



# ERIE COUNTY WATER AUTHORITY

## INTEROFFICE MEMORANDUM

November 15, 2021

To: Terrence D. McCracken, Secretary to the Authority

From: Michael W. Wymer, Senior Production Engineer *MW*

Subject: Contract GHD-010  
Sturgeon Point WTP - Sedimentation Basin Effluent Improvements  
ECWA Project No. 202100088

---

The following documents are attached:

- Blue Authorization Form – this form provides the project name and project number, the action that is being requested of the Board (resolution to advertise for bids) and a list of approvals that are required prior to being acted on by the Board.
- One Project Manual.

The above referenced project was designed by GHD. The tentative date for the receipt of contractor bids is Tuesday January 11, 2022.

Contract GH-010 includes:

1. Installation of slide gates with electric actuators at the effluent of Sedimentation Basins 1-5 (two gates each) to allow isolation of the basins during sludge scraping operations.
2. Construction of access risers and hatches for construction of the slide gates and monitoring by treatment plant operators.
3. Electrical and instrumentation improvements associated with the slide gate installations.

Budget Information:

- Unit 2510, Item 101586 GHD-010, Sedimentation Basin Effluent Valve
  - 2021 Budget: Engineering services
  - 2022 Budget: Engineering services and Construction.

MWW:jmf

Attachments

cc: R.Stoll

L.Kowalski

L.Lester

**ERIE COUNTY WATER AUTHORITY  
AUTHORIZATION FORM  
For Approval/Execution of Documents  
(check which apply)**

**Contract:** GHD-010 **Project No.:** 202100088  
**Project Description:** Sturgeon Point WTP - Sedimentation Basin Effluent Improvements








**Item Description:**

Agreement     Professional Service Contract     Amendment     Change Order  
 BCD     NYSDOT Agreement     Contract Documents     Addendum  
 Recommendation for Award of Contract     Recommendation to Reject Bids  
 Request for Proposals  
 Other \_\_\_\_\_

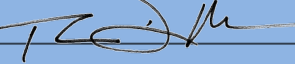
**Action Requested:**

Board Authorization to Execute     Legal Approval  
 Board Authorization to Award     Execution by the Chairman  
 Board Authorization to Advertise for Bids     Execution by the Secretary to the Authority  
 Board Authorization to Solicit Request for Proposals  
 Other \_\_\_\_\_

**Approvals Needed:**  
**APPROVED AS TO CONTENT:**

<input checked="" type="checkbox"/> Sr. Production Engineer	<u></u>	Date: <u>11/15/2021</u>
<input checked="" type="checkbox"/> Chief Operating Officer	<u></u>	Date: <u>11/16/2021</u>
<input checked="" type="checkbox"/> Executive Engineer	<u></u>	Date: <u>11/15/2021</u>
<input checked="" type="checkbox"/> Director of Administration	<u></u>	Date: <u>11/16/2021</u>
<input checked="" type="checkbox"/> Risk Manager	<u></u>	Date: <u>11/15/2021</u>
<input checked="" type="checkbox"/> Chief Financial Officer	<u></u>	Date: <u>11/16/2021</u>
<input checked="" type="checkbox"/> Legal	<u></u>	Date: <u>11/16/2021</u>

**APPROVED FOR BOARD RESOLUTION:**

<input checked="" type="checkbox"/> Secretary to the Authority	<u></u>	Date: <u>11/16/21</u>
--	--	-----------------------

**Remarks:** Unit price contract.

**Resolution Date:** \_\_\_\_\_ **Item No:** \_\_\_\_\_

Set No:

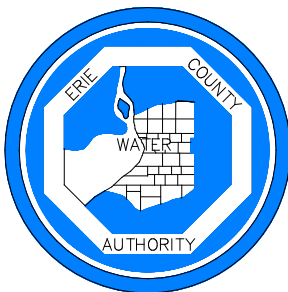
**Project Manual**  
**Contract No.: GHD-010**

**Sedimentation Basin**  
**Effluent Improvements**  
**Sturgeon Point Water Treatment Plant**

**Project No. 202100088**

**November 2021**

**Erie County Water Authority**  
**3030 Union Road**  
**Cheektowaga, New York 14227**





**ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK**

---

**CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT**

---

**ECWA PROJECT NO: 202100088**

---

**NOVEMBER 2021**

**This Project Manual and Contract Drawings were prepared under the direct supervision of a Professional Engineer by: GHD Consulting Services Inc.**



**ERIE COUNTY WATER AUTHORITY  
3030 Union Road  
Cheektowaga, New York 14227**



ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO: 202100088

TABLE OF CONTENTS

<u>Document or Section Number</u>	<u>Name or Description</u>	<u>Initial Page</u>
<u>BIDDING REQUIREMENTS</u>		
00100	Notice to Bidders .....	00100-1
00200	Instructions to Bidders .....	00200-1
00360	Permit Applications .....	00360-1
00410	Bid Forms.....	00410-1
00430	Bid Form Supplements .....	00430-1
00450	Bidder's Qualification Statement.....	00450-1
<u>CONTRACTING REQUIREMENTS</u>		
00500	Agreement.....	00500-1
00611	Performance Bond .....	00611-1
00612	Payment Bond.....	00612-1
00700	General Conditions .....	00700-1
00800	Supplementary Conditions.....	00800-1
<u>DIVISION 1 – GENERAL REQUIREMENTS</u>		
01010	Summary of Work.....	01010-1
01131	Schedule of Completion.....	01131-1
01140	Use of Owner's Facilities.....	01140-1
01210	Allowances.....	01210-1
01270	Measurement and Payment .....	01270-1
01290	Schedule of Values .....	01290-1
01300	Progress Schedules.....	01300-1
01310	Project Coordination .....	01310-1
01311	Coordination with Owner's Operations .....	01311-1
01312	Preconstruction Conference .....	01312-1
01313	Progress Meetings.....	01313-1
01321	Construction Schedules .....	01321-1
01322	Construction Photographs.....	01322-1
01331	Shop Drawing Procedures.....	01331-1
01332	Samples.....	01332-1

01400	Quality Control .....	01400-1
01411	Spill Prevention Control and Countermeasures Plan.....	01411-1
01413	Contractor’s Hazardous Materials Management Program.....	01413-1
01415	Confined Space Entry Plan .....	01415-1
01421	Reference Standards.....	01421-1
01422	Abbreviations and Symbols .....	01422-1
01520	Temporary Construction Facilities .....	01520-1
01521	Contractor’s Field Office .....	01521-1
01522	Engineer’s Field Office.....	01522-1
01523	Emergency Telephone Numbers .....	01523-1
01550	Access Roads and Parking Areas.....	01550-1
01561	Security .....	01561-1
01562	Protection of Work and Property .....	01562-1
01563	Temporary Controls .....	01563-1
01564	Erosion Control.....	01564-1
01585	Pipeline and Buried Infrastructure Protection Plan .....	01585-1
01620	Equipment - General .....	01620-1
01630	Substitutions .....	01630-1
01640	Transportation and Handling of Materials and Equipment.....	01640-1
01650	Starting of Systems .....	01650-1
01660	Storage of Material .....	01660-1
01700	Contract Closeout.....	01700-1
01723	Cutting and Patching.....	01723-1
01730	Installation.....	01730-1
01731	Connections to Existing Facilities .....	01731-1
01740	Warranty Requirements .....	01740-1
01741	Cleaning .....	01741-1
01751	Starting and Placing Equipment in Operation .....	01751-1
01780	Record Documents .....	01780-1
01781	Operation and Maintenance Data.....	01781-1
01783	Spare Parts and Maintenance Materials .....	01783-1
01821	Instruction of Operation and Maintenance Personnel .....	01821-1

TECHNICAL SPECIFICATIONS

DIVISION 2 – SITE CONSTRUCTION

02030	Demolition .....	02030-1
02205	Protection of Existing Facilities.....	02205-1
02228	Compaction .....	02228-1
02316	Select Granular Materials .....	02316-1
02351	Excavation, Backfill and Trenching .....	02351-1
02900	Restoration .....	02900-1



DIVISION 3 – CONCRETE

03300	Cast-in-Place Concrete.....	03300-1
03410	Precast Structural Concrete.....	03410-1
03600	Grout .....	03600-1

DIVISION 5 – METALS

05505	Concrete and Masonry Anchors.....	05505-1
-------	-----------------------------------	---------

DIVISION 11 – EQUIPMENT

11280	Fabricated Slide Gates .....	11280-1
-------	------------------------------	---------

DIVISION 15 – MECHANICAL

15115	Electric Actuators.....	15115-1
-------	-------------------------	---------

DIVISION 16 – ELECTRICAL

16010	Electrical Conditions.....	16010-1
16030	Temporary Electrical Connections .....	16030-1
16040	Electrical Demolition .....	16040-1
16060	Grounding and Bonding.....	16060-1
16070	Hangers and Supports .....	16070-1
16075	Electrical Identification.....	16075-1
16110	Conduit.....	16110-1
16112	Surface Raceways .....	16112-1
16120	Wire and Cable .....	16120-1
16130	Boxes.....	16130-1
16410	Power Distribution and Control Equipment .....	16410-1

APPENDICES

- A. Women and Minority Business Enterprise Policy
- B. Insurance Requirements
- C. Prevailing Wage Rate Schedule
- D. Monitoring and Control Narrative

LIST OF DRAWINGS

<u>Sheet No.</u>	<u>Drawing Title</u>
<u>GENERAL</u>	
G001	Cover Sheet and Sheet Index
G002	Legend
<u>CIVIL</u>	
C001	Site Plan
<u>STRUCTURAL</u>	
S001	Structural Sections
S002	Structural Details

<u>Sheet No.</u>	<u>Drawing Title</u>
<u>MECHANICAL</u>	
M001	Process Flow Diagram
M002	Sedimentation Basin and Conduit Plan
M003	Sedimentation Basin and Conduit Section
M004	Sedimentation Basin and Conduit Details
<u>ELECTRICAL</u>	
E001	Partial One-Line Diagram, Electrical Legend and Abbreviations
E002	Electrical Partial Site Demolition Plan – Sedimentation Basins 1W, 1E, 2W, 2E AND 3W
E003	Electrical Partial Site Demolition Plan – Sedimentation Basins 3E, 4W, 4E, 5W AND 5E
E004	Electrical Site Demolition Plan
E005	Electrical Partial Site Plan – West Sedimentation Basins 1W, 1E, 2W, 2E and 3W
E006	Electrical Partial Site Plan – East Sedimentation Basins 3E, 4W, 4E, 5W and 5E
E007	Electrical Schedules
<u>INSTRUMENTATION</u>	
I001	Sedimentation Basin Gate Control Process & Instrument Diagram

END OF TABLE OF CONTENTS

ERIE COUNTY WATER AUTHORITY  
3030 UNION ROAD  
CHEEKTOWAGA, NEW YORK 14227

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO: 202100088

NOTICE TO BIDDERS

The Erie County Water Authority will receive separate, sealed bids for the furnishing of all labor, plant, tools, equipment and specified materials, etc. for ERIE COUNTY WATER AUTHORITY, Sedimentation Basin Effluent Improvements, Sturgeon Point, TOWN OF EVANS. The Work consists of a single contract for the construction of improvements to the sedimentation basin system at the water treatment plant (WTP). Improvements consist of installation of slide gates and electric actuators at the sedimentation basins and associated electrical control panels, and related improvements.

Bids will be received by the Erie County Water Authority until **(Time)** a.m. prevailing time, on **(Day of week, Date)** at the Service Center Front Desk, Erie County Water Authority, 3030 Union Road, Cheektowaga, New York 14227.

All bid openings are recorded and posted on the ECWA website, along with the bids results.

When permitted, members of the public may be present to observe the bid opening. All attendees must bring a government-issued photo identification (driver's license preferred) and check-in with the ECWA receptionist before being allowed entry to the bid opening.

Whenever the Erie County Water Authority is operating under a Declaration of Emergency due to a pandemic or other general state of emergencies, members of the public may be precluded from being present at such bid opening.

**ANYONE ENTERING THE SERVICE CENTER OR OTHER AUTHORITY FACILITIES IS SUBJECT TO SUCH RESTRICTIONS OR LIMITATIONS IN PLACE AT THE TIME OF ENTRY.**

All bids being mailed (including FedEx, UPS, Priority Mail, etc.) or hand-delivered to the Erie County Water Authority shall be directed to the "SERVICE CENTER FRONT DESK" at the address listed above in a sealed envelope and be clearly marked on the outside of the mailing or hand-delivered envelope "BID ENCLOSED – ECWA Sedimentation Basin Effluent Improvements, Sturgeon Point Water Treatment Plant, Town of Evans." Failure to follow the above instructions could result in rejection of the bid.

Beginning at **Time, on (Date)**, the Contract Documents may be viewed online and ordered through Avalon Plan Room, at: [www.avalonbuff-planroom.com](http://www.avalonbuff-planroom.com) in the "Private Bid" section. To obtain the "Private Key Code" required to access the Contract Documents, contact Matthew Skuse (contact

information included at the end of this section). If you have questions on ordering from Avalon, please contact Avalon Document Services at (716) 995-7777.

Printed copies of the Contract Documents must be obtained from Avalon. The fee paid to Avalon is non-refundable. By submission of the non-refundable payment, bidder will be registered as an official planholder. Only official planholders are eligible to bid on the project. Subcontractors, suppliers, equipment vendors, etc., will also be required to submit the nonrefundable payment in order to receive the Contract Documents. Partial sets of documents will not be available.

Each bid shall be accompanied by a certified check or bid bond in the amount of five percent (5%) of the amount of the bid.

A non-mandatory Pre-Bid informational meeting will be held at **time, local time, Date**, to discuss the project via teleconference call with online video conference. Prospective bidders who wish to access the Pre-Bid meeting teleconference call may request the required login information by emailing Matthew Skuse. All requests for the login information shall be **before time, Date**. All prospective bidders are strongly encouraged to partake in the Pre-Bid meeting teleconference call.

Project site visit(s) are scheduled for **Date, between the hours of Time and time**. All parties wishing to visit the site must contact the Engineer, Matthew Skuse. All requests shall be received **before time, Date**. The Authority will schedule individual site visits accordingly and notify all parties.

In accordance with State Finance Law §§139-j and 139-k, all questions about meaning or intent of the bidding documents shall be submitted to the designated contact person in writing. The designated contact is Matthew Skuse.

The Erie County Water Authority reserves the right to reject any and all bids or to accept any bid deemed to be for the best interest of the Water Authority even though the proposal chosen may result in the award of the contract to a bidder whose bid is not mathematically lowest.

ERIE COUNTY WATER AUTHORITY

TERRENCE D. McCracken  
Secretary to the Authority

Engineer:  
GHD Consulting Services Inc.  
285 Delaware Avenue, Suite 500  
Buffalo, NY 14202  
Email: [matthew.skuse@ghd.com](mailto:matthew.skuse@ghd.com)  
Matthew Skuse Phone: 716-856-2142

ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT No.: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT No.: 202100088

SECTION 00200

INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

1. Defined Terms
2. Bids Received
3. Location and Scope of Work
4. Copies of Bidding Documents
5. Qualifications of Bidders
6. Examination of Bidding Documents, other Related Data and Site
7. Pre-Bid Conference
8. Site and Other Areas
9. Interpretations and Addenda
10. Bid Security
11. Contract Times
12. Liquidated and Special Damages
13. Substitute and "Or Equal" Items
14. Subcontractors, Suppliers, and Others
15. Preparation of Bid
16. Basis of Bids; Comparison of Bids
17. Submittal of Bid
18. Modification or Withdrawal of Bid
19. Opening of Bids
20. Disqualification of Bidders
21. Bids to Remain Subject to Acceptance
22. Award of Contract
23. Contract Securities
24. Contractor's Insurance
25. Signing of Agreement
26. Notice to Proceed
27. Partnering - Not Used
28. Sales and Use Taxes
29. Additional Requirements

## ARTICLE 1 - DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.
- 1.02 Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.
- A. Bidder: The individual or entity who submits a Bid directly to OWNER.
  - B. Issuing Office: The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
  - C. Successful Bidder: The Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award. Also known as CONTRACTOR.
  - D. ENGINEER: As defined in the Agreement, Section 00500, under Article 2.

## ARTICLE 2 - BIDS RECEIVED

- 2.01 Refer to Notice to Bidders for information on receipt of Bids.

## ARTICLE 3 - LOCATION AND SCOPE OF WORK

- 3.01 Refer to Section 01010 of the General Requirements for the location and scope of the Work.

## ARTICLE 4 - COPIES OF BIDDING DOCUMENTS

- 4.01 Refer to Notice to Bidders for information on examination and procurement of Bidding Documents.
- 4.02 The Issuing Office is the Service Center Front Desk of the Erie County Water Authority, 3030 Union Road, Cheektowaga, New York 14227.
- 4.03 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER, nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 4.04 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant permission for any other use.

## ARTICLE 5 - QUALIFICATIONS OF BIDDERS

- 5.01 Bidders shall be experienced in the kind of Work to be performed, shall have the necessary equipment therefore, and shall possess sufficient capital to properly execute the Work within the time allowed. Bids received from Bidders who have previously failed to complete work within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected. A Bid may be rejected if Bidder cannot show that Bidder has the necessary ability, plant and equipment to commence the Work at the time prescribed and thereafter to prosecute and complete the Work at the rate or within the time specified. A Bid may be rejected if Bidder is already obligated for the performance of other work which would delay the commencement, prosecution or completion of the Work.
- 5.02 To demonstrate qualifications to perform the Work, Bidder shall complete and submit with its Bid the Bidder Qualifications Statement which is bound in the Project Manual. Bidders may be asked to furnish additional data to demonstrate their qualifications.
- 5.03 Bidders shall be qualified to do business in the state where the Project is located or covenant to obtain such qualification prior to signing the Agreement.

## ARTICLE 6 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

### 6.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site which have been utilized by ENGINEER in preparation of the Bidding Documents.
  2. Those drawings of physical conditions in or relating to existing surface and subsurface structures (except underground facilities) which are at or contiguous to the Site that have been utilized by ENGINEER in preparation of the Bidding Documents.
- B. Copies of the reports and drawings referenced in the Supplementary Conditions will be made available by ENGINEER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph SC-4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

- 6.02 Underground Facilities - Physical Conditions
- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.
- 6.03 Hazardous Environmental Condition
- A. OWNER has no actual knowledge of hazardous environmental conditions at the project site locations involving work.
- 6.04 Provisions concerning responsibilities for the adequacy of data, if any, furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unforeseen conditions appear in paragraphs 4.02, 4.03 and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Bidding Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the Scope of Work appear in paragraph 4.06 of the General Conditions.
- 6.05 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests and studies.
- 6.06 On request, OWNER will conduct a Site visit during OWNER'S normal business hours.
- 6.07 Reference is made to the Supplementary Conditions for identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, and if available, OWNER will provide to Bidder, for examination, access to or copies of the contract documents for such other work.
- 6.08 It is the responsibility of Bidder, before submitting a Bid to:
- A. Examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local and Site conditions that may affect cost, progress and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work;



- D. Carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and to carefully study all reports and drawings of a Hazardous Environmental Condition identified at the Site, if any, which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Obtain and carefully study (or assume responsibility for having done so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for the performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of work (if any) to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents;
- I. Promptly give ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and
- J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

- 6.09 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 6, that without exception the Bid is premised upon performing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences or procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing the Work.

#### ARTICLE 7 - PRE-BID CONFERENCE

- 7.01 A pre-bid conference will be held if so indicated in the Notice to Bidders, and will be as follows. Representatives of the OWNER and ENGINEER will be present to discuss the Project. Bidders are encouraged to attend and participate at the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions raised at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

#### ARTICLE 8 - SITE AND OTHER AREAS

- 8.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment, to be incorporated into the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

#### ARTICLE 9 - INTERPRETATIONS AND ADDENDA

- 9.01 All questions about the meaning or intent of the Bidding Documents shall be submitted to ENGINEER in writing. In order to receive consideration, questions must be received by ENGINEER at least ten (10) days prior to the date for the opening of Bids. Interpretations, clarifications, and/or supplemental instructions considered necessary by ENGINEER in response to such questions will be issued by Addenda, mailed either by Registered or Certified mail, with return receipt requested, to all parties recorded by ENGINEER as having received the Bidding Documents, for receipt not later than three (3) days prior to the date for the opening of Bids. Failure of any Bidder to receive such Addendum or interpretation shall not relieve any bidder from any obligation under his bid submitted. All Addenda so issued shall become part of the Contract Documents. All Addenda must be submitted with the bid proposal and be properly signed by the Bidder as part of the Bid Documents. Only questions answered by Addenda will be binding. The OWNER will not be responsible for any other explanations or interpretation of such documents which anyone presumes to make on behalf of the OWNER before expiration

of the time set for the receipt of Bids. No interpretation of the meaning of the plans, specifications or other Contract Documents will be made to any bidder orally. Oral and other interpretations or clarifications will be without legal effect.

- 9.02 Addenda may also be issued to clarify, correct or change the Bidding Documents as deemed advisable by OWNER or ENGINEER. Such Addenda, if any, will be issued in the manner and within the time period stated in paragraph 9.01.

## ARTICLE 10 - BID SECURITY

- 10.01 A Bid must be accompanied by Bid security made payable to the OWNER in the amount of five percent of Bidder's maximum Bid price and in the form of certified check or Bid Bond.
- 10.02 Bid Bond shall be on the form bound in the Project Manual. Bid Bond shall be issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions. The Bid Bond must contain original signatures in ink. Pencil, stamped, thermal faxed, Xeroxed, or any other copies of the signature shall be grounds for voiding the Bid.
- 10.03 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to sign and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited to the OWNER as liquidated damages for such failure.
- 10.04 The Bid security of the three lowest bidders may be retained by OWNER until the earlier of the seventh day after the Effective Date of the Agreement or the forty-first day after the Bid opening whereupon the Bid security furnished by such Bidders will be returned. The Bid security of Bidders whom OWNER believes do not have a reasonable chance of receiving an award will be returned within seven days of the Bid opening.

## ARTICLE 11 - CONTRACT TIMES

- 11.01 The number of days within which the Work is to be substantially completed and also completed and ready for final payment (the Contract Times) are set forth in the Agreement.

## ARTICLE 12 - LIQUIDATED AND SPECIAL DAMAGES

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

## ARTICLE 13 - SUBSTITUTE AND "OR EQUAL" ITEMS

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

13.02 Refer to Section 01630 of the General Requirements for the period of time after the Effective Date of the Agreement during which the ENGINEER will accept applications for substitute or "or-equal" items of material or equipment.

## ARTICLE 14 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

14.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening submit to OWNER a list of all such Subcontractors, Suppliers, other individuals or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualifications for each such Subcontractor, Supplier, individual or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual or entity, OWNER may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price.

14.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

14.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual or entity against whom CONTRACTOR has reasonable objection.

#### ARTICLE 15 - PREPARATION OF BID

15.01 A Bid must be made on the Bid form bound in the Project Manual. The Bid form shall not be separated from the Project Manual nor shall it be altered in any way.

15.02 All blanks in the Bid Form shall be completed by printing in black ink or by typewriter. A Bid price shall be indicated in both words and numbers for each Bid item listed therein or the words "No Bid" or "Not Applicable" entered. In case of discrepancy between the words and the numerals, the words shall govern. Ditto marks are not considered writing or printing and shall not be used.

15.03 A Bid shall be executed as stated below.

A. A Bid by an individual shall show the Bidder's name and official address.

B. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title shall appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

C. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture shall be shown below the signature.

D. A Bid by a corporation shall be executed in the corporate name by an officer of the corporation and shall be accompanied by a certified copy of a resolution of the board of directors authorizing the person signing the Bid to do so on behalf of the corporation. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The state of incorporation and the official corporate address shall be shown below the signature.

E. A Bid by a limited liability company shall be executed in the name of the firm and signed by a member accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.

F. All names shall be typed or printed in black ink below the signature.

G. Evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed shall be provided, if applicable.

15.04 The Bid shall contain an acknowledgment of the receipt of all Addenda in the space provided on the Bid form.

- 15.05 The address and telephone number for communications regarding the Bid shall be shown.
- 15.06 In addition to the Bid Form, the following listed documents, which are bound in the Project Manual in Section 00430 - Bid Form Supplements and Section 00450 – Bidder’s Qualification Statement, shall be submitted with the Bid. Each document shall be executed in the manner described in paragraph 15.03 unless another manner is indicated.
- A. Bid Security Form.
  - B. Section 2875 of the Public Authorities Law.
  - C. Section 2876 of the Public Authorities Law.
  - D. Section 2878 of the Public Authorities Law, Non-collusive Bidding Certification.
  - E. State Finance Law Requirements.
  - F. Section 139-L of the State Finance Law, Statement relating to Sexual Harassment Policy.
  - G. Bidder’s Qualification Statement, including Attachments A, B, C and D and Bidder’s “Experience in The Installation of Tapping Sleeves & Valves on Prestressed Concrete Cylinder Pipe,” if applicable.
  - H. All Addenda.

## ARTICLE 16 - BASIS OF BIDS; COMPARISON OF BIDS

### 16.01 Lump Sum and Unit Price

- A. Bidder shall submit its Bid on the basis of each lump sum item and unit price item as set forth in the Bid Form. For each unit price item on the Bid form, Bidder shall enter the unit price Bid, and shall enter the computation of the respective quantity times the Bidder’s unit price for that item. Bidder shall compute and enter in the space provided on the Bid form, the total of all lump sum items and the total of the products of quantity and unit price Bid for each unit price item.
- B. For determination of the apparent low Bidder, Bids will be evaluated on the basis of the total of all lump sum items and the total of the products of the estimated quantity of each item and unit price Bid for that item.
- C. The quantities for the unit price items are unpredictable and the ENGINEER has inserted certain quantities in the Bid Form to be used solely for purpose of comparison bids.

- D. Fixed minimum unit prices may have been established for some of the items in the Bid. The prices represent the minimum amounts which will be paid the CONTRACTOR for these items. If in the opinion of the Bidder these prices do not reflect the actual value of the work involved the Bidder may void the given fixed minimum unit price for that specific item and enter a higher unit price in the spaces provided in the Bid Sheets.

16.02 Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

#### ARTICLE 17 - SUBMITTAL OF BID

- 17.01 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Notice to Bidders. The entire Project Manual must be submitted with all proper forms completed and signed as required.
- 17.02 Bid shall be enclosed in an opaque sealed envelope plainly marked on the outside with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) the name and address of the Bidder and its license or registration number, if applicable. Bid shall be accompanied by Bid security and other required documents.
- 17.03 All bids being mailed (including FedEx, UPS, Priority Mail, etc.) or hand-delivered to the Erie County Water Authority shall follow the procedure as defined in Section 00100, Notice To Bidders.

#### ARTICLE 18 - MODIFICATION OR WITHDRAWAL OF BID

- 18.01 Withdrawal Prior to Bid Opening:
  - A. A Bid may be withdrawn by an appropriate document duly executed, in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time fixed for the opening of Bids. Upon receipt of such written notice, the unopened Bid will be returned to the Bidder.
- 18.02 Modification Prior to Bid Opening:
  - A. If a Bidder wishes to modify its Bid, Bidder must withdraw its initial Bid in the manner specified in paragraph 18.01.A and submit a new Bid.
- 18.03 No Bids may be withdrawn after the time set for the Bid Opening.

## ARTICLE 19 - OPENING OF BIDS

- 19.01 Bids will be opened at the time and place where Bids are to be submitted and, unless obviously non-responsive, read aloud publicly. An abstract of the Bids will be made available to Bidders after the opening.
- 19.02 Bids received by mail or otherwise after the date and time specified for the opening of Bids will not be accepted and will be returned to the Bidder unopened.
- 19.03 Bid results are available on the Erie County Water Authority website, [www.ecwa.org](http://www.ecwa.org) (under Doing Business tab, select option Business Opportunities). No bid results will be given over the telephone.

## ARTICLE 20 - DISQUALIFICATION OF BIDDERS

- 20.01 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

## ARTICLE 21 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 21.01 All Bids shall remain subject to acceptance for forty five days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.
- 21.02 In the event that the OWNER requires more than 45 calendar days after the actual date of the Bid Opening to award the contract, Bidders shall, when requested, provide to ENGINEER a written extension of time for OWNER to award the contract. Bidders shall also provide, to ENGINEER, written Consent of Surety for extension of the bid bond.
- 21.03 In the event that the OWNER requires more than 45 calendar days after the actual date of the Bid Opening to award the contract, and the lowest qualified bidder does not grant an extension of time for the OWNER to award the contract, the OWNER reserves the right to award to the second lowest qualified bidder.

## ARTICLE 22 - AWARD OF CONTRACT

- 22.01 OWNER reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, non-responsive or conditional Bids. Bids may be rejected if they show any omissions, alterations of form, additions not called for, conditional or alternate bids other than are provided for in the Bid Form, bids containing escalation clauses or irregularities of any kind. OWNER further reserves the right to



reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER also reserves the right to waive any informality not involving price, time or changes in the Work, if it is deemed to be in the best interest of the OWNER. The Bidder will not be allowed to take advantage of any error or omission.

- 22.02 OWNER reserves the right to reject any Bid not accompanied by specified documentation and Bid security. In the event that OWNER requires more than 45 calendar days after the actual Bid opening date to award the contract, Bidders shall provide to ENGINEER written Consent of Surety of the Bid Bond.
- 22.03 OWNER reserves the right to reject any Bid that, in its sole discretion, is considered to be unbalanced or unreasonable as to the amount bid for any lump sum or unit price item.
- 22.04 In evaluating Bidders, OWNER will consider their qualifications whether or not their Bids comply with the prescribed requirements, the alternatives, if any, the lump sum and unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.
- 22.05 OWNER may consider the qualifications and experience of Subcontractors, Suppliers and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 22.06 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications and financial ability of the Bidders to perform the Work in accordance with the Contract Documents. OWNER reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to OWNER'S satisfaction.
- 22.07 OWNER reserves the right to accept any Bid deemed to be in its best interests even though the Bid chosen may result in the award of the Contract to a Bidder whose Bid is not, on a mathematical basis alone, the low Bid.
- 22.08 The OWNER may elect not to award a contract at this time due to budgetary or other considerations. OWNER reserves the right to reject any or all proposals and to re-bid the contract if the OWNER deems it in the public interest to do so.
- 22.09 Contracts shall be awarded only pursuant to resolution.
- 22.10 OWNER reserves the right to reject any bids from Bidders who are in arrears to, or in litigation with, the Erie County Water Authority or the County of Erie upon any debt or contract, or in default as surety or otherwise upon any obligation of the Erie County Water Authority or the County of Erie.

## ARTICLE 23 - CONTRACT SECURITIES

- 23.01 Performance Bond shall be in the form of Engineers Joint Contract Documents Committee (EJCDC) "Construction Performance Bond," 1910-28-A. Payment Bond shall be in the form of EJCDC "Construction Payment Bond," 1910-28-B. The amounts of and other requirements for Performance and Payment Bonds are stated in paragraph 5.01 of the General Conditions. The requirements for delivery of Bonds are stated in paragraph 2.01 of the General Conditions. Additional requirements may be stated in the Supplementary Conditions.
- 23.02 Successful Bidder shall within five days from the date of the Notice of Award deliver to OWNER, for OWNER'S review and approval, the Performance Bond and the Payment Bond CONTRACTOR proposes to furnish at the time of the execution of the Agreement.

## ARTICLE 24 – CONTRACTOR’S INSURANCE

- 24.01 The requirements for CONTRACTOR’S insurance and delivery of insurance certificates are stated in Article 5 of the General Conditions and in the Supplementary Conditions.

## ARTICLE 25 - SIGNING OF AGREEMENT

- 25.01 When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents, which are identified in the Agreement as attached thereto. Within five days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER.

## ARTICLE 26 - NOTICE TO PROCEED

- 26.01 Issuance of the Notice to Proceed shall be as stated in Article 2 of the General Conditions.

## ARTICLE 27 - PARTNERING (NOT USED)

## ARTICLE 28 - SALES AND USE TAXES

- 28.01 Refer to Supplementary Conditions paragraph SC-6.10 for information on OWNER’S exemption from sales and use taxes on materials and equipment to be incorporated into the Work. Do not include said taxes in Bid.

ARTICLE 29 - ADDITIONAL REQUIREMENTS

- 29.01 Refer to Supplementary Conditions Paragraph SC-18.03 for information on OWNER'S Women and Minority Business Enterprise requirements.
- 29.02 Refer to Supplementary Conditions Paragraph SC-18.06 for information on OWNER'S Apprenticeship policy.

END OF SECTION



ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT

PROJECT NO: 202100088

SECTION 00360

PERMIT APPLICATIONS

ARTICLE 1 - GENERAL

- 1.01 CONTRACTOR shall apply for and is responsible for complying with all requirements of all applicable Federal, State, and Local Permits.
- 1.02 CONTRACTOR shall include all permit fees and permit requirements in his unit bid prices for the project and will not receive separate payment for any permit fees, including all associated permit conditions.

END OF SECTION



ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT

PROJECT NO: 202100088

(This Bid Form shall not be detached from the Project Manual. The entire Project Manual shall be returned with the executed Bid.)

SECTION 00410

BID FORMS

BID FOR:

Erie County Water Authority  
Contract No: GHD-010  
Sedimentation Basin Effluent Improvements  
Sturgeon Point Water Treatment Plant  
Project No. 202100088

BID TO:

Service Center Front Desk  
Erie County Water Authority  
3030 Union Road  
Cheektowaga, New York 14227

BID FROM: \_\_\_\_\_

(Print or Type Name of Bidder)

(/A Corporation/A Partnership/A Limited Liability Company/An  
Individual/A Joint Venture/[Bidder to strike out inapplicable terms.]

Gentlemen:

- 1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the price(s) and within the times indicated in this Bid and in accordance with the Bidding Documents.

ERIE COUNTY WATER AUTHORITY  
 CONTRACT NO: GHD-010  
 SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
 TREATMENT PLANT

2.01 Bidder accepts all of the terms and conditions of the Notice to Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain open subject to acceptance for the time period set forth in the Instruction to Bidders. Bidder will sign the Agreement and will furnish the required contract security, and other required documents within the time periods set forth in the Bidding Documents.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, if any, and the following Addenda receipt of all of which is hereby acknowledged.

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance for the Work.

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

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition identified at the Site, if any, which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.



ERIE COUNTY WATER AUTHORITY

CONTRACT NO: GHD-010

SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER TREATMENT PLANT

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) and within the times and in accordance with the other terms and conditions of the Bidding Documents.
  - G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
  - H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents.
  - I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
  - J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
  - K. The quantities for the unit price items are unpredictable and the ENGINEER has inserted certain quantities in the proposal to be used solely for purpose of comparison of bids.
  - L. Fixed minimum unit prices may have been established for some of the items in the Bid. The prices represent the minimum amounts, which will be paid the CONTRACTOR for these items. The Bidder shall include a price not less than the stated minimum. If in the opinion of the Bidder these prices do not reflect the actual value of the work involved, the Bidder may void the given fixed minimum unit price for that specific item and enter a higher unit price in the spaces provided in the Bid Form sheets. Bidder's Proposals received which include a unit price less than the stated minimum shall be adjusted to meet the fixed minimum unit price.
- 4.01 Bidder further represents that this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER; and that no person or persons acting in any official capacity for the OWNER are directly or indirectly interested in this Bid, or in any portion of the profit thereof.

ERIE COUNTY WATER AUTHORITY  
 CONTRACT NO: GHD-010  
 SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
 TREATMENT PLANT

5.01 Bidder will complete the Work in accordance with the Contract Documents for:

**BASE BID**

<u>Description</u>	<u>Estimated Quantities</u>	<u>Computed Totals</u>
--------------------	---------------------------------	----------------------------

**Item 1 – Sedimentation Basin Effluent Improvements**

Item 1 – Sedimentation Basin Effluent Improvements at  
 Sturgeon Point

Item 1 – For furnishing and installing  
 Sedimentation Basin Effluent Improvements at  
 the Lump Sum price of

\_\_\_\_\_ Dollars

and \_\_\_\_\_ Cents  
 (\$ \_\_\_\_\_ ) Lump Sum

LS \$ \_\_\_\_\_

**Item 2 – Cash Allowance**

Item 2 – Cash Allowance for PLC and SCADA System Work

\_\_\_\_\_ Twenty Thousand \_\_\_\_\_ Dollars

and \_\_\_\_\_ zero \_\_\_\_\_ Cents  
 (\$ \_\_\_\_\_ ) Lump Sum

LS \$ 20,000.00

**Item 3 – Contingency Allowance**

Item 3 – Contingency Allowance for Miscellaneous Work

\_\_\_\_\_ Fifty Thousand \_\_\_\_\_ Dollars

and \_\_\_\_\_ zero \_\_\_\_\_ Cents  
 (\$ \_\_\_\_\_ ) Lump Sum

LS \$ 50,000.00

TOTAL BASE BID AMOUNT (This total is for convenience in  
 comparing Bids and is not an official part of this Bid.) \$ \_\_\_\_\_  
 (Figures)

\_\_\_\_\_  
 \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents  
 (Written Amount)

ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
TREATMENT PLANT

Unit prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities of items of Unit Price Work are not guaranteed and final payment will be based on actual quantities of Unit Price Work performed as provided in the Contract Documents.

6.01 Bidder agrees that the Work will be substantially complete and completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated and special damages in the event of failure to complete the Work within the times specified above.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security in the amount of \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
- B. Section 2875 of the Public Authorities Law.
- C. Section 2876 of the Public Authorities Law.
- D. Section 2878 of the Public Authorities Law, Non-Collusive Bidding Certification.
- E. State Finance Law Requirements
- F. Section 139-L of the State Finance Law, Statement relating to Sexual Harassment Policy.
- G. Required Bidder Qualifications Statement with supporting data.
- H. All addenda

8.01 The terms used in this Bid will have the meanings indicated in the Instructions to Bidders and the General Conditions and Supplementary Conditions.

Respectfully submitted on \_\_\_\_\_, 20\_\_.

ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
TREATMENT PLANT

If Bidder is:

An Individual

By \_\_\_\_\_  
(Individual's Signature)

\_\_\_\_\_  
(Printed or Typed Name of Individual)

Doing business as \_\_\_\_\_

License or Registration Number: \_\_\_\_\_

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

\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

A Partnership

By \_\_\_\_\_  
(Firm Name)

\_\_\_\_\_  
(General Partner's Signature)

\_\_\_\_\_  
(Printed or Typed Name of General Partner)  
(Attach evidence of authority to sign.)

License or Registration Number: \_\_\_\_\_

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

\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
TREATMENT PLANT

A Corporation

By \_\_\_\_\_

(Corporation Name)

\_\_\_\_\_

(State of Incorporation)

By \_\_\_\_\_

(Signature of Officer Authorized to Sign)

\_\_\_\_\_

(Printed or Typed Name and Title of Officer Authorized to Sign)

(Attach evidence of authority to sign.)

(CORPORATE

SEAL)

Attest \_\_\_\_\_

(Secretary)

License or Registration Number: \_\_\_\_\_

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

\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
TREATMENT PLANT

Limited Liability Company

By \_\_\_\_\_

(Firm Name)

\_\_\_\_\_  
(State of Formation)

By \_\_\_\_\_

(Signature of Member/Authorized to Sign)

\_\_\_\_\_  
(Printed or Typed Name and Title of Member Authorized to Sign)

(Attach evidence of authority to sign.)

License or Registration Number: \_\_\_\_\_

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

\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS, STURGEON POINT WATER  
TREATMENT PLANT

A Joint Venture

Joint Venture Name: \_\_\_\_\_

By \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed or Typed Name) (Title)

\_\_\_\_\_  
(Address)

By \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed or Typed Name) (Title)

\_\_\_\_\_  
(Address)

Phone and FAX number and address for receipt of communications to joint venture:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation or limited liability company that is a party to the joint venture shall be in the manner indicated above).

END OF BID FORM





ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO: 202100088

SECTION 00430

BID FORM SUPPLEMENTS

Bid Security Form

Section 2875 of the Public Authorities Law

Section 2876 of the Public Authorities Law

Section 2878 of the Public Authorities Law

State Finance Law Requirements

Statement Regarding Prevention of Unlawful Discriminatory Practices

BID SECURITY FORM

BIDDER (Name and Address):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

OWNER:

Erie County Water Authority  
295 Main Street, Room 350  
Buffalo, New York 14203

BID

BID DUE DATE: \_\_\_\_\_

PROJECT:

Contract No: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
Project No: 202100088

BOND

BOND NUMBER: \_\_\_\_\_

DATE: (Not later than Bid due date): \_\_\_\_\_

PENAL SUM: \_\_\_\_\_ (Words) \_\_\_\_\_ (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

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

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

By: \_\_\_\_\_  
Signature and Title

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

Attest: \_\_\_\_\_  
Signature and Title

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

1.01 Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2.01 Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3.01 This obligation shall be null and void if:

- A. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or
- B. All Bids are rejected by OWNER, or
- C. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5.01 hereof).

4.01 Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5.01 Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6.01 No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4.01 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7.01 Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8.01 Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9.01 Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative, who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10.01 This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11.01 The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

**END OF BID BOND**

SECTION 2875 OF THE PUBLIC AUTHORITIES LAW

§2875. GROUND FOR CANCELLATION OF CONTRACT BY PUBLIC AUTHORITY.

A clause shall be inserted in all specifications or contracts hereafter made or awarded by any public authority or by any official of any public authority created by the state or any political subdivision, for work or services performed or to be performed or goods sold or to be sold, to provide that upon the refusal of a person, when called before a grand jury, head of a state department, temporary state commission, or other state agency, the organized crime task force in the department of law, head of a city department, or other city agency, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the state, any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

(a) Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any public authority or official thereof, for goods, work or services, for a period of five years after such refusal, and to provide also that;

(b) any and all contracts made with any public authority or official thereof, since the effective date of this law, by such person and by any firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the public authority without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the public authority for goods delivered or work done prior to the cancellation termination shall be paid.

This is to CERTIFY that neither the undersigned nor any member, partner, director, or officer of the firm has refused to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning a transaction or contract with the state, any political subdivision thereof, a public authority or with a public department, agency or official of the state or of any political subdivision thereof or of a public authority, when called before a grand jury, head of a state department, temporary state commission, or other state agency, the organized crime task force in the department of law, head of a city department, or other city agency, which is empowered to compel the attendance of witnesses and examine them under oath.

\_\_\_\_\_  
(Name of Individual, Partnership or Corporation)

By \_\_\_\_\_  
(Person authorized to sign)

(SEAL)

## SECTION 2876 OF THE PUBLIC AUTHORITIES LAW

### §2876. DISQUALIFICATION TO CONTRACT WITH PUBLIC AUTHORITY

Any person who, when called before a grand jury, head of a state department, temporary state commission or other state agency, the organized crime task force in the department of law, head of a city department or other city agency, which is empowered to compel the attendance of witnesses and examine them under oath to testify in an investigation concerning any transaction or contract had with the state, any political subdivision thereof, a public authority or with a public department, agency or official of the state or of any political subdivision thereof or of a public authority, refuses to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant questions concerning such transaction or contract, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any public authority or any official of any public authority created by the state or any political subdivision, for goods, work or services, for a period of five years after such refusal or until a disqualification shall be removed pursuant to the provisions of section twenty-six hundred three of this article.

It shall be the duty of the officer conducting the investigation before the grand jury, the head of a state department, the chairman of the temporary state commission or other state agency, the organized crime task force in the department of law, the head of a city department or other city agency before which the refusal occurs to send notice of such refusal, together with the names of any firm, partnership or corporation of which the person so refusing is known to be a member, partner, officer or director, to the commissioner of transportation of the state of New York, or the commissioner of general services as the case may be, and the appropriate departments, agencies and officials of the state, political subdivisions thereof or public authorities with whom the persons so refusing and any firm, partnership or corporation of which he is a member, partner, director or officer, is known to have a contract. However, when such refusal occurs before a body other than a grand jury, notice of refusal shall not be sent for a period of ten days after such refusal occurs. Prior to the expiration of this ten day period, any person, firm, partnership or corporation which has become liable to the cancellation or termination of a contract or disqualification to contract on account of such refusal may commence a special proceeding at a special term of the supreme court, held within the judicial district in which the refusal occurred, for an order determining whether the questions in response to which the refusal occurred were relevant and material to the inquiry. Upon the commencement of such proceeding, the sending of such notice of refusal to answer shall be subject to order of the court in which the proceeding was brought in a manner and on such terms as the court may deem just. If a proceeding is not brought within ten days, notice of refusal shall thereupon be sent as provided herein.

This is to CERTIFY that neither the undersigned nor any member, partner, director, or officer of the firm has refused to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning a transaction or contract with the state, any political subdivision thereof, a public authority or with a public department, agency or official of the state or of any political subdivision thereof or of a public authority, when called before a grand jury, head of a state department, temporary state commission, or other state agency, the organized crime task force in the department of law, head of a city department, or other city agency, which is empowered to compel the attendance of witnesses and examine them under oath.

\_\_\_\_\_  
(Name of Individual, Partnership or Corporation)

By \_\_\_\_\_  
(Person authorized to sign)

## SECTION 2878 OF THE PUBLIC AUTHORITIES LAW

### §2878. STATEMENT OF NON-COLLUSION IN BIDS OR PROPOSALS TO PUBLIC AUTHORITY.

(1) Every bid or proposal hereafter made to a public authority or to any official of any public authority created by the state or any political subdivision, where competitive bidding is required by statute, rule, regulation or local law, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury:

#### 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 his knowledge and belief: (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(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 therefore. 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 state, public department or agency 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 to be 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).

The undersigned CERTIFIES, under penalty of perjury, that he is authorized to make this bid and execute this statement of non-collusion; that each of the statements contained in (1), (2) and (3) of paragraph (a) are true; that he is familiar with the statements and restrictions contained in paragraph (b) and the paragraph regarding the publication of price lists, etc. and such statements and restrictions are true and have been complied with by the bidder.

---

(Name of Individual, Partnership, or Corporation)

By \_\_\_\_\_

(SEAL)



## **FORMS A, B, and C**

### STATE FINANCE LAW REQUIREMENTS

The Erie County Water Authority (the “Authority”) is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). When the Authority seeks to procure goods or services by means of an Invitation or Notice to Bid, or a Request for Proposals, the State Finance Law imposes certain restrictions on anyone who may wish to offer goods or services to the Authority as an Offerer, as that term is defined in §§ 139-j(1)(h) and 139-k(1)(h).

During the Restricted Period, as defined in §§ 139-j(1)(f) and 139-k(1)(f), when bids or proposals are being solicited, the Authority will designate a contact person with whom the Offerer may contact for information and other authorized purposes as set forth in §139-j of the State Finance Law. The designated contact is identified in the Notice to Bidders, or in the Request for Proposal. An Offerer is authorized to contact the Authority’s designated contact for such purposes as set forth in § 139-j(3).

Pursuant to the State Finance Law, the Authority is also required to make certain findings before making any determinations as to the qualifications and eligibility of those seeking a procurement contract, as that term is defined in State Finance Law §§ 139-j(1)(g) and 139-k(1)(g). Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings of non-responsibility occurring within a 4-year period, the Offerer will be debarred from obtaining procurement contracts with the Authority. Further information about these requirements can be found in §§139-j and 139-k of the New York State Finance Law and the Erie County Water Authority’s Procurement Disclosure Policy.

The following forms will be used by the Authority to make such findings:

Form A - Offerer’s Affirmation of Understanding of, and Agreement to Comply with, the Authority’s Permissible Contact Requirements During the Restricted Period.

Form B - Offerer’s Certification of Compliance with State Finance Law.

Form C - Offerer’s Disclosure of Prior Non-Responsibility Determinations.

**FORM A**

**Offerer's Affirmation of Understanding of, and Agreement to Comply  
with, the Permissible Contact Requirements During the Restricted Period**

**Instructions:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). The Authority must obtain a written affirmation of understanding and agreement to comply with procedures regarding permissible contacts with the Authority in the restricted period for a procurement contract in accordance with State Finance Law §139-j and §139-k. It is required that this affirmation be obtained as early as possible in the procurement process, but no later than when the Offerer submits its proposal.

Offerer affirms that it understands and agrees to comply with the procedures of the Authority relative to permissible contacts as required by State Finance Law §139-j(3) and §139-j(6)(b).

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

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

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

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

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

\_\_\_\_\_

\_\_\_\_\_

**FORM B**

**Offerer's Certification of Compliance  
With State Finance Law §139-k(5)**

**Instructions:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). The Authority must obtain a Certification that the information submitted for a procurement contract is complete, true, and accurate regarding any prior findings of non-responsibility, such as non-responsibility pursuant to State Finance Law §139-j. The Offerer must agree to sign the Certification, under penalty of perjury, and to provide the Certification to the Authority. The Certification should be obtained as early as possible in the process, but no later than when an Offerer submits its proposal.

**Offerer Certification:**

*I certify that all information provided to the Authority relating to the awarding of a procurement contract is complete, true, and accurate.*

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

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

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

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

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

\_\_\_\_\_

\_\_\_\_\_

**FORM C****Offerer's Disclosure of Prior  
Non-Responsibility Determinations****Background:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). New York State Finance Law §139-k(2) obligates the Authority 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 Government Entity.

The terms "Offerer" and "Governmental Entity" are defined in State Finance Law §§139-j(1) and §139-k(1). These sections also set 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 the Offerer is the only source capable of supplying the required Article of Procurement, as that term is defined in State Finance Law §§ 139-j(1)(b) and 139-k(1)(b), within the necessary timeframe. See State Finance Law §139-j(10)(b) and §139-k(3).

**Instructions:**

The Authority must include a 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. It shall be submitted to the Authority conducting the Governmental Procurement no later than when the Offerer submits its proposal.





## **CONTRACT TERMINATION PROVISION**

### **Instructions:**

A Contract Termination Provision will be included in each procurement contract governed by State Finance Law §139-k. New York State Finance Law §139-k(5) provides that every procurement contract award subject to the provisions of State Finance Law §§139-k and 139-j shall contain a provision authorizing the governmental entity to terminate the contract in the event that the certification is found to be intentionally false or intentionally incomplete. This statutory contract language authorizes, but does not mandate, termination. “Government Entity” and “procurement contract” are defined in State Finance Law §§ 139 j(1) and 139-k(l).

This required clause will be included in a covered procurement contract.

A sample of the Termination Provision is included below. If a contract is terminated in accordance with State Finance Law §139-k(5), the Erie County Water Authority, as a governmental entity, is required to include a statement in the procurement record describing the basis for any action taken under the termination provision.

### **Sample Contract Termination Provision**

The Erie County Water Authority, as a governmental entity, reserves the right to terminate this contract in the event it is found that the certification filed by the Offerer in accordance with New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, the Authority may exercise its termination right by providing written notification to the Offerer in accordance with the written notification terms of this contract.

**OFFERER’S STATEMENT REGARDING PREVENTION OF  
UNLAWFUL DISCRIMINATORY PRACTICES**

The Erie County Water Authority (the “Authority”), as an employer in New York State, is subject to the Human Rights Law, codified as Executive Law §290, *et. seq.*, and Labor Law §201-g. The Authority seeks to provide a work environment that is free from unlawful discriminatory practices as they are defined in Executive Law §296, as well as from inappropriate harassing conduct even if not deemed unlawful, to its employees, contractors, subcontractors, vendors, consultants, and any other person providing services on Authority premises. Pursuant to the Human Rights Law, it shall be unlawful to discriminate against an individual, or to subject an individual to harassment, due to age, race, creed, color, national origin, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or status as a victim of domestic violence. Accordingly, the Authority requires that any Offeror of a proposal or bid, agree to sign the following statement regarding unlawful discriminatory practices, including, but not limited to sexual harassment, under penalty of perjury. This statement should be provided to the Authority as early as possible in the procurement process, but not later than at the time of execution of a contract with the Authority. Failure to agree to sign the statement may result in the Authority deeming the bid or proposal withdrawn by the Offerer.

**Offerer Statement:**

*I certify, under penalty of perjury, that the following statements are accurate:*

- *Offerer is aware of its obligations under the Human Rights Law (Executive Law §290, et. seq.*
- *Offerer complies with the provisions of Executive Law §290, et. seq., including Executive Law §296, and does not permit unlawful discriminatory practices or harassment based on an individual’s age, race, creed, color, national origin, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or status as a victim of domestic violence in its workplace.*
- *Offerer complies with the provisions of Labor Law §201-g, has implemented a written policy addressing sexual harassment in the workplace which meets the minimum standards of Labor Law §201-g, and provides annual sexual harassment prevention training to all of its employees.*

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

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

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

Offerer Name: \_\_\_\_\_

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

\_\_\_\_\_

END OF BID FORM SUPPLEMENTS



ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT

PROJECT NO: 202100088

SECTION 00450

BIDDER'S QUALIFICATION STATEMENT

(Completion of this statement is required in advance of  
consideration for award of Contract.)

SUBMITTED TO:

Service Center Front Desk  
Erie County Water Authority  
3030 Union Road  
Cheektowaga, New York 14227

SUBMITTED FOR:

Erie County Water Authority  
Contract No: GHD-010  
Sedimentation Basin Effluent Improvements  
Sturgeon Point Water Treatment Plant  
ECWA Project No. 202100088

SUBMITTED BY:

Name of Organization: \_\_\_\_\_  
(Print or Type Name of Bidder)

Name of Individual: \_\_\_\_\_

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

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

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Gentlemen:

The undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made hereinafter.

(Note: Attach additional sheets as required.)

1.0 Bidder's General Business Information

1.1 Check if:

Corporation  Partnership  Joint Venture  Sole Proprietorship

If Corporation:

A. Date and State of Incorporation:

---

---

B. List of Executive Officers:

Name	Title
_____	_____
_____	_____
_____	_____

If Partnership:

A. Date and State of Organization:

---

---

B. Names of Current General Partners:

---

---

C. Type of Partnership

General  Publicly Traded  
 Limited  Other (described): \_\_\_\_\_

If Joint Venture:

A. Date and State of Organization:

---

---

B. Name, Address and Form of Organization of Joint Venture Partners: (Indicate managing partner by an asterisk \*):

---

---

---

---

If Sole Proprietorship:

A. Date and State of Organization:

---

---

B. Name and Address of Owner or Owners:

---

---

---

---

2.0 How many years has your organization been in business as a general contractor? \_\_\_\_\_

3.0 Has your organizational structure changed within the past five years?  Yes  No

If the answer to this question is “yes”, provide data as listed above in Item 1.0 for your previous organization.

---

---

---

---

4.0 We normally perform \_\_\_\_\_ percent of the work with our own forces. List work normally subcontracted.

---

---

5.0 Has any construction contract to which you have been a party been terminated by the owner; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with a contract for which they furnished a bond on your behalf?

Yes       No

If the answer to any portion of this question is “yes”, furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

---

---

---

---

6.0 Has any officer or partner of your organization ever been an officer or partner of another organization that had any construction contract terminated by the owner; terminated work on a project prior to its completion for any reason; had any surety which issued a performance bond complete the work in its own name or financed such completion; or had any surety expend any monies in connection with a contract for which they furnished a bond?

Yes       No

If the answer to any portion of this question is “yes”, furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

---

---

---

---

7.0 In the last five years, has your organization, or any predecessor organization, failed to substantially complete a project in a timely manner?

Yes       No

If the answer to this question is “yes”, furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

---

---

---

---

8.0 On Schedule A, attached, list name, location and description of project, owner, architect or engineer, contract price, percent complete and scheduled completion of the major construction projects your organization has in progress on this date. Provide name, address and telephone number of a reference for each project listed.

9.0 On Schedule B, attached, list name, location and description of project, owner, architect or engineer, contract price, date of completion and percent of work with your own forces of major projects of the same general nature as this project which your organization has completed in the past five years. Provide name, address and telephone number of a reference for each project listed.

10.0 On Schedule C, attached, list name and construction experience of the principal individuals of your organization directly involved in construction operations.

10.1 On Schedule D, attached, list OSHA Information requested.

11.0 List the states and categories of construction in which your organization is legally qualified to do business.

\_\_\_\_\_  
\_\_\_\_\_

12.0 Provide the following for your surety:

12.1 Surety Company: \_\_\_\_\_

12.2 Agent: \_\_\_\_\_

A. Address: \_\_\_\_\_

B. Telephone No.: \_\_\_\_\_

12.3 What is your approximate total bonding capacity?

- \$500,000 to \$2,000,000
- \$2,000,000 to \$5,000,000
- \$5,000,000 to \$10,000,000
- \$10,000,000 or more

13.0 Provide the following with respect to an accredited banking institution familiar with your organization.

13.1 Name of Bank: \_\_\_\_\_

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

13.3 Account Manager: \_\_\_\_\_

13.4 Telephone No.: \_\_\_\_\_

14.0 Provide the name, address and telephone number of an individual who represents a major equipment/material supplier whom the Owner may contact for a financial reference:

\_\_\_\_\_  
\_\_\_\_\_

15.0 Attach a financial statement, prepared on an accrual basis, in a form which clearly indicates Bidder's assets, liabilities and net worth.

15.1 Date of financial statement: \_\_\_\_\_

15.2 Name of firm preparing statement: \_\_\_\_\_

16.0 Dated at \_\_\_\_\_, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Bidder: \_\_\_\_\_

(Print or Type Name of Bidder)

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

\_\_\_\_\_

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

Attachments A, B, C, and D

(Seal, if corporation)

------(Affidavit for Individual)-----

\_\_\_\_\_ being duly sworn, deposes and says that:  
a) the financial statement, taken from his/her books, is a true and accurate statement of his/her financial condition as of the date thereof; and b) all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Partnership)-----

\_\_\_\_\_ being duly sworn, deposes and says that:  
a) he/she is a member of the partnership of \_\_\_\_\_;  
b) he/she is familiar with the books of said partnership showing its financial condition; c) the financial statement, taken from the books of said partnership, is a true and accurate statement of the financial condition of the partnership as of the date thereof; and d) all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Corporation)-----

\_\_\_\_\_ being duly sworn, deposes and says that:  
a) he/she is \_\_\_\_\_ of \_\_\_\_\_;  
(Full name of Corporation)  
b) he/she is familiar with the books of said corporation showing its financial condition; c) the financial statement, taken from the books of said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof; and d) that all of the foregoing qualification information is true, complete, and accurate.

------(Acknowledgment)-----

\_\_\_\_\_ being duly sworn, deposes and says  
that he/she is \_\_\_\_\_ of \_\_\_\_\_;  
(Name of Bidder)  
that he/she is duly authorized to make the foregoing affidavit and that he/she makes it on behalf of  
( ) himself/herself; ( ) said partnership; ( ) said corporation.

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, in the  
County of \_\_\_\_\_, State of \_\_\_\_\_.

\_\_\_\_\_  
(Notary Public)

My commission expires \_\_\_\_\_

(Seal)

END OF BIDDER QUALIFICATIONS STATEMENT

**ATTACHMENT A**

**SCHEDULE A  
PROJECTS IN PROGRESS**

<u>Name, Location and Description of Project</u>	<u>Owner</u>	<u>Architect or Engineer</u>	<u>Contract Price</u>	<u>Percent Complete</u>	<u>Scheduled Completion</u>	<u>Reference/Contract Include Address and Phone</u>
--	--------------	----------------------------------	-----------------------	-----------------------------	---------------------------------	---



**ATTACHMENT B**

**SCHEDULE B  
PROJECTS COMPLETED**

<u>Name, Location and Description of Project</u>	<u>Owner</u>	<u>Architect or Engineer</u>	<u>Date Completed</u>	<u>Contract Price</u>	<u>Percent with Own Forces</u>	<u>Reference/Contract Include Address and Phone</u>
--	--------------	----------------------------------	---------------------------	-----------------------	------------------------------------	---

**ATTACHMENT C**

**SCHEDULE C  
PERSONNEL**

<u>Name</u>	<u>Position</u>	<u>Date Started With This Organization</u>	<u>Date Started In Construction</u>	<u>Prior Positions and Experience In Construction</u>
-------------	-----------------	--	---	---

**ATTACHMENT D**  
**SCHEDULE D**  
**OSHA INFORMATION**

List all Occupational Safety and Health Administration Citations for the last three years, including date, subject matter, and penalty.

---

---

---

---

Attach copies of all determined Citations and Notification of Penalty, Form OSHA 2.

Describe all pending cases, giving pertinent information such as apparent violations, location of project, type of project, and present status. \_\_\_\_\_

---

---

---

List any additional information on the back or attach a separate sheet if necessary.

EXPERIENCE IN THE INSTALLATION OF  
TAPPING SADDLES & VALVES  
ON  
PRESTRESSED CONCRETE CYLINDER PIPE

When this Contract includes the Installation of Tapping Saddles and Valves on Prestressed Concrete Cylinder Pipe, the Bidder is required to complete one of the following to the satisfaction of the ENGINEER:

A. I have had experience\* in the above as follows:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

B. The above noted work will be done by a subcontractor

\_\_\_\_\_

Who has the following experience\*:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

C. I will have a representative of a manufacturer of prestressed concrete cylinder pipe

\_\_\_\_\_ do the above noted work.  
(Insert manufacturer's name)

\* List size and type (SP-5 or SP-12) of main tapped along with location, year and who the work was done for.

ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT

PROJECT NO: 202100088

SECTION 00500

AGREEMENT

THIS AGREEMENT is dated as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_, by and between the ERIE COUNTY WATER AUTHORITY (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called CONTRACTOR).

WITNESSETH: OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 CONTRACTOR shall at its own cost and expense furnish all labor, services, tools, materials, equipment and incidentals necessary to complete all Work as specified or indicated in the Contract Documents to perform all specified work required for the improvements of the Sturgeon Point Water Treatment Plant located at 722 Sturgeon Point Road, Derby, NY. The Work includes all sedimentation basin modifications, slide gates, electric actuators, restoration, and all related work as shown on the drawings and described in the specifications. The Work is generally described in Section 01010 of the Summary of Work.

ARTICLE 2 - ENGINEER

2.01 The Project has been designed by GHD Consulting Services Inc., 285 Delaware Avenue, Suite 500, Buffalo, NY who is hereinafter called the ENGINEER. GHD will assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in connection with completion of the Work in accordance with the Contract Documents.

## ARTICLE 3 - CONTRACT TIMES

### 3.01 Time of the Essence

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

### 3.02 Days to Achieve Substantial Completion and Final Payment

- A. The Work shall be substantially completed within (330) days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions within (390) days from the date when the Contract Times commence to run.

## ARTICLE 4 - LIQUIDATED AND SPECIAL DAMAGES

### 4.01 Liquidated Damages

- A. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and OWNER will suffer financial loss, apart from the costs described in paragraph 4.02.A, if the Work is not substantially completed within the time specified in Article 3 for Substantial Completion, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. OWNER and CONTRACTOR also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not substantially completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER (\$500) for each day that expires after the time specified in Article 3 for Substantial Completion (adjusted for any changes thereof made in accordance with Article 12 of the General Conditions) until the Work is substantially complete.

### 4.02 Special Damages:

- A. In addition to the amount provided for liquidated damages, CONTRACTOR shall pay OWNER the actual costs reasonably incurred by OWNER for engineering and inspection forces employed for the Work for each day that expires after the days specified in Article 3 for Substantial Completion (adjusted for any changes thereof made in accordance with Article 12 of the General Conditions) until the Work is substantially complete.
- B. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER the actual costs reasonably incurred by OWNER for engineering and inspection forces employed

for the Work for each day that expires after the time specified in Article 3 for Work to be completed and ready for final payment (adjusted for any extensions thereof made in accordance with Article 12 of the General Conditions) until the Work is completed and ready for final payment.

- 4.03 OWNER may deduct liquidated damages and special damages as determined by the provisions of this Article 4 from progress payments due CONTRACTOR under this Agreement.

#### ARTICLE 5 - CONTRACT PRICE

- 5.01 OWNER shall pay CONTRACTOR, in current funds, for completion of the Work in accordance with the Contract Documents the prices stated in CONTRACTOR'S Bid, which Bid is attached hereto and identified as Exhibit 1 of this Agreement. As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

#### ARTICLE 6 - PAYMENT PROCEDURES

##### 6.01 Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed as provided in the General Conditions.

##### 6.02 Progress Payments; Retainage

- A. OWNER shall make monthly progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER. CONTRACTOR'S Applications for Payment will be due on the last day of the month. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work, based on the number of units completed and accepted) or, in the event there is no schedule of values, as provided in the General Requirements. A progress payment will not be made whenever the value of the Work completed since the last previous progress payment is less than ten thousand dollars (\$10,000).

1. Prior to Substantial Completion
  - a. Progress payments will be made in the amount of 95 percent of the Work completed, (with the balance being retainage), less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions; and
  - b. 95 percent of the cost of materials and equipment not incorporated in the Work but suitably stored (with the balance being retainage).
2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 100 percent of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions and less 200 percent of ENGINEER'S estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 Final Payment:

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 - INTEREST

- 7.01 All moneys not paid when due hereunder shall bear interest at the maximum rate allowed by law at the place of the Project.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 As part of the inducement for OWNER to enter into this Agreement CONTRACTOR makes the following representations:
- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
  - B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance for the Work.
  - C. CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.



- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition identified at the Site, if any, which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the performance of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

## ARTICLE 9 - CONTRACT DOCUMENTS

9.01 The Contract Documents consist of the following:

- A. This Agreement ((9) pages).
- B. Performance Bond ((2) pages).
- C. Payment Bond ((2) pages).
- D. General Conditions ((42) pages).
- E. Supplementary Conditions ((10) pages).
- F. Specifications, as listed in the table of contents of the Project Manual.
- G. Appendix A – Women and Minority Business Enterprise Policy.
- H. Appendix B – Insurance Requirements.
- I. Appendix C – Prevailing Wage Rate Schedule.
- K. Appendix D – Monitoring and Control Narrative
- M. The Drawings comprising a set entitled: Contract No: GHD-010, Sedimentation Basin Effluent Improvements, Sturgeon Point Water Treatment Plant and including:
- N. Addenda consisting of Numbers \_\_\_ to \_\_\_, inclusive.
- O. Exhibits to the Agreement enumerated as follows:
  - 1. Exhibit 1, Bid Form ((10) pages).
- P. The following, which may be delivered or issued on or after the Effective Date of the Agreement, and are not attached hereto:
  - 1. Notice to Proceed
  - 2. Written Amendments
  - 3. Work Change Directives
  - 4. Change Order(s)

9.02 The documents listed in paragraph 9.01 above are attached to this Agreement (except as expressly noted otherwise above). Documents not attached are incorporated by reference. There are no Contract Documents other than those listed in this Article 9.

9.03 The Contract Documents may only be amended, modified or supplemented as provided in paragraph 3.04 of the General Conditions.

## ARTICLE 10 - MISCELLANEOUS

### 10.01 Terms

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

### 10.02 Assignment of Contract

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

### 10.03 Successors and Assigns

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

### 10.04 Severability

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

### 10.05 Waiver

- A. The waiver by the OWNER of any breach or violation of any term, covenant, or condition of this Agreement or of any Law or Regulation shall not be deemed to be a waiver of any other term, covenant, condition, or Law or Regulation or of any subsequent breach or violation of the same or of any other term, covenant, condition, or Law or Regulation. The subsequent payment of any monies or fee by the OWNER which may become due hereunder shall not be deemed to be a waiver of any preceding breach or violation by CONTRACTOR of any term, covenant, condition of this Agreement or of any applicable Law or Regulation.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first written above.

This Agreement will be effective on \_\_\_\_\_, 20\_\_\_\_\_.

OWNER: Erie County Water Authority CONTRACTOR: \_\_\_\_\_

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

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

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest \_\_\_\_\_

Attest \_\_\_\_\_

Address for giving notices

Address for giving notices

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

(If OWNER is a corporation, partnership, or limited liability company, attach evidence of authority to sign) (If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Agreement.)

License No. \_\_\_\_\_  
(where applicable)

Agent for service of process: \_\_\_\_\_

\_\_\_\_\_

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

Designated Representative:

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

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

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

Phone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Designated Representative:

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

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

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

Phone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

END OF AGREEMENT



# Performance Bond

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

---

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

Erie County Water Authority  
295 Main Street, Room 350  
Buffalo, New York 14203

## CONTRACT

Date:

Amount:

Description: ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
SURGEON POINT WATER TREATMENT PLANT  
PROJECT NO. 202100088

## BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and CONTRACTOR, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

SURETY

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:  
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

SURETY

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER for the performance of the Contract, which is incorporated herein by reference.
2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:
  - 3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER'S right, if any, subsequently to declare a CONTRACTOR Default; and
  - 3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR'S right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and
  - 3.3. The OWNER has agreed to pay the Balance of the Contract Price to:
    - 3.3.1. The Surety in accordance with the terms of the Contract; or
    - 3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.
4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or
  - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
  - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER'S concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or
  - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;
    - 4.4.1 After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or
    - 4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.
5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without

further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR'S right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:
  - 6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;
  - 6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR'S Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.
7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.
8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here-from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
  - 12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.
  - 12.2 Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.
  - 12.3 CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
  - 12.4 OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY - Name, Address and Telephone)  
 AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer):



# Payment Bond

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

---

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

Erie County Water Authority  
295 Main Street, Room 350  
Buffalo, New York 14203

## CONTRACT

Date:

Amount:

Description: ERIE COUNTY WATER AUTHORITY  
CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS,  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO. 202100088

## BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and CONTRACTOR, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

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

Name and Title:

SURETY

Company: \_\_\_\_\_ (Corp. Seal)

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

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

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

Name and Title:

SURETY

Company: \_\_\_\_\_ (Corp. Seal)

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

Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

4.2.1 Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

4.2.2 Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

4.2.3 Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER'S priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

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

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 15. DEFINITIONS

15.1 Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR'S Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2 Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3 OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY - Name, Address and Telephone)  
AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer):

ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD- 010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO: 202100088

SECTION 00700

GENERAL CONDITIONS

Adapted with permission from Standard General Conditions of the  
Construction Contract, EJCDC No. 1910-8 (1996 Edition).

[This page was left blank intentionally.]

# TABLE OF CONTENTS

	<u>Page</u>
ARTICLE 1 - DEFINITIONS AND TERMINOLOGY .....	00700 - 7
1.01 <i>Defined Terms</i> .....	00700 - 7
1.02 <i>Terminology</i> .....	00700 - 10
ARTICLE 2 - PRELIMINARY MATTERS.....	00700 - 10
2.01 <i>Delivery of Bonds</i> .....	00700 - 10
2.02 <i>Copies of Documents</i> .....	00700 - 10
2.03 <i>Commencement of Contract Times; Notice to Proceed</i> .....	00700 - 10
2.04 <i>Starting the Work</i> .....	00700 - 11
2.05 <i>Before Starting Construction</i> .....	00700 - 11
2.06 <i>Preconstruction Conference</i> .....	00700 - 11
2.07 <i>Initial Acceptance of Schedules</i> .....	00700 - 11
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE.....	00700 - 12
3.01 <i>Intent</i> .....	00700 - 12
3.02 <i>Reference Standards</i> .....	00700 - 12
3.03 <i>Reporting and Resolving Discrepancies</i> .....	00700 - 12
3.04 <i>Amending and Supplementing Contract Documents</i> .....	00700 - 12
3.05 <i>Reuse of Documents</i> .....	00700 - 13
ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS .....	00700 - 13
4.01 <i>Availability of Lands</i> .....	00700 - 13
4.02 <i>Subsurface and Physical Conditions</i> .....	00700 - 13
4.03 <i>Differing Subsurface or Physical Conditions</i> .....	00700 - 13
4.04 <i>Underground Facilities</i> .....	00700 - 14
4.05 <i>Reference Points</i> .....	00700 - 15
4.06 <i>Hazardous Environmental Condition at Site</i> .....	00700 - 15
ARTICLE 5 - BONDS AND INSURANCE .....	00700 - 16
5.01 <i>Performance, Payment, and Other Bonds</i> .....	00700 - 16
5.02 <i>Licensed Sureties and Insurers</i> .....	00700 - 16
5.03 <i>Certificates of Insurance</i> .....	00700 - 17
5.04 <i>CONTRACTOR'S Liability Insurance</i> .....	00700 - 17
5.05 <i>OWNER'S Liability Insurance</i> .....	00700 - 18
5.06 <i>Property Insurance (See Supplementary Conditions)</i> .....	00700 - 18
5.07 <i>(Not Used)</i> .....	00700 - 18
5.08 <i>(Not Used)</i> .....	00700 - 18
5.09 <i>(Not Used)</i> .....	00700 - 18
5.10 <i>Acceptance of Bonds and Insurance; Option to Replace</i> .....	00700 - 18
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES.....	00700 - 18
6.01 <i>Supervision and Superintendence</i> .....	00700 - 18
6.02 <i>Labor; Working Hours</i> .....	00700 - 18
6.03 <i>Services, Materials, and Equipment</i> .....	00700 - 18
6.04 <i>Progress Schedule</i> .....	00700 - 19
6.05 <i>Substitutes and "Or-Equals"</i> .....	00700 - 19

## TABLE OF CONTENTS (CONTINUED)

		<u>Page</u>
6.06	<i>Concerning Subcontractors, Suppliers, and Others</i> .....	00700 - 20
6.07	<i>Patent Fees and Royalties</i> .....	00700 - 21
6.08	<i>Permits</i> .....	00700 - 21
6.09	<i>Laws and Regulations</i> .....	00700 - 21
6.10	<i>Taxes</i> .....	00700 - 22
6.11	<i>Use of Site and Other Areas</i> .....	00700 - 22
6.12	<i>Record Documents</i> .....	00700 - 22
6.13	<i>Safety and Protection</i> .....	00700 - 22
6.14	<i>Safety Representative</i> .....	00700 - 23
6.15	<i>Hazard Communication Programs</i> .....	00700 - 23
6.16	<i>Emergencies</i> .....	00700 - 23
6.17	<i>Shop Drawings and Samples</i> .....	00700 - 23
6.18	<i>Continuing the Work</i> .....	00700 - 24
6.19	<i>CONTRACTOR'S General Warranty and Guarantee</i> .....	00700 - 24
6.20	<i>Indemnification</i> .....	00700 - 25
 ARTICLE 7 - OTHER WORK.....		 00700 - 25
7.01	<i>Related Work at Site</i> .....	00700 - 25
 ARTICLE 8 - OWNER'S RESPONSIBILITIES.....		 00700 - 26
8.01	<i>Communications to Contractor</i> .....	00700 - 26
8.02	<i>Furnish Data</i> .....	00700 - 26
8.03	<i>Pay Promptly When Due</i> .....	00700 - 26
8.04	<i>Lands and Easements; Reports and Tests</i> .....	00700 - 26
8.05	<i>Insurance</i> .....	00700 - 26
8.06	<i>Change Orders</i> .....	00700 - 26
8.07	<i>Inspections, Tests, and Approvals</i> .....	00700 - 26
8.08	<i>Limitations on OWNER'S Responsibilities</i> .....	00700 - 26
8.09	<i>Undisclosed Hazardous Environmental Condition</i> .....	00700 - 27
8.10	<i>Evidence of Financial Arrangements</i> .....	00700 - 27
 ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION.....		 00700 - 27
9.01	<i>OWNER'S Representative</i> .....	00700 - 27
9.02	<i>Visits to Site</i> .....	00700 - 27
9.03	<i>Project Representative</i> .....	00700 - 27
9.04	<i>Clarifications and Interpretations</i> .....	00700 - 27
9.05	<i>Authorized Variations in Work</i> .....	00700 - 27
9.06	<i>Rejecting Defective Work</i> .....	00700 - 28
9.07	<i>Shop Drawings, Change Orders and Payments</i> .....	00700 - 28
9.08	<i>Determinations for Unit Price Work</i> .....	00700 - 28
9.09	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i> .....	00700 - 28
9.10	<i>Limitations on ENGINEER'S Authority and Responsibilities</i> .....	00700 - 28
 ARTICLE 10 - CHANGES IN THE WORK; CLAIMS.....		 00700 - 29
10.01	<i>Authorized Changes in the Work</i> .....	00700 - 29
10.02	<i>Unauthorized Changes in the Work</i> .....	00700 - 29
10.03	<i>Execution of Change Orders</i> .....	00700 - 29
10.04	<i>Notification to Surety</i> .....	00700 - 29
10.05	<i>Claims and Disputes</i> .....	00700 - 29

## TABLE OF CONTENTS (CONTINUED)

	<u>Page</u>
ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK .....	00700 - 30
11.01 <i>Cost of the Work</i> .....	00700 - 30
11.02 <i>Cash Allowances</i> .....	00700 - 32
11.03 <i>Unit Price Work</i> .....	00700 - 32
ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES .....	00700 - 32
12.01 <i>Change of Contract Price</i> .....	00700 - 32
12.02 <i>Change of Contract Times</i> .....	00700 - 33
12.03 <i>Delays Beyond CONTRACTOR'S Control</i> .....	00700 - 33
12.04 <i>Delays Within CONTRACTOR'S Control</i> .....	00700 - 33
12.05 <i>Delays Beyond OWNER'S and CONTRACTOR'S Control</i> .....	00700 - 33
12.06 <i>Delay Damages</i> .....	00700 - 34
ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK .....	00700 - 34
13.01 <i>Notice of Defects</i> .....	00700 - 34
13.02 <i>Access to Work</i> .....	00700 - 34
13.03 <i>Tests and Inspections</i> .....	00700 - 34
13.04 <i>Uncovering Work</i> .....	00700 - 34
13.05 <i>OWNER May Stop the Work</i> .....	00700 - 35
13.06 <i>Correction or Removal of Defective Work</i> .....	00700 - 35
13.07 <i>Correction Period</i> .....	00700 - 35
13.08 <i>Acceptance of Defective Work</i> .....	00700 - 36
13.09 <i>OWNER May Correct Defective Work</i> .....	00700 - 36
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION.....	00700 - 36
14.01 <i>Schedule of Values</i> .....	00700 - 36
14.02 <i>Progress Payments</i> .....	00700 - 36
14.03 <i>CONTRACTOR'S Warranty of Title</i> .....	00700 - 38
14.04 <i>Substantial Completion</i> .....	00700 - 38
14.05 <i>Partial Utilization</i> .....	00700 - 39
14.06 <i>Final Inspection</i> .....	00700 - 39
14.07 <i>Final Payment</i> .....	00700 - 39
14.08 <i>(Not Used)</i> .....	00700 - 40
14.09 <i>Waiver of Claims</i> .....	00700 - 40
ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION.....	00700 - 40
15.01 <i>OWNER May Suspend Work</i> .....	00700 - 40
15.02 <i>OWNER May Terminate for Cause</i> .....	00700 - 40
15.03 <i>OWNER May Terminate For Convenience</i> .....	00700 - 41
15.04 <i>CONTRACTOR May Stop Work or Terminate</i> .....	00700 - 41
ARTICLE 16 - DISPUTE RESOLUTION .....	00700 - 42
16.01 <i>Methods and Procedures</i> .....	00700 - 42
ARTICLE 17 - MISCELLANEOUS .....	00700 - 42
17.01 <i>Giving Notice</i> .....	00700 - 42
17.02 <i>Computation of Times</i> .....	00700 - 42
17.03 <i>Cumulative Remedies</i> .....	00700 - 42
17.04 <i>Survival of Obligations</i> .....	00700 - 42
17.05 <i>Controlling Law</i> .....	00700 - 42
17.06 <i>Headings</i> .....	00700 - 42

[This page was left blank intentionally.]



## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

#### 1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER'S written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER'S written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER'S Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER'S independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity,

gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

## 1.02 Terminology

### A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved,” or terms of like effect or import are used to authorize an exercise of professional judgment by the ENGINEER, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

### B. Day

1. The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

### C. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER’S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

### D. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 - PRELIMINARY MATTERS

---

### 2.01 Delivery of Bonds

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

### 2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

### 2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### 2.04 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run.

No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

#### 2.05 *Before Starting Construction*

A. *CONTRACTOR'S Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and
3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

#### 2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

#### 2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER, as provided below, the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR'S full responsibility therefor.

2. CONTRACTOR'S schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR'S schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

---

#### 3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof)

to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

### 3.02 *Reference Standards*

#### A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER'S Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER'S

approval of a Shop Drawing or Sample; or (iii) ENGINEER'S written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER'S Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

## ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

---

### 4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER'S furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER'S Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR'S purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

### 4.03 *Differing Subsurface or Physical Conditions*

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

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally

recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER'S Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER'S obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER'S findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR'S cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to

CONTRACTOR'S making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER'S Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*



1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of the underground facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 4.05 Reference Points

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 Hazardous Environmental Condition at Site

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data", CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER'S Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR'S purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly

consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If, after receipt of such written notice, CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER'S own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER'S Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.G shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

---

### 5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR'S obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents, except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

### 5.04 *CONTRACTOR'S Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR'S performance of the Work and CONTRACTOR'S other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR'S employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR'S employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER'S Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include completed operations insurance;
4. include contractual liability insurance covering CONTRACTOR'S indemnity obligations under paragraphs 6.07, 6.11, and 6.20;
5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);
6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and
7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER'S Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER'S option, may purchase and maintain at OWNER'S expense OWNER'S own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance (See Supplementary Conditions)*

5.07 (Not Used)

5.08 (Not Used)

5.09 (Not Used)

5.10 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

---

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures

of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER'S written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory

evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

#### 6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. "*Or-Equal*" Items: If, in ENGINEER'S sole discretion, an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER'S sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a

proposed item of material or equipment will be considered functionally equal to an item so named if:

a. In the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; and CONTRACTOR;

b. Certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

#### 2. *Substitute Items*

a. If, in ENGINEER'S sole discretion, an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR'S achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the

Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER'S sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER'S review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER'S Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER'S Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to

paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER'S Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR'S Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR'S expense.

#### 6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR'S

own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER'S Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

#### 6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER'S Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

#### 6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR'S compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs,

losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR'S obligations under paragraph 3.03.

#### 6.10 Taxes

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 6.11 Use of Site and Other Areas

##### A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER'S Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR'S performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work, CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents, together with all approved Samples and a counterpart of all approved Shop Drawings, will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

#### 6.13 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground



Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER'S Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR'S duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER'S review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

#### D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

- a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog

numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S obligations under the Contract Documents with respect to CONTRACTOR'S review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

#### E. ENGINEER'S Review

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER'S review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER'S review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval

of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER'S review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER'S attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

#### F. Resubmittal Procedures:

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

#### 6.18 Continuing the Work

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

#### 6.19 CONTRACTOR'S General Warranty and Guarantee

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER'S Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR'S warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

#### 6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER'S Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of real or personal property (other than the Work itself), including the loss of use resulting therefrom; and
2. is caused in whole or in part by any act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may

be liable, regardless of whether or not caused in part by an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws or Regulations.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not be limited in any way by the amount or types of insurance provided by CONTRACTOR under Article 5 of the General Conditions.

D. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the sole negligence or willful misconduct of OWNER, ENGINEER or ENGINEER'S Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

## ARTICLE 7 - OTHER WORK

---

### 7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER'S employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and
2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER'S employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR'S Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR'S Work. CONTRACTOR'S failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR'S Work except for latent defects and deficiencies in such other work.

## ARTICLE 8 – OWNER'S RESPONSIBILITIES

---

### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

### 8.02 *Furnish Data*

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

### 8.03 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

### 8.04 *Lands and Easements; Reports and Tests*

A. OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

### 8.05 *Insurance*

A. OWNER'S responsibilities, if any, in respect of purchasing and maintaining liability and property insurance are set forth in Article 5.

### 8.06 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

### 8.07. *Inspections, Tests, and Approvals*

A. OWNER'S responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

### 8.08 *Limitations on OWNER'S Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR'S means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR'S failure to perform the Work in accordance with the Contract Documents.

### 8.09 *Undisclosed Hazardous Environmental Condition*

A. OWNER'S responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

### 8.10 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER'S obligations under the Contract Documents, OWNER'S responsibility in respect thereof will be as set forth in the Supplementary Conditions.

## ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION

---

### 9.01 *OWNER’S Representative*

A. ENGINEER will be OWNER’S representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER’S representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

### 9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR’S executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER’S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER’S visits and observations are subject to all the limitations on ENGINEER’S authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER’S visits or observations of CONTRACTOR’S Work. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR’S means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

### 9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in

paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER’S Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

### 9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

### 9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

### 9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

### 9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER'S authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER'S authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER'S authority as to Applications for Payment, see Article 14.

#### 9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER'S written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

#### 9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

#### 9.10 *Limitations on ENGINEER'S Authority and Responsibilities*

A. Neither ENGINEER'S authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR'S means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR'S failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER'S review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER'S Consultants, Resident Project Representative, and assistants.

### ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

---

#### 10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the

applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

#### 10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

#### 10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER'S correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;
2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

#### 10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract

Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 20 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 45 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER'S Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER'S written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER'S decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or
2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER'S written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing

party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

---

### 11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR'S Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms



of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR'S principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

2. Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the Site.

3. Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR'S Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR'S fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR'S fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

## 11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR'S costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

## 11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

C. For provisions for an adjustment of a unit price for an increase or decrease in the quantity of Unit Price Work, if any, see General Requirements Section 01270, Measurement and Payment.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

---

### 12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR'S Fee:* The CONTRACTOR'S fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR'S fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR'S fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee

and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR'S fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

#### 12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

#### 12.03 *Delays Beyond CONTRACTOR'S Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated

by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

#### 12.04 *Delays Within CONTRACTOR'S Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

#### 12.05 *Delays Beyond OWNER'S and CONTRACTOR'S Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR'S sole and exclusive remedy for such delay.

#### 12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 - TESTS AND INSPECTIONS;  
CORRECTION, REMOVAL OR ACCEPTANCE OF  
DEFECTIVE WORK

---

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER'S Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR'S Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all

costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER'S and ENGINEER'S acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR'S purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR'S expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR'S intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER'S observation and replaced at CONTRACTOR'S expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER'S request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or

Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

#### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR'S use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the

terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR'S obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER'S recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER'S recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to

agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

#### 13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees, OWNER'S other contractors, and ENGINEER and ENGINEER'S Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR'S defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the

exercise by OWNER of OWNER'S rights and remedies under this paragraph 13.09.

## ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

---

#### 14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

#### 14.02 *Progress Payments*

##### A. *Applications for Payments*

1. At least 10 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR'S legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

## B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER'S recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER'S observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER'S review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER'S knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR'S being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER'S responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER'S review of CONTRACTOR'S Work for the purposes of recommending payments nor ENGINEER'S

recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR'S failure to comply with Laws and Regulations applicable to CONTRACTOR'S performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER'S opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER'S opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

## C. *Payment Becomes Due*

1. Sixty days after presentation of the Application for Payment to OWNER with ENGINEER'S recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

## D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR'S performance or furnishing of the Work;

b. liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER'S satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER'S refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

#### 14.03 *CONTRACTOR'S Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

#### 14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the

Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER'S objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER'S issuing the definitive certificate of Substantial Completion, ENGINEER'S aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Use by OWNER at OWNER'S option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR'S performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.



1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of the Supplementary Conditions regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

##### B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER'S observation of the Work during construction and final inspection, and ENGINEER'S review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, ENGINEER will, within 10 days after receipt of the final Application for Payment, indicate in writing ENGINEER'S recommendation of payment and present the Application for Payment to OWNER for

payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Sixty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

D. *Final Completion Delayed*

1. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.08 *(Not Used)*

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR'S continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

---

15.01 *OWNER May Suspend Work*

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR'S persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR'S disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR'S disregard of the authority of ENGINEER; or

4. CONTRACTOR'S violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but

which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

#### 15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 60 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 60 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR'S stopping the Work as permitted by this paragraph.

## ARTICLE 16 - DISPUTE RESOLUTION

---

### 16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

## ARTICLE 17 - MISCELLANEOUS

---

### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which

are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 17.04 *Survival of Obligations*

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

### 17.05 *Controlling Law*

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

### 17.06 *Headings*

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

END OF GENERAL CONDITIONS

ERIE COUNTY WATER AUTHORITY  
BUFFALO, NEW YORK

CONTRACT NO: GHD-010  
SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS  
STURGEON POINT WATER TREATMENT PLANT  
PROJECT NO: 202100088

SECTION 00800

SUPPLEMENTARY CONDITIONS

SCOPE

These Supplementary Conditions amend or supplement the General Conditions. All provisions of the General Conditions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SC-1.01.A.7. Modify paragraph 1.01.A.7. by changing the word “Advertisement” in the first sentence to “Notice”.

SC-1.01.A.43 Add the following to Paragraph 1.01.A.43:

Substantial Completion for the project shall be achieved at such time as the project, or portion thereof, has been installed, tested, disinfected, issuance of Completed Works Approval by the Erie County Water Authority, all of the services transferred, if applicable, all the hydrants installed, all of the interconnections made, and all of the abandonments performed.

SC-4.02 Add new paragraph immediately after paragraph 4.02.B which is to read as follows:

SC-4.02.C In the preparation of the Drawings and Specifications, ENGINEER has relied upon the following drawings of physical conditions in or relating to the existing site conditions:

- a. Contract No. BSJ Sturgeon Point Project Filtration Plant – Record Drawings date 1958
- b. Contract No. MP-003 Sturgeon Point Project Additions – Record Drawings date 1966
- c. Contract No. MP-73 Sturgeon Point Treatment Plant Coagulation Basins Upgrades date 2007

Erie County Water Authority (OWNER) nor GHD (ENGINEER) warrants the accuracy or completeness of said documents, expressed or implied. The Contractor is responsible for any interpretations or conclusions the Contractor draws from documents. It is the responsibility of the Contractor to field verify all existing conditions.

SC-4.06.A Add a new paragraph immediately after paragraph 4.06.A which is to read as follows:

SC-4.06.A.1 In the preparation of the Drawings and Specifications, ENGINEER relied on the following report to identify Hazardous Environmental Conditions identified at the Site:

a. Not Applicable.

SC-5.01.A Modify the first part of the second sentence of paragraph 5.01.A of the General Conditions to read:

The payment Bond shall remain in effect for one year and the performance Bond shall remain in effect for two years after.

SC-5.04 through 5.10. Delete paragraph 5.04 through 5.10, inclusive, in their entirety.

SC-5.04 Add two new paragraphs immediately after Paragraph 5.03, which is to read as follows:

“SC-5.04 *Insurance Requirements*

SC-5.04.A. CONTRACTOR shall procure and maintain insurance in accordance with Insurance Requirements, as set forth in the attached Appendix B-1 and hereby made a part of these General Conditions.”

SC-5.04.B. CONTRACTOR shall require all direct and indirect subcontractors to procure and maintain insurance in accordance with the Insurance Requirements, as set forth in the Addendum Agreement attached as Appendix B-2 and hereby made a part of these General Conditions.”

SC-6.02.B Add new paragraphs immediately after paragraph 6.02.B which are to read as follows:

“SC-6.02.B.1 Except where otherwise prohibited by Laws or Regulations, regular working hours are defined as up to 8 hours per day, beginning no earlier than 7:00 am and ending no later than 6:00 pm.

SC-6.02.B.2 Maintenance and cleanup activities may be performed during hours other than regular working hours provided that such activities do not require the startup or operation of construction equipment.

SC-6.02.B.3 If it shall become absolutely necessary to perform Work at night or on Saturdays, Sundays or legal holidays, written notice shall be submitted to OWNER and ENGINEER at least two days in advance of the need for such Work. OWNER will only consider the performance of such Work as can be performed satisfactorily under the conditions. Sufficient lighting and all other necessary facilities for carrying out and observing the Work shall be provided and maintained where such Work is being performed at night.”

SC-6.06.G Modify paragraph 6.06.G. by changing paragraph reference 5.06 to SC-5.04.

SC-6.06.H Add the following new paragraph immediately following paragraph 6.06.G, which is to read as follows:

“SC-6.06.H Before Work commences, the OWNER must review and approve any proposed subcontracting agreement prior to its execution. All Work performed by any SUBCONTRACTOR must be performed under supervision and control of the CONTRACTOR. As used in this paragraph, a SUBCONTRACTOR is defined in GC 1.01.A.42. Any subcontracting agreement must contain an Addendum Agreement in the form set forth in Appendix B-2.”

SC-6.06.I Add the following new paragraph immediately following paragraph 6.06.G, which is to read as follows:

“SC-6.06.I The CONTRACTOR shall perform with the CONTRACTOR’S own organization, contract work amounting to not less than fifty percent of the original total contract price. The term “the CONTRACTOR’S own organization” shall be construed to include only workmen employed and paid directly by the CONTRACTOR, and equipment owned or rented by the CONTRACTOR, with or without operators.”

SC-6.09.B. Add a new paragraph immediately after paragraph 6.09.B which is to read as follows:

“SC-6.09.C Refer to Article SC-18 for Laws and Regulations which, by terms of said Laws and Regulations are to be included in the Contract Documents. The failure to include in Article SC-18 any Law or Regulation applicable to the performance of the Work does not diminish CONTRACTOR’S responsibility to comply with all Laws and Regulations applicable to the performance of the work.”

SC-6.10. Add a new paragraph immediately after paragraph 6.10.A, which is to read as follows:

“SC-6.10.B OWNER is exempt from payment of sales and compensating use taxes of the State of New York and of cities and counties on all materials to be incorporated into the Work.

1. OWNER will furnish the required certificates of tax exemption to CONTRACTOR for use in the purchase of supplies and materials to be incorporated into the Work.
2. OWNER'S exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by CONTRACTOR, or to supplies or materials not incorporated into the Work."

SC-6.15.A. Add a new paragraph immediately after paragraph 6.15.A, which is to read as follows:

"SC-6.15.B CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with all Laws and regulations. CONTRACTOR shall provide a centralized location for the maintenance of the material safety data sheets or other hazard communication information required to be made available by any employer on the Site. Location of the material safety data sheets or other hazard communication information shall be readily accessible to the employees of any employer on the Site."

SC-7.01 Add a new paragraph immediately after Paragraph 7.01 which is to read as follows:

"SC-7.02 *Separate Contractor Claims*

- A. Should CONTRACTOR cause damage to the work or property of any other contractor at the Site, or should any claim arising out of CONTRACTOR'S performance of the Work be made by any other contractor against CONTRACTOR, OWNER, or ENGINEER, CONTRACTOR shall promptly settle with such other contractor by agreement, or otherwise resolve the dispute by arbitration or at law.
- B. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, and the officer, directors, partners, employees, agents, and other consultants or subcontractors of each and any of them from and against all claims, costs, losses and damages (including but not limited to, all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising directly, indirectly, or consequentially out of or relating to any claim or action, legal or equitable, brought by any other contractor against OWNER, ENGINEER, to the extent based upon CONTRACTOR'S performance of the Work.
- C. Should another contractor cause damage to the Work or property of CONTRACTOR at the Site or should the performance of work by any other contractor give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, ENGINEER, or



permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from OWNER, ENGINEER, on account of any such damage or claim.

- D. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of another contractor and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a claim for an extension of time in accordance with paragraph 10.05. Notwithstanding any other provision of the Contract Documents, an extension of the Contract Times shall be CONTRACTOR'S sole and exclusive remedy with respect to OWNER, ENGINEER, for any delay, disruption, interference or hindrance caused by any other contractor."

SC-9.03 Add a new paragraph immediately after paragraph 9.03.A which is to read as follows:

"SC-9.03.B. Resident Project Representative (RPR) will be OWNER'S agent at the Site, will act as directed by and under the supervision of OWNER, and will confer with OWNER AND ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site Work shall in general be with OWNER and CONTRACTOR keeping ENGINEER advised as necessary. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of CONTRACTOR."

SC-13.07 Modify paragraphs 13.07.A. and C. by changing the words "one year" in the first line to "two years".

SC-14.02,A. Add a new paragraph immediately after paragraph 14.02.A.3. which is to read as follows:

"4. Each Application for Payment shall be accompanied by a copy of the certified payroll record."

SC-14.07,A. Add a new paragraph immediately after paragraph 14.07.A.3. which is to read as follows:

"4. The Final Application for Payment shall be accompanied by a copy of the certified payroll record."

SC-14.07.A.2 Modify paragraph 14.07.A.2 by changing the words "subparagraph 5.04.B.7" to "SC-5.04".

SC-17.06 Add new paragraphs immediately after paragraph 17.06,A. which are to read as follows:

“ARTICLE SC-18 - STATUTORY REQUIREMENTS

SC-18.01 This Article contains portions of certain Laws or Regulations which, by provision of Law or Regulations, are required to be included in the Contract Documents. The material included in this Article may not be complete or current. CONTRACTOR’S obligation to comply with all Laws and Regulations applicable to the Work is set forth in paragraph 6.09 of the General Conditions.

SC-18.02 Non-Discrimination in Employment:

- A. During the performance of this contract, CONTRACTOR agrees as follows:
1. CONTRACTOR will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, color or national origin. Such action shall be taken with reference but not limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.
  2. CONTRACTOR will send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the CONTRACTOR’S agreement under clauses 1. through 8. hereinafter called “non-discrimination clauses”. If the CONTRACTOR was directed to do so by the OWNER as part of the Bid or negotiation of this contract, CONTRACTOR shall request labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, color or national origin and that such labor union or representative either will affirmatively cooperate within the limits of its legal and contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under this contract shall be in accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request, that it furnish such a statement, CONTRACTOR shall promptly notify the State Commission for Human Rights of such failure or refusal.
  3. CONTRACTOR will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses 1. through 2. and such provisions of the State’s Laws against discrimination as the State Commission for Human Rights shall determine.
  4. CONTRACTOR will state, in all solicitations or advertisements for employees placed by or on behalf of CONTRACTOR, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color or national origin.
  5. CONTRACTOR will comply with the provisions of the Executive Law, Human Rights Law, Article 15, will furnish all information and reports deemed necessary by the State Commission for Human Rights under these non-discrimination clauses

and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General, District Commissioner of Housing and Community Renewal and the Industrial Commission for purposes of investigation to ascertain compliance with these non-discrimination clauses of the Executive Law, Human Rights Law, Article 15.

6. This contract may be forthwith canceled, terminated or suspended, in whole or in part, by the OWNER upon the basis of a finding made by the State Commission for Human Rights that CONTRACTOR has not complied with these non-discrimination clauses, and CONTRACTOR may be declared ineligible for future contracts made by or on behalf of the State or a public authority or agency of the State or housing authority, or an urban renewal agency, or contracts requiring the approval of the Commissioner of Housing and Community Renewal, until he has satisfied the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to CONTRACTOR and an opportunity has been afforded him to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law.
7. If this contract is canceled or terminated under clause 6, in addition to other rights of the OWNER provided in this contract upon its breach by CONTRACTOR, CONTRACTOR will hold the OWNER harmless against any additional expenses or costs incurred by the OWNER in completing the Work or in purchasing the services, materials, equipment or supplies contemplated by this contract, and the OWNER may withhold payments from CONTRACTOR in an amount sufficient for this purpose and recourse may be had against the surety on the Performance Bond if necessary.
8. CONTRACTOR will include the provisions of clauses 1. through 2. in every subcontract or purchase order altered only to reflect the proper identity of the parties in such a manner that such provisions will be binding upon each Subcontractor or vendor as to operations to be performed within the State of New York. CONTRACTOR will take such actions in enforcing such provisions of such subcontract or purchase order as the OWNER may direct, including sanctions or remedies for non-compliance. If CONTRACTOR becomes involved in or is threatened with litigation with a Subcontractor or vendor as a result of such direction by the OWNER, the CONTRACTOR shall promptly so notify the Attorney General, requesting him to intervene and to protect the interest of the State of New York.

SC-18.03 Affirmative Action Requirements:

- A. During the performance of this Contract, the CONTRACTOR agrees that it will abide by and will require its subcontractors to abide by the AUTHORITY'S Affirmative Action Requirements and Women and Minority Business Enterprise Policy, as set forth in the attached Appendix A and hereby made a part of these General Conditions.

SC-18.04 Prevailing Rate Schedule:

- A. The labor on this contract shall be performed in accordance with the requirements of Article 8 (Sections 220-223) of the New York State Labor Law. The supplements to be provided and wages to be paid to workers, laborers and mechanics employed on this contract, determined pursuant to Section 220 of the Labor Law, are set forth in Appendix C, Prevailing Rate Schedule, attached to and hereby made a part of these General Conditions.
- B. CONTRACTOR shall note that the wage rates and supplemental benefits shown in the attached schedules are subject to change. The wage rates and supplemental benefits to be paid and provided shall be those prevailing at the time the contract is being performed.

SC-18.05 Payments to Subcontractors:

- A. In accordance with N.Y. State General Municipal Law, Section 106-b, CONTRACTOR shall:
  - 1. Within fifteen calendar days of the receipt of any payment from the OWNER, the CONTRACTOR shall pay each of his Subcontractors and materialmen the proceeds from the payment representing the value of the work performed and/or materials furnished by the Subcontractor and/or materialman and reflecting the percentage of the Subcontractor's work completed or the materialman's material supplied in the requisition approved by the OWNER and based upon the actual value of the subcontract or purchase order less an amount necessary to satisfy any claims, liens or judgments against the Subcontractor or materialman which have not been suitably discharged and less any retained amount as hereafter described. The CONTRACTOR shall retain not more than five per centum of each payment to the Subcontractor and/or materialman except that the CONTRACTOR may retain in excess of five per centum but not more than ten per centum of each payment to the Subcontractor provided that prior to entering into a subcontract with the CONTRACTOR, the Subcontractor is unable or unwilling to provide a Performance bond and a Labor and Material bond both in the full amount of the subcontract at the request of the CONTRACTOR. However, the CONTRACTOR shall retain nothing from those payments representing proceeds owed the Subcontractor and/or materialman from OWNER'S payments to the CONTRACTOR for the remaining amounts of the contract balance after the work or portions thereof are substantially complete. Within fifteen calendar days of the receipt of payment from the CONTRACTOR, the Subcontractor and/or materialman shall pay each of his Subcontractors and materialmen in the same manner as the CONTRACTOR has paid the Subcontractor. Nothing provided herein shall create any obligation on the part of the OWNER to pay or to see to the payment of any moneys to any Subcontractor or materialman from any CONTRACTOR nor shall anything provided herein serve to create any relationship in contract or otherwise, implied or expressed, between the Subcontractor or materialman and the OWNER.

SC-18.06 Erie County Water Authority Apprenticeship Policy

- A. During the performance of this Contract, the CONTRACTOR, its assigns, and designees, agree that it will abide by and will require its Subcontractors to abide by the Erie County Water Authority's Apprenticeship Policy, as stated in paragraph B of this Section.
- B. That pursuant to New York State Labor Law §816-B, the Erie County Water Authority hereby mandates that all contractors and subcontractors entering into any construction contracts with the Erie County Water Authority shall have established apprenticeship agreements appropriate for the type and scope of work to be performed under the contract, that have been approved by the New York State Commissioner of Labor and shall require the employment of apprentices on Erie County Water Authority construction projects.

END OF SUPPLEMENTARY CONDITIONS



## SECTION 01010

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.1 SITE LOCATION

###### A. Project Location

1. Town of Evans, Erie County, New York. Work will be completed at the Sturgeon Point Water Treatment Plant located at 722 Sturgeon Point Road, Derby, NY 14047.

##### 1.2 OWNER

- A. The Erie County Water Authority (ECWA) is responsible for management of all water system assets, including buried infrastructure, tank sites, and pumping stations. As such, the scheduling of Work and equipment shutdowns must be coordinated with the ECWA, referred to herein as OWNER.

##### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

###### A. General

1. It is the intent and purpose of these Specifications and accompanying Contract Drawings to describe all construction Work associated with and included under the Sturgeon Point Water Treatment Plant Sedimentation Basins Effluent Improvements Project.
2. The project Work will be completed under a single prime contract.
3. The CONTRACTOR shall return to original condition, satisfactory to OWNER and ENGINEER, any damaged facilities caused by the CONTRACTOR's operations at the CONTRACTOR's expense.
4. The construction Work to be completed under this Contract requires temporary shutdown of some facilities. The CONTRACTOR shall refer to Section 01311, Coordination with Owner's Operations, for a sequence of construction. Section 01311 of this specification also defines specific tasks that are in the critical path of the execution of the Work, and which must be addressed by the CONTRACTOR in the development of a Work plan.
5. It is the CONTRACTOR's responsibility to develop a work plan, sequence of operations, and schedule detailing, at a minimum, the following:
  - a. Procedures to be employed.
  - b. The equipment and materials to be used.
  - c. The site-specific safety plan to be followed during the work.
  - d. The plan for protection of existing equipment including electrical components.
  - e. A schedule defining the duration of the work with milestone subtasks.
6. The CONTRACTOR shall provide all provisions required to protect OWNER personnel.

7. The CONTRACTOR shall provide a schedule to the OWNER and ENGINEER for approval within ten (10) calendar days of the notice of acceptance and in accordance with these Contract Documents.
8. The CONTRACTOR shall provide a detailed work plan and sequence of work to the OWNER and ENGINEER for approval a minimum of thirty (30) calendar days prior to the scheduled commencement of work and in accordance with Section 01311, Coordination with Owner's Operations. Upon review by the OWNER and ENGINEER, the CONTRACTOR shall attend a meeting to finalize the work plan and schedule.
9. The CONTRACTOR is responsible for having awareness and understanding of the scope of the work, as well as all applicable regulations, permits, and other requirements of the various agencies of jurisdiction. The CONTRACTOR is responsible for obtaining any and all permits, paying all costs thereof, and meeting all permit requirements.
10. The CONTRACTOR shall comply with all applicable requirements of the Occupational Safety and Health Act of 1970 and will hold the OWNER and ENGINEER harmless from any civil or criminal penalties imposed as a result of the CONTRACTOR's non-compliance with such requirements. No additional compensation for changes in the laws, regulations or the interpretation thereof shall be granted by the OWNER.
11. The CONTRACTOR is responsible for compliance with all local, state, and federal rules and regulations concerning safety, health and exposure from work and materials generated as a result of the work under this Project. All precautions necessary to comply with health and safety rules and regulations shall be employed by the CONTRACTOR and shall be the entire responsibility of the CONTRACTOR.
12. The CONTRACTOR shall be responsible for the provision of all equipment and necessary training and shall have a documented confined space entry program in place while working within confined spaces. Confined space entry shall be in accordance with OSHA, local, state, and federal rules and regulations.
13. The CONTRACTOR's scope of work for this project also includes the following services:
  - a. Provisions of a complete Project administration and management.
  - b. Review and confirmation of Project scope.
  - c. Development, in liaison with OWNER and ENGINEER, of the overall detailed Project schedule. The schedule shall not allow for any interruption of the existing facility operation other than those specifically addressed within these Contract Documents.
  - d. Provisions for all required shop drawings and submittals.
  - e. Procurement of all CONTRACTOR-supplied materials and equipment.
  - f. Provisions for storage of all CONTRACTOR-supplied materials and equipment.
  - g. Provision of all rigging.
  - h. Dispose of all demolished materials and excess excavated materials off-Site in accordance with all federal, state, and local laws for the disposal of materials.
    - 1) All demolished material and surplus excavated materials shall be immediately removed from the Site.
    - 2) Roll-offs, dumpsters, and/or demolished material in staging areas shall be removed from the Project Site in a timely manner or as directed by the OWNER or ENGINEER.



- 3) Only one (1) dumpster is allowed on-Site at a time unless otherwise approved in writing by the OWNER. The dumpster shall be located in an area approved by the OWNER.
  - 4) CONTRACTOR will be responsible for the costs to replace any existing equipment, which is to remain part of the finished installation, if damaged during demolition or damaged as a result of the CONTRACTOR's work.
14. Provision of all excavation and trenching necessary to complete the Project electrical and piping work. This shall include all required and necessary backfill, grade, and refinish to match the existing surrounding area. The CONTRACTOR shall be responsible for all excavation, trenching, and restoration activities.
  15. Provisions of all applicable permits and inspections. The CONTRACTOR shall make himself aware of all regulations and costs involved for any and all work required by the various agencies or municipalities having jurisdiction of the working area. No additional payments shall be made for any requirements necessary including such as bonds, insurance, flagmen, night watchmen, traffic control, police, etc. The costs shall be included in the various unit prices and lump sum prices bid under the project.
  16. Payment of all applicable fees associated with the Project. This task shall include the local electrical utility company's fees, landfill tipping fees, etc. as required.
  17. Installation, inspection, testing, commissioning and startup of all Project equipment and systems, and the overall Project startup assistance as required to successfully complete the Project.
  18. Training of the OWNER's personnel, consisting of a classroom style training session for four (4) hours and up to eight (8) people for each piece of new equipment unless otherwise specified.
  19. Provision of all specified spare parts.
  20. Provisions of all as-built documentation including all as-built drawings, and all supplied equipment data and manuals showing actual construction of Work after the requirements of the "project closing punch list" have been satisfied. O&M manuals shall be provided as described in Section 01781.
  21. Provisions of orderly work closeout, and work acceptance by OWNER.
  22. Work guarantee and warranty.
  23. The CONTRACTOR shall supply all supervision, labor, equipment, materials, and incidentals required to complete the Work outlined in this Section unless specified otherwise.
  24. The materials, methods, and installations shall be appropriate for the various work area electrical classifications. The Work is within general purpose environments. Environments that are susceptible to corrosion are indicated in these Specifications.
  25. It is anticipated that there may be a salvage value associated with the disposal of scrap metal associated with the piping and valve Work and expects that the CONTRACTOR considers this salvage value when formulating the bid.
  26. The Work under this project involves Sedimentation Basin Nos. 1 – 5.

27. The Work under this Project includes the following Bid Items; organized by Contract:

a. Contract No. GHD-010 – General Contract

The GENERAL CONTRACTOR, CONTRACTOR, or GC shall supply all supervision, labor, equipment, materials, and incidentals required to complete the Work outlined in this section unless specified otherwise. The Work under the Project includes, but is not limited to, the following:

Item 1 - Sedimentation Basin Effluent Improvements

1. Item 1—Sedimentation Basin Effluent Improvements at Sturgeon Point

- a. Furnish and install new stainless steel slide gates and electric actuators within the existing effluent channels.
- b. Furnish and install new concrete risers with aluminum access hatches for maintenance access to new slide gates and mounting slide gate pedestals with electric actuators.
- c. Complete sedimentation basin modifications to accommodate new slide gate and actuator installation. The CONTRACTOR's scope of Work shall include the following:
  - 1) Provide openings in top slab for installation and maintenance of new slide gates.
  - 2) Install concrete risers and hatches.
  - 3) All excavation to complete required tank modifications.
- d. The CONTRACTOR shall coordinate modifications of the OWNER's existing Scraper Control Panel that controls the scrapers. The CONTRACTOR's scope of Work shall include the following:
  - 1) New Scraper Control Panel hardware items shall be furnished as identified under Item 2 – Cash Allowance for PLC and SCADA System Work. Contractor shall provide quotation for approval, component submittals for review, and overall coordinate with OWNER for new components.
  - 2) Contractor shall arrange for pick up, deliver, storage, and handling of the new components. Contractor shall be responsible for the components once in their possession and shall be responsible for any damage that may occur.
  - 3) CONTRACTOR shall complete interconnecting wiring between all project equipment and field devices as shown on the contract drawings, described herein, or required to complete the installation.
  - 4) New hardware component installation, scraper control panel modifications/changes shall be performed by the OWNER.
  - 5) The CONTRACTOR shall provide a minimum of 6 feet of wire in the control panel for terminations by the OWNER. The final wiring terminations at the control panel shall be performed by the OWNER.
- e. Furnish and install all conduit/wiring and terminations between project equipment/ field devices as specified and indicated on the Contract Drawings or required to complete the installation. CONTRACTOR shall be responsible for the supply and install of all materials, conduit core drills, wiring, lockout/tagout, and equipment disconnect switches.

- f. Complete all excavation, backfill, grass restoration, site grading, and landscaping restoration as specified and indicated on the Contract Drawings.

#### Item 2 – Cash Allowance

- 1. Item 2 – Cash Allowance for PLC and SCADA System Work
  - a. Under this Item, the CONTRACTOR shall furnish the following components for the Scraper Control Panel:
    - 1) PROFACE 15" MODULAR TOUCHSCREEN PANEL, 1024 X 768 PIXELS (XGA), 24VDC POWER, CONFORMAL COATED, MODEL PFXSP5700TPDF0C
    - 2) PROFACE PROCESSOR MODULE FOR 15", TOUCHSCREEN PANEL, CONFORMAL COATING, MODEL PFXSP5B10F0C
    - 3) Schneider Electric BMXDDO3202K 32 Ch output module
    - 4) ABE7H16R11 Telefast passive terminal block, 16 channel input or output (2 required for each 32-channel output module)
    - 5) BMXFCC203 Telefast FCN to 2HE 2 Meter cable (103=1meter, 203=2meter, 303=3meter) (2 required for 32 channel output)

#### Item 3 – Contingency Allowance

- 1. Contingency Allowance for Miscellaneous Work
  - a. Under this Item, the CONTRACTOR shall provide additional Work where specifically ordered and directed by the ENGINEER, and which is entirely outside of the scope of work as defined in the Contract Documents. Only additional construction work, specifically ordered and directed by the ENGINEER, and not shown or implied on the plans or specifications shall be included under this Item.

#### 1.4 MODIFICATION

- A. The right is reserved by the OWNER and the ENGINEER to make such changes in the order and execution of the Work to be done under these Specifications as, in the judgment of the ENGINEER, may be necessary or expedient to carry out the intent of the design of the Contract, and no increase in unit prices, if any, over the Contract rates will be paid the CONTRACTOR on account of such changes.

#### 1.5 AVAILABLE DATA AND PHYSICAL DATA

- A. The CONTRACTOR shall be required to be fully informed concerning the location of facilities and structures on, under, or over the project site, which may interfere with the operations of the CONTRACTOR, and it shall be assumed that the CONTRACTOR has prepared the bid and entered into the Contract in full understanding of the conditions to be encountered, and responsibility of the CONTRACTOR in connection therewith.

- B. "As-Built" information for the existing facilities has been brought to the attention of the ENGINEER and is indicated on the Drawings. However, in some instances, information only from investigations and field surveys has been shown. The location of water, gas, electric, steam, or other utility lines, and the nature of the materials are not guaranteed. The indication on the drawings of such facilities shall not be assumed to relieve the CONTRACTOR of any responsibility with respect thereto; neither shall the OWNER nor the ENGINEER or OPERATOR be held responsible for any omission or failure to give notice to the CONTRACTOR of any other facility or structure on, under, or over the project site.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01131

SCHEDULE OF COMPLETION

PART 1 GENERAL

1.1 DESCRIPTION

- A. CONTRACTOR shall perform the Work to achieve the Contract Times, Milestones, and specified completion requirements.
- B. Schedule of Completion describes selected Milestones and completion requirements and is not intended to describe all the Work or its constraints, interrelationships, or sequential requirements.
- C. Purpose of Milestones and completion requirements in the Schedule of Completion is to coordinate the Work with the required minimum operations at OWNER's facility.

1.2 MILESTONES

A. Milestone M1 – Slide Gate and Electric Actuator Submittals –Approved

- 1. The General Work for Milestone M1 is the submittal for the new slide gates and associated electric actuators.
- 2. Milestone M1 includes completing all Work shown and specified with providing submittals/resubmittals as necessary to meet OWNER/ENGINEER approval including, but not limited to, the following:
  - a. 11280 – Fabricated Slide Gates
  - b. 15115 – Electric Actuators
- 3. Milestone M1 is achieved when the CONTRACTOR provides the above listed shop drawings that are approved by OWNER/ENGINEER.

B. Milestone M2 – Sedimentation Basin Nos. 1-5 Saw Cutting

- 1. The General Area of Work for Milestone M2 is the saw cutting for installation the Slide Gates and Electric Actuators associated with Sedimentation Basins Nos. 1-5 at Sturgeon Point Water Treatment Plant.
- 2. Milestone M2 includes completing all Work shown and specified on the Contract Drawings, but not limited to the following improvements:
  - a. Saw cut existing slab to install new slide gates and electric actuators.
  - b. Provide temporary openings, coverings, and bracing as required to complete improvements and removal and restoration of all temporary provisions.

C. Milestone M3 – Sedimentation Basin Nos. 1-5 Slide Gate Installed

- 1. The General Area of Work for Milestone M3 is the installation of the Slide Gates and Electric Actuators associated with Sedimentation Basins Nos. 1-5 at Sturgeon Point Water Treatment Plant.

2. Milestone M3 includes completing all Work shown and specified on the Civil Drawings, but not limited to the following improvements:
  - a. Install new concrete riser and access hatch.
  - b. Install slide gates and actuators.
  - c. Provide temporary openings, coverings, and bracing as required to complete improvements and removal and restoration of all temporary provisions.

D. Milestone M4 – Sedimentation Basin Nos. 1-5 Slide Gate Electric Actuator for Power and Control Wiring Installed and Operating

1. The General Area of Work for Milestone M4 is the installation of the power and control wiring associated with Sedimentation Basin Nos. 1-5 at Sturgeon Point Water Treatment Plant.
2. Milestone M4 includes completing all Work shown and specified on the Contract Drawings, but not limited to the following improvements:
  - a. Install all electrical and control conduit/wiring.
  - b. Provide temporary openings, coverings, and bracing as required to complete improvements and removal and restoration of all temporary provisions.

1.3 SCHEDULE OF COMPLETION

- A. The Schedule of Completion shall be:

<b>SCHEDULE OF COMPLETION</b>		
<b>General Area of Work</b>	<b>Activity Associated with Milestone or Completion Requirement</b>	<b>Contract Time<sup>(1)</sup></b>
Slide Gate and Electric Actuator Submittals –Approved	Milestone M1	90 days
Sedimentation Basin Nos. 1-5 Saw Cutting	Milestone M2	90 days
Sedimentation Basin Nos. 1-5 Slide Gate Installed	Milestone M3	300 days
Sedimentation Basin Nos. 1-5 Slide Gate Electric Actuator for Power and Control Wiring Installed and Operating	Milestone M4	330 days

<sup>(1)</sup> From CONTRACTOR Notice to Proceed.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01140

USE OF OWNER'S FACILITIES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Limit use of premises to the areas of Work and staging and parking areas indicated on Drawings. Do not disturb portions of Site beyond areas in which Work is indicated.
- B. CONTRACTOR may use existing facilities or equipment in the new Work for construction purposes only if the OWNER'S written permission is obtained.
- C. Restore existing facilities and equipment used for temporary purposes to original condition in a manner satisfactory to OWNER.
- D. CONTRACTOR shall assume full responsibility for any damage that may result to existing or new facilities or equipment used for construction purposes and shall repair or replace any damaged facilities or equipment at CONTRACTOR's cost.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION





## SECTION 01210

### ALLOWANCES

#### PART 1 GENERAL

##### 1.1 SCOPE

- A. This Section includes administrative and procedural requirements governing the following types of allowances:
  - 1. Cash allowances.
  - 2. Contingency allowances.
- B. Authorization of Allowances:
  - 1. Work that will be done and paid under an allowance will be authorized in OWNER's written instruction to CONTRACTOR.
  - 2. Do not provide Work under an allowance without written authorization of OWNER.

##### 1.2 CASH ALLOWANCES

- A. Cash allowances are stipulated amounts for purchase of products, systems, or services. In addition to this Section, refer to General Conditions, as may be modified by the Supplementary Conditions; and individual Specification Sections for CONTRACTOR's costs to be covered by allowances, and CONTRACTOR's costs, including overhead and profit, to be included elsewhere in the Contract Price.
- B. At earliest practical date after Notice to Proceed, advise ENGINEER of date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- C. Consult with ENGINEER in selecting suppliers and obtain proposals for price and time from selected suppliers. Submit proposals to ENGINEER along with recommendations relevant to furnishing and installing products covered in the allowance.
- D. Purchase products or systems from suppliers selected by ENGINEER.
- E. Submit invoices or delivery slips to show actual cost and quantity of products or systems delivered to Site and used in fulfilling each allowance.
- F. Properly dispose of unused products and systems purchased under cash allowance.
- G. For each allowance, submit to ENGINEER a Change Order proposal to adjust Contract Price for difference between specified allowance amount and actual cost. Prepare Change Order proposal in accordance with General Conditions as may be modified by the Supplementary Conditions, except that payment within limit of a cash allowance shall exclude cost of bond and insurance premiums.

### 1.3 CONTINGENCY ALLOWANCE

- A. Contingency allowances are stipulated amounts available as reserve for sole use by OWNER to cover unanticipated costs.
- B. When authorization of Work under contingency allowance is contemplated by OWNER for a defined scope, submit Change Order proposal to ENGINEER. Prepare Change Order proposal in accordance with the General Conditions as may be modified by the Supplementary Conditions, except that payments within limit of contingency allowance shall exclude cost of bond and insurance premiums.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.1 SCHEDULE OF ALLOWANCES

- A. Cash Allowances:
  - 1. Include an allowance of \$20,000.00 for Bid Item 2 Cash Allowance for PLC and SCADA System Work.
- B. Contingency Allowances: Include a stipulated contingency allowance of \$50,000.00 for Bid Item 3 Contingency Allowance for Extra Work for use in accordance with the OWNER's instruction to perform this work.

END OF SECTION

## SECTION 01270

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a unit price or lump sum payment method.
- B. Defect assessment and non-payment for rejected work.

##### 1.2 RELATED SECTIONS

- A. Section 01010 - Summary of Work.

##### 1.3 AUTHORITY

- A. Measurement methods delineated in the individual specification sections complement the criteria of this Section. In the event of conflict, the requirements of the individual Specification Section will govern.
- B. Take all measurements and compute quantities. The ENGINEER will verify measurements and quantities.
- C. Assist by providing necessary equipment, workers, and/or survey personnel as required.

##### 1.4 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding, contract purposes, and comparison of the bids only. Actual quantities and measurements supplied or placed in the Work and verified by the ENGINEER determine actual payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted.
- C. The OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground, or the actual quantities of material encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as OWNER may deem necessary.

##### 1.5 MEASUREMENT OF QUANTITIES

- A. Measurement Devices:
  - 1. Weigh Scales: Inspected, tested, and certified by the State of New York Bureau of Weights and Measures within the last 18 months.
  - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
  - 3. Metering Devices: Inspected, tested, and certified by the State of New York Bureau of Weights and Measures within the last 18 months.

- B. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- C. Measurement by Volume: Measured by cubic dimensions using mean length, width, and height or thickness.
- D. Measurement by Area: Measured by square dimension using mean length and width or radius.
- E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- F. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as a completed item or unit of Work.

#### 1.6 PAYMENT

- A. Payment Includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant services, field offices of the CONTRACTOR or ENGINEER, layout surveys, job signs, sanitary requirements, testing, safety devices, approval and record drawings, water supplies, power, removal of waste, watchmen, bonds, insurance, and all other requirements of the General Conditions, Special Conditions, and the General Requirements. Compensation for all such services and materials shall be included in the prices stipulated for the lump sum and unit price items listed herein.
- C. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the ENGINEER multiplied by the unit price for the Work, which is incorporated in or made necessary by the Work.

#### 1.7 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the ENGINEER, it is not practical to remove and replace the Work, the ENGINEER will direct one of the following remedies:
  - 1. The defective Work may remain, but the unit price will be a new unit price at the discretion of the OWNER and ENGINEER.
  - 2. The defective Work will be partially repaired to the instructions of the ENGINEER, and the unit price will be adjusted to a new unit price at the discretion of the OWNER and ENGINEER.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.
- D. The authority of the ENGINEER to assess the defect and identify payment adjustment is final.

#### 1.8 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.

3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected Products.

## 1.9 SCHEDULE OF PAY ITEMS

### A. Contract 1 – General Contract

#### 1. **Item 1 – Sedimentation Basin Effluent Improvements**

##### Item 1- Sedimentation Basin Effluent Improvements at Sturgeon Point

Work under this Item shall generally be as specified in Section 01010, Summary of Work, as defined in these Contract Documents, and as shown on the Contract Drawings. The cost of required insurance, bonds, permits, work schedule and subsequent updates and any other initiation of the Contract work is also included in this Item.

**Measurement:** The GENERAL CONTRACTOR lump sum price for Sedimentation Basin Improvements at the Sturgeon Point Water Treatment Plant reflects the actual value of the work involved. The quantity to be paid for under this Item will be made on a lump sum basis in proportion to the amount of Work completed.

**Payment:** Payment for the work on the Sedimentation Basin Improvements will be made at the GENERAL CONTRACTOR's bid, as stated in the bid. The amount bid shall be made payable to the GENERAL CONTRACTOR whenever he shall have completed five percent (5%) of the Contract work. Five percent (5%) of the work shall be considered completed when the total of payments earned, as reflected by estimates of work done, not including the amount bid for this item, nor payments for materials delivered to the site, exceeds five percent (5%) of the total amount of the bid for this Contract. The lump sum price bid for this Item shall be full compensation as shown and specified.

#### 2. **Item 2 – Cash Allowance**

##### Item 2– Cash Allowance for PLC and SCADA System Work

This allowance is to cover the cost of work by OWNER system integrator Kaman Automation to furnish an HMI screen and associated components identified in the scope of work to OWNER. The GENERAL CONTRACTOR will only receive payment under this item for the actual cost from Kaman Automation to complete their required work.

#### 3. **Item 3 – Contingency Allowance**

##### Item 3– Contingency Allowance for Miscellaneous Work

The allowance is to cover the cost of extra work items as directed by the ENGINEER over and above the Work shown and specified in these Contract Documents. The GENERAL CONTRACTOR will only receive payment under this Item for actual extra Work performed as approved in writing and directed by the ENGINEER and may not receive all or part of the total amount of this Item if the value of this extra Work is less than the allowance value.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01290  
SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Schedule of Values preparation and submission.

1.2 EXPLANATION

- A. The Schedule of Values is an itemized list that establishes the value or cost of each part of the Work. It shall be used as the basis for preparing progress payments and may be used as a basis for negotiations concerning additional Work or credits, which may arise during the construction. Quantities and unit prices may be included in the schedule when approved by or required by the ENGINEER.

1.3 PREPARATION

- A. Schedule shall show breakdown of labor, materials, equipment, and other costs used in preparation of the Bid.
- B. Costs shall be in sufficient detail to indicate separate amounts for each Section of the Specifications.
- C. The CONTRACTOR may include an item for bond, temporary facilities, and job mobilization.
- D. Schedule of Values shall be prepared on 8-1/2-inch by 11-inch white paper.
- E. Use Table of Contents of this Specification as basis for Schedule formats and identify each item with number and title in the Table of Contents.
- F. When requested by ENGINEER, support values with data that will substantiate their correctness.
- G. The sum of the individual values shown on the Schedule of Values must equal the total lump sum Contract Price.
- H. The manner in which overhead and profit are shown shall be approved by the ENGINEER.
- I. Schedule shall show the purchase costs for materials and equipment to be stored on site prior to installation that the CONTRACTOR anticipates payment will be requested for prior to their installation.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 SUBMISSION

- A. Submit two (2) copies of schedule to ENGINEER for approval before Work commences on the site. After review by ENGINEER, revise and resubmit Schedule as required until it is approved.
- B. No partial payment will be considered for payment prior to acceptance of the Schedule of Values by the ENGINEER and OWNER.

END OF SECTION



SECTION 01300  
PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Format.
- B. Content.
- C. Revisions to schedules.
- D. Submittals.
- E. Distribution.

1.2 RELATED SECTIONS – NOT USED

1.3 FORMAT

- A. Prepare schedules as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first workday of each week. Schedule will be created on computer using Microsoft Project, latest version.
- B. The CONTRACTOR may prepare a network analysis system using the critical path method as approved by the ENGINEER.
- C. Sequence of Listings: The Table of Contents of this Specification OR the chronological order of the start of each item of Work.
- D. Scale and Spacing: To provide space for notations and revisions.
- E. Sheet Size: Minimum 8-1/2 by 11 inches, maximum 11 by 17 inches.

1.4 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of the construction.
- B. Identify each item by Specification Section number.
- C. Identify Work in logically grouped activities.
- D. Provide sub-schedules to define critical portions of the entire schedule.
- E. Provide sub-schedules for each stage of Work.
- F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

- G. Provide separate schedule of submittal dates for shop drawings, product data, and samples, including any OWNER furnished products if applicable, and dates reviewed submittals will be required from the ENGINEER. Indicate decision dates for selection of finishes by the OWNER.
- H. Indicate delivery dates of all products identified under Allowances.
- I. Coordinate content with Section 01290 - Schedule of Values.

#### 1.5 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
- B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- C. Provide narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken, or proposed, and its effect including the effect of changes on schedules of separate CONTRACTORS if applicable.

#### 1.6 SUBMITTALS

- A. Submit initial schedules within thirty (30) days after the Notice of Award. After review, resubmit required revised data within ten (10) days.
- B. Submit revised Progress Schedules with each Application for Payment.
- C. Submit PDF file(s) of the schedule, which will be retained by the ENGINEER.

#### 1.7 DISTRIBUTION

- A. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in the schedules.

#### PART 2 PRODUCTS – NOT USED

#### PART 3 EXECUTION – NOT USED

END OF SECTION

## SECTION 01310

### PROJECT COORDINATION

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. As more fully set forth in Article 6 of the General Conditions, CONTRACTOR shall be solely responsible for coordination of all the Work. He shall supervise, direct and cooperate fully with all Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the Work within the Contract Time.
- B. As more fully set forth in Article 7 of the General Conditions, CONTRACTOR shall cooperate with and coordinate his Work with the work of any other contractor, utility service company or OWNER'S employees performing additional work related to the Project at the site.
- C. CONTRACTOR shall not be responsible for damage done by contractors not under his jurisdiction. He will not be liable for any such loss or damage unless it is through the negligence of CONTRACTOR.
- D. CONTRACTOR shall maintain sufficient competent personnel, drafting equipment and supplies at the site for the purpose of preparing layout and coordination drawings. These drawings shall supplement the contract documents, and the Shop Drawings, as necessary to correlate the work of various trades. Where such drawings are to be prepared by the mechanical, electrical, or plumbing Subcontractors, CONTRACTOR will ensure that each Subcontractor maintains the required personnel and facilities at the site.
- E. CONTRACTOR shall also coordinate his Work with the work of others to assure compliance with schedules.
- F. CONTRACTOR shall attend and participate in all project coordination or progress meetings and report on the progress of all Work and compliance with schedules.

#### PART 2 PRODUCTS – NOT USED

#### PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01311

### COORDINATION WITH OWNER'S OPERATIONS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. CONTRACTOR services and required documentation for ensuring that the OWNER's operations are maintained as required during the duration of the Project.
- B. Minimum construction tasks to be addressed by the CONTRACTOR relative to coordination with the OWNER's operations and other Contractors working on the Site concurrently.
- C. OWNER's coordination, construction sequencing, and scheduling requirements for the CONTRACTOR during execution of the Work.

##### 1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work.
- B. Section 01131 – Schedule of Completion.

##### 1.3 BACKGROUND INFORMATION

- A. The Work under this Contract involves upgrades and improvements to existing water system facilities owned, operated, and maintained by the Erie County Water Authority (OWNER). The existing water system is an essential component of industries and residents' normal life; therefore, the existing water system must be maintained in continuous operation at all times during the course of the Work under this Contract, except as noted within this Section. No shutdown periods shall be permitted under this Contract, except as and when directed by the OWNER and ENGINEER.
- B. Any process interruption must be scheduled and coordinated with the OWNER to ensure that no lapses in operation occur. It is the CONTRACTOR's responsibility to develop a work plan and schedule detailing, at a minimum, the procedures to be employed, the equipment and materials to be used, the safety plan to be used during the Work, coordination with Work covered under other Contracts, and a schedule defining the duration of the Work with milestone subtasks.
- C. When shutting down any process or piece of equipment, the CONTRACTOR shall confirm the following:
  - 1. All labor, equipment, and material are in place and ready for installation, except as noted within this Section.
  - 2. The CONTRACTOR shall make any and all preparations to ensure that the duration of equipment outages and system interruptions are kept to an absolute minimum. At a minimum - a schedule, a detailed sequence of work activities, and verification that all required equipment and materials are on site shall be documented. This documentation shall be reviewed with the OWNER and the ENGINEER prior to the request for interruptions in service.
  - 3. The CONTRACTOR shall provide the OWNER and ENGINEER with written notice ten (10) days prior to any proposed interruption at the pumping station or water treatment plant sites.
  - 4. The CONTRACTOR shall coordinate all equipment shutdowns with the OWNER.

5. The OWNER will operate all existing equipment and valves for isolating or removing equipment or processes from service. The CONTRACTOR is responsible for locking out / tagging out all equipment, in coordination with the OWNER's procedures. The OWNER does not guarantee a seal-tight connection upon closing of existing valves.
6. The OWNER will operate existing electrical switches, breakers, disconnects, and other electrical equipment, unless otherwise directed by the OWNER and ENGINEER. No shutdowns of electrical service shall occur without OWNER's knowledge. OWNER does not guarantee the operation of any item of equipment.
7. All operations of new equipment including, but not limited to, electrical systems, and new slide gates, shall be performed by the OWNER once they have been placed in service unless otherwise directed by the OWNER and ENGINEER. No shutdowns of any equipment shall occur without OWNER's knowledge.
8. These constraints apply to coordination with OWNER's operations:
  - a. Operational Access: OWNER'S personnel shall have access to areas that remain in operation. All operation of existing equipment and valves required for shutdowns and/or bypasses shall be done by OWNER. All operation of existing electrical equipment required for shutdowns shall be done by OWNER, unless otherwise directed by OWNER or ENGINEER.
  - b. CONTRACTOR shall schedule and perform start-ups for Monday through Thursday. Equipment and systems shall not be placed into operation on Friday, Saturday, Sunday, and OWNER holidays without prior approval of OWNER.
  - c. Dead End Valves or Pipe: CONTRACTOR shall provide blind flanges, watertight bulkheads, or restrained valves at the temporary or permanent terminus of a pipe or conduit. Blind flanges and bulkheads shall be suitable for the service and braced and blocked, as required, or as directed by ENGINEER. Temporary valves shall be suitable for the service. Where a valve is provided at a permanent terminus of a pipe, also provide on the downstream side of the valve a blind flange with a drain/flushing connection.
  - d. Equipment and material removals shall be made with caution to prevent damage to existing facilities.
  - e. The CONTRACTOR is responsible for draining and disposing of any water from pipes and/or tanks resulting from cleaning or flushing necessary for demolition, construction, or testing.
9. The CONTRACTOR shall be prepared to stop work and return the process or equipment to service upon request from the OWNER based upon, but not limited to, weather, water demand, or emergency conditions occurring in the OWNER's water system. The OWNER's discretion shall dictate the conditions under which offline equipment or facilities are to be returned to service, but the OWNER will make reasonable requests so as not to unduly impede the progress of the Work. Time is of the essence in completing the proposed improvements. No additional payment will be made to the CONTRACTOR for Work necessary to return equipment to service.
10. Access to perform the Work will require proper regulatory Health and Safety measures to be in place prior to commencing work. Any equipment necessary to gain access to the Work shall be the responsibility of the CONTRACTOR and shall be approved by the OWNER and ENGINEER, prior to use.
11. The CONTRACTOR shall be responsible for dewatering operation provisions, as required or further described in these specifications.

12. The CONTRACTOR shall be prepared to work during nights and weekends, as required, to complete the Work, as per the specified timeframes stipulated herein, at no additional cost to the OWNER.
13. Limitations to facility interruptions are listed in the schedule at the end of this section. Wherever possible, tie-ins for each area shall be combined to minimize the number of shutdowns. The CONTRACTOR shall coordinate shutdowns with the OWNER and determine sequencing and scheduling within the constraints noted below.

#### 1.4 COORDINATION

- A. The CONTRACTOR shall be responsible for overall coordination and scheduling of Work performed.
- B. Work shall be performed in the specified sequence. Certain phases of the Work may require working 24-hour days or work during hours outside of regular business hours. Work may be accelerated from a later stage to an earlier stage if OWNER's operations are not adversely affected by the proposed sequence change, with ENGINEER's acceptance.
- C. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment. Protect existing and new electrical equipment from dust and dirt.
- D. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas, unless indicated otherwise, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. The CONTRACTOR shall not be responsible for damage done by Contractors not under their jurisdiction. The CONTRACTOR will not be liable for any such loss or damage unless it is through the negligence of the CONTRACTOR or their subcontractors.
- G. The CONTRACTOR shall maintain sufficient competent personnel, drafting equipment, and supplies for the purpose of preparing layout and coordination drawings. These drawings shall supplement the Contract Documents, and the Shop Drawings, as necessary to correlate the work of various trades. Where such drawings are to be prepared by the mechanical, electrical, or other Subcontractors, CONTRACTOR will ensure that each Subcontractor maintains the required personnel and facilities at the site.
- H. Coordinate completion and cleanup of Work of separate sections in preparation for Substantial Completion.
- I. The CONTRACTOR shall coordinate with the OWNER for making operational changes.
- J. All new equipment must be fabricated, on-site, and prepared for installation before initiation of any process shutdown/interruption, except as noted within this Section.
- K. The CONTRACTOR is responsible for coordinating the completion of the work on all parts of each system, such that, the start-up is not delayed and can be completed with all parts.
- L. CONTRACTOR has the option, subject to approval of ENGINEER and OWNER, of providing additional temporary facilities that can eliminate or mitigate a constraint without additional cost to the OWNER, provided it does not present hazards to personnel, structures, and equipment; does not adversely affect the OWNER's ability to comply with permits and operating requirements; does not generate odors and other nuisances; and it fulfills requirements of the Contract Documents.

## 1.5 SUBMITTALS

- A. Substitute Sequence and Shutdown Work Plan Submittal: Provide a submittal to ENGINEER explaining in detail the proposed sequence, system shutdowns, and explain in detail any change and its effects, including evidence that OWNER's operations will not be adversely affected by the proposed change. List benefits of the proposed sequence or shutdown change, including benefits to the Progress Schedule.
- B. Sequence and Shutdown Work Plan Submittals:
1. CONTRACTOR shall prepare an inventory of labor and materials required to perform the sequences, shutdowns, and tie-in tasks, an estimate of the time required for the shutdown including time for OWNER to take down and start up existing equipment, systems, or piping, and a written description of steps required to complete the Work associated with the sequence and shutdown.
    - a. For all work: CONTRACTOR shall inform OWNER and ENGINEER of how equipment and materials are intended to be staged into and out of the areas. For purposes of bidding, CONTRACTOR shall provide the means and methods for all equipment and materials to enter and leave the facilities through existing openings (i.e., doors or hatches). If CONTRACTOR desires to make any temporary openings in existing structures, they shall submit a written request for review and approval by OWNER and ENGINEER. CONTRACTOR shall be responsible for closing all temporary openings to a watertight condition as solely determined by the OWNER and ENGINEER. The OWNER does not guarantee the availability or condition of any existing monorail, crane, or lifting eyes.
    - b. Submittals shall also document CONTRACTOR's temporary controls including, but not limited to, dust control to prevent migration of dust and debris into adjacent areas, and temporary stockpiling of soils. Submit the inventory, time estimate, written procedures, and proposed date(s) of the shutdown to the ENGINEER for review at least 20 calendar days prior to the proposed shutdown start date. Do not start shutdown until the OWNER and ENGINEER accept the sequence and shutdown work plan submittal.
  2. Shutdown Notification: After acceptance of shutdown planning submittal and prior to the shutdown, provide written notification to OWNER and ENGINEER of the date and time at which the CONTRACTOR will be ready to perform the Work associated with each shutdown. Provide OWNER and ENGINEER notification at least 10 days in advance of each shutdown. OWNER and ENGINEER will confirm with the CONTRACTOR that they are prepared to conduct the shutdown and the anticipated date of the start of the shutdown.

## 1.6 SEQUENCE OF CONSTRUCTION

- A. The sequence of construction proposed by the CONTRACTOR shall be included as part of the work plan documenting sequence and shutdown planning and must meet the following minimum criteria:
1. Achieves the desired results of the Project.
  2. Is in accordance with the stipulated Contract Time of Completion.
  3. Is mutually agreeable to all parties involved.
  4. The minimum stated equipment must remain operational at all times.
  5. Provides startup without the possibility of damage to equipment or systems.



- B. The OWNER and ENGINEER shall review the sequence of construction proposed by the CONTRACTOR. If the ENGINEER and OWNER determine that said proposal adequately meets the criteria set forth in these specifications, the ENGINEER and OWNER shall grant limited acceptance of the sequence of construction proposed by the CONTRACTOR. Changes to the sequence of operations shall be submitted to the OWNER and ENGINEER for approval prior to starting the work.
- C. Regardless of the sequence of construction proposed by the CONTRACTOR, the CONTRACTOR shall be solely responsible for determining the order, means, methods, staffing, and scheduling necessary to satisfy the Work requirements outlined within these Contract Documents.

## 1.7 SCHEDULING

- A. Sedimentation Basin Effluent Improvements at Sturgeon Point Water Treatment Plant
  - 1. The CONTRACTOR shall coordinate work with the OWNER. Facility shutdowns and isolations must be scheduled and coordinated with the OWNER.
  - 2. The CONTRACTOR shall coordinate the slide gate installations with the OWNER. Piping isolations and any shutdowns must be scheduled and coordinated with the OWNER. Work shall be scheduled, so that shutdowns are limited to the minimum amount possible throughout the duration of the project.
  - 3. Water **must** flow through a minimum of four sedimentation basins during all work.

## 1.8 SHUTDOWNS

- A. General:
  - 1. A shutdown is defined as when a portion of the normal operation of OWNER's facility, whether equipment, systems, or pipeline, has to be temporarily suspended or taken out of service to perform the Work.
  - 2. Work that may interrupt normal operations shall be accomplished at times convenient to OWNER.
  - 3. The CONTRACTOR may be limited to a specific period of time for the shutdown, and/or non-standard working hours or the shutdown may be postponed for any amount of time so not to interfere with the production and/or pumping of water.
  - 4. Provide at the Site in close proximity to the shutdown and tie-in work areas tools, equipment, spare parts, and materials, both temporary and permanent, necessary to successfully complete the shutdown. Prefabrication of piping and other assemblies shall be completed to the degree possible prior to their associated shutdown. Demonstrate to ENGINEER's satisfaction that CONTRACTOR has complied with these requirements before starting shutdown.
  - 5. CONTRACTOR shall complete all work associated with a shutdown in one continuous period.
  - 6. If CONTRACTOR's operations cause an unscheduled interruption of OWNER'S operations, CONTRACTOR shall immediately re-establish satisfactory operation for OWNER.
  - 7. Unscheduled shutdowns or interruptions of continued safe and satisfactory operation of OWNER's facilities that result in fines or penalties by authorities having jurisdiction shall be the responsibility of CONTRACTOR if, in the ENGINEER's opinion, the CONTRACTOR caused the unscheduled shutdown or interruption.

- 8. If during the shutdown period, the OWNER has to put the existing facilities back into service due to an unforeseen emergency situation, the CONTRACTOR may be ordered to work 24-hour days until the facilities are back in service. The CONTRACTOR shall cooperate fully with the OWNER to immediately place the facilities back in service.
  - 9. When applicable, work requiring service interruptions for tie-ins shall be performed during the scheduled shutdowns.
- B. Shutdowns of Electrical Systems: Comply with the National Electric Code and the OWNERs Lock Out-Tag Out Program. CONTRACTOR shall lock out and tag circuit breakers and switches operated by OWNER and shall check cables and wires to verify that they are de-energized to ground potential before Work is started. Upon completion of Work associated with the shutdown, CONTRACTOR shall remove the locks and tags and notify ENGINEER that the facilities are available for use.
  - C. Only one (1) Sedimentation Basin shall be shutdown at a time.
  - D. Contractor shall allow for a minimum of four (4) days between different sedimentation basin work to allow for Owner filling and draining.
  - E. Summary Schedule/Tie-in Table

**SCHEDULE OF SHUTDOWNS AND TIE-INS**

<b>Schedule Sequence No.</b>	<b>Shutdown/Tie-in Location</b>	<b>Action/New Facilities and Service</b>	<b>Existing (Connecting) Facilities and Service</b>	<b>Required Sequence</b>	<b>Milestone<sup>(1)</sup></b>	<b>Maximum Duration</b>
1	Sedimentation Basins No. 1-5 (one basin at any given time)	Installation of new slide gate and electric actuator	Existing Sedimentation Basins No. 1-5	Contractor shall coordinate order of basin shutdown sequence with OWNER.	NA	30 Days (single basin)

(1) Refer to Section 01131 Schedule of Completion for milestone details

**PART 2 PRODUCTS – NOT USED**

**PART 3 EXECUTION**

**3.1 GENERAL**

- A. Verify that existing site conditions are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct location.
- E. The information within this Section provides general sequence of work requirements, constraints, and allowed shutdown times pertaining to the Work. The information is not intended to reflect means and methods, but provide a sequence, based on constraints and shutdown limitations, to accomplish the Work within the specified Contract Time. The CONTRACTOR shall develop a sequence of work and

corresponding Construction Schedule, incorporating the constraints and shutdown limitations, to complete the work within the specified Contract Time. The means and methods to meet the Contract Times shall be accounted for in the CONTRACTOR's bid. Failure to account for constraints shall not be cause for delay or additional cost to the OWNER.

- F. The CONTRACTOR is ultimately responsible for their means and methods and safety programs associated with the Work.

END OF SECTION



## SECTION 01312

### PRECONSTRUCTION CONFERENCE

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Preconstruction conference requirements.

##### 1.2 RELATED SECTIONS

- A. Section 01313 - Progress Meetings.

##### 1.3 PRECONSTRUCTION CONFERENCE

- A. Date, Time, and Location: Conference will be held after execution of the Contract and before construction work begins at the site. ENGINEER will fix the date, time, and location of the meeting.
- B. ENGINEER shall prepare agenda, preside at meeting, and prepare and distribute transcript to all parties.
- C. CONTRACTOR shall provide data required and be prepared to discuss all items on agenda.

##### 1.4 REQUIRED ATTENDANCE

- A. CONTRACTOR and major Subcontractors.
- B. OWNER.
- C. ENGINEER.
- D. Utility Representatives, as necessary.
- E. Representatives of government agencies having any form of control, if available.

##### 1.5 MINIMUM AGENDA

- A. Designation of responsible personnel.
- B. Subcontractors.
- C. Coordination with ECWA.
- D. Coordination with other CONTRACTORS.
- E. Construction schedule.
- F. Processing of Shop Drawings.
- G. Processing of field decisions and Change Orders.

- H. Requirements for copies of Contract Documents.
- I. Insurance in force.
- J. Schedule of Values.
- K. Schedule of Payments.
- L. Use of premises.
- M. Safety and first aid procedures.
- N. Security.
- O. Housekeeping.
- P. Field Offices.
- Q. Record Drawings.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

## SECTION 01313

### PROGRESS MEETINGS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Progress meetings.

##### 1.2 RELATED SECTIONS

- A. Section 01312 - Preconstruction Conference.

##### 1.3 PROGRESS MEETINGS

- A. Date and Time:
  - 1. Regular Meeting - As mutually agreed upon by ENGINEER and CONTRACTOR.
  - 2. Other Meetings - On call.
- B. Place –Sturgeon Point Water Treatment Plant or other mutually agreed location or virtual setting.
- C. ENGINEER shall prepare agenda, preside at meetings, prepare minutes of proceedings, and distribute copies of transcript.
- D. CONTRACTOR shall provide data required and be prepared to discuss all items on agenda.

##### 1.4 MINIMUM ATTENDANCE

- A. CONTRACTOR or his superintendent. The representative of the CONTRACTOR shall be able to make binding decisions regarding the Work.
- B. ENGINEER.
- C. OWNER's Representative.
- D. Any Subcontractors, materialmen, or vendors whose presence is deemed necessary by the OWNER, ENGINEER, or CONTRACTOR.

##### 1.5 MINIMUM AGENDA

- A. Minutes of previous meeting.
- B. Progress since last meeting.
- C. Planned progress for next period.
- D. Problems.

- E. Coordination among GC, subcontractors, and OWNER.
- F. Change Orders.
- G. Applications for payment.
- H. Observations by ENGINEER.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01321

### CONSTRUCTION SCHEDULES

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Provide construction schedule, which conforms to the requirements below, unless otherwise approved by ENGINEER.
- B. Update schedules every month and for progress meetings unless otherwise specified or directed by ENGINEER.
- C. Submit cash flow schedule with each updated construction schedule.

##### 1.2 CONTENT

- A. Shop drawing submittal dates and required approval dates.
- B. Product delivery dates.
- C. Factory and field testing dates.
- D. Dates for beginning and completing each phase of the Work by activity and by trades.
- E. Cash flow schedule shall be based on monthly cash flow.

##### 1.3 FORMAT

- A. Schedule will be created on computer using Microsoft Project, latest version.
- B. Type: Horizontal bar chart.
- C. Sheet Size: 11 inches by 17 inches, up to 24 inches by 36 inches.
- D. Time Scale: Indicate first date in each workweek.
- E. Organization:
  - 1. Group shop drawing submittals and reviews into a separate sub-schedule.
  - 2. Group product deliveries into a separate sub-schedule.
  - 3. Group construction work into a separate sub-schedule by activity.
  - 4. Group critical activities, which dictate the rate of progress into a separate sub-schedule.
  - 5. Organize each sub-schedule by Specification Section number.
- F. Activity Designations: Show title and related Specification Section number.

- G. Provide electronic copies of project schedule to ENGINEER in PDF format by email or on a USB flash drive, as requested.
- H. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, duration, and milestone dates.
- I. Indicate estimated percentage of completion for each item of Work at each progress meeting.
- J. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and under Allowances.

#### 1.4 SUBMITTALS

- A. Submit initial schedule at least 20 days prior to submitting first application for a progress payment but no later than 10 days after date of execution of Agreement. Subsequent schedule updates shall be submitted concurrently with monthly payment applications.
- B. Submit updated schedules at all progress meetings. If a schedule remains unchanged from one period to the next, submit a written notice to that effect. Updated schedules shall show progress completed to date.
- C. Make submittals to ENGINEER, three copies of all requirements.
- D. Unless otherwise specified, submit three paper copies of each schedule and one USB flash drive. One copy each will be reviewed by the OWNER and ENGINEER and returned. The other copy will be retained by the ENGINEER.
- E. Attach a letter of transmittal to each submittal and include the following information in the letter:
  - 1. A listing of items, which have changed since the last submittal.
  - 2. Discussion of problems causing delays, anticipated length of delays, and proposed countermeasures.
- F. Submit updated cash flow schedule based on each updated schedule.

Payment of partial estimates shall not be made unless the CONTRACTOR has, in force, an approved construction schedule.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

## SECTION 01322

### CONSTRUCTION PHOTOGRAPHS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

A. CONTRACTOR shall provide photographic documentation for the following:

1. Pre-construction.
2. Construction progress.
3. Final.

##### 1.2 CONSTRUCTION PHOTOGRAPHS

A. Digital construction photographs shall be taken at each of the major stages on construction listed below and shall be furnished to ENGINEER and OWNER with each Application for Payment:

1. Site before mobilization.
2. Completion of underground facilities prior to backfilling.
3. Completion of site clearing for each structure.
4. Completion of excavations for each structure.
5. Completion of reinforcing and formwork prior to concrete pours.
6. Completion of foundations of each structure.
7. Completion of framing of each structure.
8. Completion of enclosure for each structure.
9. Installation of all interior and exposed exterior piping, equipment, and electrical components.
10. Testing of all piping, equipment, and systems.
11. Completion of site restoration and landscaping.

B. Views and Quantities Required:

1. Two views of each item.
2. At least twenty views of overall project site monthly.
3. Three prints of each view.

C. Camera used for digital photography shall be 12.0 megapixel resolution or greater.

D. Electronic Copies (USB):

1. Maintain database of pictures for the entire length of the project.
2. Each month provide two USB drives with electronic versions of all prints taken in the past month.
3. Provide two USB Drives with electronic versions of all prints taken during the course of the Project (in .jpg format) with final Application for Payment.
4. All electronic copies of photos shall be in .jpg format. All electronic copies of photos shall be arranged on USB Drives by date and subject. Each .jpg photo file name shall include the subject description and date.

E. Photographic Prints:

1. Quantity: For each photograph taken, provide to ENGINEER three prints.
2. Print Size and Finish - submit 5-inch by 7-inch prints on professional-grade, nine-mil thick, photograph paper with semi-gloss or satin finish, unless otherwise specified.
3. Include the following information on back of each print and front of each disc containing photographic documentation:
  - a. Date photograph was taken.
  - b. Name of OWNER.
  - c. Name of the Site.
  - d. Project name.
  - e. Description of view shown in photograph.

1.3 REUSE OF CONSTRUCTION DOCUMENTATION

- A. All construction documentation furnished to OWNER shall become the property of the OWNER and cannot be copyright or otherwise protected in a manner that prevents free reuse by the OWNER.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 DELIVERY OF PHOTOS

- A. Preconstruction photos (prints and USB Drive format) shall accompany the first Application for Payment. This Application for Payment may not be approved without receipt of such materials.

- B. Monthly construction photos (prints and USB Drive format) shall accompany each monthly Application for Payment. Monthly Applications for Payment may not be approved without receipt of such materials.
- C. Final construction photos (prints and USB Drive format) shall accompany the final Application for Payment. This Application for Payment may not be approved without receipt of such materials.

END OF SECTION



SECTION 01331

SHOP DRAWING PROCEDURES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Shop Drawing procedures shall conform to requirements of General Conditions and as described in this Section.

