



Anderson Ground Storage Tank No. 1 Painting and Rehabilitation Project  
SAWS Job No. 13-0129  
Solicitation No. B-15-020-DD

**ADDENDUM No. 4**

July 13, 2015

This addendum, applicable to work designated above, is an amendment to the proposal and specification documents and as such shall be a part of and included in the Contract. Acknowledge receipt of this addendum by entering the addendum number and issue date in the spaces provided on all submitted copies of the proposal.

**1.0 Addenda Purpose**

- 1.1 The purpose of this addendum is to address questions and issue revisions to the plans and specifications for the Anderson Ground Storage Tank No. 1 Painting and Rehabilitation Project (SAWS Job No. 13-0129; SAWS Solicitation No. B-15-020-DD).

**2.0 Modifications to Specifications**

- 2.1 Insert attached Respondent Questionnaire
- 2.2 Price Proposal  
Remove the Price Proposal in its entirety and replace with the revised Price Proposal included with this addendum. Supplemental unit item 8 was added to the price proposal.
- 2.3 Special Conditions  
Remove the Special Conditions in its entirety and replace with the revised Invitation for Special Conditions included with this addendum. The following changes were made:
- In subsection SPC 4.0, DELETE “Marc Ripley” and REPLACE with “Diana Dwyer”
- 2.4 Section 01025 – Measurement and Payment  
Remove Section 01025 – Measurement and Payment in its entirety and replace with the revised Section 01025 – Measurement and Payment included with this addendum. Supplemental unit item 8 was added to the price proposal.
- 2.5 Section 02060 – Demolition  
Remove Section 02060 – Demolition in its entirety and replace with the revised Section 02060 – Demolition included with this addendum. The following changes were made:

- In subsection 1.06.D, DELETE “Existing painted surfaces contain lead and other heavy metals based paints. Take precautions as required to prevent spread of lead and heavy metals containing particle sand dust.”
- In subsection 1.09.A.1, DELETE “potential lead”
- In subsection 1.09.A.1, DELETE “when dealing with items containing heavy metals.”
- DELETE subsection 1.09.B, DELETE “Lead Based”

2.6 Section 09872 - Interior Coating System for Steel Storage Tanks

Remove Section 09872 - Interior Coating System for Steel Storage Tanks in its entirety and replace with the revised Section 09872 - Interior Coating System for Steel Storage Tanks included with this addendum. The following changes were made:

- In subsection 2.01.G, ADD the following: “4. PPG: Amercoat 114A”

2.7 Section 13200 –Steel Water Storage Tank Rehabilitation

Remove Section 13200 –Steel Water Storage Tank Rehabilitation in its entirety and replace with the revised Section 13200 – Steel Water Storage Tank Rehabilitation included with this addendum. The following changes were made:

- In subsection 3.0.1.G, DELETE “support columns” and REPLACE with “tank”
- In subsection 3.0.1.G, AFTER “...concrete foundation” ADD “around the tank exterior”
- In subsection 3.01.L, DELETE “The CONTRACTOR shall take care to remove and keep the existing nuts, bolts, and washer. The existing nuts, bolts and washers shall be reused.” and REPLACE with “The existing nuts, bolts and washers shall be replaced with like size stainless steel bolts, nuts and washers.”
- In subsection 3.01.O, DELETE “The CONTRACTOR shall take care to remove and keep the existing nuts, bolts, and washer. The existing nuts, bolts and washers shall be reused.” and REPLACE with “The existing nuts, bolts and washers shall be replaced with like size stainless steel bolts, nuts and washers.”
- In subsection 3.01.R, DELETE “shall provide one (1)” and REPLACE with “shall provide two (2)”

**3.0 Modification to Plans**

3.1 Sheet C-101

- Revised New 4’ X 4’ Tank Overflow Structure sheet reference.

3.2 Sheet C-201

- Correction to size of overflow structure.

3.3 Sheet C-203

- Detail 1, revised Ladder Parapet detail reference.
- Detail 1, revised Handrail detail reference.
- Detail 1, deleted reference to SAWS detail.
- Detail 1, revised call out for fall arrest system.

3.4 Sheet C-206

- Detail 1, revised call out and notes for fall arrest system.

#### 4.0 Questions/Comments

4.1 Where is the new pressure transmitter detail, no drawing for it?

***Response: The New Pressure Transmitter Detail can be found on Sheet E-007 Detail C.***

4.2 Is there (1) or (2) new 4" flanged electrode holders. Drawings say (2) and the specs say (1).

***Response: Provide two (2) new flanged electrode holders. Please see 2.7 of this addendum under Modifications to Specifications.***

4.3 Need SAWS Detail DD-903-15. Reference note on C-203 detail 1.

***Response: Disregard the reference to DD-903-15, this detail is not applicable. Please see 3.3 of this addendum under Modifications to Plans.***

4.4 Drwg C-205 details state that new SS bolts, nuts, washers are to replace old ones; however, the specs state that old ones are to be reused.

***Response: New SS bolts, nuts and washers are to replace the old ones. Please see 2.7 of this addendum under Modifications to Specifications.***

4.5 Drwg C-206 has two numbers for cable safety rail- 6116502 and 6116005. Which one is it?

***Response: Contractor is to provide a complete DBI/SALA vertical fall arrest system for each ladder to include all necessary brackets, cables, sleeves, guides, and miscellaneous hardware to provide for a fully functional system. Refer to revised sheet C-206 for further details.***

4.6 Reference C-203 Detail 1 Tank Exterior Ladder refers to see detail 4/S004- there is no S004.

***Response: Revise C-203 Detail 1 note to read: "HANDRAIL SEE DETAIL 3/C-204" and "LADDER PARAPET SEE DETAIL 4/C-204". Please see 3.3 of this addendum under Modifications to Plans.***

4.7 Crows Nest C-206 Detail 3 note needs clarification, are we to perform "modifications" or replace ALL of the structural steel?

***Response: Replace structural steel as referenced on C-206 and as indicated on Sheet C-210.***

4.8 How many roof rafters are the bolts to be changed out on? The plans just say the chime.

***Response: Bolts, nuts and washers throughout the entire roof structure shall be replaced with new stainless steel bolts, nuts and washers. Please see 2.7 of this addendum under Modifications to Specifications.***

4.9 C-101 note "New 4x4 Tank Overflow structure" states to see sheet S003. There is no S003.

***Response: Revise C-101 note to read: "NEW 4' X 4' TANK OVERFLOW STRUCTURE SEE SHEET C-202". Please see 3.1 of this addendum under Modifications to Plans.***

4.10 Can the full containment for the exterior be replaced with a partial containment if fully contained abrasive blasting robots are used to blast the exterior? The robots allow no emissions.

***Response: Abrasive blasting robots may be used though does not alleviate the requirement for full containment. Areas that the robot cannot reach will be required to be blasted with full containment in place.***

4.11 What is the address of the site where the tank is located?

***Response: The address is 5025 West Loop 1604 N, San Antonio, TX 78253.***

4.12 Drawing C209 references other drawings that we could use to calculate surface area for the roof beams. These drawings we need are not in the spec. We would like to request the drawings that are referenced on C209 in the bill of materials chart.

***Response: The referenced drawings are available in the Preliminary Engineering Report (PER). Please reference Special Conditions 4.1 for instructions on obtaining the PER.***

4.13 I do not see the Respondent Questionnaire in the bid package.

***Response: Respondent Questionnaire is attached. Please see 2.1 of this addendum under Modifications to Specifications.***

4.14 Drawing C-202 Detail 5 calls out to seal all cracks 0.1" and wider. We are not able to quantify the amount of cracks that will need to be repaired prior to the bid. To ensure that all bidding contractors bid the same scope can the engineer or SAWS provide and estimated quantity for the crack repair? Or if the crack repair work could be made a bid item as an allowance then all contractors would bid equally.

***Response: The quantity for foundation crack repair for pressure injection grout is estimated to be 500 linear feet. The Price Proposal has been revised. Please see 2.2 of this addendum under Modifications to Specifications.***

4.15 Specification section 13200 3.01.G please clarify where the grout is that needs to be tested and replaced under the column bottom plates? We are assuming this is on the

interior tank columns, and if the tank has a steel floor the column's would be welded to the floor so no grout would exist.

***Response: Section 13200 3.01.G. has been revised to clarify that the grout is located between the tank bottom plate and the concrete foundation around the tank exterior. Please see 2.7 of this addendum under Modifications to Specifications.***

- 4.16 Can the interior coat of Tnemec series 406 be changed to Tnemec series 22? Series 22 is similar to and meets or exceeds the performance of series 406, but is more user friendly during the application process. The DFT's will be similar and 22 is 100% solids, too.

***Response: No.***

- 4.17 Do any existing coatings contain lead? If unknown, what should we assume for purpose of pricing the work?

***Response: Limited sampling for lead testing did not find the presence of lead coatings. Per the plans and specs, contractor is required to conduct their own lead testing per specification Section 01010.1.03.B. Refer to PER for prior lead testing results.***

- 4.18 Can we use robotic equipment for preparation of the exterior surface? This equipment uses recyclable steel grit abrasive. Robotic blasters generate much less waste and provide for point of source containment of blasting debris.

***Response: Yes.***

- 4.19 Can work hours be extended to start before 8am, after 5pm, on Saturdays and on Sundays?

***Response: Work hours can only be extended with prior written approval. See General Conditions, Article 5.18.***

- 4.20 Can the exterior paint system for tank and piping be spray applied (except for stripe coat) without use of containment?

***Response: No.***

- 4.21 Who will perform inspections for the owner?

***Response: Inspections will be performed by a combination of SAWS inspectors and the engineer's NACE certified field inspector. Refer to specification section 01450 3.02.G for further information.***

- 4.22 When will a notice to proceed be issued?

***Response: NTP is anticipated to be issued between September and October 2015.***

- 4.23 Can we use the attached product as a rust inhibitor, HoldTight 102? Tnemec says they have no experience or test data with the specified rust inhibitor product used in conjunction with their products, and usage would be at the risk of the contractor and owner.

**Response: The use of rust inhibitors may only be used with the written approval of the coating system manufacturer and must be included in submittals for review and approval, per Section 09872, 1.03.A and 3.01.B.**

- 4.24 Looking to the spec I have noticed that one of my product is not listed in the coating specs section, section 09872 letter G Pit Filling. Our product is Amercoat 114A which is equal than the rest of my competitors.

**Response: Please see 2.6 of this addendum under Modifications to Specifications.**

## 5.0 Mandatory Pre-Proposal Meeting

- 5.1 Mandatory Pre-Proposal Meeting Agenda is attached.

- 5.2 Firms in Attendance

Invitation for Competitive Sealed Proposals – Proposals will not be accepted from any company not represented at the mandatory pre-proposal meeting and site visit held on July 7, 2015. The Following list is a record of represented firms:

**Firm Name**

- Quality Welding & Fabrication
- Sherwin-Williams
- MGC Contractors
- Alterman
- Utility Service Group
- American Suncraft Construction

**Firm Name**

- Horizon Bros. Painting Corp.
- MK Painting Inc.
- Chesapeake Mechanical & Coatings
- TMI Coatings Inc.
- NG Painting LP
- Classic Protective Coatings, Inc

## ACKNOWLEDGEMENT BY BIDDER

Each respondent is requested to acknowledge receipt of this Addendum No. 4 by his/her signature affixed hereto and to file same and attach with his/her proposal.

