

TOWN OF YORKTOWN
PUBLIC WORKS CONTRACTS BID

INSTRUCTIONS TO BIDDERS

NOTICE IS HERE GIVEN that sealed bids will be received by the Town Clerk, Town of Yorktown, Yorktown, NY until 10:00 A.M. on Monday, October 7, 2024 at Town Hall, 363 Underhill Avenue, Yorktown Heights, N.Y. 10598 for French Hill Tank Rehab. Copies of the Bid Documents will be available in the office of the Town of Yorktown Town Clerk located at 363 Underhill Avenue, Yorktown Heights, NY 10598, as well as the Town's website, www.yorktownny.org, or on BidNet Direct, www.bidnetdirect.com. A completed Bid Proposal Form must be returned to the Town Clerk, 363 Underhill Avenue, Yorktown Heights, NY 10598, marked: "Bid: French Hill Tank Rehab."

The Bid Documents consists of the following documents:

1. Instructions to Bidders
2. Part One Bid Proposal Form
3. Part Two General Terms and Conditions of Bid
4. Part Three Specifications
5. Non-Collusive Bidding Certificate

A submitted bid will consist of

1. One original completed Bid Proposal Form, signed on behalf of Bidder with information for all blanks supplied, and a detailed listing of any exceptions taken by Bidder;
2. Signed and notarized Non-Collusive Bidding Certificate.

Diana L. Quast, Town Clerk
Town of Yorktown
Certified Municipal Clerk

**TOWN OF YORKTOWN
PUBLIC WORKS CONTRACTS BID
PART ONE
BID PROPOSAL FORM**

The Town of Yorktown seeks bids from qualified parties:

Your Company Name: _____

Contact Name: _____

Contact Phone: _____

Contact Email: _____

\$ _____ Total Cost

The price(s) set forth above shall remain valid for sixty (60) days from the date of bid award. All of bidder's costs must be factored into and incorporated in the bid price above. Prices in the bid must cover all of bidder's costs. There shall be no additional charges to the Town for delivery, training, set-up, etc. If the contractor must rent special equipment to perform the work, the contractor shall not bill additional fees for such rental costs.

Bidder represents that the rates set forth herein does not exceed its standard charge to all of its customers.

Prior to bidding, Bidder may inspect the field conditions. Appointments are to be made through Philip Marino, General Foreman.

Name of person authorized to submit bid for bidder:

Signed: _____

[Signature of authorized person]

TITLE of authorized person: _____

BIDDER'S CORPORATE NAME:

BIDDER CONTACT INFORMATION:

PRINT NAME: _____

TITLE: _____

Address: _____ **State:** _____ **Zip:** _____

Phone: _____

Fax: _____

Email: _____ @ _____

- END OF BID PROPOSAL FORM -

**TOWN OF YORKTOWN
SERVICES AND PUBLIC WORKS CONTRACTS BID**

PART TWO

General Terms and Conditions of Bid

<u>Section Numbers</u>	<u>Heading</u>
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Section 2.	Pre-Bid Site Inspection
Section 3.	Quality and Samples
Section 4.	Request for information and/or clarification of the Bid Documents
Section 5.	Non-Collusion
Section 6.	Late Bids
Section 7.	Bid Opening
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Section 17.	Representative Always Present
Section 18.	Performance
Section 19.	Insurance Requirements
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Section 21.	Delivery Point
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Section 34.	Stopping Work
Section 35.	Change in the Contract Time
Section 36.	Disputed Work – Notice of Claims For Damages

Section 1. Bid Proposal Form

- 1.1** The bidder shall complete the Bid Proposal Form by filling in the unit price and the total price in the appropriate designated spaces. Unit price and total price of each item bid shall be written legibly in ink, or typed. All bids shall be signed in ink. Any erasures or alterations shall be initialed in ink by the signer. The completed Bid Proposal Form shall be submitted, along with any documentation in support of the bid proposal if required by the Bid Documents, in a sealed envelope addressed as required in the Invitation to Bidders on or before the time and at the place so designated. Any Bid Proposal Form which has been materially altered in any way may render the bid nonresponsive and the bid rejected.
- 1.2** In the event of a discrepancy between the unit price and the total price of the Bid Proposal Form, the unit price will prevail. In the event of a discrepancy between the written bid amount and the numerical bid amount, the written amount will take precedence and be controlling as to the amount of the Bid. All items not bid shall be indicated as “not bid” in the total price space. When bids are requested on a lump sum basis, bidder must bid on each item in the lump sum group. Any bidder desiring to bid “no charge” on an item in a group must so indicate.
- 1.3** Failure to comply with the provisions of this section may be grounds for rejection of the bid proposal.
- 1.4** Correction or withdrawal of a bid because of an inadvertent, non-judgmental mistake in the Bid Proposal Form requires careful consideration to protect the integrity of the competitive bidding process, and to ensure fairness. If the mistake is attributable to an error in judgment, the Bid Proposal Form may not be corrected. Bid correction or withdrawal by reason of the non-judgmental mistake is permissible at the sole discretion of the Town Clerk, but only to the extent that it is not contrary to the interests of the Town or the fair treatment of other bidders.
- 1.5** By signing the Bid Proposal Form, the bidder certifies that:

 - i.** the person whose signature appears below is legally empowered to bind the bidder;
 - ii.** the bidder has read the complete Bid Documents and understands and agrees to all terms and conditions set forth in the Bid Documents;
 - iii.** if accepted by the Town, the bid is guaranteed as written and will be implemented as stated;
 - iv.** By submission of the bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the New York State

- 1.6 The bidder understands and agrees that quantities shown on the Bid Proposal Form opposite items of the work for which unit prices have been requested are approximate estimated quantities, and that during the progress of the work the Town may find it advisable and shall have the right to omit portions of the work, and to increase or decrease the shown approximate estimated quantities, or the scope of the whole work; and that the Town reserves the right to add to or take from the total amount of the work up to a limit of thirty (30%) percent of the total amount of the contract based upon the executed contract price for all the specified work.
- 1.7 The bidder shall make no claim for anticipated profits or loss of profits, because of any difference between the quantities of the various classes of work actually done, or of the materials actually furnished, and the original specified scope of work and the shown approximate estimated quantities.
- 1.8 All prices bid include a sum sufficient for the preparation and submission of approved final “As-builts”, record drawings, guarantees, warranties, and operations and maintenance manuals.
- 1.9 All plans and other like records compiled by the contractor in completing the work under this contract shall become the property of the Town. The Contractor may retain copies of each such plan or record for its own use.
- 1.10 The contractor shall secure and pay for all necessary permits for the proper executing and completion of work.
- 1.11 The Town is exempt from all federal, state and local taxes.

Section 2. Pre-Bid Site Inspection

- 2.1 The bidder shall satisfy itself by personal examination of the location of the proposed work and surroundings thereof, and by such other means as it may prefer, as to the scope of the work and the accuracy of the approximate estimated quantities; and shall not at any time after submission of the bid dispute such approximate estimated quantities or assert that there was any misrepresentation by the Town or any misunderstanding by the bidder in regard to the quantity or kind of materials to be furnished, or work to be done. Failure to do so will not relieve a successful bidder contractor (“contractor”) of the obligation to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in its bid.
- 2.2 Unless otherwise stated, the bidder is free and encouraged to examine the work site during normal work hours preceding the submission of the bid. For those bidders

¹ List found at <http://ogs.ny.gov/about/regs/docs/ListofEntities.pdf>.

requesting further clarification of the conditions, an appointment with the Town's representative, can be requested, by contacting the, Town Clerk.

- 2.3 At the time of the opening of bids each bidder will be presumed to have inspected the sites and to have read and to be thoroughly familiar with the Bid Documents.

Section 3. Quality and Samples

- 3.1 All equipment, material and supplies bid upon must conform to the description and specifications set forth in the in the Bid Documents, or their reasonable equivalent.
- 3.2 References in the Bid Documents to type, style, brand or trade name, and catalog are intended to be descriptive only and not restrictive.

Section 4. Request for information or interpretation and/or clarification of the Bid Documents

- 4.1 The bidder shall have seven (7) business days prior to the bid opening date to notify the Town Clerk in writing of any errors or defects in the Bid Documents which would prevent the bidder from providing a responsive bid.
- 4.2 No interpretation of the Bid Documents will be made to any bidder orally by any representative of the Town.
- 4.3 Any request for information or interpretation and/or clarification of the Bid Documents must be addressed in writing to Diana Quast, Yorktown Town Clerk, 363 Underhill Avenue, Yorktown Height, NY 10598, and be submitted no later than five (5) business days prior to the date fixed for the opening of bids.
- 4.4 Any written response to a request for information or interpretation and/or clarification of the Bid Documents shall be issued by Town Clerk and will be incorporated into and made part of the Bid Documents and will be made available in the same manner and method as the Bid Documents. The Town Clerk's decision shall be final and binding on all parties. The failure of any bidder to receive such Addenda will not relieve the contractor of any obligation to comply with the terms and conditions of the Addenda.
- 4.5 The Bid Documents, including the drawings, Bid Documents, have been prepared with care and are intended to show as clearly as is practicable the work required to be done. The bidder must realize however, that construction details cannot always be accurately anticipated and that in executing the work, field conditions may require reasonable modifications in the details of the plans and quantities of work involved. Work under all items in the contract must be carried out to meet these field conditions to the satisfaction of the Town and in accordance with the Bid Documents. The bidder shall not take advantage of any apparent errors or omission in the Bid Documents. In the event the contractor discovers an error or omission in the Bid Documents, it shall immediately notify the Town. The Town will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Bid Documents.

- 4.6 A bidder's failure to request a clarification, interpretation, etc. of any portion of the Bid Documents or to point out any inconsistency therein will preclude such bidder from thereafter claiming any ambiguity, inconsistency, or error which should have been discovered by a reasonably prudent bidder and from asserting any claim for damages arising directly or indirectly therefrom.

Section 5. Non-Collusion

- 5.1 The bidder shall certify that it has complied with all of the requirements stated in the non-collusive bidding certificate by signing the form included in the Bid Documents. Failure by the bidder to complete and sign the non-collusive bidding certificate will constitute grounds for rejection of the bid.

Section 6. Late Bids

- 6.1 All bids received after the deadline date and time stated in the Instructions to Bidders will not be considered and will be returned to the bidder unopened. The bidder assumes the risk of any delay in the mail and the handling of the mail by the employees of the Town. Whether sent by mail or by means of personal delivery, the bidder assumes all responsibility for having the bid delivered on time and to the place specified above.

Section 7. Bid Opening

- 7.1 Sealed bids will be publicly opened on the date and time specified in the Instructions to Bidders. Bids may be read aloud to those persons present when practicable. Any bidder may request to review any submitted Bid Proposal Forms by arranging a mutually convenient time with the Town Clerk.
- 7.2 The prices stated in the Bid Proposal Form are irrevocable until the Notice of Award is issued, unless the bid is withdrawn only after the expiration of sixty (60) days from the bid opening and only in writing received by the Town Clerk and in advance of the issuance of the Notice of Award.

Section 8. Acceptance or Rejection

- 8.1 A responsive bid is one that complies with all material terms and conditions of the Bid Documents.
- 8.2 If the lowest price bid or proposal is found non-responsive, a determination setting in detail and with specificity the reasons for such finding shall be issued by the Town Clerk. A copy of such determination shall be mailed to the non-responsive bidder no later than two (2) business days after the determination is made.
- 8.3 The Town reserves the sole right to waive any informality that is a matter of form rather than substance without prejudice to other bidders and what is in the best interests of the Town. The Town's decision shall be final and binding.

8.4 Any corporation not incorporated under the Laws of New York State, must furnish a copy of its certificate of authority, from the New York State Secretary of State, to do business in the State of New York, in accordance with Article 13 of the New York State Business Corporation Law.

8.5 The Town will consider the qualifications of all bidders and may conduct such investigation as it deems necessary to assist in the evaluation of any bid. The Town reserves the right to reject any bid if the evidence submitted by, or the investigation of such bidder fails to satisfy the Town, in the Town's sole discretion, that it is properly qualified to carry out the obligations of the contract and to complete the contemplated work. In evaluating a bidder's responsibility, the Town may consider the following factors:

- i.** financial resources;
- ii.** technical qualifications;
- iii.** experience;
- iv.** organization, material, equipment, facilities, and personnel resources and expertise (or the ability to obtain them) necessary to carry out the work and to comply with required delivery or performance schedules, taking into consideration other business commitments;
- v.** a satisfactory record of performance;
- vi.** a satisfactory record of business integrity;
- vii.** where the contract includes provisions for reimbursement of contractor costs, the existence of accounting and auditing procedures adequate to control property funds, or other assets, accurately delineate costs, and attribute them to their causes; and
- viii.** compliance with requirements for the utilization of small, minority-owned, and women-owned businesses as subcontractors.

8.6 The Town reserves the right to require additional information as it deems appropriate concerning the history of any bidder's performance of prior contracts. The final determination of whether the bidder possesses the requisite experience rests in the sole discretion of the Town. Failure of a bidder to provide relevant information specifically requested by the Town may be grounds for a determination of non-responsive and/or non-responsible.

Section 9. Appeal of Determination of Non-Responsiveness or Non-Responsible

9.1 Any determination that a bid is non-responsive or a bidder is non-responsible may be appealed as set forth herein.

- 9.2** Time Limit; A bidder shall have five (5) business days from receipt of the determination of non-responsiveness or non-responsible to file an appeal with the Town Clerk. Receipt of notice by the bidder shall be deemed to be no later than five (5) business days from the date of mailing or upon delivery, if delivered. Filing of the appeal shall be accomplished by actual delivery of the appeal document to the Town Clerk. The bidder shall also send a copy of its appeal, for informational purposes, to the Town Attorney.
- 9.3** Form and Content; The appeal shall be in writing and shall briefly state all the facts or other basis upon which the bidder contests the finding of non-responsiveness or non-responsible. Supporting documentation, if any, shall be included.
- 9.4** Stay of Award of Contract Pending. Award of the contract shall be stayed pending the determination of the Town Clerk unless the Town Clerk makes a determination that proceeding with the award without delay is necessary to protect substantial Town's interests. Where such a determination is made, the bidder shall be advised of this action in the determination of non-responsiveness or, if the stay is removed at any time after the bidder has been notified of determination of non-responsiveness or non-responsible, notification shall be provided to the bidder no later than two (2) business days after such determination is made. The Town Clerk shall consider the appeal, and may, in his or her sole discretion, meet with the bidder to discuss the merits of the appeal. The Town Clerk shall make a prompt determination with respect to the merits of the appeal, a copy of which shall be sent to the bidder. The Town Clerk's determination shall be final.

Section 10. Award

- 10.1** Town reserves the right to make an award within sixty (60) days after the date of the bid opening, during which period bids may not be withdrawn.
- 10.2** The Award will be made to the responsible and responsive bidder submitting the lowest bid that fully complies with all the specifications stated in the Bid documents.
- 10.3** Town reserves the right to reject all bids and to purchase any or all items on contracts awarded by agencies or departments of the State of New York or of the Town, if such items can be obtained on substantially the same terms, conditions, specifications, and at a lower price.

Section 11. Notice of Award

- 11.1** If the bid is awarded by Town, a written Notice of Award will be issued by the Town Clerk to the contractor. Such Notice of Award will constitute a binding enforceable contract between the contractor and the Town of Yorktown. These General Terms and Conditions shall be incorporated into the contract as material terms.
- 11.2** The Town may issue a Notice of Award based on either Lowest Responsible Bid

or Best Value, in accordance with the 2012 amendments to General Municipal Law § 103, as implemented by Yorktown Town Code Chapter 78 entitled *Procurement for Goods and Services*.

- 11.3** Upon receipt of the Notice of Award the contractor will be required to submit to the Town Clerk a completed W-9 form in addition to any other information or documents required by the Town. Failure to supply a completed W-9 form or such other information or documents required by the Town will invalidate the bid.

Section 12. Performance and Payment Bond

- 12.1** A Performance and Payment bond is required and must be executed by the contractor's Surety Company and submitted to the Town.

Section 13. Assignment Prohibited

- 13.1** The contractor shall not assign, transfer, convey or otherwise dispose of the contract or any part of it or any monies due and payable under the contract, without prior written approval of the Town. If such approvals are granted by the Town, they shall in no way relieve the contractor or from any obligations under the terms of the contract.

Section 14. Special Requirements

- 14.1** Special requirements for any bid may supersede and/or be added to any provision contained in these General Terms and Conditions.

