



Date: 3/27/2026
To: Prospective Proposers
Subject: Addendum No. 1



This addendum forms part of the bidding and contract documents and modifies the original bidding documents dated 2/17/2026. Acknowledge receipt of this addendum in the space provided below. FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

CHANGES TO CONTRACT DOCUMENTS

1. Bid Form
 - a. REPLACE Line Item 43 Description with “**Structural Steel Spot Repairs and Miscellaneous Replacements.** Furnish all materials, labor, equipment, and appurtenances to replace or repair any items deemed necessary by the owner, not limited to extra structural members, and all supporting structures, including removal and disposal of old members, all in accordance with contract plans and specifications.”

CHANGES TO TECHNICAL SPECIFICATIONS

1. REMOVE “Include cost for unit price for work requiring dewatering and drainage.” from Section 01578 – Dewatering Part 1.02 Measurement and Payment.
2. REPLACE Section 02811 – Landscape and Irrigation Part 1.02 Measurement and Payment with “Unless indicated in the Unit Price Schedule as a pay item, no separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.”
3. ADD Section 08999 – Steel Water Storage Tank Rehabilitation Part 1.02 Measurement and Payment:
 - A. Lump sum shall include a total price for all materials, labor, and equipment required to complete the work as indicated on the plans. The amount invoiced shall be determined based on the Schedule of Values submitted by the Contractor.
 - B. By unit weight (pounds, lbs.) shall include a price by unit weight to complete the work as indicated on the plans or as deemed necessary by the Owner. This shall



- include all labor, materials, and equipment required to complete the work.
4. REPLACE Section 09871 – Painting and Protective Coating for Potable Water Storage Tanks Part 2.05 Steel Interior Coatings B and D with the following:
 - B. C1 Interior Base Bid: Carboline
 1. Prime coat: Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.
 2. Stripe coat: Hydroplate 1086 Epoxy applied at 2 to 3 mils DFT applied by brush.
 3. Intermediate coat: Hydroplate 1086 Epoxy applied at 4 to 6 mils DFT.
 4. Finish coat: Hydroplate 1086 Epoxy applied at 4 to 6 mils DFT. Full Color Coverage
 - D. C3 Interior Alternate Bid: Carboline
 1. Prime coat: Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.
 2. Finish coat: Hydroplate 1100 100% Epoxy applied at 20 to 30 mils DFT. Full Color Coverage.
 5. ADD “Hydroplate MCZ Zinc applied at 2 to 3 mils DFT” as a Prime Coat option to Section 09871 – Painting and Protective Coating for Potable Water Storage Tanks Part 2.06 Steel Exterior Coatings C.1 and E.1.
 6. REPLACE Section 09871 – Painting and Protective Coating for Potable Water Storage Tanks Part 2.06 Steel Exterior Coatings C.4 with “Carbothane 134 HG applied at 2 to 3 mils DFT.”
 7. REPLACE Section 11250 – Tank Mixing System with Section 11268 – Hydrodynamic Mixing System.

CLARIFICATION QUESTIONS

1. **The following items are in the technical specs but not specified in the bid form. Will the bid form be adjusted to reflect the technical specs?**
 - A. **Dewatering (Detailed in Section 01578)**
 - B. **Landscape Irrigation (Detailed in Section 02811)**
 - C. **Exterior Ladder, Ladder Safety Post, Safety Climb System, Sample Tap and Level Gauge, Rafter Replacement, Exterior and Interior Grinding, and Seam Welding. (Detailed in Section 08999)**
 - A. There is no separate pay item for dewatering. Section 01578 1.02 has been revised for clarity. There is no landscape irrigation included in this project.
 - B. Section 02811 has been included should any irrigation on site be damaged during construction and require repair or replacement. This cost is considered subsidiary to the contract per Sheet C-1, note 15 and Section 02811 Part 1.02 has been revised for clarity.



