REHABILITATION
OF
BEAVER DAM LAKE DAM
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### APPENDICES AND ATTACHMENTS

The following Appendices and Attachments are applicable to this RFB only if checked:

- Appendix A Questions  
- Appendix B Bidders' Checklist  
- Appendix C Certificate of Experience  
- Appendix D Non-Collusive Bidding Certification  
- Appendix E Disclosure of Prior Non-Responsibility Determinations  
- Appendix F Information Sheet  
- Appendix G Non-Bidder's Response  
- Appendix H Hydroplus Inc., Agreement with Contractor to supply the Fusegate System  
- Appendix I NYSDEC Master Grant contract with County of Orange dated October 5, 2017  
- Appendix J NYSDEC permit #’s 3-3399-00002/00005 and 3-3399-00002/00006  
- Appendix K Emergency Action Plan for the Beaver Dam Lake Dam last revised December 14, 2016  
- Appendix L County of Orange 2018 Holiday Schedule  
- Appendix M List of Required Submittals and Contractor Submittal Form  
- Appendix N NYSDEC letter from Larry Wilson dated August 5, 2011  
- Appendix O Beaver Dam Lake Dam Soil Borings 1987 & 1988  
- Attachment 1 Public Improvement Contract  
- Attachment 2 Supplier Forms  
- Attachment 3 Article 8 Prevailing wage rates apply to this Request for Bids and are specified in PRC#2017013459 which is attached and incorporated by reference and can be obtained through the New York State Department of Labor website at: http://wpp.labor.state.ny.us/wpp/showFindProject.do?method=showIt.  
- Attachment 4 Bid Drawings
NOTICE TO BIDDERS

The County of Orange is seeking Bids for **RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**. Bids will be received by the Commissioner of the Department of General Services, at PO Box 218, 255-275 Main Street, Goshen NY 10924, **up to and including Monday March 19, 2018 at 2:00 PM**, prevailing time.

Copies of the Request for Bids may be obtained beginning **Tuesday February 20, 2018** at that office between the hours of 9:00 A.M. and 4:45 P.M., Monday through Friday or through www.orangecountygov.com/generalservices under "Current Bids and Proposals". A deposit of One Hundred Dollars ($100.00) for each hard copy Bid Set will be required from prospective Bidders. Checks shall be made payable to the COUNTY OF ORANGE, COMMISSIONER OF FINANCE. Please allow 24 hours for hard copy sets to be available. Digital copies shall be available at no cost. For mailing of the Bid Set documents (i.e.; UPS, FedEx), the prospective Bidders shall provide their billing account number. All other shipping methods shall be coordinated by calling (845) 291-2792 to make arrangements. Only complete Bid Sets are available.

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Tuesday February 20, 2018

James P. Burpoe, Commissioner
Department of General Services
255-275 Main Street
Goshen, NY 10924
Phone – 845-291-2792
Fax – 845-378-2378
INSTRUCTIONS TO BIDDERS

The only official distribution source for this Request for Bids ("RFB") is through the County of Orange ("County"), Department of General Services ("Department"). Additionally, most RFB documents issued by the Department are now being distributed through BidNet which can be accessed through www.orangecountygov.com/general services under "Current Bids and Proposals". If you have obtained this RFB from a different source, you are encouraged to contact the Department to receive an official copy. You may not receive addenda or important information regarding this RFB if you are not registered as having obtained a copy of this RFB through the Department or through BidNet.

By submitting a Bid, you are asking the County to accept your offer for services and/or the sale of goods. It is important that you READ and UNDERSTAND all terms and conditions contained herein, as well as understand the laws that govern public contracts in New York State. If you do not agree with the terms and conditions contained in this RFB you should not submit a Bid.

Your Bid will be considered by the County if the following conditions are met:

1. Pursuant to State Finance Law §139-j and §139-k, this solicitation includes and imposes certain restrictions on communications between the County and a Bidder during the procurement process. A Bidder is restricted from contacting other than designated staff from the earliest notice of intent to solicit offers through final award and approval of the Procurement Contract by the County Executive ("restricted period") unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-(j)(3)(a). County employees are required to obtain certain information when contacted in relation to this RFB during the restricted period. The designated staff contact is the Commissioner of General Services, or his or her designee, telephone (845) 291-2792. Bidders responding to this RFB must familiarize themselves with these State Finance Law requirements and will be expected to affirm that they understand and agree to comply on the Bid Form.

2. A. ☒ If this box is checked, a Pre-Bid Conference will be held at the Orange County Department of Public Works Administration Building located at 2455-2459 Rt. 17M, Goshen, NY on Monday February 26, 2018 at 10:00 AM, prevailing time. Attendance is strongly recommended. The County shall not be liable for, nor shall it review, proposed change orders, contract amendments, etc. for inadequate pricing, labor, materials, time or similar issues in Contractor's contract resulting from Contractor's failure to attend and obtain information provided at the pre-Bid conference, site visit and/or any addenda issued afterward.

3. Bidders are responsible for reporting in writing any errors, omissions or ambiguities found in this RFB. All such reports, requests for information, questions, etc. shall be on the "Questions Form" provided in this RFB and either faxed to the Department of General Services at (845) 378-2378 or emailed on the Questions form to GeneralServices@orangecountygov.com. No questions will be entertained by any other means. All questions must be submitted by Wednesday March 7, 2018 at 4:00 PM, prevailing time. Questions received after this time may not be addressed. Please be patient, questions will be answered in an Addendum/Addenda to be shared with all interested Bidders. Questions will not be responded to individually.

4. Unless otherwise specified herein, all Bids must include the Bid Form from this RFB, as may be modified by addenda. As applicable to the trades required for the scope of work described in this RFB, Bidder shall submit within its bid package a separate sealed list that names each subcontractor Bidder will use to perform work, and the agreed upon amount to be paid to each, for: (a) plumbing and gas fitting, (b) steam heating, hot water heating, ventilating and air-conditioning apparatus, and (c) electric wiring and standard illuminating fixtures, as provided for on the Bid Form. After the apparent low bid is announced, the sealed list of subcontractors submitted with such apparent low bid shall be opened and the names of such subcontractors shall be announced, and thereafter any change of subcontractor or agreed upon amount to be paid to each shall require the approval of the County, upon a showing presented to the County of legitimate construction need for such change, which shall be open to
5. **Bids shall be submitted in a sealed envelope marked: RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**, addressed to Commissioner, Department of General Services, PO Box 218, 255-275 Main Street, Goshen, NY 10924 and **received up to and including Monday March 19, 2018 at 2:00 P.M., prevailing time.** If NOT sending your Bid via U.S. Mail, (using FedEx, UPS, hand deliver, etc.), please use the following address: Commissioner, Department of General Services, 255-275 Main Street, Goshen NY 10924. It is the Bidder’s responsibility to clearly mark the outside of their envelopes with the RFB # and Title. Faxed or emailed Bids are not permitted. **Late bids shall not be accepted.**

6. Any alteration of the Bid Form or Specifications to suit your pricing, packaging, or manufacturing requirements, etc. shall make your Bid non-responsive. If clarification is required on any aspect of the RFB it is necessary to submit questions to the Department as set forth in Instruction to Bidders Item 3.

7. Pursuant to New York State’s Freedom of Information Law (“FOIL”) (Public Officers Law, Article 6) all government records are presumptively open for public inspection unless specifically exempted from disclosure as provided therein. Bidders who have a good faith belief that certain information contained in their Bid is exempt from disclosure under FOIL must, at the time of their submission, request the exemption in writing, setting forth the basis for the claimed exemption. In addition, each page of the Bid material claimed to be exempt must be marked with the following legend: **“THE BIDDER BELIEVES THAT THIS INFORMATION IS EXEMPT FROM DISCLOSURE UNDER THE NEW YORK STATE FREEDOM OF INFORMATION LAW.”** Neither the Bidder’s classification of Bid materials as exempt under FOIL, nor the County’s acceptance of the Bid with the claimed exemptions, should be considered a final determination as to whether the designated materials are exempt under FOIL. Any and all determinations as to the propriety of claimed exemptions will be made by the County in accordance with applicable law and/or court order.

8. **One set** of the Bid shall be submitted, WHICH MUST CONTAIN ORIGINAL SIGNATURES including completed copies of any forms, certifications or other items required in this RFB. Forms included in this RFB shall be completely filled in, in ink or by typing, on the original form. Failure to respond to the RFB on any official form(s) included in this RFB may result in disqualification of a Bid as non-responsive. No Bid form will be accepted which contains any modification to the template, additional information not specifically requested, omissions or erasures. Any form requiring a signature must be signed by a duly authorized individual on behalf of the Bidder. Illegible and unsigned Bids will be rejected as non-responsive.

9. Permission will not be given to modify or explain a Bid after it has been opened, with the exception of price negotiations with the lowest responsive and responsible Bidder or any other clarification required at the sole discretion of the Commissioner of General Services or his or her designee. Permission to withdraw a Bid prior to opening will be at the discretion of the County and no replacement Bid may be submitted. Opened Bids may not be withdrawn until forty-five (45) days after opening.

10. **Basis of Award provisions vary with each RFB, please read that section carefully.** Some RFBs may be awarded to more than one entity. The County reserves the rights to waive any informality, reject any and all Bids with or without resoliciting, or, if noted in the Basis of Award section of this RFB, accept any Bid in whole or in part, if deemed to be in the best interest of the County.
11. Any award shall be subject to the execution of a contract (and, if applicable, license or other agreements) between the Bidder and the County. The County's contract obligation is contingent upon Bidder's provision of any required insurance and bonds, execution of the contract by both parties and the availability of appropriated funds for this contract. No legal liability on the part of the County for payment of any money shall arise unless and until all required insurance and bonds are provided and maintained; funds are appropriated and made available in each year of the term of the contract and all performance requirements for each payment are met. The County shall have no responsibility or liability for any of Bidder's costs related to preparation of Bids, attendance at interviews, etc.; all such costs are solely at Bidder's risk and expense.

12. Bidder(s) awarded a contract agree to execute the contract in the same form as the template enclosed in this RFB and in the timeframe, if any, indicated in this RFB. If the Specifications permit it, any supplemental agreement(s) (e.g. licensing or maintenance agreements) preferred by a Bidder must be included in the Bid and shall be subject to negotiation and the discretionary approval of the County Attorney and the County Executive. For any software required in the scope of services, include any proposed license or maintenance agreement(s) with your Bid. Failure to reach agreement on contract terms and conditions may result in rejection of a Bid as non-responsive, rescission of an award and/or retention of bid security by the County.

13. If Bid Security is required by this RFB (see page 7); it should be included in the Bid. If Performance and/or Payment Bonds are required by this RFB (see page 7), Bids should include a letter from the Bidder's bank or surety stating that the required letter of credit or bond(s) will be provided in the event of a contract. The letter of credit or bond(s) shall be provided for each year or relevant portion of the contract, as may be applicable.

14. Bidders should be properly registered to do business in New York State and furnish applicable certificates of authority/incorporation/partnership/dba, etc. with their Bid. Regardless of the propriety or legality of registration status, as a condition of contract, the Bidder shall agree to service of process as follows: In addition to the methods of service allowed by New York’s Civil Practice Law and Rules, Bidder consents to service of process upon it by registered or certified mail, return receipt requested, to the address indicated in this Agreement. Service shall be complete upon Bidder's actual receipt of process, or upon the County's receipt of the return by the United States Postal Service as refused or undeliverable. Bidder shall immediately notify the County, in writing, via registered or certified mail, return receipt requested, of each change or address to which service of process can be made. Service by the County to the last known address shall be sufficient.

15. If a deposit was required to obtain this RFB, the deposit for one full set of documents returned in good condition within thirty (30) days after the Notice of Award shall be refunded. Refunds for any additional copies obtained by the same Bidder shall be less the actual reproduction cost per set.

16. The County encourages submission of Bids by certified Minority and Women Owned Business Enterprises. If awarded a contract, Bidder specifically agrees to abide by all applicable provisions of federal and state laws and regulations, as applicable to its agents, employees, subcontractors and assigns. In hiring and employment practices, Bidder shall not in any manner discriminate on the basis of race, creed, religion, color, sex, national origin, citizenship status, age, marital status, disability, genetic information or predisposing genetic characteristics, sexual orientation, military status or domestic violence victim status.

17. Supplier Forms are included in this RFB. Contractors that have not received a purchase order in the last twelve (12) months from the County must submit completed and executed Supplier Forms prior to execution of a contract by the County.

18. If a Contractor fails to perform or otherwise breaches the contract, in addition to any other rights and remedies the County may have, the Contractor may be considered non-responsible and may be ineligible for future contract awards.
INSURANCE REQUIREMENTS

During the term of the contract, or longer if required, Contractor shall maintain, at its expense, Worker's Compensation, Disability and liability insurance policies of the types and minimum coverages specified in the enclosed Public Improvement Contract. Certificates of insurance evidencing Bidder's compliance with these requirements shall be required prior to execution of the contract by the County. Award is conditional upon submission of insurance documents within the time specified in the Notice of Award. Failure to do so may result in disqualification of the Bidder as non-responsive and/or the County's retention of any bid security.

BONDING REQUIREMENTS

Applicable only as to box(es) checked.

☒ Bid Bond

An approved bid bond, bank check, certified check, or letter of credit in the amount of either:

☐ $00.00; or

☒ 10% of the total contract price

is required with all Bids.

☒ Payment Bond

☒ Performance Bond

Prior to execution of the contract by the County, the awarded Bidder shall provide, in the full amount of the contract price:

▪ Performance and Payment Bonds, signed by a surety company authorized to do business in the State of New York, having an A.M. Best rating of A- or better and appearing on the most recent published Department of the Treasury's Listing of Approved Sureties (Department Circular 570) at the time of filing the Bond(s); or

▪ an irrevocable letter of credit with a sound and reputable bank authorized to do business in the State of New York; or

The Performance Bond, Payment Bond, letter of credit, etc., shall name the County of Orange as beneficiary and may be invoked to the benefit of the County upon delivery of a certified statement to the issuing bank or surety that the Contractor has failed to perform, pursuant to the terms and conditions of its contract with the County. Contractor shall obtain and maintain the bond(s) or letter of credit in full force and effect for sixty (60) days after contract expiration or longer if the contract so requires.

☒ Maintenance Bond

Upon application for Final Payment, the Contractor shall provide the Owner with a Maintenance Bond in the amount of TEN PERCENT (10%) of the total Contract Price at Substantial Completion which shall remain in effect for one year from the date of approval of Final Payment as a guarantee that the Contractor shall make good any faults or defects in the Work arising from improper or defective workmanship or materials which may appear during that period. The Maintenance Bond shall be in addition to any other warranties, guarantees or similar obligations called for in the Contract Documents.
Bonds evidencing awarded Bidder's compliance with these requirements shall be required prior to execution of the contract by the County. Award is conditional upon submission of bonds within the time specified in the Notice of Award. Failure to do so may result in disqualification of the Bidder as non-responsive and/or the County's retention of any bid security.

**SCOPE**

Beaver Dam Lake Dam is an earthfill embankment located on a tributary to the Moodna Creek in Salisbury Mills, Orange County, New York. The dam is owned by Orange County (“County”) on behalf of the Beaver Dam Lake Special Protection and Rehabilitation District (“District”), and by Carlos and Aurora Dominguez. It is expected that the entirety of Beaver Dam Lake Dam will be owned by the County of Orange, on behalf of the District, prior to issuance of the Notice to Proceed. Beaver Dam Lake Dam impounds a reservoir used for recreational activities by the surrounding community.

The County is seeking to retain the services of a qualified contractor to provide construction services for the rehabilitation of Beaver Dam Lake Dam, including all equipment, material, tools, labor and supervision. The project consists of the rehabilitation of the Beaver Dam Lake Dam, which includes, but is not limited to, (a) the drawdown of the lake, (b) the demolishing and reconstruction of the shotcrete gabion spillway overlay and training walls; spillway abutments and approximately eleven (11) vertical feet of the existing spillway crest, including the HydroPlus, Inc., proprietary Fusegate system, and (c) the refilling of Beaver Dam Lake.

**SPECIFICATIONS**

The successful Bidder (“Contractor”) shall furnish, at its own cost and expense, all equipment, material, tools, labor and supervision for the rehabilitation of Beaver Dam Lake Dam in conformance with the terms, conditions and requirements of the Public Improvement Contract to be executed by Contractor and County, including, but not limited to, the plans entitled “Beaver Dam Lake Dam Rehabilitation”, prepared by O’Brien and Gere.

The Technical Specifications to be utilized for this project are as describe in the “Technical Specifications” portion of this RFB.
GENERAL CONDITIONS

1. DEFINITIONS:

a. The "Contract" consists of the Contract Documents. The Contract represents the entire and integrated agreement between the parties, and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the County and Contractor.

b. “Modification” means:
   i. a written amendment to the Contract signed by both parties;
   ii. a Change Order;
   iii. a Construction Change Directive; or
   iv. a written order for a minor change in the Work.

c. The “Project” is the total construction of which the Work performed under the Contract Documents may be the whole or a part, and which may include construction by the County or by separate contractors.

d. The "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

2. INTENT

The intent of the Contract Documents is to be complementary. If Work is shown only on one document, but not on another document, the Contractor shall perform the Work as though fully described on both, consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

3. PLANS, DRAWINGS AND/OR SPECIFICATIONS

In addition to the Plans, Drawings or Specifications provided in the Contract Documents, Contractor shall furnish drawings and/or manufacturers’ specifications, as may be required by the Contract Documents for the Work to be approved by the County or its designee.

4. MATERIALS

Where the words "approved", "approved equal", "as directed", and similar expressions occur in the Specifications, they refer to the specific approval or the direction of the County. The various materials mentioned in the Specifications, including those where proprietary names are used, whether or not followed by the words "or an approved equal" are given not as a limitation, but to establish a standard of quality and construction. The only proprietary items used in this contract are the Hydroplus Fusegates as detailed in the Technical Specifications section. Approved equals may be acceptable for materials, but only as approved by the County as per Section 30.
Preference will be given to articles or materials manufactured or produced within the United States, conditions of quality and price with duty being equal. Unless otherwise stated in the bid, it will be understood that only domestic articles or materials will be used on the job. In all cases the materials shall be new.

Contractor certifies and warrants that all wood products to be used under this Contract, if any, will be in accordance with, but not limited to, the specifications and provisions of State Finance Law §165 which prohibits purchase and use of tropical hardwoods, unless specifically exempted by the County. Qualification for an exemption under this law will be the responsibility of the Contractor to establish and must meet the statutory requirements and the approval of the County. Any bid which proposes or calls for the use of any tropical hardwood in the performance of the Contract shall be deemed non-responsive.

5. **EMPLOYEES**

Contractor shall at all times enforce strict discipline and good conduct among his or her employees, and shall not employ on this job any unfit person or anyone not skilled in the work assigned to him or her.

6. **SUPERVISION**

Contractor shall at all times provide a competent Superintendent at the job site and any number of assistants satisfactory to the County. The Superintendent shall not be changed except with the consent of the County unless the Superintendent proves to be unsatisfactory to the Contractor and ceases to be in Contractor's employ. The Superintendent shall enforce strict compliance with all requirements of the Contract Documents and shall represent the Contractor in Contractor's absence and directions given to the Superintendent shall be as binding as if given to the Contractor.

7. **INSPECTION**

The County shall at all times have access to the job for purposes of inspecting all Work whether the Work is in preparation or in progress. The Work under this Contract shall be done to the County's satisfaction and acceptance.

8. **INSURANCE**

Contractor shall provide all insurance coverage required by the Public Improvement Contract template in this RFB. Proof of coverage must be submitted within ten (10) days of notice of intent to award. If Contractor is exempt from the statutory requirements of New York State Worker’s Compensation and/or New York State Disability Insurance coverage, Contractor shall provide proof on current New York State forms indicating the exemption(s). The official web-site for the NYS Workers’ Compensation Board is [http://www.wcb.ny.gov/](http://www.wcb.ny.gov/). This site can provide information regarding the Workmen’s Compensation and Disability Benefits, requirement.

9. **CONSTRUCTION AND PERMIT FEES**

Contractor shall secure, at its own cost and expense, all applicable and necessary permits from the State, municipal, or other public authorities, if any, required in connection with the Work.

10. **CLEAN-UP**

Immediately before the final inspection by County, and prior to acceptance by County of the Work performed under this Contract, Contractor shall remove all equipment, rubbish, materials not used, and debris; leaving the building site, private property and adjacent areas in a condition equal to or better than the condition prior to the Work. In
addition to the above, Contractor shall, on a daily basis during the course of the Work, make certain that the project Site and its environs are left in a clean, neat and orderly condition; removing debris as it accumulates.

11. **NO WAIVER & GUARANTEE**

Neither the Final Certificate of Payment, nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by County shall constitute an acceptance of Work not done in accordance with the Contract Documents; nor do they relieve Contractor of any liability with respect to any express warranties or any responsibility for faulty materials or workmanship. Contractor shall remedy any defects in the Work and pay for damage to other work resulting therefrom, which shall appear within a period of one (1) year from the date of final acceptance of the Work unless a longer period is specified. County shall give notice of observed defects with reasonable promptness.

12. **PUBLIC UTILITIES**

Contractor shall assume full responsibility for the protection and preservation of all public utilities, if any, adjacent to or on the Site. Contractor shall comply with all requirements of New York State Department of Labor Industrial Code Rule 753 "Dig Safely New York".

13. **EXISTING FACILITIES**

As applicable to the Work Site, Contractor shall assume full responsibility for the protection and preservation of all culverts, headwalls, buildings, and all other features existing within and adjacent to the Work Site.

14. **TWENTY-FOUR HOUR NOTICE**

Contractor shall provide the County with the names and telephone numbers of at least two (2) employees of Contractor who can be reached twenty-four (24) hours a day. This will enable County to contact Contractor any time that an emergency might arise involving Contractor's operations or responsibilities.

15. **SANITARY REQUIREMENTS** ☒ applicable if checked

Unless otherwise stated in the Contract Documents, Contractor shall provide the necessary enclosed sanitary conveniences for the use of its workers and inspection personnel. They shall be of a type approved by the County and the New York State Department of Labor and shall be maintained by Contractor and kept in a clean and satisfactory manner. Facilities such as "Sani-John" or similar prefabricated units will be approved as long as they are kept in a clean condition. Each unit shall include a toilet and a urinal. These structures shall be sufficient in number for the size of the job, and their use will be required. Contractor shall notify all his workers that no nuisances will be permitted in this regard, and any complaints shall call for stricter enforcement of the provisions of this section.

16. **DRINKING WATER** ☒ applicable if checked

Potable drinking water shall also be provided by Contractor for its workers, Subcontractors, any other representatives and inspection personnel.

17. **TRESPASSING ON PRIVATE PROPERTY**

Contractor's workers and Subcontractor(s) shall not invade or enter upon private property, lands, or buildings along the Work Site, unless it secures written permission from the County and adjacent owners, as applicable. Contractor will be held responsible for any and all damages and injuries done. Any damages or injury committed shall be
satisfactorily repaired or items replaced at Contractor's own expense. The County will confirm that Contractor covers the full cost of all expenses and damages caused by Contractor. Contractor may make its own arrangements to use private property for storage, etc.

18. WORK ON EASEMENTS AND RIGHTS-OF-WAY

Contractor shall confine its operations to the limits of the Work Site, including any easements and rights-of-way, indicated on the drawings and shall not trespass on private property. Where the County has procured easements and rights-of-way from individuals, extreme care must be exercised while working on these areas. Where lawns, gardens, driveways and other developed ground is traversed of necessity by heavy equipment, the surface of the area shall be planked, or otherwise adequately protected to prevent harm. Bulldozers and other heavy equipment shall not be used for backfilling near lawns or other highly developed areas.

19. PRE-COMMENCEMENT/PRE-CONSTRUCTION CONFERENCE

Contractor must attend any conference required by the Contract Documents or called by the County prior to commencement of the Work at a time and place to be determined. Discussion may include, but not be limited to: performance of the Contract, scheduling, number of crews, equipment, materials and construction details. Utility representatives may also be present to discuss construction details.

20. JOB MEETINGS

Contractor shall attend all bi-weekly job meetings called by the County and shall be represented by a person with complete authority to make all decisions affecting Contractor's operations. Failure to be so represented at any job meeting which is held at a mutually agreed upon time or for which three (3) days oral or written notice is given, shall in no way relieve Contractor from abiding by any and all decisions made at such meeting. The County may change the frequency of meetings as deemed necessary.

21. PREVAILING WAGE

Attention is directed to New York State Labor Law Article 8 provisions governing the prevailing rates of wages for workers, mechanics and laborers who are employed on this project. The prevailing wage rates applicable to this project are referenced in the Contract Documents. The New York State Department of Labor may amend or supplement these rates from time to time and Contractor shall be responsible for compliance with such changes in rates during the Contract term and any extension thereof. All requests for rates for additional occupations or positions shall be directed to the New York State Department of Labor. Contractor is required to pay the prevailing hourly wage rates and supplements throughout the term of the Contract pursuant to New York State Labor Law. Contracts that run through a period with an update, or possibly multiple years of updates, should account for any increase in Prevailing Wage rates as change orders due to increased Prevailing Wage rates shall not be permitted.

22. REQUEST FOR PAYMENT

All requisitions for payments must be submitted on American Institute of Architects ("AIA") Documents or other forms previously approved by the County. A certified payroll showing prevailing wage rates and supplemental benefits were paid must be included with your invoice. Each payment application shall include payment release for all suppliers and subcontractors covered in the previous payment. No payments will be made without this required documentation. See Technical Specifications Section 01010 1.4 and 1.5.
23. **FINAL PAYMENT**

Upon the completion of the project and before retainage shall be paid, County requires submission of the following AIA documents or forms otherwise deemed acceptable by the County:

- G707  Consent of Surety Company to final payment.
- G706A Contractor's affidavit of release of liens.
- G706  Contractor's affidavit of payment of debts and claims.
- G704  Certificate of substantial completion.

See Technical Specifications Section 01010 1.4 and 1.5.

24. **WORK AREA**

All work areas are to be maintained in a constant state of cleanliness by Contractor to prevent the risk of injury. All tools and ladders must be supervised at all times and not be left unattended. During all breaks, lunches and at the end of the work day, all equipment and tools must be stored properly. The County may assign an area where all equipment may be stored; however, the County shall have no responsibility or liability for equipment or tools of Contractor, its officers, employees, agents or subcontractors. “Construction Area” signage is to be provided and posted in all work areas by Contractor.

25. **SCHEDULE OF WORK**

Unless modified in writing by the Owner, all work by Contractor will be completed Monday thru Friday from 7:00 am – 5:00 pm and no work will be performed Saturday or Sunday or on Orange County Holidays (See Appendix L). Unless otherwise stated in the Contract Documents, Contractor shall confer on a daily basis with the County to discuss progress and needs and/or issues that may arise during the project.

The Contractor shall be required to submit a proposed schedule of how the work will be accomplished over the contract period including identifying workforce and equipment. This schedule shall be developed using project management software (Premavera, Microsoft Project, or equal). The schedule shall be split into separate work areas; each detailed identifying work with reference to item and specification numbers. The schedule shall identify critical path work. This overall schedule shall be submitted on or before the Pre-Construction Conference at which time the Contractor will be required to review it with all parties. The overall construction schedule is subject to the approval of the Owner and the Engineer.

The Contractor shall be required to update this overall schedule throughout the duration of the project and provide updated copies to the Engineer for review on a bi-weekly basis.

26. **TEMPORARY OFFICE** ☑ applicable if checked

Unless otherwise stated in the Specifications or any Supplemental Conditions, Contractor shall provide and maintain at its own expense for the duration of the project a suitable weatherproof office for Contractor with ample space for reading plans, conferences, etc., and with light, electric, telephone service, fax machine, answering machine, heat and air conditioning. Such temporary office may be a trailer. The cost and expenses of the temporary office shall be as described in the technical specifications under Section 02010 MOBILIZATION AND DEMOBILIZATION Sub-section 1.3(B).
27. DBE/M/WBE Goals

This contract requires a goal of **30%** for Minority and Women-Owned Business Enterprises (MWBE). The EEO Contract Goal is **10%** for Minority Labor Force Participation and **10%** Female Labor Force Participation as mentioned in Section X. Article 15-Requirements from the NYSDEC Master Grants Contract located, in Appendix I. The Contractor is required to submit an MWBE-EEO Utilization Plan (before commencement of work) and quarterly MWBE Contractor Compliance Reports as mentioned in Section X. Forms can be found at http://www.dec.ny.gov/about/48854.html. Payment requests may be delayed if these quarterly reports are not submitted on time. The Master Contract in Appendix I is between the NYSDEC and the County of Orange (Contractor) for grant reimbursement. However, the Contractor shall be familiar with this contract as certain sections pertain to the construction portion of the grant for the Rehabilitation of the Beaver Dam Lake Dam. The Contractor shall be responsible for all provisions mentioned in Section X - Article 15 in Attachment A-1 Program Specifications and Conditions. When referring to construction, the “Contractor” will be the contractor selected for this project. There are no DBE provisions in this project.

The Contractor shall not be paid for work if conditions under the NYSDEC Grant (Appendix I) are not met and the NYSDEC withholds related funding.

28. HYDROPLUS, INC. CONTRACT

The Contractor is required to enter into an agreement to supply the Fusegate system with Hydroplus, Inc. (see Appendix H). The Contractor will not be allowed to commence with construction until the County of Orange has a copy of the Contractor’s signed agreement with Hydroplus, Inc.

29. LIQUIDATED DAMAGES

If the “Work” remains incomplete after the times and dates specified in the TERM, the contractor shall pay the Owner liquidated damages. It shall be understood that the payment of liquidated damages are contractual and by signing the contract the Contractor agrees to the conditions and amounts specified. The Contractor agrees to pay the Owner the sum of **one thousand five hundred dollars ($1,500.00)** per day that the “Work” remains incomplete after the allocated date specified in the TERM.

30. SUBMITTALS

Upon receipt of the NOTICE TO PROCEED of the contract, the Contractor shall submit all appropriate shop drawings and material certifications in accordance with relevant sections of these specifications. Contractor will be required to utilize the project submittal form contained in Appendix M. Failure to use the submittal form will result in submittals being returned as incomplete. Once approvals have been obtained, the Contractor shall order all necessary equipment and materials and shall notify the Engineer of their receipt.

In addition, the Contractor shall identify all long lead material items and incorporate them into the construction schedule. The Contractor is reminded to include sufficient time for material shop drawing review in this schedule. In general, submittals requiring in office review only will be turned around within 10 business days. Submittals requiring outside review can take up to 20 business days. It shall be the Contractor’s responsibility to identify long lead-time material items and incorporate their deliver into the overall work schedule.

No additional contract time will be provided for failure to identify long lead-time materials.
Submittals shall include, but not be limited to: shop drawings, schedules, samples, and manufacturer’s literature as required by the specifications or requested by the Engineer. No work shall be fabricated until such approval has been received. Work performed without shop drawing approval is at the Contractor’s own risk.

All submissions shall include a “CONTRACTOR SUBMITTAL FORM” (See Appendix M) as a cover sheet to the submittal information. Include on this form if submittal is from a subcontractor. Submittals received without the completed submittal form will be returned to the Contractor as incomplete and not reviewed. Contractor submittal forms shall be printed on colored paper of the contractor’s choice and shall remain the same color throughout the project. Also, included in Appendix M is a list of required submittals. This list is not conclusive as there may be additional submittals required.

Submissions made directly by subcontractors will not be accepted. All business concerning approval will be conducted through the general Contractor.

The Contractor shall submit for the approval of the Engineer, the following number of submittal copies:

- 3 copies for the Engineer
- Plus the number of copies required by the Contractor/subcontractor

As an option, submittals can be submitted to the Engineer by email as a combined Portable Document Format (PDF) file. Electronic submissions shall include submittal forms as discussed above.

Submissions shall be made sufficiently in advance of construction requirements to allow ample time for checking, resubmitting and rechecking without causing delay in the work. Failure to submit shop drawings in a timely manner shall not be considered as a valid reason for a Contract time extension.

Each submission, including the submission of subcontractors shall be checked by the Contractor for accuracy and compliance with the Contract Documents. The certification of the submittal form shall constitute as evidence of such checking and coordination. Submissions without this certification will not be considered for review by the Engineer.

Submittal certification shall include one of the following:

1. Submitted “as specified” for the product
2. Submitted “AS EQUAL” to the product specified
3. Submitted “IN SUBSTITUTION” for the product specified
4. “OTHER”

1. Submitted “as specified” shall mean the Contractor is certifying that the submittal item or system is of the same manufacture and model number, or performance standard as specified. For these items, manufacturer’s data sheets shall be attached to the Contractor submittal form.

2. Submitted “AS EQUAL” to the project or system specified shall mean the Contractor is certifying the proposed submittal, although supplied by a manufacturer other than the one specified for the item meets or exceeds the physical requirements, specifications, quality, speed, reliability, and/or maintenance costs of the product specified, and is capable of being incorporated into the overall project without design revisions and will perform equally or better than the specified item. For these items, manufacturer’s data sheets shall be attached to the Contractor submittal to demonstrate that the performance, durability and/or maintenance standards of the product are specified.
3. Submitted “IN SUBSTITUTION” to the product or system specified means the Contractor is proposing an item or system of different physical requirements, specifications, quality, reliability, and/or maintenance costs, than the product specified. For a submission “IN SUBSTITUTION” of the product or system specified the following information and procedure shall be followed to determine if the Owner’s requirements will be satisfied:

- Design the system to meet or exceed the operational requirements, physical requirements, specifications, quality, reliability, maintenance costs, and ease of operation of the specified system.
- Submit full specifications for the system and all components in the form of shop drawings for review by the Owner and the Engineer.
- Submit a revised design for the system, stamped by a licensed Professional Engineer certified in the State of New York.
- Submit revised details for any and all components of the proposed system that are different than those of the specified system. A licensed Professional Engineer certified in the State of New York shall stamp details.
- Demonstrate the proposed system to the satisfaction of the Owner and Engineer.

Acceptance of any alternate item or system will be at the discretion of the Owner. Upon acceptance or rejection of a system or component thereof, the Engineer shall provide a written response to the Contractor in the form of a shop drawing review.

4. Submitted Certified as “OTHER”. The Contractor shall provide information to demonstrate the proposed item or system will satisfy the design intent and provide the Owner performance, reliability and maintenance ease over it anticipated service life that exceeds that of the specified product. The final determination of suitability shall be the sole responsibility of the Owner.

31. INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES

An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly or by implication agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as hereinafter provided without in any way invalidating the unit bid prices.

32. EMERGENCY ACTION PLAN

The Contractor shall be familiar with the Emergency Action Plan (see Appendix K) for the Beaver Dam Lake Dam, last revised December 14, 2016. The Contractor shall post the Notification Flowchart (Figure 1) in a conspicuous location on the worksite and adequately protect it from the weather. Should an emergency occur at the dam site during construction, the Contractor shall make necessary notifications as described in the Emergency Action Plan and the Notification Flowchart.
33. **FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS**

Contractor shall adhere to all applicable federal, state and local laws, rules and regulations as they apply to the Contract throughout the term, and they are assumed to be included in the Contract as if they were written out in full.

34. **CONTRACTOR’S SUPERVISION AND CONSTRUCTION PROCEDURES**

a. Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the County, and shall not proceed with that portion of the Work without further written instructions from the County.

b. Contractor shall be responsible to the County for acts and omissions of the Contractor's employees, subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

c. Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents, either by activities or duties of the County in the administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

d. Contractor shall inspect portions of the Project related to the Contractor’s Work in order to determine that such portions are in proper condition to receive subsequent Work.

e. Contractor shall obtain all permits, licenses and certificates, including certificates of occupancy, required by all governmental authorities, having jurisdiction over the Work, except as otherwise provided in the Contract Documents or directed by the County in writing, and shall assist in the preparation and giving of such notices and arrange for all inspections as are legally required in connection with same. The cost of such permits, licenses and certificates shall be paid directly by the Contractor.

f. As may be required, Contractor shall make arrangements for temporary construction facilities on the Site to be used by the Contractor and Subcontractors, and provide general service and facilities in the support of all subcontractors.

g. Contractor shall coordinate the Work by Contractor’s subcontractors, if any, on the Project until completion of the Work to the satisfaction of County, and acceptance of the Project by the County.

h. Contractor shall establish and maintain quality control procedures for all parts of the Work. Contractor shall take measures to prevent the installation of any Work not in conformity with the Contract Documents, including, but not by way of limitation, prevent use of material or equipment not properly approved, suspend operations upon the installation thereof, and report promptly to the County that particular Work or materials fail to conform to the Contract Documents.

i. Contractor shall ascertain that all inspection and testing of material or equipment required to be tested under the terms of the Contract Documents are performed by qualified consultants.
j. Contractor shall maintain equipment and material delivery records and inventory records for tools, equipment, machinery and office furniture acquired and employed in managing the Work.

k. Contractor shall maintain cost accounting records with respect to the Work in accordance with generally accepted accounting procedures. Provide, at the request of the County, a separate breakdown of the portion of the Cost of the Work allocable to building and equipment items for purposes of determining depreciation and for other federal income tax purposes. The Contractor shall establish a satisfactory cost accounting system that will provide the County with the breakdown of costs that the County needs. Such accounting procedure shall be consistently applied throughout the completion of the Work, in addition to any other accounting required by the Contract Documents.

l. Contractor shall collect and deliver to the County, in an orderly fashion, all guarantees, warranties, maintenance and operations manuals, part lists, keying schedules and other such data and/or documentation.

m. Contractor shall prepare for the County’s use, operating manuals for the various building systems.

n. Contractor shall maintain orderly files for correspondence, reports of job conferences, shop drawings and other submissions, reproductions or original Contract Documents, including all addenda, modifications, supplemental drawings and all other Project related documents.

o. Contractor shall maintain a daily field report describing Work and activities accomplished on each working day, the number of each Subcontractor’s employees at the Site, material deliveries, labor difficulties, observations in general and specific observations as required.

p. Contractor shall promptly advise the County as to the feasibility, costs, delay or accelerations, or other adverse or beneficial effects on schedule or costs anticipated with respect to proposed or ordered changes or extra work and promptly advise the County with respect to any and all matters affecting either Project costs or progress.

q. If the Contractor removes any materials from the work site, including, but not limited to, demolition material, construction debris, or recycled materials, and it is not deposited on property owned by the Contractor, Contractor shall secure an agreement with the property owner containing (a) a specific provision that the property owner accepts such material, and (b) the conditions of such acceptance. The Contractor shall provide a copy of such agreement(s) to the County within ten (10) business days of the material being deposited on the property.

35. LABOR AND MATERIALS

a. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

b. The Contractor may make materials substitutions only with the consent of the County, and in accordance with a Change Order or Construction Change Directive. All costs and time for making substitutions shall be borne by the Contractor.

c. Notwithstanding the delivery to and storage on the Site of materials, equipment and facilities to be incorporated into the Work by the Contractor, and the partial or total payment therefore by the County, the
Contractor shall be responsible for, and shall bear all losses with respect to, the care and maintenance of such materials, equipment and facilities until they have been incorporated into the Work and such portion of the Work has been accepted in writing by the County. The Contractor shall store all materials delivered to the Project Site in the area designated by the County, so as to facilitate the orderly progress of the Work. If the Contractor does not store such materials in accordance with such directives, the Contractor shall bear the cost, if any and when incurred, of moving such materials, as well as the cost of any damage attributable to the unauthorized storage of such materials. The Contractor shall not be responsible for the storage of materials by the County on the Site not related to Contractor’s Work, and the County shall not store any such materials so as to interfere with Contractor's execution of its Work. Acceptance of materials by or on behalf of the County (other than materials, fixtures or equipment provided directly by the County) shall not bar future rejection if subsequently found to be defective or inferior in quality or uniformity to materials specified in the Contract Documents, or if such materials are found not to be as represented. The Contractor's responsibility set forth in this section shall be subject to or reduced by amounts received or recoverable under applicable insurance required to be maintained by the Contract Documents.

36. **WARRANTY**

a. The Contractor warrants to the County that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the County, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

b. The Contractor shall warrant all their Work for one year including all labor and materials. If the products installed provide a longer period of warranty, that warranty shall prevail. The starting date for warranty and/or guarantee periods for all material, workmanship or equipment provided by the Contractor shall be the date of Substantial Completion for the Project. No warranty period shall start before Substantial Completion. Any Contractor that plans to use permanent building equipment and/or systems and/or utilities prior to Substantial Completion shall include in their Lump Sum Bid all costs for utility charges and any extended warranties required to ensure that the base term for the County Warranty commences at Substantial Completion.

c. Replacement Cost: Upon determination that Work covered by a warranty has failed, Contractor shall replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the County has benefited from use of the Work through a portion of its anticipated useful service life. Replacement costs shall include removal and replacement of other Work by Contractor or others that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

d. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, Contractor shall reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
37. **TIME**

By executing the Agreement, the Contractor confirms that the schedule established for the Work is a reasonable period for performing the Work. Contractor shall proceed expeditiously with adequate forces and shall achieve Completion of the Project by the date established in the Contract Documents.

38. **DELAYS AND EXTENSIONS OF TIME**

a. To be granted a time extension, the Contractor shall show how the progress of the work was delayed by such cause or reason and that such delay has affected, without question, the critical path of the Project Schedule and the completion of the Work.

b. If the Contractor is delayed at any time in the progress of the Work by any act or omission of the County’s own forces, changes ordered in the Work not due any act or omission (in whole or in part) of Contractor or its employees, fire, adverse weather conditions, unavoidable casualties, or any other cause beyond the Contractor's reasonable control (but not including delays caused by Subcontractors or material suppliers for reasons other than those that are beyond the control of such Subcontractors or material suppliers), then the date(s) established for completion of the Project shall be extended for a period not exceeding the length of such delay. Such extension shall not be granted unless, promptly after the commencement of any such delay, the Contractor delivers to the County a written notice of such delay stating the nature thereof and the manner and cost of the action to be taken by Contractor to remedy the delay, with a written request for an extension of the Completion date by reason of such delay. Failure to deliver any such notice or request promptly shall constitute an irrevocable waiver of any extension of the Completion date by reason of the cause for which such notice and request were required.

c. Adverse Weather. No application for an extension of time may be made for adverse weather unless or until the Contractor has lost workdays due to adverse weather conditions that materially affect the schedule and the date of Completion. Such requests shall only be made for the delays due to weather conditions only when such conditions are more severe and extended than those reflected by the ten (10) year average for the month in question as evidenced by Climatological Data, U.S. Department of Commerce, which includes the State of New York.

39. **CORRECTION OF WORK**

a. Contractor shall promptly correct work rejected by the County if such fails to conform to the requirements of the Contract Documents, whether discovered before or after completion of the Project, and whether or not fabricated, installed or completed. Costs and expenses associated with correcting such rejected Work, including compensation for the County’s services and expenses made necessary thereby, shall be at the Contractor's expense.

b. In addition to the Contractor's obligations under §36, if, within one (1) year after the date of completion of the Work, or designated portion thereof, or after the date for commencement of warranties, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct such Work promptly after receipt of written notice from the County to do so, unless the County has previously given the Contractor a written acceptance of such condition. The County shall give such notice promptly after discovery of the condition. The one (1) year period for correction of Work shall be extended with respect to portions of work first performed after completion of the Work, and such extension shall be the period of time completion and the actual performance of the work. This obligation under this §39(b) shall survive acceptance of the Work under the Contract and termination of the Contract.
40. SAFETY PRECAUTIONS AND PROGRAMS

Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Commissioner.

41. ATTACHED AND INCORPORATED

All appendices and attachments of this RFB, as well as the plans entitled “Beaver Dam Lake Dam Rehabilitation”, prepared by the Obrien and Gere, are hereby attached and incorporated into this RFB.

42. DOCUMENTATION PREPARED BY CONTRACTOR

All drawings, specifications, shop drawings, product data and samples, computations, sketches, test data, survey results, photographs, renderings, models and other materials prepared by Contractor, or any of its subcontractors or consultants, shall be the property of the County, and available to the County for its exclusive use and reuse at any time without further compensation to Contractor (or subcontractor or consultant) and without any restrictions on such use and reuse.

TERM

The County anticipates that the term of this Contract will extend to November 30, 2019. The construction of the project (the “Work”) shall be substantially completed by November 30, 2018. However, TIME IS OF THE ESSENCE, and Contractor shall use best efforts to complete the work in the timeframe specified in the RFB or other Contract Document. The County reserves its right to pursue all remedies available at law and in equity related to Contractor's failure to complete the work in the specified timeframe including, but not limited to exercise of liquidated damages provisions in the Contract Documents, if any, and termination of the Contract with restitution by Contractor.

 Upon expiration of the original contract term or any renewal thereof, if authorized by the County as above, the contract may be extended unilaterally by the County for an additional period of up to two months upon notice to the Vendor with the same terms and conditions as the original contract including, but not limited to, quantities (prorated for such extension), prices, and delivery requirements. With the concurrence of the Vendor/Consultant, the extension may be for a period of up to three months in lieu of the up to two-month period.

PRICING

1. The proposed scope and specifications are not a guarantee, were developed based on past or anticipated needs, and are as accurate as the County can ascertain at the time of issuance of this RFB. When an anticipated volume of services or other quantities are listed, these are either based upon a historical usage or anticipated need. The County in no way guarantees that the actual volume or quantities listed will be necessary or ordered, although every attempt is made to provide accurate information. When volume or quantities are listed, the Bidder should understand that the actual volume or quantities may be more or less, depending on the actual needs of the County. The Bidder shall hold the County harmless against any damages because of estimated volume or quantities. In the event quantities exceed the estimate, the County shall receive the price as listed in the Bid or, if a better price is available at that time, that price shall be passed on to the County.

2. The prices submitted shall be exclusive of federal and state sales taxes (or other taxes inapplicable to government entities) and must not include any tax for which the Bidder may claim exemption because of doing business with
the County. Unless otherwise indicated in this RFB, prices shall be net, including any applicable transportation and delivery charges fully prepaid by the successful Contractor to the destination indicated in the Bid. No freight and/or handling and/or fuel surcharges will be accepted, unless otherwise agreed to in the Contract.

3. For contracts involving provision of goods, equipment or technology, at no time shall any increase in price or change in product specification for those items be permitted, except in the case where an item has been replaced by another item due to obsolescence. In this instance, the County must approve a change of product in a written change order for it to be valid. In the event a product substitution is approved, no change in price will be permitted except when the price will be equal to or lower than the originally awarded price.

4. Prevailing Wage Requirements

Prevailing Wage rates apply to this Contract and are specified in Prevailing Wage Schedule PRC #2017013459 which is incorporated by reference. The Prevailing Wage Schedule and any supplements thereto may be found by entering the PRC# at http://wpp.labor.state.ny.us/wpp/showFindProject.do?method=showIt. The successful Contractor is required to pay the prevailing hourly wage rates and supplements throughout the term of the Contract pursuant to New York State Labor Law.

Currently, the New York State Department of Labor typically issues revised Prevailing Wage Schedules each July. Bids for contracts that run beyond July of any year, or potentially for multiple years, should account for any increase in Prevailing Wage rates as change orders due to increased Prevailing Wage rates shall not be permitted. Bidders are strongly encouraged to review archived Prevailing Wage Schedules at: http://www.labor.state.ny.us/workerprotection/publicwork/ArchivedWageSchedules.shtm, prior to bid submission, to ensure that their Bid pricing will be competitive. Notwithstanding the foregoing, Contractor shall be responsible for all Prevailing Wage and Supplement increases regardless of when or how often they are implemented at the prices submitted in Contractor's Bid.

**PAYMENT**

Payment shall be made in accordance with Sections 21 (Prevailing Wages), 22 (Request for Payment), and 23 (Final Payment) of the General Conditions, Article 9 (Payment) of the Public Improvement Contract, and any other applicable provisions of the Contract Documents requiring supporting documentation, forms, certifications or other documentation.

It is anticipated that any Public Improvement contract awarded will be on payment terms of approximately 30 days. The County reserves the right to pay in lesser time under all circumstances or to negotiate payment terms of lesser time at the County's sole discretion. The County offers a credit card payment alternative for Contractors needing payment faster than thirty days but Contractor is responsible for any fees associated with such credit card payment between the credit card company and Contractor (County is not responsible for such fees).

**Bidders are reminded that New York State Labor Law requires contractors to submit certified payrolls indicating payment of Prevailing Wage Rates with each invoice involving labor, prior to payment by the County.**
ADDITIONAL INFORMATION

The County may require any or all Bidders to present additional evidence of experience, ability and financial standing as well as a statement as to the materials, equipment or personnel which the Bidder will have available for the performance of this Contract.

BASIS OF AWARD

The County may award a contract to the lowest responsive and responsible Bidder. The County reserves the rights to waive any informality or to reject any and all Bids with or without resoliciting, if deemed to be in the best interest of the County.

The proposed project is comprised of a base bid and one (1) additive alternate as described below. Low bidder will be selected depending on the bid prices received and funding available as follows:

- If the combined total of the base bid plus additive alternate no. 1 is below the funding limit, the low bidder will be determined by the combined total of the base bid plus additive alternate no. 1.
- If the combined total of the base bid plus additive alternate no. 1 is above the funding limit, the low bidder will be determined by the base bid total.

Base bid: The proposed work includes the rehabilitation of Beaver Dam Lake Dam. The scope of work includes, but is not limited to, lake drawdown, erosion control, structural demolition, excavation, installation of a Hydroplus, Inc. proprietary Fusegate System, cast iron sluice gates, manual sluice gate operators, refilling of Beaver Dam Lake and items mentioned in the Technical Specifications Sections 01010 E. 1 thru 38 and as described on the Bid Drawings (Attachment 4).

Additive Alternate No. 1: The proposed work includes, but is not limited to, the additional installation of electrical equipment, wiring, electrical sluice gates and items mentioned in the Technical Specifications Sections 01010 E. 39 and 40 and as described on the Bid Drawings (Attachment 4).

In the event of a two-way tie, Bidders will be notified of a coin toss to be held in the office of the Commissioner, Department of General Services, PO Box 218, 255-275 Main Street, Goshen, New York, 10924, the date and time to be determined as needed. The first alpha-order bidder, based on first letter of business entity name, will be asked to call the coin. In the event of a multiple tie, names of tied bidders will be placed in a hat by the Commissioner. First alpha-order bidder, based on first letter of business entity name, will draw the name. In the event there are no attendees for the coin toss or the draw, the coin toss or the draw will be conducted by the Commissioner and two (2) representatives of the County.

ANTICIPATED RFB TIMELINE

All dates are approximate and subject to change, unless otherwise noted. Any change(s) in the dates will be made by an addendum issued by the County.

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<td>Questions Due</td>
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<td>Addendum issued, if any by</td>
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BID FORM

BUSINESS NAME: _______________________________ 

CONTACT PERSON NAME: _______________________________

ADDRESS: __________________________________________

________________________________________

________________________________________

TITLE: ____________________________________________

________________________________________

EMAIL: ____________________________________________

________________________________________

PHONE: ____________________________________________

________________________________________

FAX: _____________________________________________

________________________________________

D&B D-U-N-S: ________________________________

________________________________________

FEDERAL TAX ID: ________________________________

________________________________________

Does this business have a minority, women's, disadvantaged, or small business status?  Yes  No

If yes, please list the designation(s) and the certifying entity(ties): ______________________________________

________________________________________

TOTAL BASE BID PRICE __________________________________________

(FIGURES)

________________________________________

(WORDS)

TOTAL ADD ALTERNATE NO. 1. __________________________________

(FIGURES)

________________________________________

(WORDS)

TOTAL BASE BID and ADD ALTERNATE NO. 1: ______________________________

(FIGURES)

________________________________________

(WORDS)

The undersigned proposes to furnish and deliver the services described in this RFB and the responding Bid to the County, at the prices stated within the executed Contract. The individual submitting this Bid on behalf of his or her business certifies by his or her signature below that:

• he or she understands and has complied with the requirements of State Finance Law Sections 139-j and 139-k and will continue to do so throughout the restricted period;

• he or she has read and understood the full RFB cited above; and

• he or she is duly authorized to submit this Bid on behalf of the business entity noted above.

BY: _______________________________ DATE: _______________________________

________________________________________

NAME TITLE

ADDENDA CONFIRMATION (Use this section only when an addendum/addenda were received for this RFB.)

Addendum #___ - Received _________________. 20__ Initialed by person signing above _______

Addendum #___ - Received _________________. 20__ Initialed by person signing above _______

Addendum #___ - Received _________________. 20__ Initialed by person signing above _______
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RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam
## BASE BID

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<th>ITEM</th>
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<tr>
<td>NYSDOT #2 Crushed Stone</td>
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<td>NYSDOT Medium Stone Fill</td>
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<td>Steel Sheet Piles with Coal Tar Epoxy Coating</td>
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<td>Repaired Stairaged Repairs (Heavy Stone)</td>
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**UNIT BID PRICE**

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<td>Pipe and Tube Railings</td>
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<td>Additional Electrical Installations</td>
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<td>and for Electrical Sluice Gate Operators</td>
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UNIT BID PRICE AMOUNT BID ITEMS WITH UNIT PRICES WRITTEN IN WORDS

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<th>ITEM</th>
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IRAN DIVESTMENT ACT CERTIFICATION

The Iran Divestment Act of 2012 ("Act"), Chapter 1 of the 2012 Laws of New York, added State Finance Law (SFL), §165-a and General Municipal Law §103-g, effective April 12, 2012. Under the Act, the Commissioner of the New York State Office of General Services ("OGS") developed a list ("Prohibited Entities List") of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law). In accordance with SFL § 165-a(3), the Prohibited Entities List may be found on the OGS website at http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf.

Pursuant to General Municipal Law §103-g, by signing below, Bidder certifies as true under the penalties of perjury that:

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

A Bid shall not be considered for award nor shall any award be made where the certification has not been made, provided, however, that if in any case the Bidder cannot make the certification, the Bidder shall so state and shall furnish with the Bid a signed statement which sets forth in detail the reasons therefor. The County may award a contract to a Bidder who cannot make the required certification on a case-by-case basis if:

1. The investment activities in Iran were made before April 12, 2012, the investment activities in Iran have not been expanded or renewed after April 12, 2012, and the person has adopted, publicized, and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or

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

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

The County reserves the right to reject any bid, proposal, contract or request for assignment for an entity that appears on the Prohibited Entities List prior to the award or execution of a contract or any renewal thereof, as applicable, 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.

DATE

SIGNATURE

BUSINESS NAME

NAME

TITLE
TECHNICAL SPECIFICATIONS

SECTION 01000

SPECIAL WORK REQUIREMENTS

1.1 DUST CONTROL

Dust control shall be provided for the duration of the project when deemed necessary by the Engineer/Construction Inspector or the County so as to prevent damage and nuisance to adjacent property owners, public streets and the existing dam. The means of dust control may include the use of water, calcium chloride or other approved methods. Water will not be allowed to be drawn from the lake/reservoir for dust control.

1.2 TREE REMOVAL

Per the New York State Department of Environmental Conservation (NYSDEC), tree removal shall not occur between April 1 and October 31 of any year. The quantity of tree removal shall not be measured separately but shall be considered incidental to the item requiring it.

1.3 CONSTRUCTION LAYOUT

The Engineer will provide survey control points and a benchmark on the contract plans. Prior to any layout, the Contractor shall survey the control points provided and confirm their accuracy to the Contractor’s satisfaction. Any discrepancies found in the control points shall be promptly reported to the Engineer.

The Contractor shall employ the services of a licensed professional Land Surveyor registered in the State of New York to establish field control, layout limits of work, mark property boundaries, layout all proposed work, and to perform an as-built survey. The surveyor shall also provide quality control support to the Contractor by monitoring the work as it progresses. The Contractor shall provide the Engineer with documentation representing the qualifications of the surveyor prior to proceeding with field layout.

The Contractor shall not commence with any construction activities which produce ground disturbance until all required layout has been completed to the satisfaction of the Owner and the Engineer. Layout work shall be conducted at a minimum of 3 work days in advance and at satisfactory distance from the construction operations.

The Contractor shall furnish assistance to the Engineer as requested to check the layout or otherwise control the work. Such assistance shall be understood to include the provision of suitable manpower to assist the Engineer in taping measurements, holding a survey rod for checking grades and the like.

1.4 NYSDEC PERMIT #’s 3-3399-00002/00005 AND 3-3399-00002/00006 (Appendix J)

The Contractor shall be responsible for Natural Resource Permit Conditions # 13, and 17-24, however, Contractor shall be familiar with all the conditions. If there are any discrepancies between the plans and/or specification and the NYSDEC permit(s), requirements from the NYSDEC permit(s) shall govern.

The Contractor shall pay any fines related to violations of the permit conditions mentioned above.
1.5 TESTING

The Contractor is responsible for all field testing of cast-in-place concrete, soil compaction, and any testing required in the TECHNICAL SPECIFICATIONS. The Contractor shall submit to the Engineer thirty (30) days in advance of concrete placement, the name of the independent laboratory it intends to use for the field testing for approval.

1.6 LAKE DRAWDOWN

There are two outlets for Beaver Dam Lake Dam. A twenty-four inch low-level outlet is located at the west end of the spillway and a higher eighteen-inch outlet is located at the east end of the spillway. As of September 4, 2013, only the eighteen-inch sluice gate is currently operable. Both conduits daylight at the toe of the existing spillway section. The Contractor shall be responsible for lowering the lake either by the eighteen-inch outlet (if operable) or by other acceptable means approved by the Engineer.

The Contractor shall lower the water level slowly at a constant rate as described in a letter to the County of Orange from the NYSDEC dated August 5, 2011 (See Appendix N). The Contractor shall make every effort to adhere to the measures directed in this letter. Water from the lake reservoir will not be allowed for construction purposes.

1.7 COORDINATION WITH BEAVER DAM LAKE PROTECTION AND REHABILITATION DISTRICT

It is anticipated that all recreational activities on the Beaver Dam Lake will be temporarily suspended during the duration of the project as the lake will be lowered. The Contractor may need to coordinate his efforts with the Beaver Dam Lake Protection and Rehabilitation District Advisory Board as they are responsible for all District facilities, including the dam. Coordination may include updates of construction progress, completion dates or as requested by the Engineer.

1.8 AS-BUILT DRAWINGS

The final as-built drawings will be prepared by the Owner upon conclusion of construction, however, the Contractor may need to provide as-built record information to the Engineer as per the Section(s) in the Technical Specifications.

2.1 PAYMENT

The cost and expenses of the items listed in this section shall be included in the Contract Price or shall be considered incidental to the item requiring it.
SECTION 01010

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. The section includes descriptions of the measurement and payment methods to be used for the bid items included in this project. The work of this Contract consists of furnishing, employing, and installing all equipment, materials, and labor necessary to complete all demolition, renovation, and construction as specified and/or as shown on the Plans, producing thereby a complete, finished, watertight, neat, safe, rugged, reliable, and fully usable facility ready for operation.

B. All work done for this Contract shall be of the best quality, free from faults and defects, and in accordance with the Contract Documents.

C. All existing dimensions shown on the Contract Drawings are approximate. The Contractor is responsible for verifying all existing conditions in the field.

D. The project will include, but is not necessarily limited to, complete replacement, rehabilitation, and/or upgrades to existing spillway structure. These components include the temporary facilities, the removal and reconstruction of the existing structure for the installation of four fuse gates, two sluice gates with electrical controls and associated site improvement and site restoration activities.

1.2 DISTRIBUTED WORK

A. The price(s) bid for this Contract shall also include the cost of all work and materials required by the Contract Documents and not noted as included in or incidental to any particular item. There will be no separate or additional payment for any such costs, including but not limited to the following:

1. Obtaining and maintaining insurance policies.

2. Submittals, including (but not limited to): schedule of operations; list of suppliers; certificates of insurance; shop drawings; samples; as-built drawings; operating and maintenance manuals; etc.

3. Keeping work area in a neat, clean condition; satisfactory disposal of all debris.

4. Obtaining permits and licenses; payment of fees and taxes; giving of notices; compliance with all applicable laws, statutes, rules, regulations, and codes.

5. Construction Facilities and Temporary Controls.

6. Safety measures and safe work practices.

7. Field surveys, wire tracing, layout.

8. Cutting and Patching.
9. Superintendence, Coordination, and Quality Control.

10. Contractor's Overhead and Profit.

1.3 PROPOSAL ITEMS

A. Lump Sum Items - This Section includes administrative and procedural requirements for the measurement and payment of Lump Sum payment items listed in the Bid Form.

1. Measurement: Under this Item, the Contractor shall furnish all labor, materials and equipment required to construct, test, place into satisfactory operation and maintain until final acceptance the improvements as shown on the Contract Drawings, as specified or as directed by the Engineer.

2. Payment: The fixed maximum lump sum amount for Item 1 Mobilization shall be limited to no more than five (5%) percent of the base contract value.

   a. Fifty percent (50%) of the amount bid shall be made payable to the Contractor whenever he shall have completed five (5%) percent of the Contract Work. 5% of the Work shall be considered complete when the total of payments earned, as reflected by estimates of work done, not including the amount bid for this item, nor payments for any materials delivered to the site, exceeds five (5%) percent of the total amount bid for this Contract.

   b. Fifty percent (50%) of the amount bid shall be made payable to the Contractor upon completion of the Work and Demobilization.

   c. The Owner does not represent that the fixed maximum lump sum price for this item reflects the actual value of the work involved. Such price merely represents the maximum fixed amount which will be paid to the Contractor for this work.

B. Unit Price Items - This Section includes administrative and procedural requirements for the measurement and payment of Unit Price payment items listed in the Bid Form.

1. Measurement: Under this Item, the Contractor shall furnish all labor, materials and equipment required to construct, test, place into satisfactory operation and maintain until final acceptance the improvements as shown on the Contract Drawings, as specified or as directed by the Engineer.

2. Quantities are approximate and not guaranteed. Actual placement quantities that vary by more or less than 25% of the established bid quantity forms the basis for a revised unit Price.

C. Allowance Items - This Section includes administrative and procedural requirements for the measurement and payment of Allowance payment items listed in the Bid Form.

1. Certain items are specified in the Contract Documents as allowances. Allowances have been established in anticipation of variations in existing site conditions that necessitate modifications to the base contract scope of work.

D. Add Alternate Items - This Section includes administrative and procedural requirements for the
measurement and payment of work in addition to the base bid work identified on the contract documents and listed as Add Alternate payment items in the Bid Form.

1. Measurement: Under this Item, the Contractor shall furnish all labor, materials and equipment required to construct, test, place into satisfactory operation and maintain until final acceptance the improvements as shown on the Contract Drawings, as specified or as directed by the Engineer.

2. Payment: For these Owner selected options for alternate services will be Progress payments made in proportion to the amount of work completed and accepted by the Engineer.

E. Contract Scope of Work includes the following Bid Items:

1. MOBILIZATION AND DEMOBILIZATION
   a. Description: This item includes, but is not limited to, providing Contract bonds and permits, transporting all personnel, equipment, and operating supplies to the site, the Engineer’s Office, Traffic Control, performing Survey Control, and constructing the temporary access, staging areas and stream crossings.
   b. Basis of Payment: Payment for Mobilization and Demobilization shall be made at the lump sum price bid, subject to Part 1.3.A.2 of this Section.

2. SOIL AND EROSION CONTROL
   a. Description: This item includes furnishing all labor, materials, and equipment for the installation, regular inspection, maintenance and removal of temporary measures for the control of erosion and sedimentation as indicated on the Contract Drawings, as specified or as directed by the Engineer or appropriate Regulatory Agency or as defined in any permit obtained for the Project.
   b. Basis of Payment: Payment for Soil and Erosion Control will be made at the lump sum price bid. Progress payments may be made in proportion to the amount of work actually completed as compared to the approved project schedule. Full payment for Soil and Erosion Control shall not be made until the Contractor has demobilized from the site.

3. CONTROL OF WATER
   a. Description: This item includes furnishing all labor, materials, and equipment necessary to satisfactorily maintain a lowered reservoir water level and to divert surface and groundwater flows around or through the project area to provide for the proper execution Work in accordance with the Contract Drawings, as specified or as directed by the Engineer. This item also includes the coordination with all regulatory agencies, including the preparation of any plans, documents or permits required for the Control of Water or refilling of the reservoir upon completion of the Work.
   b. Basis of Payment: Payment shall be made at the lump sum price bid. Progress payments may be made in proportion to the amount of work actually completed as
compared to the approved project schedule. Full payment for Control of Water shall not be made until all temporary measures have been removed and the reservoir level restored.

4. CLEARING AND GRUBBING
   a. Description: This item includes furnishing all materials, labor, and equipment to clear and grub vegetation from areas necessary to satisfactorily complete the work as indicated on the Contract Drawings, in the Specifications, or as directed by the Engineer. This item shall include all handling, storing and off-site disposal of all cleared and grubbed material.
   
   b. Basis of Payment: Payment for Clearing and Grubbing will be made at the unit price bid per acre, computed to the nearest one-tenth acre, for the measured area cleared and grubbed.

5. TOPSOIL STRIPPING AND STOCKPILING
   a. Description: This item includes furnishing all materials, labor, and equipment to strip topsoil from vegetated areas of the site to satisfactorily complete the work as indicated on the Contract Drawings, as specified or as directed by the Engineer. This item includes all handling, stockpiling and temporary stabilization of stripped topsoil.
   
   b. Basis of Payment: Payment for Topsoil Stripping and Stockpiling will be made at the unit price bid per acre, computed to the nearest one-tenth acre, for the measured area stripped of topsoil.

6. REMOVAL OF STRUCTURES / DEMOLITION
   a. Description: This item includes furnishing all labor, materials, and equipment necessary to satisfactorily complete the Type I, II and III demolition activities as indicated on the Contract Drawings, as specified or as directed by the Engineer. This item includes the handling, sorting, separation and recycling or otherwise disposing of all materials. This item includes all measures necessary for protecting adjacent structures or properties, as well as all dust or noise control measures required for compliance with all Federal, State or local laws, regulations, or ordinances.
   
   b. Basis of Payment: Payment shall be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted.

7. EXCAVATION (UNCLASSIFIED)
   a. Description: This item includes furnishing all labor, materials, and equipment necessary for the excavation of all materials, of any description, encountered during the course of construction, with the exception of a) excavation for the Fabricated Waler / Tie Rod / Deadman assembly and b) Competent Rock as defined in the technical specifications. Estimated limits of excavation are indicated on the Contract Drawings. This item includes all handling, stockpiling, and temporary stabilization
of excavated materials. This item includes all temporary excavation supports as required by the Contractor to accomplish the work.

b. Basis of Payment: Payment for Excavation shall be made at the unit price bid per cubic yard, to the nearest whole cubic yard, according to the payment lines indicated on the Contract Drawings or as measured by average cross-sections. No payment will be made for unauthorized excavations below subgrade. Excavation quantities for the Fabricated Waler / Tie Rod / Deadman will not be included in this tabulation.

8. EARTHFILL

a. Description: This item includes furnishing all labor, materials, and equipment necessary to place rockfill and earth backfill from on-site excavations at the locations indicated on the Contract Drawings, as specified or as directed by the Engineer. This item also includes any incidental imported earth backfill material as may be necessary if on-site material is found to be unsuitable or of insufficient quantity. This item includes all handling, storing, rehandling, compaction, and replacement of deficient materials.

b. Basis of Payment: Payment shall be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted.

9. GEOTEXTILES

a. Description: This item includes furnishing all labor, materials, and equipment necessary to install geotextiles of the class and type at the locations indicated on the Contract Drawings, as specified or as directed by the Engineer. This item includes the preparation of the surface upon which the geotextile is to be placed. This item does not include geotextiles installed as part of temporary erosion and sedimentation control measures.

b. Basis of Payment: Payment for Geotextiles will be made at the unit price bid per square yard, to the nearest whole square yard, based on the measured area covered by geotextile. No additional payment shall be made for overlaps at seams, nor for repairs or replacement of damaged or defective material.

10. NYSDOT #2 CRUSHED STONE

a. Description: This item includes furnishing all labor, materials, and equipment necessary to install NYSDOT #2 Crushed Stone at the locations indicated on the Contract Drawings, as specified or as directed by the Engineer. This item includes all handling, storing, rehandling, compaction, and replacement of deficient materials.

b. Basis of Payment: Payment for NYSDOT #2 Crushed Stone will be made at the unit price bid per ton, to the nearest whole ton, as measured by certified delivery tickets for materials delivered to the project, placed, and accepted by the Engineer.
11. NYS MEDIUM STONE FILL

   a. Description: This item includes furnishing all labor, materials, and equipment necessary to install stone fill as channel or bank protection of the required class and type at the locations indicated on the Contract Drawings, as specified or as directed by the Engineer. This item includes all handling, storing, rehandling, and replacement of deficient materials.

   b. Basis of Payment: Payment for NYS Medium Stone Fill will be made at the unit price bid per ton, to the nearest whole ton, as measured by certified delivery tickets for materials delivered to the project, placed, and accepted by the Engineer.

12. REPLACE SALVAGED RIPRAP

   a. Description: This item includes furnishing all labor, materials, and equipment necessary to place suitable, on-site salvaged rockfill to supplement medium stone at the locations indicated on the Contract Drawings and acceptable to the Engineer. This item includes all handling, storing, loading, hauling and placement.

   b. Basis of Payment: Payment shall be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted.

13. STEEL SHEET PILING WITH COAL TAR EPOXY COAT

   a. Description: This item includes furnishing all labor, materials, and equipment necessary to fabricate, install, and inspect driving templates, steel sheet piles systems including special connections and coatings, anchor studs, and steel cap channel as shown on the Contract Drawings.

   b. Basis of Payment: Payment for Steel Sheet Piling will be made at the unit price bid per square foot (plan dimension of steel sheet pile wall), to the nearest whole square foot, of steel sheet piling installed to the minimum tip elevation shown on the Contract Drawings and accepted by the Engineer.

14. FABRICATED WALER-TIE ROD DEADMAN ASSEMBLY

   a. Description: This item includes furnishing all labor, materials, and equipment necessary to install the ‘base bid’ lateral supports for the steel sheet piling as indicated on the Contract Drawings. This item includes, but is not limited to, excavation, backfill of excavations, fabrication and installation of wale beams, tie rods, hardware, and steel reinforcement, and cast-in-place concrete and formwork for concrete deadman.

   b. Basis of Payment: Payment for Fabricated Waler-Tie Rod Assembly will be made at the unit price per Lineal Foot of waler bid for each assembly.
15. MICROPILES

a. Description: This item includes furnishing all labor, materials, and equipment necessary to fabricate and install the prescribed deep foundation system at the spillway toe block as shown in the Contract Drawings and in accordance with Section 02455 “MICROPILES”.

b. Basis of Payment: Payment for Micropiles will be made at the unit price bid per linear foot, to the nearest whole linear foot, of micro piles installed and accepted by the Engineer.

16. MICROPILE TESTING

a. Description: This item includes furnishing all labor, materials, and equipment necessary to perform the testing and inspection of the micropiles in accordance with Section 02455 “MICROPILES”.

b. Basis of Payment: Payment for Micropile Testing will be made at the unit price bid per each for the testing, inspection and reporting as accepted by the Engineer.

17. PIPELINE INSTALLATION

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of the permanent ductile iron pipe extensions to the existing low-level outlet conduits as indicated on the Contract Drawings. This item includes all labor and materials necessary to provide watertight connections between the new ductile iron pipe and the existing conduit material. This item includes all inspection and testing of the installed pipelines in accordance with the Specifications. This item does not include temporary extensions of the low-level outlet conduits as required for the control of water plan.

b. Basis of Payment: Payment for Pipeline Installation will be made at the unit price bid per linear foot, to the nearest whole linear foot, of pipeline installed, tested and accepted by the Engineer.

18. DRILLED DOWELS

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication, installation, and inspection of steel reinforcing dowels that are anchored with structural epoxy adhesive to concrete and/or masonry structures as indicated on the Contract Drawings. This item also includes furnishing all labor, materials, and equipment to drill holes into the concrete and/or masonry structure for each dowel. Drilled hole diameter shall be in accordance with the structural epoxy adhesive manufacturer’s recommendations. Testing and inspection of the work shall be in accordance with the Section 03200 “STEEL REINFORCEMENT”.

b. Basis of Payment: Payment for Drilled Dowels shall be made at the unit price bid per each unit, installed and accepted by the Engineer.
19. SMOOTH DOWELS WITH BPI SPLICERS
   a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of smooth dowels with mechanical bar splicing couplers where as indicated on the Contract Drawings. Testing and inspection of the work shall be in accordance with the Section 03200 “STEEL REINFORCEMENT”.
   b. Basis of Payment: Payment for Smooth Dowels with BPI Splicers shall be made at the unit price bid per each unit, installed and accepted by the Engineer.

20. STEEL REINFORCEMENT
   a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of steel reinforcement in the cast-in-place concrete work as indicated on the Contract Drawings. Testing and inspection of the steel reinforcement work shall be in accordance with the Section 03200 “STEEL REINFORCEMENT”.
   b. Basis of Payment: Payment for Steel Reinforcement shall be made at the unit price bid per ton, to the nearest whole ton as measured by certified delivery tickets for materials delivered to the project, placed, and accepted by the Engineer.

21. WATERSTOPS
   a. Description: This item includes furnishing all labor, materials, and equipment necessary to install, inspect, and test PVC and hydrophilic type waterstops, and all related intersections, joints supplemental ties and supports to steel reinforcement, etc., as indicated on the Contract Drawings and Specifications. Testing and inspection of the work shall be in accordance with Section 07110 “WATERSTOP”.
   b. Basis of Payment: Payment for Waterstops will be made at the unit price bid per linear foot, to the nearest whole linear foot, of waterstop installed, tested, and accepted by the Engineer. No additional payment shall be made for overlaps at lap splices or other joints, nor for repairs or replacement of damaged or defective material.

22. CAST-IN-PLACE CONCRETE
   a. Description: This item includes furnishing all labor, materials, and equipment necessary to install, inspect, and test cast-in-place concrete as indicated on the Contract Drawings and Section 03300 “CAST IN PLACE CONCRETE”. This item also includes furnishing all labor, materials, and equipment necessary to install formwork necessary to construct the cast-in-place concrete work as indicated in Section 03100 “FORMWORK”. This item also includes furnishing all labor, materials, and equipment necessary to prepare all surfaces on which cast-in-place concrete is to be placed in accordance with Section 02512 “CONCRETE SURFACE PREPARATION”.
b. Basis of Payment: Payment for Cast-in-Place Concrete will be made at the bid unit price of cubic yard of concrete placed and accepted by the Engineer, except the quantity for the concrete deadman will not be included in this tabulation. No additional payment shall be made for concrete used for testing required by the Specifications or directed by the Engineer, nor for wasted concrete.

23. PRECAST STRUCTURAL CONCRETE

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of precast concrete steps as indicated on the Contract Drawings.

b. Basis of Payment: Payment for Precast Structural Concrete will be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective units.

24. ELASTOMERIC JOINT SEALANTS

a. Description: This item includes furnishing all labor, materials, and equipment necessary to install, test, and inspect elastomeric joint sealants, backer rods, bond breaker materials, sealant primers, etc. as indicated on the Contract Drawings and as required by the joint sealant manufacturer installation instructions. Testing and inspection of joint sealants shall be in accordance with Section 07130 “JOINT SEALANTS”.

b. Basis of Payment: Payment for Elastomeric Joint Sealants will be made at the unit price bid per linear foot, rounded to the nearest whole linear foot, of joint sealant installed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective joint sealing materials.

25. HYDROPLUS Fusegate Assembly and Appurtenances

a. Description: This item includes furnishing all labor, materials, and equipment necessary to install the Hydroplus Fusegate assemblies and appurtenances as indicated on the Contract Drawings.

b. Basis of Payment: Payment for Hydroplus Fusegate Assembly and Appurtenances will be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective units.

26. CAST-IRON SLUICE GATES

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of cast-iron sluice gate assemblies, anchorages, and operator floor stands as indicated on the Contract Drawings.
Testing of the sluice gates shall be in accordance with Section 11202 “SLUICE GATES”.

Basis of Payment: Payment for Cast Iron Sluice Gates will be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective units.

27. SLUICE GATE OPERATORS

a. Description: This item includes furnishing all labor, materials, and equipment necessary for furnishing and installation of mechanical operators. Testing of the sluice gates and operators shall be in accordance with Section 15110 “SLUICE GATE OPERATORS”.

b. Basis of Payment: Payment for Sluice Gate Operators will be made at the lump sum bid price. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective units.

28. METAL FABRICATIONS

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of all metal fabrications and their related connections and anchorages as indicated on the Contract Drawings.

b. Basis of Payment: Payment for Metal Fabrications will be made at the lump sum bid price. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective work.

29. PIPE AND TUBE RAILINGS

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of pipe and tube railings as indicated on the Contract Drawings.

b. Basis of Payment: Payment for Pipe and Tube Railings will be made at the unit price bid per linear foot, rounded to the nearest whole linear foot, of pipe and tube railings installed and accepted by the Engineer.

30. ELECTRICAL UPGRADES

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication, installation, connections, code compliance and testing of Base Bid work indicated on the Contract Drawings.
b. Basis of Payment: Payment for the electrical upgrades, testing and activation will be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective work.

31. CHAIN LINK FENCING

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the fabrication and installation of chain link fencing, including foundations and/or anchorages for fence posts, as indicated on the Contract Drawings. Concrete for fence post foundations shall be in accordance with Section 03300 “CAST IN PLACE CONCRETE”.

b. Basis of Payment: Payment for Chain Link Fencing will be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective work.

32. TOPSOILING AND SEEDING

a. Description: This item includes furnishing all labor, materials, and equipment necessary to spread stockpiled topsoil, prepare the surface, spread seed mixtures and straw mulch at areas disturbed during construction and indicated for vegetative stabilization on the Contract Drawings, as specified or as directed by the Engineer. Areas surface by rockfill or riprap do not require topsoiling and seeding.

b. Basis of Payment: Payment for Topsoiling and Seeding will be made at the unit price bid per square yard, computed to the nearest one-yard, for the measured area of vegetative stabilization.

33. SITE RESTORATION

a. Description: This item includes furnishing all labor, materials, and equipment necessary for the restoration of all areas disturbed by the construction work including areas used for temporary facilities and lay-down areas. This item includes all handling, storing, removal and legal disposal of surplus and residual material, trash and debris.

b. Basis of Payment: Payment shall be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted.

34. ALLOWANCE ITEM - FABRICATED WALER-TIE ROD DEADMAN ASSEMBLY

a. Description: This item includes furnishing all labor, materials, and equipment necessary to install the conditional lateral supports for the steel sheet piling as indicated on the Contract Drawings upon the direction of the Engineer. This item includes, but is not limited to, all additional excavation, backfill of excavations,
fabrication and installation of wale beams, tie rods, hardware, and steel reinforcement, and cast-in-place concrete and formwork for concrete deadman.

b. Basis of Payment: Payment for Fabricated Waler-Tie Rod Assembly with Hardware will be made at the unit price per Lineal Foot of waler bid for each assembly.

35. **ALLOWANCE ITEM** - SAND-CEMENT GROUT VOID FILL

a. Description: This item includes, but is not limited to, furnishing all labor, materials, and equipment necessary to fill voids between the existing spillway training walls and the steel sheet piling as indicated on the Contract Drawings and as determined necessary by the Engineer. This item includes the design of all grout mixes and all required quality control testing.

b. Basis of Payment: Payment for Sand-Cement Grout Void Fill shall be made at the unit price bid per cubic yard, to the nearest whole cubic yard, of grout placed during the course of the work.

36. **ALLOWANCE ITEM** - COMPETENT ROCK EXCAVATION

a. Description: This item includes, but is not limited to, furnishing all labor, materials, and equipment necessary for the excavation of Competent Rock. Competent rock includes any boulders, shale or other ledge rock which cannot be removed by ripping and digging with a ¾ cubic yard excavator or backhoe. Estimated limits of excavation are indicated on the Contract Drawings. This item includes all handling, storage and disposal of excavated materials.

b. Basis of Payment: Payment for Competent Rock Excavation shall be made at the unit price bid per cubic yard, to the nearest cubic yard, according to the payment lines indicated on the Contract Drawings or as measured by average cross-sections. No payment will be made for unauthorized excavations below subgrade.

37. **ALLOWANCE ITEM** – UNACCEPTABLE MATERIAL EXCAVATION AND DISPOSAL

a. Description: This item includes furnishing all labor, materials, equipment, testing and documentation necessary for the excavation of all unacceptable materials, of any description, encountered during the course of construction, that is deemed unsuitable by the Engineer for re-use on the project and requires off-site legal disposal. This item includes all handling, stockpiling, temporary stabilization, loading, hauling, and off-loading at a regulated facility.

b. Basis of Payment: Payment for Excavation shall be made at the unit price bid per cubic yard, to the nearest whole cubic yard, as measured in the truck prior to off-site hauling. No payment will be made for unauthorized excavations.
38. **FIELD CHANGE PAYMENT (FCP)** – Unit Price/ Lump Sum / Allowance:

   a. **Description:** This item provides a contract contingency allowance for the timely payment of authorized extra work that was completed to fulfill the intent of the contract documents. Extra work eligible will include work within the scope of the contract and completed additional quantities of contract items that have exceeded the threshold quantities and completed quantities of additional authorized work, with agreed prices that are acceptable to the Owner and conform to section 109-05 from the New York State Department of Transportation Standard Specifications of May 2008. The FCP item payments will be reconciled through a change order as directed by the Owner. All work to be paid under the FCP item must receive prior written authorization in conformance with Section 7 of the Public Improvement Contract.

39. **ADD ALTERNATE ITEM – ADDITIONAL ELECTRICAL INSTALLATION**

   a. **Description:** This item includes, but is not limited to, furnishing all labor, materials, and equipment necessary for the furnishing of electrical equipment and wiring in addition to the Base Bid work as defined in the technical specifications and contract drawings.

   b. **Basis of Payment:** Payment shall be made at the lump sum price bid. Progress payments will be made in proportion to the amount of work completed and accepted. No additional payment shall be made for repairs or replacement of damaged or defective work.

40. **ADD ALTERNATE ITEM - ELECTRICAL SLUICE GATE OPERATORS**

   a. **Description:** This item includes furnishing all labor, materials, and equipment necessary for furnishing and installation of electrical gate operators. Testing of the operators shall be in accordance with Section 15110.1 “ELECTRICAL SLUICE GATE OPERATORS”.

   b. **Basis of Payment:** Payment for Electrical Sluice Gate Operators will be made at the lump sum bid price. Progress payments will be made in proportion to the amount of work completed and accepted by the Engineer. No additional payment shall be made for repairs or replacement of damaged or defective units.

1.4 **PAYMENTS**

A. **This Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.**

B. **Schedule of Values:** A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

C. **Coordination:** Coordinate preparation of the schedule of values with preparation of Contractor's
construction schedule. A Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
   a. Application for Payment forms with continuation sheets.
   b. Submittal schedule.
   c. Items required to be indicated as separate activities in Contractor's construction schedule.

2. Submit the schedule of values to Engineer at earliest possible date, but no later than fourteen days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.

4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.

D. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:
   a. Project name and location.
   b. Name of Engineer.
   c. Engineer's project number.
   d. Contractor's name and address.
   e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703 or EJCDC Document C-620.

3. Arrange the schedule of values in tabular form with separate sheets to indicate line items associated with each independent dam site.


5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance, bill of sale and affidavit with photographs of stored material.

7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.

10. Each item in the schedule of values and Applications for Payment shall be complete. Include proportionate share of general overhead and profit for each item.

11. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

12. Construction Schedule Update: Submit an updated construction schedule with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use forms acceptable to Engineer and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.

2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

   1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.

   2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.

   3. Provide summary documentation for stored materials indicating the following:

      a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.

      b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.

      c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.

   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

   2. When an application shows completion of an item, submit conditional final or full waivers.

   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

   4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to Owner.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor, and specific timeline for the submittal, approval, fabrication, delivery, installation, testing and commissioning of long lead time items, such as the Stainless Steel Hydraulic Gates.
5. Products list (preliminary if not final).
6. Schedule of unit prices.
7. Submittal schedule (preliminary if not final).
8. List of Contractor's staff assignments.
11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work, including the DIG SAFELY NEW YORK, Call 811 Before You Dig, authorization number for each work site.
12. Initial progress report, including field verification report that field conditions are consistent with the Contract Documents.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire Owner's insurance.

J. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Consult Owner about the need for additional affidavits and other requirements.
2. Evidence of completion of Project closeout requirements.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
7. AIA Document G707, "Consent of Surety to Final Payment."
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
10. Final liquidated damages settlement statement.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

-- END OF SECTION --
SECTION 02010
MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for mobilization and demobilization of the Contractor's forces and equipment necessary for performing all of the work required under the contract.

B. Related Sections:

1. Section 02140 – Control of Water
2. Section 02272 – Soil and Erosion Control
3. Section 02495 – Site Restoration

1.2 REFERENCES

Not Used

1.3 DESCRIPTION OF WORK

A. Mobilization shall include the purchase of Contract bonds and all necessary permits; transportation of all personnel, equipment and operating supplies to the site; establishment of offices, buildings, sanitary facilities, and other necessary facilities at the site; construction and maintenance of temporary access roads, bridges; and other preparatory work at the site.

B. The Contractor shall provide an environmentally controlled (heated and air conditioned), well-lighted field office for the sole use of the Engineer, with a minimum floor area of 150 square feet, and shall be responsible for cleaning and maintaining this office. This office shall be adequately secured to prevent entrance by unauthorized personnel. A desk, reference table, two sidearm swivel chairs, storage files, duplicating machine, sufficient electrical outlets, telephone with local and long distance service, a fax machine, and an answering machine shall be provided by the Contractor for use in the Engineer’s office. The office shall be in place with full service prior to commencement of work in the field.

C. Demobilization shall include removal of all unused material and equipment including field offices. Existing access roads at the site shall be restored to their condition prior to the work. Any salvaged material not specified to be disposed of otherwise shall become the property of the Contractor and removed from the site. All trash shall be removed as directed by the Engineer and disposed of according to local regulations. All work shall be neatly cleaned, upon completion.
D. At the completion of the project, the Contractor shall remove all temporary facilities and structures unless expressly directed otherwise, and shall remove remaining waste materials of all kinds from the site and structures occupied during the progress of the work. The Contractor shall leave the site and the adjacent property which may have been affected by his operation in a neat and satisfactory condition.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 MOBILIZATION

A. Mobilization will be considered to be completed after the Contractor has established at the site, the Engineer’s Office according to Subsection 1.3.B of this Specification, and has sufficient manpower and equipment on the job to begin the work in earnest.

3.2 DEMOBILIZATION

A. Demobilization will be considered complete when all the work is satisfactorily completed and accepted and the site is cleaned to the satisfaction of the Engineer.

-- END OF SECTION --
SECTION 02080

STRUCTURE REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for disassembly or demolition, removal, and disposal of structures and sections of structures at locations shown on the Contract Drawings or as directed by the Engineer. The Work includes, but is not limited to the following:

1. Removal of shotcrete covered gabion baskets forming the spillway and training walls, to expose the original spillway concrete/masonry surfaces. The rock fill under the spillway gabions shall be removed according to Section 02206 EXCAVATION.

2. Removal of the east and west spillway piers to EL. 319.45.

3. Removal of spillway crest to EL. 319.45.

4. Removal of spillway center pier to EL. 319.45.

5. Removal of loose concrete/masonry from the face of spillway channel (entire length and width). Approximate depth of loose material is 3 inches.

6. Removal of concrete core wall cap to +/- EL. 338.2, minimum depth of 1’-0”, at both east and west non-overflow sections of the dam.

7. Removal of upstream brick facing and loose concrete (crest and downstream face) along the east and west non-overflow sections (core wall) of the dam.

8. Removal of two (2) sluice gates (east and west spillway piers), including the gate and frame, operator and floor stand, stem and stem guides, and all other features related to the sluice gate assembly.

1.2 REFERENCES

Not Used

1.3 SUBMITTALS

A. Pre-removal Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit before Work begins.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION
3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent and quantity of demolition required. Before structure removal begins, submit report of findings to the Engineer for review.

3.2 PROTECTION

A. Protect all structures (or portions thereof) that are to remain during the demolition operations.

B. Contractor shall design and install all necessary fall protection requirements for all personnel performing the work outlined in this contract. The fall protection procedures will follow OSHA regulations for such design and installation necessary in the demolition and erection required for this project.

3.3 STRUCTURE REMOVAL – GENERAL

A. The Contractor shall be responsible for compliance with all Federal, State, and local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal and disposal.

B. Methods of structure removal are indicated on the Drawings. Methods proposed by the Contractor not listed on the Drawings shall be subject to review by the Engineer. The Contractor shall determine the methods for removal and disposal of waste material generated from structure removal from the site.

C. Blasting will not be permitted.

D. Sequence of structure removal is the sole responsibility of the Contractor.

E. The Contractor shall submit a dust and pollution control plan for review. The plan shall comply with governing environmental protection regulations.

F. Any voids resulting from the removal of structures shall be properly repaired or backfilled with an approved material within a reasonable and prudent time period.

G. All materials resulting from structure removal that are not designated as adequate fill materials, or as reusable by the Engineer shall become the property of the Contractor and shall be removed from the site and disposed of by the Contractor, or otherwise disposed of, in accordance with all applicable laws, rules, and regulations.

H. Precautions should be taken to prevent debris from entering any watercourse, particularly during high flow.

I. Any structure removed and/or damaged outside the limits of structure removal shown on the Contract Drawings shall be repaired and/or replaced in kind at the expense of the Contractor.

-- END OF SECTION --
SECTION 02130

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for clearing and grubbing designated area(s) as shown on the Contract Drawings. The work shall consist of clearing, grubbing, and backfilling grubbed areas as designated on the Contract Drawings.

1.2 REFERENCES

A. The Work shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)

a. ASTM D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft$^3$ (2,700 kN-m/m$^3$))

b. ASTM D2922 Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

A. Clearing shall consist of the removal and disposal of all trees, logs, brush, snags, bushes, vines, shrubs, decayed stumps, leaves, roots, grasses, weeds, fences, posts, rubbish, and other perishable and objectionable materials. Large bushes and trees smaller than eight (8) inches in diameter shall be cut six (6) inches above ground line; trees eight (8) inches and larger in diameter shall be cut twelve (12) inches above ground line. All other vegetation in areas to be cleared shall be cut within two (2) inches of the ground.

B. Grubbing shall consist of the removal of all stumps, roots and root clusters having a maximum diameter of less than eight (8) inches to a minimum depth of twelve (12) inches below the ground surface; stumps that are eight (8) inches in diameter or greater shall be grubbed to a minimum depth of twenty-four (24) inches below the ground surface.
C. Tree removal, as part of the Contactor’s clearing work, shall only be allowed between November 1 and March 31.

3.2 DISPOSAL

A. The Contractor shall be responsible for compliance with all Federal, State and Local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal or disposal. Disposal of materials by burning shall not be permitted.

B. Precautions shall be taken to prevent debris from clearing and grubbing operations from entering any water course, particularly during high flows.

C. Materials removed from the site for disposal shall be transported in a manner to prevent spillage on public and private roadways or pavements. In the event that spillage does occur, the Contractor shall maintain the roadways as often as necessary to remove any such spillage.

3.3 BACKFILL AND COMPACTION OF GRUBBED AREAS

A. Grubbed areas on the downstream and upstream slope and crest of the dam shall be backfilled with soil material of similar permeability to the adjacent embankment. This backfill material may be suitable fill excavated from the downstream slope of the dam during final grading.

B. Backfilled areas shall be compacted with hand-directed power tampers. Backfill shall be placed at a minimum of 90 percent maximum dry density (ASTM-D1557) and optimum moisture content. Maximum lift thickness shall be six (6) inches.

3.4 SALVAGEABLE MATERIALS

A. The Contractor will be allowed to stockpile salvageable materials at locations approved by the Engineer. All salvageable materials must be removed from the site before final acceptance of the work.

- END OF SECTION -
SECTION 02131

STRIPPING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This Section includes the requirements for stripping designated area(s) as shown on the Contract Drawings. The work shall consist of the excavation and removal of all topsoil, organic and other unsuitable matter at the location(s) and to the stripping limits shown on the Contract Drawings.

B. Existing areas surfaced by rockfill or riprap do not require stripping

1.2 REFERENCES

Not Used.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

A. The area(s) designated for stripping shall be stripped to a depth established by the Engineer. In general, the stripping depth will be approximately six (6) inches.

B. Stripped material shall be stockpiled at designated areas for later use or removed from the site.

C. Objectionable materials encountered during the stripping operation shall be removed from the site.

D. The Contractor shall be responsible for compliance with all Federal, State and local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal or disposal.

- END OF SECTION -
SECTION 02140

CONTROL OF WATER

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements for the control of surface water and groundwater as needed to perform the required construction in accordance with the methods specified herein and as shown on the Contract Drawings.

B. Beaver Dam Lake shall be completely drained prior to Contractor mobilization.

C. The work shall include, but is not limited to:

   1. Building and maintaining all necessary temporary impounding works, cofferdams, siphons, channels, ditches and diversions.

   2. Furnishing, installing and operating all necessary pumps, piping, and other facilities and equipment.

   3. Removing all such temporary works and equipment after they have served their purposes.

   4. Providing for the control of soil erosion and sediment transport in accordance with the Specifications and applicable local, state, and federal regulations.

1.2 REFERENCES

A. The Contractor shall review all available hydrologic/hydraulic data regarding flow at the site before submitting a diversion and dewatering plan to the Engineer. The USGS New York Stream Stats website provides discharge estimates for statistical storms at this site.

B. The drainage area to Beaver Dam Lake is approximately 9.5 square miles. Inflows to the lake from modest precipitation may exceed the combined discharge capacity of the two outlet conduits. A hydrologic/hydraulic approximation suggests that an empty reservoir would fill above El. 319.45 during a 3-inch, 24-hour rain with both conduits open.

1.3 SUBMITTALS

A. The Contractor shall furnish along with his bid, a complete written plan for controlling surface and ground water, monitoring precipitation, and dewatering construction areas, including the lowering of the lake. Acceptance of this plan by the Engineer will not relieve the Contractor of his responsibility for completing the work as specified.

PART 2 - PRODUCTS

Not used.
PART 3 - EXECUTION

3.1 DIVERTING CONCENTRATED FLOW AND OTHER SURFACE WATER

A. The Contractor shall build, maintain, and operate any cofferdams, siphons, channels, flumes, sumps, gates, and other diversion and protective works needed to divert concentrated flow and other surface water through the construction site while construction is in progress.

B. The Contractor shall furnish, install, and operate all necessary pumps, well points, piping, and other facilities and equipment needed to divert concentrated flow and other surface water through the construction site while construction is in progress.

C. After the diversion works have served their purpose, the Contractor shall remove, level, or grade such works to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works. The removal of the diversion facilities shall be subject to the approval of the Engineer.

D. The Contractor shall maintain an empty reservoir for the duration of the contract.

3.2 DEWATERING THE CONSTRUCTION SITE

A. The Contractor shall install and operate a well point system to limit the upward flow of water during construction at locations where the presence of fine grained subsurface materials and a high groundwater table may cause the upward flow of water into the excavation with a resulting quick or unstable condition.

B. The Contractor shall build, maintain, and operate cofferdams, siphons, channels, flumes, sumps, and other diversion and protective works needed to divert or remove water from foundation areas while construction is in progress. The Contractor shall be solely responsible for damages resulting from failure of the cofferdams, whether such failure is caused by overtopping, sliding, piping, or any other mechanism.

C. Water pumped or drained from excavations, drains, or water courses encountered in the work, shall be disposed of in a suitable manner without injury to adjacent property, the work under construction, or to pavements, roads, drives, and water courses.

D. After the dewatering of the construction site works have served their purpose, the Contractor shall remove, level, or grade such works to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works. The termination of the dewatering of the construction site works shall be subject to the approval of the Engineer.
E. Water shall not be allowed to rise over or come in contact with any masonry, concrete, or mortar until at least 24 hours after placement, and no stream of water shall be allowed to flow over such work until such time as the Engineer may permit.

F. Any damage caused by or resulting from dewatering operations shall be the sole responsibility of the contractor.

-END OF SECTION-
SECTION 02170

STEEL SHEET PILING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section shall consist of furnishing and installing steel sheet piles of the sizes, weights, and lengths as specified in this section and the Contract Documents to construct the Spillway Training Walls. Where standards, specifications, or methods are cited without dates, the reference shall be construed to apply to the latest revision in effect at the time of contract.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)
   a. ASTM A572/A572M High Strength Low-Alloy Columbium-Vanadium Structural Steel

1.3 SHOP DRAWINGS AND SUBMITTALS

A. Contractor to submit for approval detailed drawings for sheet piling, including fabricated sections, which shall show complete piling dimensions and details, driving sequence, pile configuration, material specifications, complete layout plan, and proposed method of installation. Detail drawings shall include dimensions of templates and other temporary guide structures for installing piling. Detail drawings shall provide the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

B. The contractor shall prepare as soon as possible after award of the contract, complete and accurate shop drawings of all work of the section. The drawings shall include the size and spacing of all steel members. All members shall be numbered for identification in erection. Shop drawings shall give complete information necessary for fabrication of component parts of the structure, including location, type and size of all bolts and welds. Shop and field bolts and welds shall be clearly distinguished. Welding symbols used on shop drawings shall show complete dimensioned layout of all steel sheet piling.

C. Contractor shall submit checked shop drawings to engineer for approval. The engineer shall be allowed, for the examination of a set of more than five (5) shop drawings, three working days for each drawing in the set. If there are five or less shop drawings in a set, the engineer shall be allowed 15 working days.

D. No steel shall be ordered until the engineer has approved such drawings.
E. Approval by the engineer covers general design details only, and if any change is made, which would cause members not to fit, or would give insufficient strength, the contractor shall call the engineer’s attention to the fact at once, in writing, so that corrections may be made. If the contractor fails to do this, the sole responsibility shall rest upon the contractor.

F. Any error or omission on the contractor’s drawings, even though approved, shall not relieve the contractor from the responsibility of performing the work in accordance with the specifications.

G. The engineer upon request will furnish any details not sufficiently shown on the plans to the contractor.

H. Contractor to submit complete descriptions of sheet piling driving equipment including hammers, jetting equipment (if approved), extractors, protection caps, and other installation appurtenances for approval prior to commencement of work.

I. Contractor to submit records of the sheet piling driving operations after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling, driving equipment performance data, piling penetration rate data, piling dimensions, and top and bottom elevations of installed piling. The format for driving records shall be as directed by the engineer.

J. Notification: The contractor shall give written notification to the engineer of the scheduled date for installation of sheet piling at the site at least one week in advance of that date.

K. Temporary Support of Sheet Piling: The sheet pile minimum tip elevations indicated on the Contract Drawings were established based on the completed construction condition with the new concrete spillway overlay in-place, which provides support to the embedded portion of the sheet pile. The Contractor shall not rely on the sheet piles alone for temporary support until concrete and/or deadman anchors have been placed. Temporary support shall be provided by the Contractor as necessary to maintain stability of the sheet piling during temporary construction loading and conditions existing prior to spillway concrete placement. Proposed temporary shoring shall be designed by a licensed engineer registered in the State of New York and plans shall be submitted for review by the Engineer. The temporary shoring design shall consider all temporary backfill, wind, surcharge and any other loading imposed on the sheet pile wall prior to installation of all required anchors and spillway concrete.

L. Shop drawings shall include detailed information related to the timing/sequencing of backfill placement with the construction of the deadman anchor system (where required per Contract Drawings). Spillway concrete shall be complete prior to wall backfill. Sheet pile wall backfill shall not exceed the lowest elevation of the deadman anchors prior to complete installation of the deadman, tie-rod, and wale system, unless the temporary shoring is designed to support backfill prior to deadman anchor system installation.
1.4 SUBSURFACE CONDITIONS
   A. The soil boring logs are included with the Contract Documents. The soil boring log and laboratory testing information is provided to the contractor at its own risk, in the assessment of subsurface conditions at the site. Prior to bidding, bidding contractors may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions, but such subsurface investigations shall be performed only under time schedules and arrangements approved in advance by Orange County.

1.5 HANDLING AND STORAGE
   A. Materials delivered to the site shall be new, undamaged, and be accompanied by certified test reports. The manufacturer’s logo and mill identification mark shall be provided on the sheet piling, as required by the referenced specifications.
   B. Steel sheet piles shall be handled and stored by methods that will not injure the pile and in a manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of sheet piling should also facilitate required inspection activities. The pile shall be stored above ground upon platforms, blocking, or other supports. They shall be kept free from dirt, grease, and other foreign matter and shall be protected from corrosion.

1.6 QUALITY ASSURANCE
   A. The MANUFACTURER shall furnish 3 certified copies of mill test reports containing the true chemical and physical analysis of piling material prior to each shipment to the project site and identified with specific lots prior to installing materials. Material test reports shall meet the requirements of ASTM A 6/A 6M.
   B. All steel sheet piles shall be straight and within appropriate tolerances at the time of delivery. Any steel sheet piles not within tolerances must be replaced at the contractor’s expense.
   C. Permanent sheet piling shall be new piling and shall be furnished and driven by contractor as provided on the plans or as designated by the engineer.
   D. The contractor shall inspect the interlocked joints of driven pilings extending above ground. Piling found to be out of interlock shall be removed and replaced at the contractor’s expense.

PART 2 - PRODUCTS

2.1 MATERIALS
   A. Steel sheet piling shall be PZ hot rolled sheet pile sections conforming to ASTM A572 Grade 50, as manufactured by Arcelor-Mittal/Skyline Steel Corporation, Parsippany, NJ or equal. Cold rolled sheet pile sections as a substitute is not allowed. Steel sheet piles shall be supplied and driven in pairs.
B. Equipment for driving sheet piling shall be a single or double acting air or steam hammer and/or vibratory hammer of sufficient energy to penetrate to the elevations shown on the Contract Drawings. To avoid contamination of the water supply, diesel hammers will not be allowed.

C. Tie rods, H-pile sections, wale beams, plates, bolts, washers and all included accessories shall conform to the latest AISC / ASTM standards.

D. Steel sheet piles shall be PZ hot rolled steel sections of the weight, shape, and length as indicated on the Construction Drawings.

E. Steel sheet piles shall be of continuous interlocking type. The interlocks of sheet piling shall be free-sliding and maintain continuous interlocking when installed.

F. Piles must be of a single type with no splices. Sheet piling (including special fabricated sections) shall be full-length sections of the dimensions shown. Fabricated sections shall conform to the requirement and the piling manufacturer’s recommendations for fabricated sections. Fabricated tees, wyes and crosspieces shall be fabricated of piling sections with a minimum web thickness of ½ inch.

G. Appurtenant Metal Materials: Metal plates, shapes, bolts, nuts, rivets, and other appurtenant fabrication and installation materials shall conform to manufacturer’s standards and to the requirements specified in the respective sheet piling.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pile Driving: The driving energy of the hammers for driving the sheet piles shall be as recommended by the manufacturer to reach the required tip elevations for the piling weights and subsurface materials to be encountered. Required tip elevations are indicated on the Contract Drawings.

B. Jetting: Jetting will be permitted only when specifically authorized by the engineer. Discontinue jetting when the pile tip is approximately 5 feet above the indicated pile tip elevation, where the pile will be driven the remaining 5 feet.

C. Pile Placement: To maintain satisfactory alignment, sheet piles shall be driven in increments of penetration necessary to prevent distortion, twisting out of position, or pulling apart at interlocks. Pilings shall be carefully located as shown on the plans. Pilings shall be placed plumb with out-of-plumbness not exceeding 1/8 inch per foot of length and true to line. Temporary wales, templates, master pilings, or guide structures shall be provided to ensure that the pilings are placed and driven.
to the correct alignment. Pilings properly placed and driven shall be interlocked throughout their length with adjacent pilings to form a continuous diaphragm throughout the length or run of piling wall.

D. All piles shall be driven to the elevations as shown on the drawings unless otherwise stated herein. If a pile, in the opinion of the Engineer, has been driven to practical refusal due to boulders or other unforeseen obstruction before the design elevation can be achieved, the following procedures shall be followed.

1. If the pile bottom has been driven to ninety percent of the design driving depth (the distance between the lowest dredge or grade line and the design pile bottom) and at least one of the two adjacent piles have been driven to design driving depth; the pile shall be cut off at grade and the slag and rough edges shall be ground off.