The undersigned acknowledges receipt of this Addendum No. 4 and the proposal submitted herewith is in accordance with the information and stipulations set forth.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

Tetra Tech, Inc.  
Texas Registered Engineering Firm F-3924  
700 N. Saint Mary's Street, Ste. 300  
San Antonio, TX 78205



Anderson GST No. 1 Painting  
& Rehabilitation Project



## RESPONDENT QUESTIONNAIRE

PROJECT NAME: \_\_\_\_\_

**Instructions:** The Respondent Questionnaire is a required questionnaire. Complete the questionnaire by inserting the requested information. Do not modify or delete the questions.

### GENERAL INFORMATION

1. **Respondent Information:** Provide the following information regarding the Respondent.  
(NOTE: Co-Respondents are two or more entities proposing as a team or joint venture with each signing the contract, if awarded. Sub-contractors are not Co-Respondents and should not be identified here. If this proposal includes Co-Respondents, provide the required information in this Item #1 for each Co-Respondent by copying and inserting an additional block(s) before Item #2.)

Respondent Name: \_\_\_\_\_  
(NOTE: Give exact legal name as it will appear on the contract, if awarded.)

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

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

Social Security Number or Federal Employer Identification Number: \_\_\_\_\_

2. **Contact Information:** List the one person who SAWS may contact concerning your proposal or setting dates for meetings.

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

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

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

Email: \_\_\_\_\_

3. Identify the principal contact person authorized to commit the Respondent to a contractual agreement.

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

4. Does Respondent anticipate any mergers, transfer of organization ownership, management reorganization, or departure of key personnel within the next twelve (12) months?

Yes  No

5. Is Respondent authorized and/or licensed to do business in Texas?

Yes  No  If "Yes", list authorizations/licenses.

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6. **Debarment/Suspension Information:** Has the Respondent or any of its principals been debarred or suspended from contracting with any public entity?

Yes  No  If "Yes", identify the public entity and the name and current phone number of a representative of the public entity familiar with the debarment or suspension, and state the reason for or circumstances surrounding the debarment or suspension, including but not limited to the period of time for such debarment or suspension.

7. **Bankruptcy Information:** Has the Respondent ever been declared bankrupt or filed for protection from creditors under state or federal proceedings?

Yes  No  If "Yes", state the date, court, jurisdiction, cause number, amount of liabilities and amount of assets.

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8. Provide any other names under which Respondent has operated within the last 10 years.

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9. **Litigation Disclosure:** Respond to each of the questions below by checking the appropriate box. Failure to fully and truthfully disclose the information required in the Litigation Disclosure questions may result in the disqualification of your proposal from consideration or termination of the contract, once awarded.

a. Have you or any member of your Firm or Team to be assigned to this project ever been indicted or convicted of a felony or misdemeanor greater than a Class C in the last five (5) years?

Yes  No

b. Have you or any member of your Firm or Team to be assigned to this project been terminated (for cause or otherwise) from any work being performed for the San Antonio Water System or any other Federal, State or Local Government, or Private Entity?

Yes  No



c. Have you or any member of your Firm or Team to be assigned to this project been involved in any claim or litigation with the San Antonio Water System or any other Federal, State or Local Government, or Private Entity during the last ten (10) years?

Yes  No

If you have answered "Yes" to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your proposal.

11. **Security Procedures:** Respondent acknowledges having read the security procedures and understands the requirements. Respondent is prepared to perform at their own expense background security checks on their employees, or the employees of their consultants or sub-consultants if requested by SAWS.

Yes  No

12. **Addendums:** Each Respondent is required to acknowledge receipt of all addendums.

None  Yes  If "Yes", Identify.

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The information provided above is true and accurate to the best of my knowledge. Furthermore, we understand that failure to complete the Respondent Questionnaire may subject this firm to elimination from the selection process.

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Signature

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Date

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Printed Name

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Title

Anderson Ground Storage Tank No. 1 Painting and Rehabilitation Project  
 SAWS Job No. 13-0129  
 Solicitation No. B-15-020-DD  
 Opinion of Probable Construction Cost: \$2,202,200.00

**PRICE PROPOSAL**

PROPOSAL OF \_\_\_\_\_ a corporation  
 a partnership consisting of \_\_\_\_\_  
 an individual doing business as \_\_\_\_\_

TO THE SAN ANTONIO WATER SYSTEM:

Pursuant to Instructions and Invitations for Competitive Sealed Proposals, the undersigned proposed to furnish all labor and materials as specified and perform the work required for the project as specified, in accordance with the Plans and Specifications for the following prices to wit:

**BASE UNIT PRICES FOR:**

ITEM NO	ITEM DESCRIPTION ( PRICE TO BE WRITTEN IN WORDS)	UNIT	QTY	UNIT PRICE (FIGURES)	TOTAL (FIGURES)
1	Anderson GST No. 1 Painting and Rehabilitation - Furnish all materials, labor, equipment and superintendence for painting and rehabilitation of a 7.5 million gallon ground water storage tank and appurtenances including: pump station piping upgrades and painting; hazardous material disposal and spoil removal; electrical upgrades, and additional site improvements in accordance with the contract plans and specifications; complete in place including contractor mobilization and demobilization. Respondent shall indicate the coating system manufacturer to be used by checking one of the following: <input type="checkbox"/> Carboline <input type="checkbox"/> Sherwin Williams <input type="checkbox"/> Tnemec <input type="checkbox"/> PPG  _____ Dollars  and _____ Cents	LS	1	<u>XXXXXXXX</u>	\$ _____

2	Permit Allowance – Contractor shall include a \$5,000.00 allowance in the proposal for reimbursement of charges incurred from Permit Fees associated with City of San Antonio Plan Review and Permitting.  <u>Five Thousand</u> Dollars  and <u>Zero</u> Cents	LS	1	<u>XXXXXXXX</u>	\$ <u>5,000.00</u>
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<b>Line Item 'A': SUB-TOTAL BASE ITEMS 1 – 2</b>	\$ _____
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**SUPPLEMENTARY UNIT PRICES FOR:**

ITEM NO	ITEM DESCRIPTION ( PRICE TO BE WRITTEN IN WORDS )	UNIT	QTY	UNIT PRICE ( FIGURES )	TOTAL ( FIGURES )
S-1	Furnish all materials, labor, equipment and appurtenances for “Interior Grinding”, complete in place.  _____ Dollars  and _____ Cents	MH	100	\$ _____	\$ _____
S-2	Furnish all materials, labor, equipment and appurtenances for “Pit Welding”, complete in place.  _____ Dollars  and _____ Cents	SQ IN	100	\$ _____	\$ _____
S-3	Furnish all materials, labor, equipment and appurtenances for “Seam Welding”, complete in place.  _____ Dollars  and _____ Cents	LF	100	\$ _____	\$ _____
S-4	Furnish all materials, labor, equipment and appurtenances for “Pit Filling”, complete in place.  _____ Dollars  and _____ Cents	GAL	20	\$ _____	\$ _____

S-5	Furnish all materials, labor, equipment and appurtenances for "Additional Work", complete in place.  _____ Dollars and _____ Cents	MH	500	\$ _____	\$ _____
S-6	Furnish all materials, labor, equipment and appurtenances for "Additional Tank Ventilation/ Dehumidification", complete in place.  _____ Dollars and _____ Cents	WK	4	\$ _____	\$ _____
S-7	Furnish all materials, labor, equipment and appurtenances for "Sika-Flex 1A", complete in place.  _____ Dollars and _____ Cents	LS	1	<u>XXXXXXXX</u>	\$ _____
S-8	Furnish all materials, labor, equipment and appurtenances for "Pressure Injection Grout Concrete Crack Repair", complete in place.  _____ Dollars and _____ Cents	LF	500	\$ _____	\$ _____
<b>Line Item 'B': SUB-TOTAL SUPPLEMENTARY ITEMS S-1 thru S-7</b>				\$ _____	

See Next Page →

**TOTAL PRICE** (Line Item 'A' + 'B') \_\_\_\_\_ Dollars  
and \_\_\_\_\_ Cents  
\$ \_\_\_\_\_

\_\_\_\_\_  
OFFEROR'S SIGNATURE & TITLE

\_\_\_\_\_  
FIRM'S PHONE NO. /FAX NO.

\_\_\_\_\_  
FIRM'S NAME (TYPE OR PRINT)

\_\_\_\_\_  
FIRM'S EMAIL ADDRESS

\_\_\_\_\_  
FIRM'S ADDRESS

**The Contractor herein acknowledges receipt of the following Addendum Numbers.**

**ACKNOWLEDGEMENT OF ADDENDUM(s):**

**ADDENDUM No.** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**ADDENDUM No.** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**ADDENDUM No.** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**ADDENDUM No.** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**Owner Reserves the right to accept the overall most responsible Price Proposal.**

1. Offeror acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Price. Final payment for all Unit Price Line Items will be based on actual quantities provided, determined as provided in the Contract Documents.
2. The Undersigned agrees to commence work on a date to be specified in a written "Authorization to Proceed", and to substantially complete the work in **180 calendar days** and complete all the work in **210 calendar days** from that date.

## SPECIAL CONDITIONS

### SPC 1.0 CONTRACT ADMINISTRATION

### SPC 2.0 CONTRACT RESPONSIBILITIES

### SPC 3.0 CONTRACT COMPLETION TIME

SPC 3.1 If Contractor encounters any nesting birds listed as threatened or endangered species, he shall notify the Owner prior to taking any action.

- A. The Contractor is responsible to take measures necessary to prevent establishment of any migratory, threatened or endangered birds nesting on the structure during his construction which would be negatively impacted by the construction activities.

### SPC 4.0 PROJECT COMPLETION AND ACCEPTANCE

SPC 4.1 A preliminary Engineering Report has been developed for SAWS on this project and upon request will be made available for review by Contractors for information purposes only. The Preliminary Engineering Report is not part of the Contract Documents. Please contact ~~Mare Ripley~~ Diana Dwyer via email at [Diana.dwyer@saws.org](mailto:Diana.dwyer@saws.org). SAWS will require the execution of a SAWS disclaimer by the Contractor as a condition of and prior to the review of the report.

### SPC 5.0 CONTRACT COMPLETION TIME

## END OF SPECIAL CONDITIONS

## **SECTION 01025**

### **MEASUREMENT AND PAYMENT**

#### **PART 1 GENERAL**

##### **1.01 DESCRIPTION OF WORK**

- A. This section defines the method that will be used to determine the quantities of Work performed or materials supplied and establish the basis upon which payment will be made.