1.2 PROCEDURE

- A. Submittals of Shop Drawings shall be made to the ENGINEER at the address listed in the Notice to Bidders.
- B. A letter of transmittal shall accompany each submittal. If data for more than one Section of the Specifications is submitted, a separate transmittal letter shall accompany the data submitted for each Section.
- C. Shop Drawings shall be submitted electronically via the Sharepoint Site designated for this project. Final approved copies of submittals shall also be sent to the ERIE COUNTY WATER AUTHORITY at the Service Center address at 3030 Union Road, Buffalo, NY 14227 at the time CONTRACTOR submits to ENGINEER.
- D. At the beginning of each letter of transmittal provide a reference heading indicating the following:
  - 1. OWNER'S Name \_\_\_\_\_
  - 2. Project Name \_\_\_\_\_
  - 3. Contract No. \_\_\_\_\_
  - 4. Transmittal No. \_\_\_\_\_
  - 5. Section No. \_\_\_\_\_
- E. If a Shop Drawing deviates from the requirements of the Contract Documents, CONTRACTOR shall specifically note each variation in his letter of transmittal.
- F. All Shop Drawings submitted for approval shall have a title block with complete identifying information satisfactory to ENGINEER.
- G. All Shop Drawings submitted shall bear the stamp of approval and signature of CONTRACTOR as evidence that they have been reviewed by CONTRACTOR. Submittals without this stamp of approval will not be reviewed by ENGINEER and will be returned to CONTRACTOR. CONTRACTOR'S stamp shall contain the following minimum information:
  - 1. Project Name: \_\_\_\_\_
  - 2. CONTRACTOR'S Name: \_\_\_\_\_
  - 3. Date: \_\_\_\_\_
  - 4. Submittal Item: \_\_\_\_\_

5. Submittal Number: \_\_\_\_\_
6. Specification Section: \_\_\_\_\_
7. Specifications Page No.: \_\_\_\_\_
8. Specifications Para. No.: \_\_\_\_\_
9. Reference Drawing No.: \_\_\_\_\_ of \_\_\_\_\_
10. Location: \_\_\_\_\_
11. Deviations: None \_\_\_\_\_; As Listed \_\_\_\_\_
12. Reference Specification Number \_\_\_\_\_
13. Space Requirement: As Designed \_\_\_\_\_ Different, As Listed \_\_\_\_\_
14. Representation is made to the OWNER and ENGINEER that the CONTRACTOR has determined and verified, or will determine and verify at the appropriate time, all field measurements and quantities, field construction criteria, materials, catalog numbers and similar data, that he has reviewed and coordinated the information in each shop drawing with the requirements of the work and the Contract Documents, and hereby approves this submittal.

CONTRACTOR \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Date \_\_\_\_\_

H. A number shall be assigned to each submittal by CONTRACTOR starting with No. 1 and thence numbered as described below. Resubmittals shall be identified by the original submittal number followed by the suffix "01" for the first submittal, the suffix "02" for the first resubmittal, etc.

1. Number the submittals as follows:
  - a. First - Specification section number.
  - b. Submittal number within the specification section.
  - c. Review cycle number.
  - d. Title of submittal.

For example:

- 15073-01-01 – Field lock gaskets for DIP (first review cycle)
- 15073-01-02 – Field lock gaskets for DIP (second review cycle)
- 15073-02-01 – Flange pipe and fittings (first review cycle)
- 15073-02-02 – Flange pipe and fittings (second review cycle)
- 15073-02-03 – Flange pipe and fittings (third review cycle)

I. CONTRACTOR shall provide electronic copies of all submittals in PDF format to the ENGINEER and OWNER.



- J. After ENGINEER completes his review, Shop Drawings will be marked with one of the following notations:
1. Approved.
  2. Approved as Corrected (No Resubmittal Required).
  3. Approved as Corrected (Resubmittal Required).
  4. Approved as Corrected (Provide Requested Information Only).
  5. Revise and Resubmit.
  6. Not Approved.
  7. Not Reviewed.
  8. Submitted for Information.
- K. If a submittal is acceptable, it will be marked "Approved" or "Approved as Corrected." Four prints or copies of the submittal will be returned to the CONTRACTOR.
- L. Upon return of a submittal marked "Approved" or "Approved as Corrected," CONTRACTOR may order, ship or fabricate the materials included on the submittal, provided it is in accordance with the corrections indicated.
- M. If a Shop Drawing marked "Approved as Corrected" has extensive corrections or corrections affecting other drawings or Work, ENGINEER may require that CONTRACTOR make the corrections indicated thereon and resubmit the Shop Drawings for record purposes. Such drawings will have the notation, "Approved as Corrected (Resubmittal Required)."
- N. If a submittal is unacceptable, copy will be returned to CONTRACTOR with one of the following notations:
1. "Revise and Resubmit."
  2. "Not Approved."
- O. Upon return of a submittal marked "Revise and Resubmit", CONTRACTOR shall make the corrections indicated and repeat the initial approval procedure. The "Not Approved" notation is used to indicate material or equipment that is not acceptable. Upon return of a submittal so marked, CONTRACTOR shall repeat the initial approval procedure utilizing acceptable material or equipment.
- P. Any related Work performed or equipment installed without an "Approved" or "Approved as Corrected," Shop Drawing will be at the sole responsibility of the CONTRACTOR.
- Q. Shop Drawings shall be submitted well in advance of the need for the material or equipment for construction and with ample allowance for the time required to make delivery of material or equipment after data covering such is approved. CONTRACTOR shall assume the risk for all materials or equipment, which are fabricated or delivered prior to the approval of Shop Drawings. Materials or equipment will not be included in periodic progress payments until approval thereof has been obtained in the specified manner.
- R. ENGINEER will review and process all submittals promptly, but a reasonable time should be allowed for this, for the Shop Drawings being revised and resubmitted, and for time required to return the approved Shop Drawings to CONTRACTOR.

- S. It is CONTRACTOR'S responsibility to review submittals made by his suppliers and Subcontractors before transmitting them to ENGINEER to assure proper coordination of the Work and to determine that each submittal is in accordance with his desires and that there is sufficient information about materials and equipment for ENGINEER to determine compliance with the Contract Documents. Incomplete or inadequate submittals will be returned for revision without review.
- T. CONTRACTOR shall furnish required submittals with complete information and accuracy in order to achieve required approval of an item within three submittals. All costs to ENGINEER involved with subsequent submittals of Shop Drawings, Samples or other items requiring approval, will be backcharged to CONTRACTOR, at the rate of 3.0 times direct technical labor cost, by deducting such costs from payments due CONTRACTOR for Work completed. In the event that CONTRACTOR requests a substitution for a previously approved item, all of ENGINEER'S costs in the reviewing and approval of the substitution will be backcharged to CONTRACTOR unless the need for such substitution is beyond the control of CONTRACTOR.
- U. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have:
1. Reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
  2. Determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto.
  3. Determined and verified the suitability of all materials offered with respect to the indicated application, chemical service, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work.
  4. Determined and verified all information relative to CONTRACTOR's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  5. With each submittal, CONTRACTOR shall give ENGINEER specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to ENGINEER for review and approval of each such variation.
- V. ENGINEER's Review - ENGINEER will provide review of Shop Drawings and Samples in accordance with the Schedule of Submittals approved by the ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

- W. ENGINEER's review and approval shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has complied with the requirements of paragraph 1.03.I.5 above and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. ENGINEER's review and approval shall not relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 1.02.U.5 or Substitute procedures detailed in the General Conditions.
- X. Resubmittal Procedures - CONTRACTOR shall make corrections required by ENGINEER and shall return the electronic copy of Shop Drawings and submit, as required, new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.
- Y. In the event that CONTRACTOR requests a change of a previously approved item, CONTRACTOR shall reimburse OWNER for ENGINEER's charges for its review time unless the need for such change is beyond the control of CONTRACTOR.
- Z. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- AA. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- BB. Submittals not requested will not be recognized or processed.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01332

### SAMPLES

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. The submittal of samples shall conform to the requirements of the General Conditions and to procedures described in the Section.
- B. Samples and Shop Drawings, which are related to the same unit of Work or Specification Section, shall be submitted at the same time. If related Shop Drawings and samples are submitted at different times, they cannot be reviewed until both are furnished to the ENGINEER.

##### 1.2 PROCEDURE

- A. CONTRACTOR shall review, approve and submit all samples promptly. Samples shall be identified with correct reference to Specification Section, page, article and paragraph number, the Drawing No. when applicable. Samples shall clearly illustrate functional characteristics of the product and all related parts and attachments, and full range of color, texture, pattern and material. Samples shall be furnished so as not to delay fabrication, allowing the ENGINEER reasonable time for the consideration of the samples submitted.
- B. CONTRACTOR shall submit at least two samples of each item required for the ENGINEER'S approval. Submission of samples shall conform to all applicable provisions under Shop Drawing Submittal and Correspondence procedure. One of the samples shall be delivered to the ENGINEER's main office unless otherwise authorized by the ENGINEER. One sample shall be delivered to the ENGINEER'S field office. If the CONTRACTOR requires a sample for his use, he shall notify the ENGINEER in writing.
- C. The CONTRACTOR shall make all corrections required and shall resubmit the required number of new samples until acceptable to the ENGINEER.

##### 1.3 SAMPLES FOR TESTS

- A. CONTRACTOR shall furnish such samples of material as may be required for examination and test. All samples of materials for tests shall be taken according to standard methods and as required by the Contract Documents.

#### PART 2 PRODUCTS – NOT USED

#### PART 3 EXECUTION – NOT USED

END OF SECTION



SECTION 01400  
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References and standards.
- C. Tolerances.
- D. Field samples.
- E. Mock-up.
- F. Testing by CONTRACTOR.
- G. Manufacturers' field services and reports.

1.2 RELATED SECTIONS

- A. General Conditions.
- B. Supplementary Conditions.
- C. Section 01331 – SHOP DRAWING PROCEDURES.

1.3 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- D. Should manufacturers' instructions conflict with Contract Documents, request clarification from ENGINEER before proceeding.
- E. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- F. Perform work by persons qualified to produce workmanship of specified quality.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

#### 1.4 REFERENCES AND STANDARDS

- A. Conform to reference standard by date of issue current on date for receiving bids, or date specified in individual Sections, except where a specific date is established by code.
- B. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- C. Should specified reference standards conflict with Contract Documents, request clarification from ENGINEER before proceeding.

#### 1.5 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from ENGINEER before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

#### 1.6 FIELD SAMPLES

- A. Furnish field samples at the site as required by individual specification sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by ENGINEER.

#### 1.7 MOCK-UP

- A. Tests will be performed under provisions identified in this Section and as identified in the respective individual Sections.
- B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Where mock-up is specified in individual Sections to be removed, clear area after the work, which the mock-up depicts, has been accepted by ENGINEER. Do not remove mock-up until the associated work has been reviewed and accepted.
- D. Accepted mock-ups shall be a comparison standard for quality required for the remaining Work.



1.8 TESTING BY CONTRACTOR

- A. CONTRACTOR shall furnish required labor, facilities, tools, equipment, compressed air, water and electric power for tests, and:
  - 1. Conduct hydrostatic and/or pressure tests on installed utilities, process piping, valves, air piping, tanks, and structures in accordance with individual Sections of the Specifications.
  - 2. Pay all costs associated with such tests.
- B. Each CONTRACTOR shall provide the materials, labor, and cost for testing and adjusting specific to their work as specified.

1.9 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to ENGINEER 30 days in advance of required observations. Observer subject to approval of ENGINEER and OWNER.
- C. Report observations, site conditions, or instructions given to applicators or installers, that are supplemental or contrary to manufacturers' written instructions.
- D. Submit report in duplicate within 15 days of observation to ENGINEER for review.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01411

### SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall comply with the Environmental Protection Agency's Spill Prevention Control and Countermeasures (SPCC) Plan requirements per 40 CFR Part 112, and applicable federal, state, and local regulations.
- B. CONTRACTOR shall determine whether an SPCC Plan is required. If an SPCC Plan is required, the CONTRACTOR shall prepare, implement, and maintain the SPCC Plan as required by the regulations.
- C. CONTRACTOR shall retain a qualified Professional Engineer, licensed in the same State as the Site, to determine the need for an SPCC Plan. CONTRACTOR shall submit to ENGINEER a letter written by and stamped by the CONTRACTOR'S Professional Engineer stating whether an SPCC Plan is required for the Project.
- D. An SPCC Plan is required if the Project activities meet the following criteria:
  - 1. Oil is stored, used, transferred, or otherwise handled at the Site.
  - 2. The maximum oil storage capacity at the site equals or exceeds either of the following thresholds: 42,000 gallons of buried capacity, or 1,320 gallons of aboveground capacity. Capacity includes the total storage tank volume and operational storage volume at the Site for prime contractors and Subcontractors, including bulk storage tanks, 55-gallon drums, tanks on construction equipment such as bulldozers and backhoes, mobile tankers located at the Site, and other vessels with 55-gallon capacity or larger. Oil includes petroleum products, fuel oil, hydraulic fluid, oil sludge, oil refuse, oil mixed with wastes other than dredged material, synthetic oil, vegetable oil, animal fats and oils, and other oils defined in the regulation.
  - 3. There is reasonable expectation, based on the location of the Site that an oil spill would reach navigable Waters of the United States or adjoining shorelines.
- E. If an SPCC Plan is not required, CONTRACTOR shall ensure the conditions that preclude the need for an SPCC Plan, including the activities of all contractors and Subcontractors at the Site are maintained throughout the duration of the Project. Should changes that affect the storage, use, or handling of oil at the Site occur, CONTRACTOR'S Professional Engineer shall reassess the need for an SPCC Plan at no additional cost to the OWNER and provide to the ENGINEER a stamped letter with original signature regarding the need for an SPCC Plan.
- F. If an SPCC Plan is required, CONTRACTOR shall develop the SPCC Plan and submit the plan for approval by the ENGINEER and OWNER. The SPCC Plan shall be specific to the Site and shall include the following:
  - 1. Stamp, original signature, and license number of CONTRACTOR'S Professional Engineer.
  - 2. A site plan identifying the name (or tag number) and location of each tank and container that will contain a substance regulated in 40 CFR 112, including aboveground and buried tanks. The site plan shall indicate the general directions of storm water runoff, including storm sewer pipes and inlets, and storm sewer outfall locations.

3. For each tank and container on the site plan, provide a table that lists the tank or container's name (or tag number), type of oil stored, and the maximum storage capacity. List the total storage capacity of all tanks and containers at the Site.
  4. Predictions of direction, rate of flow, and total quantity of oil that could be discharged from the Site as a result of storage tank or container failure.
  5. Plans for operating procedures that prevent oil spills, including procedures for oil handling, details of secondary containment structures at fuel and oil transfer areas, and details and descriptions of equipment to be used for oil handling, including piping.
  6. Plans for control measures installed at the Site by the CONTRACTOR to prevent a spill from reaching navigable waters, including secondary containment and diversionary structures. For on-shore Sites, one of the following must be used, at minimum: dikes, berms, or retaining walls; curbing; culverts, gutters, or other drainage systems; weirs, booms, or other barriers; spill diversion ponds; retention ponds; sorbent materials. Where appropriate, the Plan shall clearly demonstrate that containment or diversionary structures or equipment are not practical.
  7. Plans for countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches navigable waters, including a written commitment of manpower, equipment, and materials to quickly control and remove spilled oil. Include an estimation of the time required to contain the spill after the spill occurs.
  8. Contact list and telephone numbers for the facility response coordinator, National Response Center, cleanup contractors, and all appropriate federal, state, and local agencies that must be contacted in the event of a discharge.
  9. Program for monthly inspections of the Site by CONTRACTOR for SPCC Plan compliance. ENGINEER shall be notified of each inspection at least 72 hours in advance.
  10. Plan for Site security relative to oil storage.
  11. Plans for safely handling mobile containers (i.e., totes, drums, and fueling vehicles that remain at the Site).
  12. Plans for periodic testing the integrity of tanks and containers, and associated piping and valves.
  13. Plans for bulk storage container compliance.
  14. Plans for personnel training and oil spill prevention briefings.
  15. For SPCC Plans that do not follow the format listed in the applicable regulations, provide a cross reference to the requirements the applicable regulations, including 40 CFR Part 112.7.
  16. Approval by the OWNER.
  17. The SPCC Plan shall be reviewed by the CONTRACTOR'S Professional Engineer and the ENGINEER and OWNER every five years, as applicable.
- G. CONTRACTOR shall post a copy of the approved SPCC Plan in a conspicuous location at the Site and provide copies to the OWNER, ENGINEER, and other prime contractors. CONTRACTORS shall comply with the SPCC Plan.

- H. In the event of violation of the SPCC Plan or release of oils, the responsible CONTRACTOR shall pay fines or civil penalties (or responsible portion thereof) imposed on the OWNER by governing regulatory agencies and pay costs associated with cleanup of the spill. Spill cleanup shall conform to applicable regulations.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



SECTION 01413

CONTRACTOR'S HAZARDOUS MATERIALS MANAGEMENT PROGRAM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. CONTRACTOR shall comply with all federal, state, and local laws and Regulations related to environmental protection and environmental safety including, but not limited, to the following:
1. Title 29 Code of Federal Regulations Parts 1910, Occupational Safety and Health.
  2. Title 40 Code of Federal Regulations, Environmental Protections.
  3. Title 49 Code of Federal Regulations, Transportation.
  4. State Occupational Safety and Health Administration (OSHA).
- B. In order to ensure the OWNER that CONTRACTOR is complying with the intent of the regulations stated in paragraph 1.1.A, above, as they relate to the on-site use of hazardous materials, hazardous wastes and other substances similarly defined in those regulations, CONTRACTOR shall develop and maintain a CONTRACTOR'S Hazardous Materials Management Program that includes as a minimum, but is not limited to the requirements specified herein. The interests of the OWNER are that accidental spills, Site contamination, and injury of personnel on the Site are avoided. OWNER will not enforce suspected violations of the rules and regulations referenced in paragraph 1.1.A; however, the OWNER will notify CONTRACTOR of suspected violations. If in the opinion of the OWNER, CONTRACTOR fails to address the suspected violations in a timely and appropriate manner, OWNER will notify federal, state, or local regulatory agencies, report the suspected violations to them, and request that they inspect CONTRACTOR'S operations. Any fines that may be levied against OWNER for violations committed on the Site by CONTRACTOR as well as any costs to OWNER associated with cleanup of materials shall be reimbursed immediately by CONTRACTOR. All documents required by the program shall be made available to the OWNER'S environmental representative immediately, upon request.
- C. Any hazardous waste, as defined in any of the above listed regulations, generated by CONTRACTOR shall be the responsibility of CONTRACTOR. If CONTRACTOR is going to generate, or has generated, a substance that qualifies as a hazardous waste, CONTRACTOR shall obtain a USEPA identification number, listing CONTRACTOR'S name and construction site address as the generator of the hazardous waste. CONTRACTOR shall be responsible for the identification, analysis, profiling, transport and disposal of hazardous wastes generated. The identification number can be obtained from the New York State Department of Environmental Conservation.

This number shall be provided to the ENGINEER within five days after the Notice to Proceed, or before any hazardous materials are brought onto the Site.

## 1.2 HAZARDOUS MATERIALS PROGRAM REQUIREMENTS

- A. Within the regulations listed in paragraph 1.1.A, terms such as hazardous material, hazardous wastes, and similar terms have varying definitions. To dispel confusion regarding what materials fall under the Program Requirements and for the purposes of this Article, Hazardous Material is defined as “any material, whether solid, semi-solid, liquid, or gas, which, if not stored or used properly, may cause harm or injury to persons through inhalation, ingestion, absorption or injection, or which may negatively impact the environment through the use or discharge of the material on the ground, in the water (including groundwater), or to the air.”
- B. All chemicals brought onto the Site must be approved by OWNER. Prior to bringing any chemical onto the Site, CONTRACTOR shall request approval from OWNER’S Environmental Representative for each chemical CONTRACTOR proposes to bring onto the Site. At the time of request, OWNER’S Environmental Representative may request and receive from CONTRACTOR, specific information associated with each chemical. The specific information may include, but is not limited to, Material Safety Data Sheets (MSDS), manufacture, vendor, container size(s), number of containers, minimum and maximum volume of material intended to be stored on-site, as well a description to the process or procedures in which any requested chemical is to be used. OWNER, within five days from receipt of the specific chemical information, will inform CONTRACTOR as to whether the chemical has been approved for use on-site.
- C. CONTRACTOR shall, in accordance with applicable Laws and Regulations, develop a Hazardous Materials Communication Plan. At a minimum, CONTRACTOR shall maintain two notebooks on site containing: (1) a chemical inventory; and (2) current (dated within the past two years) for all materials being used on site, whether or not they are defined as a Hazardous Material in paragraph 1.2.A. One notebook shall be kept in CONTRACTOR’S on-site office and the other shall be kept in a location specified by the OWNER’S Environmental Representative. These notebooks must be kept up to date as materials are brought onto and removed from the Site. Copies of MSDS for chemicals removed from the Site shall be provided to the OWNER’S Environmental Representative.
- D. CONTRACTOR shall develop an emergency/spill response plan, for each hazardous material or class/group of materials. As a minimum, the response plan must address the following:
1. Provide a description of equipment on-site available to contain or respond to an emergency/spill of the material.
  2. Notification procedures.
  3. Response coordination procedures between CONTRACTOR, OWNER, and ENGINEER.
  4. Provide a Site Plan showing the location of stored hazardous materials and location of spill containment/response equipment.
  5. Provide a description of the hazardous material handling and spill response training provided to CONTRACTOR’S employees.
- E. CONTRACTOR shall, in accordance with applicable Laws and Regulations, properly and safely store all hazardous materials, which shall include as a minimum, the following:
1. Have a designated storage site for hazardous materials that includes secondary containment. The Site must include barriers to prevent vehicles from colliding with the storage containers and offer protection from environmental factors such as weather.



2. Provide signage in accordance with applicable Laws and Regulations, clearly identifying the hazardous materials storage site.
  3. All hazardous materials containers must bear the applicable Hazard Diamonds.
- F. CONTRACTOR shall properly label all containers of consumable materials, whether or not they are classified as Hazardous Materials under this Section. The name of CONTRACTOR or subcontractor shall be stenciled on any container containing a hazardous material and on any container over 5-gallon capacity containing a non-hazardous material. Any container must have a label clearly identifying the contents. If any such unlabeled containers are discovered on the Site, the OWNER'S environmental representative will notify CONTRACTOR, and CONTRACTOR will within one hour properly label the container or remove it from the Site. Any containers that are filled from larger containers must also be properly labeled.
- G. OWNER encourages storage of hazardous materials off-site until the materials are needed on-site.
- H. CONTRACTOR shall provide all documentation required herein available immediately upon request of OWNER'S Environmental Representative. CONTRACTOR'S Safety Representative will meet at least monthly with OWNER'S environmental representative to review CONTRACTOR'S Hazardous Materials Management Program documents, procedures, and inspect the storage site and the Site to ensure the requirements specified herein are being complied with. CONTRACTOR shall also provide OWNER'S environmental representative and the ENGINEER with copies of all permits obtained from environmental regulatory agencies.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION



## SECTION 01415

### CONFINED SPACE ENTRY PLAN

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

###### A. Scope:

1. OWNER has determined that portions of the Site may constitute confined spaces or permit-required confined spaces, as defined in this Section.
2. CONTRACTOR shall provide appropriate measures, including labor, supervision, equipment, protective devices, and incidentals, to protect the health and safety of personnel at the Site relative to confined spaces, and who may be affected by the Work in confined spaces including, without limitation: employees and agents of CONTRACTOR, Subcontractors, Suppliers, OWNER, ENGINEER, and ENGINEER's consultants, while engaged in performance of their respective duties at Site.
3. Comply with requirements of OWNER's confined space entry program, if any.

##### 1.2 TERMINOLOGY

###### A. The following words or terms are not defined but, when used in this Section, have the following meaning:

1. "Confined spaces" are areas on or about the Site as defined in 29 CFR 1910.146(b) and 29 CFR 1926.21(b)(6). Confined spaces include, but are not limited to: storage tanks, process vessels, bins, boilers and similar spaces; ventilation or exhaust ducts and stacks; manholes, underground utility vaults and chambers, sewers, pipelines, tunnels; and open-topped spaces greater than four feet deep, such as pits, tubs, vaults, and vessels.
2. "Entry permit" means the written or printed document provided by the employer of personnel entering permit-required confined space, to allow and control entry into permit-required confined space and that contains the information specified in 29 CFR 1926.146(f).
3. "Permit-required confined space" means confined space as defined in 29 CFR 1926.146(b) and that has one or more of the following characteristics:
  - a. Contains or has potential to contain a hazardous atmosphere.
  - b. Contains material that has potential for engulfing an entrant.
  - c. Has internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or floors, or by floor that slopes downward and tapers to a smaller cross-section.
  - d. Contains other recognized serious safety or health hazard.
4. "Hot work permit" means the written authorization of employer of personnel entering a confined space to perform operations, such as riveting, welding, cutting, burning, and heating, capable of providing a source of ignition.

### 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with Laws and Regulations related to protecting personnel working in or entering confined spaces, including:
  - 1. Code of Federal Regulations (CFR), Title 29, Part 1910, Occupational Safety and Health Standards.
  - 2. CFR, Title 29, Part 1926, Safety and Health Regulations for Construction.

### 1.4 SUBMITTALS

- A. Informational Submittals: If acceptable, written response for Informational Submittals required in this Section will not be returned to CONTRACTOR. Submit the following to OWNER; if submittals under this Section are furnished to ENGINEER, ENGINEER will forward all submittals under this Section to OWNER without review.
  - 1. Procedures: Site-specific confined space entry plan, submitted upon request of OWNER.
  - 2. Permits and Reports: For each time personnel enter a confined space, copies of completed permits required for confined space entry, and completed confined space data sheets, submitted upon request of OWNER.

### 1.5 CONFINED SPACE ENTRY PLAN

- A. Prepare Site-specific confined space entry plan, which shall be incorporated into CONTRACTOR's Site-specific health and safety plan. Maintain copy of the confined space entry plan at the Site for access by employees, OWNER and authorities having jurisdiction. Confined space entry plan shall include:
  - 1. Results of CONTRACTOR's Site-specific hazard assessment to identify confined spaces that are permit-required confined spaces, including list of all such spaces that will be accessed for the Work. Update the list as required throughout the Project.
  - 2. Requirements for safeguarding access to, and restricting non-permitted personnel from access to, permit-required confined spaces during the Work.
  - 3. Project-specific procedures to be followed when entering or accessing permit-required confined spaces.
  - 4. Documentation of training provided to each person that will enter, or work in conjunction with entry to, permit-required confined spaces
  - 5. Update the plan by adding copies of permits issued and records of entry to permit-required confined spaces, as required in Article 1.6 of this Section.

### 1.6 CONFINED SPACE SAFETY

- A. Personnel entering confined space shall be trained in accordance with 29 CFR 1926.21 (b)(6) and 29 CFR 1910.146(g).
- B. Comply with 29 CFR 1910.146 and requirements of authorities having jurisdiction.

- C. Recordkeeping: Using the example forms attached to this Section, or other forms required by CONTRACTOR, OWNER, or authority having jurisdiction, issue for each instance of access to permit-required confined space, completed permit(s) and complete associated data sheet. File completed permits and data sheets in the Site-specific confined space entry plan, and submit in accordance with Article 1.4 of this Section.
1. Permit for entry to permit-required confined space(s).
  2. Permit for hot work in permit-required confined space(s).
  3. Complete confined space data sheet.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.1 SUPPLEMENTS

- A. The example forms listed below, following the “End of Section” designation, are part of this Specification Section:
1. “Confined Space Data Sheet” (one page).
  2. “Confined Space Entry Permit (two pages).
  3. “Confined Space Hot Work Permit” (one page).

END OF SECTION



**CONFINED SPACE DATA SHEET**

Name of Confined Space: \_\_\_\_\_

Location of Confined Space: \_\_\_\_\_

Contractor/Subcontractor Accessing Confined Space: \_\_\_\_\_

**PRE-ENTRY SYSTEM CONTROL**

<b>Mechanical:</b> Isolate, lockout and de-energize to zero potential energy.	<b>Check</b>
<b>Engulfment:</b> Blank/block/cap/bleed off lines. Lock out gates, valves, pumps.	<input type="checkbox"/>
<b>Electrical:</b> Lockout/Tag-out	<input type="checkbox"/>
<b>Inerting:</b> Flush/Purge/Vent	<input type="checkbox"/>
<b>Special Precautions:</b> _____	

**ATMOSPHERE**

Date of Last-measured Values: \_\_\_\_\_

	Oxygen	Explosive	H <sub>2</sub> S/Toxic	CO	Date/Time Completed	Initials
<b>Permissible Range</b>	19.5%-23.5%	< 10% LFL	< 10 ppm H <sub>2</sub> S	< 35 ppm	--	--
<b>Last Measured</b>						
<b>Values This Entry</b>						

**SITE AND PERSONAL SAFETY** (check if required, list type where applicable)

**Personal Protective Equipment:**

Safety Harness . Life Lines . Hard Hats . Fall Protection . Retrieval . Eye . Ear . Face . Hand . Foot . Respiratory  (type) \_\_\_\_\_. Clothing  (type) \_\_\_\_\_  
Other:  \_\_\_\_\_

**Rescue and Emergency Equipment:**

Retrieval Equipment . Fire Extinguishers . Radios/Telephone . Ladder . Other  \_\_\_\_\_  
Equipment on Standby for Rescue Personnel  \_\_\_\_\_

**Site Safety:**

Explosion-Proof Lighting . Barriers/Shield/Barricades  (type) \_\_\_\_\_. Postings/Flagging .  
Other  \_\_\_\_\_

**List specific equipment isolated, de-energized, and locked out.**

\_\_\_\_\_



**CONFINED SPACE ENTRY PERMIT**

**ENTRY TEAM**

Contractor/Subcontractor Accessing Confined Space: \_\_\_\_\_

Facility: \_\_\_\_\_

Specific Confined Space Being Entered: \_\_\_\_\_

Purpose of Entry (describe the work to be done): \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Expected Job Duration (days/hours): \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_ Designated Attendant: \_\_\_\_\_

Authorized/Qualified Entrants: \_\_\_\_\_

---

**Entry Team Rotation:**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_ Designated Attendant: \_\_\_\_\_

Authorized/Qualified Entrants: \_\_\_\_\_

---

**Entry Team Rotation:**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_ Designated Attendant: \_\_\_\_\_

Authorized/Qualified Entrants: \_\_\_\_\_

---

**Communication Procedures:**

Entry Team: \_\_\_\_\_

Standby/Rescue Personnel: \_\_\_\_\_

---

**Sign Offs:**

Person Authorizing This Entry: \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_

Person Terminating Permit: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Distribution to: \_\_\_\_\_

*Attach to this permit a list of rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services.*



**Confined Space Entry Permit (PAGE 2 of 2)**

**PRE-ENTRY SYSTEM CONTROL**

**Check**

**Date/Initials**

**Mechanical:** Isolate, lockout and de-energize to zero potential energy.

Completed  \_\_\_\_\_

**Engulfment:** Blank/block/cap/bleed off lines. Lock out gates, valves, pumps.

Completed  \_\_\_\_\_

**Electrical:** Lockout/Tag-out

Completed  \_\_\_\_\_

**Inerting:** Flush/Purge/Vent

Completed  \_\_\_\_\_

**Special Precautions:** \_\_\_\_\_

**ATMOSPHERE** - Tested by portable atmospheric monitor with audible and visual alarms.

*No one will enter a space with an unsafe atmosphere without approval from the Division Superintendent/Assistant Superintendent.*

	Oxygen	Explosive	H <sub>2</sub> S/Toxic	CO	Date/Time Completed	Initials
<b>Permissible Range</b>	19.5%-23.5%	< 10% LFL	< 10 ppm H <sub>2</sub> S	< 35 ppm	--	--
<b>Pre-Entry</b>						
<b>Post Ventilation</b>						
<b>Continuous</b>						
<b>Continuous</b>						
<b>Continuous</b>						

**Ventilation Used (circle one):** Mechanical                      Natural

**Special Precautions: (See Confined Space Data Sheet)** \_\_\_\_\_

**SITE AND PERSONAL SAFETY** (check if required, list type where applicable)

**Personal Protective Equipment:**

Safety Harness . Life Lines . Hard Hats . Fall Protection . Retrieval . Eye . Ear . Face . Hand .

Foot . Respiratory  (type) \_\_\_\_\_. Clothing  (type) \_\_\_\_\_

Other:  \_\_\_\_\_

**Rescue and Emergency Equipment:**

Retrieval Equipment . Fire Extinguishers . Radios/Telephone . Other  \_\_\_\_\_

Equipment on Standby for Rescue Personnel  \_\_\_\_\_

**Site Safety:**

Explosion-Proof Lighting . Barriers/Shield/Barricades  (type) \_\_\_\_\_

Postings/Flagging .

Other  \_\_\_\_\_

**List specific equipment isolated, de-energized, and locked out.**

\_\_\_\_\_  
\_\_\_\_\_

**CONFINED SPACE HOT WORK PERMIT**

Contractor/Subcontractor Accessing Confined Space for Hot Work: \_\_\_\_\_

Facility: \_\_\_\_\_

Specific Confined Space Being Entered: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Expected Job Duration (days/hours): \_\_\_\_\_

Purpose of Entry (describe the work to be done): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Explain Why Work Cannot be Done Outside of the Confined Space: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Safety Equipment Required:**

Fire Extinguishers:    Yes \_\_\_\_\_      No \_\_\_\_\_      Number \_\_\_\_\_  
Type \_\_\_\_\_

Respirators:            Yes \_\_\_\_\_      No \_\_\_\_\_      Number \_\_\_\_\_  
Type \_\_\_\_\_

Other Equipment: \_\_\_\_\_

**Authorizing Supervisor:**

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

Signature \_\_\_\_\_

Date Signed \_\_\_\_\_

## SECTION 01421

### REFERENCE STANDARDS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. When a reference standard is specified, comply with requirements and recommendations stated in that standard, except when they are modified by the Contract Documents, or when applicable laws, ordinances, rules, regulations or codes establish stricter standards. The latest provisions of applicable standards shall apply to the Work, unless otherwise specified. Reference standards include, but are not necessarily limited to, the following:
1. American Association of State Highway and Transportation Officials.
  2. American Concrete Institute.
  3. American Gear Manufacturers Association.
  4. American Institute of Steel Construction.
  5. American Iron and Steel Institute.
  6. American National Standards Institute.
  7. American Society of Heating, Refrigerating and Air Conditioning Engineers.
  8. American Society of Mechanical Engineers.
  9. American Society for Testing and Materials.
  10. American Water Works Association.
  11. American Welding Society.
  12. Concrete Reinforcing Steel Institute.
  13. Factory Mutual Research Corporation.
  14. Institute of Electrical and Electronics Engineers.
  15. National Electrical Manufacturer's Association.
  16. Occupational Safety and Health Administration.
  17. National Fire Protection Association.
  18. Prestressed Concrete Institute.
  19. Underwriters' Laboratories, Inc.
  20. NSF International.

21. International Organization for Standardization (ISO).
22. SSPC: The Society for Protective Coatings.
23. American Petroleum Institute.
24. NACE International.
25. All other applicable standards listed in the Specifications, and the standards of utility service companies, where applicable.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01422

ABBREVIATIONS AND SYMBOLS

PART 1 GENERAL

1.1 ABBREVIATIONS

A. Common abbreviations which may be found in the Specifications are:

alternating current.....a-c	inch.....in.
ante meridiem.....am	inch-pound.....in.-lb
ampere.....A	inside diameter.....id
average.....avg	
biochemical oxygen demand.....BOD	kilovolt-ampere.....kva
brake horsepower.....bhp	kilowatt.....kw
British thermal unit.....Btu	kilowatt-hour.....hwhr
Centigrade.....°C	linear foot.....lin ft
Company.....Co	liter.....l
cubic inch.....cu in	
cubic foot.....cu ft	maximum.....max
cubic yard.....cu yd	mercury.....Hg
cubic feet per minute.....cfm	milligram.....mg
cubic feet per second.....cfs	milligrams per liter.....mg/l
	milliliter.....ml
decibel.....db	millimeter.....mm
degree Centigrade	million gallon.....mil
(or Celsius) (say).....20°C	million gallons per day.....mgd
degree Fahrenheit (say).....68°F	minimum.....min
diameter.....diam	
direct current.....d-c	net positive suction head.....npsh
dollars.....\$	number.....No.
	National Pipe Threads.....NPT
each.....ea	
efficiency.....eff	ounce.....oz
	outside diameter.....od
Fahrenheit.....EF	
feet.....ft	parts per million.....ppm
feet per hour.....fph	post meridiem.....pm
feet per minute.....fpm	pound.....lb
feet per second.....fps	pounds per square foot.....psf
Figure.....Fig	pounds per square inch absolute.....psia
flange.....flg	pounds per square inch gage.....psig
foot-pound.....ft-lb	
gallon.....gal	revolutions per minute.....rpm
gallons per minute.....gpm	
gallons per second.....gps	second.....sec
gram.....g	specific gravity.....sp gr
	square.....sq
Hertz.....Hz	square foot.....sq ft
hour.....hr	square inch.....sq in
horsepower.....hp	square yard.....sq yd

standard..... std	totally-enclosed- fan-cooled ..... tefc
standard cubic feet per minute ..... scfm	
	volt..... v
total dynamic head..... tdh	

1.2 ORGANIZATION ABBREVIATIONS

A. Abbreviations of organizations which may be used in these Specifications are:

ACS	American Chemical Society
ACI	American Concrete Institute
AGMA	American Gear Manufacturers Association
AIChE	American Institute of Chemical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APHA	American Public Health Association
API	American Petroleum Institute
AREA	American Railway Engineering Association
ASTM	American Society for Testing and Materials
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
AWWA	American Water Works Association
AWS	American Welding Society
CRSI	Concrete Reinforcing Steel Institute
ECWA	Erie County Water Authority
EPA	Environmental Protection Agency
FM	Factory Mutual Research Corporation
HEW	Department of Health, Education and Welfare
HUD	Department of Housing and Urban Development
IEEE	Institute of Electrical and Electronic Engineers
IRI	Industrial Risk Insurance
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International
NARUC	National Association of Railroad and Utilities Commissioners
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
PCI	Precast Concrete Institute
SMACNA	Sheet Metal and Air Conditioning National Association
SSPC	Steel Structures Painting Council
UL	Underwriters' Laboratories, Inc.
USGS	United States Geological Survey
USPHS	United States Public Health Service
WWEMA	Water and Wastewater Equipment Manufacturers Association

1.3 MISCELLANEOUS ABBREVIATIONS

ACP ..... Asbestos cement pipe  
DIP ..... Ductile iron pipe  
mj ..... Mechanical joint  
PCCP ..... Prestressed concrete cylinder pipe  
pe ..... Plain end  
PVC ..... Polyvinyl chloride  
s ..... spigot  
w/ ..... with

1.4 SYMBOLS

- A. Refer to Drawings for symbols used on the Contract Drawings.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED END OF SECTION

END OF SECTION





## SECTION 01520

### TEMPORARY CONSTRUCTION FACILITIES

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall be responsible for all temporary construction facilities required for the Work. CONTRACTOR shall make all arrangements with utility service companies for temporary services and shall pay all costs associated therewith.
- B. Temporary construction facilities include:
  - 1. Water.
  - 2. Electricity and lighting.
  - 3. Telephone.
  - 4. Internet Access.
  - 5. Heat, weather protection, and ventilation.
  - 6. Fire protection.
  - 7. Sanitary and first aid facilities.
- C. CONTRACTOR shall abide by all rules and regulations of the utility service company, OWNER or authority having jurisdiction. CONTRACTOR shall coordinate and schedule all utilization and tie-in work of existing electric, lighting and water service and shall provide OWNER and ENGINEER written notice at least 48 hours before utilizing existing electric, lighting and water service. CONTRACTOR shall carry out all operations to avoid interference with operations of the existing facilities.
- D. Sufficient temporary heat and ventilation shall be provided to assure safe working conditions and that no damage will occur to any of the Work.
- E. Provide all materials, equipment and power required for temporary electricity and lighting. Include continuous power for construction site offices. Provide all outlets with circuit breaker protection and comply with ground fault protection requirements of NEC. Provide minimum of one 300-watt lamp each 20 feet in work areas.
- F. Suitably enclosed chemical or self-contained toilets shall be provided for the use of the persons employed on the Work. Toilets shall be located near the Work site and secluded from observation insofar as possible. Toilets shall be serviced at regular intervals, kept clean and supplied throughout the course of the Work. No use of OWNER Facilities allowed.
- G. CONTRACTOR shall furnish and maintain a safe drinking water supply readily available to all workers.
- H. CONTRACTOR shall be responsible for all utility service costs if constructing a building or facility until the Work is substantially complete. Included are all fuel, power, light, heat and other utility services necessary for execution, completion, testing, and initial operation of the Work.

I. CONTRACTOR shall:

1. Comply with applicable requirements specified in the Technical Specifications.
2. Maintain and operate systems to assure continuous service.
3. Modify and extend systems as Work progress requires.
4. Completely remove temporary materials and equipment when their use is no longer required.
5. Clean and repair damage caused by temporary installations or use of temporary facilities.
6. Restore existing facilities used for temporary services to specified or to original condition.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

## SECTION 01521

### CONTRACTOR'S FIELD OFFICE

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Provide CONTRACTOR'S field office at location shown on Contract Drawings or specified by the ENGINEER or OWNER with the minimum facilities specified. Provide all required storage and work sheds.
- B. Field Office and Furnishings:
  - 1. As required by CONTRACTOR but with sufficient room for project meetings.
  - 2. Include conference table and chairs sufficient for six persons.
  - 3. Telephone service with answering machine/voicemail.
  - 4. Fax machine.
  - 5. Light and temperature control.
  - 6. Six protective helmets for visitor's use.
  - 7. Exterior identifying sign.
  - 8. Desk, four-drawer file cabinet, and separate telephone for Resident Project Representative's use.
  - 9. First aid kit.
  - 10. Other furnishings at CONTRACTOR'S option.
- C. Contractor may obtain electrical power from existing OWNER facility for Contractor and Engineer trailers. Contractor shall provide all required wiring, conduit, disconnects, and protection devices to make connections between existing power supply and trailer hook ups.
- D. Provide one set of all Contract Documents in the office for ready reference at all times by interested parties.
- E. Post the emergency phone list, necessary OSHA documents, New York State Labor Law requirements, and all permits on wall for easy inspection to all visitors.
- F. CONTRACTOR must maintain project file in field office containing copies of all approved submittals (with ENGINEER'S approval stamp), manufacturer's data for all materials used on site, and a health and safety manual as per OSHA requirements.
- G. Remove office and sheds upon final acceptance unless otherwise approved by ENGINEER.
- H. Restore area to pre-construction condition to satisfaction of ENGINEER.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01522

### ENGINEER'S FIELD OFFICE

#### PART 1 GENERAL

##### 1.1 GENERAL

- A. CONTRACTOR shall provide and maintain a field office for the ENGINEER of the project site. Provide an office at a location approved by the ENGINEER and OWNER. The field office shall be complete and fully functional at the same time that the CONTRACTOR's field office is functional at the site.
- B. Allocate three reserved parking spaces for use by the ENGINEER and OWNER in close proximity to the ENGINEER's field office. Parking area shall be paved with asphalt concrete, crushed stone, or bank run shell, and shall include a walkway of asphalt concrete, crushed stone, or material acceptable to the ENGINEER, between the parking area and the field office.

##### 1.2 SUBMITTALS

- A. Provide submittals for the following, prior to staging the field office at the Site:
  - 1. Proposed Internet service provider and type of service.
  - 2. Digital Camera: Technical data and information on the camera and accessories.

##### 1.3 MINIMUM CONSTRUCTION

- A. Requirements:
  - 1. Structurally sound foundation and superstructure.
  - 2. Completely weather tight and insulated.
  - 3. Exterior finish acceptable to ENGINEER.
  - 4. New interior finishes acceptable to ENGINEER.
  - 5. Resilient floor covering in first class condition.
  - 6. Size: 250 square feet floor area.
  - 7. Windows: 10 percent of floor area with operable sash and screens. Windows shall be furnished with locks and exterior security bars approved by the ENGINEER.
  - 8. One lockable closet for storage.
  - 9. Two means of ingress and egress, each with landing, stairs, and hand railing conforming to local building codes.

#### 1.4 OPTIONAL CONSTRUCTION

- A. Mobile office trailer in first-class condition acceptable to ENGINEER, specifically designed for use as a construction field office and conforming to the requirements of this Specification section.

#### 1.5 MINIMUM SERVICES

- A. Provide the following:

- 1. Electrical System:

- a. Provide electric service as required from local utility and pay all charges.
- b. Interior lighting of 50 foot-candles at desktop height.
- c. Exterior light at entrance.
- d. Eight 120-volt, wall-mounted, convenience electrical receptacles.

- 2. Heating, Ventilating, and Air Conditioning System:

- a. Automatic heating to maintain 65 degrees F in the cold weather. Furnish and pay for all fuel and utility costs.
- b. Automatic cooling to maintain 75 degrees F in warm weather.

- 3. Internet Access: CONTRACTOR shall obtain and pay for high-speed internet service (minimum 10 Mbps) until removal of the field office, with unlimited (untimed) Internet access. Set up system and appurtenances required and verify functionality in the field office. Internet service shall be one of the following, listed in order of preference; provide a lower type of access only when higher levels are unavailable:

- a. Mobile Broadband Wireless 4G Network: Provide the following for ENGINEER's sole use:
  - 1) Mobile broadband wireless 4G network service by Verizon or equal, with minimum speed of 10 Mbps.
  - 2) Mobile broadband wireless router. Product and Manufacturer: Linksys Wireless-G Router for Mobile Broadband, or equal.
  - 3) Router and air-card will remain CONTRACTOR's property upon removal of field office from the Site.

- 4. Water and Sewerage:

- a. Provide in the field office one private restroom including one lavatory, one toilet, medicine cabinet with mirror, soap dispenser, paper towel holder, and electric hot water tank or instantaneous hot water heater.
- b. Utility Connections, General: Conform to local plumbing and sewer codes. Protect plumbing from freezing.
- c. Sewerage: Provide piping to convey wastewater from the field office to a holding tank provided by the CONTRACTOR. Provide pumping and disposal of holding tank contents at regular intervals.

- B. Should actions of utility companies delay the complete set up of the field office, CONTRACTOR shall provide temporary electricity, heat, water supply, and sanitary facilities as required at no additional cost to the OWNER.

#### 1.6 MINIMUM FURNISHINGS AND EQUIPMENT

- A. Provide the following furnishings and equipment at each field office:
1. Desks: Two 5-drawer desks, each 60 inches by 30 inches with at least one 8.5-inch by 11-inch file drawer each.
  2. Desk Chairs: Two new or used (in good condition) five-point, high backed, swivel chairs.
  3. Other Chairs: Four side chairs with armrests, and eight folding chairs without armrests.
  4. Two new or used (in good condition) folding tables each 6.0 feet long.
  5. One plan rack to hold a minimum of eight sets of the Drawings.
  6. Two 4-drawer file cabinets.
  7. One 2-door storage cabinet.
  8. Shelving or bookcase with a total of 12 feet of shelf length at least 12 inches deep.
  9. Two waste baskets.
  10. Suitable mat or carpet at each doorway.
  11. One tack board 30 inches by 36 inches, with thumbtacks.
  12. One white board for use with dry markers, approximately 6.0 feet by 4.0 feet, with marker holding tray, installed by CONTRACTOR at a location directed by ENGINEER in the field. Provide a supply of colored markers and eraser for the white board.
  13. Fire extinguishers and associated signage, and smoke detector, per local codes. At minimum provide two wall-mounted fire extinguishers and one battery operated ceiling-mounted smoke detector.
  14. Identifying exterior sign acceptable to the ENGINEER, at least 24 inches by 36 inches in size. Text shall be 4 inches high, Arial font, unless otherwise approved by the ENGINEER.
  15. First aid kit, by Zee Medical Service Co., Item 0125, "Kit, Utility, Metal, Full (ANSI)," (800) 225-5933, [www.zeemedical.com](http://www.zeemedical.com), or equal.
  16. Outdoor thermometer mounted in the shade and located for convenient reading from inside the field office.
  17. Three protective helmets for use by ENGINEER, OWNER, and visitors.
  18. Bottled water with electric cooler dispenser for 5-gallon bottles, with cup dispenser.

19. One combination printer/fax/copier/scanner such as Model WP-4540 as supplied by Epson, or equal and a wireless router appropriate to the internet access provided, with 10-bin sort capacity, 8.5-inch by 11-inch, 8.5-inch by 14-inch, and 11-inch by 17-inch paper capacity, enlarging and reducing capabilities, stream-feed capability, bypass feeder, stapling capability, and double-sided copying capability. Copier shall provide a minimum of 40 copies per minute.

## 1.7 MAINTENANCE AND SUPPLIES

### A. CONTRACTOR's maintenance services shall include:

1. Provide toner or ink cartridges for printer/fax/copier/scanner as required.
2. Provide paper supplies for the copier, fax machine, and printer.
3. Provide colored dry markers.
4. Provide bottled water and disposable cups.
5. Provide coffee supplies, including cups, filters, coffee, sugar, sugar substitute (Equal or Sweet-N-Low), creamer, and stir-sticks.
6. Replenish contents of the first-aid kit as required.
7. Immediately repair malfunctioning, damaged, leaking, or defective field office systems and equipment.
8. Provide all computer supplies and pay for maintenance on the computer system.
9. Provide continuous maintenance and janitorial service of the field office and sanitary facilities. Clean the field office at least once per week and properly dispose of trash.
10. Provide soap, paper towels, cleansers, sanitary supplies, and janitorial implements in the ENGINEER's field office.

## 1.8 REMOVAL

- ### A. Remove the field office and furnishings when directed by the ENGINEER. Deliver specified equipment to the OWNER.

## PART 2 PRODUCTS – NOT USED

## PART 3 EXECUTION – NOT USED

END OF SECTION



SECTION 01523

EMERGENCY TELEPHONE NUMBERS

PART 1 GENERAL

1.1 EMERGENCY TELEPHONE NUMBERS

- A. The CONTRACTOR shall, at the CONTRACTOR'S expense, furnish to the ENGINEER an emergency phone number list for 24-hour contact during the construction period. Include numbers for office phones, pagers, and cellular phones, as applicable.
- B. The list should include, but not be limited to:
  - 1. CONTRACTOR'S office representative.
  - 2. CONTRACTOR'S field superintendent.
  - 3. CONTRACTOR'S foreman.
  - 4. OWNER'S main office.
  - 5. OWNER'S 24-hour emergency number.
  - 6. The Authority's main office.
  - 7. The Authority's 24-hour emergency number.
  - 8. Project Engineer.
  - 9. Project Inspector.
  - 10. Utility companies such as gas, water, sewer, oil, telephone, cable, TV, etc.,
  - 11. Other involved agencies.
- C. CONTRACTOR shall add names and numbers given to him by ENGINEER and resubmit to ENGINEER as requested.
- D. Emergency phone list must be submitted and considered acceptable to ENGINEER prior to the start of construction.
- E. Phone list must be neatly typed or word processed and submitted on 8-1/2-inch by 11-inch paper.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01550

### ACCESS ROADS AND PARKING AREAS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall provide temporary construction roads, walks, parking areas, and appurtenances required during the Project for use by CONTRACTOR, OWNER's operations, other contractors working on the Project, and emergency vehicles. Temporary roads and parking areas shall be designed and maintained by CONTRACTOR and be fully usable in all weather conditions.
- B. Use of Existing Access Roads:
  - 1. CONTRACTOR will be allowed to use OWNER'S existing roads upon obtaining OWNER's written permission.
  - 2. Prevent interference with traffic on existing roads and parking areas. At all times, keep access roads and entrances serving the Site clear and available to OWNER, OWNER's employees, emergency vehicles, and other contractors. Do not use these areas for parking or storage of materials.
  - 3. CONTRACTOR shall indemnify and hold harmless OWNER from expenses caused by CONTRACTOR's operations over existing roads and parking areas.
  - 4. Schedule deliveries to minimize use of driveways and entrances.

##### 1.2 SITE ACCESS

- A. Site Access:
  - 1. CONTRACTOR access to the Sturgeon Point Water Treatment Plant shall be via the existing main security gate on Sturgeon Point Road.

##### 1.3 TEMPORARY ROADS AND PARKING AREAS

- A. Temporary Roads and Parking in Same Areas as Permanent Pavement: Construct temporary roads and parking areas adequate to support construction loads and to withstand exposure to traffic during the Project. Locate temporary roads and parking areas in same location as permanent roads and parking areas. Extend temporary roads and parking areas, within construction limits indicated, as required for construction operations.
  - 1. Coordinate elevations of temporary roads and parking areas with permanent roads and parking areas.
  - 2. Prepare subgrade, subbase, and base for temporary roads and parking areas per appropriate Specification sections in Division 2. Where required by subgrade conditions and construction loads and traffic, provide geotextile or geogrid on compacted subgrade for subbase support and separation of subbase and subgrade materials.
  - 3. Re-condition granular subbase of temporary roads and parking, including removing and properly disposing of contaminated material, re-grading, proof rolling, compacting, and testing.

4. Delay installation of final courses of permanent bituminous pavement until road will not be subject to further heavy construction traffic. Repair damage to bituminous base course of pavement before installing permanent top courses.

#### 1.4 TRAFFIC CONTROLS

- A. Provide temporary traffic controls at intersections of temporary roads with public roads, and intersections of temporary roads with permanent access roads at the Site. Provide warning signs on permanent roads and drives and provide "STOP" signs for traffic on temporary roads at entrances onto permanent pavement. Comply with requirements of authorities having jurisdiction.

#### 1.5 CONTRACTOR PARKING

- A. CONTRACTOR employee vehicles shall be parked in the area specifically designated in the Contract Documents and as approved by OWNER.
- B. Construction vehicles and equipment shall be parked in work areas off permanent roads and parking areas, in areas of the Site designated for CONTRACTOR staging.

#### 1.6 MAINTENANCE OF ROADS

- A. General:
  1. CONTRACTOR shall maintain temporary roads and parking to continuously provide at the Site access for construction vehicles and trucks, OWNER vehicles, deliveries for OWNER, emergency vehicles, and parking areas for OWNER's personnel.
  2. Public roads shall be passable at all times unless a road closure is allowed in writing by authority having jurisdiction.
  3. When temporary roads and parking without hard surfacing become contaminated with soil and create a nuisance, remove contaminated material, and replace with clean aggregate as required.
  4. Provide snow and ice removal for temporary roads and parking areas.
- B. Clean paved roads and parking areas over which CONTRACTOR's vehicles travel. Cleaning shall be done by a mechanical sweeper a minimum of two times per week or more frequently as directed by ENGINEER. Roads to be cleaned include:
  1. Roads within limits of the Project.
  2. Permanent roads at Site from Site entrance to work areas and construction parking and staging areas.
  3. Public roads that require sweeping and cleaning due to CONTRACTOR's operations.
- C. Dust resulting from CONTRACTOR's activities shall be controlled by CONTRACTOR to prevent nuisances at Site and nearby areas. Apply water or use other methods subject to ENGINEER's acceptance that will minimize airborne dust. Do not use water when water will cause hazardous or objectionable conditions such as ice, mud, ponds, and pollution.
- D. Provide temporary, heavy-duty steel roadway plates to protect existing manholes, handholes, valve boxes, vaults, and similar buried facilities.

## 1.7 REMOVALS AND RESTORATION

### A. Removals:

1. Remove temporary roads, walks, and parking areas that are not intended for, or acceptable for, integration into permanent pavement. Return areas of temporary roads, walks, and parking to preconstruction condition unless otherwise required by the Contract Documents. Remove temporary gates, fencing, and traffic controls associated with temporary roads and parking areas.
2. Where areas of temporary roads and parking will be permanently landscaped, remove pavement, aggregate, soil, and other material that does not comply with requirements for fill or subsoil and landscaping. Remove and properly dispose of materials contaminated with oil, bitumen, and other petrochemical compounds, and other substances that might impair growth of plants and lawns.

### B. Restoration:

1. Repair or replace paving, curbs, gutters, and sidewalks affected by temporary roads and parking, and restore to required conditions, per authorities having jurisdiction.
2. Restore to preconstruction conditions existing roads, walks, and parking areas damaged by CONTRACTOR, subject to approval of owner of roads, walks, and parking areas.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01561

### SECURITY

#### PART 1 GENERAL

##### 1.1 SCOPE

- A. CONTRACTOR shall safely guard all the Work, products, equipment, and property from loss, theft, damage, and vandalism until Substantial Completion. CONTRACTOR's duty includes safely guarding OWNER's property in vicinity of the Work and other private property from injury or loss in connection with performance of the Work.
- B. Costs for security specified in this Section shall be paid by CONTRACTOR.
- C. Make no claim against OWNER for damage resulting from trespass.
- D. Provide full compensation for damage to property of OWNER and others arising from failure to provide adequate security.
- E. If fencing or barriers are breached or temporarily removed for the Work, provide and maintain temporary security fencing equal to existing in manner satisfactory to ENGINEER and OWNER.
- F. CONTRACTOR's security measures shall ensure that access to the site for CONTRACTOR's work is controlled at all times while work is in progress during the day and site access shall be locked during off hours.

##### 1.2 CONTRACTOR'S SITE ACCESS AND SECURITY PROCEDURES

- A. Conform to requirements of Section 01550, Access Roads and Parking Areas.
- B. Conform to OWNER's security procedures and access restrictions at Site throughout entire Project. CONTRACTOR, including Subcontractors and Suppliers, shall comply with the following:
  - 1. CONTRACTOR shall abide by OWNER's and New York State Department of Health's mandated daily health screening throughout the course of this Contract. Refer to the attachments at the end of this Section for all employee requirements.
  - 2. Personnel Identification: All CONTRACTOR personnel shall wear at all times on-Site a badge bearing CONTRACTOR's name, employee's name and, as applicable, employee number.
  - 3. Vehicle Identification: While on site, all CONTRACTOR vehicles, including employee vehicles, shall display vehicle identification tag clearly visible location on the dashboard. Vehicle tag shall be issued by the CONTRACTOR. Vehicle tag shall include the following information: Site name, CONTRACTOR name, contract number, vehicle license plate number and state of issue, name and employer of vehicle owner, and vehicle owner contact telephone number.
  - 4. Parking: Do not park outside of designated CONTRACTOR parking area. Prepare and maintain parking area as required. Personal vehicles are not allowed outside CONTRACTOR parking area.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

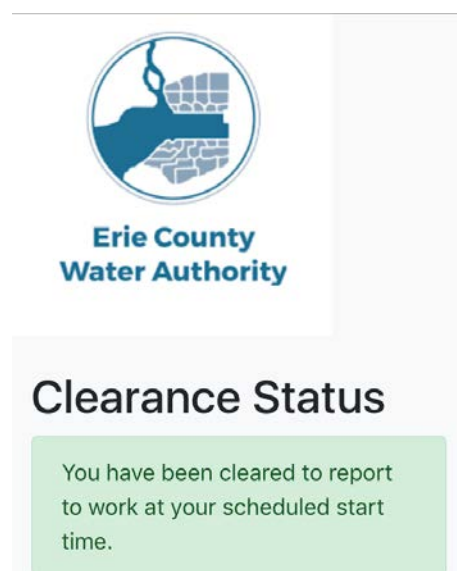
END OF SECTION



## **ATTACHMENT 1:**

### **DIRECTIONS TO COMPLETE THE ONLINE ECWA COVID QUESTIONNAIRE ONCE YOU HAVE AN ACCESS ID #**

- Your Access ID number will be emailed to you. This number will be your personal number for as long as COVID practices are in place, and you will use it every time you have to complete the online COVID Questionnaire to gain entry at the Authority.
- Once you receive your ID number and you want access to one of the Erie County Water Authority's properties within the next 12 hours of any given day, go to [www.ecwacheckin.com](http://www.ecwacheckin.com).
- Enter your Access ID number in the box under **Employee ID**.
- Enter your **Last Name**.
- Click **Submit**
- Complete the Questionnaire and click **Submit** at the bottom.
- If cleared, you will receive a clearance message similar to the one pictured below. This clearance is only good for one day, but for all our properties, all day.
  - If you want to return another day, you must complete the questionnaire again; each time you come.





## Erie County Water Authority

Service Center • 3030 Union Road • Cheektowaga, NY 14227-1097  
716-849-8459 • Fax 716-684-3937 • Email [szajdel@ecwa.org](mailto:szajdel@ecwa.org)

**Legal Department  
Security Unit**

# COVID-19 HEALTH SCREENING PORTAL

## Access Form for Consultants, Contractors and On-Site Vendors

The Erie County Water Authority (the “Authority” or “ECWA”) is operating under a [Declaration of Emergency](#) in response to the COVID-19 pandemic. Pursuant to the mandatory health guidelines issued by the New York State Department of Health, the Authority is required to perform a health screenings for all consultants, contractors, on-site vendors or other visitors requesting access to any worksite under the Authority’s control.

The Authority has an online health screening questionnaire that must be completed by consultants, contractors, on-site vendors or other visitors.

### **THE ON-LINE HEALTH SCREENING QUESTIONNAIRE MUST BE COMPLETED PRIOR TO ENTERING AN AUTHORITY WORKSITE.**

Upon completing this Access Form, the Authority will assign to you a temporary Visitor ID to gain access to the online health questionnaire. You will be required to enter the temporary ID number and your last name once you have access the portal at [www.ecwacheckin.com](http://www.ecwacheckin.com)

PLEASE PRINT OR TYPE

Last Name: \_\_\_\_\_

Full Name: \_\_\_\_\_

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

Name of Employer: \_\_\_\_\_

Contact Phone Number: \_\_\_\_\_

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

Access Period: \_\_\_\_\_

# COVID-19 HEALTH SCREENING PORTAL

## Access Form for Consultant, Contractors and On-Site Vendors

Page 2

Please check the Authority property or facilities for which you are requesting access:

- |   |   |
|---|---|
| <input type="checkbox"/> Sturgeon Point Water Treatment Plant                                   | <input type="checkbox"/> Van de Water Treatment Plant       |
| <input type="checkbox"/> Union Road Service Center  | <input type="checkbox"/> Ellicott Square Building, Room 350 |
| <input type="checkbox"/> Ball Pump Station  | <input type="checkbox"/> Windom Pump Station                |
| <input type="checkbox"/> Wehler Tank  | <input type="checkbox"/> Colvin Tank                        |
| <input type="checkbox"/> Other (including worksites in the field ) Please list such sites below |   |

---

---

---

---

---

**Effective August 10, 2020, no visitor or individual working for a consultant, contractor, or vendor may lawfully enter a property or worksite, which is owned, operated, or under the control of the Authority, without first being cleared through the Health Screening Portal. No visitor or individual will have access to the Health Screening Portal without completing this Access Form and obtaining a temporary Visitor ID.**

**WARNING:** Under the New York Penal Law, anyone who knowingly provides false information on a mandatory screening form could be charged criminally for offering a false instrument or obstructing governmental administration. Individuals could also be charged with criminal trespass if they enter a building or premises knowing they do not have authority to enter such a building or premises.

**WHEN THIS ACCESS FORM HAS BEEN COMPLETED, PLEASE EMAIL TO:**

**[szajdel@ecwa.org](mailto:szajdel@ecwa.org)**



## SECTION 01562

### PROTECTION OF WORK AND PROPERTY

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall be responsible for taking all precautions, providing all programs, and taking all actions necessary to protect the Work and all public and private property and facilities from damage as specified in the General Conditions and herein.
- B. In order to prevent damage, injury or loss, CONTRACTOR'S actions shall include, but not be limited to, the following:
  - 1. Store apparatus, materials, supplies, and equipment in an orderly, safe manner that will not unduly interfere with the progress of the Work or the Work of any other contractor or utility service company.
  - 2. Provide suitable storage facilities for all materials, which are subject to injury by exposure to weather, theft, breakage, or otherwise.
  - 3. Place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.
  - 4. Clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the Work shall present a safe, orderly, and workmanlike appearance.
  - 5. Provide barricades and guard rails around openings, for scaffolding, for temporary stairs and ramps, around excavations, elevated walkways and other hazardous areas.
- C. CONTRACTOR shall not, except after written consent from proper parties, enter or occupy privately-owned land with men, tools, materials or equipment, except on easements provided herein.
- D. CONTRACTOR shall assume full responsibility for the preservation of all public and private property or facility on or adjacent to the site. If any direct or indirect damage is done by or on account of any act, omission, neglect or misconduct in the execution of the Work by the CONTRACTOR, it shall be restored by the CONTRACTOR, at his expense, to a condition equal to that existing before the damage was done.

##### 1.2 BARRICADES AND WARNING SIGNALS

- A. Where Work is performed on or adjacent to any roadway, right-of- way, or public place, CONTRACTOR shall provide barricades, fences, lights, warning signs, danger signals, watchmen, and shall take other precautionary measures for the protection of persons or property and of the Work. Barricades shall be painted to be visible at night. From sunset to sunrise, CONTRACTOR shall furnish and maintain at least one light at each barricade. Sufficient barricades shall be erected to keep vehicles from being driven on or into Work under construction. CONTRACTOR shall furnish watchmen in sufficient numbers to protect the Work. CONTRACTOR'S responsibility for the maintenance of barricades, signs, lights, and for providing watchmen shall continue until the Project is accepted by OWNER.

### 1.3 TREE AND PLANT PROTECTION

- A. CONTRACTOR shall protect existing trees, shrubs, and plants on or adjacent to the site that are shown or designated to remain in place against unnecessary cutting, breaking or skinning of trunk, branches, bark or roots.
- B. Materials or equipment shall not be stored or parked within the drip line.
- C. Temporary fences or barricades shall be installed to protect trees and plants in areas subject to traffic.
- D. Fires shall not be permitted under or adjacent to trees and plants.
- E. Within the limits of the work, water trees and plants that are to remain, in order to maintain their health during construction operations.
- F. Cover all exposed roots with burlap that shall be kept continuously wet. Cover all exposed roots with earth as soon as possible. Protect root systems from mechanical damage and damage by erosion, flooding, run-off or noxious materials in solution.
- G. If branches or trunks are damaged, prune branches immediately and protect the cut or damaged areas with a nursery product specifically for horticultural use in a manner approved by the ENGINEER.
- H. All damaged trees and plants that die or suffer permanent injury shall be removed when ordered by the ENGINEER and replaced by a specimen of equal or better quality.
- I. Coordinate work in this section with requirements of Division 2 Technical Specifications.

### 1.4 PROTECTION OF EXISTING STRUCTURES

- A. Underground Structures:
  - 1. Underground structures are defined to include, but not be limited to, all sewer, water, gas, and other piping, and manholes, chambers, electrical conduits, tunnels and other existing subsurface work located within or adjacent to the limits of the Work.
  - 2. All underground structures known to ENGINEER except water, sewer, electric, and telephone service connections are shown. This information is shown for the assistance of CONTRACTOR in accordance with the best information available but is not guaranteed to be correct or complete.
  - 3. CONTRACTOR shall explore ahead of his trenching and excavation Work and shall uncover all obstructing underground structures sufficiently to determine their location, to prevent damage to them and to prevent interruption to the services, which such structures provide. If CONTRACTOR damages an underground structure, he shall restore it to original condition at his expense.
  - 4. Necessary changes in the location of the Work may be made by ENGINEER, to avoid unanticipated underground structures.
  - 5. If permanent relocation of an underground structure or other subsurface facility is required and is not otherwise provided for in the Contract Documents, ENGINEER will direct CONTRACTOR in writing to perform the Work, which shall be paid for under the provisions of Article 11 of the General Conditions.

- B. Surface Structures: Surface structures are defined as all existing buildings, structures, and other facilities above the ground surface. Included with such structures are their foundations or any extension below the surface. Surface structures include, but are not limited to, buildings, tanks, walls, bridges, roads, dams, channels, open drainage, piping, poles, wires, posts, signs, markers, curbs, walks and all other facilities that are visible above the ground surface.
- C. Protection of Underground and Surface Structures:
  - 1. CONTRACTOR shall sustain in their places and protect from direct or indirect injury all underground and surface structures located within or adjacent to the limits of the Work. Such sustaining and supporting shall be done carefully and as required by the party owning or controlling such structure. Before proceeding with the work of sustaining and supporting such structure, CONTRACTOR shall satisfy the ENGINEER that the methods and procedures to be used have been approved by the party owning same.
  - 2. CONTRACTOR shall assume all risks attending the presence or proximity of all underground and surface structures within or adjacent to the limits of the Work. CONTRACTOR shall be responsible for all damage and expense for direct or indirect injury caused by his Work to any structure. CONTRACTOR shall repair immediately all damage caused by his work, to the satisfaction of the owner of the damaged structure.
  - 3. Site specific underground surface structures:
    - a. Contractor shall limit equipment placed overtop of sedimentation basins throughout the duration of the project. Wheeled or tracked equipment weight limit of 4,000 pounds shall not be exceeded overtop any of the sedimentation basins.
- D. All other existing surface facilities, including but not limited to, guardrails, posts, guard cables, signs, poles, markers, and curbs, which are temporarily removed to facilitate installation of the Work, shall be replaced and restored to their original condition at CONTRACTOR'S expense.

#### 1.5 PROTECTION OF FLOORS, ROOFS, AND CEILINGS

- A. CONTRACTOR shall protect floors, roofs and ceilings during the entire construction period.
- B. Proper protective covering shall be used when moving heavy equipment, handling materials or other loads, when painting, handling mortar and grout and when cleaning walls and ceilings.
- C. Use metal pans to collect all oil and cuttings from pipe, conduit, or rod threading machines and under all metal cutting machines.
- D. Roofs and ceilings shall not be loaded without written permission of the ENGINEER.

#### 1.6 PROTECTION OF INSTALLED PRODUCTS AND LANDSCAPING

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove protection facilities when no longer needed, prior to completion of Work.
- B. Control traffic to prevent damage to equipment, materials and surfaces.

C. Provide coverings to protect equipment and materials from damage.

1. Cover projections, wall corners, and jambs, sills and soffits of openings, in areas used for traffic and for passage of products in subsequent work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01563

### TEMPORARY CONTROLS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at the construction site and adjacent areas. Remove physical evidence of temporary facilities at completion of Work.
- B. CONTRACTOR shall be aware that under no circumstances shall any debris from construction activities remain in the sedimentation basins or access areas. All visible debris shall be removed and cleaned up from sedimentation basins/channels as required by OWNER and ENGINEER.

##### 1.2 NOISE CONTROL

- A. CONTRACTOR'S vehicles and equipment shall be such as to minimize noise to the greatest degree practicable. Noise levels shall conform to the latest OSHA standards and in no case will noise levels be permitted which interfere with the work of the OWNER or others.

##### 1.3 DUST CONTROL

- A. CONTRACTOR shall be responsible for controlling objectionable dust caused by his operation of vehicles and equipment, clearing or for any reason whatever. CONTRACTOR shall apply water or use other methods subject to the ENGINEER'S approval, which will keep dust in the air to a minimum.

##### 1.4 PEST AND RODENT CONTROL

- A. Provide rodent and pest control as necessary to prevent infestation of construction or storage area.
  - 1. Employ methods and use materials, which will not adversely affect conditions at the site or on adjoining properties.

##### 1.5 WATER CONTROL

- A. Provide methods to control surface water and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties.
  - 1. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, and other construction areas; and to direct drainage to proper runoff courses so as to prevent any erosion, damage, or nuisance.
- B. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.
- C. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas and in conformance with all environmental requirements.

1.6 POLLUTION CONTROL

- A. Provide methods, means and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
  - 1. Excavate and dispose of any contaminated earth off site and replace with suitable compacted fill and topsoil.
- C. Take special measures to prevent harmful substances from entering public waters.
  - 1. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants.
  - 1. Prevent toxic concentrations of chemicals.
  - 2. Prevent harmful dispersal of pollutants into the atmosphere.
- E. All CONTRACTOR'S equipment used during construction shall conform to all current federal, state, and local laws and regulations.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01564  
EROSION CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Installation of sedimentation and erosion control barriers.
- B. Anchoring all topsoil stockpiles with straw mulch and ringings with silt fence.
- C. Protection of catch basins with silt fence rings.
- D. Inspection of all erosion measures after each rainfall and at least daily during prolonged rainfall.
- E. Repairing immediately any failed sedimentation and erosion control barrier.
- F. Removing and disposing sediment deposits in a manner that does not result in additional erosion or pollution.
- G. Removal of straw bales or silt fences after completion of construction and permanent stabilization of erosion.
- H. Removal of sedimentation barriers after completion of construction.

1.2 RELATED SECTIONS

- A. Section 02030 - DEMOLITION
- B. Section 02351 – EXCAVATION, BACKFILL, AND TRENCHING
- C. Section 02900 - RESTORATION

1.3 PERFORMANCE REQUIREMENTS

- A. Observe government policy established by United States Environmental Protection Agency (USEPA) Memorandum 78-1.
- B. Observe requirements set forth by the Federal Highway Administration Task Force 25.
- C. Conform to all erosion and sedimentation control measures of “New York State Standards and Specifications for Erosion and Sediment Control.”
- D. Temporary erosion and sediment control measures shall be installed as the first step in construction and shall not be removed until permanent cover is completely established and stabilized.

1.4 SUBMITTAL

- A. Provide shop drawing submittals as specified in Section 01331.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Hay/Straw Bales - Shall be securely tied and measure 14 inches by 18 inches by 30 inches long or greater.
- B. Silt Fence
  - 1. Propex - Silt stop, Mirafi 100X or equal meeting the physical and mechanical requirements of FHA Task Force 25 specification guide for temporary silt fence.
  - 2. Silt fence shall be constructed using fence posts and wire fence or prefabricated units in accordance with "New York State Standards and Specifications for Erosion and Sediment Control."
- C. Stakes and Fasteners
  - 1. Shall be two #3 rebar or two 2-inch by 2-inch hardwood stakes for each hay/straw bale.
  - 2. Shall be a 2-inch by 2-inch by 48-inch hardwood post for silt fences.
- D. Erosion Control Fabric - North American Green Type S75BN, NYP ECS-1B, or equal shall be used.

### 2.2 PRODUCTS

- A. Sediment Barriers - Sediment barriers shall be stone, silt fences or other approved materials that will prevent migration of silts and sediment to receiving waters.
- B. Mulch and Seeding - Mulch and seeding shall be in accordance with the appropriate site drawings.
- C. Diversion Terraces - Diversion terraces shall be installed on the uphill side of the disturbed areas to divert surface runoff away from unstabilized slopes.
- D. Interceptor Channels - Interceptor channels shall be installed across disturbed areas where the slope is running parallel to the direction of trenches.
- E. Geotextile Dewatering Bag - Geotextile dewatering bag to be used to trap sediment from dewatering activities.

## PART 3 EXECUTION

### 3.1 GENERAL REQUIREMENTS

- A. The Drawings do not show the necessary control measures to prevent erosion and sedimentation.
  - 1. It is the CONTRACTOR's responsibility to design, implement and maintain erosion and sedimentation control measures, which effectively prevent accelerated erosion and sedimentation.
- B. Earthmoving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.

- C. All erosion and sedimentation control measures shall be inspected by the contractor daily and immediately after periods of rainfall.
  - 1. Repair and/or maintenance of sedimentation and erosion control measures will be made as soon as needed.
  - 2. The contractor will be held responsible for the implementation and maintenance of all control measures on this site.
- D. Land disturbance shall be kept to a minimum.
  - 1. Restabilization will be scheduled immediately after any disturbance.
- E. Silt fences will be installed along the toe of all critical cut and fill slopes.
- F. Catch basins and drain inlets will be protected with silt fence or stone throughout the construction sequence and until all disturbed areas are stabilized.
- G. Erosion and sedimentation control measures will be installed prior to all construction activities.
- H. Sediment removal from control structures shall be the responsibility of the contractor.
  - 1. Sediment shall be disposed of in a manner which is consistent with overall intent of plan and which does not result in additional erosion.
- J. The erosion and sedimentation control measures described herein are intended as a general guide for the contractor.
  - 1. It is the contractor's responsibility to provide any and all work necessary to prevent erosion of soil from the construction site and to provide silt fences or other control measures as the need arises during construction at no additional cost to the owner.
- I. Remove all sedimentation and erosion control barriers after completion of construction and permanent stabilization of erosion.
- J. Dewatering activities shall be completed in accordance with project plans as well as any applicable environmental permit condition.

### 3.2 DIVERSION TERRACES

- A. Diversion terraces shall be used as a temporary measure installed on the uphill side of the disturbed areas to divert surface runoff away from unstabilized slopes, and the project area.
- B. Recommended minimum dimensions:
  - height - 1.5 feet
  - top width - 2 feet
  - side slopes - 2:1 or flatter
  - material - soil

### 3.3 INTERCEPTOR CHANNELS

- A. Interceptor channels shall be used across disturbed areas where the slope is running parallel to the direction of trenches.