2. In all other cases, the Contractor shall report the situation to the Engineer providing information as to the pile numbers in question, the driving equipment, the blow count or driving energy applied at practical refusal, the rate of penetration at practical refusal and the actual depths driven. The Engineer will then at his option:

a. Issue notice to proceed with installation of “conditional” deadman anchor system as indicated on the Contract Drawings, or

b. Provide orders for other structural modifications to assure structural stability. Such changes shall be made by the Contractor for an equitable adjustment in the Contract Price as approved by the Engineer, or

c. Provide a further driving attempt with other approved driving equipment at no expense to the Owner. Should this second driving attempt also fail to provide the necessary driving depth, the Engineer will then provide orders for structural modification as per a. or b. above.

E. Adequate precautions shall be taken to ensure that piles are driven as nearly plumb as practicable. Pilings driven more than 1/8 inch per foot out of plumb to either axis shall be pulled and re-driven.

F. Holes for bolts, tie back rods, angle sections and miscellaneous hardware shall be marked and cut prior to placing the pile is in its final position. All slag and rough edges resulting from cutting operation shall be ground off. Splicing of piles will not be permitted without the approval of the Engineer. All handling holes shall be patched with welded steel plates of similar thickness.

G. Pilings damaged during or driven out of interlock shall be removed and replaced at the contractor’s expense.

H. Cutoffs and Splicing: Tops of sheet piling shall be cut off or driven down to a straight line at the elevation shown on the plans. Pilings driven to refusal or to the point where additional penetration cannot be attained and are extending above the required top elevation in excess of the specified tolerance shall be cut off to the required elevation. Pilings driven below the required top elevation and pilings damaged by driving and cut off to permit further driving shall be extended as required to reach the top elevation by splicing when directed by the engineer at no additional cost to the Owner. If directed, pilings shall be spliced as required to drive them to depths greater than shown and extend them up the required top elevation. Pilings adjoining spliced pilings shall be full-length unless otherwise approved. Splicing of pilings shall be as indicated. Ends of pilings to be spliced shall be squared before splicing to eliminate dips or camber. Pilings shall be spliced together with concentric
alignment of the interlocks so that there are no discontinuities, dips, or camber at the abutting interlocks. Spliced pilings shall free sliding and able to obtain the maximum swing with contiguous pilings. The tops of pilings excessively battered during driving shall be trimmed when directed at no cost to the Owner. Piling cutoffs shall become the property of the contractor and shall be removed from the site. The contractor shall cut holes in pilings for bolts, rods, reinforcement, drains, or utilities as shown on the plans or as directed. All cutting shall be done in a neat and workmanlike manner. A straight edge shall be used in cuts made by burning to avoid abrupt nicks. Bolt holes in steel piling shall be drilled or may be burned and reamed by approved methods that will not damage the surrounding metal. Holes, other than bolt holes, shall be reasonably smooth and the proper size for rods and other items to be inserted.

I. Pulling and redriving: In the pulling and redriving of piles, the contractor shall pull selected pilings to determine the condition of the underground portions of pilings. Any piling pulled and found to be damaged to the extent that its usefulness in the structure is impaired shall be removed and replaced at the contractor’s expense. Pilings pulled found to be in satisfactory condition shall be redriven when directed.

3.2 AS-BUILT RECORDS

A. As-built construction records, shall, as a minimum, reflect the following information:

1. Recorded tip and top elevations at all changes in profile.

2. Recorded field modifications to the contract drawings and reviewed shop drawings.

- END OF SECTION -
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for all excavation at the location(s) and to the limits shown on the Contract Drawings or as directed by the Engineer.

B. Related Sections:

1. Section 02130 – Clearing and Grubbing
2. Section 02131 – Stripping
3. Section 02272 – Soil and Erosion Control

1.2 REFERENCES

Not Used

1.3 DEFINITIONS

A. Common Excavation - Excavation of earth, rockfill, soils and other materials not classified as rock excavation or stripping as defined by Section 02131 - Stripping.

PART 2 - PRODUCTS

Not used.

PART 3 EXECUTION

3.1 COMMON EXCAVATION

A. The tolerance for common excavation shall be plus or minus three-tenths (0.3) of a foot from the lines and grades shown on the Contract Drawings or as directed by the Engineer. Excavation beyond the approved lines and grades shall be backfilled as directed by the Engineer with approved suitable material and compacted. This work shall be at the Contractor's expense and no payment will be made for over excavation or backfill of over excavated areas.

B. Where excavation lines are marked as pay lines, the Contractor will be permitted to cut a flatter slope, at no additional payment for excavation or backfill, if he believes that a flatter slope is more appropriate for his operations.
C. Rockfill excavated from beneath the spillway gabions and adjacent to the spillway training walls shall be stockpiled on-site at a location to be selected by the Engineer. The stockpiled rockfill shall be used as backfill adjacent to the sheet pile spillway training walls according to Section 02290 Earthfill.

1. Unsuitable or unacceptable common excavation material shall become the property of the Contractor and be disposed of off-site in accordance with all local, county, and state regulations. Any unsuitable or unacceptable excavated material shall be paid for under Item #37 - ALLOWANCE ITEM – UNACCEPTABLE MATERIAL EXCAVATION AND DISPOSAL.

3.2 SHORING AND BRACING

A. Excavated surfaces too steep to be safe and stable, if unsupported, shall be supported as necessary to safeguard the work and workmen, to prevent sliding or settling of the adjacent ground, and to avoid damaging existing improvements. The width of the excavation shall be increased, if necessary, to provide space for sheeting, bracing, shoring and other supporting installations. The Contractor shall furnish, place and subsequently remove such supporting installations.

-- END OF SECTION --
SECTION 02209

GEOTEXTILES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for furnishing, installation, and protection of geotextiles as specified herein and as shown on the Contract Drawings. All materials used shall meet the requirements of this specification and all work shall be performed in accordance with the procedures provided herein, the manufacturers' recommendations, and the Contract Drawings.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

   a. ASTM D3786 Test Methods for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabric-Diaphragm Bursting Strength Tester Method
   b. ASTM D4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
   c. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
   d. ASTM D4533 Test Method for Trapezoid Tearing Strength of Geotextiles
   e. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
   f. ASTM D4751 Test Method for Determining the Apparent Opening Size of a Geotextile
   g. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
   h. ASTM D5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
   i. ASTM D5261 Test Method for Measuring Mass per Unit Area of Geotextiles

1.3 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

A. Materials delivered to the site shall be inspected for damage, unloaded and stored with a minimum of handling. Materials shall not be stored directly on the ground. During shipment and storage,
geotextile shall be wrapped in heavy-duty protective covering. The storage area shall be such that the fabric is protected from mud, soil, dust, and debris. Geotextile materials that are not to be installed immediately shall not be stored in direct sunlight.

B. Materials shall be handled in such a manner as to insure delivery to the site in sound undamaged condition.

PART 2 - PRODUCT

2.1 MANUFACTURERS

A. The following manufacturers are named to establish a standard of quality necessary for the project.

1. TENAX Corporation
2. Propex Geosynthetics
3. Equivalent

2.2 GEOTEXTILES

A. The Geotextile shall be a non-woven fabric. Non-woven fabrics shall consist only of continuous chain polymeric filaments or yarns of polyester, formed into a stable network by needle punching. All fabrics shall be inert to commonly encountered chemicals and hydrocarbons, mildew and rot resistant, insect and rodent resistant, resistant to ultraviolet light and heat exposure, and conform to the physical strength requirements listed in Table 1 below.

Table 02209-1 - Physical Strength Requirements: Non-Woven Geotextile

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Test Method</th>
<th>MARV</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-oz Non-Woven Geotextile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grab Tensile Strength</td>
<td>ASTM D4632</td>
<td>390 lbs.</td>
</tr>
<tr>
<td>Grab Elongation</td>
<td>ASTM D4632</td>
<td>50%</td>
</tr>
<tr>
<td>CBR Puncture Strength</td>
<td>ASTM D4833</td>
<td>1125 lbs.</td>
</tr>
<tr>
<td>Trapezoid Tear Strength</td>
<td>ASTM D4533</td>
<td>155 lbs.</td>
</tr>
<tr>
<td>Apparent Opening Size</td>
<td>ASTM D 4751</td>
<td>U.S. Sieve 100</td>
</tr>
<tr>
<td>Permittivity</td>
<td>ASTM D 4491</td>
<td>0.7 sec¹</td>
</tr>
<tr>
<td>Permeability</td>
<td>ASTM D 4491</td>
<td>0.3 cm/sec</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>ASTM D 4491</td>
<td>50 gal/min/ft.²</td>
</tr>
<tr>
<td>Mass per Unit Area</td>
<td>ASTM D 5261</td>
<td>16 oz./yd.</td>
</tr>
</tbody>
</table>

Geotex 1701, manufactured by Propex Geosynthetics, or approved equal, is acceptable for this work.
B. The seams of the fabric shall be sewn with thread of a material meeting the chemical requirements
given above for synthetic yarn or shall be bonded by cementing or by heat. Seams shall be tested in
accordance with method ASTM D4884, using 1-inch square jaws and 12 inches per minute constant
rate of traverse. The strengths shall be not less than 90% of the required tensile strength of the unaged
fabric in any principal direction. Unaged fabric is defined as fabric in the condition received from the
manufacturer or distributor.

C. Each roll of the geotextile shall bear a label which identifies the following:
   1. Manufacturer
   2. Product Identification
   3. Unique roll or lot number.
   4. Roll dimensions.

PART 3 - EXECUTION

3.1 SHIPMENT AND STORAGE

   A. During all periods of shipment and storage, the geotextile shall be protected from adverse weather,
      heavy winds or precipitation, direct sunlight, ultraviolet light, temperatures greater than 140°F, mud,
      dirt, dust, debris, and vandals. To the extent possible, the geotextile shall be maintained wrapped in a
      heavy-duty protective covering. In the event of damage, the Contractor shall immediately make all
      repair and replacements at no additional cost to the Owner.

   B. Geotextiles shall not be exposed to sunlight for more than 15 days unless otherwise specified and
      guaranteed by the manufacturer.

3.2 INSTALLATION

   A. Prior to installation of the geotextile, the material on which the geotextile is to be installed will be free
      of organic matter, irregularities, protrusions, and any abrupt changes in grade that could damage the
      geotextile. The supporting layer will be maintained in a smooth, uniform, and compacted condition
during installation of the geotextile. The subsurface shall be inspected and accepted by the Installer
      and Engineer prior to placement of the geotextile.

   B. The geotextile shall be placed in manner and at the locations shown on the drawings. At the time of
      the installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration, or
      damage incurred during manufacture, transportation, or storage.

   C. The geotextile shall be protected at all times during construction from damage by surface runoff and
      any geotextile so damaged shall be removed and replaced with undamaged geotextile. Any damage
to the geotextile during its installation or during placement of any material including, but not limited
to soil layers, free draining filter, rock fill, or riprap shall be replaced by the Contractor at the
      Contractor's expense.
D. The placement of the geotextile shall not be conducted during adverse weather conditions. The geotextile will be kept dry during storage and up to the time of deployment. During windy conditions, all geotextiles will be secured with sandbags or an equivalent approved anchoring system. Removal of the sandbags or equal will only occur upon placement of an overlying layer or as otherwise accepted by the Engineer.

E. Proper cutting tools shall be used to cut and size the geotextile materials. Extreme care will be taken while cutting in-place geotextiles.

F. During the placement of geotextiles, all dirt, dust, sand or mud shall be kept off to prevent clogging. If excessive contaminant materials are present on the geotextile, the geotextile shall be replaced as directed by the Engineer.

G. The geotextile shall be protected from damage due to the placement of materials by limiting the height of drop of the material to less than one (1) foot.

H. The geotextile shall be placed with the long dimension parallel to the line of maximum slope and shall be laid smooth and free of tension, stress, folds, wrinkles, or creases.

I. Adjacent rolls of geotextile will overlap a minimum of 1 foot from the respective edges.

J. Seaming or Joining

1. Geotextiles shall be continuously seamed using a minimum four (4) inch overlap and thermal hot wedge or hot air methods. In all cases, seams on side slopes shall be parallel to the line of maximum slope and seamed five (5) feet from the toe-of slope upward over the length of the slope. No horizontal seams will be allowed on side slopes, except for patching.

K. Repair of tears or holes in the geotextile will require the following procedures:

1. On slopes: A patch made from the same geotextile will be double seamed into place; with each seam 1/4-inch to 3/4-inch apart and no closer than 1 inch from any edge. Should any tear exceed 10% of the width of the roll, the roll will be removed from the slope and replaced.

2. Non-slopes: A patch made from the same geotextile will be spot-seamed in place with a minimum of 24 inch overlap in all directions.

- END OF SECTION -
SECTION 02270

RIPRAP

PART 1 GENERAL

1.1 SUMMARY

A. The work shall consist of placing imported riprap and stockpiled rock fill excavated from beneath the spillway gabions as rock riprap adjacent to, and downstream of, the new spillway, as shown on the Contract Drawings.

1.2 SUBMITTALS

A. Submit the following in accordance with the General Conditions/General Requirements.

1. Medium Stone Fill.

PART 2 PRODUCTS

2.1 MATERIAL

A. Riprap within the spillway stilling basin shall consist of imported “medium stone fill” in accordance with the latest NYSDOT Standard Specifications Section 620 figure 620-1.

B. Riprap may also be obtained from rock fill beneath the existing spillway gabions to supplement the imported riprap.

C. Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering.

PART 3 EXECUTION

3.1 PLACEMENT

A. Riprap shall be dumped and graded in a manner such that large rock fragments are uniformly distributed and smaller fragments fill the spaces between the large fragments in such a manner as will result in a compact, uniform layer. Hand placing will be required only to the extent necessary to produce the results specified above.

-- END OF SECTION--
SECTION 02272

SOIL AND EROSION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the furnishing, installation, regular inspection, maintenance and removal of temporary measures intended to minimize erosion of soils and sedimentation of waterways and lands adjacent to or affected by the Work as shown on the Contract Drawings.

B. This Section also includes the requirements for measures to prevent pollution of waterways and lands adjacent to the Work by non-stormwater discharges and spills of construction related materials.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)
   a. ASTM D4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
   b. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
   c. ASTM D4533 Test Method for Index Trapezoid Tearing Strength of Geotextiles
   d. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
   e. ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile
   f. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
   g. ASTM D5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
   h. ASTM D5261 Test Method for Measuring Mass per Unit Area of Geotextiles

2. New York State Department of Environmental Conservation (NYSDEC)
3. New York State Department of Transportation (NYSDOT)
   a. Standard Construction Specifications (US Customary Units)
   b. The Environmental Manual (TEM)

1.3 SUBMITTALS

A. Product data, catalog cuts and spec sheets marked to specifically indicate the equipment and materials proposed for this project. Indicate selections with arrows and cross out irrelevant data. Submit product data for the following:
   1. Prefabricated Silt Fence
   2. Geotextiles (see Section 02209 “Geotextiles”)
   3. Pumped water filter bags
   4. Rolled erosion control mats or blankets
   5. Source of aggregate materials and quarry certifications

B. Name and qualifications of the Contractor’s Representative to be responsible for the inspection and maintenance of the erosion and sediment control facilities.

1.4 DESCRIPTION OF WORK

A. The work shall consist of furnishing, installing, regular inspection, maintenance and removal of temporary measures intended to minimize erosion of soils and sedimentation of waterways and lands adjacent to or affected by the Work as shown on the Contract Drawings or as directed by the Engineer.

PART 2 - MATERIALS

2.1 GENERAL

A. The Contractor shall provide all materials required to comply with the approved Erosion and Sediment Control Plan indicated on the Contract Drawings or as directed by the Engineer or appropriate Regulatory Agency.

2.2 SILT FENCE

A. Silt fence shall consist of a two-component barrier system composed of a support fence and an attached soil and erosion control fabric. The support fence is composed of minimum 14 gage woven wire with a maximum opening of six inches attached to metal or wooden posts. The fabric shall be stapled or wired securely to the support fence. The fabric shall conform to the following specifications:
   2. Elongation at Failure (ASTM D4632): 20%
   3. Mullen Burst Strength (ASTM D3786): 300 psi
   4. Puncture Strength (ASTM D4833): 60 lbs.
   5. Minimum Trapezoidal Tear Strength (ASTM D4533): 50 lbs
   6. Flow Through Rate (ASTM D4491): 25 gal/min/sf

DGS RFB A8 Minor Closed (12/14)
8. Minimum UV Residual (ASTM D4355): 70%

B. Prefabricated silt fencing is acceptable, so long as all material specifications are met.

2.3 STABILIZED CONSTRUCTION ENTRANCE

A. Materials for Stabilized Construction Entrances shall be as specified for a Heavy Duty Haul Road, Rough Graded as defined in the Standard and Specifications for Stabilized Construction Access in the New York State Standards and Specifications for Erosion and Sediment Control.

B. Aggregate used for stabilized construction entrances shall be a matrix of one- to four-inch stone or reclaimed or recycled concrete equivalent. Aggregate depth shall be a minimum of six inches.

C. Geotextile shall be a woven or non-woven fabric, consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew, rot resistant and conform to the fabric properties as follows:

1. Grab Tensile Strength (ASTM D1682): 220 lbs
2. Elongation at Failure (ASTM D1682): 60%
3. Mullen Burst Strength (ASTM D3786): 430 lbs
4. Puncture Strength (ASTM D751 Modified): 125 lbs

D. Acceptable geotextile materials include:
   1. Trevira Spunbond 1135
   2. Mirafi 600X
   3. Approved Equal.

2.4 CONSTRUCTION ROAD AND STAGING AREA STABILIZATION

A. Materials for temporary construction roads, parking areas or other staging and laydown areas shall be in accordance with the Standard and Specifications for Construction Road Stabilization as defined in the New York State Standards and Specifications for Erosion and Sediment Control.

B. Aggregate shall consist of a minimum six-inch layer of NYSDOT Subbase, Types 1, 2, 3, or 4 or equivalent as specified in the NYSDOT Standard Specifications.

C. A geotextile filter shall be installed to facilitate the removal of the aggregate. Geotextile shall be the same as the fabric material used for the Stabilized Construction Entrance.
2.5 TEMPORARY RAMP / STREAM CROSSING

A. Materials for the temporary stream crossing shall be in accordance with the Standard and Specifications for a Temporary Access Culvert Waterway Crossing as defined in the New York State Standards and Specifications for Erosion and Sediment Control.

B. Culvert materials and sizes shall be as indicated on the Contract Drawings, or otherwise suitable for the anticipated construction traffic loadings.

C. No earth or soil materials shall be used in the construction within the waterway channel. NYSDOT Specifications for Coarse Aggregate No. 4 (also referenced as AASHTO No. 1) shall be the minimum acceptable aggregate size for temporary crossings. Larger aggregates will be allowed.

1. On-site rockfill from excavations may be utilized for the waterway crossing.

D. A geotextile filter shall be placed prior to installation of the culvert and aggregate. Filter shall be the same material as used for the Stabilized Construction Entrance.

E. The use of a temporary bridge waterway crossing is also acceptable in lieu of the temporary culvert crossing.

2.6 ROLLED EROSION CONTROL PRODUCTS

A. Rolled erosion control mats or blankets shall be used for stabilization of all vegetated slopes 3:1 (horizontal:vertical) or steeper or as indicated on the Contract Drawings. All embankment fills to be vegetated will be stabilized with rolled erosion control mats.

B. Erosion control mats or blankets shall be a machine-produced mat of 100% straw with a functional longevity of up to 12 months. The blanket shall be of consistent thickness with the straw distributed evenly over the entire area of the mat. The blanket shall be covered on the top and bottom with a 100% biodegradable woven natural fiber netting.

C. Staples or stakes for securing rolled erosion control products shall be as indicated on the Contract Drawings or as recommended by the manufacturer for the product and slope condition.

D. The following products are acceptable:

2. ECS-2B Double Net Straw Biodgradable Rolled Erosion Control Product as manufactured by East Coast Erosion Blankets.
3. AEC Premier Straw Double Net Fibrenet as manufactured by American Excelsior Company.
4. Approved Equal.
2.7. PUMPED WATER FILTER BAG

A. Geotextile filter bags, if required for excavation dewatering, shall be sized in accordance with the manufacturer’s recommendations based on the pump discharge rate.

B. Geotextile shall have the following minimum attributes:

1. Grab Tensile Strength (ASTM D 1682): 200 lbs
2. Grab Tensile Elongation (ASTM D 1682): 50%
3. Trapezoid Tear Strength: 80 lbs
4. Mullen Burst Strength: 380 psi
6. UV Resistance: 70%
7. Flow Through Rate: 70 gpm/sq. ft.

C. The bag shall be sewn with a double needle machine, using high strength thread, double stitched “Joe” type capable of minimum roll strength of 100 lbs/inch (ASTM D4884).

D. The bag shall have an opening large enough to accommodate a four inch diameter discharge hose with an attached strap to tie off the bag to the hose to prevent backflow.

E. Filter bags shall be placed on a gravel bed two inches thick, a straw mat four inches thick or a vegetated filter strip to allow water to flow out of the bag in all directions.

PART 3 - EXECUTION

3.1 GENERAL

A. The Contractor shall maintain copies of the approved Erosion and Sediment Control Plan and all permits on-site at all times.

B. Construction shall be performed in accordance with the sequence of construction indicated on the Contract Drawings.

C. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the Contractor shall implement additional erosion and sediment control measures to minimize the potential for erosion and/or sediment pollution.

D. Stabilized construction entrances shall be installed at the locations indicated on the Contract Drawings. All construction traffic must enter and exit the site through a stabilized construction entrance.

E. The access driveway and all staging areas for construction vehicles, equipment and supplies shall be stabilized according to the Construction Road Stabilization requirements of this Section and as indicated on the Contract Drawings.

F. The temporary stream crossing shall be installed at the location shown on the Contract Drawings and in accordance with the requirements of this Section.
G. Silt fencing shall be installed downslope of disturbed areas, around spoil piles and stockpiles as indicated on the Contract Drawings or as otherwise directed by the Engineer.

H. The site shall be cleared, grubbed and stripped of topsoil within the limits of work only. Care shall be taken to minimize impacts to wetlands, waterways or steeply sloped areas. Cleared vegetation, soil and other debris shall be stockpiled in an approved area for disposal.

I. Topsoil shall be stripped and stockpiled in areas indicated on the Contract Drawings or as approved by the Engineer.

J. Areas of exposed soil shall be stabilized with topsoil, seed, mulch or erosion control matting or with grouted riprap as indicated on the Contract Drawings. Areas surfaced with riprap, heavy stone fill, or rockfill do not require topsoil or vegetative stabilization.

K. Dewatering of excavations, if required, shall be through an approved sediment filtering device such as a pumped water filter bag discharging to a level, vegetated area.

L. Until stabilization of the site has been achieved and a final site inspection has been approved, all temporary erosion and sediment control facilities must remain in place and be maintained properly.

3.2 MAINTENANCE

A. The following procedures shall be utilized to maintain the effectiveness of the erosion and sediment control measures during construction:

1. Clean, repair, and/or replace silt fence, construction entrances, and construction access roads or staging areas as necessary.

2. Clean and/or sweep affected roadways daily, or more frequently if otherwise required by the Owner or Engineer.

3. Remove debris and litter on a weekly basis or more frequently if necessary.

4. Observe equipment/vehicles within the work area, particularly for identification of vehicles leaking petroleum products that could enter stormwater drainage facilities.

5. Maintain seeded areas and/or reseed or stabilize to protect against erosion.

6. Immediately repair sloughing or erosion of embankments.

7. Maintain or replace concrete washouts as needed.

3.3 ADDITIONAL CONTROLS

A. The following preventative measures shall be employed by the Contractor to minimize non-stormwater discharges associated with the construction activity entering Site stormwater facilities:

1. Proper precautions are to be taken so materials do not spill onto public thoroughfares. If materials are dropped onto these areas they are to be cleaned or removed as soon as
practicable so that they do not enter surface and subsurface drainage systems.

2. The Contractor is to provide dust control measures to mitigate dust migration off-site. Measures may include water application or mulching and shall not include use of chemical additives.

3. Solid waste disposal dumpsters and containers are to be covered and emptied regularly. Waste is to be disposed of properly in accordance with local, State, and/or federal regulations.

4. Portable toilets are to be installed and cleaned regularly with their contents properly disposed of. They are to be secured in place so they will not be knocked over by construction activities.

5. Building materials are to be properly stored and contained on-site to prevent contamination of site stormwater runoff.

6. Oil and fuel containers are to have appropriate secondary containment. If total oil storage on-site exceeds a cumulative total of 1,320-gallons, a spill prevention control and countermeasure (SPCC) plan shall to be prepared by the Contractor and maintained on-site.

7. Cleaning water for construction vehicles and equipment and ground water encountered within excavations shall not be discharged directly to storm drains or adjacent surface waters. Chemicals and detergents are not to be used.

8. The Contractor is responsible for identifying areas on-site for construction vehicle transit (i.e., haul roads, Contractor trailers and parking areas, etc.) or equipment staging, which are to be visually inspected and where runoff can be controlled.

9. Concrete trucks are only to be washed out in approved areas. Concrete washouts shall be provided in accordance with the New York State Standards for Erosion and Sediment Control. Surplus concrete or drum wash water shall not be discharged directly to storm drains or adjacent surface waters.

3.4 INSPECTION

A. Prior to construction the Contractor and any subcontractors shall identify at least one trained individual from their company that will be responsible for implementation of the Erosion and Sediment Control Plan and maintenance of the erosion and sediment control facilities in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. The Contractor shall provide that at least one trained individual is on site on a daily basis while soil disturbance activities are being performed. The Contractor shall begin implementing the corrective action within one business day and complete it within seven calendar days following the date of inspection. Additional mitigation measures are to be implemented by the Contractor if warranted to minimize sediment transport or discharge of sediment laden runoff off-site.

B. The Contractor shall provide a qualified inspector to inspect the proposed erosion and sediment control measures and disturbed areas of the construction site for compliance with the Contract Drawings. These inspections are to be completed at least once every seven calendar days. An
inspection report shall be completed by the qualified inspector after each inspection. A copy of each inspection report will be provided to the Owner and to the Contractor. Each inspection report will also remain on file at the site.

C. When soil-disturbing activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to disturbed areas, the Contractor may cease the periodic inspections by the trained individual. However, the qualified inspector must perform a site inspection at least once every 30 calendar days.

3.5 STABILIZATION

A. Final stabilization shall be defined as a minimum density uniform 80% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

B. Areas shall be stabilized in accordance with the Contract Drawings. For portions of the site where soil disturbance activities have temporarily or permanently ceased, stabilization measures must be implemented within 7 calendar days of the conclusion of the activities.

1. Disturbed areas that are at finished grade or will not be re-disturbed within one year must be stabilized in accordance with the permanent vegetative stabilization measures indicated on the Contract Drawings.

2. Disturbed areas that are not at finished grade or will be re-disturbed within one year must be stabilized in accordance with the temporary vegetative stabilization measures indicated on the Contract Drawings.

C. Vegetated areas with slopes 3:1 (horizontal:vertical) or steeper or as otherwise indicated on the Contract Drawings shall be stabilized with rolled erosion control mats or blankets. Mats shall be installed and anchored according to the manufacturer’s instructions and as indicated on the Contract Drawings. Vegetated areas with slopes flatter than 3:1 shall be mulched with straw mulch according to the notes and details indicated on the Contract Drawings and as specified in the New York Standards for Erosion and Sediment Control.

3.6 SPILL PREVENTION

A. The Contractor shall contact the NYSDEC Spills Hotline (1-800-457-7362) promptly in the event a spill occurs on-site during construction.

B. The following material management practices shall be used by the Contractor to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff during construction.

1. Materials with potential for spillage, stored on-site, are to be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.

2. Products are to be kept in their original containers with the original manufacturer’s label.

3. Substances are not to be mixed with one another unless recommended by the manufacturer.

4. Whenever possible, product is to be used up or packages resealed before proper disposal of contents and containers off-site.
5. Manufacturers’ recommendations for proper use and disposal are to be followed.
6. Inspection is to be made by the Qualified Inspector for proper use and disposal of materials during periodic inspections and recorded on the Inspection Report Form.
7. On-site vehicles are to be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage of petroleum products. Petroleum products are to be stored in closed containers that are clearly labeled. Used oils are to be disposed of properly.
8. Materials are to be brought on-site in quantities that limit or minimize the amount of on-site storage.
9. Paint containers are to be tightly sealed and properly stored when not required for use. Excess paint, solvents, etc. shall not be discharged to the storm sewer facilities but are to be properly disposed of according to manufacturers’ instructions, or State and local regulations.

3.7 SPILL CONTROL PRACTICES

A. The following practices shall be followed by the Contractor for spill prevention and cleanup.

B. Spills of petroleum, toxins, or hazardous material are to be reported to the appropriate State or local government agencies immediately, regardless of size.

C. Manufacturers’ recommended methods for spill cleanup are to be clearly posted and site personnel are to be made aware of the procedures and the location of the information and cleanup supplies.

D. Materials and equipment necessary for spill cleanup are to be kept in designated material storage areas on-site. Equipment and materials are to include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, spill control materials, sand, sawdust, and trash containers specifically for this purpose.

E. Spills are to be cleaned up immediately after discovery.

F. The spill area is to be kept well ventilated and personnel are to wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

G. A spill report is to be completed and filed with the Owner and the Engineer and is to include a description of the spill, what caused it, and the corrective actions taken.

- END OF SECTION -
SECTION 02290

EARTHFILL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for earth fill, rockfill, backfill, crushed stone select fill, general fill, and impervious fill and other fills as shown on the Contract Drawings and specified herein.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)
   a. ASTM D422 Test Method for Particle-Size Analysis of Soils
   b. ASTM D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)
   c. ASTM D2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)
   d. ASTM D2922 Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
   e. ASTM D3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

2. New York State Department of Transportation

1.3 TESTING

A. During the course of the work the Engineer may perform such tests as are required to identify materials, measure compaction characteristics, measure moisture contents, and measure density of fill in place. These tests performed by the Engineer will be used to verify that the fills conform to the requirements of the specifications. Such tests are not intended to provide the Contractor with the information required by him for the proper execution of the work and their performance shall not relieve the Contractor of the necessity to perform tests for that purpose.

B. The Contractor shall be responsible for all testing, including field and laboratory services.
1.4 SUBMITTALS

B. Submit the following in accordance with the General Conditions/General Requirements.

1. Test reports, including moisture-density relationships, for onsite earth materials.
2. Name and qualifications of third-party testing agency retained to perform in-place density testing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rockfills shall be obtained from on-site excavation. Earth backfill shall be obtained from on-site excavation or imported from an approved source if necessary. NYSDOT crushed stone materials shall be obtained from NYSDOT approved supplier.

B. Fill materials shall contain no sod, brush, roots or other perishable materials. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

C. The selection, blending, routing and disposition of materials in the various fills shall be subject to approval by the Engineer.

D. Embankment Fill and Earth Backfill shall consist of on-site or imported soils classified as SW-SM, SW-SC, GW-GM, GW-GC, GM, GC, SM, SC, ML, or CL according to the Unified Soil Classification System. The maximum particle size shall not exceed four inches.

E. NYSDOT #2 Crushed Stone shall be imported from a NYSDOT approved supplier and shall consist of crushed stone meeting NYSDOT Specification 703-02.

PART 3 - EXECUTION

3.1 FOUNDATION PREPARATION

A. Foundation and abutment surfaces shall not be steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for earthfill to be placed upon the foundation.

B. The foundations of the structures to be built under this Contract shall be dewatered and kept free of standing or running water or muddy conditions as needed for proper execution of the construction work.

3.2 PLACEMENT

A. Rockfill may be dumped into place in lifts and shall maintain a uniform distribution of particle sizes and shall avoid segregation. Rockfill placed in previous excavations shall match original lines and grades, or as shown on the Contract Drawings.
B. Fill shall not be placed until the required excavation and foundation preparations have been completed and the foundation has been inspected and approved by the Engineer. Fill shall not be placed upon a frozen surface, nor shall snow, ice or other frozen material be incorporated in the fill.

C. Fill shall be placed in horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted. Hand compacted fill, including fill compacted by manually directed power tampers, shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of fill compacted by manually directed power tampers.

D. Fill adjacent to structures shall be placed in a manner which will prevent damage to the structures and will allow the structures to assume the loads from the fill gradually and uniformly. The height of the fill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.

3.3 CONTROL OF MOISTURE CONTENT

A. Rockfill and NYSDOT #2 Crushed Stone do not require moisture control.

B. During placement and compaction of all other earth fill and backfill, the moisture content of materials being placed and that of the preceding layer shall be maintained between plus or minus three percent (+3%) of optimum moisture content. The application of water to fill materials shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the materials after placement of the fill, if necessary. Uniform moisture distribution shall be obtained by discing, blading or other approved methods prior to compaction of the layer. Material that is too wet when deposited on the fill shall either be removed or dried to the specified moisture content prior to compaction.

3.4 COMPACTION

A. Rockfill does not require compaction.

B. NYSDOT #2 Crushed Stone should be placed in maximum 12 inch lifts followed by vibratory compaction (vibratory plate tamper or equivalent) to consolidate the stone after placement.

C. All other earth fill and backfill shall be spread in horizontal layers approximately twelve (12) inches in thickness before compaction, and shall be compacted to 95 percent of maximum dry density as determined by the Standard Proctor Compaction Test ASTM D698, Method A.

D. All earthfills, except rock fill, adjacent to structures shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping, or manually directed power tampers or plate vibrators. Fill to be compacted by hand tamping, or manually directed power tampers or plate vibrators shall be spread in horizontal layers approximately six (6) inches in thickness before compaction. Heavy equipment shall not be operated within two (2) feet of any structure. Vibrating rollers shall not be operated within five (5) feet of any structure. Compaction by means of drop weights operating from a crane or hoist will not be permitted.
E. Compaction shall continue until the specified density is obtained in each lift before any additional embankment fill is placed. Improperly compacted embankment fills shall be removed at the Contractor's expense if the specified compaction requirements cannot be achieved. Once removed, the Contractor may adjust the moisture content of any rejected fills and re-use them as embankment fill.

1. Embankment Fill: Compact to 95 percent of maximum dry density as determined by the Standard Proctor Compaction Test ASTM D698, Method A.

2. Backfill: Compact to 95 percent of maximum dry density as determined by the Standard Proctor Compaction Test ASTM D698, Method A.

3.5 REMOVAL AND PLACEMENT OF DEFECTIVE FILL

A. Fill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirement or removed and replaced by acceptable fill at the Contractor's expense. The replacement fill and the foundation, abutment and fill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control and compaction.

- END OF SECTION –
SECTION 02455

MICROPILES

PART 1 - GENERAL

1.1 SUMMARY

A. This work shall consist of constructing micropiles as shown on the Contract Drawings and approved working drawings and as specified herein. The Contractor is responsible for furnishing all materials, products, accessories, tools, equipment, services, transportation, labor and supervision, and manufacturing techniques required for installation and testing of micropiles and micropile top attachments for this project.

The Contractor shall select the installation means and methods. The Contractor shall install micropiles that will develop the load capacities indicated on the Contract Drawings. The micropile load capacities shall be confirmed by verification testing as required and must meet the test acceptance criteria specified herein.

1.2 MATERIALS

A. Furnish materials new and without defects. Materials for micropiles shall consist of the following:

1. Admixtures for Grout: Admixtures which control bleed, improve flowability, reduce water content and retard set may be used in the grout subject to the approval of the Engineer. Admixtures, if used, shall be compatible manufacturer's recommendation. Accelerators are not permitted. Expansive admixtures and admixtures containing chlorides are not permitted.

2. Cement: All cement shall be Portland cement conforming to ASTM C 150, Types I, II, or III.

3. Centralizers and Spacers: Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, steel, or material non-detrimental to the reinforcing steel. Wood shall not be used. Centralizers and spacers shall be securely attached to the reinforcement; sized to position the reinforcement within ½ inch of plan location from center of pile, sized to allow grout tremie pipe insertion to the bottom of the drill hole, and sized to allow grout to freely flow up the drill hole and casing and between adjacent reinforcing bars.

4. Grout: The 28 day compressive strength shall be 4,000 psi or as otherwise indicated on the Contract Drawings. The grout shall conform to the specification ASTM C109 and to any minimum and/or maximum properties shown on the Contract Drawings.

5. Permanent Casing Pipe: Permanent steel casing/pipe shall conform to required minimum and/or maximum properties shown on the Contract Drawings. The permanent steel casing/pipe shall be designed to withstand the design service loadings shown on the Contract Drawings and the verification tests loading described in this specification. The steel casing/pipe shall conform to one or more of the following specifications ASTM 252, ASTM 106, or API (N-80). The designer will be responsible for indicating the applicable material specification(s) and any welding or fabrication conditions that apply.
6. Reinforcing Bar: Reinforcing steel shall be deformed bars in accordance with ASTM A615. The grade, thickness and number of bars shall be indicated by the designer and shall conform to any minimum and/or maximum properties shown on the Contract Drawings. Continuous spiral deformations (i.e. continuous threadbars) shall be used. Bar tendon couplers if required, shall develop the ultimate tensile strength of the bars without evidence of any failure.

1.3 CONSTRUCTION METHODS

A. Contractor Experience Requirements:

1. The Contractor shall be experienced in the construction and load testing of micropiles and have successfully constructed at least 5 projects in the last 5 years involving construction totaling at least 100 micropiles of similar capacity to those required in the Contract Drawings and specifications.

2. The Contractor shall have previous micropile drilling and grouting experience in soil/rock similar to project conditions. The Contractor shall submit construction details, structural details and load test results for at least three previous successful micropile load tests from different projects of similar scope to this project.

3. The on-site foremen and drill rig operators shall have experience on at least 10 projects over the past 5 years installing micropiles of equal or greater capacity than required in the Contract Drawings and specifications.

4. At least 45 calendar days before the planned start of micropile construction, the Contractor shall submit 5 copies of the completed project reference list and a personnel list. The project reference list shall include a brief project description with the owner’s name and current phone number and load test reports. The personnel list shall identify the drill rig operators, and on-site foremen to be assigned to the project. The personnel list shall contain a summary of each individual’s experience and be complete enough for the Engineer to determine whether each individual satisfies the required qualifications.

5. Work shall not start, nor materials ordered, until the Engineer’s written approval of the Contractor’s experience qualification is given. The Engineer may suspend work if the Contractor uses non-approved personnel. If work is suspended, the Contractor shall be fully liable for all resulting cost and no adjustment in contract time will result from the suspension.
B. Micropile Submittals

C. Construction Procedures

1. Detailed step-by-step description of the proposed micropile construction procedure, including personnel, testing and equipment to assure quality control. This step-by-step procedure shall be shown in sufficient detail to allow the Engineer to monitor the construction and quality of the micropiles.

2. Proposed start date and time schedule and micropile installation schedule providing the following:
   a) Micropile number
   b) Micropile design load
   c) Type and size of rebar
   d) Minimum total bond length
   e) Total micropile length
   f) Micropile top footing attachment

3. If welding of casing is proposed, submit the welding procedure. All welding shall be done in accordance with the current AWS Structural Welding Code.

4. Information on space requirements for installation equipment that verify the proposed equipment can perform at the site.

5. Plan describing how surface water, drill flush, and excess waste grout will be controlled and disposed. Note that uncontrolled discharge of any of these materials over land or into the lake or outlet stream is prohibited.

6. Certified mill test reports for the reinforcing steel and for permanent casing. The ultimate strength, yield strength, elongation, and material properties composition shall be included. For API N-80 pipe casing, coupon test results may be submitted in lieu of mill certification.

7. Proposed Grouting Plan. The grouting plan shall include complete description, and details for the following:
   a) Grout mix design and type of materials to be used in the grout including certified test data and trial batch reports. The Contractor shall also provide specific gravity of the wet mix design.
   b) Methods and equipment for accuracy and recording the grout depth and grout volume as the grout is being placed.
   c) Estimated curing time for grout to achieve specific strength. Previous test results for the proposed grout mix completed within one year of the start of grouting may be submitted for initial verification and acceptance and start of production work.
   d) Procedure and equipment for Contractor monitoring of grout quality. At a minimum, the Contractor shall be required to use a Baroid Mud Balance per API RP-13B-1 to check the specific gravity of the mixed grout prior to placement of the grout into each drilled micropile.
8. Detailed Plan for the proposed micropile load testing method. This shall include all drawings, details, and structural design calculations necessary to clearly describe the proposed test method, reaction load system capacity and equipment setup, types and accuracy of apparatus to be used for applying and measuring the test loads and pile top movements in accordance with this specification.

9. Calibration reports and data for each test jack, pressure gauge and master pressure gauge and electronic load cell to be used. The calibration tests shall have been performed by an independent testing laboratory, and tests shall have been performed within 90 calendar days of the date submitted. Testing shall not commence until the Engineer has reviewed and accepted the jack, pressure gauge, master pressure gauge and electronic load cell calibration data.

Work shall not begin until the construction submittals have been received, reviewed, and accepted in writing by the Engineer. Any submittals that are found to be unacceptable by the Engineer shall be reviewed, resubmitted and accepted prior to commencing work.

1.4 PRE-CONSTRUCTION MEETINGS

A. A pre-construction meeting will be scheduled by the Engineer and held prior to the start of micropile construction. The design Engineer, prime Contractor, and micropile specialty Contractor (if applicable), shall attend the meeting. Attendance is mandatory. The pre-construction meeting will be conducted to clarify the construction requirements for the work, to coordinate the construction schedule and activities, and to identify contractual relationships and delineation of responsibilities amongst the prime Contractor and the various Subcontractors – specifically those pertaining to excavation for micropile structures, installation of temporary sheeting, anticipated subsurface conditions, micropile installation and testing, micropile structure survey control and site drainage control.

1.5 SITE DRAINAGE CONTROL

A. The Contractor shall control and properly dispose of drill flush and construction related waste, including excess grout, in accordance with any related specifications within the Contract Documents and all applicable codes and regulations. Drill flush shall be conveyed by pipe, hose or conduit a minimum 20 ft away from the location where the micropile is being drilled and away from any adjacent structure or facility. Provide positive control and discharge of all surface water that will affect construction of the micropile installation. Maintain all pipes or conduits used to control surface water during construction. Repair damage caused by surface water at no additional cost. Upon substantial completion of the work, remove surface water control pipes or conduits from the Site.

B. Immediately contact the Engineer if unanticipated existing subsurface drainage structures or other utilities are discovered during excavation or drilling. Suspend work in these areas until remedial measures meeting the Engineer’s approval are implemented.

1.6 EXCAVATION

A. Coordinate the work and the excavation so the micropile structures are safely constructed. Perform the micropile construction and related excavation in accordance with the Contract Drawings and approved submittals.
1.7 MICROPILE ALLOWABLE CONSTRUCTION TOLERANCE

A. Centerline of piling shall not be more than 3 inches from indicated plan location.
B. Pile shall be plumb or battered within 2 percent of total-length plan alignment.
C. Top elevation of pile shall be plus 1 inch or minus 1 inch maximum from vertical elevation indicated.
D. Centerline of reinforcing steel shall not be more than 0.5 inches from indicated location.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 MICROPILE INSTALLATION

A. The Contractor shall select the drilling method, the grouting procedure and the grouting pressure used for installation of the micropiles. The Contractor is also responsible for estimating the grout take. There will be no extra payment for grout overruns.

B. Should the plan require uncased drilling of the micropile into bedrock, the permanent and/or temporary casing shall be drilled a minimum 6 inches into ledge or to a depth within the ledge so as to prevent subsidence of overburden into the uncased and/or bond zone portion of the drill hole (i.e. the rock socket). The Contract Drawings show estimated permanent casing lengths for the micropiles. Any difference in the required length of permanent casing installed and accepted by the Engineer from the estimated lengths shown on the Contract Drawings shall be measured for payment and/or credit. There will be no payment for differences in required length of temporary casing.

C. The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, without causing damage to the overburden above rock, any overlying or adjacent structures, buried structures or utilities, or services. If called for in the drilling method description, or by the nature of the stratum to be drilled through, the Contractor shall furnish any overburden casing of the type and thickness, which can be installed without distortion. Casings that fail, fracture, or otherwise distort during drilling or after drilling shall, unless otherwise directed, be withdrawn or replaced at the Contractor’s expense. The drill hole must be open along its full length to at least the design minimum drill hole diameter prior to placing grout and reinforcement.
D. Temporary casing or other approved method of pile drill hole support will be required in caving or unstable ground to permit the pile shaft to be formed the minimum design drill hole diameter. The Contractor’s proposed method(s) to provide drill hole support and to prevent detrimental ground movement shall be reviewed by the Engineer. Detrimental ground movement is defined as movement which requires remedial repair measures, in order to maintain site conditions as determined by the Engineer. Use of drilling fluid containing bentonite or any other non-reverting drilling fluid is not allowed.

E. During construction, the Contractor shall observe the ground conditions in the vicinity of the micropile construction site on a daily basis for signs of ground heave or subsidence. Immediately notify the Engineer if signs of movement are observed. The Contractor shall immediately suspend or modify drilling or grouting operations if ground heave or subsidence is observed, if the micropile structure is adversely affected, or if adjacent structures are damaged from the drilling or grouting. If the Engineer determines that the movements require corrective action, the Contractor shall take corrective actions necessary to stop the movement or perform repairs.

F. Reinforcement may be placed prior to grouting the drill hole. Reinforcement surface shall be free of deleterious substances such as soil, mud, grease, or oil that might contaminate the grout or coat the reinforcement and impair bond. Pile reinforcement groups, if used, shall be sufficiently strong to withstand the installation and grouting process without damage or disturbance.

G. The Contractor shall check pile top elevations and adjust all installed micropiles to the planned elevations.

H. Centralizers and spacers shall be provided at 10 ft centers maximum spacing. The upper and lower most centralizer shall be located a maximum of 3 ft from the top and bottom of the micropile. Centralizers and spacers shall permit the free flow of grout without misalignment of the reinforcing bar(s) and permanent casing. The reinforcing steel shall be inserted into the drill hole to the desired depth without difficulty. Partially inserted reinforcing bars shall not be driven or forced into the hole. The Contractor shall re-drill and reinsert reinforcing steel when necessary to facilitate insertion.

I. Lengths of casing and reinforcing bars to be spliced shall be secured in proper alignment and in a manner to avoid eccentricity or angle between the two lengths to be spliced. Splices and threaded joints shall meet the requirements of the rebar material. Threaded pipe casing joints shall be located at least two casing diameters (OD) from a splice in any reinforcing bar. When multiple bars are used, bar splices shall be staggered at least 1 foot.

J. Micropiles shall be grouted the same day the load transfer bond length is drilled. The grouting equipment used shall be a colloidal grout plant, and shall produce a grout free of lumps and undispersed cement. Paddle type mixers are not acceptable. The Contractor shall have means and methods of measuring the grout quantity and pumping pressures during the grouting operations. The grout pump shall be equipped with a pressure gauge to monitor grout pressure. A second pressure gauge shall be placed at the point of injection into the pile top. The pressure gauge shall be capable of measuring pressure of at least 150 psi or twice the actual grout pressure used, whichever is greater. The grout shall be kept in agitation prior to mixing. Grout shall be placed within one hour of mixing. The grouting equipment shall be sized to enable each pile to be grouted in one continuous operation. The grout shall be injected from the lowest point of the drill hole and injection shall continue until uncontaminated grout flows from the top of the pile. The grout may
be pumped through grout tubes, casing, hollow stem augers or drill rods. Temporary casing, if used, shall be extracted in stages ensuring that, after each length of casing is removed the grout level is brought back up to the ground level before the next length is removed. The tremie pipe or casing shall always extend below the level of the existing grout in the drill hole. The grout takes shall be controlled to prevent excessive heave or fracturing of rock or soil formations. Upon completion of grouting, the grout tube may remain in the hole, but must be filled with grout.

K. Grout within the micropile test pile shall attain the compressive strength required to safely withstand the maximum test load prior to load testing. During production, micropile grout shall be tested by the Contractor for compressive strength in accordance with ASTM C109 at a frequency of no less than one set of three 2 inch grout cubes, or 3 inch cylinders, from each grout plant each day of operation or per every 10 piles, whichever occurs more frequently. The compressive strength shall be the average of 3 cubes tested.

L. Grout consistency as measured by grout density shall be determined by the Contractor per API RP-13B at a frequency of at least one test per pile, conducted just prior to start of pile grouting. The Baroid Mud Balance used in accordance with API RP-13B is an approved device for determining the grout density of neat cement grout.

M. Provide grout cube/cylinder compressive strength and grout density test results to the Engineer within 24 hours of testing.

3.2 MICROPILE INSTALLATION RECORDS

A. The Contractor shall prepare and submit to the Engineer full-length installation records for each micropile installed. The records shall be submitted within one work shift after that pile installation is completed. The data shall be recorded on a micropile installation log. A separate log shall be provided for each micropile.

3.3 VERIFICATION TESTS

A. Perform verification testing of piles at the location selected by the Engineer. Perform tension load testing in accordance with ASTM D3689, except as modified herein.

B. Perform one pre-production verification pile load test to verify the design of pile system and the construction methods proposed prior to installing any production piles. The verification test pile may be selected at a production pile location provided that pile failure does not occur during testing. Verification test pile shall be constructed in conformance with the approved Working Drawings.

C. Verification load test shall be performed to verify that the Contractor installed micropiles will meet the tensile load capacities and load test acceptance criteria and to verify the length of the micropile load transfer bond zone is adequate. The micropile verification load test results must verify the Contractor’s installation methods.
D. The drilling method, grouting method, casing length, micropile diameter (cased and uncased), reinforcing bar length and length of embedment for the verification test pile shall be identical to those specified for the production piles at the given locations. The verification test micropile structural steel sections shall be sized to safely resist the maximum test load.

E. The maximum verification test loads applied to the micropile shall not exceed 80 percent of the structural capacity of the micropile structural elements, include steel yield in tension, steel yield or buckling in compression, or grout crushing in compression. Any required increase in strength of the verification test pile elements above the strength required for the production piles shall be provided for in the Contractor's bid price.

F. Testing equipment shall include dial gauges, dial gauge independent reference frame, jack and pressure gauge, electronic load cell (with readout device), and a reaction frame. The load cell is required only for the creep test portion of the verification test. The Contractor shall provide a description of test setup and jack, pressure gauge and load cell calibration curves in accordance with the Submittals Section.

G. Design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. Align the jack, bearing plates, and stressing anchorage such that unloading and repositioning of the equipment will not be required during the test.

H. Apply and measure the test load with a hydraulic jack and pressure gauge. The pressure gauge shall be graduated in 100 psi increments or less. The jack and pressure gauge shall have a pressure range not exceeding twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to allow the test to be done without resetting the equipment. Monitor the creep test load hold during verification tests with both the pressure gauge and the electronic load cell. Use the load cell to accurately maintain a constant load hold during the creep test load hold increment of the verification test.

I. Measure the pile top movement with a dial gauge capable of measuring to 0.001 inches. The dial gauge shall have a travel sufficient to allow the test to be done without having to reset the gauge independently from the jack, pile or reaction frame. Use a maximum of two dial gauges when the test setup requires reaction against the ground or single reaction piles on each side of the test pile.

J. Test verification piles to a maximum test load of 2 times the maximum design pile capacity, hereafter termed, “Design Load” shown on the Contract Drawings. The verification pile load tests shall be made by incrementally loading the micropile in accordance with the following cyclic load schedule for both compression and tension loading (test the compression prior to tension):
Verification Test Loading Schedule

<table>
<thead>
<tr>
<th>LOAD</th>
<th>HOLD TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AL (.05 DL)</td>
</tr>
<tr>
<td>2</td>
<td>0.25 DL</td>
</tr>
<tr>
<td>3</td>
<td>0.50 DL</td>
</tr>
<tr>
<td>4</td>
<td>AL</td>
</tr>
<tr>
<td>5</td>
<td>0.25 DL</td>
</tr>
<tr>
<td>6</td>
<td>0.50 DL</td>
</tr>
<tr>
<td>7</td>
<td>0.75 DL</td>
</tr>
<tr>
<td>8</td>
<td>AL</td>
</tr>
<tr>
<td>9</td>
<td>0.25 DL</td>
</tr>
<tr>
<td>10</td>
<td>0.50 DL</td>
</tr>
<tr>
<td>11</td>
<td>0.75 DL</td>
</tr>
<tr>
<td>12</td>
<td>1.00 DL</td>
</tr>
<tr>
<td>13</td>
<td>AL</td>
</tr>
<tr>
<td>14</td>
<td>0.25 DL</td>
</tr>
<tr>
<td>15</td>
<td>0.50 DL</td>
</tr>
<tr>
<td>16</td>
<td>0.75 DL</td>
</tr>
<tr>
<td>17</td>
<td>1.00 DL</td>
</tr>
<tr>
<td>18</td>
<td>1.33 DL</td>
</tr>
<tr>
<td>19</td>
<td>1.75 DL</td>
</tr>
<tr>
<td>20</td>
<td>2.00 DL (Maximum Test Load)</td>
</tr>
<tr>
<td>21</td>
<td>1.5 DL</td>
</tr>
<tr>
<td>22</td>
<td>1.0 DL</td>
</tr>
<tr>
<td>23</td>
<td>AL</td>
</tr>
</tbody>
</table>

The test load shall be applied in increments of 25 percent of the DL load. Each load increment shall be held for a minimum of 1 minute. Pile top movement shall be measured at each load increment. The load-hold period shall start as soon as each test load increment is applied. The verification test pile shall be monitored for creep at the 1.33 Design Load (DL). Pile movement during the creep test shall be measured and recorded at 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes. The alignment load shall not exceed 5 percent of the DL load. Dial gauges shall be reset to zero after the initial AL is applied.

The acceptance criteria for micropile verification load test are:

1. The Engineer shall determine the criteria for tolerable movement during the load test at the top of the micropile.
2. At the end of the 1.33 DL creep test load increment, test piles shall have a creep rate not exceeding 0.05 inch/log cycle time (1 to 10 minutes) or 0.1 inch/log cycle time (6 to 60 minutes or the last log cycle if held longer). The creep rate shall be linear or decreasing throughout the creep load hold period.
3. Failure does not occur at any load increment up to and including the 2.0 DL max test load. Failure is defined as load at which attempts to further increase the test load simply result in continued pile movement.

Upon completion of the test, the Contractor shall submit a report stamped by a qualified
Professional Engineer licensed in the State of New York of the test results for review and acceptance by the Engineer prior to beginning installation of production micropiles. This report shall include written confirmation of the verification micropile’s capacity.

N. If a verification tested micropile fails to meet the acceptance criteria, the Engineer shall modify the design, the construction procedure, or both. These modifications may include modifying the installation methods, increasing the bond length, or changing the micropile type. Any modification that necessitates changes to the structure shall be submitted as a revision to the working drawings.

<table>
<thead>
<tr>
<th>Proof Test Loading Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOAD</strong></td>
</tr>
<tr>
<td>1 AL</td>
</tr>
<tr>
<td>2 0.25 DL</td>
</tr>
<tr>
<td>3 0.50 DL</td>
</tr>
<tr>
<td>4 0.75 DL</td>
</tr>
<tr>
<td>5 1.00 DL</td>
</tr>
<tr>
<td>6 1.33 DL</td>
</tr>
<tr>
<td>7 1.67 DL (Maximum Test Load)</td>
</tr>
<tr>
<td>8 AL</td>
</tr>
</tbody>
</table>

O. Depending on performance, either a 10 minute or 60 minute creep test shall be performed at the 1.33 DL Test Load. Where the pile top movement between 1 and 10 minutes exceeds 1 mm, the Maximum Test Load shall be maintained an additional 50 minutes. Movements shall be recorded at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes. The alignment load shall not exceed 5 percent of DL. Dial gauges shall be reset to zero after the initial AL is applied.

P. The acceptance criteria for micropile proof load tests are:

1. The Engineer shall determine the criteria for tolerable movement during the load test at the top of the micropile.
2. At the end of the 1.33 DL creep test load increment, test piles shall have a creep rate not exceeding 0.05 inch/log cycle time (1 to 10 minutes) or 0.1 inch/log cycle time (6 to 60 minutes). The creep rate shall be linear or decreasing throughout the creep load hold period. Failure does not occur at the 1.67 DL maximum test load. Failure is defined as the load at which attempts to further increase the test load simply result in continued pile movement.

- END OF SECTION -
SECTION 02495

SITE RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for furnishing all labor, equipment and materials for restoration of all areas disturbed by construction activities at the site.

1.2 SUBMITTALS

A. A Schedule of Values shall be submitted with a cost breakdown for each site restoration item the Contractor elects to invoice for progress payments. The Schedule of Values will be used in determining partial payment for work completed according to these specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

A. None.

PART 3 - EXECUTION

A. The Contractor shall restore the site to conditions equal to or better than those present prior to commencement of the Work.

B. Fill adjacent to structures shall be placed in a manner that will prevent damage to the structures and will allow the structures to assume the loads from the fill gradually and uniformly.

C. Distribution of materials shall be essentially uniform, and the fill shall be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material.

D. Earthfills necessary for repair and restoration of disturbed areas shall conform to Section 02290 – Earthfill.

- END OF SECTION –
SECTION 02512

CONCRETE SURFACE PREPARATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This Section includes the requirements for preparing existing concrete and masonry surfaces for new surface application.

1.2 REFERENCES

A. The Work shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)

1.3 DESCRIPTION OF WORK

A. This Section includes Concrete Surface Preparation at the interface of existing concrete/masonry surfaces and proposed concrete and grout, complete with removal of all loose and deteriorated concrete, removal and disposal of the waste materials, and application of bonding material. The extent of the deteriorated concrete shall be determined by the Engineer during construction.

B. The Contractor shall notify the Engineer of any pre-existing conditions of deterioration or under design in areas of work that are uncovered or exposed during construction.

1.4 SUBMITTALS

A. In addition to those submittals identified in the General Provisions and Contract Drawings, the following items shall also be submitted:

1. Manufacturer’s certification that all materials furnished are in compliance with the applicable requirements of this specification.

PART 2 – PRODUCTS

2.1 MATERIALS

A. The Contractor shall refer to the Contract Drawings for requirements on bonding agents. Bonding agent shall be as recommended by patching mortar manufacturer selected by Contractor.
B. The following products are approved for concrete surface preparation:

1. Sikadur 32 Hi Mod, as manufactured by Sika Corp.

2. MBT CONCRESIVE 1090 Liquid, as manufactured by BASF Construction Chemicals, LLC – Building Systems

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prior to placing the new concrete overlay, the surfaces of the existing concrete shall be cleaned of organic material, loose and deteriorated concrete, and other detrimental materials. The Contractor shall use air and water jets and mechanical means to accomplish the surface cleaning. Hand chipping may be necessary as directed by the Engineer.

B. After cleaning, the surfaces of the existing concrete shall be kept moist/wet for a minimum of twenty-four hours prior to placement of the new concrete overlay. All horizontal surfaces shall be free of standing water before placement of new concrete will be allowed.

C. Bonding agent shall be used in those locations where the concrete overlay will be constructed with cast-in-place concrete. Bonding agent shall be applied uniformly over the entire exposed concrete surface (including sides of all cut edges) immediately prior to concrete placement, and in accordance with the manufacturer’s recommendations. Temperature of the exposed concrete shall not be below 40°F. The maximum allowable thickness of the bonding agent shall be 1/8 inch. Bonding agent shall not be used in locations where concrete repair mortar will be used.

D. All waste materials resulting from concrete surface preparation shall become the property of the Contractor and shall be removed from the site and disposed of by the Contractor. The Contractor shall be responsible for compliance with all Federal, State, and local regulations and laws relative to disposal, for obtaining all necessary permits, and for payment of fees for removal or disposal.

- END OF SECTION –
SECTION 02600

PIPELINE INSTALLATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for all metallic and non-metallic pipe, fittings and specials of the type and quality as shown in the Contract Drawings and as specified for the pipe.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest edition and revision of codes, standards, and specifications from the following organizations, except where more stringent requirements have been specified herein:

1. American Society of Testing and Materials (ASTM)

2. American Water Works Association (AWWA)

1.3 SUBMITTALS

A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:

1. Test reports, certifications, shop drawings and samples are required as set forth in the Subsection entitled "Submittals" in the specification Section for the type of pipe to be installed.

2. Layout drawings are required for pipelines to be installed within structures showing the location including the support system, fittings, sleeves, wall castings and appurtenances.

PART 2 - PRODUCTS

2.1 MATERIALS AND CONSTRUCTION

A. Pipe

1. Materials for the piping, joints and fittings shall be as specified in the Section for the type of pipe to be installed or as shown in the Contract Drawings.

a. Pipe and appurtenances shall comply with the applicable standards for its type of material.

B. Joints

1. Type of joints shall be as shown or noted on the Contract Drawings.
2. Grooved and shoulder type joints of the rigid design may be used in lieu of flanged joints on ductile iron or steel pipe, only with the prior acceptance of the Engineer and only for pipe sizes acceptable to the Engineer.

PART 3 - EXECUTION

3.1 INSPECTION

A. Pipe and appurtenances shall be inspected by the Contractor in the presence of the Engineer on delivery and prior to installation for conformance with the standards and specifications.

1. Materials not conforming to the standards and specifications shall not be stored on site but removed at once and replaced with material conforming to the specifications.

3.2 INSTALLATION - UNDERGROUND

A. General

1. Blocking will be permitted where the pipe is to be laid in concrete encasement.

2. No pipe shall be laid upon a foundation in which frost exists; nor at any time when there is danger of the formation of ice or the penetration of frost at the bottom of the excavation.

B. Location and Grade

1. Pipelines and appurtenances shall be located as shown on the Contract Drawings or as directed.

2. The alignment and grades shall be determined and maintained by a method acceptable to the Engineer.

3. Contractor shall document pipe invert elevations and provide elevation information to Engineer for inclusion on Record Drawings.

C. Joints

1. Joints shall be assembled using oakum, gaskets, lubricants and solvents as furnished by the pipe manufacturer and in accordance with the manufacturer's recommendations.

D. Connection to Existing Structures

1. The existing 18-inch and 24-inch conduits are likely sand-cast iron pipe with non-standard wall thickness and bell diameters. The downstream terminus configuration of the pipes within the original structure are unknown. The Contractor shall examine and measure same upon exposure and provide the Engineer with his plan to seal the connection with appropriate materials prior to concrete embedment.
3.4 FINAL INSPECTION OF PIPELINE

A. Each section of pipe shall be inspected before final acceptance.
   1. In larger pipelines the inspection shall be by traversing the inside of the pipe.
   2. In smaller pipelines the inspection shall be by observation with illumination.
   3. Where specified, the inspection shall be by closed circuit television and shall be monitored by both the Engineer and the Contractor.

B. The inspection shall determine the pipeline to be true to line and grade, to show no leaks, to have no obstruction to flow, to have no projections or protruding of connecting pipes or joint materials, shall be free from cracks and shall contain no deposits of sand, dirt or other materials.

C. All deficiencies located during the inspection shall be corrected.

3.5 CUTTING AND SPECIAL HANDLING

A. Field cuts of pipes shall be in accordance with the manufacturer's instructions.

B. Where a pipe requires special handling or installation it shall be in accordance with the Section for that type of pipe.

3.7 WALL CASTINGS AND SLEEVES

All pipelines passing through walls or slabs of structures shall be installed in a wall casting or sleeve. The wall castings and sleeves shall be in accordance with the Section 15114 - Wall Castings and Sleeves and as indicated on Contract Drawings.

3.8 LEAKAGE TEST

A. All pipelines shall be tested for leakage in accordance with the Section 02602 - Leakage Test.

- END OF SECTION –
SECTION 02602

LEAKAGE TESTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for testing of all hydraulic structures, pressure and non-pressure piping for leakage as specified.

1. The Contractor shall furnish labor, equipment, test connections, vents, water and materials necessary for carrying out the pressure and leakage tests.

B. Testing shall be witnessed by the Engineer or the Owner at their request.

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.


2. American Water Works Association (AWWA)

1.2 SUBMITTALS

A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:

1. Reports of test results.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 TESTS ON PRESSURE PIPING FOR TRANSPORT OF WATER

A. General

1. Contractor shall not encase pipe within concrete until pipeline has passed all tests and inspections.

2. Pipelines designed to transport water shall be tested hydrostatically and for leakage prior to being placed in service.

3. The length of piping and sections included in the tests shall meet the approval of the Engineer.
4. Equipment in or attached to the pipes being tested shall be protected. Any damage to such equipment during the test shall be repaired at the Contractor’s expense.

5. If the line fails the tests specified herein, the Contractor shall explore for the cause of the excessive leakage and after repairs have been made the line shall be retested. This procedure shall be repeated until the pipe complies.

3.2 TEST FOR NON-PRESSURE PIPELINES FOR TRANSPORT OF WATER

A. General

1. Contractor shall not encase pipeline within concrete until pipeline has passed all tests and inspections.

2. Pipelines designed to carry water in open channel flow or at minimal pressures shall be tested for leakage prior to being placed in service.

3. The leakage shall be determined by exfiltration or infiltration.
   a. The testing method directed by the Engineer shall take into consideration the groundwater elevation of the section of pipe being tested.
   b. The maximum non-pressure pipeline to be tested for leakage shall be the section between manholes or 600 feet or as directed by the Engineer.

3. Intermediate leakage tests during construction shall be made at the Contractor's discretion. Upon completion of any pipeline, the entire system including manholes shall be tested for compliance to allowable leakage.

4. When testing absorbent pipe materials such as concrete, the pipeline shall be filled with water at least twenty-four (24) hours before the test is made.

5. Groundwater level shall be determined by the Contractor prior to any testing by reading the water level at the observation pipe in the manholes.

6. If the line fails the test, the Contractor shall explore for the cause of the excessive leakage and after repairs have been made the line shall be retested. This procedure shall be repeated until the pipe complies.

B. Exfiltration Testing

1. Exfiltration tests shall be made by filling a section of pipeline with water and measuring the quantity of leakage.

2. The head of water at the beginning of the test shall be at least two feet above the highest pipe within the section being tested.
   a. Should groundwater be present within the section being tested, the head of water for the test shall be two feet above the hydraulic gradient of the groundwater.
b. Should the requirement of two feet of water above the highest pipe subject any joint at the lower end of the test section to a differential head of greater than 11.5 feet, contractor shall apply testing methods discussed in Section 3.2 of this specification using a test pressure of 15 psi.

C. Infiltration Testing

1. Infiltration tests will be allowed only when the water table gauges determine the groundwater level to be two feet or more above the highest pipe of the section being tested.

2. Infiltration test shall be made by measuring the quantity of water leaking into a section of pipeline.

3. Measurement of the infiltration shall be by means of a calibrated weir constructed at the outlet of the section being tested.

D. Allowable Leakage for Non-Pressure Pipelines

The allowable leakage (exfiltration or infiltration) for non-pressure pipelines shall not exceed the following in gallons per twenty-four (24) hours per inch of diameter per 1000 feet of pipe:

<table>
<thead>
<tr>
<th>Type of Pipe</th>
<th>Leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl chloride with rubber joints</td>
<td>10</td>
</tr>
<tr>
<td>Polyvinyl chloride with solvent-cemented joints</td>
<td>0</td>
</tr>
<tr>
<td>Concrete with rubber joints</td>
<td>10</td>
</tr>
<tr>
<td>Concrete with steel and rubber joints</td>
<td>10</td>
</tr>
<tr>
<td>All piping inside structures</td>
<td>0</td>
</tr>
</tbody>
</table>

Regardless of the above allowable leakage any spurting leaks detected shall be permanently stopped.

- END OF SECTION –
SECTION 02618

DUCTILE IRON PIPE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for centrifugally cast ductile iron pipe and fittings as indicated in accordance with the Contract Documents.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest edition and revision of codes, standards and specifications from the following organizations, except where more stringent requirements have been specified herein:

1. American National Standards Institute (ANSI)
2. American Water Works Association (AWWA)
3. American Society for Testing and Materials (ASTM)

1.3 SUBMITTALS

A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:

1. The manufacturer shall furnish statements that all of the specified tests have been made and the results thereof comply with the requirements of the specified standards.
2. Pipe and joint details.
3. Layout drawings for ductile iron pipe to be installed within structures showing the location including details of the support system, joint restraints, sleeves and appurtenances.

PART 2 - PRODUCTS

2.1 MATERIALS AND CONSTRUCTION

A. Ductile Iron Pipe

1. Ductile iron pipe and ductile iron fittings shall comply with the following standards:
ANSI/AWWA

- Ductile Iron Pipe C151
- Fittings C110
- Joints-Mechanical and Push-On C111
- Joints-Flanged C115
- Cement Lining C104
- Polyethylene Encasement C105
- Compact Fittings C153

B. All shipments of material shall be tested in accordance with the provisions for testing in the applicable standards.

2.2 ACCESSORIES

A. Joints

1. The type of joints for ductile iron pipe and fittings shall be as shown on the Contract Drawings.

2. To insure electrical conductivity bronze wedges, jumpers or lead tipped gaskets shall be installed at each mechanical or push-on joint.

   a. Mechanical joints shall be assembled in accordance with the Notes on Method of Installation, AWWA C111, Appendix A. All bolts shall be tightened by means of torque wrenches such that the follower shall be brought up evenly. If effective sealing is not obtained at the specified torques, the joint shall be disassembled, cleaned and reassembled.

   b. Push-on joints shall be assembled using lubricant furnished by the manufacturer. The joint shall be made by guiding the plain end into the bell until contact is made with the gasket and exerting sufficient force to drive the pipe home until penetration is made to the depth recommended by the manufacturer.

   c. Boltless Ball Joint Pipe shall be assembled in accordance with published manufacturer's recommendations.

3. Flanged joints shall be assembled with through bolts of the size required for the pipe being installed. Stud bolts shall be used only where shown or required. Connecting flanges shall be in proper alignment and no external force shall be required or used to bring them together. Ductile iron pipe to be used with flanged joints shall be AWWA Thickness Class 53.

   a. Flanges for flanged joints shall be drilled for 125 psi pressure unless otherwise specified.

      1) Flange bolts and nuts shall be steel, ASTM A307, Grade B, and shall be cadmium plated unless otherwise indicated in the Contract Documents. Cadmium plating shall be a thickness of 0.0003 to 0.0005 inches.

      2) Flange bolts and nuts shall be stainless steel for buried or submerged locations.
3) Gaskets for flanged joint piping shall be full-faced, 1/8 inch thick rubber gaskets meeting requirements of AWWA C111 for water and sewage application.
4) Gaskets for other service shall be as specified.

4. Grooved and shoulder type joints of the rigid design will not be allowed in lieu of flanged joints without the prior acceptance of the Engineer, except where specifically called for in the Contract Documents. Grooved and shoulder type joints of the rigid design shall be in accordance with AWWA C606 and Table 5 for iron pipe.
   a. Bolts and nuts shall be cadmium plated steel. Bolts and nuts shall be stainless steel for buried or submerged locations.
   b. Details of supports, anchors and couplings shall be submitted for review.

2.3 COATING, PAINTING AND LINING

A. Coating, painting and lining shall be as follows unless otherwise indicated in the Contract Document:

1. Pipe installed in the ground, in exposed exterior locations, in contact with water or inside structures but not specified for painting:

   Interior: Standard thickness cement lining with sealcoat unless otherwise specified.
   Exterior: None.

PART 3 - EXECUTION

3.1 INSTALLATION AND HANDLING

A. Ductile iron pipe shall be installed in accordance with the applicable provisions of Section 02600 - PIPELINE INSTALLATION.

B. All ductile iron pipe and fittings shall be handled with padded slings or other appropriate equipment. The use of cables, hooks or chains will not be permitted.

3.2 FIELD TESTING AND CHLORINATION

A. Perform hydrostatic and leakage tests in accordance with the applicable provisions of the Section 02602 - LEAKAGE TESTS, at the test pressure specified or scheduled.

- END OF SECTION –
SECTION 02831
CHAIN LINK FENCE

PART ONE - GENERAL

A. SUMMARY

1. This Section includes fence framework and fabric, complete with accessories, gates and related hardware, excavation for post footings, concrete for post footings as shown on the Contract Drawings.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

1.3 QUALITY ASSURANCE

A. Installation: Company specializing in commercial quality fence products with at least five years experience.

B. Fence framework, fabric and related accessories to be a complete system as specified herein.

1.4 SUBMITTALS

A. The contractor shall submit the following items related to Chain Link Fence:

1. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing details.

2. Product Data: Manufacturer’s catalog information with material specifications.

3. Samples: Fence Framework: One piece of each size 12” long.
   Fence Fabric: One piece 12” square

4. Certification: Submit manufacturer’s affidavit stating compliance with all applicable provisions of ASTM specification specified herein.
PART TWO - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers are named to establish a standard of quality necessary for the Project.

2.2 GENERAL

A. All fabric, rails, posts, gates and bracing shall be as follows:

1. Fabric: 96" 9 GA. Galvanized (2" mesh) CHAIN LINK FABRIC.

2. Top Rail: 1” O.D. SS-40 Pipe, 1.83 lbs. per foot. Top rail 21’ in length, joined with 1 sleeve.


4. Terminal Post: 3” O.D. SS-40 Pipe 3.37 lbs. per foot. Concrete footing: 12” diameter, 36” depth.

5. Bracing: Terminal posts braced and trussed to the nearest line post with 1” O.D. SS-40 Pipe and Truss Road & Truss Rod Tightener. 1” O.D. SS-40 Pipe, 1.83 lbs. per foot, used for the bottom rail.

6. Fittings: Regular brace band & carriage bolt, pressed steel rail-end boulevard clamp, 45 Deg. pressed steel barb wire arm, pressed steel cap, 3/16” x 3/4” tension bar, regular tension band & carriage bolt.

7. Tie Wire: 8” 9 GA. aluminum tie wire & 6” 9 GA. aluminum tie wire spaced 12” on center for line posts & 18” on center for rails.

8. Post Footing: 4,000 psi concrete

PART THREE - EXECUTION

3.1 INSPECTION

A. Contractor shall coordinate with all trades at site and examine site and report in writing to Engineer any conditions detrimental to the proper and timely completion of the work. Clearing, grading and fence line layout and staking of terminals to be completed by Contractor before start of fence installation.

B. Contractor shall receive reviewed Shop Drawings from Owner before starting installation.

3.2 INSTALLATION

A. Fence installation shall conform to requirements of ASTM F 567.

B. Provide fence heights as shown on Contract Drawings.
C. Space line posts at intervals not to exceed manufacturer’s recommendations.

D. Brace gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.

E. Install top rail through line post loop caps connecting sections with sleeves to form a continuous rail between terminal posts. Fasten top rail to terminal posts.

F. Stretch bottom tension wire between terminal posts 6” above grade and fasten to outside of line posts with tie wires.

G. Pull fabric taut to provide a smooth uniform appearance, free from sag, with bottom selvage 2” above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15” intervals. Tie to line posts and top rails with tie wires spaced at maximum 12” on posts and 24” on rails. Attach to bottom tension wire with hog rings at maximum 24” intervals.

H. Anchor barbed wire to terminal extension arms, pull taut to remove all sag and firmly install in slots of line post extension arms.

I. Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete. Adjust and lubricate hardware for smooth operation.

J. Install nuts for fittings, bands and hardware bolts on inside of fence. Peen ends of bolts or score threads to prevent removal.

3.3 COMPLETION

A. The area of installation shall be left neat and free on any debris caused by the erection of the fence.

- END OF SECTION –
SECTION 03100

FORMWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing form materials, form ties, form coatings, design of formwork and form removal. The Contractor shall be responsible for designing and constructing suitable and adequate falsework, centering and formwork.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest edition and revision of codes, standards and specifications from the following organizations, except where more stringent requirements are specified herein:

1. American Concrete Institute (ACI)

1.3 SUBMITTALS

Not Used

PART 2 - PRODUCTS

2.1 MATERIALS

A. Forms for Class A Finish

Forms for Class A finished surfaces shall be plywood panels conforming to APA PS 1, Grade B-B concrete form panels, Class I or II. Other form materials or liners may be used provided the smoothness and appearance of concrete produced will be equivalent to that produced by the plywood concrete form panels. Furnish in largest practicable sizes to minimize number of joints. Tolerances for the formwork and the resulting concrete surface shall be as specified ACI 347, Chapter 2, Part 2.4.

B. Forms for plain-faced finish concrete shall be of plywood, steel or other approved material and shall be mortar tight. Furnish in largest practicable sizes to minimize number of joints.
C. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Tolerances shall be as specified in ACI Manual of Concrete Practice ACI 347, Chapter 2, part 2.4. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a nonstaining form oil before being set into place. Care shall be taken to avoid splashing oil on reinforcing steel or existing concrete.

D. Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one-inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones. All internal form support steel shall be positioned to provide minimum clearances as shown on the drawings.

E. Form joint Tape: Compressible foam tape, pressure sensitive, AAMA 810.1, minimum ¼ inch thick.

F. Form Joint Sealant: Elastomeric sealant complying with ASTM C920, Type M or S, Grade NS, that adheres to form joint substrates.

G. Sealer: Penetrating, clear polyurethane wood form sealer formulated to reduce absorption of bleed water and prevent migration from wood of set-retarding materials.

PART 3 - EXECUTION

3.1 PREPARATIONS OF FORMS AND SUBGRADE

A. Forms shall be filleted at all sharp corners. All edges that will be exposed to view when the structure is completed shall be chamfered, unless finished with molding tools.

B. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-in-place surfaces. Kerf wood rustications, keyways, reglets, recesses, and the like for easy removal.

1. Do not use rust-stained, steel form-facing material.

C. Prior to placement of concrete, the forms and subgrade shall be free of chips, sawdust, debris, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces that are required to be bonded to the concrete shall be removed. Rock surfaces shall be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary, and all exposed rock surfaces shall be kept in a wetted condition from the time of exposure continuously through the time of placement of concrete. The method used for continuous wetting shall employ clean water free from injurious amounts of deleterious materials and shall be subject to review by the Engineer.

D. Seal form joints and penetrations at form ties with form joint tape or form joint sealant to prevent mortar leaks.

E. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
F. Coat contact surfaces with form-release agent, according to manufacturer’s written instructions, prior to placing steel reinforcement.

G. Forms shall be inspected by the Engineer prior to concreting. Notice shall be given twenty-four (24) hours in advance of the concrete placement so that inspection can be scheduled. No concreting shall be done in the absence of the Engineer without written permission of the Engineer.

3.2 REMOVAL OF FORMS

A. Forms shall be removed only when the Engineer is present and shall not be removed without his approval. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually. The safety and appearance of the structures shall be the sole responsibility of the Contractor.

B. Forms shall not be removed prior to the expiration of the following minimum time intervals after placement of the concrete, exclusive of days when the minimum temperature of air adjacent to the concrete is below 40°F.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footings and Slabs</td>
<td>3 days</td>
</tr>
<tr>
<td>Walls</td>
<td>7 days</td>
</tr>
<tr>
<td>Dam Sections</td>
<td>7 days</td>
</tr>
</tbody>
</table>

- END OF SECTION –
SECTION 03150

FUSEGATE WATERTIGHTNESS SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

The work of this Section shall include the furnishing of all materials, labor, equipment, incidentals, and all else necessary for the Fusegate watertightness system.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

<table>
<thead>
<tr>
<th>ASTM Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 297</td>
<td>(1993; R 2006) Rubber Products - Chemical Analysis</td>
</tr>
<tr>
<td>ASTM D 624</td>
<td>(2000; R 2007) Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers</td>
</tr>
</tbody>
</table>

1.3 SUBMITTALS

Submit the following items.

A. Shop Drawings and fabrication drawings provided by the manufacturer or prepared by the Contractor.

1) Rubber Seals

2) All fixing plates

3) Anchor Bolts and related hardware
B. Product Data and Manufacturer’s literature including safety data sheets.

Manufacturer's literature, including safety data sheets, for preformed fillers and the lubricants used in their installation; field-molded sealants and primers (when required by sealant manufacturer); and preformed compression seals. Manufacturer's recommended instructions for installing preformed fillers, field-molded sealants; and preformed compression seals.

1) Rubber Seals

2) Sealant

C. Samples or Specimens identified to indicate manufacturer, type of material, size, quantity of material, and shipment or lot represented. Each sample shall be a piece not less than 12 inch long. One splice sample of each size and type for every 50 splices made in the factory and every 10 splices made at the job site. The splice samples shall be made using straight run pieces with the splice located at the mid-length of the sample and finished as required for the installed waterstop. The total length of each splice shall be not less than 12 inches long.

1) Rubber Seals

D. Certificates of compliance stating that the joint filler and sealant materials conform to the requirements specified.

1) Rubber Seals

2) Sealant

1.4 DELIVERY, STORAGE, AND HANDLING

Protect material delivered and placed in storage off the ground from moisture, dirt, and other contaminants. Deliver sealants in the manufacturer's original unopened containers. Sealants whose shelf life has expired shall be removed from the site.

PART 2 - PRODUCTS

2.1 SEALANT

Joint sealant shall be the following:

A. Kent Rotabond 2000, TVM Bull Seal, Bostik 940, or Approved Equivalent of an MS-Polymer Adhesive and Sealant.

2.2 RUBBER SEAL

Watertightness seals shall be manufactured from virgin material; reclaimed material is not acceptable. The seals shall be manufactured from EPDM or Neoprene with the following properties:

A. Durometer Hardness, ASTM D 2240: 55 to 65
B. Tensile Strength, ASTM D 412: 2250 psi minimum

C. Thickness Tolerance, ASTM D 412: plus or minus 2 percent

D. Specific Gravity, ASTM D 297: 10, plus or minus 0.05

E. Tensile Strength at 300 percent Elongation ASTM D 412: 600 psi minimum

F. Compression set, 22 hours, ASTM D 395: 25% of original deflection

G. Elongation, ASTM D 412: 300 percent minimum

H. Tear Resistance, Die C, ASTM D 624: 180 pound force per inch minimum

I. Ozone resistance, ASTM D 1149: No cracks, 7 days, - 50 pphm - 100 degrees F, 20 percent elongation

2.3 ANCHOR BOLTS

A. Anchor Bolts, washers, and nuts for seal system shall be stainless steel Type 304 conforming to ASTM A 276. Provide anchors of the diameter, embedment, and spacing shown on the Contract Drawings.

B. Epoxy-Resin Grout adhesive system shall be produced by a manufacturer of epoxy anchor systems, equivalent to strengths obtained with by the following:

   1) Simpson Epoxy-Tie Adhesive system, by Simpson Strong-Tie Anchor Systems, Columbus, Ohio
   2) Hilti HSE 2421 Epoxy Adhesive Anchors, by Hilti North America
   3) Ramset/Red Head C6 Epoxy Adhesive, by ITW Ramset/Red Head

PART 3 - EXECUTION

3.1 JOINTS

Install joints at locations indicated and as authorized.

A. Fusegate Base

   The joint between the supporting slab and the Fusegate base shall be coated with a material to prevent bond between the slab and the Fusegate base.

3.2 SEALS, INSTALLATION, AND SPLICES

Install seals at the locations shown to form a continuous water-tight diaphragm. Make adequate provision to support and completely protect the seals during the progress of the work. Any seal punctured or damaged shall be repaired or replaced. Splices shall be made using approved equipment and procedures. Seals and sealant materials are to be installed once the Fusegates are in their final location on the spillway sill. Install at
temperatures recommended by the sealant manufacturer.

A. Non-Metallic Seal

Fittings shall be shop made using a machine specifically designed to mechanically weld the seal. A miter guide, proper fixturing (profile dependant), and portable power saw shall be used to miter cut the ends to be joined to ensure good alignment and contact between joined surfaces. The splicing of straight lengths shall be done by squaring the ends to be joined. Continuity of the characteristic features of the cross section of the seal (ribs, tabular center axis, protrusions, etc.) shall be maintained across the splice.

1) Rubber Seal

Splices shall be vulcanized or shall be made using cold bond adhesive as recommended by the manufacturer.

2) Quality Assurance

Seal splicing defects which are unacceptable include, but are not limited to the following:

a. Tensile strength less than 80 percent of parent section.

b. Free lap joints.

c. Misalignment greater than 1/16 inch.

d. Misalignment which reduces seal cross section more than 15 percent.

e. Bend failure at joint deeper than 1/16 inch or 15 percent of material thickness.

f. Visible porosity in the weld area, including pin holes.

g. Charred or burnt material.

h. Bubbles or inadequate bonding.

i. Visible signs of splice separation when cooled splice is bent by hand at a sharp angle.

- END OF SECTION –
SECTION 03200

STEEL REINFORCEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for furnishing and placing steel reinforcement for concrete.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements are specified herein:

1. American Concrete Institute (ACI)
   a. ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures
   b. ACI 318 Building Code Requirements for Reinforced Concrete

   a. ASTM A615 Grade 60 Steel Reinforcement for Concrete

3. Concrete Reinforcement Steel Institute (CRSI)
   a. CRSI-59 Recommended Practice for Placing Reinforcing Bar
   b. CRSI-63 Recommended Practice for Placing Bar Supports

1.3 DELIVERY AND STORAGE

A. All reinforcing bars shall be delivered to the job site cut to exact length, bent, securely bundled and tagged with metal tags corresponding to the bar schedules and diagrams.

B. All bars shall be stored off the ground a minimum height of six (6) inches and protected from mechanical injury, surface deterioration and moisture.

1.4 SUBMITTALS

A. All bar schedules required to accomplish the fabrication and placement of reinforcement shall be approved by the Contractor. Prior to placement of reinforcement, the Contractor shall furnish four (4) copies of any such lists or diagrams to the Engineer. The shop drawings shall also include the dimension for the geometry of the structure and shall also indicate the clear cover required as noted or by ACI standards. The final acceptance of the reinforcement will be based on the field installation of the bars which will be inspection by the resident engineer.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel reinforcement for concrete shall be deformed bars of new billet steel conforming to ASTM A 615, Grade 60.

2.2 FABRICATION

A. All details for fabrication shall conform to the Manual of Standard Practice for Detailing Reinforced Concrete Structures, ACI 315, and in accordance with details shown on the drawings. When bending is required, it shall be done accurately without the use of heat, and bars having cracks, kinks, or splits at the bends shall be rejected. All hooks and bends shall be in conformance with ACI Standard 318. Splicing of steel shall be as specified in ACI Standard 318.

PART 3 - EXECUTION

3.1 PREPARATION AND PLACEMENT

A. Before reinforcement is placed, the surfaces of the bars, fabric or any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease or other coatings or foreign substances. After placement, the reinforcement shall be maintained in a clean condition until it is completely embedded in the concrete. Reinforcing accessories, bar supports, chairs, spacers, etc. shall be in accordance with ACI 315.

B. When placed in the work, all steel shall be free from loose rust, scale, grease, oil, dirt, or other materials which impair the bond with concrete.

C. If concreting is delayed for more than five consecutive calendar days after reinforcing is placed in position, it shall be protected by covering with canvas, polyethylene sheeting or other satisfactory covering. Any bars or fabric having loose scaly rust shall be cleaned before concrete is placed.

D. All placement of steel reinforcing bars and supports shall conform to the Recommended Practice for Placing Reinforcing Bars, CRSI 59; and the Recommended Practice for Placing Bar Supports, CRSI 63. Reinforcement shall be accurately placed and secured in position in a manner that will prevent its displacement during the placement of concrete. Tack welding of bars will not be permitted. Metal chairs, metal hangers, metal spacers and concrete chairs shall be used to support the reinforcement. Metal hangers, spacers and ties shall be placed in such a manner that they will not be exposed in the finished concrete surface. The legs of metal chairs that will be exposed at the lower face of slabs or beams shall be galvanized. Precast concrete chairs shall be manufactured of the same class of concrete as that specified for the structure and shall have tie wires securely anchored in the chair or a V-shaped groove at least 3/4-inch in depth molded into the upper surface to receive the steel bar at the point of support. Precast concrete chairs shall be moist at the time concrete is placed. Reinforcement shall not be placed until the prepared site has been inspected and approved by the Engineer. Concrete protection for reinforcement shall be as shown on the drawings.

- END OF SECTION -
SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the requirements for furnishing, placing, finishing, and curing Portland cement concrete cast-in-place concrete and all related and incidental work as required to construct the structures as shown on the Contract Drawings. Concrete shall conform to the requirements of the American Concrete Institute Manual of Concrete Practice and these specifications. Where there is a conflict, these Specifications shall govern.

B. Notice to the Contractor: there are three classes of concrete for this project; Class 1 Concrete, Class 2 Concrete, and Lean Concrete Fill. Class 2 Concrete is for the east and west spillway piers and the spillway overlay; Class 1 Concrete is for all other concrete work (unless noted otherwise). Lean Concrete Fill shall be used where indicated on the Contract Drawings.

1.2 REFERENCES

A. Materials, production, transport and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements are specified herein:

1. American Concrete Institute (ACI)
   a. ACI 211 Recommended Practice for Selecting Proportions for Concrete
   b. ACI 305 Recommended Practice for Hot Weather Concreting
   c. ACI 306 Recommended Practice for Cold Weather Concreting

   a. ASTM C31 Practice for Making and Curing Concrete Test Specimens in the Field
   b. ASTM C33 Specification for Concrete Aggregates
   c. ASTM C39 Test Method for Compressive Strength of Cylindrical Concrete Specimens
   d. ASTM C94 Specification for Ready-Mixed Concrete
   e. ASTM C138 Test Method for Unit Weight, Yield, and Air Content (Gravimetric)
   f. ASTM C143 Test Method for Slump of Hydraulic Cement Concrete
1.3 QUALIFICATIONS & TESTING

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment and the Concrete Plant Manufacturer’s Bureau (CPMB “Concrete Plant Standards of the Plant Manufacturers Bureau.”

1. Manufacturer must be certified according to the National Ready Mixed Concrete Association’s Certification of Ready Mixed Concrete Production Facilities.

B. Testing Laboratory Qualifications: An independent testing laboratory, acceptable to authorities having jurisdiction, qualified according to ASTM C1077 and ASTM E329 to conduct the testing indicated, as documented according to ASTM E548. The testing laboratory shall have been inspected within the last 2 ½ years by the Cement and Concrete Reference Laboratory (CCRL) jointly sponsored by ASTM and the National Institute of Standards and Technology for testing concrete aggregates and for the preparation and testing of concrete trial batches with or without admixtures. The laboratory shall provide documentation indicating how any deficiencies in the latest CCRL inspection report have been corrected.
C. All concrete mixes shall be designed using the minimum water possible subject to workability

D. When conditions are such that the temperature of the concrete at the time of placement is consistently above 75°F, the Engineer may direct the Contractor to use a water reducing, set-retarding admixture. The cement content shall be the same as that required in the mix without the admixture.

E. In general, concrete and aggregates will be tested in accordance with the most recent issues of the procedures listed in ASTM C33 - Concrete Aggregates and ASTM C94 - Ready-Mixed Concrete.

F. The Contractor shall be responsible for initial mix designs and related testing to the mix designs. Costs for this testing shall be the Contractor’s responsibility.

G. All materials used in the work shall be subject to inspection and tests at the batch plant and at the job site.

H. The Contractor shall plan its operations to allow adequate time for all required testing and inspection. The Contractor shall provide facilities necessary to obtain and handle representative samples of materials to be tested and furnish all necessary cooperation and assistance as requested by the Engineer.

I. The Engineer or the testing laboratory may reject concrete batches for high slump, uncontrolled air entrainment, poorly mixed concrete, or delays.

J. During the progress of the work, a set of six (6) 6"x12" cylinders will be made by the independent testing agency retained by the Contractor for each 50 yards of concrete placed or fraction thereof, with at least one set made for each day's placement of concrete. For each set of six (6) cylinders, two (2) will be tested at seven days, two (2) will be tested at 28 days, and two (2) will be held in reserve. In the case of questionable or unsatisfactory test results, the remaining cylinders will be tested as directed by the Engineer.

K. Each cylinder will be properly labeled with an identifying mark. Report forms will indicate the mix proportions, air content, water content, slump, batching time, placing time, and an adequate description of the location in the structure where the concrete was placed. The making and curing of test cylinders will be in accordance with ASTM C31. Cylinders will be tested in accordance with ASTM C39.

L. Slump and air content tests will be made of each batch and/or as frequently as directed as each truck arrives at the placement location. Tests will be made in accordance with requirements of ASTM C143.

M. The Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer to inspect materials, equipment and processes and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with the manufacture and delivery of the concrete.

N. The Contractor shall be responsible for fabricating and testing all cylinders and performing all slump and air content testing.
1.4 SUBMITTALS

A. The Contractor shall be responsible for the design of the concrete mixtures. At least thirty (30) days prior to any placement of concrete the Contractor shall furnish the Engineer with a statement of the materials and mix proportions (including admixtures and pozzolans) it intends to use for the specified class of concrete. The statement shall include evidence satisfactory to the Engineer that the materials and proportions selected will produce concrete of the quality, consistency, and strength specified. The statement shall include results of mix designs and laboratory tests including:

- Mix Designation and Identification
- Mix Proportions Based on SSD Aggregates and 1 cy
- Moisture Content of the Aggregates as used in trials and corrections for the aggregate weights used
- Specific Gravity and Absorption of the aggregates
- Admixture Source and Dosage
- Yield and Wet Unit Weight
- Strength Results and Unit Weights of Cylinders
- Strength Requirements - Both the design strength and the required average strength with the applicable ASTM C 94 overdesign factor
- Cement Source
- Aggregate Source and Gradation
- Mix Temperature
- Slump - Design and Actual
- Air Content - Design and Actual
- For mixes with a high-range water reducer present, the slump and air content at 15 to 20-minute time increments for a duration of 90 minutes

B. When ready-mixed concrete is furnished, the Contractor shall provide the Engineer with the name of the concrete supplier proposed and the location of the plant or plants at which the concrete will be batched. The Contractor shall also furnish the Engineer, a statement-of-delivery ticket showing the time of loading, the revolution counter reading at the time of loading, and the quantities of materials used for each load of concrete.

C. The Contractor is responsible for all field testing of cast-in-place concrete required by this Specification. The Contractor shall submit to the Engineer thirty (30) days in advance of concrete placement, the name of the independent laboratory it intends to use for the field testing.

D. For tremie placement of concrete, the Contractor shall submit technical literature for equipment and methods proposed for use in placing concrete. The submittal shall include pumping or conveying equipment type, size and material for pipe, valve characteristics, and the maximum length and height concrete will be pumped. No adjustments shall be made to the mixture design to facilitate pumping.

1.5 ALLOWABLE TOLERANCES

A. The fineness modulus of the fine aggregate shall be not less than 2.3 or more than 3.1, nor vary by more than 0.20 from the value assumed in selecting proportions of the concrete. If this value is exceeded, the fine aggregate is rejected unless suitable adjustments are made in proportions of the fine and coarse aggregate.
B. The consistency of the concrete shall be such as to allow it to be worked into place without segregation or excessive latency.

C. The quantities of cement and aggregates in each batch of concrete, as indicated by the scales, shall be within the following percentages of the required batch weights:

- Cement: plus or minus one percent
- Aggregates: plus or minus two percent

1.6 STORAGE, HANDLING AND DELIVERY

A. Cement shall be stored in such a manner as to be protected from weather, dampness, or other destructive agents. Cement that is partially hydrated or otherwise damaged will be rejected.

B. Aggregates shall be stored or stockpiled in such a manner that separation of coarse and fine particles of each size will be avoided and that various sizes will not become intermixed before proportioning. Methods of handling and transporting aggregates shall be such as to avoid contamination, excessive breakage, segregation, or degradation.

C. All curing compounds shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner to prevent damage to the containers and to protect water-emulsion types from freezing.

D. Admixtures shall be prevented from freezing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland cement shall be Type IA or Type IIA and conform to the requirements of ASTM C150, including the false set requirements. The cement shall be approved by the Engineer prior to its purchase and use, and brands not specifically approved shall not be used. The cement used must be a low alkali type cement. Cement used throughout the work shall be uniform in color.

B. Fly ash when used as a supplementary cementing material, shall meet the requirements of ASTM C 618 Class F, and conform to NYSDOT Approved List 160.

   1. The loss on ignition shall be a maximum of 4%
   2. The maximum percent of sulfur trioxide (SO₃) shall be 4.0.

C. Slag cement when used, shall meet the requirements of ASTM C 989, Grade 100 or higher and conform to NYSDOT list 180.

D. Curing compound shall be Type I meeting the requirements of ASTM C309.

E. Air-entraining admixture shall comply with ASTM C260 and shall be certified by manufacturer to be compatible with other admixtures.
F. Water used in mixing or curing concrete shall be fresh, clean and free from injurious amounts of oil, salt, acid, alkali, organic matter, or other deleterious substances. **Water drawn from the lake reservoir will not be permitted.**

G. Water reducers and/or high range water reducers shall conform to ASTM C 494. Where a high range water reducer is specified it shall conform to the requirements for Type F or Type G admixtures and be on the NYSDOT Approved List 140 or conform to ASTM C 1017, Type II. Where a water reducer is specified it shall conform to the requirements for Type A, Type D, Type F, or Type G. The type selected shall be determined by the Contractor based on placing conditions and mix design.

H. Provide anti-washout admixtures for underwater placement with a proven record of performance and compatible with the chosen cement.

I. Concrete shall conform to the following requirements:

1. The Contractor shall provide mix designs and production concrete conforming to ASTM C94, (including the applicable overdesign factor of Table 4 for limiting the probability of Tests Falling Below the Specified Strength, $f'_{c}$ to one out of every ten tests). The mixes shall conform to the general guidance listed below for each specific use.

2. Strength Requirements are for 28 days of age. The Contractor shall be responsible to evaluate construction loads and to control its operations so that the structure is not overloaded or damaged.

3. Concrete shall be consistent from batch to batch. Rejected concrete shall not be remixed, re-tempered with water, or stiffened with additional cement in order to be salvaged for use in the work.

4. The requirements for structural concrete are as follows:

   Specified Design Strength @ 28days:
   
   - Class 1 Concrete: 4,500 psi
   - Class 2 Concrete: 4,000 psi
   - Lean Concrete Fill: 2,000 psi
   - Slump (before addition of High Range Water Reducer): 1” to 3” +/- 0.5%
   - Slump (after addition of High Range Water Reducer): 7.5” absolute max
   - Air: 6% +/- 1 %
   - High Range Water Reducer: Required
   - Max. Water/Cementitious Materials Ratio:
     - Class 1 Concrete: 0.45
RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Class 2 Concrete

Lean Concrete Fill

Max. Fly Ash Content (by weight replacement of cement): 20%

J. Aggregates shall conform to the requirements of ASTM C33 with ACI Standard Gradation as follows:

1. Fine Aggregate

<table>
<thead>
<tr>
<th>SCREEN SIZE OR NUMBER</th>
<th>PERCENT FINER</th>
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<tbody>
<tr>
<td>3/8 inch</td>
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<tr>
<td>No. 4</td>
<td>95-100</td>
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<td>No. 8</td>
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<tr>
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<td>0-3</td>
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</table>

The fine aggregate shall have not more than 45 percent passing any sieve and retained on the next consecutive sieve. The fineness modulus shall be not less than 2.3 nor more than 3.1.

2. Coarse Aggregates

Coarse aggregates shall be free of clay, mud, loam, foreign matter, and fine materials is acceptable for use as coarse aggregate.

Coarse Aggregate Size: Maximum size of coarse aggregate shall not exceed the following requirements.

a. One-fifth narrowest dimension between sides of forms within which concrete is to be cast.

b. Three-fourths of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms.

c. One-third the slab thickness for unreinforced slabs.

d. Maximum aggregate size for Class 1 Concrete and Lean Concrete Fill: 1 ½ inches

e. Maximum aggregate size for Class 2 Concrete: 2 ½ inches

The Contractor may select from the following Standard Gradations:

a. Coarse aggregate for Class 2 Concrete
### Screen Size or Number

<table>
<thead>
<tr>
<th>Screen Size or Number</th>
<th>Percent Finer by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASTM 24</td>
</tr>
<tr>
<td>2 1/2 - inch</td>
<td>90 – 100</td>
</tr>
<tr>
<td>2 - inch</td>
<td>--</td>
</tr>
<tr>
<td>1 1/2 - inch</td>
<td>25 – 60</td>
</tr>
<tr>
<td>1 - inch</td>
<td>--</td>
</tr>
<tr>
<td>3/4 - inch</td>
<td>0 – 10</td>
</tr>
<tr>
<td>1/2 - inch</td>
<td>0 – 5</td>
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<tr>
<td>3/8 - inch</td>
<td>--</td>
</tr>
<tr>
<td>No. 4</td>
<td>--</td>
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<tr>
<td>No. 8</td>
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</tbody>
</table>

#### b. Coarse aggregate for other concrete

<table>
<thead>
<tr>
<th>Screen Size or Number</th>
<th>Percent Finer by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATM 56</td>
</tr>
<tr>
<td>2 - inch</td>
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</tr>
<tr>
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<td>100</td>
</tr>
<tr>
<td>1 - inch</td>
<td>90-100</td>
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<td>0-15</td>
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<td>0-5</td>
</tr>
<tr>
<td>No. 8</td>
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</tr>
</tbody>
</table>
2.2 RELATED MATERIALS AND CONSTRUCTION

A. Formwork shall be in accordance with Section 03100 – FORMWORK.

B. Steel Reinforcing shall be in accordance with Section 03200 – STEEL REINFORCEMENT.

C. Waterstops shall be in accordance with Section 07110 – WATERSTOP.

D. Joint sealants for all concrete joints shall be in accordance with Section 07130 – JOINT SEALANTS.

E. Absorptive cover shall consist of burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M182, Class 2.

F. Moisture-retaining cover shall be one of the following, complying with ASTM C171.
   1. Waterproof paper
   2. Polyethylene film
   3. Polyethylene-coated burlap.

G. Liquid-type membrane-forming curing compound shall comply with ASTM C309, Type I, Class A. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.

H. Water-based acrylic membrane curing compound shall comply with ASTM C309, Type I, Class B.

I. Provide material that has a maximum volatile organic compound (VOC) rating of 350 g/L.

J. Evaporation control shall consist of monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

K. Bonding agent shall be epoxy base adhesive meeting ASTM C881, as a two-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements. Bonding agent shall be Sikadur 32, Hi-Mod LPL by the Sika Corporation, or approved equal.

2.3 EQUIPMENT

A. Scales for weighing aggregates and cement shall be beam type or springless dial type. They shall be accurate within one percent under operating conditions. All exposed fulcrums, clevises, and similar working parts of scale shall be kept clean.

B. Measuring tanks for mixing water shall be of adequate capacity to furnish the maximum amount of mixing water required per batch. Measuring tanks shall be equipped with outside taps and valves to provide for checking their calibration unless other means are provided to readily and accurately determine the amount of water in the tank.

C. Mixers shall be capable of thoroughly mixing the concrete ingredients into a uniform mass within the specified mixing time and of discharging the mix without segregation. Each mixer or agitator shall bear a manufacturer's rating plate indicating the rated capacity and recommended speeds of rotation, and shall be operated in accordance with these recommendations.
D. Truck mixers and agitators shall be equipped with revolution counters by which the number of revolutions of the drum or blades may be readily verified.

PART 3 - EXECUTION

3.1 MATERIAL MEASUREMENTS

A. Cement shall be measured by weight. When cement is measured by weight, it shall be weighed on a scale separate from that used for other materials, and in a hopper entirely free and independent of the hopper used for weighing the aggregates. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

B. Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface moisture it contains.

C. Mixing water shall consist of water added to the batch, ice added to the batch (if used), water occurring as surface moisture on the aggregates, and water introduced in the form of admixtures. The added water shall be measured by weight or volume to an accuracy of one percent of the required total mixing water. Added ice shall be measured by weight. Wash water shall not be used as a portion of the mixing water for succeeding batches.

D. Dry admixtures shall be measured by weight, and paste or liquid admixtures by weight or volume, within a limit of accuracy of three percent.

3.2 MIXING

A. Concrete may be furnished by batch mixing at the site of the work or by ready-mix methods. Batch plants shall conform to the requirements of the applicable State DOT specifications for automatic proportioning equipment and as specified herein, and shall be previously approved by the State Department of Transportation.