C. Per Sheet C-5 note 1, the exterior ladder, ladder safety post, safety climb, and sample tap and level gauge are not to be replaced as part of this project. Rafter replacement, exterior and interior grinding, and seam welding are considered subsidiary to Item 43 – Structural Steel Spot Repairs. Part 1.02 Measurements and Payments has been added to Section 08999 and Item 43 has been revised for clarity.

2. Can we have a copy of the contract/agreement to confirm terms prior to bidding?

A. A sample contract/agreement will be provided to the selected contractor upon award. Bidders should base their proposals on the requirements outline in the bid documents.

I hereby certify receipt of this addendum and have incorporated its information or changes in preparation of my submittal.

Authorized Signature

Date

Printed Name

Company Name

THIS DOCUMENT MUST BE SIGNED AND SUBMITTED AS IT IS A PART OF THE SOLICITATION PACKAGE

SECTION 01578

DEWATERING AND DRAINAGE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Design, furnish, install, operate, monitor, maintain, and remove a temporary dewatering system as required and lower and control water levels below subgrades of excavation to permit construction in dry conditions.
- B. Furnish, maintain, and remove temporary surface water control measures adequate to drain and remove surface water entering excavations.
- C. Collect and properly dispose of all discharge water from the dewatering and drainage systems in accordance with the provision of Section 01564 – Waste Material Disposal. No waste material shall be disposed to the City Storm Sewer, Sanitary Sewer, any location in the City Right of Way, or the Roadway.
- D. No contaminated water or solids including oil sheens shall be disposed to the City systems including storm sewer, roadway or sanitary sewer. No dewatering or drainage shall be disposed to the City Sanitary Sewer. All dewatering and drainage shall be properly disposed to the City Storm Sewer or the Roadway in compliance with:
 - 01563-Control of Ground Water and Surface Water
 - 01565-TPDES Requirements
 - 01566-Source Controls for Erosion and Sedimentation
 - 01567-Filter Fabric Fence
 - 01568-Reinforced Filter Fabric Barrier
 - 01569-Stabilized Construction Exit

1.02 MEASUREMENT AND PAYMENT (**NO SEPARATE PAY**)

- A. No additional payment will be made for dewatering and drainage.

1.03 CONTRACTOR'S RESPONSIBILITY

- A. Design and execution of methods for controlling surface water and groundwater.
- B. Repair work that may result from damage to properties, buildings or structures sewers and other utility installations, and/or pavements due to dewatering or surface water control operations.

SECTION 02811

LANDSCAPE IRRIGATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe and fittings, valves, sprinkler heads and accessories.
- B. Control system.

1.02 UNIT PRICES

- A. Unless indicated in the Unit Price Schedule as a pay item, no separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.

1.03 SYSTEM DESCRIPTION

- A. Electric solenoid controlled underground irrigation system.
- B. Source Power: 120 volt

1.04 SUBMITTALS

- A. Submittals shall conform to the requirements of all provisions and sections of these specifications.

1.05 QUALIFICATIONS

- A. Manufacturer: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable code for piping and component requirements.

1.07 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this Section.

1.08 COORDINATION

- A. Coordinate work under provisions of Section 02901 - Landscape Planting.

SECTION 08999

STEEL WATER STORAGE TANK REHABILITATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section consists of the repair and replacement of pits, holes, corrosion damage, structural damage, and various improvements to the steel water storage tank and tank appurtenances.

1.02 MEASUREMENT AND PAYMENT

- A. Lump sum shall include a total price for all materials, labor, and equipment required to complete the work as indicated on the plans. The amount invoiced shall be determined based on the Schedule of Values submitted by the Contractor.
- B. By unit weight (pounds, lbs.) shall include a price by unit weight to complete the work as indicated on the plans or as deemed necessary by the Owner. This shall include all labor, materials, and equipment required to complete the work.

