# BID ADDENDUM NO. 1

February 12, 2026
Elmira Water Board
Potable Water Pressure Boosting Pump Station
HUNT 3405-001

The following Addendum items shall be considered as part of the contract documents prepared by HUNT ENGINEERS, ARCHITECTS, LAND SURVEYORS & LANDSCAPE ARCHITECT, DPC. Bid Document date of January 2026.

**Clarifications issued by this Addendum:**

1. Q: Do you have a breakdown of each contract responsibilities?
   A: They are broken out in spec section 01 10 00 and throughout the bid documents

2. Q: Who is in charge of signs and trees?
   A: The General Contractor is responsible for the project or maintenance, and protection of traffic signs shall be the responsibility of the contractor. Contractor is responsible for removal, protection, and any replacement of trees shown on Engineering drawings.

3. Q: On Plan sheet A1.1 SCADA (By Others) Who is others?
   A: Elmira Water Board will complete SCADA improvements after the project is operational.

4. Q: Will that (SCADA) be on the plumbing contractor to buy, install and program?
   A: Elmira Water Board will do that in house

5. Q: Who is responsible for the generator concrete pad?
   A: There is not a generator concrete pad in the project

6. Q: Will a field office be needed?
   A: A field office is not required

7. Q: Are there any permits the contractor is responsible to get and are there any associated costs to the contractor?
   A: Please reference Sheet C0.1, note 8. The contractor will be responsible to secure building permits and highway work permits from the City of Elmira and Chemung County.

8. Q: For connections to existing watermains, can Tapping Sleeves be used?
   A: No

9. Q: The building does not show down spouts for the gutters, I assume there should be gutters down both sides. Is there a color for the split faced block?
   A: Correct, one down spout for each side of the building. The color will be selected by the owner during the submittal prosses.

10. Q: Does the lumber need to be fire rated the specs states it does, but the plans do not mention it.
    A: Fire rated lumber is not required.

11. Q: What Color for shingles and siding?
    A: Colors will be selected during the submittal process; each supplier will have their own color charts.

12. Q: Are we to use the Standard Duty Asphalt Pavement Detail? Did not see a detail for the Asphalt Driveway.
    A: Yes, for bidding purposes use the standard detail

13. Q: Is there anywhere that the town has for dump sites?
    A: The Water Authority has dump sites within approximately ½ mile from the project site.

14. Q:Who supplies the HVAC Unit?
    A: Reference spec section 01 10 00, 1.9, 7

15. Q: Who supplies Pannels?
    A: Reference spec section 01 10 00, 1.10, B, 3.

16. Q: Who supplies Interior lighting?
    A: Reference spec section 01 10 00, 1.10, B, 3.

17. Q: Who supplies Transfer switches?
    A: Reference spec section 01 10 00, 1.10, B, 3.

18. Q: Who supplies controls? And who is to program controls and VFDS?
    A: The controls are part of the pump skid spec 33 14 43 as described in Summary 01 10 00, the plumbing contract. In 01 10 00 again, VFD are in Division 26 which is in Electrical contract. Both manufacturers' representatives should be present during programming and start up.

19. Q: On Plan Sheet C5.1 Detail 1 Water Main Trench Section, the detail does not indicate depth or coverage of bedding material
    A: See plan sheet C5.1 Detail 1 Water Main Trench Section

20. Q: As far as conduit and the vault that will be under the general contractor contract. There is a detail for a pull box, but I do not see one in the plans are we putting a pull box in as well?
    A: Should not need a pull box.

21. Q: Will the GC Contractor be responsible for running the conduit outside of the pump station? If so will the general contractor be responsible for installing the wire and making the connections to the pull box, transformer box and to the pump house?
    A: Providing and installing all Electrical conduit and wiring shall be in the Electrical Contract.

22. Q: Will native fill need to be tested in order to use? If so, will it be at the cost of the contractor?
    A: No, Reference the Trenching section 31 23 16.13 and Fill section 31 23 23.

23. Q: Can existing top soil be stripped and used for the trenching outside the roadway?
    A: Reference the Trenching section 31 23 16.13 and Fill section 31 23 23.

24. Q: Will there be any material testing (concrete, compaction test) cost to the contractor, or will testing be provided by the owner?
    A: Reference spec section 01 40 00 Quality Requirements. The contractor will be required to demonstrate they are meeting any specified limits/specifications.

25. Q: In summary under electrical contract, there is no mention of the transformer. What contract will supply the transformer and the connections?
    A: Providing and installing the transformer is an electrical contract item.

26. Q: What contract will be responsible for supplying and installing the Pannel boards, electric meters, transfer switches? I need further clarification on which contract is responsible for supplying and installing the equipment because the electrical summary is just providing connections.
    A: Division 26 is any specification starting with 26. 01 10 00 Summary, 1.10 Bid contract #2 electrical, 3. Provide complete the work of Division 26 - Electrical

27. Q: Will dimensions of the equipment concrete pads be provided?
    A: The pads sizes would be determined by what is submitted. There is a detail how to make the pads in Sheet S2.1, Detail 10. Equipment pad. Also, the equipment pad shall have a 6-inch extension around the pad for any of the Equipment Contractors Submit.

28. Q: Could I get clarification for depth of fill or bedding under the foundations and concrete slabs, Section 31 23 23 specifies structural fill 8” per lift but no details on depth of fill.
    A: Minimum 6 inches plus how much has been over excavated.

29. Q: Please identify where the following panels and transformers should be located on the floorplans: MDP-1, Transformer, and LP. Additionally, what NEMA rating should this equipment have (NEMA 1, NEMA 3R, etc.)?
    A: MDP-1, Transformer, and LP are to be located where the box "POWER" is on the plan sheet. These pieces of equipment to be NEMA 1.

30. Q: Who is responsible for furnishing and installing VFDs #1, 2, 3, and 4? What size are they?
    A: Electrical Contractor to provide VFDs. Reference pump horse powers and sizes in reissued spec 33 14 43

31. Can ductile iron pipe be utilized in lieu of stainless-steel piping and are uniflanges acceptable? Uniflanges/mega flanges are acceptable, but any spool piece shall have at least one integral pipe flange on it in the upstream location. The downstream end can have a uniflange style fitting. The pipe does not need to be painted, and the manufacturer installed primer is acceptable.

32. Q: Is a temporary electric service required?
    A: Due to timing of the electrical provider, each contractor shall provide any needed temporary electric service.