B. Mixers shall be capable of thoroughly mixing the concrete ingredients into a uniform mass within the specified mixing time and of discharging the mix without segregation. Each mixer or agitator shall bear a manufacturer's rating plate indicating the rated capacity and recommended speeds of rotation, and shall be operated in accordance with these recommendations.

C. Concrete shall be uniform and thoroughly mixed when delivered to the work. Variations in slump of more than one inch within a batch will be considered evidence of inadequate mixing, and shall be corrected by changing batching procedures, increasing mixing time, changing mixers, or other means. Mixing time shall be within the limits specified below unless the Contractor demonstrates by mixer performance tests that adequate uniformity is obtained by different mixing times. For this purpose, the testing program and uniformity requirements shall be as specified in ASTM C94.

D. NO MIXING WATER IN EXCESS OF THE AMOUNT CALLED FOR BY THE JOB MIX SHALL BE ADDED TO THE CONCRETE DURING MIXING, HAULING, OR AFTER ARRIVAL AT THE DELIVERY POINT: SUCH CONCRETE WILL BE REJECTED.
E. NO MIXING WATER SHALL BE ADDED TO THE CONCRETE AT ANY POINT AFTER THE INITIAL BATCHING OF THE CONCRETE. If the measured slump is too stiff and outside allowable tolerance to the specified slump range, the Engineer may permit the use of a plasticizing admixture to bring concrete slump within the specified range.

F. For concrete mixed at the site of the work with stationary construction mixers, the time of mixing after all cement and aggregates are in the mixer drum shall be not less than one and one half minutes. The batch shall be so charged into the mixer that some water will enter in advance of the cement and aggregates, and all mixing water shall be introduced into the drum before one-fourth of the mixing time has elapsed. Controls shall be provided to insure the batch cannot be discharged until the required mixing time has elapsed.

G. When ready-mixed concrete is furnished, the Contractor shall advise the Engineer of the name of the concrete supplier proposed and the location of the plant or plants at which the concrete will be batched. The Contractor shall also furnish the Engineer, a statement-of-delivery ticket showing the time of loading, the revolution counter reading at the time of loading, and the quantities of materials used for each load of concrete.

H. When concrete is mixed in a truck mixer loaded to its maximum capacity, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 nor more than 100. If the batch is at least 1/2 cubic yard less than maximum capacity, the number of revolutions at mixing speed may be reduced to not less than 50. Mixing in excess of 100 revolutions shall be at the speed designated by the manufacturer of the equipment as agitated speed. The mixing operation shall begin within 30 minutes after the cement has been added to the aggregates, and the water supply shall be added during mixing. When mixing is begun during or immediately after charging, a portion of the mixing water shall be added ahead of, or with, the other ingredients.

I. When concrete is partially mixed at a central plant and the mixing is completed in a truck mixer, the mixing time in the central plant mixer shall be the minimum required to mix the ingredients and shall be not less than 30 seconds. The mixing shall be completed in a truck mixer and the number of revolutions of the drum or blades at mixing speed shall be not less than 50 nor more than 100. Mixing in excess of 100 revolutions shall be at the speed designated by the manufacturer of the equipment as agitating speed.

J. When an agitator or truck mixer used as an agitator transports concrete that has been completely mixed in a stationary mixer, mixing during transportation shall be at the speed designated by the manufacturer of the equipment as agitating speed.

K. The use of non-agitating equipment to transport concrete to the site of the work will not be permitted.

3.3 CONVEYING AND DEPOSITING

A. Concrete shall be delivered to the site and discharged into the forms within one and one half hours (90 minutes) after the introduction of the cement to the aggregates. The time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes in hot weather, under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 80°F or above. The Engineer may allow a longer time, providing the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture. In no case will concrete be accepted for use in the work if the mix temperature before placing exceeds 85°F. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable, by
methods that will prevent segregation of the aggregates or loss of mortar. Concrete shall not be dropped more than five (5) feet vertically. Concrete shall not be placed until the subgrade, forms, and steel reinforcement have been inspected and approved.

3.4 CONSOLIDATION

A. Unless otherwise specified, concrete shall be consolidated with internal type mechanical vibrators capable of transmitting vibration to the concrete at frequencies not less than 9,000 impulses per minute.

B. The location, manner, and duration of the application of the vibrators shall be such as to secure maximum consolidation of the concrete without causing segregation of the mortar and coarse aggregate, and without causing water or cement paste to flush to the surface.

C. The Contractor shall provide a sufficient number of vibrators to properly consolidate the concrete immediately after it is placed in the work. Vibration shall be applied in the freshly deposited concrete by slowly inserting and removing the vibrator at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. The vibrator shall extend into the previously placed layer of fresh concrete, at all points, to insure effective bond between layers. Vibration shall not be applied directly to the reinforcing steel or the forms, nor to concrete that has hardened to the degree that it does not become plastic when vibrated. The use of vibrators to transport concrete in the form or conveying equipment is not permitted. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items. A sufficient number of vibrators shall be employed so that the required rate of placement vibration is maintained throughout the entire volume of each layer of concrete and complete compaction is secured. At least one extra vibrator should be on hand for emergency use.

3.5 JOINTS

A. Construction Joints: When fresh concrete is placed against a hardened concrete surface, the joint between the two pours is called a construction joint. Construction joints shall be made at locations shown on the Contract Drawings, or at locations proposed by the Contractor and approved by the Engineer. Steel reinforcement shall be continuous across construction joints as indicated on the Contract Drawings.

1. Construction joint surfaces shall be cleaned of all unsatisfactory concrete, latency, coatings, stains, or debris by air and water under pressure to expose sound aggregate prior to placing the next concrete pour.

2. Horizontal construction joints shall be covered by a one-half inch layer of mortar of the same sand-cement ratio as the concrete or with an approved bonding agent. The next lift shall then be placed immediately upon the fresh mortar.

3. Vertical construction joints shall be thoroughly moistened with an approved bonding agent immediately prior to placing concrete. Fresh concrete may not be placed against the hardened concrete if the bonding agent has completely dried.
4. Unless otherwise indicated, construction joints for water-bearing members shall have a waterstop and/or sealed groove joint of the shape indicated on the Contract Drawings.

B. Contraction Joints: Contraction joints are formed joints similar to construction joints except that the fresh concrete shall not bond to the hardened surface of the earlier pour, which shall be coated with a bond breaker. The slab reinforcement shall be stopped 4-1/2 inches from the joint; which is provided with a sleeve-type dowel, to allow shrinkage of the concrete of the later pour. Unless otherwise indicated, contraction joints for water-bearing members shall have a waterstop and/or sealed groove joint of the shape indicated on the Contract Drawings.

C. Control Joints: Control joints are partial-depth surficial joints that provide a weakened plane in the concrete member at locations where shrinkage cracks will probably occur. A groove, of the shape and dimensions indicated, is either formed or saw-cut in the concrete as indicated in this Specification. The groove joint is afterward filled with a joint sealant material as indicated on the Contract Drawings.

1. Control joints in walls shall be formed and control joints in slabs may be either formed or saw-cut.

2. Control joints in slabs shall be formed or saw-cut as soon as possible after slab finishing as maybe safely done without dislodging concrete aggregate.

3. When they are to specified to be formed, the control joints shall be constructed by the insertion and subsequent removal of a wood strip, metal plate, or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of the concrete at the control joints shall be finished with an edging tool prior to removal of the joint strips.

4. Unless otherwise indicated, control joints for water bearing members shall have a waterstop and/or sealed groove joint of the shape indicated on the Contract Drawings.

D. Expansion Joints: Joints that allow volumetric changes (growth and the subsequent shrinkage) due to thermal movements of a concrete structure are called expansion joints. Expansion joints are formed joints of such width as indicated, and shall only be made at locations shown on the Contract Drawings, or at locations approved by the Engineer. To allow the concrete to expand and contract freely, a joint filler material is provided between the two placements of concrete, and the joint sealed as indicated. The joint filler material shall serve as a form for the next concrete placement. Unless otherwise indicated, expansion joints for water-bearing members shall have a center-bulb type waterstop (diameter of center-bulb to match width of joint) and sealed groove joint of the shape indicated on the Contract Drawings.

1. Exposed concrete edges at expansion joints shall be carefully tooled or chamfered to the profile indicated on the Contract Drawings, and the joints shall be free of mortar and concrete.

2. Pre-molded expansion joint material shall be installed with the edge at the indicated distance below or back from finished concrete surface, and shall have a slightly tapered, dressed, and oiled wood strip secured to or placed at the edge thereof during concrete placement. The wood strip shall later be removed to form space along the joint profile for sealing material.
3. Joint filler shall be left exposed for the full length of the joint with clean and true edges. Joint surfaces shall be cleaned of all unsatisfactory concrete, form release agents, grease, oil, stains, or debris prior to placement of joint filler. Preformed expansion joint filler shall conform to ASTM D1752 Type 1.

4. The joint profile space shall be filled with a two-part polyurethane sealing compound as specified in Section 07130 – JOINT SEALANTS.

5. In order to keep the two wall or slab elements in line, expansion joints shall also be provided with a sleeve-type dowel or shear key as indicated on the Contract Drawings.

E. Any joint sealant which fails to fully and properly cure after the manufacturer's recommended curing time for the conditions of the Work hereunder shall be completely removed; the groove shall be thoroughly sandblasted to remove all traces of the uncured or partially cured sealant and primer, and shall be re-sealed with the indicated joint sealant. Joint sealant that fails to completely and fully bond with the concrete shall also be removed, and the joint shall be cleaned as indicated, and re-sealed. Costs of such removal, joint treatment, re-sealing, and appurtenant work shall be the Contractor’s responsibility.

F. Waterstops for joints in concrete structures shall be as indicated on the Contract Drawings and in accordance with Section 07110 – WATERSTOP.

3.6 FINISHING FORMED SURFACES

A. All concrete surfaces shall be true and even, and shall be free from open or rough spaces, depressions, or projections.

B. Immediately after the removal of forms:

1. All bulges, fins, form marks, or other irregularities which in judgement of the Engineer will adversely affect the appearance or function of the structures shall be removed.

2. All forms, bolts, and ties shall be removed to a depth at least one-inch below the surface of the concrete. The cavities produced by forms, ties, and all other holes of similar size and depth shall be thoroughly cleaned. After interior surfaces have been kept continuously wet for at least three (3) hours, carefully pack such cavities with a dry patching mortar (pre-shrunk) mixed not richer than one part cement to three parts sand. Holes left by form bolts or straps which pass through the wall shall be filled solid with mortar. Patching mortar shall be thoroughly compacted into place to form a dense, well-bonded unit, and the in-place mortar shall be sound and free from shrinkage cracks. All patched areas shall be cured as specified in Subsection 3.8. All patching shall be completed prior to application of curing compound to that area.

3.7 FINISHING UNFORMED SURFACES

A. All exposed surfaces of the concrete shall be accurately screeded to grade and steel trowel finished immediately after the floated surface has hardened sufficiently to prevent an excess of fine material from being drawn to the surface. Excessive floating or troweling while the concrete is soft is not permitted. The addition of dry cement or water to the surface of the screeded concrete to expedite
finishing is not allowed. Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools to achieve profiles as shown on the drawings.

3.8 CURING

A. Concrete shall be prevented from drying for a period of at least seven (7) days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period or until curing compound is applied as specified below. At no time during the curing process shall the temperature of the concrete fall below 40 degree Fahrenheit. Moisture shall be maintained by sprinkling, flooding, fog spraying, or by covering the concrete with continuously moistened canvas, cloth mats, straw, sand, or other approved material. Wood forms left in place during the curing period shall be kept wet. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged. Water for curing shall be clean and free from any substances that will cause discoloration of the concrete. Special care shall be given to cold weather curing so as to maintain the required minimum concrete temperature.

B. Concrete may be coated with curing compound in lieu of the continued application of moisture. The compound shall be a fugitive dye curing compound. The compound shall be sprayed on the moist concrete surface as soon as free water has disappeared, but shall not be applied to any surface until patching, repairs, and finishing of that surface are completed. The curing compound shall be thoroughly mixed immediately before applying, and shall be applied at a uniform rate of not less than one gallon per 150 square feet of surface. It shall form a uniform, continuous, and adherent film that shall not check, crack, or peel and shall be free from pin holes or other imperfections. Curing compound shall not be applied to surfaces requiring bond with subsequently placed concrete, such as construction joints, shear plates, reinforcing steel, and other embedded items. Surfaces subjected to heavy rainfall or running water within three hours after the compound has been applied, or surfaces damaged by subsequent construction operations during the curing period, shall be resprayed in the same manner as for the original application.

3.9 REPAIR AND REMOVAL

A. When the concrete is honeycombed, damaged, or otherwise defective, the Contractor shall remove and replace the structure or structural member containing the defective concrete, or correct or repair the defective parts. The Engineer will determine the required extent of removal, replacement, or repair. Prior to starting repair work the Contractor shall obtain the Engineer's approval of its plan for making the repair. Such approval shall not be considered a waiver of the Engineer's right to require complete removal of defective work if the completed repair does not produce concrete of the required quality and appearance.

B. Repair work shall be performed only when the Engineer or its representative is present. Repair of formed surfaces shall be started within 24 hours after removal of the forms. Except as otherwise approved by the Engineer, the appropriate methods described in Chapter VII of the Concrete Manual, Bureau of Reclamation, United States Department of the Interior, shall be used. If approved in writing by the Engineer, proprietary compounds for adhesion or as patching ingredients may be used. Such compounds shall be used in accordance with the manufacturer's recommendations. Curing as specified in Subsection 3.8 shall be applied to repaired areas immediately after the repairs are completed. All removal and repair shall be performed at the Contractor's expense.
3.10 CONCRETING IN COLD WEATHER

A. When the atmospheric temperature may be expected to drop below 40°F at the time concrete is delivered to the work site, during placement, or at any time during the curing period, the following provisions also shall apply:

1. The temperature of the concrete at time of placing shall not be less than 50°F nor more than 90°F. The temperature of the aggregates or mixing water shall not be more than 100°F just prior to mixing with the cement. No frozen materials nor materials containing ice shall be used.

2. When the daily minimum temperature is less than 40°F, concrete structures shall be insulated or housed and heated after placement. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50°F nor more than 90°F for the duration of the curing period.

3. Methods of insulating, housing, and heating the structure shall conform to "Recommended Practice for Cold Weather Concreting,” ACI Standard 306.

4. When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40 percent shall be provided unless the concrete has been coated with curing compound, or is covered tightly with an approved impervious material. Concrete damaged by freezing shall be removed and replaced at the Contractor's expense.

5. The use of calcium chloride or other accelerators or antifreeze compounds will not be allowed.

6. Subgrade and reinforcing steel shall be maintained at a temperature of not less than 40°F for a period of not less than three (3) hours prior to placement.

3.11 CONCRETING IN HOT WEATHER

A. When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 80°F at the time of delivery at the work site, during placement, or during the first 24 hours after placement, the following provisions also shall apply:

1. The Contractor must maintain the temperature of the concrete below 85°F during the mixing, conveying, and placing. Methods used must conform to "Recommended Practice for Hot Weather Concreting,” ACI Standard 305.

2. The concrete shall be placed in the work immediately after mixing. Truck mixing shall be delayed until only time enough remains to accomplish it before the concrete is placed.

3. Exposed concrete surfaces which tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement, finishing, and after finishing.

4. Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows and shall be completed without delay.
5. Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period, and for the entire curing period unless curing compound is applied as specified below.

6. Formed surfaces shall be kept completely and continuously wet for the duration of curing period (prior to, during, and after form removal) or until curing compound is applied as specified below.

7. If moist curing is discontinued before the end of the curing period, curing compound shall be applied immediately, following the procedures specified in Subsection 3.8.

8. Subgrade and reinforcing steel shall be maintained at a temperature of not greater than 80°F for a period of not less than three (3) hours prior to placement.

- END OF SECTION –
SECTION 03400

PRECAST STRUCTURAL CONCRETE

PART 1 - GENERAL

1.1 DEFINITION
A. Not Used.

1.2 PERFORMANCE REQUIREMENTS
A. Delegated Design: Design precast structural concrete, including comprehensive engineering analysis by a qualified Professional Design Professional, using performance requirements and design criteria indicated.

B. Structural Performance: Provide precast structural concrete units and connections capable of withstanding the following design loads within limits and under conditions indicated on the Contract Drawings.

C. Design precast structural concrete framing system and connections to maintain clearances at openings, to allow for fabrication and construction tolerances, to accommodate live-load deflection, shrinkage and creep of primary building structure, and other building movements. Maintain precast structural concrete deflections within limits of ACI 318.
   1. Thermal Movements: Allow for in-plane thermal movements resulting from annual ambient temperature changes of minus 18 to plus 120 deg F.

1.3 SUBMITTALS
A. Product Data: For each type of product indicated.

B. Design Mixtures: For each precast concrete mixture. Include compressive strength, water-absorption tests, and alkali reactivity tests (ASTM C1260).

C. Design Calculations: Detailed engineering calculations of the precast concrete unit shall accompany the Shop Drawings. The engineering calculations shall be signed and sealed by a qualified Professional Engineer who is licensed in the State of New York, and who has experience in the design, fabrication, and installation of structural precast concrete.

D. Shop Drawings: Include member locations, plans, elevations, dimensions, shapes and sections, openings, support conditions, and types of reinforcement, including special reinforcement. Detail fabrication and installation of precast structural concrete units.
   1. Indicate joints, reveals, and extent and location of each surface finish.
   2. Indicate welded connections by AWS standard symbols. Show size, length, and type of each weld.
   3. Detail loose and cast-in hardware, lifting and erection inserts, connections, and joints.
   4. Indicate locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.
   5. Include and locate openings larger than by 10 inches.
   6. Indicate location of each precast structural concrete unit by same identification mark placed on panel.
7. Indicate shim sizes and grouting sequence.
8. Design Modifications: If design modifications are proposed to meet performance requirements and field conditions, submit design calculations and Shop Drawings. Do not adversely affect the appearance, durability, or strength of units when modifying details or materials and maintain the general design concept.

E. Qualification Data: For Installer, Fabricator, and Testing Agency. Include list of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

F. Welding certificates.

G. Material Certificates: For the following, from manufacturer:
   1. Cementitious materials.
   2. Reinforcing materials.
   3. Admixtures.

H. Material Test Reports: For aggregates.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm that assumes responsibility for engineering precast structural concrete units to comply with performance requirements. Responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified Professional Design Professional.
   1. Participates in PCI's Plant Certification program and is designated a PCI-certified plant as follows:
      a. Group C, Category C1 - Precast Concrete Products (no prestressed reinforcement).

B. Installer Qualifications: A precast concrete erector qualified, as evidenced by PCI's Certificate of Compliance, to erect Category S1 - Simple Structural Systems.

C. Installer Qualifications: An experienced precast concrete erector who, before erection of precast concrete, has retained a "PCI-Certified Field Auditor" to conduct a field audit of a project installed by erector in Category S1 - Simple Structural Systems and who produces an Erectors' Post Audit Declaration, according to PCI MNL 127, "PCI Erector's Manual - Standards and Guidelines for the Erection of Precast Concrete Products."

D. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

E. Design Standards: Comply with ACI 318 and design recommendations in PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of precast structural concrete units indicated.

F. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 116, "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products."

G. Welding Qualifications: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code - Steel."
   2. AWS D1.4, "Structural Welding Code - Reinforcing Steel."

H. Pre-installation Conference: Conduct conference at Project site.
1.5 DELIVERY, STORAGE, AND HANDLING
   A. Support units during shipment on non-staining shock-absorbing material in same position as during storage.
   B. Store units with adequate bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
      1. Store units with dunnage across full width of each bearing point unless otherwise indicated.
      2. Place adequate dunnage of even thickness between each unit.
      3. Place stored units so identification marks are clearly visible, and units can be inspected.
   C. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses that would cause cracking or damage.
   D. Lift and support units only at designated points shown on Shop Drawings.

1.6 COORDINATION
   A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction before starting that Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 MOLD MATERIALS
   A. Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that will provide continuous and true precast concrete surfaces within fabrication tolerances indicated; nonreactive with concrete and suitable for producing required finishes.
      1. Mold-Release Agent: Commercially produced liquid-release agent that will not bond with, stain or adversely affect precast concrete surfaces and will not impair subsequent surface or joint treatments of precast concrete.
   B. Surface Retarder: Chemical set retarder, capable of temporarily delaying final hardening of newly placed concrete mixture to depth of reveal specified.

2.2 REINFORCING MATERIALS
   A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
   B. Steel Bar Mats: ASTM A 184, fabricated from ASTM A 615, Grade 60, deformed bars, assembled with clips.
   C. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 116.
2.3 CONCRETE MATERIALS
   A. Portland Cement: ASTM C 150, Type I or Type II, gray, unless otherwise indicated.
   B. Supplementary Cementitious Materials:
       1. Fly Ash: ASTM C 618, Class C or F, with maximum loss on ignition of 3 percent.
       2. Silica Fume Admixture: ASTM C 1240, with optional chemical and physical requirement.
       3. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
   C. Normal-Weight Aggregates: Except as modified by PCI MNL 116, ASTM C 33, with coarse
      aggregates complying with Class 4S. Stockpile fine and coarse aggregates for each type of exposed
      finish from a single source pit or quarry for Project.
   D. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of
      concrete and complying with chemical limits of PCI MNL 116.
   E. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other
      required admixtures.
   F. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not
      contain calcium chloride, or more than 0.15 percent chloride ions, or other salts by weight of
      admixture.
       1. Water-Reducing Admixtures: ASTM C 494, Type A.
   G. Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor, or mixed cathodic and
      anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel
      reinforcement in concrete.

2.4 STEEL CONNECTION MATERIALS
   A. Carbon-Steel Shapes and Plates: ASTM A 36.
   B. Carbon-Steel-Headed Studs: ASTM A 108, AISI 1018 through AISI 1020, cold finished, AWS D1.1,
      Type A or B, with arc shields and with minimum mechanical properties of PCI MNL 116.
   C. Deformed-Steel Wire or Bar Anchors: ASTM A 496 or ASTM A 706.
   D. Zinc-Coated Finish: For exterior steel items and items indicated for galvanizing, apply zinc coating by
      hot-dip process according to ASTM A 123 or ASTM A 153.
   E. Shop-Primed Finish: Prepare surfaces of non-galvanized-steel items, except those surfaces to be
      embedded in concrete, according to requirements in SSPC-SP 3, and shop apply lead- and chromate-
      free, rust-inhibitive primer, complying with performance requirements in MPI 79 according to SSPC-
      PA 1.
   F. Welding Electrodes: Comply with AWS standards.
   G. Precast Accessories: Provide clips, hangers, plastic or steel shims, and other accessories required to
      install precast structural concrete units.

2.5 STAINLESS-STEEL CONNECTION MATERIALS
   A. Stainless-Steel Plate: ASTM A 666, Type 304, of grade suitable for application.
   B. Stainless-Steel Bolts and Studs: ASTM F 593, Alloy 304 or 316, hex-head bolts and studs; stainless-
      steel nuts; and flat, stainless-steel washers. Lubricate threaded parts of stainless-steel bolts with an anti-
      seize thread lubricant during assembly.

2.6 GROUT MATERIALS
A. Sand-Cement Grout: Portland cement, ASTM C 150, Type I, and clean, natural sand, ASTM C 144 or ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

2.7 CONCRETE MIXTURES
A. Prepare design mixtures for each type of precast concrete required.
   1. Limit use of fly ash to 25 percent replacement of Portland cement by weight and granulated blast-furnace slag to 40 percent of Portland cement by weight; metakaolin and silica fume to 10 percent of Portland cement by weight.
B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at precast structural concrete fabricator's option.
C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 or PCI MNL 116 when tested according to ASTM C 1218.
D. Normal-Weight Concrete Mixtures: Proportion mixes by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
   1. Compressive Strength (28 Days): 5,000 psi.
   2. Maximum Water-Cementitious Materials Ratio: 0.45.
   3. Minimum release strength: 3,000 psi.
E. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 116.
F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 116.
G. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.
H. Concrete Mix Adjustments: Concrete mix design adjustments may be proposed if characteristics of materials, Project conditions, weather, test results, or other circumstances warrant.

2.8 MOLD FABRICATION
A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for prestressing and detensioning operations. Coat contact surfaces of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and prestressing tendons by release agent.
B. Maintain molds to provide completed precast structural concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.
   1. Edge and Corner Treatment: Uniformly chamfered. DO NOT chamfer joint edges.

2.9 FABRICATION
A. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage
hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.

1. Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1 and AWS C5.4, "Recommended Practices for Stud Welding."

B. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing precast structural concrete units to supporting and adjacent construction.

C. Cast-in reglets, slots, holes, and other accessories in precast structural concrete units as indicated on the Contract Drawings.

D. Cast-in reglets, slots, holes, and other accessories in precast structural concrete units used for the transportation and erection of precast structural concrete units shall be designed by the Contractor’s Professional Design Professional and indicated on the Shop Drawings.

E. Cast-in openings that are larger than 10 inches in any dimension.

F. Reinforcement: Comply with recommendations in PCI MNL 116 for fabricating, placing, and supporting reinforcement.

1. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete.

2. Accurately position, support, and secure reinforcement against displacement during concrete placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.

3. Place reinforcement to maintain at least 2-inch minimum coverage. Increase cover requirements according to ACI 318 when units are exposed to corrosive environment or severe exposure conditions. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.

4. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh spacing and wire tie laps, where required by design. Offset laps of adjoining widths to prevent continuous laps in either direction.

G. Reinforce precast structural concrete units to resist handling, transportation, and erection stresses.

H. Comply with requirements in PCI MNL 116 and in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.

I. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units.

J. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air on surfaces. Use equipment and procedures complying with PCI MNL 116.

K. Comply with ACI 306.1 procedures for cold-weather concrete placement.

L. Comply with PCI MNL 116 procedures for hot-weather concrete placement.

M. Identify pickup points of precast structural concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each precast structural concrete unit on a surface that will not show in finished structure.
N. Cure concrete, according to requirements in PCI MNL 116, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.

O. Discard and replace precast structural concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 116 and meet Architect's approval.

2.10 FABRICATION TOLERANCES

A. Fabricate precast structural concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished unit complies with PCI MNL 116 product dimension tolerances.

2.11 COMMERCIAL FINISHES

A. Grade B Finish: Fill air pockets and holes larger than 1/4 inch in diameter with sand-cement paste matching color of adjacent surfaces. Fill air holes greater than 1/8 inch in width that occur more than once per 2 sq. in. Grind smooth form offsets or fins larger than 1/8 inch. Repair surface blemishes due to holes or dents in molds. Discoloration at form joints is permitted.

B. Screed or float finish unformed surfaces. Strike off and consolidate concrete with vibrating screeds to a uniform finish. Hand screed at projections. Normal color variations, minor indentations, minor chips, and spalls are permitted. Major imperfections, honeycombing, or defects are not permitted.

2.12 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate precast structural concrete fabricator's quality-control and testing methods.

   1. Allow testing agency access to material storage areas, concrete production equipment, concrete placement, and curing facilities. Cooperate with testing agency and provide samples of materials and concrete mixtures as may be requested for additional testing and evaluation.

B. Testing: Test and inspect precast structural concrete according to PCI MNL 116 requirements.

C. Strength of precast structural concrete units will be considered deficient if units fail to comply with ACI 318 requirements for concrete strength.

D. If there is evidence that strength of precast concrete units may be deficient or may not comply with ACI 318 requirements, employ a qualified testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C 42.

   1. A minimum of three representative cores will be taken from units of suspect strength, from locations directed by the Design Professional.

   2. Cores will be tested in an air-dry condition or, if units will be wet under service conditions, test cores after immersion in water in a wet condition.

   3. Strength of concrete for each series of 3 cores will be considered satisfactory if average compressive strength is equal to at least 85 percent of 28-day design compressive strength and no single core is less than 75 percent of 28-day design compressive strength.

   4. Test results will be made in writing on same day that tests are performed, with copies to the Design Professional, Contractor, and precast concrete fabricator. Test reports will include the
following:

a. Project identification name and number.
b. Date when tests were performed.
c. Name of precast concrete fabricator.
d. Name of concrete testing agency.
e. Identification letter, name, and type of precast concrete unit(s) represented by core tests; design compressive strength; type of break; compressive strength at breaks, corrected for length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.

E. Patching: If core test results are satisfactory and precast structural concrete units comply with requirements, clean and dampen core holes and solidly fill with same precast concrete mixture that has no coarse aggregate, and finish to match adjacent precast concrete surfaces.

F. Defective Units: Discard and replace precast structural concrete units that do not comply with requirements, including strength, manufacturing tolerances, and color and texture range. Chipped, spalled, or cracked units may be repaired, subject to the Design Professional's approval. The Design Professional reserves the right to reject precast units that do not match approved samples, sample panels, and mockups.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting structural frame or foundation and conditions for compliance with requirements for installation tolerances, true and level bearing surfaces, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Do not install precast concrete units until supporting, cast-in-place, building structural framing has attained minimum allowable design compressive strength or until supporting steel or other structure is complete.

3.2 INSTALLATION

A. Install clips, hangers, bearing pads, and other accessories required for connecting precast structural concrete units to supporting members and backup materials.

B. Erect precast structural concrete straight and true to the alignment, locations, elevations, and slopes indicated on the Contract Drawings, within specified allowable tolerances. Provide temporary structural framing, supports, and bracing as required to maintain position, stability, and alignment of units until permanent connection.

1. Install temporary steel or plastic spacing shims or bearing pads as precast structural concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.

2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.

3. Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.
C. Connect precast structural concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.

D. Field cutting of precast units is not permitted without approval of the Design Professional.

E. Welding: Comply with applicable AWS D1.1 and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
   1. Protect precast structural concrete units and bearing pads from damage by field welding or cutting operations, and provide noncombustible shields as required.
   2. Clean weld-affected steel surfaces with chipping hammer followed by brushing, and apply a minimum 4.0-mil-thick coat of galvanized repair paint to galvanized surfaces according to ASTM A 780.
   3. Remove, reweld, or repair incomplete and defective welds.

F. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
   1. Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot. For friction connections, apply specified bolt torque and check 25 percent of bolts at random by calibrated torque wrench.

G. Grouting: Grout connections and joints and open spaces at keyways, connections, and joints where required or indicated on Shop Drawings. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled.
   1. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces.
   2. Fill joints completely without seepage to other surfaces.
   3. Trowel top of grout joints smooth and uniform.
   4. Promptly remove grout material from exposed surfaces before it affects finishes or hardens.
   5. Keep grouted joints damp for not less than 24 hours after initial set.

3.3 ERECTION TOLERANCES
   A. Erect precast structural concrete units straight and true to the alignment, locations, elevations, and slopes indicated on the Contract Drawings, without exceeding the noncumulative erection tolerances of PCI MNL 135.
   B. Minimize variations between adjacent slab members by jacking, loading, or other method recommended by fabricator and approved by the Design Professional.

3.4 FIELD QUALITY CONTROL
   A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
   B. Field welds will be visually inspected and nondestructive tested according to ASTM E 165 or ASTM E 709. High-strength bolted connections will be subject to inspections.
   C. Testing agency will report test results promptly and in writing to Contractor and Design Professional.
   D. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

F. Prepare test and inspection reports.

3.5 REPAIRS

A. Repair precast structural concrete units if permitted by the Design Professional.
   1. Repairs may be permitted if structural adequacy, serviceability, durability, and appearance of units has not been impaired.

B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet.

C. Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.

D. Remove and replace damaged precast structural concrete units that cannot be repaired or when repairs do not comply with requirements as determined by the Design Professional.

3.6 CLEANING

A. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.

B. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
   1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's written recommendations. Clean soiled precast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
   2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

-END OF SECTION-
SECTION 05500
METAL FABRICATIONS

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 this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Stainless steel trashracks
2. Miscellaneous Cast-in Angles and Plates
3. Anchor Bolts (including nuts, washer, etc.)

B. Related Sections include the following:

1. Division 5 Section "Pipe and Tube Railings" for metal pipe and tube handrails and railings.

1.3 SUBMITTALS

A. Product Data: For the following:

1. Post-installed Anchor Bolts
2. Epoxy Resin Grout
3. Structural Bolts and Nuts
4. Epoxy Paint

B. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

1. Provide templates for anchors and bolts specified for installation under other Sections.

C. Mill Certificates: Signed by manufacturers of stainless-steel sheet certifying that products furnished comply with requirements.

D. Welding Certificates: Copies of certificates for welding procedures and personnel.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."
4. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.5 PROJECT CONDITIONS

A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

1.6 COORDINATION

A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete. Deliver such items to Project site in time for installation.

PART 2 – PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 FERROUS METALS

A. Steel Plates, Shapes, and Bars: ASTM A992 or A576, Grade 50.
B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
D. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
F. Malleable-Iron Castings: ASTM A 47, Grade 32510.

G. Gray-Iron Castings: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.

H. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

   1. Threaded or wedge type; galvanized ferrous castings, either ASTM A490 high-strength steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A153/A153M.

I. Post-installed Anchors in Concrete: Anchors shall be of the type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

   1. Stainless steel adhesive anchor system with stainless steel rod conforming to ASTM F593 (AISI 304/316) Condition CW ¾" to 1 ¼". Provide stainless steel nuts conforming to ASTM F594. Provide stainless steel washers conforming to ASTM A240 (AISI 304/316) and meeting dimension requirements of ANSI B18.22.1 Type A Plain.
   2. Minimum anchor embedment into concrete (new or existing) shall be 6" unless, unless otherwise indicated on the Contract Drawings.

J. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.3 ALUMINUM

A. Aluminum Extrusions: ASTM B 221, alloy 6063-T6.


2.4 PAINT

A. Shop Primer for Ferrous Metal: Organic zinc-rich primer, complying with SSPC-Paint 20 and compatible with topcoat.

   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

   2. Products: Subject to compliance with requirements, provide one of the following:

      a. Carbolene 621; Carbolene Company.
      c. Tneme-Zinc 90-97; Tnemec Company, Inc.

2.5 FASTENERS

A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.

B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

C. Anchor Bolts: ASTM A490.

D. Anchor Bolts for Inlet Well: Stainless steel conforming to ASTM A193, Grade B8 with minimum ultimate strength of 75 ksi. Provide nuts and washers of the same.

E. Anchor Rods: Threaded Rod ASTM A449.

F. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).

G. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).

H. Wood Screws: Flat head, carbon steel, ASME B18.6.1.


K. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.


2. Material: Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F 593 (ASTM F 738M) and nuts complying with ASTM F 594 (ASTM F 836M).

L. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

2.6 GROUT

A. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.

2.7 CONCRETE FILL

A. Concrete Materials and Properties: Comply with requirements in Division 3 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3,000 psi, unless otherwise indicated.
2.8 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Shear and punch metals cleanly and accurately. Remove burrs.

C. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Weld corners and seams continuously to comply with the following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

G. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

H. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

I. Remove sharp or rough areas on exposed traffic surfaces.

J. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

K. Shop Cleaning and Painting
   1. Surface Preparation: Blast clean surfaces in accordance with SSPC SP 6/NACE No.3. Wash cleated surfaces which become contaminated with rust, dirt, oil, grease, or other contaminants with solvents until thoroughly clean. Steel to be embedded in concrete shall be free of dirt and grease. Do not paint or galvanize bearing surfaces, but coat with rust preventative applied in the shop.
   2. Pretreatment, Priming, and Painting: Apply pretreatment, primer, and paint in accordance with manufacturer’s printed instructions.
2.9 STAINLESS STEEL TRASH RACKS

A. Provide two (2) trash rack assemblies constructed of stainless steel angles as indicated on the Contract Drawings. Anchor rods shall be threaded bars conforming to ASTM A449 and shall have a “J” hook head configuration of sufficient dimensions to facilitate trash rack removal. Drill angles with oversized or slotted holes to receive anchor bolts. Locate new anchor bolt hole locations based upon field-verified dimensions.

B. Reuse of existing anchor bolts on the face of the dam is not permitted. Locate new anchor bolts away from existing anchor bolt locations.

C. Coordinate the trash rack member spacing and final positioning on the dam face with the outlet pipe sluice gate frames, operator stems, etc.

2.10 MISCELLANEOUS CAST-IN PLATES AND ANGLES

A. Provide loose plates and angles, as indicated on the Contract Drawings, to be cast in the pre-cast-concrete fusegates. Couplers and fasteners shall be high strength steel bolts conforming to ASTM A490. Anchor rods shall be threaded bars conforming to ASTM A449.

B. Drill plates to receive anchor bolts.

C. Weld hooked anchor rods to angles.

2.11 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

2.12 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:

   1. ASTM A 123, for galvanizing steel and iron products.

   2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.

B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed metal fabrications:

   1. Exteriors (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

   2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.13 STAINLESS-STEEL FINISHES

A. Remove tool and die marks and stretch lines or blend into finish.

B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

C. Bright, Directional Polish: No. 4 finish.

D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

2.14 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. As-Fabricated Finish: AA-M10 (Mechanical Finish: as fabricated, unspecified).

C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces.
of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

E. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings, if any.

B. Anchor supports for operable partitions securely to and rigidly brace from building structure.

C. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.

5. Where grout space under bearing plates is indicated at girders supported on concrete or masonry, install as specified above for setting and grouting bearing and leveling plates.

D. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified above for setting and grouting bearing and leveling plates.

1. Do not grout baseplates of columns supporting steel girders until girders are installed and leveled.

3.3 ADJUSTING AND CLEANING

A. Field Preparation: Remove rust preventive coating just prior to field erection, using a remover approved by the rust preventive manufacturer. Surfaces, when assembled, shall be free of rust, grease, dirt, and other foreign matter.

B. Environmental Conditions: Do not clean or paint surface when damp or exposed to foggy or rainy weather, when metallic surface temperature is less than 5 degrees F above the dew point of the surrounding air, or when surface temperature is below 45 degrees F or over 95 degrees F, unless approved.

C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
D. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 Section "Painting."

E. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500
SECTION 05521

PIPE AND TUBE RAILINGS

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 this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Aluminum pipe and tube handrails and railings.

B. Related Sections include the following:

1. Division 5 Section "Metal Fabrications".

1.3 PERFORMANCE REQUIREMENTS

A. General: In engineering handrails and railings to withstand structural loads indicated, determine allowable design working stresses of handrail and railing materials based on the following:


B. Structural Performance of Handrails and Railings: Provide handrails and railings capable of withstanding the following structural loads without exceeding allowable design working stresses of materials for handrails, railings, anchors, and connections:

1. Top Rail of Guards: Capable of withstanding the following loads applied as indicated:

   a. Concentrated load of 200 lbf applied at any point and in any direction.
   b. Uniform load of 50 lbf/ft. applied horizontally and concurrently with uniform load of 100 lbf/ft. applied vertically downward.
   c. Concentrated and uniform loads above need not be assumed to act concurrently.

2. Handrails Not Serving As Top Rails: Capable of withstanding the following loads applied as indicated:

   a. Concentrated load of 200 lbf applied at any point and in any direction.
   b. Uniform load of 50 lbf/ft. applied in any direction.
   c. Concentrated and uniform loads above need not be assumed to act concurrently.

3. Infill Area of Guards: Capable of withstanding a horizontal concentrated load of 200 lbf applied to 1 sq. ft. at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area.
a. Load above need not be assumed to act concurrently with loads on top rails in determining stress on guard.

C. Thermal Movements: Provide handrails and railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F ambient; 180 deg F, material surfaces.

D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected handrails and railings.
2. Grout, anchoring cement, and paint products.

B. Shop Drawings: Show fabrication and installation of handrails and railings. Include plans, elevations, sections, component details, and attachments to other Work.

1. For installed handrails and railings indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for products with factory-applied color finishes.

D. Samples for Initial Selection: Short sections of railing or flat, sheet metal samples showing available mechanical finishes.

E. Samples for Verification: For each type of exposed finish required, prepared on components indicated below and of same thickness and metal indicated for the Work. If finishes involve normal color and texture variations, include sample sets showing the full range of variations expected.

1. 6-inch long sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters.
2. Fittings and brackets.
3. Assembled sample of railing system, made from full-size components, including top rail, post, handrail, and infill. Show method of finishing members at intersections. Sample need not be full height.

F. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
G. Product Test Reports: From a qualified testing agency indicating products comply with requirements, based on comprehensive testing of current products.

H. Product Test Reports: From a qualified testing agency indicating handrails and railings comply with ASTM E 985, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

A. 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 handrails and railings that are similar to those indicated for this Project in material, design, and extent.

B. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

C. Source Limitations: Obtain each type of handrail and railing through one source from a single manufacturer.

1.6 STORAGE

A. Store handrails and railings in a dry, well-ventilated, weathertight place.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify handrail and railing dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.  Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating handrails and railings without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 COORDINATION

A. Coordinate installation of anchorages for handrails and railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.9 SCHEDULING

A. Schedule installation so handrails are mounted only on completed surfaces. Do not support temporarily by any means that does not satisfy structural performance requirements.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Aluminum Pipe and Tube Railings:
   a. Alumaguard.
   b. Aluminum Tube Railings, Inc.
   c. Architectural Art Mfg., Inc.
   d. Blum: Julius Blum & Co., Inc.
   e. Braun: J.G. Braun Co.
   f. CraneVeyor Corp.
   g. Hollaender Manufacturing Co.
   h. Moultrie Manufacturing Co.
   i. Newman Bros., Inc.
   j. Sterling Fabricated Systems, Inc.
   k. Superior Aluminum Products, Inc.
   l. Thompson Fabricated Systems, Inc.
   m. Wagner: R & B Wagner, Inc.

2.2 METALS

A. General: Provide metal free from pitting, seam marks, roller marks, stains, discolorations, and other imperfections where exposed to view on finished units.

B. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.


C. Brackets and Flanges: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

D. Concrete Inserts and Anchors: As indicated on the Contract Drawings.
2.3 WELDING MATERIALS, FASTENERS, AND ANCHORS

A. Welding Electrodes and Filler Metal: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Fasteners for Anchoring Handrails and Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring handrails and railings to other types of construction indicated and capable of withstanding design loads.

1. For aluminum handrails and railings, use fasteners fabricated from Type 304 or Type 316 stainless steel.

C. Fasteners for Interconnecting Handrail and Railing Components: Use fasteners fabricated from same basic metal as fastened metal, unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.

1. Provide concealed fasteners for interconnecting handrail and railing components and for attaching them to other work, unless otherwise indicated.

2. Provide concealed fasteners for interconnecting handrail and railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for handrails and railings indicated.

3. Provide Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.

D. Cast-in-Place and Post-installed Anchors: Anchors of type indicated below, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

2. Chemical anchors.
3. Expansion anchors.

2.4 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.
2.5 FABRICATION

A. General: Fabricate handrails and railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble handrails and railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces

C. Form changes in direction of railing members as follows:

1. As detailed.
2. By bending.
3. By radius bends of radius indicated.
4. By flush radius bends.
5. By mitering at elbow bends.
6. By inserting prefabricated flush-elbow fittings.
7. By any method indicated above, applicable to change in direction involved.

D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

E. Welded Connections: Fabricate handrails and railings for connecting members by welding. Cope components at perpendicular and skew connections to provide close fit, or use fittings designed for this purpose. Weld connections continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

F. Nonwelded Connections: Fabricate handrails and railings by connecting members with concealed mechanical fasteners and fittings, unless otherwise indicated. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection using an epoxy structural adhesive where this is manufacturer's standard splicing method.

G. Welded Connections for Aluminum Pipe: Fabricate pipe handrails and railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
H. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect handrail and railing members to other work, unless otherwise indicated.

I. Provide inserts and other anchorage devices for connecting handrails and railings to concrete work. Fabricate anchorage devices capable of withstanding loads imposed by handrails and railings. Coordinate anchorage devices with supporting structure.

J. For railing posts set in concrete, provide preset sleeves of stainless steel as indicated on the Contract Drawings, but not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, and steel plate forming bottom closure.

K. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.

L. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing the Work.

M. Cut, reinforce, drill, and tap components, as indicated, to receive finish hardware, screws, and similar items.

N. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members that are exposed to exterior or to moisture from condensation or other sources.

O. Fabricate joints that will be exposed to weather in a watertight manner.

P. Close exposed ends of handrail and railing members with prefabricated end fittings.

Q. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

R. Fillers: Provide fillers made from steel plate, or other suitably crush-resistant material, where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses and to produce adequate bearing area to prevent bracket rotation and overstressing of substrate.

2.6 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Provide exposed fasteners with finish matching appearance, including color and texture, of handrails and railings.
2.7 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.

B. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

PART 3 – EXECUTION

3.2 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints

B. Perform cutting, drilling, and fitting required to install handrails and railings. Set handrails and railings accurately in location, alignment, and elevation; measured from established lines and levels and free from rack.

1. Do not weld, cut, or abrade surfaces of handrail and railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
3. Align rails so variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

D. Adjust handrails and railings before anchoring to ensure matching alignment at abutting joints. Space posts at interval indicated, but not less than that required by structural loads.

E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing handrails and railings and for properly transferring loads to in-place construction.

RAILING CONNECTIONS

A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of handrails and railings.

B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in “Fabrication” Article whether welding is performed in the shop or in the field.
C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches of post.

3.3 ANCHORING POSTS

A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's written instructions:

B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's written instructions:

1. Nonshrink, nonmetallic grout or anchoring cement.

C. Cover anchorage joint with flange of same metal as post, attached to post as follows:

1. Welded to post after placing anchoring material.

D. Leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch build-up, sloped away from post.

3.4 CLEANING

A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material.

3.5 PROTECTION

A. Protect finishes of handrails and railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at the time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

--END OF SECTION--
SECTION 07110

WATERSTOP

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements for furnishing and installing PVC and swell-type (hydrophilic) waterstop as required.

1.2 REFERENCES

A. The Work shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. American Society for Testing and Materials (ASTM)


1.3 DESCRIPTION OF WORK

A. The Contractor shall furnish and install waterstops of the shape, size and dimensions and at the locations shown on the drawings and as specified herein. Waterstops shall be installed to the limits shown on the drawing or as approved by the Engineer. Adequate provisions shall be made to support and protect the waterstop during the work. The Contractor shall repair or replace at his expense any waterstop punctured or damaged before final acceptance of the work. All water stops shall be protected from coating by oil or grease.

1.4 QUALIFICATIONS AND TESTING

A. All test methods for testing waterstop shall be in accordance with the United States Federal Test Method Standard Number 601.

B. PVC waterstop shall be of the highest grade polyvinyl chloride compound meeting U.S. Army Corps of Engineers Specifications CRD-C572-74.

1.5 SUBMITTALS

A. The Contractor shall submit for review by the Engineer, samples, manufacturer's specifications and installation instructions and recommendations along with necessary sketches for each type of waterstop required. Certifications and laboratory test reports indicating that each material complies with the requirements shall be included.

B. Complete testing shall be performed by an independent testing laboratory to show compliance with the specifications if so directed by the Engineer. All such testing shall be at the Contractor's expense.
1.6 STORAGE, HANDLING AND DELIVERY

A. Coils of waterstop shall be packaged and delivered to the job site in pallet boxes to eliminate kinks, twists, or depressions. The waterstop supplier and/or distributor shall certify that the coils have not been exposed to direct sunlight. Coils stored on the job site shall not be exposed to direct sunlight prior to installation.

1.7 QUALITY ASSURANCE

A. Waterstop Inspection: It is required that all waterstop field joints shall be subject to rigid inspection, and no such Work shall be scheduled or started without having made prior arrangements with the Engineer for the required inspections. Not less than 24 hours notice shall be given for scheduling such inspections.

B. Field joints in waterstops shall be subject to rigid inspection for misalignment, bubbles, inadequate bond, porosity, cracks, offsets, and other defects which would reduce the potential resistance of the material to water pressure at any point. Defective joints shall be replaced with material which passes inspection; faulty material shall be removed from the Site and disposed of.

C. The following waterstop defects represent a partial list of defects which shall be grounds for rejection:

1. Offsets at joints greater than 1/16-inch or 15 percent of material thickness, at any point, whichever is less.

2. Exterior crack at joint, due to incomplete bond, which is deeper than 1/16-inch or 15 percent of material thickness, at any point, whichever is less.

3. Any combination of offset or exterior crack which will result in a net reduction in the cross section of the waterstop in excess of 1/16-inch or 15 percent of material thickness at any point, whichever is less.

4. Misalignment of joint which results in misalignment of the waterstop in excess of 1/2-inch in 10 feet.

5. Porosity in the welded joint as evidenced by visual inspection.

6. Bubbles or inadequate bonding which can be detected with a penknife test. (If, while prodding the entire joint with the point of a pen knife, the knife breaks through the outer portion of the weld into a bubble, the joint shall be considered defective.)

7. Visible signs of separation when the cooled splice is bent by hand at any sharp angle.

8. Any evidence of burned material.

D. PVC Waterstop Samples: Prior to use of the waterstop material in the field, a sample of a prefabricated (shop made fitting) mitered cross and a tee constructed of each size or shape of material
to be used shall be submitted. These samples shall be prefabricated (shop made fitting) so that the material and workmanship represent in all respects the fittings to be provided. Field samples of prefabricated (shop made fitting) fittings (crosses, tees, etc.) will also be selected at random by the Engineer for testing by a laboratory at the Owner's expense. When tested, tensile strength across the joints shall be at least 1120 psi.

PART 2 - MATERIALS

2.1 PVC WATERSTOPS

A. PVC Waterstops shall be extruded from an elastomeric polyvinyl chloride compound containing the plasticizers, resins, stabilizers, and other materials necessary to meet the requirements of this Section. No reclaimed or scrap material shall be used. The CONTRACTOR shall obtain from the waterstop manufacturer and shall furnish to the ENGINEER for review, current test reports and a written certification of the manufacturer that the material to be shipped to the job meets the physical requirements as outlined in the U.S. Army Corps of Engineers Specification CRD-C572-PVC Waterstops, and those listed herein.

1. Center-Bulb Multi-ribbed Waterstops: Center-bulb waterstops shall be as manufactured by Greenstreak Plastic Products Co., Profiles 646, 679,732, and 735;Durajoint Types 5,10,11, and 11A ; or equal; provided, that at no place shall the thickness of flat strip waterstops, including the center bulb type, be less than 3/8-inch. Waterstop shall be provided with factory installed hog rings at 12 inches on centers along the waterstop.

2. Multi-Rib Waterstops: Multi-rib waterstops, where required, shall be as manufactured by Greenstreak Plastic Products Co., Profiles 789 and 790; Durajoint Types 11 and 11A; or equal. Prefabricated (shop made fitting) joint fittings shall be used at all intersections of the ribbed-type waterstops.

3. Retrofit Waterstops: Retrofit waterstops and batten bars shall be as manufactured by Greenstreak Plastic Products Co., Style #609, or equal. Waterstop shall be supplied as a complete system including waterstop, SS batten bar, SS anchor bolts, and epoxy gel.

B. Waterstop Testing Requirements: When tested in accordance with the test standards, the waterstop material shall meet or exceed the following requirements:

<table>
<thead>
<tr>
<th>Physical Property, Sheet Material</th>
<th>Value</th>
<th>ASTM Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength-min (psi)</td>
<td>2000</td>
<td>D 638, Type IV</td>
</tr>
<tr>
<td>Ultimate Elongation-min (percent)</td>
<td>350</td>
<td>D 638, Type IV</td>
</tr>
<tr>
<td>Low Temp Brittleness-max (degrees F)</td>
<td>-35</td>
<td>D 746</td>
</tr>
<tr>
<td>Stiffness in Flexure-min (psi)</td>
<td>600</td>
<td>D 747</td>
</tr>
</tbody>
</table>

Accelerated Extraction (CRD-C572)

<table>
<thead>
<tr>
<th>Physical Property, Sheet Material</th>
<th>Value</th>
<th>ASTM Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength-min (psi)</td>
<td>1500</td>
<td>D 638, Type IV</td>
</tr>
<tr>
<td>Ultimate Elongation-min (percent)</td>
<td>300</td>
<td>D 638, Type IV</td>
</tr>
</tbody>
</table>
Effect of Alkalies (CRD-C572)

| Change in Weight (percent) | plus 0.25/minus 0.10 |
| Change in Durometer, Shore A | plus and minus 5 | D 2240 |

Finish Waterstop

| Tensile Strength-min (psi) | 1400 | D 638, Type IV |
| Ultimate Elongation-min (percent) | 280 | D 638, Type IV |

2.2 HYDROPHILIC WATERSTOP

A. Hydrophilic waterstop shall be the type which expands in the presence of water to form a watertight joint seal without damaging the concrete in which it is cast.

B. Pre-formed Hydrophilic Waterstop: Hydrophilic (bentonite-free) waterstops shall be Hydrotite CJ10202k as manufactured by Greenstreak Plastic Products Co., or Adeka Ultraceal MC2010 as manufactured by Asahi Denka.

C. Waterstop shall be manufactured from chloroprene rubber and modified chloroprene rubber with hydrophilic properties. Waterstop shall have a delay coating to inhibit initial expansion due to moisture present in fresh concrete. The minimum expansion ratio of modified chloroprene shall be not less than 2 to 1 volumetric change in distilled water at 70 degrees F.

| Physical Property, Chloroprene | Value | ASTM Std. |
| Tensile Strength-min (psi) | 1275 | D 412 |
| Ultimate Elongation-min (percent) | 350 | D 412 |
| Hardness, Shore A | 55 plus and minus 5 | D 2240 |

| Physical Property, Modified Chloroprene | Value | ASTM Std. |
| Tensile Strength-min (psi) | 300 | D 412 |
| Ultimate Elongation-min (percent) | 600 | D 412 |
| Hardness, Shore A | 55 plus and minus 5 | D 2240 |

D. Bonding agent for hydrophilic waterstop shall be the manufacturer's recommended adhesive for wet, rough concrete.
PART 3 - EXECUTION

3.1 GENERAL

A. Waterstops shall be embedded in the concrete across joints as indicated. Waterstops shall be fully continuous for the extent of the joint. Splices necessary to provide such continuity shall be accomplished in conformance to printed instructions of manufacturer of the waterstops. The Contractor shall take suitable precautions and means to support and protect the waterstops during the progress of the work and shall repair or replace at its own expense any waterstops damaged during the progress of the work. Waterstops shall be stored so as to permit free circulation of air around the waterstop material.

B. When any waterstop is installed in the concrete on one side of a joint, while the other half or portion of the waterstop remains exposed to the atmosphere for more than 2 days, suitable precautions shall be taken to shade and protect the exposed waterstop from direct rays of the sun during the entire exposure and until the exposed portion of the waterstop is embedded in concrete.

3.2 JOINT CONSTRUCTION

A. Setting Waterstops: In order to eliminate faulty installation that may result in joint leakage, particular care shall be taken of the correct positioning of the waterstops during installation. Adequate provisions must be made to support and anchor the waterstops during the progress of the WORK and to insure the proper embedment in the concrete. The symmetrical halves of the waterstops shall be equally divided between the concrete pours at the joints. The center axis of the waterstops shall be coincident with the joint openings. Maximum density and imperviousness of the concrete shall be insured by thoroughly working it in the vicinity of all joints.

B. In placing PVC waterstops in the forms, means shall be provided to prevent them from being folded over by the concrete as it is placed. Waterstops shall be held in place with light wire ties on 12-inch centers which shall be passed through hog rings at the edge of the waterstop and tied to the curtain of reinforcing steel. Horizontal waterstops, with their flat face in a vertical plane, shall be held in place with continuous supports to which the top edge of the waterstop shall be tacked. In placing concrete around horizontal waterstops, with their flat face in a horizontal plane, concrete shall be worked under the waterstops by hand so as to avoid the formation of air and rock pockets.

C. In placing centerbulb waterstops in expansion joints, the centerbulb shall be centered on the joint filler material.

D. Waterstop in vertical wall joints shall stop 6 inches from the top of the wall where such waterstop does not connect with any other waterstop and is not to be connected to a future concrete placement.

E. Splices in PVC waterstops shall be performed by heat sealing the adjacent waterstop sections in accordance with the manufacturer's printed recommendations. It is essential that:

1. The material not be damaged by heat sealing.

2. The splices have a tensile strength of not less than 80 percent of the unspliced material tensile strength.
3. The continuity of the waterstop ribs and of its tubular center axis be maintained. No edge welding is allowed.

F. Butt joints of the ends of 2 identical waterstop sections may be made while the material is in the forms.

G. All joints with waterstops involving more than 2 ends to be jointed together, and all joints which involve an angle cut, alignment change, or the joining of 2 dissimilar waterstop sections shall be prefabricated (shop made fitting) prior to placement in the forms, allowing not less than 24-inch long strips of waterstop material beyond the joint. Upon being inspected and approved, such prefabricated (shop made fitting) waterstop joint assemblies shall be installed in the forms and the ends of the 24-inch strips shall be butt welded to the straight run portions of waterstop in place in the forms.

H. Where a centerbulb waterstop intersects and is jointed with a non-centerbulb waterstop, care shall be taken to seal the end of the centerbulb, using additional PVC material if needed.

I. **Hydrophilic Waterstop**

1. Where a hydrophilic waterstop is called for in the Contract Documents, it shall be installed with the manufacturer's instructions and recommendations except as modified herein.

2. When requested by the Engineer, the Contractor shall arrange for the manufacturer to furnish technical assistance in the field.

3. Hydrophilic waterstop shall only be used where complete confinement by concrete is provided. Hydrophilic waterstop shall not be used in expansion or contraction joints nor in the first 6 inches of any non-intersecting joint.

4. The hydrophilic waterstop shall be located as near as possible to the center of the joint and it shall be continuous around the entire joint. The minimum distance from the edge of the waterstop to the face of the member shall be 5 inches.

5. Where the thickness of the concrete member to be placed on the hydrophilic waterstop is less than 12 inches, the waterstop shall be placed in grooves formed or ground into the concrete. The groove shall be at least 3/4 inch deep and 1-1/4 inches wide. When placed in the groove, the minimum distance from the edge of the waterstop to the face of the member shall be 2.5 inches.

6. Where a hydrophilic waterstop is used in combination with PVC waterstop, the hydrophilic waterstop shall overlap the PVC waterstop for a minimum of 6 inches and shall be adhered to PVC waterstop with single component water-swelling sealant as recommended by manufacturer.

7. The hydrophilic waterstop shall not be installed where the air temperature falls outside the manufacturer's recommended range.

8. The concrete surface under the hydrophilic waterstop shall be smooth and uniform. The concrete shall be ground smooth if needed. Alternately, the hydrophilic waterstop shall be
bonded to the surface using an epoxy grout which completely fills all voids and irregularities beneath the waterstop material. Prior to installation, the concrete surface shall be wire brushed to remove any laitance or other materials that may interfere with the bonding of epoxy.

9. The hydrophilic waterstop shall be secured in place with concrete nails and washers at 12-inch maximum spacing. This shall be in addition to the adhesive recommended by the manufacturer.

J. Retrofit Waterstop: Retrofit waterstops shall be set in a bed of epoxy over a sandblasted surface with stainless steel batten bars and 1/4-inch diameter stainless steel anchors at 6 inches on center, staggered, and in accordance with the manufacturer's written recommendations.

3.3 INSTALLATION OF PVC WATERSTOP

A. Waterstops shall be installed where shown on the drawings.

B. Internal waterstops shall be securely fastened to formwork or reinforcing steel every 12 inches or less on both edges prior to concrete placement, as required to prevent displacement during concrete placement and vibration.

C. Maintain a minimum of two (2) inches clearance between waterstop and reinforcing steel.

D. Waterstops for all joints shall be continuous around all corners and intersections. Provide factory formed and tested corners and intersections where angle intersections occur.

E. Only straight butt splices shall be made in the field, and all field splices shall be made with a Teflon coated waterstop iron and tested for a complete seal in accordance with the manufacturer's recommendations and subject to approval of the Engineer.

F. Field splices shall be made outside of forms and shall be completed prior to concrete placement. In areas where reinforcing steel obstructs the proper positioning of the splicing apparatus, slack in the waterstop shall be provided, and splices shall be made in an unobstructed area adjacent to the reinforcing steel; after the splice has cooled and passed inspection, thread the waterstop into correct position and secure it according to paragraph above.

G. No holes will be permitted to be made in the waterstop.

H. Care shall be exercised in placing and vibrating the concrete about the waterstop to insure complete filling of the concrete forms under and about the waterstop and to obtain a continuous bond between the concrete and the waterstop at all points around the periphery of the waterstop. Care shall be taken to prevent damaging the center bulb.
3.4 INSTALLATION OF SWELL-TYPE WATERSTOP

A. Swell waterstop shall be installed where shown on the drawings.

B. Joint surfaces shall be clean and dry prior to installation of the swell waterstop.

C. All material shall be kept dry in original boxes prior to installation.

D. Material shall be installed in strict accordance with manufacturer's directions.

E. Any waterstop material exhibiting considerable swelling prior to confinement in the joint shall be replaced with new material at the expense of the Contractor.

- END OF SECTION -
SECTION 07130

JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements for applying exterior sealant/adhesives as required.

1.2 REFERENCES

A. The Work shall be in accordance with the latest revisions of the following codes, standards, and specifications except where more stringent requirements have been specified herein.

1. United States Federal Test Method TT-S-001543
2. United States Federal Test Method TT-S-00227
3. United States Federal Test Method TT-S-00230

1.3 DESCRIPTION OF WORK

A. Exterior Caulking: Provide and install caulking at all locations indicated on Contract Drawings and including the following locations:

1. Construction joints.
2. Vertical joints between unlike materials.
3. Expansion joints.
4. Control joints.

1.4 SUBMITTALS

A. Samples

1. Manufacturer's technical data.
2. Samples of sealants specified.

B. Guarantee: submit two written and signed guarantees.

C. All submittals shall be in accordance with the General Requirements of this specification.
1.5 GUARANTEE

A. The Contractor and sealant installer shall jointly guarantee to repair or replace sealants which fail to form air-tight and water-tight joints, or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, or appear to deteriorate in any other manner for a period of two years from the date of acceptance by the Owner.

1.6 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Deliver materials to the project site and store with manufacturer's label intact.

B. Manufacturer's label shall state date of manufacturer and shelf life.

C. Materials shall be stored under cover at 70 degrees Fahrenheit for 48 hours prior to installation.

1.7 QUALITY ASSURANCE

A. Construction Joint Sealant: The Contractor shall prepare adhesion and cohesion test specimens as required herein, at intervals of 5 working days while sealants are being installed.

B. The sealant material shall show no signs of adhesive or cohesive failure when tested in accordance with the following procedure in laboratory and field tests:

   1. Sealant specimen shall be prepared between 2 concrete blocks (1-inch by 2-inch by 3-inch). Spacing between the blocks shall be 1-inch. Coated spacers (2-inch by 1-1/2-inch by 1/2-inch) shall be used to insure sealant cross-sections of 1/2-inch by 2 inches with a width of 1-inch.

   2. Sealant shall be cast and cured according to manufacturer's recommendations except that curing period shall be not less than 24 hours.

   3. Following curing period, the gap between blocks shall be widened to 1-1/2-inch. Spacers shall be used to maintain this gap for 24 hours prior to inspection for failure.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Unless noted otherwise on the Contract Drawings sealants shall be one or two-component elastomeric compound of silicone, polysulfide, or polyurethane base manufactured by Sika Corp. or equal.

   1. Silicone based sealants shall meet the requirements of Federal Specification TT-S-001543. Primers for silicone sealants shall be quick drying clear primers as recommended by the sealant manufacturer.

   2. Polysulfide and polyurethane base sealants shall meet the requirements of Federal Specification TT-S-00227 or TT-S-00230. Primers shall be non-bleeding non-staining, clear-drying materials as recommended by the sealant manufacturer.
B. Back-up for joint gasketing shall be closed cell polyethylene sponge for the required size and shape, as recommended by the sealant manufacturer. Materials impregnated with oil, solvents or bituminous materials shall not be used. Oakum shall be dry and free from oil and creosote.

C. Sealants for joints which are continuously exposed to water shall be two-component polyurethane base sealants with a primer which is recommended for immersion conditions.

D. Sealants for horizontal concrete surfaces in exposed areas shall be nontracking and sealants for vertical joints shall be nonsagging type.

E. Solvents, cleaning agents and other accessory materials shall be as recommended by the sealant manufacturer.

2.2 JOINT SEALANT FOR WATER BEARING JOINTS

A. Joint sealant shall be polyurethane polymer designed for bonding to concrete which is continuously submerged in water. No material will be acceptable which has an unsatisfactory history as to bond or durability when used in the joints of water retaining structures.

B. Joint sealant material shall meet the following requirements (73 degrees F and 5 percent R.H.):

<table>
<thead>
<tr>
<th>Property</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Life</td>
<td>45 - 180 minutes</td>
</tr>
<tr>
<td>Time to Reach 20 Shore &quot;A&quot; Hardness (at 77 degrees F, 200 gr quantity)</td>
<td>24 hours, maximum</td>
</tr>
<tr>
<td>Ultimate Hardness (ASTM D 2240)</td>
<td>20 - 45 Shore &quot;A&quot;</td>
</tr>
<tr>
<td>Tensile Strength (ASTM D 412)</td>
<td>175 psi, minimum</td>
</tr>
<tr>
<td>Ultimate Elongation (ASTM D 412)</td>
<td>400 percent, minimum</td>
</tr>
<tr>
<td>Tear Resistance (Die C, ASTM D 624)</td>
<td>7 5 pds per inch of thickness, minimum</td>
</tr>
<tr>
<td>Color</td>
<td>Light Gray</td>
</tr>
</tbody>
</table>

C. Polyurethane sealants for waterstop joints in concrete shall conform to the following requirements:

1. Sealant shall be 2-part polyurethane with the physical properties of the cured sealant conforming to or exceeding the requirements of ANSI/ASTM C 920 – Elastomeric Joint Sealant, or Federal Specification TT-S-0227 E(3) - Sealing Compound, Elastomeric Type, Multicomponent, for Caulking, Sealing, and Glazing Buildings and Other Structures, for 2-part material, as applicable.

2. For vertical joints and overhead horizontal joints, only "non-sag" compounds shall be used; all such compounds shall conform to the requirements of ANSI/ASTM C 920 Class 25, Grade NS, or Federal Specification TT-S-0227 E(3), Type II, Class A.
3. For plane horizontal joints, the self-leveling compounds which meet the requirements of ANSI/ASTM C 920 Class 25, Grade P, or Federal Specification TT-S-0227 E(3), Type I shall be used. For joints subject to either pedestrian or vehicular traffic, a compound providing non-tracking characteristics, and having a Shore "A" hardness range of 35 to 45, shall be used.

4. Primer materials, if recommended by the sealant manufacturer, shall conform to the printed recommendations of the manufacturer.

D. Sealants, indicated, shall be PSI-270 as manufactured by Polymeric Systems Inc.; Elastothane 227R as manufactured by Pacific Polymers; Sikaflex 2C, as manufactured by Sika Corporation; or equal.

2.3 BACKING ROD

A. Backing rod shall be an extruded closed-cell, polyethylene foam rod. The material shall be compatible with the joint sealant material and shall have a tensile strength of not less than 40 psi and a compression deflection of approximately 25 percent at 8 psi. The rod shall be 1/8-inch larger in diameter than the joint width except that a one-inch diameter rod shall be used for a 3/4-inch wide joint.

PART 3 - EXECUTION

3.1 PREPARATION

A. The compatibility of the specified sealant with the joint surfaces, joint fillers and other materials behind or below the joint shall be investigated before purchases of sealant materials. Only materials which are known to be fully compatible with the actual installation condition, as shown by the manufacturer's published data or certification shall be provided.

B. All surfaces to receive sealants shall be dry and frost free, cleaned thoroughly and made free of all loose particles, dirt, dust, oil, wax and other foreign matter. Stone, concrete, and masonry shall be cleaned with brushes, if necessary. Protective coatings and mold release agents on materials to receive sealants shall be removed with a recommended solvent.

C. It shall be the responsibility of the sealant contractor to install a sample bead of sealant before commencing work, to demonstrate the degree of adhesion attained with actual job materials and cleaning methods.

D. All surfaces which are to receive sealant shall be primed after the surfaces have been prepared. If tests of the primer indicate discoloration of adjacent surfaces, special precautions must be taken to guard against the primer being applied over any surface to remain exposed. An impervious tape or equivalent cover must be applied prior to priming and shall not be removed until the sealant has been placed.

E. Cracks in existing concrete shall be routed to allow for minimum sealant dimensions specified below. Joint surfaces shall be cleaned of all dust and debris prior to priming.
3.2 JOINT CONSTRUCTION

A. Construction Joint Sealant: Construction joints in water-bearing floor slabs, and elsewhere as indicated, shall be provided with tapered grooves which shall be filled with a construction joint sealant. The material used for forming the tapered grooves shall be left in the grooves until just before the grooves are cleaned and filled with joint sealant. After removing the forms from the grooves, all laitance and fins shall be removed, and the grooves shall be sandblasted. The grooves shall be allowed to become thoroughly dry, after which they shall be blown out; immediately thereafter, they shall be primed, bond breaker tape placed in the bottom of the groove, and filled with the construction joint sealant. The primer shall be furnished by the sealant manufacturer. No sealant will be permitted to be used without a primer. Care shall be used to completely fill the sealant grooves. Areas designated to receive a sealant fillet shall be thoroughly cleaned, as outlined for the tapered grooves, prior to application of the sealant.

B. The primer and sealant shall be placed strictly in accordance with the printed recommendations of the manufacturer, taking special care to properly mix the sealant prior to application. The sides of the sealant groove shall not be coated with bond breaker, curing compound, or any other substance which would interfere with proper bonding of the sealant. Sealant shall achieve final cure at least 7 days before the structure is filled with water.

C. Sealant shall be installed by a competent waterproofing specialty contractor who has a successful record of performance in similar installations.

D. Thorough, uniform mixing of 2-part, catalyst-cured materials is essential; special care shall be taken to properly mix the sealer before its application. Before any sealer is placed, the Contractor shall arrange to have the crew doing the WORK carefully instructed on the proper method of mixing and application by a representative of the sealant manufacturer.

E. Any joint sealant which fails to fully and properly cure after the manufacturer's recommended curing time for the conditions of the Work hereunder shall be completely removed; the groove shall be thoroughly sandblasted to remove all traces of the uncured or partially cured sealant and primer, and shall be re-sealed with the indicated joint sealant. Costs of such removal, joint treatment, re-sealing, and appurtenant work shall be the Contractor’s responsibility.

3.3 INSTALLATION

A. Sealants shall be installed to the depths as shown or, if not shown, as recommended by the sealant manufacturer but within the following general limitations: For normal moving joints sealed with elastomeric sealants but not subject to traffic, joints shall be filled to a depth equal to 50% of the joint width, but not more than 1/2” deep or less than 1/4” deep. Control joints shall be recessed 1/4” below the adjoining surfaces. A bond breaker shall be used in all joints to prevent three-sided adhesion of the sealant material.

B. Joints which exceed the depth requirements specified herein shall be packed with a performed backup material recommended by the sealant manufacturer. Where backing rods are used, the depth of the joint shall be measured from the crown of the circular or semi-circular rods.
C. Sealants shall be applied in strict accordance with the manufacturer's directions. Proper nozzle for joint width shall be used and the material shall be driven with sufficient pressure to fill the joints completely. Sealants which merely bridge the joints at the surface and do not completely fill the space behind shall not be acceptable. Application shall begin at the bottom of vertical joints and work upward. Knife application shall be restricted to special conditions where gun application is impractical and shall be specifically approved by the Engineer.

D. Joints shall be pointed smooth and neat with the proper tool. A tooling solution as recommended by the sealant manufacturer shall be used.

E. Sealant shall be applied to all control joints, vertical joints and elsewhere as indicated on the drawings.

3.4 WEATHER CONDITIONS

A. The installation of sealants shall not proceed under adverse conditions or when temperature is above or below the limitations set by the manufacturers.

B. Whenever the joint width is affected by ambient temperature variation, the elastomeric sealants shall be installed only when temperatures are in the lower third of the manufacturer's recommended temperature range.

3.5 CLEANING

A. Excess materials shall be removed and finished joints shall be left without holes, cracks, sags, wrinkles or other imperfections.

B. Surfaces that have been soiled during sealant installation shall be cleaned immediately with solvent or cleaning agent as recommended by the sealant manufacturer.

- END OF SECTION –
SECTION 11202

SLUICE GATES

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing sluice gates and appurtenances, complete with guides, frames, brackets, anchor bolts, stems and stem guides, and accessories as indicated in accordance with the Contract Documents.

B. Manual operators and their floor stands, base plates, anchorages, and accessories are included in the Base Bid of this Contract, and are shown on the Contract Drawings. See SECTION 15110 – MANUAL SLUICE GATE OPERATORS.

C. Contractor ADD/ALTERNATE to the Base Bid are electric actuators, to be used only at the direction of the Owner, and are shown as such on the Contract Drawings. See SECTION 15110.1 – ELECTRIC SLUICE GATE OPERATORS of the ADD/ALTERNATE package.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Water Works Association (AWWA)
   a. AWWA C501 – Cast-Iron Sluice Gates

1.3 EQUIPMENT IDENTIFICATION

A. Equipment covered under this specification is identified as follows:

1. 18-inch Sluice Gate – flush bottom closure
2. 24-inch Sluice Gate – flush bottom closure

1.4 SUBMITTALS

A. Provide submittals in accordance with the General Provisions, including the following items:

1. Shop drawings or equipment drawings, including dimensions, material of construction, size and location of connections to other work, and weight of equipment.

2. Catalog information and cuts.
3. Complete manufacturer's specifications, including materials description and lubricant requirements.

4. Affidavit

Submit manufacturer's affidavit that the gates are in compliance with the applicable provisions of the latest edition of AWWA C501 and this Specification.

5. Suggested spare parts list with current price information.

6. List of special tools required for checking, testing, parts replacement, and maintenance. Special tools are those which have been specially designed or adapted for use on parts of the equipment, and which are not customarily and routinely carried by maintenance mechanics.

7. List of special tools furnished with the equipment.

8. Special handling instructions.

9. Requirements for storage and protection prior to installation.

10. Manufacturer's installation recommendations.

11. Requirements for routine maintenance required prior to plant startup.

B. Submit Manufacturer’s Certificate of proper installation.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Materials and equipment shall be boxed, crated or otherwise completely enclosed and protected during shipment, handling, and storage. Such boxes, crates or protection shall be clearly labeled with manufacturer's name, brand or model designation, type or grade, and color.

B. Protect materials and equipment from exposure to the elements and keep dry at all times. Handle and store to prevent damage in accordance with manufacturer's recommendations.

C. Material and equipment damaged by handling and storage shall be repaired or replaced by the Contractor as directed by the Engineer.

PART 2 PRODUCTS

2.1 GENERAL

A. Construction of sluice gates shall be in accordance with the latest edition of AWWA C501.

B. All drilled holes shall be spotfaced to insure ample bolt and nut bearing surfaces.

C. All wedges, seat facings, and guide wedge facings used in the installation shall be of bronze. Bronze alloys used shall not be subject to de-aluminumization or de-zincification.
D. Wherever the term "stainless steel" is used in this Specification, Type 304 stainless steel shall be provided unless otherwise noted.

E. Acceptable Manufacturers

The following manufacturers are named to establish a standard of quality necessary for the Project:

1. Rodney Hunt Co., Orange, MA
2. Waterman Industries, Inc., Exeter, CA
3. Or equal

2.2 MATERIALS AND CONSTRUCTION

A. Frames

1. Sluice gate frames shall be of one-piece cast iron construction and designed for direct mounting to an existing concrete face with anchor bolts.

2. Dovetailed slots shall be machined around the perimeter of the front face of the frame. Bronze seat facing shall be driven into these dovetailed slots and further machined and hand-finished to provide a watertight joint.

3. Frames for gates subject to unseating head shall have pads integrally cast on the top, bottom, and sides of the frame to provide seats for the top, bottom and side wedges. All wedge pads shall be machined and have machined keyways provided to receive the wedge seats.

B. Guides

1. The guides shall be made of cast iron integral with the gate frame. Guides shall be heavily ribbed at areas of contact with side wedges, and shall be designed to withstand the total thrusts due to water pressure and wedge action.

2. Grooves shall be machined throughout the entire guide length to receive machined tongues of the disc. A clearance not to exceed 1/16 inch shall be maintained on all tongue and groove dimensions.

3. The guides shall be of such lengths as to retain the entire gate disc within the guide grooves when the gate is fully open. Where the length of guides permits, further attachment shall be made to the upper portion of the guide by anchor bolts embedded in the wall.

C. Seat Facings

1. All seat facings shall be of extruded bronze of such composition as to increase toughness and wearability when cold worked.

2. The seat facings shall fill and permanently lock into the machined dovetailed grooves on both the gate disc and gate frame faces. The use of attaching pins and screws will not be allowed.
3. Once installed into the dovetailed slots, the seat facings shall be machined and hand-finished to provide for a watertight joint.

D. Discs

1. Discs (slides) shall be rectangular in shape, of one-piece cast iron with horizontal and vertical strengthening ribs.

2. Dovetailed slots with machined and hand-finished bronze seating, similar to those specified for the perimeter of the front face of the frame flange, shall be provided around the perimeter of the disc face to provide for a watertight joint.

3. Tongues shall be machined on the vertical sides of the disc for the entire disc height. Such tongues shall fit into the machined grooves of the gate guides with a clearance not to exceed 1/16 inch.

4. Wedge pads shall be integrally cast on the disc and machined to receive adjustable wedges.

5. A thrust-nut pocket shall be provided above the horizontal centerline of the disc. The thrust-nut pocket shall be reinforced by ribs and drained.

E. Wedges

1. Adjustable side wedges, and top and bottom wedges as required for unseating heads, shall be of solid bronze. All bearing surfaces shall be machined to give maximum contact and wedging action.

2. Wedges shall be fastened to the disc by adjustable bronze fasteners, designed to remain in the fixed position after adjustment.

F. Stems

1. Stems shall be of the rising stem type, unless otherwise indicated, and constructed of Type 304 or 316 stainless steel. Non-rising stem type shall be provided with operating nut, floor box, and portable operator.

2. Stems shall be one-inch minimum root diameter with Acme threads.

G. Extension Shafts

1. Stem extension shafts for operators shall be fabricated of stainless steel.

2. Extension shafts shall be supplied with all necessary stem couplings, brackets, and adjustable stem guides.

H. Stem Couplings

1. Stem couplings shall be of solid manganese bronze or stainless steel, machine bored, and internally threaded with 29-degree Acme threads to fit threaded stem ends.
2. Stem couplings shall be further secured to stem ends by silicon bronze or stainless steel pins.

I. Stem Guides

1. Stems and extensions shall be supported with stem guides. The unsupported length shall not exceed eight feet, or a lesser dimension if recommended by the manufacturer.

2. Stem guides shall be of solid cast iron construction, with bronze bushings, machine bored 1/16 inch larger than the stem diameter.

3. Guides shall be held to the wall by anchor bolts and shall be adjustable.

J. Stem Covers

1. Covers for rising stems shall be clear butyrate plastic, vented with caps.

2. Covers shall be provided with weather-resistant OPEN/CLOSED designators and indicator strips at one-inch graduations.

L. Manual Operators

1. Manual operators shall be of weatherproof cast-iron construction.

2. Unless otherwise indicated, manual operators shall be crank operated, with ball or roller bearings of hardened tool steel, designed to withstand all thrusts. Cranks shall be removable.

3. Readily accessible lubricating fittings shall be provided for all manual operators. Positive mechanical seals shall be provided on the operating nut and the pinion shafts to exclude moisture and dirt and to prevent leakage of lubricant out of the hoist.

4. The operator shall have the capacity to operate the gate under the maximum seating/unseating head with a maximum effort of 40 pounds.

5. Gears shall have machine cut teeth and shall be enclosed in a cast iron weatherproof bonnet.

2.3 ANCHOR BOLTS AND HARDWARE

A. All necessary attaching bolts, anchor bolts, mounting and assembly hardware shall be of Type 316 stainless steel unless otherwise specified and shall be furnished by the sluice gate manufacturer.
2.4 PAINTING

A. Surfaces shall be cleaned by commercial sandblasting to base material, dry and free of grease before painting in conformance with paint manufacturer’s instructions. After cleaning, the surfaces shall be primed by application of either one shop coat of zinc chromate or a coal tar coating applied in conformance with paint manufacturer’s instructions. After painted surfaces are dry, the machined or bearing surfaces and the holes, both plain and threaded, shall be coated with a protective grease until installation.

2.5 SPARE PARTS

A. Provide one-year’s supply of manufacturer recommended lubricants per the manufacturer’s recommended lubrication schedule.

PART 3 EXECUTION

3.1 INSTALLATION

A. Sluice gates and accessories shall be stored and handled in accordance with the applicable provisions of AWWA C501.

B. Sluice gates shall be installed as a complete unit.

C. The gate frame shall be leveled and plumbed. Any gaps between the frame and face of the dam shall be grouted or provided with a full face rubber gasket as manufactured by U.S. Rubber Co. or Garlock Packing Co. or equal as necessary to provide a watertight seal.

D. Wedges shall be properly adjusted and stem guides shall be set so that the stems are in perfect alignment and run smoothly.

E. Manual operators shall be installed in strict compliance with the manufacturer’s installation instructions.

F. All Surfaces in contact with the concrete shall be coated with material specified in the Section entitled “Painting”.

G. Insofar as practical, the sluice gate assemblies shall be completely factory assembled, shipped as a unit, disassembled onsite and installed in strict conformance with the manufacturer's recommendations.

H. All anchor bolts and necessary bolt setting plates shall be furnished by the manufacturer. Two nuts shall be provided for each anchor bolt, and anchor bolts shall be cast-in-place during concrete placement, unless otherwise shown. Threads shall be protected and shall be cleaned before the nuts are attached and tightened.

I. All stainless steel bolts shall be coated with an antigalling compound before the nuts are attached and tightened.
J. All gates shall be thoroughly cleaned.

3.2 OPERATION

A. General

1. After installation the seat facings shall be checked and adjusted to exclude a 0.04” thickness gauge.

2. Each gate shall be checked for operation through a complete cycle of open-shut-open or shut-open-shut.

B. Ease of Operation

Adjustments in stem alignment or other changes required for maximum ease of operation shall be made at Contractor's expense.

C. Floorstand Operator

Operators shall be tested under full design pressure to verify the 40-pound maximum operating effort. Adjustments or changes required to meet this effort requirement shall be performed at Contractor's expense.

D. Lifting Devices

Manual mechanisms shall be geared to permit not more than 50 ft-lb on lifting after unseating.

3.3 FIELD TESTING

A. Field testing shall be performed for the sluice gates as follows:

1. Pre-test Checkout

   a. Adjust, test, and operate the gate manually. Manually open and close each gate two times using hand wheel.

   b. Manufacturer shall have inspected the unit and certified proper installation and adjustments, either prior to or concurrent with the pre-test checkout. The Contractor shall submit Manufacturer’s Certificate of Installation prior to start of the Performance Tests.

   c. Prior to start of the Performance Test, construct temporary bulk head(s) in channels, pipes or distribution boxes as required to properly conduct leakage tests.

2. Performance Test

   a. Repeat item (a.) from the Pre-test Checkout.
b. Fill upstream bulk-head compartment with potable water or treated plant effluent and test for leakage.

c. Leakage under design seating head conditions shall not exceed 0.1 gpm/foot of seating perimeter. Leakage rate shall be visually estimated.

d. Leakage under design unseating head conditions shall not exceed 0.2 gpm/foot of seating perimeter. Leakage rate shall be visually estimated.

e. Demonstrate that the hand wheel torque does not exceed specified limit under seating or unseating conditions at specified heads, or maximum head condition that can be obtained under peak water conditions in channels. Verify the test with a torque wrench.

3.4 MANUFACTURER’S FIELD SERVICES

A. The Contractor shall furnish the services of a competent factory representative of the manufacturer who shall supervise the installation of the sluice gates and conduct operating tests to show that the equipment has been properly installed and will function as herein specified.

B. Provide manufacturer’s services at the jobsite designated by the Owner for the minimum hours listed below, travel time excluded:

1. 8 hours for installation assistance, inspection, and certification of installation.

2. 8 hours for operational training.

Each jobsite visit shall be scheduled separately with minimum seven (7) calendar days notice prior to each visit. The service visit for operational training shall be scheduled in coordination with the Owner’s operations staff and shall be at such times as requested by the Owner.

- END OF SECTION -
SECTION 15110

MANUAL SLUICE GATE OPERATORS

PART 1  GENERAL

1.3  SUMMARY

A.  This Section includes requirements for providing manual sluice gate operators, complete with floor stands and accessories as indicated in accordance with the Contract Documents.

B.  Contractor Add/Alternate, at the Owner’s direction, provide electrically actuated sluice gate operators per Section 15110.1 – ELECTRIC SLUICE GATE OPERATORS.

1.2  RELATED SECTIONS

A.  SECTION 11202 – SLUICE GATES

1.4  SUBMITTALS

A.  The sluice gate manufacturers shall be responsible for furnishing the sluice gate operators. Sluice gate operator shop drawings shall be submitted with each sluice gate submittal.

B.  Provide submittals in accordance with the General Provisions, including the following items:

1.  Shop drawings or equipment drawings, including dimensions, material of construction, size and location of connections to other work, and weight of equipment.

2.  Catalog information and cuts.

3.  Complete manufacturer's specifications, including materials description and lubricant requirements.

4.  Suggested spare parts list with current price information.

5.  List of special tools required for checking, testing, parts replacement, and maintenance. Special tools are those which have been specially designed or adapted for use on parts of the equipment, and which are not customarily and routinely carried by maintenance mechanics.

12.  List of special tools furnished with the equipment.

13.  Special handling instructions.

14.  Requirements for storage and protection prior to installation.

15.  Manufacturer's installation recommendations.

16.  Requirements for routine maintenance required prior to plant startup.
B. Submit Manufacturer's Certificate of proper installation.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Materials and equipment shall be boxed, crated or otherwise completely enclosed and protected during shipment, handling, and storage. Such boxes, crates or protection shall be clearly labeled with manufacturer's name, brand or model designation, type or grade, and color.

B. Protect materials and equipment from exposure to the elements and keep dry at all times. Handle and store to prevent damage in accordance with manufacturer's recommendations.

C. Material and equipment damaged by handling and storage shall be repaired or replaced by the Contractor as directed by the Engineer.

PART 2 PRODUCTS

2.1 GENERAL

A. Wherever the term "stainless steel" is used in this Specification, Type 304 stainless steel shall be provided unless otherwise noted.

B. Acceptable Manufacturers

The following manufacturers are named to establish a standard of quality necessary for the Project:

1. Rodney Hunt Co., Orange, MA
2. Waterman Industries, Inc., Exeter, CA
3. Or approved equal

2.2 MATERIALS AND CONSTRUCTION

A. Manual Operators with Floor Stands

1. Manual operators shall be crank-type removable operators of weatherproof cast-iron construction and supported by a cast-iron floor stand. Floor stand base plate shall have a minimum of four (4) holes for anchorage to supporting structure.

2. Unless otherwise indicated, manual operators shall be crank operated, with ball or roller bearings of hardened tool steel, designed to withstand all thrusts. Cranks shall be removable.

3. Readily accessible lubricating fittings shall be provided for all manual operators. Positive mechanical seals shall be provided on the operating nut and the pinion shafts to exclude moisture and dirt and to prevent leakage of lubricant out of the hoist.

4. Bronze operating nut shall be internally threaded with 29-degree ACME threads that correspond with the sluice gate stem threads.

5. The operator shall have the capacity to operate the gate under the maximum seating/unseating head with a maximum effort of 40 pounds.
6. The floor stand shall be designed to withstand, without damage, at least 200-pound effort on the operator.

7. Gears shall have machine cut teeth and shall be enclosed in a cast iron weatherproof bonnet.

8. Operator shall be self-locking at any position of stem travel.

B. ANCHOR BOLTS AND HARDWARE

1. All necessary attaching bolts, anchor bolts, and mounting and assembly hardware shall be of Type 316 stainless steel unless otherwise specified and shall be furnished by the sluice gate manufacturer.

C. PAINTING

1. Surfaces shall be cleaned by commercial sandblasting to base material, and surfaces shall be dry and free of grease before painting in conformance with paint manufacturer’s instructions. After cleaning, the surfaces shall be primed by application of either one shop coat of zinc chromate or a coal tar coating applied in conformance with paint manufacturer’s instructions. After painted surfaces are dry, the machined or bearing surfaces and the holes, both plain and threaded, shall be coated with a protective grease until installation.

D. SPARE PARTS

1. Provide one-year’s supply of manufacturer recommended lubricants per the manufacturer’s recommended lubrication schedule.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install operator plumb and true at the locations shown on the Contract Drawings. Coordinate final locations of operators with the actual installed position of the sluice gates.

B. Operators shall be installed in strict compliance with the manufacturer’s installation instructions.

C. All Surfaces in contact with the concrete shall be coated with material specified in the Section entitled “Painting”.

D. Insofar as practical, the sluice gate assemblies shall be completely factory assembled, shipped as a unit, disassembled onsite and installed in strict conformance with the manufacturer's recommendations.

E. All anchor bolts and necessary bolt setting plates shall be furnished by the manufacturer. Two nuts shall be provided for each anchor bolt, and anchor bolts shall be cast-in-place during concrete placement, unless otherwise shown. Threads shall be protected and shall be cleaned before the nuts are attached and tightened.
F. All stainless steel bolts shall be coated with an antigalling compound before the nuts are attached and tightened.

G. Operators shall be thoroughly cleaned and lubricated in accordance with the manufacturer’s installation procedures prior to testing and operation.

3.2 OPERATION

A. General

1. After installation the seat facings shall be checked and adjusted to exclude a 0.04” thickness gauge.

2. Each gate shall be checked for operation through a complete cycle of open-shut-open or shut-open-shut.

B. Ease of Operation

Adjustments in stem alignment or other changes required for maximum ease of operation shall be made at Contractor's expense.

C. Floor Stand Operator

Operators shall be tested under full design pressure to verify the 40-pound maximum operating effort. Adjustments or changes required to meet this effort requirement shall be performed at Contractor's expense.

D. Lifting Devices

Manual mechanisms shall be geared to permit not more than 50 ft-lb on lifting after unseating.

3.3 FIELD TESTING

A. See SECTION 11202 – SLUICE GATES.

3.4 MANUFACTURER’S FIELD SERVICES

A. See SECTION 11202 – SLUICE GATES.

-END OF SECTION-
SECTION 15110.1

ELECTRIC SLUICE GATE OPERATORS

PART 1 - GENERAL

1.1 SUMMARY

A. The work in this section is a Contractor Add/Alternate to the Base Bid, and shall only be used at the direction of the Owner.

B. This Section includes requirements for providing electrical sluice gate operators, remote control stations, control station padlocks, and related accessories as indicated in accordance with the Contract Documents.

1.2 SUBMITTALS

A. The sluice gate manufacturers shall be responsible for furnishing the sluice gate operators. Sluice gate operator shop drawings shall be submitted with each sluice gate submittal.

B. Submittals for equipment and materials shall be clearly marked or noted with specific features, standard options, and wiring diagrams to indicate compliance with Contract Documents.

C. Where deviations to Contract Documents are proposed, submit a list of deviations. Provide a detailed description and explanation for each deviation.

D. The contractor shall submit design calculations for sizing and operation of the electric actuators.

E. Submit a coordination list which identifies each electric actuator and its associated sluice gate. The coordination list shall include project specific information such as sluice gate tag numbers, sluice gate type, size, load requirements, and application.

F. Shop drawings shall present complete and accurate information relative to all working dimensions, equipment weights, assembly, and section views, and all necessary details pertaining to coordinating the Work of the Contract. Shop drawings shall contain information such as special tools and other items of information that are required to demonstrate detailed compliance with the Contract Documents.

G. Submit shop drawings which shall include the following:

1. Bill of Materials for all equipment and accessories.

2. Manufacturer’s catalog information for all components and accessories.

3. Manufacturer’s standard wiring diagrams including all available terminal connections.

4. Project specific wiring interconnection diagrams showing all field termination points to remote equipment. Submittals without project specific wiring diagrams will be rejected. This shall include detailed wiring diagrams showing conductors and field terminations between
sluice gate operators, power supply connections, field inputs/outputs, and remote control stations.

5. Spare Parts List (including specified spare parts to be furnished by the Contractor and manufacturer’s recommended spare parts list for each type of unit).

6. Project specific installation instructions and mounting details for piece of equipment. Materials of construction for supports, brackets, and mounting hardware shall be provided with details.

7. Shop Drawings including electric actuator, gear ratio, performance charts, size, parts list, as required, for electric actuator.

H. Provide Factory Performance Test Report including information specified.

I. Submit Operation and Maintenance Manuals for the electric actuators.

PART 2 - PRODUCTS

2.1 GENERAL

A. The sluice gate operator shall include an electric actuator as specified, for each sluice gate. The operator shall be provided with all appurtenances necessary for the equipment to perform its intended function. Appurtenances for the electrical actuators shall include anchor bolts, hardware, control switches, limit switches, torque switches, electrical supply connections, internal electric wiring and controls, regulating controls, position potentiometers, push button controls, miscellaneous controls, extension stems, local indicators, operating nuts, and indicating lights.

B. The sluice gate manufacturer shall be responsible for furnishing the sluice gate operators. The sluice gate operator shall be coordinated with and shall be compatible for operation with each sluice gate supplied. The sluice gate manufacturer shall be responsible for coordinating the specific requirements of the sluice gate operators with the sluice gate operator manufacturer.

2.2 ELECTRIC ACTUATORS

A. General

1. The following electric actuator requirements are applicable for motor operated sluice gates unless otherwise noted.

2. Electric actuators shall include the motor, integral reversing starter, actuator unit gearing, local control facilities, position limit switches, torque switches, declutch lever, and handwheel, as a self-contained unit. Remote control stations shall be provided where specified herein or as where shown on the Contract Drawings. Components and accessories shall be provided by a single source manufacturer.

3. Electric actuators shall be fully compatible with the sluice gates and operating stems. Electric actuators shall either be quarter-turn or multi-turn as required for each specific sluice gate
application and shall be sized to provide the torque requirements of the sluice gates being served.

4. Electric actuator mounting configurations shall be coordinated with each sluice gate application. Provide mounting bases and drive output couplings as required to interface with each sluice gate.

5. Actuators shall be factory wired requiring only connections of power supply, control circuits, and remote control stations where applicable.

6. Electric Actuators shall meet the latest revision of the applicable AWWA Standard C540.

B. Sluice gate Coordination

1. Actuator Sizing
   a. The actuator shall be sized to allow sluice gate closure at the required differential pressures. The safety margin of motor power available for seating and unseating the sluice gate shall be sufficient to ensure torque switch trip at maximum sluice gate torque with the supply voltage 10% below nominal.
   b. Electric actuators shall be sized to fully open or close each sluice gate in a period of time no greater than 60 seconds.

C. Electric Actuator Construction

1. The motor, gearing, controls and auxiliary components shall be housed in a NEMA 4X enclosure, provided with a corrosion protective finish.

2. Gear Reduction
   a. Electric actuators shall be furnished with gear reduction as required per each specific sluice gate application. Gears shall be machine cut, ground and highly polished. Shafts shall be heat-treated steel. The output or driving shaft shall operate in bronze bearings or in ball or roller bearings.
   b. The actuator gearing shall be totally enclosed in oil or grease filled gearcase to permit the actuator to be mounted and operated in any position. The gearcase shall be constructed to allow field inspection without taking the sluice gate out of service.
   c. Combined gear ratio shall ensure “self-locking” characteristics at all times and shall be of sufficiently high ratio as to inhibit “back driving” the actuator.

3. Drive Bushing
   a. The actuator shall be provided with a drive bushing easily detachable for machining to suit the sluice gate stem or gearbox input shaft. Thrust bearings when required shall be housed in a separate thrust base and be a sealed for life design.
4. Handwheel Operator
   a. Each actuator shall be provided with a handwheel operator and declutch lever. The declutch lever shall disengage the motor operator and engage the handwheel operator such that the sluice gate can be open and closed manually. Hand wheels shall be so designed that the motor does not turn when the handwheel is engaged and automatically disengages when the motor is energized. Hand wheels shall be sized adequate to manually operate with handwheel effort not exceeding 80 pounds. The handwheel operator clutch mechanism shall be designed to permit padlocking in both the engaged and disengaged positions.
   b. It should be possible to select manual operation while the actuator is running or start the actuator motor while the lever is in manual without damage to the drive train.
   c. The hand wheel drive shall be mechanically independent of the motor drive, and gearing shall permit emergency manual operation in a reasonable time.
   d. A clockwise rotation of the handwheel shall provide a clockwise rotation of the output drive sleeve.

5. Motor and Motor Protection
   a. Electric motors shall be single-phase as scheduled, squirrel cage induction type, specifically designed for sluice gate actuator service. The motors shall be of totally enclosed, non-ventilated construction.
   b. Electric motors shall be low inertia, high torque type, and with Class F or H insulation with a Class B temperature rise.
   c. Overload protection shall be by means of inherent motor thermal sensors embedded in the motor windings.
   d. Torque protection reset shall not allow repeated starting in the same direction while the control signal is maintained.

6. Mechanical Position Indicator
   a. Actuators shall be provided with a local mechanical position indicator or lever which shall track the sluice gate position and provide a visual reference, requiring no electric components. The mechanical position indicator shall be colored red and located on each sluice gate in a position where it can be easily viewed from a minimum of 6 feet away.
7. Space Heaters

Electric actuators shall be provided with space heaters to minimize condensation build-up inside the actuator enclosures. The actuator shall be provided appropriate power supply and controls for powering and controlling the space heaters. Separate dedicated power supplies shall not be required.

8. Torque Sensing

a. Each actuator shall be provided with both open and close torque protection. A microprocessor shall calculate the output torque from motor speed, voltage, and temperature. Torque limit shall be set from 40-100% of rating in 1% increments. The torque sensor shall not monitor the starting sequences of the actuator during initial sluice gate unseating.

b. Torque sensing shall be performed electronically.

D. Power and Controls

1. General

a. Sluice gate operators and controls shall be provided as a complete operating system for two sluice gates on this project with the following attributes:

i. Each sluice gate shall be capable of both local and remote analog positioning of the gate via potentiometer switches. Local controls shall be provided for each operator.

ii. Remote control units for each operator will be provided in a separate NEMA 4X lockable enclosure, which will house the remote control stations and the local override lockout switch.

iii. A local control override lockout switch shall be provided at the remote control station enclosure. This switch shall be located within the lockable enclosure, and shall function to disable “local” control functionality at the operators when so selected.

b. Power and control wiring shall join at a terminal strip in a separate watertight terminal box. The terminal box shall be provided with minimum two separate NPT-threaded conduit entries (minimum ¾”).
2. Controls

   a. Electrical controls shall include reversing motor starters, control power transformers and integral and/or remote control stations which shall be provided with each actuator.

   b. Motor starters shall be suitable for a minimum of 60 starts per hour, and shall be rated for the motor size.

   c. Electric actuators shall be provided with integral control stations which shall include the following features:
      
      (1) Local-Off-Remote Selector Switch (with provisions for pad-locking in any position). Selector switch shall be provided with one extra contact for remote monitoring of the selector switch “remote” position. Contacts shall be factory wired to terminal blocks to facilitate field wiring connections.

      (2) Open "RED" Indicating Light

      (3) Closed "GREEN" Indicating Light

      (4) Potentiometer switch for setting gate position
          
          Open and Closed indicating lights shall be energized when the electric actuator is in the respective “Full Open” or “Full Closed” positions. The indicating lights shall both be energized when the electric actuator is in between the “Full Open” and “Full Closed” positions.

      (5) The actuator shall be provided with a digital position indicator located on the actuator control panel.

   d. Remote Control Stations shall be provided with the same functions as the integral control stations listed above. The remote control station shall be powered from the actuator internal power supply. Remote control stations shall be provided with NEMA 4X enclosures. The actuator manufacturer shall provide all interconnecting wiring, cables, wire harnesses, and connections between the electric actuator and the remote control station.

   e. Four auxiliary limit switches shall be provided and shall be geared and fully adjustable to trip at any point between fully opened and fully closed. These limit switches shall be provided in addition to limit switches required for the integral sluice gate controls. The auxiliary limit switches shall be factory set: 2 at fully closed position and 2 at fully open position. Limit switch contacts shall be factory wired to terminal blocks to facilitate field wiring connections.

   f. The actuator shall be provided with integral torque overload protection.
g. The actuator shall be provided with integral diagnostic capabilities for monitoring the actuator operating conditions. The actuator provided with a common alarm relay output which shall monitor the following alarm functions as a minimum.

i. Sluice gate Jammed
ii. Motor Over-temperature
iii. Motor Over-torque
iv. Lost Phase (three-phase operators only)
v. No analog signal
vi. Hardware failure

h. Actuator Position Transmitter

The actuator shall be provided with an integral contact-less position transmitter which shall transmit a 4-20 mA analog signal directly proportional to the sluice gate position.

a. Electric Actuator Modulating Controller

a. Electric actuators specified for modulating service shall be provided with electronic position controllers to control the sluice gate position to a 4-20mA analog input signal from a potentiometer (local or remote) in the control panel.

b. Positioning shall be accomplished by comparing the command signal to an internal position feedback. The internal feedback shall be of the non-contacting type. The electronic controller shall be provided with a pulsing mode to prevent overshoot at the set point.

c. Modulating electric actuators shall be suitable for 600 starts per hour.

d. Modulating electric actuators shall be provided with the following features:

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy:</td>
<td>±1.0%</td>
</tr>
<tr>
<td>Proportional Band:</td>
<td>Range from 1% to 100%</td>
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<tr>
<td>Dead Band:</td>
<td>Range from ±1% of proportional band.</td>
</tr>
<tr>
<td>Polarity:</td>
<td>20mA Open, 4mA Close</td>
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<tr>
<td>Fail Mode:</td>
<td>Go to Open, Close, or Stop (Field Adjustable)</td>
</tr>
<tr>
<td>Motion Inhibit Timer:</td>
<td>0 – 60 seconds (Field Adjustable)</td>
</tr>
<tr>
<td>Input Signal:</td>
<td>4-20mA (250 ohms) via local or remote potentiometer</td>
</tr>
</tbody>
</table>

e. Electronic position controllers shall be Modutronic as manufactured by Limitorque or equal.

b. Electric Actuator Control Mode Configuration

a. Type “A” – Manual Position Control
LOCAL - When in the LOCAL position, the electric actuator shall move the sluice gate continuously to the selected position in response to the integral potentiometer control station.

REMOTE - When in the REMOTE position, the electric actuator shall move the sluice gate continuously to the selected position in response to the potentiometer in the remote control station.

a. Each electric actuator shall accommodate the following input and output wiring connections.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOR Switch Mode:</td>
<td>Discrete Output</td>
</tr>
<tr>
<td>Limit Sluice gate Open 1</td>
<td>Discrete Output (Position Adjustable)</td>
</tr>
<tr>
<td>Limit Sluice gate Open 2</td>
<td>Discrete Output (Position Adjustable)</td>
</tr>
<tr>
<td>Limit Sluice gate Closed 1</td>
<td>Discrete Output (Position Adjustable)</td>
</tr>
<tr>
<td>Limit Sluice gate Closed 2</td>
<td>Discrete Output (Position Adjustable)</td>
</tr>
<tr>
<td>Common Alarm:</td>
<td>Discrete Output – Common alarm for any sluice gate malfunction.</td>
</tr>
<tr>
<td>Position Monitor</td>
<td>Analog Output (All Sluice gates)</td>
</tr>
<tr>
<td>Remote Control Station:</td>
<td>Sluice gate manufacturer shall provide all interconnecting wiring, cables, wiring harnesses, and connections between the electric actuator and the remote control station.</td>
</tr>
</tbody>
</table>

E. Spare Parts

1. The following spare parts shall be provided for each electric actuator furnished for this project.
   a. Bearing, O-Rings, and Seals
   b. Actuator approved oil.