Section 15. Purchase of Additional Quantities of Bid Items

- 15.1** The Town may purchase additional quantities of the bid items at any time during the contract period, for the same price and under the same terms and conditions as set in the Bid Proposal Form.

Section 16. Contractor's Subcontracts and Material Lists

- 16.1** Within fifteen (15) days after execution of the Contract, the contractor shall submit to the Town for approval a list of the subcontractors, materialmen and materials that the contractor plans to use in the performance of the work and statements of the work they are to perform. The format and content of the list shall be in accordance with directives from the Town. No part of the work may be sublet until after the contractor has received the Town's approval. The contractor shall be fully responsible for all acts and omissions of its subcontractors and persons directly or indirectly employed by them, and the Town's approval to sublet parts of the work will in no way relieve the contractor of any of its obligations under the Contract. All dealings of the Town with the subcontractors shall be through the contractor.

- 16.2** The contractor shall insert appropriate clauses in all subcontracts to bind the subcontractors to the contractor by all applicable provisions of the contract

documents executed between the contractor and the Town, but this shall not be construed as creating any contractual relationships between subcontractors and the Town. Prior to approval of the subcontractors, the Town has the right to review and recommend changes in the subcontracts. The Town reserves the right to reject any subcontractor proposed by the contractor if in the reasonable opinion of the Town such subcontractor lacks the experience or capability to perform its subcontract work or is otherwise non-responsible.

- 16.3** The contractor shall insert appropriate clauses in each subcontract that require that if the contractor is terminated by the Town either for default or convenience that at the sole option of the Town the subcontract shall automatically at torn to the Town and the subcontractor shall continue without delay or interruption to fully perform all of the obligations required by its subcontract.

Section 17. Representative Always Present

- 17.1** The contractor in case of its absence from the work shall have a competent representative or foreman present, who shall obey without delay, all instructions of the Town in the prosecution and completion of the work in conformity with the contract, and shall have full authority to supply labor and material immediately.

- 17.2** The contractor, or its superintendent, shall attend job meetings with the Town for the purpose of discussing expedition, execution and coordination of the work. Job meetings will be scheduled periodically (the first to be prior to commencement of construction) at a time and place designated by the Town.

- 17.3** The contractor shall not commence any work prior to the first (pre-construction) meeting between the contractor, Town, and other concerned governmental and utility company representatives.

Section 18. Performance

- 18.1** All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions and materials requirements, including tolerances, shown in the Bid Documents.

- 18.2** Plan dimensions and contract specification values are to be considered as the target value to be strived for and complied with as the design value from which any deviations are allowed. It is the intent of the specifications that the materials and workmanship shall be uniform in character and shall conform as nearly as realistically possible to the prescribed target value or to the middle portion of the tolerance range. The purpose of the tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons. When a maximum or minimum value is specified, the production and processing of the material and the performance of the work shall be so controlled that material or work shall not be preponderantly of borderline quality or dimension.

- 18.3** Figured dimensions on the plans shall be given preference over scaled dimensions,

but shall be checked by the contractor before starting construction.

Information and data on the contract documents shall take precedence in the following order (1) Drawing; Details, Sections, Plans, Notes, General Notes, (2) Technical Specifications, (3) General Specifications. Any errors, omissions or discrepancies shall be brought to the attention of the Town whose decision thereon shall be final.

18.4 In the event that the Town determines that the materials or the finished product in which the materials used are not within reasonably close conformity with the Bid Documents but that reasonably acceptable work had been produced, the Town shall then make a determination if the work shall be accepted and remain in place. In this event, the Town will document the basis of acceptance by contract modification, subject to the approval of the Town Board, which will provide for an appropriate adjustment in the contract price for such work or materials as deems necessary.

18.5 In the event that the Town determines that the materials or the finished product in which the materials used are not within reasonably close conformity with the Bid Documents and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the contractor.

18.6 All traffic control devices (signs, signals, markings, and devices placed by the authority of a public body or official having jurisdiction for the purpose of regulating, warning or guiding traffic) shall be in conformity with the latest edition of the New York State Manual of Uniform Traffic Control Devices or other such standard as directed by the Town.

18.7 Time being of the essence, the contractor shall take notice that the timely completion of the work called for under the contract is of the greatest importance. The contractor shall commence its work within ten (10) days after "Notice of Award" has been given it by the Town (unless a definite starting date is otherwise stated). Prior to commencing its work, the contractor shall notify the Town, at least forty-eight (48) hours prior to the planned date of its "start".

Section 19. Insurance Requirements

19.1 The contractor, upon award of the contract, shall provide at its own cost and expense the following insurance to the Town from insurance companies licensed in the State of New York, carrying a Best's financial rating of "A" or better, which insurance shall be evidenced by certificates and/or policies as determined by the Town.

19.2 Each certificate or policy shall require that, thirty (30) days prior to cancellation or material change in the policies, notice thereof shall be given to the Town Clerk by registered mail, return receipt requested, for all of the following stated insurance policies. All such notices shall name the contractor and identify the contract number or description.

19.3 All policies and certificates of insurance shall be approved by the Town prior to the inception of any work.

- i. Workmen's Compensation: The contractor shall evidence compliance with Workers' Compensation Law, or as otherwise directed by the Town.
- ii. Commercial General Liability Insurance with minimum limits of liability per occurrence of \$1,000,000 with the Town named as an additional insured.
- iii. Automobile Liability Insurance with minimum limits of liability per occurrence of \$1,000,000 with the Town named as an additional insured.
- iv. Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional insurance is required for a specific contract, that requirement will be described in the Special Requirements of the contract specifications.
- v. If any of the insurance requirements are not complied with at their renewal dates, payments to the contractor will be withheld until those requirements have been met, or at the option of the Town, the Town may pay the Renewal Premium and withhold such payments from any monies due the contractor.
- vi. If at any time any of the foregoing policies shall be or become unsatisfactory to the Town, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Town, the contractor shall upon notice to that effect from the Town, promptly obtain a new policy, submit the same to the Town for approval and submit a certificate thereof as herein above provided. Upon failure of the contractor to furnish, deliver and maintain such insurance as above provided, the contract, at the election of the Town, may be forthwith declared suspended, discontinued or terminated. Failure of the contractor to secure and/or maintain or the taking out and/or maintenance of any required insurance, shall not relieve the contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations of the contractor concerning indemnification.
- vii. In the event that claims in excess of the insured amounts provided herein, are filed by reason of any operations under the contract, the amount of excess of such claims or any portion thereof, may be withheld from payment due or to become due the contractor until such time as the contractor shall furnish such additional security covering such claims as may be determined by the Town.

Section 20. Indemnification

- 20.1** The contractor hereby agrees to indemnify and save harmless the Town, its officers, employees, elected officials, and agents from and against all liability, loss or damage the Town may suffer, arising directly or indirectly out of the contract

between the contractor and the Town. The Contractor further agrees to provide defense for and defend any claims or causes of action of any kind or character directly or indirectly arising out of this Agreement at its sole expense and agrees to bear all other costs and expenses relating thereto. The foregoing provisions shall not be construed to cause the contractor to indemnify the Town, its officers, elected officials, agents or employees from its or their sole negligence.

20.2 Neither the acceptance of the completed work nor payment therefore shall release the Contractor from its obligation under this section.

Section 21. Delivery Point

21.1 Shipping of any products shall be FOB Destination. Delivery shall be at the location set forth in the Specifications except on national, state or local holidays when Town buildings are closed. Bidder shall be responsible to verify that the appropriate Town building for delivery is open prior to delivering items. All bid items shall be unloaded and placed within the particular Town building, at points of delivery, and in quantities, as directed by the Town. Any costs incurred by the Town or bidder due to the failure of bidder to comply with this requirement will be the responsibility of bidder. Bidder should be prepared to furnish proof of delivery, if requested by Town. Deliveries shall be made in accordance with the specifications, and shall be made Monday through Friday from 8 a.m. to 2 p.m. unless otherwise stated in the Specific Specifications.

21.2 If bidder is shipping bid items to Town using a third-party carrier (US Postal Service, UPS, FedEx), there shall be no additional shipping charge to the Town.

21.3 Delivery will not be complete until the good are inspected and accepted by the Town.

Section 22. Date of Delivery

22.1 Delivery of all materials included under this bid shall be made not later than the date specified in the Bid Documents or Project Schedule. If contractor cannot meet the delivery date specified in Bid Documents or Project Schedule, contractor shall state on the bid form the proposed date of delivery and such date will be considered when determining responsiveness in awarding the bid.

Section 23. Damages

23.1 The contractor shall be fully responsible for shipping and delivery of materials specified in the Bid Documents or Project Schedule in an undamaged condition. Town will not consider the carrier responsible for damaged or delayed deliveries. Any bid item damaged or broken when delivered to Town shall be replaced immediately by contractor at no cost to the Town.

Section 24. Warranty/Guarantee

- 24.1** It is the intent of the Bid Documents to require first-class work and materials and any work not fully covered herein Bid Documents shall be interpreted to require first-class work and materials, and such interpretations shall be binding upon the Contractor. The contractor shall be fully responsible for performance of work in a satisfactory manner with satisfactory results in the discretion of the Town quality materials.
- 24.2** Contractor is deemed to warrant and guarantee all work performed under this agreement.
- 24.3** Unless otherwise stated in other parts of the specifications, all work performed or goods supplied under the contract shall be guaranteed by the contractor against all defects resulting from the use of inferior materials, equipment or workmanship, for a period of five (5) years from the date of final completion and acceptance of the work, which shall be defined as the date of the Town's approval of the final Certificate for Payment or from the date the Town takes possession and makes full use of the constructed facility.
- 24.4** Any goods furnished must be standard, new, latest model of the regular stock product, as required by the specifications, with parts regularly used for the type of equipment offered.
- 24.5** No attachment or part will be substituted or applied contrary to manufacturer's recommended and standard practice. All regularly manufactured stock electrical items must bear the label of the Underwriters Laboratories, Inc. Any equipment, part or constructed item which is or becomes defective during the guarantee period shall be replaced or redone by the contractor, including all labor at no additional charge to the Town. All replacements shall carry the same guarantee as the original equipment. The contractor shall make any such replacement promptly upon receiving written notice from Town.

Section 25. Breach of Contract/Termination

- 25.1** If contractor fails to deliver as ordered, or within the time specified, or within reasonable time as interpreted by Town, or fails to make replacement of rejected or defective goods, whether so requested immediately or as directed by Town, that shall constitute a breach of the contract, and Town may arrange to have the work performed from other sources to take the place of the work product found defective or not delivered. Without limiting the foregoing, Town reserves the right to terminate the contract upon breach within ten (10) days written notice provided to the contractor.

Section 26. Prevailing Wage Rates and Supplements

- 26.1** Wages to be Paid and Supplements to be Provided
- i.** The contractor shall, at its own cost and expense, comply with all provisions of the Labor Law (i.e. prevailing rate of wages and

supplements), Lien Law, Workmen's Compensation Law and all other laws and ordinances affecting the contract or order, either Federal, State or local.

26.2 Records to be kept on Site

The contractor, subcontractors at any tier shall certify their payrolls and keep them on site and available, in addition to the following informative records:

- i. Record of hours worked by each workman, laborer and mechanic on each day;
- ii. Record of days worked each week by each workman, laborer and mechanic;
- iii. Schedule of occupation or occupations at which each workman, laborer and mechanic on the project is employed during each work day and week;
- iv. Schedule of hourly wage rates paid to each workman, laborer and mechanic for each occupation.
- v. A statement or declaration signed by each workman, laborer and mechanic attesting that they have been provided with a written notice, informing them of the prevailing wage rates and supplements requirement for the contract.

Section 27. Estimates and Payments

27.1 As the work progresses but not more often than once a month and then on such days as the Town shall direct, the contractor will submit a requisition in writing of the amount and value of the work performed and the materials and equipment provided to the date of the requisition, less any amount previously paid to the contractor.

27.2 From each requisition, the Town will retain five percent (5%) plus one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments against the contractor that have not been suitably discharged. The Town will thereupon cause the balance of the requisition therein to be paid to the contractor.

27.3 As a condition to the making of any progress payment as set forth in this paragraph, the Town, in its sole discretion may require the contractor to submit such document as may be reasonably required to establish that the contractor and its subcontractors have timely and properly paid their respective subcontractors and materialmen at any tier.

27.4 When the work or major portion thereof, as contemplated by the terms of the contract are substantially completed in the judgment of the Town, the contractor shall submit a requisition for the remainder of the contract balance. An amount equal to two (2) times the value of the remaining items to be completed plus one hundred fifty percent (150%) of the amount that the Town deems necessary to satisfy any claims, liens or judgments against the contractor which have not been suitably discharged shall be deducted from the requisition. As the remaining items of work are satisfactorily completed or corrected, the Town will, upon receipt of a

requisition, pay for these items less one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments.

- 27.5** All estimates will be made for actual quantities for work performed and materials and equipment incorporated in the work as determined by the measurements of the Town, and this determination shall be accepted as final, conclusive and binding upon the contractor. All estimates will be subject to correction in any succeeding estimate.
- 27.6** Payment will be made only upon the written request of the contractor. Payment requests shall be processed by the Town no more than one (1) time per month. Payment will be made for materials pertinent to the project which have been delivered to the site or off-site by the contractor suitably stored and secured in first-class condition as required by the Town. The contractor must submit certified copies of the manufacturer's or Contractor's invoices or statements establishing the true purchase value of the material or equipment; freight bills, release of liens and certificate of insurance covering all equipment and materials.
- 27.7** The Contractor shall be responsible for safeguarding stored equipment and materials against loss or damage of any nature whatsoever, shall retain title until incorporated into the work and acceptance by the Town and in case of loss or damage, the contractor shall replace such lost or damaged equipment and materials at no cost to the Town. After receipt of payment, the contractor shall not remove from the site equipment and materials for which such payment was made without written authorization from the Town.
- 27.8** Within thirty (30) days after receiving written notice from the Contractor of substantial completion of the work under this Agreement, the Town will cause an inspection to be made of the work done under the contract. If, upon such inspection, the Town determines that the work is substantially complete, a Substantial Completion Payment to the contractor for the work done under the contract, less any and all deductions authorized to be made by the Town under the contract or by law, will be issued.
- 27.9** As a condition precedent to receiving payment therefore, the Contractor must have received Town approval of all Shop Drawing submittals, the Operation and Maintenance Manuals, and As-Built Drawing(s).
- 27.10** Together with its application for substantial completion payment the Contractor shall also deliver to the Town a verified statement certifying that all claims or liabilities arising from the completed work, including all charges for Extra Work, Change Orders, additional time, damages or credits (collectively referred to as "claims") have been presented to the Town. All such claims shall be described in sufficient detail so as to be easily identified. The contractor's failure to submit the verified statement shall constitute a full and final waiver of all claims against the Town from the beginning of the project through the date of substantial completion as established by the Town. The presentation of the verified statement to the Town shall not constitute an acknowledgement by the Town that any such claim is valid.

The Town expressly reserves its right to assert that any such claim(s) is waived or precluded by reason of other provisions of the contract documents. Only claims particularly identified on the contractor's verified statement shall be preserved; all other claims whatever nature shall be deemed waived and released. It shall also submit proof of title of the materials and equipment covered by the contract. The contractor shall also, prior to the issuance of said Substantial Completion Payment, supply to the Town affidavits and certificates for labor, material and equipment (where applicable).

27.11 Within ten (10) days after receiving written notice from the contractor of completion of all the work, the Town will make a final inspection. If upon inspection the Town determines that no further work is needed, the Town will request that the Town approve the completion of the project and authorize payment of the Final Estimate.

Section 28. Payments to Subcontractors and Materialmen By Contractor

28.1 Within fifteen (15) calendar days of the receipt of any payment from the Town, the contractor shall pay each of its subcontractors and materialmen the proceeds from the payment representing the value of the work performed and/or materials furnished by the subcontractor and/or materialmen as reflected in the payment from the Town less an amount necessary to satisfy any claims, liens or judgment against the subcontractor or materialman which have not been suitably discharged and less any retained amount as hereafter described.

28.2 Nothing provided herein shall create any obligation on the part of the Town to pay or to see 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 Town. Notwithstanding anything to the foregoing, the Town may tender payments to the Contractor in the form of joint or dual payee checks.

Section 29. Change in the Contract Price

29.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to the contractor for performing the work pursuant to the contract. All duties, responsibilities and obligations assigned to or undertaken by the contractor shall be at its expense without change in the Contract Price.