##### **1.02 ADMINISTRATIVE SUBMITTALS:**

- A. Schedule of Values: Submit schedule on CONTRACTOR's standard form. (Refer to paragraph 1.05 of this Section and Section 01300 – Submittals for additional requirements.)
- B. Schedule of Estimated Progress Payments: (Refer to paragraph 1.06 of this Section for additional requirements.)
  - 1. Submit with initially acceptable Schedule of Values.
  - 2. Submit adjustments thereto with Application for Payment.
- C. Application for Payment.
- D. Final Application for Payment.

##### **1.03 RELATED WORK**

- A. Section 01300 – Submittals

##### **1.04 PRICE**

- A. Required items of Work and incidentals necessary for the satisfactory completion of the Project shall be considered incidental to the specified Work required under this contract and shall be considered as included in the unit prices for the various proposal items. The CONTRACTOR shall prepare his price accordingly to allow for such items:
  - 1. Not specifically listed in the Price Proposal.
  - 2. Not specified in this section to be measured or to be included in one of the items listed in the Price Proposal.
  - 3. To include CONTRACTOR's overhead and profit.
- B. Work includes the furnishing of all labor, materials, equipment, tools, and related items for performing all operations required to complete the Project satisfactorily in place, as specified by the contract documents.

## 1.05 SCHEDULE OF VALUES:

- A. Prepare a separate Schedule of Values for each phase of Work under the Agreement. Submit the Schedule of Values within 10 days prior to submitting the first request for payment or as requested by the Owner.
- B. Use line items in the proposal as line items in the schedule. Provide adequate detail to allow easy determination of the percentage of work completed for each item.
- C. Lump Sum Work.
  - 1. Reflect Schedule of Values format included in conformed Price Proposal Form, specified allowances, alternates, and equipment selected by Owner, as applicable.
  - 2. List bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.
  - 3. Separate product costs and installation costs. Break down by Division 2 through 16 for each of the Project facilities.
    - a. Product costs include cost for product, delivery and unloading, royalties and patent fees, taxes, and other cost paid directly to the supplier or vendor.
    - b. Installation costs include cost for the supervision, labor and supervision, labor and equipment for field fabrication, erection, installation, start-up, initial operation and CONTRACTOR'S overhead and profit.
  - 4. Divide principal subcontract amounts into an adequate number of line items to allow determination of the percentage of work completed for each item. These line items may be used to establish the value of work to be added or deleted from the project.
- D. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Price Proposal Form.
- E. An unbalanced or front-end loaded schedule will not be acceptable.
- F. Summation of the complete Schedule of Values representing all Work shall equal the Contract Price.
- G. Mobilization
  - 1. Description – This item shall govern the mobilization of personnel, equipment and supplies at the project site in preparation for the beginning work on contract items and the acquisition of insurance and bonds. Mobilization shall include, but not be limited to the movement of equipment, personnel, material, supplies, etc. to the project site and the establishment of temporary offices and other facilities necessary to the start of the work.
  - 2. Measurement – Measurement of the item, “Mobilization” will be by the lump sum as the work progresses. “Mobilization” lump sum price shall be limited to a maximum 10% of the total contract amount.
  - 3. Payment – Partial payments of the lump sum price for mobilization will be as follows:



- a. When 1% of the adjusted contract amount for construction items (which is defined as the total contract amount less the lump sum bid for mobilization) is earned, 50% of the mobilization lump sum bid or 5% of the total contract amount, whichever is less, will be paid. Insurance and Bonds will be paid on the initial request for payment under a sub-heading to mobilization entitled "Insurance and Bonds". The amount paid for insurance and bonds will not exceed 3% of the total contract amount for construction items. Receipts or other proof of payment for the full amount of compensation requested under the sub-heading of "Insurance and Bonds" shall be provided to the Owner with the request for payment.
- b. When 5% of the adjusted contract amount for construction items is earned, 75% of the mobilization lump sum bid or 7.5% of the total contract amount, whichever is less will be paid.
- c. When 10% of the adjusted contract amount for construction items is earned, 90% of the mobilization lump sum bid or 9% of the total contract amount, whichever is less will be paid.
- d. Upon completion of all work under this contract, payment for the remainder of the lump sum bid for mobilization will be made.
- e. Payment for this line item will be reduced by half of the earned amount, until said documents are submitted and approved by the Owner:
  - i. All material submittals,
  - ii. Health and Safety Plan,
  - iii. Quality Control / Quality Assurance Plan,
  - iv. Pre-Construction Video, and
  - v. Construction Schedule

**1.06 SCHEDULE OF ESTIMATED PROGRESS PAYMENTS:**

- A. Show estimated payment requests throughout Contract Times aggregating initial Contract Price.
- B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.

**1.07 APPLICATION FOR PAYMENT:**

- A. Reference Article VII. CONTRACT PAYMENTS of the General Conditions.
- B. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment for each schedule and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of CONTRACTOR.
- C. Provide separate form for each schedule as applicable.

- D. Include accepted Schedule of Values for each schedule or portion of Work, the unit price breakdown for Work to be paid on unit price basis, a listing of Owner-selected equipment if applicable, and allowances, as appropriate.
- E. Preparation:
  - 1. Round values to nearest dollar.
  - 2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form for each schedule as applicable.
  - 3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form(s) for each schedule as applicable, a listing of materials on hand for each schedule as applicable and such supporting data as may be requested by Owner.

### **1.08 MEASUREMENT – GENERAL**

- A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.
- B. Whenever pay quantities of material are determined by weight, the material shall be weighed on scales furnished by CONTRACTOR and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigh facility and delivered to the Owner's representative at the point of delivery of the material.
- C. If material is shipped by rail, the car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.
- D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by Owner. Each vehicle shall bear a plainly legible identification mark.
- E. All materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that the actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. All vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting the above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.
- F. Quantities will be based on ground profiles shown. Field surveys will not be made to confirm accuracy of elevations shown.
- G. Where measurement of quantities depends on elevation of existing ground, elevations obtained during construction will be compared with those shown on Drawings. Variations of one foot or less will be ignored, and profiles shown on Drawings will be used for determining quantities.

- H. Units of measure shown on the Schedule of Values shall be as follows unless specified otherwise.

<b>Item</b>	<b>Method of Measurement</b>
AC	Acre-Field Measure by Owner
CY	Cubic Yard-Field Measure by Owner within the limits specified or shown
CY-VM	Cubic Yard-Measured in the Vehicle by Volume
EA	Each-Field Count by Owner
GAL	Gallon-Field Measure by Owner
HR	Hour
LB	Pound(s)-Weight Measure by Scale
LF	Linear Foot-Field Measure by Owner
LS	Lump Sum-Unit is one; no measurement will be made
MFBM	Thousand Foot Board Measure-Delivery Invoice
SF	Square Foot
SY	Square Yard
TON	Ton-Weight Measure by Scale (2,000 pounds)

**1.09 PAYMENT:**

- A. Reference Article VII. CONTRACT PAYMENTS of the General Conditions.
- B. General:
1. Progress payments will be made within 30 calendar days of receipt of payment request.
  2. The date for CONTRACTOR's submission of monthly Application for Payment shall be established at the Preconstruction Conference.
- C. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.

**1.10 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS:**

- A. Payment will not be made for the following:
1. Loading, hauling, and disposing of rejected material.
  2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
  3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.
  4. Material not unloaded from transporting vehicle.
  5. Defective Work not accepted by Owner.
  6. Material remaining on hand after completion of Work.

**1.11 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT:**

- A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to Owner.
- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to CONTRACTOR unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

**1.12 PRICE PROPOSAL ITEMS:**

- A. Respondent will complete the Work for the following listed Work items for the prices listed on the PRICE PROPOSAL:

Item No. 1: Base Price for the 7.5 MG Steel Ground Water Storage Tank (Anderson No. 1 GST) Painting and Rehabilitation.

- 1. Description - The complete SSPC-SP-10 cleaning and repainting of the 7,500,000 gallon steel ground water storage tank in San Antonio, Texas on the interior surfaces and support members, and the complete SSPC-SP-6 cleaning and repainting of the exterior surfaces with full containment as outlined in SSPC Guide 6 Class 2A. Rehabilitation and replacement of specified items which includes, but is not limited to:
  - a. Additional tank appurtenances Work items include:
    - i. replacement of all interior bolts at the interface between the tank shell and the roof girders;
    - ii. regROUT tank base;
    - iii. repair concrete foundation;
    - iv. repair overflow weir box;
    - v. caulk roof chime area;
    - vi. new exterior and interior ladder with safety cable climb;
    - vii. new cathodic protection system;
    - viii. new aluminum roof center vent with AST pressure relief tank vent;
    - ix. rehabilitation of existing perimeter mushroom and goose neck vents;
    - x. replacement of screens on the exterior goose neck vents;
    - xi. new roof access hatches and safety railing;
    - xii. electrical and instrumentation control system improvements;
    - xiii. replacement of sample taps;
    - xiv. replacement of butterfly valves on tank inlet and outlets;
    - xv. other improvements as indicated on the Contract Drawings.

2. The Additional site improvement Work items include:
  - a. site grading work;
  - b. other miscellaneous improvements as noted on the Contract Drawings.
3. Measurement – Measurement of the item Anderson No. 1 GST Painting and Rehabilitation will be by lump sum.
4. Payment of the full lump sum price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the CONTRACTOR for furnishing all: labor, equipment, tools, and materials; mobilization and demobilization; securing all permits; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings.

Item No. 2: Permitting Allowance

1. Description - This item shall be for permitting fees associated with the project scope. This shall include furnishing all labor, materials, and incidentals required to obtain all necessary permits including review fees, in accordance with the contract documents, complete in place.
2. Measurement – Measurement of the item “Permitting Allowance” will be by the lump sum and shall not exceed the price listed on the Price Proposal.
3. Payment of the lump sum price shall be paid for the work. Payment shall constitute full compensation to the CONTRACTOR for obtaining all necessary permits for the Anderson No. 1 Ground Storage Tank Painting and Rehabilitation Project. CONTRACTOR shall provide permit receipts to SAWS for reimbursement.

Item No. S-1: Interior Grinding

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Interior Grinding of any irregular surfaces identified by the CONTRACTOR and authorized by the Field Inspector and Project Representative. Irregular surfaces shall be removed from all interior surfaces of the tank by grinding these irregular surfaces in accordance with the Project Specifications.
2. Measurement – Measurement of the item “Interior Grinding” will be by the number of grinding man-hours on the tank interior and shall be paid for by the unit price per man-hour listed on the Price Proposal.

Item No. S-2: Pit Welding

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Pit Welding all areas of apparent pitting. Work areas shall be initially abrasive blast cleaned, and any pits identified for pit welding by the CONTRACTOR and authorized by the Field Inspector and Project Representative shall be repaired by welding.

2. Measurement – Measurement for the item “Pit Welding” shall be as follows. Any pit less than 1 square inch in area shall be counted as 1 square inch. The number of square inches of pit area filled by the welding shall be paid for by the unit price per square inch listed on the Price Proposal.