**Project Manual Sections issued by this Addendum:**

00 41 13 – Bid Form

00 52 00 – Agreement

04 20 00 – Unit Masonry

33 11 17 – Water System & Appurtenances

33 14 43 – Packaged Pumping Systems for Water Utility Service

**Drawings issued by this Addendum:**

C3.2 - Site Utility Plan

C5.1 - Site Details

**Revisions to Project Manual issued by this Addendum:**

**ITEM AD1-1 Refer to Section 00 41 13 – BID FORM**

**DELETE** Specification Section 00 41 13 – Bid Form in its entirety.

**ADD** Specification Section 00 41 13 – Bid Form as issued by this addendum.

**ITEM AD1-2 Refer to Section 00 52 00 - AGREEMENT**

**DELETE** Specification Section 00 52 00 - Agreement in its entirety.

**ADD** Specification Section 00 52 00 – Agreement as issued by this addendum.

**ITEM AD1-3 Refer to Section 04 20 00 – UNIT MASONRY**

**DELETE** Specification Section 04 20 00 – Unit Masonry in its entirety.

**ADD** Specification Section 04 20 00 – Unit Masonry as issued by this addendum.

**ITEM AD1-4 Refer to Section 33 11 17 – WATER SYSTEM & APPURTENANCES**

**DELETE** Specification Section 33 11 17 - Water System & Appurtenances in its entirety.

**ADD** Specification Section 33 11 17 – Water System & Appurtenances as issued by this addendum.

**ITEM AD1-5 Refer to Section 33 14 43 – PACKAGE PUMPING SYSTEMS FOR WATER UTILITY SERVICE**

**DELETE** Specification Section 33 14 43 - Packaged Pumping Systems for Water Utility Service in its entirety.

**ADD** Specification Section 33 14 43 – Packaged Pumping Systems for Water Utility Service as issued by this addendum.

**Revisions to Drawings issued by this Addendum:**

**ITEM AD1-6 Refer to C3.2 SITE UTILITY PLAN**

**DELETE** C3.2 Site Utility Plan in its entirety.

**ADD** C3.2 Site Utility Plan as issued by this addendum.

**ITEM AD1-7 Refer to C5.1 SITE DETAILS**

**DELETE** C5.1 Site Details in its entirety.

**ADD** C5.1 Site Details as issued by this addendum.

End of Addendum #1

ACKNOWLEDGMENT OF RECEIPT BY:

LEGAL NAME OF BIDDER: _____

BY (Signature & Title): _____

DATE: _____

THIS PAGE SHALL BE ATTACHED TO AND SUBMITTED WITH THE BID PROPOSAL.

# BID FORM FOR CONSTRUCTION CONTRACT

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

**ARTICLE 1—OWNER AND BIDDER**

1.01 This Bid is submitted to:

Elmira Water Board
261 West Water Street
Elmira, NY 14901

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

**ARTICLE 2—ATTACHMENTS TO THIS BID**

2.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. Copy of NYSDOL Certificate of Registration NEW YORK STATE DEPARTMENT OF LABOR REGISTRATION #_____; and

C. All other Certifications and Exhibits contained and required per the Division 00 Specifications of the Contract Documents.

**ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES**

3.01 *Lump Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:

1. Lump Sum Price (Single Lump Sum per contract)

| | |
|---|---|
| Contract 1- General Construction | $ |
| Alternate 1 for Contract 1 – Additional intersection milling and paving | $ |
| Contract 2 – Electrical Construction | $ |
| Contract 3 – Plumbing Construction | $ |

B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and

2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

**ARTICLE 4—BASIS OF BID—COST-PLUS FEE**

4.01 The Contract Price will be the Cost of the Work, determined as provided in Paragraph 13.01 of the General Conditions, together with the following fee, and subject to the Guaranteed Maximum Price.

**ARTICLE 5—BASIS OF BID—COST-PLUS FEE**

5.01 The Contract Price will be the Cost of the Work, determined as provided in Paragraph 13.01 of the General Conditions, together with the following fee, and subject to the Guaranteed Maximum Price.

**ARTICLE 6—TIME OF COMPLETION**

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

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 45 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

| Addendum Number | Addendum Date |
|---|---|
| | |
| | |
| | |

**ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS**

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. 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.

9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:

a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Date: _____
*(typed or printed)*

*If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.*

Attest: _____
*(individual's signature)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Date: _____
*(typed or printed)*

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

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

This Agreement is by and between Elmira Water Board ("Owner") and **[name of contracting entity]** ("Contractor").

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

Owner and Contractor hereby agree as follows:

**ARTICLE 1—WORK**

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described in Article 2, below.

**ARTICLE 2—THE PROJECT**

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

Water System Improvements consisting of the installation of a pump station, installation of new water main and appurtenances. The pump station project shall consist of the installation of a new cement masonry unit building, two (2) domestic service pumps, two (2) fire pumps, hydropneumatics tanks along with all necessary interior plumbing, electrical and mechanical appurtenances such as piping, valving, lighting, heating, pump controls (VFD), manual transfer switch and exterior work including driveway improvements watermain connections, and other building services. The watermain improvements shall include new watermain along West Hill Road along with new watermain connections within the intersection of Hillcrest and Hoffman Street All watermain work shall include all excavation, thrust restraint, valves, hydrants, cut/cap, backfill, restoration, installation all necessary fittings, valves and appurtenances along with appropriate coordination and maintenance & Protection of traffic.

**ARTICLE 3—ENGINEER**

3.01 The Owner has retained Hunt Engineers, Architects, Land Surveyors & Landscape Architect, DPC**.** ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Hunt Engineers, Architects, Land Surveyors & Landscape Architect, DPC**.**

**ARTICLE 4—CONTRACT TIMES**

4.01 *Contract Times: Dates*

A. The Work will be substantially complete on or before October 31, 2026, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before November 30, 2026.

4.02 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion:* Contractor shall pay Owner $1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1,000 for each day that expires after such time until the Work is completed and ready for final payment.

3. *Milestones:* Contractor shall pay Owner $1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved, or until the time specified for Substantial Completion is reached, at which time the rate indicated in Paragraph 4.05.A.1 will apply, rather than the Milestone rate.

4. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

4.03 *Special Damages*

A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

**ARTICLE 5—CONTRACT PRICE**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work other than Unit Price Work, a lump sum price per contract:

| | |
|---|---|
| Contract 1- General Construction | $ |
| Alternate 1 for Contract 1 – Additional intersection milling and paving | $ |
| Contract 2 – Electrical Construction | $ |
| Contract 3 – Plumbing Construction | $ |

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

**ARTICLE 6—PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the 5th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

a. 95 percent of the value of the Work completed (with the balance being retainage).

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

A. All amounts not paid when due will bear interest at the rate of 8 percent per annum.

**ARTICLE 7—CONTRACT DOCUMENTS**

7.01 *Contents*

A. The Contract Documents consist of all of the following:

1. This Agreement.
2. Bonds:
    a. Performance bond (together with power of attorney).
    b. Payment bond (together with power of attorney).
3. General Conditions.
4. Supplementary Conditions.
5. NYS Prevailing Wage Determination Schedule: PRC# 2025009145
6. Specifications as listed in the table of contents of the project manual (copy of list attached).
7. Drawings listed on the attached sheet index.
8. Addenda (numbers **[number]** to **[number]**, inclusive).
9. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid (pages **[number]** to **[number]**, inclusive).
10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.
    e. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

**ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

8.01 *Contractor's Representations*

In order to induce Owner to enter into this Contract, Contractor makes the following representations:

1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. 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.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

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

8.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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

This Agreement will be effective on **[indicate date on which Contract becomes effective]** (which is the Effective Date of the Contract).

Owner:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Date: _____
*(date signed)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Attest: _____
*(individual's signature)*

Title: _____
*(typed or printed)*

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Address:

_____

_____

_____

Phone: _____

Email: _____

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

Contractor:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Date: _____
*(date signed)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

*(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: _____
*(individual's signature)*

Title: _____
*(typed or printed)*

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Address:

_____

_____

_____

Phone: _____

Email: _____

License No.: _____
*(where applicable)*

State: _____

# SECTION 04 20 00
# UNIT MASONRY

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Concrete block.