Section 30. Proper Method of Work and Proper Materials

30.1 The Town shall have the power in general to direct the order and sequence of the work, which will be such as to permit the entire work under the contract to be begun and to proceed as rapidly as possible, and such as to bring the several parts of the work to a successful completion at about the same time.

30.2 If at any time before the commencement or during the progress of the work the materials and appliances used or to be used appear to the Town as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the contractor to increase its efficiency or to improve their character,

and the contractor shall promptly conform to such order; but the failure of the Town to demand any increase of such efficiency or improvement shall not release the Contractor from its obligation to secure the quality of work or the rate of progress specified.

30.3 The Contractor will establish the lines, grades and measurements necessary in his opinion to properly locate the work, by setting suitably marked offset or reference stakes. These stakes are referenced to the control points, coordinates and similar data that may be shown on the contract drawings, but the Town reserves the right to modify that information.

30.4 The Contractor shall carefully and properly preserve all stakes, pins and markers required at no additional costs to the Town. All existing property lines and survey monuments which may, of necessity have to be disturbed during the construction work, will be properly tied to fixed points and reset by the Contractor at no cost to the Town.

Section 31. Utilities and Service Lines

31.1 The Contractor is hereby warned that a reasonable opportunity is to be given the municipalities and public service corporations to alter and install pipes, conduits or other structures prior to placing to pavement. No guarantee is given that public utility structures and service lines herein shown are correctly located. Locations given are from the best available information.

Section 32. Protection, Existing Structures

32.1 The Contractor, at his expense, shall protect adjacent and other property or premises from damage of any kind during the progress of the work and shall erect and maintain guards around his work in such a way as to afford protection to the public. The Contractor shall be held responsible for improper, illegal, or negligent conduct of himself, his subcontractors, employees and agents in and about said work or in the execution of the work covered by this Contract.

32.2 The Contractor shall, at his expense, sustain in their places and permanently protect from direct or indirect injury any and all pipelines, subways, pavements, sidewalks, curbs, railways, buildings, trees, poles, wells, and other property in the vicinity of his work, whether over-or underground, or which appear within the trench or excavations, and he shall assume all costs and expenses for direct or indirect damage which may be occasioned by injury to any of them.

32.3 The Contractor's liability shall also include the damage or injury sustained by any structure whatsoever due to settlement of trenches or excavations or to settlement or lateral movement of the sides of such trenches or excavations, whether such movement occurs during or after excavation or backfilling of such trenches or excavations. His liability to so support and protect all such structures from damage or injury shall continue without limitation, throughout the Contract period and during the period of guarantee.

32.4 The Contractor shall at all times have on the ground suitable and sufficient material and shall use the same as may be necessary or required for sustaining and supporting any and all such structures which are uncovered, undermined, weakened, endangered, threatened, or otherwise materially affected.

32.5 In case injury occurs to any portion of a pipeline or structure, or to the material surrounding or supporting the same, through blasting or similar operations, the Contractor shall immediately notify the Engineer, and, at his expense, shall remove such injured work and shall rebuild the pipeline or structure and shall replace the material surrounding the supporting the same, or shall furnish such material and perform such work of repairs or replacement as the Town may order. Any damage whatsoever shall be promptly, completely and satisfactorily repaired by the Contractor at his expense.

Section 33. Acceleration of the Work

33.1 The Town may, at its sole discretion and as circumstances reasonably require, require the contractor to accelerate the schedule of performance by providing overtime, extended day, extra crews, Saturday, Sunday and/or holiday work and/or by having all or any subcontractors designated by the Town provide overtime, extended day, extra crews, Saturday, Sunday or holiday work by the contractor's or his subcontractor's own forces.

33.2 The Town, pursuant to a validly issued written change order, may reimburse the contractor for the direct cost to the contractor of the premium time for the labor utilized by the contractor in such overtime, extended day, extra crews, Saturday, Sunday or holiday work (but not for the straight time costs of such labor) together with any social security and state or federal unemployment insurance taxes in connection with such premium time. However, no overhead, supervision costs, commissions, profit or other costs and expenses of any nature whatsoever, including impact costs or costs associated with lost efficiency or productivity, shall be payable in connection therewith.

33.3 Anything to the foregoing notwithstanding, in the event that the contractor has fallen behind schedule or in the Town's judgment appears likely to fall behind schedule, Town shall have the absolute right to direct the contractor to accelerate the performance of its work, including that of its subcontractors, and the full costs for such acceleration shall be borne solely by the contractor.

Section 34. Stopping Work

34.1 Town May Suspend Work:

- i. The Town may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the contractor which shall fix the date on which work shall be resumed. The contractor shall resume the Work on the date so fixed. Subject to the approval of the Town Board, the contractor may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

34.2 The Town May Terminate:

A. Upon the occurrence of any one or more of the following events:

1. If the contractor is adjudged bankrupt or insolvent,
2. If the contractor makes a general assignment for the benefit of creditors,
3. If a trustee or receiver is appointed for the contractor or for any of the contractor's property,
4. If the contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws,
5. If the contractor repeatedly fails to supply sufficient skilled workers or suitable materials or equipment,
6. If the contractor repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment,
7. If the contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction,
8. If the contractor disregards the authority of the Town, or
9. If the contractor otherwise violates in any substantial way any provisions of the Bid Documents or the Contract. The Town may after giving the contractor and its Surety seven (7) days written notice, terminate the services of the contractor, exclude the contractor from the site, incorporate in the Work all materials and equipment stored at the site or for which Town has paid the contractor but which are stored elsewhere, and finish the Work as Town may deem expedient. In such case the contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the work, including compensation for additional professional services, such excess shall be paid to the contractor. If such costs exceed such unpaid balance, the contractor shall pay the difference to the Town.

B. Where the contractor's services have been so terminated by the Town, the termination shall not affect any rights of Town against the contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the contractor by Town will not release the contractor from liability.

C. Upon seven (7) days written notice to the contractor, Town may, without cause and without prejudice to any other right or remedy, elect to abandon the work and terminate the Agreement. In such case, the 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 or termination, including fair and reasonable sum of overhead and profit on such work;
2. For expenses sustained prior to 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 amounts paid in settlement of terminated contracts with Subcontractors, manufacturers, fabricators, suppliers or distributors and others; and
4. For reasonable expenses directly attributable to termination. contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or any consequential damages arising out of such termination.

Section 35. Change in the Contract Time

- 35.1** The contractor agrees that it will make no claim against the Town or any of its representatives for damages for delay, interference or disruption in the performance of its Contract occasioned by any act or omission to act by the Town or any of its representatives, or occasioned by any act or omission of any other contractor and further agrees that any such claim shall be fully compensated for by an extension of time to complete the performance of the work as provided herein.
- 35.2** The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to Town within fifteen (15) days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within twenty (20) days of such occurrence unless the Town allows an additional period of time to ascertain more accurate data. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.
- 35.3** The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the contractor. Such delays shall include, but not be limited to, acts or neglect by Town, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God. No extension of the Contract Time will be granted where the delay is attributable to a subcontractor, manufacturer, fabricator, supplier or distributor or any other party performing services or furnishing material or equipment on behalf of the contractor unless such party's delay is attributable to one of the above enumerated causes.
- 35.4** The time limits concerning Substantial Completion and final completion as stated in the Contract Documents are of the essence. The provisions of this section shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party, provided, however that the

contractor shall not be entitled to damages for any delay occurring as a consequence of a delay if the performance of said additional work was noted in the Contract Documents and the delay (by others) was not directly caused by the fault of the Town.

Section 36 Disputed Work - Notice of Claims for Damages

- 36.1** If the contractor is of the opinion that any work required, necessitated, or ordered violates or conflicts with or is not required by the terms and provisions of the contract, he must promptly, within five (5) calendar days after being directed to perform such work, notify the Town, in writing, of its contentions with respect thereto and request a final determination thereon. If the Town determines that the work in question is contract and not extra work, or that the order complained of is proper, he will direct the Contractor in writing to proceed and the Contractor shall promptly comply. In order, however, to preserve its right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within seven (7) calendar days after receiving notice of the Town's determination and direction, notify the Town, in writing that the work is being performed or that the determination and direction is being complied with, under protest. Failure of the Contractor to so notify shall be deemed as a waiver of claim for extra compensation or damages therefore.
- 36.2** The contractor is bound by the provisions of all applicable laws, including but not limited to the General Municipal Law and the Town Law, as related to the presentation of claims.
- 36.3** While the contractor is performing disputed work or complying with a determination or order under protest in accordance with this Article, in each such case the contractor shall furnish the Town daily with three copies of written statements signed by the Contractor's representatives at the site showing:
- i.** the name of each workman employed on such work or engaged in complying with such determination or order, the number of hours employed thereon, and the character of the work each is doing; and
 - ii.** the nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such work or compliance with such order, and from whom purchased or rented.
- 36.4** The contractor shall carry on the work and maintain the progress schedule during all disputes or disagreements with the Town. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the contractor and Town may otherwise agree in writing.
- 36.5** Before final acceptance of the work by the Town, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto. Determinations and decisions in case any question shall arise, shall constitute a condition precedent to the right of the Contractor to receive the money therefore, until the matter in

question has been adjusted.

PART THREE

GENERAL SPECIFICATIONS

NON-COLLUSIVE BIDDING CERTIFICATION

This Non-Collusive Bidding Certificate is made pursuant to Section 103-d of the General Municipal Law of the State of New York.

By submission of this bid, Bidder and each person signing on behalf of 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 or her knowledge and belief:

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;

Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by Bidder and will not knowingly be disclosed by Bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where (1) (2) and (3) above, have not been complied with; provided, however, that if in any case Bidder cannot make the foregoing certification, Bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

Dated: _____

Bidder: _____
(Legal name of person, firm or corporation)

By: _____
(Signature)

(Please Print Name)

(Title)

State of New York)
Town of _____)ss.:

On the ____ day of _____ in the year 2024 before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

(Notary Public)

SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Project Description
- B. Description of the Work
- C. Work Sequence and Coordination
- D. Special Requirements

1.02 PROJECT DESCRIPTION

- A. The Project is generally described as the rehabilitation of the exterior of the tank, installation of a submersible mixer, structural improvements to the tank including installation of a new roof vent and swing gate, and installation of a sacrificial anode cathodic protection system.

1.03 DESCRIPTION OF THE WORK

- A. The Work includes labor, material and equipment, services required for construction, testing, and commissioning of the Project in accordance with the Contract Documents and as more specifically described in the Specifications and Drawings and includes, but is not limited to, the following principal features.
 - 1. Tank surface preparation
 - 2. Tank surface coating
 - 3. Metal fabrications
 - 4. Tank disinfection and testing
 - 5. Tank mixer installation
 - 6. Tank sacrificial anode cathodic protection system installation
 - 7. And all material and equipment, construction and services inherent to the Work.
- B. Work Site locations: generally as shown on the Drawings.
- C. Existing conditions and Site data: per the Drawings and Section 00 31 00.

1.04 WORK SEQUENCE AND COORDINATION

A. Sequence

1. Sequence Work to minimize shutdowns and reflect sequencing in the construction schedule.

B. Coordination

1. Ensure that facilities and water system flows are maintained and remain in service at all times unless otherwise approved.
 - a. Obtain written approval of the Engineer for shutdowns. Notify Engineer a minimum of two weeks prior to any required shutdowns.
2. Maintain access to facilities for the Owner throughout the Project.