Item No. S-3: Seam Welding

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Seam Welding all areas of apparent seam deterioration. Work areas shall be initially abrasive blast cleaned, and any seam corrosion or undercut identified by the CONTRACTOR and authorized by the Field Inspector and Project Representative shall be repaired by arc-gouging and welding.
2. Measurement – Measurement of the item “Seam Welding” will be by the number of linear feet of seam welding shall be paid for by the unit price per linear foot listed on the Price Proposal.

Item No. S-4: Pit Filling

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Pit Filling. All areas of apparent pitting shall be initially abrasive blast cleaned, and any pits, rough areas, or seams identified for pit filling by the CONTRACTOR and authorized by the Field Inspector and Project Representative. Work areas shall be filled with solventless polyamide epoxy seam sealer of the type recommended by the manufacturer of the interior paint system.
2. Measurement – Measurement for the item “Pit Filling” shall be for the number of gallons of pit filling required and shall be paid for by the unit price per gallon listed on the Price Proposal.

Item No. S-5: Additional Work

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Additional Work. It is felt that the detailed Plans and Technical Specifications adequately describe the work to be performed; however, in the event that during the course of the work it is found that additional work is required, Additional Work shall be authorized in writing by the Owner and the Engineer.
2. Measurement – Measurement for the item “Additional Work” shall be paid for at the following price per single man-hour, including all welding, equipment, normal rigging, labor, supplies, overhead, insurance, and profit. The number of unanticipated additional man-hours shall be paid for by the unit price per man-hour listed on the Price Proposal.

Item No. S-6: Additional Tank Ventilation / Dehumidification

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Additional Tank Ventilation/ Dehumidification. CONTRACTOR shall provide additional tank ventilation in conformance with Section 09800, paragraph 1.03 C. “Ventilation” beyond the 48 hours called for in the final coat. This may be called for by the Owner to help meet VOC testing requirements for the water.

2. Measurement – Measurement of the item “Additional Tank Ventilation/ Dehumidification shall be for the number of weeks of additional tank ventilation based on a seven (7) day week and shall be paid for by the unit price per week listed on the Price Proposal.

Item No. S-7: Sika-Flex 1A

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Sika-Flex 1A: Interior roof plates. Following the application of the final interior coating, the Owner may desire to have Sika-Flex 1A applied to seal all of the un-welded portions of the interior roof plates along with all roof truss beams meet the roof plate.
2. Measurement – Measurement of the item “Sika-Flex 1A” shall be for the application of the Sika-Flex 1A to the interior of the un-welded portions of the tank roof plates and shall be paid for by the lump sum listed on the Price Proposal.

Item No. S-8: Pressure Injection Grout Concrete Crack Repair

1. Description - This item shall be for furnishing all labor, materials, tools, equipment and incidentals required for Pressure Injection of Grout in all areas of apparent cracks larger than 0.1” in width around the concrete foundation of the steel tank. Work areas shall be initially cleaned, and any cracks found by the CONTRACTOR and authorized by the Field Inspector and Project Representative shall be repaired by a pressure injection grout system.
2. Measurement – Measurement of the item “Pressure Injection Grout Concrete Crack Repair” will be by the number of linear feet of cracks and shall be paid for by the unit price per linear foot listed on the Price Proposal.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

## **SECTION 02060**

### **DEMOLITION**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section covers the labor and materials necessary for the Work associated with the demolition of the structures as shown on the Drawings and specified herein.
- B. Demolition required to modify the existing structures, or to make room for new construction.
- C. Disconnecting, capping and removing identified utilities and process piping.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 01500 – Construction Facilities and Temporary Controls
- B. Section 01566 – Waste and Salvageable Materials
- C. Section 01600 – Material and Equipment
- D. Section 01700 – Contract Closeout
- E. Section 01720 – Project Record Documents
- F. Section 02215 – Fill and Backfill
- G. Section 02220 – Excavating, Backfilling, and Compaction for Utilities

##### **1.03 PROJECT RECORD DOCUMENTS**

- A. Submit under provisions of Section 01700 – Contract Closeout and Section 01720 – Project Record Documents.
- B. CONTRACTOR shall accurately record actual locations of capped utilities and subsurface obstructions.

##### **1.04 REGULATORY REQUIREMENTS**

- A. Conform to applicable codes, regulations and/or permits for demolition of structures, safety of adjacent structures, dust control, runoff control and sludge disposal. The City of San Antonio Noise Ordinance will be strictly enforced.
- B. Obtain required permits from authorities. Provide copies of each permit under the provisions of Section 01300 – Submittals.



- C. Notify affected utility companies before starting the Work and comply with their requirements.
- D. Do not close or obstruct facility or other roadways without permission.
- E. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
- F. Demolition contractor shall have documented experience with at least ten similar projects.
- G. No blasting will be allowed.

#### 1.05 SUBMITTALS AND SCHEDULING

- A. Schedule work and submit a work plan including methods of demolition to be used on each structure under the provisions of Section 01300 - Submittals.
- B. Provide a detailed plan of action including and timeline for activities, in advance, for Owner review and approval. **The CONTRACTOR shall not proceed without SAWS approval.**
- C. Describe demolition removal procedures and schedule. Demolition activities will be limited to 8 a.m. to 5 p.m., Monday through Friday. No Work on Saturday or Sunday without prior written approval from the Owner.

#### 1.06 PROJECT CONDITIONS

- A. Each respondent shall visit the site and carefully and thoroughly inspect all existing facilities and take into account, in the preparation of his price, all conditions affecting the Work required by the Contract Drawings and Specifications.
- B. Each respondent shall satisfy himself as to the limits of removal, replacement, and modification of the existing facilities required to complete the Work as indicated on the Contract Drawings and as specified herein.
- C. Locate existing exposed and buried utilities and determine the requirements for their protection, or their disposition with respect to the demolition work.
- ~~D. Existing painted surfaces contain lead and other heavy metals based paints. Take precautions as required to prevent spread of lead and heavy metals containing particles and dust.~~

## 1.07 PROTECTION

- A. Protect all reference points, bench marks and monuments from dislocation or damage. Replace or repair immediately any point's damage, destroyed or dislocated. Protect and maintain all conduits, drains, inlets, sewers, pipes and wires that are to remain on the property.
- B. Provide adequate protective measures to protect workmen and passersby from falling material and dust. Sprinkle and dampen all mortar and other dusty substances from the beginning of work to its completion.
- C. Provide, erect and maintain all lights, barricades, warning signs and guards as necessary for the protection of streets, sidewalks and all adjoining property.
- D. Salvaged materials and rubbish shall be lowered or raised and transported by means of reasonable dust proof chutes or suitable conveyances, and all mortar and other dusty substances shall be sprinkled and dampened from the beginning of such work to its completion.
- E. Take measures for safety of personnel as recommended in the AGC Manual of Accident Prevention I Construction and as required by OSHA.

## 1.08 JOB CONDITIONS

- A. Existing Conditions
  - 1. Do not work or store materials or equipment on public or adjacent property.
  - 2. Do not allow material and debris to accumulate on the site.
- B. Damage
  - 1. CONTRACTOR shall be responsible for any damage to streets, curbs or other property not specifically called for as an item to be demolished.

## 1.09 REQUIRED PRECAUTIONS

- A. Protection of Grounds:
  - 1. CONTRACTOR shall provide protection of person and property, including all landscape, drives, roads, walks, buildings, utilities, etc. any damage to such shall be corrected to the Owner's satisfaction at the CONTRACTORs expense. The CONTRACTOR must determine the means and methods as required by the Specifications to comply with environmental laws regarding ~~potential lead~~ paint disposal and exposure, including OSHA 29 CFR 1926.62 dealing with cutting steel with protective coatings. The CONTRACTOR must also take into account the provisions set forth in SSPC Guide No. 6 and 7. ~~when dealing with items containing heavy metals.~~
- B. Containment of ~~Lead Based~~ Paint:

1. CONTRACTOR shall provide containment of all loose, peeling paint. A containment plan shall be submitted to SAWS and the Engineer for approval prior to the start of any work. If at any time the containment system shall fail, the CONTRACTOR shall suspend the Work and shall take all actions necessary to correct the cause of failure prior to resuming the Work. Should paint debris fall on adjacent property or public right-of-way, CONTRACTOR shall be responsible to collect debris.

## **PART 2 PRODUCTS**

### **2.01 FILL MATERIALS**

- A. Fill Material: As required for structural backfill per Section 02215 – Fill and Backfill.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. All work shall be done in conformance with the rules and regulations pertaining to safety established by, but not limited to, OSHA, City of San Antonio, and as specified elsewhere in these Specifications.
- B. Provide, erect, and maintain temporary barriers and security devices. Materials needed for temporary protection in the form of barricades, fences, enclosures etc, may be “used” construction materials of sound condition and reasonably clean.
- C. Protect existing structures and piping that are not to be demolished.
- D. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as required.
- E. Arrange for and verify locations of utility services, prior to beginning operations. Mark location of utilities.

### **3.02 DEMOLITION REQUIREMENTS**

- A. Conduct demolition to minimize interference with adjacent structures and occupancies.
- B. Cease operations immediately if adjacent structures appear to be in danger and notify Engineer.
- C. Conduct operations with minimum interference to Owner’s access. Maintain egress and access at all times.
- D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- E. Sprinkle work with atomized water to minimize dust. Provide hoses and water connections for this purpose. No runoff of water allowed.

- F. The CONTRACTOR shall be responsible for the disposal of all debris; disposal shall satisfy all applicable, Federal, State and local laws that govern such disposal.

### **3.03 DEMOLITION**

- A. CONTRACTOR shall obtain required demolition permits and also provide proper chain of custody forms and disposal forms which certify proper disposal of waste materials to an approved disposal/recycling center.
- B. Disconnect and cap designated utilities and process piping within demolition areas.
- C. Demolish in accordance with demolition procedures submitted to and accepted by the Owner.
- D. All demolished materials shall be removed from the site and disposed of by the CONTRACTOR. Remove demolition debris continuously as required.
- E. Do not store or sell materials on site. Maintain a neat, clean appearance to the site at all times.
- F. Any hazardous material located in the foundations, vaults or in the water mains of these structures shall be disposed of in a manner that satisfies all State, Local and Federal laws pertaining to these types of materials.
- G. Maintain streets and walks outside barriers free from debris at all times.
- H. The Owner shall be notified immediately of any existing line, wire, pipelines, water lines, sewer lines, or other facility encountered in the demolition, which was not shown on the Contract Drawings.
- I. Do not permit demolition work, or any work in connection with this demolition work, to disturb or damage any adjacent structure, its foundation and/or public utilities which are to remain.
- J. All demolition work shall be carried out in a safe, orderly and careful manner which will prevent injury to workers and damage to existing facilities or construction. A demolition permit from the City of San Antonio Building Inspection Department will be required for all demolition work. Demolition work shall be performed in accordance with all applicable laws and ordinances. Blasting and open burning are prohibited.
  - 1. Tank appurtenances (i.e. vents, ladders, platforms, etc.) that are required to be removed from the tank shall be lowered to the ground in a controlled fashion. At no time shall equipment or demolished materials be allowed to free fall from the tank.
- K. Wet down masonry and plaster materials during demolition to prevent spread of dust and dirt. Sprinkle debris, and use temporary enclosures as necessary to limit dust to lowest practicable level. Do not use water to extent causing flooding, containment runoff, or icing.