B. Reinforcement and anchorage.

C. Accessories.

### 1.2 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements.

B. Section 04 05 11 - Masonry Mortaring and Grouting.

C. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

### 1.3 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

B. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019 (Reapproved 2025).

C. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.

D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2024.

E. ASTM C90 - Standard Specification for Dry-Cast Loadbearing Concrete Masonry Units; 2024a.

F. ASTM C129 - Standard Specification for Dry-Cast Nonloadbearing Concrete Masonry Units; 2025.

G. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units; 2025.

H. ASTM C780 - Standard Test Methods for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2025a.

I. BIA Technical Notes No. 18A - Accommodating Expansion of Brickwork; 2019.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Handle and store pre-faced concrete block units in protective cartons or trays. Do not remove from protective packaging until ready for installation.

## PART 2 PRODUCTS

## 2.1 CONCRETE MASONRY UNITS

A. Manufacturers:
   1. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
      a. Southern Tier Concrete Products.
      b. Dagostino Building Blocks.
      c. York Building Products, Inc.
      d. Substitutions: Section 01 60 00 - Product Requirements.

B. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
   2. Load-Bearing Units: ASTM C90, normal weight.
   3. Nonloadbearing Units: ASTM C129.
   4. Special Units with Factory-Installed Insulation Inserts: ASTM C90, normal weight.
      a. Type: Special shape without end webs; with continuous horizontal insulation inserts.
      b. Insulation Type: Manufacturer's standard expanded polystyrene (XPS).
   5. The insulated masonry block shown on architectural drawings A1.1 & A1.2 shall meet the following requirements:
      a. Minimum 4" wide. Insulation inserts.
      b. Block to be split faced and designed for Climate Zone 5 with a maximum U factor of U-0.080
      c. Minimum 115 pcf mix design and color as selected by owner from standard color options.

## 2.2 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: As specified in Section 04 05 11.

## 2.3 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:
   1. Blok-Lok Limited: www.blok-lok.com/#sle.
   2. Hohmann & Barnard, Inc: www.h-b.com/#sle.
   3. WIRE-BONDwww.wirebond.com/#sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Reinforcing Steel: Type specified in Section 03 30 00; size as indicated on drawings; uncoated finish.

C. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

D. Single Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Type: Truss or ladder.
   2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
   3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

E. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 1-1/2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.

F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.

## 2.4 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
   1. Manufacturers:
      a. Blok-Lok Limited: www.blok-lok.com/#sle.

b. Hohmann & Barnard, Inc: www.h-b.com/#sle.
c. WIRE-BOND: www.wirebond.com/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
1. Manufacturers:
a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
b. WIRE-BOND: www.wirebond.com/#sle.
c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.

D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials. All material cleaning shall be done as recommended by material supplier.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### 3.2 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

### 3.3 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
1. Bond: Running. unless shown otherwise in contract documents.
2. Coursing: One unit and one mortar joint to equal 8 inches.
3. Mortar Joints: Concave.

### 3.4 PLACING AND BONDING

A. Lay hollow masonry units with face shell bedding on head and bed joints.

B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

C. Remove excess mortar and mortar smears as work progresses.

D. Interlock intersections and external corners.

E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

G. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.

H. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.5 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to receive cavity insulation and air/vapor retarder adhesive.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

D. Install cavity wall vents in veneer at 16 inch o.c. horizontally at top of exterior walls and below windowsills.

3.6 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.7 LINTELS

A. Install loose steel lintels over openings.

B. Maintain minimum 6 inch bearing on each side of opening.

3.8 GROUTED COMPONENTS

A. Reinforce bond beams with 2, No. 5 bars, 1 inch from bottom web unless noted otherwise on contract documents.

B. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.9 CONTROL AND EXPANSION JOINTS

A. Locate control and expansion joints as indicated on drawings and in accordance with recommendations of BIA Technical Notes No. 18A.
   1. Where joint locations are not indicated, or discrepancy exists between indicated joints and BIA recommendations, notify Engineer for approval prior to proceeding.

B. Do not continue horizontal joint reinforcement through control or expansion joints.

C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

D. Form expansion joint as detailed on drawings.

## 3.10 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

## 3.11 TOLERANCES

A. Maximum Variation from Alignment of Columns: 1/4 inch.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

## 3.12 CUTTING AND FITTING

A. Cut and fit for chases, ductwork, pipes, ductwork, conduit, ductwork, sleeves, ductwork, grounds, ductwork, and ductwork. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

## 3.13 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.
   1. The agency shall monitor the proportioning, mixing, and consistency of mortar and grout; the placement of mortar, grout and masonry units; and the placement or reinforcing steel for compliance with the contract documents.

B. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.

C. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

D. The agency shall prepare one set of prisms for testing at 7 days and one set for testing at 28 days. Tests are to be conducted by the agency for each 3,000 square feet of wall installed, but not less than two tests.

## 3.14 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.15 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

B. Protect base of walls from mud and mortar splatter.

C. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.

D. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress.

END OF SECTION

# SECTION 33 11 17
# WATER SYSTEM & APPURTENANCES

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
   1. Pipe supports.
   2. Mag Water Meter
   3. Kinetic Air Release
   4. Sample port
   5. Circular Chart Flow Recorder

B. Related Sections:
   1. Section 03 30 00 - Cast-In-Place Concrete: Concrete for thrust restraints.
   2. Section 31 23 16 - Excavation: Product and execution requirements for excavation and backfill required by this section.
   3. Section 31 23 16.13 - Trenching: Execution requirements for trenching required by this section.
   4. Section 31 23 23 - Fill: Requirements for backfill to be placed by this section.

### 1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. American Society of Mechanical Engineers:
   1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
   2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

C. ASTM International:
   1. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
   2. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures.
   3. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   4. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   5. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
   6. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
   7. ASTM D2466 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
   8. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
   9. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
   10. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
   11. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.

D. American Welding Society:
   1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

E. American Water Works Association:
   1. AWWA C104 - American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
   2. AWWA C111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   3. AWWA C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
   4. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
   5. AWWA C502 - Dry-Barrel Fire Hydrants.
   6. AWWA C508 - Swing-Check Valves for Waterworks Service, 2 in. (50 mm) Through 24 in. (600 mm) NPS.
   7. AWWA C509 - Resilient-Seated Gate Valves for Water-Supply Service.
   8. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
   9. AWWA C606 - Grooved and Shouldered Joints.
   10. AWWA C701 - Cold-Water Meters - Turbine Type, for Customer Service.
   11. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. through 12 in., for Water Distribution.
   12. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

F. Underwriters Laboratories Inc.:
   1. UL 246 - Hydrants for Fire - Protection Service.

1.3 SUBMITTALS

A. Product Data: Submit data on pipe materials, pipe fittings, valves and accessories.

B. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.1 PIPE SUPPORTS

A. General
   1. Support spacing shall be such that:
      a. Support capacity is at least 1.25 x weight of the pipe and water, and maximum manufacturer's support spacing is not exceeded.
      b. Dependent upon the application, hangers and supports may be factory-fabricated, constructed in the field, or a combination of the two. All supports, hangers, and fasteners shall have a protective coating. As noted on the drawings, they may be hot-dip galvanized, factory or field applied.