PART 2 PRODUCTS - NOT USED

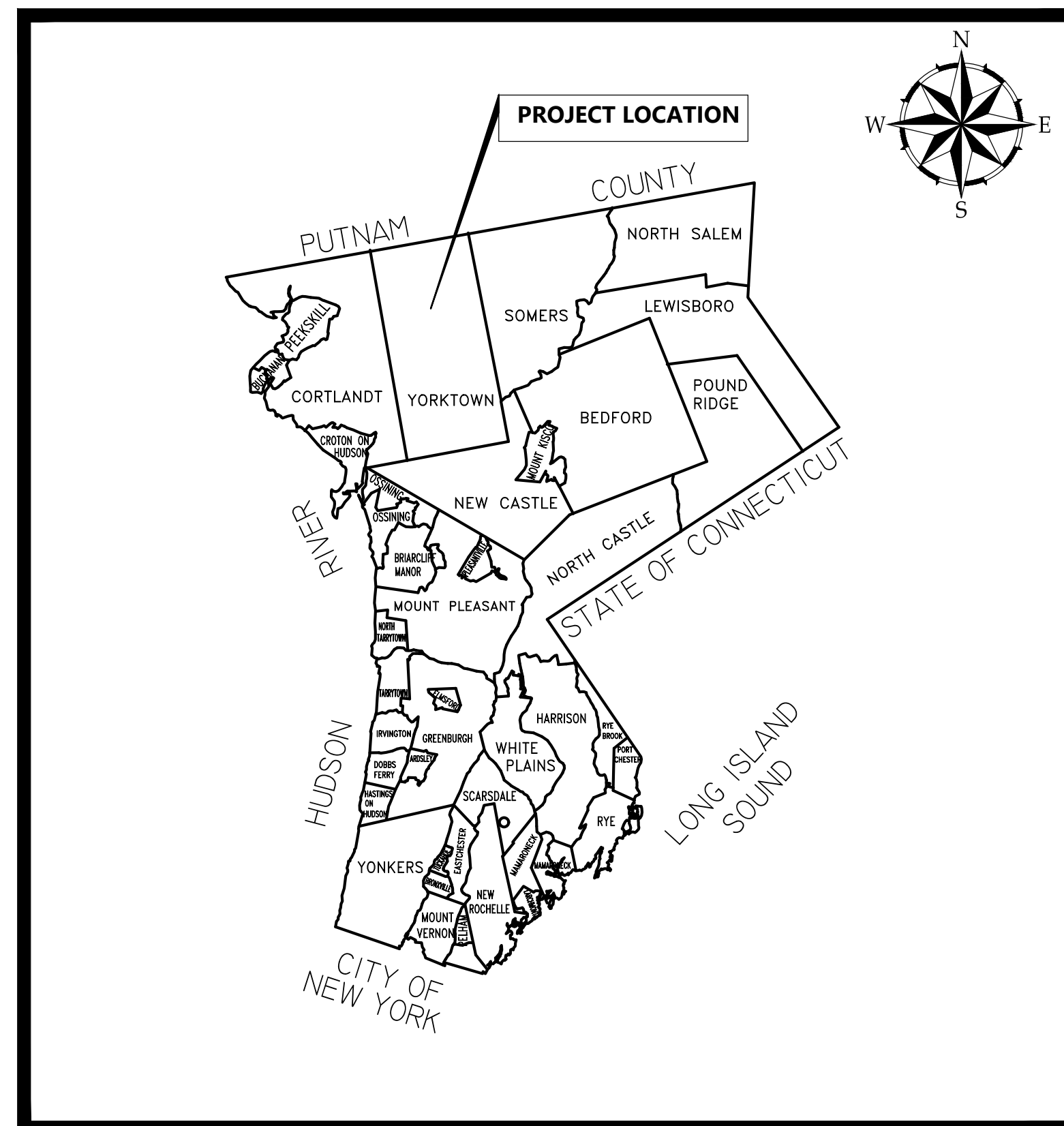
PART 3 EXECUTION - NOT USED

END OF SECTION

TOWN OF YORKTOWN WESTCHESTER COUNTY, NY

FRENCH HILL TANK REHABILITATION

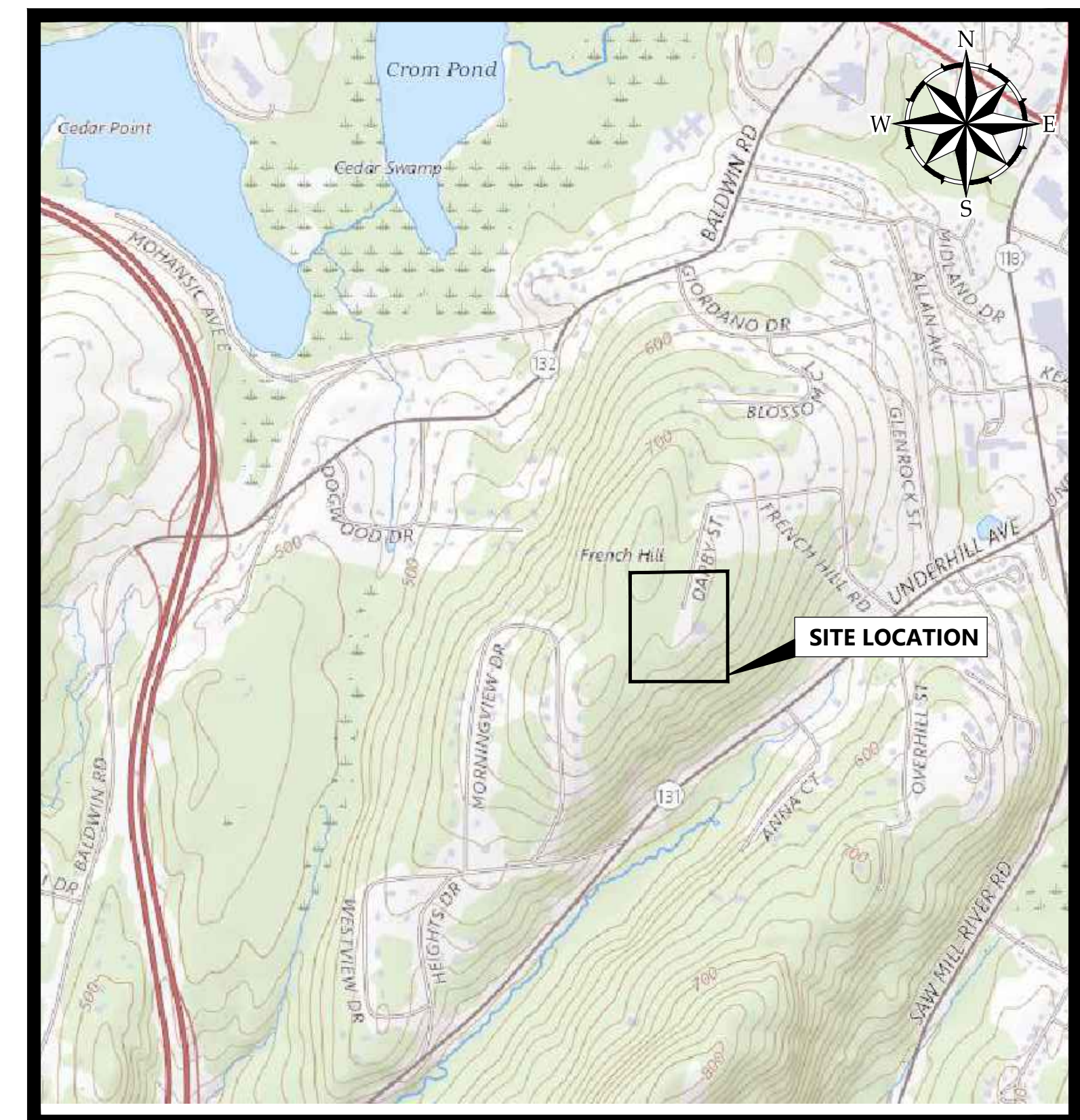
SEPTEMBER 2024



PROJECT LOCATION MAP

WOODARD & CURRAN DRAWING

- G-001 COVER SHEET
- C-100 SITE PLAN AND GENERAL NOTES
- C-300 TANK CONDITION PHOTOS
- S-301 STRUCTURAL DETAILS



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE



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Geological Services PA PC
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Rye Brook, New York 10573
800.807.4080 |
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EDUCATION LAW, EXCEPT AS PROVIDED FOR
BY SECTION 7209, SUBSECTION 2.



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GENERAL NOTES

1. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, STREETS, PAVEMENTS, CURBING, TREES, PLANTINGS, LAWN, FENCING TO REMAIN ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE AT HIS/HER OWN EXPENSE AS DIRECTED BY THE ENGINEER ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
2. ALL SURFACES TO REMAIN THAT ARE DISTURBED BY THIS WORK SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, AS DETAILED, OR AS SPECIFIED BY THE ENGINEER.
3. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY. CONTRACTOR IS RESPONSIBLE FOR ALL SCAFFOLDING, LIFTS, AND OTHER EQUIPMENT NECESSARY FOR THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS.
4. WORK HOURS SHALL BE 8AM TO 4PM MONDAY THROUGH FRIDAY EXCEPT AS APPROVED BY THE TOWN OF YORKTOWN WATER DEPARTMENT.
5. CONTRACTOR SHALL PROVIDE DETAILED WORK PLAN AND SCHEDULE PRIOR TO COMMENCEMENT OF WORK. THE WORK PLAN SHALL DESCRIBE WORK PRACTICES AND PROTECTIVE MEASURES TO BE IMPLEMENTED THAT WILL MINIMIZE IMPACTS ON ADJACENT PROPERTIES.
6. TANK DESIGN DATA:
 - a. CAPACITY: 3.0 MILLION GALLONS
 - b. DIAMETER: 104 FEET
 - c. HEIGHT: 52 FEET

SCOPE OF WORK

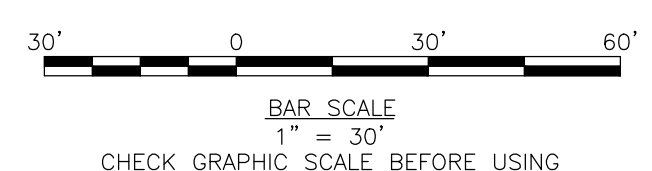
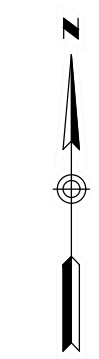
- PREPARATORY WORK**
1. THE TOWN AND WESTCHESTER DEPARTMENT OF HEALTH (WCDOH) MUST BE NOTIFIED TWO DAYS BEFORE WORK IS STARTED. THE TOWN WILL DRAW THE WATER FROM THE TANK TO THE LEVEL OF THE SUPPLY PIPE.
 2. THE TANK MUST BE EMPTY BEFORE WORK IS STARTED. TANK WATER WILL BE RELEASED TO THE GROUND SURFACE AND WILL BE DISCHARGED ACCORDING TO LOCAL ENVIRONMENTAL REGULATIONS.
 3. REMOVE ALL SEDIMENT AND DISPOSE OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.
 4. TIGHTEN BOLTS AND RODS ON THE TANK. REGROUT AND SEAL AS NEEDED.
 5. PROVIDE, SET-UP AND MAINTAIN ALL HOISTS, SCAFFOLDS, AND STAGING AND PLANKING.
 6. ERECT AND MAINTAIN PROTECTIVE TARPS, ENCLOSURES, AND/OR MASKINGS TO CONTAIN DERRIS.
- EXTERIOR (COATING SYSTEM NUMBER: AWWA D102 OCS#6)**
1. BLAST EXISTING COATING SYSTEM TO ACHIEVE THE EQUIVALENT OF SSPC-SP6 SURFACE PREPARATION.
 2. PRIMER: SHERWIN-WILLIAMS B65G00011 - COROTHANE | GALVAPAC ZINC PRIMER (3.0 - 4.0 MILS DFT).
 3. INTERMEDIATE: SHERWIN WILLIAMS B58W00610 - MACROPOXY 646 FAST CURE EPOXY (5.0 - 7.0 MILS DFT).
 4. TOPCOAT: SHERWIN-WILLIAMS B80W00551 - SHER-LOXANE 800 (4.0 - 6.0 MILS DFT).
- INTERIOR (COATING SYSTEM NUMBER: AWWA D102 ICS#3)**
1. FULL REMOVAL OF EXISTING COATING SYSTEM TO ACHIEVE SSPC-SP10 SURFACE PREPARATION.
 2. SURFACE COMPOUND (IF NEEDED): SHERWIN-WILLIAMS B58W00910 - STEEL-SEAM FT910.
 3. PRIMER: SHERWIN-WILLIAMS B65G00011 - COROTHANE | GALVAPAC 1K ZINC PRIMER (3.0 - 4.0 MILS DFT).
 4. STRIPE COAT: SHERWIN-WILLIAMS B58H0681 - SHERPLATE 600 PW EPOXY (3.0 - 5.0 MILS DFT).
 5. FINISH COAT: SHERWIN-WILLIAMS B62W00260 - SHERPLATE PW EPOXY (25.0 - 30.0 MILS DFT).
- STRUCTURAL**
1. INSTALL SELF-CLOSING SWING GATE ON EXTERIOR LADDER AS PER OSHA STANDARD 1910.23(A)(2).
 2. REMOVE AND REPLACE EXISTING ROOF VENT WITH ROOF VENT COMPLIANT WITH AWWA D100.
 3. INSTALL A STAINLESS STEEL 24 MESH BUG SCREEN ON THE TANK OVERFLOW PIPE.
 4. INSTALL TWO (2) GRIDBEE GS-12 SUBMERSIBLE WATER STORAGE TANK MIXERS.
 5. INSTALL A SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM COMPLIANT WITH AWWA.

WCDOH NOTES

1. CONTRACTOR SHALL NOTIFY WCDOH AT THE START OF WORK.
2. AFTER COMPLETION OF THE WORK, THE WATER STORAGE TANK SHALL BE FILLED, AND TWO (2) WATER SAMPLES SHALL BE COLLECTED FOR THE DETERMINATION OF MICROBIOLOGICAL PRESENCE (E-COLI, HPC), AND VOLATILE ORGANIC COMPOUNDS (EPA TEST 524 PLUS MTBE) LEVELS MUST BE TAKEN AT THE DISCHARGE OF THE TANK AT TWO (2) CONSECUTIVE 24-HOUR LEVELS.
3. LEAD SAMPLES SHALL BE TAKEN BY THE TOWN OF YORKTOWN PRIOR TO WORK COMMENCEMENT AND IMMEDIATELY FOLLOWING CONTRACTOR'S DEMOBILIZATION FROM THE SITE.
4. DISINFECTION OF THE TANK WILL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARD C652-19, METHOD 2 (4.3.2) OR METHOD 3 (4.3.3).

LEAD SAMPLE RESULTS

SAMPLE	LEAD (MG/KG DRY)	% SOLIDS (%)
SOIL SAMPLE #1	79.7	43.1
SOIL SAMPLE #2	63.0	75.6
SOIL SAMPLE #3	81.3	55.3
PAINT SAMPLE #1	17.8	100



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PE SEAL:

CLIENT INFO:

TOWN OF YORKTOWN
WESTCHESTER COUNTY, NY

FRENCH HILL TANK
REHABILITATION

REV	MM/DD/YY	DESCRIPTION
1	08/22/24	WCDOH COMMENTS

JOB NO: 214883.00
DATE: SEPTEMBER 2024
SCALE: NOT TO SCALE
DESIGNED BY: PH
DRAWN BY: SJ
CHECKED BY: SR
FILENAME: 0214883.00-C-100.dwg

DRAWING TITLE:
**CIVIL
SITE PLAN AND
GENERAL NOTES**

DRAWING NO:
C-100



\\woodardcurran-ent\shared\Project\0214883.00 Yorktown NY French Hill Tank Rehabilitation\wp\Drawings\Civil\0214883.00-C-100.dwg, Sep 11, 2024, 8:17am KNORSCULIST



Woodard & Curran

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1 OVERFLOW SCREEN
NOT TO SCALE