- L. **Note: Some buildings, pipes or other structures may contain building products that contain both friable and nonfriable asbestos fibers, including tile, siding, roofing panels, pipe and insulation. All asbestos materials must be handled and disposed of according to EPA and TCEQ criteria.**
- M. The CONTRACTOR shall conduct the work with strict consideration to fire protection, and shall notify and comply with the requirements of the local fire department. Portable fire extinguishers shall be provided as required by OSHA regulations and the fire department. Storage of flammable materials shall be in areas designated by the Owner, and shall comply with all NFPA requirements and applicable regulations.
- N. Provide tarps on trucks and/or other forms of transportation used for hauling materials, rubbish, and/or debris from the site. Do not drop or scatter trash, rubbish, etc., along the route of travel either on or after leaving the site.

### **3.04 FENCE REMOVAL**

- A. Fences to be removed are indicated on the Contract Drawings.
- B. Fence to be removed shall include all fencing support structures, posts, post foundations, etc.

### **3.05 MECHANICAL EQUIPMENT**

- A. Remove mechanical equipment by unbolting or torch cutting of anchor bolts.
- B. Anchor bolts to be torch-cut and ground neatly flush with existing concrete.

### **3.06 PIPE AND ELECTRICAL LINES**

- A. Existing pipe shown to be abandoned and removed shall be disconnected from piping to remain active by capping the active line.
- B. All piping shown to be abandoned shall be removed, unless noted otherwise on drawings or approved by Owner.
- C. Pipe to be removed and demolished shall be completely removed and the trench backfilled with suitable material compacted in accordance with Section 02220 – Excavating, Backfilling, and Compaction for Utilities.
- D. Buried electrical lines located beneath new structures or shown to be abandoned shall be disconnected prior to any excavation work in the vicinity.

### **3.07 BACKFILLING**

- A. The CONTRACTOR shall backfill all demolition areas approximately to existing ground level or foundation level of new construction, as applicable, as shown on the Contract Drawings.

- B. Backfill material shall meet the requirements for secondary backfill, as applicable, and backfill compaction shall be in accordance with the applicable requirements of Section 02315 – Fill and Backfill. Building debris shall not be used as backfill material. In all areas not backfilled to ground level, the CONTRACTOR shall erect safety barriers around the excavation.

### **3.08 CONCRETE AND PIPE REMOVAL**

- A. The CONTRACTOR shall be responsible for disposal of all concrete, steel and pipe removed from the jobsite. Any hazardous material located in the foundation, or in the water mains of these structures shall be disposed of in a manner that satisfies all State, Local and Federal laws pertaining to these types of materials.
- B. Material of water main piping contains asbestos materials, asbestos cement. CONTRACTOR shall refer to Section 02110 – Asbestos Cement Pipe Repairs, Demolition and Disposal for removal and handling of asbestos containing materials.

### **3.09 EXISTING COATINGS**

- A. CONTRACTOR shall drum all collected paint debris as necessary, seal, and label accordingly. Debris shall be drummed minimum daily, and shall be stored on site until waste is classified.
- B. All collected paint debris shall be analyzed by a qualified laboratory for the Toxic Characteristic Leachate Profile (TCLP) test to determine the waste classification. CONTRACTOR shall provide copies of results to the Engineer. All waste generated from work on this project, regardless of classification, shall be disposed by the CONTRACTOR in accordance with all applicable Federal, State, and Local laws that govern such disposal.

### **3.10 RESTORATION OF DAMAGE**

- A. Any damage caused to the existing site, walks, drives, curbs, grassed areas, etc., scheduled to remain, shall be immediately repaired and/or replaced at the CONTRACTOR's expense to the satisfaction of Construction Inspector/Engineer.
- B. Any damage which effects drainage of existing property shall be corrected. Disturbed areas include, but are not limited to the tank site property, right-of-way of any state, county, city thoroughfare, and adjoining property. Any damage to adjoining property shall be shaped and sod shall be installed to Owner's satisfaction.
- C. CONTRACTOR shall work to resolve all damage claims in a timely manner.

### **3.11 SALVAGE**

- A. All equipment will become the property of the CONTRACTOR except salvageable material as outlined in Section 01566 – Waste and Salvageable Material.

**END OF SECTION**

**SECTION 09872**  
**INTERIOR COATING SYSTEM FOR STEEL STORAGE TANKS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. All interior wet surfaces of the containers, including, but not limited to, the manholes, ladders, threads, bolts, nuts, pins, brackets, seams, interior suction pipes, handrails, columns, rafters, corners, interior overflow weir, interior inlet box, knife edges, drain holes etc. shall be cleaned and painted in accordance with the paragraphs in this section.
- B. Furnishing and application of the underwater curing (100 % solids) epoxy gel for use at the time of the First Anniversary Inspection.
- C. Preparation of all interior wet surfaces which are to receive coating is included in this Section.
- D. Painting of all interior wet surfaces which are to receive coating are included in this Section.
- E. Specifications for the coating of the interior wet surfaces of the existing steel potable water storage tanks and accessories are included in this Section.
- F. Sealant for steel water storage tanks.
- G. Interior 100% solids polyurethane finish coats for the steel water storage tanks.

**1.02 RELATED SECTIONS**

- A. Section 09800 – General Specifications for Coating Systems

**1.03 SUBMITTALS:**

Provide the following in conformance with applicable requirements contained in Section 01300 - Submittals.

- A. Shop Drawings: Submit shop drawings for coatings, rust inhibition and miscellaneous components. Shop drawings shall be complete with bill-of-materials showing kind and class of materials and catalog and engineering data showing compliance with the specified requirements.
- B. Certified shop drawings shall include the required thickness, general construction and material specification of the proposed. The rust inhibitor coating/dehumidification equipment shall be noted as approved by the coating manufacturer by submitting a signed letter from the coating manufacturer.
- C. Applicator Certifications: Submit supervisor and applicator certifications from the coating manufacturer for the coating system and rust inhibitor.

**PART 2 PRODUCTS**

**2.01 MATERIALS AND MANUFACTURERS**

- A. **Compliance with ANSI/NSF Standard 61:** The approval of potable water tank interior coatings and sealers shall be based on written certification of compliance with ANSI/NSF Standard 61 and compliance with state and local agencies. Adequate manufacturer’s published product/technical data concerning the storage, mixing, thinning, pot-life, application, and curing shall be furnished to ensure that the finished product complies with ANSI/NSF Standard 61.
- B. **Certification:** Manufacturer’s presented below must certify that their coatings furnished are in compliance with the Specifications and the Manufacturer’s Recommendations.
- C. **Coating System:** The approved coatings for the interior wet surfaces of the steel water storage tank shall be a single-coat NSF approved system per AWWA D102 *Inside Coating System No. 4*. The system shall include a finish coat of 100% solids polyurethane coating of the same Manufacturer of all other coating products used on this project. The dry film thickness shall be in compliance with manufacturer recommendations.
- D. **Thinners:** Only thinners recommended and furnished by the chosen coating manufacturer shall be used to thin the paint products.
- E. **Coatings:** Acceptable coating manufacturers and specifications for the interior wet surfaces of the steel water storage tanks follow; however, the CONTRACTOR is advised that all manufacturers presented below must submit and certify that the coatings furnished are in compliance with these Specifications and the Manufacturer’s Recommendations. Coating systems vary by manufacturer, CONTRACTOR shall provide required DFT for total system following manufacturer requirements.

<b>Coating System</b>	<b>Product</b>	<b>DFT</b>	<b>Color</b>
<b><u>Finish Coat</u></b>		<b><u>Minimum</u></b>	
Carboline	Reactamine 760 HB	30.0 mils dry	Light Tan
PPG	Amerthane 490	30.0 mils dry	Off-White
Sherwin Williams	Sherflex S	30.0 mils dry	Beige
Tnemec	Elasto-Shield Series 406	30.0 mils dry	Off-White

**30 mils dry**  
Total DFT: **minimum**

- F. **Stripe Coat:** Shall be same product used for finish coat system. Apply to top of roof rafters, weld seams, edges, bolts, connections and difficult to reach areas.
- G. **Pit Filling - Polyamide Epoxy Seam Sealer:** The following manufacturer’s products are acceptable for this project for all areas on the tank interior identified for pit filling.
  - 1. Carboline: Carboguard 501
  - 2. Sherwin-Williams: Steel Seam FT910
  - 3. Tnemec: Series 215 Surfacing Epoxy
  - 4. PPG: Amercoat 114A



H. **Underwater Epoxy:** The following manufacturer's underwater curing (100% solids) epoxy gels are acceptable for this project during the 1-year Anniversary Inspection spot repairs.

1. Raven Lining System, Tulsa, OK
  - a) Aquata Poxo A-6 Paint 10.0 - 12.0 mils

### **PART 3 EXECUTION**

#### **3.01 DEHUMIDIFICATION EQUIPMENT / RUST INHIBITION**

The CONTRACTOR shall provide for rust inhibition using either dehumidification equipment OR rust inhibitor coating. The selection shall be approved by the coating manufacturer, ENGINEER and OWNER through the submittal process.

A. **Dehumidification Equipment:** The CONTRACTOR shall furnish, install, and operate dehumidification equipment to maintain a minimum of five (5) degrees F dew point depression between the internal steel surface and the internal ambient air dew point temperature, and a low relative humidity inside the tank during all interior abrasive blasting operations, prior to coating applications and during coating curing at a minimum of one and one-half (1½) to two (2) air changes per hour. The CONTRACTOR shall provide propane powered units at the site for dehumidification at no additional cost to the Owner. Cost and connection of power for the units shall be the responsibility of the CONTRACTOR. This dehumidification shall permit continuous cleaning of the tank interior and shall hold the blast cleanliness until coating application, as well as facilitate coating cure. The size and type of the dehumidification units shall be designed by the manufacturer of the units to comply with these specifications. Dehumidification shall be supplied by one of the following firms:

1. Aggreko, Inc.
2. Dehumidification Technologies, Inc.
3. Munters Corporation – Moisture Control Services
4. Or approved equal by the Owner.

B. **Rust Inhibitor Coating:** As an alternative to Dehumidification Equipment the CONTRACTOR may be allowed to utilize, furnish and install a rust inhibitor coating with documented approval by the coating manufacturer. The CONTRACTOR shall furnish a letter from the coating system manufacturer on manufacturer letterhead listing the rust inhibitor coating as approved for use with the selected interior tank coating. The proper use of a rust inhibitor coating is the responsibility of the contractor and the contractor takes full responsibility of insuring that the surface of the steel is rust free prior to applying the finish coat. In the event that rust formation occurs, the contractor shall re-blast the steel at no additional cost to the owner. The product must be applied by a certified applicator and supervisor. Certificates are to be provided as a submittal. The rust inhibitor coating shall be supplied by:

1. CorrLine, CorrX.

#### **3.02 SURFACE PREPARATION**

A. **Cleaning Tank and Debris Removal:** The Owner will remove all water from the tank which will drain by gravity through the drain line. The CONTRACTOR shall remove all standing water, mud, and debris from the tank prior to starting work. All loose paint, rust, and dirt shall be

removed from the tank interior prior to starting the cleaning operations. This debris shall be stored in leak proof covered drums/containers on the site and shall be disposed of in accordance with the specifications.