- B. Interceptor channels reduce erosion by intercepting storm runoff and diverting it to outlets on the lower side of the disturbed area where it can be disposed of having minimum erosion impact.
- C. Recommended dimensions and materials:
  - depth - 0.5 feet
  - width - 2 to 4 feet
  - side slopes - 2:1 or flatter
  - spacing - where required
  - material - stable on-site material

### 3.4 TRENCH BARRIERS

- A. Trench barriers shall be used where the disturbed area is sloped in the direction of the pipeline, when the slope exceeds 15 percent.
- B. Trench barriers shall be earth-filled sacks or piled stone, stacked to the top of the trench after installation of the sewer and prior to backfill, if backfill is delayed.
- C. Trench barriers shall act as an erosion check by preventing the washout of the trench.
- D. Recommended dimensions and materials:
  - Height - to top of trench
  - Spacing - approximately every 150 feet
  - Material - earth-filled sacks or piled stones

### 3.5 STABILIZED CONSTRUCTION ENTRANCES

- A. Stabilized construction entrances shall be constructed in accordance with the drawings.
- B. Stone base shall be replaced or maintained as needed to prevent tracking of sediment on site.
- C. Recommended dimensions and materials
  - 1. Length – 50 feet minimum.
  - 2. Width – 12 feet minimum.
  - 3. Material – 2-inch stone or reclaimed concrete equivalent.

### 3.6 SEDIMENT BARRIERS

- A. Sediment barriers shall be used at storm drain inlets; across minor swales and ditches; and at other applications where the structure is of a temporary nature and structural strength is not required.
  - 1. Sediment barriers are temporary berms, diversions, or other barriers that are constructed to retain sediment on-site by retarding and filtering storm runoff.
- B. Recommended materials and dimensions
  - 1. Hay or straw bales (only to be used where specifically shown on plans or per engineer's request).
    - a. Bales should be bound with twine.

- b. Bales should be anchored to the ground with fence posts, wood pickets, or #3 rebar. Two anchors per bale are required.
  - c. Bales shall be installed so that runoff cannot escape freely under the bales.
  - d. Height - 1.5 feet  
width - 1.5 to 3.0 feet  
cross-sectional area required per tributary acre - 50 square feet
2. Stone:
- height - 1.5 to 2.0 feet (uniform top elevation) top
  - width - 3 to 5 feet
  - side slopes - 3:1 or flatter
  - cross-sectional area required per tributary acre - 20 square feet
  - material - coarse rock or stone
3. Brush:
- a. Brush should be bound with twine.
  - b. Brush should be anchored such that it does not move, and runoff cannot escape freely under the barrier.
  - c. Height - 1.5 to 2.0 feet  
cross-sectional area required per tributary acre - 15 square feet
4. Silt fence:
- a. Synthetic fabric 48 inches wide for fencing material.
  - b. 2-inch by 4-inch wooden stakes at 8 to 10 feet apart for posts.
  - c. Height - +30 inches above ground.

### 3.7 GEOTEXTILE DEWATERING BAG

- A. Used for dewatering activities, geotextile dewatering bag shall be placed within a stabilized upland area.
- B. Stabilized area shall consist of a stone bedding of no. 1 stones, 6 inches deep.
- C. Dewatering bag shall be removed from site following dewatering, prior to site restoration.

### 3.8 MULCH

- A. Used alone or in conjunction with other structural or vegetative erosion control measure, mulch is applied on any disturbed area, which is subject to erosion, for protection of disturbed soil or newly reseeded areas. See table 1.

3.9 EROSION CONTROL FABRIC

- A. Erosion control fabric shall be used on slopes greater than 20 percent. Prior to installation of the erosion control fabric, the underlying layer is to be graded and seeded as shown on the drawings. Erosion control fabric shall be staked into place according to manufacturer’s instructions.

3.10 VEGETATION

A. Temporary vegetation

- 1. The planting of temporary vegetative cover shall be performed on disturbed areas where the earthmoving activities will be ceased for a period of more than 14 days.
  - a. The vegetation shall provide short-term rapid cover for the control of surface runoff and erosion, until permanent vegetation can be established, or earthmoving activities can resume.
- 2. The temporary vegetative seed mix is outlined in table 2. Prior to seeding, a copy of the seed composition list including species and percent by weight shall be provided to project engineer.

B. Permanent vegetation

- 1. Planting of various permanent vegetative covers shall be performed in accordance with the site restoration. See section 02900.
  - a. Permanent plant and seed material shall be installed according to the plant material list, planting plan legend, seed mixes, and details included on the site drawings on the planting plan.

Table 1

Mulch Materials, Rates and Uses

MULCH MATERIAL	QUALITY STANDARDS	APPLICATION PER 1,000 SQ. FT.	RATES PER ACRE	DEPTHS OF APPLICATION
Straw or hay	Air-dried Free from coarse	75-100 lbs. 2-3 bales	1.5-2.5 tons 90-120 bales	Lightly cover 75 to 90% of surface
Wood chips	Green or air-dried	500-900 lbs.	10-20 tons	2" - 7"

Table 2

Temporary Seedings for Erosion Control of Construction Sites

SPECIES	PERCENT BY WEIGHT
Annual rye grass	10%
Creeping red fescue	35%
Little bluestem	35%
Canada wild rye	10%
Perennial rye grass	10%

Apply temporary erosion control seed mix at a rate of 1 lb/1,250 sf.



### 3.11 SPECIAL CONDITIONS

- A. Prohibited construction practices - prohibited construction practices include but shall not be limited to the following:
  - 1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters or at unspecified locations, even with permission of the property owner.
  - 2. Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or any surface waters.
  - 3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors or any wetlands.
  - 4. Damaging vegetation adjacent to or outside of the access road or the right-of-way.
  - 5. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface water or at unspecified locations.
  - 6. Permanent or unspecified alteration of the flow line of the stream.
  - 7. Open burning of construction project debris.
- B. Defective devices - any erosion and sediment control devices, which become damaged, clogged or otherwise non-functional shall be immediately replaced by the contractor, without additional compensation.
- C. Adjustment
  - 1. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the regulatory agencies having jurisdiction over the project, the contractor shall immediately adjust his program and/or institute additional measures so as to eliminate excessive erosion and sediment-runoff.
  - 2. If the contractor fails or refuses to comply promptly, the owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the contractor.

END OF SECTION



## SECTION 01585

### PIPELINE AND BURIED INFRASTRUCTURE PROTECTION PLAN

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. The project work is in close proximity to existing utilities of a critical nature. As such, CONTRACTOR shall provide a Pipeline and Buried Infrastructure Protection Plan (Protection Plan) submittal identifying the steps necessary to provide proper protection for these utilities. Utilities include, but are not limited to, existing waterline, electrical duct banks, pressurized gas or petroleum pipelines, sanitary trunk sewers, storm trunk sewers, underground electrical facilities, ventilation systems, buried vaults and chambers, and any other facility which requires protection from the loading associated with truck traffic and/or construction equipment.
- B. CONTRACTOR shall provide a Protection Plan submittal which conforms to the requirements herein for review by the ENGINEER and OWNER.
- C. Critical buried utilities for this project include but are not limited to the settled water conduits and process piping along the effluent end of the sedimentation basins, which require inclusion in the Protection Plan Submittal.
- D. CONTRACTOR shall include all utilities in his submittal which might be affected by his operations. This includes all utilities that he intends to either cross over or work in close proximity to.
- E. The Protection Plan Submittal is to be prepared by a licensed engineer in the State of New York and shall contain the seal and signature of the engineer. The licensed engineer shall be qualified to perform the calculations and provide recommendations.
- F. Site mobilization cannot start until this submittal is reviewed for conformity by ENGINEER and OWNER.

##### 1.2 CONTENT

- A. Signed cover letter from firm/individual summarizing the scope of work and results.
- B. Plan and details showing the requirements to provide proper pipeline protection during construction.
- C. Calculations identifying all assumptions, field data, and results of computations.
- D. Profiles, graphs, charts, reference information, or any other needed information to provide a complete calculation set.
- E. Required maintenance for protection systems, operational data, special conditions, and site restoration requirements shall be included in the submittal.

##### 1.3 FORMAT

- A. Protection Plan Submittal shall be either a letter format or bound report.
- B. Engineer's seal and signature shall be included in the submittal.

#### 1.4 SUBMITTALS

- A. Provide three copies of all requirements with original seal and signature to ENGINEER for review.
- B. ENGINEER will review the submittal for compliance with the contract documents only. Calculations presented in the report will not be verified by the ENGINEER or OWNER.
- C. Submit updates to the submittal as requested by the ENGINEER or OWNER.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01620  
EQUIPMENT-GENERAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Performance affidavits.
- C. Shop drawings.
- D. Equipment design.
- E. Spare parts.
- F. Equipment identification.
- G. Standardization of grease fittings.
- H. Anchors and supports.
- I. Shop tests.
- J. Installation of equipment.
- K. Field tests.
- L. Services of manufacturer's representative.
- M. Operation and maintenance instructions.
- N. Failure of equipment to perform.
- O. Guarantee.
- P. Schedule of Equipment Testing and Manufacturer's Services.

1.2 RELATED SECTIONS

- A. Section 01331 – Shop Drawing Procedures.
- B. Section 01640 – Transportation And Handling of Materials And Equipment.
- D. Section 01660 – Storage of Material.
- C. Section 01751 – Starting and Placing Equipment in Operation.
- E. Section 01781 – Operation and Maintenance Data.

### 1.3 PRODUCTS

- A. Products – Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for components being replaced.

### 1.4 PERFORMANCE AFFIDAVITS

- A. Provide performance affidavits for products as required in the individual technical sections.
- B. Submit performance affidavits in conformance with Section 01331 Shop Drawing Procedures.
- C. By these affidavits, each manufacturer must certify to the CONTRACTOR and the OWNER, jointly, that he has examined the Contract Documents and that the equipment, apparatus, process or system he offers to furnish will meet in every way the performance requirements set forth in the Contract Documents. Equipment design, manufacturing and assembly specifications are an integral part of the performance requirements.
- D. Shop drawings will not be reviewed prior to receipt by the ENGINEER of an acceptable performance affidavit.
- E. The performance affidavit must be signed by an officer (vice president or higher) of the basic corporation, partnership or company manufacturing the equipment, and witnessed by a notary public.
- F. The performance affidavits shall be in the following format:

Addressed to:  (CONTRACTOR)  and  (OWNER)

Reference: Contract No. \_\_\_\_\_ (Project)

Text: “(manufacturer’s name) has examined the Contract Documents and verified that the (product) meets in every way the performance requirements and design specifications set forth in Section(s)   of the Contract Documents.”

Signature: Corporate officers shall be vice president or higher (unless statement authorizing signature is attached).

Notary: Signature(s) must be notarized.

### 1.5 SHOP DRAWINGS

- A. Provide shop drawing submittals as specified in Section 01331.
- B. Shop drawing submittals shall include all descriptive data, performance characteristics, material specifications, spare parts list, drawings, piping diagrams, wiring schematics, and shall be complete and accurate to indicate item-by-item compliance with the Contract Documents.
- C. All catalog cuts, manufacturer’s specifications, drawings, and verbal descriptions shall be clearly marked to allow identification of the specific products used.
- D. If the submittal deviates from the requirements of the Specifications in any way, it shall be clearly marked in the submittal with the justifying reason stated for evaluation by the ENGINEER.

- E. Electrical and control submittals shall include a verbal description of the functions, metering equipment, alarm points, alarm sequences, and any other specific features provided.
- F. All electrical equipment submittals shall be in accordance with Division 16, Electrical Specifications.

#### 1.6 EQUIPMENT DESIGN

- A. Equipment and appurtenances shall be designed in conformity with ANSI, ASME, IEEE, NEMA and other generally accepted applicable standards.
- B. Equipment and appurtenances shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, all conditions of operation, or as required by Specifications.
- C. All bearings and moving parts shall be adequately protected by bushings or other approved means against wear, and provision shall be made for adequate lubrication by readily accessible devices.
- D. Details shall be designed for appearance as well as utility. Protruding members, joints, corners, gear covers, etc., shall be finished in appearance. All exposed welds on machinery shall be ground smooth and the corners of structural shapes shall be rounded or chamfered.
- E. Machinery parts shall conform within allowable tolerances to the dimensions shown on the working drawings. The corresponding parts of identical machines shall be made interchangeable.
- F. All machinery and equipment shall be safeguarded in accordance with the safety codes of the ANSI and OSHA and the State Industrial Code. All rotating shafts, couplings or other moving pieces of equipment shall be provided with suitable protective guards of sheet metal or wire mesh neatly and rigidly supported. Guards shall be removable as necessary to provide access for repairs.
- G. Details promoting maintenance, ease of replacing parts, and lubrication shall be a prime consideration in design.
- H. Products shall be designed for corrosion resistance and shall not be constructed of materials, which may prohibit ease of maintenance due to corrosion. All fasteners on areas requiring access for maintenance and lubrication shall be Type 316 stainless steel unless otherwise specified. Zinc or cadmium plated fasteners for these areas shall not be used.

#### 1.7 SPARE PARTS

- A. Provide spare parts as required by individual Specification Sections and Section 01783.
- B. Provide spare parts that are identical and interchangeable with original parts.
- C. For each part (or group of small parts), provide a tag, which shall carry the following information: Identity of the equipment the part is for; identity or name of the part itself; date and manufacturer's name and identification number of the part.

#### 1.8 EQUIPMENT IDENTIFICATION

- A. Each piece of equipment shall be provided with a substantial brass or stainless steel nameplate, securely fastened in a conspicuous place and clearly inscribed with the manufacturer's name, year of manufacture, serial number and principal rating data.

- B. Each piece of equipment shall be provided with an engraved plastic nameplate clearly indicating equipment name and designation. Plate shall be black with white lettering. Lettering shall be minimum 3/4-inch high. CONTRACTOR shall adhesive mount or hang plaque with bronze chains.

#### 1.9 STANDARDIZATION OF GREASE FITTINGS

- A. Provide grease fittings of the hydraulic type, Alemite #1600 Series or Lincoln.
- B. Coordinate grease fittings on all mechanical equipment to be compatible with a single type of grease gun.

#### 1.10 ANCHORS AND SUPPORTS

- A. Obtain and install all necessary guides, bearing plates, anchor and attachment bolts, working drawings for installation, templates and all other appurtenances necessary for the installation of the equipment specified. Subcontractors furnishing equipment shall also furnish anchors and templates to the CONTRACTOR.
- B. Anchor bolts shall be of size and strength suitable for purpose intended.
- C. Pipe sleeves or other means of adjusting anchor bolts shall be provided where indicated or needed. Equipment shall be leveled by first using sitting nuts on the anchor bolts and then filling the space between the equipment base and concrete pedestal with grout. Where equipment bases (i.e., pumps) are installed with grout holes, subsequent to field testing, those bases shall be totally filled with grout.
- D. Provide grout as required by the Contract Documents.
- E. Provide concrete equipment pads or housekeeping pads for all mechanical, heating and ventilating, plumbing and electrical equipment. Coordinate pad placement to confirm dimensions, location and anchor requirements.

#### 1.11 SHOP TESTS

- A. Arrange shop tests of the equipment indicated in the Schedule of Equipment Testing and Manufacturer's Services and individual equipment specification sections.
- B. Arrange for the ENGINEER to witness performance tests in the manufacturer's shop, if required by the individual specification section.
- C. Pump shop tests shall be conducted and reported in accordance with the Standards established by the Hydraulic Institute. Pump tolerances shall be within limits acceptable by these standards.
- D. Demonstrate by the tests that the equipment characteristics, including any specified pressure, duty, capacity, rating, efficiency, performance, function or other special requirements, comply fully with the requirements of the Contract Documents and that it will operate in the manner specified.
- E. Submit certified copies of the manufacturer's test data and interpreted results as required by Section 01331 Shop Drawing Procedures.

#### 1.12 INSTALLATION OF EQUIPMENT

- A. Install all equipment strictly in accordance with recommendations of the manufacturer.
- B. Submit all installation instructions as required by Sections 01331 and 01730.



- C. Install slide gates in accordance with Division 11.
- D. Install equipment on the foundations as specified in this section and at the locations and elevations shown on the Contract Drawings.
- E. Install any additional wiring and conduit systems required for complete operational systems.

#### 1.13 FIELD TESTS

- A. Perform field tests as specified in this Section and in the individual specification sections.
- B. Preliminary Field Tests – Furnish all labor, materials and instruments to perform all preliminary field tests of equipment. Make all changes, adjustments and replacements required to comply with the requirements of the Contract Documents. Demonstrate that:
  - 1. Equipment is installed in the location and orientation specified in Project Manual or shown on the Drawings.
  - 2. Equipment is prepared for operation in strict accordance with the Contract Documents and with manufacturer’s recommendations.
- C. Final Acceptance Tests – Perform final tests prior to startup. Provide services of the manufacturer’s representative if required by the Schedule of Equipment Testing and Manufacturer’s Services. Furnish labor, fuel, lubricants, energy, water and all other materials, equipment and instruments necessary for all acceptance tests. Schedule final acceptance test to consist of the following checks as a minimum:
  - 1. That the equipment is properly lubricated, adjusted and aligned.
  - 2. That the equipment meets the specified performance requirements in every detail and performs its intended function without any unusual vibration, noise or other signs of possible malfunction.
  - 3. Perform motor field tests as specified.
  - 4. Where equipment is capable of operation in more than one mode or equipment performs more than one function, each operational mode or function shall be checked for proper performance.
  - 5. All controls, both mechanical and electrical, shall be checked individually for proper connection and operation.

#### 1.14 SERVICE OF MANUFACTURER’S REPRESENTATIVE

- A. Arrange for the equipment manufacturer to furnish the services of a qualified representative. The time period for the supervision and instructions is stated in the Schedule of Equipment Testing and Manufacturer’s Services. Where no specific duration of visit is listed, the length of time shall be such to allow the equipment representative ample time to follow the requirements outlined in this Section and the individual technical section covering the particular equipment item.
- B. The CONTRACTOR shall be responsible for any additional time required for the manufacturer’s representative to resolve equipment installation and/or operation problems due to a lack of coordination between the supplied equipment and the Contract Documents such as, but not limited to, dimensions, electrical problems or performance.

- C. Arrange for the equipment representative to visit the plant on occasions after initial start-up and during the first year of operation if required by the individual Specification Sections. The purpose of these visits shall be to review equipment operation, assist the operators in correcting operational problems and basic inspection of the equipment.
- D. Installation Service - Certify installation, recommend or make adjustments and supervise field testing of equipment.
- E. Instructions - Instruct the OWNER's operating personnel in operation and maintenance of equipment. A written report by the representative covering instructions given shall be sent to the OWNER, ENGINEER and CONTRACTOR.
  - 1. General CONTRACTOR shall prepare and maintain a log of all training provided to OWNER. The log shall include date, time, duration, list of attendees, copy of agenda, and summary of which equipment the training was for. Log shall be organized similar to the schedule herein. Log shall be submitted prior to final payment request.
- F. Certification of Equipment Compliance - Submit written certification jointly to the OWNER, the ENGINEER and the CONTRACTOR that the equipment supplied or manufactured by their organization has been installed and tested to their satisfaction, and that all final adjustments thereto have been made. Certification shall include date of final acceptance field test, as well as a listing of all persons present during tests.

#### 1.15 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Provide operation and maintenance instructions as specified in Section 01781.

#### 1.16 FAILURE OF EQUIPMENT TO PERFORM

- A. Promptly correct by replacement or otherwise any defects in the equipment, or failure to meet the guarantees or performance requirements.
- B. If CONTRACTOR fails to make the corrections, or if the improved equipment again fails to meet the guarantees or specified requirements, the OWNER, notwithstanding his having made partial payment for work and materials which have entered into the manufacture of said equipment, may reject said equipment and order the CONTRACTOR to remove it from the premises at the CONTRACTOR's expense.

#### 1.17 GUARANTEE

- A. Provide equipment guarantees in accordance with Articles 6 and 13 of the General Conditions and Article 13.07 of the Supplementary Conditions. Guarantee requirements may be added to or modified in the individual Specification Sections.
- B. By supplying a product under the contract, the manufacturer and CONTRACTOR jointly agree that all manufacturer's warranties, expressed or implied, pass through the CONTRACTOR to OWNER. This warranty obligation starts on the date of substantial completion and survives any inspection by, delivery to, acceptance by or payment by the OWNER or CONTRACTOR for the goods furnished by the manufacturer. Further, this warrants that the equipment designed, manufactured and/or used meets all applicable federal, state and local laws, rules and regulations, including applicable OSHA standards. This requirement does not change or limit the requirements for performance affidavits described in Article 1.4.

1.18 EQUIPMENT SCHEDULE

- A. The attached schedule outlines the various items of equipment specified in other Sections of the specifications.

LOCATION	EQUIPMENT	SPECIFICATION SECTION
Sturgeon Point Water Treatment Plant	Sedimentation Basin Slide Gates	11280-Fabricated Slide Gates
Sturgeon Point Water Treatment Plant	Sedimentation Basin Slide Gate Electric Actuators	15115-Electric Actuators

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01630

### SUBSTITUTIONS

#### PART 1 GENERAL

##### 1.1 PRODUCTS LIST

- A. Within thirty (30) days after execution of Agreement, submit electronic PDF of complete list of products proposed for the Work tabulated by Sections and with complete data and identification.

##### 1.2 SUBSTITUTIONS

- A. Within thirty (30) days after execution of Agreement, ENGINEER will consider formal request from CONTRACTOR for substitution of products or construction methods. Any item substituted as an "or equal" shall be considered a substitution.

- B. Submit electronic PDF of request for substitution. Include in request the following:

1. Complete data substantiating compliance of proposed substitution with Contract Documents.
2. For products:
  - a. Product identification, including the name and address of the manufacturer.
  - b. Literature of the manufacturer complete with product description, performance and test data, and reference standards.
  - c. Samples.
  - d. Name and address of similar projects on which product was used, and date of installation.
3. For construction methods:
  - a. Detailed description of proposed method.
  - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Data relating to changes in construction schedule.
6. Relation to separate contracts, if any.
7. Accurate cost data on proposed substitution in comparison with product or method specified.

- C. In making request for substitution the CONTRACTOR represents:

1. CONTRACTOR has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
2. CONTRACTOR will provide the same or better guarantee for substitution as for product or method specified.

3. CONTRACTOR will coordinate installation of accepted substitution into Work, making such changes as required in all respects.
  4. CONTRACTOR waives all claims for additional costs related to substitution that consequently become apparent.
  5. Cost data is complete and includes all related costs under this Contract.
- D. Substitutions will not be accepted if:
1. They are only shown or implied on Shop Drawings.
  2. Acceptance will require substantial revision of Contract Documents.
  3. Substitutions would change design concepts or Specifications.
  4. Substitutions would delay completion of the Work.
  5. Substitutions involve items for which a manufacturer was declared at time of bidding.
  6. Substitution is not compatible with existing SCADA equipment.
- E. ENGINEER will determine whether substitute brands or products are equal to those specified in the Contract Documents.
- F. If the ENGINEER determines that a substitute is not equal to that named in the Specification, the CONTRACTOR shall furnish one of the brands or products specified, at no additional cost to the OWNER.
- G. Engineering Costs:
1. CONTRACTOR shall reimburse the OWNER for actual evaluation costs of ENGINEER and his consultants if:
    - a. Proposed substitute does not meet requirements of the Drawings and Specifications and is rejected.
    - b. Acceptance of proposed substitute requires changes to the Work.
  2. CONTRACTOR shall reimburse OWNER for all associated engineering costs, including redesign, additional Shop Drawing reviews, investigations, consultant fees, and revision of the Contract Documents required because of the substitution.
  3. Costs of ENGINEER shall be the sum of the following:
    - a. Salary costs.
    - b. Overhead costs.
    - c. Out-of-pocket costs.
    - d. Consultant fees.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION





## SECTION 01640

### TRANSPORTATION AND HANDLING OF MATERIALS AND EQUIPMENT

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall make all arrangements for transportation, delivery and handling of equipment and materials required for prosecution and completion of the Work. Included in CONTRACTOR'S work shall be acceptance of consignment and coordination of equipment deliveries for equipment purchased by OWNER.
- B. Shipments of materials to CONTRACTOR or Subcontractors shall be delivered to the site only during regular working hours. Shipments shall be addressed and consigned to the CONTRACTOR giving name of Project, street number and city. Shipments shall not be delivered to OWNER except where otherwise directed.
- C. If necessary to move stored materials and equipment during construction, CONTRACTOR shall move or cause to be moved materials and equipment without any additional compensation.

##### 1.2 DELIVERY

- A. Arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with Work and conditions at site and to accommodate the following:
  - 1. Work of other contractors, or OWNER.
  - 2. Limitations of storage space.
  - 3. Availability of equipment and personnel for handling products.
  - 4. OWNER'S use of premises.
  - 5. Work under other construction projects on OWNER'S site.
- C. Do not have products delivered to project site until related Shop Drawings have been approved by the ENGINEER.
- D. Do not have products delivered to site until required storage facilities have been provided.
- E. Have products delivered to site in manufacturer's original, unopened, labeled containers. Keep ENGINEER informed of delivery of all equipment to be incorporated in the Work.
- F. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.
- G. Immediately on delivery, inspect shipment to assure:
  - 1. Product complies with requirements of Contract Documents and reviewed submittals.
  - 2. Quantities are correct.

3. Containers and packages are intact, labels are legible.
4. Products are properly protected and undamaged.

### 1.3 PRODUCT HANDLING

- A. Provide equipment and personnel necessary to handle products by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or overstressing.
- D. Lift heavy components only at designated lifting points.
- E. Materials and equipment shall at all times be handled in a safe manner and as recommended by manufacturer or supplier so that no damage will occur to them. Do not drop, roll or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

### PART 2 PRODUCTS – NOT USED

### PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01650  
STARTING OF SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work.
- B. Section 01700 – Contract Closeout.

1.3 SUBMITTALS

- A. CONTRACTOR shall submit a System Startup Plan for each system for the OWNER/ENGINEER'S approval. The Plan shall include at a minimum equipment involved, required personnel involvement, schedule, and proposed startup methodology.

1.4 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment systems with the OWNER and all other CONTRACTORS involved in the installation and successful completion of the system.
- B. Notify the ENGINEER and OWNER a minimum of seven (7) days prior to start-up of each item.
- C. Verify field testing of equipment within the system is complete.
- D. Execute startup of systems under supervision of applicable personnel (either the personnel of the CONTRACTOR or the personnel of the manufacturer as specified in the individual technical Specification Sections) in strict accordance with the instructions of the manufacturer.
- E. Systems at a minimum shall be cycled through a complete sequence from start to finish, all safety interlocks and controls shall be verified, system capacity and volumes shall be confirmed.
- F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to the personnel of the OWNER a minimum of four (4) weeks prior to date of Substantial Completion.
- B. Demonstrate new project equipment and instruct the personnel of the OWNER in a classroom type environment by a qualified representative of the manufacturer who is knowledgeable about the project.

- C. For equipment or systems requiring seasonal operation, perform demonstration for other season prior to the beginning of the season when the equipment will be utilized.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with the personnel of the OWNER.
- E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at the agreed upon time, at a designated location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01660

### STORAGE OF MATERIAL

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Store and protect materials in accordance with manufacturer's recommendations and requirements of Specifications.
- B. CONTRACTOR shall make all arrangements and provisions necessary for the storage of materials and equipment. All excavated materials, construction equipment, and materials and equipment to be incorporated into the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment shall be kept neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner to provide easy access for inspection.
- C. CONTRACTOR shall be consigned responsibility for scheduling, coordination of delivery and manufacturer's representatives' services, on-site storage, and handling of equipment items purchased directly by OWNER for this project. CONTRACTOR shall make provisions for temporary storage, if required, and all handling of said equipment items.
- D. Areas available on the construction site for storage of material and equipment shall be as shown or approved by the ENGINEER.
- E. Materials and equipment which are to become the property of the OWNER shall be stored to facilitate their inspection and insure preservation of the quality and fitness of the Work, including proper protection against damage by freezing and moisture. They shall be placed inside storage areas unless otherwise acceptable to OWNER.
- F. Lawns, grass plots or other private property shall not be used for storage purposes without written permission of the property owner or other person in possession or control of such premises.
- G. CONTRACTOR shall be fully responsible for loss or damage to stored materials and equipment.
- H. Do not open manufacturer's containers until time of installation unless recommended by the manufacturer or otherwise specified.
- I. Do not store products in the structures being constructed unless approved in writing by the ENGINEER.

##### 1.2 UNCOVERED STORAGE

- A. The following types of materials may be stored out-of-doors without cover:
  - 1. Reinforcing steel.
  - 2. Precast concrete items.
  - 3. Masonry block and brick.

4. Castings.
5. Manholes and exterior buried pipe.

B. Store the above materials on wood blocking so there is no contact with the ground.

### 1.3 COVERED STORAGE

A. The following types of materials may be stored out-of-doors if covered with material impervious to water:

1. Rough lumber.

2. Piping.

B. Tie down covers with rope and slope to prevent accumulation of water on covers.

C. Store materials on wood blocking.

### 1.4 FULLY PROTECTED STORAGE

A. Store all products not named above in buildings or trailers, which have a concrete or wooden floor, a roof, and fully closed walls on all sides.

B. Provide heated storage space for materials, which would be damaged by freezing.

C. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.

D. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

### 1.5 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.

2. Required environmental conditions are maintained on continuing basis.

3. Products exposed to elements are not adversely affected.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01700  
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Project record documents.
- D. Warranties.
- E. Spare parts and maintenance materials.

1.2 RELATED SECTIONS

- A. Section 01520 – TEMPORARY CONSTRUCTION FACILITIES.
- B. Section 01620 – EQUIPMENT GENERAL

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for the review of the ENGINEER.
- B. Provide submittals to the ENGINEER that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final Project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains, and foreign substances, polish transparent and glossy surfaces, and vacuum any carpeted or soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Clean filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean Site: sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the Site.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain on Site, one set of the following record documents; record actual revisions to the Work:
  - 1. Contract Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by OWNER.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured depths of foundations in relation to finish main floor datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 4. Field changes of dimensions and detail.
  - 5. Details not on the original Contract Drawings.
- G. Submit documents to the ENGINEER with claim for final Application for Payment.



1.06 WARRANTIES

- A. Provide duplicate notarized copies.
- B. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in binder with a durable plastic cover.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance, and extra materials in quantities specified in individual specification sections.
- B. Deliver to the Project Site unless otherwise specified elsewhere; obtain receipt prior to final payment.
- C. Provide O&M Manuals as specified.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION



## SECTION 01723

### CUTTING AND PATCHING

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall perform cutting and coring, and rough and finish patching of holes and openings in existing construction.
- B. Cutting, coring, rough patching, and finish patching shall be by CONTRACTOR.
- C. Provide cutting, coring, fitting and patching, including attendant excavation and backfill, required to complete the Work, and to:
  - 1. Remove and replace defective Work.
  - 2. Remove samples of installed Work as specified or required for testing.
  - 3. Remove construction required to provide for specified alterations or addition to existing work.
  - 4. Uncover Work for ENGINEER's observation of covered Work or observation by authorities having jurisdiction.
  - 5. Connect to completed Work not performed in proper sequence.
  - 6. Remove or relocate existing utilities and pipes that obstruct the Work in locations where connections must be made.
  - 7. Make connections or alterations to existing or new facilities.
- D. Structural Elements: Do not cut or patch structural elements in manner that would change structural element's load-carrying capacity as load deflection ratio.
- E. Operating Elements: Do not cut or patch operating elements in manner that would reduce their capacity to perform as intended. Do not cut or patch operating elements or related components in manner that would increase maintenance requirements or decrease operational life or safety.

##### 1.2 SUBMITTALS

- A. Action Submittals: Submit the following:
  - 1. Cutting and Patching Request:
    - a. Submit written request to ENGINEER well in advance of executing cutting or alteration affecting:
      - 1) Design function or intent of Project.
      - 2) Work of OWNER.
      - 3) Structural value or integrity of an element of the Project.
      - 4) Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.

- 5) Efficiency, operational life, maintenance, or safety of operational elements.
  - 6) Visual qualities of sight-exposed elements.
- b. Request shall include:
- 1) Identification of Project and contract name and number.
  - 2) Description of affected Work of CONTRACTOR and work of others.
  - 3) Necessity for cutting.
  - 4) Effect on work of OWNER or other contractors, or on structural or weatherproof integrity of Project.
  - 5) Description of proposed Work to include scope of cutting and patching; trades who will be executing the Work; products proposed to be used; extent of refinishing; schedule of operations; alternatives to cutting and patching, if any.
  - 6) Designation of party responsible for cost of cutting and patching, when applicable.
  - 7) Written permission of other contractors whose work will be affected.
2. Should conditions of Work, or schedule, indicate a change of materials or methods, submit written recommendation to ENGINEER including:
- a. Conditions indicating change.
  - b. Recommendations for alternative materials or methods.
  - c. Submittals as required for substitutions.
- B. Informational Submittals: Submit the following:
1. Submit written notice designating time Work will be uncovered, to provide for observation. Do not begin cutting or patching operations until accepted by ENGINEER.
  2. X-ray Investigations:
    - a. Proposed method of investigation.
    - b. Report of X-ray evaluation of floors and walls to be cut or core-drilled.
- C. Conform to submittal requirements in Specifications for application and installation of materials used for patching.

### 1.3 WARRANTY

- A. Replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials in manner that does not void required or existing warranties.

## PART 2 PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Use materials in conformance with the Contract Documents.
- B. If not shown or indicated in the Contract Documents, use materials and products that are identical to existing materials and products affected by cutting and patching Work.

- C. For exposed surfaces, use materials that visually match existing adjacent surfaces to fullest extent possible. If identical materials are unavailable or cannot be used, use materials whose installed performance will equal or surpass that of existing materials.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Perform cutting and coring in such manner that limits extent of patching.
- B. Core drill holes are not to be cut through concrete and masonry walls, slabs, or arches, unless otherwise accepted by ENGINEER in writing.

### 3.2 INSPECTION

- A. Examine surfaces to be cut or patched and conditions under which cutting or patching are to be performed before starting cutting or patching Work.
- B. Report unsatisfactory or questionable conditions to ENGINEER in writing. Do not proceed with the Work until unsatisfactory conditions are corrected.

### 3.3 PREPARATION

- A. Provide temporary support as required to maintain structural integrity of Project, to protect adjacent Work from damage during cutting, and to support the Work to be cut.
- B. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that will be exposed during cutting and patching operations.
  - 1. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
  - 2. Do not cut existing pipe, conduit, ductwork, or other utilities serving facilities scheduled to be removed or relocated until provisions have been made to bypass them.

### 3.4 CORING

- A. Perform coring with non-impact rotary tool using diamond core drills. Size holes for pipe, conduit, sleeves, equipment or mechanical seals, as required.
- B. Protect existing equipment, utilities and adjacent areas from water and other damage covered by drilling operations.
- C. Vacuum or otherwise remove slurry or tailings from the Work area following drilling.
- D. Do not core-drill through electrical conduit or other utility lines embedded in walls or floors without approval of ENGINEER. To extent possible, avoid cutting reinforcing steel in floors and walls. After core-drilling, coat exposed concrete and steel with Sika 62 or equal before installing the utility or equipment through the penetration.

### 3.5 CUTTING

- A. Cut existing construction using methods least likely to damage elements retained or adjoining construction, and that will provide proper surfaces to receive installation or repair.
  - 1. In general, use hand or small power tools designed for sawing or grinding, not hammering and chopping.
  - 2. Cut through concrete and masonry using concrete wall saw with diamond saw blades.
    - a. Provide for control, on both sides of walls, of slurry generated by sawing.
- B. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Provide temporary covering over openings where not in use.
- C. To avoid marring existing finished surfaces, cut or drill from exposed or finished side into concealed side.
- D. Provide adequate bracing of area to be cut prior to start of cutting.
- E. Provide equipment of adequate size to remove cut panel.

### 3.6 PATCHING

- A. Patch construction by filling, repairing, refinishing, closing-up and similar operations following performance of other Work. Patch with durable seams that are as inconspicuous as possible. Provide materials and comply with installation requirements specified, in the Specifications.
- B. Where feasible, test patched areas to demonstrate integrity of installation.
- C. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- D. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in manner that eliminates evidence of patching and refinishing.
  - 1. For continuous surfaces, refinish to nearest intersection.
  - 2. For an assembly, refinish entire unit.
- E. Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

### 3.7 CLEANING

- A. Clean areas and spaces where cutting, coring and patching are performed. Clean piping, conduit, or similar constructions before applying paint or other finishing materials. Restore damaged coverings of pipe and other utilities to original condition.

END OF SECTION

## SECTION 01730

### INSTALLATION

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. This Section describes general requirements for installing products. Additional product installation requirements are included in the Specification Sections.

##### 1.2 INSTALLATION QUALITY ASSURANCE AND QUALITY CONTROL

- A. Provide appropriate quality assurance for installing products, and provide quality control over Suppliers, products, services, Site conditions, and workmanship to provide Work of specified quality.
- B. Install products in accordance with approved Shop Drawings, the Contract Documents, and Supplier's installation data. If Supplier's data conflict with the Contract Documents, obtain clarification from ENGINEER before proceeding.
  - 1. Supplier's installation data includes Supplier's written instructions; drawings; illustrative, wiring and schematic diagrams; diagrams identifying external connections, terminal block numbers and internal wiring; and all other such information pertaining to installation of products and equipment that is not furnished with Shop Drawings. Included are all Supplier's printed installation instructions, including those that may be attached to equipment.
- C. CONTRACTOR's installers shall be experienced in the types of Work required.

##### 1.3 SERVICES OF SUPPLIER'S REPRESENTATIVE

- A. When specified, provide competent, qualified representatives of product Supplier to provide services specified, including supervising installation, adjusting, and testing of products.

#### PART 2 PRODUCTS

##### 2.1 EQUIPMENT DRIVE GUARDS

- A. Equipment Drive Guards:
  - 1. Unless otherwise shown or specified, provide all-metal guards conforming to 29 CFR 1910, Subpart O, with equipment driven by open shafts, belts, chains, pulleys, sheaves, or gears. Guards shall enclose drive and driven mechanism.
  - 2. If material of guards is not otherwise specified, guards shall be galvanized sheet steel, galvanized woven wire, or expanded metal set in a frame of galvanized steel members, as appropriate.
  - 3. Secure guards in position by steel braces or straps, securely fastened to frame of equipment, floor, or wall as required.
  - 4. Fastenings shall permit removal of guards for servicing equipment.

## PART 3 EXECUTION

### 3.1 INSTALLATION

#### A. General:

1. Prior to installing products, complete preparation of surfaces on which products are to be installed. Prior to installing products on new concrete, concrete shall achieve sufficient compressive strength to support the products.
2. Maintain Work area in a broom-clean condition during installation of products.
3. Use proper tools to assemble products. Do not deform or mar surface of shafts, nuts, and other parts.
4. Do not support rigging from building or structure without written permission of ENGINEER. CONTRACTOR is responsible for and shall repair all damage to building or structure resulting from his operations.
5. During installation, maintain products in neutral position and do not exert undue stress on products.
6. Tighten connections requiring gaskets evenly all around to ensure uniform stress over entire gasket.
7. Use only an oil bath heater to expand couplings, gears, and other mechanical components to be expanded for installation. Do not force or drive couplings, gears, and other mechanical components onto equipment shafts, or subject them to open flame or torch.
8. Do not alter or repair products and do not burn or weld products unless specified in the Contract Documents or allowed by ENGINEER.
9. Provide plugs in lubrication holes to prevent entry of foreign material.

#### B. Setting and Erection:

1. Wedging is not allowed. Use minimum number of shims required in leveling equipment being installed. Shims shall be Type 304L stainless steel, clean and free of slag. Provide shims, filling pieces, keys, packing, red or white lead grout, and other products necessary to properly align, level, and secure apparatus in place. Install products plum and level, unless otherwise specified, and demonstrate plumbness and level to ENGINEER. Bring parts to proper bearing after installation and erection.
2. Using experienced millwrights, carefully set and align equipment on foundations, after equipment soleplates or baseplates, as applicable, have been shimmed to true alignment at anchorages. Set anchorages in place and tighten nuts against shims. Check bedplates or wing feet of equipment after securing to foundations and, after confirming alignments, grout soleplates or baseplates, as applicable, in place.
3. Anchorages:
  - a. Provide anchorage setting drawings in time to coordinate with fabrication of products and the Work at the Site.
  - b. Anchorages shall be as defined in the Contract Drawings and at a minimum as required by manufacturer. Requests for approval of alternate anchorage methods shall be per the General Conditions and Section 01630, Substitutions.
4. Ream misaligned holes. Do not "force" bolts or keys.



5. Where applicable, properly align equipment with associated piping and utility connections, without exerting undue stress on connecting piping and utilities.
- C. Alignment and Leveling:
1. Verify that all shafts, couplings, and sheaves are properly aligned and adjust to required tolerances.
  2. Align couplings while equipment is free from external loads.
  3. Check angular and parallel alignment and record actual alignment and submit to ENGINEER. Alignment shall be within tolerances specified in Contract Documents and as recommended by Supplier of the product.
  4. Use laser indicators or dial indicators for checking angular and parallel alignment. Using dial indicators requires that, during rotation of half couplings in performance of test, dial indicator shall be maintained in same relative position, and dial indicator readings taken at same place on circumference of coupling.
- D. Threaded Connections: Apply a molybdenum disulfide, anti-seize compound to threads in mechanical connections such as bolts, studs, cap screws, tubing, and other threads, unless otherwise specified.

END OF SECTION



## SECTION 01731

### CONNECTIONS TO EXISTING FACILITIES

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Perform all construction necessary to complete connections and tie-ins to existing facilities.
- B. Keep existing facilities in operation unless otherwise specifically permitted in these Specifications or approved by OWNER.
- C. CONTRACTOR shall perform all construction activities so as to avoid interference with operations of the facility and the work of others, and the safety and quality of the finished water.
- D. Related work specified elsewhere:
  - 1. Section 01311 - Coordination with Owner's Operations.
  - 2. Section 01723 - Cutting and Patching.
  - 3. Divisions 2-16 - Technical Specifications.

##### 1.2 GENERAL INFORMATION

- A. Construction of interconnections is subject to CONTRACTOR'S submittal of materials, detailed procedures, schedules, etc. required by the contract. The following is for information only and the CONTRACTOR is responsible for all interconnections and abandonments.
- B. The CONTRACTOR shall not operate existing valves. Once new piping and equipment is placed into service, CONTRACTOR shall not operate those valves.
- C. The OWNER only shall operate existing valves. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed. The CONTRACTOR shall consider this in his bid.
- D. The CONTRACTOR shall have all equipment, manpower, and materials required for the construction on site and ready for use and/or prior to commencing any shutdown or removing any existing facilities.
- E. The CONTRACTOR shall schedule and coordinate his work with others in accordance with the specifications and shall coordinate all proposed shutdowns with the ENGINEER and OWNER. The work shall be scheduled through the ENGINEER so that the OWNER has a minimum of three working days advance notice.
- F. Caps (or plugs) on ductile iron pipe shall be mechanically restrained watertight caps (or plugs) compatible with the pipe being capped and suitable to resist thrusts due to operating pressures.
- G. Temporary caps shall be watertight and shall remain in place until the actual interconnections are made.
- H. The CONTRACTOR shall submit his detailed procedures for his interconnection sequence to the ENGINEER.

- I. If the CONTRACTOR wishes to propose construction of several interconnections at one time, he shall submit a written, detailed proposal to the ENGINEER.
- J. No work shall begin on the interconnections until the ENGINEER authorizes the work.
- K. Firms performing taps on existing piping shall be acceptable to the OWNER.
- L. All joints at interconnections shall be mechanically restrained.
- M. New hydrants shall remain bagged in burlap (except for flushing and/or testing) until placed into service.
- N. The interconnections and abandonment items include all costs to comply with permits, regulatory agencies, etc., not included under other bid items.

### 1.3 SCHEMATIC DRAWINGS

- A. The schematic drawings included on the plans are not to scale and only indicate the general arrangement of the interconnections and abandonments.
- B. In general, heavy lines indicate proposed improvements, pipe, fittings, etc. and light lines indicate existing facilities.
- C. The schematic drawings do not show other features (such as other underground utilities, etc.) which could affect the work.
- D. The CONTRACTOR shall, at his expense, verify all field conditions.
- E. Restrained mechanical joint solid sleeves or restrained flexible sleeve type couplings will be required to connect the proposed pipe to existing pipe, where applicable.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01740

### WARRANTY REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. The CONTRACTOR'S minimum requirements for providing a warranty for the Work included in the Contract.

##### 1.2 RELATED SECTIONS

- A. Section 01010 – SUMMARY OF WORK
- B. Section 01700 – CONTRACT CLOSEOUT

##### 1.3 REQUIREMENTS

- A. Unless otherwise noted, the CONTRACTOR shall warrant that all materials and equipment be free from defects and operate correctly for a minimum period of two (2) years from date of final payment.
- B. Unless otherwise noted, the CONTRACTOR shall provide the services of a factory-trained serviceperson to provide repair services for all materials and equipment for a minimum period of two (2) years from the date the material and/or equipment is approved by the OWNER as in-place for continuous permanent operation. This service shall include the cost of all replacement parts during the interval.
- C. The CONTRACTOR shall submit all warranty and guarantee information, including a statement of repair services, with the shop drawing submittal.
- D. Refer to warranty requirements outlined in individual equipment specification sections as required.
- E. Complete original warranty forms filled out in OWNER'S name and register with the manufacturer.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION - NOT USED

END OF SECTION



## SECTION 01741

### CLEANING

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

###### A. Scope:

1. CONTRACTOR shall execute cleaning during the Project, at completion of the Work, and as required by the General Conditions and this Section.
2. Maintain in a clean manner the Site, the Work, and areas adjacent to or affected by the Work.

##### 1.2 REFERENCES AND REQUIREMENTS OF REGULATORY AGENCIES

###### A. Standards referenced in this Section are:

1. NFPA 241, Safeguarding Construction, Alteration, and Demolition Operations.

###### B. Requirements of Regulatory Agencies:

1. In addition to the requirements herein, maintain the cleanliness of the Work and surrounding premises within the Work limits so as to comply with federal, state, and local fire and safety laws, ordinances, codes, and regulations.
2. Comply with all federal, state, and local anti-pollution laws, ordinances, codes, and regulations when disposing waste materials, debris, and rubbish.

##### 1.3 PROGRESS CLEANING

###### A. General: Clean the Site, work areas, and other areas occupied by CONTRACTOR at least weekly. Dispose of materials in accordance with the General Conditions and the following:

1. Comply with NFPA 241 for removing combustible waste materials and debris.
2. Do not hold non-combustible materials at the Site more than three days if the temperature is expected to rise above 80 degrees F. When temperature is less than 80 degrees F, dispose of non-combustible materials within seven days of their generation.
3. Provide suitable containers for storage of waste materials and debris.
4. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately.

###### B. Site:

1. Keep outdoor, dust-generating areas wetted down or otherwise control dust emissions.
2. At least weekly, brush-sweep roadways and paved areas at the Site that are used by construction vehicles or otherwise affected by construction activities.

- C. Work Areas:
1. Clean areas where the Work is in progress to level of cleanliness necessary for proper execution of the Work.
  2. Remove liquid spills promptly and immediately report spills to OWNER, ENGINEER, and authorities having jurisdiction.
  3. Where dust would impair proper execution of the Work, broom-clean or vacuum entire work area, as appropriate.
  4. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- D. Installed Work: Keep installed Work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of material or equipment installed, using only cleaning agents and methods specifically recommended by material or equipment manufacturer. If manufacturer does not recommend specific cleaning agents or methods, use cleaning agents and methods that are not hazardous to health and property and that will not damage exposed surfaces.
- E. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration until Substantial Completion.
- F. Cutting and Patching:
1. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
  2. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- G. Waste Disposal:
1. Properly dispose of waste materials, surplus materials, debris, and rubbish off the Site.
  2. Do not burn or bury rubbish and waste materials at the Site.
  3. Do not discharge volatile or hazardous substances, such as mineral spirits, oil, or paint thinner, into storm sewers or sanitary sewers.
  4. Do not discharge wastes into surface waters or drainage routes.
  5. CONTRACTOR shall be solely responsible for complying with laws and regulations regarding storing, transporting, and disposing of waste.
- H. During handling and installation of materials and equipment, clean and protect construction in progress and adjoining materials and equipment already in place. Apply protective covering where required for protection from damage or deterioration, until Substantial Completion.
- I. Clean completed construction as frequently as necessary throughout the construction period.



## 1.4 CLOSEOUT CLEANING

### A. Complete the following prior to requesting inspection for Substantial Completion:

1. Clean and remove from the Site rubbish, waste material, debris, and other foreign substances.
2. Sweep paved areas broom-clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Hose-clean sidewalks and loading areas.
4. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
5. Leave surface waterways, drainage routes, storm sewers, and gutters open and clean.
6. Repair pavement, roads, sod, and other areas affected by construction operations and restore to specified condition; if condition is not specified, restore to pre-construction condition.
7. Clean exposed exterior and interior hard-surfaced finishes to dirt-free condition, free of spatter, grease, stains, fingerprints, films, and similar foreign substances.
8. Clean, wax, and polish wood, vinyl, and painted floors.
9. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, and similar spaces.
10. In unoccupied spaces, sweep concrete floors broom-clean.
11. Clean transparent materials, including mirrors and glazing in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
12. Remove non-permanent tags and labels.
13. Touch up and otherwise repair and restore chipped, scratched, dented or otherwise marred surfaces to specified finish and match adjacent surfaces.
  - a. Do not paint over "UL" or similar labels, including mechanical and electrical nameplates.
14. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint, and mortar droppings, and other foreign substances.
15. Clean plumbing fixtures to sanitary condition, free of stains, including stains resulting from water exposure.
16. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
17. Clean lighting fixtures, lamps, globes, and reflectors to function with full efficiency. Replace temporary lamps provided in permanent fixtures. Replace existing lighting fixture components that are burned out or noticeably dimmed from use during construction. Replace defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
18. Leave the Site clean, and in neat, orderly condition, satisfactory to OWNER and ENGINEER.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

## SECTION 01751

### STARTING AND PLACING EQUIPMENT IN OPERATION

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Coordinate schedule for start-up of various equipment and systems. Attend coordination meetings convened by ENGINEER.
- B. Notify ENGINEER seven (7) days prior to startup of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute startup under supervision of responsible manufacturer's representative and CONTRACTOR's personnel in accordance with manufacturer's instructions.
- G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report stating that equipment or system has been properly installed and is functioning correctly.
- I. CONTRACTOR shall initially start-up and place all equipment installed into successful operation according to manufacturer's written instructions and as instructed by manufacturer's field representative. CONTRACTOR shall provide all material, labor, tools, equipment, chemicals, lubricants, and expendables required to complete start-up.
- J. No system or subsystem shall be started up for continuous operation unless all components of that system or subsystem, including instrumentation, have been tested and proven to be operable as intended by the Contract Documents.
- K. General Activities Include:
  - 1. Cleaning.
  - 2. Removing temporary protective coatings.
  - 3. Flushing and replacing greases and lubricants, where required by manufacturer.
  - 4. Lubrication.
  - 5. Check shaft and coupling alignments and reset where required.
  - 6. Check and set motor, pump and other equipment rotation, safety interlocks, and belt tensions.

7. Check and correct if necessary leveling plates, grout, bearing plates, anchor bolts, fasteners, and alignment of piping which may put stress on pumping equipment connected to it.
  8. All adjustments required.
- L. CONTRACTOR shall provide chemicals, lubricants, and all other required operating fluids.
  - M. CONTRACTOR shall provide fuel, electricity, water, filters, and other expendables required for start-up of equipment, unless otherwise specified.
  - N. CONTRACTOR shall provide all materials, supplies, labor, etc. to test, demonstrate functionality, and complete polymer feed system. Once approved by Engineer, CONTRACTOR shall remove all liquid from the systems, clean them, and prepare them to receive chemical deliveries.
  - O. OWNER shall provide sufficient personnel to assist CONTRACTOR in the start-up, but the prime responsibility for proper mechanical operation shall belong to CONTRACTOR. Manufacturer's representatives shall be present during initial start-up and operation, unless otherwise acceptable to ENGINEER.
  - P. No system, unit process or any piece of equipment shall be started up for continuous operation without the approved Operation and Maintenance Manuals being turned over to OWNER.
  - Q. Training shall be provided prior to turning the operation of a system, unit process or piece of equipment over to OWNER. Training shall be scheduled for each plant staff work shift accordingly. Training shall conform to the requirements of Section 01821, Instruction of Operations and Maintenance Personnel.
  - R. OWNER shall assume responsibility for operation of the equipment upon completion of start-up and placing equipment in operation. If the OWNER does not assume operational responsibility and in the opinion of the ENGINEER start-up tasks are completed, the ENGINEER will notify CONTRACTOR, in writing, of the completion of the start-up period.

## 1.2 MINIMUM START-UP REQUIREMENTS

- A. Bearings and Shafting:
  1. Inspect for cleanliness, and clean and remove all foreign materials.
  2. Verify alignment.
  3. Replace defective bearings and those, which run rough or noisy.
  4. Grease as necessary and in accord with manufacturer's recommendations.
- B. Drives:
  1. Adjust tension in V-belt drives and adjust varipitch sheaves and drives for proper equipment speed.
  2. Adjust drives for alignment of sheaves and V-belts.
  3. Clean and remove foreign materials before starting operation.
- C. Motors:
  1. Check each motor for comparison to amperage nameplate value.

2. Correct conditions which produce excessive current flow and exist due to equipment malfunction.
- D. Pumps:
1. Check glands and seals for cleanliness and adjustment before running pump.
  2. Inspect shaft sleeves for scoring.
  3. Inspect mechanical faces, chambers, and seal rings, and replace if defective.
  4. Verify that piping system is free of dirt and scale before circulating liquid through the pump.
- E. Valves:
1. Inspect both hand and automatic control valves, and clean bonnets and stems.
  2. Tighten packing glands to assure no leakage but permit valve stems to operate without galling.
  3. Replace packing in valves to retain maximum adjustment after system is determined to be complete.
  4. Replace packing on any valve that continues to leak.
  5. Remove and repair bonnets that leak.
  6. Coat packing gland threads and valve stems with a surface preparation of "Moly-Cote" or "Fel-Pro" after cleaning.
- F. Verify that control valve seats are free from foreign material and are properly positioned for intended service.
- G. Tighten flanges and all other pipe joints after system has been placed in operation.
1. Replace gaskets, which show any sign of leakage after tightening.
- H. Inspect all joints for leakage:
1. Promptly remake each joint that appears to be faulty; do not wait for rust to form.
  2. Clean threads on both parts and apply compound and remake joints.
- I. After system has been placed in operation, clean strainers, drives, pockets, orifices, valve seats and headers in fluid system to assure freedom from foreign materials.
- J. Remove rust, scale and foreign materials from equipment and renew defaced surfaces.
- K. Set and calibrate draft gages of air filters and other equipment.
- L. Inspect fan wheels for clearance and balance.
1. Provide factory-authorized personnel for adjustment when needed.
- M. Check each electrical control circuit to assure that operation complies with these Specifications and requirements and to provide desired performance.
- N. Inspect each pressure gage and thermometer for calibration.
1. Replace items which are defaced, broken, or which read incorrectly.

- O. Repair damaged insulation.
- P. Vent gasses trapped in any part of systems.
  - 1. Verify that liquids are drained from all parts of gas or air systems.

### 1.3 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel no later than two weeks prior to date of Substantial Completion.
- B. Demonstrate Project equipment and Instruct in a classroom environment located at the OWNER's site and instructed by a manufacturer's representative who is knowledgeable about the Project.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times at designated location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections or in Section 01620.

### 1.4 PERFORMANCE TESTING OF MAJOR PROCESS EQUIPMENT

- A. After the installation of process equipment the equipment shall be subject to performance tests under actual operating conditions to verify operations.
- B. The CONTRACTOR shall notify the ENGINEER and OWNER 7 days prior to the start of performance testing.
- C. The test shall be made by the CONTRACTOR and witnessed by a qualified representative of the manufacturer(s), and in the presence of the ENGINEER. The OWNER shall furnish the necessary finished water for the tests.
- D. The test shall demonstrate that under the conditions of operation, each unit:
  - 1. Has been properly installed.
  - 2. Has no mechanical defects.
  - 3. Is in proper alignment.
  - 4. Has been properly connected.
  - 5. Is free of overheating of any parts.

6. Is free of all object vibration.
  7. Is properly programmed.
- E. Any defect in the equipment or the installation shall be promptly corrected to provide a fully functional installation, whether by adjustment or replacement of the equipment as necessary. The decision of the ENGINEER as to whether the CONTRACTOR has fulfilled their obligation under the Contract shall be final and conclusive. If the CONTRACTOR fails or refuses to make the required corrections, or if the impaired equipment when tested, shall again fail to perform as specified, the OWNER shall have the option of rejecting the equipment or of accepting the same at reduced payment as may be agreed upon by the parties hereto.
- F. Performance Testing Procedures
1. Performance testing shall be provided as identified in Technical Specifications.
  2. All related electrical, instrumentation, structural equipment and instruments associated with the equipment listed above shall be included in the performance testing.
  3. The period of performance testing shall be 2 weeks.
  4. During performance testing, CONTRACTOR shall obtain baseline operating data on equipment. Baseline data shall include amperage, bearing temperatures, and vibration data obtained. Methods of measurement shall be in accordance with industry standards applicable for the motors being tested.
  5. Performance testing of each piece of equipment shall be successfully completed prior to the CONTRACTOR achieving Substantial Completion. If a major failure occurs, the 2-week performance testing period will be restarted; this determination will solely be made by the ENGINEER and OWNER. Items that may be considered a major failure include, but are not limited to:
    - a. Equipment/drives overheating/not operating.
    - b. Excessive vibration.
    - c. Equipment failure.
    - d. Improper operation/sequencing.
    - e. Instrumentation failure associated with the equipment.
    - f. Anchor bolt failure.
  6. Test Results and Re-testing: The following applies to the entire system tested and to portions thereof:
    - a. Successful test results shall indicate conformance in accordance with the Contract Documents.
    - b. When results of performance testing fail to comply with the Contract Documents regarding such test, CONTRACTOR shall make adjustments and repairs as required and shall repeat the tests as required until conform with the Contract Documents is achieved.
    - c. Re-testing Because of Disputed Testing Results or Procedures: In the case of an otherwise satisfactory performance test, when there is doubt, dispute, or difference between ENGINEER and CONTRACTOR regarding testing results, methods, or equipment used in performance testing, ENGINEER may order CONTRACTOR to repeat the testing. All costs, including costs of engineering, labor, testing agencies, and inspections, shall be paid by CONTRACTOR.

7. Post-Test Inspection: Once testing has been completed, all machines shall be rechecked for proper alignment and realigned, as required. All equipment shall be checked for loose connections, unusual movement, or other indications of improper operating characteristics. Any deficiencies shall be corrected to the satisfaction of the ENGINEER. All machines or devices, which exhibit unusual or unacceptable operating characteristics, shall be disassembled and inspected. Any defects found during the course of the inspection shall be repaired or the specific part or entire equipment item shall be replaced to the complete satisfaction of the ENGINEER, at no additional cost to the OWNER.

1.5 TESTING, ADJUSTING, AND BALANCING

- A. CONTRACTOR shall appoint, employ, and pay for services of an independent firm to perform testing, adjusting and balancing and pay all costs associated with these services.
- B. The independent firm will perform services specified in the Technical Specifications..
- C. Reports will be submitted in triplicate by the independent firm to the ENGINEER indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



## SECTION 01780

### RECORD DOCUMENTS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall maintain and provide ENGINEER with record documents per the Specifications, General Conditions, and Supplementary Conditions.
- B. Maintenance of Documents:
  - 1. Maintain in CONTRACTOR'S field office in clean, dry, legible condition complete sets of the following: Drawings, Specifications, Addenda, approved Shop Drawings, Samples, photographs, Change Orders, other modifications of Contract Documents, test records, survey data, Field Orders, and all other documents pertinent to CONTRACTOR'S Work.
  - 2. Provide files and racks for proper storage and easy access. File in accordance with filing format of Construction Specifications Institute (CSI), unless otherwise approved by ENGINEER.
  - 3. Make documents available at all times for inspection by ENGINEER and OWNER.
  - 4. Record documents shall not be used for any other purpose and shall not be removed from the CONTRACTOR'S office without ENGINEER'S approval.
  - 5. Record Drawings may be reviewed anytime by the ENGINEER and processing of Application may be withheld if documents are not current.
- C. Marking System: Provide colored pencils or felt tipped pens for marking changes, revisions, additions and deletions, to the record set of Drawings. Use following color code unless otherwise approved by the ENGINEER:
  - 1. Process and Mechanical: Red
  - 2. Architectural: Blue
  - 3. Structural: Purple
  - 4. Plumbing: Brown
  - 5. HVAC: Green
  - 6. Other Printed Notations: Black
- D. Recording:
  - 1. Label each document "PROJECT RECORD" in 2-inch high printed letters.
  - 2. Keep record documents current.
  - 3. Do not permanently conceal any Work until required information has been recorded.

4. Contract Drawings and Shop Drawings – Legibly mark in ink to show all changes in, or directly associated with, the work of this contract. Keep entire set of drawings current on day-to-day basis. Examples of types of changes which could occur and are to be recorded:
  - a. Change in location or elevation of structures.
  - b. Change in dimensions of structures.
  - c. Elimination of structures.
  - d. Unforeseen modifications to existing structures made necessary by work requirements.
  - e. Relocation of equipment.
  - f. Additions to or expansion of structures.
  - g. Changes in mechanical trades components (electrical, heating, ventilating, plumbing).
  - h. Measured location of internal utilities or mechanical trade items, which are to be concealed from view, referenced to visible and accessible features of the structure.
  - i. Change in location or elevations of underground utilities installed under this Contract (sewer, water, industrial process piping).
  - j. Change in materials, such as pipe materials.
  - k. Relocation of existing underground utilities made necessary because of interference with work under this contract.
  - l. Change in topographical contours of finished earth and paved surfaces.
  - m. Change in elevations of finished surfaces along route of installed underground utilities (sewer, water).
5. Recording Changes for Schematic Layouts
  - a. In some cases, on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items is shown schematically and is not intended to portray physical layout. For such cases, final physical arrangement is determined by CONTRACTOR subject to acceptance by ENGINEER.
  - b. Record on record documents all revisions to schematics on Drawings, including: piping schematics, ducting schematics, process and instrumentation diagrams, control and circuitry diagrams, electrical one-line diagrams, motor control center layouts, and other schematics when included in the Contract. Record actual locations of equipment, lighting fixtures, in-place grounding system, and other pertinent data.
  - c. When plans and sections on the Drawings show the Work schematically, show on the record documents, by dimensions accurate to within one inch in the field, centerline location of items of Work such as conduit, piping, ducts, and similar items.
    - 1) Clearly identify the Work item by accurate notations such as “cast iron drain,” “rigid electrical conduit,” “copper waterline,” and similar descriptions.

- 2) Show by symbol or note the vertical location of Work item; for example, “embedded in slab,” “under slab,” “in ceiling plenum,” “exposed,” and similar designations. For piping not embedded, also provide elevation dimension relative to Project datum.
  - 3) Descriptions shall be sufficiently detailed to be related to Specifications.
- d. ENGINEER may provide written waiver of requirements relative to schematic layouts shown on plans and sections when, in ENGINEER’s judgment, dimensioned layouts of Work shown schematically will serve no useful purpose. Do not rely on waiver(s) being issued.
6. Supplemental Drawings:
- a. In some cases, drawings produced during construction by ENGINEER or CONTRACTOR supplement the Drawings and shall be included with record documents submitted by CONTRACTOR. Supplemental record drawings shall include drawings provided with Change Orders, Work Change Directives, and Field Orders and that cannot be incorporated into the Drawings due to space limitations.
  - b. Supplemental drawings provided with record drawings shall be integrated with the Drawings and include necessary cross-references between drawings. Supplemental record drawings shall be on sheets the same size as the Drawings.
  - c. When supplemental drawings developed by CONTRACTOR using computer-aided drafting/design (CADD) software are to be included in record drawings, provide electronic files for such drawings in AutoCAD 2018 format as part of record drawing submittal. Provide electronic files on compact disc or USB drive labeled, “Supplemental Record Drawings,” together with CONTRACTOR name, Project name, and Contract name and number.
7. Specifications and Addenda: Legibly mark up each section to record:
- a. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  - b. Changes made by Change Order or Field Order.
  - c. Other matters not originally specified.
8. Submittal:
- a. Upon Substantial Completion of the Work, CONTRACTOR will deliver record documents to ENGINEER. Final payment to the CONTRACTOR will not be made until satisfactory record documents are received and approved by the ENGINEER.
  - b. CONTRACTOR shall submit to ENGINEER, accompanied with a transmittal letter, the following:
    - 1) Date.
    - 2) Project title and number.
    - 3) CONTRACTOR’S name and address.
    - 4) Title and number of each record document.
    - 5) Certification that each document as submitted is complete and accurate.
    - 6) Signature of CONTRACTOR, or his authorized representative.

E. Affix CONTRACTOR’s identification stamp, together with the label “Record Documents,” as follows:

1. On each Contract Drawing, just above the ENGINEER’s title block.

2. On each shop drawing, just above the preparer's title block.
  3. On the front cover or front page of all other documents.
- F. Store Record Documents separate from documents used for construction.
- G. Record information concurrent with construction progress; make available for periodic examination by ENGINEER.
- H. Ensure that entries are complete and accurate, enabling future reference by OWNER.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01781

### OPERATION AND MAINTENANCE DATA

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. The CONTRACTOR'S minimum requirements for providing Operation and Maintenance (O&M) Manuals for individual systems covered by the Work, including but not being limited to, valves, pumping equipment, monorail crane system equipment, and related accessories.
- B. Definitions:
  - 1. Operation and Maintenance Data:
    - a. The term "operation and maintenance data" includes all product-related information and documents which are required for operation of all equipment.
    - b. Required operation and maintenance data includes but is not limited to the following:
      - 1) Complete, detailed written operating instruction for each product or piece of equipment including equipment function; operating characteristics; limiting conditions; operating instructions for start-up, normal and emergency conditions, and regulation and control.
      - 2) Complete, detailed written preventive maintenance instruction as defined below.
      - 3) Recommended spare parts list, sources of supply for parts, and recommended storage provisions for spare parts.
      - 4) Written explanations of all safety considerations relating to operation and maintenance procedures.
      - 5) Name, address and phone number of manufacturer and manufacturer's local service representative.
      - 6) Final approved shop drawings and bill of material
      - 7) Complete electrical drawings including interconnecting wiring and termination diagrams.
      - 8) Manufacturers' standard catalogue brochures in PDF format.
  - 2. Preventive Maintenance Instructions:
    - a. Preventative maintenance instructions shall be provided in a stand-alone document separate from the O&M Manual for each piece of equipment furnished. This document shall contain a bulleted list.
    - b. The term "preventive maintenance instructions" includes all information and instructions required to keep a product or piece of equipment properly lubricated, adjusted and maintained so that the item functions economically throughout its full design life.
    - c. Preventive maintenance instructions include, but are not limited to, the following:
      - 1) A written explanation with illustrations for each preventive maintenance task.
      - 2) Recommended schedule for execution of preventive maintenance tasks.
      - 3) Trouble shooting instructions.
      - 4) List of required maintenance tools and equipment.
      - 5) Lubrication charts and table of lubricants.

C. Submittals:

1. General: Submit Operations and Maintenance Manual to the ENGINEER within 90 days after approval of Shop Drawings. O&M Manuals shall be submitted in hard copy and in electronic format, and include all O&M data and preventative maintenance instructions as defined herein.
2. Number of Copies:
  - a. Three (3) hard copies of each item.
  - b. Two (2) electronic copies of each item (copies of each item on two USB drives).
  - c. PDFs shall be saved separately for each piece of equipment.
3. Letter of Transmittal: Provide a letter of transmittal with each submittal and include the following in the letter.
  - a. Date of submittal.
  - b. Contract title and number.
  - c. CONTRACTOR's name and address.
  - d. A list of the attachments and the Specification Sections to which they relate.
  - e. Reference to or explanation of related submittals already made or to be made at a future date.
4. Format Requirements:
  - a. The electronic copies of the O&M Manuals shall be furnished in PDF format on a USB drive.
    - 1) Preventative maintenance instructions shall be provided in a stand-alone document separate from the O&M Manual for each piece of equipment furnished. This document shall contain a bulleted list.
  - b. The hard copies of the O&M Manuals shall be furnished as complete binders for each system. The CONTRACTOR shall supply O&M Manuals for all equipment and materials supplied under this contract.

Each manual shall conform to the following requirements:

- 1) Use 8-1/2-inch by 11-inch paper of high rag content and quality. Larger drawings or illustrations are acceptable if neatly folded to the specified size in a manner, which will permit easy unfolding without removal from the binder.
- 2) All text must be legible, typewritten or machine printed originals or high-quality copies of same.
- 3) Each page shall have a binding margin of approximately 1½-inches and be punched for placement in a three-ring loose-leaf or triple post binder.
- 4) Use dividers between major categories of information such as operating instruction, preventive maintenance instructions, or other. When necessary, place each major category in a separate binder.
- 5) Provide a table of contents for each binder.
- 6) Identify products by their functional names in the table of contents and at least once in each chapter or section. Thereafter, abbreviations and acronyms may be used if their meaning is explained in a table in the back of each binder. Use of model or catalog numbers or letters for identification is not acceptable.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION





## SECTION 01783

### SPARE PARTS AND MAINTENANCE MATERIALS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. CONTRACTOR shall furnish spare parts data and maintenance materials for materials and equipment in accordance with the Contract Documents. CONTRACTOR shall prepare and maintain a log of all spare parts delivered. The log shall be organized by specification section and shall include date of parts delivery, itemized record of each part received, location stored, type of container, and any deficiencies or damage observed at delivery. Log shall be turned over to ENGINEER prior to final payment request.
- B. List of Spare Parts and Maintenance Materials: With the Shop Drawings and product data for each Specification Section, submit a complete list of spare parts, extra stock materials, maintenance supplies, and special tools required for maintenance ("spare parts and maintenance materials") for two years of operation, with unit prices in current United States funds, and source(s) of supply for each.
- C. Packaging and Labeling: Furnish spare parts and maintenance materials in manufacturer's unopened cartons, boxes, crates, or other original, protective covering suitable for preventing corrosion and deterioration for maximum length of storage normally anticipated by manufacturer. Packaging of spare parts and maintenance materials shall be clearly marked and identified with name of manufacturer, applicable equipment, part number, part description, and part location in the equipment. Protect and package spare parts and maintenance materials for maximum shelf life normally anticipated by manufacturer.
- D. Storage Prior to Delivery to OWNER: Prior to furnishing spare parts and maintenance materials to OWNER, store spare parts and maintenance materials in accordance with the Contract Documents and manufacturers' recommendations.
- E. Delivery Time and Eligibility for Payment:
  - 1. Deliver to OWNER spare parts and maintenance materials prior to date of Substantial Completion for equipment or system associated with the spare parts and maintenance materials. Do not deliver spare parts and maintenance materials before commencing start-up for associated equipment or system.
  - 2. Spare parts and maintenance materials are not eligible for payment until delivered to OWNER and CONTRACTOR's receipt of OWNER's countersignature on letter of transmittal.
- F. Procedure for Delivery to Owner: Deliver spare parts and maintenance materials to OWNER's permanent storage rooms at the Site or area(s) at the Site designated by OWNER. When spare parts and maintenance materials are delivered, CONTRACTOR and OWNER will mutually inventory the spare parts and maintenance materials delivered to verify compliance with the Contract Documents regarding quantity and part numbers. Additional procedures for delivering spare parts and maintenance materials to OWNER, if required, will be developed by ENGINEER and complied with by CONTRACTOR.
- G. Transfer Documentation:
  - 1. Furnish on CONTRACTOR letterhead a letter of transmittal for spare parts and maintenance materials furnished under each Specification Section. Letter of transmittal shall accompany spare parts and maintenance materials. Do not furnish letter of transmittal separate from associated spare parts and maintenance materials.

2. Furnish three original, identical, signed letters of transmittal for each Specification Section. Upon delivery of specified quantities and types of spare parts and maintenance materials to OWNER, designated person from OWNER will countersign each original letter of transmittal indicating OWNER's receipt of spare parts and maintenance materials. OWNER will retain one fully signed original, CONTRACTOR shall submit one fully signed original to ENGINEER, and CONTRACTOR shall retain one fully signed original for CONTRACTOR's file.
  3. Letter of transmittal shall include the following:
    - a. Information required for letters of transmittal in Section 01331, Shop Drawing Procedures.
    - b. Transmittal shall list spare parts and maintenance materials furnished under each Specification Section. List each individual part or product and quantity furnished.
    - c. Provide space for countersignature by OWNER as follows: space for signature, space for printed name, and date.
- H. CONTRACTOR shall be fully responsible for loss or damage to spare parts and maintenance materials until spare parts and maintenance materials are received by OWNER.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01821

### INSTRUCTION OF OPERATIONS AND MAINTENANCE PERSONNEL

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

###### A. Scope:

1. CONTRACTOR shall furnish services of Supplier's operation and maintenance training specialists to instruct OWNER's personnel in recommended operation and maintenance procedures for materials and equipment furnished, in accordance with the Contract Documents.
2. Supplier shall provide a combination of classroom and field training at the Site, unless otherwise required elsewhere in the Contract Documents.
3. OWNER reserves the right to record training sessions on video for OWNER's later use in instructing OWNER's personnel.

###### B. Scheduling of Training Sessions:

###### 1. General:

- a. CONTRACTOR shall coordinate training services with start-up and initial operation of materials and equipment on days and times, and in manner, acceptable to OWNER, in accordance with the Contract Documents.
- b. Training may be required outside of normal business hours to accommodate schedules of operations and maintenance personnel. Furnish training services at the required days and times at no additional cost to OWNER.

###### 2. Prerequisites to Training:

- a. Training of OWNER'S personnel shall commence after acceptable preliminary operation and maintenance data has been submitted and work required in Section 01751, Starting and Placing Equipment in Operation.
- b. At option of OWNER or ENGINEER, training may be allowed to take place before, during, or after equipment start-up.

###### 3. Training Schedule Submittal:

- a. Training Schedule Required: CONTRACTOR shall prepare and submit proposed training schedule for review and acceptance by ENGINEER and OWNER. Proposed training schedule shall show all training required in the Contract Documents and shall demonstrate compliance with specified training requirements relative to number of hours of training, number of training sessions, and scheduling.

- b. Timing of Training Schedule Submittal: Submit initial training schedule at least 60 days before scheduled start of first training session. Submit final training schedule, incorporating revisions in accordance with ENGINEER's comments, no later than 30 days prior to starting the first training session.
- c. OWNER reserved the right to modify personnel availability for training in accordance with process or emergency needs at the Site.

## 1.2 QUALITY ASSURANCE

### A. Qualifications:

- 1. Manufacturer's instructors shall be factory-trained by manufacturer of material or equipment.
- 2. Manufacturer's instructors shall be proficient and experienced in conducting training of type required.
- 3. Qualifications of instructors are subject to acceptance by ENGINEER. If ENGINEER does not accept qualifications of proposed instructor, furnish services of replacement instructor with acceptable qualifications. CONTRACTOR shall submit instructor qualifications such that Final Acceptance by the ENGINEER shall be no later than 30 days prior to starting the associated training.

### B. Training Scheduling Conference:

- 1. Prior to preparing initial training schedule submittal, schedule and hold training scheduling conference at the location where progress meetings are held, to review:
  - a. Training requirements in accordance with the Contract Documents.
  - b. Work to be completed prior to starting training.
  - c. Work progress and Progress Schedule relative to start-up and training.
  - d. Scheduling constraints for OWNER's personnel, relative to days and times of training sessions.
  - e. Preferred days for training.
  - f. Location where training will be performed and facilities available.
  - g. Required submittals relative to training.
  - h. Other issues relative to training of operations and maintenance personnel.
  - i. New York State Department of Health (NYSDOH) requirements for obtaining continuing education credits for Water Treatment Plant Operators for the training sessions.
- 2. Attendance is mandatory for the following:
  - a. CONTRACTOR's project manager.
  - b. CONTRACTOR's Site superintendent.
  - c. Project manager of Subcontractors responsible for providing materials and equipment for which training of operations and maintenance personnel is required.
  - d. Manufacturers and other Suppliers invited by CONTRACTOR.

- e. ENGINEER.
  - f. OWNER's staff responsible for training coordination, and staff responsible for scheduling operations and maintenance personnel.
3. If additional information must be developed to adequately cover agenda items, reconvene conference as soon as possible.
  4. CONTRACTOR shall prepare minutes summarizing the discussions of conference, decisions made, and agreements and disagreements, and submit the minutes to each conference attendee.