B. Floor Stanchions and Supports Between Pipes
   1. Unless otherwise shown, floor stanchions shall be adjustable for height through use of a threaded coupling or a sliding barrel with a locking of the pipe barrel. They shall be Fig. 426 or Fig. 430 by F & S.
   2. Floor stanchions shall be provided below the suction and discharge piping for each of the booster pumps. In addition, floor stanchions and pipe supports shall be utilized for the pressure reducing valve and surge relief valve piping.

C. Wall Supports
   1. Large Diameter (greater than 4 inches)
   2. Unless otherwise shown, wall supports for large diameter piping shall consist of an angle steel wall bracket with clevis hanger.
   3. Small Diameter (4 inches and less)
   4. Unless otherwise shown pipe straps for fastening small diameter pipes to walls or ceiling shall fit the pipe barrel for at least 180 degrees and shall be as Fig. 47 by F & S.
   5. Concrete Support Blocks
      a. Concrete support blocks shall be constructed of concrete with a compressive strength of 4000 psi. Concrete block shall be reinforced.

2.2 MAG WATER METER

A. Manufacturer: The mag meters shall be Rosemont.The mag flow meters shall be on the well pump discharge shall be 8-inch, Rosemont 8750WA.

B. Specifications

| | |
|---|---|
| Type. Operating Range: | 7 - 6,000GPM |
| Meter Flanges: | 8-inch dia. round, AWWA 150 Class |
| Register: | Remote reading |
| Registration: | 1,000,000,000 gallons, |

C. Materials
   1. Non-Wetted Materials

| | |
|---|---|
| Sensor Body | AISI Type 304 SST |
| Flanges | AISI Type 304 SST/304L |
| Housing: | Carbon Steel |
| Paint | Polyurethane |

   2. Process Wetted Materials

| | |
|---|---|
| Lining | Polyurethane |
| Electrodes | 316L Stainless steel |

D. Optional Digital Output Function

The digital output shall include digital resettable totalizer and digital rate of flow indicator. The display shall be provided with two indicators, one displaying rate-of -flow (in GPM) and the other displaying totalization (in gallons).

E. Transmitter

The transmitter shall be a Rosemont. The transmitter shall also be used to provide a 4-20mA signal to the process controller which will send a signal to each of the three chemical feed pumps (for flow-pacing the injection of chemicals) and a recorder for historical recording of flow rates.

2.3 KINETIC AIR RELEASE

A. Manufacturers:
   1. GA Industries:
   2. Approved Equal

B. Air & Vacuum valve shall be 2-inch, capable of withstanding pressures up to 175 psi and meet or exceed the performance standards of a GA Industries 920H. The valve shall also conform to the requirements of AWWA C512 and be of the "Kinetic" design capable of exhausting air at up to sonic velocity without blowing shut.

C. Body and cover shall be ASTM A126 Class B cast iron with a stainless steel float meeting the requirements of AWWA C512 and a replaceable seat of Buna-N or other suitable material.

D. Valves shall have a threaded inlet connection and larger valves shall have a flanged inlet faced and drilled per ANSI B16.1 Class 125.

E. The valve shall employ the Kinetic principle to exhaust the air in the well column at pump start up at up to sonic velocity, closing only when all the air has been discharged. The throttle device shall be designed to permit control of the rate of air discharge. It shall return to the open position upon closure of the air & vacuum valve. The air & vacuum valve shall re-open at pump shutdown to admit air in order to allow the column to fall without excessive vacuum.

2.4 HOSE BIB WITH VACUUM BREAKER

A. There shall be provided Zurn Z-1330 hose bibb with valve and vacuum breaker on the suction piping.

2.5 SMOOTH NOSE SAMPLE TAP

A. A Zurn, right angle outlet, smooth nose, no lead brass sample tap shall be installed on the well discharge piping immediately after entering the control building. The smooth nose sample tap shall be installed prior to injection of any chemicals.

2.6 CIRCULAR CHART FLOW RECORDER

A. The recorder shall be a wall mounted device capable of recording process signals from transmitters (typically 4-20ma/1-5Vdc signals), thermocouples, resistance temperature devices. (RTD's)

B. The recorder shall be available for use with 120Vac/ 240Vac, 60 Hertz. An integral 24VDC-power supply shall be available for powering up to 2 field transmitters (50ma max.) as a standard feature.

C. The recorder shall fit into a 12.7" x 12.7" cutout. The recorder's front door and case shall be made from flame retardant materials and come with a choice of blue, black or grey color.

D. The recorder shall be equipped with a vacuum fluorescent, alphanumeric display with one six digit display dedicated to the process variable with a second display used for configuration and other status information such as a second PV, alarm information, control information or totalization.

E. The recorder shall be two pen/input for recording pump flows and pressure

F. The pen information will be recorded on a 12" diameter plain (no gridlines), thermal-sensitive chart. The recorder will have a real time clock and record the time marking at each major grid line.

G. The recorder shall have a dual stylus printing mechanism that shall not require ink cartridges. The pen system shall be capable of printing configurable alphanumeric chart data including time and trend lines that automatically compensates for chart width variations caused by changes due to ambient temperature and humidity.

H. Minimun two digital outputs for control outputs.

I. The recorder will support recording speeds from 6 hours per revolution up to 744 hours per revolution with a set up option of 24 hours and 7 day chart rotation as a standard selection.

J. The recorder shall conform to Safety Standard: ANSI/UL61010-1 2004 and CSA22.2-No.1010.1-2004. Optional approval for FM Class 1 Div 2 Groups A, B, C, D shall be available.

K. The circular chart recorder shall be Honeywell model DR4500 Truline or approved equal.

L. Provide two pressure transducers for chart recorder
   1. Manufacture: keller
   2. 4-20mA + Rs435 with lightening protection
   3. 0 to 150psi range

M. Provide one quad output 4-20mA current loop splitter / retransmitter
   1. Accepts 4-20mA, 1-5V, 0-5V, pr 0-10 input
   2. Able to drive 4 independent 4-20mA outputs
   3. Capable of powering two or three wire transmitter at 24V, up 30mA

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify building service connection and municipal utility water main size, location, and invert are as indicated on Drawings.

3.2 PREPARATION

A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare pipe connections to equipment with flanges or unions.

3.3 INSTALLATION OF PIPE SUPPORTS

A. Supports and hangers shall be installed at the locations indicated on the contract drawings and/or indicated in this specification. All fasteners shall be of the types and materials indicated. Supports and hangers shall be installed in accordance with manufacturer's recommendations for support spacing.

3.4 INSTALLATION OF KINETIC AIR RELEASE

A. Install valve according to Drawings and in accordance with manufacturer's written instructions and approved submittals.

B. The manufacturer’s authorized representative shall be present at the job site assistance during equipment start-up and to train owner’s personnel in the operation, maintenance, and troubleshooting of the equipment provided.