1. **Rough Areas:** These paragraphs apply to rough areas created during the repair and repainting processes. This Work is not included in the **Supplementary Unit Price Items** and shall be included in the **Base Price**. All spatter, rough welds, sharp edges, burrs, and corners which would cause difficulty in achieving a defect free coating shall be ground smooth.
  2. The objective of the grinding operation is to eliminate sharp edges and corners in order to provide a surface for the application of a uniform coating thickness without pinholes, holiday, or voids.
- B. **Surface Preparation:** The complete interior wet surfaces of the tanks shall be cleaned in compliance with the SSPC-SP 10, Near-White Blast Cleaning Specification and in accordance with Section 09800 - General Specifications for Coating Systems. All Surfaces shall be cleaned and primed after the repairs are completed.
- C. **Surface Contamination:** The surfaces to be painted shall be free of dust, moisture, oil, mud grease, or other foreign material which could cause coating adhesion problems. If tests by the Field Inspector find questionable amounts of contamination on the steel surfaces or primer/intermediate coats, a representative of the coating manufacturer may be called to examine the surfaces in question and assist in determining if the surfaces are in accordance with the Specifications and the manufacturer's recommendations.

### 3.03 APPLICATION

- A. **Final Coat:**
1. Before the formation of rust and after observation of the surface by the Field Inspector, the SSPC-SP 10 cleaned surfaces shall be painted. Once the entire interior surfaces have been blasted, the CONTRACTOR shall then pressure wash the interior to remove all residual blasting dust and debris prior to the finish coat. Any areas found to flash rust shall be sanded and touched up.
  2. Apply final coat in different color than base color following specification and manufacturer's recommendations. Upon curing of the Final coat a 100% holiday detection will be conducted on all surfaces.
- B. **Flexible Sealant:** If so desired by the Owner the following Sika-Flex 1A application shall be done for the lump sum price listed in the **Price Proposal**. After the curing of the finish coat of paint, Sika-Flex 1A flexible polyurethane sealant shall be applied to the un-welded lapped container roof seams. The applied Sika-Flex 1A shall be allowed 1 week to cure at standard conditions prior to the required 4 to 7 days to cure prior to filling the tank. The sealant shall be applied in a workmanlike manner, being beveled at approximately 45 degrees. The color shall be white.

**END OF SECTION**

**SECTION 13200**  
**STEEL WATER STORAGE TANK REHABILITATION**

**PART 1 GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. This section includes 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 REFERENCE STANDARDS (Latest Revisions)**

- A. American Water Works Association (AWWA) Standards
1. D100, Standard for Welded Steel Tanks for Water Storage.
- B. American Society for Testing and Materials (ASTM)
1. A36, Structural Steel
  2. A53, Pipe, Steel, Black and Hot Dipped, Zinc Coated Welded and Seamless
  3. A325, Type 3, High Strength Bolts for Structural Steel Joints
  4. A442, Pressure Vessel Plates, Carbon Steel, Improved Transition Properties
  5. A516, Pressure Vessel Plates, Carbon Steel, for Moderate – and Lower-Temperature Service
  6. A517, Pressure Vessel Plates, Alloy Steel, High Strength, Quenched and Tempered
  7. A537, Pressure Vessel Plates, Heated Treated, Carbon-manganese-Silicon Steel
  8. A563, Type C3 and Dh3, Carbon and Alloy Steel Nuts
  9. A66, Steel Screw Spikes
  10. A573, Structural Carbon Steel Plates of Improved Toughness
  11. A580, Stainless and Heat Resisting Steel Wire
  12. A588, High Strength Low Alloy Structural Steel
  13. A633, Normalized High Strength Low Alloy Structural Steel
  14. A662, Pressure Vessel Plates, Carbon-Manganese, for Moderate and Lower Temperature Service
  15. A678, Quenched and Tempered Carbon Steel Plates for Structural Applications
  16. F436, Hardened Steel Washers
  17. F593, Stainless Steel Bolts, Hex Cap Screws, and Studs
  18. F594, Stainless Steel Nuts
- C. American Petroleum Institute (API)
1. API Standard 650, “Welded Steel Tanks for Oil Storage”
  2. APE Standard 653, “Tank Inspection, Repair, Alteration, and Reconstruction”

- D. American Welding Society (AWS)
  - 1. Publication D1.1, Structural Welding Code, Steel
- E. American National Standard Institute (ANSI)
  - 1. Standard A14.3, Safety Code for Fixed Ladders
- F. American Society of Civil Engineers (ASCE)
  - 1. ANSI/ASCE 7, Minimum Design Loads for Buildings and Other Structures
- G. Occupational Safety and Health Administration (OSHA)
  - 1. Regulation 1910.23, Guarding Floor and Wall Opening and Holes
  - 2. Regulation 1910.27, Fixed Ladders
  - 3. Regulation 1926.1053, Ladders
- H. Southern Building Code Congress International, Inc. (SBCCI)
  - 1. Uniform Building Code (UBC)
- I. NACE International (NACE) Standard
  - 1. Standard RPO178, Standard Recommended Practice –Fabrication Details, Surface Finish Requirements, and Proper Design Considerations for Tanks and Vessels to be Lined for Immersion Service
  - 2. Visual Comparator – Surface Finishing of Welds (NACE Standard RPO 178)

## **1.02 PROJECT CONDITIONS**

- A. Submittals: Submittals shall be provided for review prior to performing any Work in accordance with Section 01300 – Submittals.
- B. Welders Certification: All welders and welding operators shall be certified to the procedures and processes required to accomplish the Work. Welder’s certification papers shall be furnished to the Field Inspector prior to the commencement of welding on the tank. All welders shall be 6G certified.
- C. Repair Standards: See Section 01060 – Regulatory Requirements.
- D. Painting Standards: See Section 01060 – Regulatory Requirements.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. All structural components shall be fabricated from new ASTM A36 material.
- B. All steel plates, shapes, and bars shall be fabricated from new ASTM A36, A516, A537, A588, A633, A662, or A678 material if the tank is designed in accordance with Section 14 of the AWWA D100. All steel plates and shapes shall be free from any laminations that bring questions as to the structural integrity of the member. Laminations exposed on the surface or edges of the

steel shall be repaired or the member replaced. The CONTRACTOR shall be responsible for ultrasonically or otherwise investigating the extent of sub-surface laminations to the satisfaction of the Engineer. Members found to have internal lamination shall be replaced in a timely manner at the expense of the CONTRACTOR.

- C. New steel pipe attached to the tank shall be ASTM A53.
- D. Stainless steel bolts and nuts shall conform to conform to ASTM F593 and F594.
- E. Screen material shall be made of Type 316, stainless steel wire conforming to ASTM A580.
- F. Interior nuts and bolts shall be carbon steel and at a minimum shall conform to ASTM A325. Threads shall not extend beyond the nut. Sika-Flex interior nuts and bolts.

### **PART 3 EXECUTION**

#### **3.01 REPAIRS AND ADDITIONS**

- A. Construction Drawing Submittals: Construction Drawings of all fabricated and new items shall be submitted to the Owner and Engineer for review in accordance with Section 01300 – Submittals. Drawings submitted shall, at a minimum, include the following:
  - 1. Drawings of new permanent manways.
  - 2. Drawings of new Cathodic Protection System.
  - 3. Drawings of all new tank appurtenances (i.e. ladders, handrails, vents, hatches, manholes, and access platform handrails).
- B. Interior Grinding: Any irregular surfaces identified by the CONTRACTOR and authorized by the Field Inspector, including but not limited to surface protrusions, burrs, fitting scars, weld spatter, corners, sharp edges, rough weld beads, and weld overlap shall be removed from all interior surfaces of the tank. The objective of the grinding is to eliminate irregular surfaces and to provide a sufficiently smooth surface for the application of a uniform coating without pinholes, holidays, and/or voids.
- C. Seam Welding: All areas of apparent seam deterioration shall be abrasive blast cleaned, and any seam corrosion or undercutting identified by the CONTRACTOR and authorized by the Field Inspector shall be repaired by arc gouging and seal welding.
- D. Pit Welding: All areas of apparent pitting shall be abrasive blast cleaned, and any pits identified for pit welding by the CONTRACTOR and authorized by the Field Inspector shall be repaired by welding.
- E. Pit Filling: All areas of apparent pitting shall be abrasive blast cleaned, and any pits or seams identified for pit filling by the CONTRACTOR and authorized by the Field Inspector shall be filled with solventless polyamide epoxy seam sealer of the type recommended by the manufacturer of the interior coating system. Any rough areas of the seam sealer shall be sanded smooth prior to the application of the coating system.
- F. Roof Overlaps: Sika-Flex 1A shall be applied to all roof seams and overlaps at no additional charge to the Owner. Sika-Flex 1A shall be applied after cure of the finish coat.

- G. Grout Repair: The grout which is between the ~~support columns tank~~ bottom plate and the concrete foundation around the tank exterior shall be tested by the CONTRACTOR under the observation of the Field Inspector by using a sharp 18 oz. Hammer. Any missing or loose portions of the grout shall be replaced with a non- staining, non-shrinking, high strength structural grout material. The material shall be L&M Construction Chemicals' Duragrout, Master Builders' Masterflow 928, Euclid Chemical Company's EUCO N-S Grout, or equal allowed in writing by the Engineer. After the final contour of the grout has hardened sufficiently for the application of a curing compound, a water based curing compound shall be applied to the exposed grout surfaces. The curing compound shall be a water based material such as L&M Cure from L&M Construction Chemicals, Inc., Mastercure 200W from Master Builders, Aqua-cure from Euclid Chemical Company, or approved equal allowed in writing by the Engineer. After cleaning and painting, any separation between the bottom plate and the grout greater than 1/32 in. shall be filled/sealed with Sika-Flex-1A from Sika Corporation, or equal allowed in writing by the Engineer.
- H. Existing Ladder Repairs: The existing ladders and brackets shall be replaced in accordance with OSHA 1910.27, OSHA 1926.1053, AWWA D100, and the Contract Drawings. Adequate clearance for the climber in accordance with OSHA 1910.27 Fixed Ladders and ANSI A14.3, Safety Code for Fixed Ladders shall be provided. The ladders shall be secured to the side rails with complete structural welds. All ladders shall be provided with an approved cable type safety climb device DBI/SALA #6116502 or equal with guide rails spaced at 20 ft. maximum and installed by a qualified "competent person", according to OSHA's definition. Any necessary temporary protective devices for compliance with Federal OSHA requirements, all state and local safety regulations, and safe working practices shall be furnished and maintained by the CONTRACTOR. All new and replacement ladders shall be blasted and primed in accordance with specifications prior to installation. After installation, welded and damaged areas shall be spot blasted and primed. The replacement of the ladders shall be as follows:
- 1) Exterior Ladders: The existing ladder located on the tank exterior shall be removed and disposed of by the CONTRACTOR. The remaining ladder attachment brackets shall be ground flush. New carbon steel ladders shall be furnished and installed in accordance with the Contract Drawings. The existing handrail and parapet shall be replaced according to the Contract Drawings, providing safe access to the tank roof. New stainless steel cable safety climb device and aluminum vandal deterrent shall be installed on the exterior ladder after the complete curing of the finish coat of paint. The new ladder parapet shall be installed as detailed on the Contract Drawings.
  - 2) Interior Ladders: All the existing interior access ladders shall be removed and disposed of by the CONTRACTOR. The remaining ladder attachment brackets shall be ground flush. New carbon steel ladders (one interior access ladder and one weir box access ladder) shall be furnished and installed in accordance with the Contract Drawings. A new stainless steel cable safety climb device shall be installed after the complete curing of the interior finish coat of paint to the interior access ladder. The first rungs of the interior ladders shall be a maximum of twelve (12) inches below the curb of the roof manhole (access hatch). If the CONTRACTOR uses the existing interior ladders for any of the rehabilitation operations, then the Owner and the Engineer assume no responsibility for the safety for his/her employees during use of the ladder.
  - 3) Full Body Harness: CONTRACTOR shall supply two (2) full body harnesses, buckle type with front D-ring.

