



## ADDENDUM NO. 1 - Bid # 21-04

**Project:** 2021 Water Well #14 Ground Storage Tank Replacement

**Owner:** City of Kingsville

**Engineer:** Rutilio P. Mora Jr. P.E.

Addendum No.: 1 Specifications Section: \_\_\_\_\_ Issue Date: January 22, 2021

Acknowledge receipt of this Addendum in the BID PROPOSAL submitted for this project. Failure to acknowledge receipt of this Addendum in the BID PROPOSAL may render the BID as non-responsive and serve as the basis for rejecting the BID.

Approved by: Rutilio P. Mora, Jr., P.E.

Rutilio P. Mora Jr.

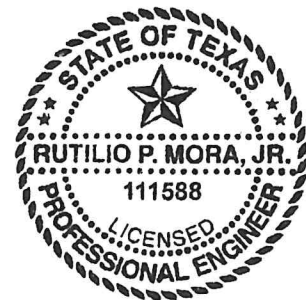
Name

1/22/2021

Date

Addendum Item:

1. Refer to Specifications Added Below:  
021020 - Site Clearing & Striping  
021040 - Site Grading  
131000 - Galvanized Steel Bolted Water Storage Tanks  
151100 - Disinfection and Hydro Testing



SECTION 021020  
SITE CLEARING AND STRIPPING

DESCRIPTION

This specification shall govern all work necessary for clearing, grubbing and stripping of objectionable matter as required to complete the project, and shall include removing and disposing of trees, stumps, brush, roots, vegetation, rubbish and other objectionable matter from the project site.

CONSTRUCTION METHODS

The site shall be cleared of all trees, stumps, brush, roots, vegetation, rubbish and other objectionable matter as indicated on the drawings and/or as directed by the Engineer or his designated representative. Tree stumps and roots shall be grubbed to a minimum depth of 2 feet below natural ground or 2 feet below base of subgrade, whichever is lower. Areas that underlie compacted backfill shall be stripped of all vegetation, humus and other objectionable matter encountered within the top six (6) inches of the soil. All material removed from the site under this operation shall become the Contractor's responsibility. The material shall be disposed of either at a disposal site indicated on the drawings or at a disposal site obtained by the Contractor.

MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, site clearing and stripping or clear right-of-way shall be measured by the acre.

Payment shall be full compensation for all labor, equipment, tools and incidentals necessary for removing, handling, and disposing of objectionable matter from the site as indicated above.

SECTION 021040  
SITE GRADING

DESCRIPTION

This specification shall govern all work necessary for backfill and grading of the site to complete the project.

CONSTRUCTION METHODS

Prior to site grading, the site shall be cleared in accordance with City Standard Specification Section 021020 "Site Clearing and Stripping". Unless specified otherwise on the drawings, the existing surface shall be loosened by scarifying or plowing to a depth of not less than six (6) inches. The loosened material shall be recompacted with fill required to bring the site to the required grades and elevations indicated on the plans.

Fill shall be uniform as to material, density and moisture content. Fill shall be free of large clods, large rocks, organic matter, and other objectionable material. No fill that is placed by dumping in a pile or windrow shall be incorporated into a layer in that position; all such piles and windrows shall be moved by blading or similar method. All fill shall be placed in layers approximately parallel to the finish grade in layers not to exceed six (6) inches of uncompacted depth, unless indicated otherwise on drawings.

The fill shall be compacted to a density which approximates that of natural ground unless indicated otherwise on drawings.

The Engineer may order proof rolling to test the uniformity of compaction. All irregularities, depressions and soft spots that develop shall be corrected by the Contractor.

Excess material from excavation, which is not incorporated into the site as fill, shall become property of the Contractor and disposed of away from the job site, unless indicated otherwise on the drawings.

MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, site grading shall not be measured for pay, but shall be considered subsidiary to other work.

## SECTION 131000

### GALVANIZED STEEL WATER STORAGE TANK

#### 1. SCOPE:

The specifications presented are intended to present a minimum level of quality in procedure which must be equaled or exceeded by installation of an 84,000-gallon galvanized steel water storage tank for which this set of specifications is applicable.