2. The following spare parts shall be provided for each type of actuator furnished for this project.
   a. One Electronic Control Module (including each PC board) of each type provided.
   b. One Main Contactor of each type provided
   c. One Motor
   d. One Relay
e. One Encoder
f. One stem nut
g. One worm shaft assembly
h. One drive sleeve assembly

F. Acceptable Manufacturers

1. Electric motor operators for 240 VAC, single-phase power applications shall be as manufactured by:
   a. Limitorque Corporation – L120 Series
   b. Rotork Controls, Inc. – A Series
   c. Or equal

2.3 FLOOR STANDS

A. Provide a cast-iron floor stand intended to support electrically actuated sluice gate operators. Floor stand base plate shall have a minimum of four (4) holes for anchorage to supporting structure.

B. The floor stand shall be designed to withstand, without damage, at least 200-pound effort on the operator or 1.25 times the stalled output of the electric actuator, whichever is greater.

C. All necessary attaching bolts, anchor bolts, and mounting and assembly hardware shall be of Type 316 stainless steel unless otherwise specified and shall be furnished by the sluice gate manufacturer.

2.4 PADLOCKS

A. Padlocks shall be provided to lock each control station’s Local-Off-Remote selector switch in any of the three positions. Padlocks shall be suitable for outdoor, severe weather use and shall be provided with the following features:
   1. Boron alloy-steel shackles which repel saws and bolt cutters.
   2. Dual locking shackles shall resist forcing or prying.
   3. Pick resistant spool pins.
   4. Durable thermo-plastic cover to protect lock body and key cylinder from dirt, dust, and other contaminants.
   5. Special drain channels to move water through the lock body.
   6. 2-1/8 inch wide steel case and five pin W6000 removable cylinder.

B. Padlocks shall be “keyed alike” such that all locks can be opened via the same key number. Provide padlocks and 10 keys for this project.
C. Manufacturers

1. Master - Pro-Series 6121

2. Or equal

PART 3 EXECUTION

3.1 INSTALLATION

A. The installation of the electric actuators shall be in accordance with the configuration shown on the Contract Drawings, manufacturer’s template, and shop drawings.

B. All anchor bolts and necessary bolt setting plates shall be furnished by the manufacturer. Two nuts shall be provided for each anchor bolt, and anchor bolts shall be cast-in-place during concrete placement, unless otherwise shown. Threads shall be protected and shall be cleaned before the nuts are attached and tightened.

C. All stainless steel bolts shall be coated with an antigalling compound before the nuts are attached and tightened.

D. All Surfaces in contact with the concrete shall be coated with material specified in the Section entitled “Painting”.

E. Operators shall be thoroughly cleaned and lubricated in accordance with the manufacturer’s installation procedures prior to testing and operation.

3.2 TESTING

A. Factory Tests

1. Provide a factory performance test for each motor operated sluice gate assembly. The test shall consist of simulating each typical sluice gate load and the following parameters shall be recorded:

   a. Current at maximum torque setting
   b. Torque at maximum torque setting
   c. Flash Test Voltage
   d. Actuator Output Speed or Operating Time

   In addition, the test certificate should record details of specification, such as gear ratios for both manual and automatic drive, closing direction, and wiring diagram code number.

2. Provide a factory control and status test on each motor operated sluice gate assembly by simulating each control signal and each position limit switch signal to verify proper and correct unit action.

3. Provide certified documentation of the tests performed. Final approval of the actuators shall be contingent upon receipt of the certified tests.
4. Provide above stated tests in addition to the normal factory tests performed.

B. Inspections & Field Calibrations

1. Visually inspect delivered units and accessories for conformance with the specifications and Contract Drawings.

2. Examine equipment locations for satisfactory preparation. Check conduits and raceway installations, and all wiring and cable terminations.

3. Perform startup of equipment under technical direction of manufacturer’s service engineer. Under no circumstances shall any portion of the equipment be energized without authorization from the manufacturer’s service engineer.

4. Manufacturer’s service engineer shall program and calibrate each unit. Submit a startup configuration/parameter report for each drive. Report shall include the following information as a minimum:

   Report shall include the following information as minimum:

   a. Project Name
   b. Equipment Location
   c. References
   d. Tag Reference
   e. Manufacturer/Model
   f. Manufacturer Serial Number
   g. Test Equipment Type and ID Number
   h. Date and Time Calibrated
   i. Configuration By: (name of person)
   j. Detailed configuration/parameter settings

C. Field Demonstrations

1. After installation, instrumentation equipment shall be checked, calibrated, and tested.

2. Equipment shall be field demonstrated to operate satisfactorily throughout the specified operating functions in the presence of the Owner and Engineer. Field demonstrations shall be performed after successful installation, calibration and testing of each drive.

3. The Contractor shall provide the necessary test equipment, and qualified test personnel to perform the field demonstrations as specified herein.
4. Each electric actuator shall be field demonstrated for operation, and the following parameters shall be recorded on a test certificate.

   a. Current @ maximum torque setting.
   b. Torque @ maximum torque setting.
   c. Flash Test voltage
   d. Actuator output speed or operating time.

5. In the event of a failure of the field demonstration, the Contractor shall perform the necessary corrections and re-demonstrate, at his own cost and expense, the equipment as directed by the Engineer.

C. Floor Stand Operator

   Operators shall be tested under full design pressure to verify the 200-pound maximum operating effort. Adjustments or changes required to meet this effort requirement shall be performed at Contractor's expense.

D. All tests and demonstrations shall be subject to the Engineer’s approval.

3.3 MANUFACTURER’S SERVICES

A. The Contractor shall furnish the services of a competent factory service engineer representing the manufacturer who shall start and operate the equipment. The representative shall supervise the installation of all actuators. The representative shall conduct testing to adequately show that the equipment has been properly installed and will function as herein specified.

B. The manufacturer shall furnish field services of a qualified service engineer for two working days, who shall perform the following:

   1. Check the installed equipment for correctness of assembly and connections.
   2. Adjust protective and control devices as required.
   3. Assist the Engineer and the Owner in the Testing and start-up of the equipment which shall include checking of equipment for compliance with the specifications. The manufacturer, after shop and field testing shall submit to the Engineer ten copies of final test data.

3.4 OPERATOR TRAINING

A. On-Site Training and Startup Assistance

   1. During the startup of the project the contractor shall provide a minimum of two days of classroom, "hands-on" training and startup assistance for plant operations' personnel simultaneously commencing on a date agreeable to the Owner, Engineer, and Contractor.

   - END OF SECTION -
SECTION 16010

ELECTRICAL GENERAL

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes general requirements for all electrical work.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of his specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. Local Building Codes
2. National Fire Protection Association (NFPA)
3. National Electrical Code (NEC)
4. Underwriters Laboratories, Inc. (UL)
5. National Electrical Manufacturers Association (NEMA)
6. Institute of Electrical and Electronic Engineers (IEEE)
7. American Society of Testing Materials (ASTM)
8. Insulated Cable Engineers Association (ICEA)
9. Association of Edison Illuminating Companies (AEIC)
10. American National Standard Institute (ANSI)

B. In general, all electrical equipment furnished shall be listed and labeled by Underwriters Laboratories, Inc. (UL) or another acceptable organization to Owner. This requirement will be waived only when the specified equipment is not available from any manufacturer with such a label or listing.

1.3. INSPECTION

A. The contractor shall have all electrical work inspected by the following agencies and this work shall pass such inspection:

1. Authority having jurisdiction.

B. The Contractor shall furnish to the Owner a certificate of compliance stating that the completed installation complies with the requirements of the National Electrical Code. This certificate shall be completed by the agency listed above.
1.4. QUALITY ASSURANCE

A. Uniformity: Unless otherwise specified, equipment or material of same type of classification, used for the same purpose shall be products of same manufacturer. All material shall be new and of the current design of manufacturer providing equipment or material.

B. Design: Equipment and accessories not specifically described or identified by manufacturer's catalog numbers shall be designed in conformity with NEMA, IEEE, or other applicable technical standards and shall have neat and finished appearance.

C. Installation: Erect equipment in neat and workmanlike manner; align, level and adjust for satisfactory operation; install so that parts are easily accessible for inspection, operation, maintenance and repair. Minor deviations from indicated arrangements may be made, but only after obtaining approval from the Owner.

1.5. CONTRACT DRAWINGS

A. Location Approximate

1. The locations of equipment, fixtures, outlets and similar devices shown on the Contract Drawings are approximate only.

2. The Contractor shall determine the exact locations of the equipment, outlets, box-outs, sleeves and of similar items required for the coordination of electrical work with the structural, architectural, mechanical and other work.

B. Drawings Diagrammatic

1. Circuit diagrams shown are diagrammatic and functional only and are not intended to show exact circuit layouts, number of fittings, or other installation details.

2. The Contractor shall furnish all labor and materials necessary to install and place in satisfactory operation all power, lighting and other electrical systems shown.

1.6. CONCEALMENT

A. Conceal all Contract Work other than areas specifically shown as exposed on Contract Documents (e.g. Electrical/Mechanical Rooms). For work in open ceiling areas, corridors, etc., where ceiling concealment is impossible, or if other concealment is impossible or impractical, proceed as follows:

B. Notify the Owner prior to starting that part of the Work and install only after Owner approval of final appearance.

1.7. CONTINUITY OF SERVICES

A. When existing buildings are in use during construction operations, keep all existing electrical systems in operation within all rooms of building at all times.
B. Schedules for various phases of Work shall be coordinated with all other trades and with the Owner.

C. Provide necessary and temporary connections and relocations as required to maintain existing systems in operation.

D. When connecting new facilities do not shut off any existing Mechanical/Electrical facilities or services without prior written approval of the Owner.

1.8. INSTRUCTION OF OWNER’S REPRESENTATIVE

A. Before request for final acceptance of Work, furnish necessary skilled personnel to operate all systems. Instruct designated Owner’s representatives in proper operation and care of systems and equipment. Repeat instructions as required.

1.9. OPERATION AND MAINTENANCE MANUAL

A. Operating Instructions and Manuals for electrical equipment shall as a minimum include the following:

B. Prepare six operations and maintenance manuals as specified hereinafter. Include one copy each of the following:

C. Record (as-built) copies of all reviewed shop drawings.

D. Wiring diagrams incorporating all field changes and Owner’s comments.

E. Manufacturer’s instructions on care and operation of equipment.

F. Warranty certificates.

G. Spare parts list.

H. Complete typewritten operating instructions, covering all systems descriptions and operation, emergency operating instructions and precautions.

I. Name, address and telephone number of supplier or representative of manufacturer for each item of equipment in Contract.

J. Bind above items (all unused, clean, and legible) in common folder or heavy notebook covers and submit to the Owner before request for final acceptance.

K. This shall include but not be limited to the following:

1. Power Panels
2. Disconnect Switches
3. Fusing
4. Circuit Breakers
5. Gate Actuators
6. Control Devices (Each Type)
1.10.  PROTECTED WORK

A.  General

1.  Exterior plywood panels shall be 3/4” painted marine plywood.

B.  Wet Locations

1.  Where installed outdoors or in areas designated as Wet Locations, all work shall meet the requirements of the NEC for Wet Locations.

1.11.  DELIVERY, HANDLING AND STORAGE OF MATERIAL

A.  General

B.  Materials and equipment shall be delivered to the site of the work in their original containers, and containers shall not be opened until inspected by the Owner.

C.  Electrical equipment shall at all times during construction be adequately protected against mechanical injury or damaged by water.

D.  If any materials or apparatus have been damaged the apparatus or materials shall be restored to a new condition, subject to the inspection and approval of the Owner or replaced with new materials or apparatus.

E.  Equipment shall be stored in accordance with manufacturer's recommendations. Temporary heaters shall be provided as required to prevent buildup of condensation in the equipment.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

-END OF SECTION-
SECTION 16095

ELECTRICAL SYSTEMS IDENTIFICATION

PART 1 GENERAL

1.1. SUMMARY
   A. This Section includes materials, procedures, practices, and requirements that shall be provided for
      identification of raceways, conductors, instruments, equipment, and devices.

1.2. REFERENCES
   A. The publications listed below, current as of the date of this solicitation, form a part of this
      specification to the extent referenced. The publications are referred to in the text by basic designation
      only.
      1. National Electrical Code - NEC
      2. Underwriter's Laboratories, Inc. UL

1.3. SUBMITTALS
   A. Prior to obtaining any materials in conjunction with this Section, detailed shop drawings shall be
      submitted.
   B. Submittals shall consist of the following:
      1. Complete list of all engraved nameplates. Failure to indicate all nameplates on this list shall not relieve the contractor of the requirement for their installation.
      2. Sample of engraved nameplate, punched tape label and marking tags if requested by the Owner.

PART 2 PRODUCTS

2.1. NAMEPLATES
   A. Nameplates shall be engraved laminoid.
   B. All lettering to be uppercase (condensed block type).
   C. Nameplate colors shall be black with white letters unless otherwise shown.

2.2. PUNCHED TAPE LABELS (RECEPTACLE IDENTIFICATION)
   A. Punched Tape Labels for identification of receptacles and light switches shall be \( \frac{1}{2} \) -inch clear tape
      with standard lettering.
B. Manufacturer: Dymo or approved equal.

2.3. MARKING TAGS (WIRE AND CABLE IDENTIFICATION)
   
   A. Marking Tags shall be means of preprinted plastic tape.
   
   B. Manufacturer: Brady, O.Z. Gedney, or approved equal.

PART 3 EXECUTION

3.1. INSTALLATION
   
   A. Follow the numbering systems specified, scheduled, and/or shown on the Contract Documents.
   
   B. Provide identification noted on panel schedules, one lines, etc. for all panelboards, contactors, transformers, disconnects, busways, starters, devices, controllers, fire alarm devices, and all other electrical devices and enclosures. Indicate with engraved lamicoid nameplate, on cover of equipment and label with numbers and letters as shown.

3.2. FASTENING
   
   A. Nameplates
      
      1. Clean equipment surface and securely fasten each label with silicone adhesive.
   
   B. Devices (Receptacles)
      
      1. Label all receptacles on faceplate with 1/2 - inch clear punched (Dymo) tape.
      
      2. Provide the following information
         
         a. Panel Designations (Per Panel Schedules)
         b. Branch Breaker Number.

3.3. WIRE AND CABLES
   
   A. Tag all feeders, sub-feeders, special system wiring, and control wiring in each panelboard, pullbox, and gutter space, denoting points of origin and termination of wires.
   
   B. Provide the following information:
      
      1. Panel or source where conductors originate
      2. Circuit Number
      3. Circuit Designation.

3.4 SPECIAL PANELBOARD REQUIREMENTS
   
   A. Nameplates
1. Identify in accordance with Panel Schedule.

B. Directory

1. Provide complete typewritten directory for each panel, with all load information and functions, etc., positively identified for each individual branch circuit.

2. Handwritten directory shall be provided until all circuits are connected and balanced. Then, install permanent directory.

-END OF SECTION-
SECTION 16111

CONDUITS

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes the conduit systems required, specified, and or shown on Contract Drawings including conduits, fittings, boxes, hangers, and accessories.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. American National Standard Institute (ANSI)
   a. ANSI C80.1: Electrical Rigid Steel Conduit (ERSC)
   b. ANSI C80.3: Specification for Electrical Metallic Tubing, Zinc Coated (EMT)

2. US Federal Specification (FS)
   a. FS WW-C-581E: Conduit, Metal, Rigid, and Intermediate; and Coupling, Elbow, and Nipple, Electrical Conduit: Steel, Zinc Coated (S/S by UL6A-ED1 and UL514D-ED1) (Superseding WW-C-581D)

3. National Electrical Code (NEC)
   a. NEC Article 310: Conductors for General Wiring (Table)

4. National Electrical Manufacturers Association (NEMA)
   a. NEMA FB-1: Covers fittings that are a part of electrical raceway systems designed for use as intended by the requirements of NFPA 70. Specifically covers fittings for use with non-flexible tubular raceways--rigid and intermediate metal conduit, electrical metallic tubing,
   b. NEMA TC-2: Covers electrical polyvinyl chloride (PVC) conduit of types EPC-40-designed for normal-duty applications above ground and concrete encased applications or direct burial--and EPC-80--designed for heavy-duty (areas of physical damage) applications above ground and concrete encased applications or direct burial.
c. NEMA TC-3: Covers PVC fittings intended to be joined in the field by means of a solvent cement system to PVC rigid conduit, tubing, and other fittings, based on the outside diameters given in NEMA Standards Publication TC 2-2002.

5. Underwriters Laboratories, Inc. (UL)
   a. UL 1: Flexible Metal Conduit
   b. UL 514B: Standard for Conduit, Tubing, and Cable Fittings

1.3. SUBMITTALS

A. General
   1. Submittals and samples shall be submitted in accordance with the provisions set forth below.
   2. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted.
   3. Submittals shall contain a material list with manufacturer’s name and data describing the material and showing its compliance with specifications and associated standards.
   4. Samples of any material shall be submitted upon the request of the Owner.

PART 2 PRODUCT

2.1. CONDUIT

A. Rigid Metal (steel) Conduit (RSC)
   1. Rigid metal conduit shall be galvanized steel, hot-dipped with zinc over the entire length, both exterior and interior including threads.
   2. Each conduit shall have a coupling on one end and a thread protector on the other.
   3. Conduit shall meet ANSI Standards C80.1 and C80.4 latest revisions. The conduit shall be manufactured by Allied Tube & Conduit Corporation, Pittsburgh Standard Conduit Company, Triangle PWC Co. or approved equal.

B. Intermediate Metal Conduit (IMC)
   1. IMC shall be galvanized steel, hot-dip galvanized over entire length including threads. In additional, the exterior shall have a chromate coating applied and the interior shall be coated with a silicone lubricant.
   2. The conduit shall be supplied with threads cut one thread short on each to assure a good ground return path. A standard rigid steel coupling shall be supplied on one end and a color-coded thread protector on the other.
3. Swivel type retractable couplings will not be permitted.

4. IMC shall be manufactured to meet the latest revisions of Federal Specification WW-C-581E. IMC shall be manufactured by Allied Tube and Conduit Corporation, or approved equal.

C. Non-Metallic Conduits (PVC)

1. Non-Metallic conduits and fittings shall be Schedule 80 or Schedule 40, polyvinyl chloride, as shown or scheduled.

2. Materials shall be corrosion, fire retardant, and sunlight resistant.

3. Conduit and fittings shall be in accordance with the NEMA Standard TC-2 and TC-3, latest revisions.

4. The conduit and fittings shall be manufactured by Carlon Electric Conduit Co., Triangle PWC Co., or approved equal.

D. Flexible Conduit

1. Liquid-tight flexible metal conduit (Seal-tite) - Shall be constructed of flexible corrosion resistant zinc galvanized steel conduit with an extruded plastic jacket and built-in continuous copper ground strap under the jacket. Conduit shall be Type UA manufactured by Anaconda Metal Hose Company, Type LA manufactured by Electri-Flex Co., or approved equal.

2.2. JUNCTION, DEVICE AND PULL BOXES

A. Junction Boxes

1. Junction boxes and pull boxes shall be sized as required for the quantity and size of conductors to be installed within the box. Sizes shall comply with the requirements of the National Electric Code for wire bending space and radius.

2. Cast Junction Boxes - Junction boxes for use with RSC or IMC shall be constructed of hot dipped galvanized cast iron or copper free aluminum and shall be sized per NEC requirements. Boxes shall be manufactured by Crouse-Hinds Co., Killark Co. or approved equal (use copper free aluminum with RAC).

B. Device Boxes for Outlets

1. Cast Device Boxes – In areas using exposed RSC or IMC boxes shall be constructed of hot dipped galvanized cast iron or copper free aluminum and sized per NEC requirements. Boxes shall be Series FD manufactured by Crouse-Hinds Co., Series FD, manufactured by Killark Co., or approved equal. (Use copper free aluminum boxes with RAC)

2. Flush Device Boxes - Device boxes installed within concrete masonry units shall be constructed of code-gaged galvanized steel and shall be of the type specifically approved for
masonry use. Boxes shall be installed flush with finished surface and the mounting height shall be adjusted for masonry joints.

2.3. CONDUIT OUTLET BODIES, FITTINGS, COUPLINGS AND EXPANSION COUPLINGS

A. Conduit Outlet Bodies

1. Conduit outlet bodies shall be used where required to permit ready fishing and withdrawing of wires. Conduit bodies not located in areas classified as Hazardous shall be gasketed. Bodies shall be of the cast iron or copper-free aluminum type. Bodies shall be Condulet series manufactured by Crouse-Hinds Co., Electrolet series manufactured by Killark Co., or approved equal (use copper free aluminum with RAC).

2. Conduit outlet bodies used with rigid PVC conduit shall be of the same material and schedule as rigid PVC conduit.

B. Fittings and Couplings

1. PVC - All couplings and fittings for PVC rigid conduit shall be of the same material and schedule as PVC rigid conduit.

2. IMC - Standard Rigid Steel conduit fittings shall be installed with IMC conduit.

3. Liquid-tight flexible metal conduit (Seal-tite) – Fittings shall be compatible with raceway material and in conformance with NEMA FB-1 and UL 514B.

2.4. CONDUIT HANGERS AND SUPPORTS

A. General

1. All steel parts of the conduit support systems shall be galvanized, cadmium plated or PVC coated.

2. Perforated strap hangers will not be accepted.

3. Conduit supports shall be as manufactured by T&B (Steel City-Kindorf or Superstrut), Unistrut, Allied, Globe, or B-Line, or approved equal.

4. One hole malleable iron pipe clamps shall be hot dipped galvanized. Pipe spacers shall be of malleable iron and have a hot dip galvanized finish.

B. Slotted Channel Framing: Cold-formed metal channels with continuous slot.

1. Size of Channels: Nominal 1-5/8 by 1-5/8 inches, 12 gauge unless otherwise indicated or required for the application.

2. Finish:
RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

a. Indoor Dry Applications: Electro-plated zinc coating (Super-strut Gold-Galv, Kindorf Gold Galv-Krom, etc).

b. Outdoor, wet applications: Hot dipped galvanized (Superstrut HDG, Kindorf HD, etc.)

c. Corrosive applications: PVC coated (Superstrut PVC, Kindorf “P”, etc.).

3. Fittings

a. Channel attachment nuts shall be prelocated in channel and be self supporting (spring type).

b. Conduit straps shall be of the notched type to fit channel with captured nut and bolt for tightening.

c. Beam clamps shall be provided with jaw openings to accommodate selected beam and provided with tapped holes and/or captured nuts for support of threaded rods.

4. Manufacturer (refer to Finish above for correct product)

a. Kindorf B-900, 905 series

b. Superstrut A-1200, A-1200P series

c. Globe G-5812, G-5812PO series

d. B-Line B-22, B-22-1-7/8 H series

e. Unistrut P-1000, P-1000-HS series

f. Power Strut PS-200, PS-200-H-1-7/8 series

g. Or Approved Equal.

C. Fasteners

1. All fasteners shall be stainless steel or silicon bronze.

2. All expansion anchors shall be self-drilling type.

2.5. MISCELLANEOUS ACCESSORIES

A. Warning Tape

1. Tape shall be of the detectable type and shall consist of a polyethylene tape with aluminum foil coil. Tape shall be 6” wide and shall have the legend "CAUTION ELECTRIC LINE BURIED BELOW". Lettering shall be black, on a red background. Tape shall be Panduit HTDU6R-E, Seton 37236, or approved equal.
PART 3 EXECUTION

3.1. INSTALLATION

A. General

1. No exterior conduits shall be run exposed on outside walls of buildings, or structures.
2. Minimum size shall be ¾ inch unless specifically shown otherwise.
3. Terminations of metallic conduits shall be furnished with grounding bushings in accordance with Section “Electrical Grounding”.
4. Where exposed conduit requires clamping to the building structure, clamps shall consist of galvanized iron one-hole pipe straps and expansion shields.
5. Support outlets; pull boxes and junction boxes separately from building construction, not from conduit.
6. Where exposed conduit is permitted, install conduit parallel to or at right angles with lines of structure in neat and organized configurations.
7. Coordinate all conduit installations with other trades in advance of installation.
8. Plug conduit openings until wires are installed.
9. Conduit reducers shall not be allowed.
10. Complete raceway installation before starting conductor installation.
11. Install temporary closures to prevent foreign matter from entering raceways.
12. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portions of bends are not visible above the finished slab.
13. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and keep straight legs of offsets parallel, unless otherwise indicated.
14. Install exposed raceways parallel or at right angles to nearby surfaces or structural members and follow surface contours as much as possible.
15. Run parallel or banked raceways together on common supports.
16. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
17. Join raceways with fittings designed and approved for that purpose and make joints tight.
18. Provide insulating bushings to meet NEC requirements.

B. PVC Rigid Conduit Requirements

1. PVC rigid conduit shall be installed per manufacturer's recommendations.
   a. Use proper tools for installing PVC conduits.
   b. Fittings, boxes, and other accessories shall be PVC of the same schedule with all joints being of the solvent cement type.

3.2. UNDERGROUND CONDUITS

A. Conduits shall be buried to a minimum depth of 24 inches unless otherwise shown or specified.

B. Warning Tape

1. All buried conduits or groups of conduits shall have a warning tape buried 12 inches under finished grade and located directly over the centerline of the conduits. A second tape shall be buried 12 inches above the top of the highest conduit in the group. Where shown on the drawings, additional tapes shall be provided for ductbanks wider than 30 inches.

C. Underground conduits exiting and entering structures shall have expansion couplings as specified.

D. Where conduit is buried below structures, footing, slabs etc. Contractor shall excavate, install, backfill and compact buried conduit prior to final compaction by General Contractor.

E. Any Earthwork shall be in accordance with sections headed "Excavation" and "Earthfill."

F. All conduits shall be cleaned and tested with a mandrel, prior to pulling cables.

G. The transition from the underground conduit system to the building interior conduit system shall occur at the first junction box, device, or equipment enclosure within the building. Conduit seals shall be provided at this location. Such seals shall minimize the circulation of air between the underground conduit system and the indoor enclosures. Seals shall be composed of Duct Seal sealing compound or similar non-hardening removable sealant.

H. Conduit bends in underground conduits shall have a minimum centerline radius as follows:
### Conduits in Concrete

A. Raceways Embedded in Slabs: Install in middle 1/3 of slab thickness where practical and leave at least 2 inches of concrete cover.

B. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.

C. Space raceways laterally to prevent voids in concrete.

D. Where conduit crossovers are necessary, they shall be located so that reinforcing is not displaced from its position.

E. Run conduit larger than 1-inch trade size parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.

F. Where non-metallic conduit is permitted within the slab, change from nonmetallic conduit to rigid steel conduit, or IMC before rising above the floor.

G. Where electrical conduits in slabs cross a building expansion joint, an expansion coupling for each conduit shall be installed at the joint.

### Conduit Types

A. Conduit types shall be in accordance with the following schedule unless specifically noted otherwise on the Contract Documents:

<table>
<thead>
<tr>
<th>Conduit Size</th>
<th>Radius (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inch</td>
<td>36</td>
</tr>
<tr>
<td>4 inch</td>
<td>42</td>
</tr>
<tr>
<td>5 inch</td>
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### Rehabilitation of Beaver Dam Lake Dam

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<tr>
<th>Description</th>
<th>RSC</th>
<th>IMC</th>
<th>PVC Sch. 40</th>
<th>PVC Sch. 80</th>
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<td>1. Direct Buried Underground Ductbanks or Individual Conduits without encasement</td>
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<td>2. Direct Buried Non-Electrical Underground Ductbanks or Individual Conduits without Encasement</td>
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<td>3. Concrete encased Underground Ductbanks or Individual Conduits</td>
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<td>4. Conduit Encased in Concrete (Slabs, walls, etc)</td>
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<td>5. Exposed Exterior Conduit</td>
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-END OF SECTION-
SECTION 16120

WIRES AND CABLES

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes wires, cables and accessories as shown, specified or required for the complete power, lighting, control and other systems in the Contract. Quantity, type and size of conductors shall be as shown or specified.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. National Electrical Code (NEC)
2. Underwriters Laboratories, Inc. (UL)
3. American Society of Testing Materials (ASTM)

1.3. QUALITY ASSURANCE

A. Conductor Manufacturers

1. All wires and cables of like type shall be the product of one manufacturer.

B. Manufacturer Test Requirements

1. Certified test reports showing compliance with applicable UL Standards for each type of conductor shall be provided upon request.

1.4. SUBMITTALS

A. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted.

B. Submittals shall contain a material list with manufacturer data describing the material and showing its compliance with specification, associated standards and test requirements.

C. Other Submittals

1. Samples of any material shall be submitted upon the Owner’s request.
2. A list of all test equipment shall be submitted to the Owner for review.
3. Cable testing results.
PART 2 PRODUCTS

2.1. GENERAL

A. Unless otherwise shown or specified, all conductors shall be stranded copper.

B. Material construction of copper conductor strands shall be coated or uncoated soft drawn or annealed copper.

2.2. LOW VOLTAGE CONDUCTORS

A. Low voltage conductors for 600 VAC service and below shall be rated a minimum of 600 volts. Conductors shall be constructed of uncoated Class C copper concentric-lay-stranded wires, rated for 90° C (dry), 75° C (wet), machine tool wire with thermoplastic (PVC) insulation and nylon jacket. Conductors shall be oil and gasoline resistant II.

B. THHN/THWN/MTW: 600 Volt, 90° C (dry), 75° C (wet) with PVC insulation and Nylon Jacket.

C. Acceptable manufacturers: General Cable/BICC, Essex Electrical Products, American Insulated Wire, Southwire, or approved equal.

2.3. GROUNDING SYSTEM CONDUCTORS

A. Grounding system conductors shall be copper wires in accordance with "Electrical Grounding" section.

2.4. COLOR CODING OF CONDUCTORS

A. Power conductors on systems 600 volts and less shall be color coded in accordance with the following:

1. 240/120 VAC, 1 phase, 3 wire, 60 Hz.

   Conductor 1  Black
   Conductor 2  Red
   Neutral      White
   Ground       Green

2. For conductors larger than No. 6 AWG, color tape may be used to color-code the conductors at all terminations, splices or other places where they are visible.

2.5. CONNECTORS AND TERMINALS

A. Connectors (#10 and Smaller)

1. Solderless pressure connectors (wirenuts) for pigtail splicing all power wires and cables #10 and smaller shall be "Wing-nut" type made by Ideal.

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<tr>
<th>Model No.</th>
<th>Wire Size</th>
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<tr>
<td>451</td>
<td>2 #18 min.; 3 #12 max.</td>
</tr>
<tr>
<td>452</td>
<td>2 #14 min.; 4 #12 max.</td>
</tr>
<tr>
<td>453</td>
<td>1 #10, and 1 #12 min.; 2 #8 and 1 #16 max.</td>
</tr>
<tr>
<td>455</td>
<td>3 #12 min.; 4 #10 max.</td>
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</tbody>
</table>

2. Connectors for (straight) splicing signal/control wires #10 and smaller shall be solderless compression type. (Burndy Hydent; T & B "Sta-Kon").

B. Connectors (#8 and Larger)

1. Connections of conductors to terminal posts or other conductors shall be made with UL approved compression type connectors. Wire nuts shall not be permitted.

2. Connections shall insure a thorough connection without damaging the conductor.

3. Connections shall be for proper cable size.

4. Typical compression type fittings shall be as specified below:

   a. Two way splices for large conductors 1/0 and larger shall be uninsulated indenture type similar to Burndy "Hy-Link", Thomas and Betts Type YS two-way conductor or approved equal.

   b. Two way splices for small conductors, 1 AWG and smaller shall be uninsulated indenture type similar to Burndy "Hy-Dent", Thomas and Betts "Sta-Kon" or approved equal.

   c. Fixture connections shall be two-piece indenture type similar to Thomas and Betts "Sta-Kon" Series PT-66M, Ideal - Crimp Connector Sleeve No. 410 with wire cap insulated or approved equal.

C. Terminals

1. Terminals shall be 600 volt, indenture type, two or one hole lugs similar to Thomas and Betts "Sta-Kon", Burndy "Hylug" or approved equal.
2. Spade terminals shall be locking, vinyl self insulated similar to Thomas and Betts "Sta-Kon", Burndy or approved equal.

3. All accessories that use special tools for proper application as recommended by the manufacturer shall be installed only with those tools and in accordance with the established practices and recommendations of the manufacturers.

D. Terminal Blocks

1. Terminal blocks shall be suitable for 600 VAC continuous ratings and shall be in accordance with UL and NEMA standards for clearance between adjacent terminals.

2. Terminal blocks shall be sectional units of molded thermoplastic polyester and suitable for channel mounting.

3. Sections shall have built in marking area and wire gauge.

4. Center post in each section shall prevent over insertion of wires.

5. Sections shall not be interlocked so one section can be removed without disturbing the remainder of the assembly.

6. Terminals shall be tin plated, box lugs having hardware recessed into the molding or flat terminal connectors.

7. Box lugs shall be captive and self locking

8. End caps, jumpers and mounting channels shall be provided as required.

2.6. MISCELLANEOUS ACCESSORIES

A. Wire pulling lubricant shall be non-toxic and contain no solvent to attack wire insulation plastic tape or conduits. Lubricant shall leave no residual in conduit, shall be rust inhibited and be non-combustible. Lubricant shall be as manufactured by Ideal, Tomic Electric or approved equal.

B. Cable and wire supports shall be Kellem grips or cable supports wedges as manufactured by O. Z. Gedney or approved equal.

C. Cable tags for coding of individual conductors shall be in accordance with the Section "Electrical Systems Identification."

D. Electrical tape shall be as manufactured by 3M, Bishop Electric, General Electric, Okonite or approved equal. The following catalog numbers refer to 3M to establish type and quality.

E. Plastic tape shall be all weather vinyl electrical tape having a high dielectric strength and resistant to sun, water, oil, acids and corrosive chemicals. Tape shall be 3M Type 88.

F. Electrical insulation putty shall be rubber based elastic putty in tape form. Putty shall be 3M Scotchfill.
PART 3 EXECUTION

3.1. INSTALLATION

A. Unless otherwise shown or specified all power, lighting and control circuits shall be enclosed in conduit wireways.

B. All individual conductors shall be tagged at all termination and splice points.

C. Letter coding shall be by means of printed plastic tape.

D. Letter coding shall be as scheduled on the Contract Drawings.

E. Each conductor insulation shall be one color throughout the entire run.

F. Splices and connections shall be made with solderless pressure type connectors.

G. Splice and connections shall be taped and covered to provide an insulating value of the connection equal to the adjacent wire insulation.

H. Conductors installed in wireways shall be grouped and bundled as they exit each conduit run.

I. In open areas such as wire ways, manhole, etc., wires and cables shall be tied every 12 inches.

J. All conductors shall be carefully handled to avoid kinks or damage to insulation.

K. Lubricant may be used to assist in pulling conductors into conduits.

L. Pulling strain shall not exceed that recommended by the cable manufacturer.

M. Spare conductors shall be of a sufficient length for future connection. Where spare terminal blocks are provided, proper terminals shall be installed and connected.

3.2. SPLICES AND JOINTING

A. All splices shall be made in junction boxes and shall be taped to an insulating value at least equal to the insulating value of the conductors.

B. Application of taped joints shall be as follows:
   1. For lighting circuits splice connections shall be wrapped with plastic electrical tape.
   2. For motor circuit terminations splice connection shall be wrapped with 3M Scotchfill tape and finished with plastic tape.

C. Copper to aluminum connection shall be made with UL approved aluminum-to-copper connectors and compound.
D. Solder joints, hinged connectors and bolted terminal lugs will not be permitted.

E. The exception of multi-bolted direct compression connectors in large wire and cable sizes will be permitted, if compression type fittings are not available.

F. Splices, taps or terminations shall not be made when conductor ends have missing strands or when ends are mutilated in any way.

G. All underground and outdoor splices of 600-volt conductors shall be installed utilizing a epoxy based cast splice kit (3M or approved equal).

3.3. LOW VOLTAGE AND CONTROL CONDUCTORS

A. Low voltage and control conductors shall be as follows:

B. All power, control and lighting conductors shall be Type THHN-90C, THWN-75C/MTW unless otherwise noted.

3.4. CONNECTIONS TO EQUIPMENT

A. Connections and interconnections shall be made to all equipment in accordance with the Contract Drawings, wiring diagrams furnished by manufacturers, connection drawings prepared by the Contractor, and as specified by the Owner.

B. The Contractor shall be responsible for the accuracy of the connected work made under this Contract.

C. Any damage resulting from erroneous connections shall be corrected by the Contractor at his own expense.

3.5. TESTING

A. General

1. When all wire and cable are in place but before the final connections have been made, they shall be tested.

2. Manufacturer’s data on testing resistance shall be submitted with tabulated test results.

3. Contractor shall furnish all necessary test equipment instruments.

4. All tests shall be performed in the presence of the Owner’s Representative, unless waived by the Owner.

5. Contractor shall notify the Owner three working days in advance of any testing.

6. If damage is indicated during testing or upon review of the tabulated data, Contractor shall replace defective wires and cables and retest at no cost to the Owner.
B. Megohm Test

1. For all wires and cable 8 AWG and larger, a 1500 volt insulation resistance (Megohm) test shall be performed.

2. The Megohm test shall be performed on the following combination of conductors:
   a. Between all conductors in the same enclosure
   b. Between each conductor and ground.

3. The resistance test results shall be recorded at the end of one minute of sustained voltage.

C. Acceptance

1. After all final connections have been made, the equipment and controls shall be tested, by operation, to demonstrate performance.

- END OF SECTION -
SECTION 16141

WIRING DEVICES

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes switches, receptacles, and accessories required for a complete installation as shown and specified.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. American National Standard Institute (ANSI)

2. National Electrical Code (NEC)

3. National Electrical Manufacturers Association (NEMA)
   a. NEMA WD1: Contains color references for AC switches, plugs and cord connectors, receptacles, and other related wiring devices.
   b. NEMA 5-15R: 125 V two-pole, three-wire receptacle.

4. Underwriters Laboratories, Inc. (UL)
   a. UL Rated Class A Group 1

5. US Federal Specification (FS)
   a. FS WC-596: General specification for electrical power connectors.

1.3. QUALITY ASSURANCE

A. Qualifications of Manufacturer

1.4. SUBMITTALS

A. Shop Drawings

1. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted.
2. Submittals shall contain manufacturer data describing the material and showing its compliance with specifications, associated with standards and test requirements.

B. Other Submittals

1. Samples are not required for specified manufacturers and part numbers. If "approved equal" products are proposed, samples of both the "approved equal" and the specified product shall be submitted for comparison purposes.

C. Approved equal products will not be considered unless samples are submitted.

PART 2 PRODUCT

2.1. GENERAL

A. Provide industrial grade heavy-duty wiring devices, in types, characteristics, grades, colors, and electrical ratings for applications indicated which are UL listed and which comply with NEMA WD 1 and other applicable UL, Federal, and NEMA standards.

B. Provide ivory color devices except as otherwise indicated.

C. Model or series numbers, where indicated, refer only to the specified manufacturer. Identical numbers by other manufacturers are not considered approved equal.

2.2. RECEPTACLES

A. Receptacles

1. Wall plug receptacles shall be NEMA 5-15R rated 15 amperes at 120 VAC of the two-pole, three-wire type. They shall be suitable for use with a three-wire polarized plug having two parallel blades and shall have the third leg grounded. They shall meet the requirements of Federal Specification WC-596.

2. All duplex receptacles shall be:

a. Hubbell 5262 Series heavy-duty industrial grade.

b. Leviton 5262 Series heavy-duty industrial grade.

c. Arrow Hart 5262 Series heavy-duty industrial grade.

d. Daniel Woodhead 5262 Series heavy-duty industrial grade.

e. Approved equal (samples of any proposed approved equal products shall be submitted as noted above).

B. GFI Receptacles

1. Receptacles marked as GFI shall be of the ground fault interrupter type. They shall be UL rated Class A, Group 1. They shall be:

a. Hubbell Series GF5262

b. Or Approved Equal.
2. Single GFI Receptacles providing "downstream" protection are not acceptable unless specifically shown.

3. GFI breakers used with conventional receptacles shall not be acceptable where GFI receptacles are shown.

C. Device Boxes for receptacles shall be of the type appropriate for each location as specified under Sections headed "Enclosures" and "Conduits".

D. Plates

   1. Unless otherwise specified, flush plates for devices shall be smooth stainless steel type 302. Plates shall be:
      a. Hubbell S1 Series
      b. Leviton S Series
      c. Arrow Hart S1 Series
      d. Or Approved Equal.

   2. Plates in unfinished areas shall be galvanized steel, unless otherwise noted.

   3. Plates in wet, corrosive, or outdoor areas shall be of the corrosive resistant weatherproof design.

PART 3 EXECUTION

3.1. INSTALLATION

   A. Install wiring devices and accessories as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with recognized industry practices to fulfill project requirements.

   B. Coordinate with other Work, including painting, electrical boxes and wiring installations, as necessary to interface installation of wiring devices with other Work.

   C. Install wiring devices only in electrical boxes, which are clean; free from building materials, dirt, and debris.

   D. Install wiring devices after wiring work is completed.

   E. Install wall plates after painting work is completed.

-END OF SECTION-
SECTION 16160

ENCLOSURES

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes enclosures of the type suitable for their locations to protect all electrical equipment and controls.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

   1. National Electric Code (NEC)
   2. National Electrical Manufacturers Association (NEMA)
   3. Underwriters Laboratories, Inc. (UL)
   4. International Electrotechnical Commission (IEC)

1.3. QUALITY ASSURANCE

A. Qualifications of Manufacturer

B. All equipment furnished under this Section shall be furnished by manufacturers who meet the quality, workmanship, and experience requirements as specified in Division 1, General Requirements section of this Contract.

1.4. SUBMITTALS

A. Submittals and samples shall be submitted in accordance with the provisions set forth in Division 1, General Requirements.

B. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted.

C. Enclosures shall be submitted with each piece of equipment they are protecting.

D. Submittals shall contain the NEMA or IEC type designation and manufacturer data describing the enclosure and showing its compliance with specifications and associated standards.

E. A list of nameplate titles shall be submitted.

F. Samples of any material shall be submitted upon the Owner’s request.
PART 2 PRODUCTS

2.1. GENERAL

A. Protected Work

1. Enclosures for electrical equipment shall be NEMA Type 1 - Gasketed or IEC-IP42 except as modified below.

B. In areas designated as:

1. Wet Locations or Outdoors Environments, all work shall meet the requirements of the NEC for wet locations. All electrical equipment and enclosures shall be NEMA Type 4, or IEC-1P66.

C. Where electrical equipment is installed in motor control centers, panels other control assemblies, no additional enclosures are required except where specifically specified or shown.

D. Device, junction, pull boxes and other conduit system accessories shall be as specified in Section headed, "Conduits."

2.2. ENCLOSURE IDENTIFICATION

A. General

1. All enclosures shall have nameplates on the exterior of each enclosure identifying the application function of the equipment enclosed such as "GATE ACTUATOR NO. 1." Nameplates shall be in accordance with the Section "Electrical systems Identification."

2. In addition, for control stations, a factory installed legend plate shall be provided to indicate the function each station performs, such as "ON" or "OFF."

B. Identification Tags

1. Nameplates shall be engraved ¼ inch high white letters on 1/16 inch thick plastic black tags mechanically attached to enclosure.

2. Legend plates shall be metal with black lettering mechanically attached to control station.

PART 3 EXECUTION

NOT USED

-END OF SECTION-
SECTION 16370

ELECTRICAL DISTRIBUTION SYSTEM, AERIAL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C29.2 (1992) Insulators - Wet-Process Porcelain and Toughened Glass - Suspension Type
ANSI C29.3 (1986; R 1995) Wet Process Porcelain Insulators - Spool Type
ANSI C29.4 (1989; R 1995) Wet-Process Porcelain Insulators - Strain Type
ANSI C29.6 (1996) Wet-Process Porcelain Insulators - High-Voltage Pin Type
ANSI C29.9 (1983; R 1996) Wet-Process Porcelain Insulators - Apparatus, Post-Type
ANSI C135.1 (1979) Galvanized Steel Bolts and Nuts for Overhead Line Construction
ANSI C135.4 (1987) Zinc-Coated Ferrous Eyebolts and Nuts for Overhead Line Construction
ANSI C135.14  (1979) Staples with Rolled or Slash Points for Overhead Line Construction

ANSI C135.22  (1988) Zinc-Coated Ferrous Pole-Top Insulator Pins with Lead Threads for Overhead Line Construction

ANSI C135.30  (1988) Zinc-Coated Ferrous Ground Rods for Overhead or Underground Line Construction

ANSI O5.1     (1992) Specifications and Dimensions for Wood Poles

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ASTM A 36/A 36M  (1997a) Carbon Structural Steel

ASTM A 123/A 123M  (1997ael) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A 153/A 153M  (1998) Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 475  (1998) Zinc-Coated Steel Wire Strand

ASTM A 575  (1996) Steel Bars, Carbon, Merchant Quality, M-Grades

ASTM A 576  (1990b; R 1995) Steel Bars, Carbon, Hot-Wrought, Special Quality


ASTM B 8  (1999) Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft


ASTM B 228  (1998) Concentric-Lay-Stranded Copper-Clad Steel Conductors


ASTM D 1654  (1992) Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments

**AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)**

AWPA C4  (1995) Poles - Preservative Treatment by Pressure Processes

AWPA C25  (1995) Sawn Crossarms - Preservative Treatment by Pressure Processes
<table>
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<th>Standard</th>
<th>Description</th>
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<tr>
<td>AWPA P1/P13</td>
<td>(1995) Standard for Coal Tar Creosote for Land and Fresh Water and Marine (Coastal Water Use)</td>
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<td>AWPA P5</td>
<td>(1997) Standards for Waterborne Preservatives</td>
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<td>AWPA P8</td>
<td>(1997) Standards for Oil-Borne Preservatives</td>
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**INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)**

<table>
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<th>Description</th>
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<tr>
<td>IEEE Std 100</td>
<td>(1996) IEEE Standard Dictionary of Electrical and Electronics Terms</td>
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**NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)**

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**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

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**RURAL UTILITIES SERVICES (RUS)**

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<th>Standard</th>
<th>Description</th>
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**UNDERWRITERS LABORATORIES (UL)**

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<th>Standard</th>
<th>Description</th>
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<tr>
<td>UL 467</td>
<td>(1993; Rev thru Aug 1996) Grounding and Bonding Equipment</td>
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<tr>
<td>UL 486A</td>
<td>(1997; Rev thru Dec 1998) Wire Connectors and Soldering Lugs for Use with Copper Conductors</td>
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<tr>
<td>UL 486B</td>
<td>(1997; Rev Jun 1997) Wire Connectors for Use with Aluminum Conductors</td>
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</table>
1.2 GENERAL REQUIREMENTS

1.2.1 Terminology

Terminology used in this specification is as defined in IEEE Std 100.

1.3 SUBMITTALS

Manufacturer's Catalog.

Catalog cuts, brochures, circulars, specifications, product data, and printed information in sufficient detail and scope to verify compliance with the requirements of the contract documents.

Material, Equipment, and Fixture Lists.

A complete itemized listing of equipment and materials proposed for incorporation into the work. Each entry shall include the item number, the quantity of items proposed, and the name of the manufacturer of the item.

As-Built Drawings

The as-built drawings shall be a record of the construction as installed. The drawings shall include the information shown on the contract drawings as well as deviations, modifications, and changes from the contract drawings, however minor. The as-built drawings shall be kept at the job site and updated daily. The as-built drawings shall be a full sized set of prints marked to reflect deviations, modifications, and changes. The as-built drawings shall be complete and show the location, dimensions, part identification, and other information. Additional sheets may be added. Upon completion of the work, the Electrical Contractor shall submit three full sized sets of the marked prints to the Construction Manager for approval. If upon review, the as-built drawings are found to contain errors and/or omissions, they will be returned to the Electrical Contractor for correction. The Electrical Contractor shall correct and return the as-built drawings to the Construction Manager for approval within ten calendar days from the time the drawings are returned to the Electrical Contractor.

Field Testing

A proposed field test plan 10 days prior to testing the installed system. No field test shall be performed until the test plan is approved. The test plan shall consist of complete field test procedures including tests to be performed, test equipment required, and tolerance limits.

Test Reports

Three copies of the information described below in 8-1/2 by 11 inch binders having a minimum of 5 rings, and including a separate section for each test. Sections shall be separated by heavy plastic dividers with tabs.

a. A list of equipment used, with calibration certifications.

b. A copy of measurements taken.
c. The dates of testing.

d. The equipment and values to be verified.

e. The condition specified for the test.

f. The test results, signed and dated.

g. A description of adjustments made.

Certificates

Materials and Equipment

Where materials or equipment are specified to conform to the standards of the Underwriters Laboratories (UL) or to be constructed or tested, or both, in accordance with the standards of the American National Standards Institute (ANSI), the Institute of Electrical and Electronic Engineers (IEEE), or the National Electrical Manufacturers Association (NEMA), the Electrical Contractor shall submit proof that the items provided under this section of the specifications conform to such requirements. The label of, or listing by, UL will be acceptable as evidence that the items conform thereto. Either a certification or a published catalog specification data statement, to the effect that the item is in accordance with the referenced ANSI or IEEE standard, will be acceptable as evidence that the item conforms thereto. A similar certification or published catalog specification data statement to the effect that the item is in accordance with the referenced NEMA standard, by a company listed as a member company of NEMA, will be acceptable as evidence that the item conforms thereto. In lieu of such certification or published data, the Electrical Contractor may submit a certificate from a recognized testing agency equipped and competent to perform such services, stating that the items have been tested and that they conform to the requirements listed, including methods of testing of the specified agencies.

1.4 DELIVERY, STORAGE, AND HANDLING

Devices and equipment shall be visually inspected by the Electrical Contractor when received and prior to acceptance from conveyance. Stored items shall be protected from the environment in accordance with the manufacturer’s published instructions. Damaged items shall be replaced. Wood poles held in storage for more than 2 weeks shall be stored in accordance with ANSI O5.1. Handling of wood poles shall be in accordance with ANSI O5.1, except that pointed tools capable of producing indentations more than inch in depth shall not be used.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

Products shall conform to the following requirements. Items of the same classification shall be identical including equipment, assemblies, parts, and components.

2.2 STANDARD PRODUCT

Material and equipment shall be the standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.
2.3 CORROSION PROTECTION

2.3.1 Aluminum Materials

Aluminum shall not be used in contact with earth or concrete. Where aluminum conductors are connected to dissimilar metal, fittings conforming to UL 486B shall be used.

2.3.2 Ferrous Metal Materials

2.3.2.1 Hardware

Ferrous metal hardware shall be hot-dip galvanized in accordance with ASTM A 153/A 153M and ASTM A 123/A 123M.

2.3.2.2 Equipment

Equipment and component items, which are not hot-dip galvanized or porcelain enamel finished, shall be provided with corrosion-resistant finishes which shall withstand 120 hours of exposure to the salt spray test specified in ASTM B 117 without loss of paint or release of adhesion of the paint primer coat to the metal surface in excess of 1/16 inch from the test mark. The described test mark and test evaluation shall be in accordance with ASTM D 1654 with a rating of not less than 7 in accordance with TABLE 1, (procedure A). Cut edges or otherwise damaged surfaces of hot-dip galvanized sheet steel or mill galvanized sheet steel shall be coated with a zinc rich paint conforming to the manufacturer's standard.

2.4 CONDUCTORS, CONNECTORS, AND SPLICES

2.4.1 Connectors and Splices

Connectors and splices shall be of copper alloys for copper conductors, aluminum alloys for aluminum-composition conductors, and a type designed to minimize galvanic corrosion for copper to aluminum-composition conductors. Aluminum-composition and aluminum-composition to copper shall comply with UL 486B, and copper-to-copper shall comply with UL 486A.

2.5 POLES AND HARDWARE

Poles shall be of lengths and classes indicated.

2.5.1 Wood Poles

Wood poles shall comply with ANSI O5.1, and shall be pressure treated in accordance with AWPA C4, with creosote conforming to AWPA P1/P13or with oil-borne preservatives and petroleum conforming to AWPA P8 and AWPA P9, respectively, and waterborne preservatives conforming to AWPA P5. Waterborne preservatives shall be either chromated or ammoniacal copper arsenate. Any species listed in ANSI O5.1 for which a preservative treatment is not specified in AWPA C4, shall not be used; northern white cedar, if treated as specified for western red cedar, and western fir, if treated as specified for Douglas fir, may be used. Wood poles shall have pole markings located approximately 10 feet from pole butts for poles 50 feet or less in length, and 14 feet from the pole butts for poles longer than 55 feet in length. Poles shall be machine trimmed by turning smooth full
length, and shall be roofed, gained, and bored prior to pressure treatment. Where poles are not provided with factory-cut gains, metal gain plates shall be provided.

2.5.2 Pole Line Hardware

Zinc-coated hardware shall comply with ANSI C135.1, ANSI C135.2, ANSI C135.4, ANSI C135.14 ANSI C135.22. Steel hardware shall comply with ASTM A 575 and ASTM A 576. Hardware shall be hot-dip galvanized in accordance with ASTM A 153/A 153M. Pole-line hardware shall be hot-dip galvanized steel. Washers shall be installed under boltheads and nuts on wood surfaces and elsewhere as required. Washers used on through-bolts and double-arming bolts shall be approximately 2-1/4 inches square and 3/16 inch thick. The diameter of holes in washers shall be the correct standard size for the bolt on which a washer is used. Washers for use under heads of carriage-bolts shall be of the proper size to fit over square shanks of bolts. Eye bolts, bolt eyes, eyenuts, strain-load plates, lag screws, guy clamps, fasteners, hooks, shims, and clevises shall be used wherever required to support and to protect poles, brackets, crossarms, guy wires, and insulators.

2.5.3 Guy Assemblies

Guy assemblies shall be aluminum-clad steel in accordance with ASTM B 416. Guy assemblies, including insulators and attachments, shall provide a strength exceeding the required guy strength. Three-eye thimbles shall be provided on anchor rods to permit attachment of individual primary, secondary, and communication down guys. Anchors shall provide adequate strength to support all loads. Guy strand shall be 7 strand. Guy material shall be aluminum-clad-steel-strand, with a minimum breaking strength as shown, except where two or more guys are used to provide the required strength. Guy rods shall be not less than 8 feet in length by 3/4 inch in diameter.

2.6 INSULATORS

Insulators shall comply with NEMA HV 2 for general requirements. Suspension insulators shall be used at corners, angles, dead-ends, other areas where line insulators do not provide adequate strength, and as indicated. Mechanical strength of suspension insulators and hardware shall exceed the rated breaking strength of the attached conductors.

2.6.1 Strain Insulators for Guy Wires

Strain insulators for use in insulated guy assemblies shall comply with ANSI C29.4 for porcelain or equivalent fiberglass, and shall have a mechanical strength exceeding the rated breaking strength of the attached guy wire. Insulators shall be not smaller than Class 54-4 with two in tandem.

2.7 GROUNDING AND BONDING

2.7.1 Driven Ground Rods

Ground rods shall be of copper-clad steel conforming to UL 467 not less than 3/4 inch in diameter by 10 feet in length of the sectional type driven full length into the earth.
2.7.2 Grounding Conductors

Grounding conductors shall be bare, except where installed in conduit with associated phase conductors. Insulated conductors shall be of the same material as the phase conductors and green color-coded, except that conductors shall be rated no more than 600 volts. Bare conductors shall be ASTM B 8 soft-drawn unless otherwise indicated. Aluminum is not acceptable.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

Equipment and devices shall be installed and energized in accordance with the manufacturer's published instructions.

3.1.1 Conformance to Codes

The installation shall comply with the requirements and recommendations of IEEE C2 for heavy loading districts, Grade B construction. No reduction in clearance shall be made. The installation shall also comply with the applicable parts of NFPA 70.

3.1.2 Verification of Dimensions

The Electrical Contractor shall become familiar with details of the work, shall verify dimensions in the field, and shall notify the Construction Manager of any discrepancy before performing any work.

3.2 POLE INSTALLATION

3.2.1 Wood Pole Setting

Wood Pole Setting: Wood poles shall be set straight and firm. In normal firm ground, minimum pole-setting depths shall be as listed in Table I. In swampy or soft ground, a bog shoe shall be used where support for a pole is required. Poles in straight runs shall be in a straight line. Curved poles shall be placed with curvatures in the direction of the pole line. Poles shall be set to maintain as even a grade as practicable. When the average ground run is level, consecutive poles shall not vary more than 2 feet in height. When the ground is uneven, poles differing in length shall be kept to a minimum by locating poles to avoid the highest and lowest ground points. If it becomes necessary to shorten a pole, a piece shall be sawed off the top end and roofed. If any pole is shortened after treatment, the shortened end of the pole shall be given an application of hot preservative. Where poles are set on hilly terrain, along edges of cuts or embankments, or where soil may be washed out, special precautions shall be taken to ensure durable pole foundations, and the setting depth shall be measured from the lower side of the pole. Holes shall be dug large enough to permit proper use of tampers to the full depth of a hole. Earth shall be placed into the hole in 6 inch maximum layers, then thoroughly tamped before the next layer is placed. Surplus earth shall be placed around each pole in a conical shape and packed tightly to drain water away from poles.
TABLE I

MINIMUM POLE-SETTING DEPTH (FEET)

<table>
<thead>
<tr>
<th>Length Overall Feet</th>
<th>Curves, Corners, and Points of Extra Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum Setting Depth (Feet)</td>
</tr>
<tr>
<td>Overall Straight</td>
<td>Lines</td>
</tr>
<tr>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>25</td>
<td>5.5</td>
</tr>
<tr>
<td>30</td>
<td>5.5</td>
</tr>
<tr>
<td>35</td>
<td>6.0</td>
</tr>
<tr>
<td>40</td>
<td>6.5</td>
</tr>
<tr>
<td>45</td>
<td>6.5</td>
</tr>
<tr>
<td>50</td>
<td>7.0</td>
</tr>
<tr>
<td>55</td>
<td>7.5</td>
</tr>
<tr>
<td>60</td>
<td>8.0</td>
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<tr>
<td>65</td>
<td>8.5</td>
</tr>
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<td>70</td>
<td>9.0</td>
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<td>75</td>
<td>9.5</td>
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<td>10.0</td>
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<td>85</td>
<td>10.5</td>
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<tr>
<td>90</td>
<td>11.0</td>
</tr>
<tr>
<td>95</td>
<td>11.5</td>
</tr>
<tr>
<td>100</td>
<td>12.5</td>
</tr>
</tbody>
</table>

3.3 GUY INSTALLATION

Guys shall be provided where shown, with loads and strengths as indicated, and wherever conductor tensions are not balanced, such as at angles, corners, and dead-ends. Where a single guy will not provide the required strength, two or more guys shall be provided. Where guys are wrapped around poles, at least two guy hooks shall be provided and pole shims shall be provided where guy tension exceeds 6000 pounds. Guy clamps 6 inches in length with three 5/8 inch bolts, or offset-type guy clamps, or approved guy grips shall be provided at each guy terminal. Guy-strain insulators shall be provided in each guy for wood poles. Multiple-helix screw anchors shall be provided in marshy ground; rock anchors shall be installed in rock at right angles to guys, elsewhere anchors shall be of an expanding type, except that power installed screw anchors of equivalent holding power are acceptable. A half-round yellow fiberglass or other suitable plastic guy marker, not less than 8 feet in length, shall be provided at the anchor end of each guy shown, securely clamped to the guy or anchor at the bottom and top of the marker. Holding capacities for down guys shall be based on a lead angle of 45 degrees.

3.4 CONDUCTOR INSTALLATION

3.4.1 Line Conductors

Unless otherwise indicated, conductors shall be installed in accordance with manufacturer's approved tables of sags and tensions. Proper care shall be taken in handling and stringing conductors to avoid abrasions, sharp bends, cuts, kinks, or any possibility of damage to insulation or conductors. Conductors shall be paid out with the free
end of conductors fixed and cable reels portable, except where terrain or obstructions make this method unfeasible. Bend radius for any insulated conductor shall not be less than the applicable NEMA specification recommendation. Conductors shall not be drawn over rough or rocky ground, nor around sharp bends. When installed by machine power, conductors shall be drawn from a mounted reel through stringing sheaves in straight lines clear of obstructions. Initial sag and tension shall be checked by the Electrical Contractor, in accordance with the manufacturer's approved sag and tension charts, within an elapsed time after installation as recommended by the manufacturer.

3.4.2 Connectors and Splices

Connectors and splices shall be mechanically and electrically secure under tension and shall be of the nonbolted compression type. The tensile strength of any splice shall be not less than the rated breaking strength of the conductor. Splice materials, sleeves, fittings, and connectors shall be noncorrosive and shall not adversely affect conductors. Aluminum-composition conductors shall be wire brushed and an oxide inhibitor applied before making a compression connection. Connectors which are factory-filled with an inhibitor are acceptable. Inhibitors and compression tools shall be of types recommended by the connector manufacturer. Primary line apparatus taps shall be by means of hot line clamps attached to compression type bail clamps (stirrups). Low-voltage connectors for copper conductors shall be of the solderless pressure type. Noninsulated connectors shall be smoothly taped to provide a waterproof insulation equivalent to the original insulation, when installed on insulated conductors. On overhead connections of aluminum and copper, the aluminum shall be installed above the copper.

3.4.3 Conductor-To-Insulator Attachments

Conductors shall be attached to insulators by means of clamps, shoes or tie wires, in accordance with the type of insulator. For insulators requiring conductor tie-wire attachments, tie-wire sizes shall be as indicated in TABLE II.

<table>
<thead>
<tr>
<th>CONDUCTOR</th>
<th>TIE WIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAC, AAAC, or ACSR (AWG)</td>
<td>AAAC OR AAC (AWG)</td>
</tr>
<tr>
<td>Any size</td>
<td>6 or 4</td>
</tr>
</tbody>
</table>

3.4.4 Armor Rods

Armor rods shall be provided for AAC, AAAC, and ACSR conductors. Armor rods shall be installed at supports, except armor rods will not be required at primary dead-end assemblies if aluminum or aluminum-lined zinc-coated steel clamps are used. Lengths and methods of fastening armor rods shall be in accordance with the manufacturer's recommendations. Flat armor rods shall be not less than 0.05 by 0.30 inches. For span lengths of 200 feet or more, preformed round armor rods shall be used.
3.5 CONNECTIONS BETWEEN AERIAL AND UNDERGROUND SYSTEMS

Connections between aerial and underground systems shall be made as shown. Underground cables shall be extended up poles in conduit to cable terminations. Conduits shall be secured to poles by conduit supports spaced not more than 10 feet apart and with one support not more than 12 inches from any bend or termination. Cables shall be supported by devices separate from the conduit or guard, near their point of exit from the riser conduit or guard. Cables guards shall be secured in accordance with the manufacturers published procedure. Risers shall be equipped with bushings to protect cables.

3.6 GROUNDING

Noncurrent-carrying metal parts of equipment and conductor assemblies, such as luminaires, medium-voltage cable terminations and messengers, metal poles, operating mechanisms of pole top switches and other noncurrent-carrying metal items shall be grounded. Additional grounding of equipment, neutral, and surge arrester grounding systems shall be installed at poles where indicated.

3.6.1 Grounding Electrodes

Grounding electrodes shall be installed as follows:

a. Driven rod electrodes - Unless otherwise indicated, ground rods shall be located approximately 3 feet out from base of the pole and shall be driven into the earth until the tops of the rods are approximately 1 foot below finished grade. Multiple rods shall be evenly spaced at least 10 feet apart and connected together 2 feet below grade with a minimum No. 6 bare copper conductor.

b. Ground Resistance - The maximum resistance of a driven ground rod shall not exceed 5 ohms under normally dry conditions. Whenever the required ground resistance is not met, provide additional electrodes interconnected with grounding conductors to achieve the specified ground resistance. The additional electrodes will be up to three 10 feet rods spaced a minimum of 10 feet apart. In high ground resistance, UL listed chemically charged ground rods may be used. If the resultant resistance exceeds 5 ohms measured not less than 48 hours after rainfall, the Construction Manager shall be notifies immediately. Connections below grade shall be fusion welded. Connections above grade shall be fusion welded or shall use UL 467 approved connectors.

3.6.2 Grounding and Bonding Connections

Connections above grade shall be made by the fusion-welding process or with bolted solderless connectors in compliance with UL 467, and those below grade shall be made by a fusion-welding process. Where grounding conductors are connected to aluminum-composition conductors, specially treated or lined copper-to-aluminum connectors suitable for this purpose shall be used.

3.6.3 Grounding Electrode Conductors

On multi-grounded circuits, as defined in IEEE C2, provide a single continuous vertical grounding electrode conductor. Neutrals, surge arresters, and equipment grounding conductors shall be bonded to this conductor. For single grounded or ungrounded systems, provide a grounding conductor for the surge arrester and equipment grounding conductors and a separate grounding conductor for the secondary neutrals. Grounding electrode
conductors shall be sized as shown. Grounding electrode conductors shall be stapled to wood poles at intervals not exceeding 2 feet. Bends greater than 45 degrees in grounding electrode conductor are not permitted.

3.7 FIELD TESTING

3.7.1 General

Field testing shall be performed in the presence of the Construction Manager. The Electrical Contractor shall notify the Construction Manager 10 days prior to conducting tests. The Electrical Contractor shall furnish materials, labor, and equipment necessary to conduct field tests. The Electrical Contractor shall perform tests and inspections recommended by the manufacturer unless specifically waived by the Construction Manager. The Electrical Contractor shall maintain a written record of tests which includes date, test performed, personnel involved, devices tested, serial number and name of test equipment, and test results. Field reports will be signed and dated by the Electrical Contractor.

3.7.2 Safety

The Electrical Contractor shall provide and use safety devices such as rubber gloves, protective barriers, and danger signs to protect and warn personnel in the test vicinity. The Electrical Contractor shall replace any devices or equipment which are damaged due to improper test procedures or handling.

3.7.3 Ground-Resistance Tests

The resistance of each pole ground of 5 ohms shall be measured using the fall-of-potential method defined in IEEE Std 81. Ground resistance measurements shall be made before the electrical distribution system is energized and shall be made in normally dry conditions not less than 48 hours after the last rainfall. Resistance measurements of separate grounding electrode systems shall be made before the systems are bonded together below grade. The combined resistance of separate systems may be used to meet the required resistance, but the specified number of electrodes shall be provided.

3.7.4 Sag and Tension Test

The Construction Manager shall be given prior notice of the time schedule for stringing conductors or cables serving overhead medium-voltage circuits and reserves the right to witness the procedures used for ascertaining that initial stringing sags and tensions are in compliance with requirements for the applicable loading district and cable weight.

3.8 MANUFACTURER’S FIELD SERVICE

3.8.1 Installation Engineer

After delivery of the equipment, the Electrical Contractor shall furnish one or more field engineers, regularly employed by the equipment manufacturer to supervise the installation of the equipment, assist in the performance of the onsite tests and initial operation.
3.9 ACCEPTANCE

Final acceptance of the facility will not be given until the Electrical Contractor has successfully completed all tests and after all defects in installation, material or operation have been corrected.

-END OF SECTION-
SECTION 16450

ELECTRICAL GROUNDING

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes the grounding system, equipment grounding and the grounding grid where shown on the Contract Drawings.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. National Electrical Code - NEC
2. Underwriter's Laboratories, Inc. - UL

B. These Specifications to require that all grounding and grounding circuitry equal or exceed the requirements of NEC, Article 250 and in the event of a conflict or discrepancy between these Specifications, the Contract Documents, and NEC Article 250, the more stringent requirement shall apply.

1.3. SUBMITTALS

A. Submittals and samples shall be submitted in accordance with the provisions set forth in Division 1, General Requirements.

B. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted including but not limited to:

1. Ground Conductors
2. Ground Connectors
3. Ground Bushings

C. Submittals shall contain a material list with manufacturer data describing the material and showing its compliance with specifications, associated standards, and test requirements.

PART 2 PRODUCTS

2.1. EQUIPMENT GROUND CONDUCTORS

A. Equipment ground conductors shall be in accordance with Wires & Cables" Section for low voltage conductors.

B. Ground conductor #8 and smaller shall be green in color.
C. For #6 and larger ground conductors, black wire may be used and identified where exposed in all
junction boxes, disconnect switches, panels, etc. with green tape wrapped over its entire exposed
length.

D. All exposed grounding conductors such as bars, straps, cables, flexible jumpers, braids, shunts, etc.,
shall be bare copper.

PART 3 EXECUTION

3.1. INSTALLATION

A. Bare copper bars, cables, fittings, etc. shall not be installed in cinder fill nor shall be covered with
soil containing cinders or other corrosive material.

B. Cables shall be installed with enough slack to prevent breaking stresses.

C. All grounding conductors subject to mechanical damage shall be protected by rigid steel conduit or
other suitable steel guards and in all cases where so protected shall be permanently and effectively
grounded to said enclosure at each end of its length.

D. Where grounding conductors pass through floor slabs, walls, etc., and are not encased in metal
conduit, they shall be sleeved in transite, fiber, or approved nonmetallic conduit.

E. All equipment ground bus, ground pads, frames, enclosures, etc. shall have surfaces at point of
connection thoroughly cleaned and brightened just prior to actually making the connection. Touch-
up damaged painted surfaces.

F. Splices in wire or cable grounding conductors are prohibited.

3.2. CONDUIT SYSTEM

A. Ground Conductor

1. All power and 120 volt control system conduits (feeders, branch circuits, lighting circuits,
etc) shall have an internal grounding conductor which shall be sized in accordance with the
requirements of the National Electric Code. This ground conductor shall be installed
although it may not be shown or scheduled on the Contract Drawings.

2. The internal grounding conductor shall be bonded to each device box, pull box, junction box,
or wiring trough it passes though.

3. All conduits 1” inch and larger shall be provided with grounding bushings on each end and
at all cabinets and pull, junction, or outlet boxes.

4. The Contractor shall exercise care to ensure good ground continuity, in particular, between
the conduit system and equipment frames and enclosures.
3.3. TESTING

A. The Contractor shall test all grounding conductors and grounding systems for continuity.

1. Where continuity does not exist, jumpers shall be installed at no cost to the Government and the system retested.

B. All testing shall be performed in the presence of the Owner’s Representative.

END OF SECTION
SECTION 16470

PANELBOARDS AND CIRCUIT PROTECTIVE DEVICES

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes low voltage panelboards, circuit breakers, disconnect switches, fuses, and other circuit protective devices for service at 600 VAC or less.

1.2. REFERENCES

A. The publications listed below, current as of the date of this solicitation, form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. American National Standard Institute (ANSI)
2. National Electrical Code (NEC)
3. National Electrical Manufacturers Association (NEMA)

a. NEMA AB-1: Molded-Case circuit breakers, molded-case switches and circuit-breaker enclosures. Sets forth, for use by qualified personnel, a number of basic procedures that may be used for the inspection and preventive maintenance of molded-case circuit breakers used in industrial and commercial applications rated up to and including 1000V 50/60 Hz AC or AC/DC.

b. NEMA PB-1: Covers single Panelboards or groups of panel units suitable for assembly in the form of single Panelboards, including buses, and with or without switches or automatic overload protective devices (fuses or circuit breakers), or both. These units are used in the distribution of electricity for light, heat, and power at 600 volts and less with:
   i. 1600-ampere mains and less.
   ii. 1200-ampere branch circuits and less.
Specifically excluded are live-front Panelboards, Panelboards employing cast enclosures for special service.

c. NEMA I: Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dirt.
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4. Underwriter's Laboratories, Inc. (UL)
   a. UL 50: Enclosures for Electrical Equipment
   b. UL 67: Panelboards
   c. UL 489: Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
   d. UL 891: Standard for Safety Switchboards

5. US Federal Specification (FS)
   a. FS W-P-115C: General Purpose Circuit Breakers
   b. FS W-C-375B/Gen 1: Circuit Breakers, Molded Case, Branch Circuit and Service

1.3. SUBMITTALS

A. Submittals and samples shall be submitted in accordance with the provisions set forth in Division 1, General Requirements.

B. Prior to obtaining any material in connection with this Section, detailed shop drawings on all material shall be submitted.

C. Submittals shall contain a material list with manufacturer data describing the material and showing its compliance with specifications, associated standards and test requirements.

D. Samples of any material shall be submitted upon Owner's request.
1.4. OTHER SUBMITTALS

A. Descriptive data and time/current characteristic trip curves for each type of circuit breaker and/or fuse.

PART 2 PRODUCT

2.1. GENERAL

A. Panelboards

1. Panelboards shall meet Federal Specification W-P-115C, Type 1, Class 1 and shall conform to UL50, UL67, and NEMA PB-1.

2. Loadcenters (Federal Specification W-P115C Type 1 Class 2) shall not be substituted for panelboards unless specifically indicated.

3. Panelboards shall be the circuit breaker type as shown on the drawings with neutral bar, ground bar and main and branch circuit breakers as scheduled.

4. Unless otherwise shown, scheduled or specified bus bars, ground bar, and neutral bar shall be copper or tin plated aluminum.

5. Panelboards shall be furnished and installed with circuit schedules as shown.

6. Subject to the Owner’s review, such schedules may be revised to obtain more convenient grouping and a better balance of the actual connected load.

7. Panelboards shall be provided with ample wiring gutters and shall have a single door with spring door hinges, lock and keys, and card holders on the inside of the door.

8. Cards shall be typewritten with circuit identification as actually installed.

9. Panelboards shall have single, double or triple pole bolt-on branch circuit breakers as scheduled.

10. Branch circuit breakers shall be in accordance with subsection headed "Molded Case Circuit Breakers".

11. Unless otherwise shown, circuit breakers shall be rated at 20 amperes.

12. Circuit breakers shall be provided for all spares shown on the schedule.
2.2. SHORT CIRCUIT CURRENT

A. Short circuit current requirements shall be obtained only from the schedules, specifications and/or Contract Drawings.

B. If this information is not shown, the Owner shall be consulted.

C. Under no circumstances shall any short circuit current requirements be assumed by the contractor.

D. Integrally rated panelboards utilizing branch breakers with reduced short circuit ratings are acceptable.

2.3. MANUFACTURERS

A. 120/208 VAC Panelboards

1. Unless otherwise indicated, four wire 120/208 VAC panelboards shall be plug-on AQ Series manufactured by General Electric Co., Type NQOD manufactured by Sq D Company or approved equal.

2.4. MOLDED CASE CIRCUIT BREAKERS

A. Except as modified below, the material and construction of molded case circuit breakers shall be in accordance with NEMA AB-1 and UL 489 standards for breakers.

1. Circuit breakers shall be of the air-break type.

2. They shall be provided with thermal time limit and instantaneous magnetic tripping elements.

B. Circuit breaker mechanisms shall be so designed that an overload or a fault on any one pole shall trip all poles simultaneously.

C. All poles shall be effectively barriered from one another.

D. Circuit breaker handles shall be trip-free. Circuit breakers in motor control centers or individual enclosures shall be interlocked with the door latching mechanism so that the door of the circuit breaker enclosure or motor control center compartment cannot be opened unless the circuit breaker contained is in the open position.

E. Number of poles and trip ratings of circuit breakers shall be as shown, specified, or required.

2.5. INDIVIDUAL CIRCUIT BREAKERS

A. Circuit breakers shall have a minimum of 240 VAC except where different ratings are shown on Contract Drawings.
B. Circuit breakers, 225-ampere frame and above, shall have interchangeable thermal and adjustable magnetic tripping elements.

C. Circuit breaker enclosures of the type shown on the drawings shall be provided.

2.6. PANELBOARD CIRCUIT BREAKERS

A. Circuit breakers, where included as part of panelboards, shall be mechanically and electrically similar to molded case circuit breakers.

B. Single pole breakers shall have a minimum interrupting rating of 10,000 amperes RMS symmetrical at 240 VAC unless otherwise shown.

C. Except where otherwise shown, trip ratings shall be 20 amperes.

D. 120/208 VAC circuit breakers shall be Q Line manufactured by General Electric Co., Type Q0 manufactured by Sq D Company or approved equal.

2.7. SERVICE ENTRANCE CIRCUIT BREAKERS

A. Where shown or required, a service entrance breaker shall be provided to disconnect all conductors in a building or structure from the service-entrance conductors.

B. The service entrance breaker shall be UL listed, service entrance rated.

C. The service entrance breaker shall be provided with an appropriate enclosure labeled as "Service Disconnect," and the enclosure shall be connected to the grounding grid in accordance with the Section "Electrical Grounding" and the National Electrical Code.

2.8. DISCONNECT SWITCHES

A. General

1. Disconnect switches as indicated on the plans and specifications shall be NEMA Heavy Duty Type HD, Underwriters Laboratories listed.

B. Switch Interior

1. All switches shall have switch blades that are fully visible in the OFF position when the door is open. Switches shall have removable arc suppressors, where necessary to permit easy access to line-side lugs. Lugs shall be UL listed for aluminum and/or copper cables and front removable. All current carrying parts shall be plated.

2. Switch Mechanism

a. Switches shall have a quick-make and quick-break operating handle and mechanism which shall be an integral part of the box, not the cover. Switches shall have an interlock to prevent unauthorized opening of the switch door in the ON position or
closing of the switch mechanism with the door open. Handle position shall indicate if switch in ON or OFF.

C. Enclosures

1. Switches shall be furnished in NEMA 1 general-purpose enclosures unless specified as NEMA 3R (rainproof), NEMA 4 (stainless steel, or NEMA 7 (Class 1, Div 1) on the Contract Drawings. Covers on NEMA 1 enclosures shall be attached with pin type hinges. Rainproof covers shall be securable in the open position. NEMA 3R switches thru 200 amperes shall be provided with closing caps and have provisions for interchangeable bolt-on hubs and these hubs shall be provided as indicated on plans.

D. Ratings

1. Switches shall be rated as indicated on the Contract Drawings. The switch must have a UL listed rejection feature to reject all fuses except Class R. UL listed short circuit ratings, when equipped with Class J or Class R fuses, shall be 200,000 amperes RMS symmetrical.

2.9. FUSES

A. Low Voltage (less than 600 volts) cartridge fuses shall be of the voltage and amperage rating listed on the drawings. Fuses shall be selected to provide overcurrent, short circuit, and blackout protection. They shall be of the type listed below unless otherwise indicated:

B. Main service and feeder protection (above 600 amps) - Current limiting UL class L above 600 amperes (current UL standards do not rate Class L fuses at or below 600 amperes).

C. Main service and feeder protection at 600 amps and below - Current Limiting UL Class J.

D. Motor branch circuit, transformer, inductive loads protection (i.e., MCCs, starters, etc.) - UL Class J. current limiting, time delay for motor inrush and short circuit protection.

E. Manufacturers - Bussman, Littlefuse, Eagle, or approved equal.

F. Spare Fuse Cabinet - Wall mounted cabinet with piano-hinge door. Size adequate for storage of spare fuses with 25% spare capacity. Painted with “SPARE FUSES” stenciled on front door. Bussman SFC or approved equal.

2.10. ENCLOSURES

A. Enclosures for Circuit Protective Devices shall be of the type appropriate for each location as specified under Section headed, "Enclosures".

DGS RFB A8 Minor Closed (12/14)
PART 3 EXECUTION

3.1. INSTALLATION

A. Electrical Contractor shall refer to all pertinent Sections of these Specifications for installation details of other equipment associated with panelboards and individual circuit breakers.

B. Provide all miscellaneous bolts, washers, nuts, clips, belleville washers, lockwashers, small hardware, etc., of corrosion resistant material to make installation complete.

C. Provide complete and perfect installation for all items of equipment included in this Section.

D. Provide minimum working clearance, as described in the NEC, for all electric equipment.

E. Verify location at site before installing enclosure or conduits.

F. Mount cabinet level and plumb, flush or surface as scheduled.

G. Install recessed cabinet flush with finished wall.

H. Be sure wall thickness will accept panel enclosures before ordering equipment.

I. Paint all scratches, marrs, etc., resulting from installation. Use matching paint.

3.2. INSTALLATION OF PANELBOARDS

A. General

1. Mount 6'-6" maximum to centerline of top circuit breakers; 3'-0" to bottom of cabinet where possible, unless noted otherwise.

2. Properly align panel in cabinet.

3.3. FUSES

A. Install fuses in fusible devices as shown. Arrange fuses such that fuse ratings are readable without removing fuse.

B. Install spare fuse cabinet with spare fuses in location shown (or adjacent to distribution switchgear).

C. Spare Fuses - Furnish quantity equal to 20 percent of each fuse type and size installed, but not less than one set of three of each type and size.

-END OF SECTION-
SECTION 262100

LOW-VOLTAGE ELECTRICAL SERVICE ENTRANCE

PART 1 GENERAL

1.1 SUMMARY

A. Provide incoming 120/240V secondary electrical service as shown on the Drawings and specified herein.

B. The Contractor shall be responsible for making arrangements with the electrical utility company (Orange and Rockland) service provider to complete the installation of the incoming electric services in conformance with the approved Project Schedule, and for coordination with the electrical service providers' installation requirements.

C. The Contractor shall pay all charges related to the installation of electrical services.

1.2 WORK NOT INCLUDED

A. Electrical energy bills usage charges will be paid by the Owner.

1.3 QUALITY ASSURANCE

A. Electrical

1. The incoming service installation shall be inspected and approved by Orange and Rockland the electric utility company.

2. The incoming service shall be inspected and approved by the AHJ.

3. Inspection certificates shall be submitted prior to energization of the incoming service.

1.4 COORDINATION REQUIREMENTS

A. Coordinate layout and installation of electrical service equipment with the work of other trades.

B. Submit specially prepared Coordination Drawings for this Project, including site plan and the proposed service entrance pole location.

C. Pre-Installation Meetings: The Contractor shall request a meeting with the Owner and the Utility Company prior to commencing work. The Agenda shall include the following items as a minimum:

1. Review of scheduling requirements

2. Discussion of the coordination requirements

3. Review of Owner's needs for continuity of service.

D. Scheduling: The following milestones and activities shall be included in the Contractor's schedule for the project:

1. Kickoff meeting with each service provider

2. Procurement of equipment and materials, including utility service provider equipment and materials.

3. Installation of equipment and materials, including utility service provider equipment and materials
4. Inspections
5. Energization

1.5 SUBMITTALS
A. Submit the following in accordance with the Division “General Conditions”.
B. Product Data: “Catalog cuts” and spec sheets marked to specifically indicate the service equipment and materials proposed for this project. Indicate selections with arrows, and cross out irrelevant data.
C. Certificates: copy of the inspection certificates from the AHJ, and copy of the inspection certificate from the electrical utility company, for the record
D. Test Reports for equipment and materials specified in other Sections
E. Closeout Submittals
   1. Operation and Maintenance manuals for service equipment
   2. Utility service provider contact information

PART 2 PRODUCT

2.1 ELECTRIC SERVICE(S)

A. All material shown on the Contract Drawings, specified below, or required by the utilities shall be in accordance with applicable sections of the specifications.

PART 3 EXECUTION

3.1 INSTALLATION

A. Electrical
   1. The Electrical Utility will perform the following work:
      a. Furnish and install aerial secondary service cable from the utility owned pole to the new service/meter pole including connections to the service pole riser conductors, pad mounted pole top transformer including pad pole and primary connections. Service voltage shall be 120/240V single phase phase, 3 wire, 60 Hertz.
      b. Furnish and install revenue meter.
      c. Inspect and approve the completed installation prior to connecting the incoming service.
   2. Contractor shall perform the following work:
      a. Furnish and install service entrance pole.
      b. Furnish and install main fused disconnect switch
      c. Furnish and install grounding electrode and grounding conductors
      d. Furnish and install revenue meter socket.
      e. Furnish and install conduit and conductor from service entrance weatherhead thorough to the main fused disconnect.
      f. Installation shall follow Orange and Rockland standards and be approved by Orange and
Rockland upon completion.

3. Before the final power connections are made, the incoming service shall be inspected by the local electrical agency responsible for such inspections.

4. A certificate of inspection shall be obtained and a copy sent to the Engineer.

5. The Contractor shall perform the following work:
   a. Provide underground service conduits as shown on the Drawings.

   - END OF SECTION -
SECTION 03100.1

FUSEGATE FORMWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing form materials, form ties, form coatings, design of formwork, and form removal for the Fusegates, which are pre-cast concrete structures. The Precaster shall be responsible for designing and constructing suitable and adequate falsework, centering, and formwork.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest edition and revision of codes, standards and specifications from the following organizations, except where more stringent requirements are specified herein:

1. American Concrete Institute (ACI)

1.3 SUBMITTALS

Not Used

PART 2 - PRODUCTS

2.1 MATERIALS

A. FORM MATERIALS

1. Forms for Class A Finish

Forms for Class A finished surfaces shall be plywood panels conforming to APA PS 1, Grade B-B concrete form panels, Class I or II. Other form materials or liners may be used provided the smoothness and appearance of concrete produced will be equivalent to that produced by the plywood concrete form panels. Furnish in largest practicable sizes to minimize number of joints. Tolerances for the formwork and the resulting concrete surface shall be as specified ACI 347, Chapter 2, Part 2.4.

2. Forms for CSC4 Finish

Forms for CSC4 finished surfaces shall be plywood panels conforming to APA PS 1, Grade B-B concrete form panels, Class I or II. Other form materials or liners may be used provided the smoothness and appearance of concrete produced will be equivalent to that produced by the plywood concrete form panels. Furnish in largest practicable sizes to minimize number of joints.
Tolerances for the formwork and the resulting concrete surface shall be as specified in Tables 3.1a through 3.1d of ACI 347.3R-13.

B. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a nonstaining form oil before being set into place. Care shall be taken to avoid splashing oil on reinforcing steel or existing concrete. Tolerances for forms and associate falsework for each finish surface classification shall be as indicated.

C. Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one-inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones. All internal form support steel shall be positioned to provide minimum clearances as shown on the drawings.

D. Form joint Tape: Compressible foam tape, pressure sensitive, AAMA 810.1, minimum ¼ inch thick.

E. Form Joint Sealant: Elastomeric sealant complying with ASTM C920, Type M or S, Grade NS, that adheres to form joint substrates.

F. Sealer: Penetrating, clear polyurethane wood form sealer formulated to reduce absorption of bleed water and prevent migration from wood of set-retarding materials.

PART 3 - EXECUTION

3.1 PREPARATIONS OF FORMS

A. Unless specified otherwise on the Contract Drawings, all exposed joints, edges, and external corners shall be chamfered by molding placed in the forms.

B. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-in-place surfaces. Kerf wood rustications, keyways, reglets, recesses, and the like for easy removal.

1. Do not use rust-stained, steel form-facing material.

C. Prior to placement of concrete, the forms shall be free of chips, sawdust, debris, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces that are required to be bonded to the concrete shall be removed. The method used for continuous wetting shall employ clean water free from injurious amounts of deleterious materials and shall be subject to review by Hydroplus.

D. Seal form joints and penetrations at form ties with form joint tape or form joint sealant to prevent mortar leaks.
E. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

F. Coat contact surfaces with form-release agent, according to manufacturer’s written instructions, prior to placing steel reinforcement.

G. Forms shall be inspected by Hydroplus prior to concreting. Notice shall be given seventy-two (72) hours in advance of the concrete placement so that inspection can be scheduled.

3.2 INSTALLATION OF FORMWORK

A. Forms shall be constructed true to the structural design and required alignment. Forms shall be mortar tight, properly aligned and adequately supported to produce concrete surfaces meeting the surface requirements specified in Section 03400 FUSEGATE PLANT PRECAST CONCRETE and conforming to construction tolerance given in TABLE 1.

B. Continuously monitor the alignment and stability of the forms during all phases to assure the finished product will meet the required surface class specified. Failure of any supporting surface either due to surface texture, deflection or form collapse shall be the responsibility of the Contractor as will the replacement or correction of unsatisfactory surfaces.

C. Where concrete surfaces are to have a Class A or a CSC4 finish, joints in form panels shall be arranged as approved. When forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the completed surface to obtain accurate alignment of the surface and to prevent leakage of mortar.

D. Forms shall not be re-used if there is any evidence of defects which would impair the quality of the resulting concrete surface. All surfaces of used forms shall be cleaned of mortar and any other foreign material before reuse. Form ties that are to be completely withdrawn shall be coated with a non-staining bond breaker.

3.3 CHAMFERING

A. All exposed joints, edges and external corners shall be chamfered by molding placed in the forms unless the drawings specifically state that chamfering is to be omitted or as otherwise specified.

3.4 COATING

A. Forms for Class A and CSC4 finished surfaces shall be coated with a form releasing agent before the form or reinforcement is placed in final position. The coating shall be used as recommended in the manufacturer's printed or written instructions.

3.5 REMOVAL OF FORMS

A. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually. The safety and appearance of the structures shall be the sole responsibility of the Contractor.
B. Forms shall not be removed without approval. All removal shall be accomplished in a manner which will prevent damage to the concrete and ensure the complete safety of the structure. Where forms support more than one element, the forms shall not be removed until the form removal criteria are met by all supported elements. Evidence that concrete has gained sufficient strength to permit removal of forms shall be determined by tests on control cylinders. All control cylinders shall be stored in the structure or as near the structure as possible so they receive the same curing conditions and protection methods as given those portions of the structure they represent. Control cylinders shall be removed from the molds at an age of no more than 24 hours. All control cylinders shall be prepared and tested in accordance with ASTM C 31/C 31M and ASTM C 39/C 39M at the expense of the Contractor by an independent laboratory that complies with ASTM C 1077 and shall be tested within 4 hours after removal from the site.

1. Formwork Not Supporting Weight of Concrete

   Formwork for walls and other vertical type formwork not supporting the weight of concrete shall be left in place until control concrete test cylinders indicate evidence the concrete has attained at least 70 percent of the compressive strength required for the structure in accordance with the quality and location requirements.

2. Formwork Supporting Weight of Concrete

   Formwork supporting weight of concrete and shoring shall not be removed until structural members have acquired sufficient strength to safely support their own weight and any construction or other superimposed loads to which the supported concrete may be subjected. As a minimum, forms shall be left in place until control concrete test cylinders indicate evidence the concrete has attained at least 70 percent of the compressive strength required for the structure in accordance with the quality and location requirements.

3.6 INSPECTION

   Forms and embedded items shall be inspected in sufficient time prior to each concrete placement in order to certify to the Engineer that they are ready to receive concrete. The results of each inspection shall be reported in writing.
### TABLE 1
TOLERANCES FOR FORMED SURFACES

1. Variation from the plumb:
   - a. For all surfaces but specified: 1/2 inch
   - b. For surfaces supporting the watertightness system: 1/16 inch

2. Variation for the level:
   - a. In exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines: 1/2 inch
   - b. Crest of the bucket: 1/4 inch
   - c. Top of inlet well (concrete shaft): 1/16 inch

3. Variation of the linear building lines from established position in plan:
   - a. For all surfaces but specified: 1/4 inch
   - b. Upstream to downstream length: 1/2 inch
   - c. Right abutment to left abutment length: +0/- 1/2 inch

4. Variation in the sizes and locations of floor openings and wall opening:
   - a. Centerlines of embedments in Fusegates: minus 1/4 inch, plus 1/4 inch
   - b. Position of voids for grouted anchors for Fusegates watertightness system: minus 1/8 inch, plus 1/8 inch
   - c. Centerlines of anchors bolt embedded on top of the inlet well (concrete shaft): use of a framework provided by Hydroplus
   - d. Drain hole: minus 1/4 inch, plus 1/4 inch
   - e. All others: minus 1/4 inch, plus 1/2 inch

5. Thickness: +1/4 inch / - 1/8 inch

6. Angular deviation of sides: +/- 1 percent, 1/16 inch max

7. Deviation from square: not exceed 0.1 percent, 1/4 inch max

8. Deviation from flatness of bottom bearing surface: not exceed 1/8 inch max

9. Local smoothness: +/- 0.2 percent

10. Position of reinforcement: within 1/4 inch of indicated position

- END OF SECTION -
SECTION 03200.1

FUSEGATE STEEL REINFORCEMENT

PART 1 - GENERAL

1.1 SUMMARY
   A. This Section includes requirements for furnishing and placing steel reinforcement for the precast concrete Fusegates.

1.2 REFERENCES
   A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements are specified herein:
      1. American Concrete Institute (ACI)
         a. ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures
         b. ACI 318 Building Code Requirements for Reinforced Concrete
         a. ASTM A615 Grade 60 Steel Reinforcement for Concrete
      3. Concrete Reinforcement Steel Institute (CRSI)
         a. CRSI-59 Recommended Practice for Placing Reinforcing Bar
         b. CRSI-63 Recommended Practice for Placing Bar Supports

1.3 DELIVERY AND STORAGE
   A. All reinforcing bars shall be delivered to the job site cut to exact length, bent, securely bundled and tagged with metal tags corresponding to the bar schedules and diagrams.
   B. All bars shall be stored off the ground a minimum height of six (6) inches and protected from mechanical injury, surface deterioration and moisture.

1.4 SUBMITTALS
   A. All bar schedules required to accomplish the fabrication and placement of reinforcement shall be approved by Hydroplus. The shop drawings shall also include the dimension for the geometry of the structure and shall also indicate the clear cover required as noted or by ACI standards. The final acceptance of the reinforcement will be based on the installation of the bars at the precasting yard and will be inspected by Hydroplus.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Steel
   1. Steel reinforcement and dowels: Plain deformed bars of new billet steel conforming to ASTM A 615, Grade 60.
   2. Wire: Conforming to ASTM A82.

B. Rebar Splicing Coupler: ASTM A615/A615M, Grade 60.
   1. Positive connecting, taper threaded type butt splicer (coupler) with a capacity of not less than 125 percent of the minimum yield strength of the bar.
   2. Tensile strength: 90 percent of ultimate strength of reinforcement bars (ACI 318 minimum).

C. Dowels shall conform to ASTM A615/A615M, Grade 60.

D. Fabricated Bar Mats shall conform to ASTM A184/A184M.

E. Wire Ties shall be of 16 gauge or heavier black annealed steel wire.

F. Supports for steel reinforcement for formed surfaces shall be designed and fabricated in accordance with CRSI 10MSP and shall be galvanized, plastic coated steel, or precast concrete blocks. Precast concrete blocks shall have wire ties and shall be not less than 4 inches square when supporting reinforcement on ground. Precast concrete block shall have compressive strength equal to that of the surrounding concrete. Where concrete formed surfaces will be exposed to weather or where surfaces are to be painted, steel supports within 1/2 inch of concrete surface shall be galvanized, plastic protected, or of stainless steel. Concrete supports used in concrete exposed to view shall have the same color and texture as the finish surface. For bar supports which support the bottom layer of steel reinforcement of the Fusegate base slab, supports shall be precast concrete blocks, plastic coated steel fabricated with bearing plates, or specifically designed wire-fabric supports fabricated of plastic.

2.2 FABRICATION

A. All details for fabrication shall conform to the Manual of Standard Practice for Detailing Reinforced Concrete Structures, ACI 315, and in accordance with details shown on the drawings. When bending is required, it shall be done accurately without the use of heat, and bars having cracks, kinks, or splits at the bends shall be rejected. All hooks and bends shall be in conformance with ACI Standard 318. Splicing and coupling of steel reinforcement shall be as specified in ACI Standard 318.
PART 3 - EXECUTION

3.1 PREPARATION AND PLACEMENT

A. The surfaces of the bars, fabric, or any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease, or other coatings or foreign substances before reinforcement is placed. After placement, the reinforcement shall be maintained in a clean condition until it is completely embedded in the concrete. Reinforcing accessories, bar supports, chairs, spacers, etc. shall be in accordance with ACI 315.

B. When placed in the work, all steel shall be free from loose rust, scale, grease, oil, dirt, or other materials which impair the bond with concrete.

C. If concreting is delayed for more than five consecutive calendar days after reinforcing is placed in position, it shall be protected by covering with canvas, polyethelene sheeting, or other satisfactory covering. Any bars or fabric having loose scaly rust shall be cleaned before concrete is placed.

D. All placement of steel reinforcing bars and supports shall conform to the Recommended Practice for Placing Reinforcing Bars, CRSI 59; and the Recommended Practice for Placing Bar Supports, CRSI 63. Reinforcement shall be accurately placed and secured in position in a manner that will prevent its displacement during the placement of concrete. Tack welding of bars will not be permitted. Metal chairs, metal hangers, metal spacers, and concrete chairs shall be used to support the reinforcement. Metal hangers, spacers, and ties shall be placed in such a manner that they will not be exposed in the finished concrete surface. The legs of metal chairs that will be exposed at the lower face of slabs or beams shall be galvanized. Precast concrete chairs shall be manufactured of the same class of concrete as that specified for the structure and shall have tie wires securely anchored in the chair or a V-shaped groove at least 3/4-inch in depth molded into the upper surface to receive the steel bar at the point of support. Precast concrete chairs shall be moist at the time concrete is placed. Reinforcement shall not be placed until the Fusegate formwork has been inspected and approved by Hydroplus. Concrete protection (clear cover) for reinforcement shall be as shown on the drawings.

E. Splices of reinforcement shall conform to ACI 318 and shall be made only as required or indicated. Splicing shall be by lapping or by mechanical or welded butt connection; except that lap splices shall not be used for bars larger than No. 11 unless otherwise indicated. Welding shall conform to AWS D1.4/D1.4M. Welded butt splices shall be full penetration butt welds. Lapped bars shall be placed in contact and securely tied or spaced transversely apart to permit the embedment of the entire surface of each bar in concrete. Lapped bars shall not be spaced farther apart than one-fifth the required length of lap or 6 inches. Mechanical butt splices shall be in accordance with the recommendation of the manufacturer of the mechanical splicing device. Butt splices shall develop 125 percent of the specified minimum yield tensile strength of the spliced bars or of the smaller bar in transition splices. Bars shall be flame dried before butt splicing. Adequate jigs and clamps or other devices shall be provided to support, align, and hold the longitudinal centerline of the bars to be butt spliced in a straight line.

F. Dowels shall be accurately positioned and aligned parallel to the finished concrete surface before concrete placement. Dowels shall be rigidly supported during concrete placement. One end of dowels shall be coated with a bond breaker.

- END OF SECTION –
SECTION 03400.1

FUSEGATE PLANT-PRECAST CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

The work of this Section shall include the furnishing of all materials, labor, equipment, incidentals, and all else necessary for plant-precast concrete to be used for constructing the Fusegates and the Fusegate ballast blocks.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ACI INTERNATIONAL (ACI)


ACI 211.2 (1998; R 2004) Standard Practice for Selecting Proportions for Structural Lightweight Concrete

ACI 305R (1999; Errata 2006) Specification for Hot Weather Concreting


ACI 318 (2008; Errata 2008; Errata 2009; Errata 2009; Errata 2009; Errata 2009; Errata 2009) Building Code Requirements for Structural Concrete and Commentary

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)

ACPA QPC (2005; Ver 3.0) QCast Plant Certification Manual

AMERICAN WELDING SOCIETY (AWS)


AWS D1.4/D1.4M (2005) Structural Welding Code - Reinforcing Steel

ASTM INTERNATIONAL (ASTM)


ASTM A 775/A 775M (2007b) Standard Specification for Epoxy - Coated Steel Reinforcing Bars
ASTM C 138/C 138M (2009) Standard Test Method for Density ("Unit Weight"), Yield, and Air Content (Gravimetric) of Concrete
ASTM C 231 (2009a) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method


ASTM C 618 (2008a) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

ASTM C 891 (2009) Installation of Underground Precast Concrete Utility Structures


CANADIAN STANDARDS ASSOCIATION (CSA)


NATIONAL PRECAST CONCRETE ASSOCIATION (NPCA)


PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)


1.3 SYSTEM DESCRIPTION

Furnish precast concrete units designed and fabricated by an experienced and acceptable precast concrete manufacturer who has been, for at least 3 years, regularly and continuously engaged in the manufacture of precast concrete work. Coordinate precast work with the work of other trades.

A. Precast Units

Design precast concrete units as shown on the drawings to withstand design load conditions provided by Hydroplus. Design shall also consider stresses induced during handling, shipping and installation as to avoid product cracking or other handling damage. Indicate design loads for precast concrete units on the shop drawings.
B. Joints and Sealants

Provide joints and sealants between adjacent units of the type and configuration indicated on shop drawings meeting specified design and performance requirements.

C. Concrete Mix Design

1) Concrete Mix Proportions

Base selection of proportions for concrete on the methodology presented in ACI 211.1 for normal weight concrete. Develop the concrete proportions using the same type and brand of cement, the same type and brand of pozzolan, the same type and gradation of aggregates, and the same type and brand of admixture that will be used in the manufacture of precast concrete units for the project. Do not use calcium chloride in precast concrete containing reinforcing steel or other embedded metal items. The use of self-consolidating concrete is permitted, provided that mix design proportions and constituents meet the requirements of this specification.

2) Concrete Strength

Provide precast concrete Fusegates with a minimum 28-day compressive strength (f'c) of 6,000 pounds per square inch (psi).

3) Water-to-Cement Ratio

Furnish concrete, containing entrained air and with water-cement ratios of 0.45 or less.

4) Cement Content

Furnish concrete, containing a minimum portland cement content of 600 lbs/cyd.

5) Air Content

The air content of concrete shall be within the limits given below.

<table>
<thead>
<tr>
<th>NOMINAL MAXIMUM AGGREGATE SIZE</th>
<th>3/4 inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR CONTENT % SEVERE EXPOSURE</td>
<td>6% +/- 0.5% Tolerance</td>
</tr>
</tbody>
</table>

1.4 SUBMITTALS

Submit the following items prior to performing the work.

A. Shop Drawings

Drawings for precast concrete units shall be submitted by the precast concrete producer for approval by Hydroplus. These drawings shall demonstrate that the applicable industry design standards have been met. The shop drawings shall clearly indicate the approved design assumptions. Include installation and construction information on shop drawings. Include details of steel reinforcement size and placement as well as supporting design calculations. Produce precast concrete units in accordance with the approved drawings.
Include embedded metals in shop drawings. The concrete mix design shall be submitted to Hydroplus for approval before the production begins.

B. Product Data

1) Precast Units: Drawings and product data sheets, for precast concrete Fusegates and ballast blocks, showing conformance to project construction drawings and requirements, and to applicable industry design standards listed in this specification.

2) Embedded Items: Product data sheets and proper installation instruction for anchors, lifting inserts and other devices. Clearly indicate the product dimensions and safe working load.

3) Accessories: Proper installation instructions and relevant product data for items including, but not limited to, sealants, gaskets, connectors, and other items installed before or after delivery.

C. Design Data

1) Concrete Mix Proportions including a complete list of materials, quantity, type, brand, and applicable data sheets for all mix design constituents as well as applicable reference specifications.

2) Precast Lifting Devices, Connections, and Embedment Design Calculations or manufacturer’s data.

D. Test Reports

Submit the following Test Reports:

1) Copies of material certifications and/or laboratory test reports, including mill tests and all other test data, for portland cement, blended cement, pozzolans, ground granulated blast furnace slag, silica fume, aggregate, admixtures, and curing compound proposed for use on this project. Also provide documentation stating that the aggregates will not be susceptible to alkali-aggregate reaction.

2) Copies of test reports showing that the mix has been successfully tested to produce concrete with the properties specified and will be suitable for the job conditions.

3) Documentation, when the use of self-consolidating concrete (SCC) is proposed, including, but not limited to, test reports from previous precast projects demonstrating that SCC is appropriate for casting of the product.

4) Copies of in-plant QA/QC inspection reports, upon the request of the Authority.

E. Certificates

1) Quality Control Procedures established in accordance with NPCA QC Manual and/or ACPA QPC.
1.5 QUALITY ASSURANCE

Demonstrate adherence to the standards set forth in NPCA QC Manual and/or ACPA QPC. Meet requirements written in the subparagraphs below.

A. NPCA and ACPA Plant Certification

The precast concrete producer shall be certified by the National Precast Concrete Association's and/or the American Concrete Pipe Association's Plant Certification Program prior to and during production of the products for this project.

B. Qualifications, Quality Control, and Inspection

1) Qualifications

Select a precast concrete producer that has been in the business of producing precast concrete units for a minimum of 3 years. The precast concrete producer shall maintain a permanent quality control department or retain an independent testing agency on a continuing basis.