- I. Aluminum Tank Center Vent/ Steel Exhaust Flange: The existing roof center vent shall be removed and disposed of by the CONTRACTOR and a new aluminum roof center vent shall be installed to conform to the dimensions and installation details shown in the Contract Drawings. One (1) new 36 inch diameter aluminum roof vent shall be installed at the center of the roof. The new exterior stainless 12 inch vent screen shall be supported to not produce a gap greater than 0.10 inch by a minimum of two stainless steel bands. The bolts and nuts utilized in the tank vent shall be 304 stainless steel. The vent cap shall be designed with a vertical overhang to prevent the entrance of wind driven rain and debris. The new tank vent flange assembly shall be seal welded with 3/16 inch fillet welds around its circumference on the inside and outside of the tank. The tank vent flange necks shall be welded to an annular eight bolt flange with continuous 1/4 inch fillet welds on the interior and exterior surfaces. Weld spatter and rough edges shall be ground smooth prior cleaning to properly receive paint. New 1/4 inch thick steel patch plates shall be installed over any and all remaining unused penetrations in the roof with complete seal welds on the interior and exterior of the roof plates.
- J. Roof Access: Two new 36 in. x 42 in. square manholes (access hatches) with gaskets shall be installed in accordance with the Contract Drawings.
- K. Roof Safety Railing: New roof safety railing shall be installed around the new roof manholes (access hatches) in accordance with the Contract Drawings.
- L. Roof Painter's Access: The existing roof manhole will remain. The existing roof manhole will be blasted and repainted in accordance with the Contract Drawings. ~~The CONTRACTOR shall take care to remove and keep the existing nuts, bolts, and washers. The existing nuts, bolts and washers shall be reused.~~ The existing nuts, bolts and washers shall be replaced with like size stainless steel bolts, nuts and washers. Damaged nuts, bolts and washers as a result of the work shall be replaced by the CONTRACTOR at no cost to the Owner. After the complete application and curing of the paint, a new 1/4 inch thick cloth inserted gasket shall be furnished and installed.
- M. Electrical Apparatus: All unused electrical conduit, fixtures, electrical metering equipment, and cathodic protection equipment shall be removed and disposed of by the CONTRACTOR. Any resulting pipe openings/penetrations shall be patched with a 1/4 inch steel plate seal welded to the interior and exterior of the tank.
- N. Cathodic Protection: The CONTRACTOR shall remove the existing cathodic protection hand hole covers in the tanks for the cleaning, painting, and curing of the paint. After curing of both the interior and exterior paint system, the hand hole covers shall be replaced with new cover plates and gaskets to cover the hand holes. The existing cathodic protection anode supports inside of the tanks shall be removed for the abrasive blasting and coating application operations. New cathodic protection system including anode supports shall be installed following the application and curing of the final interior coat with the new cathodic protection systems.
- O. Existing Shell Manways: The existing shell manways will remain and will be blasted and painted in accordance with these Specifications. ~~The CONTRACTOR shall take care to remove and keep the existing nuts, bolts, and washers for each manway. The existing nuts, bolts and washers shall be reused.~~ The existing nuts, bolts and washers shall be replaced with like size stainless steel bolts, nuts and washers. Damaged nuts, bolts and washers as a result of the work shall be

replaced by the CONTRACTOR at no cost to the Owner. After the complete application and curing of the paint, new 1/4 inch thick cloth inserted gaskets shall be furnished and installed on the existing manways and replace the “confined space” signage.

P. Tank Access: Existing manways will be used for access to the interior of the tank. If the Contractor desires to cut temporary opening through the permanent structure for equipment and personnel access, the Contractor shall submit the following information to the Owner and Engineer for review prior to cutting or welding on the shell. If submittal is reviewed and approved by the Owner and Engineer, the Contractor shall remove and replace the shell plate in accordance with the American Petroleum Institute (API) Standard 653, API Standard 650, and AWWA D100. All required temporary stiffening shall be installed by the Contractor prior to cutting the temporary shell opening. The temporary stiffening shall be removed by the Contractor prior to cutting the shell opening. The temporary stiffening shall be removed by the Contractor after the door sheet is welded back into place and repair any surface imperfections prior to abrasive blasting and coating those areas of the tank surfaces. The Contractor shall submit the following information for the review and approval of the Owner and Engineer:

1. Weld qualification procedures.
2. Welder certifications and credentials.
3. A detailed drawing from showing the size and configuration of the proposed opening, including details at intersections with the existing weld seams, corners of the opening, and cut back of corner welds or girth seams.
4. Details of the location of the proposed opening relative to existing shell opening, or penetrations, weld seams, or other attachments to the shell, such as anchor bolt chairs or other base plate attachments.
5. A detail drawing of the proposed temporary stiffening along each side across the top of the opening, including weld details.
6. The proposed method and sequence for cutting the opening in the shell and making cut back. The corner weld between the shell and the bottom shall be gouged on each side at least 12 in. beyond the opening.
7. Details of the weld joint penetration for the shell and the door sheet, including process for grinding and beveling.
8. Description of weld procedures of all joints and attachment welds, including any preheating or any post weld heat treating requirements, rod size, etc.
9. Description of weld sequence for reinstalling the door sheet.
10. Details of the proposed non-destructive examination (NDE) plan with the number and location of x-rays. Note: a minimum of four (4) x-rays will be required with one at a horizontal weld seam, one at a vertical weld seam, and the others located at the horizontal/vertical weld seam junctions.
11. All detail drawings shall be signed and sealed by a Professional Engineer registered in the State of Texas.

Q. Locking Man Holes and Ladder Vandal Deterrents: The new roof manholes and new ladder vandal deterrent shall be locked at the completion of the Work, using padlocks approved by the Owner.

R. Electrode Holder: The CONTRACTOR shall provide ~~one (1)~~ two (2) new 4 inch diameter flanged electrode holder in accordance with the Contract Drawings for the support of a level electrode system on the tank. Provide new 4 inch diameter blind flange gaskets with bolts, nuts, and



washers to replace the existing electrode holder and hand hole flanged holder opening. The location of the new level electrode holder shall be field verified in order to place in close proximity to the interior access ladder.

*Note: The CONTRACTOR is to measure the lengths of the electrode probes prior to removal and rehabilitation operations. The holders, controls, and probes shall be protected during rehabilitation operations.*

- S. New Pressure Gauge: A new stainless steel pressure gauge with 4 inch minimum diameter dial and calibrated to read in PSI and feet at no more than 2 ft. intervals shall be installed on the tank. Terrice model 700-LF-SS-40-04-L-A, or equal.
- T. Sample Pipe Taps: Two (2) sample taps shall be replaced and located 36" off the tank floor/base to meet SAWS standards. See Plans for mounting details and locations.
- U. Vandal Deterrent: A new aluminum vandal deterrent manufactured by RB Industries shall be installed by the CONTRACTOR with the locking mechanism and guard attached to the tank. Following the application of the final coat of the exterior finish color, the CONTRACTOR shall provide a stencil embossed with the entire interior tank coating system and the entire exterior coating system to the back side of the ladder vandal deterrent. The locking mechanism shall be located on the side rail so not to interfere with climbing.
- V. Painter's rails: The existing painter's rails on the tank interior and exterior including mounting clips and trolleys are to be removed and disposed of by the CONTRACTOR. The tank shell shall be repaired as stipulated in the ladder removal specification. The Owner has deemed these devices as unsafe and the CONTRACTOR shall not use or tie off to any portion of the device.
- W. Tie offs: Tie offs shall be furnished and installed on locations indicated on the drawings.
- X. Piping & Valves: Replace valves, fittings and pipes as specified on the Contract Drawings. CONTRACTOR shall field verify that all bolt patterns and sizes fit existing piping before ordering new valves. All of the new pipe and valves and existing valves and piping shall be prepared and painted in accordance with Section 09885.
- Y. Weld Testing: All seal welds shall be mag-particle tested and butt seal welds shall be x-ray tested.
- Z. Interior Roof Spaces: All interior spaces between roof and rafters must be jacked or wedged in order to blast and recoat those areas.