#### 2. GENERAL:

The Engineer's selection of galvanized bolted steel tank construction for this facility has been predicated upon the design criteria and construction methods specified. Deviations from the specified design and construction details will not be permitted.

#### 3. DRAWINGS AND SPECIFICATIONS:

Construction shall be governed by the drawings and specifications showing general I dimension and construction details. After approval by the Engineer of detailed erection drawings prepared by the Manufacturer, there shall be no deviation from these drawings and specifications except upon written or approval from the Engineer.

Three (3) copies of the shop drawings covering tank, anchorage, accessories, and appurtenances provided shall be submitted to the Engineer.

#### 4. QUALIFICATIONS OF TANK MANUFACTURER:

The tank manufacturer shall be a specialist in the design, fabrication, and erection of galvanized bolted steel tanks. The manufacturer shall be quality certified, having an active API-QI certification.

#### 5. DESIGN CRITERIA:

Job Site Location:	Kingsville Water well No. 14
Product to be stored:	Potable Water
Storage Capacity:	84,000 gallons (Nominal)
Tank Diameter:	29'-8 1/2" I.D.
Tank Height:	16'-1
Minimum freeboard:	6"

Design pressure:	2.5 ounces per square inch
Deck Live Load:	5 PSF
Wind speed:	130 MPH (when erected)

## 6. PRODUCTS:

A. Tank Structure: The materials, design, fabrication, and erection of the galvanized bolted steel tank shall conform to AWWA D103-97, to the Principles of Standard Specification 12B of the American Petroleum Institute, or to Columbian's specification which are derived from engineering principles, industry experiences, and the aforementioned standards and specifications.

1. Coating (Inside and Outside): Galvanized per ASTM-A 123 and shall meet NSF Standard 61.
2. Steel
  - a. Sheet. Steel sheets shall conform to or shall be at least equal to hot-rolled quality per ASTM A570 Grade 33 with a minimum yield strength of 33,000 psi. Minimum thickness shall be 12 gauge (0.0972" minimum).
  - b. Plate. Steel plates shall conform to or at least be equal to the requirements of ASTM A36 with a minimum yield strength of 36,000 psi.
  - c. Rolled Structural Shapes. Rolled structural shapes shall conform to ASTM A36.
3. Bolts
  - a. Galvanized bolts, nuts and washers used in tank joints shall be minimum h inch bolt diameter and shall meet the minimum requirements of API 12B, Appendix A, except that bolt heads and nuts may be other than square at the option of tank manufacturer.
  - b. Other bolts shall conform to or at least be equal to the latest revision of ASTM A307.

4. Gaskets: All bolted connections shall incorporate EPDM prefabricated gasket minimum width 1-3/4". A single piece double-punched gasket shall be used at vertical seams which require two vertical rows of punching. Field caulking will be allowed when joining a discontinuous gasket section and at certain joint connections. Neoprene backed steel washers shall be provided at all bolts in contact with the stored liquid.
5. Multiple Row Punching: All sheets in the shell of the tank that require multiple vertical row punching (double or triple) must be in single stroke to insure proper alignment.

B. Accepted Manufacturers: The steel tank and accessories furnished under this section shall be as manufactured by Columbian TecTank Company, Kansas City, Kansas or an approved equal.

## 7. APPURTENANCES:

- A. The contractor shall furnish and install the appurtenances as shown on the contract drawings and as specified below. Unless otherwise noted, standard appurtenances shall be as follows:
  1. Hatch: The tank roof hatch shall have a curbed, upward opening 30" square. The curb shall extend at least four inches above the roof surface. The hatch cover lip shall be hinged and provisions made for locking. The hatch cover lip should extend for a distance of two inches down on the outside of the curb.
  2. Inlet and Outlet Connections: Inlet, outlet, and overflow connections shall conform to the sizes and locations specified on the plan sheets.
  3. Vent: A mushroom-screened vent shall be furnished above maximum water level and shall conform to the size specified on the plan sheets. The overflow pipe shall not be considered to be a tank vent. The vent shall be stainless steel and so designed and constructed as to prevent the entrances of birds, animals, or insects.
  4. Outside Tank Ladder: An outside galvanized ladder with safety cage, meeting OSHA specifications, shall be furnished at the location designated on the plans.
  5. Perimeter Deck Rail: Galvanized handrails & toe board for the deck perimeter shall be furnished on each side of the ladder entry at the location designed on the plans. Handrails and toe board shall meet OSHA requirements.
  6. Interior Tank Ladder: An inside OSHA ladder shall be furnished at the location designated on the plans. Contractor shall place Buna N prefabricated gaskets between the ladder and tank wall at all areas in contact with the stored liquid.