2) Quality Control Procedures

Show that the following QC tests are performed as required and in accordance with the ASTM standards indicated.

a. Slump: Perform a slump test during the concreting of each Fusegate unit. Perform slump tests in accordance with ASTM C 143/C 143M.

b. Temperature: Measure the temperature of fresh concrete when slump or air content tests are made and when compressive test specimens are made in accordance with ASTM C 1064/C 1064M.

c. Compressive Strength: Make at least three compressive strength specimens for each Fusegate unit of each concrete mix in accordance with the following Standards: ASTM C 31/C 31M, ASTM C 192/C 192M, ASTM C 39/C 39M.

d. Air Content: Perform tests for air content on air-entrained, wet-cast concrete for each 150 cu yd of concrete, but not less often than once each day when air-entrained concrete is used. Determine the air content in accordance with either ASTM C 231 or ASTM C 173/C 173M for normal weight aggregates.

e. Unit Weight: Perform tests for unit weight a minimum of once per week to verify the yield of batch mixes. Unit weight of the concrete shall be between 145 and 155 pcf per ASTM C 138.

f. Lifting Device Design Calculations: The jacking shoes will be used for lifting the Fusegates. Submit design calculations prepared and sealed by a professional engineer demonstrating compliance with the connection and embedment details as shown on the drawings.
3) Inspection

Hydroplus may place an inspector in the plant when the units covered by this specification are being manufactured. The precast concrete producer shall give notice 14 days prior to the time the units will be available for plant inspection. Neither the exercise nor waiver of inspection at the plant will affect the County's right to enforce contractual provisions after units are transported or erected.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery

Deliver precast units to the site in accordance with the delivery schedule to avoid excessive build-up of units in storage at the site. Upon delivery to the jobsite, all precast concrete units will be inspected by Hydroplus for quality and final acceptance.

B. Storage

Store units off the ground or in a manner that will prevent potential damage.

C. Handling

Handle, transport, and store products in a manner to prevent damage. The Fusegates shall only be lifted at the jacking shoe locations with the jacking shoe assemblies fastened to the Fusegate unit, as indicated on the Contract Drawings. Lifting devices or holes shall be consistent with industry standards. Perform lifting with methods or devices intended for this purpose as indicated on shop drawings. Lifting devices shall be capable of supporting a minimum load of 58.5 kips.

PART 2 - PRODUCTS

2.1 MATERIALS

Except as otherwise specified in the following paragraphs, conform material to Section 03200.1 FUSEGATE STEEL REINFORCEMENT.

A. Cement

Furnish cement conforming to ASTM C 150/C 150M, Type I, II, III or V.

B. Silica Fume

Provide silica fume conforming to ASTM C 1240. Provide available alkalies conforming to the optimal limit given in Table 2 of ASTM C 1240. Silica fume may be furnished as a dry, densified material or as slurry. When necessary, coordinate the services of a technical representative experienced in mixing, proportioning, placement procedures, and curing of concrete containing silica fume.

C. Fly Ash and Pozzolans
Fly ash is used as an admixture conforming to ASTM C 618, with 4 percent maximum loss on ignition and 35 percent maximum cement replacement by weight.

D. Water

Furnish water potable or free of deleterious substances in amounts harmful to concrete or embedded metals conforming to ASTM C 1602.

E. Aggregates

1) Selection

Furnish aggregates conforming to ASTM C 33/C 33M. Provide aggregates not containing any substance, which may be deleteriously reactive with the alkalies in the cement. Provide documentation stating that aggregates will not be susceptible to alkali-aggregate reaction. Nominal maximum-size coarse aggregate shall be ¾ inch. Gradation shall be in accordance with ASTM C 136 for this size coarse aggregate.

F. Admixtures

1) Air-Entraining - ASTM C 260

2) Accelerating, Retarding, Water Reducing - ASTM C 494/C 494M

G. Reinforcement

1) Plain, Deformed Steel Reinforcement

   a. Reinforcing Bars: ASTM A 615/A 615M
   b. Wires and Fabric: ASTM A 185/A 185M

H. Inserts and Embedded Metal

All items embedded in concrete shall be of the type required for the intended task, and meet the following standards.

1) Stainless Steel Plate: ASTM A 240/A 240M, Alloy 304, 304N, or 304L
2) Stainless Steel Bar and Shapes: ASTM 276, Allow 304, 304N, or 304L
3) Minimum Yield Strength for all Stainless Steel: 36 ksi

I. Accessories

1) Elastomeric Joint Sealants: ASTM C 920

J. Grout

Non-shrink Grout shall conform to ASTM C 1107/C 1107M. Cementitious grout shall be a mixture of portland cement, sand, and water. Proportion one part cement to approximately 2.5 parts sand, with the amount of water based on placement method. Provide air entrainment for grout exposed to the weather.
PART 3 - EXECUTION

3.1 FABRICATION AND PLACEMENT

Perform fabrication in accordance with NPCA QC Manual and/or ACPA QPC unless specified otherwise.

A. Forms- see Section 03100.1

B. Reinforcement- see Section 03200.1

C. Embedded Items

Position embedded items at locations specified in the design documents. Perform welding in accordance with AWS D1.1/D1.1M when necessary. Hold rigidly in place inserts, plates, weldments, lifting devices and other items to be embedded in precast concrete products so that they do not move significantly during casting operations.

3.2 CONCRETE

A. Concrete Mixing

Mixing operations shall produce batch-to-batch uniformity of strength, consistency, and appearance.

B. Concrete Placing

Deposit concrete into forms as near to its final location as practical. Keep the free fall of the concrete to a minimum. Consolidate concrete in such a manner that segregation of the concrete is minimized and honeycombed areas are kept to a minimum. Use vibrators to consolidate concrete with frequencies and amplitudes sufficient to produce well consolidated concrete.

1) Cold Weather Concreting

Perform cold weather concreting in accordance with ACI 306.1.

a. Provide adequate equipment for heating concrete materials and protecting concrete during freezing or near-freezing weather.

b. Free from frost all concrete materials and all reinforcement, forms, fillers, and ground with which concrete is to come in contact.

c. Do not use frozen materials or materials containing ice.

d. In cold weather the temperature of concrete at the time of placing shall not be below 45 degrees F. Discard concrete that freezes before its compressive strength reaches 500 psi.

2) Hot Weather Concreting

Recommendations for hot weather concreting are given in detail in ACI 305R. During hot weather, give proper attention to constituents, production methods, handling, placing, protection, and curing to prevent excessive concrete temperatures or water evaporation that could impair required strength or serviceability of the member or structure. The temperature of concrete at the time of placing shall not exceed 90 degrees F.
C. Concrete Curing

Commence curing immediately following the initial set and completion of surface finishing. See Section 03100.1 “FUSEGATE FORMWORK” for form stripping requirements.

1) Curing by Moisture Retention

Prevent moisture evaporation from exposed surfaces until adequate strength for stripping the formwork is reached by one of the following methods:

a. Cover with polyethylene sheets a minimum of 6 mils thick in accordance with ASTM C 171.
b. Cover with burlap or other absorptive material and keep continually moist.
c. Use of a membrane-curing compound applied at a rate not to exceed 200 square ft/gallon, or in accordance with manufacturers’ recommendations according to ASTM C 309.

2) Curing with Heat and Moisture

Do not subject concrete to steam or hot air until after the concrete has attained its initial set. Apply steam, if used, within a suitable enclosure, which permits free circulation of the steam in accordance with CAN/CSA A23.4. If hot air is used for curing, take precautions to prevent moisture loss from the concrete. The temperature of the concrete shall not be permitted to exceed 150 degrees F. These requirements do not apply to products cured with steam under pressure in an autoclave.

D. Surface Finish for Formed and Unformed Surfaces

1) Finish unformed surfaces of wet-cast precast concrete products with a trowel finish for all visible surfaces except those surfaces to receive a Class A finish. Level the surface with a straight edge, and strike off. After surface water has disappeared, float and trowel surface. Provide smooth finished surface, free of trowel marks, and uniform in texture and appearance.

2) Finish formed, exposed vertical surfaces in accordance with Section 03100.1 FUSEGATE FORMWORK.

E. Stripping Products from Forms- see Section 03100.1 FUSEGATE FORMWORK

F. Patching and Repair

Concrete exposed to view with defects which adversely affect the appearance of the specified finish shall be repaired if practicable. No repair is required to formed surfaces that are, in the opinion of the Owner, relatively free of air voids and honeycombed areas, unless the surfaces are required by the design to be finished.

1) Repairing Minor Defects

Defects that will not impair the functional use or expected life of a precast concrete product shall be repaired by any method that does not impair the product.
2) Repairing Honeycombed Areas

When honeycombed areas are to be repaired, remove all loose material and cut back the areas into essentially horizontal or vertical planes to a depth at which coarse aggregate particles break under chipping rather than being dislodged. Use repair materials in accordance with the manufacturer's instructions. Unless in conflict with manufacturer’s instructions, saturate the area with water. Immediately prior to repair, the area should be damp, but free of excess water. Apply a cement-sand grout or an approved bonding agent to the chipped surfaces, followed immediately by consolidating an appropriate repair material into the cavity.

3) Repairing Major Defects

Evaluate, by Hydroplus, defects in precast concrete products which impair the functional use or the expected life of products to determine if repairs are feasible and, if so, to establish the repair procedure.

G. Shipping Products

1) After concreting is completed, do not lift or transport the Fusegate units inside the Precast Plant until the concrete as attained 75 percent of the specified 28-day concrete strength.

2) Do not ship products until they are at least 5 days old, unless it can be shown that the concrete strength has reached at least 75 percent of the specified 28-day strength, or that damage will not result, impairing the performance of the product.

3) Fusegates shall only be lifted at the jacking shoe locations with the jacking shoe assemblies fastened to the Fusegate unit.

3.3 INSTALLATION

A. Site Conditions

It is the Contractor's responsibility to provide adequate access to the site to facilitate hauling, storage, and proper handling of the precast concrete products. Verify that all parts of the supporting structure are complete and ready to receive the Fusegate modules, and that site conditions are conductive to proper installation. Install precast Fusegate modules in accordance with the Contract Drawings and Specifications.

B. General Requirements

1) Install precast concrete products to the lines and grades shown in the contract documents or otherwise specified.

2) Lift products by suitable lifting devices at points provided by the precast concrete producer.

3) Install products in accordance with the precast concrete producer's instructions.
C. Water Tightness

Watertight joints, connectors, and inserts should be used to ensure the integrity of the entire system. The Contractor shall drill holes on the Fusegates on site in order to install and grout the anchor bolts for the watertightness system.

D. Erection Tolerances

Locate Fusegate modules to accommodate proper joint width, and alignment with adjacent precast modules. Noncumulative dimensional tolerances for erection of Fusegate modules are as follows:

a. Face width of joint

Dimension normal to joint

10 feet or under: Plus or minus 3/16 inch

b. Joint taper (panel edges not parallel): 0.2 percent or 1/16 inch total, whichever is larger, but not greater than 3/8 inch

c. Module alignment

Jog in alignment of edge: 1/4 inch

Offset in face of module (exterior face unless otherwise noted): 1/4 inch

d. Variation from theoretical position, any location: Plus or minus 1/4 inch

e. Deviation from plumb: 0.2 percent, 3/8 inch maximum

f. Maximum warpage after erection: One corner out of plane of other three, 0.5 percent of distance from nearer adjacent corner, or 1/8 inch

g. Differential bowing or camber of adjacent Fusegate modules: 1/4 inch maximum

E. Joints

Joint widths between Fusegate modules shall be as specified on the drawings unless otherwise indicated.

F. Protection

Protect exposed-to-view facing from staining and other damage. Do not allow laitance to penetrate, stain, or harden on exposed surfaces.
3.4 CLEANING

Clean exposed-to-view surfaces of Fusegate modules thoroughly with detergent and water; use a brush to remove foreign matter. Remove stains that remain after washing in accordance with recommendations of the precast manufacturer. Surfaces shall be clean and uniform in color.

3.5 SAMPLING AND TESTING

A. Product Quality Control

PCI MNL-117 for PCI enrolled plants. Where Fusegate modules are manufactured by specialists in plants not currently enrolled in the PCI "Quality Control Program", provide a product quality control system in accordance with PCI MNL-117 and perform concrete and aggregate quality control testing using an approved, independent commercial testing laboratory. Submit test results to Hydroplus.

1) Aggregate Tests

ASTM C 33/C 33M. Perform one test for each aggregate size, including determination of the specific gravity.

2) Strength Tests

ASTM C 172. Provide ASTM C 39 and ASTM C 31/C 31M compression tests. Perform ASTM C 143 slump tests. Mold six cylinders each day or for every 20 cubic yards of concrete placed, whichever is greater. Perform strength tests using two cylinders at 7 days and two at 28 days. Cure four cylinders in the same manner as the Fusegate modules and place at the point where the poorest curing conditions are offered. Moist cure two cylinders and test at 28 days.

3) Changes in Proportions

If, the compressive strength falls below that specified, adjust the mix proportions and water content and make necessary changes in the temperature, moisture, and curing procedures to secure the specified strength.

4) Strength Test Results

Evaluate compression test results at 28 days in accordance with ACI 214R using a coefficient of variation of 20 percent. Evaluate the strength of concrete by averaging the test results (two specimens) of standard cylinders tested at 28 days. Not more than 20 percent of the individual tests shall have an average compressive strength less than the specified ultimate compressive strength.

B. Rejection

Fusegate modules may be rejected for any one of the following product defects or installation deficiencies remaining after preapproved repair attempts and cleaning have been accomplished. "Visible" means visible to a person with normal eyesight when viewed from a distance of 20 feet in broad daylight.

1) Nonconformance to specified tolerances.
2) Air voids (bugholes or blowholes) larger than 3/8 inch diameter.

3) Visible irregularities.
4) Visible foreign material embedded in the face.
5) Visible repairs.
6) Visible reinforcement shadow lines.
7) Visible cracks.

3.6 WEIGHING AT THE FABRICATION YARD

A. Preamble

The Fusegates shall be lifted prior to the installation of the watertightness system and the ballast blocks. The lifting operation shall determine the weight and center of gravity of each Fusegate. This is to be done at the fabrication yard. Any shifts in location of the center of gravity (or weight) from the design location will be adjusted through the ballast concrete.

B. Lifting Equipment

The lifting equipment shall consist of 4 hydraulic cylinders, each with 100 kip capacity, connected to a manifold which is connected to a hydraulic pump. The pressure in each cylinder shall be monitored by pressure gages and controlled by needle valves.

1) Hydraulic Pump

The hydraulic pump shall have the capacity to power the four hydraulic cylinders simultaneously through a lifting range of 10 inches. The pump may be powered by a compressed air, gasoline or electric motor.

2) Manifold

The manifold shall serve as the control center for the jacking operation. The pump shall be connected to the manifold. Supply and return hydraulic hoses, with pressure gages and needle valves, shall connect the manifold to each cylinder.

3) Hydraulic Cylinders

The dimensions of the hydraulic cylinders shall be such that they fit under the Fusegate lifting corbels. The stroke shall be 5 inches minimum.

4) Hoses

The length of the hydraulic hoses shall be long enough to connect the manifold with each cylinder. Return lines shall be easily differentiated from pressure lines.
5) Pressure Gages

Four pressure gages shall be provided on each hose to measure the lifting force exerted on the Fusegates at each jacking point. If the gages read in tons of force, they shall be calibrated to the hydraulic cylinders to provide accurate readings in tons of force. Each gage shall be marked to show the maximum operating pressure or force of the system. One pressure gage shall be provided at the outlet of the hydraulic pump.

6) Needle Valve

Needle valves shall be provided on each inlet hose to control the hydraulic pressure in each cylinder at all times.

C. Lifting Procedure

The two jacking shoes shall be attached to the Fusegates by means of the high strength bolts threaded into coupler nuts that are cast into the base slab during construction. Jacking shoes shall be removed after all weighing operations are complete. The cylinders shall be positioned so that the lifting force is centered on the jacking shoe or the embedded jacking plate, and as close to the Fusegate as possible.

Theoretical Static Forces (Four Lifting Points)

| Downstream Jacks (1 and 1’): | 19.5 kips |
| Upstream Jacks (2 and 2’):  | 12.6 kips |

The maximum force exerted by any single jack shall not exceed 110 percent of the theoretical force static force. Forces shall be applied gradually to each jack.

Step 1: All jacks needle valves shall be opened until a force of 11 kips is applied by each jack.

Step 2: Close the needle valves to jacks 1 and 1’. Increase the force in jacks 2 and 2’ in 0.1 kip increments and inspect the Fusegate after applying each increment of lifting force.

Step 3: Close the needle valves for jacks 2 and 2’ when the upstream side of the Fusegate has been raised above the spillway slab 1/8 inch maximum.

Step 4: Open the needle valves for jacks 1 and 1’. Increase the force in 1 kip increments up to 18 kip and in 0.1 kip increments above 18 kip. Inspect the Fusegate for movement after each increment. Stop jacking when the downstream side of the Fusegate has been raised above the ground so that the base of the Fusegate is horizontal. Apply minor adjustments to the jacks 2 and 2’ to achieve a horizontal orientation.

Step 5: Read all of the pressure gages and record the pressures to determine the lift force of each jack. When the pressure readings have been completed, the Fusegate shall be lowered.

Step 6: Open the return valves to the tank and place the pump in the neutral position. Open the needle valves to jacks 2 and 2’ a small amount, until the upstream side of the Fusegate contacts the floor then close the needle valves.
Step 7: Open the needle valves to jacks 1 and 1' until the downstream side of the Fusegate contacts the ground. Gradually reduce the force in all jacks to zero.

3.7 WATERTIGHTNESS SYSTEM

Installation of the watertightness system shall be undertaken per the guidelines from Hydroplus. The vertical and horizontal seal gaskets are to be installed within 1/8 inch of the locations shown on the Contract Drawings. Apply a thread locking compound (removable grade) to all bolts. Install seal with positive compression set to insure sealing. See Section 03150 FUSEGATE WATERTIGHTNESS SYSTEM for details of the watertightness system.

Provide recesses in the concrete for anchor bolts of the watertightness system. Mount metal rods on the formwork at the required locations. These will be removed for the installation of the anchor bolts so drilling of holes will not need to be done.

-END OF SECTION -
SECTION 05500.1

FUSEGATE METAL FABRICATIONS

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 this Section.

1.2 SUMMARY

A. This Section includes the following Fusegate components:

1. Steel Intake Well Assemblies
2. Jacking shoe/ Lifting Bracket Assemblies
3. Toe Abutments
4. Embedded flat bars, plates, and angles
5. Watertightness System
6. Cast-in Anchor Bolts (including nuts, washers, etc.)
7. Post-installed Anchor Bolts (including nuts, washers, etc.)

B. Related Sections include the following:

1. Division 5 Section "Metal Fabrications" for other miscellaneous metal fabrications, their accessories and anchorages, that are not part of the Fusegates as shown on the Contract Drawings.

1.3 SUBMITTALS

A. Product Data: For the following:

1. Cast-in Anchor Bolts
2. Post-Installed Anchor Bolts
3. Structural Bolts and Nuts

B. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

1. Embedded angles, plates, etc.
2. Intake well

C. Mill Certificates: Signed by manufacturers of stainless-steel sheet certifying that products furnished comply with requirements.

D. Welding Certificates: Copies of certificates for welding procedures and personnel.
1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.6, "Structural Welding Code – Stainless Steel."
2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.5 PROJECT CONDITIONS

A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

1.6 COORDINATION

A. Coordinate installation of cast-in anchor bolts for the intake wells. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in precast concrete Fusegate.

PART 2 – PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 AUSTENITIC METALS

A. Stainless-Steel Sheet, Strip, and Plate: ASTM A 666, Type 304 or 316 (36 ksi minimum yield strength).

B. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304 or 316 (36 ksi minimum yield strength).

C. Welding Rods and Bar Electrodes: Select according to AWS specifications for metal alloy welded.
2.3 FASTENERS

A. General: Provide Type 304 or 316 stainless-steel fasteners, of the material grade indicated, for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.

B. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488.

1. Threaded stainless steel anchor bolts, hardware, and shims (as needed) per ASTM F593, Alloy 304 or 316 (90 ksi minimum tensile strength, 35 ksi minimum yield strength).
2. Provide oversized stainless steel washers at intake well anchor bolts.
3. Jacking Plate Anchor Bolts: Provide threaded rod, heavy hex nuts, and oversized washers per ASTM F593, Alloy 304 or 316 (90 ksi minimum tensile strength, 35 ksi minimum yield strength). Provide Grade 8 coupling nut as indicated on the Contract Drawings.

C. Post-installed Anchors in Concrete: Anchors shall be of the type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488.

1. Stainless steel adhesive anchor system with stainless steel rod conforming to ASTM F593 (AISI 304/316) Condition CW ¾” to 1 ¼”. Provide stainless steel nuts conforming to ASTM F594. Provide stainless steel washers conforming to ASTM A240 (AISI 304/316) and meeting dimension requirements of ANSI B18.22.1 Type A Plain.
2. Minimum anchor embedment into concrete (new or existing) shall be 4” unless, unless otherwise indicated on the Contract Drawings.
3. Anchor diameter shall be as indicated on the Contract Drawings.

2.4 GROUT

A. Non-shrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.

2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Shear and punch metals cleanly and accurately. Remove burrs.

C. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Weld corners and seams continuously to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

E. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

F. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

G. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

H. Remove sharp or rough areas on exposed traffic surfaces.

I. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

J. Shop Cleaning and Painting

1. Dissimilar Materials: Where dissimilar metals are in contact, protect surfaces with a coat conforming to MPI 79 to prevent galvanic or corrosive action.

2. Field Preparation: Remove rust preventive coating just prior to field erection, using a remover approved by the rust preventive manufacturer. Surfaces, when assembled, shall be free of rust, grease, dirt and other foreign matter.

3. Environmental Conditions: Do not clean or paint surface when damp or exposed to foggy or rainy weather, when metallic surface temperature is less than 5 degrees F above the dew point of the surrounding air, or when surface temperature is below 45 degrees F or over 95 degrees F, unless approved by the Owner.
2.6 CAST-IN PLATES AND ANGLES

A. Provide loose plates and angles, as indicated on the Contract Drawings, to be cast in the pre-cast-concrete Fusegates. Couplers and fasteners shall be high strength stainless steel as indicated.

B. Drill holes in the jacking plates to receive anchor bolts, as indicated on the Contract Drawings.

C. Weld hooked anchor rods to angles as indicated on the Contract Drawings.

2.7 STEEL INTAKE WELL ASSEMBLIES

A. Provide steel plate and bar assemblies for intake wells to be set on and anchored to the pre-cast concrete Fusegate intake shaft (one each). The intake well assemblies include steel plate side and end walls, bearing plate, and steel bar screen. The intake well assembly will be anchored to the Fusegate with cast-in anchor rods. Drill the bearing plates to receive the cast-in anchor bolts.

B. Fabrication tolerances are plus 0 inch; minus 1/4 inch in any single length except as noted on the drawings, and minus 3/8 inch maximum variation from theoretical location.

2.8 TOE ABUTMENTS ASSEMBLIES

A. Provide toe abutments fabricated from stainless steel ASTM A276 Type 304 or 316 (36 ksi minimum yield strength).

B. Provide pre-tensioned cast-in anchor bolts in the cast-in-place concrete spillway crest as indicated on the Contract Drawings.

C. Welding shall be in accordance with AWS A5.9

D. Provide holes for cast-in anchor bolts as indicated on the Construction Drawings. Coordinate hole spacing with the as-built anchor bolt locations.

2.9 JACKING SHOE/ LIFTING BRACKET ASSEMBLIES

A. Provide jacking shoe/ lifting brackets fabricated from stainless steel ASTM A276 Type 304 or 316 (36 ksi minimum yield strength). Anchor rods, couplers, washers, and nuts shall be as indicated.

B. Welding shall be in accordance with AWS A5.9.

C. Drill holes fasteners as indicated on the Contract Drawings. Coordinate bolt hole location with the jacking plate anchor bolt locations.

D. Fasten jacking shoe/ lifting bracket assembly to jacking plate with ASTM A490X bolts as indicated on the Contract Drawings.
2.10 WATERTIGHTNESS SYSTEM

A. Provide fixing plates fabricated from stainless steel conforming to ASTM A666. Fasteners shall be stainless steel. Rubber seal gaskets shall be in accordance with Section 03150 FUSEGATE WATERTIGHTNESS SYSTEM.

B. Provide plates and flanges shall be fabricated from stainless steel conforming to ASTM A276 Type 304L Alloy.

C. Welding shall be in accordance with AWS A5.9.

D. Drill holes fasteners in accordance with the Contract Drawings.

2.11 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

2.12 STAINLESS-STEEL FINISHES

A. Remove tool and die marks and stretch lines or blend into finish.

B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

C. Bright, Directional Polish: No. 4 finish.

D. When polishing is completed, passivate, and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.

   1. Intake wells: Fasten intake wells to Fusegate at the precasting yard before the Fusegates are weighted and the ballast blocks are casted. Unfasten and dismantle intake wells for transportation to the site once the Fusegate weighing and ballasting has been completed. Fasten intake wells to Fusegates once they are set into their final positions on the spillway sill.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

E. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings, if any.

3.3 ADJUSTING AND CLEANING

A. Field Preparation: Remove rust preventive coating just prior to field erection, using a remover approved by the rust preventive manufacturer. Surfaces, when assembled, shall be free of rust, grease, dirt, and other foreign matter.

B. Environmental Conditions: Do not clean surface when damp or exposed to foggy or rainy weather, when metallic surface temperature is less than 5 degrees F above the dew point of the surrounding air, or when surface temperature is below 45 degrees F or over 95 degrees F, unless approved by the Owner.

- END OF SECTION -
QUESTIONS

ALL QUESTIONS REGARDING THIS RFB MUST BE ON THIS FORM and either faxed to the Department of General Services at (845) 378-2378 or emailed on the Questions form to GeneralServices@orangecountygov.com by the time and date specified in the Instructions to Bidders.

Business Name ____________________________

Telephone: __________________ Fax:__________________________ Date:____________________

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BIDDER'S CHECKLIST

Unless otherwise noted below, one signed original and the number of copies specified in the Instruction to Bidders of each of the following items should be submitted in your Bid package. **It is NOT necessary to include a copy of the entire RFB in your Bid package, only the information required below:**

1. Bid Form
2. Separately sealed list of subcontractor and their pricing, if applicable (See Instructions to Bidders Item 4)
3. Iran Divestment Act Certification
4. Certificate of Experience, if applicable
5. Certificate of Equipment, if applicable
6. Non-Collusive Bidding Certification
7. Disclosure of Non-Responsibility Determinations (copy of instruction page not required)
8. Certificate of Incorporation, Authority, Partnership, Assumed Name (d/b/a), etc., as applicable to your business
9. Bid security and/or letter from your bank or surety, if required in the Instructions to Bidders section
10. Manufacturers' Warranties, if applicable
11. Samples, if applicable
12. Supplemental contracts or agreements, if permitted under the Specifications and as applicable
13. Other information or materials (e.g. resumes, certifications) **ONLY AS REQUESTED** in this RFB
14. Supplier Forms (if you do not hold a current purchase order or contract with the County)
15. Control of Water Plan – see Technical Specification 02140 section 1.3.A.

Bidder(s) awarded a contract agree(s) to execute the contract in the same form as the template enclosed in this RFB and in the timeframe, if any, indicated in this RFB. Failure to reach agreement on contract terms and conditions may result in rejection of a Bid, rescission of an award and/or retention of bid security by the County.

**THIS IS A SEALED BID PROCESS. ALL SUBMISSIONS MUST BE CLEARLY MARKED ON THE OUTSIDE PACKAGING WITH THE RFB TITLE AND NUMBER.**

**INSURANCE AND BONDS:** While not required in the Bid package, Bidders are reminded that Certificates of Insurance and Bonds evidencing compliance with the requirements of this RFB, as applicable, must be provided prior to execution of the contract by the County. The number of days for submission stated in the Notice of Award may vary but it may be less than one business week, please be prepared. **FAILURE TO SUBMIT INSURANCE AND BOND DOCUMENTS MAY RESULT IN DISQUALIFICATION OF THE BIDDER AS NON-RESPONSIVE AND/OR THE COUNTY'S RETENTION OF BID SECURITY.**
Certificate of Experience applicable if checked.

CERTIFICATE OF EXPERIENCE (REFERENCES)

I, _______________________________, hereby certify that ____________________________
(Print Signer's Name) (Bidder – Company Name)
has performed work for the following entities within the last three (3) year(s).

NAME OF BUSINESS: ______________________________ CONTACT NAME: ______________________________
ADDRESS: ____________________________________________________________________________________________

AMOUNT OF CONTRACT: __________________________ TELEPHONE NO.: __________________________
TYPE OF WORK: __________________________________ FAX NUMBER: __________________________

NAME OF BUSINESS: ______________________________ CONTACT NAME: ______________________________
ADDRESS: ____________________________________________________________________________________________

AMOUNT OF CONTRACT: __________________________ TELEPHONE NO.: __________________________
TYPE OF WORK: __________________________________ FAX NUMBER: __________________________

NAME OF BUSINESS: ______________________________ CONTACT NAME: ______________________________
ADDRESS: ____________________________________________________________________________________________

AMOUNT OF CONTRACT: __________________________ TELEPHONE NO.: __________________________
TYPE OF WORK: __________________________________ FAX NUMBER: __________________________

-----------------------------------------------------------------------------------------------------------------------------

ATTACH ADDITIONAL PAGES IF MORE THAN 3 REFERENCES ARE REQUIRED BY THE RFB

-----------------------------------------------------------------------------------------------------------------------------

BY: ______________________________ DATE: ______________________________
TITLE: ______________________________
NON-COLLUSIVE BIDDING CERTIFICATION

(a) By submission of this Bid, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint Bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

(1) The prices in this Bid have been arrived at independently without collusion, consultation communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor.
(2) Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and
(3) No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

(b) A Bid shall not be considered for award nor shall any award be made where (a)(1)(2) and (3) above have not been complied with; provided however, that if in any case the Bidder cannot make the foregoing certification, the Bidder shall so state and shall furnish with the Bid a signed statement which sets forth in detail the reasons therefor. Where (a)(1)(2) and (3) above have not been complied with, the Bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the Bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a Bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being Bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

Any Bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate Bidder for work or services performed or to be performed or goods sold or to be sold, where competitive Bidding is required by statute, rule, regulation, or local law, and where such Bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the Bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

____________________________________  ______________________________________
DATE  SIGNATURE

____________________________________  ______________________________________
BUSINESS NAME  NAME

____________________________________
TITLE
DISCLOSURE OF PRIOR NON-RESPONSIBILITY DETERMINATIONS
(See instructions on next page before completing this form.)

Name of Individual or Entity Seeking to Enter into the Procurement Contract:

____________________________________________________________________________________

Address: ____________________________________________________________________________

Name and Title of Person Submitting this Form: _____________________________________________

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years? (Please circle): No Yes

If Yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law §139-j (Please circle): No Yes

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity? (Please circle): No Yes

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below and attach additional pages as necessary.

   Governmental Entity: ________________________________________________________________
   Date of Finding of Non-Responsibility: ________________________________
   Basis of Finding of Non-Responsibility: ________________________________________________
   ________________________________________________________________________________

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information? (Please circle): No Yes

6. If yes, please provide details below and attach additional pages as necessary.

   Governmental Entity: ________________________________________________________________
   Date of Termination or Withholding of Contract: ________________________________
   Basis of Termination or Withholding: ________________________________________________
   ________________________________________________________________________________

Offerer certifies that all information provided to the Governmental Entity with respect to State Finance Law §139-k is complete, true and accurate.

By: ___________________________ Date: ___________________________
    Signature
Appendix E
Disclosure of Prior Non-Responsibility Determinations

Instructions for Completing the Disclosure of Prior Non-Responsibility Determinations

Background:

New York State Finance Law §139-k(2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations with respect to State Finance Law §139-j. In accordance with State Finance Law §139-k, an Offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity. The terms “Offerer” and “Governmental Entity” are defined in State Finance Law § 139-k(1). State Finance Law §139-j sets forth detailed requirements about the restrictions on contacts during the procurement process. A violation of State Finance Law §139-j includes, but is not limited to, an impermissible contact during the restricted period (for example, contacting a person or entity other than the designated contact person, when such contact does not fall within one of the exemptions).

As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether an Offerer fails to timely disclose accurate or complete information regarding the above non-responsibility determination. In accordance with law, no Procurement Contract shall be awarded to any Offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary timeframe. See State Finance Law §§139-j (10)(b) and 139-k(3).

Instructions:

The County of Orange includes this disclosure request regarding prior non-responsibility determinations in accordance with State Finance Law §139-k in its solicitation of proposals or bid documents or specifications or contract documents, as applicable, for Procurement Contracts. The attached form is to be completed and submitted by the individual or entity seeking to enter into a Procurement Contract, Supplement or Change Order. It shall be submitted with your bid or proposal to the County agency conducting the Governmental Procurement.

This document must accompany each Bid Form, Letter of Interest, or Bid submitted by all Offerers.
INFORMATION SHEET

The questions asked on this Information Sheet are voluntary. It is not necessary to complete this section of this RFB. Filling out this sheet does not change your chances of a Bid award in any respect. By completing this form, you will be helping the County track trends that we believe to be of importance. The information collected will NOT be used to compile mailing lists, and will not be used to contact you. It will also not be sold. The information collected may be used to generate reports showing historical data with regard to the County’s purchasing process.

Business Name: ________________________________________________________________

Address: ______________________________________________________________________

In what county are the primary operations of this business conducted? ______________________

Business type (Sole Proprietorship, Corporation, LLC, etc.) ________________________________

Does this business have a minority, women's, disadvantaged, or small business status? Yes No

If yes, please list the designation(s) and the certifying entity(ties) ______________________________

____________________________________________________________________________________

How many individuals does this business employ? ______

Have you conducted business with the County before? Yes No

How did you discover this Bid opportunity? _____________________________________________

Do you use the Empire State Purchasing Group Website (BidNet)? Yes No

If Yes, do you find it useful (explain) or if No, why?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Please list any other comments or suggestions pertaining to doing business with Orange County.

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
NON-BIDDER’S RESPONSE

BUSINESS NAME: __________________________________________

For the purpose of facilitating your firm’s response to our Request for Bids, the County of Orange is interested in ascertaining reasons for prospective Bidders' failure to respond to Requests for Bids. If your firm is not responding to this RFB, please indicate the reason(s) by checking any appropriate item(s) below and faxing it to the Department of General Services at (845) 360-7206 or mailing it to the above address.

We are **not** responding to this RFB for the following reason(s):

- [ ] We do not offer this product or service.
- [ ] We are unable to meet the specifications.
- [ ] Specifications are inapplicable (too vague, too rigid, etc.) or not understandable.
- [ ] We are unable to meet your bond requirements.
- [ ] Insufficient time allowed for preparation of Bid.
- [ ] Incorrect address used or our branch/division does not handle this type of Bid. Correct name and mailing address is:
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________

- [ ] Other reason(s): _____________________________________
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________
  ______________________________________________________

DGS RFB A8 Minor Closed (12/14)
This agreement (hereinafter referred to as the “AGREEMENT”) is entered into on the ___________ of ___________ 2018, by and between:

______________________________
hereinafter referred to as the “CONTRACTOR” on the one hand,

and

HYDROPLUS, INC.

A company incorporated in the State of Delaware, USA on 04 October 1992, having its office at 401 Harbour Place Dr, Suite 1321, Tampa, FL 33602, duly represented by Hasan Kocahan, acting in his capacity as Manager;

hereinafter referred to as the “SUPPLIER” on the other hand,

hereinafter referred to individually as a “PARTY” and collectively as the “PARTIES”

WHEREAS, the County of Orange (hereinafter referred as the “AUTHORITY”) is the owner/operator of the Beaver Dam Lake Dam located in the vicinity of Salisbury Mills in the State of New York, USA; and

WHEREAS, the AUTHORITY desires to upgrade the spillway of the Beaver Dam Lake Dam with use of a Fusegate System, pursuant to their Request for Proposals (RFP) for Contract No. __________ dated __________ 2018 (such work shall hereinafter be referred to as the “PROJECT”); and

WHEREAS, the AUTHORITY and the CONTRACTOR have entered into an agreement, dated __________ Contract No. [_________] for the PROJECT (hereinafter referred to as the “PRIME CONTRACT”), whereby the CONTRACTOR has agreed to perform the construction works of the PROJECT; and
WHEREAS, the CONTRACTOR has approached the SUPPLIER in relation to the supply of the new Fusegate System at Beaver Dam Lake Dam and the SUPPLIER has confirmed its interest in providing the said supplies and services upon the terms and conditions set forth in this AGREEMENT;

NOW THEREFORE, in consideration with the mutual undertakings herein contained, it is agreed as follows:

ARTICLE 1 – CONTRACT DOCUMENTS

The following documents shall be deemed to form and be read and construed as part of the AGREEMENT:

1. This agreement, including the following appendices:
   a) Technical Specifications – Fuegate System (Sections 03100.1 to 05500.1); and
   b) Contract Drawings – Fuesgate System (FG-1 to FG-8).

The documents forming the AGREEMENT are to be taken as mutually explanatory of one another. In the event of any ambiguity, discrepancy or inconsistency between anything contained in the documents comprising the AGREEMENT, the order of precedence shall be the same as the order in which the documents are listed above.

ARTICLE 2 – THE PROJECT

The PROJECT consists of the modification of the main spillway at Beaver Dam Lake Dam, which will be lowered, widened and reconstructed in order to safely discharge the revised Design Flood without generating any damage to the dam embankment. The Fusegate System will then be installed on top of the modified spillway in order to maintain the original Full Supply Level.

The PROJECT involves the construction and installation of 4 straight crested Fusegates, each 8.50 ft. high and 20.38 ft. wide, made in pre-cast reinforced concrete with inlet wells made in stainless steel. The Fusegates shall operate in such a way that they:

- act as a water retaining structure for reservoir levels below El. 330.45-ft;
- act as a free overflow weir for reservoir levels ranging between El. 330.45-ft. and El. 336.60-ft; and
- tip one by one for predetermined reservoir levels ranging between El. 336.60-ft. and El. 337.70-ft.

The SUPPLIER’s scope of WORK is as defined herein.

ARTICLE 3 – SCOPE OF WORK

The SUPPLIER shall furnish all supervision, labor, materials, and equipment and shall perform all services necessary to fabricate and deliver the products described below (hereinafter referred to as the “PRODUCTS”) and perform the associated technical assistance services during installation (hereinafter referred to as the “SERVICES”) in accordance with all of the
provisions of this AGREEMENT. The WORK means the PRODUCTS delivered by the SUPPLIER and the SERVICES performed by the SUPPLIER in accordance with this AGREEMENT.

The scope of the PRODUCTS and SERVICES comprises the following:

3.1. **Products**

The supply of the PRODUCTS includes:
- Supply of four pre-cast reinforced concrete Fusegate units;
- Weighing the Fusegates and determination of the concrete ballast blocks required for each Fusegate (renting of the jacking equipment included);
- Supply of the pre-cast concrete ballast blocks for each Fusegate;
- Supply of four stainless steel inlet wells;
- Supply of one set of stainless steel jacking shoes;
- Supply of the water tightness system including all the components and accessories required for the installation (EPDM seals, steel flanges, washers, bolts, etc.);
- Storage of all the above until they are transported to the dam site (hereinafter referred to as the “SITE”); and
- Transportation of all the above equipment to the SITE.

3.2. **Services**

The SUPPLIER shall provide technical input to the CONTRACTOR for matters related to the Fusegate System including installation method statements, equipment list, and construction staging areas.

The installation of the entire Fusegate System by the CONTRACTOR is expected to last approximately ten (10) Business Days. During this installation period, the SUPPLIER shall ensure the presence of an expert on SITE to provide technical assistance and guidance to the CONTRACTOR.

3.3. **Exclusions**

For the avoidance of doubt, the following tasks will be performed by the CONTRACTOR, and are excluded from the PRODUCTS and SERVICES:
- Any and all civil works at the SITE related or not to the Fusegate System;
- Unloading, lifting and handling of the PRODUCTS at the SITE;
- Installing and assembling the PRODUCTS and ballast blocks at determined locations;
- Installing the inlet wells;
- Installing the watertightness system; and
- More generally, any tasks related to the PRODUCT installation on SITE.
3.4 Supplier’s Responsibilities

- The SUPPLIER as soon as practicable shall make all claims to the CONTRACTOR for additional work, extensions of time, or otherwise, in accordance with the terms and conditions of this AGREEMENT.

- The SUPPLIER shall take all necessary safety precautions with respect to the supply of the PRODUCTS and the performance of the SERVICES, shall comply with all safety measures set by the CONTRACTOR on the project SITE, and with all applicable laws, ordinances, rules, regulations and orders of any public authority for the safety of persons or property in accordance with the requirements of this AGREEMENT. The SUPPLIER shall promptly notify the CONTRACTOR of any injury to any of the SUPPLIER’s (or the SUPPLIER’ subcontractors) employees at the SITE.

- The SUPPLIER shall cooperate with the CONTRACTOR and other subcontractors whose work might interfere with the PRODUCTS to be supplied and the SERVICES to be performed.

ARTICLE 4 – SPECIFICATIONS

See Technical Specifications (Sections 03100.1 to 05500.1).

ARTICLE 5 – PRICE AND PAYMENT TERMS

5.1 Price

The currency of this AGREEMENT is United States Dollars (“USD”).

The CONTRACTOR will pay to the SUPPLIER, in consideration for the complete and satisfactory supply of the PRODUCTS and performance of the SERVICES, a lump sum price of:

$528,000 (five hundred twenty-eight thousand dollars USD) (hereinafter referred to as the “PRICE”).

The PRICE is valid until 31 May 2018.

The PRICE shall be adjusted from time to time as per Article 5.4 (Price Adjustment) of this AGREEMENT.

The PRICE includes 8.875% Sales Tax applicable for the State of New York, USA.

The PRICE is exclusive of any bonds, custom duties, fees and levies of any kind whatsoever arising out of, or due on, the delivery of the PRODUCTS, or the performance of the SERVICES by or on behalf of the SUPPLIER.

Any additional taxes or fees other than the Sales Tax shall be borne and paid by the CONTRACTOR.
Appendix H
Hydroplus, Inc. agreement w/Contractor

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

If for any reason whatsoever, the SUPPLIER is required to pay any of the said taxes or fees not quoted at the date of signature hereof, the PRICE shall be increased accordingly, and such taxes shall be reimbursed to the SUPPLIER by the CONTRACTOR.

5.2 Payment Terms

Payments will be made in accordance with the payment schedule provided below, based on milestones achieved by the SUPPLIER. Once a milestone is achieved, the SUPPLIER will invoice the relevant amount to the CONTRACTOR. Payment is to be made by the CONTRACTOR within thirty (30) days from the acceptance by the CONTRACTOR of the relevant WORK in accordance with Article 10.2 (Acceptance of Work) of this AGREEMENT.

<table>
<thead>
<tr>
<th>Item</th>
<th>Milestone</th>
<th>Payment amount for Item 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Submission of the shop drawings</td>
<td>$55,000</td>
</tr>
<tr>
<td>b.</td>
<td>Completion of all steel items including the inlet wells, jacking shoes, seal fixing plates, etc.</td>
<td>$143,000</td>
</tr>
<tr>
<td>c.</td>
<td>Completion of the pre-cast Fusegates and ballast blocks</td>
<td>$308,000</td>
</tr>
<tr>
<td>d.</td>
<td>Transportation of all items and technical assistance on SITE</td>
<td>$22,000</td>
</tr>
</tbody>
</table>

5.3. Additional Costs

Should the delivery of the PRODUCTS be postponed beyond six (6) months following the completion of their production for a reason not attributable to the SUPPLIER, the CONTRACTOR shall pay the SUPPLIER the following storage fees:

- $1,500 per calendar month counting any fraction of a month as a full month; and
- All fabricated steel items will be stored until shipped to the SITE at no additional cost to the CONTRACTOR.

5.4. Price Adjustment

Should the Fusegates and its components are not ordered until 30 April 2018, items b and c in section 5.2 may be subject to escalation. The abovementioned portions of the PRICE to be paid pursuant to Article 5.2 (Payment Terms) of this AGREEMENT will be adjusted in accordance with the following formula:

\[ P_n = P_o \times \frac{I_n}{I_o} \]

Where:
- \( P_n \) is the adjusted amount to be paid;
- \( P_o \) is the initial value to be paid, as per the payment schedule in Article 5.2 (Payment Terms) of this AGREEMENT, with base date of \([X]\);
- **In** is the published ENR cost index (BCI) for New York for the month that the invoice is issued; and
- **Io** is the published [X] ENR cost index (BCI) for New York.

If the published ENR cost index (BCI) for New York for the month that the invoice is issued is not yet available, the latest published ENR cost index (BCI) for New York will be considered for the adjustment up to the month of the said index, and the period between the month of the said index and the month that the invoice is issued shall lead to an adjustment based on the average of the index evolution between the two latest published indexes.

If ENR cost index (BCI) for New York is not published anymore by the industry during the performance of the AGREEMENT, the PARTIES will mutually agree on a new relevant index to be used for price escalation purpose, and if the PARTIES fail to agree on a new index within fifteen (15) days, an annual rate of 2% price increase will apply in proportion to the period covered.

**ARTICLE 6 – TIME SCHEDULE**

The time schedule for the supply of the PRODUCTS is as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Milestone</th>
<th>Estimated Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Submittal of the shop drawings</td>
<td>6 weeks after execution of AGREEMENT</td>
</tr>
<tr>
<td>2.</td>
<td>Construction of the Fusegate units</td>
<td>12 weeks after Acceptance of the shop drawings</td>
</tr>
<tr>
<td>3.</td>
<td>Fabrication of all steel items</td>
<td>8 weeks after Acceptance of the shop drawings</td>
</tr>
<tr>
<td>4.</td>
<td>Supply of the EPDM seals</td>
<td>12 weeks after Acceptance of the shop drawings</td>
</tr>
</tbody>
</table>

**ARTICLE 7 – FORCE MAJEURE**

Neither PARTY shall have any liability for the failure to perform any contractual obligation resulting from a Force Majeure event.

A Force Majeure event is an occurrence beyond the control without the fault or negligence of the PARTY affected and which said PARTY is unable to prevent or provide against by the exercise of reasonable diligence including, but not limited to: acts of God or the public enemy; expropriation or confiscation of facilities; war, rebellion, civil disturbances, sabotage, riots, floods, unusually severe weather that could not reasonably have been anticipated; fires, explosions, or other catastrophes; strikes or any other concerted acts of workers; and other similar occurrences. For the avoidance of doubt, any delays caused by the CONTRACTOR’s employees do not constitute civil disturbances.
If the SUPPLIER is delayed in the delivery of the PRODUCTS or the performance of the SERVICES by a Force Majeure event, the SUPPLIER shall as soon as practicable notify the CONTRACTOR after it becomes aware of the Force Majeure event. The time for performance of the relevant obligations shall be appropriately extended at least by the period during which the Force Majeure event exists.

**ARTICLE 8 – COMING INTO FORCE**

The AGREEMENT shall come into force at the signature by both PARTIES of this AGREEMENT.

**ARTICLE 9 – OWNERSHIP AND CONFIDENTIALITY OF TECHNICAL INFORMATION**

All designs, drawings and other technical information relating to the PRODUCTS or the SERVICES, including the intellectual property rights therein made or acquired by the SUPPLIER prior to or in the course of the AGREEMENT, including in particular the patented Fusegate System, shall be, and remain the property of the SUPPLIER.

Such technical information shall be kept confidential by the CONTRACTOR, its employees, agents or subcontractors, shall not be copied, modified or disclosed by any of them and shall not be used by them otherwise than for the purposes of the operation and maintenance of the PRODUCTS.

**ARTICLE 10 – ACCEPTANCE AND TAKING OVER**

10.1 **Acceptance of Submittals**

The SUPPLIER will submit to the CONTRACTOR for review the shop drawings prepared by the SUPPLIER for the fabrication of the PRODUCTS. The time for review shall not exceed fifteen (15) days from the date of submission, excluding delivery time to and from the SUPPLIER. Should the CONTRACTOR fail to respond within fifteen (15) days, the shop drawings shall be deemed approved by the CONTRACTOR, and the SUPPLIER may proceed with the fabrication of the PRODUCTS based on such shop drawings.

When the shop drawings are revised for resubmission, the SUPPLIER shall identify changes made since the previous submission.

Fabrication of the PRODUCTS may only start after acceptance or deemed acceptance of the shop drawings by the CONTRACTOR.

10.2 **Acceptance of Work**

Upon completion of any Milestone referred to in Article 5.2 (*Payment Terms*) of this AGREEMENT, the SUPPLIER shall invite the CONTRACTOR to perform an Acceptance review of the WORK on SITE or on their manufacturing site (as applicable). The SUPPLIER shall send a written notice to the CONTRACTOR to attend the acceptance review fifteen (15) days in advance of such review. The CONTRACTOR shall give a written notice to the SUPPLIER of any omission or damage.
If such notice is not given within fifteen (15) days following such review, or should the CONTRACTOR fail to attend such review, the PRODUCTS shall be considered in conformity with the packing list and free from apparent defects.

The SUPPLIER will remedy any omission or damage notified by the CONTRACTOR in accordance with the above and reoffer the WORK concerned in conformity with the abovementioned procedures within twenty one (21) days from such notice, or any other period agreed by both PARTIES.

Within ten (10) days after the acceptance of the WORK an acceptance certificate will be drawn up and signed by the PARTIES.

Minor defects or shortcomings which do not substantially affect the operational use of the WORK will not give rise to a rejection of the WORK concerned provided that the SUPPLIER shall undertake to remedy such defects and shortcomings as soon as possible.

ARTICLE 11 – LIMITATION OF LIABILITY

Neither PARTY shall be responsible or liable to the other PARTY for any indirect or consequential loss or damage suffered by such other PARTY, such as loss of contracts, loss of profit, loss of revenue, anticipated profit, loss of use of production, productivity, product or facilities downtime, which may be suffered by the other PARTY in connection with this AGREEMENT.

Notwithstanding anything to the contrary in this AGREEMENT, the SUPPLIER’s aggregate liability arising out of or in connection with this AGREEMENT, whether based on breach of contract, statutory warranty or otherwise, shall in no event exceed 50% of the PRICE.

ARTICLE 12 – INDEMNITY

To the extent permitted by law, the SUPPLIER shall indemnify and hold harmless the CONTRACTOR (including without limitation its directors, employees, subcontractors and agents) from and against any and all claims, damages, losses and expenses, demands and causes of action, arising in favor or any third party, on account of bodily injury, sickness, disease or death, or to injury to or destruction of or loss of any property, as a result of or in connection with the performance or non-performance by the SUPPLIER of any of its obligations under this AGREEMENT.

To the extent permitted by law, the CONTRACTOR shall indemnify and hold harmless the SUPPLIER (including without limitation its directors, employees, subcontractors and agents) from and against any and all claims, damages, losses and expenses, demands and causes of action, arising in favor of any third party, on account of bodily injury, sickness, disease or death, or to injury to or destruction of or loss of any property, as a result of or in connection with the performance or non-performance by the CONTRACTOR of any of its obligations under this AGREEMENT.
ARTICLE 13 – WARRANTY

The SUPPLIER warrants that all materials, equipment and workmanship furnished by the SUPPLIER shall be new, merchantable, and fit for the purpose(s) intended and shall comply with the relevant specifications and other requirements of this AGREEMENT and shall be free of defect for a period of one (1) year after Acceptance (as defined in Article 10 (Acceptance and Taking Over) of this AGREEMENT).

This warranty is related to the quality of material used and the manufacturing process. It will not cover external damages that occur (i) between delivery of the PRODUCTS and the installation of the PRODUCTS; and (ii) after the installation of the PRODUCTS (such as damages caused by installation and handling, falling or hitting objects, vandalism, Force Majeure, etc.).

With respect to items of manufactured equipment specified by the CONTRACTOR and purchased by the SUPPLIER from others, if any, the SUPPLIER warrants that the equipment is as specified, and agrees to pass on and assign to the CONTRACTOR, the manufacturer’s warranty and the SUPPLIER shall prosecute the enforcement thereof in cooperation with the CONTRACTOR.

ARTICLE 14 – INSURANCE

The SUPPLIER shall, at its own expense, carry and maintain:

a. Worker’s Compensation and Employers’ Liability Insurance in which the limit of liability for each accident shall be $1,000,000;

b. General Liability Insurance in which the limit of liability for personal and adv. injuries, shall be $1,000,000 for each occurrence and $2,000,000 for general aggregate;

c. General Liability Insurance in which the limit of liability for damage to rented properties shall be $100,000 for each occurrence;

d. Automobile Liability Insurance in which the limit of liability for combined single limit, shall be $1,000,000 for each accident;

e. Professional Liability Insurance covering errors and omissions with limits of not less than $2,000,000 for any one occurrence; deductible not more than $25,000; and

f. The CONTRACTOR shall be named as an additional Insured on all General Liability policies.

Before any of the SUPPLIER’S or its subcontractors’ employees shall perform any of the SERVICES on SITE, the SUPPLIER shall furnish the CONTRACTOR with a certificate evidencing that such insurance has been carried out and maintained. The SUPPLIER agrees that such benefits shall be provided and such insurance carried and maintained until after completion of the AGREEMENT. The SUPPLIER shall likewise require its subcontractors, if any, to provide for such benefits and carry and maintain such insurance at no expense to the CONTRACTOR.
ARTICLE 15 – SUSPENSION

In the event of suspension of the PROJECT by the AUTHORITY, the CONTRACTOR shall be entitled to instruct by written notice that the SUPPLIER suspends the delivery of the PRODUCTS or the performance of the SERVICES or any part thereof for the duration of the suspension of the PRIME CONTRACT. The written notice shall specify the date on which the delivery of the PRODUCTS shall be resumed.

As a result of the suspension, the SUPPLIER shall be granted an adjustment of the PRICE and/or an extension of the time (as applicable) provided the SUPPLIER submits a claim. For the avoidance of doubt, such compensation shall take into account the amount of the PRODUCTS delivered and the SERVICES performed as at the date of suspension.

The SUPPLIER reserves the right to suspend the delivery of the PRODUCTS or the performance of the SERVICES or any part thereof in the event that the CONTRACTOR fails to fulfill its payment obligations within thirty (30) days from the contractual time for payment, or fails to fulfill its obligations under the AGREEMENT.

ARTICLE 16 – TERMINATION

16.1 Termination by Contractor

If the SUPPLIER substantially fails to perform his material obligations, the CONTRACTOR may inform the SUPPLIER by notice stating the grounds for such notice. If a satisfactory response is not received by the CONTRACTOR within ten (10) days, the CONTRACTOR may by a further notice terminate the AGREEMENT provided that further notice is given within fourteen (14) days of the CONTRACTOR’S former notice.

16.2 Termination by Supplier

The SUPPLIER shall be entitled to terminate the AGREEMENT by giving notice to the CONTRACTOR if:

a) The CONTRACTOR fails to pay the amount due to the SUPPLIER in accordance with the time for payment in Article 5.2 (Payment Terms) of this AGREEMENT; or

b) The CONTRACTOR unreasonably interferes with, or obstructs or unreasonably refuses, any required approval of any certificate or invoice, or

c) In the event of suspension under this AGREEMENT lasting more than ninety (90) days in aggregate.

Such termination shall take effect fourteen (14) days after receipt of the notice by the CONTRACTOR.

In the event of any such termination, the CONTRACTOR shall pay to the SUPPLIER the amount as had become due to the SUPPLIER under this AGREEMENT and the amount of any loss or direct damage arising out of or in connection with such termination. Such payment shall be made within forty-five (45) days to the CONTRACTOR of the detailed account by the SUPPLIER.
ARTICLE 17 – DISPUTES
The PARTIES shall endeavor to settle amicably any dispute arising out of or in connection with the AGREEMENT within forty-five (45) days as from the date of request of one PARTY to the other.

If the PARTIES’ attempt at amicable settlement is unsuccessful, the dispute shall be submitted to mediation by formal request to the other PARTY. The mediation shall be administered by the American Arbitration Association under its Commercial Mediation Procedures. The cost for mediation will be borne equally by each PARTY. Any dispute not resolved by mediation within six (6) months from the date of the request (for mediation) to the other PARTY, shall be finally settled by arbitration administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules including the International Commercial Arbitration Supplementary Procedure, and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. The arbitration shall be seated in New York, USA.

ARTICLE 18 – APPLICABLE LAW
This AGREEMENT shall be governed by and construed in accordance with the laws of the State of New York, USA. The SUPPLIER shall comply with laws, statutes, ordinances, rules and regulations of any governmental entity having jurisdiction over the WORK. In the event of any new laws or regulations being promulgated, or in the event of any change in any existing law or regulation or in the interpretation of application thereof, on or after the signature of this AGREEMENT, the SUPPLIER shall be entitled to compensation for all costs or loss of profits incurred as a result of such events.

ARTICLE 19 – TRANSFER OF RISKS AND TRANSFER OF TITLE
Risk of loss or damage to the PRODUCTS shall pass from the SUPPLIER to the CONTRACTOR upon delivery of the PRODUCTS on SITE.

Title to the PRODUCTS will pass to, and vest in, the CONTRACTOR upon payment of the PRODUCTS by the CONTRACTOR and delivery of the PRODUCTS on SITE.

ARTICLE 20 – NOTICE
Except as it may be provided in the working procedures mutually agreed upon by the PARTIES, all invoices, certificates, notices or such orders as are operative to be given by either PARTY to the other, shall be valid when given in writing by registered mail, expedited mail service and courier service or by delivery against receipt to the following address:
FOR THE CONTRACTOR:

________________________________________

(Name)

FOR THE SUPPLIER:

HYDROPLUS, INC.
401 Harbour Place Drive, Suite 1321
Tampa, FL 33602
With a copy by email to: hkocahan@hydroplususa.com

Or such other addresses and/or to the attention of such person/group as either PARTY may notify from time to time to the other.

ARTICLE 21 – MISCELLANEOUS

21.1
When any period of time is referred to in the AGREEMENT by days, it will be computed to exclude the first and to include the last day of such period. If the last day of any such period falls on a Saturday or a Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

21.2
This AGREEMENT constitutes the entire agreement of the PARTIES with respect to its object and supersedes and cancels any prior representation, commitment, undertaking or agreement between the PARTIES, whether oral or written, with respect to or in connection with any of the matters or things to which such AGREEMENT applies or refers.

If any provision of this AGREEMENT is determined to be invalid or unenforceable for any reason, the PARTIES will use their best efforts to negotiate an equitable adjustment to this AGREEMENT with a view to achieving the original purpose and intent of this AGREEMENT, provided, however, that the validity or enforceability of the remaining provisions of this AGREEMENT, or any portions or applications thereof, will not be affected by the unenforceability or invalidity of any other provision of this AGREEMENT, and any invalid or unenforceable provision will be deemed severed from the remainder of this AGREEMENT. No failure by either PARTY to exercise, nor any delay in exercising, any right or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right or remedy prevent any further or other exercise...
thereof or the exercise of any other right or remedy. The rights and remedies herein provided are cumulative and not exclusive of any rights or remedies provided by law.

This AGREEMENT may only be amended by mutual written agreement between the PARTIES.

No assignment of this AGREEMENT is permitted without prior written permission from the other PARTY.

IN WITNESS WHEREOF, the PARTIES have caused this AGREEMENT to be executed by their duty authorized representatives, as follows, on the date first above written:

FOR THE CONTRACTOR:

FOR THE SUPPLIER:

__________________________     __________________________
Signature                  Signature

__________________________     __________________________
(Name)                     HYDROPLUS, INC.

__________________________     __________________________
Title                     Title
# STATE OF NEW YORK MASTER CONTRACT FOR GRANTS FACE PAGE

**STATE AGENCY (Name & Address):**
Department of Environmental Conservation  
625 Broadway  
Albany, NY  12233-1080

**BUSINESS UNIT/DEPT ID:**  DEC01
**CONTRACT NUMBER:**  DEC01-C00273GG-3350000

**CONTRACT TYPE:**
- [ ] Multi-Year Agreement
- [ ] Simplified Renewal Agreement
- [x] Fixed Term Agreement

**CONTRACTOR SFS PAYEE NAME:**  ORANGE COUNTY OF

**TRANSACTION TYPE:**
- [ ] New
- [ ] Renewal
- [x] Amendment

**CONTRACTOR DOS INCORPORATED NAME:**  Orange County DPW

**PROJECT NAME:**  Rehabilitation of Beaver Dam Lake Dam

**CONTRACTOR IDENTIFICATION NUMBERS:**
- NYS Vendor ID Number:  1000002432
- Federal Tax ID Number:  146002567
- DUNS Number (if applicable):  012981593

**CONTRACTOR PRIMARY MAILING ADDRESS:**
ATTN COUNTY CLERK  PARRY BUILDING 4 GLENMERE COVE RD  
GOSHEN, NY 10924

**CONTRACTOR PAYMENT ADDRESS:**
- [x] Check if same as primary mailing address

**CONTRACT MAILING ADDRESS:**
- [x] Check if same as primary mailing address

**CONTRACTOR STATUS:**
- [ ] For Profit
- [x] Municipality, Code:
- [ ] Tribal Nation
- [ ] Individual
- [ ] Not-for-Profit

**AGENCY IDENTIFIER:**

**CFDA NUMBER (Federally Funded Grants Only):**

**CONTRACTOR STATUS:**
- [ ] Charities Registration Number:
- [ ] Exemption State Code:

**CONTRACT NUMBER:**  DEC01-C00273GG-3350000

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Master Grant Contract, Face Page
**STATE OF NEW YORK MASTER CONTRACT FOR GRANTS FACE PAGE**

**CURRENT CONTRACT TERM:**
- From: 11/01/2005  
- To: 12/31/2016

**CURRENT CONTRACT PERIOD:**
- From: 11/01/2005  
- To: 12/31/2016

**AMENDED TERM:**
- From: 11/01/2005  
- To: 12/31/2018

**AMENDED PERIOD:**
- From: 11/01/2005  
- To: 12/31/2018

**CONTRACT FUNDING AMOUNT**
- CURRENT: $999,850.00
- AMENDED:

**FUNDING SOURCE(S):**
- [x] State
- [ ] Federal
- [ ] Other

**FOR MULTI-YEAR AGREEMENTS ONLY - CONTRACT AND FUNDING AMOUNT:**
(Out years represents projected funding amounts)

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STATE OF NEW YORK MASTER CONTRACT FOR GRANTS FACE PAGE

ATTACHMENTS PART OF THIS AGREEMENT:

Attachment A:  
- [x] A-1 Program Specific Terms and Conditions
- [ ] A-2 Federally Funded Grants

Attachment B:  
- [ ] B-1 Expenditure Based Budget
- [ ] B-2 Performance Based Budget
- [ ] B-3 Capital Budget
- [ ] B-4 Net Deficit Budget
- [x] B-1 (A) Expenditure Based Budget (Amendment)
- [ ] B-2 (A) Performance Based Budget (Amendment)
- [ ] B-3 (A) Capital Budget (Amendment)
- [ ] B-4 (A) Net Deficit Budget (Amendment)

Attachment C: Work Plan

Attachment D: Payment and Reporting Schedule

Other: Attachment E - Signage Requirements

Contract Number: # DEC01-C00273GG-3350000
IN WITNESS THEREOF, the parties hereto have electronically executed or approved this Master Contract on the dates below their signature.

In addition, I, acting in the capacity as Contractor, certify that I am the signing authority, or have been delegated or designated formally as the signing authority by the appropriate authority or officials, and as such I do agree, and I have the authority to agree, to all of the terms and conditions set forth in the Master Contract, including all appendices and attachments. I understand that (i) payment of a claim on this Master Contract is conditioned upon the Contractor’s compliance with all applicable conditions of participation in this program and (if I am acting in the capacity as a for-profit Contractor) the accuracy and completeness of information submitted to the State of New York through the Gateway vendor prequalification process and (ii) by electronically indicating my acceptance of the terms and conditions of the Master Contract, I certify that (a) to the extent that the Contractor is required to register and/or file reports with the Office of Attorney General’s Charities Bureau (“Charities Bureau”), the Contractor’s registration is current, all applicable reports have been filed, and the Contractor has no outstanding requests from the Charities Bureau relating to its filings and (b) all data and responses in the application submitted by the Contractor are true, complete and accurate. I also understand that use of my assigned User ID and Password on the State’s contract management system is equivalent to having placed my signature on the Master Contract and that I am responsible for any activity attributable to the use of my User ID and Password. Additionally, any information entered will be considered to have been entered and provided at my direction. I further certify and agree that the Contractor agrees to waive any claim that this electronic record or signature is inadmissible in court, notwithstanding the choice of law provisions.

CONTRACTOR:

By: Stefan Neuhhau

Printed Name
Title: County Executive
Date: 09/22/2017

STATE AGENCY:

By: Nancy Lussier

Printed Name
Title: Director, Division of Management and Budget Services
Date: 10/03/2017

ATTORNEY GENERAL’S SIGNATURE
APPROVED AS TO FORM

By: ________________________________
Printed Name
Title: ________________________________
Date: ________________________________

STATE COMPTROLLER’S SIGNATURE

By: Regina Richardson
Printed Name
Title: Contract Management Specialist 1
Date: 10/05/2017

Contract Number: # DEC01-C00273GG-3350000
Page 1 of 1, Master Contract for Grants Signature Page
STATE OF NEW YORK
MASTER CONTRACT FOR GRANTS

This State of New York Master Contract for Grants (Master Contract) is hereby made by and between the State of New York acting by and through the applicable State Agency (State) and the public or private entity (Contractor) identified on the face page hereof (Face Page).

WITNESSETH:

WHEREAS, the State has the authority to regulate and provide funding for the establishment and operation of program services, design or the execution and performance of construction projects, as applicable and desires to contract with skilled parties possessing the necessary resources to provide such services or work, as applicable; and

WHEREAS, the Contractor is ready, willing and able to provide such program services or the execution and performance of construction projects and possesses or can make available all necessary qualified personnel, licenses, facilities and expertise to perform or have performed the services or work, as applicable, required pursuant to the terms of the Master Contract;

NOW THEREFORE, in consideration of the promises, responsibilities, and covenants herein, the State and the Contractor agree as follows:

STANDARD TERMS AND CONDITIONS

I. GENERAL PROVISIONS

A. Executory Clause: In accordance with Section 41 of the State Finance Law, the State shall have no liability under the Master Contract to the Contractor, or to anyone else, beyond funds appropriated and available for the Master Contract.

B. Required Approvals: In accordance with Section 112 of the State Finance Law (or, if the Master Contract is with the State University of New York (SUNY) or City University of New York (CUNY), Section 355 or Section 6218 of the Education Law), if the Master Contract exceeds $50,000 (or $85,000 for contracts let by the Office of General Services, or the minimum thresholds agreed to by the Office of the State Comptroller (OSC) for certain SUNY and CUNY contracts), or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount including, but not limited to, changes in amount, consideration, scope or contract term identified on the Face Page (Contract Term), it shall not be valid, effective or binding upon the State until it has been approved by, and filed with, the New York Attorney General Contract Approval Unit (AG) and OSC. If, by the Master Contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $10,000, it shall not be valid, effective or binding upon the State until it has been approved by, and filed with, the AG and OSC.

Budget Changes: An amendment that would result in a transfer of funds among program activities or budget cost categories that does not affect the amount, consideration, scope or other terms of such contract may be subject to the approval of the AG and OSC where the amount of such modification is, as a portion of the total value of the contract, equal to or greater than ten percent for contracts of less than five million dollars, or five percent for contracts of more than
five million dollars; and, in addition, such amendment may be subject to prior approval by the applicable State Agency as detailed in Attachment D (Payment and Reporting Schedule).

C. Order of Precedence:

In the event of a conflict among (i) the terms of the Master Contract (including any and all attachments and amendments) or (ii) between the terms of the Master Contract and the original request for proposal, the program application or other attachment that was completed and executed by the Contractor in connection with the Master Contract, the order of precedence is as follows:

1. Standard Terms and Conditions
2. Modifications to the Face Page
3. Modifications to Attachment A-2\(^1\), Attachment B, Attachment C and Attachment D
4. The Face Page
5. Attachment A-2\(^2\), Attachment B, Attachment C and Attachment D
6. Modification to Attachment A-1
7. Attachment A-1
8. Other attachments, including, but not limited to, the request for proposal or program application

D. Funding: Funding for the term of the Master Contract shall not exceed the amount specified as “Contract Funding Amount” on the Face Page or as subsequently revised to reflect an approved renewal or cost amendment. Funding for the initial and subsequent periods of the Master Contract shall not exceed the applicable amounts specified in the applicable Attachment B form (Budget).

E. Contract Performance: The Contractor shall perform all services or work, as applicable, and comply with all provisions of the Master Contract to the satisfaction of the State. The Contractor shall provide services or work, as applicable, and meet the program objectives summarized in Attachment C (Work Plan) in accordance with the provisions of the Master Contract, relevant laws, rules and regulations, administrative, program and fiscal guidelines, and where applicable, operating certificate for facilities or licenses for an activity or program.

F. Modifications: To modify the Attachments or Face Page, the parties mutually agree to record, in writing, the terms of such modification and to revise or complete the Face Page and all the appropriate attachments in conjunction therewith. In addition, to the extent that such modification meets the criteria set forth in Section I.B herein, it shall be subject to the approval of the AG and

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\(^1\) To the extent that the modifications to Attachment A-2 are required by Federal requirements and conflict with other provisions of the Master Contract, the modifications to Attachment A-2 shall supersede all other provisions of this Master Contract. See Section I(V).

\(^2\) To the extent that the terms of Attachment A-2 are required by Federal requirements and conflict with other provisions of the Master Contract, the Federal requirements of Attachment A-2 shall supersede all other provisions of this Master Contract. See Section I(V).

Contract Number: # DEC01-C00273GG-3350000
Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

OSC before it shall become valid, effective and binding upon the State. Modifications that are not subject to the AG and OSC approval shall be processed in accordance with the guidelines stated in the Master Contract.


H. Severability: Any provision of the Master Contract that is held to be invalid, illegal or unenforceable in any respect by a court of competent jurisdiction, shall be ineffective only to the extent of such invalidity, illegality or unenforceability, without affecting in any way the remaining provisions hereof; provided, however, that the parties to the Master Contract shall attempt in good faith to reform the Master Contract in a manner consistent with the intent of any such ineffective provision for the purpose of carrying out such intent. If any provision is held void, invalid or unenforceable with respect to particular circumstances, it shall nevertheless remain in full force and effect in all other circumstances.

I. Interpretation: The headings in the Master Contract are inserted for convenience and reference only and do not modify or restrict any of the provisions herein. All personal pronouns used herein shall be considered to be gender neutral. The Master Contract has been made under the laws of the State of New York, and the venue for resolving any disputes hereunder shall be in a court of competent jurisdiction of the State of New York.

J. Notice:

1. All notices, except for notices of termination, shall be in writing and shall be transmitted either:

   a) by certified or registered United States mail, return receipt requested;

   b) by facsimile transmission;

   c) by personal delivery;

   d) by expedited delivery service; or

   e) by e-mail.

2. Notices to the State shall be addressed to the Program Office designated in Attachment A-1 (Program Specific Terms and Conditions).

3. Notices to the Contractor shall be addressed to the Contractor’s designee as designated in Attachment A-1 (Program Specific Terms and Conditions).

4. Any such notice shall be deemed to have been given either at the time of personal delivery or, in the case of expedited delivery service or certified or registered United States mail, as of the date of first attempted delivery at the address and in the manner provided herein, or in the case of facsimile transmission or e-mail, upon receipt.

5. The parties may, from time to time, specify any new or different e-mail address, facsimile number or address in the United States as their address for purpose of receiving notice under the
Master Contract by giving fifteen (15) calendar days prior written notice to the other party sent in accordance herewith. The parties agree to mutually designate individuals as their respective representatives for the purposes of receiving notices under the Master Contract. Additional individuals may be designated in writing by the parties for purposes of implementation, administration, billing and resolving issues and/or disputes.

K. 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. The Contractor shall have thirty (30) calendar days after service hereunder is complete in which to respond.

L. 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 money due to the Contractor under the Master Contract up to any amounts due and owing to the State with regard to the Master Contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of the Master 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 OSC.

M. Indemnification: The Contractor shall be solely responsible and answerable in damages for any and all accidents and/or injuries to persons (including death) or property arising out of or related to the services to be rendered by the Contractor or its subcontractors pursuant to this Master Contract. The Contractor shall indemnify and hold harmless the State and its officers and employees from claims, suits, actions, damages and cost of every nature arising out of the provision of services pursuant to the Master Contract.

N. Non-Assignment Clause: In accordance with Section 138 of the State Finance Law, the Master 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 shall be considered to be 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 State Agency and with the concurrence of OSC, where the original contract was subject to OSC’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 the merged 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 the Master Contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

O. Legal Action: No litigation or regulatory action shall be brought against the State of New York, the State Agency, or against any county or other local government entity with funds provided under the Master Contract. The term “litigation” shall include commencing or threatening to commence a lawsuit, joining or threatening to join as a party to ongoing litigation, or requesting any relief from
any of the State of New York, the State Agency, or any county, or other local government entity. The term “regulatory action” shall include commencing or threatening to commence a regulatory proceeding, or requesting any regulatory relief from any of the State of New York, the State Agency, or any county, or other local government entity.

P. No Arbitration: Disputes involving the Master 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.

Q. Secular Purpose: Services performed pursuant to the Master Contract are secular in nature and shall be performed in a manner that does not discriminate on the basis of religious belief, or promote or discourage adherence to religion in general or particular religious beliefs.

R. Partisan Political Activity and Lobbying: Funds provided pursuant to the Master Contract shall not be used for any partisan political activity, or for activities that attempt to influence legislation or election or defeat of any candidate for public office.

S. Reciprocity and Sanctions Provisions: The Contractor is hereby notified that if its 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 it offers shall be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively) require that it be denied contracts which it would otherwise obtain.  

T. Reporting Fraud and Abuse: Contractor acknowledges that it has reviewed information on how to prevent, detect, and report fraud, waste and abuse of public funds, including information about the Federal False Claims Act, the New York State False Claims Act, and whistleblower protections.

U. Non-Collusive Bidding: By submission of this bid, the Contractor and each person signing on behalf of the Contractor certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his or her knowledge and belief that its bid was arrived at independently and without collusion aimed at restricting competition. The Contractor further affirms that, at the time the Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive binding certification on the Contractor’s behalf.

V. Federally Funded Grants and Requirements Mandated by Federal Laws: All of the specific Federal requirements that are applicable to the Master Contract are identified in Attachment A-2 (Federally Funded Grants and Requirements Mandated by Federal Laws) hereto. To the extent that the Master Contract is funded in whole or part with Federal funds or mandated by Federal laws, (i) the provisions of the Master Contract that conflict with Federal rules, Federal regulations, or Federal program specific requirements shall not apply and (ii) the Contractor agrees to comply with all applicable Federal rules, regulations and program specific requirements including, but not limited to, those provisions that are set forth in Attachment A-2 (Federally Funded Grants and Requirements Mandated by Federal Laws) hereto.

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As of October 9, 2012, the list of discriminatory jurisdictions subject to this provision includes the states of Alaska, Hawaii, Louisiana, South Carolina, West Virginia and Wyoming. Contact NYS Department of Economic Development for the most current list of jurisdictions subject to this provision.

Contract Number: # DEC01-C00273GG-3350000
Page 5 of 25, Master Contract for Grants - Standard Terms and Conditions (August 2014)
II. TERM, TERMINATION AND SUSPENSION

A. Term: The term of the Master Contract shall be as specified on the Face Page, unless terminated sooner as provided herein.

B. Renewal:

1. General Renewal: The Master Contract may consist of successive periods on the same terms and conditions, as specified within the Master Contract (a “Simplified Renewal Contract”). Each additional or superseding period shall be on the forms specified by the State and shall be incorporated in the Master Contract.

2. Renewal Notice to Not-for-Profit Contractors:

   a) Pursuant to State Finance Law §179-t, if the Master Contract is with a not-for-profit Contractor and provides for a renewal option, the State shall notify the Contractor of the State’s intent to renew or not to renew the Master Contract no later than ninety (90) calendar days prior to the end of the term of the Master Contract, unless funding for the renewal is contingent upon enactment of an appropriation. If funding for the renewal is contingent upon enactment of an appropriation, the State shall notify the Contractor of the State’s intent to renew or not to renew the Master Contract the later of: (1) ninety (90) calendar days prior to the end of the term of the Master Contract, and (2) thirty (30) calendar days after the necessary appropriation becomes law. Notwithstanding the foregoing, in the event that the State is unable to comply with the time frames set forth in this paragraph due to unusual circumstances beyond the control of the State (“Unusual Circumstances”), no payment of interest shall be due to the not-for-profit Contractor. For purposes of State Finance Law §179-t, “Unusual Circumstances” shall not mean the failure by the State to (i) plan for implementation of a program, (ii) assign sufficient staff resources to implement a program, (iii) establish a schedule for the implementation of a program or (iv) anticipate any other reasonably foreseeable circumstance.

   b) Notification to the not-for-profit Contractor of the State’s intent to not renew the Master Contract must be in writing in the form of a letter, with the reason(s) for the non-renewal included. If the State does not provide notice to the not-for-profit Contractor of its intent not to renew the Master Contract as required in this Section and State Finance Law §179-t, the Master Contract shall be deemed continued until the date the State provides the necessary notice to the Contractor, in accordance with State Finance Law §179-t. Expenses incurred by the not-for-profit Contractor during such extension shall be reimbursable under the terms of the Master Contract.
C. Termination:

1. Grounds:

   a) Mutual Consent: The Master Contract may be terminated at any time upon mutual written consent of the State and the Contractor.

   b) Cause: The State may terminate the Master Contract immediately, upon written notice of termination to the Contractor, if the Contractor fails to comply with any of the terms and conditions of the Master Contract and/or with any laws, rules, regulations, policies, or procedures that are applicable to the Master Contract.

   c) Non-Responsibility: In accordance with the provisions of Sections IV(N)(6) and (7) herein, the State may make a final determination that the Contractor is non-responsible (Determination of Non-Responsibility). In such event, the State may terminate the Master Contract at the Contractor’s expense, complete the contractual requirements in any manner the State deems advisable and pursue available legal or equitable remedies for breach.

   d) Convenience: The State may terminate the Master Contract in its sole discretion upon thirty (30) calendar days prior written notice.

   e) Lack of Funds: If for any reason the State or the Federal government terminates or reduces its appropriation to the applicable State Agency entering into the Master Contract or fails to pay the full amount of the allocation for the operation of one or more programs funded under this Master Contract, the Master Contract may be terminated or reduced at the State Agency’s discretion, provided that no such reduction or termination shall apply to allowable costs already incurred by the Contractor where funds are available to the State Agency for payment of such costs. Upon termination or reduction of the Master Contract, all remaining funds paid to the Contractor that are not subject to allowable costs already incurred by the Contractor shall be returned to the State Agency. In any event, no liability shall be incurred by the State (including the State Agency) beyond monies available for the purposes of the Master Contract. The Contractor acknowledges that any funds due to the State Agency or the State of New York because of disallowed expenditures after audit shall be the Contractor’s responsibility.

   f) Force Majeure: The State may terminate or suspend its performance under the Master Contract immediately upon the occurrence of a “force majeure.” For purposes of the Master Contract, “Force majeure” shall include, but not be limited to, natural disasters, war, rebellion, insurrection, riot, strikes, lockout and any unforeseen circumstances and acts beyond the control of the State which render the performance of its obligations impossible.

2. Notice of Termination:

   a) Service of notice: Written notice of termination shall be sent by:

      (i) personal messenger service; or

      (ii) certified mail, return receipt requested and first class mail.
b) **Effective date of termination:** The effective date of the termination shall be the later of (i) the date indicated in the notice and (ii) the date the notice is received by the Contractor, and shall be established as follows:

(i) if the notice is delivered by hand, the date of receipt shall be established by the receipt given to the Contractor or by affidavit of the individual making such hand delivery attesting to the date of delivery; or

(ii) if the notice is delivered by registered or certified mail, by the receipt returned from the United States Postal Service, or if no receipt is returned, five (5) business days from the date of mailing of the first class letter, postage prepaid, in a depository under the care and control of the United States Postal Service.

3. **Effect of Notice and Termination on State’s Payment Obligations:**

a) Upon receipt of notice of termination, the Contractor agrees to cancel, prior to the effective date of any prospective termination, as many outstanding obligations as possible, and agrees not to incur any new obligations after receipt of the notice without approval by the State.

b) The State shall be responsible for payment on claims for services or work provided and costs incurred pursuant to the terms of the Master Contract. In no event shall the State be liable for expenses and obligations arising from the requirements of the Master Contract after its termination date.

4. **Effect of Termination Based on Misuse or Conversion of State or Federal Property:**

Where the Master Contract is terminated for cause based on Contractor’s failure to use some or all of the real property or equipment purchased pursuant to the Master Contract for the purposes set forth herein, the State may, at its option, require:

a) the repayment to the State of any monies previously paid to the Contractor; or

b) the return of any real property or equipment purchased under the terms of the Master Contract; or

b) an appropriate combination of clauses (a) and (b) of Section II(C)(4) herein.

Nothing herein shall be intended to limit the State’s ability to pursue such other legal or equitable remedies as may be available.

D. **Suspension:** The State may, in its discretion, order the Contractor to suspend performance for a reasonable period of time. In the event of such suspension, the Contractor shall be given a formal written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor shall comply with the particulars of the notice. The State shall have no obligation to reimburse Contractor’s expenses during such suspension period. Activities may resume at such time as the State issues a formal written notice authorizing a resumption of performance under the Master Contract.
III. PAYMENT AND REPORTING

A. Terms and Conditions:

1. In full consideration of contract services to be performed, the State Agency agrees to pay and the Contractor agrees to accept a sum not to exceed the amount noted on the Face Page.

2. The State has no obligation to make payment until all required approvals, including the approval of the AG and OSC, if required, have been obtained. Contractor obligations or expenditures that precede the start date of the Master Contract shall not be reimbursed.

3. Contractor must provide complete and accurate billing invoices to the State in order to receive payment. Provided, however, the State may, at its discretion, automatically generate a voucher in accordance with an approved contract payment schedule. Billing invoices submitted to the State must contain all information and supporting documentation required by Attachment D (Payment and Reporting Schedule) and Section III(C) herein. The State may require the Contractor to submit billing invoices electronically.

4. Payment for invoices submitted by the Contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the head of the State Agency, in the sole discretion of the head of such State Agency, due to extenuating circumstances. Such electronic payment shall be made in accordance with OSC's procedures and practices to authorize electronic payments.

5. If travel expenses are an approved expenditure under the Master Contract, travel expenses shall be reimbursed at the lesser of the rates set forth in the written standard travel policy of the Contractor, the OSC guidelines, or United States General Services Administration rates. No out-of-state travel costs shall be permitted unless specifically detailed and pre-approved by the State.

6. Timeliness of advance payments or other claims for reimbursement, 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.

7. Article 11-B of the State Finance Law sets forth certain time frames for the Full Execution of contracts or renewal contracts with not-for-profit organizations and the implementation of any program plan associated with such contract. For purposes of this section, “Full Execution” shall mean that the contract has been signed by all parties thereto and has obtained the approval of the AG and OSC. Any interest to be paid on a missed payment to the Contractor based on a delay in the Full Execution of the Master Contract shall be governed by Article 11-B of the State Finance Law.
B. Advance Payment and Recoupment:

1. Advance payments, which the State in its sole discretion may make to not-for-profit grant recipients, shall be made and recouped in accordance with State Finance Law Section 179(u), this Section and the provisions of Attachment D (Payment and Reporting Schedule).

2. Initial advance payments made by the State to not-for-profit grant recipients shall be due no later than thirty (30) calendar days, excluding legal holidays, after the first day of the Contract Term or, if renewed, in the period identified on the Face Page. Subsequent advance payments made by the State to not-for-profit grant recipients shall be due no later than thirty (30) calendar days, excluding legal holidays, after the dates specified in Attachment D (Payment and Reporting Schedule).

3. For subsequent contract years in multi-year contracts, Contractor will be notified of the scheduled advance payments for the upcoming contract year no later than 90 days prior to the commencement of the contract year. For simplified renewals, the payment schedule (Attachment D) will be modified as part of the renewal process.

4. Recoupment of any advance payment(s) shall be recovered by crediting the percentage of subsequent claims listed in Attachment D (Payment and Reporting Schedule) and Section III(C) herein and such claims shall be reduced until the advance is fully recovered within the Contract Term. Any unexpended advance balance at the end of the Contract Term shall be refunded by the Contractor to the State.

5. If for any reason the amount of any claim is not sufficient to cover the proportionate advance amount to be recovered, then subsequent claims may be reduced until the advance is fully recovered.

C. Claims for Reimbursement:

1. The Contractor shall submit claims for the reimbursement of expenses incurred on behalf of the State under the Master Contract in accordance with this Section and the applicable claiming schedule in Attachment D (Payment and Reporting Schedule).

Vouchers submitted for payment shall be deemed to be a certification that the payments requested are for project expenditures made in accordance with the items as contained in the applicable Attachment B form (Budget) and during the Contract Term. When submitting a voucher, such voucher shall also be deemed to certify that: (i) the payments requested do not duplicate reimbursement from other sources of funding; and (ii) the funds provided herein do not replace funds that, in the absence of this grant, would have been made available by the Contractor for this program. Requirement (ii) does not apply to grants funded pursuant to a Community Projects Fund appropriation.

2. Consistent with the selected reimbursement claiming schedule in Attachment D (Payment and Reporting Schedule), the Contractor shall comply with the appropriate following provisions:

   a) Quarterly Reimbursement: The Contractor shall be entitled to receive payments for work, projects, and services rendered as detailed and described in Attachment C (Work Plan).
The Contractor shall submit to the State Agency quarterly voucher claims and supporting documentation. The Contractor shall submit vouchers to the State Agency in accordance with the procedures set forth in Section III(A)(3) herein.

b) Monthly Reimbursement: The Contractor shall be entitled to receive payments for work, projects, and services rendered as detailed and described in Attachment C (Work Plan).

The Contractor shall submit to the State Agency monthly voucher claims and supporting documentation. The Contractor shall submit vouchers to the State Agency in accordance with the procedures set forth in Section III(A)(3) herein.

c) Biannual Reimbursement: The Contractor shall be entitled to receive payments for work, projects, and services rendered as detailed and described in Attachment C (Work Plan).

The Contractor shall submit to the State Agency biannually voucher claims and supporting documentation. The Contractor shall submit vouchers to the State Agency in accordance with the procedures set forth in Section III(A)(3) herein.

d) Milestone/Performance Reimbursement: Requests for payment based upon an event or milestone may be either severable or cumulative. A severable event/milestone is independent of accomplishment of any other event. If the event is cumulative, the successful completion of an event or milestone is dependent on the previous completion of another event.

Milestone payments shall be made to the Contractor when requested in a form approved by the State, and at frequencies and in amounts stated in Attachment D (Payment and Reporting Schedule). The State Agency shall make milestone payments subject to the Contractor’s satisfactory performance.

e) Fee for Service Reimbursement: Payment shall be limited to only those fees specifically agreed upon in the Master Contract and shall be payable no more frequently than monthly upon submission of a voucher by the contractor.

f) Rate Based Reimbursement: Payment shall be limited to rate(s) established in the Master Contract. Payment may be requested no more frequently than monthly.

g) Scheduled Reimbursement: The State Agency shall generate vouchers at the frequencies and amounts as set forth in Attachment D (Payment and Reporting Schedule), and service reports shall be used to determine funding levels appropriate to the next annual contract period.

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4 A milestone/performance payment schedule identifies mutually agreed-to payment amounts based on meeting contract events or milestones. Events or milestones must represent integral and meaningful aspects of contract performance and should signify true progress in completing the Master Contract effort.

5 Fee for Service is a rate established by the Contractor for a service or services rendered.

6 Rate based agreements are those agreements in which payment is premised upon a specific established rate per unit.

7 Scheduled Reimbursement agreements provide for payments that occur at defined and regular intervals that provide for a specified dollar amount to be paid to the Contractor at the beginning of each payment period (i.e., quarterly, monthly or bi-annually). While these payments are related to the particular services and outcomes defined in the Master Contract, they are not dependent upon particular services or expenses in any one payment period and provide the Contractor with a defined and regular payment over the life of the contract.
h) **Interim Reimbursement:** The State Agency shall generate vouchers on an interim basis and at the amounts requested by the Contractor as set forth in Attachment D (Payment and Reporting Schedule).

i) **Fifth Quarter Payments:** Fifth quarter payment shall be paid to the Contractor at the conclusion of the final scheduled payment period of the preceding contract period. The State Agency shall use a written directive for fifth quarter financing. The State Agency shall generate a voucher in the fourth quarter of the current contract year to pay the scheduled payment for the next contract year.

3. The Contractor shall also submit supporting fiscal documentation for the expenses claimed.

4. The State reserves the right to withhold up to fifteen percent (15%) of the total amount of the Master Contract as security for the faithful completion of services or work, as applicable, under the Master Contract. This amount may be withheld in whole or in part from any single payment or combination of payments otherwise due under the Master Contract. In the event that such withheld funds are insufficient to satisfy Contractor’s obligations to the State, the State may pursue all available remedies, including the right of setoff and recoupment.

5. The State shall not be liable for payments on the Master Contract if it is made pursuant to a Community Projects Fund appropriation if insufficient monies are available pursuant to Section 99-d of the State Finance Law.

6. All vouchers submitted by the Contractor pursuant to the Master Contract shall be submitted to the State Agency no later than thirty (30) calendar days after the end date of the period for which reimbursement is claimed. In no event shall the amount received by the Contractor exceed the budget amount approved by the State Agency, and, if actual expenditures by the Contractor are less than such sum, the amount payable by the State Agency to the Contractor shall not exceed the amount of actual expenditures.

7. All obligations must be incurred prior to the end date of the contract. Notwithstanding the provisions of Section III(C)(6) above, with respect to the final period for which reimbursement is claimed, so long as the obligations were incurred prior to the end date of the contract, the Contractor shall have up to ninety (90) calendar days after the contract end date to make expenditures; provided, however, that if the Master Contract is funded, in whole or in part, with Federal funds, the Contractor shall have up to sixty (60) calendar days after the contract end date to make expenditures.

**D. Identifying Information and Privacy Notification:**

1. Every voucher or New York State Claim for Payment submitted to a State Agency by the Contractor, 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 Contractor’s Vendor Identification Number assigned by the Statewide Financial System, and any or all of the following identification numbers: (i) the Contractor’s Federal employer identification number,
(ii) the Contractor’s Federal social security number, and/or (iii) DUNS number. Failure to include such identification number or numbers may delay payment by the State to the Contractor. Where the Contractor does not have such number or numbers, the Contractor, on its voucher or Claim for Payment, must provide the reason or reasons for why the Contractor does not have such number or numbers.

2. 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 principle 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. The personal information is requested by the purchasing unit of the State Agency contracting to purchase the goods or services or lease the real or personal property covered by the Master Contract. This 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.

E. Refunds:

1. In the event that the Contractor must make a refund to the State for Master Contract-related activities, including repayment of an advance or an audit disallowance, payment must be made payable as set forth in Attachment A-1 (Program Specific Terms and Conditions). The Contractor must reference the contract number with its payment and include a brief explanation of why the refund is being made. Refund payments must be submitted to the Designated Refund Office at the address specified in Attachment A-1 (Program Specific Terms and Conditions).

2. If at the end or termination of the Master Contract, there remains any unexpended balance of the monies advanced under the Master Contract in the possession of the Contractor, the Contractor shall make payment within forty-five (45) calendar days of the end or termination of the Master Contract. In the event that the Contractor fails to refund such balance the State may pursue all available remedies.

F. Outstanding Amounts Owed to the State: Prior period overpayments (including, but not limited to, contract advances in excess of actual expenditures) and/or audit recoveries associated with the Contractor may be recouped against future payments made under this Master Contract to Contractor. The recoupment generally begins with the first payment made to the Contractor following identification of the overpayment and/or audit recovery amount. In the event that there are no payments to apply recoveries against, the Contractor shall make payment as provided in Section III(E) (Refunds) herein.

G. Program and Fiscal Reporting Requirements:

1. The Contractor shall submit required periodic reports in accordance with the applicable schedule provided in Attachment D (Payment and Reporting Schedule). All required reports or other work products developed pursuant to the Master Contract must be completed as provided by the agreed upon work schedule in a manner satisfactory and acceptable to the State Agency in order for the Contractor to be eligible for payment.
2. Consistent with the selected reporting options in Attachment D (Payment and Reporting Schedule), the Contractor shall comply with the following applicable provisions:

a) If the Expenditure Based Reports option is indicated in Attachment D (Payment and Reporting Schedule), the Contractor shall provide the State Agency with one or more of the following reports as required by the following provisions and Attachment D (Payment and Reporting Schedule) as applicable:

(i) *Narrative/Qualitative Report:* The Contractor shall submit, on a quarterly basis, not later than the time period listed in Attachment D (Payment and Reporting Schedule), a report, in narrative form, summarizing the services rendered during the quarter. This report shall detail how the Contractor has progressed toward attaining the qualitative goals enumerated in Attachment C (Work Plan). This report should address all goals and objectives of the project and include a discussion of problems encountered and steps taken to solve them.

(ii) *Statistical/Quantitative Report:* The Contractor shall submit, on a quarterly basis, not later than the time period listed in Attachment D (Payment and Reporting Schedule), a detailed report analyzing the quantitative aspects of the program plan, as appropriate (e.g., number of meals served, clients transported, patient/client encounters, procedures performed, training sessions conducted, etc.)

(iii) *Expenditure Report:* The Contractor shall submit, on a quarterly basis, not later than the time period listed in Attachment D (Payment and Reporting Schedule), a detailed expenditure report, by object of expense. This report shall accompany the voucher submitted for such period.

(iv) *Final Report:* The Contractor shall submit a final report as required by the Master Contract, not later than the time period listed in Attachment D (Payment and Reporting Schedule) which reports on all aspects of the program and detailing how the use of funds were utilized in achieving the goals set forth in Attachment C (Work Plan).

(v) *Consolidated Fiscal Report (CFR):* The Contractor shall submit a CFR, which includes a year-end cost report and final claim not later than the time period listed in Attachment D (Payment and Reporting Schedule).

b) If the Performance-Based Reports option is indicated in Attachment D (Payment and Reporting Schedule), the Contractor shall provide the State Agency with the following reports as required by the following provisions and Attachment D (Payment and Reporting Schedule) as applicable:

(i) *Progress Report:* The Contractor shall provide the State Agency with a written progress report using the forms and formats as provided by the State Agency, summarizing the work performed during the period. These reports shall detail the Contractor’s progress toward attaining the specific goals enumerated in Attachment C (Work Plan). Progress reports shall be submitted in a format prescribed in the Master Contract.
(ii) Final Progress Report: Final scheduled payment is due during the time period set forth in Attachment D (Payment and Reporting Schedule). The deadline for submission of the final report shall be the date set forth in Attachment D (Payment and Reporting Schedule). The State Agency shall complete its audit and notify the Contractor of the results no later than the date set forth in Attachment D (Payment and Reporting Schedule). Payment shall be adjusted by the State Agency to reflect only those services/expenditures that were made in accordance with the Master Contract. The Contractor shall submit a detailed comprehensive final progress report not later than the date set forth in Attachment D (Payment and Reporting Schedule), summarizing the work performed during the entire Contract Term (i.e., a cumulative report), in the forms and formats required.

3. In addition to the periodic reports stated above, the Contractor may be required (a) to submit such other reports as are required in Table 1 of Attachment D (Payment and Reporting Schedule), and (b) prior to receipt of final payment under the Master Contract, to submit one or more final reports in accordance with the form, content, and schedule stated in Table 1 of Attachment D (Payment and Reporting Schedule).

H. Notification of Significant Occurrences:

1. If any specific event or conjunction of circumstances threatens the successful completion of this project, in whole or in part, including where relevant, timely completion of milestones or other program requirements, the Contractor agrees to submit to the State Agency within three (3) calendar days of becoming aware of the occurrence or of such problem, a written description thereof together with a recommended solution thereto.

2. The Contractor shall immediately notify in writing the program manager assigned to the Master Contract of any unusual incident, occurrence, or event that involves the staff, volunteers, directors or officers of the Contractor, any subcontractor or program participant funded through the Master Contract, including but not limited to the following: death or serious injury; an arrest or possible criminal activity that could impact the successful completion of this project; any destruction of property; significant damage to the physical plant of the Contractor; or other matters of a similarly serious nature.

IV. ADDITIONAL CONTRACTOR OBLIGATIONS, REPRESENTATIONS AND WARRANTIES

A. Contractor as an Independent Contractor/Employees:

1. The State and the Contractor agree that the Contractor is an independent contractor, and not an employee of the State and may neither hold itself out nor claim to be an officer, employee, or subdivision of the State nor make any claim, demand, or application to or for any right based upon any different status. Notwithstanding the foregoing, the State and the Contractor agree that if the Contractor is a New York State municipality, the Contractor shall be permitted to hold itself out, and claim, to be a subdivision of the State.

The Contractor shall be solely responsible for the recruitment, hiring, provision of employment benefits, payment of salaries and management of its project personnel. These functions shall be carried out in accordance with the provisions of the Master Contract, and all applicable Federal and State laws and regulations.
2. The Contractor warrants that it, its staff, and any and all subcontractors have all the necessary licenses, approvals, and certifications currently required by the laws of any applicable local, state, or Federal government to perform the services or work, as applicable, pursuant to the Master Contract and/or any subcontract entered into under the Master Contract. The Contractor further agrees that such required licenses, approvals, and certificates shall be kept in full force and effect during the term of the Master Contract, or any extension thereof, and to secure any new licenses, approvals, or certificates within the required time frames and/or to require its staff and subcontractors to obtain the requisite licenses, approvals, or certificates. In the event the Contractor, its staff, and/or subcontractors are notified of a denial or revocation of any license, approval, or certification to perform the services or work, as applicable, under the Master Contract, Contractor shall immediately notify the State.

B. Subcontractors:

1. If the Contractor enters into subcontracts for the performance of work pursuant to the Master Contract, the Contractor shall take full responsibility for the acts and omissions of its subcontractors. Nothing in the subcontract shall impair the rights of the State under the Master Contract. No contractual relationship shall be deemed to exist between the subcontractor and the State.

2. If requested by the State, the Contractor agrees not to enter into any subcontracts, or revisions to subcontracts, that are in excess of $100,000 for the performance of the obligations contained herein until it has received the prior written permission of the State, which shall have the right to review and approve each and every subcontract in excess of $100,000 prior to giving written permission to the Contractor to enter into the subcontract. All agreements between the Contractor and subcontractors shall be by written contract, signed by individuals authorized to bind the parties. All such subcontracts shall contain provisions for specifying (1) that the work performed by the subcontractor must be in accordance with the terms of the Master Contract, (2) that nothing contained in the subcontract shall impair the rights of the State under the Master Contract, and (3) that nothing contained in the subcontract, nor under the Master Contract, shall be deemed to create any contractual relationship between the subcontractor and the State. In addition, subcontracts shall contain any other provisions which are required to be included in subcontracts pursuant to the terms herein.

3. If requested by the State, prior to executing a subcontract, the Contractor agrees to require the subcontractor to provide to the State the information the State needs to determine whether a proposed subcontractor is a responsible vendor.

4. If requested by the State, when a subcontract equals or exceeds $100,000, the subcontractor shall submit a Vendor Responsibility Questionnaire (Questionnaire).

5. If requested by the State, upon the execution of a subcontract, the Contractor shall provide detailed subcontract information (a copy of subcontract will suffice) to the State within fifteen (15) calendar days after execution. The State may request from the Contractor copies of subcontracts between a subcontractor and its subcontractor.

6. The Contractor shall require any and all subcontractors to submit to the Contractor all financial claims for Services or work to the State agency, as applicable, rendered and required supporting documentation and reports as necessary to permit Contractor to meet claim deadlines and documentation requirements as established in Attachment D (Payment and Reporting
Schedule) and Section III. Subcontractors shall be paid by the Contractor on a timely basis after submitting the required reports and vouchers for reimbursement of services or work, as applicable. Subcontractors shall be informed by the Contractor of the possibility of non-payment or rejection by the Contractor of claims that do not contain the required information, and/or are not received by the Contractor by said due date.

C. Use Of Material, Equipment, Or Personnel:

1. The Contractor shall not use materials, equipment, or personnel paid for under the Master Contract for any activity other than those provided for under the Master Contract, except with the State’s prior written permission.

2. Any interest accrued on funds paid to the Contractor by the State shall be deemed to be the property of the State and shall either be credited to the State at the close-out of the Master Contract or, upon the written permission of the State, shall be expended on additional services or work, as applicable, provided for under the Master Contract.

D. Property:

1. Property is real property, equipment, or tangible personal property having a useful life of more than one year and an acquisition cost of $1,000 or more per unit.

   a) If an item of Property required by the Contractor is available as surplus to the State, the State at its sole discretion, may arrange to provide such Property to the Contractor in lieu of the purchase of such Property.

   b) If the State consents in writing, the Contractor may retain possession of Property owned by the State, as provided herein, after the termination of the Master Contract to use for similar purposes. Otherwise, the Contractor shall return such Property to the State at the Contractor's cost and expense upon the expiration of the Master Contract.

   c) In addition, the Contractor agrees to permit the State to inspect the Property and to monitor its use at reasonable intervals during the Contractor's regular business hours.

   d) The Contractor shall be responsible for maintaining and repairing Property purchased or procured under the Master Contract at its own cost and expense. The Contractor shall procure and maintain insurance at its own cost and expense in an amount satisfactory to the State Agency, naming the State Agency as an additional insured, covering the loss, theft or destruction of such equipment.

   e) A rental charge to the Master Contract for a piece of Property owned by the Contractor shall not be allowed.

   f) The State has the right to review and approve in writing any new contract for the purchase of or lease for rental of Property (Purchase/Lease Contract) operated in connection with the provision of the services or work, as applicable, as specified in the Master Contract, if applicable, and any modifications, amendments, or extensions of an existing lease or purchase prior to its execution. If, in its discretion, the State disapproves of any
Appendix I
NYSDEC Master Grant contract with County of Orange
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Purchase/Lease Contract, then the State shall not be obligated to make any payments for such Property.

g) No member, officer, director or employee of the Contractor shall retain or acquire any interest, direct or indirect, in any Property, paid for with funds under the Master Contract, nor retain any interest, direct or indirect, in such, without full and complete prior disclosure of such interest and the date of acquisition thereof, in writing to the Contractor and the State.

2. For non-Federally-funded contracts, unless otherwise provided herein, the State shall have the following rights to Property purchased with funds provided under the Master Contract:
   a) For cost-reimbursable contracts, all right, title and interest in such Property shall belong to the State.
   b) For performance-based contracts, all right, title and interest in such Property shall belong to the Contractor.

3. For Federally funded contracts, title to Property whose requisition cost is borne in whole or in part by monies provided under the Master Contract shall be governed by the terms and conditions of Attachment A-2 (Federally Funded Grants and Requirements Mandated by Federal Laws).

4. Upon written direction by the State, the Contractor shall maintain an inventory of all Property that is owned by the State as provided herein.

5. The Contractor shall execute any documents which the State may reasonably require to effectuate the provisions of this section.

E. Records and Audits:

1. General:
   a) The Contractor shall establish and maintain, in paper or electronic format, complete and accurate books, records, documents, receipts, accounts, and other evidence directly pertinent to its performance under the Master Contract (collectively, Records).

   b) The Contractor agrees to produce and retain for the balance of the term of the Master Contract, and for a period of six years from the later of the date of (i) the Master Contract and (ii) the most recent renewal of the Master Contract, any and all Records necessary to substantiate upon audit, the proper deposit and expenditure of funds received under the Master Contract. Such Records may include, but not be limited to, original books of entry (e.g., cash disbursements and cash receipts journal), and the following specific records (as applicable) to substantiate the types of expenditures noted:

      (i) personal service expenditures: cancelled checks and the related bank statements, time and attendance records, payroll journals, cash and check disbursement records including copies of money orders and the like, vouchers and invoices, records of contract labor, any and all records listing payroll and the money value of non-cash advantages provided to employees, time cards, work schedules and logs, employee personal history folders,
detailed and general ledgers, sales records, miscellaneous reports and returns (tax and otherwise), and cost allocation plans, if applicable.

(ii) payroll taxes and fringe benefits: cancelled checks, copies of related bank statements, cash and check disbursement records including copies of money orders and the like, invoices for fringe benefit expenses, miscellaneous reports and returns (tax and otherwise), and cost allocation plans, if applicable.