1.03 REFERENCES:

- A. American Water Works Association (AWWA)
 - 1. AWWA D100-05 - Standard for Welded Steel Tanks for Water Storage
 - 2. AWWA C-200 – Steel Water Pipe – 6 Inches and Larger
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM A36 - Structural Steel
 - 2. ASTM A325 - Type 3, High strength Bolts for Structural Steel Joints
 - 3. ASTM A442 - Pressure Vessel Plates, Carbon Steel, Improved Transition Properties
 - 4. ASTM A516 - Pressure Vessel Plates, Carbon Steel, for Moderate – and Lower-Temperature Service
 - 5. ASTM A517 - Pressure Vessel Plates, Alloy Steel, High Strength, Quenched and Tempered
 - 6. ASTM A537 - Pressure Vessel Plates, Heated Treated, Carbon-manganese-Silicon Steel
 - 7. ASTM A563 - Type C3 and Dh3, Carbon and Alloy Steel Nuts
 - 8. ASTM A573 - Structural Carbon Steel Plates of Improved Toughness
 - 9. ASTM A580 - Stainless and Heat Resisting Steel Wire
 - 10. ASTM A588 - High Strength Low Alloy Structural Steel
 - 11. ASTM A633 - Normalized High Strength Low Alloy Structural Steel
 - 12. ASTM A662 - Pressure Vessel Plates, Carbon-Manganese, for Moderate and Lower Temperature Service
 - 13. ASTM A678 - Quenched and Tempered Carbon Steel Plates for Structural Applications
 - 14. ASTM F436 - Hardened Steel Washers
 - 15. ASTM F593 - Stainless Steel Bolts, Hex Cap Screws, and Studs
 - 16. ASTM F594 - Stainless Steel Nuts
- C. American Petroleum Institute (API)

**PAINTING AND PROTECTIVE COATING
FOR POTABLE WATER STORAGE TANKS**

CITY OF GALVESTON

2.03 PAINT AND THINNERS

- A. Thickness of coatings shall be measured according to the procedures outlined in SSPC Paint Application 2 (PA 2) "Measurement of Dry Film Thickness (DFT) with Magnetic Gages", November 2018 or current edition. Measurements shall conform to Level 2 requirements.

2.04 SURFACE PREPARATION

- A. Contractor shall perform surface preparation as stated in PART 3 – EXECUTION.

2.05 STEEL INTERIOR COATINGS

- A. Colors: The color of the 2nd coat and stripe coat shall contrast with the 1st and 3rd coats. Finish coat color to be **tank white** as selected by OWNER from submittal.
- B. C1 Interior Base Bid: Carboline
 - 1. Prime coat: Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.
 - 2. Stripe coat: Hydroplate 1086 Epoxy applied at 2 to 3 mils DFT applied by brush.
 - 3. Intermediate coat: Hydroplate 1086 Epoxy applied at 4 to 6 mils DFT.
 - 4. Finish coat: Hydroplate 1086 Epoxy applied at 4 to 6 mils DFT. Full Color Coverage
- C. C1 Interior Base Bid: Sherwin-Williams
 - 1. Prime coat: Corothane 1 Galvapak 1K or 2K Zinc applied at 2.5 to 3.5 mils DFT.
 - 2. Stripe coat: Sherplate 600 Epoxy applied at 3 to 6 mils DFT applied by brush.
 - 3. Intermediate coat: Sherplate 600 Epoxy applied at 4 to 6 mils DFT.
 - 4. Finish coat: Series Sherplate 600 Epoxy applied at 4 to 6 mils DFT. Full Color Coverage
- D. C3 Interior Alternate Bid: Carboline
 - 1. Prime coat: Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.
 - 2. Finish coat: Hydroplate 1100 100% Epoxy applied at 20 to 30 mils DFT. Full Color Coverage.
- E. C3 Interior Alternate Bid: Sherwin-Williams
 - 1. Prime coat: Corothane 1 Galvapak 1K or 2K Zinc applied at 2.5 to 3.5 mils DFT.
 - 2. Finish coat: Dura-Plate UHS Epoxy applied at 18 to 20 mils DFT. Full Color Coverage
- F. Interior Coatings must be ANSI/NSF Std. 61/600 approved for potable water storage.
- G. Stripe coats: shall be applied by brush to all weld seams, edges, corners, bolts, nuts and other difficult to coat areas.