2 VENT SCREEN
NOT TO SCALE



3 SHELL LADDER
NOT TO SCALE



4 SEDIMENT ON TANK FLOOR
NOT TO SCALE



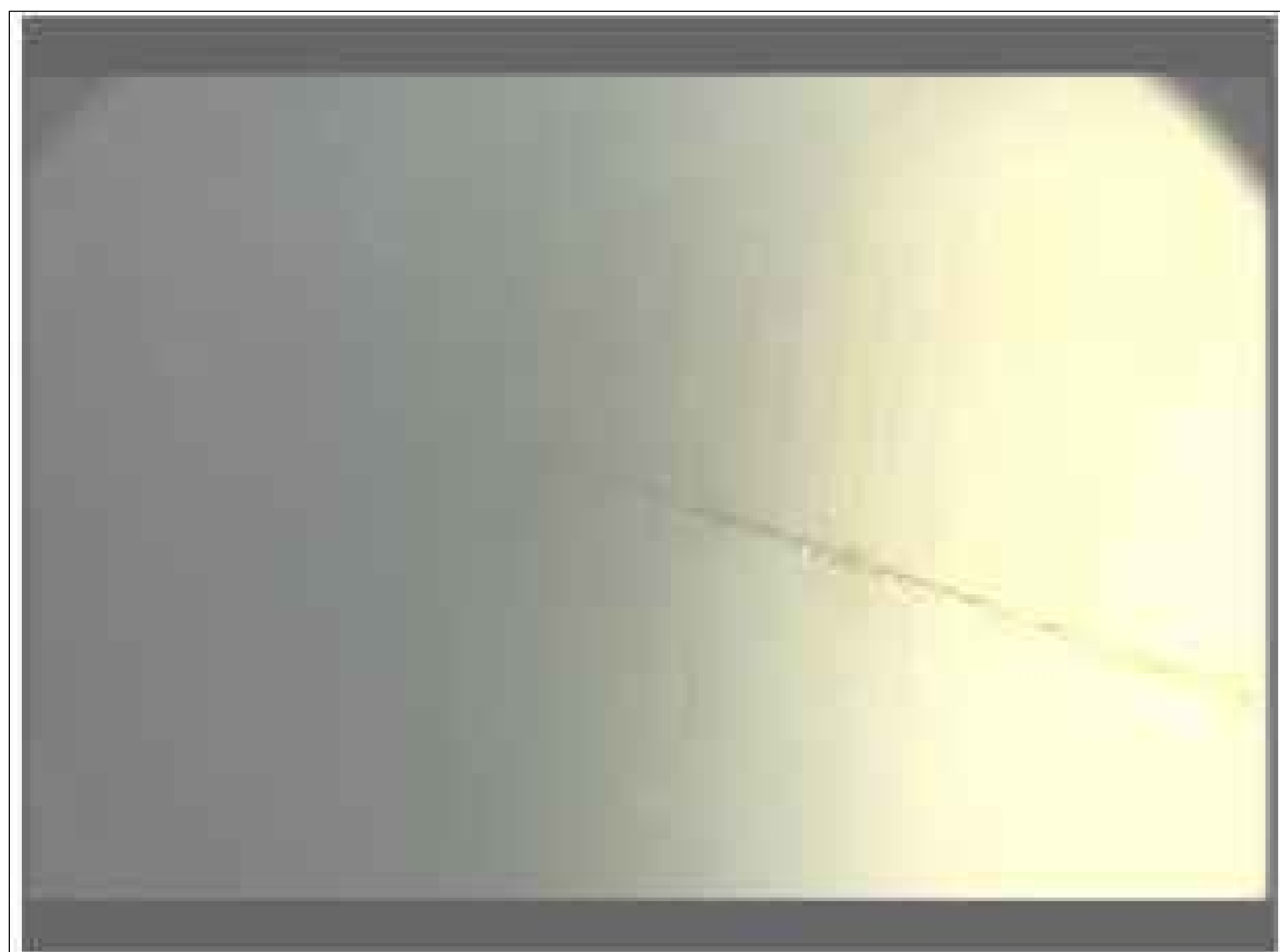
5 ROOF VENT
NOT TO SCALE



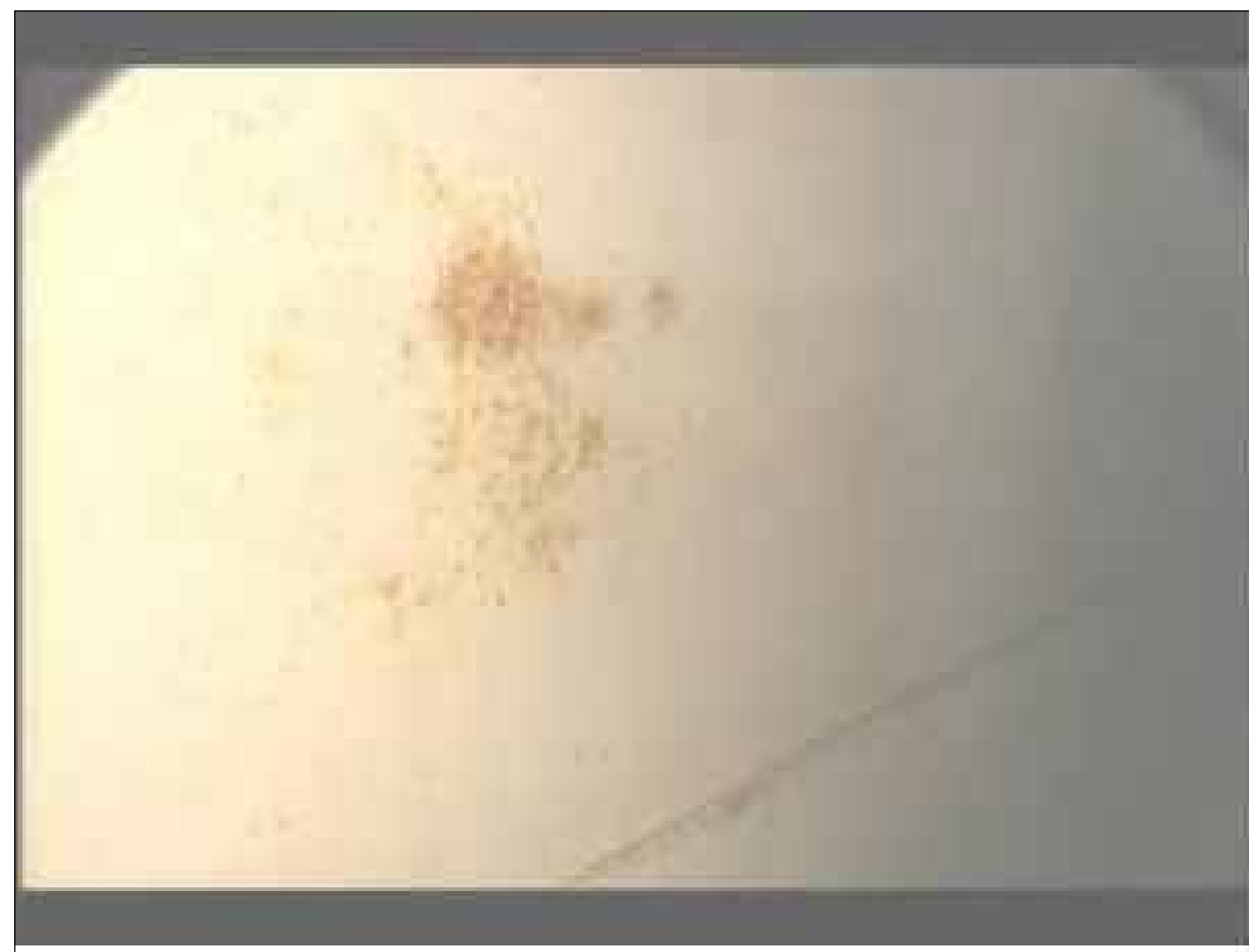
6 CORROSION ON SHELL
NOT TO SCALE



7 BIOLOGICAL STAINING AND CORROSION ON THE SHELL
NOT TO SCALE



8 TYPICAL INTERIOR SHELL CONDITION
NOT TO SCALE



9 CORROSION ON INTERIOR SHELL PLATE
NOT TO SCALE

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PE SEAL:

CLIENT INFO:
TOWN OF YORKTOWN
WESTCHESTER COUNTY, NY
FRENCH HILL TANK
REHABILITATION

REV	MM/DD/YY	DESCRIPTION

JOB NO: 214883.00
 DATE: SEPTEMBER 2024
 SCALE: NOT TO SCALE
 DESIGNED BY: PH
 DRAWN BY: SJ
 CHECKED BY: SR
 FILENAME: 0214883.00-C-300.dwg

DRAWING TITLE:
**CIVIL
TANK CONDITION PHOTOS**

DRAWING NO:
C-300

\\woodardcurran.net\shared\Projects\0214883.00 Yorktown NY French Hill Tank Rehabilitation\wp\Drawings\Civil\0214883.00-C-300.dwg, May 01, 2024 - 8:48am SJJING



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PE SEAL:

CLIENT INFO:

TOWN OF YORKTOWN WESTCHESTER COUNTY, NY FRENCH HILL TANK REHABILITATION

Table with 2 columns: REV, MM/DD/YY, DESCRIPTION. Includes job number 214883.00, date SEPTEMBER 2024, and drawing number S-301.

DRAWING TITLE: STRUCTURAL GENERAL NOTES, ABBREVIATIONS, LEGEND, & DETAILS. DRAWING NO: S-301

SHEET GENERAL NOTES

- A. GENERAL NOTES: DESIGN IS IN ACCORDANCE WITH 2020 BUILDING CODE OF NEW YORK STATE & 2018 IBC, AS AMENDED. THESE NOTES SHALL APPLY TO ALL STRUCTURAL PLANS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE. B. STEEL: STEEL SHALL COMPLY WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AISC 360-10 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS...

STRUCTURAL KEYED NOTES

- 1. HDPE RING 47" OD X 43" ID X 1/2" THK BOLT CIRCLE: (36) 1/4" DIA HOLES AND EVENLY SPACED @ RAD = 22 1/2". 2. 16X16 316 SS WIRE MESH 46" DIA (0.0018 - 316 SS WIRE SCREEN) BOLT CIRCLE: (36) 1/4" DIA HOLES EVENLY SPACED @ RAD = 22 1/2". 3. (36) NO 10 PAN HEAD 316 SS MACHINE SCREWS W/ NUTS AND FENDER WASHERS, 1 1/2" LONG.

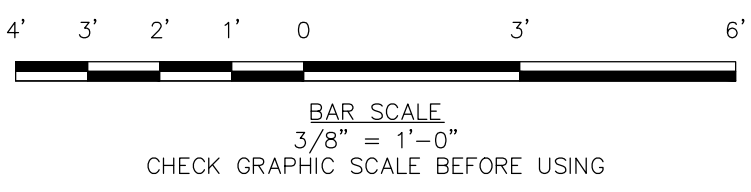
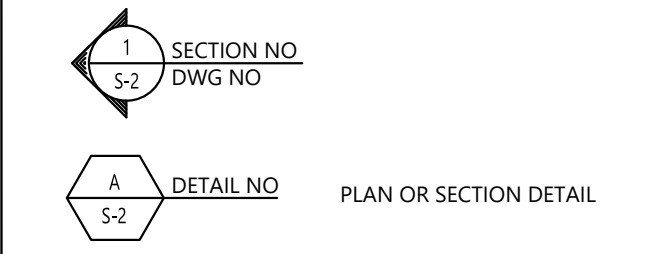
NOTE: THIS IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DOCUMENTS

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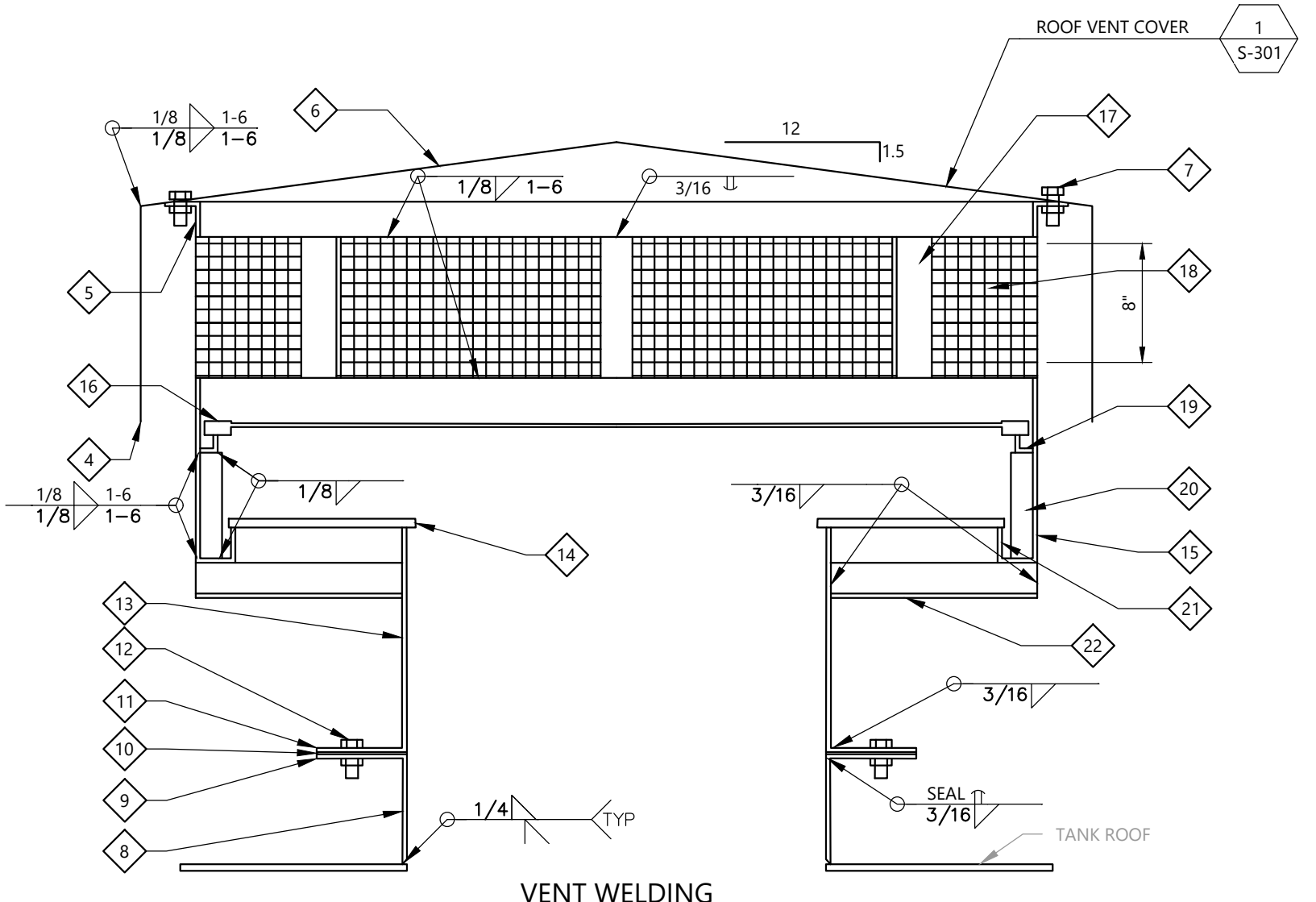
ABBREVIATIONS

Table of abbreviations including AND, AT, DIAMETER, DEGREES, ANCHOR BOLT, ABOVE, AMERICAN CONCRETE INSTITUTE, ABOVE FINISHED FLOOR, etc.

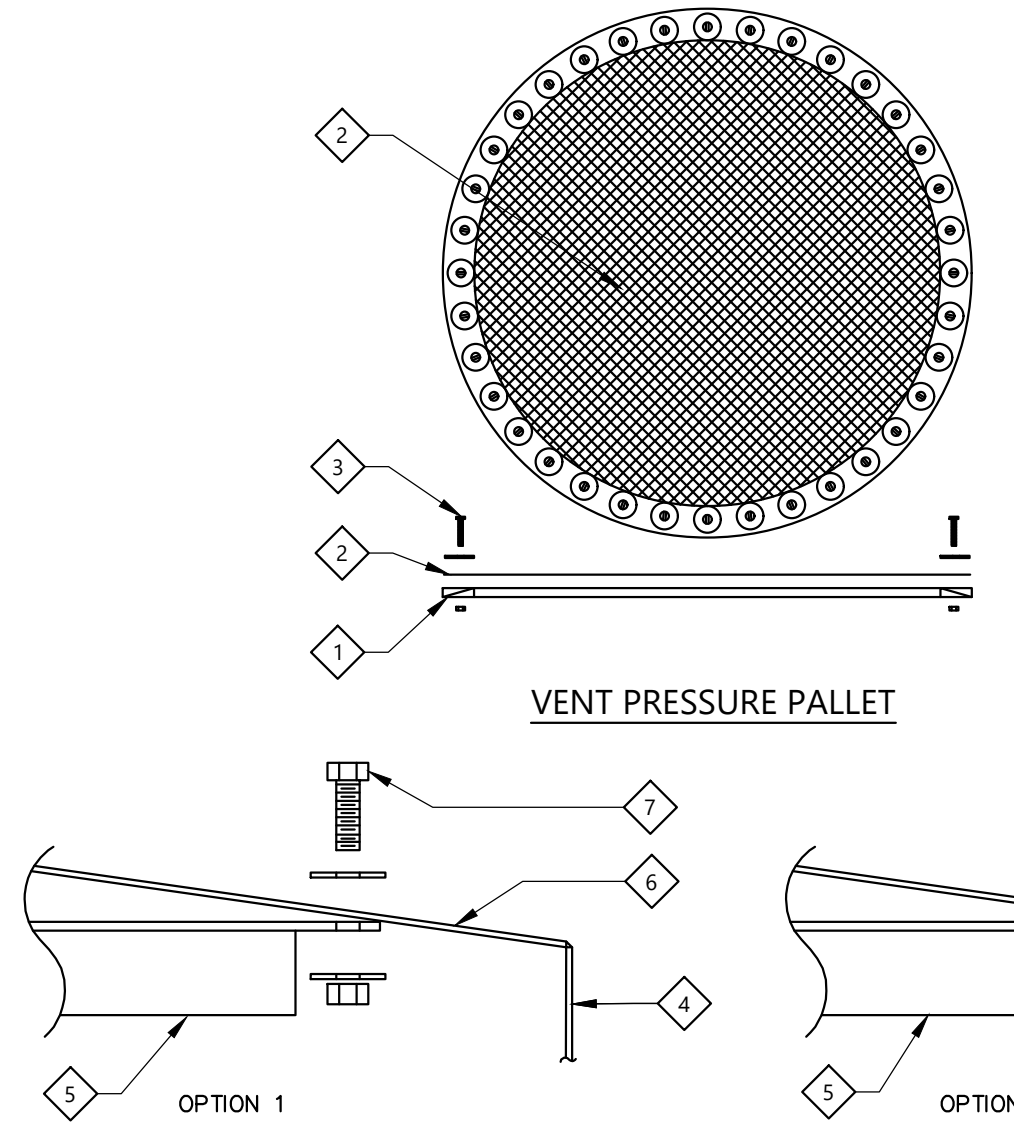
SYMBOLS



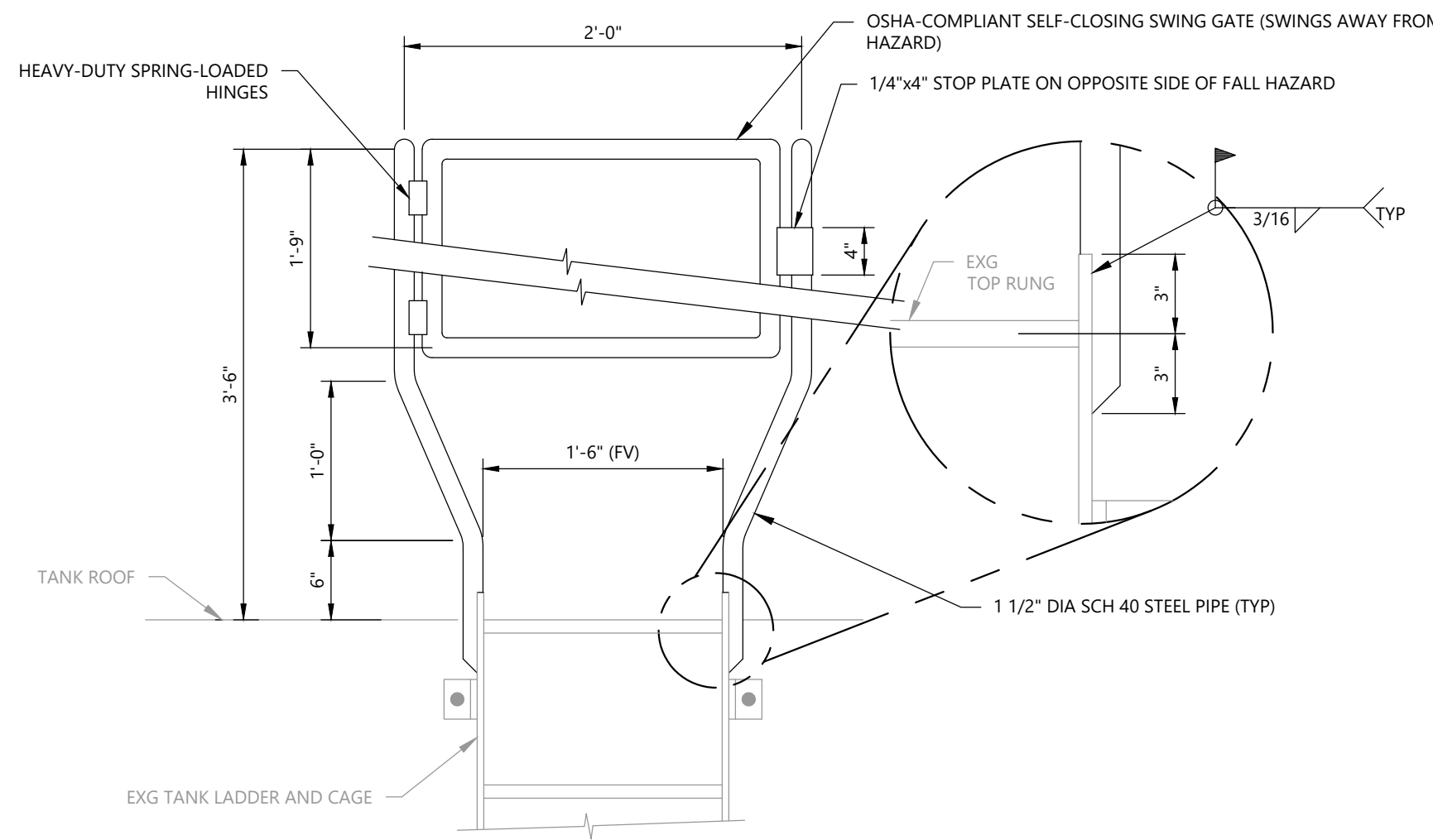
BAR SCALE 3/8" = 1'-0" CHECK GRAPHIC SCALE BEFORE USING