3.5 DISINFECTION OF WATER PIPING

A. Flush and disinfect system in accordance with Section 33 01 10.58

3.6 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Compaction Testing for Bedding: In accordance with ASTM D1557. ASTM D698. AASHTO T180. ASTM D2922. ASTM D3017.

C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

END OF SECTION

# SECTION 33 14 43
# PACKAGED PUMPING SYSTEMS FOR WATER UTILITY SERVICE

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Skid packaged water booster pump station.

### 1.2 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Cast-in-place concrete for pump station enclosure.

B. Section 04 20 00 - Unit Masonry: Masonry for pump station enclosure.

C. Section 06 10 00 - Rough Carpentry: Wood framing and sheathing for pump station enclosure.

D. Section 22 30 00 - Plumbing Equipment.

E. Section 26 29 23 - Variable-Frequency Motor Controllers.

F. Section 31 23 23 - Fill: Backfilling.

G. 33 01 10.58 Disinfection of Water Utility Piping Systems

H. Section 33 14 16 - Water Distribution Piping

### 1.3 REFERENCE STANDARDS

A. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2024.

C. Modbus (PS) - The Modbus Organization Communications Protocol.; Latest Update.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NSF 61 - Drinking Water System Components - Health Effects; 2024.

F. UL 1449 - Standard for Surge Protective Devices; Current Edition, Including All Revisions.

G. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.

### 1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

### 1.5 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of Professional Engineer experienced in design of this type of work and licensed in the State of New York.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

1.7 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer's warranty for packaged pump station, with itemized list of components covered by warranty; include list of specific operation and maintenance procedures that are required to keep warranty valid. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.1 COMPACT-SKID PACKAGED WATER BOOSTER PUMPS

A. Manufacturers:
1. Wilo USA: www.wilo-usa.com.
2. Goulds, a brand of Xylem, Inc: www.goulds.com/#sle.
3. Substitutions: See Section 01 60 00 - Product Requirements.

B. System Compliance: NSF 61 Annex G and listed for intended service.

C. System Design Configuration Compliance: ASHRAE Std 90.1 I-P.

D. Maximum Water and Ambient Operating Temperature: 105 degrees F.

E. Factory assembled, pretested, compact structural-skid station fitted with pumps, pressure tank, valves, piping, fittings, starters or VFDs, instrumentation, safeties, controls, disconnect devices, cables, wiring, raceways, and other unlisted components necessary for continuous, unattended, automatic operation.

F. Field Installed Components: Furnish with skid including valves, cable, wiring, instrumentation, and other items required to place the station in full service.

G. Booster System Capacity:
1. Head: 134 ft-wg.
2. Flow: Low Flows Duplex 120 gpm, 7.5 Hp.
3. Fire Flow: Duplex 500 gpm, 30 Hp.
4. Nominal Outlet Pressure: 58 psi.
5. Centrifugal Pump Type: Booster.
6. Pump Motor Speed: TEFC at 3,500 rpm for high pressure boost application.
7. Pressure Tank: Diaphragm-type compression tank; see Section 22 30 00.
8. Pump Control: Load coordinated using magnetic starters; see Section 26 29 13.
9. Redundancy Configuration: Duplex, both pumps sized to 70 percent of flow capacity and Duplex, Fire flow pumps sized for 70 percent of fire flow capacity.

H. Skid Footprint, Dimensional Requirements: As indicated in drawings

I. Pump Servicing: Skid design is to allow easy pump removal or replacement.

J. Skid Anchors and Fasteners Material: Stainless steel.

K. Hydropneumatic BladderTank: Size for low-flow detection unless other reliable method is used.

L. Piping:
1. Stainless steel pipe and fittings of compatible materials and ratings; see Section 22 10 05.
2. Pipe Segment and Pump Connections: Manufacturer standard unless stated otherwise.

3. Pump Fittings: Upstream strainer, downstream check valve, float type air vent, and backflow preventer.
4. End Connections at Suction and Discharge Manifolds:
   a. Skid Level: Flanged end connections.
5. Provide key chain to operate valves located above 6 feet of skid-top level.

M. Instrumentation:
1. General Requirements:
   a. Scale Range: Select instrument with process value at or near center of scale.
   b. Accuracy: Plus or minus one percent of full scale except where specified.
2. Pressure Gauges: 2 inch in diameter. Provide for each manifold and pump at suction and discharge ends.

N. Automated Controls and Telemetry:
1. Control System Requirements:
   a. Control Panel Listing: UL 508A, include panel-mounted label stating compliance.
   b. Manual Control: Provide operator override access for manual station control both locally at the control panel or at the remote station or remote terminal device interface.
   c. Provide each pump with Hand-Off-Auto switch with On-status indicating light.
   d. Provide separate disconnect switch for each pump to facilitate servicing.
   e. Elapsed Time Meter: Controller display to indicate pump run time in hours, not resettable.
   f. Electronic Controller:
      1) Mount in starter panel enclosure, visible with enclosure door opened in front of swing-out panel.
   g. Identification and Tagging:
      1) For each item of equipment, provide the manufacturer's name or trademark and model number on corrosion-resistant identification plate, cast integrally, stamped, or otherwise permanently marked in conspicuous place.
      2) For each pump, include pump capacity in gallons per second and liters per minute, pump head in feet and meters, speed of rotation, and direction of rotation.
2. Pump Load Sequencing:
   a. Variable-frequency Motor Controllers Staging:
      1) Configure remote pressure sensor located upstream at system critical point location as the process value to modulate active running pump(s) coordinating output commands based on controller proportional control loop against common setpoint of 20 psi.
      2) "Stage On" next idle pump when single or multiple running pumps are at the 90 percent output command or higher for more than 2 minutes, both values adjustable. Confirm pump run status.
      3) Set pump as fail whenever run status is not confirmed within specified time delay or pump fails while in service. Isolate failed pump and index on next available pump while initiating system alarm.
      4) "Stage Off" pump when multiple pumps in service at the pump turndown point or 30 percent output command or higher for more than 2 minutes, both values adjustable.
      5) Include time delay devices so that pumps cannot be started within a certain period after shutdown, adjustable from 10 to 120 seconds.
      6) Alternate pump designations based on run time to ensure an equal or near equal run time between system pumps and ensure an equal run and tear of these.
   b. System Pipe Fill Mode: Configure an alternate pump sequence to ease system fill.
3. System Safeties:
   a. Pump Failure or Disable: Switch operation to next available pump.
   b. Dry-Run Protection: Index system Off when system is under low suction pressure, low flow, NPSHa is below NPSHr, or no flow is detected on the system.
   c. Pump Run-Out: Configure system to prevent pump from running beyond the maximum flow rate shown at the end of selected pump curve or high discharge pressure.
4. System Alarms and Alert Notification:
   a. System Running: Panel-face mounted green light.
   b. Alarm: Panel-face mounted red pilot light.
   c. Trouble or Fault: Panel-face mounted yellow light.

d. Provide pilot light for each system alarm or trouble for panel without display.
e. Alarm Reset Switch: Provide momentary pushbutton switch to reset alarm or fault.
f. System Reset Switch: Provide momentary pushbutton switch to reset system.