7. Level Indicator: A liquid level indicator with stainless steel float and target board.

8. Internal Nozzle with Overflow Weir Cone: The internal galvanized nozzle with overflow weir shall conform to the size and location specified on the plan sheets.

C. Tank Foundation

1. Steel Bottom Tanks: The foundation shall be installed per AWWA D03-87, Section

2. The existing foundation shall be leveled with differential not exceeding V 1/8 inch in any 30-foot circumference under the shell. The levelness on the circumference shall not vary more than Y 1/4 inch from an established plane.

D. Shipping: All plates, supports, members, and miscellaneous parts shall be packaged for shipment in such manner to prevent abrasion or scratching of the tank surface.

F. Erection: Field erection of galvanized bolted steel tanks shall be in strict accordance with the tank manufacturer's recommendations. Particular care shall be exercised in handling and bolting of the tank plates, supports, and members to avoid abrasion or scratching of the tank surface.

G. Testing: Following completion of erection and cleaning of the tank, the tank shall be tested for liquid-tightness in accordance with Technical Specification 151100. Any leaks disclosed by this test shall be corrected by the erection contractor in accordance with the tank manufacturer's recommendations. The Owner shall provide clean water free of charge at the time of erection completion, for hydrostatically testing the tank. Filling and emptying the tank shall be the responsibility of the Contractor.

8. WARRANTY:

The tank manufacturer shall warrant the tank against any defects in workmanship and materials for a period of one (1) year from date of shipment. In the event a defect should appear, it shall be reported in writing to the manufacturer during the warranty period.

9. MEASUREMENT AND PAYMENT:

Measurement and payment for this item shall be made by lump sum and shall include but not be limited to foundation, piping, fittings, filling, disinfection, testing, concrete splash blocks, and incidentals required to fully complete the work as intended.

## SECTION 151100

### DISINFECTION AND HYDRO TESTING

#### 1. DESCRIPTION

The specifications presented in this item are intended to present a minimum level of quality in procedure which must be equaled or exceeded by disinfection and hydro testing for which this set of specifications is applicable.

#### 2. DISINFECTION

All inside surfaces of the tank shall be disinfected in accordance AWWA Std. C652-92, DISINFECTION OF WATER STORAGE FACILITIES, using the No. 2 Method as described in Section 4.2 of Std. C652-92. Generally, this method consists of a spray application of a solution of calcium hypochlorite (HTH) containing approximately 65% available chlorine by weight. The solution of 200 mg/L (1.9 oz./50 gal. water) available chlorine shall be applied directly to all interior surfaces, including those above the high water level.

The surfaces disinfected shall remain in contact with the chlorine solution for at least one (1) hour. These surfaces shall then be thoroughly flushed by hosing down all surfaces with clean potable water.

#### 3. TESTING

- A. The Contractor will fill the tank to overflow immediately after completion of the disinfection operations.
- B. While the tank is at overflow, the water compartment will be inspected for leaks by the Engineer.
- C. If leaks resulting from the Contractor's work are found, then the tank will be drained and the necessary remedial work will be performed by the Contractor at his own expense. The Contractor will once again disinfect the tank as specified in Section 213-2.
- D. After hydro testing and before the tank is placed in service, water from the full tank shall be sampled and tested by the Contractor in accordance with TCEQ requirements. Testing of the water to be paid for by the Contractor.
- E. Should the tests fail, then the tank will be drained (by Contractor) and the disinfection procedures as outlined above shall be repeated by the Contractor until acceptable test samples are obtained.



F. Contractor shall dispose of heavily chlorinated water in accordance with AWWA Standards for Disinfection of Water-Storage Facilities

#### 4. MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for this item but considered subsidiary to those items of which it is a component part.