### 1.3 SUBMITTALS

- A. CONTRACTOR shall coordinate submittals with the ENGINEER and OWNER in order to obtain NYSDOH continuing education units (CEUs) for Water Treatment Plant Operators for the training sessions. Contract shall comply with the requirements of the NYSDOH.
- B. Action Submittals: Submit the following:
  1. Training Schedule: Detailed schedule of training sessions, demonstrating compliance with number of training sessions, hours required in the Contract Documents, and complying with the Contract Times. Training schedules shall include start and end times, and if any breaks will be scheduled. Submit training schedule submittals in accordance with time frames specified in this Section.
- C. Informational Submittals: Submit the following:
  1. PowerPoint Presentation, where applicable.
  2. Lesson Plan: Acceptable lesson plan for training on each material or equipment item, in accordance with the Schedule of Equipment Testing and Manufacturer's Services in Section 01620 and the Contract Documents. Lesson plan shall comply with requirements of this Section. Include with lesson plan copy of handouts that will be used during training sessions. Provide lesson plan submittals in accordance with time frames specified in this Section.
  3. Qualifications: Credentials of manufacturer's proposed operations and maintenance instructor(s). Credentials shall demonstrate compliance with requirements of this Section and shall include brief resume' and specific details of instructor's operating, maintenance, and training experience relative to the specific material and equipment for which instructor will provide training.
  4. Minutes of training scheduling conference.
- D. Closeout Submittals: Submit the following:
  1. Trainee sign-in sheet for each training session. Submit to OWNER's training coordinator.

### 1.4 LESSON PLAN

- A. Supplier's lesson plan shall describe specific instruction topics, system components for which training will be furnished, and training procedures. Handouts, if any, to be used in training shall be included with the lesson plan. Describe in lesson plan "hands-on" demonstrations planned for training sessions.
- B. Submit acceptable lesson plan 30 days prior to starting associated training.

- C. Lesson plan shall include estimated duration of each training segment.
- D. Lesson plan shall include the following:
  - 1. Equipment Overview (required for all types of operations and maintenance training):
    - a. Describe equipment's operating (process) function and performance objectives.
    - b. Describe equipment's fundamental operating principles and dynamics.
    - c. Identify equipment's mechanical, electrical, and electronic components and features. Group related components into subsystems and describe function of subsystem and subsystem's interaction with other subsystems.
    - d. Identify all support equipment associated with operation of subject equipment, such as air intake filters, valve actuators, motors, and other appurtenant items and equipment.
    - e. Identify and describe safety precautions and potential hazards related to operation.
    - f. Identify and describe in detail safety and control interlocks.
  - 2. Equipment Operation:
    - a. Describe operating principles and practices.
    - b. Describe routine operating, start-up, and shutdown procedures.
    - c. Describe abnormal or emergency start-up, operating, and shutdown procedures that may apply.
    - d. Describe alarm conditions and responses to alarms.
    - e. Describe routine monitoring and recordkeeping procedures.
    - f. Describe recommended housekeeping procedures.
  - 3. Equipment Preventive Maintenance:
    - a. Describe preventative maintenance inspection procedures required to:
      - 1) Inspect equipment in operation.
      - 2) Identify potential trouble symptoms and anticipate breakdowns.
      - 3) Forecast maintenance requirements (predictive maintenance).
    - b. Define recommended preventative maintenance intervals for each component.
    - c. Describe lubricant and replacement part recommendations and limitations.
    - d. Describe appropriate cleaning practices and recommend intervals.
    - e. Identify and describe use of special tools required for maintenance of equipment.
    - f. Describe component removal, installation, and disassembly and assembly procedures.
    - g. Perform "hands-on" demonstrations of preventive maintenance procedures.

- h. Describe recommended measuring instruments and procedures, and provide instruction on interpreting alignment measurements, as appropriate.
  - i. Define recommended torquing, mounting, calibrating, and aligning procedures and settings, as appropriate.
  - j. Describe recommended procedures to check and test equipment following corrective maintenance.
4. Troubleshooting:
- a. Describe how to determine if corrective maintenance or an operating parameter adjustment is required.
  - b. Define recommended systematic troubleshooting procedures.
  - c. Provide component-specific troubleshooting checklists.
  - d. Describe applicable equipment testing and diagnostic procedures to facilitate troubleshooting.
  - e. Describe common corrective maintenance procedures with “hands on” demonstrations.

#### 1.5 TRAINING AIDS

- A. Manufacturer’s instructor shall incorporate training aids as appropriate to assist in the instruction. Provide handouts of text, tables, graphs, and illustrations as required. Other appropriate training aids include:
- 1. Audio-visual aids, such as videos, Microsoft PowerPoint presentations, overhead transparencies, posters, drawings, diagrams, catalog sheets, or other items.
  - 2. Equipment cutaways and samples, such as spare parts and damaged equipment.
  - 3. Tools, such as repair tools, customized tools, and measuring and calibrating instruments.
- B. Handouts:
- 1. Manufacturer’s instructor shall distribute and use descriptive handouts during training. Customized handouts developed especially for training for the Project are encouraged.
  - 2. Photocopied handouts shall be good quality and completely legible.
  - 3. Handouts should be coordinated with the instruction, with frequent references made to the handouts.
  - 4. Provide one set of handouts for each trainee expected at each training session.
- C. Audio-visual Equipment: Training provider shall provide audio-visual equipment required for training sessions. If suitable equipment is available at the Site, OWNER may make available OWNER’s audio-visual equipment; however, do not count on OWNER providing audio-visual equipment. Audio-visual equipment that training provider shall provide, as required, includes:
- 1. Laptop computer, presentation software, and suitable projector.
  - 2. As required, extension cords and spare bulb for projector.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION



# Technical Specifications



## SECTION 02030

### DEMOLITION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Demolition of existing facilities.
- B. Removal of designated construction.
- C. Disposal of materials.

##### 1.2 RELATED SECTIONS

- A. Section 01311 - Coordination with Owner's Operations.

##### 1.3 SUBMITTALS FOR REVIEW

- A. Submit in accordance with the Special Conditions of these Contract Documents.
- B. Demolition Methods:
  - 1. Submit for approval proposed means, methods, equipment, and operating sequences to be utilized for demolition. Include coordination for possible shut-off, capping, temporary services, continuation of utility services, and other applicable items to ensure no interruption of the operations of the OWNER.
- C. Notification:
  - 1. At least ten (10) business days prior to commencement of demolition, notify ENGINEER in writing of the proposed schedule. Do not commence demolition without the written permission of the ENGINEER.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to all applicable federal, state, and local laws and codes for demolition Work, dust control, and products requiring electrical power removal.
- B. Obtain any required permits, as necessary.
- C. Do not close or obstruct egress width to any building or Site exit.
- D. Do not disable or disrupt building fire or life safety systems without giving five (5) days prior written notice to the OWNER and OPERATOR.
- E. Conform to procedures applicable when hazardous or contaminated materials are discovered.

## 1.5 SEQUENCING

- A. Sequence activities as described in Section 01010 - Summary of Work and Section 01311 – Coordination with Owner’s Operations.

## 1.6 SCHEDULING

- A. Schedule demolition Work to coincide with new construction.
- B. The CONTRACTOR shall coordinate the demolition Work with the OWNER.
- C. Carry out operations so as to avoid interference with operations and work in and near adjacent facilities.
- D. No shutdown of any kind shall occur without the written consent of the OWNER.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Provide, erect, and maintain temporary barriers and bulkheads, and security devices in accordance with this Specification.
- B. Protect existing materials, which are not to be demolished.
- C. Prevent any movement of structures; provide bracing and shoring. The CONTRACTOR shall take care to prevent any unexpected collapse of existing structures.
- D. Notify affected utility companies before starting Work and comply with their requirements.
- E. Mark the location and termination of all utilities.
- F. Provide appropriate temporary signage including signage for job site exit or egress.

### 3.2 GENERAL

- A. Disconnect, remove, cap, and identify designated utilities in demolition areas.
- B. Demolish in an orderly and careful manner. Protect existing remaining structures, piping, valves, etc. from the demolition Work.
- C. No materials shall be burned on Site.
- D. The use of explosives for demolition shall not be allowed.
- E. Conduct operations with minimum interference to Site access.
- F. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon, or limit access to their property.
- G. Incorporate provisions for sedimentation control during and after demolition, if applicable.

- H. Perform all demolition and removal Work to prevent damage or injury to adjacent structures, occupants thereof, and features which might result from falling debris or other causes and so as not to interfere with the use and free and safe passage to and from adjacent structures.
- I. Closing or obstructing of public roadways, sidewalks, and passageways adjacent to the Work by the placement or storage of materials shall not be permitted and all operations shall be conducted with a minimum interference to vehicular and/or pedestrian traffic on these ways.
- J. Erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices when applicable.
- K. Repair damage to facilities to remain or to any property belonging to the OWNER, or occupants of adjacent facilities.

### 3.3 POLLUTION CONTROLS

- A. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
  - 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, or pollution.
  - 2. Clean adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to conditions existing prior to the start of Work.

### 3.4 STRUCTURAL REMOVAL

- A. Remove structures to the lines and grades indicated on the Contract Drawings. The removal of structures beyond those indicated limits shall be at the expense of the CONTRACTOR. Excess removal shall be reconstructed to the satisfaction of the ENGINEER, with no additional compensation to the CONTRACTOR.
- B. All concrete, brick, tile, concrete block, stone walls, damaged roof decking, reinforcement, structural or miscellaneous metals, plaster, wire mesh, and other items contained in or upon the structure shall be removed and taken from the Site, unless otherwise approved by the ENGINEER.
- C. The surfaces of walls, floors, ceilings, or other areas that are exposed by any of the removals specified, indicated, or required and which will remain within the active flow stream shall be repaired and re-finished, watertight, by the CONTRACTOR. Utilize the same or matching materials as the existing adjacent surface or as otherwise approved by the ENGINEER.
- D. If partial demolition of underground structures is indicated on the Contract Drawings, once removal of the designated foundation, wall, slabs, or structure is complete, the CONTRACTOR shall abandon-in-place the remaining portion and neatly backfill and grade the area. No structural steel and/or concrete structures shall remain exposed above grade.

### 3.5 MECHANICAL AND PIPING REMOVAL

- A. Mechanical removal shall consist of dismantling and removing of existing piping, valves, pumps, motors, equipment, and other appurtenances, such as gauges, instrument tubing, etc., as specified, indicated on the Contract Drawings, or required for the completion of the Work. It shall include cutting, capping, and plugging as required.

- B. Existing process, water, chemical, gas, fuel oil, and other piping shall be removed where required, indicated, and specified. Chemical and fuel lines and tanks shall be purged and made safe prior to removal or capping. Where piping that is to be removed passes through existing walls that shall remain, the pipe shall be cut off and properly capped on each side of the wall.
- C. Waste and vent piping shall be removed to points shown. Pipe shall be plugged with cleanouts and plugs. Where vent stacks pass through an existing roof that is to remain, they shall be removed and the hole in the roof properly patched and made watertight; new roof material shall be identical (or as close as practical) to the existing roofing materials unless otherwise directed by the ENGINEER.

### 3.6 ELECTRICAL AND INSTRUMENTATION REMOVAL

- A. Electrical removal shall consist of the demolition of existing panelboards, motor control centers, control panels, motors, conduits and wires, poles and overhead wiring, exposed ground conductors, lighting fixtures, miscellaneous electrical devices, and all instrumentation as indicated, specified, or required to perform the Work.
- B. The CONTRACTOR shall verify the function of all wiring prior to disconnecting and removing it. Ducts that are not to be reused shall be plugged where they enter buildings and made watertight.
- C. All existing electrical equipment to be demolished shall be removed with such care as may be required to prevent unnecessary damage to remaining equipment and/or structures and to maintain OWNER/OPERATOR operations. Any damage incurred shall be repaired.
- D. Motors shall be disconnected and removed where required, indicated, or specified. Motors not designated by the OWNER to be salvaged shall be removed from the site and disposed of by the CONTRACTOR.
- E. Conduits and wires shall be abandoned in-place or removed where required, indicated, or specified. Abandoned conduits concealed in floor or ceiling slabs or in walls shall be cut flush with the slab or wall at the point of entrance. The conduits shall be suitably plugged, and the area repaired in a flush, smooth, approved manner. Exposed conduits and their supports shall be disassembled and removed from the site. Repair all areas of Work to prevent rust spots on exposed surfaces.

### 3.7 REFUSE REMOVAL, HANDLING, AND OWNERSHIP

- A. Any item that is to remain the property of the OWNER/OPERATOR shall be carefully removed, so as not to be damaged as a result of the Work by the CONTRACTOR and shall be placed in an OPERATOR-designated, protected, and secure location within the Site.
  - 1. If an item is to be retained by the OWNER/OPERATOR and stored off-Site, it shall be so noted on the Contract Drawings or these Specifications. The CONTRACTOR shall include the costs associated with loading, securing, transporting, and unloading.
- B. Remove materials as the Work progresses. Upon completion of the Work, leave areas in a clean condition. All demolished materials shall be removed from the Site without delay.
- C. All materials, equipment, and debris shall be transported and disposed of in an appropriate manner at the expense of the CONTRACTOR and in compliance with all existing and governing laws and regulations.

### 3.8 ALTERATIONS AND CLOSINGS

- A. Alterations shall conform to all applicable Specifications, the Contract Drawings, and the directions and approvals of the ENGINEER.

- B. Where alterations require cutting or drilling into existing floors, walls, and roofs, the holes shall be repaired in an approved manner. The CONTRACTOR shall repair such openings with the same or matching materials as the existing floor, wall, or roof or as otherwise approved by the ENGINEER. All repairs shall be smoothly finished unless otherwise approved by the ENGINEER.
- C. Openings in existing concrete slabs, ceilings, masonry walls, floors, and partitions shall be closed and sealed as indicated or otherwise directed by the ENGINEER. New Work shall be keyed into the existing Work in an acceptable manner. New reinforcing steel shall be welded to the existing reinforcing steel. Welding shall conform to AWS D12.1, Reinforcing Steel Welding Code. In general, use the same or matching materials as the existing adjacent surface. The finished closure shall be a smooth, tight, sealed, permanent closure acceptable to the ENGINEER.

### 3.9 CLEAN-UP

- A. Remove all temporary structures, barriers, and security devices upon completion of the Work.
- B. The CONTRACTOR shall remove from the Site all debris resulting from the demolition operations as it accumulates. Upon completion of the Work, all materials, equipment, waste, and debris of every sort shall be removed, and premises shall be left, clean, neat, and orderly.

END OF SECTION





## SECTION 02205

### PROTECTION OF EXISTING FACILITIES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Location of facilities.
- B. Notification of owners and authorities.
- C. Coordination and preparation.
- D. Protection of facilities.
- E. Relocation of facilities.
- F. Protection of sewers and storm drains.
- G. Protection of water mains near sewers.
- H. Abandonment of utilities.
- I. Restoration of property markers.

##### 1.2 RELATED SECTIONS

- A. Section 01312 - PRECONSTRUCTION CONFERENCE
- B. Section 01322 - CONSTRUCTION PHOTOGRAPHS
- C. Section 01562 – PROTECTION OF WORK AND PROPERTY
- D. Section 02351 - EXCAVATION, BACKFILL AND TRENCHING

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.1 LOCATION OF FACILITIES

- A. Prior to construction, verify location of existing underground facilities near or adjacent to project.
  - 1. Consult with appropriate underground facilities protection organization (Dig Safely New York) and arrange for field stakeout or other markings to show locations.
  - 2. Consult with OWNER to review any existing drawings that may show the locations of underground facilities.
  - 3. Perform exploratory excavation at key junctures and other critical points to aid in ascertaining locations.

- B. Report field stakeout findings and results of exploratory excavations to ENGINEER if possible, changes in project location or design are indicated because of suspected interferences with existing facilities. Allow ENGINEER sufficient time to determine magnitude of changes and to formulate instructions in that regard.
- C. If location of an existing underground facility is uncertain, apply careful excavation and probing techniques during construction to locate and avoid damage to same.

### 3.2 NOTIFICATIONS OF OWNERS AND AUTHORITIES

- A. Prior to construction, notify owners of existing facilities, including local Police and Fire Departments, of general scope, nature, and planned progress schedule of the Work.
- B. Notify owners of nearby underground facilities when excavating is to take place in a particular area, allowing them reasonable time to institute precautionary procedures or preventive measures, which they deem necessary for protection of their facilities.
- C. When existing utilities, such as sewer, water, gas, telephone, or electric power are damaged or disturbed during construction, immediately notify affected OWNER and Project OWNER.
- D. Notify Police and Fire Departments, including affected owners, immediately if hazardous conditions are created or have the potential for occurring, as a result of damage to an existing facility or as a result of other activities at project site. Hazardous conditions could be created from: fire, explosion, escape of gas, escape of fuel oil, gasoline or industrial fluids, downed electrical wires, and disrupted underground electrical cables.

### 3.3 COORDINATION AND PREPARATION

- A. Discuss anticipated work schedule with local authorities and owners of utilities at preconstruction meeting, including procedures to be followed if one or more utilities are damaged or disrupted. Develop contingency plans to address CONTRACTOR's role in repair of damaged utilities.
- B. Make preparations beforehand to repair and restore damaged utilities, including arrangements for standby materials and equipment to be promptly assembled at site and utilized immediately.
- C. Adjust work schedules and personnel assignments as necessary to conform with requirements of utility owner whose utility is to be temporarily interrupted during construction. Cooperate with utility owner in this regard to minimize the time of interruption.
- D. Make preparations for and conform to applicable requirements of New York State Industrial Code Rule 53 (as amended April 1, 1975) entitled, "Construction, Excavation and Demolition Operations at or Near Underground Facilities," issued by State Department of Labor.

### 3.4 PROTECTION OF FACILITIES

- A. Plan and conduct construction operations so that operation of existing facilities near or adjacent to the Work, including electric, telephone, sewer, water, gas, or drainage utilities, are sustained insofar as the requirements of the project will permit.
- B. Protect existing facilities from damage or movement through installation of adequate support systems and use of proper equipment, including application of careful excavation and backfilling techniques in sensitive areas.

- C. Protect existing water storage tanks from any movement or damage by all means possible. Immediately notify the ENGINEER if there is a risk of damage to the tank and/or tank foundations. Immediately stop associated work if damage is done and notify ENGINEER to assess the damage.
- D. Existing utilities and other facilities which are damaged by the CONTRACTOR's construction operations shall be promptly repaired by CONTRACTOR to the satisfaction of the affected owner or, if he so elects, that owner will perform the repairs with his own forces. Under either arrangement, such repair work shall be done at CONTRACTOR's expense.
- E. When aboveground visible facilities such as poles, wires, cables, fences, signs or structures constitute an unavoidable interference, notify ENGINEER and consult with affected owner regarding temporary removal and later restoration of the interfering item. Arrange with that owner to remove and later restore the interfering item to the satisfaction of the owner, subject to approval of the project OWNER; or, allow affected owner to perform such work with his own forces. Under either arrangement, such work shall be done at CONTRACTOR's expense.
- F. Take all necessary precautions to prevent fires at or adjacent to the work, buildings, and other facilities. No burning of trash or debris is permitted. If permanent fire extinguishers are used, they shall be recharged and in "new" condition when turned over to OWNER.

### 3.5 RELOCATION OF FACILITIES

- A. If the location or position of an existing gas or water pipe, public or private sewer or drain, conduit or structure be such as, in the opinion of ENGINEER, to require its removal, realignment or change, such alteration shall be without cost to the CONTRACTOR for the work of removal, realignment or change only.
- B. Uncovering, supporting and sustaining such facility before its removal or before and after its realignment or change, shall be the CONTRACTOR's responsibility as part of the work of his Contract.
- C. CONTRACTOR shall be entitled to extension of time for completion of entire Work as the ENGINEER determines that the entire Work was delayed by the removal, realignment or change of such obstruction.

### 3.6 PROTECTION OF SEWERS AND STORM DRAINS

- A. Where existing sanitary sewers or storm drain systems are being replaced or interrupted, provide temporary bypass pumping or piping to maintain flow around that segment of the Work such that no back-ups occur in existing systems.
- B. Existing sanitary sewer laterals damaged in the work or temporarily disconnected shall be restored to operation by the end of each work day. Existing sanitary sewer laterals crossing over new pipelines to be restored in accordance with details shown on the Drawings.
- B. Maintain existing manholes, catch basins, and other utility structures in their pre-work condition. Any material or debris entering same due to the CONTRACTOR's operation shall be promptly removed.

### 3.7 PROTECTION OF WATER MAINS NEAR SEWERS

- A. Where a minimum 10-foot horizontal separation or minimum 18-inch vertical separation (bottom of water pipe to top of sewer pipe) cannot be maintained between a water main and sewer line, one or more of the following remedies shall be incorporated in the work:
  - 1. The sewer lines shall be encased in Mix C concrete for a length of 10 feet on either side of the water main.

2. Both the water main and sewer line shall be constructed of pressure type joints of ductile iron pipe and shall be pressure tested to 100 psi to assure watertightness.
3. One full length of water main shall be centered over the sewer line, so that both joints will be as far from the sewer as possible.
4. Relocate water main to obtain 18 inches minimum vertical separation.

### 3.8 ABANDONMENT OF UTILITIES

- A. Remove existing utilities to be abandoned within limits of trench excavation or impinging on trench limits.
- B. Open ends of abandoned utilities, or those scheduled for abandonment, shall be bulkheaded by brick masonry or Mix C concrete; or by cast iron plugs or caps in small diameter water mains.
- C. Abandoned sewers 36-inches in diameter or larger shall be completely filled with sand or gravel or other approved material prior to bulkheading the open end(s).
- D. Abandoned manholes and water valve casings shall be backfilled to grade with approved trench backfill material.
- E. Frames, covers, grates, water valve casing, sections of water piping, hydrants (including standpipe and boot) valves and other items to be abandoned shall, if ordered by OWNER, be salvaged for re-use and be delivered to OWNER's property yard.

### 3.9 RESTORATION OF PROPERTY MARKERS

- A. Property corner markers, boundary monuments, etc., disturbed or moved by the CONTRACTOR's operation shall be restored, in conformance with the property deed description, by a licensed land surveyor. Restoration of the property corner markers or boundary monuments shall be certified by said surveyor on a map prepared by him, which shows the work accomplished. One copy of the map shall be given to the property owner and one copy given to the project OWNER.

END OF SECTION

## SECTION 02228

### COMPACTION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Compaction requirements and test methods.
- B. Compact all subgrades, foundations, embankments, trench backfills, filled and backfilled material as specified.

##### 1.2 RELATED SECTIONS

- A. Section 01400 – Quality Control.
- B. Section 02351– Excavation, Backfill and Trenching.

##### 1.3 REFERENCES

- A. ASTM D698, Laboratory Compaction of Soil Using Standard Effort.
- B. ASTM D1556, Density of Soil in Place by the Sand-Cone Method.
- C. ASTM D1557, Laboratory Compaction of Soil Using Modified Effort.
- D. ASTM D2922, Density of Soil in Place by Nuclear Methods.
- E. ASTM D3017, Water Content of Soil in Place by Nuclear Methods.

##### 1.4 SUBMITTAL

- A. Submit in writing a description of the equipment and methods proposed to be used for compaction.

##### 1.5 QUALITY ASSURANCE

- A. The CONTRACTOR shall adopt compaction methods, which will produce the degree of compaction specified herein, prevent subsequent settlement, and provide adequate support for the surface treatment, pavement, structure and piping to be placed thereon, or therein, without damage to the new or existing facilities.
- B. The natural subgrade for all footing, mats, slabs-on-grade for structures or pipes shall consist of firm undisturbed natural soil, at the grades shown on the Drawings.

- C. After excavation to subgrade is completed, the subgrade shall be compacted if it consists of loose granular soil or if its surface is disturbed by the teeth of excavating equipment.
  - 1. This compaction shall be limited to that required to compact loose surface material and shall be terminated in the event that it causes disturbance to underlying fine-grained soils, as revealed by weaving or deflection of the subgrade under the compaction equipment.
  - 2. If the subgrade soils consist of saturated fine or silty sands, silts, or clay or varved clays, no compaction shall be applied.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Materials to be compacted shall be as specified in Section 02351.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine spaces to be filled beforehand and remove all unsuitable materials and debris including sheeting, forms, trash, stumps, plant life, etc.
- B. Inspect backfill and fill materials beforehand and remove all roots, vegetation, organic matter, or other foreign debris. Stones larger than 12 inches in any dimension shall also be removed or broken into smaller pieces.
- C. No backfill or fill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments.
- D. Spaces to be filled shall be free from standing water so that placement and compaction of the fill materials can be accomplished in "dry" conditions.

### 3.2 PREPARATION

- A. Brace walls and slabs of structures to support surcharge loads and construction loads imposed by compaction operations.
- B. Proof-roll all subgrade surfaces to accept fill material.
- C. Each layer of fill shall be compacted to the specified density the same day it is placed.
  - 1. The moisture content of backfill or fill material shall be adjusted, if necessary to achieve the required degree of compaction.
- D. Compact each lift in accordance with Table 1.
- E. Match compaction equipment and methods to the material and location being compacted in order to obtain specified compaction, with consideration of the following guidelines:
  - 1. Rubber-tired rollers are preferred for most areas to prevent bridging of softer materials.
  - 2. Double smooth drum rollers may be used provided that careful inspection can prevent bridging.

3. Compaction roller should be lighter in weight than proof-rolling equipment, with a minimum compaction force of 350 pounds per linear inch (PLI).
4. Vibratory compaction is preferred for dry, granular materials.
5. Hand compaction equipment such as impact rammers, plate or small drum vibrators, or pneumatic buttonhead compactors should be used in confined areas.
6. Hydraulic compaction by pounding or jetting will not be permitted except in unusual conditions, and then only upon written approval by the ENGINEER and after a demonstration of effectiveness.
7. Backhoe mounted hydraulic or vibratory tampers are preferred for compaction of backfill in trenches under pavements over 4 feet in depth. The upper 4 feet shall be compacted as detailed above or with hand-guided or self-propelled vibratory compactors or static roller.
8. For plastic pipelines (PVC, PE, or PB) do not compact directly over center of pipe until backfill has reached 2 feet above top of pipe.

TABLE 1

COMPACTION REQUIREMENTS

CONSTRUCTION ELEMENT	MAXIMUM COMPACTION LAYER THICKNESS (INCHES)	ASTM	MINIMUM COMPACTION
<b>I. STRUCTURES</b>			
a. Fill beneath foundation elements and under slabs-on-grade - hand-guided compaction	6	D1557	95%
Fill beneath foundation elements and under slabs-on-grade - self-propelled or tractor-drawn compaction	8	D1557	95%
b. Fill around structures and above footings	8	D1557	95%
<b>II. TRENCHES**</b>			
a. Fill under pipelines and pipe bedding	8	D1557	95%
b. Pipe sidefills and top 4 feet of pipe backfill under pavements	12	D1557	93%
c. Backfill below 4 feet under pavement	18	D1557	90%
d. Backfill under lawns, gardens and cultivated fields	24	D1557	90%
e. All other trenches***	36	D698	85%
<b>III. EMBANKMENTS AND FILLS</b>			
a. Fill under streets, parking lots, and other paved areas	12	D1557	92%
b. Embankments not supporting pavement or structures	18	D1557	90%
c. Rough site grading	24	D698	85%

\* Where structural loads are carried by piles, caissons or other deep foundations, minimum compaction may be reduced to 92 percent.

\*\* The first 1 foot above pipelines shall have a compacted thickness of 12 inches.

\*\*\* For cross-country pipelines, lifts may be compacted with a backhoe bucket or other means, and slightly mounded at the surface provided that regrading is performed within the guarantee period.

### 3.3 FIELD QUALITY CONTROL

#### A. Material Testing

1. The ENGINEER reserves the right to order testing of materials at any time during the work.
2. Testing will be done by a qualified, independent testing laboratory in accordance with this Section and Section 01400.
3. The CONTRACTOR shall aid the ENGINEER in obtaining representative material samples to be used in testing.
4. For each material, which does not meet specifications, the CONTRACTOR shall reimburse the OWNER for the cost of the test and shall supply an equal quantity of acceptable material, at no additional compensation.
5. The CONTRACTOR shall anticipate these tests and incorporate the time and effort into procedure.

#### B. Compaction Testing

1. The ENGINEER reserves the right to order the qualified independent testing laboratory to conduct in-place density tests of compacted lifts at the cost to the CONTRACTOR.
2. Testing shall be conducted for every 100 linear feet of trench backfill placed.
3. The CONTRACTOR shall dig test holes and provide access to all backfill areas at no additional compensation when requested by the ENGINEER.
4. For each test, which does not meet specifications, the CONTRACTOR shall retest at his cost. If the retest does not meet specifications, the CONTRACTOR shall replace and recompact material to the specifications at no additional cost to the OWNER.
5. The CONTRACTOR shall anticipate these tests and incorporate the time and effort into procedures.
6. Nuclear moisture density testing by "probe" methods will be acceptable for compacted layers not exceeding 8 inches in thickness.
  - a. Nuclear "backscatter" methods will be acceptable only for testing asphalt paving layers not in excess of 3 inches in thickness.
  - b. Only certified personnel will conduct nuclear testing.
  - c. If the nuclear method is utilized, the results shall be checked by at least one in-place density test method described above.

#### C. Unacceptable Stockpiled Material - Stockpiled material may be tested according to Material Testing Materials.

#### D. Alternate Methods of Compaction - The CONTRACTOR may employ alternate methods of compaction if the desired degree of compaction can be successfully demonstrated to the ENGINEER's satisfaction.



E. Select Material – On Site

1. Any on-site material may be used for select fill material provided it meets all the requirements of the equivalent off-site material.
2. No on-site material shall be used without prior approval of the ENGINEER.

F. Systematic Compaction - Compaction shall be done systematically, and no consideration shall be given to incidental coverage due to construction vehicle traffic.

3.4 PROTECTION

- A. Prior to terminating work for the day, the final layer of compacted fill, after compaction, shall be rolled with a smooth-wheel roller if necessary to eliminate ridges of soil left by tractors or equipment used for compaction or installing the material.
- B. As backfill progresses, the surface shall be graded so as to drain off during incidence of rain such that no ponding of water shall occur on the surface of the fill.
- C. The CONTRACTOR shall not place a layer of fill on snow, ice or soil that was permitted to freeze prior to compaction.
  1. These unsatisfactory materials shall be removed prior to fill placement.

END OF SECTION



SECTION 02316

SELECT GRANULAR MATERIALS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work Specified - Select granular materials shall be used in bedding, pipe encasement, or backfill and as specified or as directed by the ENGINEER.
- B. Related Work Specified Elsewhere:
  - 1. Section 02351 – Excavation, Backfill and Trenching.
  - 2. Section 02900 – Restoration.

1.2 QUALITY ASSURANCE

- A. Reference Standards - NYSDOT Standards, latest revision.

1.3 SUBMITTALS

- A. The CONTRACTOR shall furnish representative samples, sieve analysis and certification of specification compliance for the select granular materials to the ENGINEER and advise on the location of the source
- B. The CONTRACTOR shall submit copies of proposed materials, methods and operations of backfilling and compaction to the ENGINEER for review prior to the start of work. A list of equipment to be used in CONTRACTOR's methods and operations must be included.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Bedding and Pipe Encasement
  - 1. NYSDOT No. 1 Crushed Stone or Crushed Gravel – Bedding for PVC, DIP, and PCCP water main. Thoroughly washed, clean, sound, tough, hard, crushed limestone conforming to the requirements of NYSDOT Item No. 703.0201 or crushed gravel conforming to the requirements of NYSDOT Item No. 703.0202, having the following gradation by weight:

<u>% Passing</u>	<u>Sieve</u>
100	1-inch
90 - 100	1/2-inch
0 - 15	1/4-inch

2. NYSDOT No. 2A Crushed Stone or Crushed Gravel – Bedding for DIP and PCCP water main. Shall be a No. 1 and No. 2 blend, thoroughly washed, clean, sound, tough, hard, crushed limestone conforming to the requirements of NYSDOT Item No. 703.0201 or crushed gravel conforming to the requirements of NYSDOT Item No. 703.0202, having the following gradation by weight:

<u>% Passing</u>	<u>Sieve</u>
100	1-1/2-inch
93-100	1-inch
27-58	1/2-inch
0-8	1/4-inch

3. NYSDOT Concrete Sand – Bedding for copper and polyethylene tubing. Washed, fine aggregate sand shall conform to the requirements of NYSDOT Item No. 703.07, having the following gradation by weight:

<u>% Passing</u>	<u>Sieve</u>
100	3/8-inch
90 - 100	No. 4
75 - 100	No. 8
50 - 85	No. 16
25 - 60	No. 30
10 - 30	No. 50
1 - 10	No. 100
0 - 3	No. 200

- B. Select Backfill - NYSDOT Subbase Type 2 Crusher Run Stone or Crusher Run Gravel. Material shall conform to the requirements of NYSDOT Item No. 304.12, having the following gradation by weight:

<u>% Passing</u>	<u>Sieve</u>
100	2-inch
25 - 60	1/4-inch
5 - 40	No. 40
0 - 10	No. 200

- C. Peagravel - NYSDOT Type 1A Screened Gravel for the annular space between the carrier pipe and the casing pipe. Screened gravel shall conform to the requirements of NYSDOT Item No. 703.0203 and have the following gradation by weight:

<u>% Passing</u>	<u>Sieve</u>
100	1/2-inch
90 - 100	1/4-inch
0 - 15	1/8-inch

- D. Follow NYSDOT Standard Specifications if gradation data varies from those listed above.
- E. Recycled concrete or asphalt pavement shall not be allowed.
- F. Slag of any type shall not be allowed.
- G. Flowable fill shall not be allowed.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Select granular material as specified or directed for water main bedding or encasement shall be placed in accordance with Sections 02351.
- B. Select backfill where specified or directed shall be placed in accordance with the backfilling provisions of Section 02351.

### 3.2 DISPOSAL OF DISPLACED MATERIALS

- A. Materials displaced through the use of the above materials shall be wasted or disposed of by the CONTRACTOR and the cost of such disposal shall be included in the appropriate bid item.

END OF SECTION



## SECTION 02351

### EXCAVATION, BACKFILL AND TRENCHING

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

###### A. Work Specified

1. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals necessary for excavation, trenching, and backfill as shown and specified. Disposal of excess and unsuitable excavated material is included.
2. Backfill of excavations with acceptable materials as specified in other sections.

###### B. RELATED SECTIONS

1. Section 01562 – Protection of the Work and Property.
2. Section 02205 – Protection of Existing Facilities.
3. Section 02316 – Select Granular Materials.
4. Section 02900 – Restoration.

##### 1.2 QUALITY ASSURANCE

###### A. Reference Standards

1. ASTM A36, Structural Steel.
2. ASTM A328, Steel Sheet Piling.
3. ASTM D422, Particle-Size Analysis of Soils.
4. ASTM D698, Moisture-Density Relations of Soils, using 5.5 lb. Rammer and 12-inch Drop.
5. ASTM D1556, Density of Soil in Place by the Sand-Cone Method.
6. ASTM D1557, Moisture-Density Relations of Soils, using 10 lb. Rammer and 18-inch Drop.
7. ASTM D2321, Recommended Practices for Underground Installation of Pipe for Sewers and Other Gravity Flow Applications.
8. ASTM D2922, Density of Soil and Soil-Aggregate in Place by Nuclear Method (Shallow Depth).
9. AISC Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
10. Occupational Safety and Health Administration (OSHA) Regulations.
11. Industrial Code Rule 23.

12. Public Law 91-596 (Williams Steiger Act).
13. NYS Industrial Code Rule 53.

### 1.3 SUBMITTALS

- A. Before any excavation begins, the CONTRACTOR shall obtain all permits and licenses required by governing authorities having jurisdiction and submit certified copies to ENGINEER prior to work being performed.
- B. The CONTRACTOR shall submit drawings submitted with a professional engineer stamp, for information only, for the following items as required:
  1. Sheeting, shoring and bracing.
  2. Dewatering systems.
  3. Cofferdams.
  4. Additional excavation protection systems required.
  5. Underpinning.
  6. Underdraining.
  7. Sediment and erosion control.
  8. Boring and Receiving Pits.
- C. The CONTRACTOR shall submit proposed materials, methods and operations of backfilling and compaction to the ENGINEER for review prior to the start of work. A list of equipment to be used in CONTRACTOR's methods and operations must be included.
- D. All drawings shall be prepared and sealed by an independent professional engineer recognized as an expert in the specialty involved and licensed to practice in the State of New York. The drawings shall be submitted to the ENGINEER to establish compliance with the terms of the Contract Documents. Calculations shall not be submitted. Drawing submissions will not be checked and will not imply approval by the ENGINEER of the work involved. CONTRACTOR shall be wholly responsible for designing, installing, and operating whatever system is necessary to accomplish satisfactory sheeting, bracing, protection, underpinning, and dewatering.

### 1.4 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the Work are as shown on Drawings, or as provided by the ENGINEER.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Bedding and Select Backfill - Bedding and select backfill material shall be in accordance with Section 02316.



B. Backfill and Fill Materials

1. Excavated materials may be used for backfill provided:
  - a. Material is sandy, loamy or similar to bank run gravel.
  - b. Material is free of debris, hazardous materials, frozen materials, organic or other deleterious materials. Material greater than 4 inches in any direction is unacceptable. Material greater than 2 inches in any direction is unacceptable for backfill directly against the water main.
  - c. Maximum dry density and optimum moisture content are determined in accordance with the above.
  - d. Material is reviewed and deemed acceptable by the ENGINEER.
2. Use select granular backfill in accordance with Section 02316 within 5 feet or within a 1 on 1 slope from the trench to the edge of pavement of all roadways.

C. Topsoil - Topsoil shall be furnished and installed and coordinated with Section 02900.

D. Sheeting, Shoring and Bracing:

1. Used material shall be in good condition, not damaged or excessively pitted. Unless otherwise specified, all sheeting to remain in place shall be new. New or used sheeting may be used for temporary work.
2. All timber used for breast boards (lagging) shall be new or used, meeting the requirements for Douglas Fir Dense Construction grade or Southern Pine No. 2 Dense S3. Where close or tight sheeting is required, wood sheeting shall be tongued and grooved.
3. All steel work for sheeting, shoring, bracing, etc. shall be designed in accordance with the provisions of the "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" of the AISC, except that field welding will be permitted.
4. Steel sheet piling shall be manufactured from steel conforming to ASTM A328. Steel soldier piles, wales and braces shall be new or used and shall conform to ASTM A36.
5. Steel sheeting shall have a minimum thickness of 3/8-inch in web, unless otherwise specified.

E. Explosives:

1. Explosives are not allowed to be used nor allowed on site.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. The CONTRACTOR shall provide the ENGINEER with sufficient time and means to examine the areas and conditions under which excavating, filling, and grading are to be performed. The CONTRACTOR shall notify the ENGINEER of conditions detrimental to the proper and timely completion of work. The CONTRACTOR shall not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the ENGINEER.

### 3.2 TEST PITS

- A. Where shown or ordered by the ENGINEER, the CONTRACTOR shall excavate and backfill test pits in advance of construction to determine conditions or location of existing facilities. The CONTRACTOR shall perform all work required in connection with excavating, stockpiling, maintaining, sheeting, shoring, backfilling and restoring the surface for the test pits.
- B. Test pits, which the CONTRACTOR excavates, that are not shown on the Drawings or specified or ordered shall be at the CONTRACTOR's expense.
- C. No test pits will be dug prior to utility company stakeout.
- D. Cold patch for temporary repair shall be placed as directed by the ENGINEER.

### 3.3 EROSION CONTROL

- A. See Specification Section 01564.

### 3.4 EXCAVATION

- A. The CONTRACTOR shall perform all excavation required to complete the work as shown and specified. Anticipated excavations are within existing excavations on each project site. Excavations shall include earth, sand, clay, gravel, hardpan, boulders and ledge rock, decomposed rock, pavements, rubbish, and all other materials within the excavation limits.
- B. Excavations for pipelines, utilities and structures shall be open excavations, shored and braced where necessary, according to OSHA standards, to prevent possible injury to workmen and to new and existing structures or pipelines. CONTRACTOR shall designate a "competent person" [29 CFR 1926.32(f)] who shall be responsible for complying with OSHA 29 CFR 1926.
- C. Where the pipeline, utility or structure is to be placed below the groundwater table, wellpoints, or other acceptable methods shall be used to permit construction under dry conditions. Dry conditions shall prevail until concrete has reached sufficient strength to withstand earth and hydrostatic loads and until the pipelines are properly jointed, tested and backfilled.
- D. Pumping in excavations shall be done in such a manner so as to prevent damage to the existing subgrade, and to prevent the carrying away of unsolidified concrete materials.
- E. Excavations for pipelines shall be made sufficiently wide to permit proper laying and jointing of the pipe. The trench width at the top of the pipe should not be greater than the outside diameter of the pipe barrel, plus 2 feet, but shall be sufficient to allow thorough compacting of earth refill adjacent to the bottom half of the pipe. The depth of trench shall be sufficient to allow a minimum cover over the top of the pipe as shown on the drawings. The use of excavating equipment, which requires the trench to be excavated to an excessive width, will not be allowed. All trenches for buried piping shall be excavated at least 6 inches below the bottom of the pipe and backfilled with pipe bedding material as specified in Section 02316.
- F. Acceptable excavated materials shall be stockpiled in specified areas until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
  - 1. Locate and retain soil materials away from edge of excavations.
  - 2. Unsuitable backfill material shall be kept separate from all other material and shall be disposed of as specified hereinafter. Disposal of unsuitable and excess excavated material shall be accomplished immediately upon removal from the excavation.

3. Stockpiles shall not be located such that they interfere with traffic or access to public or private property. If necessary, the CONTRACTOR shall maintain additional stockpile areas located elsewhere on the site and shall transport the suitable backfill material to and from such stockpile areas as required for the work.
  4. In built-up districts and in streets where traffic conditions render it necessary, the material excavated from the initial opening shall be removed by the CONTRACTOR as soon as excavated, and the material subsequently excavated, if suitable for the purpose, shall be used to backfill the trenches in which pipe has been laid or structures have been built, and neither the excavated material nor materials of construction shall be stored on the streets or sidewalks.
- G. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with select granular material.
- H. Unless otherwise directed or permitted, not more than 100 feet of trench in advance of the end of the completed pipe or structure therein shall be opened at any time. Every trench in rock shall be fully opened at least 30 feet in advance of any place where masonry or pipe is being laid. Any time when the CONTRACTOR's crews are not on the job working, a trench length equal to or less than one-half of the last length of pipe installed may be left open, but properly covered or barricaded to protect the public.
- I. At such locations where two pipes may be installed in parallel in a common trench, and where specified, the CONTRACTOR shall install the pipes a minimum of 2 feet apart as measured horizontally from the outside diameter of pipe.

### 3.5 UNAUTHORIZED EXCAVATION

- A. All excavation outside the lines and grades shown and not specified, together with the removal and disposal of the associated material shall be at the CONTRACTOR's expense. The unauthorized excavation shall be filled as directed by the ENGINEER with select compacted backfill at the CONTRACTOR's expense. Claims and damages resulting from the CONTRACTOR's unauthorized excavation will be his sole responsibility.

### 3.6 DRAINAGE AND DEWATERING

A. General:

1. Prevent surface and subsurface water from flowing into excavations and from flooding adjacent areas.
2. Remove water from excavation as fast as it collects.
3. Maintain the ground water level at least 2 feet below the bottom of the excavation to provide a stable surface for construction operations and to prevent damage to the work during all stages of construction.
4. Provide and maintain pumps, sumps, suction and discharge lines and other dewatering system components necessary to convey water away from excavations.
5. Provide sediment traps when water is conveyed into watercourses.
6. Notify the ENGINEER before shutting down dewatering systems for any reason.

7. Standing water shall not be permitted in the excavation at any time. If the material at the design grade becomes unsuitable or contaminated due to the actions of the CONTRACTOR, the CONTRACTOR shall excavate additional material to the depth necessary and shall backfill to the proposed grade with select fill or crushed stone.
8. 100 percent standby pumps (gasoline powered) shall be maintained at the site at all times.
9. Any hardships created by the temporary dewatering for this contract which adversely affects the water supply to local property owners, shall be satisfactorily resolved by the CONTRACTOR, including the provision of temporary water service, if required, at no additional cost to the OWNER.
10. Obtain required permits from agencies of jurisdiction, NYSDEC, and USACOE, for any water being discharged into rivers, streams, or watercourses.
11. Examine adjacent structures and utilities, both existing and under construction, for possible settlement, movement or other adverse effects resulting from dewatering methods or water removal. Take necessary precautionary steps to protect such structures and utilities.

B. Disposal of Water Removed by Dewatering Systems:

1. Dispose of all water removed from the excavation in such a manner as not to endanger public health, property, or any portion of the work under construction or completed.
2. Dispose of water in such a manner as to cause no inconvenience to the OWNER or others on or adjacent to the site.
3. Convey water from the excavation in a closed conduit. Do not use trench excavations as temporary drainage ditches.
4. Disposal of water shall be by specified methods and shall not cause erosion or sedimentation to occur in existing drainage systems. All sedimentation or blocking of existing systems shall be thoroughly cleaned and returned to original condition by the CONTRACTOR at his expense.
5. Damage caused by the CONTRACTOR's operations to public or private property shall be repaired by him to the satisfaction of the ENGINEER and the damaged property owner at the CONTRACTOR's expense.
6. The CONTRACTOR shall perform all work, furnish all materials, and install all measures required to reasonably control soil erosion resulting from construction operations and prevent excessive flow of sediment from the construction site. Such work may include the installation of water diversion structures, diversion ditches, and sediment basins and seeding, mulching or sodding critical areas to provide temporary protection. The CONTRACTOR shall submit a plan showing the methods to be used for controlling erosion and sedimentation during construction along with the schedule of construction operations to the ENGINEER for review.
7. All erosion and sediment control practices shall be in place prior to any grading operations and installation of proposed structures or utilities.
8. All erosion and sediment control practices shall be left in place until construction is completed and/or area is stabilized.
9. Where necessary, disturbed areas shall be temporarily seeded and/or mulched until proper weather conditions exist for establishment of a permanent vegetative cover.

### 3.7 SHEETING, SHORING, AND BRACING

#### A. General:

1. Unless otherwise shown or specified, excavations shall be open, shored and braced or sheeted where necessary to prevent injury to workmen, structures, pipelines, and utilities.
2. Structures within 100 feet of sheeting installations shall be subject to a preconstruction survey to identify and record existing structural conditions. In the instance of private residences, the homeowners shall be contacted directly. These inspections shall be carried out by a pre-inspection firm experienced in this line of work.
3. During the actual construction process, the CONTRACTOR shall provide the monitoring and recording of the actual vibrations generated. A baseline of ambient vibration levels shall be established prior to driving sheet piling.
  - a. The particle acceleration during the driving of the sheet piling shall not exceed 2.0 feet per second.
  - b. The CONTRACTOR will be required to change the construction methods if the work is resulting in unacceptable vibration levels.
4. All municipal, county, state, and federal ordinances, codes, regulations, and laws shall be observed. The CONTRACTOR shall provide all sheeting, shoring, and bracing which conforms to Public Law 91-596 (Williams Steiger Act), New York State Department of Labor Industrial Code Note 23, and all applicable sections of the 1970 Occupational Safety and Health Act (OSHA), and any other requirements as necessary.
5. All municipal, county, state and federal ordinances, codes, regulations, laws, and OSHA regulations shall be observed.
6. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down the shoring and bracing as excavation progresses.
7. Safe and satisfactory sheeting, shoring, and bracing shall be the entire responsibility of the CONTRACTOR.
8. The CONTRACTOR shall be held accountable and responsible for the sufficiency of all shoring and bracing used and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining or removing of the same.
9. The ENGINEER's permission to proceed with work in either a sheeted, shored braced or open trench condition shall in no way relieve the CONTRACTOR from the above responsibilities.
10. The clearances and types of temporary structures, insofar as they affect the character of the finished work, and the design of steel sheeting to be left in place, will be subject to the review of the ENGINEER, but the CONTRACTOR shall be solely responsible for the adequacy of all sheeting, shoring, bracing, cofferdamming, etc.
11. Unless otherwise shown, specified, or ordered, all materials used for temporary construction shall be removed when work is completed. Such removal shall be made in a manner not injurious to the pipelines or structures.
12. All steel sheet piling designed to remain in place shall be new materials. New or used materials may be used for temporary work.

13. Steel sheet piling shall be manufactured from steel conforming to ASTM A328. Steel for soldier piles, wales, and braces shall be manufactured to conform to ASTM A36.
14. No excavation shall be performed below a line drawn down and away at a slope of two horizontal and one vertical from the nearest footing of the existing structure without providing sheeting, shoring, and bracing.

**B. Sheeting Left in Place:**

1. Steel sheet piling shall be left in place or where conditions are such that the removal of sheeting will endanger the work or adjacent pipes or structures or when ordered in writing to be left in place by the ENGINEER. It shall consist of rolled sections of the continuous interlocking type unless otherwise specified. The type and design of the sheeting and bracing shall conform to the above specifications for all steel work for sheeting and bracing.
2. Steel sheet piling to be left in place shall be driven straight to the lines and grades as shown or directed. The piles shall penetrate into firm materials with secure interlocking throughout the entire length of the pile. Damaged piling having faulty alignment shall be pulled and replaced by new piling.
3. The type of guide structure used and method of driving for steel sheet piling to be left in place shall be submitted to the ENGINEER for review. Jetting will not be permitted.
4. The CONTRACTOR shall cut off piling left in place at least 2 feet below road surface or to the grades shown or ordered by the ENGINEER and shall dispose of the cutoffs.
5. Portions of sheeting or soldier piles and breast boards, which are in contact with concrete, shall be left in place.

**C. Removal of Sheeting and Bracing:**

1. Sheeting and bracing shall be removed from excavation unless otherwise indicated by the ENGINEER. Removal shall be done so as to not cause injury to the work.
  - a. Wood or steel sheeting shall not be removed when adjacent to structures, pavement, pipes, or any other public or private property where removal may cause damage to such property.
  - b. Fill all voids left by removal of sheeting with select fill.
2. Removal of sheet piling shall be done so as not to cause injury to the Work. Removal shall be equal on both sides of excavation to ensure no unequal loads on pipe or structures.

- E.** In areas where the Contract Drawings call for sheeting to remain in place, alternate sheeting methods will not be allowed. Only pre-driven, steel sheet piling systems designed for the CONTRACTOR by a professional engineer will be allowed in these areas.

### **3.8 BACKFILL AND COMPACTION**

- A.** All backfill required for trenches and structures required to provide the finished grades shown and as described herein shall be furnished, placed, and compacted in 6-inch lifts by the CONTRACTOR. Unless otherwise specified or required, fill shall be obtained from the excavated materials. All materials used for filling and backfilling shall be soil of acceptable quality, free from boulders, frozen lumps, wood, stumps, sludge, or other organic matter or other deleterious or hazardous materials. Excavated materials meeting these requirements and approved by the ENGINEER may be used as backfill.

- B. Rock and/or earth material may be encountered during the work that is unsuitable for backfilling. When this material is encountered, it shall be disposed of in the specified manner, possibly resulting in a shortage of suitable backfill material. In this event, the CONTRACTOR shall be responsible for furnishing, delivering, and installing clean earth or select backfill materials to properly and completely backfill the excavation. Backfill material for these situations may be obtained from other areas of the project where suitable material is available or from offsite locations as approved by the ENGINEER. All backfill material is subject to the ENGINEER's review and must meet the minimum requirements of the specifications above.
- C. Backfill excavations as promptly as work permits, but not until completion of the following:
1. Inspection by the ENGINEER of all work within the excavation.
  2. Inspection, testing approval, and recording of locations of underground utilities, connections, branches, structures, and other facilities.
  3. Removal of shoring and bracing and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in a manner to prevent settlement of the structure or utilities or leave in place if required.
  4. Removal and proper disposal of trash and debris.
- D. Excavation shall be kept dry during backfilling operations. Backfill around piping and structures shall be brought up evenly on all sides.
- E. The minimum density to be obtained during backfilling operations shall be 95 percent and is a percentage of the maximum density obtained in the laboratory as defined in ASTM D698 Method C including Note 2. This percentage is of modified Proctor density. In-place density determinations shall be made using a sand density cone or equivalent method as specified by ASTM D1556. If any bricks, bottles, pieces of metal, debris, or other foreign matter larger than 3/4-inch size are encountered in the density test hole, a different test location shall be chosen. The ENGINEER will determine the frequency of field testing required to determine the density of the fill and shall direct the number and location of density tests. All equipment necessary to determine fill density, including nuclear density meters, shall be supplied by the CONTRACTOR.
- F. The water content of fill material shall be controlled during placement within the range necessary to obtain the density specified. In general, the moisture content of the fill shall be within 5 percent dry and 2 percent wet of the optimum moisture content for the specified density as determined by laboratory tests. The CONTRACTOR shall perform all necessary work to adjust the water content of the material to within the range necessary to permit the density specified. No fill material shall be placed, and no compaction of fill will be permitted when there is any standing water in the trenches or when the fill material or the ground the fill is to be placed on is frozen.
- G. The CONTRACTOR is not allowed to access any part of an existing water supply system (fire hydrants, etc.) as a source of water for any reason during construction activities, including the use of water for backfilling to obtain the proper moisture content.
- H. If the specified densities are not obtained because of the CONTRACTOR's improper control of placement or compaction procedures, or because of inadequate or improperly functioning equipment, the CONTRACTOR shall perform whatever work is required to provide the specified densities. This work shall include complete removal of unacceptable fill areas, replacement and recompaction until acceptable fill is provided.

I. Pipe Trench Preparation:

1. Braced trench width shall be minimized to greatest extent practical but shall conform to the following:
  - a. Trench width shall be sufficient to provide room for installing, jointing, and inspecting piping, as shown on Contract Drawings.
  - b. Enlargements at pipe joints may be made if required and specified by the ENGINEER.
  - c. Trench width shall be sufficient for sheeting, bracing, sloping, and dewatering.
  - d. Trench width shall be sufficient to allow thorough compacting of backfill.
  - e. Do not use excavating equipment, which requires the trench to be excavated to excessive width.
2. Depth of trench shall be as shown. If required, depths may be revised as specified by the ENGINEER.
3. Where pipe is laid in rock excavation, crushed stone or gravel fill shall be carefully placed and tamped over the rock before the pipe is laid. After laying pipe, the balance of the backfill shall be placed as described herein above.

J. Preparation for Structures:

1. Generally, compact subgrade to density requirements for subsequent backfill materials.
2. Cut out soft areas of subgrade not capable of in situ compaction. Backfill with Type B gravel fill and compact to density equal to or greater than requirements for subsequent backfill materials.
3. Inspect spaces to be backfilled and remove all unsuitable materials including sheeting, bracing, forms, and debris prior to commencing backfilling operations.

K. Placement for Pipes:

1. Place pipe bedding, select backfill and/or earth backfill or borrow materials, as specified herein.
2. All backfill in pipe trenches shall be placed in horizontal layers not exceeding 6 inches in depth and thoroughly compacted before the next layer is placed.
3. Trenches under roadways shall be backfilled with select backfill material for the entire length of the open cut crossing plus 5 feet back from the edge of pavement or a distance equal to a 1 on 1 slope to the invert, whichever is greater.
4. Where shoulders are excavated, the trench shall be backfilled with select granular material.
5. The entire trench area under driveways, parking areas, and sidewalks, shall be backfilled with select granular material in accordance with the Contract Drawings and Specifications.
6. Prior to commencing with the backfilling operation, the CONTRACTOR shall submit information to the ENGINEER such as catalog cuts, specification sheets, etc., describing the type of compaction equipment he intends to use.

L. Placement for Structures:

1. Backfill shall be placed in layers and thoroughly compacted by mechanical means as outlined in these specifications



2. Where pipelines or conduits are to be placed on structural backfill, all backfill under the pipes shall be Size D-2 crushed stone placed in 8-inch layers and mechanically tamped, unless an alternate method of supporting such pipes is specified.
  3. Hydraulic compaction by ponding or jetting will not be permitted except in very unusual conditions and then only upon written request and demonstration of its effectiveness by the Contractor and the written acceptance by the Engineer.
  4. Backfill against supported structure walls that are properly shored and braced or of sufficient strengths to withstand lateral soil pressures.
  5. Backfill simultaneously on each side of unsupported foundation walls.
- M. The CONTRACTOR shall repair any settlement that occurs at no additional cost to the OWNER.

### 3.9 GRADING

- A. General - Uniformly grade areas within limits of grading under this Section including adjacent transition areas. Smooth subgrade surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
- B. Turfed Areas - Finish areas to receive topsoil to within not more than 1 inch above or below the required subgrade elevation.
- C. Walks and Pavements - Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 1/2 inch above or below the required subgrade elevation.
- D. Slabs - Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 3 inch when tested with a 10-foot straightedge.
- E. Compaction - After grading, compact subgrade surfaces to the depth and percentage of maximum density required.
- F. All existing drainage swales and ditches, if disturbed, shall immediately, upon completion of pipe installation, be restored to proper lines and grades. CONTRACTOR shall ensure the final drainage facilities are in working condition and acceptable to the agency of jurisdiction.

### 3.10 PIPE ENCASEMENT

- A. General - Place subbase material, in layers of specified thickness, over ground surface to support the pavement base course. In the event an underground pipe is shown under a base slab, the pipe shall be encased in concrete for its entire length under the slab in accordance with details shown on the Drawings. Where no detail is shown, encasement shall be formed to provide a minimum of 8 inches of concrete cover reinforced with #5 reinforcing bars spaced 12 inches each way. When the top of the pipe is within 12 inches of the bottom of the slab, the encasement shall be tied to the base slab with reinforcing. The General CONTRACTOR shall be responsible for encasement of all pipes under slabs including piping by other contracts.

### 3.11 PAVEMENT SUBBASE COURSE

- A. General - Place subbase material, in layers of specified thickness, over ground surface to support the pavement base course.

- B. Grade Control - During construction, maintain lines and grades including crown and cross-slope of subbase course.
- C. Shoulders - Place shoulders along edges of subbase course to prevent lateral movement. Construct shoulders of acceptable soil materials as specified, placed in such quantity to compact to thickness of each subbase course layer. Compact and roll at least 12-inch width of shoulder simultaneously with compacting and rolling of each layer of subbase course.
- D. Placing - Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations. When a compacted subbase course is shown to be 6 inches thick or less, place material in a single layer. When shown to be more than 6 inches thick, place material in equal layers, except no single layer more than 6 inches or less than 3 inches in thickness when compacted.

### 3.12 DISPOSAL OF EXCAVATED MATERIALS

- A. Material removed from the excavations which does not conform to the requirements for fill or is in excess of that required for backfill shall be hauled away by the CONTRACTOR and disposed of in compliance with municipal, county, state, federal or other applicable regulations at no additional cost to the OWNER.
- B. The CONTRACTOR shall not dispose waste excavated material in any of the following locations:
  - 1. Wetland areas.
  - 2. Floodplains.
  - 3. Any area where excess siltation will damage or pollute receiving water.
  - 4. Disposal of excess materials shall only be allowed at locations approved by NYSDEC Region 9.

### 3.13 RESTORATION AND CLEANUP

- A. Following installation, the CONTRACTOR shall restore all areas to their original condition to the requirements of Section 02900 and to the satisfaction of the ENGINEER.

END OF SECTION

## SECTION 02900

### RESTORATION

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

###### A. Work Specified

The work specified shall include all labor, material, equipment, services, and incidentals necessary to restore surfaces, lawns, culverts, and other features disturbed, damaged, or destroyed during the performance of the work under or as a result of the operations of the Contract.

###### B. Related Work Specified Elsewhere

1. Section 02316 – Select Granular Materials.
2. Section 02351 – Excavation, Backfill, and Trenching .

##### 1.2 QUALITY ASSURANCE

###### A. The quality of materials and the performance of work used in the restoration shall produce a surface or feature equal to the condition of each before the work began.

###### B. Reference Standards

1. American Association of Nurserymen (AAN).
2. ASTM D698, Standard Compaction Test.
3. ASTM D2487, Classification of Soils for Engineering.
4. ASTM D2974, Standard Test Method for Moisture, Ash and Organic Matter of Peat and Other Organic Soils.
5. New York State Department of Transportation Standard Specifications, latest revision.

##### 1.3 SUBMITTALS

###### A. CONTRACTOR shall submit the following submittals:

1. The location of source and data for off-Site topsoil.
2. Analysis of the seed.
3. Should a hydroseeder be used, the CONTRACTOR shall submit all data including material and application rates.

1.4 SCHEDULE OF RESTORATION

- A. A schedule of restoration operations shall be submitted by the CONTRACTOR for review.
  - 1. After an accepted schedule has been agreed upon it shall be adhered to unless otherwise revised by the ENGINEER.
- B. In general, permanent restoration of traveled surfaces will not be permitted until 1-month time has elapsed after excavations have been completely backfilled as specified.
- C. The replacement of surfaces at any time, as scheduled or as directed, shall not relieve the CONTRACTOR of responsibility to repair damages by settlement or other failures.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil shall be unfrozen friable clayey loam free from clay lumps, stones, roots, sticks, stumps, brush, hazardous materials, or foreign objects.
- B. Fertilizer shall be a standard quality commercial carrier of available plant food elements. A complete prepared and packaged material containing a minimum of 10 percent nitrogen, 10 percent phosphoric acid and 10 percent potash.
  - 1. Each bag of fertilizer shall bear the manufacturer's name and guaranteed statement of analysis.
- C. Seed mixtures shall be of commercial stock of the current season's crop and shall be delivered in unopened containers bearing the guaranteed analysis of the mix.
  - 1. All seed shall meet the New York State Department of Transportation 713-04 standard specifications for germination and purity.

D. Seed Mixtures:

<i>Specia</i>	<i>Lawn Areas*</i>	<i>Non-Maintained Areas *</i>
Kentucky Bluegrass	50	20
Creeping Red Fescue	30	20
Manhattan or Pennfine Ryegrass	20	60

\* % by weight

- E. Mulch shall be stalks of oats, wheat, rye or other acceptable crops, which are free from noxious weeds.

2.2 MATERIALS TESTING.

- A. All materials must be tested and approved prior to delivery to the Site. Samples of materials proposed for use shall be submitted by the CONTRACTOR to the ENGINEER and the testing laboratory. Samples of the materials shall be submitted at least ten days in advance of its anticipated use.

## PART 3 EXECUTION

### 3.1 INSTALLATION

#### A. Lawns and Improved Areas

1. The area to receive topsoil shall be graded to a depth of not less than 4 inches or as specified, below the proposed finished surface. If the depth of existing topsoil prior to construction was greater than 4 inches, topsoil shall be replaced to that depth.
  - a. All debris and inorganic material shall be removed, and the surface loosened for a depth of 2 inches prior to the placing of the topsoil.
  - b. The topsoil shall not be placed until the subgrade is in suitable condition and shall be free of excessive moisture and frost.
  - c. Topsoil placed in areas of earth excavation will not be placed until suitable earth compaction has been performed.
2. Satisfactory topsoil removed from the excavations shall be placed on the prepared subgrade to the depth required.
  - a. In the event the topsoil removed during excavation is unsatisfactory or inadequate to obtain the required finish grades, the CONTRACTOR shall furnish the required quantity of satisfactory topsoil from specified sources off Site.
  - b. All topsoil shall be free from stones, roots, sticks and other foreign substances and shall not be placed in a frozen or muddy condition.
  - c. The finished surface shall conform to the lines and grades of the area before disturbed or as shown on the Contract Drawings. Any irregularities shall be corrected before the placement of fertilizer and seed.
3. The fertilizer shall be applied uniformly at the rate of 20 pounds per 1,000 square feet.
  - a. Following the application of the fertilizer and prior to application of the seed, the topsoil shall be scarified to a depth of at least 2 inches with a disc or other suitable method traveling across the slope if possible.
4. When the topsoil surface has been fine graded, the seed mixture shall be uniformly applied upon the prepared surface with a mechanical spreader at a rate of not less than 5 pounds per 1,000 square feet.
  - a. The seed shall be raked lightly into the surface and rolled with a light hand lawn roller.
  - b. Seeding and mulching shall not be done during windy weather.
5. The mulch shall be hand or machine spread to form a continuous blanket over the seed bed, approximately 2 inches uniform thickness at loose measurement. Excessive amounts or bunching of mulch will not be permitted.
  - a. Mulch shall be anchored by an acceptable method.
  - b. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.

- c. Any anchorage or mulch that has not disintegrated at time of first mowing shall be removed. Anchors may be removed or driven flush with ground surface.
6. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed. Any washout or damage, which occurs, shall be regraded and reseeded until a good sod is established.
7. Hydroseeding may be accepted as an alternative method of applying fertilizer, seed, and mulch. The CONTRACTOR must submit all data regarding materials and application rates to the ENGINEER for review.
8. The CONTRACTOR shall maintain the newly seeded areas, including regrading, reseeding, watering and mowing, in good condition, until the development of an established cover.

#### B. Cultivated Area Replacement

1. Areas of cultivated lands shall be graded to a depth to receive topsoil of not less than the depth of the topsoil before being disturbed. All debris and inorganic material shall be removed prior to placing of the topsoil.
2. After the topsoil has been placed and graded, the entire area disturbed during construction shall be cultivated to a minimum depth of 12 inches with normal farm equipment.
  - a. Any debris or inorganic materials appearing shall be removed.
  - b. The removal of stones shall be governed by the adjacent undisturbed cultivated area.
3. Grass areas shall be re-seeded using a mixture equal to that of the area before being disturbed, unless otherwise specified.

#### C. Other Types of Restoration

1. Shrubs and landscape items damaged or destroyed as a result of the construction operations shall be replaced in like species and size.
  - a. All planting and care thereof shall meet the standards of the American Association of Nurserymen.
2. Water courses shall be reshaped to the original grade and cross-section and all debris removed. Where required to prevent erosion, the bottom and sides of the watercourse shall be protected.
3. Culverts destroyed or removed as a result of the construction operations shall be replaced in like size and material and shall be replaced at the original location and grade. When there is minor damage to a culvert and with the consent of the ENGINEER, a repair may be undertaken, if satisfactory results can be obtained.
4. Should brick pavements be encountered in the work, the restoration shall be as set forth in the General Requirements or as directed.
5. Items removed for construction such as mailboxes, signposts, reflector markers, and the like shall be replaced in as good or better condition than existing. Items damaged by the CONTRACTOR shall be replaced at his expense. Privately owned items, such as mailboxes, shall be reinstalled to the satisfaction of the OWNER and ENGINEER.

D. Lawn Maintenance

1. All lawn areas shall be mowed by the CONTRACTOR before the new grass reaches a height of 4 inches.
  - a. Following the establishment of a good stand of grass and the first mowing, the CONTRACTOR's obligation shall end except for the repair of settlement or damage.
2. Any lawn area, which does not develop an established cover, shall be reseeded and maintained at the CONTRACTOR's expense until an established cover is present.

E. Tree Plantings

1. Determine location of underground utilities and perform work in a manner that will avoid possible damage. Hand excavate, as required, to minimize possibility of damage to underground utilities. Maintain grade stakes until removal is mutually agreed upon by all parties concerned.
2. Trees replaced by the CONTRACTOR will be of the same species and will be a minimum of 6 feet high and 2 inches in trunk diameter. CONTRACTOR must fertilize and water tree appropriately after planting and will guarantee tree for a period of one year. All issues regarding tree planting including type, size, and final location must be approved by the ENGINEER prior to payment.

END OF SECTION





## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This Section specifies cast-in place concrete, formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

##### 1.2 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments. Indicate amounts of mix water to be withheld for later addition at Project Site.
- C. Provide the name and location of the concrete supplier.
- D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
  - 1. Aggregates.
  - 2. Reinforcing steel if requested by the ENGINEER.
  - 3. Design mixes.
- F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
  - 1. Cementitious materials and aggregates.
  - 2. Form materials and form-release agents.
  - 3. Steel reinforcement and reinforcement accessories.
  - 4. Admixtures.
  - 5. Curing materials.
  - 6. Bonding agents.
  - 7. Adhesives.
  - 8. Joint-filler strips.

### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- C. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
- D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated.
- E. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- F. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
- G. ACI Publications: Comply with the following, unless more stringent provisions are indicated:
  - 1. ACI 301, "Specification for Structural Concrete."
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

### 1.4 TESTS

- A. All previous testing of non-concrete materials incorporated in the concrete mix shall be performed within the past twelve months. Make test reports available to the Engineer upon request.
- B. For each day when concrete is being placed, provide at a minimum, one slump test and three cylinders for compression testing. One cylinder shall be tested at 7 days, and two (2) at 28 days. Submit all copies of test results to Engineer for review.

## PART 2 PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed (exposed) Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. Use plywood, metal, or other approved panel materials.
- B. Rough-Formed (unexposed) Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4-inch minimum.
- D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Formulate form-release agent with rust inhibitor for steel form-facing materials.

- E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of the exposed concrete surface.
  - 2. Furnish ties that, when removed, will leave holes not larger than 1 inch in diameter in concrete surface.
  - 3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615 Grade 60, deformed.
- B. Welded Wire reinforcement: ASTM A1064, flat sheets.

## 2.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
  - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.

## 2.4 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type II.
- B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
  - 1. Class: Severe weathering region, but not less than 3S.
  - 2. Nominal Maximum Aggregate Size: 1-1/2 inches.
- C. Water: Potable and complying with ASTM C 94.

## 2.5 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
- G. Corrosion Inhibiting Admixture: ASTM C 1582.

## 2.6 WATERSTOPS

- A. Hydrophilic waterstops shall be 1-inch wide by 3/4-inch thick strips of chloroprene or butyl rubber and mastic. Waterstops shall be Hydrotite by Greenstreak/Sika, Earth Shield type 20 by JP Specialties, Inc., Hydro-Flex 302 by the Henry Company, or approved equal.
- B. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes. Use profile as indicated.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
    - a. Greenstreak.
    - b. Murphy: Paul Murphy Plastics Co.
    - c. Vinylex Corporation.

## 2.7 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
- F. Products: Subject to compliance with requirements, provide one of the following:
  - 1. Evaporation Retarder:
    - a. Eucobar; Euclid Chemical Co.
    - b. Lambco Skin; Lambert Corporation.
    - c. E-Con; L&M Construction Chemicals, Inc.
    - d. MasterKure ER 50; BASF Corporation.
    - e. SikaFilm; Sika Corporation.

2. Clear, Waterborne, Membrane-Forming Curing Compound:
  - a. AH Clear Cure WB; Anti-Hydro International, Inc.
  - b. Diamond Clear VOX; Euclid Chemical Co.
  - c. Dress & Seal WB; L&M Construction Chemicals, Inc.
  - d. Vocomp-20; W. R. Meadows, Inc.
  - e. MasterKure CC 200 WB; BASF Corporation.
  - f. Horncure 100; Tamms Industries Co., Div. of LaPorte Construction Chemicals of North America, Inc.

## 2.8 RELATED MATERIALS

- A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- B. Epoxy Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Shore A hardness of 80 per ASTM D 2240.
- C. Surface Sealant: 100% silane sealant.
- D. Bonding Agent: Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Product that consists of water-insensitive epoxy adhesive, Portland cement, and water-based solution of corrosion-inhibiting chemicals that forms a protective film on steel reinforcement.
  1. Properties of the mixed cementitious bonding agent:
    - a. Time: Not less than 2 hours.
    - b. Color: Concrete gray.
  2. Properties of the cured bonding agent:
    - a. Compressive Strength: 28 days: 6,000 psi min. (ASTM D 695).
    - b. Flexural Strength: 28 days: 500 psi min. (ASTM C 293).
    - c. Splitting Tensile Strength at 28 days: 500 psi min.
    - d. Bonding agent shall not produce a vapor barrier.
  3. Manufacturer: MasterEmaco ADH 326 by BASF or approved equal.
- E. Grout: All grout shall be non-shrink, non-metallic, non-gas forming preblended and ready for use requiring only the addition of water. Minimum 28-day compressive strength must be 5000 psi.

## 2.9 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test databases, as follows:
1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
  2. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.
- B. Structural Concrete: Includes all foundations, walls, pads, slabs, beams, columns, and other elements except where specifically noted on the drawings. Proportion normal-weight concrete mix as follows:
1. Compressive Strength (28 Days): 4,500 psi.
  2. Slump: 3 ½ inches ± 1 inch.
  3. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2- to 4-inch slump.
  4. Except where otherwise specified, all concrete shall be air-entrained in the range of 5-7%.
- C. Fill Concrete: Concrete not included in structural concrete. Proportion normal-weight concrete mix as follows:
1. Compressive Strength (28 Days): 2500 psi.
  2. Slump: 3 inches ± 2 inch.
- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:
1. Fly Ash (ASTM C618): 25 percent.
  2. Combined Fly Ash and Pozzolan (ASTM C618): 25 percent.
  3. Silica Fume (ASTM C1240): 10 percent.
  4. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
  5. Slag (ASTM C989): 50 percent.
  6. Total of fly ash, pozzolans, slag, and silica fume: 50 percent.
- E. Maximum Water-Cementitious Materials Ratio: 0.40 for structural concrete; 0.50 for fill concrete.
- F. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- G. Admixtures: Admixtures other than air entraining admixtures shall not be used without written approval of the ENGINEER. Use admixtures according to manufacturer's written instructions.
1. Superplasticizer (per ASTM C 494): a high-range water-reducing admixture in the concrete, as required, for placement and workability.

2. Water-reducing admixture: pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

## 2.10 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

# PART 3 EXECUTION

## 3.1. FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
  1. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual.
- C. Construct forms tight enough to prevent loss of concrete mortar.
- D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal. Do not use rust-stained steel form-facing material.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- G. Chamfer exterior corners and edges of permanently exposed concrete as indicated on the Contract Drawings.
- H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor bolts, accurately located, to elevations required.
  - 2. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

### 3.3 REMOVING AND REUSING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.
- B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the following:
  - 1. At least 70 percent of 28-day design compressive strength.
  - 2. Determine compressive strength of in-place concrete by testing representative field- or laboratory-cured test specimens according to ACI 301.
  - 3. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by the ENGINEER.

### 3.4 SHORES AND RESHORES

- A. Comply with ACI 318, ACI 301, and recommendations in ACI 347 for design, installation, and removal of shoring and reshoring.
- B. Plan sequence of removal of shores and re-shore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.



### 3.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
- C. Accurately position support and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
  - 1. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.
  - 2. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
  - 3. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

### 3.6 JOINTS AT NEW CONCRETE LOCATIONS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by OWNER.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
  - 2. Form from preformed galvanized steel, plastic keyway-section forms, or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
  - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 6. Use an epoxy-modified cementitious bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
    - a. Exception: When a wall greater than five feet in height is to be placed on hardened concrete, epoxy bonding agents are not required.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
  2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Division 7 Section "Joint Sealants," are indicated.
  3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

### 3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before placing concrete, water may be added at Project Site, subject to limitations of ACI 301. Do not add water to concrete after adding high-range water-reducing admixtures to mix.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Place each layer while preceding layer is still plastic, to avoid cold joints.
1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
  2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into proceeding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  2. Maintain reinforcement in position on chairs during concrete placement.
  3. Screenshot slab surfaces with a straightedge and strike off to correct elevations.
  4. Slope surfaces uniformly to drains where required.
  5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When air temperature has fallen to or may fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at point of placement.
  2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
  4. When the average air temperature is expected to be less than 40 degrees F during the first 3 days after the concrete is poured, concrete shall be maintained at a minimum temperature of 50 degrees during that time. The minimum temperature shall be increased to 55 degrees for concrete less than 12 inches thick. Concrete temperature shall be recorded with high-low thermometers at opposite corners of the concrete pour at a maximum interval of 12 hours during that time. This period of time shall be increased to 7 days for concrete expected to resist partial construction loads prior to reaching the design 28-day strength.
- F. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is CONTRACTOR's option.
  2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
  3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

### 3.8 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove all fins and other projections exceeding 1/8 inch in height.
1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, damp proofing, veneer plaster, or painting.
  2. Do not apply rubbed finish to smooth-formed finish.
- B. Rubbed Finish: Apply the following to smooth-formed finished concrete (all exposed concrete). Remove formwork exposing only small sections at a time. Do not expose more concrete than can be troweled within 30 minutes. Expeditiously work surface of exposed walls with a steel concrete finishing trowel to bring latent cement to the surface. Lightly wet areas drying too quickly. Patch surface voids with Portland cement compound. Trowel entire wall in a circular pattern to achieve a uniform appearance. Protect until fully cured.

- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

### 3.9 FINISHING FLOORS AND SLABS

- A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Coordinate floor finish and application of slab treatment and curing materials with requirements of finished flooring materials and traffic coating materials. Do not finish while bleed water is still being released from concrete. Provide recommended finish and omit slab treatment and curing materials where application will be detrimental to adhesion and longevity of traffic coating and floor finish.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.
- C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with OWNER before application.

### 3.10 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bullfloating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the methods listed for unformed surfaces.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven (7) days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. **Moisture-Retaining-Cover Curing:** Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven (7) days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
  - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
  - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer recommends for use with floor coverings.
3. **Curing Compound:** Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
4. **Curing and Sealing Compound:** Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

### 3.11 LIQUID FLOOR/SLAB TREATMENTS

- A. **Penetrating Liquid Floor/Slab Treatment:** Prepare, apply, and finish penetrating liquid floor/slab treatment according to manufacturer's written instructions.
  1. Apply silane sealer to concrete slabs and walls in accordance with manufacturer's specifications.