2 ROOF VENT SCALE: NTS



1 ROOF VENT COVER SCALE: NTS



3 SELF-CLOSING SWING GATE SCALE: 3/8" = 1'-0"

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SECTION 05 50 00

METAL FABRICATIONS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Provide the following metal fabrications in accordance with this Section and applicable reference standards listed in Article 1.03.
 - a. Miscellaneous steel items

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

- A. Reference Standards
 - 1. American Concrete Institute (ACI)
 - a. ACI 355.2 Qualification of Post-Installed Mechanical Anchors in Concrete
 - b. ACI 355.4 Qualification of Post-Installed Adhesive Anchors in Concrete Elements
 - 2. American Institute of Steel Construction (AISC)
 - a. AISC 303 Code of Standard Practice for Steel Buildings and Bridges
 - 3. American National Standards Institute (ANSI)
 - a. A14.3 American National Standard for Ladders-Fixed-Safety Requirements
 - b. Z359.16 Safety Requirements for Climbing Ladder Fall Arrest Systems
 - 4. American Welding Society (AWS)
 - a. AWS D1.1 Structural Welding Code - Steel
 - b. AWS D1.2 Structural Welding Code - Aluminum

- c. AWS D1.6 Structural Welding Code - Stainless Steel
5. ASTM International (ASTM)
- a. ASTM A6 Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
 - b. ASTM A36 Standard Specification for Carbon Structural Steel
 - c. ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
 - d. ASTM A123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - e. ASTM A153 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - f. ASTM A239 Standard Practice for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles
 - g. ASTM A500 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
 - h. ASTM A563 Standard Specification for Carbon and Alloy Steel Nuts
 - i. ASTM A572 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
 - j. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - k. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
 - l. ASTM A992 Standard Specification for Structural Steel Shapes
 - m. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - n. ASTM B211 Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire
 - o. ASTM B308 Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles

- p. ASTM D6386 Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting
 - q. ASTM F436 Hardened Steel Washers
 - r. ASTM F959 Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners
 - s. ASTM F1136 Standard Specification for Zinc/Aluminum Corrosion Protective Coatings for Fasteners
 - t. ASTM F1554 Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
 - u. ASTM F1852 Standard Specification for "Twist Off" Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
 - v. ASTM F2329 Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners
 - w. ASTM F2833 Standard Specification for Corrosion Protective Fastener Coatings with Zinc Rich Base Coat and Aluminum Organic/Inorganic Type
 - x. ASTM F3125 Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch and Metric Dimensions
6. ICC Evaluation Services (ICC-ES)
- a. ICC-ES AC58 Acceptance Criteria for Adhesive Anchors in Masonry Elements.
 - b. ICC-ES AC308 Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements.
7. National Association of Architectural Metal Manufacturers (NAAMM)
- a. AMP 500 Metal Finishes Manual
 - b. MBG 531 Metal Bar Grating Manual
 - c. MBG 533 Welding Specification for Fabrication of Steel, Aluminum, & Stainless Steel Bar Grating
8. Research Council on Structural Connections (RCSC)

- a. Specification for Structural Joints Using High-Strength Bolts

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination, sequencing, and scheduling: per Division 01 General Requirements.

1.05 SUBMITTALS

- A. Submit in accordance with Division 01 General Requirements.
- B. Shop Drawings
 1. Details of connections, copes, splices, holes, hardware, finish, and other pertinent information
 2. Anchor bolt embedment Drawings
 3. Indicate welds by standard AWS symbol
 4. Indicate bolts and identify slip-critical connections as applicable
 5. Identify areas of slip-critical connections to be masked from shop painting
- C. Product Data
 1. Expansion Bolts
 - a. ICC-ES Compliance Report
 - b. Allowable and ultimate load tables per embedment depths
 - c. Capacity reduction factors for bolt spacing and edge distances
 - d. Installation Instructions including bolt torque
 2. Adhesive Anchors
 - a. ICC-ES Compliance Report
 - b. Allowable and ultimate load tables per embedment depths
 - c. Storage requirements
 - d. Gel and cure times as a function of temperature
 - e. Installation temperature requirements
 - f. Drilling method (diamond drill bit shall be prohibited)

- g. Drill bit diameter and depth of hole for each size anchor
 - h. Hole cleaning procedure and required condition of hole
 - i. Dual-nozzle instructions to ensure proper mixing
 - j. Hole Filling procedure
 - k. Time period anchor cannot be contacted or disturbed
- D. Manufacturer Instructions
 - E. Source and Field Quality Control Submittals
 - F. Certificates
 - 1. Mill test reports for structural shapes, bolts, nuts, and washers
 - 2. Welding certifications for welding procedures and personnel
 - G. Closeout and maintenance material submittals: per Division 01 General Requirements.

1.06 QUALITY ASSURANCE

- A. Provide in accordance with Division 01 General Requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Provide in accordance with Division 01 General Requirements.
- B. Assemble and ship ASTM F1852 and galvanized ASTM F3125 bolt assemblies in the same container. Do not re-lubricate ASTM F1852 tension-control bolt assemblies.
- C. Carefully unload material and equipment and stack to prevent deformation and damage. Store items on substantial pallets, dunnage, or other supports and spacers, free from the earth and properly drained, preventing splattering with dirt and other foreign matter.
- D. Store material and equipment to permit easy access for inspection and identification. Protect from deterioration and maintain markings.
- E. Provide protective storage for fastener components. Protect fastener components removed from protective storage from dirt and moisture in closed containers at the location of installation. Do not clean or modify fastener components from as-delivered condition. Do not use fastener components accumulating rust or dirt, and remove from the Site.

1.08 SITE CONDITIONS

- A. Existing conditions: per Division 01 General Requirements.

1.09 WARRANTY

- A. Special Warranty/Extended Correction Period
 - 1. Hatch covers: 5-year manufacturer's warranty covering proper operation and defects in material or workmanship.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Make field measurements prior to fabrication to ensure proper fit. Report discrepancies in existing conditions that require detail changes to Engineer prior to fabrication.
- B. Assemble built-up Work in sections in the shop as much as practicable and match mark components for field assembly.
- C. Bolt holes (including those for attaching wood blocking and other components): by fabricator and not made or modified by burning.
- D. Gauges
 - 1. Iron sheets and steel: U.S. Standard
 - 2. Acceptable level of quality for non-ferrous products: equivalent to Brown & Sharpe.
 - 3. Wire: U.S. Steel Wire.
- E. Weld carbon steel per ANSI/AWS D1.1, with electrodes with a tensile strength of 70 ksi.
- F. Fusion weld aluminum by the inert gas-shielded arc method per ANSI/AWS D1.2. Use alloy rods similar to alloy being welded where appearance match is required. Alloy 4043 rods may be used where appearance is not a factor and anodizing is not required.
- G. Weld stainless steel per AWS D1.6.
- H. Steel
 - 1. Comply with AISC 303.
 - 2. Steel mill material tolerances: per ASTM A6.

3. Steel W-shapes: ASTM A992 (50 ksi yield strength).
4. Steel channels and angles: ASTM A992 (50 ksi yield strength) ASTM A572 grade 50, or ASTM A36.
5. Other steel shapes, plates and bars: ASTM A36.
6. Steel pipe: ASTM A53, Grade B.
7. Hollow structural shapes: ASTM A500, Grade B.
- I. Bolts: ASTM F3125 Grade A325 Type I, heavy-hex, hot-dipped galvanized per ASTM F2329 at exterior applications and/or where indicated on Drawings.
- J. Nuts: ASTM A563, heavy-hex.
- K. Washers: ASTM F436 hardened steel.
- L. Tension-control bolt assemblies: ASTM F1852 Type I, heavy-hex.
- M. Direct tension indicators: ASTM F959, Type 325, compressible washer type.
- N. Threaded rods: ASTM A36.
- O. Aluminum items: Fabricated from bars, plates, pipes, rolled and extruded shapes conforming to the following alloy designation unless otherwise specified.
 1. Standard structural shapes: Rolled 6061-T6 per ASTM B308.
 2. Rolled rod and bar: 6061-T6 per ASTM B211.
 3. Sheets, Plates, Checkered Plates: 6061-T6 per ASTM B209.
 4. Bolts: 2024-T4.
 5. Nuts: 6061-T6.
 6. Washers: Alclad 2024-T4.
- P. Stainless steel items: Type 316 (Type 316L if welded).

2.02 MISCELLANEOUS STEEL ITEMS

- A. Fabricate and furnish miscellaneous steel items, galvanized angles, relieving angles, plates, channels, and all required fastenings per Drawing details. Miscellaneous steel items shall be galvanized as specified.

2.03 SOURCE OF QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.

PART 3 – EXECUTION

3.01 DISSIMILAR MATERIAL

- A. Keep aluminum surfaces from direct contact with metals other than stainless steel by painting the dissimilar metal with a coating of zinc chromate paint, or provide non-absorptive tape between dissimilar metals.
- B. Paint aluminum with a coat of bituminous paint where aluminum is embedded in, or comes in contact with, concrete, masonry or by-products of these materials.

3.02 INSTALLATION

- A. Use stainless steel hardware when anchoring aluminum and in submerged locations.

3.03 ADHESIVE BOLTS

- A. Installation: Per manufacturer's installation instructions and as listed in the product ICC-ES Evaluation Report
- B. Drilled and epoxied bolts shall be installed in concrete having a minimum age of 21 days at time of installation.
- C. All cartridges shall have the expiration date clearly visible. Material past its expiration date shall not be used, and shall be immediately removed from the Site.
- D. Diamond drill bits are not permitted. Hammer drills shall be used.
- E. Drill Holes:
 - 1. Diameter: Per manufacturer's instructions
 - 2. Embedment: Manufacturer's standard embedment for anchor size, unless noted otherwise on drawings. Depth stop shall be used to ensure correct drilling depth.
 - 3. Installation Torque: Per manufacturer's instructions.
- F. The initial material extruded from each cartridge shall be discarded in accordance with the manufacturer's instructions to ensure that all material is properly mixed.
- G. Drilled holes shall be blown out with air, thoroughly wire brushed with a repeated back and forth movement, blown out, thoroughly wire brushed, and blown out

again. Adhesive shall be injected, starting from the bottom of the hole and slowly withdrawn as filling progresses to prevent air pockets.

- H. Installed bolt shall remain completely undisturbed between the manufacturer's specified gel time and the full cure time. Zero load shall be applied during this time.

3.04 EXPANSION BOLTS

- A. Installation: Per manufacturer's installation instructions and as listed in the product ICC-ES Evaluation Report.
- B. Drill Holes:
 - 1. Diameter: Per manufacturer's instructions
 - 2. Embedment: Manufacturer's standard embedment for anchor size, unless noted otherwise on drawings. Depth stop shall be used to ensure correct drilling depth
- C. Installation Torque: Per manufacturer's instructions.

3.05 FIELD TOUCH UP

- A. Where galvanized steel is field cut and locations where galvanized coating is removed: Touch up steel surface with zinc rich paint meeting ASTM A780 and containing a minimum of 65 percent zinc at locations.

3.06 PIT WELDING

- A. Performed by AWS or ASME certified welders.
- B. Performed where 35% or greater reduction in plate thickness occurs within the tank.
- C. Ensure 100% fusion to base metals and bring the pit at least flush with the original surface.
- D. Grind smooth with adjacent surfaces.
- E. Where patch plates are required in roof rafters they shall match existing material thickness. Remove portions of rafters with greater than 35% section loss and replace with patch plates utilizing full penetration welds. Temporary shoring of roof shall be the responsibility of the contractor if required.

3.07 CLEANING

- A. Immediately after installation, round or chamfer sharp edges and grind burrs, jagged edges and surface defects smooth. Remove weld splatter.

3.08 FIELD QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.
- B. All structural welding on tank shell shall be inspected in accordance with AWWA D100 Section 11, "Inspection and Testing". Radiographic inspection of welds shall be made by an independent inspection company retained by the contractor incidental to the work.
 - 1. The first 10 linear feet of each welders production shall be tested as a qualifying shot. Then another test performed for every 100 linear feet or fraction thereof as forage shots.
 - 2. In addition to the requirements of AWWA D100 Section 11, complete joint penetrating welds at new manholes shall also be subject to radiographic inspection.

3.09 CLOSEOUT ACTIVITIES

- A. Provide in accordance with Division 01 General Requirements.

END OF SECTION

SECTION 09 97 13

COATING SYSTEM FOR STEEL STORAGE TANKS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Provide specialty coatings in accordance with this Section and applicable reference standards listed in Article 1.03.
 - 2. Complete field coating for the water storage tank.
 - 3. Rigid staging and containment around exterior of tank capable of supporting local wind loads.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

- A. Reference Standards
 - 1. Society for Protective Coatings (SSPC)
 - a. SSPC-PA1, “Standard for Shop, Field, and Maintenance Painting.”
 - b. SSPC-PA2, “Measurement of Dry Paint Thickness with Magnetic Gauges.”
 - c. SSPC-PA Guide 3, Standard “A Guide to Safety in Paint Application,” latest revision.
 - d. SSPC-SP 2, Hand Tool Cleaning
 - e. SSPC-SP 3, Power Tool Cleaning
 - f. SSPC-SP 6/NACE No. 3, Commercial Blast Cleaning
 - g. SSPC-SP 10/NACE No. 2, Near-White Blast Cleaning
 - h. SSPC-SP 12, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

2. ASTM International (ASTM)
 - a. D523 - Standard Test Method for Specular Gloss
 - b. D610 - Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
 - c. D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
 - d. D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
 - e. D4258 - Standard Practice for Surface Cleaning Concrete for Coating
3. Federal Test Method No. 141 – Method 6141, Stain Removal.
4. National Science Foundation / American National Standards Institute
 - a. NSF/ANSI 61: Drinking Water System Components
 - b. NSF/ANSI 600: Health Effects Evaluation and Criteria for Chemicals in Drinking Water
5. VOC Standards – All coatings shall be in accordance with all Local, State, and Federal VOC Standards.
 - a. OSHA 29 CFR 1925.55 Gases, Vapors, Fumes, Dusts, and Mists.
 - b. Ozone Transportation Commission (OTC) 2005 VOC Regulation.
6. American Water Works Association (AWWA)
 - c. AWWA C652 Disinfection of Water-Storage Facilities

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination, sequencing, and scheduling: per Division 01 General Requirements.

1.05 SUBMITTALS

- A. Submit in accordance with the Division 01 General Requirements.
 1. Acceptance Sample: minimum 4-foot square sample of specified finish system applied to exterior of tank, stepped so that each layer of the system is visible. Finish colors shall be as selected by Owner and show each color required by any special logos.

2. Manufacturer's standard color charts for color selection by Owner. Separate colors may be chosen for Tank Exterior fields, Exterior Tank Columns, and Special Logo.
 3. Manufacturers' Literature: Descriptive data and specific recommendations for initiating, mixing, application and curing.
 4. Manufacturer's Material Safety Data Sheets (MSDS) for each respective product being used.
 5. Manufacturer's certification that the proposed coatings meet all local, State, and Federal VOC requirements.
 6. Coating manufacturer's certification that the proposed coatings meet all NSF / ANSI / CAN 600 requirements.
 7. Daily log of temperature and humidity within tanks at the start of each day during coating and curing.
- B. Staging Shop Drawings indicating they have been designed for local wind speeds and are adequate to support any temporarily relocated antennas.
- C. Closeout and maintenance material submittals: per Division 01 General Requirements.