O. Electrical:
1. Power: As indicated in drawings VAC, three phase, 60 Hz, single point connection via fused disconnect.
2. Raceway and Wire:
a. Select, size, and install in compliance with NFPA 70.
b. Use hard conduit, nonmetallic liquid-tight conduit, cables, and wires accordingly.
3. Skid-Mounted Control Panel:
a. Enclosure Type: Stainless steel with hinged door and hinged dead front; sized to accommodate components; factory wired and tested.
b. Door: Minimum 180 degrees opening, rubber gasket weatherproof seal, 3-point latch, and padlockable handle.
c. Internal Wiring: Stranded 18 awg copper conductors rated at 194 degrees F with conductor terminations as recommended by device manufacturer.
d. Back Plate: Steel sheet, 12 gauge, 0.1046 inch thick, minimum; finished with primer coat and two coats of baked on white enamel.
e. Hardware Mounting: Use machine screws in thread-tapped holes; sheet metal screws not permitted.
f. Ventilator: Rain and vermin proof ventilator of fire retardant thermoplastic, located near top of enclosure on opposite side from receptacle.
g. Permanently identify devices as indicated on final as-built drawings; identify on front of door, front of dead front, and on back plate.
h. Identify control conductors with wire markers at each end as close as practical to end of conductor.
i. Identification Plate: Engraved to show uppercase white letters on black background, reading:
1) "WATER BOOST STATION CONTROL PANEL".
2) System voltage (e.g., 208V, 3PH or 480V, 3PH).
3) Power Source: (e.g., 1st level, ER-3, panel 109, breaker 41)
j. Mount the following, at minimum, on front of dead front:
1) Control switches, indicator pilot lights, and other operational devices.
2) Cutouts for breaker handles to allow operation of breakers without entering compartment.
3) Convenience Outlet: Duplex, GFCI 15 amp, 120 VAC, single phase, 60 Hz.
k. Mount the following, at minimum, behind dead front or panel backplane:
1) Pump time delay relay.
2) Circuit breakers.
3) Motor starters and motor overload protection.
4) Surge protection devices.
5) Control transformers.
6) Power monitor.
7) Remote monitoring and alarm contacts.
l. Circuit Breakers:
1) Indicating type, quick-make quick-break thermal magnetic breakers; operating handle with On-Trip-Off positions, with Trip in middle position; inverse time characteristics through use of bimetallic tripping elements supplemented by magnetic trip for instantaneous protection; overload on one pole automatically trips and opens all legs; field installed handle ties not permitted.
2) Provide separate circuit breakers for main power and emergency power; mechanically interlock to prevent simultaneous operation of both power sources.
3) Individually protect control circuits and duplex receptacle by circuit breakers.
4) Motor Circuit Breakers: Size to meet pump motor operating characteristics.

m. Motor Starters: Open frame, across the line, full voltage, NEMA rated with individual overload protection for each phase; starter contact and coil replaceable from front of starter without removing from mounted position.
n. Motor Overload Protection: Melting alloy type thermal overload relays; interchangeable and sized in accordance with NFPA 70.
o. Control Transformers: Fused transformers and grounded secondaries.
p. Surge Protection:
    1) Provide incoming power solid state devices with LED indicator lights for power and protective status.
    2) Load Side: Surge protective device complying with UL 1449.
    3) Surge Current Rating: 50,000 kA per phase with response time less than 5 nanoseconds.
q. Power Monitor: Line voltage rated, solid-state, adjustable, plug-in monitor to sense reversed or phase loss, de-energizing upon sensing any faults and automatically restoring service upon return to normal power; activate alarm indications upon loss of normal power.
r. Alarm Indicators: Alarm light and horn mounted on exterior of power enclosure.
    1) Light: Weatherproof and shatterproof blue strobe alarm light fixture rated at 100,000 peak candle power, 80 flashes per minute.
    2) Horn: Not less than 90 dB at 10 feet.
    3) Push-to-test button for light and horn, power-on light.
    4) Controls: Manual alarm silence switch that deactivates horn but leaves light flashing until alarm condition ceases; when alarm condition ceases reset alarm function for normal operation.
    5) Remote Monitoring and Alarm Indication: Provide one normally open and one normally closed unpowered contacts for remote monitoring and alarm indication, wired to terminal strip.

## 2.2 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Test pumps, valves, and piping assembly in factory prior to shipping, at test pressure equal to 50 percent more than pump discharge pressure or total dynamic head, whichever is greater.

# PART 3 EXECUTION

## 3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify inlet and discharge piping connection match size, location, and elevation shown on drawings.

## 3.2 INSTALLATION

A. Install as indicated, in accordance with drawings and manufacturer's instructions.

B. Attach final as-built drawings of components, flow diagrams, and other details laminated in mylar at control panel front door; include legends and pump nameplate data.

C. Install on or near pump station, complete package of posted instructions, consisting of labels, signs, and operating instructions.

## 3.3 MANUFACTURER FIELD SERVICES

A. Provide the services of equipment manufacturer's technical representative to direct startup of station and instruct Owner's personnel in startup, operation, and maintenance procedures.

## 3.4 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Manufacturer Services: Provide manufacturer's field representative to inspect system.

C. After installation but before backfilling or connecting to piping, test pump, valve, and piping assemblies under test pressure equal to 50 percent more than pump discharge pressure or total dynamic head, whichever is greater, using clean water.
   1. Include alarm conditions to show that alarms are correctly connected and functioning.

## 3.5 SYSTEM STARTUP

A. Manufacturer Services: Provide services of manufacturer's field representative to perform systems startup.

B. Prepare and start equipment and systems in accordance with manufacturers' instructions and recommendations.

## 3.6 CLEANING

A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.

## 3.7 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals for additional submittals.

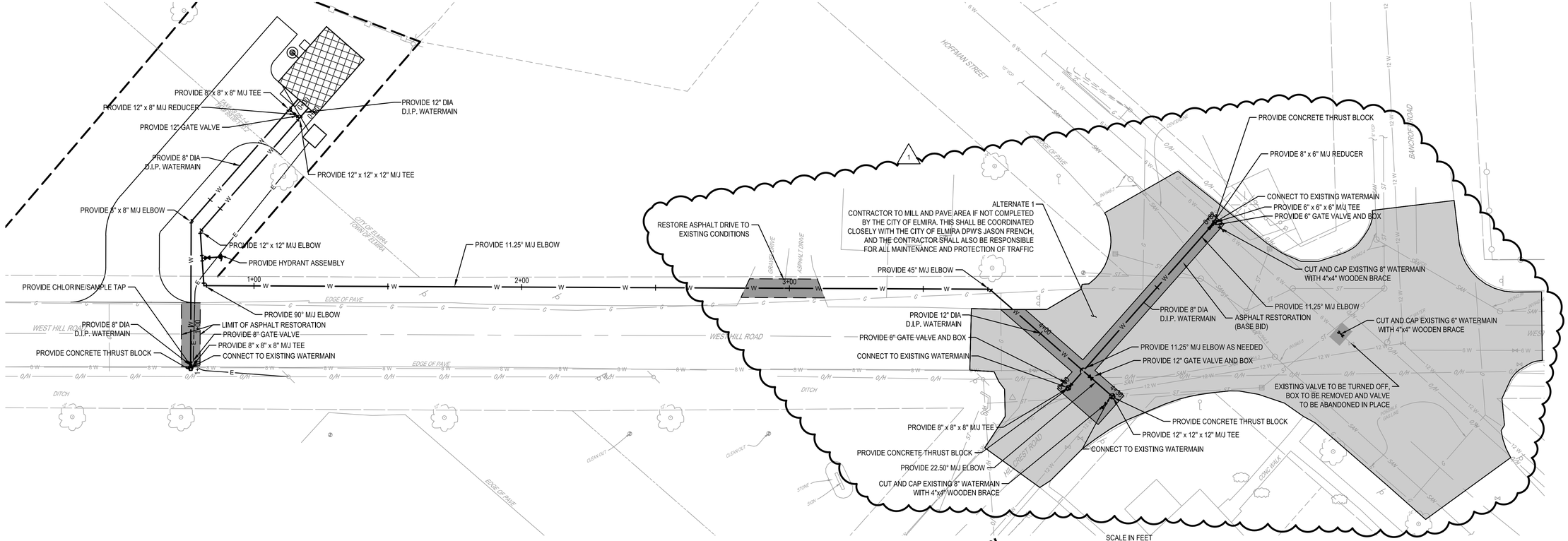
B. Demonstrate proper operation of equipment to Owner's designated representative.