### 3.12 JOINT FILLING AT NEW CONCRETE LOCATIONS

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions. Defer joint filling until concrete has aged at least six (6) months. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semi-rigid epoxy joint filler full depth in saw-cut joints and at least 2 inches 50 mm deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

### 3.13 FIELD QUALITY CONTROL

- A. **Testing Agency:** CONTRACTOR shall engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.
- B. **Testing Services:** Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
  1. **Testing Frequency:** Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof. When

frequency of testing will provide fewer than five compressive- strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
  4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 degrees F and below and when 80 degrees F and above, and one test for each composite sample.
  5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
  6. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample. Cast and field cure one set of four standard cylinder specimens for each composite sample.
  7. Compressive-Strength Tests: ASTM C 39; test two field-cured specimens at 7 days and two at 28 days. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.
- C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, CONTRACTOR shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- E. Test results shall be reported in writing to OWNER, concrete manufacturer, and CONTRACTOR within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- F. The CONTRACTOR shall provide the testing agency a minimum of 24 hours advance notification prior to all concrete operations.
- G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by ENGINEER but will not be used as sole basis for approval or rejection of concrete.
- H. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by ENGINEER. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by the ENGINEER.

END OF SECTION

SECTION 03410

PRECAST STRUCTURAL CONCRETE

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. Extent of plant precast concrete work as shown on drawings and in schedules.
- B. Precast concrete includes the following:
  - 1. Slide gate access chamber Pre-cast Top slabs.
- C. Related Accessories: The following precast accessories and related products are found in this section:
  - 1. Access Hatches.

1.3. PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design precast structural concrete, including comprehensive engineering analysis by a qualified professional engineer registered in the State of New York, using performance requirements and design criteria indicated and as required by applicable codes.
- B. Structural Performance: Provide precast structural concrete units and connections capable of withstanding the following design loads within limits and under conditions indicated:
  - 1. Live Loads: 300 psf.

1.4. APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification:

- A. American Concrete Institute (ACI) Publications:

ACI 304	Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 309	Practice for Consolidation of Concrete
ACI 318	Building Code Requirements for Reinforced Concrete

B. American Society for Testing and Materials (ASTM) Publications:

A 82	Steel Wire, Plain, for Concrete Reinforcement
A 185	Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
A 416	Uncoated Seven-Wire Stress-Relieved Steel Strand for Prestressed Concrete
A 421	Uncoated Stress-Relieved Steel Wire for Prestressed Concrete
A 497	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
C 33	Concrete Aggregates
C 94	Ready-Mixed Concrete
C 150	Portland Cement
C 260	Air-Entraining Admixtures for Concrete
C 494	Chemical Admixtures for Concrete
C 595	Blended Hydraulic Cements

C. Prestressed Concrete Institute (PCI) Publication:

MNL-116	Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products
MNL-120	Design Handbook - Precast and Prestressed Concrete

1.5. SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each precast concrete mixture. Include compressive strength and water-absorption tests.
- C. 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. Include and locate openings larger than by 10 inches.
  - 2. Indicate location of each precast structural concrete unit by same identification mark placed on panel.
  - 3. Indicate relationship of precast structural concrete units to adjacent materials.



## 1.6. 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 engineer.
  - 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. Design Standards: Comply with ACI 318, ACI 350 and design recommendations in PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of precast structural concrete units indicated.
- C. 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."

## 1.7. DELIVERY, STORAGE, AND HANDLING

- A. Support units during shipment on shock-absorbing material in same position as during storage.
- B. 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.
- C. Lift and support units only at designated points shown on Shop Drawings.

## 1.8. 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.

### 2.2. REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from, 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, gray, unless otherwise indicated.
- B. Supplementary Cementitious Materials: Use of the following materials is permitted, in accordance with the criteria of ACI 318.
  - 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 3S. 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/C 494M, Type A.
  - 2. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.

### 2.4. STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A 36/A 36M.
- B. Welding Electrodes: Comply with AWS standards.
- C. Accessories: Provide clips, hangers, plastic shims, and other accessories required to install precast structural concrete units.

### 2.5. 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.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, Portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, of consistency suitable for application.

## 2.6. 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, granulated blast-furnace slag to 40 percent of Portland cement by weight; 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/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion 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): 5000 psi.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
- E. 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.
- F. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.
- G. Concrete Mix Adjustments: Concrete mix design adjustments may be proposed if characteristics of materials, Project conditions, weather, test results, or other circumstances warrant.

## 2.7. 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. Form joints are not permitted on faces exposed to view in the finished work.
  - 2. Edge and Corner Treatment: Uniformly chamfered.

## 2.8. 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/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- B. Cast-in access doors in precast structural concrete slabs as indicated on the Contract Drawings.
- C. Cast-in openings larger than 10 inches in any dimension. Do not drill or cut openings without Engineer's approval.
- D. 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. When damage to epoxy-coated reinforcement exceeds limits specified, repair with patching material compatible with coating material and epoxy coat bar ends after cutting.
  - 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 3/4-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. Place reinforcing steel strand to maintain at least 3/4-inch minimum concrete cover. Increase cover requirements for reinforcing steel to 1-1/2 inches 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.
  - 5. 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.
- E. Reinforce precast structural concrete units to resist handling, transportation, and erection stresses.
- F. 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.
- G. Place face mixture to a minimum thickness after consolidation of the greater of 1 inch or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.
- H. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units.
  - 1. Place backup concrete mixture to ensure bond with face-mixture concrete.

- I. 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.
    - 1. Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."
  - J. Comply with ACI 306.1 procedures for cold-weather concrete placement.
  - K. Comply with PCI MNL 116 procedures for hot-weather concrete placement.
  - L. 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.
  - M. 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.
  - N. 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 Engineer's approval.
- 2.9. 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.
- 2.10. COMMERCIAL FINISHES
- A. Commercial Grade: Remove fins and large protrusions and fill large holes. Rub or grind ragged edges. Faces must have true, well-defined surfaces. Air holes, water marks, and color variations are permitted. Limit form joint offsets to 3/16 inch.
  - 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.
- 2.11. SOURCE QUALITY CONTROL
- A. Strength of precast structural concrete units will be considered deficient if units fail to comply with ACI 318 requirements for concrete strength.
  - B. 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/C 42M.
    - 1. A minimum of three representative cores will be taken from units of suspect strength, from locations directed by Engineer.

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.
- C. 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 Engineer's approval.

#### 2.12. JOINT SEALING GASKET

- A. Provide preformed plastic gaskets for all horizontal joints between sections.
1. Flexible plastic gasket-type sealant shall be butyl rubber, meeting the requirements of Federal Specification SS-S-210A, and shall conform with the applicable requirements of ASTM C-361, Section 5.7.'
  2. Sealing compound shall be provided in extruded rope form of minimum 1" cross section. Size of sealant shall be in accordance with the manufacturer's recommendations and of sufficient size to obtain squeeze-out of material around the entire interior and exterior circumference of the vaults.
  3. Joint surfaces shall be primed, and sealant applied in conformance with the written specifications of the sealant manufacturer.

#### 2.13. TOP SLABS.

- A. Provide precast top slab, to the dimensions shown on the drawings.
- B. Manufacturer shall be aware of the need for attachment and installation of slide gate operators and bases on the top slab, as shown on the drawings.
- C. Access hatches will be provided under this section and cast into the top slab.

#### 2.14. ACCESS HATCHES

- A. General: Provide manufactured hatch cast in concrete top slab, at the location shown and to the nominal dimensions and specifications indicated on drawings.

### PART 3 EXECUTION

#### 3.1. EXAMINATION

- A. Examine 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.

### 3.2. INSTALLATION

- A. Erect precast structural concrete level, plumb, and square 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. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  - 2. Imbedded precast lifting devices shall be recessed into the slab. Lifting points shall remain for future rigging connections and slab removal.
- B. 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.
- C. Fasteners: Do not use drilled or powder-actuated fasteners for attaching accessory items to precast, prestressed concrete units.

### 3.3. ERECTION TOLERANCES

- A. Erect precast structural concrete units level, plumb, square, true, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 135.

### 3.4. REPAIRS

- A. Repair precast structural concrete units if permitted by Engineer.
  - 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. Remove and replace damaged precast structural concrete units that cannot be repaired or when repairs do not comply with requirements as determined by Engineer.

END OF SECTION





## SECTION 03600

### GROUT

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This Section includes the minimum requirements of grout used for equipment bases, pipe supports, and anchor rods/bolts including, but not limited to, the following:
  - 1. Non-shrink, epoxy type.
  - 2. Non-shrink, non-metallic cementitious type.

##### 1.2 RELATED SECTIONS

- A. Section 03300 – Cast-In-Place Concrete.
- B. Division 11 – Equipment.
- C. Division 15 – Mechanical.

##### 1.3 REFERENCES

- A. Comply with applicable provisions and recommendations of the following, except as otherwise specified.
  - 1. ASTM C78, Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).
  - 2. ASTM C 144, Aggregate and Masonry Mortar.
  - 3. ASTM C 150, Portland Cement.
  - 4. ASTM C 109, Compressive Strength of Hydraulic Cement Mortars (using 2-inch or 50 mm Cube Specimens).
  - 5. ASTM C 191, Time of Setting of Hydraulic Cement by Vicat Needle.
  - 6. ASTM C476, Standard Specification for Grout for Masonry.
  - 7. ASTM C531, Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
  - 8. ASTM C579, Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
  - 9. ASTM C580, Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.

10. ASTM C881, Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
11. ASTM E488, Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements.
12. CRD-C-5898, Specifications for Non-Shrink Grout.

#### 1.4 QUALITY ASSURANCE

- A. Perform work in accordance with applicable ACI model code.

#### 1.5 SUBMITTALS

##### A. Shop Drawings:

1. Submit copies of manufacturer's specifications and installation instructions for all materials.

##### B. Reports and Certificates:

1. For proprietary materials, submit copies of reports on quality control tests.
2. For nonproprietary materials, submit certification that materials meet specification requirements.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

##### A. The following shall be used for grout work where otherwise unspecified:

1. Non-shrink, epoxy type grout shall be Masterflow 648 CP Plus by Degussa Building Systems, Euclid Chemical, or approved equal.
2. Non-shrink, non-metallic cementitious grout shall be Masterflow 928 by Degussa Building Systems, Z-Crete, or approved equal.

#### 2.2 MATERIALS

##### A. Non-shrink, epoxy type grout for applications including anchor rods/bolts.

1. Grout shall be a non-shrink, high-performance, three-component, 100 percent solids, moisture tolerant, high strength, modified epoxy resin-based grout.
2. Grout shall conform to current ASTM C881 specifications.
3. Grout shall have the following minimum property values in accordance with test standard:
  - a. 7-day compressive strength: 15,500 psi (ASTM C579).
  - b. 28-day compressive strength: 17,500 psi (ASTM C579).

- c. Flexural strength: 5,000 psi (ASTM C580).
  - d. Tensile bond strength to steel: 3,000 psi (ASTM C531).
  - e. Shear bond strength to steel: 4,000 psi (ASTM C531).
- B. Non-shrink, non-metallic cementitious grout for structural applications including bearing plates and base plates.
- 1. Grout shall have the following minimum property values in accordance with test standard:
    - a. 28-day compressive strength (flowable state): 8,000 psi (ASTM C476).
    - b. 28-day flexural strength (flowable state): 1,150 psi (ASTM C 78).
    - c. Design stress 2,275 psi (ASTM E 488).

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. CONTRACTOR shall, prior to placing grout, inspect all areas to be grouted to ensure that no defects exist that may inhibit the intended use of the grout. If such conditions occur, CONTRACTOR shall make notice to the ENGINEER and proceed only when directed by the ENGINEER.

### 3.2 PREPARATION

- A. Prior to placing grout, CONTRACTOR shall clean concrete surfaces of dirt, dust, laitance, corrosion, or other contamination; wire brush; using potable water, rinse surface and allow it to dry.

### 3.3 INSTALLATION

- A. General:
  - 1. Place grout as shown on the Contract Drawings and in accordance with manufacturer's instructions. If manufacturer's instructions conflict with the Specifications do not proceed until ENGINEER provides clarification.
  - 2. Manufacturers of proprietary products shall make available upon 72 hours notification the services of a qualified, full-time employee to aid in assuring proper use of the product under job conditions.
  - 3. Placing grout shall conform to temperature and weather limitations as specified by the manufacturer.
  - 4. Equipment base grouting shall be conducted to ensure no voids exist under bases. Grout shall be worked from one end of the base to the other. On large bases, standpipes, grout holes, and vents shall be provided to ensure base is properly grouted.

END OF SECTION



SECTION 05505

CONCRETE AND MASONRY ANCHORS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Post-installed chemical adhesive anchor system for installing bolts and reinforcement dowels into concrete and masonry.
- B. Limited use of post-installed mechanical anchors in concrete and masonry.
- C. Cast-in anchors for attachment to concrete and masonry.

1.2. RELATED SECTIONS

- A. Section 03300 (Cast-in-Place Concrete)

1.3. REFERENCES

ACI 318	Building Code for Structural Concrete
ACI 355.2	Qualifications of Post-Installed Mechanical Anchors in Concrete
ACI 355.4	Qualifications of Post-Installed Adhesive Anchors in Concrete
ASTM A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A325	Structural Bolts, Heat Treated, 120/105 ksi Tensile Strength
ASTM A449	Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use
ASTM A615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM E488	Strength of Anchors in Concrete and Masonry Elements
ASTM E1512	Testing Bond Performance of Bonded Anchors
ASTM F593	Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F594	Stainless Steel Nuts
ASTM F1554	Anchor Rods, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F2329	Zinc Coating, Hot-Dip
ICC-ES AC58	Acceptance Criteria for Post-Installed Adhesive Anchors in Masonry
ICC-ES AC106	Acceptance Criteria for Post-Installed Mechanical Anchors in Masonry
ICC-ES AC193	Acceptance Criteria for Post-Installed Mechanical Anchors in Concrete
ICC-ES AC308	Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete

1.4. SUBMITTALS

- A. Submit catalog cuts for post-installed anchor products to be used for anchoring bolts and dowels into concrete and masonry. Catalog cuts (do not submit whole catalogs) shall be clearly marked to include:
  - 1. Manufacturer's installation instructions.
  - 2. Allowable temperature range for anchor installation and curing.
- B. Submit the ICC-ES Evaluation Service Report (ESR) for proposed anchor system.

- C. Submit data on threaded rods to be used, including materials, sizes, lengths, etc.
- D. Submit letter from anchor manufacturer that indicates successful completion of product installation training.
- E. Submit catalog cuts on mechanical, expansion-type anchor bolts when use is previously approved.
- F. Submit name of Contractor's testing laboratory that will complete proof-load testing.

#### 1.5. QUALITY ASSURANCE

- A. Only post-installed anchor products listed in Part 2 are acceptable for use on this project. Substitutions will only be considered for products having an applicable ICC-ES Evaluation Service Report. Substitution requests shall include calculations, signed and sealed by a professional engineer registered in the state of New York, that demonstrate the substitute product is capable of achieving the performance values required by this specification.
- B. Prior to installation of the approved anchor, contact the Manufacturer's representative to provide product installation training and a letter indicating successful completion of product installation training.
- C. A five percent sample of installed anchors shall be proof-loaded by an independent testing laboratory contracted by the Contractor. The quantity of samples and locations shall be determined by the Engineer. Test results shall be submitted to the Engineer.

#### 1.6. COORDINATION

- A. Coordinate the placement of anchor bolts with approved items and fabrications.

### PART 2 PRODUCTS

#### 2.1. MATERIALS

- A. Anchor adhesive shall be a high-strength, premeasured, two-part, self-mixing, cartridge-type adhesive system.
- B. Adhesive system used to install threaded rod anchors and reinforcing bars into concrete shall be "DeWalt AC 100+ Gold" by DeWalt, "HIT-HY200" by Hilti, Inc., or equal.
- C. Adhesive system used to install threaded rod anchors and reinforcing bars into grouted masonry shall be "DeWalt AC 100+ Gold" by DeWalt, "HIT-HY200" by Hilti, Inc., or equal.
- D. Adhesive system used to install threaded rod anchors into hollow core masonry using a SS mesh screen tube; shall be "DeWalt AC 100+ Gold" by DeWalt or equal.

MINIMUM REQUIRED ULTIMATE LOAD CAPACITIES			
ROD SIZE (DOWEL)	MINIMUM EMBEDMENT <sup>(1)</sup> (INCHES)	MINIMUM ULTIMATE TENSILE STRENGTH <sup>(2)</sup> (LBS.)	MINIMUM ULTIMATE SHEAR STRENGTH <sup>(2)</sup> (LBS.)
3/8" (#3)	3-1/2	6,000	5,000
1/2" (#4)	4-1/2	10,000	9,000
5/8" (#5)	5-1/2	14,000	15,000
3/4" (#6)	6-3/4	18,000	20,000
7/8" (#7)	7-3/4	30,000	30,000
1" (#8)	9	43,000	33,000

(1) Minimum embedment depths unless noted otherwise on the Contract Drawings.

(2) Ultimate strengths are based on bond strength to minimum 2,000 psi concrete.

- E. Stainless Steel Threaded Rods – ASTM A593, Type 316.
- F. Stainless Steel Nuts – ASTM A594, Type 316.
- G. Reinforcing Steel Dowels – ASTM A615, Grade 60 deformed bar.
- H. Cast-in Anchor Rods (Bolts) – ASTM F1554 anchor rods galvanized to ASTM A153 or F2329. Use 3/4-inch diameter rods (L-bolts) bent 90 degrees with 3-inch hook. Anchor rods shall be 18 inches long or as shown on the Contract Drawings.
- I. Threaded rods and anchor bolt accessories, including nuts, washers, etc. shall be of the same material as the rods/bolts.
- J. Mechanical Anchors – (expansion-type) are not allowed unless specifically requested (for a special application) by the Contractor and approved by Engineer in writing. When approved, expansion-type anchors shall be stainless steel. Anchors shall be rated for a minimum of twice the required load capacity. Refer to limitations of use stated in Part 3.

## PART 3 EXECUTION

### 3.1. INSTALLATION OF ADHESIVE ANCHOR SYSTEMS

- A. All bolted connections to concrete and masonry shall utilize an adhesive anchor system as specified above.
- B. Threaded stainless steel rods shall be used for all anchor bolt applications.
- C. Provide templates or other means to accurately locate anchors. Coordinate location of post-drilled anchors with slab or wall reinforcing steel to prevent conflict.
- D. Holes for anchors shall be drilled in accordance with manufacturer's written instructions. Drilled holes shall be cleaned out and shall be free of dust and trapped water by using oil free compressed air and brushes.
- E. Masonry wall (cores) shall be filled with masonry grout where anchors are to be installed. In existing construction where masonry cores are not (and cannot be) grout filled (hollow core masonry), manufacturer's mesh screen tube shall be used with adhesive anchor installation.
- F. Install adhesive anchors in accordance with manufacturer's recommendations.

- G. Bolts installed into concrete and masonry shall not be closer than 6 inches on centers.
- H. All structural members bolted to concrete and masonry shall be made with a minimum of two 5/8-inch diameter anchors at each end of member.
- I. Anchor bolts and dowels shall be clean and free of coatings or other contaminants that would impair bonding to the chemical adhesive.
- J. Threaded rods shall be long enough to project through the entire depth of nut and shall be cut off at 1/2 inch beyond the top of nut.
- K. Anchor bolts shall not be installed in concrete less than seven days old, or older if recommended by the manufacturer.
- L. Adhesive anchors shall be installed following all criteria as listed in the respective ESR. Adhesive shall be fully cured prior to applying load on anchor.

### 3.2. INSTALLATION OF CAST-IN ANCHORS

- A. All cast-in anchors used for slide gates shall be stainless steel and match frame material grade. Other anchors shall be at a minimum hot-dip galvanized unless noted otherwise in the Contract Documents.
- B. Provide templates or other means to accurately place anchors.
- C. Anchors shall be secured in place to not allow displacement during placement of concrete or masonry grout.
- D. Concrete or masonry grout shall be thoroughly vibrated around the anchors for proper bonding of the anchors.
- E. Anchor rods shall be long enough to project through the entire depth of nut and shall be cut off at 1/2 inch beyond the top of nut.
- F. Concrete or masonry grout shall be at full 28-day compressive strength prior to applying load on anchor.

### 3.3. INSTALLATION OF MECHANICAL ANCHORS

- A. Mechanical (expansion-type) anchors will only be considered for overhead (ceiling) applications where thru-bolting cannot be performed. Mechanical anchors are not allowed for any other use unless specifically requested (for a special application) by the Contractor and approved by Engineer in writing.
- B. Mechanical anchors shall support static tension loads not exceeding 200 lbs. per anchor.
- C. Drilled holes shall be cleaned out and free of dust.
- D. Anchors shall be fully seated prior to pretension. Pretension in accordance with manufacturer's instructions.
- E. Engineer may request any/all of these mechanical anchors to be proof-loaded.

END OF SECTION



## SECTION 11280

### FABRICATED SLIDE GATES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section defines the minimum requirements for the supply and installation of fabricated slide gates and appurtenances.
- B. The equipment provided under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the equipment manufacturer unless exceptions are noted by the ENGINEER.
- C. Gates and operators shall be supplied with all the necessary parts and accessories indicated on the drawings, specified or otherwise required for a complete, properly operating installation, and shall be the latest standard product of a manufacturer regularly engaged in the production of fabricated gates

##### 1.2 RELATED SECTIONS

- A. Section 03600 – Grout
- B. Section 15115 – Electric Actuators

##### 1.3 REFERENCES

- A. American Water Works Association (AWWA) C561, latest edition.
- B. American Bearing Manufacturer's Association (ABMA).
- C. American National Standards Institute (ANSI).
- D. American Society for Testing and Materials (ASTM).

##### 1.4 QUALITY ASSURANCE

- A. The manufacturer shall have experience in the production of substantially similar equipment and shall show evidence of satisfactory operation in at least 50 installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirement of the latest edition of ASME, Section IX.
- B. Gates shall be shop inspected for proper operation before shipping. Gates shall be leak tested prior to shipment. Leak testing shall be performed with pressurized water in the unseating head condition. Feeler gauge testing or similar is not acceptable in lieu of water testing. Results of shop tests shall be submitted to the ENGINEER for approval prior to gates leaving manufacturer.
- C. The manufacturer shall be ISO 9001: 2015 certified.

1.5 SUBMITTALS

- A. In accordance with the General Provisions, General Specifications, and Section 01331 of this Contract, and prior to the procurement of the equipment, the CONTRACTOR shall submit the following documentation to the ENGINEER for review and approval:
1. Drawings and documents showing and describing the gate. As a minimum, the documents shall include general arrangements (plans and vertical elevations), dimensions, weights of a complete assembly and individual components, materials of construction, and other information pertaining to the equipment supply.
  2. Complete description of all materials including the material thickness of all structural components of the frame and slide.
  3. Installation drawings showing all details of construction, details required for installation, dimensions, and anchor bolt locations.
  4. Maximum bending stress and deflection of the slide under the maximum design head.
  5. The location of the company headquarters and the location of the principal manufacturing facility. Provide the name of the company that manufactures the equipment if the supplier utilizes an outside source.
  6. Operation and Maintenance Manuals shall be in accordance with Special Project Conditions and General Specifications including complete installation, and operation and maintenance data, with copies of all approved Shop Drawings.

1.6 WARRANTY

- A. The manufacturer of the units shall provide a written warranty covering all parts and service for the entire slide gate system, as described herein for a period of two (2) years.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. The slide gates shall be as manufactured by RW Gate Company (basis of design), Whipps, Rodney Hunt, or approved equal. The following gates shall be in the quantities and types as indicated on the Contract Drawings and in the Gate Schedule below:

<i>Gate Description</i>	<i>Clear Opening Dimensions</i>	<i>Qty.</i>	<i>Mounting</i>	<i>Actuator Type</i>	<i>Max Design Head</i>
Sedimentation Basin 1 (East)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 1 (West)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 2 (East)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 2 (West)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 3 (East)	32"W x 32"H	1	Settled Water Channel	Electric	15'

<i>Gate Description</i>	<i>Clear Opening Dimensions</i>	<i>Qty.</i>	<i>Mounting</i>	<i>Actuator Type</i>	<i>Max Design Head</i>
Sedimentation Basin 3 (West)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 4 (East)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 4 (West)	32"W x 32"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 5 (East)	36"W x 36"H	1	Settled Water Channel	Electric	15'
Sedimentation Basin 5 (West)	36"W x 36"H	1	Settled Water Channel	Electric	15'

1. All gates are open/close operation.

## 2.2 DESIGN CRITERIA

### A. Design Head

1. Slide gates shall be sized as shown on the Contract Drawings and designed to withstand a maximum design head on both sides as listed on the Chart in Section 2.1.

### B. Leakage

1. Slide gates shall be substantially watertight under the design head conditions. Under the design seating head, and unseating head the leakage shall not exceed 0.1 U.S. gallon per minute per foot (1.24 l/min per meter) of seating perimeter.

- C. Seal performance: The gate's sealing system should have been tested through a cycle test in an abrasive environment and should show that the leakage requirements are still obtained after 25,000 cycles with negligible wear (less than 0.018-inch) and proper sealing.

## 2.3 DETAILS OF CONSTRUCTION

### A. GENERAL

1. Gates shall have the characteristics as specified herein and as shown on the Contract Drawings.
2. The gate shall utilize durable self-adjusting UHMWPE seals. Due to the difficulty of accessing gates when they are in service, gates that utilize adjustable wedges, wedging devices or pressure pads are not acceptable.
3. All structural components of the frame and slide shall be fabricated of 316 stainless steel having a minimum thickness of 1/4-inch and shall have adequate strength to prevent distortion during normal handling, during installation and while in service.
4. Slide gate frames shall be shipped fully assembled with the invert member welded to the side frames and the slide installed in the frame unless the overall width of the slide gate exceeds 96 inches, or the overall height of the slide gate exceed 25 feet.
5. All welds shall be performed by welders with AWS D1.6 or ASME Section IX certification.

6. Finish: Mill finish on stainless steel. Welds shall be passivated in accordance with ASTM A380. If bead blasting is utilized; the entire slide and entire frame shall be bead blasted to provide a uniform finish. All iron and steel components shall be properly prepared, and shop coated with a primer. Provide finish coating after installation of the equipment.

#### B. FRAME

1. The frame assembly, including the guide members, invert member and yoke members, shall be constructed of formed 316 stainless steel plate with a minimum thickness of 1/4-inch.
2. Frame design shall allow for embedded mounting, mounting directly to a wall with 316 stainless steel anchor bolts and grout or mounting to a wall thimble with stainless steel mounting studs and a mastic gasket material. Mounting style shall be as shown on the Contract Drawings.
3. All gates shall have a flange frame. Flat frame gates are not acceptable. Wall mounted guides shall have a minimum weight of 10 lbs. per foot. The guide extensions shall be constructed of formed plate and shall have a minimum weight of 6 lbs. per foot. Angles are not acceptable for guide extensions.
4. The structural portion of the frame that incorporates the seat/seals shall be formed by one plate into a one-piece shape for rigidity. Guide members that consist of two or more bolted structural members are not acceptable. Guide member designs where water loads are transferred through the assembly bolts are specifically not acceptable.
5. Wrap around gussets shall be provided as necessary to support the guide members in an unseating head condition. The gussets shall extend to support the outer portion of the guide assembly and shall be positioned to ensure that the load is transferred to the anchor bolts or the wall thimble studs.
6. The frame shall extend to accommodate the entire height of the slide when the slide is in the fully opened position.
7. A rigid 316 stainless steel invert member shall be provided across the bottom of the opening. The invert member shall be of the flush-bottom type on upward opening gates.
8. A 316 rigid stainless steel top seal member shall be provided across the top of the opening on gates designed to cover submerged openings.
9. Lifting lugs shall be provided on all frame styles.

#### C. SLIDE

1. The slide and reinforcing stiffeners shall be constructed of 316 stainless steel plate. All structural components shall have a minimum thickness of 1/4-inch. The portion of the slide that engages the frame shall have a minimum thickness of 1/2-inch.
2. The slide shall not deflect more than 1/360 of the span or 1/16 inch, whichever is smaller, under the maximum design head.
3. The portion of the slide that engages the guide members shall be of a "thick edge" design. The thick edge portion of the slide shall have a minimum thickness of 3 inches.
4. Reinforcing stiffeners shall be welded to the slide and mounted horizontally. Vertical stiffeners shall be welded on the outside of the horizontal stiffeners for additional reinforcement and even distribution of stress forces.

5. The stem connector shall be constructed of two angles or plates. The stem connector shall be welded to the slide. A minimum of two bolts shall connect the stem to the stem connector.

#### D. SEALS

1. All gates shall be provided with a self-adjusting seal system to restrict leakage in accordance with the requirements listed in this specification.
2. Adjustable seal systems are not acceptable since they require accessibility and dewatering to make adjustment.
3. All gates shall be equipped with UHMW polyethylene seat/seals to restrict leakage and to prevent metal to metal contact between the frame and slide.
4. The seat/seals shall extend to accommodate the entire height of the slide when the slide is in the fully closed or fully opened position.
5. All upward opening gates shall be provided with a resilient seal to seal the bottom portion of the gate. The seal shall be attached to the invert member or the bottom of the slide and it shall be held in place with stainless steel attachment hardware. Invert seals that are held solely with adhesives are not acceptable.
6. The seal system shall be durable and shall be designed to accommodate high velocities and frequent cycling without loosening or suffering damage.
7. Seals shall be field replaceable. All seals must be bolted or otherwise mechanically fastened to the frame or slide. Arrangement with seals that are force fit or held in place with adhesives are unacceptable.
8. The seals shall be mounted so as not to obstruct the water way opening.
9. The seal system shall have been factory tested to confirm negligible wear (less than 0.01") and proper sealing. The factory testing shall consist of an accelerated wear test comprised of a minimum of 25,000 open-close cycles using a well-agitated sand/water mixture to simulate fluidized grit. The shop test shall have been performed on a stainless steel slide gate and the test results shall have been certified by the manufacturer in writing. A copy of the test shall be provided to the Engineer with submittal package.

#### E. STEM

1. A threaded operating stem shall be utilized to connect the operating mechanism to the slide. On rising stem gates, the threaded portion shall engage the operating nut in the motor actuator.
2. The threaded portion of the stem shall have a minimum outside diameter of 1-1/2 inches. Stem extension pipes are not acceptable.
3. The stem shall be constructed of solid 316 stainless steel bar for the entire length, the metal having a tensile strength of not less than 75,000 psi.
4. The stem shall be threaded to allow full travel of the slide unless the travel distance is otherwise shown on the Contract Drawings.
5. Maximum L/R ratio for the unsupported part of the stem shall not exceed 200.
6. In compression, the stem shall be designed for a critical buckling load caused by a 40 lb. effort on the crank or handwheel with a safety factor of 2, using the Euler column formula.

7. The stem shall be designed to withstand the tension load caused by the application of a 40 lb. effort on the crank or handwheel without exceeding 1/5 of the ultimate tensile strength of the stem material.
8. The threaded portion of the stem shall have machine rolled or cut threads of the full depth Acme type with a 16-microinch finish or better. Stub threads are not acceptable.
9. Stems of more than one section shall be joined by 316 stainless steel couplings. The coupling shall be bolted to the stems.
10. Stem lubricant shall be grease.
11. All slide gate stems for this project shall have the same diameter.

#### F. STEM GUIDES

1. Stem guide shall be provided when necessary to ensure that the maximum L/R ratio for the unsupported part of the stem is 200 or less.
2. Stem guide brackets shall be fabricated of 316 stainless steel and shall be outfitted with UHMW bushings.
3. Adjustable in two directions.

#### G. OPERATORS

1. Pedestals shall be constructed of 316 stainless steel.
  - a. The pedestal height shall be such that the motor actuator height is located as indicated on the Contract Drawings.
  - b. The base plate, adaptor plate and gussets on the pedestal shall have a minimum thickness of 1/2-inch.
  - c. The design and detail of the pedestals and anchor bolts shall be provided by the gate manufacturer and shall be approved by the ENGINEER. The gate manufacturer shall supply the pedestals, anchor bolts and accessories as part of the gate assembly.
2. Operators shall be equipped with fracture-resistant clear butyrate or lexan plastic stem covers.
  - a. The top of the stem cover shall be closed.
  - b. The bottom end of the stem cover shall be mounted in a housing or adapter for easy field mounting. Drain holes shall be located at the bottom end to prevent condensation.
  - c. Stem covers shall be complete with indicator markings to indicate gate position.

#### H. ELECTRIC MOTOR ACTUATORS

1. Each slide gate shall be operated by an electric motor actuator- see Section 15115.

#### I. ANCHOR BOLTS

1. Chemical adhesive anchor bolts shall be provided by the gate manufacturer for mounting the gates and appurtenances.

2. Quantity and location shall be determined by the gate manufacturer.
3. Anchor bolts shall have a minimum diameter of 1/2-inch.

#### 2.4 MATERIALS OF CONSTRUCTION

<b>PART</b>	<b>MATERIAL</b>
Frame Assembly	316L Stainless Steel ASTM A240
Slide and Stiffeners	316L Stainless Steel ASTM A240
Stem	316 Stainless Steel ASTM A276
Anchor Studs, Bolts, Fasteners and Nuts	316 Stainless Steel ASTM A276
Invert Seal	EPDM
Seat/Seals and Facing	UHMW Polyethylene ASTM D4020
Pedestals and Wall Brackets	316L Stainless Steel ASTM A240

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Plates and appurtenances shall be handled and installed in accordance with the manufacturer's recommendations.
- B. Equipment shall be installed within a vertical tolerance of 1/8-inch over the entire length or as specified by the manufacturer, whichever is most stringent.
- C. The CONTRACTOR shall fill the void in between the gate frame and the wall with non-shrink grout as shown on the installation drawing and in accordance with the manufacturer's recommendations.

#### 3.2 FIELD TESTS AND ADJUSTMENTS

- A. Conduct field performance and functional test of each slide gate, in the presence of the ENGINEER to demonstrate that each part and all components function together correctly.
- B. The CONTRACTOR shall provide any required test equipment and/or commissioning consumables.
- C. Adjust all parts and components as required to provide correct operation.

#### 3.3 START-UP ASSISTANCE

- A. The CONTRACTOR shall furnish 10 (ten) days of service and up to 5 (five) trips from a qualified, factory employed service technician of the manufacturer to inspect the installation and certify that it is adequate and acceptable prior to operation of each unit. Sales representatives are not considered acceptable service technicians. In addition, the representative shall witness on-Site start-up and testing of each unit. OWNER and ENGINEER shall be present during start-up procedures.
- B. A complete start-up service report shall be filled out and signed by the factory service representative and a representative of the OWNER and ENGINEER. Five copies of the start-up report shall be furnished.

C. CONTRACTOR shall pay the per diem charges of manufacturers' service representatives if additional service is required due to failure of CONTRACTOR to have proper forces available during a scheduled service call. CONTRACTOR shall not be responsible for additional service calls due to defects in equipment or materials furnished by OWNER.

1. CONTRACTOR shall give sufficient notice to the OWNER prior to placing the equipment in service so that arrangements can be made for the scheduled service calls.

#### 3.4 TRAINING

A. The CONTRACTOR shall provide a factory-trained technician to conduct two 4-hour training sessions for up to four of the OWNER's personnel per session. This session will be conducted at the designated site of the OWNER and shall consist of instruction on the proper operation and maintenance of the gate/actuator assembly.

B. The CONTRACTOR shall furnish all instruction materials (one per OWNER personnel plus additional two spares) to conduct the session. Upon completion of the training, all instructional materials shall become the property of the OWNER.

C. The sessions shall be conducted at times chosen by the OWNER.

D. One (1) additional day of service separate from installation and start-up shall be provided for training. Training shall include a detailed Power Point presentation and an outline of the training, an electronic copy of which shall be turned over to the OWNER.

END OF SECTION



## SECTION 15115

### ELECTRIC ACTUATORS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Electric actuators for slide gates.
- B. Actuators shall be provided by the slide gate manufacturer and provided with the gate assembly as a complete package.

##### 1.2 REFERENCES

- A. NEMA Standards, National Electrical Manufacturer's Association.
- B. NEC, National Electric Code.
- C. UL/IEC Standards for Electrical Components.

##### 1.3 RELATED SECTIONS

- A. Section 11280 – Fabricated Slide Gates.

##### 1.4 PROGRESS SUBMITTALS

- A. Provide submittals that clearly illustrate compliance to the specifications and Contract Drawings. CONTRACTOR shall provide documentation with pertinent data clearly highlighted that illustrates that proposed equipment complies with this specification.
- B. Shop Drawings: Submittals shall include but not be limited to the following:
  - 1. Manufacturer's literature, illustrations, specifications, detailed drawings, data, and descriptive literature on all proposed actuators and appurtenances including dimensions, materials, size, and weight.
  - 2. Documentation showing the required normal and maximum operating torque of each gate verses the torque ratings of the actuator selected for use on that gate.
  - 3. List of all actuators indicating tag number, full part numbers and type (on/off, modulating). Also include manufacturer's ordering information defining the breakdown of the products part number.
  - 4. Submit certificates of compliance with referenced standards.
  - 5. Detailed description of all testing configurations and proposed test procedures.
  - 6. Where specified or otherwise required by the ENGINEER, submit test certificates.
  - 7. Manufacturer's Instructions: Indicate application conditions and limitations of use. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

8. Operation and Maintenance Data: Include bound copies of operating and programming instructions, adjustments, and preventative maintenance procedures and materials. Provide operating and maintenance instructions, including parts lists for all of the equipment.
  9. Schematic wiring diagrams (SWD): Indicate how the actuators are wired to the control system and AC power. Provide electronic and printed drawings using the latest version of AutoCAD.
- C. Calculations or data used for sizing of the actuators.

## 1.5 CLOSEOUT SUBMITTALS

### A. Manufacturer's Warranty:

1. All warranties shall individually start at the time the commissioning of the actuator is completed and accepted in writing by the OWNER or his representative.
2. Provide the manufacturer's standard written warranty on all materials and workmanship for a minimum of two (2) years.
3. Provide a minimum 5-year manufacturer's written warranty against breakage of any mechanical drive components, leakage of the housing seals and failure of the control or communication circuit components.
4. Fill out original warranty forms in the OWNER's name and register with manufacturer.

### B. Operation and Maintenance Manual

1. Operation and maintenance manuals, shall include at a minimum:
  - a. Sectional drawings.
  - b. Parts list with recommended spares.
  - c. Operation instructions.
  - d. Maintenance instructions.

## 1.6 QUALITY ASSURANCE

### A. Qualifications:

1. Installer: The installer shall have a minimum of five (5) years of experience installing actuators and appurtenances and shall show evidence of at least five (5) installations (similar to the Work required for this Project) in satisfactory operation.

### B. Testing:

1. Actuators are to be assembled to their gate, setup and tested and shipped as an assembly by the gate manufacturer.

C. Delivery, Handling and Storage:

1. Delivery of Materials: No materials shall be shipped without the written consent of the ENGINEER upon review of all submittal and testing information. The CONTRACTOR is responsible to inspect all materials received for size, quality, and quantity against the approved shop drawings.
2. Handling of Materials: The CONTRACTOR shall carefully handle all products. Any component that is dropped, dented, or damaged by the CONTRACTOR or as a result of delivery or storage shall not be incorporated into the final assembly. The CONTRACTOR at his expense shall replace the component.
3. Storage of Materials: All materials shall be stored in the original package of the manufacturer whenever possible. The products shall be labeled. They shall be stored in a covered, dry location until installation.

PART 2 PRODUCTS

2.1 OPERATING ENVIRONMENT:

- A. Continuously operating (24 hours per day, 7 days per week) municipal water facilities.
- B. Non-hazardous industrial exterior environment (damp, rain, snow, humid, dust, and dirt).
- C. Outdoor temperature range of -29 degrees C (-20 degrees F) to 60 degrees C (150 degrees F) and relative humidity 0 percent to 95 percent.
- D. Electrical classification is General Purpose.

2.2 MECHANICAL

- A. The CONTRACTOR shall determine the correct actuator locations and sizes required for the process conditions as indicated by the Contract Drawings and specifications.
- B. In general terms, each device shall be an externally mounted actuator utilizing an AC motor to produce a rotary or linear motion for the position control of a mechanical gate.
- C. The actuator enclosure shall meet or exceed NEMA 4X specifications (outdoor use, watertight, and corrosion resistant)
- D. All cover screws and fasteners, as well as mounting hardware, shall be stainless steel.
- E. The actuator shall be suitable for operation at any angle.
- F. Speed reduction shall be achieved utilizing spur, helical, bevel, and/or worm type gears. All gearing material shall be either steel or bronze. Aluminum and/or non-metallic gear material shall not be utilized. The time to travel from full open to full closed, or vice versa, shall be 30 seconds.
- G. All gears and shafts shall be fully supported on anti-friction bearings. Where susceptible to thrust loads, roller type or axial thrust type bearings shall be utilized.
- H. Gears and shafts shall be lubricated. Mechanical seals shall be provided and shall contain the lubricant regardless of shaft position. Lubricants shall be suitable for the site conditions indicated in this section.

- I. Each actuator shall include a handwheel or crank for manual operation of the gate if motor power is unavailable. The handwheel or crank shall require no more than 80 ft. lbs. of rim pull to operate. Operation of the motor shall not transmit motion to the handwheel and operation of the handwheel shall not cause the motor to rotate. When the handwheel is in use, no motor torque shall be capable of being transmitted to the handwheel. The actuator body shall include an indication of required direction of handwheel rotation to open and to close the gate.
- J. The lever or handle used to disengage the clutch shall be capable of being padlocked in either the manual or motor mode.
- K. Gate position shall be locally indicated on the actuator and clearly indicate closed vs. open position.
- L. All actuators shall include field adjustable mechanical stop limiting devices, one at full open and one at full closed, to prevent over travel.
- M. Mechanically actuators must be fully repairable in the field using standard hand tools and not require return to the factory for repair.

### 2.3 ELECTRICAL

- A. Actuators shall operate from +/- 10 percent of the 480 VAC, three-phase 60 Hz service power. Plant distribution wiring is designed for a maximum voltage loss of 5 percent.
- B. The AC motor shall be specifically designed for use in actuators and shall be suitable for operation from the voltage indicated.
- C. The motor shall be totally enclosed and non-ventilated. Insulation shall be Class F. The actuator shall be provided with thermostatic and overload relay protection integral to the actuator.
- D. The CONTRACTOR shall select and size the actuators for open/close operation as required for the specific application in accordance with the manufacturer's recommendations. Regardless of the service type, the maximum output torque of the actuator shall be equal to or greater than two times the maximum output torque required to operate the associated gate.
- E. Two field adjustable position limit switches shall be included and shall be capable of indicating gate fully closed, gate fully open, or any positions in between. The installed setup shall have one switch set at the gate fully opened position and the other at gate fully closed.
- F. Field adjustable torque limit protection shall be included and shall be capable of interrupting the control circuit when the predetermined torque is exceeded at the fully open position, the fully closed position, or if the torque is exceeded during travel in either direction due to an obstruction.
- G. The actuator electrical enclosure shall meet or exceed NEMA 4X standards, be integral to the actuator and shall house the electrical controls, field connection power and control terminal strips, and a thermostatically controlled space heater to prevent condensation.
- H. Terminal strips shall accept bare wire as well as wires terminated with crimp on lugs.
- I. Provide control power transformer with primary and secondary protection.
- J. Actuators must be fully electrically repairable in the field, at least to the board level, using standard hand tools and not require return to the factory for repair.

## 2.4 CONTROLS

- A. As a minimum, each actuator shall provide dry contact outputs capable of conveying the following data to a master control system. Contracts shall be compatible with a 24 VDC PLC digital input circuit.
  - 1. Gate in full open position.
  - 2. Gate in full closed position.
  - 3. Selector switch in the Remote position.
- B. All slide gate actuators shall be rated for open/close service.
- C. Integral lockable three-position selector switch for Local - Off - Remote control.
- D. Integral open-close switch and indicator lights. Both local indicator lights shall be ON when in travel.
- E. Open-Close switch shall be wired for maintained mode so that a switch does not have to be held in place to complete the action.
- F. Gate position shall be mechanically monitored so that if all power is removed from the actuator, the gate position manually changed, and power restored the electronics will automatically detect the new gate position.
- G. With the exception of limit and torque switch settings during setup, configuration of the actuator shall not require any removal of wires, covers, etc.

## 2.5 SPARE PARTS

- A. Furnish manufacturers' recommended spare parts kits to accommodate two (2) actuators.

## 2.6 MANUFACTURERS

- A. Limitorque L120 Series or approved equal.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Verify that systems are ready to receive work.
- B. During installation of all actuators the CONTRACTOR shall verify that all items are clean and free of defects in material and workmanship and function properly.

### 3.2 INSTALLATION

- A. Install all actuators and appurtenances in accordance with the manufacturer's instructions.
- B. Install all actuators so that operating handwheel, local push buttons and controls may be conveniently accessed from operating surface without interference, and as approved by the ENGINEER.
- C. Actuator(s) shall be installed free from distortion; strain or raking caused by misaligned piping, equipment, or supports.

### 3.3 SERVICES OF THE MANUFACTURER

- A. The CONTRACTOR shall provide on-site startup and commissioning services of a factory trained service person to inspect each installation prior to placing any unit in service, to supervise the initial operation, and to instruct the OWNER in the proper operation, care, and maintenance of the equipment.
- B. The CONTRACTOR shall provide factory service personnel for site visits for the purpose of commissioning the actuators. The CONTRACTOR must coordinate all trips in advance with the OWNER.

### 3.4 FIELD TESTS AND ADJUSTMENTS

- A. Factory Authorized Service Personnel shall conduct tests of each gate/actuator assembly, in both manual and automatic modes, in the presence of the ENGINEER to demonstrate that each unit and all associated components function properly under all possible field conditions.
- B. The CONTRACTOR shall furnish any required test equipment and/or commissioning consumables.
- C. The CONTRACTOR shall adjust all parts and components as required to provide correct operation.

### 3.5 TRAINING

- A. The CONTRACTOR shall provide a factory-trained technician to conduct two 4-hour training sessions for up to four of the OWNER's personnel per session. This session will be conducted at the designated site of the OWNER and shall consist of instruction on the proper operation and maintenance of the gate/actuator assembly.
- B. The CONTRACTOR shall furnish all instruction materials (one per OWNER personnel plus additional two spares) to conduct the session. Upon completion of the training, all instructional materials shall become the property of the OWNER.
- C. The sessions shall be conducted at times chosen by the OWNER.
- D. One (1) additional day of service separate from installation and start-up shall be provided for training. Training shall include a detailed Power Point presentation and an outline of the training, an electronic copy of which shall be turned over to the OWNER.

END OF SECTION

## SECTION 16010

### ELECTRICAL CONDITIONS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This Section includes minimum general requirements for the CONTRACTOR's electrical Work.

##### 1.2 SCOPE OF WORK

- A. CONTRACTOR shall provide all labor, materials, equipment, services, and incidentals necessary and required to complete a fully operational project as described in Section 01010, Summary of Work, shown on the Contract Drawings, and specified in the Work-Related Sections and herein. This task includes supply, installation, connection, commissioning, and startup all project electrical equipment and systems.

##### 1.3 RELATED SECTIONS

- A. The project electrical Work shall be as specified in the following related sections:
  - 1. Section 01010 – Summary of Work.
  - 2. Division 16 – Electrical.

##### 1.4 REFERENCE CLAUSES

- A. The Information for Bidders, Proposal Form, Agreement, General Conditions, Special Conditions, Related Sections, and the Contract Drawings are all a part of the CONTRACTOR'S Work. CONTRACTOR shall refer to them for further instructions pertaining to his Work.
- B. "CONTRACTOR," "The CONTRACTOR," "This CONTRACTOR," "EC," as used herein and in Division 16000 sections, means the Electrical Contractor.
- C. "Furnish," "Supply," "Install," "Construct," "Furnish and Install," "Supply and Install" as used herein and in the Work-Related Sections, means a workable, complete, and industry-acceptable electrical supply and installation by CONTRACTOR.

##### 1.5 REFERENCES

- A. All electrical Work supplied and installed by CONTRACTOR shall comply with the most recent requirements of all applicable codes, standards, guides, and practices issued by the following organizations at the time of bidding:
  - 1. ANSI – American National Standards Institute.
  - 2. IEEE – Institute of Electrical and Electronic Engineers.
  - 3. NEMA – National Electrical Manufacturer's Association.
  - 4. NFPA – National Fire Protection Association.

5. OSHA – Occupational Safety and Health Act.
6. UL – Underwriter’s Laboratories, Inc.
7. IBC – International Building Code.
8. IFC – International Fire Code.
9. ICEA – Insulated Cable Engineers Association.
10. All state and local authorities having jurisdiction.

- B. In the event of conflict between the codes and standards listed by the above organizations, the more stringent regulation shall govern and be considered the minimum standard.
- C. In the event of conflict between Division 16000 section specifications and the standards listed by the above organizations, the standard shall govern unless specifications are in excess of standards.

#### 1.6 QUALITY ASSURANCE

- A. CONTRACTOR’S Work quality of shall be in accordance with the industry accepted practices.
- B. CONTRACTOR shall have in place an approved Quality Assurance Program for the project Work execution.
- C. CONTRACTOR shall be inspected periodically by OWNER, Contract Administrator and/or their representative solely for the purpose of determining general quality of Work and not for any other purpose.
- D. Guidance will be offered to CONTRACTOR in interpretation of the Contract Drawings and Division 16000 specifications to assist him in carrying out the Work as intended.
- E. OWNER and ENGINEER guidance and inspections do not relieve CONTRACTOR from his responsibility to maintain the approved quality assurance program for the Project.

#### 1.7 HEALTH AND SAFETY

- A. CONTRACTOR shall abide by OWNER’S Health and Safety requirements and all applicable OSHA rules and regulations.

#### 1.8 SITE COORDINATION

- A. CONTRACTOR shall be responsible for coordinating the electrical Work with other trades working on this facility and with the facility OWNER. See Section 01010, Summary of Work and Section 01311, Coordination with Owner’s Operations for further details.
- B. Furnish and file with the local authorities having jurisdiction all drawings and information required by them in connection with the Work.
- C. Obtain all permits, licenses, and inspections and pay all legal and proper fees and charges pertaining to the Project.



- D. CONTRACTOR shall note that existing facility operation takes precedence over any construction activities. If CONTRACTOR does not accomplish this requirement, ENGINEER reserves the right to demand such changes as necessary to avoid further operational interference and such changes shall not be considered an extra expense to the Project and OWNER. See Coordination with OWNER'S Operations Section for further details.
- E. When CONTRACTOR has occasion to Work on the existing plant equipment, OWNER shall de-energize the equipment. Both OWNER and CONTRACTOR shall tag and lockout the equipment. When newly installed equipment reaches the state of being ready to be energized, CONTRACTOR shall tag and lockout the equipment.

#### 1.9 ON-SITE WORK SUPERVISION

- A. CONTRACTOR shall provide the services of a full-time, on-Site, experienced and competent supervisor to direct and oversee the Work until successful completion of the Project.
- B. The on-Site supervisor shall have sufficient experience to run a project construction within a facility similar to the Project Site.
- C. OWNER'S and ENGINEER'S guidance, directions and inspections do not relieve CONTRACTOR from his responsibility to supervise the Work.

#### 1.10 CONTRACTOR'S EMPLOYEES

- A. All CONTRACTOR'S employees shall be skilled in the Work performed to which they shall be assigned.
- B. Any CONTRACTOR'S employee incompetent or careless shall be removed from the Project when directed by OWNER and/or ENGINEER.

#### 1.11 WORK AREAS

- A. The project electrical Work shall be at the locations as shown on the Contract Drawings.

#### 1.12 ELECTRICAL CLASSIFICATION OF WORK AREAS

- A. The electrical classification of Work areas are as shown on the drawings.
- B. Electrical equipment in classified areas are to be installed as shown on the drawings, with explosion proof lights, motors, boxes, rigid metal conduit/rigid galvanized steel, seals at the exit/or entrance to adjacent rooms, as well as seals within 18 inches of sources that create electrical arcs, included but not limited to motors, switches, disconnects, etc.

#### 1.13 SCHEDULE

- A. CONTRACTOR shall, in liaison with OWNER and ENGINEER, develop a project schedule to ensure, without delays, the sequencing, demolition, installation, testing, and commissioning of the project electrical Work. Refer to Section 01300 of these specifications for further details.
- B. The CONTRACTOR'S schedule shall be based on the requirements of the Scope of Work and Limitation and Constrains Sections, and it shall not allow for interruption of the existing facility operation.

- C. The CONTRACTOR'S schedule shall be subject to OWNER'S review and approval.
- D. CONTRACTOR shall maintain the OWNER-approved schedule until successful completion of the Project.

#### 1.14 SITE PROGRESS MEETINGS

- A. CONTRACTOR shall attend all construction progress meetings as scheduled by OWNER and ENGINEER.
- B. CONTRACTOR shall be prepared to discuss the schedule progress, Work quality, interference with other Work or the existing facility operation, health and safety, and any other project-related issues.

#### 1.15 CONFLICT OF DOCUMENTATION

- A. Anything mentioned in the reference sections and not shown on the drawings, or not mentioned in the sections and shown on drawings shall be of like effect as if shown or mentioned in both.
- B. In event of any conflict between the drawings and the reference sections or between the sections or between the drawings, CONTRACTOR shall bring it to ENGINEER'S attention for review and resolution. This shall be done during CONTRACTOR'S bidding stage. CONTRACTOR shall be liable for any Work performed without following this procedure and shall remedy the situation at his own expense as requested by ENGINEER at no cost to the Project and OWNER.

#### 1.16 CONTRACT DRAWINGS

- A. The Contract Drawings are engineering type drawings showing principal engineering design elements and they do not intend to be used as detailed construction drawings.
- B. The Contract Drawings show the project equipment recommended equipment layouts, interconnecting wiring routing, and the equipment, conductor and raceways sizes based on the project preliminary data available to the ENGINEER during the Project design phase.
- C. The Contract Drawings do not cover every detail of the proposed installation or variation for construction or provide for every possible installation contingency.
- D. The Contract Drawings do not provide the equipment point-to-point field interconnecting wiring and shall not be additionally furnished. CONTRACTOR shall develop these drawings during the construction shop drawings phase, when the Project progresses to the point that the CONTRACTOR-supplied equipment wiring termination information becomes available.
- E. Unless dimensioned, the Contract Drawings show the approximate size and location of the equipment, devices, and building services. The CONTRACTOR shall determine exact equipment locations and sizes based on actual equipment supplied and field conditions.
- F. Standard details, where shown, are included in the Contract Drawings to establish the minimum quality of the installation. Actual field conditions may require that the components be arranged in a different manner.
- G. When "HOLD" appears on a Contract Drawing, the CONTRACTOR shall understand that this only applies to the actual construction or fabrication. The Contract Bid Price shall include all costs to provide the Work.
- H. The Contract Drawings as provided to CONTRACTOR, shall be deemed adequate for completion of all project electrical Work. It is expected that the project electrical Work will be supervised and performed by qualified persons familiar with electrical equipment, electrical construction practices, and health and safety requirements within an operational facility similar to the Project Site.

- I. Immediately after the Contract is signed, CONTRACTOR shall obtain a complete set of the Contract Drawings from ENGINEER. CONTRACTOR shall verify, confirm and/or review the Contract Drawings based on the actual Site conditions and the actual equipment data. CONTRACTOR shall make all necessary and required corrections to the Contract Drawings, and have the corrected Contract Drawings reviewed and approved by ENGINEER prior to commencing construction
- J. CONTRACTOR shall be liable for any Work performed without following the above submittal procedure at no cost to the Project and OWNER.
- K. Review of the corrected Contract Drawings by ENGINEER shall not relieve CONTRACTOR from responsibility for errors or omissions.

#### 1.17 SHOP DRAWINGS

- A. CONTRACTOR'S required shop drawings shall be based on the actual Site conditions and the actual equipment data. As a minimum, the required shop drawings shall include, but not be limited to the following documents:
  - 1. Equipment layout plans, elevations, and dimensions.
  - 2. Wiring routing plans and raceways.
  - 3. Equipment installation details.
  - 4. Panel layouts and bill of materials.
  - 5. Equipment/System schematic diagrams.
  - 6. Equipment/System point-to-point field wiring connection diagrams showing identified cable bundles, cable conductors and all terminating points.
  - 7. Required construction calculations (an example of the required construction calculation is wire sizing and raceway fill calculation).
  - 8. All CONTRACTOR-supplied equipment and system documentation (further details on this submittal requirements are under the heading "O&M Manual").
- B. CONTRACTOR shall review the Shop Drawing Submittal Section for requirements of the CONTRACTOR'S Submittals procedure.
- C. All CONTRACTOR'S shop drawings shall be subject to ENGINEER'S review and approval prior to commencing the project equipment/system installation. CONTRACTOR shall be liable for any Work performed without following the submittal procedure at no cost to the Project and OWNER.
- D. Review of the Shop Drawing submittals by ENGINEER shall not relieve CONTRACTOR from responsibility for errors or omissions.

#### 1.18 CONSTRUCTION DRAWINGS

- A. All CONTRACTOR-corrected Contract Drawings and all CONTRACTOR-provided Shop Drawings shall form a complete set of the Project Construction Drawings.

#### 1.19 RECORD DRAWINGS

- A. CONTRACTOR shall maintain a complete set of Record Drawings for construction as further defined in Special Conditions of the Contract.

#### 1.20 SUBMITTALS

- A. CONTRACTOR'S submittal requirements are detailed in the Special Conditions of the Contract, as modified by special requirements as may be specified in Division 16 specification Sections. The following is a brief summary of the minimum documents, which shall be submitted to ENGINEER for review and approval prior to commencing construction:
  - 1. OWNER-approved Work Schedule showing all construction tasks, milestones, duration, and sequences.
  - 2. All corrected Contract Drawings.
  - 3. All required Shop Drawings.
  - 4. All CONTRACTOR-supplied equipment and material manufacturer's data including, but not be limited to catalog cuts, equipment data sheets, approval drawings, performance and test data, recommended spare parts, installation manuals, operation and maintenance manuals, and the like.

#### 1.21 OPERATION AND MAINTENANCE MANUAL

- A. Operating and Maintenance (O&M) Manuals shall be submitted as described under Section 01781 for every electrical equipment/system component supplied by CONTRACTOR. As a minimum, the O&M Manual shall contain the following:
  - 1. Overall index.
  - 2. Index tabs to designate different section of the supplied equipment and systems.
  - 3. All factory and field equipment and system inspection and test reports. This information is subject to ENGINEER'S review and approval.
  - 4. All ENGINEER-approved as-built equipment/system documentation including equipment plans, elevations, dimensional data, weights, material lists, schematics, wiring and connection diagrams, and the like.
  - 5. All recommended spare parts.
  - 6. All equipment installation, operation, and maintenance instructions.
- B. On completion of the Project, CONTRACTOR shall supply three (3) complete sets of operating and maintenance (O&M) manuals to OWNER.

#### 1.22 GUARANTEE

- A. CONTRACTOR shall guarantee all his Work including equipment, material, and installation for a period of two (2) years after acceptance by OWNER. Any defects occurring within the guarantee period shall be rectified as quickly as possible by the CONTRACTOR, at no expense to the Project and OWNER.

- B. The above general guarantee shall not act as a waiver of any specified guarantee or special equipment guarantee covering a greater length of time.

## PART 2 PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A. All CONTRACTOR-supplied project electrical equipment and material shall be as specified in Division 16000 sections. At a minimum, the following shall apply:
  - 1. All electrical equipment and material shall be new, standard industrial grade, UL approved for application, and UL labeled. No commercial or residential components will be acceptable. No custom components will be acceptable, unless approved by Engineer.
  - 2. Unless noted otherwise, all current carrying components shall be Copper (Cu).
  - 3. All electrical components and assemblies (i.e., motor starters) shall be standard NEMA rated or NEMA/IEC rated. Strictly IEC rated equipment will not be accepted.
  - 4. All electrical components shall be properly selected, sized and approved for application.
  - 5. Each piece of material and equipment shall be installed with the name or trademark of the manufacturer, rating nameplate, and approval label as required.
  - 6. Before ordering any materials or equipment, CONTRACTOR shall verify all measurements at the Project Site and shall be responsible for the correctness of the same. No extra charge or compensation shall be allowed on account of difference between actual dimensions and the measurements derived from the Contract Drawings.
  - 7. CONTRACTOR shall be responsible to check with equipment manufacturers as to the physical size of their equipment. The CONTRACTOR must ensure that the equipment will fit in the space allocated on the Contract Drawings. Any extra expense due to equipment not fitting in the allocated space shall be borne by the CONTRACTOR.
  - 8. CONTRACTOR shall instruct manufacturers as to the maximum shipping size of equipment that shall permit moving the equipment through available accesses.

## PART 3 EXECUTION

### 3.1 WORK INSTALLATION GUIDELINES – GENERAL REQUIREMENTS

- A. All project electrical components including motor control centers modifications, panels, transformers, wiring raceways, and the like shall be installed as follows:
  - 1. Adhere to the location shown on the drawings as far as possible.
  - 2. Do not install electrical and control equipment at locations where process equipment is to be installed.
  - 3. Do not obstruct walkways or makes inaccessible or hard equipment maintenance access.
  - 4. All Work shall be constructed plumb square, level, and true to lines and surfaces indicated, in a neat, substantial, and workmanlike manner, and in such a way as to properly serve the purpose indicated.
  - 5. Assure that the space about all electrical equipment is in accordance with NEC.

### 3.2 RIGGING AND LIFTING

- A. CONTRACTOR shall provide all project-required electrical equipment rigging and lifting equipment and tools.
- B. All project electrical equipment rigging and lifting shall be by qualified and experienced personnel.
- C. All lifts shall be planned and shall be in accordance with the equipment manufacturer's instructions and in close communication with OWNER.

### 3.3 COMMISSIONING AND STARTUP

- A. Equipment and system inspection, testing and commissioning shall be as described in Division 16000 sections. As a minimum, the following shall apply:
  - 1. CONTRACTOR shall inspect, test, and commission all Work done under this Contract and prove to the ENGINEER that all equipment is correctly connected and adjusted to fully function as intended under all operation conditions.
  - 2. CONTRACTOR shall provide all tools and qualified personnel for commissioning.
  - 3. CONTRACTOR shall rectify all deficiencies found during commissioning at no cost to the Project and OWNER.
  - 4. During the process equipment start-up, CONTRACTOR shall provide tools and a qualified electrician for one week of the start-up assistance as required.

### 3.4 TRAINING

- A. CONTRACTOR shall be responsible for training of OWNER'S personnel assigned to operate and maintain the project equipment and systems.
- B. CONTRACTOR'S training activities shall start at the beginning of the Project in liaison with OWNER and ENGINEER. The actual training shall begin during the final stages of the construction Work and prior to the Project completion.
- C. At a minimum, CONTRACTOR'S training activities shall include the following:
  - 1. Provide a team of experienced and qualified personnel for training purposes.
  - 2. Develop OWNER-approved training plan and schedule.
- D. At a minimum, the training shall cover the following:
  - 1. Review of the Project O&M Manual.
  - 2. Review of each Project equipment and system description, operation, maintenance, spare parts, troubleshooting, and health and safety issues.
  - 3. Review and practicing of the Project equipment/system proposed and recommended operation.

### 3.5 PROJECT CLOSE-OUT

- A. Clean-up: At completion of Work, and prior to the final acceptance inspection, CONTRACTOR shall remove all temporary structures, scaffolding, tools, surplus material, waste, and trash from the Work areas leaving the Project Site clean and ready for immediate use.
- B. Touch-up Painting: At completion of Work, and prior to the final acceptance inspection, CONTRACTOR shall "touch-up" all minor nicks and scratches on all equipment enclosures and raceways, with two coats of matching paint.
- C. Restoration: At completion of Work, and prior to the final acceptance inspection, CONTRACTOR shall provide all properly compacted backfill, grade, and refinish to match the existing surrounding areas.
- D. Demolished and Loose Equipment: At completion of the Work, and prior to the final acceptance inspection, CONTRACTOR shall demonstrate to OWNER that all Project demolished and loose equipment have been returned to OWNER, and safely and securely placed in the designated areas.
- E. As-Built Documentation: Upon completion of Work, and prior to the final acceptance inspection, CONTRACTOR shall provide all specified as-built documentation including Record Drawings and O&M manuals as specified.
- F. Final Acceptance: Acceptance of individual Work items is described in Division 16000 sections. At the Project closeout, but prior to CONTRACTOR leaving the Site, the final acceptance of Work shall be by CONTRACTOR, OWNER and ENGINEER. During this inspection CONTRACTOR shall demonstrate to OWNER and ENGINEER that the entire electrical construction has been completed as specified. The inspection shall result in either a written CONTRACTOR'S Final Acceptance Report signed by OWNER and ENGINEER or a written Punch List containing items requiring corrections, followed by another inspection. This process shall be repeated until OWNER and ENGINEER sign off the Final Acceptance Report.

END OF SECTION





## SECTION 16030

### TEMPORARY ELECTRICAL CONNECTIONS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This Section includes minimum requirements for the Project temporary electrical connections as required and necessary to maintain the existing facility's electrical, control, and instrumentation systems in full working order during the Project demolition and new construction work.
- B. This Work shall be in close communication with OWNER and ENGINEER, and it shall include provisions of all required and necessary adequate temporary sources of power, power distribution, interconnecting wiring, and grounding.

##### 1.2 RELATED SECTIONS

- A. The following sections relate to this section Work:
  - 1. Section 01010 - Summary of Work.
  - 2. Division 16 – Electrical.

##### 1.3 REFERENCES

- A. CONTRACTOR'S Work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. ANSI/NFPA 70 – National Electrical Code.
  - 2. NFPA 70E – Standard for Electrical Safety in the Workplace.
  - 3. ANSI/IEEE C2 – National Electrical Safety Code.
  - 4. OSHA CER 1910, Subpart S – Electrical General, Parts 1 and 2.

##### 1.4 SITE CONDITIONS

- A. Scheduling: CONTRACTOR shall carry out the temporary connection work so as to avoid interference with the OWNER'S operations in the existing facilities.
- B. Notifications: At least 48 hours prior to the commencement of the temporary connection work, the CONTRACTOR shall notify the OWNER in writing of the proposed schedule. The CONTRACTOR shall not start the temporary connection work without permission of the OWNER. Special detailed coordination with the OWNER must be adhered to for any work involving shutdowns or modifications affecting facility operation.

## PART 2 PRODUCTS

### 2.1 MATERIALS AND EQUIPMENT

- A. All equipment and materials used for this section shall be as specified in the applicable Work-Related Sections and Work References.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Existing electrical, control, and instrumentation information on the Contract Drawings is based on the Project preliminary data available to the ENGINEER during the Project design phase, therefore, the CONTRACTOR shall field verify all required and necessary information pertaining to this section before any work is begun.

### 3.2 PREPARATION

- A. To prepare for the Project demolition and new construction work, CONTRACTOR shall disconnect all effected existing power, control and instrumentation wiring and/or associated power sources, and to provide all necessary and required temporary electrical connections. This task requires CONTRACTOR'S provision of all necessary and required 7-day 24-hours temporary power sources, power distribution equipment, and interconnecting wiring and grounding.

### 3.3 TEMPORARY ELECTRICAL CONNECTION WORK

- A. As a minimum, CONTRACTOR'S Work shall be as per requirements NEC Article 527, Temporary Installations and as specified in the applicable Work-Related Sections and References.

### 3.4 EXTENSION OF EXISTING ELECTRICAL WORK

- A. All wiring that is necessary to maintain full operation of the OWNER'S facility shall be reconnected either temporarily or, wherever possible, with the new permanent installation.

END OF SECTION

## SECTION 16040

### ELECTRICAL DEMOLITION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section includes minimum requirements for the Project electrical demolition work.

##### 1.2 RELATED SECTIONS

- A. The following sections relate to this section Work:
  - 1. Section 02030 – Demolition.
  - 2. Division 16 – Electrical.

##### 1.3 REFERENCES

- A. CONTRACTOR's Work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. ANSI/NFPA 70 – National Electrical Code.
  - 2. NFPA 70E – Standard for Electrical Safety in the Workplace.
  - 3. ANSI/IEEE C2 – National Electrical Safety Code.
  - 4. OSHA CER 1910, Subpart S – Electrical General, Parts 1 and 2.

##### 1.4 SITE CONDITIONS

- A. Scheduling: CONTRACTOR shall carry out the temporary connection work so as to avoid interference with the OWNER's operations in the existing facilities.
- B. Notifications: At least 48 hours prior to the commencement of the temporary connection work, the CONTRACTOR shall notify the OWNER in writing of the proposed schedule. The CONTRACTOR shall not start the temporary connection work without permission of the OWNER. Special detailed coordination with the OWNER must be adhered to for any work involving shutdowns or modifications affecting operation.
- C. Examination:
  - 1. Examine existing condition requirements and required demolishing activities based on Contract Documents, existing Record Documents, and existing conditions in liaison with OWNER and ENGINEER.
  - 2. The beginning of demolition shall mean CONTRACTOR accepts existing conditions and operations.

D. Protection:

1. CONTRACTOR shall supply and install temporary protective covering for all existing equipment that may be damaged during demolition. The covering shall be of sufficient protection to prevent debris, dust, moisture, etc. from entering and/or damaging the existing equipment.
2. Perform all demolition work to prevent damage or injury to structures, occupants thereof, and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free safe passage to and from adjacent structures.
3. Closing or obstruction of roadways, sidewalks, and passageways adjacent to the Work will not be permitted, and all operations shall be conducted with a minimum interference to these ways.
4. Repair damage to facilities to remain or to any property belonging to the OWNER or occupants of the facilities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A. The demolition work shall be as shown on the Contract Documents and as specified.
- B. All demolished materials and equipment removed from the existing facility shall become the property of the CONTRACTOR, except where the OWNER has identified and marked for his use.
- C. All materials and equipment marked by the OWNER to remain his shall be carefully removed (salvaged) by the CONTRACTOR, so as not to be damaged, and shall be cleaned, loaded onto trucks provided by the OWNER, and delivered to a location determined by the OWNER.
- D. The CONTRACTOR shall dispose of all demolition materials, equipment, debris, and all other items not marked by the OWNER to remain as his, off the Site and in conformance with all existing applicable laws and regulations.
- E. Surfaces of walls, floors, ceilings, or other areas which are exposed by any of the removals specified herein, and which will remain as architecturally finished surfaces shall be repaired and re-finished by the CONTRACTOR with the same or matching materials as the existing adjacent surface or as may be otherwise approved by the ENGINEER.

3.2 ELECTRICAL DEMOLISHING

- A. Electrical demolition shall consist of the removal of the motors, conduits and wires, and all miscellaneous electrical equipment as shown, specified, or required to perform the Work.
- B. All existing electrical equipment to be removed shall be removed with such care as may be required to prevent unnecessary damage, to keep existing systems in operation, and to maintain the integrity of the grounding systems.

- C. Conduits and wires shall be abandoned or removed where shown. All wires in abandoned conduits shall be removed, salvaged, and stored. Abandoned conduits concealed in floor or ceiling slabs, or in walls, shall be cut flush with the slab or wall at the point of entrance. The conduits shall be suitably plugged, and the area repaired in a flush, smooth, approved manner. Exposed conduits and their supports shall be disassembled and removed from the Site. Repair all areas of work to prevent rust spots on exposed surfaces.
- D. Where shown or otherwise required, wiring in underground duct systems shall be removed. All such wiring shall be salvaged and stored as specified. The CONTRACTOR shall verify the function of all wiring before disconnecting and removing it. Ducts which are not to be reused shall be plugged where they enter buildings and made watertight.
- E. Where shown, direct-burial cable shall be abandoned. Such cable shall be disconnected at both ends of the run. Where it enters a building or structure, the cable shall be cut back to the point of entrance. All openings in buildings for entrance of abandoned direct-burial cable shall be patched and made watertight.

### 3.3 ALTERATIONS AND CLOSURES

- A. Alterations shall conform to all applicable Specifications, the Contract Drawings, and the directions and approvals of the ENGINEER.
- B. Where alterations require cutting or drilling into existing floors, walls, and roofs, the holes shall be repaired in an approved manner. The CONTRACTOR shall repair such openings with the same or matching materials as the existing floor, wall, or roof or as otherwise approved by the ENGINEER. All repairs shall be smoothly finished unless otherwise approved by the ENGINEER.
- C. Openings in existing concrete slabs, ceiling, masonry walls, floors, and partitions shall be closed and sealed as shown or otherwise directed by the ENGINEER. New Work shall be keyed into the existing Work in an acceptable manner. In general, use of the same or matching materials as the existing adjacent surface should be utilized. The finished closure shall be a smooth, tight, sealed, permanent closure acceptable to the ENGINEER.

### 3.4 CLEAN-UP

- A. CONTRACTOR shall remove from the job site all debris resulting from the demolition operations as it accumulates and shall dispose it off at no extra cost to the owner as per Federal and State environmental standards and guidelines.

END OF SECTION



## SECTION 16060

### GROUNDING AND BONDING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section includes minimum requirements for the Project grounding and bonding.

##### 1.2 RELATED SECTIONS

- A. The following sections relate to this section Work:
  - 1. Section 01010 – Summary of Work.
  - 2. Division 16 – Electrical.

##### 1.3 REFERENCES

- A. CONTRACTOR'S Work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. ANSI/NFPA 70 – National Electric Code.
  - 2. ANSI/IEEE C2 – National Electrical Safety Code.
  - 3. OSHA CER 1910, Subpart S – Electrical General, Parts 1 and 2.

##### 1.4 SUBMITTALS FOR REVIEW

- A. CONTRACTOR shall submit for approval, catalog cut sheets for each type of conductor and component, and connection method proposed for this section Work.

##### 1.5 SUBMITTALS FOR CLOSEOUT

- A. On completion, CONTRACTOR shall submit, for approval, all test results and all accurately completed Project record drawings showing actual location and routing of all Project ground rods and underground conductors.

#### PART 2 PRODUCTS

##### 2.1 MATERIAL – GENERAL REQUIREMENTS

- A. All grounding system materials shall be UL-approved copper components.

## 2.2 CONDUCTORS

- A. All buried ground conductors shall be stranded soft drawn annealed uncoated bare copper.
- B. All exposed ground shall be stranded soft drawn annealed uncoated copper with green PVC insulation and nylon jacket (THHN/THWN).
- C. All exposed instrumentation ground shall be stranded soft drawn annealed uncoated copper with green PVC insulation, a yellow stripe, and an overall nylon jacket (THHN/THWN).
- D. All ground conductor sizes shall be as indicated on the Contract Drawings or per the NEC.

## PART 3 EXECUTION

### 3.1 INSTALLATION – GENERAL REQUIREMENTS

- A. Complete installation of the Project grounding and bonding in accordance with NEC Article 250, and as shown on Drawings. Install all grounding system components in accordance with the manufacturer's recommendations.
- B. CONTRACTOR shall coordinate the installation of buried ground conductors and conductor PVC sleeves with the other trades located on the Project Site.
- C. All metallic conduit, electrical enclosures, motor frames, pump bases, metallic devices, fences surrounding electrical equipment, and the like shall be grounded as shown on the Contract Drawings and required by NEC.
- D. All non-metallic raceways shall be provided with a system ground conductor sized according to the NEC and included within the raceway.
- E. All ground connections shall be compressed or bolted. Soldering shall not be allowed.
- F. Where ground conductor passes through floors, slabs, walls, etc. and are not encased in a raceway, the CONTRACTOR shall furnish and install schedule 80 PVC sleeves of the required size and length. Sleeve to extend a minimum of 2 inches beyond finished floor, slab wall, etc. to provide physical protection. Under electrical equipment, stub-up shall be flush with finish floor. Minimum size of the sleeve shall be 3/4-inch.
- G. Bond jumpers shall be installed where required to maintain grounding continuity. Jumpers shall be sized per the NEC.
- H. Provide a ground conductor to all miscellaneous building services such as light switches, receptacles, and light fixtures.
- I. Ground conductors shall not be installed in any way that would interfere with electrical, mechanical, or piping equipment removal.
- J. Only conditioned power (isolated) exposed ground risers shall use green with yellow stripe conductors.
- K. Underground connections for the grounding system shall be compression type or exothermic welded type (Cadweld or equal).
- L. Verify that final backfill and compaction has been completed before driving ground rods.
- M. Copper main ground conductor to be buried a minimum of 30 inches below finished grade with sufficient slack to prevent damage.