2.06 STEEL EXTERIOR COATINGS

- A. Surface Preparation: See Technical Specification 02830 Removal of Lead Based Coatings.
- B. Colors: Provide color submittal for selection by the Owner. The color of the 2nd coat shall contrast with the 1st and 3rd coat. Finish coat color to be **aluminum gray** as selected by OWNER from submittal.
- C. C2 Exterior Bid: Carboline
 - 1. Prime Coat: Carbozinc 859 applied at 2 to 4 mils DFT or Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.

2. Stripe Coat: Carboguard 60 applied at 2 to 3 mils DFT applied by brush.
 3. Intermediate Coat: Carboguard 60 applied at 4 to 6 mils DFT.
 4. Finish Coat: Carbothane 134 HG applied at 2 to 3 mils DFT.
- D. C2 Exterior Base Bid: Sherwin-Williams
1. Prime Coat: Corothane 1 Galvapak 1K or 2K Zinc applied at 2.5 to 3.5 mils DFT.
 2. Stripe Coat: Macropoxy 646 FC Epoxy applied at 2 to 3 mils DFT applied by brush.
 3. Intermediate Coat: Macropoxy 646 FC Epoxy applied at 4 to 6 mils DFT.
 4. Finish Coat: Acrolon Ultra Polyurethane applied at 3 to 5 mils DFT.
- E. C4 Exterior Alternate Bid: Carboline
1. Prime Coat: Carbozinc 859 applied at 3 to 5 mils DFT or Hydroplate MCZ Zinc applied at 2 to 3 mils DFT.
 2. Stripe Coat: Carboguard 890 applied at 2 to 3 mils DFT applied by brush.
 3. Intermediate Coat: Carboguard 890 applied at 4 to 6 mils DFT.
 4. Finish Coat: Carboxane 2000 (Siloxane) applied at 3 to 5 mils DFT.
- F. C4 Exterior Alternate Bid: Sherwin-Williams
1. Prime Coat: Corothane 1 Galvapak 1K or 2K Zinc applied at 2.5 to 3.5 mils DFT.
 2. Stripe Coat: Macropoxy 646 FC Epoxy applied at 2 to 3 mils DFT applied by brush.
 3. Intermediate Coat: Macropoxy 646 FC Epoxy applied at 2 to 3 mils DFT.
 4. Finish Coat: Sher-loxane 800 Polyiloxane applied at 4 to 6 mils DFT.

2.07 EQUIPMENT:

- A. Agitator: The CONTRACTOR shall provide a suitable mechanical agitator and shall agitate all paint until proper dispersion of materials is secured. All paint ingredients shall be in a satisfactory dispersed condition at the time of application. Use equipment that conforms to the paint manufacturer's requirements.

2.08 MATERIALS:

- A. Blast Cleaning Abrasives: Blasting shall be done with an abrasive material of non-silica composition. This abrasive material shall be clean, dry, and free of clay particles and other extraneous matter. The abrasive material must be approved by the OWNER's representative before blasting begins. Coal slag and copper slag are not allowed.
- B. Compressed Air used for blasting shall be free of detrimental amounts of water and oil. Adequate traps and separators shall be provided at the compressor.
- C. Rust Inhibitor compatible with the coating systems shall be included in water for wet blasting.

PART 3 - EXECUTION

3.01 GENERAL

- A. The CONTRACTOR and all workmen employed by him shall conduct all operations in a clean and sanitary manner and in conformance with all aspects of the General Conditions. CONTRACTOR shall at all times provide dust and overspray controls for blasting and

SECTION 11268

HYDRODYNAMIC MIXING SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the requirements to furnish and install hydrodynamic mixing system (HMS) within the existing tank bowl. The complete system shall be defined as all piping and appurtenances within the tank downstream of the tank penetration. Appurtenances include pipe, fittings, horizontal and vertical pipe supports, expansion joints, variable orifice duckbill check valves, and any other equipment specified within this section.