(iii) non-personal services expenditures: original invoices/receipts, cancelled checks and related bank statements, consultant agreements, leases, and cost allocation plans, if applicable.

(iv) receipt and deposit of advance and reimbursements: itemized bank stamped deposit slips, and a copy of the related bank statements.

c) The OSC, AG and any other person or entity authorized to conduct an examination, as well as the State Agency or State Agencies involved in the Master Contract that provided funding, shall have access to the Records during the hours of 9:00 a.m. until 5:00 p.m., Monday through Friday (excluding State recognized holidays), 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.

d) The State shall protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law 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 Section 87 of the Public Officers Law, is reasonable.

e) Nothing contained herein shall diminish, or in any way adversely affect, the State’s rights in connection with its audit and investigatory authority or the State’s rights in connection with discovery in any pending or future litigation.

2. Cost Allocation:

a) For non-performance based contracts, the proper allocation of the Contractor’s costs must be made according to a cost allocation plan that meets the requirements of OMB Circulars A-87, A-122, and/or A-21. Methods used to determine and assign costs shall conform to generally accepted accounting practices and shall be consistent with the method(s) used by the Contractor to determine costs for other operations or programs. Such accounting standards and practices shall be subject to approval of the State.

b) For performance based milestone contracts, or for the portion of the contract amount paid on a performance basis, the Contractor shall maintain documentation demonstrating that milestones were attained.

F. Confidentiality: The Contractor agrees that it shall use and maintain personally identifiable information relating to individuals who may receive services, and their families pursuant to the Master Contract, or any other information, data or records marked as, or reasonably deemed, confidential by the State (Confidential Information) only for the limited purposes of the Master Contract and in conformity with applicable provisions of State and Federal law. The Contractor (i) has an affirmative obligation to safeguard any such Confidential Information from unnecessary or unauthorized disclosure and (ii) must comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law Section 899-aa; State Technology Law Section 208).

G. Publicity:

1. Publicity includes, but is not limited to: news conferences; news releases; public announcements; advertising; brochures; reports; discussions or presentations at conferences or meetings; and/or the inclusion of State materials, the State’s name or other such references to the State in any document or forum. Publicity regarding this project may not be released without prior written approval from the State.

2. Any publications, presentations or announcements of conferences, meetings or trainings which are funded in whole or in part through any activity supported under the Master Contract may not be published, presented or announced without prior approval of the State. Any such publication, presentation or announcement shall:

   a) Acknowledge the support of the State of New York and, if funded with Federal funds, the applicable Federal funding agency; and

   b) State that the opinions, results, findings and/or interpretations of data contained therein are the responsibility of the Contractor and do not necessarily represent the opinions, interpretations or policy of the State or if funded with Federal funds, the applicable Federal funding agency.

3. Notwithstanding the above, (i) if the Contractor is an educational research institution, the Contractor may, for scholarly or academic purposes, use, present, discuss, report or publish any material, data or analyses, other than Confidential Information, that derives from activity under the Master Contract and the Contractor agrees to use best efforts to provide copies of any manuscripts arising from Contractor’s performance under this Master Contract, or if requested by the State, the Contractor shall provide the State with a thirty (30) day period in which to review each manuscript for compliance with Confidential Information requirements; or (ii) if the Contractor is not an educational research institution, the Contractor may submit for publication, scholarly or academic publications that derive from activity under the Master Contract (but are not deliverable under the Master Contract), provided that the Contractor first submits such manuscripts to the State forty-five (45) calendar days prior to submission for consideration by a publisher in order for the State to review the manuscript for compliance with confidentiality requirements and restrictions and to make such other comments as the State deems appropriate. All derivative publications shall follow the same acknowledgments and disclaimer as described in Section IV(G)(2) (Publicity) hereof.

H. Web-Based Applications-Accessibility: Any web-based intranet and Internet information and applications development, or programming delivered pursuant to the Master Contract or procurement shall comply with New York State Enterprise IT Policy NYS-P08-005, Accessibility
Web-Based Information and Applications, and New York State Enterprise IT Standard NYS-S08-005, Accessibility of Web-Based Information Applications, as such policy or standard may be amended, modified or superseded, which requires that State Agency web-based intranet and Internet information and applications are accessible to person with disabilities. Web content must conform to New York State Enterprise IT Standards NYS-S08-005, as determined by quality assurance testing. Such quality assurance testing shall be conducted by the State Agency and the results of such testing must be satisfactory to the State Agency before web content shall be considered a qualified deliverable under the Master Contract or procurement.

I. Non-Discrimination Requirements: Pursuant to 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 and sub-contractors will not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex (including gender expression), national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest. 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 the Master Contract shall be performed within the State of New York, the Contractor agrees that neither it nor its sub-contractors 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 the Master Contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, the Contractor agrees that neither it nor its sub-contractors 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 the Master Contract. The Contractor shall be subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 of the Labor Law.

J. Equal Opportunities for Minorities and Women: Minority and Women Owned Business Enterprises: In accordance with Section 312 of the Executive Law and 5 NYCRR 143, if the Master Contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting State 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 State Agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting State 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 Contractor certifies and affirms that (i) it is subject to Article 15-A of the Executive Law which includes, but is not limited to, those provisions concerning the maximizing of opportunities for the participation of minority and women-owned business enterprises and (ii) the following provisions shall apply and it is Contractor’s equal employment opportunity policy that:

1. The Contractor shall not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status;
2. The Contractor 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;

3. The Contractor shall 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, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

4. At the request of the State, 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 shall not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative shall affirmatively cooperate in the implementation of the Contractor’s obligations herein; and

5. The Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants shall be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

The Contractor shall include the provisions of subclauses 1 – 5 of this Section (IV)(J), in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (Work) except where the Work is for the beneficial use of the Contractor. Section 312 of the Executive Law does not apply to: (i) work, goods or services unrelated to the Master Contract; or (ii) employment outside New York State. The State shall consider compliance by the Contractor or a subcontractor with the requirements of any Federal law concerning equal employment opportunity which effectuates the purpose of this section. The State 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 State shall waive the applicability of Section 312 of the Executive Law to the extent of such duplication or conflict. The Contractor shall 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.

K. 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.

1. If the total dollar amount of the Master Contract is greater than $1 million, the Omnibus Procurement Act of 1992 requires that by signing the Master Contract, the Contractor certifies the following:

   a) The Contractor has made reasonable efforts to encourage the participation of 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 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 the Master Contract and agrees to cooperate with the State in these efforts.

L. Workers’ Compensation Benefits:

1. In accordance with Section 142 of the State Finance Law, the Master Contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of the Master Contract for the benefit of such employees as are required to be covered by the provisions of the Workers’ Compensation Law.

2. If a Contractor believes they are exempt from the Workers Compensation insurance requirement they must apply for an exemption.

M. Unemployment Insurance Compliance: The Contractor shall remain current in both its quarterly reporting and payment of contributions or payments in lieu of contributions, as applicable, to the State Unemployment Insurance system as a condition of maintaining this grant.

The Contractor hereby authorizes the State Department of Labor to disclose to the State Agency staff only such information as is necessary to determine the Contractor’s compliance with the State Unemployment Insurance Law. This includes, but is not limited to, the following:

1. any records of unemployment insurance (UI) contributions, interest, and/or penalty payment arrears or reporting delinquency;

2. any debts owed for UI contributions, interest, and/or penalties;

3. the history and results of any audit or investigation; and

4. copies of wage reporting information.

Such disclosures are protected under Section 537 of the State Labor Law, which makes it a misdemeanor for the recipient of such information to use or disclose the information for any purpose other than the performing due diligence as a part of the approval process for the Master Contract.

N. Vendor Responsibility:

1. If a Contractor is required to complete a Questionnaire, the Contractor covenants and represents that it has, to the best of its knowledge, truthfully, accurately and thoroughly completed such Questionnaire. Although electronic filing is preferred, the Contractor may
obtain a paper form from the OSC prior to execution of the Master Contract. The Contractor further covenants and represents that as of the date of execution of the Master Contract, there are no material events, omissions, changes or corrections to such document requiring an amendment to the Questionnaire.

2. The Contractor shall provide to the State updates to the Questionnaire if any material event(s) occurs requiring an amendment or as new information material to such Questionnaire becomes available.

3. The Contractor shall, in addition, promptly report to the State the initiation of any investigation or audit by a governmental entity with enforcement authority with respect to any alleged violation of Federal or state law by the Contractor, its employees, its officers and/or directors in connection with matters involving, relating to or arising out of the Contractor’s business. Such report shall be made within five (5) business days following the Contractor becoming aware of such event, investigation, or audit. Such report may be considered by the State in making a Determination of Vendor Non-Responsibility pursuant to this section.

4. The State reserves the right, in its sole discretion, at any time during the term of the Master Contract:

a) to require updates or clarifications to the Questionnaire upon written request;

b) to inquire about information included in or required information omitted from the Questionnaire;

c) to require the Contractor to provide such information to the State within a reasonable timeframe; and

d) to require as a condition precedent to entering into the Master Contract that the Contractor agree to such additional conditions as shall be necessary to satisfy the State that the Contractor is, and shall remain, a responsible vendor; and

e) to require the Contractor to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity. By signing the Master Contract, the Contractor agrees to comply with any such additional conditions that have been made a part of the Master Contract.

5. The State, in its sole discretion, reserves the right to suspend any or all activities under the Master Contract, at any time, when it discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor shall be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the State issues a written notice authorizing a resumption of performance under the Master Contract.

6. The State, in its sole discretion, reserves the right to make a final Determination of Non-Responsibility at any time during the term of the Master Contract based on:
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a) any information provided in the Questionnaire and/or in any updates, clarifications or amendments thereof; or

b) the State's discovery of any material information which pertains to the Contractor's responsibility.

7. Prior to making a final Determination of Non-Responsibility, the State shall provide written notice to the Contractor that it has made a preliminary determination of non-responsibility. The State shall detail the reason(s) for the preliminary determination, and shall provide the Contractor with an opportunity to be heard.

O. Charities Registration: If applicable, the Contractor agrees to (i) obtain not-for-profit status, a Federal identification number, and a charitable registration number (or a declaration of exemption) and to furnish the State Agency with this information as soon as it is available, (ii) be in compliance with the OAG charities registration requirements at the time of the awarding of this Master Contract by the State and (iii) remain in compliance with the OAG charities registration requirements throughout the term of the Master Contract.

P. 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.

Q. 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 condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

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Not applicable to not-for-profit entities.

Contract Number: DEC01-C00273GG-3350000

ATTACHMENT A-1
PROGRAM SPECIFIC TERMS AND CONDITIONS

Standard Clauses for All New York State Department of Environmental Conservation Contracts

The parties to the attached contract, license, lease, grant, 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 to the contract, other than the New York State Department of Environmental Conservation (hereinafter "Department").

A) AGENCY SPECIFIC TERMS AND CONDITIONS

I. Postponement, suspension, abandonment or termination by the Department: Within 15 days of receipt of notice, the Contractor shall deliver to the Department all data, reports, plans, or other documentation related to the performance of this contract, including but not limited to source codes and specifications, guarantees, warranties, as-built plans and shop drawings. In any of these events, the Department shall make settlement with the Contractor upon an equitable basis as determined by the Department which shall fix the value of the work which was performed by the Contractor prior to the postponement, suspension, abandonment or termination of this contract. This clause shall not apply to this contract if the contract contains other provisions applicable to postponement, suspension or termination of the contract.

II. Conflict of Interest
(a) Organizational Conflict of Interest. To the best of the Contractor's knowledge and belief, the Contractor warrants that there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as herein defined, or that the Contractor has disclosed all such relevant information to the Department.

(1) An organizational conflict of interest exists when the nature of the work to be performed under this contract may, without some restriction on future activities, impair or appear to impair the Contractor's objectivity in performing the work for the Department.

(2) The Contractor agrees that if an actual, or potential organizational conflict of interest is discovered at any time after award, whether before or during performance, the Contractor will immediately make a full disclosure in writing to the Department. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Department, to avoid, mitigate or minimize the actual or potential conflict.

(3) To the extent that the work under this contract requires access to personal, proprietary or confidential business or financial data of persons or other companies, and as long as such data remains proprietary or confidential, the Contractor shall protect such data from unauthorized use and disclosure and agrees not to use it to compete with such companies.

(b) Personal Conflict of Interest. The following provisions with regard to management or professional level employee personnel performing under this contract shall apply until the earlier of the termination date of the affected employee(s) or the duration of the contract.

(1) A personal conflict of interest is defined as a relationship of an employee, subcontractor employee, or consultant with an entity that may impair or appear to impair the objectivity of the employee, subcontractor employee, or consultant in performing the contract work. The Contractor agrees to notify the Department immediately of any actual or potential personal conflict of interest with regard to any such person working on or having access to information regarding this contract, as soon as Contractor becomes aware of such conflict. The Department will notify the Contractor of the appropriate action to be taken.

(2) The Contractor agrees to advise all management or professional level employees involved in the work of this contract, that they must report any personal conflicts of interest to the Contractor. The Contractor must then advise the Department which will advise the Contractor of the appropriate action to be taken.
(3) Unless waived by the Department, the Contractor shall certify annually that, to the best of the Contractor’s knowledge and belief, all actual, apparent or potential conflicts of interest, both personal and organizational, as defined herein, have been reported to the Department. Such certification must be signed by a senior executive of the Contractor and submitted in accordance with instructions provided by the Department. Along with the annual certification, the Contractor shall also submit an update of any changes in any conflict of interest plan submitted with its proposal for this contract. The initial certification shall cover the one-year period from the date of contract award, and all subsequent certifications shall cover successive annual periods thereafter. The certification is to be submitted no later than 45 days after the close of the previous certification period covered.

(4) In performing this contract, the Contractor recognizes that its employees may have access to data, either provided by the Department or first generated during contract performance, of a sensitive nature which should not be released without Department approval. If this situation occurs, the Contractor agrees to obtain confidentiality agreements from all affected employees working on requirements under this contract including subcontractors and consultants. Such agreements shall contain provisions which stipulate that each employee agrees not to disclose, either in whole or in part, to any entity external to the Department, Department of Health or the New York Department of Law, any information or data provided by the Department or first generated by the Contractor under this contract, any site-specific cost information, or any enforcement strategy without first obtaining the written permission of the Department. If a Contractor, through an employee or otherwise, is subpoenaed to testify or produce documents, which could result in such disclosure, the Contractor must provide immediate advance notification to the Department so that the Department can authorize such disclosure or have the opportunity to take action to prevent such disclosure. Such agreements shall be effective for the life of the contract and for a period of five (5) years after completion of the contract.

c) Remedies. The Department may terminate this contract in whole or in part, if it deems such termination necessary to avoid an organizational or personal conflict of interest, or an unauthorized disclosure of information. If the Contractor fails to make required disclosures or misrepresents relevant information to the Department, the Department may terminate the contract, or pursue such other remedies as may be permitted by the terms of Clause I of this Attachment or other applicable provisions of this contract regarding termination.

d) The Contractor will be ineligible to make a proposal or bid on a contract for which the Contractor has developed the statement of work or the solicitation package.

e) The Contractor agrees to insert in each subcontract or consultant agreement placed hereunder (except for subcontracts or consultant agreements for well drilling, fence erecting, plumbing, utility hookups, security guard services, or electrical services) provisions which shall conform substantially to the language of this clause, including this paragraph (e), unless otherwise authorized by the Department.

III. Dispute Resolution
The parties agree to the following steps, or as many as are necessary to resolve disputes between the Department and the Contractor.

(a) The Contractor specifically agrees to submit, in the first instance, any dispute relating to this contract to the designated individual, who shall render a written decision and furnish a copy thereof to the Contractor.

(1) The Contractor must request such decision in writing no more than fifteen days after it knew or should have known of the facts which are the basis of the dispute.

(2) The decision of the designated individual shall be the final DEC determination, unless the Contractor files a written appeal of that decision with the designated appeal individual (“DAI”) within twenty days of receipt of that decision.

(b) Upon receipt of the written appeal, the DAI will review the record and decision. Following divisional procedures in effect at that time, the DAI will take one of the following actions, with written notice to the Contractor.

(1) Remand the matter to the program staff for further negotiation or information if it is determined that the matter is not ripe for review; or

(2) Determine that there is no need for further action, and that the determination of the designated individual is confirmed; or

(3) Make a determination on the record as it exists.
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(e) The decision of the DAI shall be the final DEC decision unless the Contractor files a written appeal of that decision with the Chair of the Contract Review Committee (CRC) within twenty days of receipt of that decision.

The designated individual to hear disputes is:

Joe DiMura, Director, Bureau of Water Compliance
New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, New York 12233-3506
(518) 402-8117

The designated appeal individual to review decisions is:

Alan Fuchs, Director, Bureau of Flood Protection and Dam Safety
New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, NY 12233-3504
(518) 402-8185

The Chair of the Contract Review Committee is:

Department of Environmental Conservation
Nancy W. Lussier, Chair
Contract Review Committee
625 Broadway
Albany, NY 12233-5010
Telephone: (518) 402-9228

(d) Upon receipt of the written appeal, the Chair of the CRC, in consultation with the members of the CRC and the Office of General Counsel, will take one of the following actions, or a combination thereof, with written notice to the Contractor.

(1) Remand the matter to program staff for additional fact finding, negotiation, or other appropriate action; or

(2) Adopt the decision of the DAI; or

(3) Consider the matter for review by the CRC in accordance with its procedures.

(e) Following a decision to proceed pursuant to (d) 3, above, the Chair of the CRC shall convene a proceeding in accordance with the CRC’s established contract dispute resolution guidelines. The proceeding will provide the Contractor with an opportunity to be heard.

(f) Following a decision pursuant to (d) 2 or (d) 3, the CRC shall make a written recommendation to the Deputy Commissioner for Administration who shall render the final DEC determination.

(g) At any time during the dispute resolution process, and upon mutual agreement of the parties, the Office of Hearings and Mediation Services (OHMS) may be requested to provide mediation services or other appropriate means to assist in resolving the dispute. Any findings or recommendations made by the OHMS will not be binding on either party.

(h) Final DEC determinations shall be subject to review only pursuant to Article 78 of the Civil Practice Law and Rules.

(i) Pending final determination of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract in accordance with the decision of the designated individual. Nothing in this Contract shall be construed as making final the decision of any administrative officer upon a question of law.

(j) Notwithstanding the foregoing, at the option of the Contractor, the following shall be subject to review by the CRC: Disputes arising under Article 15-A of the Executive Law (Minority and Women Owned Business participation), the
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Department’s determination with respect to the adequacy of the Contractor’s Utilization Plan, or the Contractor’s showing of good faith efforts to comply therewith. A request for a review before the CRC should be made, in writing, within twenty days of receipt of the Department’s determination.

(2) The CRC will promptly convene a review in accordance with Article 15-A of the Executive Law and the regulations promulgated thereunder.

IV. Tax Exemption
Pursuant to Tax Law Section 1116, the State is exempt from sales and use taxes. A standard state voucher is sufficient evidence thereof. For federal excise taxes, New York’s registration Number 14740026K covers tax-free transactions under the Internal Revenue Code.

V. Litigation Support
In the event the Department becomes involved in litigation related to the subject matter of this contract, the Contractor agrees to provide background support and other litigation support, including but not limited to depositions, appearances, and testimony. Any compensation paid to the Contractor under this paragraph will be negotiated and based on the rates established in the contract, or as may otherwise be provided in the contract. No compensation for such support will be paid if the litigation is the result of the Contractor’s misconduct, negligence or omissions.

VI. Inventions or Discoveries
Any invention or discovery first made in performance of this Contract shall be the property of the Department, unless otherwise provided in the contract. The Contractor agrees to provide the Department with any and all materials related to this property. At the Department’s option, the Contractor may be granted a non-exclusive license.

VII. Intellectual Property and Copyright Materials
The Department has title to and the right to determine the disposition of any copyrights, or copyrightable materials, first produced or created in the performance of this work. The Department may grant to the Contractor an irrevocable, royalty-free, non-exclusive right to reproduce, translate, and use all such copyrighted material for its own purposes.

VIII. Patent and Copyright Protection
If any patented or copyrighted material is involved in or results from the performance of this Contract, this Article shall apply.

(a) The Contractor shall, at its expense, defend any suit instituted against the Department and indemnify the Department against any award of damages and costs made against the Department by a final judgment of a court of last resort based on the claim that any of the products, services or consumable supplies furnished by the Contractor under this Contract infringes any patent, copyright or other proprietary right, provided the Department gives the Contractor:

(1) prompt written notice of any action, claim or threat of infringement suit, or other suit, and
(2) the opportunity to take over, settle or defend such action at the Contractor’s sole expense, and
(3) all available information, assistance and authority necessary to the action, at the Contractor’s sole expense.

The Contractor shall control the defense of any such suit, including appeals, and all negotiations to effect settlement, but shall keep the Department fully informed concerning the progress of the litigation.

(b) If the use of any item(s) or parts thereof is held to infringe a patent or copyright and its use is enjoined, or Contractor believes it will be enjoined, the Contractor shall have the right, at its election and expense to take action in the following order of precedence:

(1) procure for the Department the right to continue using the same item or parts thereof;
(2) modify the same so that it becomes non-infringing and of at least the same quality and performance;
(3) replace the item(s) or parts thereof with noninfringing items of at least the same quality and performance;
(4) if none of the above remedies are available, discontinue its use and eliminate any future charges or royalties pertaining
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thereto. The Contractor will buy back the infringing product(s) at the State’s book value, or in the event of a lease, the parties shall terminate the lease. If discontinuation or elimination results in the Contractor not being able to perform the Contract, the Contract shall be terminated.

c) In the event that an action at law or in equity is commenced against the Department arising out of a claim that the Department’s use of any item or material pursuant to or resulting from this Contract infringes any patent, copyright or proprietary right, and such action is forwarded by the Department to the Contractor for defense and indemnification pursuant to this Article, the Department shall copy all pleadings and documents forwarded to the Contractor together with the forwarding correspondence and a copy of this Contract to the Office of the Attorney General of the State of New York. If upon receipt of such request for defense, or at any time thereafter, the Contractor is of the opinion that the allegations in such action, in whole or in part, are not covered by the indemnification set forth in this Article, the Contractor shall immediately notify the Department and the Office of the Attorney General of the State of New York in writing and shall specify to what extent the Contractor believes it is and is not obligated to defend and indemnify under the terms and conditions of this Contract. The Contractor shall in such event protect the interests of the Department and State of New York and secure a continuance to permit the State of New York to appear and defend its interests in cooperation with Contractor as is appropriate, including any jurisdictional defenses which the Department and State shall have.

d) The Contractor shall, however, have no liability to the Department under this Article if any infringement is based upon or arises out of:

1. compliance with designs, plans, or specifications furnished by or on behalf of the Department as to the items;
2. alterations of the items by the Department;
3. failure of the Department to use updated items provided by the Contractor for avoiding infringement;
4. use of items in combination with apparatus or devices not delivered by the Contractor;
5. use of items in a manner for which the same were neither designed nor contemplated;
6. a patent or copyright in which the Department or any affiliate or subsidiary of the Department has any direct or indirect interest by license or otherwise.

e) The foregoing states the Contractor’s entire liability for, or resulting from, patent or copyright infringement or claim thereof.

IX. Freedom of Information Requests

In response to a Freedom of Information Law (FOIL) request received by the Department, the Contractor agrees to provide to the Department records generated by the Contractor as a result of this contract’s scope of work that are responsive to the FOIL request. The contractor may request that the Department except from disclosure records on the basis that they contain trade secrets or confidential commercial information in accordance with FOIL (Public Officers Law Section 87 and 6 NYCRR Part 616).

X. Article 15—Requirements

PARTICIPATION BY MINORITY GROUP MEMBERS AND WOMEN WITH RESPECT TO STATE CONTRACTS: REQUIREMENTS AND PROCEDURES

(a) General Provisions

1. The Department is required to implement the provisions of New York State Executive Law Article 15-A and 5 NYCRR Parts 142-144 (“MWBE Regulations”) for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services, equipment, materials, or any combination of the foregoing or (2) in excess of $100,000 for real property renovations and construction.

2. The Contractor to the subject contract (the “Contractor” and the “Contract,” respectively) agrees, in addition to any other nondiscrimination provision of the Contract and at no additional cost to the New York State Department (the “Department”), to fully comply and cooperate with the Department in the implementation of New York State Executive
Law Article 15-A. These requirements include equal employment opportunities for minority group members and women ("EEO") and contracting opportunities for certified minority and women-owned business enterprises ("MWBEs"). Contractor’s demonstration of “good faith efforts” pursuant to 5 NYCRR §142.8 shall be a part of these requirements. These provisions shall be deemed supplementary to, and not in lieu of, the nondiscrimination provisions required by New York State Executive Law Article 15 (the “Human Rights Law”) or other applicable federal, state or local laws.

(3) Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, non-responsibility and/or a breach of contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to Section VII of this Article or enforcement proceedings as allowed by the Contract.

(b) Contract Goals

(1) For purposes of this procurement, the Department hereby establishes an overall goal of 30% for Minority and Women-Owned Business Enterprises ("MWBE") participation, (based on the current availability of qualified MBEs and WBEs).

(2) For purposes of providing meaningful participation by MWBEs on the Contract and achieving the Contract Goals established in Section II-A hereof, Contractor should reference the directory of New York State Certified MWBEs found at the following internet address: https://ny.newsacycontracts.com

Additionally, the Contractor is encouraged to contact the Division of Minority and Woman Business Development ((518) 292-5250; (212) 803-2414; or (718) 846-8200) to discuss additional methods of maximizing participation by MWBEs on the Contract.

(3) Where MWBE goals have been established herein, pursuant to 5 NYCRR §142.8, Contractor must document “good faith efforts” to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of the Contract. In accordance with Section 318-a of Article 15-A and 5 NYCRR §142.13, the Contractor acknowledges that if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to the Department for liquidated or other appropriate damages, as set forth herein.

(c) Equal Employment Opportunity (EEO)

(1) Contractor agrees to be bound by the provisions of Article 15-A and the MWBE Regulations promulgated by the Division of Minority and Women’s Business Development of the State of Economic Development (the “Division”). If any of these terms or provisions conflict with applicable law or regulations, such laws and regulations shall supersede these requirements. Contractor shall comply with the following provisions of Article 15-A:

(i) Contractor and Subcontractors shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

(ii) The Contractor shall submit an EEO policy statement to the Department within seventy two (72) hours after the date of the notice by Department to award the Contract to the Contractor.

(iii) If Contractor or Subcontractor does not have an existing EEO policy statement, the Department may provide the Contractor or Subcontractor a model statement. This statement can be found at the link provided in Section 8.

(iv) The Contractor’s EEO policy statement shall include the following language:

a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability or marital status, will undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its workforce.

b. The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
c. The Contractor shall request each employer Department, 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 employer Department, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor’s obligations herein.

d. The Contractor will include the provisions of Subdivisions (a) through (c) of this Subsection 4 and Paragraph “E” of this Section III, which provides for relevant provisions of the Human Rights Law, in every subcontract in such a manner that the requirements of the subdivisions will be binding upon each subcontractor as to work in connection with the Contract.

e. EEO Contract Goals for the purposes of this procurement, the Department hereby establishes a goal of 10% Minority Labor Force Participation, 10% Female Labor Force Participation.

(2) Staffing Plan Form

To ensure compliance with this Section, the Contractor shall submit a staffing plan to document the composition of the proposed workforce to be utilized in the performance of the Contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. Contractors shall complete the Staffing plan as part of the MWBE Utilization Plan and submit at the time of award of the contract.

(3) Workforce Employment Utilization Report Form (“Workforce Report”)

(i) Once a contract has been awarded and during the term of Contract, Contractor is responsible for updating and providing notice to the Department of any changes to the previously submitted Staffing Plan. This information is to be submitted on a quarterly basis during the term of the Contract to report the actual workforce utilized in the performance of the Contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. The Workforce Report must be submitted to report this information.

(ii) Separate forms shall be completed by Contractor and any subcontractor performing work on the Contract.

(iii) In limited instances, Contractor may not be able to separate out the workforce utilized in the performance of the Contract from Contractor’s and/or subcontractor’s total workforce. When a separation can be made, Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the contract cannot be separated out from Contractor’s and/or subcontractor’s total workforce, Contractor shall submit the Workforce Report and indicate that the information provided is Contractor’s total workforce during the subject time frame, not limited to work specifically under the Contract.

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

(d) MWBE Utilization Plan

(1) The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan either prior to, or at the time of, the execution of the contract.

(2) Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this Appendix.

(3) Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, Department shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsiveness.

e. Waivers

(1) For Waiver Requests Contractor should use Waiver Request Form.
(2) If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver form documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the Department shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) days of receipt.

(3) If the Department, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that Contractor is failing or refusing to comply with the Contract goals and no waiver has been issued in regards to such non-compliance, the Department may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

(f) Quarterly MWBE Contractor Compliance Report
Contractor is required to submit a Quarterly MWBE Contractor Compliance Report Form to the Department by the 10th day following each end of quarter over the term of the Contract documenting the progress made towards achievement of the MWBE goals of the Contract.

(g) Liquidated Damages - MWBE Participation
(1) Where Department determines that Contractor is not in compliance with the requirements of the Contract and Contractor refuses to comply with such requirements, or if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, Contractor shall be obligated to pay to the Department liquidated damages.

(2) Such liquidated damages shall be calculated as an amount equaling the difference between:
   (i) All sums identified for payment to MWBEs had the Contractor achieved the contractual MWBE goals; and
   (ii) All sums actually paid to MWBEs for work performed or materials supplied under the Contract.

(3) In the event a determination has been made which requires the payment of liquidated damages and such identified sums have not been withheld by the Department, Contractor shall pay such liquidated damages to the Department within sixty (60) days after they are assessed by the Department unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Minority and Woman Business Development pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the liquidated damages shall be payable if Director renders a decision in favor of the Department.

(h) Forms
The following forms referenced in Article IX 3-A-3, 3B, 3C and 5A can be found at http://www.dec.ny.gov/about/48554.html

XI. Iran Divestment Act Requirements
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 http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf

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.

XII. Americans With Disabilities Act
Appendix I
NYSDEC Master Grant contract with County of Orange
dated October 5, 2017

In the event the monies defined herein are to be used for the development of facilities, outdoor recreation areas, transportation or written or spoken communication with the public, the Contractor shall comply with all requirements for providing access for individuals with disabilities as established by Article 4A of the New York State Public Buildings Law, Americans with Disabilities Act, and relevant sections of the New York State Uniform Fire Prevention and Building Code. Standards for certain Recreation Facilities are found in the 2010 ADA Standards for Accessible Design while others are found in the Architectural Barriers Act Accessibility Guidelines for Outdoor Recreation Areas, https://www.access-board.gov/guidelines-and-standards

XIII. Public Access to Facilities
If applicable to the project, the Contractor agrees to allow public access to any facilities developed with monies defined herein on the same basis to all residents of New York State for a period not less than five (5) years after the date of final payment under this Contract or five (5) years after the date that the final payment was due. Failure to comply with the provisions of this clause shall be considered an abandonment of the Project.

XIV. Project Insurance Considerations
Refer to project insurance requirements set forth in A-1 (B) Program Specific Terms and Conditions.

XV. Amendment/Extensions
The Contract may be amended and/or extended by mutual written consent of all parties. Amendment forms will be incorporated into this Contract and will not take effect until approved by all applicable State agencies and final approval by the Office of the State Comptroller, if applicable. Contract amendments may be conditioned upon funds being reappropriated in the State Budget each state fiscal year to the Department.

XVI. Environmental Protection Fund Acknowledgement
If applicable, in recognition of a portion of the Department funds utilized for any work completed under this Contract, the Contractor agrees to acknowledge in any communication to the public, that such funding was provided from the Environmental Protection Fund as administered by the New York State Department of Environmental Conservation.

XVII. Vendor Responsibility
A. The Contractor shall at all times during the Contract term remain responsible. The Contractor agrees, if requested by the Commissioner or his or her designee, to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity.

B. The Department recommends that vendors file a required Vendor Responsibility Questionnaire online via the New York State VendRep System. To enroll in and use the New York State VendRep System, see the VendRep System Instructions available at https://www.osc.state.ny.us/vendrep/vendor_index.htm or go directly to the VendRep System online at https://portal.osc.state.ny.us.

C. Vendors must provide their New York State Identification Number when enrolling. To request assignment of a Vendor ID or for VendRep System assistance, contact the Office of the State Comptroller’s Help Desk at 866-370-4672 or 518-408-4672 or by email at cihelpdesk@osc.state.ny.us. Vendors opting to complete and submit a paper questionnaire can obtain the appropriate questionnaire from the VendRep website www.osc.state.ny.us/vendorhelp or may contact the Department of the Office of the State Comptroller’s Help Desk for a copy of the paper form.

D. Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate Department officials or staff, the Contract may be terminated by the Commissioner or his or her designee at the Contractor’s expense where the Contractor is determined by the Commissioner or his or her designee to be non-responsible. In such event, the Commissioner or his or her designee may complete the contractual requirements in any manner he or she may deem advisable and pursue available legal or equitable remedies for breach.

XVIII. Permits
A. If applicable, the Contractor agrees to obtain all required permits, including but not limited to, local, state and federal permits prior to the commencement of any project related work. The Contractor agrees that all work performed in relation to the project by the Contractor or its agents, representatives, or contractors will comply with all relevant federal, state and local laws, rules, regulations and standards, zoning and building codes, ordinances, operating certificates for facilities, or licenses for an activity.
B. With respect to the project, the contractor certifies that it has complied, and shall continue to comply with all requirements of the State Environmental Quality Review Act (SEQRA). The Contractor agrees to provide all environmental documents as may be required by the Department. The Contractor has notified, and shall continue to notify, the Department of all actions proposed for complying with the environmental review requirements imposed by SEQRA.

XIX. Approvals
The Contractor agrees that the project will be performed in accordance with the condition of any applicable administrative, judicial or governmental orders or approvals.

XX. Site Access
If applicable, the Contractor represents it has or will obtain title to or sufficient interest in the project site, including rights-of-way and necessary easements, before the start of the project to ensure undisturbed use and possession for purposes of construction and completion of the project, as well as operation of the project throughout its useful life.

XXI. Cost Overruns
If applicable, any cost overruns will not be paid by the Department and the Department is not committed to seeking additional appropriations or re-appropriation of funds and will not be responsible for the maintenance and operation of any facility which may be developed or equipment which may be purchased with the funds herein identified.

XXII. Construction Plans
It is the Contractor’s responsibility (if applicable to the Project) to have all construction contract plans, specifications and cost estimates certified by a professional engineer licensed to practice in the State of New York. All certified plans and specifications shall become part of this Contract and shall be kept on the project site at all times.

XXIII. Payment and Reporting
A. The Contractor agrees to fully fund the Project and then seek reimbursement from the Department for eligible project costs. The Department will not process final payment for this Contract, until the Department determines that the project was completed satisfactorily and upon receipt of all required final close-out payment documentation in accordance with the direction and requirements described in Attachment D.

B. The Contractor will be entitled to receive reimbursement payments for work, projects, and/or services rendered as detailed and described in Attachment C and Attachment D of this Contract. Claims for reimbursement must be accompanied by such receipts and documents verifying expenditures as may be required by the Department and by the Comptroller. Satisfactory documentation shall include, but is not limited to, signed copies of payment vouchers or invoices, canceled checks or the latest cumulative work-in-place estimate for each construction contract, and any further documentation as may be required by the Department and/or the Comptroller. The Department reserves the right, in its sole discretion, to determine if the reimbursement request and accompanying documentation submitted by the Contractor is in satisfactory form and substance. A final payment determination will be based upon the Department’s review of the Contractor’s final voucher submission and reporting as described in Attachment D.

XXIV. On-Site Inspections
The State, Department or authorized representatives will conduct a review of the Project funded from this Contract, which may include on-site inspections, at a time that is satisfactory to the Department.

XXV. 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 of 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 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.
B) PROGRAM SPECIFIC TERMS AND CONDITIONS - NYSDEC Dam Safety Projects Program
(Title 3 - Clean Water/Clean Air Bond Act of 1996)

I. Notices:
The Department’s authorized representative for the implementation of this Contract and for approval, direction and receipt of all Project reports called for in this Contract. Whenever it is provided in this Contract that notice must be given or other communications sent to the Department, the notices or communications must be in writing and delivered or sent to the Department’s authorized representative at:

Address: Alon Dominitz
New York State Department of Environmental Conservation
Division of Water, Bureau of Flood Protection and Dam Safety
625 Broadway, 4th Floor
Albany, New York 12233-3504
Tel. No.: (518) 402-8138

A copy of all legal notices shall be sent to:

General Counsel
New York State Department of Environmental Conservation
625 Broadway - 14th Floor
Albany, New York 12233-1500

The Contractor’s authorized representative for the implementation of this Contract is the person authorized in the Resolution of Support for the contract submitted by the Contractor. Notices or communications regarding this Contract should be in writing and delivered or sent to the Contractor’s authorized representative at the address identified on the Face Page, with copies sent to the Contractor’s contract administrator as identified in the contract application.

Notices delivered or sent shall be deemed for all purposes as notice to all persons who are Parties to this Contract as Department or Contractor.

II. Project Insurance Considerations
The Contractor agrees to procure and maintain at its own expense and without expense to the Department until final acceptance by the Department of the services covered by this Contract, insurance of the kinds and amounts as determined by the Department and based upon the project work plan. The insurance policies should be provided by insurance companies licensed to do business in the State of New York. Any delay or time lost as a result of the Contractor not having insurance required by the Contract shall not give rise to a delay claim or any other claim against the Department.

Upon execution of this Contract, the Contractor shall furnish to the Department a certificate or certificates, satisfactory to the Department, showing that it has complied with this Article. The insurance documentation shall provide that:

- Liability and/or liability insurance policies shall provide primary and non-contributory coverage for the NYS Department of Environmental Conservation for any claims arising from the Contractor’s Work under this contract or as a result of Contractor’s activities.
- The State of New York, NYS Department of Environmental Conservation, its officers, agents and employees, Division of Water, 625 Broadway, Albany, New York, 12233-3508, shall be listed as Certificate Holder on all liability insurance certificate(s), as additional insureds on endorsements(s) and on additional supporting documentation.
- The policies shall include a waiver of subrogation endorsement in favor of the Department as an additional insured. The endorsement shall be on ISO Form Number CG 24 04 or a similar form with same modification to the policy.
Appendix I
NYSDEC Master Grant contract with County of Orange
dated October 5, 2017

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

• Policies shall not be changed or canceled until thirty (30) days prior written notice has been given to the Department, as evidenced by an endorsement or declarations page.
• Insurance documentation shall disclose any deductible, self-insured retention, aggregate limit or any exclusion to the policy that materially changes the coverage required by the Contract.
• Endorsements in writing must be added to and made part of the insurance contract for the purpose of changing the original terms to reflect the revisions and additions as described. A copy of these endorsements must be provided to the Department.
• Applicable insurance policy number(s) reference on the ACORD form must be referenced in the supporting documentation requested by the Department and supplied by the insurance company (e.g. endorsement page, declarations page, etc.).
• This Contract shall be void and of no effect unless the Contractor procures the required insurance policies and maintains them until acceptance or completion of the work, by the Department, whichever event is later.

The kinds and amounts of insurance required are as follows:

A. Workers’ Compensation coverage must be provided for work to be performed in New York State. The Contractor shall provide and maintain full New York State coverage during the life of this contract for the benefit of such employees as are required to be covered by the New York State Workers’ Compensation Law.

Evidence of Workers’ Compensation and Employers Liability coverage must be provided on one of the following forms specified by the Chairman of the New York State Workers’ Compensation Board:

<table>
<thead>
<tr>
<th>FORM #</th>
<th>FORM TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-105.2</td>
<td>Certificate of Workers’ Compensation Insurance</td>
</tr>
<tr>
<td>U-26.3</td>
<td>State Insurance Fund Version of the C-105.2 form</td>
</tr>
<tr>
<td>SI-12/GSI-105.2</td>
<td>Certificate of Workers’ Compensation Self-Insurance</td>
</tr>
<tr>
<td>CE-200</td>
<td>Certificate of Attestation of Exemption – (no employees)</td>
</tr>
</tbody>
</table>

B. Disability Benefits coverage must be provided for work to be performed in New York State. The Contractor shall provide and maintain coverage during the life of the contract for the benefit of such employees as are required to be covered by the New York State Disability Benefits Law. Any waiver of this requirement must be approved by the Department of Environmental Conservation and will only be granted in unique or unusual circumstances.

Evidence of Disability Benefits coverage must be provided on one of the following forms specified by the Chairman of the New York State Workers’ Compensation Board:

<table>
<thead>
<tr>
<th>FORM #</th>
<th>FORM TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB-120.1</td>
<td>Certificate of Disability Benefit Insurance</td>
</tr>
<tr>
<td>DB-155</td>
<td>Certificate of Disability Benefit Self-Insurance</td>
</tr>
<tr>
<td>CE-200</td>
<td>Certificate of Attestation of Exemption – (no employees)</td>
</tr>
</tbody>
</table>

An ACORD form is NOT an acceptable proof of Workers’ Compensation coverage. ALL OF THE ABOVE REFERENCED FORMS, EXCEPT CE-200, SI-12 & DB-155 MUST NAME The State of New York and The New York State Department of Environmental Conservation, Division of Water, 625 Broadway, Albany, NY 12233-3506, as the Entity Requesting Proof of Coverage.

Additional information can be obtained at the Worker’s Compensation website:
http://www.wcb.ny.gov/content/main/Employers/Employers.jsp

Upon review of the scope of work outlined in the Grant Application by the Department, the following types of liability insurance may be required:
C. Commercial General Liability Insurance with a limit of not less than $2,000,000 each occurrence, and $5,000,000 General aggregate. Such insurance shall cover liability arising from premises operations, independent contractors, products-completed operations, broad form property damage, personal and advertising injury, cross liability assumed in a contract (including tort liability of another assumed in a contract). Limits may be provided through a combination of primary and umbrella/excess liability policies. The CGL aggregate shall be endorsed to apply on a per project basis for construction contracts.

D. Business Automobile Liability with a limit of not less than $1,000,000 each accident. Such insurance shall cover liability arising out of any registered motor vehicle including owned, leased, hired and non-owned vehicles. If the Contractor does not own, rent or lease any registered vehicles and will not be using any vehicles on State Land proof of Business Automobile Liability Insurance shall not be required for this Contract. The Contractor shall assume full responsibility and liability that owners and operators of any registered vehicles entering State Land to conduct work under this contract carry the same Business Automobile Liability Insurance of the kinds and amounts listed above.

E. Environmental Liability with a limit of not less than $1,000,000 providing primary coverage for bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. Such policy shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants, including any loss, cost or expense incurred as a result of any cleanup of pollutants or in the investigation, settlement or defense of any claim, suit, or proceedings against the Department of Environmental Conservation arising from the Contractor’s Work.

F. Professional Liability Insurance includes coverage for its negligent act, error or omission in rendering or failing to render professional services required by this contract arising out of specifications, installation, modification, abatement, replacement or approval of products, materials or processes containing pollutants, and the failure to advise or detect the existence or the proportions of pollutants. The Contractor, any subcontractor or supplier retained by the Contractor to work on the contract shall procure and maintain during and for a period of three (3) years after completion of this contract, Professional Liability Insurance in the amount of $1,000,000. The professional liability insurance may be issued on a claims-made policy form, in which case the Contractor shall purchase at its sole expense, extended Discovery Clause coverage of up to three (3) years after work is completed if coverage is cancelled or not renewed.

G. Marine Protection & Indemnity: Anytime the activity involves work on navigable water or the work is connected to water related activities, the Contractor shall procure Marine Protection & Indemnity and Hull and Machinery coverage, if available. Hull and Machinery coverage shall be provided for the total value of the watercraft or equipment. The Contractor shall obtain Protective and Indemnity Liability insurance for all marine operations under the contract, with a minimum $2,000,000 limit.

Should the Contractor engage a subcontractor, the Contractor shall impose the insurance requirements of this document on the subcontractor. Contractor shall determine the required insurance types and limits, commensurate with the work of the Subcontractor. The Contractor will maintain the certificate or certificates and endorsements for all subcontractors hired as part of the Contractor’s records.

III. Local Share Requirements
The Department share will not exceed seventy five percent (75%) of the approved project costs, up to the Contract Funding Amount identified on the Face Page, and the Contractor must provide twenty five (25%) of required eligible share with eligible costs not paid with state or federal grant funds.

Please note there is a discrepancy in the calculation on the Attachment B-1 Expenditure Budget form in the Grants Gateway which can only formulate the match percentage on the ‘Grant Funds’ amount rather than the total project costs. As a result, the ‘Match %’ column of the Attachment B-1 summary budget form will reflect a percentage higher than twenty-five percent (33.33%), but consistent with match funding based on the total project costs.

IV. Construction
(a) The Contractor agrees to proceed expeditiously with the Project and shall complete the Project in accordance with the
performance measures set forth in Attachment C (Work Plan) or any amendments to such Work Plan which are approved by the Department in writing.

(b) The Contractor agrees that it shall notify the Department in writing thirty (30) calendar days prior to the start of construction.

(c) The Contractor agrees that it shall notify the Department in writing thirty (30) days following initial start-up operation of the Project.

(d) The Contractor agrees that it shall cause the Project to be designed and constructed in accordance with the engineering report or facilities plan, and if applicable to the project, the plans and specifications for the Project shall be stamped with the seal of a licensed professional engineer and shall be signed with the personal signature of such engineer in compliance with Education Law §7209(1) and (2), and which have been delivered to and approved by the Department, as well as any amendments thereto.

(e) The Contractor agrees that it shall permit the Department to participate in all its meetings and conferences with respect to the Project. Upon request from the Department, the Contractor must submit to the Department reports, documents, data, contractual documents, administrative records and other information pertinent to the Project.

(f) The Contractor agrees to permit representatives of the Department to have unrestricted access to the Project at all reasonable times, and all contracts of the Contractor for construction or operation of all or a portion of the Project shall contain provisions that permit such access to the Project or work relating to the Project, wherever it is in preparation or progress, and that contractors or subcontractors shall provide proper facilities for such access and inspection and shall permit extracts and copies of Project records to be made by the representatives of the Department.

V. Engineering Certification/As-built Plans
Within sixty (60) calendar days after the end of the Contract Term, or upon final completion of the Project, the Contractor agrees that it will deliver the following to the Department:

(a) A certification stating that the Project has been completed in accordance with this Contract, and constructed per the approved plans and specifications, and any approved amendments thereto.

(b) The certified “as built” plans and specifications for the Project. Any work not in accordance with the approved plans and specifications shall be remedied, unless such non-compliance is agreed to be waived by the Department.

(c) The Contractor shall retain all as-built plans and specifications for the Project for the useful life of the Project.

VI. Useful Life of Project
The Contractor agrees that it is fully responsible for ensuring the proper and efficient monitoring, operation and maintenance of the Project satisfactory to the Department, including, but not limited to, retaining a sufficient number of qualified staff and ensuring performance of required tests and requirements. After completion of the Project, the Contractor shall, for a period of thirty (30) years unless another period of time is specified in the attached Work Plan (the useful life of the Project as provided in the State Finance Law §611), operate the Project or otherwise cause the Project to be operated properly in a sound and economical manner and shall maintain, preserve and keep the Project, or cause the Project to be maintained, preserved and kept, in good repair, working order and condition and shall make, or cause to be made, all necessary and proper repairs, replacements and renewals from time to time, so that at all times the Project may be operated properly in a manner consistent with the Project performance standards contained in the engineering report of facilities plan for the Project, with this Contract and with the requirements of any related permit or other governmental approval of the Project.

VII. Signage
In lieu of requirements in Article XV (Environmental Protection Fund Acknowledgement), the Contractor acknowledges that a portion of this project is funded by the Department as a Dam Safety Project. The Contractor agrees to identify the Department as a source of funding for this project in any communications to the public and that such funding was provided from the Clean Water/Clean Air Bond Act of 1996. The Department may require the installation of a project sign which identifies it as a source of funding as outlined in the requirements and specifications attached to and made part of this contract as Attachment E.
## Appendix I

### NYSDEC Master Grant contract with County of Orange

**Date:** October 5, 2017

**Contract Number:** # DEC-002756-335000

### Rehabilitation of Beaver Dam Lake Dam

#### Table of Expenditures

<table>
<thead>
<tr>
<th>Category</th>
<th>Grant Funds</th>
<th>Other Funds</th>
<th>Match Funds</th>
<th>Revised Budget</th>
<th>Current Budget</th>
<th>Change Budget</th>
<th>Category of Expense</th>
</tr>
</thead>
<tbody>
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<th>Match Funds</th>
<th>Revised Budget</th>
<th>Current Budget</th>
<th>Change Budget</th>
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### Summary

**Attachment B-1(a) - Expenditure Based Budget (Appendix)**

**District:** Orange County

**Project Name:** Rehabilitation of Beaver Dam Lake Dam

**Contractor:** Contractor's Name

**Duration:**

- **From:** 11/10/2005
- **To:** 12/14/2018

---

*Note: The table contains detailed budget allocations for the project, which are not fully transcribed due to the image quality.*
## Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

<table>
<thead>
<tr>
<th>Position Title</th>
<th>Position Salary Per Hour (Standard)</th>
<th>Position Salary Per Hour (Annualized)</th>
<th>Number of Hours Worked</th>
<th>Percentage Work Effort</th>
<th>Final End Date</th>
<th>Wages Earned</th>
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RFB OC007-18 Rehabilitation of Beaver Dam Lake Dam
## Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

### Contract Number:  
DEC01-OC007-18KG-310000  
Amendment B-1(A) - Expenditure Based Budget (Amendment)

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**TOTAL**

**TOTAL**
Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam
**Appendix I**

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

---

### RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

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TOTAL

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DGS RFB A8 Minor Closed (12/14)
Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam
<table>
<thead>
<tr>
<th>Objective</th>
<th>Tasks</th>
<th>Details</th>
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<tr>
<td>Design Report - This information is included in the Design Report</td>
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</tr>
<tr>
<td>Performance Objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment Analysis - This includes a hydraulic and hydrologic analysis, a stability analysis, and a dam breach analysis.</td>
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</table>
**County of Orange, New York**
Department of General Services
PO Box 218, 255-275 Main St.
Goshen, New York 10924

**Appendix I**
NYSDEC Master Grant contract with County of Orange dated October 5, 2017

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<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>NYS DEC Review - Review the Design Report and Preliminary Design and provide comments that were incorporated into the final NYS dam survey report.</td>
</tr>
<tr>
<td>2</td>
<td>NYS DEC Review - Review the Design Report and Preliminary Design and provide comments that were incorporated into the final NYS dam survey report.</td>
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**DETAI**

**ATTACHMENT C - WORK PLAN**
### Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

<table>
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<th>Tasks</th>
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**Attachment C - Work Plan**
Appendix I

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Contract Number: DEC022376-3398000

DETAILED ATTACHMENT - WORK PLAN
**Appendix I**

NYSDEC Master Grant contract with County of Orange dated October 5, 2017

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

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<th>Task</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Performance Specifications</td>
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<tr>
<td>2</td>
<td>Construction Oversight - Construction Oversight will be conducted by a Professional Engineer that will issue the Contractor's Work will be in compliance with the contract documents.</td>
</tr>
<tr>
<td>3</td>
<td>Performance Specifications</td>
</tr>
<tr>
<td>4</td>
<td>Project Closeout and As-Builts - Upon completion of the rehabilitation of the dam the Engineer will conduct the final inspection of the project and issue the final report.</td>
</tr>
<tr>
<td>5</td>
<td>Conclusion</td>
</tr>
</tbody>
</table>
### Appendix I

**NYSDEC Master Grant contract with County of Orange dated October 5, 2017**

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

<table>
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<th>Due Date</th>
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</table>

3. **Scheduled advance payments** shall be due in accordance with an approved payment schedule as follows:

   - Days from the beginning of the budget period.
   - The payment will be no later than the date shown in the most recently approved applicable attachment B form (budget).

   - The State Agency will make an initial payment to the Contractor in the amount of _______.

4. **Advance Payment Initial Payment and Recoupment Language (if applicable):**

   - The applicable attachment B form (budget), which is attached hereto.
   - All payments shall be in accordance with the budget contained in the applicable budget attachment B form (budget). All payments shall not exceed the amount noted on the Face Page hereof. All payments shall be performed in accordance with the terms of this contract.

5. **Payment Provisions of contract services to be performed by the State Agency agree to pay and the Contractor agrees to accept:**

---

**ATTACHMENT D**

---

**PAYMENT AND REPORTING SCHEDULE**
<table>
<thead>
<tr>
<th>Expenditure Period Dates From</th>
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Appendix I
NYSDEC Master Grant contract with County of Orange dated October 5, 2017
RFB OC007-18 Rehabilitation of Beaver Dam Lake Dam

County of Orange, New York
Department of General Services
PO Box 218, 255-275 Main St.
Goshen, New York 10924

DGS RFB A8 Minor Closed (12/14)
II. REPORTING PROVISIONS

A. Expenditure-Based Reports (select the applicable report type):

☑ Narrative/Qualitative Report

The Contractor will submit, on a quarterly basis, not later than 30 days from the end of the quarter, the report described in Section III(G)(2)(a)(i) of the Master Contract.

☐ Statistical/Quantitative Report

The Contractor will submit, on a quarterly basis, not later than ___ days from the end of the quarter, the report described in Section III(G)(2)(a)(ii) of the Master Contract.

☑ Expenditure Report

The Contractor will submit, on a quarterly basis, not later than 30 days after the end date for which reimbursement is being claimed, the report described in Section III(G)(2)(a)(iii) of the Master Contract.

☑ Final Report

The Contractor will submit the final report as described in Section III(G)(2)(a)(iv) of the Master Contract, no later than 30 days after the end of the contract period.

☐ Consolidated Fiscal Report (CFR)

The Contractor will submit the CFR on an annual basis, in accordance with the time frames designated in the CFR manual. For New York City contractors, the due date shall be May 1 of each year; for Upstate and Long Island contractors, the due date shall be November 1 of each year.

---

1 The Consolidated Fiscal Reporting System is a standardized electronic reporting method accepted by Office of Alcoholism & Substance Services, Office of Mental Health, Office of Persons with Developmental Disabilities and the State Education Department, consisting of schedules which, in different combinations, capture financial information for budgets, quarterly and/or mid-year claims, an annual cost report, and a final claim. The CFR, which must be submitted annually, is both a year-end cost report and a year-end claiming document.

Contract Number: # DEC01-C00273GG-3350000

Page 3, Attachment D - Payment and Reporting Schedule
B. Progress-Based Reports

1. Progress Reports

The Contractor shall provide the report described in Section III(G)(2)(b)(i) of the Master Contract in accordance with the forms and in the format provided by the State Agency, summarizing the work performed during the contract period (See Table 1 below for the annual schedule).

2. Final Progress Report

Final scheduled payment will not be due until ___ days after completion of agency’s audit of the final expenditures report/documentation showing total grant expenses submitted by vendor with its final invoice. Deadline for submission of the final report is ____. The agency shall complete its audit and notify vendor of the results no later than ____. The Contractor shall submit the report not later than ___ days from the end of the contract.

C. Other Reports

The Contractor shall provide reports in accordance with the form, content and schedule as set forth in Table 1.
TABLE 1 - REPORTING SCHEDULE

<table>
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<th>PROGRESS REPORT #</th>
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III. SPECIAL PAYMENT AND REPORTING PROVISIONS
ATTACHMENT E

Dam Safety Signage Requirements

The Department will require project signs for projects meeting the following criteria:

- All Dam Safety projects.

All signs should be constructed in accordance with the specifications identified herein.

The Department may, in its discretion, waive this requirement if the sign cannot be reasonably maintained, the sign is not consistent with other laws, or the location of the sign would not provide a public purpose.

The project sign should be maintained from the start of construction until 90 days after closeout of the project.

The cost of the project sign is a reimbursable project cost and should be included in the materials category for the project budget.
ATTACHMENT E - Dam Safety Signage Requirements

Dam Safety Sign Specifications

Size: Horizontal format - 48" wide by 24" high.

Construction Materials: Aluminum blank sign boards with vinyl sheeting.

Inserts: “Project Name”, and “Local Project Sponsor” indicate position, size and topography for specific project names and sponsor to be inserted.

Color Scheme:

NYS logo and text – “DEPARTMENT OF ENVIRONMENTAL CONSERVATION” – Pantone 350 C

TEXT:

Clean Water/Clean Air Bond Act of 1996 PMS3005 C
Dam Safety Project PMS3005 C
Project Site Name Local Project Sponsor Pantone 350 C

Type Specifications: All type is Arial 540, with the exception of the logo type.

Format is: center each line of copy with small caps and initial caps.

Production Notes: 48" wide x 24" high aluminum blanks will be covered with vinyl sheeting to achieve background color. Copy and logo will be silk screened on this surface.

Time Period: From start of Construction until 90 days after closeout of the project.

Grant recipients must provide a project name and the local project sponsor to be inserted on the sign.
New York State Department of Environmental Conservation  
Division of Environmental Permits, Region 3  
21 South Putt Corners Road, New Paltz, New York 12561-1620  
FAX: (845) 255-4659  
Website: www.dec.ny.gov  

IMPORTANT NOTICE TO ALL PERMITTEES

The permit you requested is enclosed. Please read it carefully and note the conditions that are included in it. The permit is valid for only that activity expressly authorized therein; work beyond the scope of the permit may be considered a violation of law and be subject to appropriate enforcement action. Granting of this permit does not relieve the permittee of the responsibility of obtaining any other permission, consent or approval from any other federal, state, or local government which may be required.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address. For SPDES, Solid Waste and Hazardous Waste Permits, renewals must be made at least 180 days prior to the expiration date.

☐ Applicable only if checked. Please note all work authorized under this permit is prohibited during trout spawning season commencing October 1 and ending April 30.

The DEC permit number & program ID number noted on page 1 under “Permit Authorization” of the permit are important and should be retained for your records. These numbers should be referenced on all correspondence related to the permit, and on any future applications for permits associated with this facility/project area.

If a permit notice sign is enclosed, you must post it at the work site with appropriate weather protection, as well as a copy of the permit per General Condition 1.

If the permit is associated with a project that will entail construction of new water pollution control facilities or modifications to existing facilities, plan approval for the system design will be required from the appropriate Department’s regional Division of Water or delegated local Health Department, as specified in the State Pollutant Discharge Elimination System (SPDES) permit.

If you have any questions on the extent of work authorized or your obligations under the permit, please contact the staff person indicated below or the Division of Environmental Permits at the above address.

John W. Petringlin  
Division of Environmental Permits, Region 3  
Telephone (845) 256-3041

☐ Applicable Only if Checked for STORMWATER SPDES INFORMATION: We have determined that your project qualifies for coverage under the General Stormwater SPDES Permit. You must now file a Notice of Intent to obtain coverage under the General Permit. This form can be downloaded at: http://www.dec.ny.gov/chemical/43133.html

☐ Applicable Only if Checked MS4 Areas: This site is within an MS4 area (Municipal Separate Storm Sewer System), therefore the SWPPP must be reviewed and accepted by the municipality. The MS-4 Acceptance Form must be submitted in addition to the Notice of Intent.

Send the completed form(s) to: NYS DEC, Stormwater Permitting, Division of Water, 625 Broadway, Albany, New York 12233-3505

In addition, DEC requests that you provide one electronic copy of the approved SWPPP directly to Natalie Browne at NYS DEC, 100 Hillside Avenue - Suite 1W, White Plains, NY 10603-2860.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Facility DEC ID 3-3399-00002

PERMIT  
Under the Environmental Conservation Law (ECL)

<table>
<thead>
<tr>
<th>Permit Issued To:</th>
<th>Facility:</th>
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</thead>
<tbody>
<tr>
<td>ORANGE COUNTY</td>
<td>OCDPW-BEAVER DAM LAKE</td>
</tr>
<tr>
<td>2455-2459 ST RTE 17M</td>
<td>ST RTE 94 &amp; LAKE RD</td>
</tr>
<tr>
<td>PO BOX 637</td>
<td>SALISBURY MILLS, NY</td>
</tr>
<tr>
<td>GOSHEN, NY 10924-0607</td>
<td>(845) 291-2750</td>
</tr>
</tbody>
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Facility Location: In MULTIPLE TOWNS in ORANGE COUNTY  
Facility Principal Reference Point: NYTM-E: 573.389  
NYTM-N: 4587.38  
Latitude: 41º26'04.7"  
Longitude: 74º07'17.7"

Project Location: southern end of Beaver Dam Lake  
Authorized Activity: This permit authorizes various repairs to the existing Beaver Dam Lake Dam (H-89-12-P234, Class B), fed by a tributary of the Moodna Creek (H-89-12, Class C). Repairs include demolishing the gabion spillway overlay, increasing the spillway capacity, overlying the original concrete spillway, adding a reinforced concrete stilling basin, replacing two regulating sluice gates, adding trash racks and closing the breach in the west masonry freeboard wall. All work must be conducted in strict accordance with the plans referenced in Natural Resource condition No. 1 of this permit.

Permit Authorizations

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NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: JOHN W PETRONELLA, Deputy Regional Permit Administrator  
Address: NYSDEC REGION 3 HEADQUARTERS  
21 SOUTH PUTT CORNERS RD  
NEW PALTZ, NY 12561 -1620
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Facility DEC ID 3-3399-00002

Authorized Signature:  

Date: 12/19/2013

Distribution List

Ron Meyer, Orange County DPW  
Scott Braymer, DEC CO Dam Safety  
Doug Gaugler, DEC R3 Bureau of Habitat

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: DAM; STREAM DISTURBANCE

1. Approved Construction Documents All work shall be accomplished in strict conformance with the approved construction documents, as follows:  


   SPECIFICATIONS: Rehabilitation of Beaver Dam Lake Dam, dated September 2013, by Robert R. Bowers, NY P.E. License #082304-1.

2. Substantial Deviations Any substantial deviation from the approved construction documents must be approved in writing by the Dam Safety Section prior to implementation. All deviations from the approved plans shall be indicated in the "as-built" records.

3. Dam Safety Section Contact Information When used in this permit, the contact information for the Dam Safety Section is:

   Dam Safety Section  
   NYSDEC HEADQUARTERS  
   625 BROADWAY  
   ALBANY, NY 12233

4. Seepage Evaluation Prior to lake drawdown, the permittee shall investigate and evaluate the seepage along the right training wall (looking downstream), and shall submit a written report with conclusions and recommendations to the Dam Safety Section. If necessary, the Construction Engineer shall propose a Design Modification to address the seepage.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Facility DEC ID 3-3399-00002

5. Pre-Construction Status Reports Starting from the date of Permit Issuance, the permittee shall submit pre-construction status reports to the Dam Safety Section on a monthly basis which shall, at a minimum, include: dates lake drawdown was commenced and completed, date of contract advertisement, date of contract award, date of Notice to Proceed.

6. Construction Engineer Prior to issuing Notice to Proceed to the Contractor, the permittee shall notify the Dam Safety Section, by certified mail (return receipt requested), of the name, address, telephone number and license number of the registered professional engineer responsible for oversight of the dam construction work (Construction Engineer) and for submission of the construction certification and “as-built” records required under this permit.

7. Construction Reports Starting from the date of Notice to Proceed, the permittee shall submit to Dam Safety the contractor’s proposed project schedule and monthly reports regarding the progress of construction. Monthly reports shall, at a minimum, include: a summary of major work completed for the month with construction photos, and a one month look ahead of anticipated work.

8. Interim Emergency Action Plan On or before December 31, 2013, the permittee shall submit to the Dam Safety Section an acceptable Interim Emergency Action Plan to be kept in effect through construction, including a complete Notification Flow Chart.

9. Final Emergency Action Plan On or before Substantial Completion, the permittee shall submit to the Dam Safety Section an acceptable final Emergency Action Plan (EAP) in accordance with TOGS 3.1.3 and reflecting the revised spillway configuration. Approval to Fill will not be granted until an acceptable final EAP is received.

10. Final Inspection Maintenance Plan On or before Substantial Completion, the permittee shall submit to the Dam Safety Section an acceptable Final Inspection & Maintenance (I&M) Plan reflecting the revised spillway configuration. Approval to Fill will not be granted until an acceptable Final I&M Plan is received.

11. Reservoir Filling Plan. On or before Substantial Completion, the permittee shall submit to the Regional Permit Administrator and Dam Safety Section an acceptable Plan for the Initial Filling of the Reservoir. Approval to Fill will not be granted until an acceptable Initial Filling Plan is received.

12. Substantial Completion At least two weeks before the anticipated date, the permittee shall cause the construction engineer to notify the Dam Safety Section in writing by certified mail (return receipt requested) that the work will be substantially complete and ready to impound water so that an inspection of the dam can be scheduled.

13. Approval to Fill Upon satisfactory results from the inspection of the dam an “Approval to Fill” letter will be issued by the Dam Safety Section permitting the owner to impound water behind the structure. Water shall not be impounded above elevation 309 (Project Datum) until the “Approval to Fill” letter is issued.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 3-3399-00002

14. **Completion of Work**  Within two weeks after the completion of the permitted work, the permittee shall provide the Dam Safety Section by certified mail (return receipt requested) an original signed and sealed statement from the construction engineer that the project has been completely constructed under his/her care and supervision and in accordance with the construction documents approved by the Department ("certification"), with a copy to the Regional Permit Administrator.

15. **As-Built Records**  Within four weeks after completion of the permitted work, the permittee shall provide to the Dam Safety Section, one complete set of "as-built" records.  "As-built" records shall include at a minimum:

   **Record Drawings.**  The "as-built" records shall be signed and sealed by the construction engineer and shall include identification of all changes to the approved construction documents.

   The "as-built" records shall be signed and sealed by the construction engineer and shall include identification of all changes to the approved construction documents.

16. **Post Permit Sign**  The permit sign enclosed with this permit shall be posted in a conspicuous location on the worksite and adequately protected from the weather.

17. **Install Erosion Controls**  Before any soil is disturbed on the subject site, the permittee shall install erosion and sedimentation controls which are adequate to prevent erosion and sedimentation off-site. Such controls shall be maintained until the unpaved portions of subject site, if any, are stabilized by a self-sustaining cover of vegetation that is adequate to prevent erosion and sedimentation on and off such site.  Before such controls are removed, the permittee shall remove all sediment that has accumulated at such controls.

18. **Materials Removed from Bed and Banks**  Any debris or excess materials from construction of this project shall be immediately and completely removed from the bed and banks of all water areas to an appropriate upland area for disposal.

19. **Discharging Concrete Contaminated Waters**  Wet concrete is highly toxic to fish and other aquatic organisms.  Water which comes into contact with fresh concrete or is contaminated by concrete leachate shall be pumped to an upland vegetated area prior to any discharge to the lake.

20. **Upland disposal of pump out water**  Water removed from work areas shall be pumped to a silt bag, hay bale enclosure or vegetated upland area.  Turbid water shall not be discharged back to the lake.

21. **Lake Drawdown**  The lake shall only be lowered the minimum amount needed to implement repairs to the dam.

22. **Lake Dewatering - Fisheries Protection**  Lake dewatering must be conducted at a slow, constant rate to allow fish to migrate upstream.

23. **Lake Dewatering - Maintaining Pools**  Where feasible, in deeper areas of the lake, refuge pools shall be maintained.  If the lake will be drawn down for an extended period of time, mechanical aeration of the refuge pool(s) may be necessary.

24. **Precautions Against Contamination of Waters**  All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials.
The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

1. Facility Inspection by The Department The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
Facility DEC ID 3-3399-00002

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator  
NYSDEC REGION 3 HEADQUARTERS  
21 SOUTH PUTT CORNERS RD  
NEW PALTZ, NY12561 -1620

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Dam, Stream Disturbance.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee’s acts or omissions in connection with the permittee’s undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC’s own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under
RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Appendix J
NYSDEC PERMIT #’s 3-3399-0002/0005 and 3-3399-00002/00006

The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Department conditions on it, contact the DEC at 845/256-3054. Please refer to the permit number shown when contacting the DEC.

Permit No. 3-3399-00002/00005
Expiration date: December 31, 2016
Effective date: December 31, 2016
Permittee: Orange County

NOTE: This notice is NOT a permit.

Applicable if checked. No instream work allowed between October 1 & April 30
December 2, 2016

Christopher Viebrock, P.E. Commissioner
Orange County Dept. of Public Works
2455-2459 Route 17M
P. O. Box 509
Goshen, NY 10924

Re: Beaver Dam Lake Dam
Town of Blooming Grove, Orange County
DEC Permit ID No. 3-3399-00002/00005 – Dam Safety
Permit Extension

Dear Mr. Viebrock:

The New York State Department of Environmental Conservation (DEC) has reviewed the written request prepared by Civil Dynamics Engineering P.C on your behalf, requesting an extension of the expiration date of the above referenced permit until December 31, 2018.

In accordance with this request, the permits is hereby extended with an expiration date of December 31, 2018.

All other all terms and conditions are as written in the original permit. Please attach this letter to the front of your permit. An updated permit sign is enclosed. This sign must be posted at the work site with appropriate weather protection.

If you have any questions, please feel free to contact me at 845 256-3041.

Sincerely,

[Signature]

John W. Petronella
Deputy Regional Permit Administrator

Enc: Updated Permit sign

Cc: Christopher S. Adams, Civil Dynamics
Scott Braymer, DEC CO Dam Safety
New York State
Department of Environmental Conservation

NOTICE

The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Department conditions on it, contact the DEC at 845/256-3054. Please refer to the permit number shown when contacting the DEC.

Permittee: Orange County Permit No. 3-3399-00002/00005

Effective Date: December 18, 2017 Expiration date: December 31, 2018

☐ Applicable if checked. No instream work allowed between October 1 & April 30

NOTE: This notice is NOT a permit.
EMERGENCY ACTION PLAN

FOR THE

BEAVER DAM LAKE DAM

SALISBURY MILL, NY

Last Revision: December 14, 2016

NYSDEC DAM ID 195-0502

FEDERAL DAM ID NY 00619

Primary Owner / Operator
County of Orange
Beaver Dam Lake Protection and Rehabilitation District
Department of Public Works
Goshen, NY

Additional Owner(s)
Carlos and Aurora Domingues
28 Lake Rd, Salisbury Mills, NY 12577
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## Appendices

- **Appendix I**  INDUNDATION MAP
- **Appendix II**  PLANS FOR TRAINING, EXERCISING, UPDATING & POSTING
- **Appendix III** LIST OF AGENCIES AND CONTACTS
- **Appendix IV**  DISTRIBUTION OF EAP
- **Appendix V**  DEFINITIONS
- **Appendix VI**  SURVEILANCE & INCIDENCE FORMS
- **Appendix VII**  TYPICAL FAILURE MODES
- **Appendix VIII** LIST OF OFF-SITE MATERIALS
- **Appendix IX**  LIST OF OFF-SITE EQUIPMENT
- **Appendix X**  LIST OF CONTRACTORS
SECTION 1 INTRODUCTION

STATEMENT OF PURPOSE

This document outlines the procedures to be followed by the dam owner and several municipal agencies during the various normal and abnormal conditions that may occur during the life of the Beaver Dam lake Dam.

The purpose of this document is to provide procedures for on-going monitoring of conditions at the dam and actions to be taken in order to mitigate the loss of life and property in the event of significant structural deterioration or failure.

Existence of this document does not mean that there are any verified weaknesses in the structure or that failure is imminent.

SCOPE

This Emergency Action Plan:
1. Establishes a system for monitoring normal and abnormal conditions at the dam.
2. Identifies areas, structures, residences, businesses, facilities and roads potentially affected by a failure or other emergency condition associated with the Dam.
3. Establishes procedures to be followed for the orderly evacuation of the area potentially affected by an emergency condition associated with the dam.
4. Establishes procedures for activating the Plan.
5. Identifies the officials, agencies, organizations and their respective responsibilities for implementing the Plan.

Information contained in this document was compiled from data furnished by the N.Y. State Dept. of Environmental Conservation, Orange County Office of Natural Disaster-Civil Defense, Orange County Dept. of Public Works, National Weather Service, U.S. Army Corps of Engineers, O'Brien & Gere Engineers, Inc. as well as field inspections.

RELATED DOCUMENTS


NYS Dept of Environmental Conservation Policies and Procedures Manual
Title 1800 Emergency Procedures, Chapter 1855 - Dam Failure Emergencies, March 24,1983

Phase I Inspection Report, National Dam Safety Program, N.Y.#619, Beaver Dam Lake N.Y.
District Corps of Engineers, August 1980

Dam Break Analysis for Beaver Dam Lake, Orange County, New York

Guidelines for Development of a Dam Emergency Action Plan
New York State Department of Environmental Conservation, February 1982
SECTION 2 SITE DESCRIPTION

OWNERSHIP

The dam is situated on two adjacent parcels of land that are under separate ownership. The common property line between these two parcels is described as running along the upstream face of the dam. Since the submerged face is an irregular shape and slopes in the upstream direction, the property line appears to have been measured along the dry face with the lake at normal pool or spillway level. (See metes and bounds description)

The portion of the dam structure from the upstream face to the downstream toe is situated on property owned by the County of Orange, Beaver Dam Lake Protection and Rehabilitation District. (Town of Blooming Grove Section 3 - Block 1 – Lot 7.1)

The west abutment wall as well as the portion of the upstream dam structure submerged below normal pool level is situated on adjacent private property presently owned by Carlos and Aurora Domingues (Town of Blooming Grove Section 3 - Block 1 – Lot 7.3)

Owner #1
(3-1-7.1)

County of Orange
Beaver Dam Lake Protection and Rehabilitation District
Department of Public Works
2455-2459 Rt 17M, PO Box 509
Goshen, NY 10924-0509

Telephone: 845-291-2750

Owner #2
(3-1-7.3)

Carlos and Aurora Domingues
28 Lake Rd
Salisbury Mills, NY 12577

Telephone: 845-497-3335
SECTION 3  DAM DESCRIPTION

Dam Name: Beaver Dam Lake Dam  Hazard Classification: Type “C” (high)
NY DEC Id: 195-0502  Federal Id: NY 00619
City/Town: Town of Blooming Grove  County: Orange
Location: Beaver Dam Lake

Access: From Goshen: Take NYS Route 17M to Route 94 East through Washingtonville, Continue on Route 94 to Salisbury Mills, Make left onto Lake Road. Dam entrance is approximately 500 feet on right.

From Newburgh: Take NYS Route 94 West, turn right onto Lake Road.

Latitude: 41°26’4”N  Longitude: 74°7’18”W

River/Stream: Tributary to Moodna Creek

Quad Sheet: Cornwall-on-Hudson, NY  Nearest City/Town: Salisbury Mills
Height (ft): 35  Normal Surface (ac): 164
Length (ft): 400  Normal Capacity (ac-ft): 1,400
Dam Type: Earth Rock Fill Embankment  Maximum Capacity (ac-ft): 2,694
Spillway: Gabion Basket with shotcrete of overlay  Spillway Capacity (cfs): 
Dike: None  Drainage Area (sqr mls): 9.5

Outlet other than spillway: An 18-inch low-level outlet is located at the east spillway piers.

Purpose/Operation of Dam: Recreational Lake

Instrumentation: None

Method of Emergency Drawdown: NONE
DAM DESCRIPTION (continued)

The Beaver Dam Lake Dam (BDL Dam) is located at the south end of Beaver Dam Lake approximately 500 feet north of the intersection of NY State Route 94 and Lake Road in the Town of Blooming Grove, Orange County, New York.

Based on available archival records, it is estimated that the dam was constructed in its present configuration between 1900 and 1911 as an expansion of a pre-existing dam that was constructed during the 1870’s. Both the original and expanded dams were constructed by Henry Powell Ramsdell to create a reservoir (Beaver Dam Lake formerly known as Ramsdell’s Lake) to support manufacturing operations at the long defunct Arlington Paper Mill downstream at Salisbury Mills.

The downstream spillway surfaces and training walls were covered with shotcrete surfaced stone filled gabions during a rehabilitation project completed during the early 1980’s. Design and construction records have not been located for the original nor the expanded structure.

The BDL Dam consists of brick, concrete and rubble masonry walls with earth buttresses. It is approximately 35 feet high, 400 feet long and has a storage capacity of 1440 acre-feet at normal pool elevation of 331. Also included is an uncontrolled spillway section measuring 8 feet high and 70 feet long. Two manually operated reservoir drain valves (18 inch and 24 inch diameter) provide control of the impoundment level1. However, only the 18 valve is functional. There are no automatic monitoring or warning systems installed or planned at this time.

The lake impounded by this structure is used for recreational purposes and has a normal pool surface area of approximately 164 acres which extends into the adjacent Towns of Cornwall and New Windsor2.

Situated immediately downstream from the BDL Dam is the unincorporated hamlet of Salisbury Mills which contains numerous residential and business properties, the main fire station for the Salisbury Mills Fire Department, a cellular telephone communications tower, a state park, a small hydroelectric dam, public utilities as well as State, County and Town roadways. Whenever human habitation is present in an area which could be inundated due to the malfunction or failure of a dam, the potential for an emergency condition is considered to exist2. The characteristics of the downstream area combined with the size and capacity of the structure place the BDL Dam in the "high hazard potential" category1. Consequently, the development of a comprehensive Emergency Action Plan (EAP) for the structure and downstream area is required in order to prepare for and mitigate unusual or emergency conditions which could arise.

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11Beaver Dam Lake Phase I Inspection Report - National Dam Safety Program -
2 New York District Corps of Engineers - August 1980
32Emergency Action Planning Guidelines for Dams - Federal Emergency Management Agency -
4 FEMA 64) February 1985
Beaver Dam Lake

Vicinity Map

(Not To Scale)
Beaver Dam Lake Dam

Location Map

(Not To Scale)
SECTION 4  EMERGENCY, DETECTION, EVALUATION and CLASSIFICATION

CONDITION IDENTIFICATION

As the major objective of dam emergency planning is to save lives and minimize damage, the timely identification of emergency conditions by trained personnel becomes paramount. Procedures to identify emergency conditions have been established. Five (5) dam conditions of varying severity have been identified and are described below.

Notification of an Advisory, Warning, Emergency or Breach Condition is to be made to the Orange County E-911 Emergency Communications Center via telephone by dialing 911 or through direct radio communications by a recognized emergency service unit (Police, Fire Department, etc).

The required notifications and assignments for each condition are listed in the Emergency Response Notification charts shown on the following pages. These charts have been patterned after standard Fire Department mutual aid multiple alarm multiple agency emergency response plan “boxes” currently in use in Orange County.

It is the responsibility of the Orange County E-911 Emergency Communications Center to make the required notifications shown in the Emergency Response Notification charts and to coordinate all emergency radio communications traffic.

“DAM NORMAL” CONDITION

The water level of lake is not greater than 18” above the top of the right spillway crest. Weather conditions range from fair to a maximum severity of moderate precipitation. Ice formation may be present ranging from skim to completely frozen. Seepage rates and structural conditions are stable. Structural conditions are stable.

Required Emergency Actions - None
"DAM ADVISORY" CONDITION

A Dam Advisory Condition is a situation where an unusual problem or situation has occurred or is suspected, but a failure of the dam is not imminent. This is a condition that warrants further observation and assessment before escalation of emergency actions.

Examples of a Dam Advisory Condition are:

- Water level in the lake is between 18” and 36” above the top of the west spillway crest and the water level downstream at Lake Rd is below top of culvert (below roadway surface) and precipitation / runoff rate is heavy.
- Any undocumented or unusual spring
- Any sign of piping
- Any sign of slumping
- Any sinkhole
- Any unusual crack
- Any unusual wet spot or boggy area
- Any seismic event regardless of how slight
- Any obstruction in the spillway
- Evidence of damage due to vandalism at any structure(s)
- Bomb threat
- A civil disorder near the reservoir structure(s)
- Any aircraft accident near the reservoir structure(s)

Required Emergency Actions – Notify Orange County E-911 Emergency Communications Center.

"DAM WARNING" CONDITION

A Dam Warning Condition is any developing or occurring event or circumstance which may adversely affect the integrity of the dam but is considered controllable. The Dam Warning Condition has the potential of evolving into a Dam Emergency or a Dam Breach Condition.

Examples of a Dam Warning Condition are:

- Water level in the lake is between 36” and 60” above the top of the west spillway crest.
- Water level downstream at Lake Rd is above top of culvert (roadway is flooded).
- Precipitation / runoff rate is extremely heavy.
- Seepage rates are accelerating and slight amount of silt is visible in the discharge.
- Minor structural damage has occurred in non-critical areas.
- Any developing erosion, settlement, or upheaval occurring on the downstream slope or at the toe of the dam and is considered to be controllable
- Any undocumented leakage through any dam structure considered to be controllable

Required Emergency Actions – Notify Orange County E-911 Emergency Communications Center.
"DAM EMERGENCY" CONDITION

A Dam Emergency Condition is defined as one or more of the following situations:

- Water level is greater than 60" above the top of the right spillway crest.
- Water has overtopped the dam or is expected to overtop within the next hour
- Water level is significantly above the Lake Road culvert.
- Seepage rates are high with large amounts of silt and/or other materials present in the discharge.
- Significant structural deterioration is taking place or has taken place up to and including breach.
- Any uncontrollable erosion, settlement, or upheaval occurring on the downstream slope or at the toe of the dam.
- Any uncontrollable leakage through any part of the dam structure

**Required Emergency Actions** – Notify Orange County E-911 Emergency Communications Center

"DAM BREACH" CONDITION

A Dam Breach Condition is defined as a dislocation or failure of any structure, which allows for an expanding, uncontrollable discharge of water through the spillway, dam or dikes, indicating a breach is occurring.

**Required Emergency Actions** – Notify Orange County E-911 Emergency Communications Center. The Emergency Response Notifications for “Dam Emergency Condition” are to be followed.

**REFER TO THE EMERGENCY RESPONSE NOTIFICATION CHARTS ON THE FOLLOWING PAGES**
# Beaver Dam Lake Dam Emergency Response Notification

## DAM ADVISORY CONDITION

**Action Level 1**

Orange County E911 receives report of Suspected Emergency Condition or Unusual Condition involving Beaver Dam Lake Dam. This report to E911 may be initiated by anyone (general public, passerby, public agency, etc.).

Orange County E911 notifies the parties listed below and states that "A Dam Advisory Condition exists at the Beaver Dam Lake Dam" and requests the parties to respond to locations specified.

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – A</td>
<td>Orange County DPW</td>
<td>MAIN: 845-291-2750 24 HOUR: 911</td>
<td>Incident Commander</td>
<td>Respond to Dam Command Post</td>
<td>Establish Command Post Investigate and Assess Situation Advise E911 of situation observed Adjust Action Level as Needed</td>
</tr>
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<td>1 – B</td>
<td>Salisbury Mills FD</td>
<td>911</td>
<td>Incident Support</td>
<td>Respond to Dam Command Post</td>
<td>Assist Incident Commander with Assessment</td>
</tr>
<tr>
<td>1 – C</td>
<td>Blooming Grove PD</td>
<td>24 HR: 845-496-9161</td>
<td>Incident Support</td>
<td>Respond to Dam Command Post</td>
<td>Assist Incident Commander with Assessment</td>
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<tr>
<td>1 – D</td>
<td>Beaver Dam Lake Emergency Coord.</td>
<td>24 HR: 911</td>
<td>Resource</td>
<td>Respond to Dam Command Post</td>
<td>Assist as requested by Incident Commander</td>
</tr>
<tr>
<td>1 - E</td>
<td>Beaver Dam Lake Advisory Board Chair</td>
<td>496-7009</td>
<td>Resource</td>
<td>Respond to Dam Command Post</td>
<td>Assist as requested by Incident Commander</td>
</tr>
<tr>
<td>1 – F</td>
<td>Orange County Emergency Management Office</td>
<td>MAIN: 845-615-0565 24 HR: 911</td>
<td>Awareness</td>
<td>Standby In Quarters</td>
<td>Assist as requested by Incident Commander</td>
</tr>
</tbody>
</table>
### Beaver Dam Lake Dam Emergency Response Notification

**DAM ADVISORY CONDITION**  
**Action Level 1**

<table>
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<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
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<th>Response Location</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1 – G</td>
<td>Cornwall PD</td>
<td>24 HR: 845-534-8100</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
</tr>
<tr>
<td>1 – H</td>
<td>New Windsor PD</td>
<td>24 HR: 845-565-7000</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
</tr>
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<td>1 – I</td>
<td>Blooming Grove Town Supervisor</td>
<td>MAIN: 845-496-5223</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
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<tr>
<td></td>
<td></td>
<td>24 hr-Contact through Town PD</td>
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<td></td>
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<tr>
<td>1 – J</td>
<td>Cornwall Town Supervisor</td>
<td>MAIN: 845-534-3760</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
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<td></td>
<td>24 hr-Contact through Town PD</td>
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<td></td>
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<tr>
<td>1 – K</td>
<td>New Windsor Town Supervisor</td>
<td>MAIN: 845-563-4610</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
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<td></td>
</tr>
<tr>
<td>1 – L</td>
<td>NYS Police</td>
<td>MAIN: 845-782-8311</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist as requested by Incident Commander</td>
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<td></td>
<td></td>
<td>24 HR: 866-723-3697</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Beaver Dam Lake Dam Emergency Response Notification

DAM WARNING CONDITION

Action Level 2

Orange County E911 receives request for **Second Alarm** for this box from the Incident Commander.
(This may also be a request initiated by a qualified public agency such as OC Public Works, NYS DEC, PD, etc.)

Orange County E911 notifies the parties listed below and states that
“A Dam Warning Condition exists at the Beaver Dam Lake Dam” and requests the parties to respond and perform the actions listed.

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – A</td>
<td>Orange County DPW</td>
<td>MAIN: 845-291-2750</td>
<td>Incident Command</td>
<td>Respond to Dam Command Post</td>
<td>1. IC to establish Command Post (Relocate as required by flooding)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 HOUR: 911</td>
<td></td>
<td></td>
<td>2. IC to Investigate and Assess Situation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Assess Structural Conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Completes Inspection Checklist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. Coordinate On-Scene County Resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6. IC to Adjust Alarm Level as Needed</td>
</tr>
<tr>
<td>2 – B</td>
<td>Blooming Grove PD</td>
<td>24 HR: 845-496-9161</td>
<td>Incident Support Liaison w/ Town Liaison w/ other Police agencies</td>
<td>Respond to Dam Command Post</td>
<td>1. Assist IC with Incident Assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Request additional police agencies to assist with other incidents as needed</td>
</tr>
<tr>
<td>2 – C</td>
<td>Salisbury Mills FD</td>
<td>911</td>
<td>Incident Support</td>
<td>Respond to Dam Command Post</td>
<td>1. MLFC: Stage in Quarters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Senior Officer</td>
<td></td>
<td>2. SMFC: Prepare to relocate fire station to Emergency Staging Area on high ground (Bethlehem Church)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Respond to Dam Command Post</td>
<td></td>
<td>3. IC to request fire mutual aid to cover other incidents as needed</td>
</tr>
</tbody>
</table>

**Alarm** | **Notification** | **Telephone Number** | **Assignment / Role** | **Response Location** | **Action(s)**
---|------------------|-----------------------|-----------------------|-----------------------|--------------------------|
2 – A | Orange County DPW | MAIN: 845-291-2750    | Incident Command      | Respond to Dam Command Post | 1. IC to establish Command Post (Relocate as required by flooding) |
       |                   | 24 HOUR: 911          |                       |                                    | 2. IC to Investigate and Assess Situation                               |
       |                   |                       |                       |                                    | 3. Assess Structural Conditions                                        |
       |                   |                       |                       |                                    | 4. Completes Inspection Checklist                                       |
       |                   |                       |                       |                                    | 5. Coordinate On-Scene County Resources                                 |
       |                   |                       |                       |                                    | 6. IC to Adjust Alarm Level as Needed                                   |
2 – B | Blooming Grove PD  | 24 HR: 845-496-9161   | Incident Support Liaison w/ Town Liaison w/ other Police agencies | Respond to Dam Command Post       | 1. Assist IC with Incident Assessment                                   |
       |                   |                       |                       |                                    | 2. Request additional police agencies to assist with other incidents as needed |
2 – C | Salisbury Mills FD | 911                   | Incident Support       | Respond to Dam Command Post       | 1. MLFC: Stage in Quarters                                               |
<pre><code>   |                   |                       | Senior Officer         |                                    | 2. SMFC: Prepare to relocate fire station to Emergency Staging Area on high ground (Bethlehem Church) |
   |                   |                       | Respond to Dam Command Post|                                    | 3. IC to request fire mutual aid to cover other incidents as needed      |
</code></pre>
<table>
<thead>
<tr>
<th>Action Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2 – D</strong></td>
</tr>
<tr>
<td><strong>2 – E</strong></td>
</tr>
<tr>
<td><strong>2 – F</strong></td>
</tr>
<tr>
<td><strong>2 – G</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
</table>

- 16 -
# Appendix K
EAP for the Beaver Dam Lake Dam
last revised 12/14/16

## Beaver Dam Lake Emergency Response Notification

### DAM WARNING CONDITION

<table>
<thead>
<tr>
<th>Level</th>
<th>Action</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Prepare to open Emergency Evacuation Center</td>
<td>Prepare to assist at Emergency Evacuation Center</td>
</tr>
<tr>
<td></td>
<td>Support Red Cross as requested</td>
<td>Assist as directed by Incident Commander</td>
</tr>
</tbody>
</table>

### CORNWALL CENTRAL SCHOOL DISTRICT

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-K</td>
<td>Cornwall Central School District</td>
<td>607-433-8009</td>
</tr>
<tr>
<td>2-L</td>
<td>Cornwall High School</td>
<td>607-433-8011</td>
</tr>
<tr>
<td>2-M</td>
<td>American Red Cross</td>
<td>911</td>
</tr>
</tbody>
</table>

### O.C. SHERIFF

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-N</td>
<td>O.C. Sheriff</td>
<td>911</td>
</tr>
</tbody>
</table>

### CORNWALL TOWN

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-O</td>
<td>Cornwall Town Supervisor</td>
<td>911</td>
</tr>
<tr>
<td>2-P</td>
<td>Blooming Grove Supervisor</td>
<td>911</td>
</tr>
<tr>
<td>2-Q</td>
<td>New Windsor Supervisor</td>
<td>911</td>
</tr>
</tbody>
</table>

### NEW WINDSOR TOWN

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-R</td>
<td>New Windsor Ambulance</td>
<td>911</td>
</tr>
<tr>
<td>2-S</td>
<td>Washingtonville School District</td>
<td>24-HR: 644-732-5997</td>
</tr>
<tr>
<td>2-T</td>
<td>NYS Police</td>
<td>24-HR: 644-732-5997</td>
</tr>
</tbody>
</table>

### NYS DOT

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-U</td>
<td>NYS DOT</td>
<td>24-HR: 644-431-5750</td>
</tr>
</tbody>
</table>
## Appendix K
EAP for the Beaver Dam Lake Dam
last revised 12/14/16

<table>
<thead>
<tr>
<th>Beaver Dam Lake Dam Emergency Response Notification</th>
<th>Action Level 2</th>
<th>DAM WARNING CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alarm</strong></td>
<td><strong>Telephone Number</strong></td>
<td><strong>Notification</strong></td>
</tr>
<tr>
<td>2 – V NYS Thruway Authority</td>
<td>MAIN: 866-691-8282 24 HR: 911</td>
<td>Metro North RR</td>
</tr>
<tr>
<td>2 – W</td>
<td>MAIN: 845-534-3449 24 hr Contact through Cornwall PD</td>
<td>Cornwall Highway Dept.</td>
</tr>
<tr>
<td>2 – X Cornwall-on-Hudson Water Dept.</td>
<td>MAIN: 845-496-3816 24 hr Contact through Town PD</td>
<td>Cornwall Highway Dept.</td>
</tr>
<tr>
<td>2 – Y Blooming Grove Highway Dept.</td>
<td>MAIN: 845-534-2171 24 hr Contact through Town PD</td>
<td>Cornwall Highway Dept.</td>
</tr>
<tr>
<td>2 – Z</td>
<td>MAIN: 845-564-6660 24 hr Contact through Town PD</td>
<td>New Windsor Highway Dept.</td>
</tr>
</tbody>
</table>

### Action(s)
- As needed to protect their infrastructure
- As needed to protect their infrastructure
- As needed to protect their infrastructure
- Assist as directed by Incident Commander
- Assist as directed by Incident Commander
- Assist as directed by Incident Commander

### Response Location
- Standby
- Standby
- Standby
- Standby
- Standby
- Standby

### Assignment / Role
- Awareness (MTA Police)
- Awareness
- Awareness
- Assistant
- Assistant
- Assistant
# Beaver Dam Lake Dam Emergency Response Notification

## DAM EMERGENCY CONDITION

**Action Level 3**

Orange County E911 (36 Control) receives request for **Third Alarm** for this box from Incident Commander. 
(This may also be a request initiated by a qualified public agency such as OC Public Works, NYS DEC, PD, etc.)

Orange County E911 notifies the parties listed below and states that

"A Dam Emergency Condition exists at the Beaver Dam Lake Dam" and requests the parties to respond and perform the actions listed.

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
</table>
| 3 – A1| Salisbury Mills FD            | 911              | Unified Command                    | All Department representatives respond to Dam Command Post.                     | 1. UC to establish Command Post  
2. UC to Monitor and Assess Situation  
3. Mountain Lodge Fire Company: Close Clove Road at Woodcock Mountain Road.  
4. Mountain Lodge Fire Company: Remainder to stage in quarters for other deployment.  
5. Salisbury Mills FD to relocate fire station to Emergency Staging Area on high ground (Bethlehem Church)  
6. UC to Adjust Alarm Level as Needed  
7. UC to request fire mutual aid to cover other incidents as needed  
8. UC to request PD to initiate mandatory evacuation of Inundation area.                                                                 |
| A2    | Orange County DPW             |                  |                                    |                                                                                 |                                                                                                                                              |
| A3    | Blooming Grove PD             |                  |                                    |                                                                                 |                                                                                                                                              |
| A4    | Blooming Grove EMS            |                  |                                    |                                                                                 |                                                                                                                                              |
| A5    | Emergency Mgmt.               |                  |                                    |                                                                                 |                                                                                                                                              |

- 19 -
<table>
<thead>
<tr>
<th>Level</th>
<th>Agency</th>
<th>Contact Numbers</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Windsor PD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - C</td>
<td>Additional Mutual Aid Fire Departments as requested by UC</td>
<td>24 HR: 911</td>
<td>Evacuation Assistance</td>
<td>Response locations to be determined by UC and PD</td>
<td>Evacuate public from Inundation Area</td>
</tr>
<tr>
<td>3 - D</td>
<td>Additional Mutual Aid Fire Departments as requested by UC</td>
<td>24 HR: 911</td>
<td>Traffic Control</td>
<td>Response locations to be determined by UC and PD</td>
<td>Control access into Inundation Area</td>
</tr>
<tr>
<td>3 - E</td>
<td>Vails Gate FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist UC as Requested</td>
</tr>
<tr>
<td>3 - F</td>
<td>Beaver Dam Lake Advisory Board Chair</td>
<td>MAIN: 845-496-7009</td>
<td>Resource Subordinate to DPW</td>
<td>Respond to Dam Command Post</td>
<td>Assist as Directed by UC</td>
</tr>
<tr>
<td>3 - G</td>
<td>Blooming Grove Town Supervisor</td>
<td>MAIN: 845-496-5223  24 hr-Contact through Town PD</td>
<td>Manage Activities at Town Emergency Operations Center  Public Information Officer / Media Liaison</td>
<td>Respond to Town of Blooming Grove Emergency Operations Center (Town Hall, Horton Road, Blooming Grove)</td>
<td>1. Activate Town of Blooming Grove Emergency Operations Center  2. Establish Communications with Dam Command Post  3. Establish Communications with Orange County Emergency Management Office  4. Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B</td>
</tr>
</tbody>
</table>
| Appendix K | EAP for the Beaver Dam Lake Dam  
| last revised 12/14/16 |

| County of Orange, New York  
| Department of General Services  
| PO Box 218, 255-275 Main St.  
| Goshen, New York 10924 |

| **Beaver Dam Lake Dam Emergency Response Notification** |
| **DAM EMERGENCY CONDITION** |
| **Action Level 3** |
| **Beaver Dam Lake Dam Emergency Response Notification** |

| Cornwall Town Supervisor  
| 3-H |
| New Windsor Town Supervisor  
| 3-1 |
| Orange County Emergency Management Office  
| 3-J |

| MAIN: 845-534-3760  
| 24 hr. Contact through Town PD |
| MAIN: 845-565-8610  
| 24 HR: 845-561-1328 |
| MAIN: 845-615-0565  
| 24 HR: 911 |

| Manage Activities at Emergency Operations Center  
| Respond to Town of Cornwall Emergency Operations Center  
| Respond to Town of New Windsor Emergency Operations Center  
| Require support and obtain resources as requested |
| Establish Communications with Dam Command Post  
| Establish Communications with Dam Command Post  
| Establish Communications with Dam Command Post  
| |
| Activate Town of Cornwall Emergency Operations Center  
| Activate Town of New Windsor Emergency Operations Center  
| Activate Town of New Windsor Emergency Operations Center  
| |
| Establish Communications with Dam Command Post  
| Establish Communications with Dam Command Post  
| Establish Communications with Dam Command Post  |
| |
| Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B  
| Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B  
| Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B  |
| |
| Public Information Officer / Media Liaison  
| Public Information Officer / Media Liaison  
| Public Information Officer / Media Liaison  |
| |
| Establish communications with Blooming Grove Emergency Operations Center  
| Establish communications with Blooming Grove Emergency Operations Center  
| Establish communications with Blooming Grove Emergency Operations Center  |
| |
| Orange County Emergency Management Office at ES911 Center  
| Orange County Emergency Management Office at ES911 Center  
| Orange County Emergency Management Office at ES911 Center |
# Beaver Dam Lake Dam Emergency Response Notification

## DAM EMERGENCY CONDITION

### Action Level 3

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
</table>
Notifies State agencies as needed |
| 3 – M | Cornwall Central School District | MAIN: 845-534-8009 24 HR: 911 | Support Emergency Evacuation Reception Center | Cornwall High School  
Dragon Dr at Rt. 94 | 1. Open Emergency  
Evacuation Reception Center  
2. Assist Red Cross as requested |
| 3 – N | American Red Cross | 24 HR: 911 | Manage Emergency Evacuation Reception Center | Cornwall High School  
Dragon Dr at Rt. 94  
Taft Elementary School | Open, staff and manage Emergency Evacuation Reception Center |
| 3 – O | Cornwall Ambulance | 24 HR: 911 | Assist Red Cross | Cornwall High School  
Dragon Dr at Rt. 94 | Assist at Red Cross at Emergency Evacuation Reception Center |
| 3 – P | New Windsor Ambulance | 24 HR: 911 | Assist Red Cross | Cornwall High School  
Dragon Dr at Rt. 94 | Assist at Red Cross at Emergency Evacuation Reception Center |
| 3 – Q | NYS Police | MAIN: 845-782-8311 24 HR: 866-723-3697 | Awareness | Standby | Assist as directed by Incident Commander |
| 3 – R | NYS DOT | MAIN: 845-431-5750 24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
| 3 – S | OC Sheriff | MAIN: 845-651-4033 24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
| 3 – T | Washingtonville School District | MAIN: 845-567-3679 24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
# Beaver Dam Lake Dam Emergency Response Notification

## DAM EMERGENCY CONDITION

### Action Level 3

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – U</td>
<td>NYS Thruway Authority</td>
<td>24 HR: 866-691-8282</td>
<td>Awareness</td>
<td>Standby</td>
<td>As needed to protect their infrastructure</td>
</tr>
<tr>
<td>3 – V</td>
<td>Metro North RR</td>
<td>24 HR: 911 MTA Police</td>
<td>Awareness</td>
<td>Standby</td>
<td>As needed to protect their infrastructure</td>
</tr>
<tr>
<td>3 – W</td>
<td>Cornwall-on-Hudson Water Dep’t.</td>
<td>MAIN: 845-534-3449 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>As needed to protect their infrastructure</td>
</tr>
<tr>
<td>3 – X</td>
<td>Mutual Aid</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>3 – Y</td>
<td>Vails Gate FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>3 – Z</td>
<td>Cornwall FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>3 – AA</td>
<td>Blooming Grove Highway Dep’t.</td>
<td>MAIN: 845-496-3816 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>3 – BB</td>
<td>Cornwall Highway Dep’t.</td>
<td>MAIN: 845-534-2171 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>3 – CC</td>
<td>New Windsor Highway Dep’t.</td>
<td>MAIN: 845-564-6660 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
</tbody>
</table>
Beaver Dam Lake Dam Emergency Response Notification
DAM ADVISORY CONDITION
Action Level 4

Orange County E911 receives report of Suspected Emergency Condition or Unusual Condition involving Beaver Dam Lake Dam
This report to E911 may be initiated by anyone (general public, passerby, public agency, etc.).

Orange County E911 notifies the parties listed below and states that
“A Dam Breach Condition exists at the Beaver Dam Lake Dam” and requests the parties to respond to locations specified.