- N. Unless noted otherwise on the Contract Drawings or required by local building code, the top of permanent ground rods shall be driven to a depth of 12 inches below finished grade.
- O. Any buried ground conductor damaged during construction shall be repaired by the CONTRACTOR before being covered over.
- P. For all new construction or existing building work, ground conductors shall be bonded to the base of the nearest building column.
- Q. Grounding conductors installed inside the building shall be neatly clipped and installed as inconspicuously as possible. In routing to the nearest building ground, the conductor should be attached to structural steel and avoid interference with any other equipment.
- R. Where the ground conductor bonds to building steel, the location shall not be subject to mechanical damage. Bond points shall be accessible for inspection.
- S. Where connections have been made to structural steel, the CONTRACTOR shall furnish and apply touch-up-paint to match the steel finish. The steel surface shall be adequately prepared by wire brush cleaning.
- T. Upon completion of ground system installation, perform a ground test utilizing the 4-point method defined in IEEE 81. If the resistance is greater than 5 Ohms, drive two more ground rods and repeat test.

### 3.2 CLOSEOUT

- A. On completion, CONTRACTOR shall demonstrate to the OWNER and ENGINEER that the Project grounding and bonding has been supplied and installed as specified.

END OF SECTION



SECTION 16070  
HANGERS AND SUPPORTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Conduit and equipment supports.
- B. Anchors and fasteners.

1.2 REFERENCES

- A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
- B. NFPA 70 - National Electrical Code (NEC).

1.3 SUBMITTALS

- A. See appropriate sections of Front End Specifications and Division 1 for submittal procedures.
- B. Product Data: Provide manufacturer's catalog data for fastening systems.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.4 DESCRIPTION

- A. Description: Steel channel, fittings, and anchors used to support various electrical devices and equipment racks.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Materials and components shall be inspected for damage and physical defects.
- B. Materials and components shall be stored in accordance with manufacturer's recommendations.

## 1.7 WARRANTY

- A. Full warranty against defects in materials and workmanship for 2 years after final acceptance by the OWNER, including all parts, labor, and expenses.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Superstrut.
- B. Thomas & Betts Corporation: [www.thomasandbetts.com](http://www.thomasandbetts.com).
- C. Threaded Rod Company: [www.threadedrod.com](http://www.threadedrod.com).
- D. Unistrut.
- E. B-Line.
- F. Or equal.

### 2.2 MATERIALS

- A. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type as indicated on the Drawings, adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
- B. Supports: Fabricated of structural steel or formed steel members; galvanized.
- C. Anchors and Fasteners:
  - 1. Corrosion resistant galvanized or cadmium plated steel.
  - 2. Do not use powder-actuated anchors.
  - 3. Concrete Structural Elements: Use expansion anchors.
  - 4. Steel Structural Elements: Use beam clamps or steel spring clips.
  - 5. Concrete Surfaces: Use expansion anchors.
  - 6. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts.
  - 7. Solid Masonry Walls: Use expansion anchors or preset inserts.
  - 8. Sheet Metal: Use sheet metal screws.
  - 9. Wood Elements: Use wood screws.

- D. Formed Steel Channel:
  - 1. Materials and Finishes: Provide galvanized, adequate corrosion resistance.
  - 2. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- E. Steel Spring Clips:
  - 1. Product: B-Line manufactured by Cooper.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify wall, ceiling, and rafters are suitable to accept channel and anchors.
- B. Verify all channels, fasteners, anchors and miscellaneous are suitable for the application.

### 3.2 INSTALLATION

- A. Provide the project equipment and wiring support as shown on the drawings and specified, and as required to adequately and securely support electrical system components and to complete the installation.
- B. Install products in accordance with manufacturer's instructions.
- C. Install hangers and supports as required in a neat and workmanlike manner, as specified in NECA 1.
- D. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
- E. Obtain permission from ENGINEER before drilling or cutting structural members.
- F. Fabricate supports from structural steel or steel channel. Rigidly weld support members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- G. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- H. In wet and damp locations use aluminum or stainless-steel channel supports to stand cabinets and panelboards 1/4-inch off wall.
- I. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

### 3.3 FIELD QUALITY ASSURANCE

- A. Verify all supports are securely anchored and fastened.
- B. Verify all supports are level and square.

3.4 DEMONSTRATION

- A. On completion, demonstrate to the ENGINEER that all project hangers and supports have been supplied and installed as specified.

END OF SECTION

## SECTION 16075

### ELECTRICAL IDENTIFICATION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Nameplates and labels.
- B. Wire and cable markers.
- C. Conduit markers.

##### 1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work.

##### 1.3 REFERENCES

- A. NFPA 70 - National Electrical Code (NEC).

##### 1.4 SUBMITTALS

- A. See appropriate sections of Front End Specifications and Division 1 for submittal procedures.
- B. Product Data: Provide catalog data for nameplates, labels, and markers.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Quality Assurance. Include instructions for storage, handling, protection, examination, preparation and installation of product.

##### 1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. Brady Corporation: [www.bradycorp.com](http://www.bradycorp.com).
- B. Seton Identification Products: [www.seton.com/aec](http://www.seton.com/aec).
- C. HellermannTyton: [www.hellermanntyton.com](http://www.hellermanntyton.com).
- D. Substitutions: Not permitted.

## 2.2 NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
  - 1. Each electrical distribution and control equipment enclosure.
  - 2. Communication cabinets.
- C. Letter Size:
  - 1. Use 3/16 inch letters for identifying individual equipment and loads.
  - 2. Use 1/2 inch letters for identifying grouped equipment and loads.
- D. Labels: Embossed adhesive tape, with 3/16 inch black letters on white background. Use only for identification of individual wall switches and receptacles and control device stations.

## 2.3 WIRE MARKERS

- A. Manufacturers:
  - 1. Brady.
  - 2. Seton.
  - 3. HellermannTyton.
  - 4. Substitutions: Not permitted.
- B. Description: Vinyl or cloth self-adhesive type wire markers.
- C. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, junction boxes, and motor control center and each load connection.
- D. Legend:
  - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on Drawings.
  - 2. Control Circuits: Control wire number indicated on schematic and interconnection diagrams on Drawings.

## 2.4 CONDUIT MARKERS

- A. Manufacturers:
  - 1. Brady.
  - 2. Seton.
  - 3. Substitutions: Not permitted.
- B. Description: Vinyl self-adhesive type.



C. Location: Furnish markers for each conduit longer than 20 feet.

D. Spacing: 20 feet on center.

E. Color:

1. 480 Volt System: orange with black letters.
2. 208 Volt System: yellow with black letters.
3. Communication/Video Systems: blue with white letters.

F. Legend:

1. 480 Volt System: 480 Volts.
2. 208 Volt System: 208 Volts.
3. Communication/Video System: Name of System

## 2.5 UNDERGROUND WARNING TAPE

A. Manufacturers:

1. Brady.
2. Seton.
3. Substitutions: Not permitted.

B. Description: 6-inch wide plastic tape, detectable type colored red with suitable warning legend describing buried electrical lines.

## PART 3 EXECUTION

### 3.1 PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

### 3.2 INSTALLATION

A. Provide electrical identification (nameplates and labels) means for all specified electrical equipment/device enclosures and panels, and wiring as shown on the Drawings, specified and as required to complete the installation.

B. Install nameplates and labels parallel to equipment lines.

C. Secure nameplates to equipment front using stainless steel screws.

D. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.

E. Identify underground conduits using underground warning tape. Install one tape per trench at 18 inches below finished grade.

3.3 FIELD QUALITY ASSURANCE

- A. Verify provision of the project identification means.

3.4 DEMONSTRATION

- A. On completion, demonstrate to the ENGINEER that all project electrical identification has been provided as specified.

END OF SECTION

## SECTION 16110

### CONDUIT

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section includes minimum requirements for the project conduit in all project locations as shown on the drawings and as specified herein. This shall include all project conduit and fittings, and all associated pull and junction boxes.

##### 1.2 RELATED SECTIONS

- A. The following sections relate to this section Work:
  - 1. Section 01010 – Summary of Work
  - 2. Division 16 – Electrical

##### 1.3 REFERENCES

- A. CONTRACTOR's Work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. NEC/NFPA 70 – National Electrical Code
  - 2. NFPA 70E – Standard for Electrical Safety in the Workplace
  - 3. ANSI/IEEE C2 – National Electrical Safety Code
  - 4. OSHA CER 1910, Subpart S – Electrical General, Parts 1 & 2
  - 5. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated, and C80.5 – Rigid Aluminum Conduit
  - 6. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies
  - 7. NEMA TC 2 – Electrical Polyvinyl Chloride (PVC) Conduit (EPC-40 and EPC-80)
  - 8. NEMA TC 3 – PVC Fittings for Use with Rigid PVC Conduit and Tubing
  - 9. Underwriters Laboratories Inc. (UL)

##### 1.4 SUBMITTALS FOR REVIEW

- A. CONTRACTOR shall submit, for approval, catalog cuts for all conduit, fittings and boxes proposed for this section Work.
- B. CONTRACTOR shall submit, for approval, all revised Contract Drawings showing revised conduit routing and conduit sizes as specified in Section 16010, Electrical Conditions.

## 1.5 SUBMITTALS FOR CLOSEOUT

- A. On completion, CONTRACTOR shall submit, for approval, accurately completed project Record Drawing showing actual location and routing of all exposed and all concealed conduit work.

## PART 2 PRODUCTS

### 2.1 MATERIAL - GENERAL REQUIREMENTS

- A. Furnish products listed and classified by UL as suitable for purpose specified and shown.
- B. Aboveground Interior installation: Use rigid metal conduit (unless otherwise noted, or unless installed in a classified area), sizes as shown on the drawings and/or per NEC, 3/4-inch minimum size.
- C. Above grade exterior and underground Installation: Use PVC coated rigid metallic conduit, sizes as shown on the drawings and/or per NEC, 3/4-inch minimum size.
- D. Galvanized Rigid Conduit shall be installed in classified areas

### 2.2 RIGID METAL CONDUIT

- A. NEC type RMC, rigid hot dipped galvanized steel conduit, complete with threaded conduit bodies, fittings and sealing fittings as required, in classified areas
- B. NEC type RMC, rigid aluminum conduit, complete with threaded conduit bodies, fittings and sealing fittings as required, in non-classified areas
- C. Conduit shall be furnished in manufacturer's standard lengths. Each conduit length shall be threaded on both ends. One end shall have a factory coupling and the other end shall have a plastic thread-protecting sleeve. Each length shall bear the UL label and the manufacturer's name.
- D. Conduit sizes shall be as required by NEC and/or shown on the Drawings, 3/4-inch minimum size.
- E. Conduit fittings and bodies shall match the conduit system.
- F. Approved Manufacturers: Allied Tube & Conduit, Wheatland Tube, Republic or approved equal.

### 2.3 RIGID METAL CONDUIT, PVC-COATED

- A. NEC type RMC, rigid hot dipped galvanized steel conduit, PVC-coated complete with PVC-coated threaded conduit bodies, fittings and sealing fittings as required.
- B. Conduit shall be furnished in manufacturer's standard lengths. Each conduit length shall be threaded on both ends. One end shall have a factory coupling and the other end shall have a plastic thread-protecting sleeve. Each length shall bear the UL label and the manufacturer's name.
- C. Conduit fittings and bodies shall match the conduit system.
- D. Approved Manufacturers: Plasti-Bond or approved equal.

## 2.4 LIQUID- TIGHT FLEXIBLE METAL CONDUIT

- A. NEC type LFMC, interlocked steel helically wound strip type with PVC liquid-tight jacket.
- B. Approved Manufacturers: Sealtite or approved equal.

## 2.5 BOXES

- A. All boxes shall be installed as specified in Section 16130.

## 2.6 HANGERS AND SUPPORTS

- A. All Hangers and supports shall be installed as specified in Section 16070.

## 2.7 UTILITY MARKING TAPE

- A. All underground conduits shall be designated with a red color, corrosion resistant detectable utility marking tape. The tape shall be 35-mil thick solid foil core encased in a protective jacket.
- B. Approved Manufacturers: Magnatec; Terra Tape, Sentry Line 620 or approved equal.

# PART 3 EXECUTION

## 3.1 GENERAL REQUIREMENTS

- A. The conduit quantity, size, and routings, as shown on the Contract Drawings shall not be considered absolute. This information, as indicated on the Contract Drawings or in this specification, is based on preliminary engineering data available to ENGINEER during preparation of the Contract Documents. CONTRACTOR shall completely review all Contract Drawings, as specified in Section 16010, Electrical Conditions, and as based on the equipment data and actual field conditions and furnish all necessary project conduit as required.

## 3.2 INSTALLATION - GENERAL GUIDELINES

- A. CONTRACTOR shall coordinate and properly schedule, so as not to cause project delays, with other trades the placement of conduits and/or sleeves in concrete or through walls, floors, and ceilings.
- B. CONTRACTOR shall be responsible for all trenching, excavation, backfill, disposal of excess material, and restoration required to install all underground conduits and/or ductbanks. Work shall be completed in accordance with the Division 2 technical specification sections.
- C. When indicated on the Contract Drawings, conduits passing through new walls, floors, and foundations shall be sleeved. Sleeves shall be either steel or PVC as indicated on the Contract Drawings, and, if necessary, shall be sealed with a fire stopping material similar in appearance to the surrounding area.
- D. Core drill for individual conduits passing through existing concrete slabs or walls. In existing facilities, obtain authorization from OWNER before core drilling. Check existing drawings to locate possible existing embedded conduits. Seal spaces around new conduits with waterproof grout similar in appearance to the surrounding area.
- E. Unless reusing existing conduit, all conduits, supports, hardware and the like shall be new materials.

- F. All miscellaneous hardware such as nuts, bolts, screws, washers, etc. shall be furnished and installed by CONTRACTOR and shall be, at a minimum, either hot-dipped galvanized steel or zinc plated.
- G. All metallic conduits shall be installed as a complete continuous system to NEC before any conductors are laid or pulled in. The conduits shall be installed so that a continuous grounding system will be maintained from the furthest point to the building grounding system.
- H. Where any component of the conduit system is damaged prior to final acceptance by OWNER, this CONTRACTOR shall be required to replace or provide a new conduit at no expense to the project and OWNER.
- I. To reuse existing conduit:
  - 1. Remove all wire and cable from the conduit.
  - 2. Pull rag swabs through the conduit to remove water and to clean the conduit prior to installing new conductors.
  - 3. Repeat swabbing until all foreign matter is removed.
- J. Embedded conduits shall be protected immediately (before concrete is placed) by installing polyethylene plugs, designed for this purpose, at each end. The plug shall not be removed until cable is ready to be installed.
- K. Open ends of spare conduits shall be capped with a threaded steel bushing and a flat (solid) washer immediately after installation. The use of wooden plugs or duct tape shall not be allowed. Exact location of spare conduits shall indicate on the "Record" Contract Drawings.
- L. A heavy-duty pull string shall be installed in each spare or empty conduit.
- M. Whenever possible, there shall not be more than the equivalent of three quarter bends or 270° total between pull points such as conduits or pull boxes.
- N. Rigid metal conduit that connects to metal enclosures or pull boxes shall use double lock nuts and a protective bushing. One lock nut shall be used on the outside and the second lock nut and bushing shall be utilized inside. The bushing must be screwed on fully before the lock nuts are set.
- O. Rigid metal conduit shall be provided with grounding fittings as necessary to provide bonding connections.
- P. Rigid metal conduit cut in the field shall have ends cut square. Cut ends shall be reamed to remove burrs and sharp edges. All field threads shall be cut to the same dimensions and taper as the factory cut threads.
- Q. Galvanized rigid steel conduit installed in classified areas shall be sealed at the entry/exit of adjacent rooms, and within 18" of arcing sources.

### 3.3 UNDERGROUND INSTALLATION

- A. CONTRACTOR shall coordinate all underground work with OWNER for possible interference with the existing underground facilities. All CONTRACTOR's underground work shall be reviewed and approved by OWNER prior to commencing construction. CONTRACTOR shall be liable for any work performed without following this procedure.
- B. All underground conduit shall be buried to a depth of at least 24 inches below final grade unless shown otherwise on the drawings. A 6-inch wide red caution tape "BURIED ELECTRICAL LINE BELOW" shall be placed at a depth of 12 inches below the final grade the entire length of the underground line.

- C. Where requested by OWNER, the utility marker tape shall be applied for the underground installation.

### 3.4 ROUTING AND SIZING

- A. When the routing of conduits is shown on the Contract Drawings, this information is provided only as a guide and shall not be considered absolute. The Contract Drawings only indicate the approximate location of conduit installation. The CONTRACTOR shall determine exact locations by field verifying each route before beginning work.
- B. The sizes of conduit indicated on the Contract Drawings are based on preliminary engineering data. The CONTRACTOR shall determine actual conduit sizes based on the outside diameter of the actual cable and wire supplied.
- C. The quantity of conduits indicated on the Contract Drawings or in this specification is based on preliminary engineering data. The CONTRACTOR shall supply and install all conduits required to maintain the installation recommendations of NEC, IEEE, and the supplied equipment manufacturers.
- D. Conduits shall not be smaller than the size required by the NEC for the conductors enclosed and shall be larger where so specified or indicated on the Contract Drawings.
- E. Unless otherwise noted on the Contract Drawings as large radius (sweeps), all 90° conduit elbows shall be standard radius or field bent conduit with a radius of a standard elbow. To ease cable-pulling tensions, CONTRACTOR may elect to install large radius elbows.
- F. No conduit shall be reduced in size in a ductbank or embedded conduit run.
- G. Conduit shall not be embedded in concrete slabs and/or walls having a thickness of 6 inches or less.
- H. When indicated in a standard detail on the Contract Drawings, conduit may be installed below a grade floor slab. CONTRACTOR shall excavate, bed the conduit in stone, cover the conduit with stone, and backfill.
- I. Conduit may be embedded in concrete slabs and/or walls having a thickness of more than 6 inches. CONTRACTOR shall submit installation details for review by the ENGINEER. All embedded conduits shall have a minimum of 2 inches of concrete cover.
- J. Exact location of conduit in slabs with respect to reinforcing shall be as directed by the ENGINEER. Crossing of conduit in a floor slab shall not be permitted except as approved by the ENGINEER.
- K. All exposed conduits shall be installed parallel to or perpendicular to the building walls and ceiling unless otherwise indicated on the Contract Drawings.
- L. All conduits and supports shall be installed so as not to interfere with normal passage of personnel, mobile equipment, and/or vehicles. Maintain a minimum headroom clearance of 8 feet.
- M. To avoid possible injuries to operators and/or maintenance personnel, under no circumstance shall conduit be installed across the top of a floor surface.
- N. Conduits shall be run to avoid adverse conditions such as heat and moisture and to avoid all materials and equipment of other trades. Conduits shall maintain a minimum clearance of 6 inches from all hot water pipes, flues, or any high temperature piping or ductwork. Should it be necessary to install conduits closer than this to hot water pipes, an insulating type covering shall be used to protect the conduit from high temperature.
- O. Provide suitable fittings to accommodate expansion and/or deflection where conduits cross building expansion joints.

- P. All exterior vertical conduit runs with an elevation change greater than 5 feet shall include proper conduit vents and drains.
- Q. CONTRACTOR shall increase conduit size, as required, where wire size has been increased for voltage drop.

### 3.5 SEPARATION

- A. In order to maintain a separation of electrical noise sources from signal and instrumentation cabling, the CONTRACTOR shall group cables within a conduit system according to IEEE standard 518 level designations.
  - 1. Level 1: Analog signals of less than 50V. Digital signals of less than 15V.
  - 2. Level 2: Analog signals greater than 50V. Control/switching circuits operated by less than 50V. Analog tachometer signals.
  - 3. Level 3: Control/switching circuits operated by 50V or greater but less than 20 amps. AC feeders less than 20 amps.
  - 4. Level 4: Power circuits of 0-1000V. Power circuits of 20-800A.
  - 5. Level 5: Power circuits above 1000V. Power circuits above 800A.

### 3.6 LIQUID - TIGHT FLEXIBLE METAL CONDUIT

- A. It shall be installed for the final conduit connection to all motors and any other device, such as valves or fans and the like, subject to movement or vibration.
- B. The minimum length shall be 12 inches and the maximum length shall be 36 inches.
- C. The size shall be the same as the conduit it is connected to. When connecting to a single device, such as a solenoid or limit switch, the final length of flexible conduit may be ½-inch diameter.
- D. Proper terminations and bonding jumpers shall be used to maintain the integrity of the grounding system.

### 3.7 CONDUIT FITTINGS AND BOXES

- A. CONTRACTOR shall install all conduit fittings and boxes as indicated on the Contract Drawing or where necessary to facilitate the installation of conductors and as required to meet NEC requirements for non-hazardous and hazardous locations.
- B. All box conduit entry holes shall be cut, drilled, or punched. Torch cutting shall not be permitted. Holes shall be deburred from both sides.
- C. All boxes shall be supported independently of all conduits and shall be secured in place.

### 3.8 SUPPORTS

- A. CONTRACTOR shall be responsible for supply, proper application, installation, and location of all necessary, required, and approved conduit system supports and hangers for a complete conduit system. This shall be provided as specified in Section 16070, Hangers and Supports.



- B. The conduit supports shall be from the building structural steel members only. Do not support conduit from the pipe, duct, conduit, and the like. Do not burn or weld to structural members.
- C. As a minimum, conduit supports shall be spaced as required by the NEC.

### 3.9 FIELD QUALITY CONTROL

- A. Demonstration: On completion, demonstrate to ENGINEER that all project conduit and boxes have been supplied and installed as specified.

END OF SECTION



## SECTION 16112

### SURFACE RACEWAYS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Surface metal raceways.
- B. Multi-outlet assemblies.
- C. Wireways.
- D. Wall duct.

##### 1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work.
- B. Division 16000 – Electrical.

##### 1.3 REFERENCES

- A. NECA 1 – Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
- B. NEMA WD 6 – Wiring Device Configurations.
- C. ANSI/NFPA 70 – National Electric Code (NEC).
- D. Underwriters Laboratories (UL).

##### 1.4 SUBMITTALS

- A. See appropriate sections of Front End Specifications and Division 1 for submittal procedures.
- B. Product Data – Provide dimensions, knockout sizes, and locations, materials, fabrication details, finishes, and accessories.

##### 1.5 QUALITY ASSURANCE

- A. Perform work in accordance with NECA Standard of Installation
- B. Maintain one copy of document on site.

## 1.6 QUALIFICATIONS

- A. Manufacturer – Company specializing in manufacturing Products specified in this Section with minimum of 3 years of documented experience.

## 1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

## PART 2 PRODUCTS

### 2.1 SURFACE METAL RACEWAY

- A. Manufacturers:
  - 1. Hubbell Incorporated.
  - 2. Panduit Corporation.
  - 3. Wiremold/Legrand.
  - 4. Approved Equivalent.
- B. Description – Sheet metal channel with fitted cover, suitable for use as surface metal raceway.
- C. Size – As indicated on Drawings.
- D. Finish – Manufacturers recommended finish.
- E. Fittings, Boxes, and Extension Rings – Furnish manufacturer’s standard accessories.

### 2.2 SURFACE NONMETAL RACEWAY

- A. Manufacturers:
  - 1. ABB Inc.
  - 2. Panduit Corporation
  - 3. Hubbell Incorporated.
  - 4. Wiremold/Legrand.
  - 5. Approved Equivalent.
- B. Description – Plastic or Fiberglass channel with fitted cover, suitable for use as surface metal raceway.
- C. Size – As indicated on Drawings.

- D. Finish – Gray.
- E. Fittings, Boxes, and Extension Rings – Furnish manufacturer’s standard accessories.

### 2.3 WIREWAY

- A. Manufacturers:
  - 1. Hoffman.
  - 2. Eaton B-Line.
  - 3. Panduit Corporation.
  - 4. Approved Equivalent
- B. Description – General purpose, oil tight, dust tight, and rain tight type wireway.
- C. Knockouts – Manufacturer’s Standard.
- D. Size – As indicated on Drawings.
- E. Cover – Screw Cover with full gasketing.
- F. Connector – Slip in.
- G. Fittings – Lay-in type with removable top; captive screws.
- H. Finish – Rust inhibiting primer with ANSI Gray enamel Finish.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install products in accordance with manufacturer’s instructions.
- B. Use flat-head screws, clips, and straps to fasten raceway channel to surfaces. Mount plumb and level.
- C. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.
- D. Wireway Supports – Provide suitable steel channel.
- E. Ground and bond raceway and wireway under provisions of Section 16060.

END OF SECTION



## SECTION 16120

### WIRE AND CABLE

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section includes minimum requirements for the Project wire and cable in all Project locations as shown on the drawings and as specified herein. This shall include all Project wire, cable, wiring identification and terminations.

##### 1.2 RELATED SECTIONS

- A. The following sections relate to this section Work:
  - 1. Section 01010 – Summary of Work.
  - 2. Division 16 – Electrical.

##### 1.3 REFERENCES

- A. CONTRACTOR'S Work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. ANSI/NFPA 70 – National Electrical Code.
  - 2. NFPA 70E – Standard for Electrical Safety in the Workplace.
  - 3. ANSI/IEEE C2 – National Electrical Safety Code.
  - 4. OSHA CER 1910, Subpart S – Electrical General, Parts 1 and 2.
  - 5. Underwriters Laboratories Inc. (UL).

##### 1.4 SUBMITTALS FOR REVIEW

- A. CONTRACTOR shall submit, for approval, catalog cuts for all wire and cable proposed for this section Work.
- B. CONTRACTOR shall submit, for approval, all revised Contract Drawings showing revised wiring routing and wire sizes as specified in Section 16010, Electrical Conditions.
- C. CONTRACTOR shall submit, for approval, all required interconnecting wiring termination drawings as specified in Section 16010, Electrical Conditions.

##### 1.5 SUBMITTALS FOR CLOSEOUT

- A. On completion, CONTRACTOR shall submit, for approval, accurately completed Project Record Drawing showing actual location, routing and termination details of all wire and cable work.

## PART 2 PRODUCTS

### 2.1 MATERIAL - GENERAL REQUIREMENTS

- A. All wire, cable and terminations for the Project shall be NEC compliant, UL-approved product.

### 2.2 FEEDER AND BRANCH CIRCUIT CABLE

- A. Description: NEC general wiring type, single-conductor cable for use in conduit installations.
- B. Conductor: Class B stranded, annealed copper, sizes as shown on the Drawings and/or as required by NEC.
- C. Voltage Rating: 600 volts.
- D. Insulation: 75 /90 degrees C, THHN/THWN-Approved Manufacturers: General Cable, Southwire or approved equal.

### 2.3 INSTRUMENTATION CABLE

- A. Analog Cable: 600V, 18AWG copper twisted shielded pair with overall PVC jacket, Belden 9341, or approved equal.
- B. Digital Cable: 600V, 18AWG copper twisted unshielded pair with overall PVC jacket, Belden 9486, or approved equal.

### 2.4 LOW VOLTAGE WIRING TERMINATIONS

- A. All 480 V power terminations at motors and buswork shall be made with Burndy two-hole “Hylug” or approved equal compression type connectors.
- B. All instrumentation wiring terminating at screw type terminals shall be made with Thomas & Betts “Sta-Kon” or approved equal insulated “fork-type” spring connectors.

## PART 3 EXECUTION

### 3.1 GENERAL REQUIREMENTS

- A. The wire and cable quantity and sizes, as shown on the Contract Drawings shall not be considered absolute. This information, as indicated on the Contract Drawings or in this specification, is based on preliminary engineering data available to ENGINEER during preparation of the Contract Documents. CONTRACTOR shall completely review the Contract Drawings as specified in Section 16010, Electrical Conditions and based on the actual supplied equipment data and field conditions, and furnish all necessary Project wire and cable as required.

### 3.2 INSTALLATION – GENERAL GUIDELINES

- A. The wire and cable installation shall include wire and cable handling, cutting, training, pulling, termination and testing.



- B. All wiring and cable shall be enclosed in conduit, except temporary wiring installation, which shall comply with NEC requirements for temporary installations and as instructed by OWNER and/or by the local authority having jurisdiction.
- C. All wiring shall be properly grounded, color-coded, phased and/or polarized throughout. The wiring color code shall be as follows:
  - 1. 3-Phase 120, 208, & 240V Wiring: In accordance with NEC; Line 1 "L1" Black, Line 2 "L2" Red, Line 3 "L3" Blue", Common White
  - 2. 3-Phase, 480V Wiring: In accordance with NEC; Line 1 "L1" Brown, Line 2 "L2" Orange, Line 3 "L3" Yellow", Common White
  - 3. Ground: Green.
  - 4. Instrumentation Analog and Digital Cable: White (+), black (-).
- D. No conductor shall be installed until the raceway system that contains it is complete.
- E. Install wire and cable in accordance with manufacturer's instructions. Employ manufacturer recommended tools and installation methods. Never exceed manufacturer's recommended cable bending radiuses and pull tensions. Pull all conductors into raceway at the same time. Use manufacturer recommended greaseless conductor pulling compound only.
- F. All conductors shall be installed in continuous runs, from origin to equipment, without splices or joint unless specifically indicated on the Contract Drawings.
- G. Cable splices, if any, and terminations shall carry full ampacity of conductors with no perceptible temperature rise.
- H. All wire/cable terminations shall be made to terminal blocks, bus, or connectors in approved enclosures.
- I. All conductors shall be installed and terminated without nicking the insulation.
- J. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- K. All cables, cables conductors and wires shall be clearly identified with identification numbers, as indicated on the Drawings, at all pull boxes, equipment, and devices enclosures, and at all terminating points. Identify each cable, cable conductor, or wire by a marker at each terminating point in accordance with Section 16075, Electrical Identification. All identification letters and numbers shall be typed.
- L. Wire pulled prior to the equipment setting, or completion of conduit termination, shall be protected from the environment and shall be neatly coiled and protected from damage.

M. Terminations:

1. All cable terminations shall be completed only after the cable checks and tests have been performed and found acceptable by ENGINEER.
2. Conducting surfaces of the cable terminating ends shall be thoroughly cleaned before applying connectors.
3. No more than two wires shall be terminated at any terminal. Wire twisting around the terminal will not be allowed.

N. Checkouts and Tests:

1. Prove all interconnecting cable and wire continuity and freedom from grounds and short circuit.
2. Ensure the equipment proper polarity and phasing, and that all conductors have been terminated at the correct terminals.
3. All power, control, and instrumentation wiring shall be tested. Cable, which fails the test, shall be promptly replaced at CONTRACTOR'S expense.
4. All underground cables shall be tested twice prior to and after backfilling of the trenches.
5. All test results shall be documented and submitted to ENGINEER for review and comments and shall later become a part of the as-built documents.
6. The high voltage cable shall be given manufacturer's recommended high voltage test.
7. The low voltage cable tests shall be performed with a digital insulation and continuity tester (AVO INTERNATIONAL Megger BM80 or approved equal) as follows:
  - a. All 480V power and motor feeders shall be 1000 VDC megger tested. Record lowest readings. Reference insulation resistance numbers shall be obtained from the cable manufacturer.
  - b. Instrumentation cable shall be checked for continuity only (disconnect all associated surge protective devices during the test).

O. Phasing:

1. The entire electrical system shall be properly phased-out by CONTRACTOR, so that all three-phase transformers, motor control center, distribution panels, disconnects, power outlets, etc., are identical in phase relationship.
2. The phasing shall be of A-B-C sequence, left to right, top to bottom, front to back.

3.3 DEBRIS

- A. During cable installation, at the end of each day, CONTRACTOR shall ensure that cable cuttings and other cable waste are deposited into a trash container to avoid any debris left in the work area, and in the equipment enclosures.

3.4 DAILY RUNNING RECORD

- A. CONTRACTOR shall keep a daily running record of cables pulled and terminated, and it should be available for ENGINEER'S periodic inspection.

3.5 CLOSEOUT

- A. On completion, CONTRACTOR shall demonstrate to the OWNER and ENGINEER that all Project wire and cable has been supplied and installed as specified.

END OF SECTION



## SECTION 16130

### BOXES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Equipment outlet boxes.
- B. Wiring pull and junction boxes.

##### 1.2 REFERENCES

- A. Quality Requirements: References.
- B. National Electrical Manufacturers Association (NEMA):
  - 1. FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
  - 2. OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
  - 3. OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
  - 4. 250 - Enclosures for Electrical Equipment (1,000 Volts Maximum).
- C. National Fire Protection Association, Inc. (NFPA): 70 - National Electrical Code.
- D. Underwriters Laboratories Inc. (UL).

##### 1.3 REGULATORY REQUIREMENTS

- A. Conform to NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

##### 1.4 PROGRESS SUBMITTALS

- A. Facility Operation: Progress Submittals.
- B. Product Data: Include for the specified boxes.

##### 1.5 CLOSEOUT SUBMITTALS

- A. Execution Requirements: Closeout Procedures, Project Record Documents.
- B. Facility Operation: Closeout Submittals.
- C. Record Documents: Record actual locations of the installed boxes on Drawings.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, Galvanized steel:
  - 1. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2-inch male fixture studs where required.
- B. Cast Boxes: NEMA FB 1 Type FD, aluminum or cast ferrous alloy. Provide gasketed cover by box manufacturer. Provide threaded hubs.
- C. Wall Plates for Finished Areas: Section 16140.
- D. Explosion proof (denoted as XP on the drawings) outlet boxes in classified areas.

### 2.2 WIRING PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, Galvanized steel.
- B. Surface-mounted Cast Metal Box: NEMA 250 Type 4, flat-flanged, surface-mounted junction box:
  - 1. Material: Cast aluminum.
  - 2. Cover: Furnish with ground flange, neoprene gasket, and stainless-steel cover screws.
- C. Underground Wiring Handholes: As shown on Drawings.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Execution Requirements: Examination.

### 3.2 INSTALLATION

- A. Install in locations as shown on Drawings, and as required for wire pulling and equipment connections.
- B. Set wall-mounted boxes at elevations to accommodate mounting heights at a minimum of 7 feet 0 inches above finished floor elevation.
- C. Orient boxes to accommodate wiring devices.
- D. Maintain headroom and present neat mechanical appearance.
- E. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- F. Install boxes to preserve fire resistance rating of wall partitions and other elements.
- G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- H. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.

- I. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices.
  - J. Support boxes independently of conduit.
  - K. Use gang box where more than one device is mounted together. Do not use sectional box.
  - L. Use cast outlet box in exterior locations exposed to weather and wet locations.
  - M. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.
  - N. Coordinate installation of outlet box for equipment connected.
  - O. On completion of installation, clean interior of boxes to remove dust, debris, and other material.
  - P. For hazardous areas, install seals within 18" of boxes that contain arc creating apparatuses.
- 3.3 FIELD QUALITY CONTROL
- A. Quality Requirements: Inspecting and Testing Services.
  - B. On completion, demonstrate to ENGINEER that all boxes have been installed as specified.

END OF SECTION





## SECTION 16410

### POWER DISTRIBUTION AND CONTROL EQUIPMENT

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. This section defines minimum requirements for the project switchgear, power distribution, lighting panelboards, and control equipment work.

##### 1.2 RELATED SECTIONS

- A. This section work shall be as specified in the following related sections:
  - 1. Section 01010 - Summary of Work.
  - 2. Division 16 - Electrical.

##### 1.3 REFERENCES

- A. CONTRACTOR'S work shall comply with the latest requirements of all applicable codes, standards, guides, practices, and local regulations pertaining to the job at the time of bidding, and it shall carry approval labels where required. As a minimum, the following shall apply:
  - 1. ANSI-C37.13 – Low Voltage Power Circuit Breakers.
  - 2. ANSI-C37.17 – Trip Devices.
  - 3. UL 1066 Low Voltage Power Circuit Breakers.
  - 4. NFPA 70 – National Electrical Code (NEC).
  - 5. NFPA 70E – Standard for Electrical Safety in the Workplace.
  - 6. IEEE C2 – National Electrical Safety Code.
  - 7. OSHA CER 1910, Subpart S – Electrical General, Parts 1 & 2.
  - 8. NEMA AB 1 - Molded Case Circuit Breakers.
  - 9. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.
  - 10. NEMA ICS 3 – Industrial Control and Systems: Factory Built Assemblies.
  - 11. NEMA ICS 6 – Enclosures for Industrial Controls and Systems.
  - 12. NEMA ICS 7 – Industrial Control and Systems: Adjustable Speed Drives.
  - 13. NEMA KS 1 - Enclosed Switches.

#### 1.4 SUBMITTALS

- A. See appropriate sections of Division 1 for submittal procedures.
- B. Shop Drawings: Indicate outline and support point dimensions, nameplate schedule, schematic diagrams, product data sheets, front and plan views, cable terminal sizes, conduit space locations, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and switch arrangement and sizes. Where applicable submit busway connections, front and plan view of close-coupled assemblies, interlock scheme drawings and sequence of operations, automatic transfer sequence of operations, and bus size and color.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Project Record Documents: Record actual locations of switchgear and panelboards and record actual circuiting arrangements.
- E. Maintenance Data: Include spare parts listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

#### 1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Perform Work in accordance with NECA Standard of Installation.
- C. Maintain one copy of document on site.
- D. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years' experience.
- E. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store in clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

#### 1.7 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after final acceptance by the Owner, including all parts, labor, and expenses.

## 1.8 MAINTENANCE MATERIALS

- A. Furnish all panel keys, if applicable.
- B. Maintenance Data: Include spare parts data listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

## PART 2 PRODUCTS

### 2.1 GENERAL MATERIAL REQUIREMENTS

- A. All equipment shall be as shown on the Contract Drawings, specified herein, and as necessary and required to complete the Project.
- B. Manufacturers
  - 1. Eaton.
  - 2. Square D.
  - 3. Or approved equal.

### 2.2 EQUIPMENT

- A. Feeder Breakers in MCC and Panelboards
  - 1. Ground fault protection.
  - 2. Ancillary devices as required.

### 2.3 RATINGS

- A. Voltage rating shall be as indicated on the drawings. The entire assembly shall be suitable for 600 volts maximum ac service.
- B. The assembly shall be rated to withstand mechanical forces exerted during short-circuit conditions when connected directly to a power source. Symmetrical amperes shall match in kind, tested in accordance with ANSI C37.20.1 and UL1558. System short circuit ratings shall be verified through power modeling throughout the life of the equipment.
- C. All circuit breakers shall have a minimum symmetrical interrupting capacity matching in kind of existing equipment.

### 2.4 INSTALLATION

- A. Feeder circuit breakers shall be installed as shown on drawings, per NEC installation methods

### 2.5 WIRING/TERMINATIONS

- A. Terminate wires through existing wireway for field wiring.

- B. Front access to all circuit breaker secondary connection points shall be provided for ease of troubleshooting and connection to external field connections without the need of removing the circuit breaker for access.
- C. NEMA 2-hole mechanical- type lugs shall be provided for all line and load terminations suitable for copper or aluminum cable rated for 75 degrees C of the size indicated on the drawings.

## 2.6 CIRCUIT BREAKERS

- A. All protective devices shall be low voltage power circuit breakers. All breakers shall be UL listed for application in their intended enclosures for 100% of their continuous ampere rating.

## 2.7 ENCLOSURES

- A. NEMA 1 Enclosures in non-classified areas.

## 2.12 NAMEPLATES

- A. Engraved nameplates, mounted on the face of the assembly, shall be furnished for new feeder circuits as indicated on the drawings. Nameplates shall be laminated plastic, black characters on white background, and secured with screws. Characters shall be 3/16-inch high, minimum.
- B. Furnish master nameplate giving switchgear designation, voltage ampere rating, short-circuit rating, and manufacturer's name.
- C. Control components mounted within the assembly, such as fuse blocks, relays, pushbuttons, switches, etc., shall be suitably marked for identification corresponding to appropriate designations on manufacturer's drawings.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that equipment is installed securely and wire terminations are not loose.
- B. Review manufacturer's installation instructions.

### 3.2 INSTALLATION

- A. The Contractors shall install all equipment per the manufacturer's recommendations and the contract drawings.
- B. All necessary hardware to secure the assembly in place shall be provided by the Contractor.
- C. The equipment shall be installed and checked in accordance with the manufacturer's recommendations. This shall include but not limited to:
  - 1. Inspecting and installing all circuit breakers in their proper compartments.
- D. Height: 6 feet to top of panelboard; install panelboards taller than 6 feet with bottom no more than 4 inches above floor.
- E. Wire up equipment and pull and connect wires.
- F. Ground and bond enclosures according to Section 16060.

### 3.3 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with appropriate sections of Division 1.
- B. Inspect equipment for signs of damage during installation, completion of the interconnecting wiring and grounding, and labeling.
- C. Energize equipment and check for phase rotation, reconnect if necessary.
- D. Measure steady state load currents at each feeder; rearrange circuits to balance the phase loads to within 20 percent of each other. Confirm panel directory, review and correct if necessary.

### 3.4 DEMONSTRATION

- A. On completion, demonstrate to the Engineer that all equipment has been provided as specified.

END OF SECTION



# **Appendix A**

## **Women and Minority Business Enterprise Policy**





**APPENDIX A**

**WOMEN AND MINORITY BUSINESS ENTERPRISE POLICY**

**ERIE COUNTY WATER AUTHORITY**

## APPENDIX A

### WOMEN AND MINORITY BUSINESS ENTERPRISE POLICY

#### ERIE COUNTY WATER AUTHORITY

It is the policy of the Authority to foster and encourage minority business enterprise participation in the construction contracts of the Authority. Through the setting of Minority Business Enterprise goals and careful monitoring of CONTRACTOR compliance, the Authority will ensure the fullest possible participation in construction activities by qualified minority and women-owned firms.

Some of the federal and state laws that provide the basis for Equal Employment Opportunity and Affirmative Action are:

1. Title VII, Civil Rights Act of 1964 (as amended by the Equal employment Opportunity Act of 1972): Prohibits employment discrimination because of race, color, sex, religion or national origin.
2. Executive Order 11246 (as amended by the Executive Order 11375): Requires Affirmative Action by all Federal CONTRACTORS and subcontractors and requires that all firms with Contracts over \$50,000.00 and 50 or more employees develop and implement written programs.
3. Equal Act of 1963: Requires employers to provide equal pay for men and women performing similar work.
4. New York State Human Rights Law: Prohibits discrimination based on race, color, sex, age, creed, disability, national origin and marital status in employment matters.
5. Flynn Act: Guarantees disabled citizens protection against discrimination in housing, employment, public accommodations, training programs and non-sectarian education due to mental, physical or medical disability.
6. Title VI, Civil Rights Act of 1964: Prohibits discrimination based on race, color or national origin in all programs which receive Federal aid.
7. Title IX, Education Amendments Act of 1972: Prohibits sex discrimination against students of any educational institution receiving Federal financial aid.

#### **A. MINORITY BUSINESS UTILIZATION COMMITMENT**

The Erie County Water Authority has established the following business utilization rules which requires all prime CONTRACTORS awarded construction contracts let by the Erie County Water Authority to exemplify Affirmative Action to sub-contract to minority business enterprise (MBE). For the purpose of these regulations, the term “Minority Business Enterprise” refers to a business at least fifty-one percent (51%) of which is owned and controlled by minority group members. Minority group members are citizens of the United States who are Women, Blacks, Hispanics and Native Americans. MBE’s must demonstrate current certification of a government agency.

The Authority has determined that a goal of ten percent (10%) of the total contract value represents a fair share of minority business utilization on each construction contract awarded.

Recipients of Authority construction Contracts must utilize minority-owned business sources for supplies, services and professional services, allowing these sources the maximum feasible opportunity to compete for Contracts, Subcontracts and third-tier Contracts to be performed, All prime CONTRACTORS awarded Authority Contracts estimated to exceed \$100,000.00 must take positive steps to “afford fair opportunities to MBE’s”. Positive steps shall include, but not be limited to, (a) utilizing a source list of bona fide minority business enterprises, (b) solicitations of bids from MBE’s particularly of those located in Erie County, (c) giving minority firms sufficient time to submit proposals in response to solicitations and (d) maintaining records showing minority business enterprises and specific efforts to identify and award Contracts to these Companies.

Each CONTRACTOR bidding on an Erie County Water Authority contract is to contact MBE’s and solicit bids for various aspects of each project. The CONTRACTOR is to supply the Authority with information regarding contracts for services and products with minority business enterprises and the dollar amount of each contract on the Minority Business Utilization Report.

The Successful Bidder shall submit to the Authority the Minority Business Enterprise Utilization Report - Part A within one week of the bid opening. Part A includes a list of MBE’s from whom the CONTRACTOR has solicited bids, or with whom the CONTRACTOR has signed a binding contractual agreement. The Authority will not consider a CONTRACTOR’s bid where the CONTRACTOR fails to submit this report or where an examination of the report evidences failure by the CONTRACTOR to comply with the affirmative action requirements of the Contract.

In the event of a joint venture participating in this MBE Program, the Joint Venture Disclosure Affidavit must be submitted with Part A by all parties involved. Only to the extent that a minority business enterprise contributes to and is paid for its participation in a joint venture will that dollar be credited towards the 10% goal of minority participation in the Erie County Water Authority MBE Program.

MBE’s must be approved by the Erie County Water Authority before their participation may be credited toward the 10% goal. Where the proposed MBE is not approved by the Authority, an Authority MBE/Disclosure Affidavit must be filed with the Contract Compliance office. Forms and lists of certified MBE’s can be obtained by calling Lavonya Lester, Director of Equal Employment Opportunity (ECWA) at (716) 685-8223.

A Minority Business Enterprise Utilization Waiver Request may be completed and submitted with the Minority Business Enterprise Utilization Report - Part A to the Authority within one week of the bid opening. Waivers shall be granted only where the availability of MBE’s in the market area of the project is less than the 10% goal.

Sufficient information must be provided on the Minority Business Enterprise Utilization Waiver Request to ascertain whether a waiver should be approved, conditionally approved or rejected by advice of the Equal Opportunity Office.

A waiver approval limits the CONTRACTOR’s obligation to solicit MBE’s for this particular project. It does not relieve the CONTRACTOR of MBE utilization for any other Erie County Water Authority project on which he submits a bid.

Conditional approval of the waiver request makes it necessary for the CONTRACTOR to continue soliciting MBE’s for contracting purposes, after he has been declared the low bidder.

A MBE Utilization Waiver Request will be rejected if the CONTRACTOR:

1. fails to provide information on the Minority Business Enterprise Utilization Report with his bid.
2. provides fraudulent information of the MBE reports.
3. fails to make an honest good faith effort to recruit and contract with MBE's or
4. takes any other action which is contrary to the spirit and intent of the law.

THE INFORMATION PROVIDED ON THE MBE WAIVER REQUEST AND THE MBE UTILIZATION REPORT WILL BE CONSIDERED CONCURRENTLY TO DETERMINE IF A WAIVER SHOULD BE APPROVED, CONDITIONALLY APPROVED OR REJECTED.

The low bidder shall submit to the Authority, within one week of the bid opening, a schedule for minority business enterprise participation, with whom the CONTRACTOR intends to Subcontract, specifying the agreed price to be paid for such work, and identifying in detail the Contract item(s) or parts to be performed by each minority business enterprise. A letter of intent to enter into a Subcontract or purchase agreement, signed by the minority business, contingent upon the contract award, indicating the agreed upon price and scope of work, shall be provided, signed by both the CONTRACTOR and the minority business enterprise. The prime CONTRACTOR shall not substitute or delete the listed minority business enterprise without the written consent of the Erie County Water Authority.

In the event that the MBE goal for the contract is not met, the CONTRACTOR shall provide sufficient documentation to establish that every positive effort was made to identify, solicit and negotiate with MBE's in pursuit of the goal. Such documentation includes, but is not limited to, advertisement in minority-focused media, written contract with minority businesses indicating sufficient bidder's price along with evidence showing the work to be performed is the same, and not a reduced portion thereof.

The CONTRACTOR shall provide to the Erie County Water Authority copies of all subcontracts and/or purchase agreements with minority business enterprises within one week of the bid opening. A notice to proceed with construction shall not be issued until acceptable documentation is received.

When the project is thirty (30%) percent complete, the CONTRACTOR shall submit to the Authority the Minority Business Enterprise Utilization Report - Part B. Part B lists the MBE's on the project, the dollar amounts paid to that date and the estimated amount remaining to be spent.

The Minority Business Enterprise Utilization Report - Part C certifies the actual dollar amount expended to MBE's. Part C must be completed by the prime CONTRACTOR and submitted at the seventy-five (75%) percent payment level.

The Minority Business Enterprise Utilization Report - Part D certifies the total dollar amount expended to MBE's. Part D is to be submitted with the request for final payment.

In the event a CONTRACTOR fails to comply with these provisions the Authority may:

1. Summon the CONTRACTOR to a hearing
2. Withhold progress payments in part or in full
3. Cancel the contract.
4. Bar award of future Contracts until the CONTRACTOR can demonstrate that he will comply.

It is hereby the Erie County Water Authority's commitment to assure that on all contracts awarded, prime CONTRACTORS expend a fair share of the contract with bona fide minority businesses in accordance with the goals set forth by the Authority. Failure to comply with these provisions shall disqualify the bidder and shall constitute a breach of contract subject to all remedies available to the Authority.

The Prime CONTRACTOR and all minority Subcontractors are bound by all requirements as put forth in the Erie County Water Authority standard General Conditions and all modifications thereto contained in these Contract Specifications.

Listing of **AFFIRMATIVE ACTION FORMS ATTACHED:**

<b><u>NAME OF FORM</u></b>	<b><u>PAGE NUMBER(S)</u></b>
Minority Business Utilization Report- Part A	6 & 7
Waiver Request	8
Erie County Water Authority Minority Business Enterprise Joint Venture Disclosure Affidavit	9
Erie County Water Authority Minority Business Enterprise Utilization Report - Part B	10 & 11
Minority Business Enterprise Utilization Report - Part C	12
Minority Business Enterprise Utilization Report - Part D	13

**ERIE COUNTY WATER AUTHORITY  
MINORITY BUSINESS ENTERPRISE  
UTILIZATION REPORT - PART A**

This information must be submitted by the successful bidder within one week of bid opening.

COMPANY \_\_\_\_\_

AUTHORIZED REPRESENTATIVE \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

I. List actions taken to identify, solicit, and contact Minority Business Enterprises (MBE) to bid on subcontracts on this project.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

II. List all bona fide Minority Business Enterprise, subcontractors, professional personnel, solicited, contracted, or presently negotiating a contract in accordance with the minority business utilization goal set forth by the Erie County Water Authority. (Attach additional sheets if necessary.)

<b>MINORITY OWNED FIRM</b>	<b>SUPPLY/ SERVICE</b>	<b>AMOUNT OF PROPOSAL</b>	<b>PRIOR CERTIFICATION</b>	<b>CONTRACT EXECUTED</b>	<b>REASON NOT AWARDED</b>
NAME: _____ ADDRESS: _____ TELE NO. _____ IRS NO. _____				YES _____ NO _____	
NAME: _____ ADDRESS: _____ TELE NO. _____ IRS NO. _____				YES _____ NO _____	
NAME: _____ ADDRESS: _____ TELE NO. _____ IRS NO. _____				YES _____ NO _____	
NAME: _____ ADDRESS: _____ TELE NO. _____ IRS NO. _____				YES _____ NO _____	

PART A CONTINUED

III. Assistance offered by CONTRACTOR to MBE's as to bonding, union requirements, obtaining work capital etc.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_

IV. Total Dollar Amount to be subcontracted to Minority Business Enterprise(s): \$ \_\_\_\_\_

V. Total Amount of Bid: \$ \_\_\_\_\_

VI. MBE Percent (%) of project bid: \_\_\_\_\_

VII. **YOU MUST ATTACH COPIES OF RELEVANT CORRESPONDENCE AND DOCUMENTS INCLUDING RETURN RECEIPTS.**

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED REPRESENTATIVE

**Note: Within one week of the bid opening, this original form, together with a letter of intent to enter into a subcontract or purchase agreement, contingent upon the contract award, indicating the agreed upon price and scope of work, signed by both the CONTRACTOR and the Minority Business Enterprise, must be submitted to:**

Lavonya Lester, Director of Equal Employment Opportunity (ECWA)  
Erie County Water Authority  
3030 Union Road  
Cheektowaga, New York 14227



**WAIVER**

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_  
(AREA CODE) (NUMBER)

- 1. CONTRACTOR has made a good faith effort to adopt subcontracting on this project to those trades, professions, supplies, etc. for which minority business enterprises bids could be solicited; and
- 2. The total percentage of the bids which could be Subcontracted in trades, professions, supplies, etc. for which minority business enterprises bids could be solicited is less than 10%.

A waiver, as provided for by the Erie County Water Authority is hereby requested on the grounds that there are no/insufficient (circle the appropriate term) minority business enterprise in the market area of this project which do subcontracting in the following fields (list all trades, professions, supplies, etc. which could be subcontracted on this project):

- |          |           |
|----------|-----------|
| 1. _____ | 6. _____  |
| 2. _____ | 7. _____  |
| 3. _____ | 8. _____  |
| 4. _____ | 9. _____  |
| 5. _____ | 10. _____ |

(use additional sheets if necessary)

If a partial waiver is granted the CONTRACTOR will make a good faith effort to meet the reduced goal.

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED  
REPRESENTATIVE OF COMPANY

Granted in whole \_\_\_\_\_

Granted in part \_\_\_\_\_

Comments \_\_\_\_\_

_____ EQUAL OPPORTUNITY OFFICIAL	/	_____ TITLE	_____ DATE
-------------------------------------	---	----------------	---------------

_____ LETTING DEPARTMENT REPRESENTATIVE	/	_____ TITLE	_____ DATE
---	---	----------------	---------------

**ERIE COUNTY WATER AUTHORITY  
MINORITY BUSINESS ENTERPRISE  
JOINT VENTURE DISCLOSURE AFFIDAVIT**

To Be Submitted With Part A  
Where Applicable

Joint Ventures: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Principal Office: \_\_\_\_\_  
Office Phone: \_\_\_\_\_  
Home Phone: \_\_\_\_\_

Percent of minority ownership in terms of profit and loss sharings:

Capital contributions by each joint venture and accounting therefore:

Equipment and supply contributions by each joint venturer and accounting therefore:

Any ownership options for ownership or loans between the joint venturers - identify terms thereof:

How and by whom the on-site work will be supervised and administered:

I, \_\_\_\_\_, as  
representative of \_\_\_\_\_ Company,  
do hereby swear or affirm that I am authorized to act on its behalf and that in this capacity and to  
the best of my knowledge and belief, the information provided herewith relevant to the joint  
venture of \_\_\_\_\_  
is accurate, complete and current, and fairly represents the joint venture; further, that I have  
personally reviewed the material and assured myself of its accuracy. It is recognized and  
acknowledged that the statements herein are being given under oath and any material  
misrepresentation will be grounds for terminating any contract which may be awarded in reliance  
hereon.

\_\_\_\_\_  
SIGNATURE

**ERIE COUNTY WATER AUTHORITY  
MINORITY BUSINESS ENTERPRISE UTILIZATION REPORT - PART B**

CONTRACTOR \_\_\_\_\_ CONTRACT NAME \_\_\_\_\_

I. List all bona fide minority business enterprises, Subcontractors, suppliers, professional personnel, or joint venture firms, with whom you have entered into a binding agreement in accordance with the Minority Business Utilization Goal set forth by the Erie County Water Authority. Include minority trucking firms that will be utilized and included and estimated dollar amount. This information must be submitted to the Erie County Water Authority when the project is 30% complete.

(USE REVERSE SIDE IF MORE SPACE IS NEEDED) MINORITY OWNED FIRMS	TYPE OF WORK	DATE CONTRACT EXECUTED	TOTAL EXPENDED TO DATE	AMOUNT REMAINING
NAME: _____ ADDRESS: _____ _____				
IRS #: _____				
NAME: _____ ADDRESS: _____ _____				
IRS #: _____				

\*Erie County Water Authority reserves the right to require documentation including, but not limited to, canceled checks to verify these amounts:

- II. Total Dollar Amount to be Subcontracted to minority Business Enterprise(s):  
\$ \_\_\_\_\_
- III. Total dollar amount expended to date: \$ \_\_\_\_\_
- IV. Total amount of bid: \$ \_\_\_\_\_
- V. MBE Percent (%) of project bid: \$ \_\_\_\_\_

I, \_\_\_\_\_ as an official representative of \_\_\_\_\_, do hereby certify that the information listed above is correct and complete.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

PART B CONTINUED

<b>(USE REVERSE SIDE IF MORE SPACE IS NEEDED) MINORITY OWNED FIRMS</b>	<b>TYPE OF WORK</b>	<b>DATE CONTRACT EXECUTED</b>	<b>TOTAL EXPENDED TO DATE</b>	<b>AMOUNT REMAINING</b>
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				
NAME: _____ ADDRESS: _____ _____ IRS #: _____				

**MINORITY BUSINESS ENTERPRISE UTILIZATION REPORT - PART C  
CERTIFICATION OF EXPENDITURES TO MBE's**

(To be completed by the prime CONTRACTOR and  
submitted at the 75% payment level)

CONTRACTOR \_\_\_\_\_

CONTRACT: \_\_\_\_\_

MBE	PART B CONTRACT AMOUNT OF ESTIMATE	TOTAL EXPENDED TO DATE	ESTIMATED AMOUNT REMAINING

\* Erie County Water Authority reserves the right to require documentation including, but not limited to, canceled checks to verify these amounts.

I, \_\_\_\_\_  
\_\_\_\_\_ as an official representative of \_\_\_\_\_,

do hereby certify that the information listed above is correct and complete.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

**MINORITY BUSINESS ENTERPRISE UTILIZATION REPORT - PART D**

**FINAL CERTIFICATION OF EXPENDITURES TO MBE's**

(to be completed by the prime CONTRACTOR and submitted with the request for final payment)

CONTRACTOR: \_\_\_\_\_

CONTRACT: \_\_\_\_\_

<b>MBE</b>	<b>TOTAL AMOUNT EXPENDED</b>

TOTAL OF ALL MBE  
SUB-CONTRACTS \$ \_\_\_\_\_

AMOUNT OF  
CONTRACT \_\_\_\_\_

FINAL MBE  
PERCENTAGE \_\_\_\_\_

I, \_\_\_\_\_, as an official  
representative of \_\_\_\_\_,  
do hereby certify that the information listed above is correct and complete.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

## **ACCOUNTABILITY**

The CONTRACTOR shall be fully accountable for its performance under this contract and agrees to answer under oath all questions relevant to the performance thereof and to any transaction, act, or omission had, done or omitted in connection therewith if called before the Erie County Water Authority, any Judicial, County or State Officer or agency empowered to investigate the Contract or its performance.





# Appendix B

## Insurance Requirements



## APPENDIX B-1

### SEDIMENTATION BASIN EFFLUENT IMPROVEMENTS STURGEON POINT WATER TREATMENT PLANT

#### PROJECT NO: 202100088

The following minimum insurance requirements shall apply to vendors providing services to the Erie County Water Authority (the Authority). If a service or project, in the opinion of the Authority, represents an unusual or exceptional risk, the Authority may establish additional insurance requirements for that service or project. All insurance required herein shall be obtained at the sole cost and expense of the contractor, including deductibles and self-insured retentions, and shall be in full force and effect on the contract commencement date and for the duration of the contract. These requirements include but are not limited to the minimum insurance requirements.

#### Insurance Requirements:

**a. Workers Compensation:**

Part 1: Workers Compensation: Statutory

Part 2: Employers Liability: \$1,000,000.

Note: If New York State domiciled employees are used, coverage to be New York Statutory for both Parts 1 and 2

**b. New York Disability Benefits Liability:** Statutory coverage if New York State domiciled employees are used.

**c. Commercial General Liability:**

- \$2,000,000. General Aggregate
- \$2,000,000. Products/Completed Operations Aggregate
- \$1,000,000. Each Occurrence
- \$1,000,000. Personal Injury/Advertising Liability
- Erie County Water Authority to be scheduled as an Additional Insured for both on-going and completed operations (attach Additional Insured endorsement to Certificate of Insurance)
- Insurance to be primary and non-contributory

**d. Automobile Liability:**

- \$1,000,000. Each Accident
- Erie County Water Authority to be scheduled as an Additional Insured.

**e. Contractors Pollution Liability (if work involves asbestos and/or lead abatement):**

- \$5,000,000. Each Occurrence
- \$5,000,000. Aggregate
- Erie County Water Authority to be scheduled as an Additional Insured

**f. Umbrella Liability:**

- \$5,000,000. Each Occurrence
- \$5,000,000. Aggregate

- Erie County Water Authority to be scheduled as an Additional Insured

**g. All-Risk Installation Floater:** Builder's risk completed value form based on the total value of the project, providing coverage for work performed, equipment, supplies and materials at the project location, as well as any off-site storage location.

Certificates of Insurance to be provided to the Authority prior to start of work as follows:

ACORD 25 including copy of Additional Insured Endorsement Note: If coverage provided for NYS domiciled employees require Forms C 105.2 and DB 120.1 for Workers Compensation and NYS DBL.

Certificates of Insurance, on forms approved by the New York State Department of Insurance, must be submitted to the Authority prior to the award of contract. Renewals of Certificates of Insurance, on forms approved by the New York State Department of Insurance, must be received by the Authority 30 days prior to the expiration of the insurance policy period.

Certificates of Insurance and renewals, on forms approved by the New York State Department of Insurance, must be submitted to the Authority prior to the award of contract. Each insurance carrier issuing a Certificate of Insurance shall be rated by A. M. Best no lower than "A-" with a Financial Strength Code (FSC) of at least VII. The professional service provider shall name the Authority, its officers, agents and employees as additional insured on a Primary and Non-Contributory Basis, including a Waiver of Subrogation endorsement (form CG 20 26 11 85 or equivalent), on all applicable liability policies. Any liability coverage on a "claims made" basis should be designated as such on the Certificate of Insurance. Such insurance shall continue through the term of this Agreement and vendor shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also, known as Tail Coverage); or 2) Prior Acts Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that vendor has Maintained continuous coverage with the same or original insurer. Coverage provided under items; 1), 2), or 3) will continue as long as the law allows.

To avoid confusion with similar insurance company names and to properly identify the insurance company, please make sure that the insurer's National Association of Insurance Commissioners (N.A.I.C.) identifying number or A. M. Best identifying number appears on the Certificate of Insurance. Also, at the top of the Certificate of Insurance, please list the project number.

Acceptance of a Certificate of Insurance and/or approval by the Authority shall not be construed to relieve the outside vendor of any obligations, responsibilities or liabilities.

Certificates of Insurance should be e-mailed to [mmusarra@ecwa.org](mailto:mmusarra@ecwa.org) or mailed to Ms. Molly Jo Musarra, Claim Representative/Risk Manager Erie County Water Authority, 295 Main Street – Room 350, Buffalo, New York 14203-2494, or If you have any questions you can contact Ms. Musarra by e-mail or phone (716) 849-8465.

## APPENDIX B-2

**[THIS FORM IS INTENDED TO BE USED AS AN EXHIBIT OR ADDENDUM TO ANY SUBCONTRACT—IT SHOULD NOT BE USED BY ITSELF AS A SOLE CONTRACT DOCUMENT]**

### ADDENDUM AGREEMENT

This Addendum to the Agreement (“Addendum Agreement”) between [ **Insert name of Upstream Contractor or Upstream Subcontractor**] (hereinafter referenced as “Contractor”) and [ **Insert name of Downstream Subcontractor**] (hereinafter referenced as “Subcontractor”) is being entered into by the parties for any and all work done for, with, or on behalf of **the Erie County Water Authority** (hereinafter the “Authority”) under the Primary Contract No. \_\_\_\_, Project No. \_\_\_\_\_ [ **Insert Project Description**] with [ **Insert name of Contractor**], a copy of which may be obtained from [ **Insert name and contract information of the entity**].

In accordance with the terms and conditions of the Primary Contract No. \_\_\_\_\_ entered into with the Erie County Water Authority, an **ACORD25-Certificate of Liability Insurance** and **ACORD 855 NY-NY Construction Certificate of Liability Addendum** shall be provided evidencing the following insurance is currently maintained and in force with an insurance carrier approved to do business in the State of New York and maintaining an A.M. Best Rating of A- or better showing the Authority as Certificate Holder and additional insured. You should share these requirements with your current insurance agent, broker or insurance company.

#### **Insurance Requirements**

Prior to the commencement of any work designated in any contract or agreement to which this Addendum Agreement is attached, and until at least the final completion and acceptance of the work under the contract or agreement to which this Addendum Agreement is attached, the Subcontractor, at its sole expense, shall maintain the following minimum insurance on its own behalf, and furnish to the Authority certificates of insurance evidencing same and reflecting the effective date of such coverage as listed below. In no event shall the failure to provide this proof, prior to the commencement of the work, be deemed a waiver by the Authority of the Subcontractor’s obligation to maintain the insurance set forth herein. The insurance required shall not be canceled, not renewed or materially changed after the issuance of the certificate of insurance required by this Addendum Agreement.

#### **A. Worker’s Compensation, Occupational Disease & Employer’s Liability Insurance:**

Worker’s Compensation, Occupational Disease & Employer’s Liability Insurance in accordance with the applicable laws and statutes to cover any injuries or illness to employees and any other person eligible for compensation, and the liability of the employer thereof to any person or organization, as follows:

**Worker’s Compensation & Occupational Disease:** Statutory

**Employer's Liability:** \$1,000,000 bodily injury by accident or disease, except for work work/employers subject to the New York Worker's Compensation Law, in which this insurance shall be unlimited.

All such coverage shall: not contain any exclusion for injuries to sole proprietors, partners, members of limited liability companies or executive officers of any corporate entity; and provide for a "Waiver of Subrogation" endorsement in favor of the Owner/Contractor.

Any Contractor/Subcontractor with a principal place of business located outside of the State of New York must include New York under Part 3A of the policy.

**B. Commercial General Liability:**

Commercial general liability insurance as provided under the ISO Commercial General Liability Coverage Form, CG 00 01, or its equivalent, for claims of Bodily Injury, Property Damage and Personal and Advertising Injury, with limits of not less than:

Per Occurrence and Personal & Advertising Injury-	\$1,000,000.00
General Aggregate & Products/Completed Operations Aggregate-	\$2,000,000.00
Fire Damage Legal Liability/Damage to Rented Property-	\$100,000.00
Medical Payment (per-person)	\$5,000.00

The coverage must include the following:

1. Liability assumed by the insured in an "insured contract" as that term is defined in the ISO Commercial General Liability Coverage Form, CG 00 01.
2. Products/Completed Operations liability for a period of three years after acceptance of the work.
3. A per project aggregate of \$ 2,000,000.00.
4. A "Waiver of Subrogation" Endorsement in favor of the Owner/Contractor.
5. Exterior Insulation Finish System ("EFIS") coverage must be specifically included or provided separately where the Contractor/Subcontractor work under this Agreement or in any contract or agreement to which this Addendum is attached in any way involves EFIS.
- 6. The coverage shall not include any provision, definition, exclusion or endorsement which in any way would serve to eliminate the insurance to any insured or additional insured for liability for bodily injury or property damage arising from work performed in New York State, for claims made under the New York Labor Law or for claims made by employees, subcontractors and employees of subcontractors hired to perform work by any insured or additional insured pursuant to work that is subject to this Addendum Agreement or in any contract or agreement to which this Addendum Agreement is attached.**

7. The insurance is to be provided through insurers licensed and admitted to do business in the State of New York, with an A. M. Best financial rating of “A-” or better, or otherwise specifically approved by the Owner.

The Authority, its officers, directors, partners, representatives, agents and employees must be named as Additional Insureds on a primary and non-contributory basis on both the ongoing and completed operations coverage required herein utilizing the ISO endorsements: CG 2010 04 13 or CG 2038 04 13 (or their equivalent) for ongoing operations; and CG 2037 04 13 (or its equivalent) for completed operations. The Additional Insured coverage shall contain no special limitation or limitation on the scope of the protection afforded to the Additional Insureds.

**C. Commercial Automobile Liability Insurance:**

Commercial Automobile Liability insurance covering the ownership, maintenance and use of all Owned, Non-Owned and Hired Vehicles by the Subcontractor with combined Bodily Injury and Property Damage limits including pollution transit coverage of \$1,000,000.00 per accident. The Authority, its officers, directors, partners, representatives, agents and employees must be named as Additional Insureds on a primary and non-contributory basis. A “Waiver of Subrogation” in favor of the Authority must be included.

**D. Commercial Umbrella/Excess Liability Insurance:**

Commercial Umbrella/Excess Liability Insurance with limits of \$5,000,000.00 per occurrence and a \$5,000,000.00 aggregate. The Authority, its officers, directors, partners, representatives, agents and employees must be named as Additional Insureds on a primary and non-contributory basis. A “Waiver of Subrogation” in favor of the Authority must be included.

**E. Pollution Liability:**

Where the Subcontractor is performing work that is subject to this Addendum Agreement or to any contract or agreement to which this Addendum Agreement is attached, that involves abatement or remediation of hazardous substances or any manner of environmental work, pollution liability coverage applicable to the type of work/operations being performed in the amount of \$5,000,000.00 per occurrence and \$5,000,000.00 aggregate limit. The Authority, its officers, directors, partners, representatives, agents and employees must be named as Additional Insureds on a primary and non-contributory basis. A “Waiver of Subrogation” in favor of the Authority must be included.

**F. Builder's Risk/Installation Floater:**

“All Risk” Property Insurance coverage afforded by a Builder’s Risk/Installation Floater or its equivalent insuring all materials, equipment and supplies provided by the Subcontractor and intended to become a permanent part of the construction, whether stored on the premises, away from the project site and/or while in transit, in an amount equal to the replacement cost of such materials, equipment and supplies. A “Waiver of Subrogation” in favor of the Authority must be included.

**G. Owned and/or Rented Tools or Equipment:**

Property insurance covering all owned, rented, leased and/or borrowed tools or equipment of the Subcontractor or used by the Subcontractor in connection with the work that is subject to this Agreement or to any contract or agreement to which this Addendum is attached, in an amount equal to the replacement cost of such tools or equipment. A “Waiver of Subrogation” in favor of the Authority must be included.

**JOB-SITE SAFETY:**

The Authority makes no representation with respect to the physical conditions or safety of the Project Site. The Subcontractor shall, at its own expense, protect from injury its employees engaged in the performance of the Work. The prevention of accidents to all workers engaged in the Subcontractor’s work and others affected by the Subcontractor’s work is the responsibility of the Subcontractor. Subcontractor shall comply with all applicable federal, state, labor and local laws, regulations and codes concerning safety.

For purposes of this Addendum Agreement, “Project Site” means the entire construction site or the various separately identifiable part of the site described in any contract or agreement to which the Addendum Agreement is attached, and as described in the Primary Contract with the Authority.

**WORKERS COMP IMMUNITY WAIVER:**

In any and all claims against the Authority by any employee of the Subcontractor, anyone directly or indirectly employed by the Subcontractor (including any of the Subcontractor’s subcontractors) or anyone for whose acts the Subcontractor may be liable, the indemnification obligation shall not be limited by any limitation on the amount or type of damages, compensation or benefits payable by or for the Subcontractor under workers’ compensation acts, disability benefit acts or other employee benefit acts.

**HOLD HARMLESS / INDEMNIFICATION:**

To the fullest extent permitted by law, Subcontractor shall defend, indemnify and hold harmless Authority and its heirs, executors, administrators, successors, assigns, affiliates, employees and agents (hereinafter referenced as “Owner Indemnitees”) from and against any and all actions, claims, liabilities, damages, losses and expenses, including but not limited to bodily injury, death and



property damage, and reasonable attorney's fees and costs (including those incurred in the defense of any such underlying claim, as well as those incurred in the enforcement of this Addendum Agreement and/or in the prosecution of any claim for indemnification by Authority) arising out of or resulting from, or alleged to arise out of or result from, the Subcontractor's work (including the work by any of the Subcontractor's subcontractors), except to the extent caused by the negligence or willful misconduct of any Owner Indemnitees.

**MISCELLANEOUS:**

If any term or provision of this Addendum Agreement conflicts with or is otherwise inconsistent with any term or provision in the Primary Contract or any prior written agreement entered between the parties, the terms and provisions contained herein shall govern and control.

This Addendum Agreement shall be binding upon and inure to the benefit of the parties hereto and their successors and permitted assigns. This Addendum Agreement, its terms and any claims arising therefrom, shall be interpreted and construed in accordance with the laws of the State of New York.

This Addendum Agreement may be executed via facsimile or email in any number of counterparts, all of which taken together shall constitute one and the same agreement. No waiver by a party of any breach by the other party of any of the provisions of this Agreement shall be deemed a waiver of any preceding or succeeding breach of the same or any other provisions hereof. No such waiver shall be effective unless in writing and then only to the extent expressly set forth in writing.

No modification or amendment of this Addendum Agreement shall be effective unless in writing and signed by both parties and approved in writing by the Authority. If any term or provision of this Addendum Agreement shall to any extent be invalid or unenforceable, the remainder of this Addendum Agreement shall not be affected thereby, and each provision of this Addendum Agreement shall be valid and enforceable to the fullest extent permitted by law.

**[Insert name of Upstream Contractor  
or Upstream Subcontractor]**

**[Insert name of Downstream  
Subcontractor]**

---

[Name of Representative]

---

[Insert Name by Representative]

(Print name and title)

(Print name and title)

Date:

Date:



# Appendix C

## Prevailing Wage Rate Schedule





Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Erie County Water Authority

Jacob Kocic, Engineer  
285 Delaware Ave  
Suite 500  
Buffalo NY 14202

Schedule Year 2021  
Date Requested 07/28/2021  
PRC# 2021007954

Location Sturgeon Point Treatment Plant  
Project ID#  
Project Type Installation of slide gates and associated actuators and controls at the existing sedimentation basins.

### 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 2021 through June 2022. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website [www.labor.ny.gov](http://www.labor.ny.gov). Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

#### NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: \_\_\_\_\_ Date Cancelled: \_\_\_\_\_

Name & Title of Representative: \_\_\_\_\_

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240



# General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

## Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

## Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion [online](#).

## Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the ["Request for a dispensation to work overtime" form \(PW30\)](#) and ["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 form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

## Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid

or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed \$100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

### **Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties**

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

### **Withholding of Payments**

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

### **Summary of Notice Posting Requirements**

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.



The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers' compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

## **Apprentices**

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

## **Interest and Penalties**

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

## **Debarment**

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

## **Criminal Sanctions**

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

## **Discrimination**

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b) ).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of \$50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c) ).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d) ).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

### **Workers' Compensation**

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

### **Unemployment Insurance**

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.



Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Erie County Water Authority

Jacob Kocic, Engineer  
285 Delaware Ave  
Suite 500  
Buffalo NY 14202

Schedule Year 2021  
Date Requested 07/28/2021  
PRC# 2021007954

Location Sturgeon Point Treatment Plant  
Project ID#  
Project Type Installation of slide gates and associated actuators and controls at the existing sedimentation basins.

### Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

### Contractor Information

All information must be supplied

Federal Employer Identification Number: _____		
Name: _____		
Address: _____ _____		
City: _____	State: _____	Zip: _____
Amount of Contract: \$ _____	Contract Type:	
Approximate Starting Date: ____/____/____	<input type="checkbox"/> (01) General Construction	
Approximate Completion Date: ____/____/____	<input type="checkbox"/> (02) Heating/Ventilation	
	<input type="checkbox"/> (03) Electrical	
	<input type="checkbox"/> (04) Plumbing	
	<input type="checkbox"/> (05) Other : _____	

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240



## **Social Security Numbers on Certified Payrolls:**

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

## **Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d**

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, [www.labor.ny.gov](http://www.labor.ny.gov). <https://labor.ny.gov/formsdocs/ui/IA999.pdf>

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: [dol.misclassified@labor.ny.gov](mailto:dol.misclassified@labor.ny.gov) .

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

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

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub*\*. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website [www.labor.ny.gov](http://www.labor.ny.gov) or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. \*In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

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

## **Budget Policy & Reporting Manual**

# **B-610**

### **Public Work Enforcement Fund**

*effective date December 7, 2005*

---

#### **1. Purpose and Scope:**

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

#### **2. Background and Statutory References:**

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

#### **3. Procedures and Agency Responsibilities:**

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

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

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor  
Administrative Finance Bureau-PWEF Unit  
Building 12, Room 464  
State Office Campus  
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.





Required Notice under Article 25-B of the Labor Law

**Attention All Employees, Contractors and Subcontractors:  
You are Covered by the Construction Industry Fair Play Act**

**The law says that you are an employee unless:**

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

**It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.**

**Employee Rights:** If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

**Independent Contractors:** If you are an independent contractor, **you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

**Penalties** for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty**
  - First offense: Up to \$2,500 per employee
  - Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty**
  - First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to one year.
  - Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a \$50,000 fine and debarment from performing public work for up to 5 years.

**If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to [dol.misclassified@labor.ny.gov](mailto:dol.misclassified@labor.ny.gov). All complaints of fraud and violations are taken seriously. You can remain anonymous.**

**Employer Name:**

IA 999 (09/16)



# Attention Employees

## THIS IS A: **PUBLIC WORK PROJECT**

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

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](http://www.labor.ny.gov)

If you feel that you have not received proper wages or benefits, please call our nearest office.\*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

\* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or [www.comptroller.nyc.gov](http://www.comptroller.nyc.gov) – click on Bureau of Labor Law.

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

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



## Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

### The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

\*\*A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

## WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$3 million in Bronx, Kings, New York, Queens and, Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

## Introduction to the Prevailing Rate Schedule

### Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

#### Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

#### Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

#### Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

#### Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

#### Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

#### Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website ([www.labor.ny.gov](http://www.labor.ny.gov)) for current wage rate information.

#### Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor  
Bureau of Public Work  
State Office Campus, Bldg. 12  
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

**Erie County General Construction**

**Boilermaker** **07/01/2021**

**JOB DESCRIPTION** Boilermaker

**DISTRICT** 12

**ENTIRE COUNTIES**

Allegany, Cattaraugus, Chautauqua, Chemung, Erie, Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Schuyler, Steuben, Wayne, Wyoming, Yates

**WAGES**

Per hours: 07/01/2021

Boilermaker \$ 35.10

The wage rate will be 90% of the above for Maintenance work on boilers less than 100,000 pph.

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: \$ 31.04\*

\*NOTE: \$29.85 of this amount is for every Hour "Paid"

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

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

**REGISTERED APPRENTICES**

1st Term at 12 Months  
Terms 3-8 at 6 Months

Per Hour:

1st 65%      3rd 70%      4th 75%      5th 80%      6th 85%      7th 90%      8th 95%

Supplemental Benefits per hour:

All Terms \$ 31.04\*\*

\*\*NOTE: \$29.85 of this amount is for every Hour "Paid"

12-7

**Carpenter - Building** **07/01/2021**

**JOB DESCRIPTION** Carpenter - Building

**DISTRICT** 12

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Townships of Persia and Perrysburg

**WAGES**

Per hour: 07/01/2021

Building:

Carpenter \$ 33.05  
FloorLayer 33.05  
Certified Welder 34.05  
Hazardous Waste Worker 34.55  
Diver-Dry Day 34.05  
Diver Tender 34.05  
Diver-Wet Day\*\*\* 61.25

Hazardous Waste Worker: Hazardous sites requiring personal protective equipment.

\*\*\* Diver rate applies to all hours worked on the day of dive.



Depth pay for divers:	0' to 80'	no additional fee
	81' to 100'	additional \$0.50 per foot
	101' to 150'	additional \$0.75 per foot
	151' and deeper	additional \$1.25 per foot
Penetration pay:	0' to 50'	no additional fee
	51' to 100'	additional \$0.75 per foot
	101' and deeper	additional \$1.00 per foot

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour worked:

Carpenter(s)	\$ 28.73
Diver(s)	28.73

**OVERTIME PAY**

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

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

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

**Floorlayer Apprentices:**

1st	2nd	3rd	4th
55%	60%	70%	80%

**Carpenter Apprentices:**

1st	2nd	3rd	4th	5th
55%	60%	65%	70%	80%

Supplemental Benefits per hour worked:

1st	2nd	3rd	4th	5th
\$12.40	\$12.40	\$15.05	\$15.05	\$15.05

12-276B-Cat

**Carpenter - Building / Heavy&Highway**

**07/01/2021**

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

**DISTRICT 2**

**ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

**PARTIAL COUNTIES**

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

**WAGES**

Wages per hour: 07/01/2021

Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	\$ 32.08
--	----------

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

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 24.20

**OVERTIME PAY**

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

**HOLIDAY**

Paid: See (5) on HOLIDAY PAGE

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

Notes:

When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. When a holiday falls upon a Sunday, it shall be observed on the following Monday.

An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

**REGISTERED APPRENTICES**

Wages per hour:

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

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	\$ 12.15
2nd year term	12.15
3rd year term	14.80
4th year term	14.80

2-42AtSS

**Carpenter - Heavy&Highway**

**07/01/2021**

**JOB DESCRIPTION** Carpenter - Heavy&Highway

**DISTRICT** 12

**ENTIRE COUNTIES**

Erie

**WAGES**

Per hour: 07/01/2021

Carpenter	\$ 36.39
Certified Welder	37.89
Diver-Dry Day	37.39
Diver-Wet Day**	61.39
Diver Tender	37.39
Hazardous Material Worker	38.39
Piledriver	36.39
Effluent & Slurry Diver-Dry Day	56.08
Effluent & Slurry Diver-Wet Day	92.08

Hazardous Waste Worker: Hazardous sites requiring personal protective equipment.

\*\* Diver rate applies to all hours worked on the day of dive.

Depth pay for divers:	0' to 50'	no additional fee
	51'to 100'	additional \$0.50 per foot
	101' to 150'	additional \$0.75 per foot
	151' to 200'	additional \$1.25 per foot
Penetration pay:	0' to 50'	no additional fee
	51' to 100'	additional \$0.75 per foot
	101' to deeper	additional \$1.00 per foot

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour worked:

Carpenter(s)	\$ 29.89
Diver(s)	29.89

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (2, 17) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

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

Carpenter Apprentice:

1st	2nd	3rd	4th	5th
55%	60%	65%	70%	80%

Pile Driver Apprentice(1300hour terms at percentage of Pile Driver Rate)

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental benefits per hour worked:

1st	2nd	3rd	4th	5th
\$12.15	\$12.15	\$14.80	\$14.80	\$14.80

12-276HH-Erie

**Electrician**

**07/01/2021**

**JOB DESCRIPTION** Electrician

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Only the Townships of Ashford, East Otto, Ellicottville, Farmersville, Freedom, Franklinville, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire.  
Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield,Pembroke and that portion of the Towns of Batavia and Elba that are west of Little Tonawanda Creek; Tonawanda Creek; the City limits of Batavia (in effect prior to Feb. 1, 1970) and State Highway 98 north of the City of Batavia, then north on Highway 98 to the Orleans County line.  
Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle, Java, Orangeville, Sheldon and Wethersfield.

**WAGES**

Per hour:	07/01/2021	05/30/2022
Electrician*	\$ 37.49	Additional \$ 2.00

\* Includes teledata work

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

17.3% for work from 4:30PM - 1:00AM

31.4% for work from 12:30AM - 9:00AM

Additional \$0.50/hr in shafts over 25 ft. deep and in underground tunnels over 75 ft. long.

Additional \$0.75/hr for work on toothpicks, structural steel, temporary platforms, swinging scaffolds, boatswain chairs, smoke stacks or water towers 30 ft above the floor or for work on rolling scaffolds and ladders over 50 ft.

Additional \$1.50/hr for Cable Splicers on such work as lead, and shielded cable and splices or terminations on cable 5KV and above.

Additional \$1.00/hr for Hot work (Atomic plants).

Additional \$2.00/hr for work on radio, TV, light towers and floating platforms or climbing ladders in excess of 100 ft. high.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 30.05\*

\* NOTE - add 3% of the posted straight time or applicable premium wage rate.

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following wages:

0 to 1000 to 2000 to 3500 to 5000 to 6500 to 8000  
\$ 13.85 \$ 15.00 \$ 16.85 \$ 20.60 \$ 26.25 \$ 30.00

Supplemental benefits per hour:

0 to 2000 to 6500 to 8200  
\$ 13.51\* \$ 24.30\* \$ 30.05\*

\* NOTE - add 3% of the posted straight time or applicable premium wage rate.

3-41

---

**Elevator Constructor** **07/01/2021**

---

**JOB DESCRIPTION** Elevator Constructor **DISTRICT 3**

**ENTIRE COUNTIES**  
Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**  
Per hour: 07/01/2021  
Elevator Constructor \$ 53.16  
Helper 37.21

**\*\* IMPORTANT NOTICE - EFFECTIVE 04/01/2009 \*\***  
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: \$ 35.83

Note - add 6% of regular hourly rate for all hours worked.

**OVERTIME PAY**  
See (D, O) on OVERTIME PAGE

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

**REGISTERED APPRENTICES**  
Wages per hour:

One year (1,700 hour each) terms at the following percentage of Journeyman's wage:

1st*	2nd	3rd	4th
55%	65%	70%	80%

Supplemental benefits per hour: \$ 35.83

\* Note - 0-6 months of the 1st year term is paid at 50% of Journeyman's wage with no Supplemental benefits.

Note - add 6% of regular hourly rate for all hours worked.

3-14

---

**Glazier** **07/01/2021**

---

**JOB DESCRIPTION** Glazier **DISTRICT 3**

**ENTIRE COUNTIES**  
Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**  
Per hour: 07/01/2021  
Glazier \$ 27.88  
Working off Suspended  
Scaffold (Swing Stage) 28.88  
Maintenance 17.50\*

\* Note - This rate to be used only for all repair and replacement work such as glass breakage, glass replacement, door repair and board ups.

**\*\* 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.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:  
Journeyman Glazier \$ 24.19  
Maintenance 15.49

**OVERTIME PAY**

See (B, E2, F, R) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE for Glazier and Glazier Apprentices.  
Paid: See (5, 6) on HOLIDAY PAGE for Maintenance  
Overtime: See (5, 6) on HOLIDAY PAGE.

**REGISTERED APPRENTICES**

Wages per hour:

Glazier: 1000 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	90%

Supplemental benefits per hour:

1st & 2nd terms	\$ 8.00
3rd & 4th terms	8.85
All other terms	10.25

3-660

**Insulator - Heat & Frost**

**07/01/2021**

**JOB DESCRIPTION** Insulator - Heat & Frost

**DISTRICT 3**

**ENTIRE COUNTIES**

Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming

**PARTIAL COUNTIES**

Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield and Pembroke.

**WAGES**

Per Hour: 07/01/2021  
Heat & Frost Insulator \$ 34.15

**SUPPLEMENTAL BENEFITS**

Per hour:  
\$ 26.14

**OVERTIME PAY**

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

\* Note - Double time after 10 hours on Saturday.

\*\* Note - Triple time on Labor Day if WORKED.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

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

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental Benefits per hour:

1st and 2nd	\$ 21.09
All other terms	\$ 26.14

3-4

**Ironworker** **07/01/2021**

**JOB DESCRIPTION** Ironworker

**DISTRICT** 3

**ENTIRE COUNTIES**

Cattaraugus, Chautauqua

**PARTIAL COUNTIES**

Allegany: Entire county except the Towns of Birdsall, Burns and Grove.

Erie: All except the Town of Grand Island north of Whitehaven Road.

Genesee: Only the Townships of Alabama, Alexander, Darien and Pembroke

Steuben: Only the Townships of Canisteo, Freemont, Greenwood, Hartsville, Hornell, Hornellsville, Howard, Jasper, Troupsburg and West Union

Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle, Gainsville, Java, Orangeville, Pike, Sheldon, Warsaw and Wethersfield.

**WAGES**

Per hour: 07/01/2021

Structural	\$ 31.90
Ornamental	31.90
Layout	31.90
Rodmen	31.90
Reinforcing	31.90
Welders	31.90
Riggers & Mach. Movers	31.90
Curtain Wall Erector	31.90
Window Erector	29.55
Fence Erector	30.47

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

10% for second shift work from 2:00PM - 7:00PM

15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

**SUPPLEMENTAL BENEFITS**

Per hour:

Fence erectors	\$ 29.13
All others	30.63

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following wage:

1st	2nd	3rd	4th
\$ 19.50	\$ 21.50	\$ 23.50	\$ 25.50

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 13.38	\$ 23.18	\$ 24.58	\$ 25.98

**Ironworker** **07/01/2021**

**JOB DESCRIPTION** Ironworker

**DISTRICT** 3

**ENTIRE COUNTIES**

Niagara

**PARTIAL COUNTIES**

Erie: Only that portion of the Township of Grand Island north of Whitehaven Road.

Orleans: Only the Townships of Ridgeway, Shelby and Yates.

**WAGES**

Per hour: 07/01/2021

Structural	\$ 31.00
Ornamental	31.00
Reinforcing	31.00
Rigger & Mach. Mover	31.00
Pre-Engineered	31.00
Fence Erector	31.00
Pre-Cast Erector	31.00
Welder	31.00
Window Erector	31.00

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:  
10% for second shift work from 2:00PM - 7:00PM  
15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 31.78

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following wage:

1st term	\$ 19.50
2nd term	21.50
3rd term	23.50
4th term	25.50

Supplemental benefits per hour:

1st term	\$ 12.28
2nd term	19.98
3rd term	21.08
4th term	22.18

---

**Laborer - Building** **07/01/2021**

**JOB DESCRIPTION** Laborer - Building

**DISTRICT** 3

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Only the Townships of Perrysburg and the Village Gowanda.

**WAGES**

CLASS A: Basic, Safety Man, Flagman, Tool Room Man, Nurseryman, Demolition Worker, Top Man, Wrecker, IBC Barriers Except on Structures, Guard Rail, Asphalt Shovelers, Foundation Laborer over 8' in Depth, Hod Carriers, Plaster Tender, Plaster Scaffold Builder, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns, Steel Burners.

CLASS B: Mortar Mixer, Asphalt Smoothers, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns over 8' in depth.

CLASS C: Worker on any Swing Scaffold, Blaster, Plumbing Laborer, Wagon Drill Operator, Bottomman (caisson or cofferdam), Laser Setter, Asphalt Rakers, Asphalt Screed Man.

CLASS D: Stone Cutter, Curb Setter and Flag Layer.

CLASS E: Wearing of replaceable cartridge respirator.

CLASS F: Asbestos Removal, Deleader.

**CLASS G: Hazardous Waste Worker.**

Per hour:	07/01/2021	07/01/2022
Building Laborer:		Additional
CLASS A	\$ 29.13	\$ .60
CLASS B	29.30	.60
CLASS C	29.41	.60
CLASS D	29.88	.60
CLASS E	30.13	.60
CLASS F	30.63	.60
CLASS G	31.13	.60

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 27.65

**OVERTIME PAY**

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

**HOLIDAY**

Paid: See (22) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 500	to 1000	to 1500	to 2000	to 2500	to 3000	to 4000
55%	60%	65%	70%	75%	80%	90%

Supplemental benefits per hour:

\$ 27.65

3-210b

**Laborer - Heavy&Highway**

**07/01/2021**

**JOB DESCRIPTION** Laborer - Heavy&Highway

**DISTRICT** 3

**ENTIRE COUNTIES**

Erie

**WAGES**

Heavy/Highway Laborer:

GROUP A: Basic, Drill Helper, Flagman, Outboard and Hand Boats, Demolition Worker, Nurseryman, IBC Barriers (except on structures), Guard Rails, Road Markers.

GROUP B: Grade Checker, Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of Steel Mesh, Small Generators for Laborers' Tools, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump Operators (2" and Single Diaphragm), Nozzle (Asphalt, Guniting, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool Operators, Wrecking Laborer and Laser Man.

GROUP C: All Rock or Drilling Machine Operators (Except Quarry Master and Similar Type), Acetylene Torch Operators, Asphalt Raker, Powderman and Welder.

GROUP D: Blasters, Curb and Flatwork Formsetter not on structures, Stone or Granite Curb Setters and Stone Cutter.

Per hour:	07/01/2021
Heavy/Highway Laborer:	
GROUP A	\$ 31.41
GROUP B	31.61
GROUP C	31.81
GROUP D	32.01

For all Deleader & Asbestos work add \$1.50 to Group A rate.

For all Hazardous waste work add \$2.00 to Group A rate.

For use of replaceable cartridge respirator add \$1.00 to Group A rate.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

Sewer/Water Laborer:



GROUP A: Basic, Flagman, Top man, Wreckers.

GROUP B: Foundation, Plaster tender, Scaffold bootman, Pneumatic, gas, electric, tool operator, jackhammer, chipping guns.

GROUP C: Mortar Mixer, over 8 ft. in depth.

GROUP D: Pavement formsetter, Steelburner, Caisson, Wagon Drill Oper., PipeLayer, Swing Scaffold.

GROUP E: Utility pave driver, Laser operator.

GROUP F: Blaster.

Per hour: 07/01/2021

Sewer/Water Laborer:

GROUP A	\$ 31.41
GROUP B	31.51
GROUP C	31.56
GROUP D	31.66
GROUP E	32.01
GROUP F	32.41

For all Deleader & Asbestos work add \$1.50 to Group A rate.

For all Hazardous waste work add \$2.00 to Group A rate.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 27.65

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 500	to 1000	to 1500	to 2000	to 2500	to 3000	to 4000
55%	60%	65%	70%	75%	80%	90%

Supplemental benefits per hour:

\$ 27.65

3-210h

**Laborer - Tunnel**

**07/01/2021**

**JOB DESCRIPTION** Laborer - Tunnel

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

**WAGES**

CLASS A: Mole Nipper, Powder Handler, Changehouse Attendant and Top Laborer.

CLASS B: Air Spade, Jackhammer, Pavement Breaker.

CLASS C: Top Bell.

CLASS D: Bottom Bell, Side or Roofbelt Driller, Maintenance men, Burners, Block Layers, Rodmen, Caulkers, Miners helper, Trackmen, Nippers, Derailmen, Electrical Cablemen, Hosemen, Groutmen, Gravelmen, Form Workers, Movers and Shaftmen, Conveyor men.

CLASS E: Powder Monkey.

CLASS F: Blasters, Ironmen and Cement Worker, Miner, Welder, Heading Driller.

CLASS G: Steel Erectors, Piledriver, Rigger.

Per hour: 07/01/2021  
 Tunnel Laborer:

CLASS A	\$ 32.91
CLASS B	33.06
CLASS C	33.16
CLASS D	33.66
CLASS E	33.76
CLASS F	34.16
CLASS G	34.41

For all Deleader & Asbestos work add \$1.50 to Class A rate.

For all Hazardous waste add \$2.00 to Class A rate.

For use of replaceable cartridge respirator add \$1.00 to Group A rate.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 27.65

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0	to	500	to	1000	to	1500	to	2000	to	2500	to	3000	to	4000
		55%		60%		65%		70%		75%		80%		90%

Supplemental benefits per hour:

\$ 27.65

3-210t

**Lineman Electrician**

**07/01/2021**

**JOB DESCRIPTION** Lineman Electrician

**DISTRICT 6**

**ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

**WAGES**

Per hour:

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines

Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. (Ref #14.01.01)

	07/01/2021	05/02/2022	05/01/2023	05/06/2024
Lineman, Technician	\$ 54.70	\$ 56.00	\$ 57.40	\$ 58.90
Crane, Crawler Backhoe	54.70	56.00	57.40	58.90
Welder, Cable Splicer	54.70	56.00	57.40	58.90
Digging Mach. Operator	49.23	50.40	51.66	53.01
Tractor Trailer Driver	46.50	47.60	48.79	50.07
Groundman, Truck Driver	43.76	44.80	45.92	47.12
Equipment Mechanic	43.76	44.80	45.92	47.12
Flagman	32.82	33.60	34.44	35.34

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

Lineman, Technician	\$ 54.70	\$ 56.00	\$ 57.40	\$ 58.90
Crane, Crawler Backhoe	54.70	56.00	57.40	58.90
Cable Splicer	60.17	61.60	63.14	64.79
Certified Welder - Pipe Type Cable	57.44	58.80	60.27	61.85
Digging Mach. Operator	49.23	50.40	51.66	53.01
Tractor Trailer Driver	46.50	47.60	48.79	50.07
Groundman, Truck Driver	43.76	44.80	45.92	47.12
Equipment Mechanic	43.76	44.80	45.92	47.12
Flagman	32.82	33.60	34.44	35.34

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

Lineman, Tech, Welder	\$ 56.02	\$ 57.32	\$ 58.72	\$ 60.22
Crane, Crawler Backhoe	56.02	57.32	58.72	60.22
Cable Splicer	61.62	63.05	64.59	66.24
Certified Welder - Pipe Type Cable	58.82	60.19	61.66	63.23
Digging Mach. Operator	50.42	51.59	52.85	54.20
Tractor Trailer Driver	47.62	48.72	49.91	51.19
Groundman, Truck Driver	44.82	45.86	46.98	48.18
Equipment Mechanic	44.82	45.86	46.98	48.18
Flagman	33.61	34.39	35.23	36.13

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. (Ref #14.03.01)

Lineman, Tech, Welder	\$ 57.21	\$ 58.51	\$ 59.91	\$ 61.41
Crane, Crawler Backhoe	57.21	58.51	59.91	61.41
Cable Splicer	57.21	58.51	59.91	61.41
Digging Mach. Operator	51.49	52.66	53.92	55.27
Tractor Trailer Driver	48.63	49.73	50.92	52.20
Groundman, Truck Driver	45.77	46.81	47.93	49.13
Equipment Mechanic	45.77	46.81	47.93	49.13
Flagman	34.33	35.11	35.95	36.85

Additional \$1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

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

	\$25.40 *plus 7% of hourly Wage	\$ 25.90 *plus 7% of hourly wage	\$ 26.40 *plus 7% of hourly wage	\$ 26.90 *plus 7% of hourly wage
Journeyman Lineman or Equipment Operators with Crane License	\$ 26.40 *plus 7% of hourly wage	\$ 27.90 *plus 7% of hourly wage	\$ 29.40 *plus 7% of hourly wage	\$ 30.90 *plus 7% of hourly wage

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

**OVERTIME PAY**

See (B, E, Q,) on OVERTIME PAGE. \*Note\* Double time for all emergency work designated by the Dept. of Jurisdiction.  
 NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.  
 Contractor is still responsible to pay the hourly benefit amount for each hour worked.

**HOLIDAY**

Paid See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.  
 Overtime See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

**REGISTERED APPRENTICES**

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2021	05/02/2022	05/01/2023	05/06/2024
\$25.40	\$ 25.90	\$ 26.40	\$ 26.90
*plus 7% of hourly Wage	*plus 7% of hourly wage	*plus 7% of hourly wage	*plus 7% of hourly wage

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

6-1249a

**Lineman Electrician - Teledata**

**07/01/2021**

**JOB DESCRIPTION** Lineman Electrician - Teledata

**DISTRICT 6**

**ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

Per hour:

For outside work, stopping at first point of attachment (demarcation).  
 07/01/2021

Cable Splicer	\$ 34.78
Installer, Repairman	\$ 33.01
Teledata Lineman	\$ 33.01
Tech., Equip. Operator	\$ 33.01
Groundman	\$ 17.50

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman	\$ 5.14
	*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, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

**Lineman Electrician - Traffic Signal, Lighting** **07/01/2021**

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

**ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

**WAGES**

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/groundman truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.  
 (Ref #14.01.01)

Per hour:	07/01/2021	05/02/2022	05/01/2023	05/06/2024
Lineman, Technician	\$ 47.15	\$ 48.19	\$ 49.32	\$ 50.54
Crane, Crawler Backhoe	47.15	48.19	49.32	50.54
Certified Welder	49.51	50.60	51.79	53.07
Digging Machine	42.44	43.37	44.39	45.49
Tractor Trailer Driver	40.08	40.96	41.92	42.96
Groundman, Truck Driver	37.72	38.55	39.46	40.43
Equipment Mechanic	37.72	38.55	39.46	40.43
Flagman	28.29	28.91	29.59	30.32

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

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

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

\$25.40	\$ 25.90	\$ 26.40	\$ 26.90
*plus 7% of hourly Wage	*plus 7% of hourly wage	*plus 7% of hourly wage	*plus 7% of hourly wage

Journeyman Lineman or Equipment Operators with Crane License	\$ 26.40 *plus 7% of hourly wage	\$ 27.90 *plus 7% of hourly wage	\$ 29.40 *plus 7% of hourly wage	\$ 30.90 *plus 7% of hourly wage
--	--	--	--	--

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

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE. \*Note\* Double time for all emergency work designated by the Dept. of Jurisdiction.  
 NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.  
 Contractor is still responsible to pay the hourly benefit amount for each hour worked.

**HOLIDAY**

Paid: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.  
 Overtime: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

**REGISTERED APPRENTICES**

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2021	05/02/2022	05/01/2023	05/06/2024
\$25.40 *plus 7% of hourly Wage	\$ 25.90 *plus 7% of hourly wage	\$ 26.40 *plus 7% of hourly wage	\$ 26.90 *plus 7% of hourly wage

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

6-1249a-LT

**Lineman Electrician - Tree Trimmer**

**07/01/2021**

**JOB DESCRIPTION** Lineman Electrician - Tree Trimmer

**DISTRICT 6**

**ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

**WAGES**

Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

Per hour:	07/01/2021	01/02/2022	12/31/2023
Tree Trimmer	\$ 27.36	\$ 28.25	\$ 29.80
Equipment Operator	24.19	24.98	26.35
Equipment Mechanic	24.19	24.98	26.35
Truck Driver	20.15	20.80	21.94
Groundman	16.59	17.13	18.07
Flag person	12.50*	12.50*	13.03*

\*NOTE: Subject to change due to any minimum wage increases.

**SUPPLEMENTAL BENEFITS**

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

Journeyman	\$ 9.98 *plus 3% of hourly wage	\$ 10.23 *plus 3% of hourly wage	\$ 10.48 *plus 3% of hourly wage
------------	---------------------------------------	--	--

\* The 3% is based on the hourly wage paid, straight time rate or premium rate.

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.  
Contractor is still responsible to pay the hourly benefit amount for each hour worked.

**HOLIDAY**

Paid: See (5, 6, 8, 15) on HOLIDAY PAGE  
Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday.  
All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

---

**Mason - Building** **07/01/2021**

---

**JOB DESCRIPTION** Mason - Building **DISTRICT 3**

**ENTIRE COUNTIES**  
Erie, Niagara

**PARTIAL COUNTIES**  
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**  
Per hour: 07/01/2021  
Plasterer \$ 30.15

Additional \$3.00/hr for work on swing stage over 20 feet.

**SUPPLEMENTAL BENEFITS**  
Per hour:  
\$ 22.49

**OVERTIME PAY**  
Exterior work only See ( B, E, E2, Q ) on OVERTIME PAGE.  
All other work See ( B, E, Q ) on OVERTIME PAGE.

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

**REGISTERED APPRENTICES**  
Wages per hour:

Hour terms at the following dollar amounts:

0 to 1000 to 2000 to 3000 to 4000 to 4700 to 5400 to 6000 to 7000 to 8000  
\$ 12.50 \$ 14.00 \$ 15.00 \$ 16.00 \$ 17.00 \$ 18.00 \$ 19.00 \$ 20.00 \$ 21.00

Supplemental benefits per hour:

Hour terms at the following dollar amounts:

0 to 4000 to 4700 to 5400 to 6000 to 8000  
\$ 2.50 \$ 3.50 \$ 4.50 \$ 5.50 \$ 7.50

3-9-Pltr

---

**Mason - Building** **07/01/2021**

---

**JOB DESCRIPTION** Mason - Building **DISTRICT 5**

**ENTIRE COUNTIES**  
Erie, Niagara

**PARTIAL COUNTIES**  
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**  
Per Hour: 07/01/2021  
Building:  
Bricklayer \$ 32.57  
Stone Mason 32.57  
Tuck Pointer 32.57

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 31.26

**OVERTIME PAY**

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

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

1250 hour terms at the following wage:

1st	2nd	3rd	4th
\$ 25.87	\$ 26.01	\$ 27.72	\$ 30.21

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 12.35	\$ 18.61	\$ 23.30	\$ 27.22

5-3B-Z3

**Mason - Building / Heavy&Highway**

**07/01/2021**

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

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**

Per hour:	07/01/2021	07/01/2022
		Additional
Cement Mason	\$ 31.00	\$ 1.15

Additional \$0.25 per hr for Swing scaffold or exterior scaffold 42' or higher.

Additional \$1.00 per hr when required to wear respirator.

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 33.07

**OVERTIME PAY**

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

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

750 hour terms at the following dollar amounts:

1st	2nd	3rd	4th	5th	6th
\$ 15.63	\$ 17.19	\$ 20.25	\$ 23.31	\$ 26.44	\$ 29.56

Supplemental benefits per hour:

1st	2nd	3rd	4th	5th	6th
\$ 8.86	\$ 11.86	\$ 11.80	\$ 15.05	\$ 17.21	\$ 20.54

3-111Erie

**Mason - Heavy&Highway**

**07/01/2021**

**JOB DESCRIPTION** Mason - Heavy&Highway

**DISTRICT 5**

**ENTIRE COUNTIES**



Allegany, Broome, Chautauqua, Chemung, Chenango, Cortland, Delaware, Genesee, Livingston, Monroe, Ontario, Orleans, Otsego, Schuylar, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

**PARTIAL COUNTIES**

Cattaraugus: Entire county except in the Township of Perrysburg and the Village of Gowanda only the Bricklayer classification applies.  
Erie: Only the Bricklayer classification applies.  
Niagara: Only the Bricklayer classification applies.

**WAGES**

Per hour: 07/01/2021  
Heavy & Highway:  
Cement Mason \$ 32.53  
Bricklayer 32.53

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 23.13

**OVERTIME PAY**

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

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

1500 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental benefits per hour:

1st term \$ 14.13  
2nd - 4th term 23.13

5-3h

**Mason - Tile Finisher 07/01/2021**

**JOB DESCRIPTION** Mason - Tile Finisher

**DISTRICT** 5

**ENTIRE COUNTIES**

Erie, Niagara, Orleans

**PARTIAL COUNTIES**

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**

Per hour: 07/01/2021

Building:  
Marble, Slate, Terrazzo \$ 29.46  
and Tile Finisher

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: \$ 16.47

**OVERTIME PAY**

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

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

1200 hours 1st and 2nd term and 1300 hours 3rd term at the following wage:

1st	2nd	3rd
\$ 18.84	\$ 21.38	\$ 24.23

Supplemental benefits per hour:

1st	2nd	3rd
\$ 8.64	\$ 10.71	\$ 12.47

5-3TF - Z3

**Mason - Tile Setter**

**07/01/2021**

**JOB DESCRIPTION** Mason - Tile Setter

**DISTRICT 5**

**ENTIRE COUNTIES**

Erie, Niagara, Orleans

**PARTIAL COUNTIES**

Cattaraugus: Only in the Township of Perrysburg and the Village of Gowanda.

**WAGES**

Per hour: 07/01/2021

Building:

Marble, Slate, Terrazzo and Tile Setter \$ 32.60

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: \$ 30.73

**OVERTIME PAY**

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

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

1250 hour terms at the following wage:

1st	2nd	3rd	4th
\$ 25.75	\$ 25.84	\$ 27.33	\$ 30.52

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 12.17	\$ 18.43	\$ 23.29	\$ 26.46

5-3TS - Z3

**Millwright**

**07/01/2021**

**JOB DESCRIPTION** Millwright

**DISTRICT 12**

**ENTIRE COUNTIES**

Erie, Genesee, Niagara

**WAGES**

Per hour: 07/01/2021

Building	\$ 34.25
Heavy & Highway*	36.25

\*All Heavy & Highway Millwright construction will be paid at the rate indicated above. H/H work performed on hazardous waste sites where employees are required to wear protective gear shall receive an additional \$2.00 per hour over the Millwright H/H rate for all hours worked on the day protective gear was worn.

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

- Certified Welders shall receive \$1.75 per hour in addition to the current Millwright's rate provided he/she is directed to perform certified welding.
- If a building work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a \$1.50 premium per hour.
- An employee performing the work of a machinist shall receive \$2.00 per hour in addition to the current Building Millwright's rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional \$1.00 per hour.

**SUPPLEMENTAL BENEFITS**

Per hour Paid:

All Classifications	\$ 30.35
---------------------	----------

**OVERTIME PAY**

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

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

1300 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour worked:

1st	2nd	3rd	4th
\$12.26	\$ 24.92	\$ 26.73	\$ 28.54

12-1163-Gen/Nia/Orl/Wyo

---

**Operating Engineer - Building** **07/01/2021**

---

**JOB DESCRIPTION** Operating Engineer - Building

**DISTRICT** 12

**ENTIRE COUNTIES**

Cattaraugus, Chautauqua, Erie, Orleans, Wyoming

**PARTIAL COUNTIES**

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

**WAGES**

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-Alls, Archer Hoist, Asphalt Curb and Gutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe, Backhoe and Pullhoe (tractor mounted, rubber tired), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (Pipe), Bituminous Spreader and Mixer, Blacktop Plants (Automated and Non-automated), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck (excluding pick-up and delivery), Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all concrete batching plants), Cherry Picker, Concrete Cleaning Decontamination Machine Operator, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Cutters (Vermeer or Similar Type), Concrete Mixer (over 1/2 cu yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Concrete Pump, Conveyor, Core Drill, Crane, Crusher, Decon of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Generator (10 outlets or more), Gradall, Grader, Grout or Guniting Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Helicopter (when used for hoisting), Hoist (one drum), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self-propelled), Hydraulic Pipe Jack Machine (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Hydro Crane, Hydro Hammer (or similar type), Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type loaders), Laser Screed, Locomotive, Lubrication Truck, Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self-propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Multiple Drum Hoist (more than one drum in use), Overhead Crane, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Driver, Power Broom, Pumpcrete, Push Button Hoist, Push or Snatch Cat, Quarry Master or equivalent, Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (pipe), Rotomill, Scissors Trucks, Lift, or Boom Lift of any type (when used for hoisting), Scoopmobile, Shovel, Sideboom, Skidsteer/Bobcat (Similar Type), Skimmer, Slip Form Paver (CMI or similar type), Snorkel/Vacuum Truck, Strato-Tower, Stump Chipping Machine, Tire Truck and Drivers performing tire repair (exclude outside vendor), Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractor (when using winch power), Tractors, Trencher, Truck Crane, Truck Mechanic and Helper (exclude Teamsters when repairing their own trucks), Tunnel Shovel, Tube Finisher (CMI and similar type), Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, Boiler (used in conjunction with production), CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors (any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines - four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Form Trucks (excluding Teamster or delivery), Fuel Truck or Drivers (exclude Teamster or delivery), Heaters, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps, Revinus Widener, Steam Boilers (if manning or license by local law is required), Steam Cleaner (when used for cleaning equipment on the job site), Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Building:

Per hour:	07/01/2021
Class A	\$ 38.51
Class B	34.03
Crane(Up to 60 Tons)	40.01
" (61 to 199 Tons)	42.01
" (200 to 399 Tons)	42.51
" (400 Tons or more)	43.01

Additional \$5.00/hr. for Any Tower Crane  
Additional \$2.50/hr. for Hazardous Work Site  
Additional \$1.00/hr. for Tunnel Work

**SUPPLEMENTAL BENEFITS**

Per Hour:

Journeyman \$ 31.55\*\*

\*\*Note: For Overtime Hours \$23.35 of this amount is paid a straight time, the remaining balance of \$8.20 is paid at the same premium as the wage.

**OVERTIME PAY**

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

\* Only Saturdays between October 15th and April 15th.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:  
1 year Terms

1st	2nd	3rd	4th
\$28.35	\$29.24	\$30.12	\$31.01

Supplemental benefits Per Hour:  
 All Apprentices \$30.65\*\*

\*\*Note: For Overtime Hours \$23.35 of this amount to be paid a straight time rate remaining balance of \$7.30 is paid at same premium as the wage.

12-17b

---

**Operating Engineer - Heavy&Highway** **07/01/2021**

---

**JOB DESCRIPTION** Operating Engineer - Heavy&Highway **DISTRICT 12**

**ENTIRE COUNTIES**  
 Chautauqua, Erie, Niagara, Orleans

**WAGES**  
 Marine Construction/Dredging

Class 1: Diver/Wet Tender, Engineer, Engineer(hydraulic dredge), Blaster.

Class 2(A): Crane, Backhoe Operator, Material Handler, ALL Self-propelled Drill Rigs, Mechanic/Welder, Asst. Engineer(hydraulic dredge), Leverman(hydraulic dredge), Diver/Dry Tender.

Class 2(B): Friction, Lattice Boom, or Crane License Certificate, Endorse Tug or Tow Boat Operator.

Class 3: Deck Equipment Operator, (Machineryman), Maintenance of Crane, Tug/Launch Operator, Loader/Dozer on Barge.

Class 4: Deck Equipment Operator and Machineryman/Fireman on 4 equipment units or more, Off Road Trucks, Deck Hand, Tug Engineer, Crane Maintenance(50 tons and under/ backhoe 115,000lbs or less), Asst. Tug Operator, Blaster Helper.

Per hour: 07/01/2021

Class 1	\$ 48.80
Class 2(A)	47.30
Class 2(B)	50.30
Class 3	42.10
Class 4	35.00

Hazardous/Toxic Waste based on EAP Levels  
 Additional:  
 Level A - \$2.50/Hr.  
 Level B - 2.00/Hr.  
 Level C - 1.00/Hr.  
 Level D - 0.50/Hr.

**SUPPLEMENTAL BENEFITS**  
 Per Hour Paid:

ALL CLASSES \$ 32.04

**OVERTIME PAY**  
 See (B, E, I, \*S) on OVERTIME PAGE  
 \* If the Holiday is Worked

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

12-17 Marine

---

**Operating Engineer - Heavy&Highway** **07/01/2021**

---

**JOB DESCRIPTION** Operating Engineer - Heavy&Highway **DISTRICT 12**

**ENTIRE COUNTIES**  
 Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

**PARTIAL COUNTIES**  
 Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

**WAGES**

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-Alls, Asphalt Curb and Cutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe (all), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (pipe), Bituminous Spreader and Mixer, Blacktop Plant (all), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck, Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all Concrete Batching Plants), Cherry Picker, Concrete Cleaning Decontamination Machine, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Mixer (over 1/2 cu. yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Concrete Pump, Concrete Saw (self propelled), Conveyor, Convoying Vehicles Convoying Engineer's Equipment, Core Drill, Crane, Crusher, Decontamination of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Gradall, Grader, Grout or Guniting Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Hoist (all types), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self propelled), Hydraulic Pipe Jack Machine, (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type Loaders), Laser Screed, Locomotive, Log Skidder (similar type), Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Overhead Crane, Parts Chasing, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Post Driver, Power Broom, Pump Crete, Push Button Hoist, Push or Snatch Cat, Quarry Master (or equivalent), Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (Pipe), Rotomill, Scoopmobile, Shovel, Side Boom, Skidsteer/Bobcat (similar type), Skimmer, Slip Form Paver (CMI or similar, first and second operator), Snorkel/Vacuum Truck, Strato-Tower, Tire Truck & Repair, Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractors (when using winch power), Trencher, Truck Crane, Tug Boats, Tunnel Shovel, Tube Finisher (CMI and similar), Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Waterjet Cutting Tool System Operator/Mechanic (Ultra High Pressure), Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors: any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines (four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Fuel Truck, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps (4" or over), Revinus Widener, Steam Cleaner, Stump Chipping Machine, Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Heavy/Highway, Sewer/Water, Tunnel:

Per hour:	07/01/2021
Class A	\$ 40.64
Class B	36.14
Crane 5 to 60 tons	43.64
" 61 to 199 tons	44.14
" 200 to 399 tons	44.64
" 400 and over	45.14

Additional \$2.50/hr. for Hazardous Work Site  
Additional \$1.00/hr. for Tunnel Work  
Additional \$4.00/hr. for Mandated Off-Shift Work

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 33.16\*

\*Note: For Overtime Hours \$25.21 of the amount paid at straight time, the remaining balance of 7.95 is paid at the same premium as the wage.

### OVERTIME PAY

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

### HOLIDAY

Paid: See (\*5, \*\*6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

\*Saturday Holidays will be recognized on the Friday before

\*\*Sunday Holidays will be recognized on the Monday after

### REGISTERED APPRENTICES

Wages per hour:

Apprentices at 1 year terms

1st	2nd	3rd	4th
\$33.14	\$34.14	\$35.14	\$36.14

Supplemental Benefits

All Apprentices \$ 32.76\*

\*Note: For Overtime Hours \$25.21 of the amount paid at straight time, the remaining balance of \$7.55 is paid at same premium as the wage.

12-17 hh/sw/t

**Operating Engineer - Survey Crew** **07/01/2021**

**JOB DESCRIPTION** Operating Engineer - Survey Crew **DISTRICT 12**

**ENTIRE COUNTIES**  
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

**PARTIAL COUNTIES**  
Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

**WAGES**  
These rates apply to Building, Heavy and Highway Construction.

Per hour:  
SURVEY CLASSIFICATIONS:

- Party Chief - One who directs a survey party.
- Instrument Person - One who operates the surveying instruments.
- Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2021

Party Chief	\$ 44.09
Instrument Person	41.57
Rod Person	28.75

Additional \$3.00 per hr. for work in a Tunnel.  
Additional \$2.50 per hr. for EPA or DEC certified toxic or hazardous waste work.

**SUPPLEMENTAL BENEFITS**  
Per hour worked:

Journeyman \$ 28.75

**OVERTIME PAY**  
See (B, E, Q, \*X) on OVERTIME PAGE  
\*Note: \$23.75 Only for "ALL" premium hours when worked.

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

**REGISTERED APPRENTICES**  
WAGES:1000 hour terms based on the Percentage of Rod Person wage:

07/01/2021

0-1000 Hrs	60%
1001-2000 Hrs	70%
2001-3000 Hrs	80%

SUPPLEMENTAL BENEFITS per hour worked:  
0-1000 Hrs \$ 17.25 / PHP \$13.29  
1001-2000 Hrs 20.13 / " 15.51  
2001-3000 Hrs 23.00 / " 18.12  
NOTE: PHP is premium hours paid when worked.

12-17D Sur

**Operating Engineer - Survey Crew - Consulting Engineer** **07/01/2021**

**JOB DESCRIPTION** Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT 12**

**ENTIRE COUNTIES**

Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

**PARTIAL COUNTIES**

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

**WAGES**

These rates apply to feasibility and preliminary design surveying, line of grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:

**SURVEY CLASSIFICATIONS:**

Party Chief - One who directs a survey party.

Instrument Person - One who operates the surveying instruments.

Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2021

Party Chief	\$ 44.09
Instrument Person	41.57
Rod Person	28.75

**SUPPLEMENTAL BENEFITS**

Per hour worked:

Journeyman	\$ 28.75
------------	----------

**OVERTIME PAY**

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

\*Note: \$23.75 Only for "ALL" premium hours paid.

**HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

07/01/2021

0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFITS per hour worked:

0-1000	\$ 17.25 / PHP \$13.29
1001-2000	20.13 / " 15.51
2001-3000	23.00 / " 18.12

NOTE: PHP is premium hours paid when worked.

12-17D Con Eng

**Painter**

**07/01/2021**

**JOB DESCRIPTION** Painter

**DISTRICT 3**

**ENTIRE COUNTIES**

Allegany, Erie, Genesee, Niagara, Orleans, Wyoming

**PARTIAL COUNTIES**

Cattaraugus: Entire County except the Townships of Conewango, Leon, Napoli, New Albion, Randolph and South Valley.

Chautauqua: Only the Townships of Awkright, Dunkirk, Hanover, Pomfret, Portland, Sheridan and Villenova.

Livingston: Only the Townships of North Dansville, Nunda, Ossian, Portage, Sparta, Spring Water and West Sparta.

Steuben: Only the Townships of Avoca, Canisteo, Cohocton, Dansville, Fremont, Greenwood, Hartsville, Hornellsville, Howard, Jasper, Prattsburg, Pulteney, Troupsburg, Tuscarora, Urbana, Wayland, Wayne, Woodhull, West Union, Wheeler, and the City of Hornell.

**WAGES**

Per hour: 07/01/2021

Basic Rate (Brush & Roll)	\$ 28.00
Spray painting, wallcovering	28.00
Abrasive and hydroblasting	28.00
Taping/DryWall Finisher	28.50



Skeleton Steel\* 28.75

\* Skeleton Steel: No floors, walls or ceiling are constructed, including radio and television towers, flagpoles, smokestacks, cranes and the abatement of coatings with lead, asbestos and/or arsenic, etc. All work within the confines of a plant shall be paid the skeleton steel rate (except in-plant tank work (see Tank Rate)).

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:

\$ 25.79

**OVERTIME PAY**

Exterior work only See ( B, E4, F\*, R ) on OVERTIME PAGE.

All other work See ( B, F\*, R ) on OVERTIME PAGE.

\* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Painter/Decorator: 750 hour terms at the following percentage of Journeyman's Basic wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	90%

Taper/Drywall Finisher: 750 hour terms at the following percentage of Journeyman's Taper wage:

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

Supplemental benefits per hour:

Painter/Decorator and Taper/Drywall Finisher:

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 2.35	\$ 4.35	\$ 5.35	\$ 5.85	\$ 6.35	\$ 6.85	\$ 7.35	\$ 7.60

3-4-Buf, Nia, Olean

**Painter**

**07/01/2021**

**JOB DESCRIPTION** Painter

**DISTRICT 3**

**ENTIRE COUNTIES**

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Cortland, Delaware, Erie, Genesee, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

**WAGES**

Per hour: 07/01/2021

Bridge	\$ 40.00
Tunnel	40.00
Tank*	38.00

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.

Tank rate applies to indoor and outdoor tanks, tank towers, standpipes, digesters, waste water treatment tanks, chlorinator tanks, etc. Covers all types of tanks including but not limited to steel tanks, concrete tanks, fiberglass tanks, etc.

Note an additional \$1.00 per hour is required when the contracting agency or project specification requires any shift to start prior to 6:00am or after 12:00 noon.

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 29.20

**OVERTIME PAY**

Exterior work only See ( B, E4, F\*, R ) on OVERTIME PAGE.  
 All other work See ( B, F\*, R ) on OVERTIME PAGE.

\*Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

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

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

Supplemental benefits per hour:

1st & 2nd terms	\$ 5.50	\$ 5.51
3rd & 4th terms	5.50	5.51
5th & 6th terms	6.50	6.51

3-4-Bridge, Tunnel, Tank

**Painter - Metal Polisher** **07/01/2021**

**JOB DESCRIPTION** Painter - Metal Polisher

**DISTRICT 8**

**ENTIRE COUNTIES**

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

	07/01/2021
Metal Polisher	\$ 37.13
Metal Polisher*	38.23
Metal Polisher**	41.13

\*Note: Applies on New Construction & complete renovation

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

**SUPPLEMENTAL BENEFITS**

Per Hour: 07/01/2021

Journeyworker:

All classification \$ 10.64

**OVERTIME PAY**

See (B, E, P, T) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE  
 Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

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

	07/01/2021
1st year	\$ 16.00
2nd year	17.00
3rd year	18.00
1st year*	\$ 16.39
2nd year*	17.44
3rd year*	18.54
1st year**	\$ 18.50
2nd year**	19.50
3rd year**	20.50

\*Note: Applies on New Construction & complete renovation  
\*\* Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:  
Per hour:

1st year	\$ 7.39
2nd year	7.39
3rd year	7.39

8-8A/28A-MP

---

**Plumber****07/01/2021**

---

**JOB DESCRIPTION** Plumber**DISTRICT 3****ENTIRE COUNTIES**

Erie, Niagara, Wyoming

**PARTIAL COUNTIES**

Allegany: Only the Townships of Allen, Angelica, Belfast, Caneadea, Centerville, Granger, Hume, New Hudson and Rushford  
 Cattaraugus: Only the Townships of Ashford, Dayton, East Otto, Ellicottville, Farmersville, Franklinville, Freedom, Leon, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire.  
 Chautauqua: Only the Townships of Arkwright, Charlotte, Cherry Creek, Dunkirk, Hanover, Pomfret, Portland, Ripley, Sheridan, Stockton, Villenova, Westfield, City of Dunkirk and Village of Fredonia.  
 Genesee: Only the Townships of Alabama, Alexander, Batavia, Darien, Elba, Oakfield, Pembroke and the City of Batavia.  
 Orleans: Only the Townships of Ridgeway, Shelby and Yates.

**WAGES**

Per hour: 07/01/2021

Plumber	\$ 37.15
Steamfitter	\$ 37.15

Note - Add 10% (ten-percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 27.51

Note - \$4.38 of this amount must be paid at the same premium as the wage.

**OVERTIME PAY**

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

\* Double time after 11 hours per day on Weekdays.  
 \*\* Double time after 10 hours per day on Saturday.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

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

1st	2nd	3rd	4th	5th
45%	55%	65%	75%	90%

Note - Add 10% (ten-percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

Supplemental benefits per hour:

\$ 22.82

Note - \$4.38 of this amount must be paid at the same premium as the wage.

3-22-Buffalo, Niagara

---

**Roofer****07/01/2021**

---

**JOB DESCRIPTION** Roofer**DISTRICT 3****ENTIRE COUNTIES**

Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**

Per hour: 07/01/2021

Asbestos Removal	\$ 33.96
Slate, Tile	31.11
Precast tile / slabs	31.11
Crete / gypsum planks	31.11
Damp and waterproofer	30.96
Composition, sprayers,	30.96
Asphalt mastic,	30.96
Steep roofers	30.96

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:  
 15.0% for work from 4:30PM - 1:00AM or second shift  
 20.0% for work from 12:30AM - 9:00AM or third shift

**SUPPLEMENTAL BENEFITS**

Per hour:  
 \$ 23.01

**OVERTIME PAY**

See (B, \*E, \*\*E2, Q) on OVERTIME PAGE  
 \* and \*\* Double time after 8 hours on Saturday.

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0	to 499	to 999	to 1499	to 1999	to 2499	to 2999	to 3499	to 4499
	60%	65%	70%	75%	80%	85%	90%	95%

Supplemental benefits per hour:

0	to 499	to 999	to 1499	to 1999	to 2499	to 2999	to 3499	to 4499
	\$ 8.21	\$ 8.21	\$ 12.34	\$ 12.54	\$ 20.32	\$ 20.99	\$ 21.66	\$ 22.34

**Sheetmetal Worker**

**07/01/2021**

**JOB DESCRIPTION** Sheetmetal Worker

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**

Per hour: 07/01/2021

Sheet Metal Worker \$ 35.00

Additional \$0.50 per hour for work more than 30" above floor on boatswain chair.  
 Additional \$1.00 per hour for work in "Hot" areas of atomic laboratories, atomic plants, or any premises where radio-active materials are stored or handled and personal protective equipment is required.  
 Additional \$1.00 per hour for work when required to have 40-hour HAZMAT training or the use of OSHA compliant respirator is required.

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

Shift Premium per hour:

Second Shift	\$ 3.25
Third Shift	\$ 5.00

**SUPPLEMENTAL BENEFITS**

Per hour:  
 \$ 27.47\*

\* Note - \$17.57 of this amount must be paid at the same premium as the wages per overtime hours.

**OVERTIME PAY**

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

**HOLIDAY**

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

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following wage:

1st term	\$ 15.75
2nd term	20.60
3rd term	22.04
4th term	26.36
5th term	29.24

Supplemental benefits per hour:

1st term	\$ 15.94	Note - \$8.04 of this amount must be paid at the same premium as the wage.
2nd term	19.04	Note - \$11.14 of this amount must be paid at the same premium as the wage.
3rd term	24.68	Note - \$14.78 of this amount must be paid at the same premium as the wage.
4th term	25.61	Note - \$15.71 of this amount must be paid at the same premium as the wage.
5th term	26.23	Note - \$16.33 of this amount must be paid at the same premium as the wage.

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply;

Shift Premium per hour:

Second Shift

1st term	\$ 1.46
2nd term	\$ 1.63
3rd term	\$ 1.79
4th term	\$ 2.28
5th term	\$ 2.60

Third Shift

1st term	\$ 2.25
2nd term	\$ 2.50
3rd term	\$ 2.75
4th term	\$ 3.50
5th term	\$ 4.00

3-71

**Sprinkler Fitter**

**07/01/2021**

**JOB DESCRIPTION** Sprinkler Fitter

**DISTRICT 1**

**ENTIRE COUNTIES**

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

**WAGES**

Per hour	07/01/2021
Sprinkler Fitter	\$ 36.33

**SUPPLEMENTAL BENEFITS**

Per hour

Journey person	\$ 27.14
----------------	----------

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

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

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

**REGISTERED APPRENTICES**

Wages per hour

One Half Year terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 17.48	\$ 19.43	\$ 21.12	\$ 23.06	\$ 25.00	\$ 26.95	\$ 28.89	\$ 30.83	\$ 32.77	\$ 34.72

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.27	\$ 8.27	\$ 19.22	\$ 19.22	\$ 19.47	\$ 19.47	\$ 19.47	\$ 19.47	\$ 19.47	\$ 19.47 1-669

**Teamster - Building / Heavy&Highway** **07/01/2021**

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

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie, Niagara

**PARTIAL COUNTIES**

Genesee: Only in the Townships of Alabama, Darien and Pembroke.

Orleans: Only the Townships of Ridgeway, Shelby and Yates.

Wyoming: Only in the Townships of Arcade, Bennington, Java and Sheldon.

**WAGES**

GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks (straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers.

GROUP 2: Tandems and Batch Trucks, Mechanics, Dispatcher.

GROUP 3: Semi-Trailers, Low-Boy Trucks, Asphalt Distributor Trucks and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Trucks

GROUP 4: Specialized Earth Moving Equipment, Euclid type, or similar off-highway, where not self-loading, Straddle (Ross) Carrier, and self-contained concrete mobile truck.

GROUP 5: Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

Per hour: 07/01/2021

All GROUPS \$ 41.22

Add \$2.00 when required to use personal protection when performing hazardous waste removal work.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 15.36\*

\*Note - Only \$ 7.16 per hour needs to be paid for overtime hours.

**OVERTIME PAY**

See (B, G, P) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

3-449

**Teamster - Building / Heavy&Highway** **07/01/2021**

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

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie, Niagara

**WAGES**

Per hour: 07/01/2021

Dump Truck Operator\* \$ 24.25

\*Does not include Single Axle Dump Trucks (see Teamster Group 1).

\*Does not include Off-highway Dump Trucks (see Teamster Groups 2-5).

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 1.73

**OVERTIME PAY**

See (B, B2, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

3-449d-DT

---

---

**Welder**

**07/01/2021**

**JOB DESCRIPTION** Welder

**DISTRICT 1**

**ENTIRE COUNTIES**

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

Per hour 07/01/2021

Welder: To be paid the same rate of the mechanic performing the work.\*

\*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

**OVERTIME PAY**

**HOLIDAY**

1-As Per Trade

## Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- ( AA ) Time and one half of the hourly rate after 7 and one half hours per day
- ( A ) Time and one half of the hourly rate after 7 hours per day
- ( B ) Time and one half of the hourly rate after 8 hours per day
- ( B1 ) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.  
Double the hourly rate for all additional hours
- ( B2 ) Time and one half of the hourly rate after 40 hours per week
- ( C ) Double the hourly rate after 7 hours per day
- ( C1 ) Double the hourly rate after 7 and one half hours per day
- ( D ) Double the hourly rate after 8 hours per day
- ( D1 ) Double the hourly rate after 9 hours per day
- ( E ) Time and one half of the hourly rate on Saturday
- ( E1 ) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- ( E2 ) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- ( E3 ) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- ( E4 ) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- ( E5 ) Double time after 8 hours on Saturdays
- ( F ) Time and one half of the hourly rate on Saturday and Sunday
- ( G ) Time and one half of the hourly rate on Saturday and Holidays
- ( H ) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- ( I ) Time and one half of the hourly rate on Sunday
- ( J ) Time and one half of the hourly rate on Sunday and Holidays
- ( K ) Time and one half of the hourly rate on Holidays
- ( L ) Double the hourly rate on Saturday
- ( M ) Double the hourly rate on Saturday and Sunday
- ( N ) Double the hourly rate on Saturday and Holidays
- ( O ) Double the hourly rate on Saturday, Sunday, and Holidays
- ( P ) Double the hourly rate on Sunday
- ( Q ) Double the hourly rate on Sunday and Holidays
- ( R ) Double the hourly rate on Holidays
- ( S ) Two and one half times the hourly rate for Holidays



- ( S1 ) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- ( T ) Triple the hourly rate for Holidays
- ( U ) Four times the hourly rate for Holidays
- ( V ) Including benefits at SAME PREMIUM as shown for overtime
- ( W ) Time and one half for benefits on all overtime hours.
- ( X ) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

## Holiday Codes

### PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

### OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- ( 1 ) None
- ( 2 ) Labor Day
- ( 3 ) Memorial Day and Labor Day
- ( 4 ) Memorial Day and July 4th
- ( 5 ) Memorial Day, July 4th, and Labor Day
- ( 6 ) New Year's, Thanksgiving, and Christmas
- ( 7 ) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- ( 8 ) Good Friday
- ( 9 ) Lincoln's Birthday
- ( 10 ) Washington's Birthday
- ( 11 ) Columbus Day
- ( 12 ) Election Day
- ( 13 ) Presidential Election Day
- ( 14 ) 1/2 Day on Presidential Election Day
- ( 15 ) Veterans Day
- ( 16 ) Day after Thanksgiving
- ( 17 ) July 4th
- ( 18 ) 1/2 Day before Christmas
- ( 19 ) 1/2 Day before New Years
- ( 20 ) Thanksgiving
- ( 21 ) New Year's Day
- ( 22 ) Christmas
- ( 23 ) Day before Christmas
- ( 24 ) Day before New Year's
- ( 25 ) Presidents' Day
- ( 26 ) Martin Luther King, Jr. Day
- ( 27 ) Memorial Day
- ( 28 ) Easter Sunday

( 29 )      Juneteenth



**New York State Department of Labor - Bureau of Public Work  
State Office Building Campus  
Building 12 - Room 130  
Albany, New York 12240**

**REQUEST FOR WAGE AND SUPPLEMENT INFORMATION**

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

**This Form Must Be Typed**

Submitted By:

(Check Only One)

Contracting Agency

Architect or Engineering Firm

Public Work District Office

Date:

**A. Public Work Contract to be let by:** (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address  (Check if new or change)

Telephone: ( )

Fax: ( )

E-Mail:

2. NY State Units (see Item 5)

01 DOT

02 OGS

03 Dormitory Authority

04 State University  
Construction Fund

05 Mental Hygiene  
Facilities Corp.

06 OTHER N.Y. STATE UNIT

07 City

08 Local School District

09 Special Local District, i.e.,  
Fire, Sewer, Water District

10 Village

11 Town

12 County

13 Other Non-N.Y. State  
(Describe)

3. SEND REPLY TO  check if new or change)  
Name and complete address:

Telephone:( )

Fax: ( )

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR  
THIS PROJECT :

OFFICE USE ONLY

**B. PROJECT PARTICULARS**

5. Project Title \_\_\_\_\_

Description of Work \_\_\_\_\_

Contract Identification Number \_\_\_\_\_

Note: For NYS units, the OSC Contract No. \_\_\_\_\_

6. Location of Project:  
Location on Site \_\_\_\_\_

Route No/Street Address \_\_\_\_\_

Village or City \_\_\_\_\_

Town \_\_\_\_\_

County \_\_\_\_\_

7. Nature of Project - Check One:

1. New Building

2. Addition to Existing Structure

3. Heavy and Highway Construction (New and Repair)

4. New Sewer or Waterline

5. Other New Construction (Explain)

6. Other Reconstruction, Maintenance, Repair or Alteration

7. Demolition

8. Building Service Contract

8. OCCUPATION FOR PROJECT :

Construction (Building, Heavy  
Highway/Sewer/Water)

Tunnel

Residential

Landscape Maintenance

Elevator maintenance

Exterminators, Fumigators

Fire Safety Director, NYC Only

Guards, Watchmen

Janitors, Porters, Cleaners,  
Elevator Operators

Moving furniture and  
equipment

Trash and refuse removal

Window cleaners

Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding?

YES  NO

10. Name and Title of Requester

**Signature**



NEW YORK STATE DEPARTMENT OF LABOR  
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE  
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

**Debarment Database:** To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://applications.labor.ny.gov/EDList/searchPage.do>

**For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322**



**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	NYC	*****9839	A.J.S. PROJECT MANAGEMENT, INC.		149 FIFTH AVENUE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL	*****4018	ADIRONDACK BUILDING RESTORATION INC.		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	AG	*****1812	ADVANCED BUILDERS & LAND DEVELOPMENT, INC.		400 OSER AVE #2300HAUPPAUGE NY 11788	09/11/2019	09/11/2024
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC		AGOSTINHO TOME		405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMENT	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	NYC		AMJAD NAZIR		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		ANITA SALERNO		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	NYC		ANTHONY J SCLAFANI		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DOL		ARVINDER ATWAL		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	NYC	*****5532	ATWAL MECHANICALS, INC		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****2591	AVI 212 INC.		260 CROPSEY AVENUE APT 11GBROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		BALWINDER SINGH		421 HUDSON ST SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BOGDAN MARKOVSKI		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL	*****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****0225	C&D LAFACE CONSTRUCTION, INC.		8531 OSWEGO RD BALDWINVILLE NY 13027	02/03/2020	01/09/2023

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINNESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		CALVIN WALTERS		465 EAST THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARMEN RACHETTA		8531 OSWEGO RD BALDWINVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL		CARMENA RACHETTA		8531 OSWEGO ROAD BALDWINVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTIN G AND CARMODY CONTRACTIN G CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		CHRISTOPHER PAPASTEFANOU A/K/A CHRIS PAPASTEFANOU		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	NYC		DALJIT KAUR BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL		DANICA IVANOSKI		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024



**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAIR 145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DIMITRIOS TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL		DOMENICO LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DUARTE LOPES		66-05 WOODHAVEN BLVD. STE 2 REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLET PA 16923	03/12/2018	03/12/2023
DOL	NYC	*****4269	EAST PORT EXCAVATION & UTILITIES		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	NYC	*****5917	EPOCH ELECTRICAL, INC		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2024
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FAIGY LOWINGER		11 MOUNTAIN RD 28 VAN BUREN DR MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	NYC		FRANK MAINI		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	DOL		GEOFF CORLETT		415 FLAGGER AVE #302 STUART FL 34994	10/31/2018	10/31/2023
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL		GIGI SCHNECKENBURGER		261 MILL RD EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		GIOVANNI LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	NYC	*****3164	GLOBE GATES INC	GLOBAL OVERHEAD DOORS	405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC	*****3228	HEIGHTS ELEVATOR CORP.		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		JAMES LIACONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORI PEDERSEN		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JOSEPH FOLEY		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOY MARTIN		2404 DELAWARE AVE NIGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	NYC		K.S. CONTRACTING CORP.		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DA	****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023
DOL	AG	****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL	****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	NYC		MAREK FABIJANOWSKI		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC		MARTINE ALTER		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC		MATINA KARAGIANNIS		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2023
DOL	DOL		MATTHEW P. KILGORE		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		MCLEAN "MIKKI BEANE"		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN "MIKKI" DRAKE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN M DRAKE-BEANE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSIONAL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4 YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL	*****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29 MORGANVILLE NJ 07751	04/10/2019	04/10/2024
DOL	NYC	*****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204 NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	*****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOOR STATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	NYC	*****3826	MOVING MAVEN OF NY, INC.		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	NYC	*****3550	MOVING MAVEN, INC		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DA	*****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023
DOL	NYC		NICHOLAS FILIPAKIS		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTION, INC.	444 SCHANTZ ROAD ALLENTOWN PA 18104	09/17/2020	09/17/2025
DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC	*****0818	ONE TEN RESTORATION, INC.		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		PARESH SHAH		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	NYC	*****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	NYC	*****5771	PMJ ELECTRICAL CORP		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC	*****4532	PROFESSIONAL PAVERS CORP.		66-05 WOODHAVEN BLVD. REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DA	*****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023

**NYS DOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	AG	*****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOOR MASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL	*****9148	RICH T CONSTRUCTION		107 WILLOW WOOD LANE CAMILLUS NY 13031	11/13/2018	11/13/2023
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL	*****9148	RICHARD TIMIAN	RICH T CONSTRUCTI ON	108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	11/13/2018	11/13/2023
DOL	DOL		ROBBYE BISSEAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT A. VALERINO		3841 LANYARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL		ROBERT BRUNO		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	NYC		ROBERT HOHMAN		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101 SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101 SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****1365	S & L PAINTING, INC.		11 MOUNTAIN ROAD P.O BOX 408 MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****7730	S C MARTIN GROUP INC.		2404 DELAWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		SALVATORE A FRESINA			08/26/2016	08/26/2021
DOL	DOL		SAM FRESINA			08/26/2016	08/26/2021
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		SANDEEP BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	NYC	*****6597	SHAIRA CONSTRUCTION CORP.		421 HUDSON STREET SUITE C5 NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		SHULEM LOWINGER		11 MOUNTAIN ROAD 28 VAN BUREN DR MONROE NY 10950	03/20/2019	03/20/2024

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL	****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	DOL	****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR.		256 WEST SADDLE RIVER RD UPPER SADDLE RIVER NJ 07458	05/30/2019	05/30/2024
DOL	DOL	****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEVE TATE		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	NYC		STEVEN GOVERNALE		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL		STEVEN MARTIN		2404 DELWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	NYC	****5863	SUKHMANY CONSTRUCTION, INC.		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	****1060	SUNN ENTERPRISES GROUP, LLC		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	****8209	SYRACUSE SCALES, INC.		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		TEST		P.O BOX 123 ALBANY NY 12204	05/20/2020	05/20/2025
DOL	DOL	****6789	TEST1000		P.O BOX 123 ALBANY NY 12044	03/01/2021	03/01/2026
DOL	DOL	****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	****8311	TRIPLE B FABRICATING, INC.		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL	****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL	****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	****7361	VIABLE HOLDINGS, INC.	MOVING MAVEN	1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		VICTOR ALICANTI		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	NYC		VIKTAR PATONICH		2630 CROPSEY AVE BROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC	****3673	WALTERS AND WALTERS, INC.		465 EAST AND THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM C WATKINS		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022

**NYSDOL Bureau of Public Work Debarment List 06/28/2021**

**Article 8**

DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4730	XGD SYSTEMS, LLC	TDI GOLF	415 GLAGE AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL	*****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022





# Appendix D

## Monitoring and Control Narrative





Appendix D of Contract Documents

## Monitoring and Control Narrative

Sedimentation Basin Effluent Improvements,  
Sturgeon Point Water Treatment Plant

Erie County Water Authority, Erie County, New York

Project No. 202100088  
Contract No. GHD-010

July 2021



## Table of Contents

1.	General.....	1
1.1	Design Basis .....	1
1.2	PLC/SCADA Overview.....	2
2.	Control System Architecture .....	2
2.1	Overview .....	2
2.2	Specifications and Modifications.....	2
2.3	PLCs .....	2
2.4	Operator Interface.....	3
2.5	Alarms .....	3
2.6	Communications .....	3
2.7	SCADA Integration.....	3
3.	System Operation.....	3
3.1	General .....	3
3.1	Sturgeon Point Water Treatment Plant Sedimentation Basin Effluent Improvements .....	4
3.1.1	System Scope.....	4
3.1.2	System Operation .....	4
3.1.3	Alarms.....	4
3.1.4	HMI/SCADA Monitored Information.....	5
3.1.5	Controls and Interlocks.....	5

## Appendix Index

Appendix A PLC IO List



# 1. General

This narrative provides a description of the functional requirements for integrating the Sturgeon Point Water Treatment Plant Sedimentation Basin Effluent Improvements Project into the existing plant monitoring and control system. These system improvements are intended to be utilized during sedimentation basin sludge collection operations to prevent carry-over of elevated water turbidity into the settled water conduits. This document is intended to define the controls design requirements and Programmable Logic Controller/Supervisory Control and Data Acquisition System (PLC/SCADA) programming scope of work. It is not intended to define or describe all system operations, manual operations, or maintenance activities. This document also does not define project sequencing for this work.

This narrative is divided into the following sections:

- Section 1 provides a general introduction of the document.
- Section 2 provides a general philosophy for integrating into the existing monitoring and control system, as well as a description of alarm, and existing and new system hardware.
- Section 3 provides a description of the individual system component operations. Various alarms, interlocks, and operating procedures are discussed.

Documents that complement this narrative include:

- Appendix A – PLC IO List

## 1.1 Design Basis

The design of the control system is based upon the following criteria:

- Systems are operated as needed to meet required quality metrics, data storage requirements, permit requirements, standards, and objectives.
- The systems are designed for unattended operation with limited operator interface. The status of operating equipment is continuously monitored to detect operational excursions and equipment failures.
- Manual control is provided for operations, maintenance, startup, and emergency shutdown where appropriate.



## 1.2 PLC/SCADA Overview

The Sedimentation Basin Effluent Improvements Project will consist of the modification of the Scraper Control PLC panel, HMI, and SCADA programming modifications to monitor and control devices that operate within their own parameters. Schematics and block diagrams for these systems are part of the design drawing package included in the Contract Documents. IO lists for the PLC to be upgraded or modified are included as Appendix A. Anticipated visual screens for the Control Panel HMI and SCADA System are updates to existing Sturgeon Point screens with new control screens for slide gates. System operation for these improvements, including lists of alarms and displayed information available to the operator on the SCADA screen and control panel for the system is presented in Section 3.

# 2. Control System Architecture

## 2.1 Overview

The existing Sturgeon Point monitoring and control includes the following major components:

- Modicon 340 PLCs.
- Personal computers (PCs) running SCADA software.
- PLC panels.
- HMI screens.
- Field devices, instruments, and motor control circuits.
- Sturgeon Point uses a GE iFix SCADA system software to operate their facilities. A local SCADA project at the site allows for monitoring and control of various systems. The SCADA system allows for automatic and manual control of equipment and devices, monitoring of instrumentation, real-time and historical trending of process variables, alarm logging, data logging, and the printing of data and trends, where required, via graphical, computer-based displays.

## 2.2 Specifications and Modifications

The proposed control system architecture has been reviewed with the Erie County Water Authority (ECWA) staff and developed to meet ECWA requirements. Updated and new software programming will be documented with appropriate commenting. Specific modifications are detailed in Section 3.

## 2.3 PLCs

Existing PLCs at each site will be utilized for the Sedimentation Basin Effluent Improvements Project and integration of new IO points will be performed by the ECWA or their system integrator (Kaman).



## 2.4 Operator Interface

A new HMI screen will be provided to replace the existing HMI at the existing Scraper Control Panel to meet the ECWA's latest requirements. Specific operation features are detailed in Section 3.

## 2.5 Alarms

All alarms will be initially programmed per ECWA standards and can be adjusted by the ECWA in the future.

## 2.6 Communications

The existing PLC communication architecture at the site utilizes Ethernet and EtherNet/IP protocols to transfer data between various PLC devices and the SCADA system currently operating at the site. PLC software will be written/modified and configured to utilize existing communications between PLCs and the SCADA System to transfer data between PLCs for the new system IO points and newly programmed controls and monitoring for the new equipment.

The real-time status of all system improvement devices will be displayed on updated SCADA screens through a graphical representation. An Alarm History Viewer will be accessible to allow for searching/filtering the entire system alarm database.

## 2.7 SCADA Integration

SCADA will perform monitoring functions of new equipment and devices and provide for control of the sedimentation basin slide gates at each basin. The SCADA system screens at Sturgeon Point will be modified and developed by the ECWA or their system integrator (Kaman).

# 3. System Operation

## 3.1 General

PLC and SCADA modifications under this project will incorporate the improvements associated with the Sedimentation Basin Effluent Improvements Project. Upgrades to the monitoring and control of the major components at Sturgeon Point facilities are listed as follows:

- Existing PLC Panel
  - Sturgeon Point Scraper Control Panel PLC shall be utilized to bring in the sedimentation basin slide gate improvements IO points. Existing spare capacity or new IO hardware will be added at the PLC as needed for connection of new devices. IO points are listed in Appendix A.
- Sturgeon Point Sedimentation Basin Effluent Improvements Equipment
  - Adding two (2) new slide gates with electrical actuators at each sedimentation basin for basins 1 through 5.



## 3.1 Sturgeon Point Water Treatment Plant Sedimentation Basin Effluent Improvements

### 3.1.1 System Scope

PLC and SCADA modifications under this project are listed as follows:

- Develop and provide updated Sedimentation Basin System HMI and SCADA screen and integrate into current system.
- Replace Scraper Control Panel HMI with Proface HMI and GProEx Software
- New IO Modules
- Incorporate new alarms identified in Section 3.1.3
- Incorporate new monitoring of equipment identified in Section 3.1.4
- Incorporate control identified in Section 3.1.5

### 3.1.2 System Operation

The sedimentation basins (five total) will have slide gates installed at each outlet to the settled water conduit. Each sedimentation basin has two outlets for a total of ten slide gates. When a sedimentation basin sludge collection operation is called for, the pair of slide gates associated with the basin will close prior to the sludge collection equipment starting. After the sludge collection operation is complete, the pair of slide gates will open, placing the basin back into normal operation. The monitoring and control of each slide gate will be programmed at the PLC. Monitoring and control by an operator can be performed at the Scraper Control Panel HMI or SCADA screen(s). The slide gate actuators will also be provided with a local hand mode switch at each actuator along with hand wheel to allow for full manual opening and closing of the slide gates, if necessary.

### 3.1.3 Alarms

The following is a summary of HMI/SCADA alarms to be generated associated with the Sedimentation Basin Effluent Improvements Project:

- Sedimentation Basin 1 Slide Gate 1W Fail to Open Alarm
- Sedimentation Basin 1 Slide Gate 1W Fail to Close Alarm
- Sedimentation Basin 1 Slide Gate 1E Fail to Open Alarm
- Sedimentation Basin 1 Slide Gate 1E Fail to Close Alarm
- Sedimentation Basin 2 Slide Gate 2W Fail to Open Alarm
- Sedimentation Basin 2 Slide Gate 2W Fail to Close Alarm
- Sedimentation Basin 2 Slide Gate 2E Fail to Open Alarm
- Sedimentation Basin 2 Slide Gate 2E Fail to Close Alarm
- Sedimentation Basin 3 Slide Gate 3W Fail to Open Alarm





- Sedimentation Basin 3 Slide Gate 3W Fail to Close Alarm
- Sedimentation Basin 3 Slide Gate 3E Fail to Open Alarm
- Sedimentation Basin 3 Slide Gate 3E Fail to Close Alarm
- Sedimentation Basin 4 Slide Gate 4W Fail to Open Alarm
- Sedimentation Basin 4 Slide Gate 4W Fail to Close Alarm
- Sedimentation Basin 4 Slide Gate 4E Fail to Open Alarm
- Sedimentation Basin 4 Slide Gate 4E Fail to Close Alarm
- Sedimentation Basin 5 Slide Gate 5W Fail to Open Alarm
- Sedimentation Basin 5 Slide Gate 5W Fail to Close Alarm
- Sedimentation Basin 5 Slide Gate 5E Fail to Open Alarm
- Sedimentation Basin 5 Slide Gate 5E Fail to Close Alarm

Slide Gate alarms listed above are generated for failure to make open or close contact after an adjustable programmed timer has elapsed.

#### 3.1.4 HMI/SCADA Monitored Information

Monitoring of the new slide gates will be available at the Scraper Control Panel HMI and Plant's SCADA system. Equipment to be monitored are the slide gates open/close status and in-remote status for each sedimentation basin.

#### 3.1.5 Controls and Interlocks

##### ***Slide Gate Control***

The operator has control to open/close each pair of slide gates associated with each basin at the HMI (HMI-Manual) or SCADA screen (SCADA Manual). During automatic mode (PLC Auto), upon initiation of a sedimentation basin collection operation by the PLC, the pair of slide gates associated with that basin will close prior to the sludge collector starting in a basin. The pair of slide gates will open after sludge collection operation has completed and an operator adjustable timer has elapsed.



Appendix A  
**PCL IO Point List**

Sturgeon Point Scraper Control Panel IO - Partial List for Sedimentation Basin Effluent Improvements

Tag No.	Instrument Description	Low State	High State	Units	Rate Control PLC Panel					
					AI	AO	DI	DO	T/C	Enet
ZCO	Sedimentation Basin 1 Slide Gate 1W Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 1 Slide Gate 1W Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 1 Slide Gate 1W Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 1 Slide Gate 1W Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 1 Slide Gate 1W In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 1 Slide Gate 1E Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 1 Slide Gate 1E Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 1 Slide Gate 1E Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 1 Slide Gate 1E Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 1 Slide Gate 1E In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 2 Slide Gate 2W Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 2 Slide Gate 2W Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 2 Slide Gate 2W Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 2 Slide Gate 2W Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 2 Slide Gate 2W In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 2 Slide Gate 2E Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 2 Slide Gate 2E Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 2 Slide Gate 2E Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 2 Slide Gate 2E Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 2 Slide Gate 2E In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 3 Slide Gate 3W Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 3 Slide Gate 3W Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 3 Slide Gate 3W Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 3 Slide Gate 3W Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 3 Slide Gate 3W In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 3 Slide Gate 3E Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 3 Slide Gate 3E Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 3 Slide Gate 3E Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 3 Slide Gate 3E Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 3 Slide Gate 3E In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 4 Slide Gate 4W Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 4 Slide Gate 4W Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 4 Slide Gate 4W Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 4 Slide Gate 4W Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 4 Slide Gate 4W In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 4 Slide Gate 4E Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 4 Slide Gate 4E Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 4 Slide Gate 4E Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 4 Slide Gate 4E Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 4 Slide Gate 4E In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 5 Slide Gate 5W Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 5 Slide Gate 5W Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 5 Slide Gate 5W Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 5 Slide Gate 5W Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 5 Slide Gate 5W In Remote	0=Local	1=Remote				1			
ZCO	Sedimentation Basin 5 Slide Gate 5E Open Command	0=Not Open	1=Open					1		
ZCC	Sedimentation Basin 5 Slide Gate 5E Close Command	0=Not Closed	1=Close					1		
ZSO	Sedimentation Basin 5 Slide Gate 5E Opened Status	0=Not Open	1=Opened				1			
ZSC	Sedimentation Basin 5 Slide Gate 5E Closed Status	0=Not Closed	1=Closed				1			
HS	Sedimentation Basin 5 Slide Gate 5E In Remote	0=Local	1=Remote				1			
	SUBTOTALS				0	0	30	20	0	0
	TOTALS			TOTALS	0	0	30	20	0	0