1.02 REFERENCE STANDARDS

- A. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
- B. NSF International (NSF):
 - 1. 61, Drinking Water System Components - Health Effects.
- C. Underwriters Laboratories Inc., UL 508

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01300.
- B. All submittals shall be approved by the Engineer or the OWNER prior to delivery.
- C. Submit the following:
 - 1. NSF-61 Certification for all equipment placed in contact with potable water.
 - 2. Sufficient information to show that the equipment meets this specification.
 - 3. General equipment specifications and data sheets.
 - 4. The duckbill valve manufacturer shall be responsible for providing engineering installation drawings of the complete manifold piping system as supplied by the manufacturer. These drawings shall include plan view piping arrangement, sections and elevations as required, support bracket installation details, duckbill nozzle orientation details, and all dimensions required for locating the system within the specified dimensions of the tank.
 - 5. Copy of test report from an accredited independent laboratory that confirmed there is no degradation in the elastomer when exposed to chlorine and chloramine per the ASTM D471-98.
 - 6. The following manufacturer provided design calculations, curves, and reference information:
 - a) Calculations showing the fill time required, under isothermal conditions, for the HMS to achieve complete mix of the reservoir volume at minimum, average and peak fill rates. Complete mixing is defined as 95% homogenous solution. The theory and equations used in calculating the mixing times must be from a published AWWA

reference manual or paper. The reference document(s) must be submitted with the equations and calculations.

- b) Calculations showing the water level drawdown required to achieve complete mixing on the fill cycles at minimum, average, and peak flow rates.
 - c) Calculations of average storage tank water age for both fill-then-draw, and simultaneous fill and draw scenarios. Theory used in calculating water age must be submitted with the calculations.
 - d) A representative Computational Fluid Dynamics (CFD) model evaluation of the proposed HMS configuration applied within a reservoir of similar geometry. Model output documentation shall include all design variables applied for the simulation, plot of the 3-D geometry showing the mesh definition, velocity magnitude vector and contour plots at different cross-sections throughout the water volume, simulated tracer animations showing the spatial and temporal distribution of inlet water in real time during the fill cycle.
 - e) Hydraulic calculations showing the resulting jet velocities of each inlet nozzle at minimum, average, and peak fill rates.
 - f) Hydraulic calculations showing the flow distribution among all inlet ports at minimum, average, and peak fill rates.
 - g) Manifold hydraulic calculations showing the total headloss of the HMS at minimum, average, and peak fill and draw rates. Headloss shall include all minor losses and headloss of nozzles and outlet check valves.
 - h) Hydraulic curves showing thrust vs. flow for the inlet nozzles.
 - i) Hydraulic curves for each outlet check valves showing headloss vs. flow.
 - j) Calculations showing the terminal rise height of the jets that discharge at an angle above horizontal. The terminal rise height shall be calculated assuming 10°F and 20°F colder inlet water and calculated at minimum, average and peak fill rates. The theory and equations used to calculate the terminal rise height shall be included.
 - k) Hydraulic curves for each inlet nozzle of Densimetric Froude number vs. flow.
7. Installation, start-up, operation, and maintenance instructions.
 8. Operation and Maintenance Manuals.

1.04 PROJECT CONDITIONS:

A. Working Conditions

1. Safety and Health - The Contractor shall comply with safe working practices and all health and safety regulations of OSHA, state and local health regulatory agencies and Material Safety Data Sheets (MSDS). Provide protective and lifesaving equipment for persons working at the site.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect all parts so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and the units and equipment are ready for operation.
- B. Individual nozzles and outlet valves shall be packaged separately from the piping equipment.