1.06 QUALITY ASSURANCE

- A. Provide in accordance with Division 01 General Requirements.
- B. Qualifications: per Division 01 General Requirements for Applicator and as follows.
1. Surface preparation and painting shall be performed by a Contractor with a minimum of 5 years' experience in the application of the specified coating systems, a minimum of 5 years' experience in the application of high performance coating systems on at least 5 similar sized or larger potable water storage facilities located in the New England region. No Sub-Contracting of this work will be permitted.
- C. Acceptance Sample
1. An acceptance sample of the specified finish system shall be prepared by the manufacturer's representative and submitted to Owner during the pre-coating meeting specified.
 2. The installed coating system shall duplicate the acceptance sample in thicknesses of each respective film layer, color, texture and degree of overall appearance and finish.

- D. The finished coating shall be uniform in color, texture, and appearance. All discontinuous edges and other embedded items shall be sharp, uniform and cosmetically acceptable with no thick or ragged edge. The Contractor shall work out an acceptable masking technique to ensure the acceptable finish of all coated surfaces.
- E. Single-source responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.
- F. Repainting of materials failing to meet the requirements of the Specifications or Drawings shall be performed at no additional cost to Owner.
- G. The number of coats and total mil thickness specified in the paint schedule are minimums. If the specified minimum film thickness is not achieved, additional coat(s) shall be applied to achieve the total film thickness specified.
- H. Provide disinfection in compliance with all Westchester County Department of Health requirements for disinfection of storage tanks.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Provide in accordance with Division 01 General Requirements.
- B. Deliver materials in original manufacturer's sealed containers with all pertinent labels intact and legible.
- C. Store materials in protected area at a temperature between 40 degrees F and 90 degrees F or as required by the Manufacturer.
- D. Follow all manufacturer's specific instructions and prudent safety practices for storage and handling.
- E. Store only acceptable project materials on the Project Site.
- F. All painting materials shall be stored and mixed in a single location coordinated with the Engineer. Do not use any plumbing fixture or pipe for mixing or for disposal of any refuse. Carry necessary water to the mixing room and shall dispose of all waste outside of the building in a suitable receptacle.
- G. Restrict storage location to paint materials and related equipment and supplies.
- H. Keep storage location neat and clean.
- I. Remove soiled and used rags, waste, and trash from the storage location and building at the end of each workday.
- J. Repair damage to the storage location, caused by painting materials and equipment at no additional cost to the owner.

- K. Comply with all applicable health and fire codes and regulations including safety precautions recommended by the manufacturer. Storage space shall be provided with a suitable fire extinguisher fully charged at all times.
- L. Heat shall be provided in the storage area if paints are to be stored during winter months. The temperature shall be maintained within the previously specified range at all times.

1.08 SITE CONDITIONS

- A. Existing Conditions: per Division 01 General Requirements.
- B. The material, air and surface temperatures shall be in the range of 50 degrees F to 120 degrees F, or manufacturer's requirements, whichever is more stringent, during application and cure. Furnish and maintain heating as necessary.
- C. The relative humidity in the specific location of the application shall be less than 85 percent and the surface temperature shall be at least 5 degrees F above the dew point, or manufacturer's requirements, whichever is more stringent. Contractor may need to furnish and maintain dehumidification as necessary.
- D. The surfaces to be coated shall have been prepared as specified.
- E. Protect adjacent surfaces not to be coated with masking and covers.

1.09 WARRANTY

- A. Special Warranty/Extended Correction Period
 - 1. It will be the Contractor's obligation to guarantee his/her workmanship. Such guarantees shall state the products used will adhere to the surface without peeling and cracking, scaling, alligating, blistering, for a period of at least one year from the date of acceptance of the painting work. The Contractor shall also obtain from the coating manufacturer a corrosion, color and gloss fluoropolymer resin warranty and submit this to the Owner following completion of work. Exterior coatings shall be covered for 15-years and interior coatings for 15-years. The coating manufacturer's warranty shall include coverage against the following conditions:

Interior and Exterior
 - a. Check, crack, blister or delaminate from the exterior substrate.
 - b. Allow the substrate to corrode in excess of 1 percent per ASTM D610 for a period of 5 years, then no more than 0.5 percent per year for the balance of the warranty period.

Exterior

- a. Change color more than 5 DE Units as determined per ASTM D2244.
 - b. The exterior shall not exhibit loss of gloss in excess of 24 Units per ASTM D523 with 60 degree geometry.
 - c. The exterior shall not chalk in excess of a rating of 8 as measured per ASTM D4214 Method A.
2. At the end of the Warranty Period, a visual inspection will be conducted by Owner and Engineer to identify any failures as specified. Any coating failures shall be removed and replaced at no additional cost to Owner by the Contractor and coatings manufacturer.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers of system shall be of single source and made in the USA. Any reference to a name of a specific coating product such as Sherwin-Williams is for the purpose of establishing a type and quality of product and shall not be considered as proprietary.

2.02 MATERIALS

- A. Any reference to a name of a specific coating product such as Sherwin-Williams is for the purpose of establishing a type and quality of product and shall not be considered as proprietary. Any coating system comparable in type, style, design and performance and compatible with the surface preparation specified will be considered for approval during bid phase. Products equal to those specified as manufactured by Tnemec or Carboline will be considered. It shall be the Contractor's responsibility to document that the product meets the "or-equal" criteria and present it to the Engineer for review during the bid phase.
- B. Storage Tank Interior
1. Surface Preparation: All components for priming shall be sandblasted clean in accordance with SSPC-SP 10, Near White, minimum anchor profile of 3 mills, immediately prior to priming.
 2. Paint Schedule
 - a. Field Applied Surfacing Compound (where required)
 - 1) Sherwin-Williams "Steel-Seam FT910"

- 2) or approved equal
- b. Field Applied Primer Coat
 - 3) Sherwin-Williams “Corothane - Galvapak 1K Zinc Primer”
DFT 3-4 mils
 - 4) or approved equal
- c. Field Applied Stripe Coat
 - 5) Sherwin-Williams “Sherplate 600 PW Epoxy” DFT 3-5mils
 - 6) or approved equal
- d. Field Applied Finish Coat
 - 7) Sherwin-Williams “Sherplate PW Epoxy” DFT 25-30 mils
 - 8) or approved equal
3. Finished, coated surface shall have uniform color and shall be smooth, monolithic, and free of drips and marks, with no pits, honeycombs, or other voids in the surface; finish shall be as defined by mockup panel specified.
4. Provide site inspection by manufacturer’s field representative before and during application (minimum of 2 days per individual tank structure).
5. All materials in contact with potable water shall meet the requirements of NSF/ANSI/ CAN 600. Manufacturers must certify that their coatings furnished are in compliance with these Specifications.

C. Storage Tank Exterior

1. Surface preparation: components for priming shall be sandblasted clean in accordance with SSPC SP 6 Commercial Blast Cleaning providing a 1.5-2 mil anchor profile.
2. Paint Schedule
 - a. Field Applied Primer Coat
 - 1) Sherwin-Williams “Corothane – Galvapak 1K Zinc Primer”
DFT 3-4 mils
 - 2) Or approved equal
 - b. Field Applied Intermediate Coat

- 1) Sherwin Williams “Macropoxy 646 Fast Cure Epoxy” 5-7 mils
- 2) Or approved equal
- c. Field Applied Top-Coat
 - 1) Sherwin Williams “Sher-Loxane 800” DFT 4-6 mils
 - 2) Or approved equal
3. Finished, coated surface shall have uniform color and shall be smooth, monolithic, and free of drips and marks, with no pits, honeycombs, or other voids in the surface; finish shall be as defined by mockup panel outlined in Paragraph 1.05 of this specification.
4. Provide site inspection by manufacturer’s field representative before and during application (minimum of 2 days per individual tank structure).
5. The finish colors of the top coat for tank and logos shall be selected by the Owner.
6. Furnish to the Owner 2 gallons of exterior top coat of the same type and color used on the work.

2.03 SOURCE QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.

PART 3 – EXECUTION

3.01 SUBSTRATE PREPARATION

- A. As specified in painting schedules above and per manufacturer’s recommendations.
- B. Coordinate with a coating manufacturer’s technical representative to observe and approve substrate surface preparation prior to application of coatings.
- C. Disposal of all materials, especially those containing lead, shall be in accordance with all local, state, and federal regulations.
- D. Owner will remove all water from the tank. Remove all standing water, mud, and debris from the tank prior to starting work. All loose rust, loose paint, and dirt shall be removed from the tank interior prior to the beginning of cleaning operations. The debris shall be promptly stored in leak-proof covered dumpsters/containers on site and disposed of in accordance with all local, state, and federal requirements. Any water that enters the tank through leaky valves shall be removed from the tank at no additional cost to Owner.

- E. Provide rigid staging and containment capable of withstanding local wind speeds and any temporarily relocated antennas.
- F. Burrs, weld spatter, sharp edges, corners, or rough welds which would cause difficulty in achieving a defect-free coating shall be chipped or ground smooth. The objective is to eliminate sharp edges, corners, and overlaps in order to provide a surface for the application of a uniform thickness coating without voids.

3.02 INSTALLATION

- A. Hold a pre-coating meeting with the coating system manufacturer, Engineer, and any inspectors prior to application. The pre-coating meeting shall be coordinated to occur the initial coating of the storage tank, but after application of the Acceptance Sample specified.
- B. Installation shall be per manufacturer's printed instructions and construction details.

3.03 DISINFECTION

- A. Sequencing and Scheduling
 1. The interior coating shall be properly cured.
 2. The interior coating shall be washed with portable water.
 3. The Contractor shall flush and disinfect the tank.
 4. The Owner shall take and send in the samples to the laboratory for testing. The Owner shall pay for the testing of the initial set of samples. The Contractor shall pay for all subsequent samples and testing, if required.
- B. Washing Tank Interior Surfaces
 1. After proper curing of the interior coating and prior to disinfecting, the Contractor shall wash the tank interior surfaces with potable water. All equipment, including brooms, brushes, spray equipment, and worker's boots, shall be disinfected before they are used to clean the water storage facility. The Contractor shall supply an adequate flow of water (20 gpm minimum) with sufficient pressure (60 psi minimum at the nozzle) to wash thoroughly all the interior surfaces, including those surfaces above the high water level. All residue shall be removed from the tank and the inlet/outlet pipe.
- C. Disinfection of the Tank
 1. It is the Contractor's responsibility to flush and disinfect the tank and connecting piping until two or more successive samples taken in a twenty-four hour period show that the samples are satisfactory as reported from the

Owner's laboratory. Method 3 (Section 4.3.3) or Method 2 (Section 4.3.2) of AWWA C652-11 shall be used for the disinfection procedure. Samples shall be taken and tested by the Owner.

D. Sampling and Testing

1. The Owner shall take and send in the samples to the laboratory, but shall assume no responsibility for the sampling technique or the care of the samples. The stored tank water shall comply with current State and USEPA standards for organic, inorganic, and biological contaminants as influenced by the operations of the Contractor. One tank of water for the disinfection shall be furnished by the Owner at no charge to the Contractor. Additional water shall be furnished at current municipal water rates charged by the Owner and shall be paid for by the Contractor.

3.04 CLEANING

- A. At the completion of the Work of this section, remove all paint spots caused by this Work from floors, walls, fixtures, hardware, and equipment, leaving their finishes in a satisfactory condition. Remove all materials and debris and leave the site of the work in a clean condition so far as this work is concerned.
- B. Do not dispose of paints or solvents by pouring on the ground. Place in designated containers for proper disposal.

3.05 CONTRACTOR AND OWNER RESPONSIBILITY

- A. The Contractor shall be responsible for certain aspects of inspection of the coating application process, along with the Owner, Engineer and Inspector.
- B. The Contractor shall be responsible for having the equipment and expertise to monitor and record site and tank ambient conditions such as air and steel temperatures, relative humidity and dew point, with recording equipment capable of recording data on a 24-hour basis, and equipment to measure and record wet and dry film thicknesses of coating throughout the application process.
- C. The Contractor shall make the Inspector aware of any conditions that deviate from that required by the specifications, such as but not limited to tank surface temperature and ambient conditions prior to the start of coating application and during the process, wet and dry film thicknesses that are more or less than that required in the specifications.
- D. The Contractor shall be responsible for reporting to the inspector immediately upon observing any tank or appurtenance that is to be, or is in the process of receiving coatings, where there is a problem with the surface preparation, or other condition that is not consistent with the specifications or standard practice for coating application.

- E. The Contractor shall immediately report to the inspector any coating system color, finish or gloss that is not consistent with the requirements on the specifications, especially on the two exterior tank finish coatings.
- F. The Contractor shall cooperate with inspector to provide safe access for inspection and shall conduct thorough inspection of substrates or coatings to ensure that Work is done as specified.
- G. The Owner's Inspector shall also monitor ambient conditions at the site, steel temperature and other conditions that are of importance in proper coating application and curing. The opinion of the Owner or his representative Inspector shall govern in determining if coating can be applied and if there has been adequate curing of the undercoat prior to the application of additional coats.
- H. The Inspector shall take wet film and dry film thickness measurements for determining the coating thicknesses, and the average of the measurement shall meet or exceed the specified wet and dry film thickness plus the base thickness and no measurements shall be less than 80% of the specific minimum dry film thickness for the new coatings. Dry film thickness measurements shall be taken in accordance with SSPC-PA2.
- I. Coating application and curing will be subject to routine inspections as the work progresses. Normal inspection shall include the adequacy of equipment and materials sufficient to secure satisfactory quality of work and maintain suitable progress, and the application of coatings.
- J. The Owner reserves the right to retain an independent paint inspector to assist in assuring compliance with these Specifications. Inspection shall include but not be limited to observation and measurements of all cleaned surfaces prior to coating application, and observation and measurements associated with the application and curing of each coat of paint prior to subsequent paint applications.
- K. The Contractor shall keep the Inspector fully informed of the work schedule. Failure on the part of the Contractor to keep the Inspector so informed may be sufficient cause for requiring the Contractor to do additional cleaning or painting of questionable un-inspected areas as directed by the Engineer.
- L. Determination of paint thickness and uniformity of coatings will be made by the Inspector and Engineer, with assistance provided by the Contractor. The Owner or his representative reserves the right to use a low voltage holiday detector in accordance with NACE SPO188 to check the paint film integrity as the work proceeds.
- M. The Contractor shall maintain adequate and secure rigging scaffolding and safety lines for use of the Inspector and Engineer, with operation by the Contractor. Scaffolding, boatswains, chairs or other rigging removed prior to inspection shall

be replaced at the Contractor's expense as required by the Inspector and Engineer, for thorough complete inspection of the work.

- N. The Contractor shall coordinate his/her schedule with that of the Inspector and Engineer to ensure that adequate time is allowed for thorough inspections as the project proceeds.
- O. The Contractor shall touch up and damaged coatings caused by the replacement of the communications equipment, providing he has workman on the site at that time.
- P. Protection
 - 1. Tank shall not be returned to service until coating has cured as required by the manufacturer, or a minimum of 7 days.

3.06 FIELD QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.
- B. All coatings shall be applied to minimum Dry Film Thicknesses scheduled.
- C. All pin holes or holidays discovered by Third Party Inspector shall be repaired by Contractor.

3.07 CLOSEOUT ACTIVITIES

- A. Provide in accordance with Division 01 General Requirements.

END OF SECTION

SECTION 26 42 13

SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Requirements for design criteria of a sacrificial anode cathodic protection system.
 - 2. Requirements for cathodic protection designer.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

- A. ANSI/AWWA D106-16 – Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Storage Tanks

1.04 SUBMITTALS

- A. Cathodic protection designer qualifications.
 - 1. Submit the name, address, and all relevant certifications of the cathodic protection designer.
 - 2. Submit a list, including name of client, contact phone number, location of installation, and size and material of tank, of at least 3 previous sacrificial anode cathodic protection installations by the cathodic protection designer.
- B. Shop drawings of proposed cathodic protection system, including specification of all products to be used, including, but not limited to, sacrificial anode location and material, suspension materials, wire locations and materials, wire insulation material, and control panel.
- C. Any design or inspection report generated as part of the cathodic protection design.
- D. Operation and maintenance manual, which shall include the following information, in accordance with ANSI/AWWA D106-16:
 - 1. Name and address of system installer.
 - 2. System design criteria.

3. Date of completion and date of testing of cathodic protection system.
 4. As-built drawings showing anode composition, anode configuration, anode suspension, and support system.
 5. Operation and maintenance instructions.
- E. Signed written verification from cathodic protection designer of successful system test in accordance with ANSI/AWWA D106-16.