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
</table>
| 4 – A1| Salisbury Mills FD    | 24 HR: 911         | Unified Command                        | All Department representatives respond to Dam Command Post                          | 1. UC to establish Command Post  
2. UC to Monitor and Assess Situation  
3. Mountain Lodge Fire Company: Close Clove Road at Woodcock Mountain Road.  
4. Mountain Lodge Fire Company: Remainder to stage in quarters for other deployment.  
5. Salisbury Mills FD to relocate fire station to Emergency Staging Area on high ground (Bethlehem Church)  
6. UC to Adjust Alarm Level as needed  
7. UC to request fire mutual aid to cover other incidents as needed  
8. UC to request PD to initiate mandatory evacuation of Inundation area. |
| A2    | Orange County DPW     |                    |                                        |                                                                                    |                                                                                                      |
| A3    | Blooming Grove PD     |                    |                                        |                                                                                    |                                                                                                      |
| A4    | Blooming Grove EMS    |                    |                                        |                                                                                    |                                                                                                      |
| A5    | Emergency Mgmt.       |                    |                                        |                                                                                    |                                                                                                      |
| 4 – B1| Cornwall PD           | 24 HR: 845-534-8100| 1. Incident Support                    | Respond to Dam Command Post                                                      | 1. Assist UC with Incident Management.  
2. Request Town Supervisor to initiate mandatory evacuation of Inundation Area. |
| B2    | New Windsor PD        | 24 HR: 845-565-7000| 2. Liaison with Town Supervisor       |  
                                                                                          |                                                                                                      |
# Beaver Dam Lake Dam Emergency Response Notification

## DAM ADVISORY CONDITION

### Action Level 4

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - C</td>
<td>Additional Mutual Aid Fire Departments as requested by UC</td>
<td>24 HR: 911</td>
<td>Evacuation Assistance</td>
<td>Response locations to be determined by UC and PD</td>
<td>Evacuate public from Inundation Area</td>
</tr>
<tr>
<td>4 - D</td>
<td>Additional Mutual Aid Fire Departments as requested by UC</td>
<td>24 HR: 911</td>
<td>Traffic Control</td>
<td>Response locations to be determined by UC and PD</td>
<td>Control access into Inundation Area</td>
</tr>
<tr>
<td>4 - E</td>
<td>Vails Gate FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby in Quarters</td>
<td>Assist UC as Requested</td>
</tr>
<tr>
<td>4 - F</td>
<td>Beaver Dam Lake Advisory Board Chair</td>
<td>MAIN: 845-496-7009</td>
<td>Resource Subordinate to DPW</td>
<td>Respond to Dam Command Post</td>
<td>Assist as Directed by UC</td>
</tr>
<tr>
<td>4 - G</td>
<td>Blooming Grove Town Supervisor</td>
<td>MAIN: 845-496-5223 24 hr. Contact through Town PD</td>
<td>Manage Activities at Town Emergency Operations Center Public Information Officer / Media Liaison</td>
<td>Respond to Town of Blooming Grove Emergency Operations Center (Town Hall, Horton Road, Blooming Grove)</td>
<td>1. Activate Town of Blooming Grove Emergency Operations Center 2. Establish Communications with Dam Command Post 3. Establish Communications with Orange County Emergency Management Office 4. Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B</td>
</tr>
<tr>
<td>Alarm</td>
<td>Assignment / Role</td>
<td>Action(s)</td>
<td>Response Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------------</td>
<td>-----------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - H</td>
<td>Cornwall Town Supervisor</td>
<td>1. Activate Town of Cornwall Emergency Operations Center 2. Establish Communications with Dam Command Post 3. Establish County Emergency Management Office 4. Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B</td>
<td>Respond to Town of Cornwall Emergency Operations Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - I</td>
<td>New Windsor Town Supervisor</td>
<td>1. Activate Town of New Windsor Emergency Operations Center 2. Establish Communications with Dam Command Post 3. Establish County Emergency Management Office 4. Issue Emergency Evacuation of Inundation Area under NYS Executive Law Art 2-B</td>
<td>Respond to Town of New Windsor Emergency Operations Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - J</td>
<td>Orange County Emergency Management Office</td>
<td>1. Establish communications with Blooming Grove Emergency Operations Center 2. Activate County Emergency Operations Center 3. Provide support and obtain resources as requested</td>
<td>Orange County Emergency Operations Center at 911 Center</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Telephone Numbers**
- MAIN: 845-534-3760
- 24 HR Contact through Town PD
- MAIN: 845-563-4610
- 24 HR: 845-561-1328
- MAIN: 845-615-0565
- 24 HR: 911
### Beaver Dam Lake Dam Emergency Response Notification

#### DAM ADVISORY CONDITION

**Action Level 4**

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
</table>
| 4 – K | NYSEMO Warning Point | MAIN: 518-457-2200 24 HR: 911 | Resource | Albany | Monitors Incident  
Notifies State agencies as needed |
| 4 – M | Cornwall Central School District | MAIN: 845-534-8009 24 HR: 911 | Support Emergency Evacuation Reception Center | Cornwall High School  
Dragon Dr at Rt. 94 | 1. Open Emergency  
Evacuation Reception Center  
2. Assist Red Cross as requested |
| 4 – N | American Red Cross | 24 HR: 911 | Manage Emergency Evacuation Reception Center | Cornwall High School  
Dragon Dr at Rt. 94  
Taft Elementary School | Open, staff and manage Emergency  
Evacuation Reception Center |
| 4 – O | Cornwall Ambulance | 24 HR: 911 | Assist Red Cross | Cornwall High School  
Dragon Dr at Rt. 94  
Taft Elementary School | Assist at Red Cross at Emergency  
Evacuation Reception Center |
| 4 – P | New Windsor Ambulance | 24 HR: 911 | Assist Red Cross | Cornwall High School  
Dragon Dr at Rt. 94  
Taft Elementary School | Assist at Red Cross at Emergency  
Evacuation Reception Center |
| 4 – Q | NYS Police | MAIN: 845-782-8311  
24 HR: 866-723-3697 | Awareness | Standby | Assist as directed by Incident Commander |
| 4 – R | NYS DOT | MAIN: 845-431-5750  
24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
| 4 – S | OC Sheriff | MAIN: 845-615-4033  
24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
24 HR: 911 | Awareness | Standby | Assist as directed by Incident Commander |
| 4 – U | NYS Thruway Authority | MAIN: 866-691-8282  
24 HR: 911 | Awareness | Standby | As needed to protect their infrastructure |
| 4 – V | Metro North RR | 24 HR: 911 (MTA Police) | Awareness | Standby | As needed to protect their infrastructure |
### Beaver Dam Lake Dam Emergency Response Notification

#### DAM ADVISORY CONDITION

**Action Level 4**

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Notification</th>
<th>Telephone Number</th>
<th>Assignment / Role</th>
<th>Response Location</th>
<th>Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 – W</td>
<td>Cornwall-on-Hudson Water Dep't.</td>
<td>MAIN: 845-534-3449 24 hr-Contact through Cornwall PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>As needed to protect their infrastructure</td>
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<tr>
<td>4 – X</td>
<td>Mutual Aid</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>4 – Y</td>
<td>Vails Gate FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>4 – Z</td>
<td>Cornwall FD</td>
<td>24 HR: 911</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>4 – AA</td>
<td>Blooming Grove Highway Dep't.</td>
<td>MAIN: 845-496-3816 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
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<tr>
<td>4 – BB</td>
<td>Cornwall Highway Dep't.</td>
<td>MAIN: 845-534-2171 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
<tr>
<td>4 – CC</td>
<td>New Windsor Highway Dep't.</td>
<td>MAIN: 845-564-6660 24 HR: Contact through Town PD</td>
<td>Awareness</td>
<td>Standby</td>
<td>Assist as directed by Incident Commander</td>
</tr>
</tbody>
</table>
SECTION 5 TRAINING, UPDATING AND POSTING

TRAINING

The Owner is responsible for the training of all personnel involved in the implementation of the EAP. Training of the personnel involved in the implementation of this EAP should be thoroughly familiar with all elements of the plan, and are informed of their responsibilities and duties detailed in this EAP. Exercises should be conducted on a frequency as described below. Cross training of personnel is also required. A record of all training exercises should be kept including a roster of all individuals and their function under the drill.

Training courses should be held within 6 months of the implementation of this EAP. Additional training sessions should be held on an annual basis. The following activities should be part of the training:

1. For Advisory, Warning or Emergency Condition Identification.
   - Review of EAP
   - Review of specific responsibilities related to emergency operations
   - Review of conditions that would indicate the particular type of emergency
   - Instruction on identification of items in section 3

2. For Emergency Communications
   - Instruction on proper use of communication equipment
   - Instruction on appropriate individuals to contact and when to contact them

3. For Emergency Response Actions
   - Instruction on the role of each worker
   - Instruction on dam emergency response action for each type of emergency
   - Instruction on obtaining on/off-site materials and equipment
   - Instruction on determining the end of the emergency and all related communication

EXERCISING

Prepare scenarios for the various emergency conditions and test the state of training and readiness of key personnel responsible for actions during an emergency. Consideration of any special procedures required for nights weekends, and holidays should be included. The exercises should include all involved parties. The exercises should range from simple to complex.

The five “types” of exercises include: 1) Orientation Meeting, 2) Annual Test, 3) Tabletop Exercise, 4) Functional Exercise, 5) Full Scale Exercise.

The following is a brief description of each:

Orientation Meeting – This is where the dam owner introduces a new or significantly revised EAP to all involved parties and gives the opportunity to review and comment on the document.

Annual Test – Involves the calling of the telephone numbers on the flowchart. It may include the distribution of a specific test scenario with participants mailing back response forms to confirm the
accuracy of all contact information.

Tabletop Exercise – A tabletop exercise include the following:
- Higher level of exercise than the annual test
- Involves various levels of personnel
- Is held in an informal conference room environment
- Provides an opportunity to discuss the EAP and response procedures and to resolve questions throughout the exercise
- Participants practice a coordinated, effective response
- Should be held every 3 years

Functional Exercise – A functional exercise should include the following:
- Involves various levels of personnel without full activation of field personnel.
- Simulates emergency operations center environment
- Include time constraints
- Simulates dam failure and response
- Participants act out their roles
- Tests responses and coordination
- Should be held every 3-5 years

Full Scale Exercise – The full scale exercise should include the following:
- Interactive and with time constraints
- Actual mobilization of personnel and resources
- Tests deployment capabilities
- Should be held every 5 years

UPDATING

The EAP should be updated periodically after any change of owner, with significant changes in personnel or when any deficiencies in the plan are revealed. The EAP should be reviewed for adequacy at intervals not to exceed one year. A notice should be sent out to all plan holders every year with either the changes to the plan or statement that the plan was reviewed and there are no changes.

POSTING OF THE NOTIFICATION FLOWCHART

An updated copy of the Notification Flowchart should be posted in a prominent place at the dam site and local emergency operations center.

APPROVAL AND DISTRIBUTION

The Draft EAP shall be submitted to the NYS DEC for review and approval. Upon approval by the DEC the plan shall be finalized and distributed to all owners of the dam and to all agencies involved during an emergency. Upon receipt of the plan or revisions to the plan, all agencies shall send back to the owner a signed receipt.
EMERGENCY RESPONSE

All involved agencies involved with the EAP should review the plan, meet, discuss, prepare, implement, and practice all aspects as previously described.
SECTION 6 INUNDATION MAPS

See Appendix I for a copy of the inundation map. These maps are to be used as a planning tool to facilitate the EAP.
APPENDIX I

INUNDATION MAP
APPENDIX II

PLANS FOR TRAINING, EXERCISING, UPDATING & POSTING
APPENDIX III

LIST OF AGENCIES AND CONTACTS

New York State:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSDEC Region 3:</td>
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<tr>
<td>White Plains Office</td>
<td>914-428-2505</td>
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<tr>
<td>New Paltz Office</td>
<td>845-256-3000</td>
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<td>NYSDEC Dam Safety Section:</td>
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<td>Albany Office</td>
<td>518-402-8185</td>
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<tr>
<td>24 hour</td>
<td>518-852-0415</td>
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<td>NYS Police</td>
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</tr>
<tr>
<td>Main</td>
<td>845-782-8311</td>
</tr>
<tr>
<td>24 hour</td>
<td>866-723-3697</td>
</tr>
<tr>
<td>NY State Department of Transportation:</td>
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<tr>
<td>Region 8 Main Office</td>
<td>845-431-5750</td>
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<td>Emergency Services:</td>
<td>911</td>
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<td>NYS Emergency Management Office:</td>
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<tr>
<td>Office</td>
<td>518-242-5000</td>
</tr>
<tr>
<td>24 hour</td>
<td>518-292-2200</td>
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Orange County:

<table>
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<th>Agency</th>
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</thead>
<tbody>
<tr>
<td>Department of Public Works:</td>
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<td>Main Office</td>
<td>845-291-2750</td>
</tr>
<tr>
<td>Emergency</td>
<td>911</td>
</tr>
<tr>
<td>Emergency Management Office:</td>
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<tr>
<td>Main Office</td>
<td>845-615-0565</td>
</tr>
<tr>
<td>Emergency</td>
<td>911</td>
</tr>
<tr>
<td>Sheriff:</td>
<td></td>
</tr>
<tr>
<td>Main</td>
<td>845-651-4033</td>
</tr>
<tr>
<td>Emergency</td>
<td>911</td>
</tr>
<tr>
<td>Beaver Dam Lake Advisory Board Chair:</td>
<td></td>
</tr>
<tr>
<td>Main</td>
<td>845-496-7009</td>
</tr>
</tbody>
</table>
Town of Blooming Grove:

Supervisor:
Main 845-496-5223
24 hour Contact thru Police Dept.

Highway Department:
Main 845-496-3816
24 hour 911

Police Department:
24 hour 845-496-9161

Emergency Services (Fire, Ambulance):
24 hour 911

Town of Cornwall:

Supervisor:
Main 845-534-3760
24 hour Contact thru Police Dept.

Highway Department:
Main 845-534-2171
24 hour Contact thru Police Dept.

Police Department:
24 hour 845-534-8100

Emergency Services (Fire, Ambulance):
24 hour 911

Town of New Windsor:

Supervisor:
Main 845-563-4610
24 hour 845-561-1328

Highway Department:
Main 845-564-6660
24 hour Contact thru Police Dept.

Police Department:
24 hour 845-565-7000

Emergency Services (Fire, Ambulance):
24 hour 911
**Appendix K**  
EAP for the Beaver Dam Lake Dam  
last revised 12/14/16

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**Hospitals:**

Orange Regional Medical Center (Emergency Room):
- 24 hour 845-333-1300

St. Lukes (Emergency Department):
- 24 hour 845-568-2300

**Utility Companies:**

- Electric:
  - Orange and Rockland Utilities:
    - 24 hour 877-434-4100

- Telephone:
  - Frontier Communications:
    - 24 hour 800-921-8102

**Other:**

- NYS Thruway Authority (Sr. Dispatcher):
  - 24 hour 800-842-2233

- Metro North:
  - 24 hour 911 (MTA Police)

- Cornwall-on-Hudson Water Dep’t.:
  - Main 845-534-3449
  - 24 hour Contact thru T. Cornwall PD

- Vails Gate FD:
  - 24 hour 911

- National Weather Service (Upton)
  - 24 hour 631-924-0037
APPENDIX IV
EAP DISTRIBUTION

CONTROLLED DOCUMENT HOLDER

ORANGE COUNTY
  Department of Public Works
  Emergency Management Office
  Sheriff Department
  Beaver Dam Lake Advisory Board

TOWN OF BLOOMING GROVE
  Supervisor
  Police Department
  Fire Department
  Ambulance
  Superintendent of Highways

TOWN OF CORNWALL
  Supervisor
  Police Department
  Fire Department
  Ambulance
  Superintendent of Highways

TOWN OF NEW WINDSOR
  Supervisor
  Police Department
  Fire Department
  Ambulance
  Superintendent of Highways

SALISBURY MILLS
  Fire Department

VAILS GATE
  Fire Department

CORNWALL ON HUDSON WATER SUPERINTENDENT

METRO NORTH

NY THRUWAY AUTHORITY

ORANGE & ROCKLAND

NATIONAL WEATHER SERVICE (UPTON)
EAP DISTRIBUTION (CONTINUED)

NYS POLICE

NYSDEC

NYS EMERGENCY MANAGEMENT OFFICE

NYSDOT HUDSON VALLEY TRANSPORTATION
APPENDIX V

DEFINITIONS

The following words and terms, as used in this plan, shall have the following meanings, unless the context clearly indicates otherwise.

**DAM** - Any artificial dike, levee or other barrier, together with appurtenant works, which is constructed for the purpose of impounding water on a permanent or temporary basis, that raises the water level five feet or more above the usual, mean, low water height when measured from the downstream toe-of-dam to the emergency spillway crest or, in the absence of an emergency spillway, the top-of-dam.

**DRAWDOWN** - Lowering of lake/reservoir level through the use of flood gates, low level outlets, etc.

**EMERGENCY** - A condition in which the occurrence of a significant hazard to life or property is occurring.

**EMERGENCY ACTION PLAN (EAP)** - Established procedures necessary to minimize threat to life and damage to property in the event of a dam failure related release.

**EMERGENCY CONDITION** - Any of the four conditions identified in the Emergency Condition Identification section.

**EMERGENCY MANAGEMENT SERVICE (EMS)** - All the involved Emergency Management Office. (State, County or local) which would be involved in an emergency response.

**EMERGENCY OPERATION CENTER (EOC)** - The command post from which emergency operations are coordinated. Must contain a telephone/communication line or be close to one.

**FAILURE** - An incident resulting in the uncontrolled release of water from an operating dam.

**FILE NUMBER** - New York State identification number for the dam.

**HAZARD CLASSIFICATION** - Classification of potential hazard a dam failure would cause downstream of the dam.

- **Class “A”** – Dam failure will damage nothing more than isolated farm buildings, undeveloped lands or township or county roads.

- **Class “B”** – Dam failure can damage homes, main highways, minor railroads, or interrupt use or service of relatively important public utilities.

- **Class “C”** – Dam failure can cause loss of life, serious damage to homes, industrial or commercial buildings, important public utilities main highways, and railroads.

**INUNDATION** - Area that would be directly affected by flood waters resulting from a catastrophic dam failure.

**NY File No.** - New York State Identification Number for the dam.

**NY-DSS** - New York Department of Environmental Protection, Dam Safety Section.

**NYSEMO** - New York State Police, Emergency Management Office.
OUTLET - An opening through which water can be freely discharged from a lake/reservoir for a particular purpose.

OWNER/OPERATOR - Person/entity who owns, controls, operates, maintains, manages the dam.

PIPING - The progressive development of internal erosion by seepage, appearing downstream as a hole or seam discharging water that contains soil particles.

SINKHOLE - Any unusual subsidence.

SLUMPING - The movement of a mass of earth along and/or down a slope. In embankments and abutments, this involves the separation of a portion of the slope from the surrounding material.

SPILLWAY - A waterway/structure designed to convey excess water from a reservoir/lake without endangering the safety of the dam.

SPILLWAY DESIGN FLOOD - The flood associated with the spillway design storm upon which the hydraulic capacity of the spillway structure as designed.
APPENDIX VI

SURVEILLANCE & INCIDENCE FORMS
APPENDIX VII

TYPICAL FAILURE MODE
APPENDIX VIII

LIST OF OFF-SITE MATERIALS
# Appendix K

## EAP for the Beaver Dam Lake Dam

**Effective April 18, 2016 through April 17, 2017**

### Hot Mix Asphalt (RFB-OC037-16)

**Effective June 6, 2016 through April 17, 2017**

### Hot Mix Asphalt - Additional Materials (RFB-OC076-16)

<table>
<thead>
<tr>
<th>RFB-OC037-16</th>
<th>Callanan</th>
<th>Joint Lime</th>
<th>Mclaren</th>
<th>Tetz</th>
<th>Ticon</th>
<th>Ticon</th>
<th>Ticon</th>
<th>R. Young</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monticello</td>
<td>New Windsor</td>
<td>Wurtsboro</td>
<td>Middletown</td>
<td>Newburgh</td>
<td>Maybrook</td>
<td>Goshen</td>
<td>Hewitt NJ</td>
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<td>FOB PLANT</td>
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<td>402.029902, Shell course F9</td>
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<td>71.00</td>
<td>77.00</td>
<td>77.00</td>
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<td>66.90</td>
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### RFB-OC076-16 (NEW ITEMS)

| RFB-PLANT | 64.50 | 67.90 | 64.00 | 70.00 | 70.00 | 70.00 | 70.00 | No Bid |
| FOI PLANT | 76.00 | 76.90 | 68.00 | 75.00 | 80.00 | 80.00 | 80.00 | No Bid |
| IC Shell, Modified shell course F3 | 74.00 | 73.90 | 70.00 | 70.00 | 77.00 | 77.00 | 77.00 | No Bid |
| 402.03830118, Misc. patching F3 | 70.00 | 70.00 | 68.00 | 70.00 | 72.00 | 77.00 | 77.00 | No Bid |
| 402.06200118, 6.3 Superflat Top F3 | 71.00 | 76.50 | 68.00 | 70.00 | 74.00 | 74.00 | 74.00 | No Bid |

### HAUL PRICE DELIVERED

| 0-5 miles | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid |
| 5-15 miles | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid |
| 16-35 miles | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid | No Bid |

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*Any award shall be subject to the issuance of a purchase order or the execution of a contract between the bidder and the County of Orange.*

James P. Burstoe
Commissioner of General Services
Gravel, Borrow, Topsoil etc. (RFB-OC005-16)
Letting of Thursday, April 13, 2016 @ 3:00PM

<table>
<thead>
<tr>
<th>209 Sand &amp; Gravel</th>
<th>Callahan &amp; Nannini Concrete</th>
<th>Dick's Concrete</th>
<th>Eastern Concrete</th>
<th>EBS Associates Sand &amp; Gravel</th>
<th>Ellenville Sand &amp; Gravel</th>
<th>E. Tetz</th>
<th>Grosso Materials</th>
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<td>1 Rob Gravel</td>
<td>6.00</td>
<td>14.50</td>
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<td>3 Topsoil (unscreened)</td>
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<td>4 Topsoil (screened)</td>
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<td>17.50</td>
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<td>10 Sand for ice control</td>
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<td>15.50</td>
<td>12.00</td>
<td>10.00</td>
<td>6.75</td>
<td>16.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Haul Distance</th>
<th>0-5</th>
<th>6-15</th>
<th>10-33</th>
</tr>
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<tbody>
<tr>
<td>Distance</td>
<td>5.25</td>
<td>7.50</td>
<td>9.50</td>
</tr>
<tr>
<td>Distance</td>
<td>5.50</td>
<td>7.00</td>
<td>8.50</td>
</tr>
<tr>
<td>Distance</td>
<td>4.25</td>
<td>5.25</td>
<td>6.25</td>
</tr>
<tr>
<td>Distance</td>
<td>4.25</td>
<td>5.00</td>
<td>8.25</td>
</tr>
<tr>
<td>Distance</td>
<td>5.25</td>
<td>4.65</td>
<td>9.10</td>
</tr>
</tbody>
</table>

* denotes award

* Any award shall be subject to the issuance of a purchase order or the execution of a contract between
the bidder and the County of Orange.

James P. Burpoe
Commissioner of General Services

**Plant Location**

| 209 Sand & Gravel | 299 Main Street, Napocono, NY |
| Dick's Concrete   | 276 Clove Road, Salisbury Mills, NY |
| Eastern Concrete  | 1033 CR 37, New Hampton, NY |
| EBS Associates    | 123 Ryan Street, Port Jervis, NY |
| Ellenville Sand & Gravel | 3620 Rt. 23W, North Hampton, NJ |
| E. Tetz           | 45 N. Main Street, Ellenville, NY |
| Grosso Materials  | 90 Colabaro Road, Montgomery, NY |
Effective March 31, 2016 through March 30, 2017

<table>
<thead>
<tr>
<th>Callahan &amp; Nannini</th>
<th>Callahan</th>
<th>Eastern Concrete</th>
<th>F Tetz</th>
<th>Grosso</th>
<th>Ticon</th>
<th>Ticon</th>
<th>Ticon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salisbury Mills</td>
<td>Monticello</td>
<td>Hamburg/Wantage</td>
<td>Slate Hill, Mingo Valley</td>
<td>Clinton Pt</td>
<td>W, Nyack</td>
<td>Goshen</td>
<td></td>
</tr>
<tr>
<td>1 NYS 1A</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>2 NYS #1ST</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>3 NYS #2</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>4 NYS #3</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
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<td>23.00</td>
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<tr>
<td>5 NYS 30H.12H</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>6 Fine stone fill</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>7 Light stone fill</td>
<td>16.50</td>
<td>25.00</td>
<td>15.00</td>
<td>21.00</td>
<td>11.00</td>
<td>18.00</td>
<td>23.00</td>
</tr>
<tr>
<td>8 Medium stone fill</td>
<td>22.75</td>
<td>19.00 $99/hr portal to portal</td>
<td>28.90</td>
<td>31.00</td>
<td>15.75</td>
<td>28.90**</td>
<td>39.00***</td>
</tr>
<tr>
<td>9 Heavy stone fill</td>
<td>22.75</td>
<td>22.00 $125/hr portal to portal</td>
<td>31.00</td>
<td>37.00</td>
<td>15.75</td>
<td>28.90**</td>
<td>39.00***</td>
</tr>
<tr>
<td>10 River rock #2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11 Washed pea gravel</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Haul Distance**

<table>
<thead>
<tr>
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<th>0-5</th>
<th>5-10</th>
<th>11-15</th>
<th>15-35</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bids</strong></td>
<td>5.50</td>
<td>7.50</td>
<td>9.00</td>
<td>11.00</td>
</tr>
</tbody>
</table>

*indicates award

* Any award shall be subject to the issuance of a purchase order or the execution of a contract between the bidder and the County of Orange.

James P. Borres
Commissioner of General Services

**Locations:**
- Callahan & Nannini - 276 Clove Road, Salisbury Mills, NY
- Eastern Concrete - 3020 Route 23, Hamburg, NJ
- Eastern Concrete - 80 Route 23, Wantage, NJ 07461
- E. Tetz - Cemetery Road, Middletown, NY
- E. Tetz - Winterton Road, Bloomingburg, NY
- E. Tetz - Route 6, Slate Hill, NY
- E. Tetz - Route 17B, Mingo Valley, NY
- Grosso - 90 Callaway Road, Montgomery, NY
- Ticon - Clinton Point Quarry, 461 Sheaf Road, New Hamburg, NY
- Ticon - West Nyack Quarry, Crabber Road, West Nyack, NY
- Ticon - Goshen Quarry, 2 Quarry Road, Goshen, NY

*Last revised 12/14/16*
APPENDIX IX

LIST OF OFF-SITE EQUIPMENT
APPENDIX X

LIST OF CONTRACTORS
## APPENDIX X

### LIST OF CONTRACTORS

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liodice Excavating, Inc.</td>
<td>914-557-0590</td>
</tr>
<tr>
<td>783 Guymard Turnpike Otisville, NY 10963</td>
<td></td>
</tr>
<tr>
<td>Sun Up Enterprises, Inc.</td>
<td>845-462-1800</td>
</tr>
<tr>
<td>1903 State Rte 376 Wappingers Falls, NY 12590</td>
<td></td>
</tr>
<tr>
<td>Roehrs Construction, Inc.</td>
<td>845-883-6500</td>
</tr>
<tr>
<td>139 Station Road Clintondale, NY 12515</td>
<td></td>
</tr>
<tr>
<td>McCarey Landscaping, Inc.</td>
<td>845-956-7000</td>
</tr>
<tr>
<td>80 Tower Drive Middletown, NY 10941</td>
<td></td>
</tr>
<tr>
<td>5L Enterprises, Inc.</td>
<td>845-343-7170</td>
</tr>
<tr>
<td>41 Howells Road Otisville, NY 10963</td>
<td></td>
</tr>
<tr>
<td>Boyce Excavating</td>
<td>845-343-5400</td>
</tr>
<tr>
<td>88 Monhagon Ave. Middletown, NY 10940</td>
<td></td>
</tr>
</tbody>
</table>
County of Orange 2018 Holiday Schedule

DEPARTMENT OF HUMAN RESOURCES
30 MATTHEWS STREET, SUITE 303A
GOSHEN, NEW YORK 10924

New Year’s Day – January 1, Monday
Martin Luther King, Jr.’s Birthday - January 15, Monday
Lincoln's Birthday – February 12, Monday
Washington's Birthday - February 19, Monday
Memorial Day - May 28, Monday
Independence Day - July 4, Wednesday
Labor Day – September 3, Monday
Columbus Day - October 8, Monday
Election Day - November 6, Tuesday
Veteran's Day - November 11, Sunday; observed November 12, Monday
Thanksgiving Day - November 22, Thursday
Half-Day Before Christmas - December 24, Monday
Christmas Day - December 25, Tuesday
Half-Day Before New Year's - December 31, Monday
LIST OF REQUIRED SUBMITTALS

1. Project schedule (to include lake drawdown) – must be submitted at pre-construction meeting or before
2. MWBE Utilization Plan – submit before any works starts
3. Quarterly MWBE Contractor Compliance Reports (10th day following each quarter)
4. Section 02010 – Mobilization and Demobilization – Field Office with office equipment
5. Section 02080 – Structural Removal – Pre-removal photographs
6. Section 02140 – Control of Water - Control of Water plan
7. Section 02170 – Steel Sheet Piling
8. Section 02209 – Geotextiles
9. Section 02270 – RipRap
10. Section 02272 - Soil and Erosion Control
11. Section 02290 – Earthfill
12. Section 02455 - Micropiles
13. Section 02495 - Site restoration - schedule of values
14. Section 02512 - Concrete surface preparation – manufacturers certification
15. Section 02600 - Pipe line installation – test reports, certifications, shop drawings, etc..
16. Section 02602 - Leakage tests – test result reports
17. Section 02618 - Ductile iron pipe
18. Section 02831 - Chain link fence
19. Section 02831 - Waterstop
20. Section 02831 - Joint Sealants
21. Section 11202 – Sluice Gates – shop drawings, catalog cuts, etc..
22. Section 15110 – Manual Sluice Gate Operators – shop drawings, etc..
23. Section 15110.1 - Electric Sluice Gate Operators (Add Alternate No. 1) – shop drawings, etc..
24. Section 16095 – Electrical Systems Identification
25. Section 02010 – Conduits – detailed shop drawings, etc..
26. Section 02010 – Wires and cables – detailed shop drawings, etc..
27. Section 02010 – Wiring devices – shop drawings, etc..
28. Section 02010 – Enclosures
29. Section 02010 - Electrical distribution systems, aerial – manufacturer’s cut sheets, etc.
30. Section 02010 - Electrical grounding – material list, etc.
31. Section 02010 - Panel board and circuit protection devices – detailed shop drawings, etc.
32. Section 02010 - Low-Voltage Electrical Service Entrance – Operation & maintenance manual, etc..
33. Section 02010 - Fusegate Steel Reinforcement – shop drawings, etc
34. Section 02010 - Fusegate plant precast concrete – shop drawings, product data, etc..
35. Section 02010 - Fusegate Metal Fabrications – Product data, shop drawings, etc..
Appendix M
List of Required Submittals and Contractor Submittal Form

Submittal Number: ___________

CONTRACTOR SUBMITTAL FORM

Job Name: ___________________________________________________________

Contractor: _________________________________________________________

Address: ___________________________________________________________

Contractor’s Contact: ___________________________ Phone Number: __________

Reviewed By: __________________________________ Date Submitted: ___________

☐ Check here if submittal is from a subcontractor

Item No.: ___________________________

Specification Section and Paragraph: _________________________________

CERTIFICATION

I HEREBY CERTIFY that the attached submittal has been reviewed under the terms of the Contract Documents and is in conformity with the requirements of the plans and specifications unless specifically noted otherwise. It is understood that the Contractor is responsible for dimensions and quantities to be confirmed and correlated at the site, for information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction, and for coordination of the Work of all trades.

☐ 1 – Submitted as specified
☐ 2 – Submitted “AS EQUAL” to the product specified
☐ 3 – Submitted “IN SUBSTITUTION” to the product specified
☐ 4 – Subcontractor submittal form included
☐ 5 – Other

Description of Submittal Components: _________________________________

________________________________________________________

Contractor signature ___________________________
August 5, 2011

Ronald J. Meyer, P.E.
Orange County Department of
Public Works
P.O. Box 509, 2455-2459 Route 17M
Goshen, NY 10924

Dear Mr. Meyer:

Thank you for your letter of August 2, 2011, requesting documentation of this Department’s recommendations regarding the drawdown of Beaver Dam Lake, in order to make repairs to the dam in accordance with NYS DEC Dam Safety requirements.

As I stated during the Beaver Dam Lake Association meeting on September 30, 2010, as Beaver Dam Lake is privately owned, DEC will not mandate that measures be taken to prevent fish mortality during the drawdown of the water level. However, we do recommend that efforts be made to minimize loss of the fish community inhabiting the lake. Measures that may reduce fish mortality include:

- Lowering the water level slowly at a constant rate to allow fish to migrate upstream.
- Drawing down the lake level only as low as needed to implement repairs to the dam.
- Maintaining pools of water in deeper areas of the lake if feasible. If the lake will be drawn down for an extended period, mechanical aeration of the pool may be necessary.
- If the lower release at the base of the dam will be opened, crowding any remaining fish in the lake toward the outlet, prior to opening the release valve, to encourage their movement downstream of the dam.

Other measures may also be appropriate. In any case, there will likely be some level of fish mortality. The Beaver Dam Lake Association may want to consider a contingency plan for carcass removal and disposal, as needed.

Please be aware that removal and transport of any fish to another waterbody is prohibited. In addition, should the lake association wish to restock the lake after dam repairs are made and the lake is refilled, a fish stocking permit from DEC is required.

Please contact me at (845) 256-3070 or via email at lwilson@dec.ny.gov if you require additional information.

Sincerely,

Larry Wilson
Dam Safety Unit

cc: S. Braymer, Dam Safety Unit
# TEST BORING LOG

**PROJECT**
Beaver Dam Lake Dam  
Newburgh, New York

**DATE STARTED**
11/6/85  
**DATE COMPLETED**
11/7/85

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING  
30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/  
"OR — % CORE RECOVERY # HAMMER FALLING

**CASING TYPE** — NW

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE DRIVE RECORD PER 6&quot;</th>
<th>N</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>STRATA CHANGE DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOPSOIL</td>
<td>1.5'</td>
</tr>
<tr>
<td></td>
<td>5'-6'</td>
<td>1A</td>
<td>8/14</td>
<td>28</td>
<td>Brown wet very stiff SILT and fine to coarse SAND, some fine to medium gravel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6'-7'</td>
<td>1B</td>
<td>14/18</td>
<td></td>
<td>Brown-gray moist to wet hard SILT, coarse to fine GRAVEL and fine to coarse SAND</td>
<td>6.0'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.0'-12.0'</td>
<td>2</td>
<td>7/8</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.0'</td>
<td></td>
<td></td>
<td></td>
<td>Brown wet very loose to medium dense fine to coarse SAND, fine to coarse GRAVEL and SILT</td>
<td>14.0'</td>
</tr>
<tr>
<td></td>
<td>15.0'-17.0'</td>
<td>3</td>
<td>Rec 2/3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17.0'-19.0'</td>
<td>4</td>
<td>5/8</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20.0'-22.0'</td>
<td>5</td>
<td>26/14</td>
<td>27</td>
<td>Weathered CONCRETE</td>
<td>23.0'</td>
</tr>
<tr>
<td></td>
<td>24.5'-24.7'</td>
<td>6</td>
<td>No Rec 50'-.2'</td>
<td></td>
<td>Bottom of Boring</td>
<td>25.7'</td>
</tr>
<tr>
<td></td>
<td>24.7'</td>
<td></td>
<td></td>
<td></td>
<td>Note: Unable to penetrate below 25.7' with diamond core barrel,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25.7'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GROUND WATER WHILE DRILLING**
Dry

**EAST SYRACUSE, N.Y.**

**HOLE NO.**
E-185-471

**SURF. EL.**
85200

**JOB NO.**
85200

**BEFORE CASING REMOVED**

**AFTER CASING REMOVED**

**SHEET**
10F 1

**File #**
3187.003

---

**APPENDIX O**

Beaver Dam Lake Dam Soil Borings  
1987 & 1988
<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>C</th>
<th>SAMPLE DRIVE RECORD PER 6&quot;</th>
<th>N</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>STRATA CHANGE DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOPSOIL</td>
<td>1.0'</td>
</tr>
<tr>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Brown wet medium dense to very dense fine to coarse SAND, SILT and fine to coarse GRAVEL, few boulders</td>
<td></td>
</tr>
<tr>
<td>5.0-</td>
<td>1</td>
<td></td>
<td>3</td>
<td></td>
<td>20</td>
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<tr>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0</td>
<td></td>
<td></td>
<td>15/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Weathered CONCRETE</td>
<td>12.3'</td>
</tr>
<tr>
<td>10.0-</td>
<td>2</td>
<td></td>
<td>55</td>
<td></td>
<td></td>
<td>Bottom of Boring</td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Note: Struck boulder @ 9.0' in original boring, offset to complete boring. Lost core water at 13.0'</td>
<td></td>
</tr>
<tr>
<td>12.3-</td>
<td>R-1</td>
<td>RecNX Core</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.8</td>
<td></td>
<td></td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td>13.8'</td>
</tr>
</tbody>
</table>

Sheet 1 of 1  
File #3187.003
## TEST BORING LOG

**PROJECT**
Beaver Dam Lake Dam
Newburgh, New York

**LOCATION**
Beaver Dam Lake Dam
Newburgh, New York

**DATE STARTED** 11/12/85  **DATE COMPLETED** 11/12/85

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586, STANDARD PENETRATION TEST
C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
*OR — % CORE RECOVERY

**CASING TYPE**

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE DRIVE RECORD PER 6&quot;</th>
<th>N</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>STRATA CHANGE DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td>Drove NW casing to refusal without sampling</td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td>Refusal Bottom of Boring 12.3'</td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td>Note: This boring offset 5.0' from hole #2.</td>
<td></td>
</tr>
</tbody>
</table>

**HOLE NO.** B-2A-85-473
**SURF. EL.**
**JOB NO.** 85200
**GROUND WATER DEPTH WHILE DRILLING** Dry
**BEFORE CASING REMOVED** Dry
**AFTER CASING REMOVED** Dry

**SHEET 1 OF 1**
## TEST BORING LOG

**PROJECT** Beaver Dam Lake Dam  
**LOCATION** Newburgh, New York  
**DATE STARTED** 11/13/85  
**DATE COMPLETED** 11/13/85

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>C</th>
<th>SAMPLE DRIVE RECORD PER 6&quot;</th>
<th>N</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>STRATA CHANGE DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0'</td>
<td>R-1 Rec</td>
<td>NX Core</td>
<td>1.5'</td>
<td>75%</td>
<td></td>
<td>CONCRETE with large cobbles and boulders</td>
<td></td>
</tr>
<tr>
<td>2.0'</td>
<td>R-2 Rec</td>
<td>NX Core</td>
<td>0.8'</td>
<td>80%</td>
<td></td>
<td>Lost water at 6.0', water leaking from lake side of dam</td>
<td></td>
</tr>
<tr>
<td>3'-4.8'</td>
<td>R-3 Rec</td>
<td>NX Core</td>
<td>1.5'</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8'-6.0'</td>
<td>R-4 Rec</td>
<td>NX Core</td>
<td>2.9'</td>
<td>69%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0'</td>
<td>R-5 Rec</td>
<td>NX Core</td>
<td>2.0'</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bottom of Dam 14.5'</td>
<td></td>
</tr>
<tr>
<td>15.0-15.6'</td>
<td>1</td>
<td>10/15</td>
<td></td>
<td></td>
<td></td>
<td>Brown wet medium dense coarse to fine GRAVEL, some coarse to fine sand, little silt</td>
<td></td>
</tr>
<tr>
<td>17.0-17.6'</td>
<td>2</td>
<td>11/10</td>
<td></td>
<td></td>
<td></td>
<td>19.0'</td>
<td></td>
</tr>
<tr>
<td>19.0-19.6'</td>
<td>3</td>
<td>10/12</td>
<td></td>
<td></td>
<td></td>
<td>Brown-gray wet to moist hard SILT, some clay, some fine to coarse sand, little fine to medium gravel</td>
<td></td>
</tr>
<tr>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bottom of Boring 25.0'</td>
<td></td>
</tr>
</tbody>
</table>

**HOLE NO.** B-3-85-474  
**SURF. EL.**  
**JOB NO.** 85200  
**GROUND WATER DEPTH WHILE DRILLING** 14.0'  
**BEFORE CASING REMOVED** 14.0'  
**AFTER CASING REMOVED** 14.0'

**CASING TYPE** - NW  
**SHEET** 1 OF 1  
**FILE #** 3187.003
## TEST BORING LOG

**PROJECT**  
Beaver Dam Lake Dam  
Newburgh, New York

**LOCATION**

**DATE STARTED** 11/14/85  
**DATE COMPLETED** 11/15/85

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING  
"OR — % CORE RECOVERY

**CASING TYPE** — NONE

### DEPTH VS SAMPLE DEPTH

<table>
<thead>
<tr>
<th>Sample Depth</th>
<th>Sample Number</th>
<th>C (Drive Record Per 6&quot;)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0’ - 2.9’</td>
<td>R-1 Rec</td>
<td>NX Core</td>
<td>45%</td>
</tr>
<tr>
<td>2.0’ - 4.0’</td>
<td>R-2 Rec</td>
<td>NX Core</td>
<td>40%</td>
</tr>
<tr>
<td>4.0’ - 6.0’</td>
<td>R-3 Rec</td>
<td>NX Core</td>
<td>65%</td>
</tr>
<tr>
<td>6.0’ - 8.0’</td>
<td>R-4 Rec</td>
<td>NX Core</td>
<td>81%</td>
</tr>
<tr>
<td>9.0’ - 10.0’</td>
<td>R-5 Rec</td>
<td>NX Core</td>
<td>77%</td>
</tr>
<tr>
<td>12.0’ - 12.5’</td>
<td>R-6 Rec</td>
<td>NX Core</td>
<td>77%</td>
</tr>
<tr>
<td>15.0’ - 17.5’</td>
<td>R-7 Rec</td>
<td>NX Core</td>
<td>84%</td>
</tr>
<tr>
<td>20.0’ - 22.0’</td>
<td>R-8 Rec</td>
<td>NX Core</td>
<td>98%</td>
</tr>
<tr>
<td>22.0’ - 27.0’</td>
<td>R-9 Rec</td>
<td>NX Core</td>
<td>60%</td>
</tr>
<tr>
<td>27.0’ - 28.0’</td>
<td>R-9 Rec</td>
<td>NX Core</td>
<td>200%</td>
</tr>
</tbody>
</table>

### DESCRIPTION OF MATERIAL

<table>
<thead>
<tr>
<th>Strata Change Depth</th>
<th>Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom of Boring</td>
<td>28.0’</td>
</tr>
</tbody>
</table>

**Note:** Lost water at 7.0’, water leaking from lake side of dam, water returned at 8.0’, lost water again at 18.2’.

**FISHER ROAD**  
EAST SYRACUSE, N.Y. 13057

**HOLE NO.** B-6-85-475

**SURF. EL.**

**JOB NO.** 852 00

**GROUND WATER DEPTH**  
WHILE DRILLING 9.5’

**BEFORE CASING REMOVED**

**AFTER CASING REMOVED**

**SHEET 1 OF 1**
## TEST BORING LOG

**PROJECT**
Beaver Dam Lake Dam
Newburgh, New York

**LOCATION**

**DATE STARTED** 12/19/85  **DATE COMPLETED** 12/20/85

**N** — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

**C** — NO. OF BLOWS TO DRIVE CASING 12" W/ HAMMER FALLING "OR — % CORE RECOVERY

### CASING TYPE

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>C Rec</th>
<th>SAMPLE DRIVE RECORD PER 6&quot;</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0' - 0.8'</td>
<td>R-1</td>
<td>0.6'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.8'</td>
<td>R-2</td>
<td>2.1'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8'</td>
<td></td>
<td>175%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8'</td>
<td>R-3</td>
<td>2.1'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8'</td>
<td>R-4</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8'</td>
<td></td>
<td>1.7'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.8'</td>
<td>R-5</td>
<td>0.9'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.8'</td>
<td>R-6</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.8'</td>
<td>R-7</td>
<td>1.1'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.8'</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.8'</td>
<td>R-8</td>
<td>1.6'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.8'</td>
<td></td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.8'</td>
<td>R-9</td>
<td>1.6'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.8'</td>
<td></td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.8'</td>
<td>R-10</td>
<td>0.8'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.8'</td>
<td></td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.8'</td>
<td>R-11</td>
<td>1.1'</td>
<td>NX Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.8'</td>
<td></td>
<td>55%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Boring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.8'</td>
</tr>
</tbody>
</table>

**DESCRIPTION OF MATERIAL**

- Weathered CONCRETE, BRICK and BOULDERS
- 8.6' - 8.7', void, temporary water loss
- Weathered CONCRETE

**STRATA CHANGE DEPTH**

- Bottom of Boring
- Note: No water loss, hole filled with drill water on completion.
## Appendix O
Beaver Dam Lake Dam Soil Borings
1987 & 1988

### 85189
BEAVER DAM LAKE DAM
NEWBURGH, NEW YORK

### SIEVE ANALYSIS - SAMPLE B-1

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>100.0</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>94.1</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>89.2</td>
</tr>
<tr>
<td>#4</td>
<td>81.6</td>
</tr>
<tr>
<td>#10</td>
<td>73.0</td>
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<td>#30</td>
<td>61.6</td>
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<td>#40</td>
<td>58.8</td>
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<td>#60</td>
<td>54.1</td>
</tr>
<tr>
<td>#100</td>
<td>47.9</td>
</tr>
<tr>
<td>#200</td>
<td>40.8</td>
</tr>
</tbody>
</table>
PUBLIC IMPROVEMENT CONTRACT

THIS AGREEMENT ("Contract") entered into and effective Month Day, 2018 between the County of Orange, a municipal corporation and county of the State of New York, by and through its Department of Public Works having its principal office at 2455-2459 Route 17M, Goshen, New York, 10924 ("County"), and Contractor's Name a State of Registration business entity type e.g. sole proprietorship having its principal office at principal business address, if different than service address add "with services to be performed from offices at address" ("Contractor"),

WITNESSETH: That County and Contractor, for the promises and consideration set forth herein, agree as follows:

1. CONTRACT DOCUMENTS. The Contract Documents consist of this Public Improvement Contract, all incorporated and attached components of RFB-OC153-17 for Rehabilitation of Beaver Dam Lake Dam ("RFB") with the Bid and all RFB forms as completed by Contractor including, but not limited to, as may be included in the RFB, the Instructions to Bidders, Specifications, Plans, General Conditions, Iran Divestment Act Certification, all RFB addenda, if any, Prevailing Wage Schedule PRC#2017013459, and all properly executed Contract modifications.

2. WORK TO BE DONE. Contractor, at its cost and expense, shall furnish all materials, appliances, tools, and labor of every kind required by the Contract Documents (the "Work") and will complete and finish the Work in the most workmanlike manner in strict compliance with the Contract Documents, for the price of:

   Dollars ($###.##)

Should the amount of Work be increased or decreased due to special conditions encountered in the Work, or where ordered by the Commissioner of the Orange County Department of Public Works ("Department Head") or his or her designee, the Contractor agrees that the basis of compensation for such increase or decrease shall be by Unit Bid Prices or as otherwise agreed upon pursuant to §7 of this Contract.

3. EXAMINATION OF DOCUMENTS AND SITE. Contractor agrees that before making its bid or proposal, it carefully examined the Contract Documents, together with the Work Site and is fully informed regarding all of the conditions affecting the Work to be done and the labor and materials to be furnished for the completion of this Contract. Contractor shall secure, at its cost and expense, all applicable and necessary permits from County, New York State, federal, applicable local or other public authorities required in connection with the Work.

4. TIME OF COMPLETION. Contractor shall begin the Work within ten (10) days after the effective date of this Contract, unless the written consent of the Department Head is given to begin at a later date. Time is of the essence and Contractor will prosecute the Work without interruption, so that it will be entirely completed and performed by 4:00 P.M., prevailing time on November 30, 2018 unless the time is extended by written change order at the sole discretion of the County.

5. LIQUIDATED DAMAGES FOR DELAY. The parties recognize and agree that time is of the essence and the Work shall be accomplished within the time stated in §4 of this Contract. Since actual damages are speculative in nature and not readily ascertainable, liquidated damages shall apply if Contractor is unable to achieve substantial completion by the date agreed upon and through no fault of the County, its officers, employees and/or other contractors. Should the Work, including any previously approved change orders, not be substantially completed within the time specified and, unless an extension of time has been granted by the County, the Contractor shall forfeit the sum of $1,500.00 Dollars per day, for each and every calendar day from and after the time during which the Work, including any approved change orders, shall remain unfinished and incomplete. The forfeited sum(s) shall be deemed Liquidated Damages and shall be deducted from the sum agreed to be paid to the Contractor by the County.

DGS RFB A8 Minor Closed (12/14)
under the terms of this Contract or any binding addendum and/or change order. This provision shall not be construed as a penalty.

6. PERFORMANCE. The Work under this Contract is to be done to the satisfaction of the Department Head and all materials shall be subject to his or her acceptance.

7. CHANGES IN THE WORK AND CLAIMS FOR EXTRA WORK. To the extent permissible under New York State Law, County reserves the right to order extra Work, or make changes by altering, adding to, or deducting from the Work without invalidating the Contract. The Contract Price shall be increased or decreased by any one of the following mutually agreeable methods, to the extent any are legally applicable:

7.1 Using the Unit Price Bid;
7.2 Negotiated Lump Sum price; or
7.3 Negotiated Time and Material price.

Any claims for extension of time caused by changes shall be stated in writing and shall be subject to County approval.

8. DEDUCTIONS. County shall make an equitable deduction from the Contract Price for any uncorrected Work or Work not done in accordance with the Specifications. In addition, County shall deduct contingency or other amounts required to close out the Contract upon completion of the Work.

9. PAYMENT.

9.1 Contractor shall adhere to all provisions of New York State Labor Law regarding certified payrolls. With each requisition, Contractor shall submit a certified payroll of the amount paid for wages and applicable supplements for all employees. Certified payrolls shall be submitted for all employees of the Contractor and any Subcontractor(s) utilized by the Contractor. In addition, County reserves the right to require Contractor to submit with any requisition a detailed statement of all materials utilized and paid for by Contractor.

9.2 The County will audit each month and pay such amount, as the Department Head certifies has been earned by Contractor, less five (5) percent retainage which will be paid to Contractor upon completion of the Work.

9.3 Upon the faithful performance and full completion of the Work and within thirty (30) days after acceptance by County, County will pay to Contractor the remaining amount of the Contract Price, (taking into account any additions or deductions) less the total of all previous payments. The acceptance by the Contractor of the final payment shall be and operate as a release to the County of all claims and liability to the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the County, and others relating to or arising out of this Work, excepting the Contractor's claim for interest upon the final payment, if this payment be improperly delayed. No payment, however, final or otherwise, shall operate to release the Contractor or Contractor's sureties from any obligations under this Contract or the Performance or Payment Bonds.

10. LABOR LAW COMPLIANCE.

10.1 Pursuant to New York State Labor Law 220(2), no laborer, worker or mechanic in the employ of the Contractor, Subcontractor or other person doing or contracting to do the whole or a part of the Work shall be
permitted or required to work more than eight hours in any one calendar day or more than five days in any one week except in cases of extraordinary emergency including fire, flood or danger to life or property. No such person shall be so employed more than eight hours in any day or more than five days in any one week except in such emergency. Extraordinary emergency within the meaning of this §10 shall be deemed to include situations in which sufficient laborers, workers and mechanics cannot be employed to carry on public work expeditiously as a result of such restrictions upon the number of hours and days of labor and the immediate commencement or prosecution or completion without undue delay of the public work is necessary in the judgment of the New York State Commissioner of Labor ("Labor Commissioner") for the preservation of the Contract Site and for the protection of the life and limb of the persons using the same. Upon the application of any person interested, the Labor Commissioner shall make a determination as to whether or not on any public project or on all public projects in any area of this state, sufficient laborers, workers and mechanics of any or all classifications can be employed to carry on Work expeditiously if their labor is restricted to eight hours per day and five days per week, and in the event that the Labor Commissioner determines that there are not sufficient workers, laborers and mechanics of any or all classifications which may be employed to carry on such Work expeditiously if their labor is restricted to eight hours per day and five days per week, and the immediate commencement or prosecution or completion without undue delay of the public work is necessary in the judgment of the Labor Commissioner for the preservation of the Project Site and for the protection of the life and limb of the persons using the same. Whenever such a dispensation is granted, all Work in excess of eight hours per day and five days per week shall be considered overtime Work, and the laborers, workers and mechanics performing such Work shall be paid a premium wage commensurate with the premium wages prevailing in the area in which the Work is performed. No such dispensation shall be effective with respect to any public work unless and until the County certifies to the Labor Commissioner that such Project is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public. Time lost in any week because of inclement weather by employees engaged in the construction, reconstruction and maintenance of highways outside of the limits of cities and villages may be made up during that week and/or the succeeding three weeks.

10.2 Pursuant to New York State Labor Law 220(3)(a) each laborer, workman or mechanic, employed by Contractor, any Subcontractor or other person on this Project shall be paid not less than the prevailing rate of wages and supplements set by the New York State Department of Labor.

10.3 Pursuant to New York State Labor Law 220(3)(d)(iv), the filing of payrolls in a manner consistent with Labor Law 220(3-a) is a condition precedent to payment of any sums due and owing for Work done upon the Project.

10.4 Pursuant to Labor Law 220-d, the prevailing wage rate and supplement schedule was specified in the RFB. Laborers, workingmen or mechanics shall be paid not less than such prevailing wage rates and supplements.

10.5 Pursuant to Labor Law 220-e, Contractor and every Subcontractor agrees:

10.5.1 that in the hiring of employees for the performance of Work under this Contract or any subcontract hereunder, no Contractor, Subcontractor, nor any person acting on behalf of such Contractor or Subcontractor, shall by reason of race, creed, color, 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;
10.5.2 that no Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of Work under this Contract on account of race, creed, color, disability, sex or national origin;

10.5.3 that there may be deducted from the amount payable to Contractor by the County under this Contract a penalty of fifty dollars ($50.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract;

10.5.4 that this Contract may be cancelled or terminated by New York State or the County, and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this §10 of the Contract; and

10.5.5 the aforesaid provisions covering every Contract for or on behalf of New York State or the County for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the state of New York.

10.6 Pursuant to Labor Law 220-h, if the Contract Price of this Contract is at least two hundred fifty thousand dollars ($250,000) all laborers, workers, and mechanics employed in the performance of the contract on the Project Site, either by Contractor, any Subcontractor(s) or other person doing or contracting to do the whole or a part of the Work contemplated by the Contract, shall be certified prior to performing any Work on the Project as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

10.7 Pursuant to Labor Law 222(2)(d), the design of this Project shall be subject to the review and approval of County and Contractor shall furnish performance and payment bonds as specified in the Contract Documents, which shall conform to the provisions of New York State, County and applicable local law, and that a copy of such performance and payment bonds shall be kept by County and shall be open to public inspection.

10.8 Pursuant to Labor Law 222(2)(e), County shall consider the financial and organizational capacity of contractors and subcontractors in relation to the magnitude of Work they may perform, the record of performance of contractors and Subcontractors on previous Work, the record of contractors and subcontractors in complying with existing labor standards and maintaining harmonious labor relations, and the commitment of contractors to Work with minority and women-owned business enterprises pursuant to Article 15-A of the New York State Executive Law through joint ventures of subcontractor relationships. If the Contract Price of this Contract is in excess of five hundred thousand dollars ($500,000), Contractor and any Subcontractor shall participate in apprentice training programs in the trades of work it employs that have been approved by the New York State Department of Labor for not less than three (3) years and shall have graduated at least one apprentice in the last three (3) years and shall have at least one (1) apprentice currently enrolled in such apprenticeship training program. In addition, it must be demonstrated that the program has made significant efforts to attract and retain minority apprentices, as determined by affirmative action goals established for such program by the department.

10.9 Pursuant to Labor Law 222-a, in the construction of public works wherein a harmful dust hazard is created for which appliances or methods for the elimination of harmful dust have been approved by the Industrial Board of Appeals, the installation, maintenance and effective operation of such appliances and methods is required. Failure to comply with this provision shall void this Contract.
11. **POSTING.** Contractor and all Subcontractors, if any, engaged in the Work described in this Contract shall post and maintain at each of their establishments and at the Work Site(s), any and all notices required of employers by the laws of the State or New York or the United States and any regulations thereto, as may be amended.

12. **BONDS.** Contractor shall procure and deliver bonds to County and maintain them at Contractor's cost and expense, until final acceptance by County of the Work covered by this Contract. Types and amounts of Bonds shall be as specified in the Instructions to Bidders or Request for Quote, as applicable.

13. **PROCUREMENT OF AGREEMENT.**

   13.1 Contractor represents and warrants that no person or selling agency has been employed or retained by Contractor to solicit or secure this Contract upon an agreement or upon an understanding for a commission, percentage, a brokerage fee, contingent fee or any other compensation. Contractor further represents and warrants that no payment, gift or thing of value has been made, given or promised to obtain this or any other agreement between the parties. Contractor makes such representations and warranties to induce the County to enter into this Contract and the County relies upon such representations and warranties in the execution hereof.

   13.2 For a breach or violation of such representations or warranties, the County shall have the right to annul this Contract without liability, entitling the County to recover all monies paid hereunder and Contractor shall not make claim or be entitled to recover, any sum or sums otherwise due under this Contract. This remedy, if effected, shall not constitute the sole remedy afforded the County for such falsity or breach, nor shall it constitute a waiver of the County’s right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity or pursuant to this Contract.

14. **CONFLICT OF INTEREST.**

   14.1 Contractor represents and warrants that neither it, nor any of its officers, directors, partners, members, employees, contractors, agents, assignees or other representatives, have any interest nor shall they acquire any interest, directly or indirectly, which would or may conflict in any manner or degree with the performance of this Contract. Contractor further represents and warrants that no person having such conflict of interest or possible conflict of interest shall be employed or contracted by it unless such person:

   14.1.1 if required by the County's "Local Ethics Law" (Local Law No. 2 of 1994, as amended) to submit a Disclosure Form to the Orange County Board of Ethics, amends such Disclosure Form to include their interest in this Contract; or

   14.1.2 if not required to complete and submit such a disclosure form, must either voluntarily complete and submit a Disclosure Form disclosing their interest in this Contract or seek a formal opinion from the Orange County Ethics Board as to whether or not a conflict of interest exists.

   14.2 For a breach or violation of such representations or warranties, County shall have the right to annul this Contract without liability, entitling County to recover all monies paid hereunder and Contractor shall not make claim to, or be entitled to recover, any sum(s) otherwise due under this Contract. This remedy, if effected, shall not constitute the sole remedy afforded County, nor shall
it constitute a waiver of County’s right to claim damages, or otherwise refuse payment, or to take any other action provided for by law, in equity or pursuant to this Contract.

14.3 The foregoing provisions shall not limit County's rights under the Local Ethics Law with regard to civil penalties or criminal prosecution as provided in the Local Ethics Law.

15. CURRENT OR FORMER COUNTY EMPLOYEES.

15.1 Contractor represents and warrants that it shall not retain the services of any County employee or former County employee in connection with this Contract or any other Contract that Contractor has or may have with the County, without the express written permission of the County. This limitation period covers the preceding three (3) years or longer if the County employee or former County employee has or may have an actual or perceived conflict of interest(s) due to their position with County.

15.2 For a breach or violation of such representations or warranties, County shall have the right to annul this Contract without liability, entitling County to recover all monies paid hereunder and Contractor shall not make claim for or be entitled to recover, any sum or sums otherwise due under this Contract. This remedy, if affected, shall not constitute the sole remedy afforded County for such falsity or breach, nor shall it constitute a waiver of County’s right to claim damages or otherwise refuse payment or to take any other action provided for by law or pursuant to this Contract.

16. INDEPENDENT CONTRACTOR.

16.1 In performing the Work and incurring expenses under this Contract, Contractor shall operate as, and have the status of, an independent contractor and shall not act as agent, or be an agent, of County. As an independent contractor, Contractor shall be solely responsible for determining the means and methods of performing the Work and shall have complete charge and responsibility for Contractor’s personnel and subcontractors engaged in the performance of the same.

16.2 In accordance with such status as independent contractor, Contractor covenants and agrees that neither it nor its employees or agents will hold themselves out as, nor claim to be officers or employees of County, or of any department, agency or unit thereof, and that they will not make any claim, demand or application to or for any right or privilege applicable to an officer or employee of County including, but not limited to, Worker’s Compensation and Disability, health insurance, Unemployment Insurance Benefits, Social Security coverage or employee retirement membership or credit.

17. ASSIGNMENT.

17.1 Pursuant to New York State General Municipal Law §109, Contractor shall not assign, transfer, convey, sublet or otherwise dispose of any of its rights, title or interests in this Contract, or its power to execute this Contract, without the prior express written consent of the County Executive, or his or her designee. If Contractor assigns, transfers, conveys, sublets or otherwise disposes of its rights, title or interests in this Contract, or its power to execute it without such consent, County shall revoke and annul this Contract and County shall be discharged from any and all liability and obligations growing out of this Contract to Contractor and to any party to which such assignment, transfer, conveyance, sublet or other disposition was purportedly made. Contractor shall also forfeit and lose all moneys theretofore earned under this Contract, except so much as may be required to pay its employees performing under this Contract. The provisions of this clause
shall not hinder, prevent, or affect any assignment by Contractor for the benefit of its creditors made pursuant to the laws of the State of New York.

17.2 This Contract may be assigned by County to any corporation, agency, municipality or instrumentality having authority to accept such assignment.

17.3 Contractor agrees not to enter into any subcontracts for the performance of its obligations, in whole or in part, under this Contract, without the prior written approval of the County. A copy of any proposed subcontract(s) shall be submitted to the County with Contractor's written request for approval. All such subcontracts shall contain provisions specifying:

17.3.1 That the work performed by the subcontractor must be in accordance with this Contract;

17.3.2 That nothing contained in the subcontract shall impair the rights of the County;

17.3.3 That nothing contained in this subcontract or under this Contract shall create any contractual relation in law or equity between the subcontractor and the County; and

17.3.4 Any terms, conditions, forms or other provisions that may be required by New York State or federal provisions specified in or incorporated by reference into this Contract, as applicable.

17.4 Contractor agrees that it is fully responsible to County for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by its subcontractors, to the same extent as Contractor is responsible for acts and omissions employed by Contractor.

17.5 Contractor shall not in any way be relieved of any responsibility under this Contract by any subcontract.

18. SUBCONTRACTORS. Contractor shall submit in writing to the County a list of all Subcontractors, if any, whom Contractor shall engage for the Work prior to awarding any subcontracts. The Contractor shall not employ any Subcontractor to whom County may have a reasonable objection nor shall Contractor be required to employ any Subcontractor against whom Contractor has a reasonable objection. Contractor may not discharge and/or replace any Subcontractors without County's written approval. Contractor shall contractually require every Subcontractors' compliance with the terms of this Contract, as far as applicable to each Subcontractor's Work, and shall assume full responsibility to County for acts and omissions of Subcontractors. There shall be no contractual relation between County and any Subcontractor, and in no way shall County be obligated to pay any sums to any Subcontractor. At the completion of the Work, and before final payment shall be made, Contractor shall submit to County lien releases or notarized statements from any and all Subcontractors that full payment was received.

19. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION.

19.1 Identification Number(s). For granting, renewing, amending, supplementing or restating the license of any person, and for every invoice or other claim for payment submitted to County by Contractor under this Contract, the application, invoice or claim must include Contractor's payee identification number. This number is any or all of the following:
19.1.1 the payee’s federal employer identification number;

19.1.2 the payee’s federal social security number, and/or

19.1.3 the payee’s Contractor Identification Number assigned by County, if any.

Failure to include such number(s), as required by County, may delay payment. Where Contractor does not have such number(s), on its application, invoice or other claim for payment, Contractor must give the reason or reasons why it does not have a payee number(s).

19.2 Privacy Notification.

19.2.1 The County’s authority to request the above personal information from Contractor, and its authority to maintain such information, is found in New York State Tax Law §5. Disclosure of this information by Contractor to County is mandatory. The principal purpose for collection of the information is for New York 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 New York State Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law.

19.2.2 The County may forward the personal information to the New York State Commissioner of Taxation and Finance upon that Commissioner’s request pursuant to New York State Tax Law §5(3).

20. RECORDKEEPING. Contractor agrees to maintain separate and accurate books, records, documents and other evidence and accounting procedures and practices which sufficiently and properly reflect all direct and indirect costs of any nature expended in the performance of this Contract.

21. RETENTION OF RECORDS. Contractor agrees to retain all paper and electronic invoices, payment receipts, books, records and other data and documents relevant to this Contract ("Records") for six (6) years after the final payment or termination of this Contract or such longer period as may be required the Contract Document or by law or regulation, whichever later occurs. County, or any state and/or federal auditors, and any other persons duly authorized by county, shall have full access and the right to examine any records during the term of this Contract and the retention period, unless otherwise specified in schedule a or required by law or regulation.

22. AUDIT BY THE COUNTY AND OTHERS. All records and accounts upon which the records are based are subject to inspection, review and audit by county, new york state, the federal government, and/or other persons or entities duly authorized by county. Contractor, upon request, shall submit any and all documentation and justification in support of expenditures or fees under this Contract as may be required for evaluation of the reasonableness of the charges. Such audits may include examination and review of the source and application of all funds relevant to the performance of the Work, whether from the County, New York State, the federal government, private sources or otherwise. Contractor shall not be entitled to any interim or final payment under this Contract if any audit requirements and/or requests have not been satisfactorily met.
23. **SAFETY OF PERSONS AND PROPERTY.**

23.1 Contractor assumes the risk of and shall be responsible for, any loss or damage to County property, including property and equipment leased by the County, used in the performance of this Contract and caused, either directly or indirectly by the acts, conduct, omissions or lack of good faith of Contractor, its officers, directors, members, partners, employees, contractors, agents, assignees, or other representatives.

23.2 To the fullest extent permitted by law, Contractor agrees to defend, indemnify and hold the County harmless from any and all claims, liabilities, expenses, costs, losses, damage or causes of action (including, without limitation, reasonable attorneys' fees and costs of litigation and/or settlement) arising out of, directly or indirectly, the services performed and/or the goods and materials provided pursuant to this Contract.

23.3 In the event that any County property is lost, damaged (except for normal wear and tear), or destroyed, then County shall have the right to withhold further payments hereunder for the purposes of set-off in sufficient sums to cover such loss or damage. This remedy, if effected, shall not constitute the sole or exclusive remedy afforded County, nor shall it constitute a waiver of that County's right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity or pursuant to this Contract.

23.4 Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

23.4.1 employees on the Work and other persons who may be affected thereby including, but not limited to, the County, other contractors, suppliers, delivery persons or other third parties;

23.4.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site, under care, custody or control of Contractor or Contractor's subcontractors or sub-subcontractors;

23.4.3 other property at the Work Site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and

23.4.4 construction by County or other contractors.

23.5 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

23.6 Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

23.7 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.
23.8 Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in §23.4.1 through §23.4.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under §23.4.1 through §23.4.4 caused, except damage or loss attributable to acts or omissions of the County or anyone directly or indirectly employed by it, or by anyone for whose acts County may be liable.

23.9 Contractor shall designate a responsible member of Contractor's organization at the Work Site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to County.

23.10 Contractor shall not load or permit any part of the construction or Work Site to be loaded so as to endanger its safety.

23.11 Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the County or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

24. INSURANCE.

24.1 For the performance of the Work, Contractor shall obtain and maintain in full force and effect during the term of this Contract, and any renewal or modification thereof, at its expense, insurance coverage of the types and, at minimum, in the coverage limits listed below. Such policies are to be in the broadest form available on usual commercial terms and shall be written by insurers with an A.M. Best rating of A- or better and satisfactory to County, who have been fully informed as to the nature of the Work to be performed and any modification(s) thereto. This insurance shall cover the premises on operations of the Contractor and shall cover all Subcontractors. Policies for insurance must be written as to include contingent liability and contingent property damage insurance to protect Contractor against claims arising from the operations of Subcontractors. County may require Contractor to secure miscellaneous property insurance, elevator insurance or other forms of indemnity protection depending upon the Work to be performed. Additional coverage types or limits may be required by County if any policy contains a contractual liability exclusion.

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<thead>
<tr>
<th>Type of Coverage</th>
<th>Limit of Coverage</th>
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<tr>
<td>Worker’s Compensation</td>
<td>Statutory</td>
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<td>Disability</td>
<td>Statutory</td>
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<td>Employer's Liability</td>
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<td>Automobile Liability (Including Bodily Injury &amp; Property Damage)</td>
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<td>Comprehensive General Liability (Including Contractual Liability, Bodily Injury, Wrongful Death &amp; Property Damage)</td>
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<td>Professional Liability (Required if commercially available for your profession)</td>
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24.2 Except for Worker's Compensation, Disability, and professional liability, County shall be named an additional insured on all such policies with the understanding that any obligations imposed upon the insured (including, without limitation, the liability to pay premiums) shall be the sole obligation of Contractor and not those of County.

24.3 Notwithstanding anything to the contrary in this Contract, Contractor irrevocably waives all claims against County for all losses, damages, claims or expenses resulting from risks commercially insurable under this insurance described in this §24. The provisions of insurance by Contractor shall not in any way limit Contractor’s liability under this Contract.

24.4 Each policy of insurance shall contain clauses to the effect that:

24.4.1 such insurance shall be primary without right of contribution of any other insurance carried by or on behalf of County;

24.4.2 it shall not be cancelled, including, without limitation, for non-payment of premium, or materially amended, without fifteen (15) days prior written notice to County, directed to County’s Risk Management Officer and the Department Head; and

24.4.3 County shall have the option to pay any necessary premiums to keep such insurance in effect and charge the cost back to Contractor.

24.5 To the extent it is commercially available, each policy of insurance shall be provided on an “occurrence” basis. If any insurance is not commercially available on an “occurrence” basis, it shall be provided on a “claims made” basis, and all such “claims made” policies shall provide that:

24.5.1 Policy retroactive dates coincide with or precede Contractor’s start of the performance of this Contract (including subsequent policies purchased as renewals or replacements);

24.5.2 If the insurance is terminated for any reason and/or following final payment, Contractor shall maintain an extended reporting provision and/or similar insurance (i.e. “tail coverage”) for six (6) years from the date of such termination and/or final payment; and

24.5.3 Immediate notice shall be given to County through the Department Head and County’s Risk Management Officer of circumstances or incidents that might give rise to future claims with respect to the performance of this Contract.

24.6 Pursuant to General Municipal Law §108, this Contract shall be void and of no effect unless Contractor and each Subcontractor, if any, shall secure compensation for the benefit of, and keep insured during the life of this Contract, such employees, in compliance with the provisions of the Worker's Compensation Law, unless Contractor is exempt and provides the applicable New York State Workers Compensation Board certificate of exemption.
24.7 Contractor shall provide County with certificates of insurance evidencing Contractor’s compliance with these requirements prior to execution of this Contract by County and shall provide updated certificates within two (2) business days of receipt by Contractor during the term and any renewals or modifications thereof.

25. WORKER’S COMPENSATION AND DISABILITY INSURANCE. Pursuant to General Municipal Law §108, this Contract shall be void and of no effect unless Contractor and each Subcontractor, if any, shall secure compensation for the benefit of, and keep insured during the life of this Contract, such employees, in compliance with the provisions of the Worker’s Compensation Law, unless Contractor is exempt and provides the applicable New York State Workers Compensation Board certificate of exemption.

26. UNEMPLOYMENT BENEFITS. Contractor shall take out, and maintain during the life of this Contract adequate unemployment benefits insurance, in compliance with New York Labor Law Article 18, for all employees and will also require all Subcontractors, if any, to maintain such insurance.

27. INDEMNIFICATION.

27.1 To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless County and its officers, employees, contractors, agents, assignees and other representatives, from and against any and all claims, liabilities, expenses, costs, losses, damages and causes of action (including without limitation, reasonable attorneys’ fees and costs of litigation and/or settlement) arising out of, directly or indirectly, the services performed and/or goods provided pursuant to this Contract.

27.2 Without limiting the foregoing, to the fullest extent permitted by law, Contractor specifically agrees to defend, indemnify and hold County harmless against claims, including claims by Contractor's customers and/or subcontractors, based on infringement of copyright, patent, trade secret, trademark, libel, slander, or invasion of privacy, arising out of, directly or indirectly, the services performed and/or goods provided by Contractor or its officers, directors, partners, members, employees, contractors, agents, assignees or other representatives pursuant to this Contract.

27.3 In the event that any claim is made or any action is brought against County arising out of, in connection with or otherwise relating to this Contract either within or without the scope of Contractor’s duties, obligations or applicable industry standards, or those of any of Contractor’s respective officers, directors, partners, members, employees, contractors, agents, or other representative's; then County shall have the right to withhold further payments hereunder, for the purpose of set-off, in sufficient sums to cover the claims, liabilities, expenses, costs, losses, damages or causes of action. This remedy, if effected, shall not constitute the sole or exclusive remedy afforded the County, nor shall it constitute a waiver of that the County's right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity, or pursuant to this Contract.

28. WARRANTY.

28.1 The Contractor warrants to the County that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's
warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the County, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

28.2 Contractor warrants to County that all construction and related services provided hereunder shall be performed in a good and workmanlike manner, by workers who are appropriately trained and experienced in the Work being performed, and in accordance with all requirements of the Contract Documents, industry standards for projects of similar type and quality, and all applicable laws, codes, regulations and other requirements, including safety requirements.

28.3 If, within one (1) year after the date of completion of the Work or designated portion thereof, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the County to do so. County shall give such notice promptly after actual discovery of the condition. This period of one (1) year shall be extended with respect to portions of the Work first performed after completion of the Work by the period of time between completion and the actual performance of that portion of the Work. This obligation under this §28.3 shall survive acceptance of the Work and expiration or earlier termination of this Contract.

28.4 The warranty in §28.3 is separate from the warranties in §28.1 and §28.2 and shall not be construed as a period of limitation on the warranties under §28.1 and §28.2.

29. SUSPENSION OR TERMINATION OF THE CONTRACT.

29.1 Termination by the Contractor

29.1.1 Contractor may terminate the Contract if the Work is stopped for a period of ninety (90) consecutive days through no act or fault of Contractor or it Subcontractor(s) or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with Contractor, for any of the following reasons:

.1 issuance of an order of a court or other public authority having jurisdiction over the Work or parties hereto which requires all Work to be stopped; or

.2 an act of government, such as a declaration of national emergency which requires all Work to be stopped;

29.1.2 Contractor may terminate the Contract if; through no act or fault of Contractor or its Subcontractor(s) or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with Contractor; repeated suspensions, delays or interruptions of the Work by County as described §29.0 constitute in the aggregate more than one hundred (100) percent of the total number of days scheduled for completion, or one hundred twenty (120) days in any successive three hundred sixty five (365)-day period commencing from the start date of the Contract, whichever is less.

29.1.3 In case of such termination, Contractor shall be entitled to receive payment for Work executed in accordance with the Contract Documents.
29.2 Termination by the County for Cause

29.2.1 Contractor shall be deemed in default, and County may terminate this Contract, if Contractor, or any of its Subcontractors, shall:

.1 fail to begin Work within the time specified;

.2 persistently or repeatedly refuse or fail to supply sufficient properly skilled workers or sufficient proper equipment or materials to insure the completion of the Work within the specified time as reasonably determined by County, which failure shall not be cured within ten (10) days after notice from County;

.3 perform the Work in a manner reasonably deemed by County to be unsatisfactory, which failure shall not be cured within ten (10) days after notice from County;

.4 fail or refuse to remove materials reasonably determined by County to be unsuitable, which failure shall not be cured within ten (10) days after notice from County;

.5 fail or refuse to perform anew any Work reasonably determined by County to be defective or unacceptable, which failure shall not be cured within ten (10) days after notice from County;

.6 fail to diligently proceed with the prosecution of the Work according to the agreed schedule for completion, which failure shall not be cured within ten (10) days after notice from County;

.7 fail to make prompt payment to Subcontractors or Suppliers for labor or material furnished to or for the Work, which failure shall not be cured within ten (10) days after notice from County;

.8 become insolvent or be declared bankrupt, commit any act of bankruptcy or insolvency, or make an assignment for the benefit of creditors;

.9 violate any laws, ordinances, rules, regulations or orders of any public authority having jurisdiction over the Work or the Project, which violation shall not be cured within ten (10) days after notice from County;

.10 otherwise fail to perform its obligations hereunder, which failure shall not be cured within thirty (30) days after notice from the County; or

.11 pursuant to New York State Finance Law §139-k(5) upon finding by County that the information and certification provided by Contractor in the Disclosure of Prior Non-Responsibility Determinations is intentionally false or intentionally incomplete.

29.2.2 When County determines that any of the above reasons exist, County may, without prejudice to any other rights or remedies County may have, and after giving Contractor and Contractor's surety, if any, seven (7) days written notice:

.1 terminate the Contract;
.2 take possession of the Site and of all materials, equipment, tools, construction equipment and machinery thereon owned by Contractor;

.3 finish the Work by whatever method County, in its sole discretion may deem expedient; and

.4 provide Contractor with instructions as described in §29.2.3.

29.2.3 Upon receipt of notice of termination, Contractor shall immediately, in accordance with written instructions from County, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this §29.2:

.1 cease operations as specified in the notice;

.2 place no further orders and enter into no further subcontracts for materials, equipment, labor, services or facilities, except as necessary to complete continued portions of the Contract;

.3 promptly make every reasonable effort to procure cancellation upon terms satisfactory to County of all orders and subcontracts;

.4 take actions that may be necessary, or that County may direct, for the protection and preservation of the terminated Work and to protect materials, plant and equipment on the Work Site or in transit thereto; and

.5 execute and deliver such papers and documents and take such steps, including legal assignment of its contractual rights, as County may require in order to vest in County the rights and benefits Contractor may have under any obligations or commitments incurred or undertaken by Contractor in connection with the Work.

29.2.4 In the event that County terminates this Contract under §29.2, Contractor shall not be entitled to receive further payment until the Work is finished. If the sum of the costs of finishing the Work; including compensation for the services, as applicable to this Contract, of a Construction Manager, Architect, their respective consultants and any other Contractors and their Subcontractors or Sub-Subcontractors made necessary thereby; plus the amounts previously paid to Contractor prior to termination, exceed the Contract Price, Contractor shall pay the difference to the County upon demand. If the foregoing costs together with all other costs incurred by County as a consequence of having to terminate the Contract are less than the Contract Price, then upon completion of the Work, Contractor shall be paid the portion of such difference, if any, properly allocable to the portion of the Work completed by Contractor prior to termination by the County, and for which Contractor has not previously been paid. In no event, however, shall Contractor be entitled to receive more than the difference between the Contract Price, minus all costs associated with completing the Work and terminating the employment of Contractor. In determining the amount owing to Contractor, allowances shall be made for claims which County has against Contractor under the Contract, and for the value of materials, supplies, equipment and other items that are part of the Cost of the Work to be disposed of by Contractor.
29.2.5 By terminating the employment of Contractor, County does not forfeit the right to recover damages from Contractor.

29.3 Suspension by the County for Convenience

29.3.1 County may, without cause, order Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as County may determine.

29.3.2 The Contract Price and term shall be adjusted for increases in the cost and time caused by suspension, delay or interruption pursuant to §29.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

29.4 Termination by the County for Convenience

29.4.1 County may, at any time, terminate the Contract for County's convenience and without cause.

29.4.2 Upon receipt of written notice from County of such termination for County's convenience, the Contractor shall:

.1 cease operations as directed by County in the notice;

.2 place no further orders and enter into no further subcontracts for materials, equipment, labor, services or facilities, except as necessary to complete continued portions of the Contract;

.3 promptly make every reasonable effort to procure cancellation upon terms satisfactory to County of all orders and subcontracts;

.4 take actions that may be necessary, or that County may direct, for the protection and preservation of the terminated Work and to protect materials, plant and equipment on the Work Site or in transit thereto; and

.5 execute and deliver such papers and documents and take such steps, including legal assignment of its contractual rights, as County may require in order to vest in County the rights and benefits Contractor may have under any obligations or commitments incurred or undertaken by Contractor in connection with the Work.

29.4.3 In case of such termination for County's convenience, Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on Work not executed.
30. CLOSEOUT PROCEDURES.

Upon the expiration or earlier termination of this Contract, Contractor shall comply with any and all County closeout procedures, including, but not limited to:

30.1 Accounting for and refunding to County within thirty (30) days, any unexpended funds which have been paid to Contractor pursuant to this Contract; and

30.2 Furnishing within thirty (30) days an inventory to County of all equipment, appurtenances and property purchased by Contractor through or provided under this Contract, and carrying out any County directive concerning the disposition thereof.

31. NONDISCRIMINATION; EQUAL EMPLOYMENT OPPORTUNITIES.

31.1 To the extent required by Article 15 of the New York State Executive Law (also known as the Human Rights Law) and all other New York State and federal statutory and constitutional non-discrimination provisions, Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex (including gender identity or expression), national origin, sexual orientation, military status, age, disability, predisposing genetic characteristics, marital status or domestic violence victim status.

31.2 Furthermore, in accordance with §220-e of the New York State Labor Law, if the Work for this Contract includes 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 New York State, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin:

   31.2.1 discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or
   31.2.2 discriminate against or intimidate any employee hired for the performance of the Work under this Contract.

31.3 If this is a building service contract as defined in §230 of the Labor Law, then, in accordance with §239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability:

   31.3.1 discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or
   31.3.2 discriminate against or intimidate any employee hired for the performance of work under this contract.

31.4 Contractor is subject to fines of $50.00 per person per day for any violation of §220-e or §239 of New York State Labor Law, as well as possible termination of this Contract and forfeiture of all moneys due hereunder for a second or subsequent violation. These remedies, if effected, shall not constitute the sole or exclusive remedies afforded the County, nor shall it constitute a waiver of that the County's right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity, or pursuant to this Contract.
31.5 If this Contract involves the sale or rental of property, Contractor specifically agrees to abide by all applicable provisions of federal and state laws and regulations, as applicable to sale or rental of the property. With respect to any sale of the property and selection and treatment of tenants, Contractor shall not in any manner discriminate on the basis of race, color, religion, sex (including gender identity or expression), familial status, national origin, disability, age, sexual orientation, military status or marital status.

32. SECULAR PURPOSE.

32.1 Contractor agrees that no funds received pursuant to this Contract will be used for sectarian purposes or to further the advancement of any religion.

32.2 Additionally, Contractor agrees that if it is, or is deemed to be, a religious or denominational institution or organization, or an organization operated for religious purposes which is supervised or controlled by, or in connection with, a religious or denominational institution or organization, in performing this Contract Contractor will:

- 32.2.1 not discriminate against any employee or applicant for employment on the basis of religion, and will not limit or give preference in employment to persons on the basis of religion;

- 32.2.2 not discriminate against any individual or entity, seeking to participate or participating in any program or activity funded under this Contract and will not limit the programs and activities or give preference to persons, on the basis of religion; and

- 32.2.3 provide no religious instruction or counseling, conduct no religious worship or services, engage in no religious proselytizing and exert no other religious influence in the provision of services or the use of facilities or furnishings funded in whole or in part under this Contract or any other agreement with County.

33. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS.

33.1 Contractor certifies and warrants that all wood products to be used in performing the Work under this Contract, if any, will be in accordance with, but not limited to, the specifications and provisions of New York State State Finance Law §165. (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by New York State or any governmental agency or political subdivision or public benefit corporation.

33.2 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 or proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in New York State State Finance Law §165.

33.3 Contractor certifies that any use of tropical hardwood in the Work meets with the exception requirements of New York State State Finance Law §165(2)(d)(iii), as established by the Contractor and was approved by County during the quote, bid or proposal process.
34. COMPLIANCE WITH NEW YORK STATE INFORMATION SECURITY BREACH NOTIFICATION ACT.

Both during and after the performance of the Work under this Contract, with respect to all data involved in the performance of this Contract, Contractor shall comply with the New York State Information Security Breach and Notification Act (General Business Law §899-aa; State Technology Law §208, both as may be amended).

35. COMPLIANCE WITH EXECUTIVE ORDER 38.

Contractor is and shall remain in compliance with New York State Executive Order 38 of 2013, as may be amended. More information may be found at: http://www.executiveorder38.ny.gov/.

35. COMPLIANCE WITH PROCUREMENT LOBBYING LAWS.

35.1 To the extent this Contract is a "procurement contract" as defined by New York State State Finance Law §139-j and §139-k, Contractor certifies and affirms that all disclosures made in accordance with New York State 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 incomplete, County may terminate this Contract in accordance with §29.2 of this Contract.

35.2 Notwithstanding any other provision of this Contract, Contractor shall not be relieved of liability to County for damages sustained by County by virtue of Contractor’s breach of this §35. County may withhold payments to Contractor for the purposes of set-off until such time as the exact amount of damages due to County from Contractor is determined.

35.3 These remedies, if effected, shall not constitute the sole or exclusive remedies afforded the County, nor shall it constitute a waiver of that the County’s right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity, or pursuant to this Contract.

36. COMPLIANCE WITH IRAN DIVESTMENT ACT.

36.1 Contractor certifies in accordance with New York State 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: http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf

36.2 Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time this 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 assignment will be approved by County.

36.3 During the term of this Contract, should County receive information that Contractor is in violation of the above-referenced certifications, County 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 Iran Divestment Act (New York State State Finance Law §165-a) within ninety (90) days after the determination of such violation, then County 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 Contractor in default and terminating the Contract in accordance with §29.2 of this Contract. These remedies, if effected, shall not constitute the sole or exclusive remedies afforded the County, nor shall it constitute a waiver of that the County's right to claim damages or otherwise refuse payment or to take any other action provided for by law, in equity, or pursuant to this Contract.

36.4 County reserves the right to reject any request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the 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.

37. PIGGYBACKING.

37.1 Participation in County contracts by political subdivisions or districts as defined in New York State General Municipal Law §103(3) and/or (16) (otherwise known as "Piggybacking") is permitted upon the following conditions:

37.1.1 such participation was authorized in the solicitation for this Contract (e.g. in the Request for Bids or Proposals)

37.1.2 the responsibility with regard to performance of any contractual obligation, covenant, condition or term of this Contract by any piggybacking political subdivision or district, shall be borne and is expressly assumed by that political subdivision or district and not by County;

37.1.3 a breach of any contractual obligation, covenant, condition or term of this Contract by any piggybacking political subdivision or district shall neither constitute nor be deemed a breach of this Contract as a whole and shall not affect the validity of this Contract nor the obligations of Contractor respecting non-breaching political subdivisions or districts, whether County or otherwise; and, in the event of breach by a piggybacking political subdivision or district, this Contract shall remain in full force and effect as to all other non-breaching political subdivisions and districts, including County, as applicable;

37.1.4 for a breach by a piggybacking political subdivision or district, County specifically and expressly disclaims any and all liability for such breach; and

37.1.5 Contractor guarantees to save County, its officers, employees, contractors, agents, assignees and other representatives, from any liability that may be or is imposed by its failure to perform in accordance with its obligations under this Contract.

37.2 Notwithstanding the terms and conditions of this Article 26, any changes in New York State and/or federal law pertaining to Piggybacking shall govern County's, Contractor's and piggybacking political subdivisions and districts rights and responsibilities with regard to piggybacking under this Contract.
38. **FORCE MAJEURE.**

**38.1** A Force Majeure occurrence is an event or effect that cannot be reasonably anticipated or controlled and is not due to the negligence or willful misconduct of the affected party. Force Majeure includes, but is not limited to, acts of God, acts of war, acts of public enemies, terrorism, strikes, fires, explosions, actions of the elements, floods, or other similar causes beyond the control of the Contractor or the County in the performance of this Contract where non-performance, by exercise of reasonable diligence, cannot be prevented.

**38.2** The affected party shall provide the other party with written notice of any Force Majeure occurrence as soon as the delay is known and provide the other party with a written contingency plan to address the Force Majeure occurrence, including, but not limited to, specificity on quantities of materials, tooling, people, and other resources that will need to be redirected to another facility and the process of redirecting them. Furthermore, the affected party shall use its commercially reasonable efforts to resume proper performance within an appropriate period of time. Notwithstanding the foregoing, if the Force Majeure condition continues beyond thirty (30) days, the parties shall jointly decide on an appropriate course of action that will permit fulfillment of the parties’ objectives hereunder.

**38.3** The Contractor agrees that in the event of a delay or failure in the performance of the Work by Contractor, due to a Force Majeure occurrence, the County may purchase from other sources (without recourse to and by the Contractor for the costs and expenses thereof) to replace all or part of the goods and/or services which are the subject of the delay, which purchases may be deducted from the quantities of this Contract, if any, without penalty or liability to the County.

**38.4** Neither the Contractor nor the County shall be liable to the other for any delay in or failure of performance under this Contract due to a Force Majeure occurrence. Any such delay in or failure of performance shall not constitute default or give rise to any liability for damages. The existence of such causes of such delay or failure shall extend the period for performance to such extent as determined by the Contractor and the County to be necessary to enable complete performance by the Contractor and County if reasonable diligence is exercised after the cause of delay or failure has been removed.

**38.5** Notwithstanding the above, at the discretion of the County where the delay or failure will significantly impair the value of this Contract to the County, the County may terminate this Contract or the portion thereof which is subject to delays, and thereby discharge any unexecuted portion of this Contract or the relative part thereof.

39. **GENERAL RELEASE.**

The acceptance by Contractor or its assignees of the final payment under this Contract (whether based on invoice, judgment of any court of competent jurisdiction, administrative or any other means) shall constitute and operate as a general release to County from any and all claims of Contractor arising out of the performance of this Contract.

40. **SET-OFF RIGHTS.**

**40.1** County shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but are not limited to, County’s right to withhold for the purposes of set-off any monies otherwise due to Contractor:
40.1.1 under this Contract;

40.1.2 under any other agreement or contract with County, including any agreement or contract for a term commencing prior to or after the term of this Contract; or

40.1.3 from County by operation of law.

40.2 County also has the right to withhold any monies otherwise due under this Contract for the purposes of set-off as to any amounts due and owing to County for any reason whatsoever including, without limitation, tax delinquencies, fee delinquencies or monetary penalties or interest relative thereto.

41. DISPUTE RESOLUTION. Any and all disputes involving this Contract, including the breach or alleged breach thereof, may not be submitted to arbitration unless specifically agreed thereto in writing by the County Executive, or his or her designee, but must instead only be heard in the Supreme Court of the state of New York, with venue in Orange County or if appropriate, in the Federal District Court with venue in the Southern District of New York, White Plains division.

42. GOVERNING LAW. This Contract shall be governed by and construed in accordance with the laws of the State of New York, without giving effect to its conflicts of law principles.

43. BUSINESS AUTHORIZATION AND REGISTRATION; SERVICE OF PROCESS.

43.1 Contractor shall be properly authorized and registered to do business as required by the laws of the state of New York applicable to Contractor's business entity type.

43.2 Regardless of the propriety or legality of Contractor's business authorization and registration status, as a condition of contract, Contractor shall agree to service of process as follows: In addition to the methods of service allowed by New York's Civil Practice Law and Rules, Contractor consents to service of process upon it by registered or certified mail, return receipt requested, to the address indicated in this Contract. Service shall be complete upon Contractor's actual receipt of process, or upon County's receipt of the return by the United States Postal Service as refused or undeliverable. Contractor shall immediately notify County, in writing, via registered or certified mail, return receipt requested, of each change or address to which service of process can be made. Service by County to the last known address shall be sufficient.

44. NOTICE.

44.1 All notices permitted or required hereunder shall be in writing and shall be transmitted either:

44.1.1 via certified or registered United States mail, return receipt requested;

44.1.2 by personal delivery;

44.1.3 by overnight delivery service with a nationally recognized carrier (e.g. FedEx, UPS);

44.1.4 by fax (only as explicitly designated and required by the Contract Documents and when other provisions of this Contract do not control over this §44); or
44.1.5 by email (only as explicitly designated and required by the Contract Documents and when other provisions of this Contract do not control over this §44).

44.2 The parties agree to mutually designate individuals as their respective representative for the purposes of receiving notices under this Contract. Additional individuals may be designated in writing by the parties for purposes of implementation and administration/billing, resolving issues and problems, and/or for dispute resolution. Notices shall be addressed as follows or to such different addresses as the parties may from time to time designate in accordance with §44.2:

County
Name: insert name
Title: insert title
Address: insert mailing address
Phone Number: insert phone number
Fax: insert fax number
Email: insert email

Consultant
Name: insert name
Title: insert title
Address: insert mailing address
Phone Number: insert phone number
Fax: insert fax number
Email: insert email

44.3 Any such notice shall be deemed to have been given either at the time of personal delivery or, in the case of expedited delivery service or certified or registered United States mail, as of the date of first attempted delivery at the address and in the manner provided herein, or in the event of a Contract Document permits facsimile transmission or email notice but does not indicate when a notice takes effect, such notices shall be deemed given, upon receipt.

44.4 The parties may, from time to time, specify any new or different contact person or address in the United States as their address for purpose of receiving notice by notifying County, in writing, via registered or certified mail, return receipt requested, of each change or address.

45. SURVIVAL.

The rights and obligations under §§ 5, 8, 9, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 27, 28, 29, 30, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51 shall survive the termination of this Contract.

46. MODIFICATION.

46.1 No modification(s) of this Contract shall be valid unless reduced to writing and signed by both parties. Changes in the scope of Work for this Contract shall not be binding, and no payment shall be due in connection therewith, unless prior to the performance of any additional Work, the County Executive, or his or her designee, after consultation with the Department Head, executes a modification to this Contract, which specifically sets forth the additional Work; the amount of compensation; and the extension of the time for performance, all as may be applicable to the change in the Work, at the County's discretion.
46.2 Unless otherwise specifically provided for in the modification(s), the provisions of this Contract shall remain in full force and effect and applicable to the modified scope of Work.

47. COMPLIANCE.

47.1 Contractor and its officers, directors, partners, members, employees, contractors, agents, assignees or other representatives shall at all times comply with all applicable state and federal laws and regulations in the performance of the Work.

47.2 Contractor understands that it may be necessary for County to submit to governmental agencies or to a court of law part of or all of the data, analyses and/or conclusions developed in the performance of the Work as well as certification, payment applications or other documentation certified and/or signed by Contractor or its officers, directors, partners, members, employees, contractors, agents, assignees or other representatives. Contractor is aware that there are significant state and/or federal civil and criminal penalties for submitting false information, including the possibility of fines and imprisonment. Contractor is responsible for such penalties resulting from false information submitted by Contractor or its officers, directors, partners, members, employees, contractors, agents, assignees or other representatives and shall, to the fullest extent permitted by law, defend, indemnify and hold harmless County and its officers, employees, contractors, agents, assignees and other representatives, from and against any and all claims, liabilities, expenses, costs, losses, damages and causes of action (including without limitation, reasonable attorneys’ fees and costs of litigation and/or settlement) arising out of, directly or indirectly, any such submission of false information.

48. WAIVER. No covenant, condition or undertaking contained in this Contract may be waived except by the written agreement of the parties. Forbearance or indulgence in any form by either party in regards to any covenant, condition or undertaking to be kept or performed by the other party shall not constitute a waiver thereof, and until complete satisfaction or performance of all such covenants, conditions and undertakings, the other party may be entitled to invoke any remedy available under this Contract, despite any such forbearance or indulgence.

49. EXECUTORY CONTRACT. County shall have no liability under this Contract to Contractor or to anyone else beyond the extent of funds accepted and actually received by County from any funding source for this Contract and that are in turn appropriated and made available for this Contract by the County.

50. BINDING EFFECT. This Contract shall be binding upon the parties hereto and their respective successors and assigns.

51. SEVERABILITY. If any part, term or provision of this Contract is declared or found to be illegal, unenforceable, or void, then both parties shall be relieved of all obligations arising under such provisions, but the remainder of this Contract shall be interpreted so as to carry out the intent of the parties in an equitable manner.

52. ENTIRE AGREEMENT. This Contract sets forth the entire agreement between the County and Contractor with regard to the subject matter hereof, and supersedes all prior representations, agreements and understandings, written or oral and shall bind the successors, assigns, and representatives of the parties hereto.
IN WITNESS WHEREOF, the parties hereto have executed this Contract as of date above written. The undersigned each represent that he or she is dually authorized to sign this Agreement on behalf and bind the party he or she represents.

COUNTY OF ORANGE

BY: __________________________
STEFLAN (STEVEN) M. NEUHAUS
COUNTY EXECUTIVE

CONTRACTOR

BY: __________________________

Name:

Title:

(COUNTY ACKNOWLEDGEMENT)

STATE OF NEW YORK } :SS.
COUNTY OF ORANGE }

On this ______ day of __________, 20__, before me, the subscriber, personally came ________________ ____________________________, to me known who, being by me duly sworn, did depose and say that he is the __________________ of the County of Orange, the municipal corporation described in, and which executed, the above instrument; that he knows the seal of said municipal corporation; that the seal affixed to such instrument is such corporate seal, and that it was so affixed by virtue of §3.02 of the Orange County Charter, and that he was duly authorized to execute the same as the act and deed of the municipal corporation.

______________________________
Notary Public

(INDIVIDUAL ACKNOWLEDGEMENT)

STATE OF NEW YORK } :SS.
COUNTY OF ORANGE }

On this ______ day of __________, 20__, before me, the subscriber, personally appeared ________________ ____________________________, to me personally known, and known to me to be the same person described in, and who executed, the foregoing instrument, and he/she duly acknowledged to me that he/she was duly authorized to execute the same.

______________________________
Notary Public
(PARTNERSHIP ACKNOWLEDGEMENT)

STATE OF NEW YORK  }  :SS.
COUNTY OF ORANGE   }  

On this _____ day of ____________, 20__ before me, the subscriber, personally appeared ________________ ________________________________ to me personally known, and known to be a member of the partnership of ______________________________ described in, and who executed the foregoing instrument, and he/she acknowledged to me that he/she was duly authorized to execute the same as the act and deed of the partnership.

____________________________________  
Notary Public

(CORPORATE ACKNOWLEDGEMENT)

STATE OF NEW YORK  }  :SS.
COUNTY OF ORANGE   }  

On this _____ day of ____________, 20__, before me, the subscriber, personally appeared ________________ ________________________________ to me personally known, who being by me duly sworn, did depose and say that he/she is the_________________________ of ___________________________ the corporation described in the foregoing instrument; that he/she knows the seal of the corporation; the seal affixed to this instrument is the corporation seal; that it was so affixed by order of the Board of Directors of said corporation, and that he/she was duly authorized to execute the same as the act and deed of the corporation.

____________________________________  
Notary Public
Thank you for your interest in becoming a registered supplier/payee with Orange County Government. The attached forms are designed to help you provide Orange County with all the information we should need to get you set up in our data base. If you are already a registered supplier/payee and are using these forms to request a change to your existing information, thank you for your efforts to keep our records current.

Although the forms are basically self-explanatory, some areas can be confusing. Hopefully the following elaboration will be helpful to you.

**Supplier/Payee Name:**
 Normally this is the name of your company, such as “ABC Corporation.” However, in the instances where you are applying as a “Doing Business As (DBA)” you should enter the DBA name in this field, which corresponds with DBA name on the substitute W-9 Form which is also attached.

If you are registering as an individual for payment or reimbursement, this should be your name that corresponds with the substitute W-9.

**Taxpayer ID Number:**
 This is your Employer Identification Number -or- your Social Security number, depending on what you enter in the “Taxpayer Identification Number” field on the attached substitute W-9 Form.

**Correspondence, Purchasing Address:**
 This should be the address you want any purchase orders mailed or for general correspondence.

**Payment, Remittance Address:**
 This should be the address that all payments are to be mailed to.

**Contact Information:**
 The name and telephone number of the person completing the form is required. This person should be an authorized official of the Company. Although it is not required, supplying a valid email address may prove to be valuable to you as a supplier in the future.

For assistance with completing the W-9 Form, please review instructions or visit our website at www.orangecountygov.com look under “Supplier Information - Forms and Instructions.”

For assistance with completing the W-9 Form, please review instructions below.

Thank you for your interest in doing business with Orange County.
Supplier/Payee Application Form

Thank you for your interest in doing business with Orange County Government. Please supply all of the requested information on this form so that our records will be accurate. When you have completed the form and the accompanying W9 form please send them to the Department of Finance by mail or Email.

County Department Contact: Must be Completed

Department: __________________________
Name: ________________________________
Telephone: (_____) _______ – _________

PLEASE PRINT OR TYPE ALL INFORMATION

Supplier Name (If this is a DBA, the DBA name must appear here and match the DBA stated on the W9 form)

Taxpayer ID Number: ____________________

One of these boxes must be checked

☐ New Supplier  ☐ Change to Existing Record

Supplier #: _____________________________

Will accept payment by Pcard i.e., MasterCard (One of these boxes must be checked)

☐ No  ☐ Yes *a staff member will contact you shortly

Correspondence, Purchasing Address

Address Line 1: ____________________________ Telephone: (_____) _______ – _________
Address Line 2: ____________________________ Fax: (_____) _______ – _________
Address Line 3: ____________________________

City: __________________ State: _______ Zip Code: __________

Payment, Remittance Address  ☐ Same as above

Address Line 1: ____________________________ Telephone: (_____) _______ – _________
Address Line 2: ____________________________ Fax: (_____) _______ – _________
Address Line 3: ____________________________

City: __________________ State: _______ Zip Code: __________

Contact Information (email address must be included if supplier desires to take advantage of certain internet interactions with Orange County)

Contact Name: __________________________ Telephone: (_____) _______ – _________
Email Address: __________________________ Fax: (_____) _______ – _________

PLEASE NOTE: THE ATTACHED SUBSTITUTE W9 FORM MUST ALWAYS BE COMPLETED AND SUBMITTED WITH THIS FORM TO THE ADDRESS STATED ABOVE. IF IT IS NOT, THE APPLICATION WILL BE REJECTED AND YOU WILL NEED TO RE-APPLY.

rev 12-19-17
Orange County Substitute W-9 Form

Request for Taxpayer Identification Number and Certification

Please type or print clearly.

For assistance in completing this form, you can refer to the instructions found on IRS Form W-9 available at www.irs.gov.

Type of Request (one of these boxes must be checked):

☐ New Vendor
☐ Change to Existing Record: TIN / previous TIN
☐ Effective Date

(Check all that apply):
☐ Legal Entity Name
☐ Tax Address
☐ Entity Type

Taxpayer Identification Number (TIN) (Provide only one nine-digit number)

Social Security Number (SSN)    Employer Identification Number (EIN)

Legal Entity Name (As shown on your income tax return; must match SSN or EIN given. Individual or Sole Proprietor enter owner’s name.)

Business, Trade, “Doing Business As” (DBA) Name (if different from legal entity name)

Tax Correspondence Address / Contact (address where tax information will be mailed):

Address Line 1:

Address Line 2:

Address Line 3:

City:    State:    Zip Code:

Telephone:   (__)   Fax:   (__)   Email Address:

Payment Requests are Primarily for:

☐ Medical / Health Care / Veterinary Services
☐ Commodity (products)

Entity Type:

☐ Individual
☐ Sole Proprietor or Sole Proprietor organized as LLC or PLLC
☐ Partnership, LLP or Partnership organized as LLC or PLLC
☐ Corporation or LLC, PLLC organized as a corporation providing health care, medical veterinary or legal services

Exempt Payee:

☐ Corporation or LLC, PLLC organized as a corporation NOT providing health care, medical veterinary or legal services
☐ Tax Exempt Organization under §501(a) (excludes 501(c) (3))
☐ U.S. Government, a state, a possession of the U.S. or any of their political subdivisions or instrumentalities

Certification

Under penalties of perjury, I certify that:
1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because:
   (a) I am exempt from backup withholding, or
   (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest and dividends, or
   (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN.

The Internal Revenue Service does not require your consent to any provision of this document other than the certification required to avoid backup withholding.

Signature of US Person:  

Title:  

Date:  

Print Name Above:  

Orange County Substitute W-9 (12/19/17)
General Instructions—Substitute W-9 Form
Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form: A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA. Use this form only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your applicable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note: If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to a Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from the business. Further, in certain cases where a W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives the W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,
- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person, do not use Form W-9. Instead, use appropriate Form W-8 (see IRS Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, then you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-
China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called “backup withholding.” Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, non-employee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on pages 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividend accounts opened after 1983 only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only). Certain payees and payments are exempt from backup withholding. See the instructions below and the separate instructions for the Requester of Form W-9. Also see Special rules for partnerships on page 1.

Penalties
Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.
Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.
Criminal penalty for falsifying information. Wholly falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.
Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name
If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered on the form.

Sole proprietor. Enter your individual name as shown on your income tax return on the “Name” line. You may enter your business, trade, or “doing business as (DBA)” name on the “Business name” line.

Limited liability company (LLC). If you are a single member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner’s name on the “Name” line. Enter the LLC’s name on the “Business name” line.

For an LLC classified as a partnership or a corporation, enter the LLC’s name on the “Name” line and any business, trade, or DBA name on the “Business name” line.

Other entities. Enter your business name as shown on required federal tax documents on the “Name” line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the “Business name” line.
Note: You must check the appropriate box depicting your Entity Type. Also select or enter what you are primarily receiving payment for.

Exempt Payee
If you are exempt from backup withholding, enter your name as described above, select or enter what payment is primarily for, check the appropriate box for your Entity Type, check the “Exempt Payee” box, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

Note: If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

The following payees are exempt from backup withholding:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),
2. The United States or any of its agencies or instrumentalities,
3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,
4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or
5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,
7. A foreign central bank of issue,
8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,
9. A futures commission merchant registered with the Commodity Futures Trading Commission,
10. A real estate investment trust,
11. An entity registered at all times during the tax year under the Investment Company Act of 1940,
12. A common trust fund operated by a bank under section 584(a),
13. A financial institution,
14. A middleman known in the investment community as a nominee or custodian, or
15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

<table>
<thead>
<tr>
<th>If the payment is for</th>
<th>THEN the payment is exempt for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest and dividend payments</td>
<td>All exempt recipients except for 9</td>
</tr>
<tr>
<td>Broker transactions</td>
<td>Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker</td>
</tr>
<tr>
<td>Barter exchange transactions and patronage dividends</td>
<td>Exempt recipients 1 through 5</td>
</tr>
<tr>
<td>Payments over $600 required to be reported and direct sales over $5,0001</td>
<td>Generally, exempt payees 1 through 72</td>
</tr>
</tbody>
</table>

1See Form 1099-MISC, Miscellaneous Income, and its Instructions.

2However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys’ fees; and payments for services paid by a federal executive agency.

Part I. Taxpayer Identification Number (TIN)
Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see how to get a TIN below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see Limited Liability company (LLC) on page 2), enter the owner’s SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity’s EIN.

Notes: See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting www.irs.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete this form but do not have a TIN, write “Applied For” in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Notes: Writing “Applied For” means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are an U.S. person, or resident alien, you must sign the form. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown should sign the form. Exempt payees, see Exempt Payee on page 2.