- C. Protect the finished surfaces of all exposed flanges by wooden blank flanges, strongly built and securely bolted thereto.
- D. Protect finished iron or steel surfaces not painted to prevent rust and corrosion.
- E. Prevent plastic and similar brittle items from being directly exposed to sunlight or extremes in temperature.
- F. Duckbill nozzles should be protected from contact with rigid objects during handling and storage. The contractor shall be responsible for replacing any duckbill nozzles or elastomeric components that are damaged after arrival on the site through installation and start-up of the system.
- G. Secure and maintain a location to store the material in accordance with Section 01600.

1.06 QUALITY ASSURANCE

- A. Each mixing system shall be tested prior to deployment according to the manufacturer's standard factory testing practices at the factory testing facilities.
- B. Complete mixing system is NSF/ANSI Standard 61/600 certified by NSF

1.07 WARRANTY

- A. Duckbill inlet nozzles and perforated disc/elastomeric membrane outlet check valves shall be warranted by the manufacturer against failure under design operating conditions for a period of one (1) year from the date of final installation certification. Elastomer components damaged as a result of maintenance activities, foreign debris, or excessive exposure to direct ultraviolet and thermal radiation shall be excluded warranted coverage.
- B. All piping, pipe supports, expansion joints, and anchors shall be warranted by the system manufacturer against failure under design conditions for a period of one (1) year from the date of final installation certification.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. The following mixing equipment manufacturers have been preapproved:

Manufacturer	Model
Red Valve Company	Tideflex Mixing System

- B. Any product that is not listed above is considered a substitution and shall be submitted in accordance with Section 01630. Substitutions must comply with the requirements of this specification.

2.02 DUCKBILL CHECK VALVE

- A. Inlet ports/nozzles shall be duckbill-style check valves that allow fluid to enter the reservoir during fill cycles and prevent flow in the reverse direction through the nozzle during draw periods. Inlet ports/nozzles may not be fixed-diameter ports or pipes.
- B. The flange drilling shall conform to ANSI B16.1 Class 125/ANSI B16.5, Class 150 standards. The duckbill valve shall be furnished with stainless steel 316 back-up rings for installation.
- C. The duckbill valves shall be NSF61 Certified. NSF61 approved/Certified materials will not be accepted in lieu of valve certification.

- D. The duckbill style nozzles shall be one-piece elastomer matrix with internal fabric reinforcing designed to produce the required discharge velocity and minimum headloss requirements as stipulated in the Submittals section.
- E. The flange portion shall be an integral portion of the nozzle with fabric reinforcing spanning across the joint between the flange and nozzle body.
- F. The elastomer used in construction of the duckbill valves must have been tested by an accredited independent laboratory that confirmed there is no degradation in the elastomer when exposed to chlorine and chloramine per the ASTM D471-98.

2.03 STEEL PIPE AND FITTINGS

- A. All steel pipe and fittings shall conform to Section 02611.

2.04 FLANGE GASKETS

- A. Flange gaskets shall be full-faced and shall be in accordance with ASTM D1330
- B. Flange gasket drilling pattern shall conform to ANSI B16.1/B16.5.
- C. Flange gaskets shall be 1/8" thick.
- D. Gasket material shall be EPDM.

2.05 FASTERS

- A. Hex head bolts and nuts shall be stainless steel 316 conforming to ANSI/ASME B18.2.1 and ANSI/ASME B18.2.2.
- B. Plastic insulating sleeve/washers shall be utilized to isolate dissimilar bolt and flange metals where required.