1.05 QUALITY ASSURANCE

- A. Provide in accordance with Division 01 General Requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide in accordance with Division 01 General Requirements.

1.07 SITE CONDITIONS

- A. Existing Conditions: per Division 01 General Requirements.

PART 2 – PRODUCTS

2.01 SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM

- A. Provide a sacrificial anode cathodic protection system in accordance with ANSI/AWWA D106-16, latest revision.
- B. Sacrificial anode cathodic protection system design shall include the following elements:
1. Sacrificial anodes
 2. Lead wires, with appropriate insulation
 - a. Provide conduit for wire connections to Prefabricated Utility Building and other electrical connections. Conduit shall be in accordance with Section 26 05 33 – Raceways and Boxes for Electrical Systems.
 3. Collector cable
 4. Control panel/box with identifying hard plastic or metal nameplate. Nameplate shall read “CATHODIC PROTECTION”.
- C. Sacrificial anode cathodic protection system shall have a design life of 10 years.

PART 3 – EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.
- B. Testing and verification of all elements of the cathodic protection system shall be performed or overseen by the cathodic protection designer.

END OF SECTION

SECTION 46 41 23

SUBMERSIBLE MIXERS

PART 1 – GENERAL

1.01 SUMMARY

- A. Provide submersible mixers, appurtenances and coordinated systems as specified. Provide related appurtenances, and accessories to provide complete mixing systems specified. Each mixer shall include a submersible power cable, lifting chain, power cable support, terminal junction box, control relays and related appurtenances as specified, in accordance with this Section and applicable reference standards listed in Article 1.03.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

- A. Reference Standards
 - 1. International Organization For Standardization (ISO)
 - a. ISO 9001 Quality management systems- Requirements
 - 2. NSF International (NSF)
 - a. NSF/ANSI 61 Drinking Water System Components – Health Effects
 - b. NSF/ANSI 372 Drinking Water System Components – Lead Content

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination, sequencing, and scheduling: per Division 01 General Requirements.

1.05 SUBMITTALS

- A. Submit in accordance with Division 01 General Requirements.

B. Shop Drawings

1. Shop Drawings shall show layout and dimensions of equipment, major components, key alignment locations and locations of bolt holes. Drawings shall also indicate where access points for maintenance and operations are located on the equipment. Drawings shall show critical equipment dimensions. Shop drawings shall include electrical and control wiring diagrams for the equipment including motor wiring diagrams, control wiring diagrams, and grounding requirements.
2. Provide sufficient product data to verify compliance with the specifications and to illustrate the construction and assembly of the products. Include compliance of materials and components with applicable standards, including NSF 61. List the manufacturer, model and weights of major components. Include catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment.

C. Product Data

1. Provide complete product data with all pertinent information needed to fully describe the mixer(s) and accessories. Where multiple options are included within standard literature, project specific part numbers and options shall be highlighted by enclosing the project-specific information (circling, clouding, text boxes) and other information shall be crossed out. Any deviations to the Contract Documents shall be listed on a separate page referencing the specification section with a brief description of the deviation and why it is equal to or superior to what is specified.
2. Product data shall include but is not limited to, mixer characteristic curves showing capacity, efficiency, and mixing horsepower to the design capacity. A complete list of equipment and materials; including Manufacturer's descriptive data and technical literature, performance charts and curves, catalog cuts, and installation instructions shall also be included. Include warranty language for the equipment and all related appurtenances.
3. Product data shall also include electrical data including but not limited to wiring diagrams.
4. Include the weight of the entire removable mixer assembly.

D. Manufacturer's Field Reports

1. Manufacturer's field reports shall include all requirements of Division 01 including but not limited to written certification of proper installation, initial adjustments, and satisfactory operations, dated and signed by a Manufacturer's representative.

E. Operation And Maintenance Data

1. Submit operation and maintenance data in accordance with Division 01 General Requirements. The manual shall include, but is not limited to the following:
 - a. Startup, normal, shut down, and emergency operating instructions
 - b. Lubricating and maintenance instructions
 - c. Guides to troubleshooting
 - d. A numbered parts list and predicted life of parts subject to wear
 - e. Test data and performance curves
 - f. Installation instructions
 - g. A written warrantee statement
2. Operation and Maintenance Data shall also include all required cuts, drawings, equipment lists, descriptions, etc., which are required to instruct operation and maintenance personnel unfamiliar with such equipment.

1.06 QUALITY ASSURANCE

- A. Provide in accordance with Division 01 General Requirements.
- B. Materials and equipment shall be the standard products of a manufacturer regularly engaged in the production of such products and shall essentially duplicate items that have been in satisfactory use in identical applications in other wastewater treatment facilities. Manufacturer shall have a minimum of 5 years of documented experience in the design and production of submersible mixing equipment of all types, and not less than 5 years of experience in the production of equal or larger sized models of the exact equipment as specified.
- C. Manufacturer shall provide a list of at least 5 similar installations, including contact names and phone numbers. Equipment shall be supported by a service organization that is, in the opinion of the Engineer, reasonably convenient to the site to ensure parts and service can be acquired in a timely fashion.
- D. Mixer manufacturer shall be ISO 9001 compliant. Mixer manufacturer shall submit a copy of a current ISO certificate for review by Engineer as part of the submittals.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Spare parts shall be packed in containers bearing labels clearly designating the contents and respective pieces of equipment for which they are intended. All spare parts shall be delivered at the same time as the pertaining equipment.

- B. Store equipment in storage with protection from the weather, humidity, temperature variations, dirt, dust, or other contaminants in accordance with manufacturer's written instructions.
- C. Off-load equipment at installation Site using equipment of sufficient size and design to prevent damage to the mixing units. Immediately after off-loading, inspect mixers and appurtenances for shipping damage or missing parts. Any damage or discrepancy shall be noted in a written claim with the shipper prior to accepting delivery. Validate all equipment serial numbers and parts lists with the shipping documentation. Notify manufacturer of any unacceptable conditions noted with the shipper.

1.08 SITE CONDITIONS

- A. Existing conditions: per Division 01 General Requirements.

1.09 MAINTENANCE

- A. Furnish extra materials (spare parts and special tools) as specified below. Make interchangeable with and of same material and workmanship as corresponding original parts.
 - 1. Provide 1 set of special tools if required to completely assemble, disassemble, or maintain the mixing equipment.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Provide submersible mixing equipment and all related appurtenances as specified. The mixers shall be designed for continuous duty. The mixers shall provide complete homogeneous mixing within the tank volume and thereby reduce temperature and water age stratification in the tank.
- B. Each mixer shall be an integral design, close coupled, submersible type. All components of the mixer, including the motor and gearbox, shall be designed to provide continuous underwater operation in a potable drinking water environment as specified.
- C. Each mixer assembly shall be NSF61 certified.
- D. Each mixer shall be capable of handling chlorinated potable water. The standard mixer, with its appurtenances and cable, shall be capable of continuous submergence under water without loss of watertight integrity to a depth of 100 feet.
- E. Each mixer shall be designed to be able to be raised, lowered and easily removed for inspection or service without the need for personnel to enter the tank.

2.02 UNIT DESCRIPTIONS

- A. Acceptable level of quality for submersible mixer: equivalent to GridBee GS 12 Single Phase Submersible Mixer.

2.03 PROCESS DESIGN CONDITIONS

- A. The requirements for mixer design and operating conditions shall be in accordance with the following criteria:

SUBMERSIBLE MIXER DESIGN CRITERIA	
Number of Mixers	Two (2)
Mixer Length	37" – See Drawings
Mixer Width	9" – See Drawings
Mixer Height	10" – See Drawings
Motor Horsepower	1 hp (Maximum)
Motor Type	Submersible - Continuous Operation
Power Supply	120VAC, 20 Amp
Motor Type	Constant Speed
Motor Mounting	Flow Sleeve

- B. All components of the mixer, including the motor and power cable shall be capable of continuous underwater operation while the mixer propeller is completely submerged. If the tank is to be drained the mixer is to be shut off and not allowed to be run exposed to air.
- C. There shall be no significant change in vibration and/or noise level over the entire specified range of operating conditions.

2.04 MATERIALS OF CONSTRUCTION

- A. Stainless steel components shall be electro-polished or pacified to obtain maximum corrosion resistance. Stainless steel components shall not be painted. All fasteners including but not limited to all bolts and screws shall be 316 stainless steel.

2.05 MOTOR

- A. Unless otherwise specified or indicated on Drawings, mixer motors shall be designed for 120 VAC, 20 Amp power service. All motors shall be NEMA Premium Efficiency design. The mixer motors shall be rated for the respective Electrical Hazard Area Classifications as previously specified.
- B. The motor shall be a direct drive with no gearbox and no lubrication. Mixer design will include a flow sleeve to house the motor and provide flow past the motor for use in submersible applications.
- C. Motor shall be designed for continuous operation. No variable frequency drives or other speed reduction controls are not permissible.

2.06 CABLE ENTRY

- A. The electrical power cable entry shall be an integral part of the mixer casing. The cable entry seal system shall be composed of elastomer grommets flanked by stainless steel washers all designed with close clearance fits against the cable outside diameter and the cable entry inside diameter. A cable entry seal system shall provide a watertight seal between the electrical connection chamber and the motor thus preventing fluid leakage into the motor.

2.07 THERMAL PROTECTION

- A. Automatic reset, on-winding thermal overload protection and surge arresters shall be built into the motor and rated for temperatures up to 122 degrees F.

2.08 POWER CABLE

- A. Provide each submersible mixer with lengths of submersible cable which to allow for a full range of movement throughout the tanks/vessels as shown on Drawings. Provide adequate slack cable for movement as well as connection to local junction boxes/disconnects. The power/control cable shall be FM approved for use in the respective electrical hazard area classifications as specified and as shown on Drawings. Exterior jacket to be designed for continuous submergence in raw wastewater, sludge, septage, etc.

- B. All power and instrument cables shall be sized according to all applicable NEC and ICEA standards. All power and instrument cables shall be of sufficient length to reach the junction box/disconnect without the need for any splices. The outer jacket of the cable shall be oil resistant chloroprene rubber. The pump motors, power cables, and instrument cables shall be capable of continuous submergence underwater without loss of watertight integrity to depths of at least 150 feet.
- C. Provide power cables with adequate slack to ensure operation over the entire tank/vessel depth as shown on Drawings. Splicing of power and/or instrument cable shall not be acceptable under any circumstances.

2.09 HARDWARE

- A. All Bolts, nuts, anchors, washers, appurtenances and related fastening hardware shall be type 316 stainless steel. All stainless steel components shall be electro-polished or pacified to obtain maximum corrosion resistance. All necessary hardware, attachments, and related appurtenances for installation of the pumps and guide rail systems shall be provided. All stainless steel bolts shall comply with ASTM F 593 standards. Stainless steel nuts shall comply with ASTM F 594 standards.

2.10 NAMEPLATES

- A. Each major item of equipment shall have manufacturer's name, address, type or style, model or serial number, catalog number, rated capacity, speed, and all other pertinent data on a 316 stainless steel plate secured to the item of equipment per Section 40 00 00. The nameplate for each electric motor shall show at least the minimum information required by NEMA MG 1 standards.

2.11 SPARE PARTS

- A. Provide a total of 1 set of the following spare parts for each of the mixing units specified in this section. At a minimum, a set of spare parts shall include the following:
 - 1. One set of chain grab tools
 - 2. One tube of sealant
- B. The spare parts shall be individually boxed with the project name and part number clearly identified on each individual box. All spare parts shall be shipped in a separate crate and clearly labeled.

2.12 ELECTRICAL WORK

- A. All motor controls shall conform to NEMA ICS 1 standards. The mixer Manufacturer shall supply the necessary relays for temperature and leakage protection as previously specified.

- B. The equipment manufacturer shall provide all control wiring diagrams. Submit manufacturers wiring diagrams for review and approval by the Engineer.

2.13 SOURCE QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements. Comply with applicable reference standards listed in Article 1.03.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install each mixer in accordance with manufacturers' written instructions and under the direct supervision of the manufacturer's representative. Install mixers and appurtenances in accordance with Drawings and manufacturers' installation instruction manual.
- B. Provide appurtenances required for a complete and operating mixing system, including but not limited to such items as piping, conduit, valves, wall sleeves, wall pipes, concrete foundations, anchors, grouting, pumps, drivers, power supply, and controls.

3.02 FACTORY TESTING

- A. The mixer manufacturer shall perform the following routine inspections and tests on each mixer before shipment. The tests shall include but are not limited to:
 - 1. A final inspection of propeller, motor rating, electrical connections electrical classification for compliance with purchase order.
 - 2. A dry run mixer test to verify correct rotation and mechanical integrity. The entire unit is checked for excessive vibration. The unit shall also be balanced.
 - 3. A motor and cable insulation test or inspection for moisture content and insulation defects.
 - 4. A test of the mixer motor (run for 5 minutes at full load) to verify electrical data measurements. All electrical data shall be registered as part of documentation
- B. A quality control check form showing the factory test results and that each mixer successfully passed factory tests shall be provided by the Manufacturer.

3.03 FIELD TESTING

- A. The equipment startup and demonstration period for the equipment previously specified shall include the provisions of Division 01; and also include but is not limited to that which is specified herein.

- B. Prior to acceptance, an operational test of all equipment, drivers, and control systems shall be performed to determine if the installed equipment meets the purpose and intent of the specifications. Tests shall demonstrate that the equipment is not electrically, mechanically, structurally, or otherwise defective; is in safe and satisfactory operating condition; and conforms to the specified operating characteristics. Prior to applying electrical power to any motor driven equipment, the drive train shall be rotated by hand to demonstrate free operation of all mechanical parts. Tests shall include checks for excessive vibration, leaks in all piping and seals, correct operation of control systems, proper alignment, excessive noise levels, and power consumption.
- C. Provide all the requirements to conduct a proper field test which include but are not limited to: power, water, facilities, labor, materials, supplies and test instruments.
- D. In the presence of a manufacturer's representative, test and inspect all necessary controls which include but are not limited to: all interlocks required for the equipment to function properly without causing damage to the equipment. Manufacturer's representative shall provide Contractor and Engineer with necessary set points in writing prior to the Site acceptance test visit as outlined in the submittals.
- E. Performance testing shall be required during start-up to demonstrate adequate mixer operation. The mixer shall be given an operating test under load for a period of at least 2 hours. A successful test shall include operation of the mixer continuously for a period of no less than 2 hours without faults (except as required for testing). Field testing shall be conducted by a Manufacturer's representative and shall be witnessed by Contractor, Engineer, and Owner. During the tests, the operation of the mixing units shall be observed carefully and measurement of the motor draw, vibration and motor-bearing temperatures recorded.
- F. Manufacturer shall provide Field Test Booklets for each unit showing all field tests performed to adjust each component of the equipment. All field tests performed shall prove compliance with the specified performance criteria. Each test report shall indicate the final position of controls.

3.04 RETESTING

- A. If equipment does not successfully pass the tests, repair equipment and perform tests again until they are passed successfully. If any deficiencies are revealed during any test, such deficiencies shall be corrected and the tests shall be reconducted at no additional cost to the Owner or Engineer.

3.05 MANUFACTURER'S SERVICES

- A. Services of a manufacturer's representative who is experienced in the installation, adjustment, and operation of the equipment specified to be provided. Manufacturer to submit qualifications of representative for approval by Engineer.

- B. Manufacturer's representative to supervise the installation, adjustment, and testing of the equipment. Manufacturer's representative to be present for a period of not less than 1 on-Site man day, to inspect the installed equipment, supervise the initial performance test run, and to provide instruction to the facility personnel.
- C. Manufacturer's representative shall provide a certification of proper installation and satisfactory operation to Owner and Engineer. Certification shall be signed and dated by the manufacturer's representative.

3.06 FIELD TRAINING

- A. A field training course shall be provided for designated operating and maintenance staff members. Training shall be provided in conjunction with the visit of the Manufacturer's representative. The training shall start after the system is functionally complete but prior to final acceptance tests. Field training shall cover all of the items contained in the operating and maintenance manuals, including normal operations, trouble-shooting, maintenance, lubrication, and other related work.

3.07 FIELD QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements. Comply with applicable reference standards listed in Article 1.03.

3.08 STARTUP & COMMISSIONING

- A. Provide in accordance with Division 01 General Requirements.

3.09 CLOSEOUT ACTIVITIES

- A. Provide in accordance with Division 01 General Requirements.

END OF SECTION