Signature requirements. Complete the certification as indicated in 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1964 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1963 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. “Other payments” include payments made in the course of the requester’s trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a non-employee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

<table>
<thead>
<tr>
<th>For this type of account:</th>
<th>Give name and SSN of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Individual</td>
<td>The Individual</td>
</tr>
<tr>
<td>2. Two or more Individuals (joint account)</td>
<td>The actual owner of the account or, if combined funds, the first individual on the account</td>
</tr>
<tr>
<td>Number</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3.</td>
<td>Custodian account of a minor (Uniform Gift to Minors Act)</td>
</tr>
<tr>
<td>4.</td>
<td>a. The usual revocable savings trust (grantor is also trustee)</td>
</tr>
<tr>
<td></td>
<td>b. So-called trust account that is not a legal or valid trust under state</td>
</tr>
<tr>
<td></td>
<td>law</td>
</tr>
<tr>
<td>5.</td>
<td>Sole proprietorship or disregarded entity owned by an individual</td>
</tr>
<tr>
<td></td>
<td>For this type of account:</td>
</tr>
<tr>
<td>6.</td>
<td>Disregarded entity not owned by an individual</td>
</tr>
<tr>
<td>7.</td>
<td>A valid trust, estate, or pension trust</td>
</tr>
<tr>
<td>8.</td>
<td>Corporate or LLC electing corporate status on Form 8832</td>
</tr>
<tr>
<td>9.</td>
<td>Association, club, religious, charitable, educational, or other tax exempt</td>
</tr>
<tr>
<td></td>
<td>organization</td>
</tr>
<tr>
<td>10.</td>
<td>Partnership or multimember LLC</td>
</tr>
<tr>
<td>11.</td>
<td>A broker or registered nominee</td>
</tr>
<tr>
<td>12.</td>
<td>Account with the Dept. of Agriculture in the name of a public entity</td>
</tr>
</tbody>
</table>

3. List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person’s number must be furnished.

2. Circle the minor’s name and furnish the minor’s SSN.

1. You must show your individual name, and you may also enter your business or “DBA” name on the second line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

* List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 1.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Payees must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.
RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Orange County DGS
Nancy McElroy, Contract Coordinator
255-275 Main Street
Goshen, NY 10924

Schedule Year: 2017 through 2018
Date Requested: 12/19/2017
PRC#: 201703450

Location: Salisbury Mills
Project ID#: [Proper Project ID]
Project Type: The County is seeking to purchase construction services (labor and materials) for the Rehabilitation of Beaver Dam Lake Dam. The project consists of the rehabilitation of the Beaver Dam Lake Dam.

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 2017 through June 2018. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department’s website: www.labor.state.ny.us. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and/or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail OR fax this form to the office shown at the bottom of this notice, OR fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: ______________________ Date Cancelled: ______________________
Name & Title of Representative: ____________________________________________

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averill Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

www.labor.state.ny.us. PW 200 PWAsk@labor.state.ny.us
General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a “Request for wage and Supplement Information” form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project. There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "4 Day / 10 Hour Work Schedule" form (PW 30.1).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule from the Bureau of Public Work. Requests may be submitted by: mail to NYSDOl, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 455-1870, or electronically at the NYSDOl website www.labor.state.ny.us.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOl website www.labor.state.ny.us.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOl website www.labor.state.ny.us.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least Five (5) years from the project's date of completion. See Spota Bill Notice. 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, canceled 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 NYS DOL 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 229-b and 235.2 of the Labor Law to 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 journeymen 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 Wage 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 journeymen’s wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg, Campus, Bldg 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany 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 renters 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.
RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

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:

[ ] (01) General Construction

[ ] (02) Heating/Ventilation

[ ] (03) Electrical

[ ] (04) Plumbing

[ ] (05) Other: __________________________

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

www.labor.state.ny.us PW 16 PWAsk@labor.state.ny.us
IMPORTANT NOTICE

FOR

CONTRACTORS &
CONTRACTING AGENCIES

Social Security Numbers on Certified Payrolls

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors’ concerns with regard to inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor.

NOTE: This change does not affect the Department’s ability to request and receive the entire social security number from employers during the course of its public work / prevailing wage investigations.
To all State Departments, Agency Heads and Public Benefit Corporations

IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.


3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to 10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.
To all State Departments, Agency Heads and Public Benefit Corporations

IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.
Construction Industry Fair Play Act

Required Posting For Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site.

Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense.

The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov.

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.state.ny.us.
New York State Department of Labor
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 such as
  - unemployment benefits, if 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 required by New York State and Federal Law.

Penalties for paying 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, 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 1(866)435-1499 or send an email to dot.misclassified@labor.state.ny.us. All complaints of fraud and violations are taken seriously and you can remain anonymous.

Employer Name:
WORKER NOTIFICATION

(Labor Law §220, paragraph a of subdivision 3-a)

Effective February 24, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the prevailing wage rate for their particular job classification on each pay stub*. It also requires contractors and subcontractors to post a notice at the beginning of the performance of every public work contract on each job site that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her particular job classification. The required notification will be provided with each wage schedule, may be downloaded from our website www.labor.state.ny.us or made available upon request by contacting the Bureau of Public Work at 518-457-5589.

* In the event that the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.
Attention Employees

THIS IS A:
PUBLIC WORK PROJECT

If you are employed on this project as a worker, laborer, or mechanic you are entitled to receive the prevailing wage and supplements rate for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: www.labor.ny.gov

If you feel that you have not received proper wages or benefits, please call our nearest office.*

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<th>Location</th>
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<th>Location</th>
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<td>(518) 457-2744</td>
<td>Patchogue</td>
<td>(631) 687-4882</td>
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<tr>
<td>Binghamton</td>
<td>(607) 721-8005</td>
<td>Rochester</td>
<td>(585) 258-4505</td>
</tr>
<tr>
<td>Buffalo</td>
<td>(716) 847-7159</td>
<td>Syracuse</td>
<td>(315) 428-4056</td>
</tr>
<tr>
<td>Garden City</td>
<td>(516) 228-3915</td>
<td>Utica</td>
<td>(315) 793-2314</td>
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<tr>
<td>New York City</td>
<td>(212) 932-2419</td>
<td>White Plains</td>
<td>(914) 997-9507</td>
</tr>
<tr>
<td>Newburgh</td>
<td>(845) 568-5156</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: ____________________________

Project Location: ____________________________
OSHA 10-hour Construction
Safety and Health Course – S1537-A

Effective July 18, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, section 220-h. It requires that on all public work projects of at least $250,000.00, all laborers, workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least $250,000.00, contain a provision of this requirement.

NOTE: The OSHA 10 Legislation only applies to workers on a public work project that are required, under Article 8, to receive the prevailing wage.
Where to find OSHA 10-hour Construction Course

1. NYS Department of Labor website for scheduled outreach training at:
   www.labor.state.ny.us/workerprotection/safetyhealth/DOSH_ONSITE CONSULTATION.shtml

2. OSHA Training Institute Education Centers:
   
   **Rochester Institute of Technology OSHA Education Center**
   Rochester, NY
   Donna Winter
   Fax (585) 475-6292
   e-mail: diwipo@rit.edu
   (866) 385-7470 Ext. 2919
   www.rit.edu/~outreach/course.php3?CourseID=54

   **Atlantic OSHA Training Center**
   UMDNJ - School of Public Health
   Piscataway, NJ
   Janet Crooks
   Fax (732) 235-9460
   e-mail: crooksje@umdnj.edu
   (732) 235-9455
   https://ophp.umdnj.edu/wconnect/ShowSchedule.awp?~GROUP~AOTCON~10~

   **Atlantic OSHA Training Center**
   University at Buffalo
   Buffalo, New York
   Joe Syracuse
   Fax (716) 829-2806
   e-mail: mailto:japs@buffalo.edu
   (716) 829-2125
   http://www.smbx.buffalo.edu/CENTERS/trc/schedule_OSHA.php

   **Keene State College**
   Manchester, NH
   Leslie Singleton
   e-mail: leslie@keene.edu
   (800) 449-6742
   www.keene.edu/courses/print/courses_osha.cfm

3. List of trainers and training schedules for OSHA outreach training at:
   www.OutreachTrainers.org
Requirements for OSHA 10 Compliance

Chapter 282 of the Laws of 2007, codified as Labor Law 220-h took effect on July 18, 2008. The statute provides as follows:

The advertised specifications for every contract for public work of $250,000.00 or more must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (Note: Completion cards do not have an expiration date.)
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-485-5696.
WICKS Reform 2008

(For all contracts advertised or solicited for bid on or after 7/1/08)

- Raises the threshold for public work projects subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work. The total project's threshold would increase from $50,000 to: $3 million in Bronx, Kings, New York, Queens and Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

- For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical work and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or use of a Project Labor Agreement (PLA), and must be open to public inspection.

- Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

- The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

- Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

- Reduces from 15 to 7 days the period in which contractors must pay subcontractors.
IMPORTANT INFORMATION
Regarding Use of Form PW30.1
(Previously 30R)
“Employer Registration for Use of 4 Day / 10 Hour Work Schedule”

To use the ‘4 Day / 10 Hour Work Schedule’:

There MUST be a Dispensation of Hours (PW30) in place on the project

AND

You MUST register your intent to work 4 / 10 hour days, by completing the PW30.1 Form.

REMEMBER...

The ‘4 Day / 10 Hour Work Schedule’ applies ONLY to Job Classifications and Counties listed on the PW30.1 Form.

Do not write in any additional Classifications or Counties.

(Please note: For each Job Classification check the individual wage schedule for specific details regarding their 4/10 hour day posting.)
Instructions for Completing Form PW30.1
(Previously 30R)
“Employer Registration for Use of 4 Day / 10 Hour Work Schedule”

Before completing Form PW30.1 check to be sure …

- There is a Dispensation of Hours in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Instructions (Type or Print legibly):

Contractor Information:
- Enter the Legal Name of the business, FEIN, Street Address, City, State, Zip Code; the Company’s Phone and Fax numbers; and the Company’s email address (if applicable)
- Enter the Name of a Contact Person for the Company along with their Phone and Fax numbers, and the personal email address (if applicable)

Project Information:
- Enter the Prevailing Rate Case number (PRC#) assigned to this project
- Enter the Project Name / Type (i.e. Smithtown CSD — Replacement of HS Roof)
- Enter the Exact Location of Project (i.e. Smithtown HS, 143 County Route #2, Smithtown, NY; Bldgs. 1 & 2)
- If you are a Subcontractor, enter the name of the Prime Contractor for which you work
- On the Checklist of Job Classifications -
  - Go to pages 2 and 3 of the form
  - Place a checkmark in the box to the right of the Job Classification you are choosing
  - Mark all Job Classifications that apply
    ***Do not write in any additional Classifications or Counties.***

Requestor Information:
- Enter the name of the person submitting the registration, their title with the company, and the date the registration is filled out

Return Completed Form:
- Mail the completed PW30.1 form to: NYSDOL Bureau of Public Work, SOBC — Bldg 12 — Rm. 130, Albany, NY 12240 —OR—
- Fax the completed PW30.1 form to: NYSDOL Bureau of Public Work at (518)485-1870
Employer Registration for Use of 4 Day / 10 Hour Work Schedule

Before completing this form, make sure that:
- There is a Dispensation of Hours in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Please type or print the requested information and then mail or fax to the address above.

Contractor Information

Company Name: ___________________________ FEIN: __________
Address: ____________________________________________
City: ___________________ State: ___________ Zip Code: ______
Phone No: ___________ Fax No: ___________ Email: ___________
Contact Person: ____________________________
Phone No: ___________ Fax No: ___________ Email: ___________

Project Information

Project Proc#: ____________________________ Project Name/Type: ____________________________

Exact Location of Project: ____________________________ County: ____________________________

(If you are a Subcontractor)
Prime Contractor Name: ____________________________

Job Classification(s) to Work 4/10 Schedule: (Choose all that apply on Job Classification Checklist - Pages 3-8)

*** Do not write in any additional classifications or Counties ***

Requestor Information

Name: __________________________________
Title: ____________________________ Date: ____________________________
Please use the list below with the number assigned to each county as a reference to the corresponding numbers listed in the following pages under Entire Counties & Partial Counties.

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<thead>
<tr>
<th></th>
<th>County</th>
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<th>County</th>
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<td>New York County (Manhattan)</td>
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</tr>
<tr>
<td>32.</td>
<td>Niagara County</td>
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### Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

***Do not write in any additional Classifications or Counties***

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<thead>
<tr>
<th>Job Classification</th>
<th>Tag #</th>
<th>Entire Counties</th>
<th>Partial Counties</th>
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### Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

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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.

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. In most cases the payment or provision of supplements is for each hour worked (noted in the schedule as ‘Per hour worked’). Some classifications require the payment or provision of supplements for each hour paid (noted in the schedule as ‘Per hour paid’), which require supplements to be paid or provided at a premium rate for premium hours worked. Some classifications may also require the payment or provision of supplements for paid holidays on which no work is performed.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.state.ny.us) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1:1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before the 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) 457-8620 if you have any questions.

<table>
<thead>
<tr>
<th>Title (Trade)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boilermaker (Construction)</td>
<td>1:1:1:4</td>
</tr>
<tr>
<td>Boilermaker (Shop)</td>
<td>1:1:1:3</td>
</tr>
<tr>
<td>Carpenter (Bldg., HSH, Pte Driver/Dockbuilder)</td>
<td>1:1:1:4</td>
</tr>
<tr>
<td>Carpenter (Residential)</td>
<td>1:1:1:3</td>
</tr>
</tbody>
</table>
### Prevailing Wage Rates for 07/01/2017 - 09/30/2018

*Last Published on Dec 01, 2017*

<table>
<thead>
<tr>
<th>Trade</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical (Outside) Lineman</td>
<td>1:1:1:2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrician (Inside)</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevator/Escalator Construction &amp; Modernizer</td>
<td>1:1:1:2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glazier</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation &amp; Asbestos Worker</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Worker</td>
<td>1:1:1:4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laborer</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mason</td>
<td>1:1:1:4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millwright</td>
<td>1:1:1:4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Op Engineer</td>
<td>1:1:1:5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painter</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumber &amp; Steamfitter</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofer</td>
<td>1:1:1:2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheet Metal Worker</td>
<td>1:1:1:3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprinkler Fitter</td>
<td>1:1:1:2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

<table>
<thead>
<tr>
<th>District Office Locations</th>
<th>Telephone #</th>
<th>FAX #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bureau of Public Work - Buffalo</td>
<td>716-847-7159</td>
<td>716-847-7560</td>
</tr>
<tr>
<td>Bureau of Public Work - Garden City</td>
<td>516-228-3015</td>
<td>516-794-3518</td>
</tr>
<tr>
<td>Bureau of Public Work - Newburgh</td>
<td>845-688-8287</td>
<td>845-688-6332</td>
</tr>
<tr>
<td>Bureau of Public Work - New York City</td>
<td>212-732-2419</td>
<td>212-775-3579</td>
</tr>
<tr>
<td>Bureau of Public Work - Patchogue</td>
<td>631-887-4882</td>
<td>631-887-4902</td>
</tr>
<tr>
<td>Bureau of Public Work - Rochester</td>
<td>585-258-4505</td>
<td>585-258-4708</td>
</tr>
<tr>
<td>Bureau of Public Work - Syracuse</td>
<td>315-428-4656</td>
<td>315-428-4671</td>
</tr>
<tr>
<td>Bureau of Public Work - Utica</td>
<td>315-793-2314</td>
<td>315-793-2514</td>
</tr>
<tr>
<td>Bureau of Public Work - White Plains</td>
<td>914-697-9507</td>
<td>914-697-9523</td>
</tr>
<tr>
<td>Bureau of Public Work - Central Office</td>
<td>518-457-5589</td>
<td>518-457-1870</td>
</tr>
</tbody>
</table>
Attachment 3
Article 8 Prevailing Wage Schedule

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Prevailing Wage Rates for 07/01/2017 - 06/30/2018
Published by the New York State Department of Labor
Last Published on Dec 01, 2017
PRC Number 2017013459 Orange County

Orange County General Construction

Boilermaker 12/01/2017

JOB DESCRIPTION Boilermaker

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

WAGES
Per Hour: 07/01/2017 01/01/2018
Boilermaker $55.23 $57.17
Repairs & Renovations $55.23 $57.17

SUPPLEMENTAL BENEFITS
Per Hour: 07/01/2017 01/01/2018
Boilermaker 32% of hourly 32% of hourly
Repair & Renovations Wage Paid Wage Paid
+ $25.27 + $25.35

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 (D, O) on OVERTIME PAGE
Repairs & Renovation see (B.E.O)

HOLIDAY
Paid: See (8, 18, 23, 24) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 12, 15, 18, 22, 23, 24, 25) on HOLIDAY PAGE
NOTE: *Employee must work in pay week to receive Holiday Pay.
**Employee gets 4 times the hourly wage rate for working Labor Day.

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

<table>
<thead>
<tr>
<th>Term</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/17</td>
<td>85%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>01/01/18</td>
<td>85%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
</tr>
</tbody>
</table>

Supplemental Benefits Per Hour:

<table>
<thead>
<tr>
<th>Apprentice(s)</th>
<th>07/01/2017</th>
<th>01/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage Paid Plus</td>
<td>32% of Hourly</td>
<td>32% of Hourly</td>
</tr>
<tr>
<td>Amount Below</td>
<td>Wage Paid Plus</td>
<td>Wage Paid Plus</td>
</tr>
<tr>
<td>1st Term</td>
<td>$10.35</td>
<td>$10.37</td>
</tr>
<tr>
<td>2nd Term</td>
<td>20.22</td>
<td>20.22</td>
</tr>
<tr>
<td>3rd Term</td>
<td>21.04</td>
<td>21.00</td>
</tr>
<tr>
<td>4th Term</td>
<td>21.89</td>
<td>21.92</td>
</tr>
<tr>
<td>5th Term</td>
<td>22.74</td>
<td>22.77</td>
</tr>
<tr>
<td>6th Term</td>
<td>23.60</td>
<td>23.62</td>
</tr>
<tr>
<td>7th Term</td>
<td>24.43</td>
<td>24.40</td>
</tr>
</tbody>
</table>

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

Carpenter 12/01/2017

JOB DESCRIPTION Carpenter

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
## Prevailing Wage Schedule

### County of Orange, New York

**Department of General Services**

**PO Box 218, 255-275 Main St.**

**Goshen, New York 10924**

### RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

#### Article 8

**Attachment 3**

**Article 8 Prevailing Wage Schedule**

---

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**

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**Last Published on Dec 01, 2017**

**Attachment 3**

---

**Orange: The territory west demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle. The territory south demarcated by a line continuing north on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W to the center line of Route 32. The territories south and east heading 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**

**Per hour:**

- **07/01/2017**
  - Carpet/Resilient
    - Floor Coverer: $31.57

**INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.**

**SUPPLEMENTAL BENEFITS**

**Per hour worked:**

- **$29.12**

**OVERTIME PAY**

See (8, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid:

- See (18, 19) on HOLIDAY PAGE

Paid for 1st & 2nd yr.

- Appentices: See (5, 8, 11, 13, 15, 16, 18, 19, 25)

<table>
<thead>
<tr>
<th>Year</th>
<th>Wage per hour (1) year terms:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>14.99</td>
</tr>
<tr>
<td>2nd</td>
<td>17.98</td>
</tr>
<tr>
<td>3rd</td>
<td>20.97</td>
</tr>
<tr>
<td>4th</td>
<td>23.97</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour - All apprentices:**

- **$18.97**

---

**Carpenter**

**DISTRICT 8**

**Entire Counties**

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

**Wages**

**Per Hour:**

- **07/01/2017**

**Supplemental Benefits**

**Per Hour Worked:**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Diver</td>
<td>$65.38</td>
</tr>
<tr>
<td>Marine Tender</td>
<td>$40.44</td>
</tr>
</tbody>
</table>

**OVERTIME PAY**

See (8, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid:

- See (18, 19) on HOLIDAY PAGE

Overtime:

- See (5, 8, 10, 11, 13, 15, 16, 18, 19, 20) on HOLIDAY PAGE

---

**Carpenter**

**DISTRICT 8**

**Entire Counties**

- Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

**Partial Counties**

---

Page 33
## Prevailing Wage Rates for 07/01/2017 - 06/30/2018

Last Published on Dec 01, 2017

### Orange County

- South of but including the following: Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.
- Putnam: South of but including the following: Cold Spring, Tompkins Corners, Mahopac, Croton Falls, east to Connecticut border.
- Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

### WAGES

<table>
<thead>
<tr>
<th>Core Drilling</th>
<th>Per hour: 07/01/2017</th>
<th>10/17/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>$38.82</td>
<td>+ additional $1.65</td>
</tr>
<tr>
<td>Driller Helper</td>
<td>30.66</td>
<td>+ additional $1.45</td>
</tr>
</tbody>
</table>

**Note:** Hazardous Waste Pay Differential:
- For Level C, an additional 10% above wage rate per hour
- For Level B, an additional 10% above wage rate per hour
- For Level A, an additional 10% above wage rate per hour

**Note:** When required to work on water: an additional $0.50 per hour.

### SUPPLEMENTAL BENEFITS

| Driller and Helper | Per hour worked: 07/01/2017 | 10/17/2017 | $24.68 |

**OVERTIME PAY**

- **OVERTIME:** See (B, E, K*, P, R**) on OVERTIME PAGE.

### HOLIDAY

- **Paid:** See (5, 6) on HOLIDAY PAGE.
- **Overtime:** See (5, 6) on HOLIDAY PAGE.
- **Supplemental:** See (6, 10, 11, 13) on HOLIDAY PAGE.

### Carpenter

**District:** 8

### Entire Counties

- Dutchess, Orange

### WAGES

<table>
<thead>
<tr>
<th>Per hour: 07/01/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building:</td>
</tr>
<tr>
<td>Milwright: $40.99</td>
</tr>
</tbody>
</table>

### SUPPLEMENTAL BENEFITS

| Journeymen | $39.04 |

### OVERTIME PAY

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

### HOLIDAY

- **Payers:** See (18, 19) on HOLIDAY PAGE.
- **Paid:** See (5, 6, 11, 13, 16, 18, 19, 25) for 1st & 2nd yr. Apprentices
- **Overtime:** See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE.

### REGISTERED APPRENTICES

<table>
<thead>
<tr>
<th>Wages per hour:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) year terms:</td>
</tr>
<tr>
<td>1st: $22.49</td>
</tr>
<tr>
<td>2nd: $28.58</td>
</tr>
<tr>
<td>3rd: $30.67</td>
</tr>
<tr>
<td>4th: $38.85</td>
</tr>
</tbody>
</table>
Prevaling Wage Rates for 07/01/2017 - 06/30/2018

Supplemental benefits per hour:

<table>
<thead>
<tr>
<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$27.30</td>
<td>$26.58</td>
<td>$22.90</td>
<td>$36.45</td>
</tr>
</tbody>
</table>

Carpenter - Building / Heavy & Highway

JOB DESCRIPTION: Carpenter - Building / Heavy & Highway

DISTRIBUTION: 2

ENTIRE COUNTIES:


PARTIAL COUNTIES:

Orange: The area lying on the Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Ors Mills Rd, then west on Ors 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 Knis Rd, southeast on Knis 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:

<table>
<thead>
<tr>
<th>Date</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017</td>
<td>$29.88</td>
</tr>
<tr>
<td>01/01/2018</td>
<td>$30.30</td>
</tr>
<tr>
<td>Additional</td>
<td>$1.50</td>
</tr>
</tbody>
</table>

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

SUPPLEMENTAL BENEFITS:

Per hour worked plus paid holidays:

Journeyman $21.45

OVERTIME PAY:

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

HOLIDAY:

Paid: See (2, 17) on HOLIDAY PAGE.

Overtime: See (5, 6, 18) on HOLIDAY PAGE.

Notes:

When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. When a holiday falls upon a Sunday, it shall be observed on the following Monday.

An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES:

Wages per hour:

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

<table>
<thead>
<tr>
<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Supplemental benefits per hour worked plus paid holidays:

<table>
<thead>
<tr>
<th>Term</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>$11.00</td>
</tr>
<tr>
<td>2nd year</td>
<td>$11.00</td>
</tr>
<tr>
<td>3rd year</td>
<td>$13.00</td>
</tr>
<tr>
<td>4th year</td>
<td>$13.00</td>
</tr>
</tbody>
</table>

Carpenter - Building / Heavy & Highway

JOB DESCRIPTION: Carpenter - Building / Heavy & Highway

DISTRIBUTION: 11

ENTIRE COUNTIES:

Columbia, Dutchess, Orange, Sullivan, Ulster

WAGES:

WAGES (per hour):

<table>
<thead>
<tr>
<th>Date</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017</td>
<td>$29.88</td>
</tr>
<tr>
<td>01/01/2018</td>
<td>$30.30</td>
</tr>
<tr>
<td>07/01/2018</td>
<td>$30.30</td>
</tr>
</tbody>
</table>
**Attachment 3**

Article 8 Prevailing Wage Schedule

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**Prevaling Wage Rates for 07/01/2017 - 06/30/2018**

*Published by the New York State Department of Labor*  
*PRC Number 2017013459 Orange County*

<table>
<thead>
<tr>
<th>Trade</th>
<th>Wage Rate</th>
<th>Shift Differential</th>
<th>Supplemental Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter</td>
<td>$36.00</td>
<td></td>
<td>Plus $0.80</td>
</tr>
<tr>
<td>Dockbuilder/Filedriver</td>
<td>36.00</td>
<td></td>
<td>to be allocated</td>
</tr>
<tr>
<td>Diver Tender</td>
<td>36.00</td>
<td></td>
<td>to be allocated</td>
</tr>
<tr>
<td>Diver (Wet)</td>
<td>50.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diver (Dry)</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

**NOTE:** Carpenters employed in the removal or abatement of asbestos or any toxic or hazardous material or required to work near asbestos or any toxic or hazardous material and required to wear protective equipment shall receive two (2) hours extra pay per day, plus applicable benefits.

**SUPPLEMENTAL BENEFITS**

<table>
<thead>
<tr>
<th>Per hour paid:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeyworker</td>
<td>$26.88</td>
</tr>
</tbody>
</table>

**OVERTIME PAY**

**BUILDING:**

See (B, E, Q) on OVERTIME PAGE

**HEAVY/HIGHWAY:**

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

**HOLIDAY**

**BUILDING:**

Paid: See (1) on HOLIDAY PAGE.

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

**HEAVY/HIGHWAY:**

Paid: See (5, 8, 25) on HOLIDAY PAGE including benefits.

Overtime: See (5*, 8*, 25**) on HOLIDAY PAGE.

*NOTE:* For Holidays 5 and 6 code T applies, with benefits at straight time rate.

**NOTE:** For Holidays 16 and 25 code Q applies, with benefits at straight time rate.

**REGISTERED APPRENTICES**

1 Year terms at the following wage rates.

<table>
<thead>
<tr>
<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/17</td>
<td>$18.30</td>
<td>$21.45</td>
<td>$24.00</td>
<td>$27.75</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour paid:

- Apprentices
- All terms

<table>
<thead>
<tr>
<th></th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$18.05</td>
</tr>
</tbody>
</table>

**Carpenter - Floor Coverer**

**DISTRICT 11**

**12/01/2017**

**JOB DESCRIPTION** Carpenter - Floor Coverer

**ENTIRE COUNTIES**

**PARTIAL COUNTIES**

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Ors Mill Rd, then west on Ors Mill Rd to Route 84, continue west and south on Route 84 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Belvale Rd, west on Belvale Rd to Belvale Lakes Rd, then south on Belvale Lakes Rd to Kail Rd, southeast on Kail Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

**WAGES**

<table>
<thead>
<tr>
<th>WAGES (per hour)</th>
<th>07/01/2017</th>
<th>01/01/2018</th>
<th>07/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpet / Resilient</td>
<td>$36.09</td>
<td>Plus $0.80</td>
<td>Plus $0.80</td>
</tr>
<tr>
<td>Floor Coverer</td>
<td></td>
<td>to be allocated</td>
<td>to be allocated</td>
</tr>
</tbody>
</table>

**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.
Prevaling Wage Rates for 07/01/2017 - 06/30/2018
Published by the New York State Department of Labor
Last Published on Dec 01, 2017
PRC Number 2017013459 Orange County

Note: Carpenters employed in the removal or abatement of asbestos or any toxic or hazardous material or required to work near asbestos or any toxic or hazardous materials and required to wear protective equipment shall receive two (2) hours extra pay per day, plus applicable benefits.

SUPPLEMENTAL BENEFITS
Per hour paid:
Journey worker $26.88

OVERTIME PAY
Building: See (B, E, Q) on Overtime Page
Heavy/Highway: See (B, E, Q, T) on Overtime Page

HOLIDAY
Building:
Paid: See (1) on Holiday Page
Overtime: See (5, 6, 16**, 25** ) on Holiday Page, including benefits

Heavy/Highway
Paid: See (5, 6, 25) on Holiday Page, including benefits
Overtime: See (5*, 6*, 25*) on Holiday Page

*Note: For Holidays 5 and 6 code T applies, with benefits at straight time rate
**Note: For Holidays 16 and 25 code Q applies, with benefits at straight time rate

REGISTERED APPRENTICES
1 Year terms at the following wage rate:

<table>
<thead>
<tr>
<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18.30</td>
<td>21.45</td>
<td>24.60</td>
<td>27.75</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour paid for all terms:
$10.05

11-279,2 Floor

Electrician
12/01/2017

JOB DESCRIPTION: Electrician
DISTRIBUTION: 11

ENTIRE COUNTIES: Orange, Putnam, Rockland
PARTIAL COUNTIES: Towns of Fishkill, East Fishkill, and Beacon

WAGES
Per hour:
Electrician Wreman/Technician $42.50

*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 $49.87*
- Shift worked between 12:30am & 8:30am $55.80*

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 Scott air packs, gas masks or in shafts or tunnels, they shall receive an additional $2.00 per hour above the regular straight time rate.

Journeyman Wreman when performing welding or cable splicing: $1.00 above the Journeyman Wreman rate of pay.
Journeyman Wreman required to have a NYS Asbestos Certificate: $1.00 above the Journeyman Wreman rate of pay.
Journeyman Wreman required to have a CDL: $1.00 above the Journeyman Wreman rate of pay.

SUPPLEMENTAL BENEFITS
Per hour worked:
07/01/2017

Journeyman
$25.32 plus
6% of straight or premium wage
Attachment 3

Article 8 Prevailing Wage Schedule

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Prevaling Wage Rates for 07/01/2017 - 03/30/2018
Published by the New York State Department of Labor
Published on Dec 01, 2017
PRC Number 2017013459; Orange County

OVERTIME PAY
See (8, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 8, 13, 15, 18, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:

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

<table>
<thead>
<tr>
<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Denotes average journeyman wireman rate of all wage zones

Supplemental Benefits per hour worked:

<table>
<thead>
<tr>
<th></th>
<th>07/01/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st term</td>
<td>$11.42 plus 5% of straight or premium wage</td>
</tr>
<tr>
<td>2nd term</td>
<td>$12.92 plus 5% of straight or premium wage</td>
</tr>
<tr>
<td>3rd term</td>
<td>$14.92 plus 6% of straight or premium wage</td>
</tr>
<tr>
<td>4th term</td>
<td>$16.92 plus 6% of straight or premium wage</td>
</tr>
<tr>
<td>5th &amp; 8th term</td>
<td>$19.92 plus 6% of straight or premium wage</td>
</tr>
</tbody>
</table>

Elevator Constructor

12/01/2017

JOB DESCRIPTION: Elevator Constructor

DISTRIBUTION:

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

PARTIAL COUNTIES
Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hamden, Kortright, Maripah, Middletown, Roxbury, Hancock & Stamford
Rockland: Only the Township of Stony Point.

WAGES

Per Hour

<table>
<thead>
<tr>
<th></th>
<th>07/01/2017</th>
<th>01/01/2018</th>
<th>01/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanic</td>
<td>$55.02</td>
<td>+$2.85</td>
<td>+$2.04</td>
</tr>
</tbody>
</table>

Helper 70% of Mechanic Wage Rate

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

NOTE - In order to use the ‘4 Day/10 Hour Work schedule’, as your normal schedule, you must submit an ‘Employer Registration for Use of 4 Day/10 Hour Work Schedule’, form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked:

<table>
<thead>
<tr>
<th></th>
<th>07/01/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeyman/Helper</td>
<td>$31.565</td>
</tr>
</tbody>
</table>

(*) Plus 6% of regular hourly.

OVERTIME PAY
See (D, G) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 8, 13, 15, 18) on HOLIDAY PAGE
Overtime: See (5, 8, 13, 18) 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
Prevailing Wage Rates for 07/01/2017 - 06/30/2018
Last Published on Dec 01, 2017
Published by the New York State Department of Labor
PRC Number 2017013459, Orange County

Wages per hour:

<table>
<thead>
<tr>
<th>0-6 mo*</th>
<th>6-12 mo</th>
<th>2nd yr</th>
<th>3rd yr</th>
<th>4th yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>55%</td>
<td>55%</td>
<td>70%</td>
<td>80%</td>
</tr>
</tbody>
</table>

*No supplemental benefits

Supplemental Benefits per hour worked:

Same as Journeyman/Helper

Glazier 12/01/2017

JOB DESCRIPTION: Glazier
DISTRICT: 0
ENTIRE COUNTIES: Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES:
Per hour:

<table>
<thead>
<tr>
<th>Glazier</th>
<th>$53.60</th>
<th>+ additional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffolding</td>
<td>$54.60</td>
<td>$1.25</td>
</tr>
</tbody>
</table>

Scaffolding includes swing scaffold, mechanical equipment, scissor jacks, man lifts, booms & buckets 24' or more, but not pipe scaffolding.

Repair & Maintenance $27.23

Repair & Maintenance: All repair & maintenance work on a particular building, whenever performed, where the total cumulative contract value is under $121,550

SUPPLEMENTAL BENEFITS:
Per hour paid:

<table>
<thead>
<tr>
<th>Glazier</th>
<th>$31.99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair &amp; Maintenance</td>
<td>$18.24</td>
</tr>
</tbody>
</table>

OVERTIME PAY
See (C, D, E2, C) on OVERTIME PAGE. (Premium is applied to the respective base wage only.)

* If an optional 8th hour is required to complete the entire project, the same shall be paid at the regular rate of pay. If a 9th hour is worked, then both hours or more (8th & 9th or more) will be paid at double time rate of pay.

For ‘Repair & Maintenance’ see (B, B2, F, F) on overtime page.

HOLIDAY:
Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 8, 18, 25) on HOLIDAY PAGE

For ‘Repair & Maintenance’ see (5, 6, 16, 26)

REGISTERED APPRENTICES:
Wage per hour:
(1) Year terms at the following wage rates:

<table>
<thead>
<tr>
<th>Glazier</th>
<th>$18.44</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd term</td>
<td>20.01</td>
</tr>
<tr>
<td>3rd term</td>
<td>22.10</td>
</tr>
<tr>
<td>4th term</td>
<td>42.97</td>
</tr>
</tbody>
</table>

Supplemental Benefits:
(Per hour worked)

<p>| 1st term | $15.38 |
| 2nd term | 21.21 |
| 3rd term | 23.41 |
| 4th term | 27.58 |</p>
<table>
<thead>
<tr>
<th>JOB DESCRIPTION</th>
<th>Insulator - Heat &amp; Frost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE COUNTRIES</td>
<td>Dutchess, Orange, Putnam, Rockland, Westchester</td>
</tr>
<tr>
<td>DISTRICT</td>
<td>8</td>
</tr>
<tr>
<td>WAGES</td>
<td>12/01/2017</td>
</tr>
<tr>
<td>Per hour:</td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td>$51.30</td>
</tr>
<tr>
<td>Discomfort &amp; Additional Training**</td>
<td>$54.25</td>
</tr>
<tr>
<td>Fire Stop Work*</td>
<td>$28.45</td>
</tr>
</tbody>
</table>

* Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

** Applies to work requiring: garb or equipment worn against the body not customarily worn by insulators: psychological evaluation: special training, including but not limited to "Yellow Badge" radiation training.

Note: Additional $0.60 per hour for work 30 feet or more above floor or ground level.

<table>
<thead>
<tr>
<th>SUPPLEMENTAL BENEFITS</th>
<th>Per hour paid:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeyworker</td>
<td>$32.05</td>
</tr>
<tr>
<td>Discomfort &amp; Additional Training</td>
<td>$33.64</td>
</tr>
<tr>
<td>Fire Stop Work: Journeyworker</td>
<td>$18.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OVERTIME PAY</th>
<th>See (B. E. 2.Q. T) on OVERTIME PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOLIDAY</td>
<td>Paid: See (1) on HOLIDAY PAGE</td>
</tr>
<tr>
<td>Note: Last working day preceding Christmas and New Years day, workers shall work no later than 12:00 noon and shall receive 8 hrs pay.</td>
<td></td>
</tr>
<tr>
<td>Overtime</td>
<td>See (2, 4, 6, 16, 25) on HOLIDAY PAGE.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REGISTERED APPRENTICES</th>
<th>(1) year terms:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator Apprentices:</td>
<td>1st 2nd 3rd 4th</td>
</tr>
<tr>
<td>$22.59 $27.57 $38.05 $41.74</td>
<td></td>
</tr>
<tr>
<td>Discomfort &amp; Additional Training Apprentices:</td>
<td>1st 2nd 3rd 4th</td>
</tr>
<tr>
<td>$23.76 $26.84 $30.60 $44.10</td>
<td></td>
</tr>
</tbody>
</table>

Supplemental Benefits paid per hour paid:

<table>
<thead>
<tr>
<th>Insulator Apprentices:</th>
<th>1st term 2nd term 3rd term 4th term</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13.23 $18.26 $22.63 $25.75</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discomfort &amp; Additional Training Apprentices:</th>
<th>1st term 2nd term 3rd term 4th term</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13.00 $17.32 $23.98 $27.29</td>
<td></td>
</tr>
</tbody>
</table>
# Prevailing Wage Schedule

**Article 8**

## Ironworker

### District 11

**Entire Counties:** Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

### Wages

<table>
<thead>
<tr>
<th>JOB DESCRIPTION</th>
<th>Ironworker</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE COUNTIES</td>
<td>District 11</td>
</tr>
<tr>
<td>WAGES</td>
<td>12/01/2017</td>
</tr>
<tr>
<td>Per hour:</td>
<td>07/01/2017</td>
</tr>
<tr>
<td>Structural</td>
<td>$45.73</td>
</tr>
<tr>
<td>Reinforcing*</td>
<td>$45.73</td>
</tr>
<tr>
<td>Ornamental</td>
<td>$45.73</td>
</tr>
<tr>
<td>Chain Link Fence</td>
<td>$45.73</td>
</tr>
</tbody>
</table>

*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).*

### Supplemental Benefits

**Per hour paid:**

- **Journeyman:** $36.98

### Overtime Pay

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

- *Note: Double Time after 10 hours Monday thru Friday.
- **Note: On Saturdays, double time after 8 hours.

### Holiday

**Paid:** See (1) on HOLIDAY PAGE

**Overtime:** See (5, 6, 18) on HOLIDAY PAGE

### Registered Apprentices

**Wages:**

<table>
<thead>
<tr>
<th>(1) year terms at the following wage</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$22.87</td>
<td>$27.44</td>
<td>$32.01</td>
<td>$36.58</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour worked:**

- **1st year:** $31.52
- **2nd year:** $32.69
- **3rd year:** $33.77
- **4th year:** $34.84

---

## Laborer - Building

### District 11

**Entire Counties:** Orange, Sullivan, Ulster

### Partial Counties

- Delaware: Only the Townships of Andes, Bovina, Davenport, Delhi, Franklin, Hamden, Harperfield, Kortright, Meredith, Middletown, Roxbury, and Stamford
- Greene: Only the Township of Catskill.

### Wages

**General Laborer:** flag person, portable generator tender, portable pump tender, temporary heat tender, chipping hammer, acoustic pump, mixer, concrete laborer, demolition, demo saw, gunite, general cleanup, landscaping, mason tender, jackhammer, pavement breaker, pressure blasting, signperson, bullies, wrecking, chain saw, cleaning machine, cutting torch, discharge pipe, mega mixer, pump crane machine.

**Intermediate Laborer:** excavation, grading, backfilling, tampers, walk behind roller, when OSHA or contractor requires negative respirator.

**Premium Laborer:** Asbestos abatement work, toxic and hazardous abatement, lead abatement work, environmental work.

### Wages (Per Hour)

<table>
<thead>
<tr>
<th>07/01/2017</th>
<th>08/01/2018</th>
<th>06/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>$34.15</td>
<td>$35.00</td>
</tr>
</tbody>
</table>

---

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**Prevaling Wage Rates for 07/01/2017 - 06/30/2018**

Last Published on Dec 01, 2017

<table>
<thead>
<tr>
<th>Wage Rate</th>
<th>Intermediate</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15.05</td>
<td>$26.95</td>
<td>$27.76</td>
</tr>
<tr>
<td>$18.70</td>
<td>$30.60</td>
<td>$40.50</td>
</tr>
</tbody>
</table>

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 and benefits are 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 worked:
- **Journeyman:** $27.40
- **Shift:** $33.25

**OVERTIME PAY**

See (B.E.G) on OVERTIME PAGE
Double time after the eighth hour on Saturday

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 8, 13, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

(1) year terms at the following wage rates.

<table>
<thead>
<tr>
<th>Term</th>
<th>07/01/2017</th>
<th>06/30/2018</th>
<th>06/30/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>$18.78</td>
<td>$19.28</td>
<td>$19.77</td>
</tr>
<tr>
<td>2nd</td>
<td>$22.19</td>
<td>$22.78</td>
<td>$23.37</td>
</tr>
<tr>
<td>3rd</td>
<td>$25.09</td>
<td>$25.78</td>
<td>$26.60</td>
</tr>
<tr>
<td>4th</td>
<td>$28.02</td>
<td>$28.79</td>
<td>$30.58</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour worked:**

- **Apprentices:** $22.15
- **Shift:** $20.83

**Laborer - Heavy&Highway**

<table>
<thead>
<tr>
<th>Job Description</th>
<th>12/01/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entire Counties</strong></td>
<td><strong>District 11</strong></td>
</tr>
</tbody>
</table>

**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, chock tender, ripper, 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 settler, signalman, pipe men, rippers, dry stone layers, jack hammer, bush hammer, pavement breaker, gunite nozzle, men on mulching & seeding machines all seeding & sod laying, landscape work, walk behind self-propelled power saws, grader, groover, 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 & pumporete operators, fireproof sprayer, 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 phytoremediation, leaf 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):**

<table>
<thead>
<tr>
<th>Class</th>
<th>07/01/2017</th>
<th>06/30/2018</th>
<th>06/30/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>$32.15</td>
<td>$33.15</td>
<td>$34.15</td>
</tr>
<tr>
<td>Class 2</td>
<td>$35.90</td>
<td>$37.90</td>
<td>$38.90</td>
</tr>
</tbody>
</table>

Attachment 3

**Article 8 Prevailing Wage Schedule**

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam
# Attachment 3
## Article 8 Prevailing Wage Schedule

**County of Orange, New York**  
Department of General Services  
PO Box 218, 255-275 Main St.  
Goshen, New York 10924

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

---

### Prevailing Wage Rates for 07/01/2017 - 06/30/2018

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 3</td>
<td>$41.15</td>
<td>42.15</td>
<td>43.15</td>
</tr>
<tr>
<td>Class 4</td>
<td>$45.50</td>
<td>46.75</td>
<td>48.00</td>
</tr>
</tbody>
</table>

*Note:* Micropaving and crack sealing laborers shall receive $2.50 per hour over the Class 2 rate.

**SHIFT DIFFERENTIAL:** On all NYS D.O.T. or other Governmental mandated regular or off shift work, an additional 15% of wage on straight time pay.

### SUPPLEMENTAL BENEFITS

**Per hour paid:**
- **Journeyman:** $27.10, $28.10, $29.10
- **Shift:** $27.52, 31.86, TBA

### OVERTIME PAY

**See (B. E. P., *S*) on OVERTIME PAGE**

**HOLIDAY**

- **Paid:** See (5, 8, 15, 25) on HOLIDAY PAGE
- **Overtime:** See (*) on HOLIDAY PAGE

*Note: If Saturday Holiday is worked code S applies.*

### REGISTERED APPRENTICES

(1) Year 1000 hour terms at the following wage rates.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1st term</td>
<td>$18.78</td>
<td>$19.26</td>
<td>$19.77</td>
</tr>
<tr>
<td>2nd term</td>
<td>$22.19</td>
<td>$22.78</td>
<td>$23.37</td>
</tr>
<tr>
<td>3rd term</td>
<td>$20.69</td>
<td>$20.92</td>
<td>$20.90</td>
</tr>
<tr>
<td>4th term</td>
<td>$20.02</td>
<td>$20.70</td>
<td>$20.68</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour paid:**
- **Apprentices:** $21.85, $23.05, $24.05
- **Shift:** $24.86, 26.01, TBA

---

**Tunnel**

**District:** 11

**Entire Counties:** Dutchess, Orange, Osego, Putnam, Rockland, Sullivan, Ulster, Westchester

**Partial Counties:** Chenango: Townships of Columbus, Sherrill and New Berlin.  
Columbia: Townships of Anarnam, Claverack, Clarenmont, Copake, Galatin, Germantown, Greenport, Hillsdale, Hudson, Livingston, Philmont and Taconic.  
Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, kortight, Harpersfield, Meredith and Davenport.  
Greene: Township of Catskill.

**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

### Wages (per hour)

<table>
<thead>
<tr>
<th>Class</th>
<th>07/01/2017</th>
<th>07/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>$48.90</td>
<td>$48.05</td>
</tr>
<tr>
<td>Class 2</td>
<td>$48.85</td>
<td>$50.20</td>
</tr>
<tr>
<td>Class 4</td>
<td>$55.05</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

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

**SHIFT DIFFERENTIAL:** 2nd and 3rd shift or an irregular shift 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:**
<table>
<thead>
<tr>
<th>Job Description</th>
<th>07/01/2017</th>
<th>05/07/2018</th>
<th>05/06/2019</th>
<th>05/04/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lineman, Technician</td>
<td>$49.20</td>
<td>$50.00</td>
<td>$52.05</td>
<td>$53.50</td>
</tr>
<tr>
<td>Crane, Crawler Backhoe</td>
<td>$40.20</td>
<td>$40.60</td>
<td>$42.06</td>
<td>$43.50</td>
</tr>
<tr>
<td>Welder, Cable Splicer</td>
<td>$39.30</td>
<td>$40.48</td>
<td>$41.84</td>
<td>$43.20</td>
</tr>
<tr>
<td>Digging Mach. Operator</td>
<td>$41.92</td>
<td>$43.01</td>
<td>$44.24</td>
<td>$45.48</td>
</tr>
<tr>
<td>Tractor Trailer Driver</td>
<td>$59.35</td>
<td>$60.48</td>
<td>$61.84</td>
<td>$63.20</td>
</tr>
<tr>
<td>Equipment Mechanic</td>
<td>$39.30</td>
<td>$40.48</td>
<td>$41.84</td>
<td>$43.20</td>
</tr>
<tr>
<td>Flagman</td>
<td>$29.52</td>
<td>$30.36</td>
<td>$31.23</td>
<td>$32.10</td>
</tr>
</tbody>
</table>

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".

<table>
<thead>
<tr>
<th>Job Description</th>
<th>07/01/2017</th>
<th>05/07/2018</th>
<th>05/06/2019</th>
<th>05/04/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lineman, Technician</td>
<td>$49.20</td>
<td>$50.00</td>
<td>$52.05</td>
<td>$53.50</td>
</tr>
<tr>
<td>Crane, Crawler Backhoe</td>
<td>$40.20</td>
<td>$40.60</td>
<td>$42.06</td>
<td>$43.50</td>
</tr>
<tr>
<td>Cable Splicer</td>
<td>$54.12</td>
<td>$55.66</td>
<td>$57.26</td>
<td>$58.85</td>
</tr>
<tr>
<td>Certified Welder - Pipe Type Cable</td>
<td>$51.90</td>
<td>$53.13</td>
<td>$54.50</td>
<td>$56.18</td>
</tr>
<tr>
<td>Digging Mach. Operator</td>
<td>$44.92</td>
<td>$46.04</td>
<td>$47.85</td>
<td>$49.15</td>
</tr>
<tr>
<td>Tractor Trailer Driver</td>
<td>$41.92</td>
<td>$43.01</td>
<td>$44.24</td>
<td>$45.48</td>
</tr>
<tr>
<td>Groundman, Truck Driver</td>
<td>$39.30</td>
<td>$40.48</td>
<td>$41.84</td>
<td>$43.20</td>
</tr>
<tr>
<td>Equipment Mechanic</td>
<td>$39.30</td>
<td>$40.48</td>
<td>$41.84</td>
<td>$43.20</td>
</tr>
<tr>
<td>Flagman</td>
<td>$29.52</td>
<td>$30.36</td>
<td>$31.23</td>
<td>$32.10</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Job Description</th>
<th>07/01/2017</th>
<th>05/07/2018</th>
<th>05/06/2019</th>
<th>05/04/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lineman, Tech. Welder</td>
<td>$50.52</td>
<td>$51.02</td>
<td>$53.37</td>
<td>$54.82</td>
</tr>
<tr>
<td>Crane, Crawler Backhoe</td>
<td>$50.52</td>
<td>$51.02</td>
<td>$53.37</td>
<td>$54.82</td>
</tr>
<tr>
<td>Cable Splicer</td>
<td>$55.57</td>
<td>$57.11</td>
<td>$58.71</td>
<td>$60.30</td>
</tr>
</tbody>
</table>

* Including the cost of the fiber optic cable.
Prevaling Wage Rates for 07/01/2017 - 06/30/2018

<table>
<thead>
<tr>
<th>Job Title</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lineman, Tech, Welder</td>
<td>$51.71</td>
<td>$53.11</td>
<td>$54.56</td>
<td>$56.01</td>
</tr>
<tr>
<td>Crane, Crawler Backhoe</td>
<td>$51.71</td>
<td>$53.11</td>
<td>$54.56</td>
<td>$56.01</td>
</tr>
<tr>
<td>Cable Splicer</td>
<td>$51.71</td>
<td>$53.11</td>
<td>$54.56</td>
<td>$56.01</td>
</tr>
<tr>
<td>Digging Mach. Operator</td>
<td>$48.73</td>
<td>$50.14</td>
<td>$51.55</td>
<td>$53.01</td>
</tr>
<tr>
<td>Tractor Trailer Driver</td>
<td>$42.94</td>
<td>$44.13</td>
<td>$45.43</td>
<td>$46.80</td>
</tr>
<tr>
<td>Groundman, Truck Driver</td>
<td>$40.42</td>
<td>$41.54</td>
<td>$42.70</td>
<td>$43.90</td>
</tr>
<tr>
<td>Equipment Mechanic</td>
<td>$40.42</td>
<td>$41.54</td>
<td>$42.70</td>
<td>$43.90</td>
</tr>
<tr>
<td>Flagman</td>
<td>$30.31</td>
<td>$31.15</td>
<td>$32.02</td>
<td>$32.99</td>
</tr>
</tbody>
</table>

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)

**NOTE:** THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

- **1ST SHIFT**: 8:00 AM to 4:30 PM REGULAR RATE
- **2ND SHIFT**: 4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3%
- **3RD SHIFT**: 12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4%

**IMPORTANT NOTICE**
Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday, Friday may be used as a make-up day.

*Effective 05/01/2013, Tuesday thru Friday may be worked with no make-up day.

**SUPPLEMENTAL BENEFITS**
Per hour worked (also required on non-worked holidays):

- The following SUPPLEMENTAL BENEFITS apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>1st Hourly Wage</th>
<th>2nd Hourly Wage</th>
<th>3rd Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$22.05</td>
<td>$23.40</td>
<td>$24.15</td>
<td>$24.30</td>
</tr>
</tbody>
</table>

*The 0.75% is based on the hourly wage paid, straight time rate or premium rate.

**OVERTIME PAY**
See (8. 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.

**HOLIDAY**
Paid See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

**NOTE**: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

**REGISTERED APPRENTICES**
WAGES: 1000 hour terms at the following percentage of the applicable Journeyman wage.

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
</tr>
</thead>
<tbody>
<tr>
<td>65%</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
</tr>
</tbody>
</table>

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Prevaling Wage Rates for 07/01/2017 - 06/30/2018
Published by the New York State Department of Labor
Last Published on Dec 01, 2017
PRC Number 2017013459 Orange County

SUPPLEMENTAL BENEFITS: Same as Journeyman

Lineman Electrician - Teledata

JOB DESCRIPTION Lineman Electrician - Teledata

ENTIRE COUNTIES

WAGES
Per hour:

07/01/2017

Cable Splicer $ 30.00
Installer, Repairman 29.33
Teledata Lineman 29.33
Technician, Equipment Operator 29.33
Groundman 15.66

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT REGULAR RATE
2ND SHIFT REGULAR RATE PLUS 10%
3RD SHIFT REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS
Per hour:
Journeyman $ 4.43
* plus 3% of 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, 8, 15) on HOLIDAY PAGE
0-124LT - Teledata

Lineman Electrician - Traffic Signal, Lighting

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting

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.
## Article 8 Prevailing Wage Schedule

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**

**Published by the New York State Department of Labor**

**Last Published on Dec 01 2017**

**PRO Number 2017013459 Orange County**

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footing 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 blaster, operate molotching 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 ground man/truck driver may assist in installing conduit, pipe, cables and equipment.

A fagger's duties shall consist of traffic control only.

(Ref #14.01.02)

<table>
<thead>
<tr>
<th>Per hour:</th>
<th>07/01/2017</th>
<th>05/07/2018</th>
<th>05/08/2019</th>
<th>05/04/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lineman, Technician</td>
<td>$43.93</td>
<td>$45.08</td>
<td>$46.28</td>
<td>$47.48</td>
</tr>
<tr>
<td>Crane, Crawler Backhoe</td>
<td>$43.03</td>
<td>$45.08</td>
<td>$45.28</td>
<td>$46.48</td>
</tr>
<tr>
<td>Certified Welder</td>
<td>$46.13</td>
<td>$47.33</td>
<td>$48.59</td>
<td>$49.85</td>
</tr>
<tr>
<td>Digging Machine</td>
<td>$30.64</td>
<td>$32.07</td>
<td>$31.66</td>
<td>$32.73</td>
</tr>
<tr>
<td>Tractor Trailer Driver</td>
<td>$37.34</td>
<td>$38.32</td>
<td>$39.34</td>
<td>$40.36</td>
</tr>
<tr>
<td>Groundman, Truck Driver</td>
<td>$35.14</td>
<td>$36.06</td>
<td>$37.02</td>
<td>$37.98</td>
</tr>
<tr>
<td>Equipment Mechanic</td>
<td>$35.14</td>
<td>$36.00</td>
<td>$37.02</td>
<td>$37.98</td>
</tr>
<tr>
<td>Flagman</td>
<td>$28.98</td>
<td>$28.05</td>
<td>$27.77</td>
<td>$28.40</td>
</tr>
</tbody>
</table>

Above rates applicable on all Lighting and Traffic Signal Systems and the installation, testing, operation, maintenance and repair of all traffic control and illumination projects, traffic monitoring systems, road weather information systems and the installation of Fiber Optic Cable.

**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:**

<table>
<thead>
<tr>
<th>Shift</th>
<th>Time Period</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ST SHIFT</td>
<td>8:00 AM TO 4:30 PM</td>
<td>REGULAR RATE</td>
</tr>
<tr>
<td>2ND SHIFT</td>
<td>4:30 PM TO 1:00 AM</td>
<td>REGULAR RATE PLUS 17.3%</td>
</tr>
<tr>
<td>3RD SHIFT</td>
<td>12:30 AM TO 9:00 AM</td>
<td>REGULAR RATE PLUS 31.4%</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTICE**

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

*Effective 05/08/2018, Tuesday thru Thursday may be worked with no make-up day.*

**NOTE** - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Days/10 Hour Work Schedule,' form PW30.1, and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

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

<table>
<thead>
<tr>
<th>Journeyman</th>
<th>$22.05</th>
<th>$23.40</th>
<th>$24.15</th>
<th>$24.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>*plus 6.75% of hourly wage</td>
<td>*plus 6.75% of hourly wage</td>
<td>*plus 6.75% of hourly wage</td>
<td>*plus 6.75% of hourly wage</td>
<td></td>
</tr>
</tbody>
</table>

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate. Supplements paid at STRAIGHT TIME rate for holidays.*

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.

**NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.**

**HOLIDAY**

Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE 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.

<table>
<thead>
<tr>
<th>1st term</th>
<th>07/01/2017</th>
<th>05/07/2018</th>
<th>05/08/2019</th>
<th>05/04/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20.35</td>
<td>$27.05</td>
<td>$27.77</td>
<td>$28.49</td>
<td></td>
</tr>
</tbody>
</table>
Prevailing Wage Rates for 07/01/2017 - 06/30/2018
Last Published on Dec 01, 2017
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PRC Number 2017013459 Orange County

2nd term 20.90 20.08 20.96
3rd term 30.75 31.56 32.40 33.24
4th term 32.65 33.81 34.71 35.51
5th term 35.14 36.00 37.02 37.98
6th term 37.24 38.32 39.34 40.38
7th term 39.54 40.57 41.65 42.73

SUPPLEMENTAL BENEFITS: Same as Journeyman

Lineman, Electrician - Tree Trimmer

JOB DESCRIPTION Lineman Electrician - Tree Trimmer
DISTRICT 0

ENTIRE COUNTIES

WAGES
Per hour:
Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

07/01/2017
Tree Trimmer $23.65
Equipment Operator 21.13
Equipment Mechanic 21.13
Truck Driver 17.02
Groundman 14.38
Flag person 10.23

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):
Journeyman $9.98
* plus 3% of hourly wage

* The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (6. E. Q) on OVERTIME PAGE
NOTE: WAGE CAP: Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5. 6. 8. 12. 10. 25) on HOLIDAY PAGE
Overtime: See (5. 6. 8. 15. 16. 26) on HOLIDAY PAGE
NOTE: All paid holidays falling on a Saturday shall be observed on the proceeding Friday. All paid holidays falling on a Sunday shall be observed on the following Monday.

Mason - Building

JOB DESCRIPTION Mason - Building
DISTRICT 11

ENTIRE COUNTIES
Dutchess, Sullivan, Ulster

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

WAGES
Per hour:
07/01/2017 06/01/2018 06/01/2019

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## Prevailing Wage Rates for 07/01/2017 - 06/30/2018

<table>
<thead>
<tr>
<th>Trade</th>
<th>Hourly Rate 2017</th>
<th>Hourly Rate 2018</th>
<th>Hourly Rate 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayer</td>
<td>$40.02</td>
<td>$40.67</td>
<td>$41.31</td>
</tr>
<tr>
<td>Cement Mason Bldg</td>
<td>40.02</td>
<td>40.67</td>
<td>41.31</td>
</tr>
<tr>
<td>Plasterer/Stone Mason</td>
<td>40.02</td>
<td>40.67</td>
<td>41.31</td>
</tr>
<tr>
<td>Pointer/Caulker</td>
<td>40.02</td>
<td>40.67</td>
<td>41.31</td>
</tr>
</tbody>
</table>

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

**SHIFT DIFFERENTIAL:** When shift work is mandated or required by state, federal, county, local or other governmental agency contracts, the following rates apply:

- 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 paid:**

<table>
<thead>
<tr>
<th>Trade</th>
<th>Hourly Rate 2017</th>
<th>Hourly Rate 2018</th>
<th>Hourly Rate 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeyman</td>
<td>$32.68</td>
<td>33.53</td>
<td>34.64</td>
</tr>
</tbody>
</table>

### 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, 8) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

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

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>55%</td>
<td>60%</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour paid:

750 hour terms at the following percentage of journeyman supplements:

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>60%</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>85%</td>
</tr>
</tbody>
</table>

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

**Mason - Building**

**JOB DESCRIPTION:** Mason - Building

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

**WAGES**

**Per hour:**

- **07/01/2017**
- **Building:**
  - **Tile, Marble & Terrazzo Mechanic/Setter:** $48.00

**SUPPLEMENTAL BENEFITS**

**Per Hour:**

- **Journeyman:** $23.45 per hour paid plus $6.81 per hour worked

* This portion of the benefits is per hour paid and subject to same premium as 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, 8, 11, 15, 18, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Page 49
Attachment 3
Article 8 Prevailing Wage Schedule

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Prevaling Wage Rates for 07/01/2017 - 06/30/2018
Last Published on Dec 01, 2017
Published by the New York State Department of Labor
PRC Number 2017013459 Orange County

Wages per hour:

(750 hour) terms at the following wages:

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$23.59</td>
<td>$27.42</td>
<td>$30.55</td>
<td>$33.83</td>
<td>$36.43</td>
<td>$38.76</td>
<td>$39.68</td>
<td>$43.92</td>
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</table>

Supplemental Benefits (per Hour):

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$14.45*</td>
<td>$14.45*</td>
<td>$15.45*</td>
<td>$15.65*</td>
<td>$16.45*</td>
<td>$17.45*</td>
<td>$17.70*</td>
<td>$19.45*</td>
</tr>
<tr>
<td>+$0.66</td>
<td>+$0.73</td>
<td>+$1.08</td>
<td>+$1.12</td>
<td>+$1.45</td>
<td>+$1.49</td>
<td>+$5.52</td>
<td>+$5.55</td>
</tr>
</tbody>
</table>

*This portion of the benefits is per hour paid, and subject to the same premium as overtime wages. The additional benefit amount is per hour worked.

Mason - Building

JOB DESCRIPTION Mason - Building

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Sullivan, Ulster

WAGES
Per hour: 07/01/2017
Building
Tile, Marble, & Terrazzo Finisher: $41.82

SUPPLEMENTAL BENEFITS
Journeyman:
Per Hour: $18.45* per hour paid
plus $8.00 per hour worked

* This portion of benefit subject to same premium as wages

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

HOLIDAY
Paid: See (f) on HOLIDAY PAGE
Overtime: See (5, 8, 11, 15, 18, 25) on HOLIDAY PAGE

Mason - Building

JOB DESCRIPTION Mason - Building

ENTIRE COUNTIES
Putnam, Rockland, Westchester

PARTIAL COUNTIES
Orange: Only the Township of Tuxedo.

WAGES
Per hour:

<table>
<thead>
<tr>
<th>07/01/2017</th>
<th>06/01/2018</th>
<th>06/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayer</td>
<td>$40.80</td>
<td>$41.46</td>
</tr>
<tr>
<td>Cement Mason Eldg</td>
<td>40.00</td>
<td>41.40</td>
</tr>
<tr>
<td>Plasterer/Stone Mason</td>
<td>40.88</td>
<td>41.46</td>
</tr>
<tr>
<td>Pointer/Caulker</td>
<td>40.88</td>
<td>41.46</td>
</tr>
</tbody>
</table>

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

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

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 paid:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Journeymen</td>
<td>$33.24</td>
<td>34.08</td>
</tr>
</tbody>
</table>

## OVERTIME PAY

OVERTIME:

- 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 (5.8) on HOLIDAY PAGE.

## REGISTERED APPRENTICES

Wages per hour:

- 750 hour term at the following percentage of Journeymen's wage:
  - 50%: 55%, 00%, 05%, 03%, 70%, 75%, 80%, 85%
- 750 hour term at the following percentage of journeyman supplement:
  - 50%: 55%, 00%, 05%, 65%, 03%, 70%, 75%, 80%, 85%

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

---

**Mason - Building**

<table>
<thead>
<tr>
<th>Job Description</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason - Building</td>
<td>0</td>
</tr>
</tbody>
</table>

**Entire Counties**

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

**WAGES**

- Wages: 07/01/2017 - 01/01/2018
- Marble Cutters & Setters: $58.18 - $58.53

### SUPPLEMENTAL BENEFITS

Per Hour:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Journeymen</td>
<td>$35.12</td>
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</tbody>
</table>

### OVERTIME PAY

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

### HOLIDAY

- Paid: See (1) on HOLIDAY PAGE.
- Overtime: See (5.8, 11, 15, 18, 25) on HOLIDAY PAGE.

## REGISTERED APPRENTICES

Wage Per Hour:

- 750 hour term at the following wage:
  - 1st Term: 751-1000, 1501-2250, 2251-3000, 3001-3750, 3751-4500, 4501-5250, 5251-6001, 6751-7500
  - $23.10 - $25.98 - $28.87 - $31.76 - $34.64 - $37.53 - $40.42 - $43.30 - $46.08 - $54.85

Supplemental Benefits per hour paid at the following term:

<p>| | | | | | | | | |</p>
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<tr>
<td>$24.53</td>
<td>$25.31</td>
<td>$26.12</td>
<td>$26.91</td>
<td>$27.71</td>
<td>$28.51</td>
<td>$29.32</td>
<td>$30.12</td>
<td>$31.71</td>
</tr>
</tbody>
</table>
**Attachment 3**  
**Article 8 Prevailing Wage Schedule**

---

**Prevaling Wage Rates for 07/01/2017 - 06/30/2018**  
**Published by the New York State Department of Labor**  
**Last Published on Dec 01, 2017**  
**PRC Number 2017013459 Orange County**

<table>
<thead>
<tr>
<th>Mason - Heavy &amp; Highway</th>
<th>District 11</th>
<th>12/01/2017</th>
</tr>
</thead>
</table>

**Job Description:** Mason - Heavy & Highway

**Entire Counties:** Dutchess, Sullivan, Ulster

**Partial Counties:** Orange: Entire county except the Township of Tuxedo.

**Wages:**

<table>
<thead>
<tr>
<th>Date</th>
<th>07/01/2017</th>
<th>06/01/2018</th>
<th>05/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayer</td>
<td>$40.53</td>
<td>$41.19</td>
<td>$41.82</td>
</tr>
<tr>
<td>Cement Mason</td>
<td>40.53</td>
<td>41.19</td>
<td>41.82</td>
</tr>
<tr>
<td>Marble/Stone Mason</td>
<td>40.53</td>
<td>41.19</td>
<td>41.82</td>
</tr>
<tr>
<td>Plasterer</td>
<td>40.53</td>
<td>41.19</td>
<td>41.82</td>
</tr>
<tr>
<td>Pointer/Caulker</td>
<td>40.53</td>
<td>41.19</td>
<td>41.82</td>
</tr>
</tbody>
</table>

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

**Shift Differential:** When shift work is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:

- 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:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Per hour paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017</td>
<td>Journeyman $32.67</td>
</tr>
<tr>
<td>06/01/2018</td>
<td>$33.51</td>
</tr>
<tr>
<td>05/01/2019</td>
<td>$34.03</td>
</tr>
</tbody>
</table>

**Overtime Pay:**

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

**Holiday Pay:**

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

**Registered Apprentices:**

Wages per hour:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
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</tbody>
</table>

**Supplemental Benefits per hour paid:**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
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</thead>
<tbody>
<tr>
<td>50%</td>
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<td>80%</td>
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</tr>
</tbody>
</table>

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

11-5du-H/H

---

**Mason - Heavy & Highway**  
**District 11**  
**12/01/2017**

**Job Description:** Mason - Heavy & Highway

**Entire Counties:** Putnam, Rockland, Westchester

**Partial Counties:** Orange: Only the Township of Tuxedo.

**Wages:**

<table>
<thead>
<tr>
<th>Date</th>
<th>07/01/2017</th>
<th>06/01/2018</th>
<th>05/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Mason</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marble/Stone Mason</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plasterer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pointer/Caulker</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Article 8 Prevailing Wage Schedule

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Hourly Rate 2017</th>
<th>Hourly Rate 2018</th>
<th>Hourly Rate 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bricklayer</td>
<td>$41.31</td>
<td>$41.06</td>
<td>$42.59</td>
</tr>
<tr>
<td>Cement Mason</td>
<td>$41.31</td>
<td>$41.06</td>
<td>$42.59</td>
</tr>
<tr>
<td>Marble/Stone Mason</td>
<td>$41.31</td>
<td>$41.06</td>
<td>$42.59</td>
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<tr>
<td>Plaster</td>
<td>$41.31</td>
<td>$41.06</td>
<td>$42.09</td>
</tr>
<tr>
<td>Pointer/Caulker</td>
<td>$41.31</td>
<td>$41.06</td>
<td>$42.09</td>
</tr>
</tbody>
</table>

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

**SHIFT DIFFERENTIAL:** When shift work is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:
- 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**

<table>
<thead>
<tr>
<th>Position</th>
<th>Hourly Rate 2017</th>
<th>Hourly Rate 2018</th>
<th>Hourly Rate 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeymen</td>
<td>$33.23</td>
<td>$34.08</td>
<td>$35.19</td>
</tr>
</tbody>
</table>

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

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

**HOLIDAY**

Paid: See (5, 8, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 8, 15, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

- 750 hour terms at the following percentage of Journeymen’s wage
  - 1st: 55%
  - 2nd: 50%
  - 3rd: 65%
  - 4th: 70%
  - 5th: 75%
  - 6th: 80%
  - 7th: 85%
  - 8th: 90%

Supplemental Benefits per hour paid:

- 750 hour terms at the following percentage of journeyman supplement
  - 1st: 55%
  - 2nd: 50%
  - 3rd: 65%
  - 4th: 70%
  - 5th: 75%
  - 6th: 80%
  - 7th: 85%

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

---

**Operating Engineer - Heavy & Highway**

---

**Entire Counties**

Delaware, Orange, Rockland, Sullivan, Ulster

**Wages**

CLASS A5: Cranes, Derrick and Pipe Drivers 100 tons or more and Tower Cranes, with a 140ft boom and over.
CLASS A4: Cranes, Derrick and Pipe Drivers 100 tons or more and Tower Cranes, with a 100ft to 139ft boom.
CLASS A3: Cranes, Derrick and Pipe Drivers less than 100 tons with a 140ft boom and over.
CLASS A2: Cranes, Derrick and Pipe Drivers 100 tons or more and Tower Cranes, with a boom under 100ft.
CLASS A1: Cranes, Derrick and Pipe Drivers less than 100 tons with a 100ft to 139ft boom.
CLASS A: Cranes, Derrick and Pipe Drivers less than 100 tons with a boom under 100ft.1 Auto-Crane-Combin. Subgrader, Base Material Spreader and Base Trimmer (CMI & Similar Types), Autograde Placer-Trimmer-Spreader Comb. (CMI & Similar types), Auto-Crane Slippform Paver (CMI & Similar Types), Backhoe, Central Power Plants (all types), Chief of Party, Concrete Paving Machines, Cranes (all types, incl. Overhead & Straddle Traveling Type), Cranes-Gantry, Derrick (Land or Floating), 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), Grader, Grader-Rake, Helicopters (Co-Pilot), Helicopters (Communications Engineer), Locomotive (Light), Locomotive (Large), Mucking Machines, Pavement & Concrete Breaker, Inc., Superhammer & Hoe Ram, Pile Driver (length of boom including lead length shall determine premium rate applicable), Roadway Surface Grinder, Prentice Truck, Scooper (Loader and Shovel), Shovels, Tree Chopper with Boom and Trench Machines Tunnel Boring Machine, Vacuum Truck.
### Article 8 Prevailing Wage Schedule

#### RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**

**Published by the New York State Department of Labor**

**Last Published on Dec 01, 2017**

**PRC Number**: 2017013495 Orange County

<table>
<thead>
<tr>
<th>CLASS Description</th>
<th>Wage Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLASS B</strong> A Frame, Bookhoe, (Combination), Boom Attachment on Loaders (Rate based on size Bucket not applicable to pipehook), Boring and Drilling Machines, Brush Chopper, Shredder and Tree Shredder, Bulldozer (Fine Grade), Cabeways, Carryalls, Concrete Pump, Concrete Pumping System, Pump Concrete and Similar Types, Conveyors (125 ft. and over), Drill Doctor (duties incl. Dust Collector Maintenance), Freight End Loaders (2 yds. but less than 5 yds.), Graders (all), 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 Hosting Machines, portable or stationary, except Chicago Boom Type), Long Boom Rate to be applied if Hoist is &quot;Outside Material Tower Hoist,&quot; Hoists (Chicago Boom Type), Hydraulic Cranes-10 tons and under, Hydraulic Dredge, Hydro-Axe, Hydro Blaster, Jacks-Gore Air Hydraulic Power Operated Unit or Console Type (not hand Jack or Pile Load Test Type), Log Skidder, Pans, Pavers (all) concrete, Pumpcrete Machines, Squeeze-concrete &amp; Concrete Pumping (regardless of size), Scrapers, Side Booms, &quot;Straddle Carrier-Ross and similar types, Winch Trucks (hoisting), Whip Hammer.</td>
<td></td>
</tr>
</tbody>
</table>

| **CLASS C** Asphalt Curbing Machine, Asphalt Plant Engineer, Asphalt Spreader, Autograde Tube Finisher and Texturing Machine (CMI & Similar Types), Autograde Curcrete Machine (CMI & Similar Types), Autograde Cube Trimmer & Sidewalk, Shoulder, Siltform (CMI & Similar Types), Bar Bending Machines (Power), Batching, Batching Plant and Crusher on Site, Belt Conveyor Systems, Boom Type Skimmer Machines, Bridge Deck Finisher, Bulldozer (except fine grade), Car Dumpers (Railroad), Compactor 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, Instacrete, or Similar Type Materials), Compressors (2 or 3 in Battery), Concrete Breaking Machines, Concrete Finishing Machines, Concrete cleaning decontamination machine operator, Concrete Saws and Cutters (Ride-on type) Concrete Sprayers (Hetzal, Rexomanic and Similar Types), Concrete Vibrators, Conveyors (under 125 feet), Crushing Machines, Directional Boring Machines, Ditching Machines, (Ditch-witch, Vermeer, or Similar Type), Dope Pots (Mechanical or without pump), Dustpans, 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, Gunite 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 (Excepting Paving Mixers), Pavement Breakers (small self propelled ride on type also maintains compressor hydraulic unit), Pavement Breaker-Truck mounted, Pipe Bending Machine (Power), Pitch Pump, Plastic Pump (regardless of size), Post Hole Digger (Post Pounder & Auger), Rod Bending Machines (Power), Roller-Black Top, Scaes (Power), Seaman pulverizing mixer, Shoulder widener, Silos, Skillsteer (all attachments), Skimmer Machines (boom-type), Steel Cutting Machine (service & maintain), Tam Rock Drill, Tracon, Tug Captain, Power Boats, Tug Master (powerboats), Ultra High Pressure Waterjet Cutting Tool System, operator/maintenance technician, Vacuum Blasting Machine, Vacuumizing Plants (used in conjunction with unloading), Welder and Repair Mechanics. |

| **CLASS D** Brooms and Sweepers, Chippers, Compactor (single), Concrete Spreaders (small type), Convoy Loaders (not including Elevator Graders), Engines-large diesel (1620 HP) and Staging Pump, Farm Tractors, Fertilizing Equipment (Operation & Maint. 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, Hesters (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 (4 inch suction & over incl. submersible pumps), Pumps (2 inch or less than four 4 inches such incl. submersible pumps), Pumps (Diesel Engine and Hydraulic-inmaterial of power, Road Finishing Machines (small type), Rollers-grade, till or stone base, Seeding Equip. (Operation and Maintenance of), Sprinkler & Water Pump Trucks (used on job sites or in conjunction with job sites), Steam Jammers and Rollers-irrespective of use, Stone Spreader, Tamper Machine, Vibrating Ride-on, Temporary Heating Plant (Nelson or other type, incl. Propane, Natural Gas or Flowtype Units), Water & Sprinkler Trucks (used on or in conjunction with job sites), 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, Maintenance Apprentice (Deck Hand), Maintenance Apprentice (Oiler), Mechanics' Helper, Tire Repair and Maintenance, Transit/Instrument Man. |

<table>
<thead>
<tr>
<th><strong>WAGES:</strong> (per hour)</th>
<th>07/01/2017</th>
<th>01/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A6</td>
<td>$67.07</td>
<td>$68.21</td>
</tr>
<tr>
<td>Class A4</td>
<td>$68.07</td>
<td>$69.21</td>
</tr>
<tr>
<td>Class A3</td>
<td>$62.57</td>
<td>$63.78</td>
</tr>
<tr>
<td>Class A2</td>
<td>$55.07</td>
<td>$56.28</td>
</tr>
<tr>
<td>Class A1</td>
<td>$52.57</td>
<td>$53.78</td>
</tr>
<tr>
<td>Class A</td>
<td>$50.57</td>
<td>$51.78</td>
</tr>
<tr>
<td>Class C</td>
<td>$48.98</td>
<td>$50.19</td>
</tr>
<tr>
<td>Class C</td>
<td>$47.07</td>
<td>$48.28</td>
</tr>
<tr>
<td>Class D</td>
<td>$45.44</td>
<td>$46.65</td>
</tr>
<tr>
<td>Class E</td>
<td>$43.73</td>
<td>$45.04</td>
</tr>
</tbody>
</table>

**Helicopter:**

- Pilot/Engineer: $65.30
- Lead/Safety Engineer: $61.31

**Surveying:**

- Chief of Party: $65.30
- Transit/Instrument Man: $43.73
## Prevailing Wage Rates for 07/01/2017 - 09/30/2018

Last Published on Dec 01, 2017

**Published by the New York State Department of Labor**

PRC Number 2017013459 Orange County

<table>
<thead>
<tr>
<th>Year</th>
<th>Wage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$41.15</td>
</tr>
</tbody>
</table>

*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.

Additional 20% per hour for DEC or EPA certified toxic or hazardous waste work.

### SUPPLEMENTAL BENEFITS

**Per hour paid:**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Wage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journeyman</td>
<td>$30.70</td>
</tr>
</tbody>
</table>

**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) on OVERTIME PAGE

### HOLIDAY

**Paid:** See (5, 0, 10, 15) on HOLIDAY PAGE

**Overtime:** See (5, 0, 10, 15) on HOLIDAY PAGE

### REGISTERED APPRENTICES

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

<table>
<thead>
<tr>
<th>Year</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>80%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour paid:**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Wage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apprentices</td>
<td>$30.70</td>
</tr>
</tbody>
</table>

### Operating Engineer - Marine Dredging

**District 4**

**12/01/2017**

**Job Description:** Operating Engineer - Marine Dredging

**Entire Counties:** Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

**Wages:**

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for barge mounted cranes and other equipment are only for marine dredging work in navigable waters found in the counties listed above.

<table>
<thead>
<tr>
<th>Class</th>
<th>Per Hour:</th>
<th>07/01/2017</th>
<th>10/01/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>Operator, Levee, Lead Dredgem</td>
<td>$37.25</td>
<td>$38.18</td>
</tr>
</tbody>
</table>

**Class A**

**Dozer, Front Loader Operator**

To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.

<table>
<thead>
<tr>
<th>Class B</th>
<th>Barge Operator</th>
<th>$32.21</th>
<th>$33.02</th>
</tr>
</thead>
</table>

**Class B**

**Spider/Spill Tug Operator (over 1000hp), Operatort, Fill Placer, Derrick Operator, Engineer, Chief Mate, Electrician, Chief Wanker, Maintenance Engineer**

<table>
<thead>
<tr>
<th>Class C</th>
<th>Certified Welder, Boat Operator,licensed</th>
<th>$30.33</th>
<th>$31.09</th>
</tr>
</thead>
</table>

**Class C**

**Drag Barge Operator,**

<table>
<thead>
<tr>
<th>$20.60</th>
<th>$30.24</th>
</tr>
</thead>
</table>

---

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Prevaling Wage Rates for 07/01/2017 - 09/30/2018
Last Published on Dec 01, 2017
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PRC Number 2017013459, Orange County

Steward, Mata,
Assistant Fill Plaer,
Welder (please add $ 0.00

Boat Operator
$ 29.54
$ 29.25

CLASS D
Shoreman, Deckhand,
Scooman, Cook,
Messman, Porter/Lanitor

$ 23.71
$ 24.30

Oiler (please add $ 0.09

SUPPLEMENTAL BENEFITS
Per Hour:
THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

<table>
<thead>
<tr>
<th>Class</th>
<th>Rate</th>
<th>Rate</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>07/01/2017</td>
<td>10/01/2017</td>
</tr>
<tr>
<td></td>
<td>$10.75 + 8%</td>
<td>$11.23 + 8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>of straight time</td>
<td>of straight time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>wage, Overtime hours</td>
<td>wage, Overtime hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>add $ 0.03</td>
<td>add $ 0.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All Class C

$10.45 + 8%

of straight time
wage, Overtime hours
add $ 0.48

All Class D

$10.15 + 8%

of straight time
wage, Overtime hours
add $ 0.33

OVERTIME PAY
See (8, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 8, 15, 26) on HOLIDAY PAGE

<table>
<thead>
<tr>
<th>OPERATING ENGINEER - STEEL ERECTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>DISTRICT 11</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>ENTIRE COUNTIES Delaware, Orange, Rockland, Sullivan, Ulster</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>WAGES</td>
</tr>
<tr>
<td>CLASS A3: Cranes, Derrick and Pile Drivers 100 tons or more and Tower Cranes, with a 140 ft. boom and over.</td>
</tr>
<tr>
<td>CLASS A2: Cranes, Derrick and Pile Drivers 100 tons or more and Tower Cranes, with up to a 139 ft. boom and under.</td>
</tr>
<tr>
<td>CLASS A1: Cranes, Derrick and Pile Drivers less than 100 tons with a 140 ft. boom and over.</td>
</tr>
<tr>
<td>CLASS A: Cranes, Derrick and Pile Drivers less than 100 tons with up to a 139 ft. boom and under, Vacuum Truck.</td>
</tr>
<tr>
<td>CLASS B: &quot;A&quot; Frame, Cherry Picker (10 tons and under), Hoists (all type Hoists, shall also include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft, 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.</td>
</tr>
</tbody>
</table>
## Attachment 3
### Article 8 Prevailing Wage Schedule

#### RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**

Published by the New York State Department of Labor

<table>
<thead>
<tr>
<th>Wage Date</th>
<th>Class</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017</td>
<td>Class A3</td>
<td>$59.09</td>
</tr>
<tr>
<td></td>
<td>Class A2</td>
<td>$57.43</td>
</tr>
<tr>
<td></td>
<td>Class A1</td>
<td>$64.60</td>
</tr>
<tr>
<td></td>
<td>Class A</td>
<td>$52.93</td>
</tr>
<tr>
<td></td>
<td>Class B</td>
<td>$50.14</td>
</tr>
<tr>
<td></td>
<td>Class C</td>
<td>$47.48</td>
</tr>
<tr>
<td></td>
<td>Class D</td>
<td>$45.06</td>
</tr>
<tr>
<td></td>
<td>Class E</td>
<td>$44.19</td>
</tr>
</tbody>
</table>

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

**Supplemental Benefits**

Per hour paid:

- **Journeyman:** $30.70

**Overtime Pay**

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

**Holiday**

Paid:

- See (5, 6, 10, 15) on HOLIDAY PAGE

**Registered Apprentices**

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

<table>
<thead>
<tr>
<th>Term</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour paid:

- **Apprentices:** $30.70

**Painter**

- **Rate:** 12/01/2017

**Job Description:** Painter

**Entire Counties:** Columbia, Dutchess, Greene, Orange, Sullivan, Ulster

**Wages**

Per hour

<table>
<thead>
<tr>
<th>Wage Date</th>
<th>07/01/2017</th>
<th>05/01/2018</th>
<th>05/01/2019</th>
</tr>
</thead>
</table>
## Prevailing Wage Rates for 07/01/2017 - 06/30/2018

Last Published on Dec 01, 2017

<table>
<thead>
<tr>
<th>Rate Type</th>
<th>Rate 1</th>
<th>Additional 1</th>
<th>Rate 2</th>
<th>Additional 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brush/Paper Hanger</td>
<td>$31.99</td>
<td>$1.65</td>
<td>$31.99</td>
<td>$1.65</td>
</tr>
<tr>
<td>Dry Wall Finisher</td>
<td>31.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Abatement</td>
<td>51.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandblaster/Painter</td>
<td>31.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray Rate</td>
<td>32.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 worked**

- **Journeyman**: $22.24

### OVERTIME PAY

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

### HOLIDAY

- **Paid**: See (1) on HOLIDAY PAGE
- **Overtime**: See (5, 0) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>40%</td>
</tr>
<tr>
<td>2nd</td>
<td>50%</td>
</tr>
<tr>
<td>3rd</td>
<td>50%</td>
</tr>
<tr>
<td>4th</td>
<td>70%</td>
</tr>
<tr>
<td>5th</td>
<td>80%</td>
</tr>
<tr>
<td>6th</td>
<td>50%</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour worked:

- **1st term**: $9.99
- **All others**: 22.24

---

### JOB DESCRIPTION

**Painter - Bridge & Structural Steel**

**DISTRICT 8**

**ENTIRE COUNTRIES**


### WAGES

**Per Hour Worked:**

**STEEL:**

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017 to 10/01/2017</td>
<td>$49.50</td>
<td>$50.00</td>
<td>$51.00</td>
</tr>
<tr>
<td>+ 6.93*</td>
<td></td>
<td>+ 6.93*</td>
<td>+ 8.68*</td>
</tr>
<tr>
<td>10/01/2017 to 10/01/2018</td>
<td>$49.50</td>
<td>$50.00</td>
<td>$51.00</td>
</tr>
<tr>
<td>+ 6.93*</td>
<td></td>
<td>+ 6.93*</td>
<td>+ 8.68*</td>
</tr>
</tbody>
</table>

*Not subject to overtime and limited to first 40 hours.

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

**EXCEPTION:** During the period of May 1st to November 15th, for the first and last week of employment on the project, and for the weeks of Memorial Day, Independence Day and Labor Day, this rate shall be paid for the actual number of hours worked.

**Power Tool/Spray** is an additional $6.00 per hour above hourly rate, whether straight time or overtime.

**NOTE:** Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter’s Rate; the contract must be ONLY for Bridge Painting.

### SUPPLEMENTAL BENEFITS

**Per Hour Worked:**

<table>
<thead>
<tr>
<th>Period</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/01/2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/01/2018</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Article 8 Prevailing Wage Schedule

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

## Prevailing Wage Rates

<table>
<thead>
<tr>
<th>Period</th>
<th>Wage Rate 40 hours</th>
<th>Wage Rate 45 hours</th>
<th>Wage Rate 50 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>From May 1st to Nov. 15th</td>
<td>$30.90</td>
<td>$31.90</td>
<td>$32.90</td>
</tr>
<tr>
<td>Hourly Rate up to 40 hours</td>
<td>7.50</td>
<td>7.50</td>
<td>7.50</td>
</tr>
<tr>
<td>From Nov. 16th to April 30th</td>
<td>$29.70</td>
<td>$31.00</td>
<td>$32.30</td>
</tr>
<tr>
<td>Hourly Rate up to 50 hours</td>
<td>7.50</td>
<td>7.50</td>
<td>7.50</td>
</tr>
</tbody>
</table>

**EXCEPTION:** During the period of May 1st to November 15th, for the first and last week of employment on the project, and for the weeks of Memorial Day, Independence Day and Labor Day, this rate shall be paid for the actual number of hours worked.

### Overtime Pay

See (A, F, R) on OVERTIME PAGE

### Holiday

Paid: See (1) on HOLIDAY PAGE

### Registered Apprentices

Wage - Per hour worked:

<table>
<thead>
<tr>
<th>Term</th>
<th>07/01/2017</th>
<th>10/01/2017</th>
<th>10/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>$22.95</td>
<td>$22.85</td>
<td>$22.75</td>
</tr>
<tr>
<td>2nd year</td>
<td>$33.53</td>
<td>$33.48</td>
<td>$33.43</td>
</tr>
<tr>
<td>3rd year</td>
<td>$44.70</td>
<td>$45.30</td>
<td>$45.90</td>
</tr>
</tbody>
</table>

### Supplemental Benefits - Per hour worked:

<table>
<thead>
<tr>
<th>Term</th>
<th>07/01/2017</th>
<th>10/01/2017</th>
<th>10/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>$12.30</td>
<td>$12.70</td>
<td>$13.44</td>
</tr>
<tr>
<td>2nd year</td>
<td>$18.64</td>
<td>$19.14</td>
<td>$20.16</td>
</tr>
<tr>
<td>3rd year</td>
<td>$24.72</td>
<td>$25.52</td>
<td>$26.88</td>
</tr>
</tbody>
</table>

### Painter - Line Striping

**JOB DESCRIPTION:** Painter - Line Striping

**DISTRICT:** 8


**WAGES**

Per hour:

- Painter (Striping-Highway): 07/01/2017
  - Stripping-Machine Operator: $27.11
  - Lineman Thermoplastic: $32.37

**Note:** Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

**NOTE:** In order to use the ‘4 Day/10 Hour Work Schedule,’ as your normal schedule, you must submit an Employer Registration for Use of 4 Day/10 Hour Work Schedule; form PW30.1, and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour paid: 07/01/2017

- Journeyworker:
  - Stripping-Machine operator: $14.18
  - Lineman Thermoplastic: $14.55

**OVERTIME PAY**
Attachment 3
Article 8 Prevailing Wage Schedule

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

Prevailing Wage Rates for 07/01/2017 - 06/30/2018
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Last Published on Dec 01 2017
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See (B. E2. F. S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 8, 11, 12, 15, 16, 17, 20, 21, 22) on HOLIDAY PAGE

Painters - Metal Polishers

JOB DESCRIPTION Painter - Metal Polisher

ENTIRE COUNTIES

WAGES

<table>
<thead>
<tr>
<th></th>
<th>07/01/2017</th>
<th>06/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Polisher</td>
<td>$29.73</td>
<td>$30.56</td>
</tr>
<tr>
<td>Metal Polisher**</td>
<td>30.68</td>
<td>31.53</td>
</tr>
<tr>
<td>Metal Polisher***</td>
<td>33.23</td>
<td>34.08</td>
</tr>
</tbody>
</table>

**Note: Applies on New Construction & complete renovation
***Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour:
Journeyworker: $7.55
All classification: $7.65

OVERTIME PAY

See (B, E2, F, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 8, 11, 15, 16, 20, 26) on HOLIDAY PAGE
Overtime: See (5, 8, 11, 15, 16, 20, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

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

<table>
<thead>
<tr>
<th></th>
<th>07/01/2017</th>
<th>06/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>$12.14</td>
<td>$14.25</td>
</tr>
<tr>
<td>2nd year</td>
<td>13.44</td>
<td>15.50</td>
</tr>
<tr>
<td>3rd year</td>
<td>16.29</td>
<td>18.25</td>
</tr>
</tbody>
</table>

Supplemental benefits:
Per hour paid:
1st year $5.62 $5.62
2nd year 5.62 5.62
3rd year 5.62 5.62

8-8A/28A-MP

Plumber

JOB DESCRIPTION Plumber

ENTIRE COUNTIES
Orange, Rockland, Sullivan

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

WAGES

REFRIGERATION/AIR COOLING/AIR CONDITIONING: For all commercial plumbing/HVAC service and maintenance refrigeration where combined compressor tonnage does not exceed 40 tons. For water-cooled air conditioning where units do not exceed 25 tons, including piping of the component system and erection of water tower. For air-cooled air conditioning where units do not exceed 20 tons.
### Article 8 Prevailing Wage Schedule

**RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam**

<table>
<thead>
<tr>
<th>WAGES: (per hour)</th>
<th>05/01/2017</th>
<th>05/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumber/Steamfitter</td>
<td>$32.99</td>
<td>$35.24</td>
</tr>
</tbody>
</table>

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

Shift Differential: Additional 15% shift differential will be paid for government mandated shifts or irregular workdays outside the normal working hours for 2nd and 3rd shifts.

**SUPPLEMENTAL BENEFITS**

Per hour:

- **Journeyman**: $29.33

**OVERTIME PAY**

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

**HOLIDAY**

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

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

**REGISTERED APPRENTICES**

(1) year terms at the following wage.

- **1st term**: $11.54
- **2nd term**: 14.84
- **3rd term**: 18.14
- **4th term**: 21.44
- **5th term**: 26.36

Supplemental Benefits per hour:

- **Apprentices**
  - **1st term**: $10.36
  - **2nd term**: 13.36
  - **3rd term**: 16.20
  - **4th term**: 19.17
  - **5th term**: 23.51

**Plumber**

<table>
<thead>
<tr>
<th>JOB DESCRIPTION</th>
<th>Plumber</th>
<th>DISTRICT</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE COUNTIES</td>
<td>Orange, Rockland, Sullivan</td>
<td>DISTRIBUTION</td>
<td>11</td>
</tr>
<tr>
<td>PARTIAL COUNTIES</td>
<td>Ulster: Only the Townships of Plattekill, Marlboro, Wawarsing, and Shawangunk (except for Wallkill and Shawangunk Prisons)</td>
<td>DISTRIBUTION</td>
<td>11</td>
</tr>
</tbody>
</table>

**WAGES**

<table>
<thead>
<tr>
<th>WAGES: (per hour)</th>
<th>05/01/2017</th>
<th>05/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumber/Steamfitter</td>
<td>$43.80</td>
<td>plus $3.00 to be allocated</td>
</tr>
</tbody>
</table>

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

Shift Differential: Additional 15% shift differential will be paid for government mandated shifts or irregular workdays outside the normal working hours for 2nd and 3rd shifts.

**SUPPLEMENTAL BENEFITS**

Per hour:

- **Journeyman**: $38.24

*Note for overtime hours $0.50 of this amount is paid at straight time, the remaining balance of $37.74 is paid at the same premium as the wages.

**OVERTIME PAY**

OVERTIME: (B, E, Q, V*) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE
## Attachment 3

### Article 8 Prevailing Wage Schedule

#### RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

**Prevailing Wage Rates for 07/01/2017 - 06/30/2018**  
**Last Published on Dec 01, 2017**

**Published by the New York State Department of Labor**  
**PRC Number 2017013459, Orange County**

---

### REGISTERED APPRENTICES

(11) year terms at the following wages:

<table>
<thead>
<tr>
<th>Term</th>
<th>Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>$15.33</td>
</tr>
<tr>
<td>2nd</td>
<td>$19.71</td>
</tr>
<tr>
<td>3rd</td>
<td>$24.09</td>
</tr>
<tr>
<td>4th</td>
<td>$28.47</td>
</tr>
<tr>
<td>5th</td>
<td>$35.04</td>
</tr>
</tbody>
</table>

**Supplemental Benefits per hour:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>$13.71**</td>
</tr>
<tr>
<td>2nd</td>
<td>$17.48**</td>
</tr>
<tr>
<td>3rd</td>
<td>$21.28**</td>
</tr>
<tr>
<td>4th</td>
<td>$25.02**</td>
</tr>
<tr>
<td>5th</td>
<td>$30.83**</td>
</tr>
</tbody>
</table>

**Note for overtime hours:** 0.50% of this amount is paid at straight time, the remaining balance is paid at the same premium as the wages.

---

#### Roofer

**JOB DESCRIPTION:** Roofer  
**DISTRICT:** 9  
**ENTIRE COUNTIES:** Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

**WAGES**

- **Per Hour:** 07/01/2017
- **Roofer/Waterproofer:** $41.50

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

**SUPPLEMENTAL BENEFITS**

- **Journeyworker:** $32.37

**OVERTIME PAY**

- See (B, H) on OVERTIME PAGE

**HOLIDAY**

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

---

#### REGISTERED APPRENTICES

(11) year terms at the following percentage of Journeyworker hourly wage.

<table>
<thead>
<tr>
<th>Term</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25%</td>
<td>50%</td>
<td>60%</td>
<td>75%</td>
</tr>
</tbody>
</table>

**Supplements per hour paid at the following rates:**

<table>
<thead>
<tr>
<th>Term</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3.02</td>
<td>$15.46</td>
<td>$18.54</td>
<td>$23.17</td>
</tr>
</tbody>
</table>

---

#### Sheetmetal Worker

**JOB DESCRIPTION:** Sheetmetal Worker  
**DISTRICT:** 8  
**ENTIRE COUNTIES:** Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

- **Per Hour:** 07/01/2017
- **Sheetmetal Worker:** $42.88

**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:** $40.49

**OVERTIME PAY**

- See (B, E, Q.) on OVERTIME PAGE.
Attachment 3
Article 8 Prevailing Wage Schedule

RFB-OC007-18 Rehabilitation of Beaver Dam Lake Dam

<table>
<thead>
<tr>
<th>Prevailing Wage Rates for 07/01/2017 - 06/30/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published by the New York State Department of Labor</td>
</tr>
<tr>
<td>PRO Number 2017013459, Orange County</td>
</tr>
</tbody>
</table>

**Note:** For Sundays or Holidays worked, HOURLY WAGE is double the total of the hourly wage plus the hourly benefit paid all in wages. (Benefits are included in the wages).

**HOLIDAY**
Paid: See (1) on HOLIDAY PAGE
Over Time: See (5, 8, 15, 16, 23) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15.77</td>
<td>$17.73</td>
<td>$19.71</td>
<td>$21.08</td>
<td>$23.64</td>
<td>$25.62</td>
<td>$28.07</td>
<td>$30.51</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour:

- Apprentices
  - 1st term: $17.05
  - 2nd term: 10.30
  - 3rd term: 21.49
  - 4th term: 23.72
  - 5th term: 25.94
  - 6th term: 28.18
  - 7th term: 29.91
  - 8th term: 31.07

**Sprinkler Fitter**

<table>
<thead>
<tr>
<th>JOB DESCRIPTION</th>
<th>Sprinkler Fitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTRICT</td>
<td>1</td>
</tr>
</tbody>
</table>

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

**WAGES**
Per Hour:

- Sprinkler Fitter: $43.97 (01/01/2018), $45.42 (04/01/2018)

**SUPPLEMENTAL BENEFITS**
Per hour worked:

- Sprinkler Fitter: $22.42 (01/01/2018), $23.12 (04/01/2018), $23.42 (04/01/2018)

**OVERTIME PAY**
See (8, E, Q) on OVERTIME PAGE

**HOLIDAY**
Paid: See (1) on HOLIDAY PAGE
Over Time: See (5, 8, 15, 16, 23) on HOLIDAY PAGE

**NOTE:** When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

**REGISTERED APPRENTICES**
Wages per hour

For Apprentices HIRED ON OR AFTER 04/01/2010:

One and Half Year terms at the following percentage of journeyman's wage:

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
</tr>
</thead>
<tbody>
<tr>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour worked:

- Sprinkler Fitter:
  - 1st: $8.85
  - 2nd: $8.91
  - 3rd: $18.49
  - 4th: $18.55
  - 5th: $17.11
  - 6th: $17.17
  - 7th: $17.23
  - 8th: $17.28
  - 9th: $17.34
  - 10th: $17.40

For Apprentices HIRED ON OR AFTER 04/01/2013:
Prevailing Wage Rates for 07/01/2017 - 06/30/2018
Last Published on Dec 01, 2017
Published by the New York State Department of Labor
PRC Number 2017013459 Orange County

One Half Year terms at the following percentage of journeyman’s wage.

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
</tr>
</thead>
<tbody>
<tr>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>60%</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Supplemental Benefits per hour worked

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
</tr>
</thead>
</table>

1-669.2

Teamster - Building / Heavy&Highway

DUSCH, JOSUE, RODRIGUEZ, SULLIVAN, Ulster

WAGES

GROUP 1: LeTourneau Tractors, Double Barrel Euclid's, Ahney Wagons and similar equipment (except when hooked to scrapers), I-Beam and Pole Trailers. Tire Trucks. Tractor and Trailers with 6 axles and over. Articulated Back Dumps and Road Oil Distributors. Articulated Water Trucks and Fuel Trucks, 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 34 yard bodies, Mixer Trucks, Dump Crate 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, Intiniator Trucks. Water Trucks.

GROUP 5: Straight Trucks.

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

WAGES: (per hour)

<table>
<thead>
<tr>
<th>07/01/2017</th>
<th>05/01/2016</th>
<th>07/01/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP 1</td>
<td>$31.75</td>
<td>$32.60</td>
</tr>
<tr>
<td>GROUP 1A</td>
<td>$32.89</td>
<td>$33.64</td>
</tr>
<tr>
<td>GROUP 2</td>
<td>$31.19</td>
<td>$31.94</td>
</tr>
<tr>
<td>GROUP 3</td>
<td>$30.67</td>
<td>$31.72</td>
</tr>
<tr>
<td>GROUP 4</td>
<td>$30.85</td>
<td>$31.81</td>
</tr>
<tr>
<td>GROUP 5</td>
<td>$30.74</td>
<td>$31.49</td>
</tr>
<tr>
<td>GROUP 6</td>
<td>$30.74</td>
<td>$31.49</td>
</tr>
</tbody>
</table>

NOTE: additional 20% premium above the hourly wage for hazardous and toxic waste removal. This applies to all groups.

Shift Work: A 10% premium will be paid for off-shift or irregular shift work when mandated by the NYSDOT or other Governmental Agency.

SUPPLEMENTAL BENEFITS

Per hour paid:
First 40 hours: $33.42
Over 40 hours: $27.02

OVERTIME PAY

OVERTIME... See (B, E, F, P) on OVERTIME PAGE.

HOLIDAY

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

NOTE: Holidays worked Monday to Friday receive straight time wage for working, plus Holiday Pay.
Holidays worked on Saturday receive time and a half plus Holiday Pay.
Holidays worked on Sunday receive double time and a half plus Holiday Pay.

Welder

12/01/2017
Welder

ENTIRE COUNTIES

WAGES
Per hour
07/01/2017

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, if worked
<table>
<thead>
<tr>
<th>Prevailing Wage Rate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(S1)</td>
<td>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.</td>
</tr>
<tr>
<td>(T)</td>
<td>Triple the hourly rate for Holidays, if worked</td>
</tr>
<tr>
<td>(U)</td>
<td>Four times the hourly rate for Holidays, if worked</td>
</tr>
<tr>
<td>(V)</td>
<td>Including benefits at SAME PREMIUM as shown for overtime</td>
</tr>
<tr>
<td>(W)</td>
<td>Time and one half for benefits on all overtime hours.</td>
</tr>
</tbody>
</table>
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
### 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]**

<table>
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<tr>
<th>A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)</th>
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<tbody>
<tr>
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<tr>
<td>(Check if new or change)</td>
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<tr>
<td>Telephone: ( )</td>
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<tr>
<td>E-Mail:</td>
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| 3. SEND REPLY TO | 4. SERVICE REQUIRED. Check appropriate box and provide project information. |
| Name and complete address: | ○ New Schedule of Wages and Supplements. |
| (Check if new or change) | ○ Additional Occupation and/or Redetermination |
| Telephone: ( ) | Fax: ( ) |
| E-Mail: | |

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<th>B. PROJECT PARTICULARS</th>
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<td>Description of Work</td>
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<th>7. Nature of Project - Check One:</th>
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<td>○ 1. New Building</td>
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<td>○ 3. Heavy and Highway Construction (New and Repair)</td>
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<td>○ 4. New Sewer or Waterline</td>
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<td>○ 6. Other Reconstruction, Maintenance, Repair or Alteration</td>
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<td>○ 7. Demolition</td>
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<td>○ 8. Building Service Contract</td>
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<th>8. OCCUPATION FOR PROJECT:</th>
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<td>○ Guards, Watchmen</td>
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<td>○ Janitors, Porters, Cleaners, Elevator Operators</td>
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<td>○ Moving furniture and equipment</td>
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<td>○ Trash and refuse removal</td>
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<td>○ Window cleaners</td>
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<td>○ Other (Describe)</td>
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| 9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding? | YES ☐ NO ☐ |
|---------------------------------------------------------------|
| Signature | |

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS
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

NOTE: The agency issuing the determination and providing the information, is denoted under the heading ‘Fiscal Officer’. DOL = NYS Dept. of Labor; NYC = New York City Comptroller’s Office; AG = NYS Attorney General’s Office; DA = County District Attorney’s Office.

A list of those barred from bidding, or being awarded, any public work contract or subcontract with the State, under section 141-b of the Workers’ Compensation Law, may be obtained at the following link, on the NYS DOL Website:

https://dbr.labor.state.ny.us/EDList/searchPage.do
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<th>EMPLOYER DLX NAME</th>
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# Article 8 Prevailing Wage Schedule

### NYSDOL Bureau of Public Work Debarment List  

**11/17/2017**

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**NYSDOL Bureau of Public Work Debarment List**

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