C. Training: Train Owner's personnel on operation and maintenance of system.
   1. Training Reference: Operation and maintenance manual and additional training materials as required.
   2. Provide minimum of two hours of training.

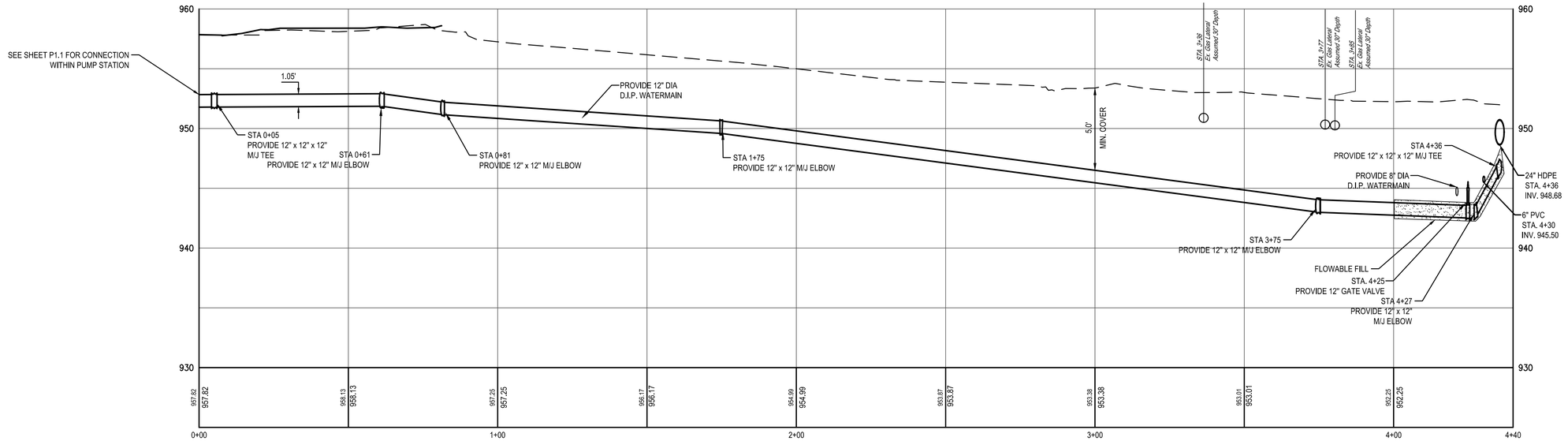
## 3.8 MAINTENANCE

A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.

END OF SECTION




1 PUMP HOUSE TO INTERSECTION PLAN - STA 0+00 - STA 4+40
SCALE: 1" = 10'




2 PUMP HOUSE TO INTERSECTION PROFILE - STA 0+00 - STA 4+40
SCALE: H: 1"=20' V: 1"=5'

NOTE:
ALL EXTERNAL VALVES AND HYDRANTS SHALL OPEN RIGHT. ALL EXTERNAL PIPING SHALL BE CL 52 DUCTILE IRON PIPING.

| | |
|---|---|
| DRAWN BY: | ZBS |
| CHECKED BY: | TKS |
| DATE: | 1/28/26 |
| PHASE: | BID |

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|---|---|---|
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"IT IS A VIOLATION OF THE LAW FOR ANY PERSON TO MAKE UNAUTHORIZED ALTERATIONS OR ADDITIONS TO PLANS BEARING A LICENSED ENGINEERS, ARCHITECTS OR SURVEYOR'S SEAL."


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NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC220313464-1


SITE UTILITY PLAN

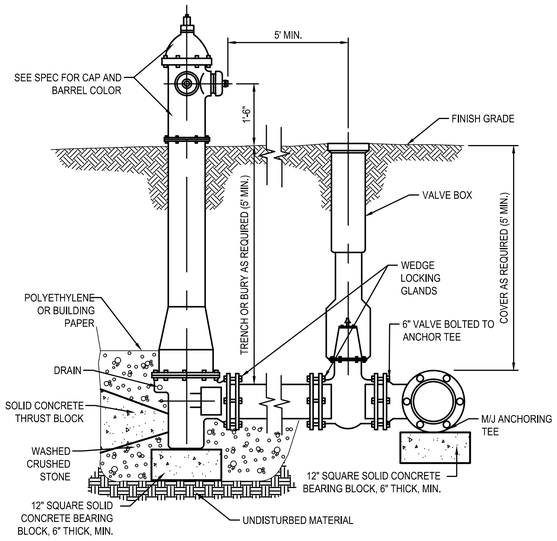
EWB POTABLE WATER PRESSURE BOOSTING PUMP STATION

ELMIRA WATER BOARD

ELMIRA, NY 14901

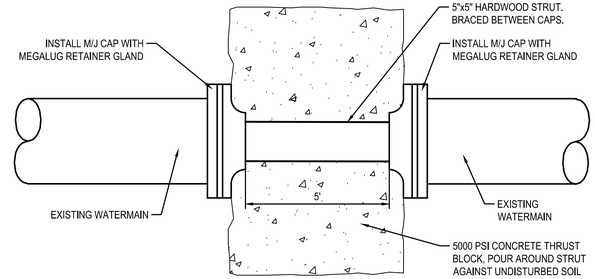
**C3.2**

PROJECT NO: 3405-001

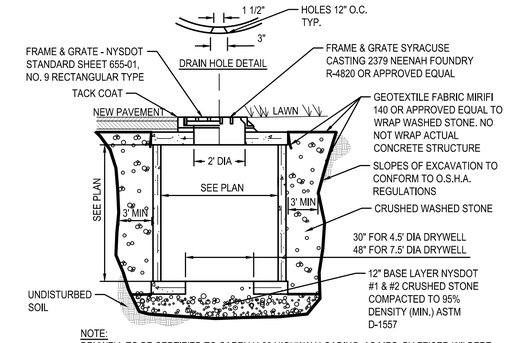



NOTES:
1. WHEN INSTALLING HYDRANTS AND GROUND WATER IS ENCOUNTERED WITHIN 7 FEET OF FINISHED GRADE THE HYDRANT DRAIN OR WEEP HOLES MUST BE TAPPED AND PLUGGED.
2. HYDRANTS SHALL NOT BE LOCATED WITHIN 10 FEET OF SANITARY SEWERS, STORM DRAINS, AND STORMWATER INLETS.
3. IF GROUND WATER IS ENCOUNTERED WITHIN 7 FEET OF FINISHED GRADE THE HYDRANT DRAIN OR WEEP HOLES MUST BE TAPPED AND MECHANICALLY PLUGGED. HYDRANTS WITH PLUGGED WEEP HOLES SHALL BE TAGGED TO INDICATE THAT THE BARRELS NEED TO BE PUMPED DRY AFTER EACH USE.