2.06 PIPE SUPPORTS

- A. For field welded, plain end, carbon steel pipe, the pipe supports shall be carbon steel in accordance with the associated standards and be welded directly between the tank floor, shell, access tube, or wet riser and the carbon steel piping. The pipe supports shall be flat plates, structural angle iron or channel.
- B. The pipe supports shall consist of four components:
 1. A base plate. For all-stainless steel pipe supports, the base plate will have four thru holes for expansion anchors and a pipe welded to the base plate with a hex nut welded to the top of the pipe to serve as a guide for the all-thread of the top-works weldment.
 2. For carbon steel supports, a top-works weldment that consists of structural channel and angle iron. The angle iron has predrilled holes for the U-bolt. The HMS piping shall rest on the angle iron and the U-bolt is used to retain the HMS pipe.
 3. For stainless steel supports, a top-works weldment that consists of structural angle iron with predrilled holes for the U-bolt. The HMS piping shall rest on the angle iron and the U-bolt is used to retain the HMS pipe. All-thread rod shall be welded to the bottom of the angle iron and shall thread into the hex nut of the base plate weldment. The top-works weldment can be rotated into or out of the hex nut to provide height adjustability.
 4. U-bolt with four hex nuts.
 5. An 1/8" thick EPDM strip with a length equivalent to the circumference of the pipe. The strip shall be placed between the pipe and the angle iron and U-bolt.

- C. For steel tanks, the channel of the top-works weldment shall be field fit and modified to the required length. The channel shall then be field welded to the base plate.
- D. For steel tanks, the base plate shall be field welded to the tank floor or shell. The location of the base plate shall avoid welded joints in the floor/shell plates.
- E. Plastic insulating sleeve/washers shall be utilized to isolate dissimilar metals where required.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. The CONTRACTOR shall install the manifold system in accordance with the installation plans and guidelines provided by the HMS manufacturer.
- B. Duckbill check valves shall not be coated. The valves shall either be masked or be mounted after coating of the tank and piping. Contractor to ensure masking materials are removed after coating.
- C. A manufacturer's authorized representative shall provide one (1) day inspection to verify that the system has been installed in accordance with the design specifications and installation drawings. It is recommended the flow testing described below is conducted the same day once the representative confirms proper installation of the system
- D. The inspection representative shall provide signed inspection documents confirming the date of the inspection and approval of the installation.
- E. Start-Up Flow Testing
 - 1. Following installation of the complete manifold piping system, the contractor shall open the upstream isolation valve to allow flow into the tank through the manifold system. The isolation valve must be opened slowly to prevent surge or over-pressurization of the manifold system. The isolation valve must be fully opened to inspect the flow characteristics of the manifold system.
 - 2. The contractor shall take videos and photos during the filling operation and submit them to the HMS manufacturer. Videos and photos are to confirm there is no leakage in the piping system and that all the duckbill inlet nozzles are discharging flow into the tank. The only exception is for a system where the duckbill nozzles are at different elevations. If the water level is not at the elevation of higher duckbill nozzles, those may not discharge flow until the water level approaches those nozzles.

3.02 SITE CLEANING:

- A. The project site shall be kept in a clean and safe condition at all times. The Contractor shall remove all construction equipment and debris at project completion.

3.03 TANK DISINFECTION

- A. The proposed chlorination method shall be communicated to the owner's representative prior to disinfection. The owner shall be notified a minimum of three weeks in advance of proposed date of commencing tank disinfection. Water and sufficient pressure for flushing, cleaning, initial testing and disinfection shall be supplied by the Owner at no cost to the Contractor. However, Contractor shall be aware that after tank disinfection, the water used for disinfection may not be able to be placed into the water system and may need to be de-

chlorinated and discharged from the tank. Any costs associated with de-chlorination and discharge from the tank shall be the sole responsibility of the Contractor.

3.04 FIELD QUALITY CONTROL

- A. Field Inspections. Before acceptance of the installed equipment, the OWNER Staff shall have the opportunity to observe the equipment.
- B. If access and operation of the valve meet the OWNER's criteria, then the equipment will be accepted as installed.

3.05 NON-CONFORMING WORK

- A. If access and operation of the equipment does not meet the OWNER's criteria, remedy the situation until the equipment meets the OWNER's criteria.

END OF SECTION