## 6 HYDRANT UNIT DETAIL
SCALE: N.T.S.

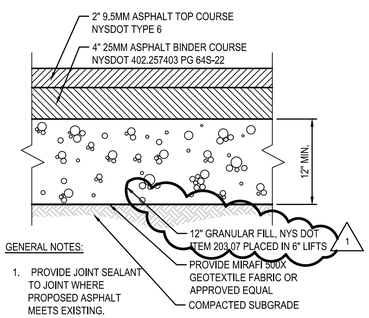



## 7 TYPICAL DISCONNECT DETAIL
SCALE: N.T.S.



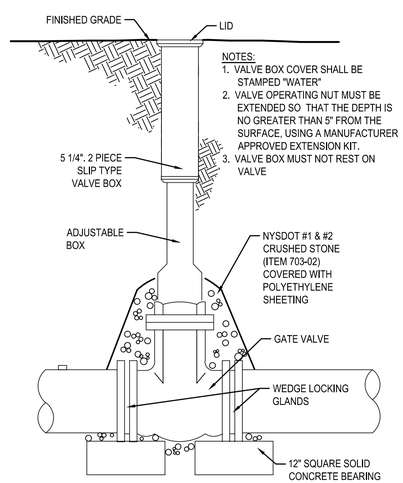

NOTE:
DRYWELL TO BE CERTIFIED TO CARRY H-20 HIGHWAY LOADING, AS MFG. BY ZEISER-WILBERT VAULT, INC. OR APPROVED EQUAL WHEN IN PAVED AREAS.

## 5 DRYWELL DETAIL
SCALE: N.T.S.



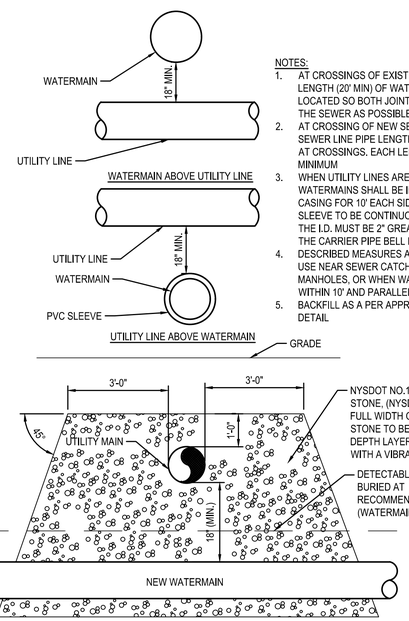

GENERAL NOTES:
1. PROVIDE JOINT SEALANT TO JOINT WHERE PROPOSED ASPHALT MEETS EXISTING.

## 4 STANDARD DUTY ASPHALT PAVEMENT
SCALE: N.T.S.



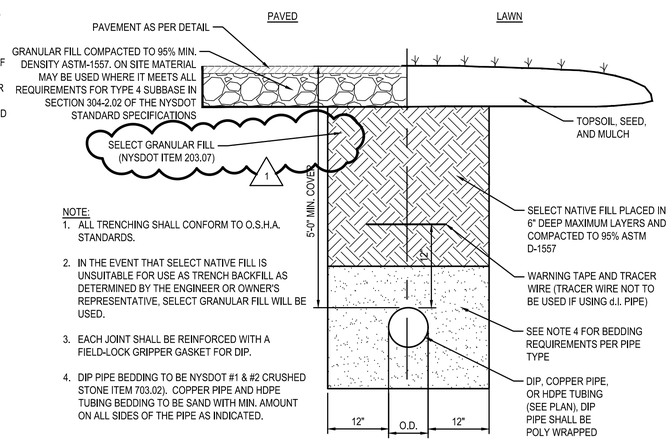

NOTES:
1. VALVE BOX COVER SHALL BE STAMPED "WATER"
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5" FROM THE SURFACE, USING A MANUFACTURER APPROVED EXTENSION KIT.
3. VALVE BOX MUST NOT REST ON VALVE

## 3 GATE VALVE DETAIL
SCALE: N.T.S.




NOTES:
1. AT CROSSINGS OF EXISTING SEWERS, ONE FULL LENGTH (20' MIN) OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
2. AT CROSSING OF NEW SEWERS, WATERLINE AND SEWER LINE PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS. EACH LENGTH OF PIPE TO BE 20' MINIMUM
3. WHEN UTILITY LINES ARE ABOVE WATERMAINS, WATERMAINS SHALL BE INSTALLED WITH PVC CASING FOR 10' EACH SIDE OF THE CROSSING. SLEEVE TO BE CONTINUOUS, NO JOINTS, AND THE I.D. MUST BE 2" GREATER THAN THE O.D. OF THE CARRIER PIPE BELL DIMENSION.
4. DESCRIBED MEASURES ARE NOT ALLOWED FOR USE NEAR SEWER CATCH BASINS, DRYWELLS, MANHOLES, OR WHEN WATERMAIN IS INSTALLED WITHIN 10' AND PARALLEL TO SEWER.
5. BACKFILL AS A PER APPROPRIATE TRENCH DETAIL

## 2 UTILITY CROSSING DETAIL
SCALE: N.T.S.




NOTE:
1. ALL TRENCHING SHALL CONFORM TO O.S.H.A. STANDARDS.
2. IN THE EVENT THAT SELECT NATIVE FILL IS UNSUITABLE FOR USE AS TRENCH BACKFILL AS DETERMINED BY THE ENGINEER OR OWNER'S REPRESENTATIVE, SELECT GRANULAR FILL WILL BE USED.
3. EACH JOINT SHALL BE REINFORCED WITH A FIELD-LOCK GRIPPER GASKET FOR DIP.
4. DIP PIPE BEDDING TO BE NYSDOT #1 & #2 CRUSHED STONE ITEM 703.02). COPPER PIPE AND HDPE TUBING BEDDING TO BE SAND WITH MIN. AMOUNT ON ALL SIDES OF THE PIPE AS INDICATED.

## 1 WATERMAIN TRENCH SECTION
SCALE: N.T.S.

| DRAWN BY: | ZBS |
|---|---|
| CHECKED BY: | TKS |
| DATE: | 1/28/26 |
| PHASE: | BID |



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SITE DETAILS

EWB POTABLE WATER PRESSURE BOOSTING PUMP STATION
ELMIRA WATER BOARD
ELMIRA, NY 14901

C5.1

PROJECT NO: 3405-001