### **3.02 UNANTICIPATED ADDITIONAL WORK**

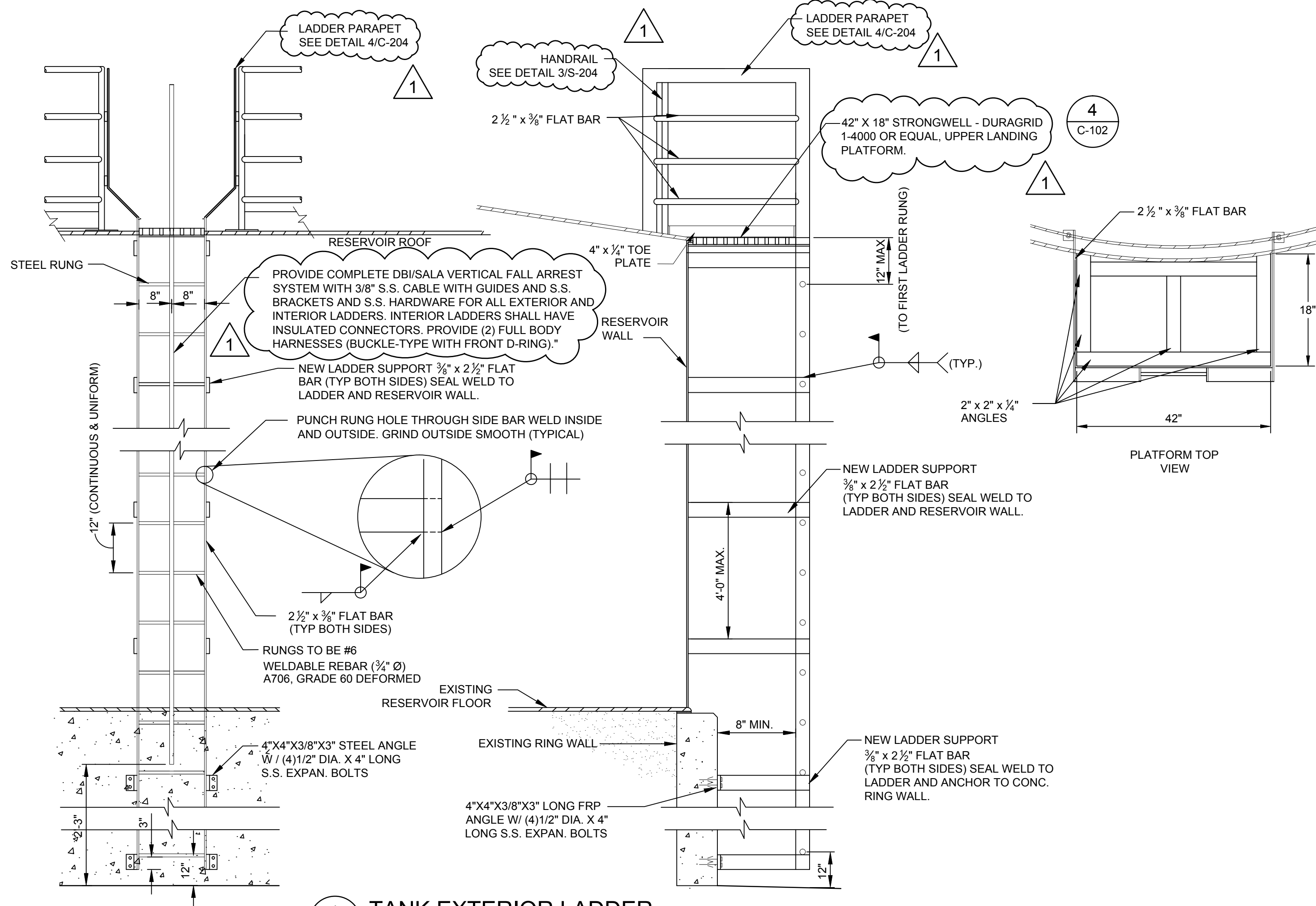
- A. It is understood that the project plans and technical specifications adequately describe the Work to be performed. However, if during the Work, it is found that additional Work is required and it is authorized by the Owner and Engineer in writing, this work shall be paid for per single man-hour, including all welding, equipment, normal rigging, labor, supplies, overhead, insurance, and profit. The number of unanticipated additional work man-hours shall be paid for by the unit price under Supplemental Work Items in the Price Proposal.

**END OF SECTION**

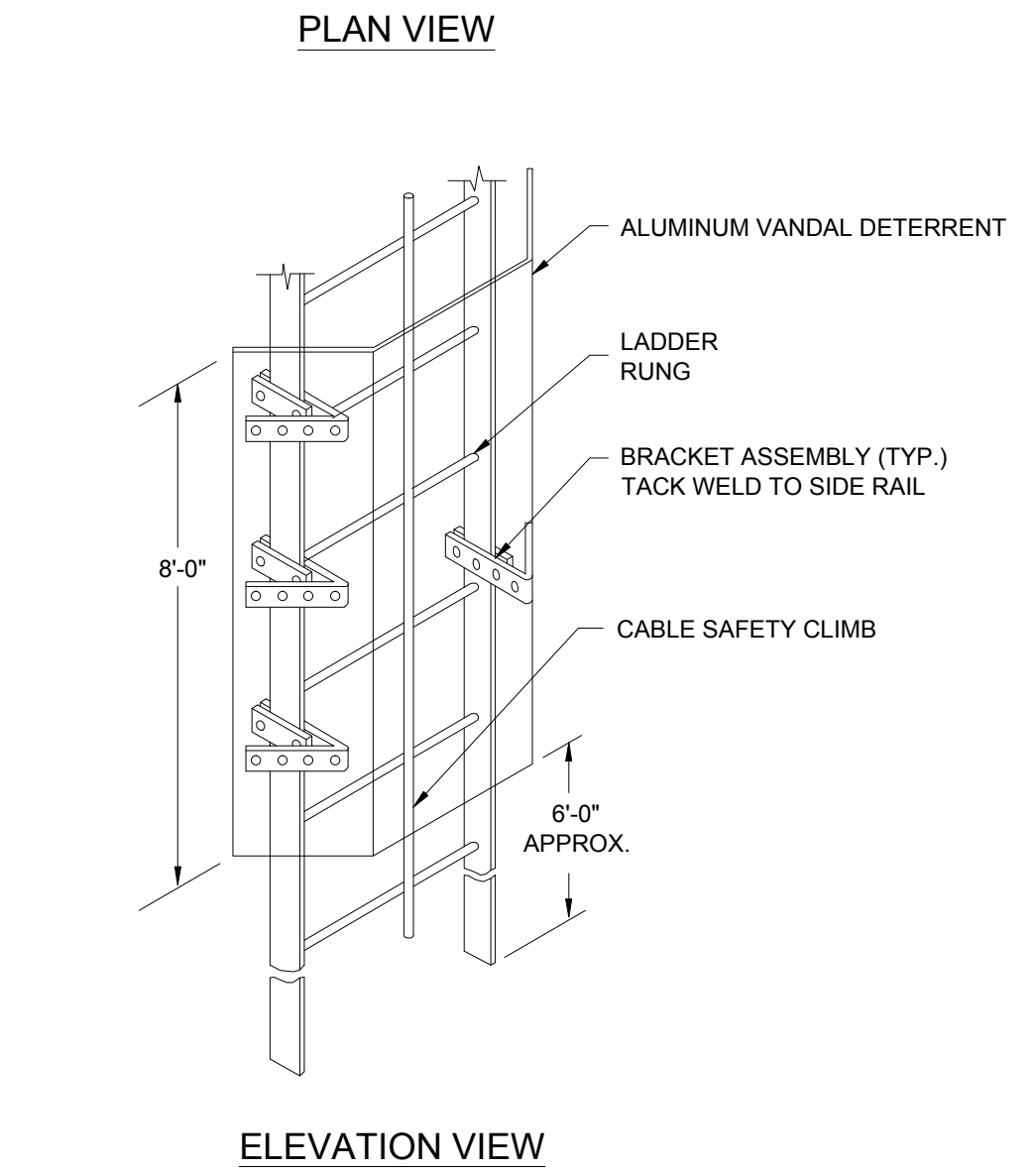
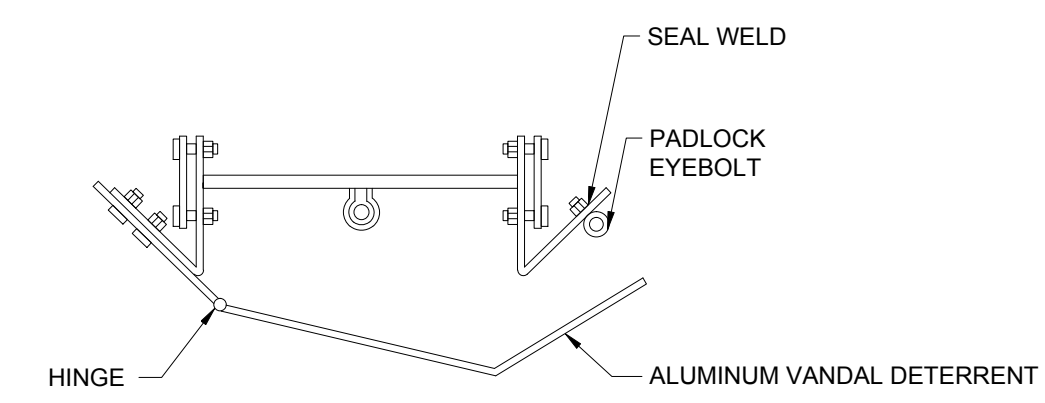




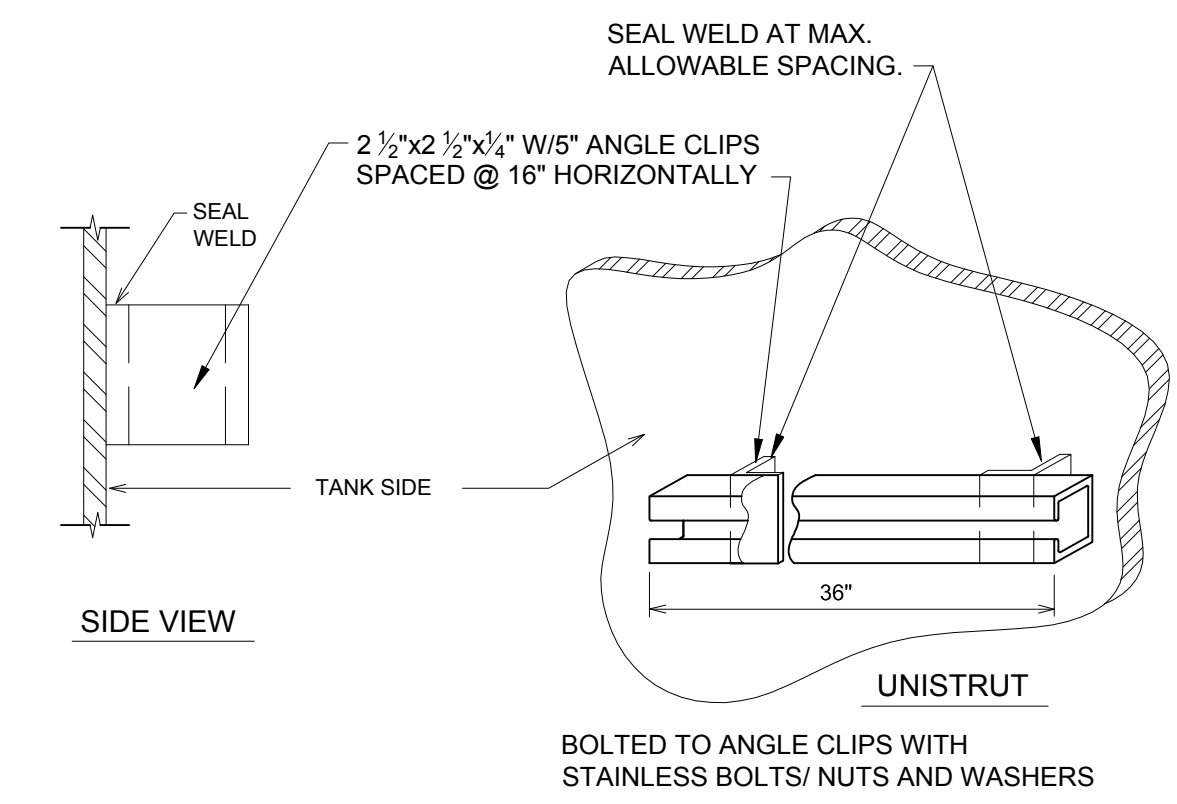
7/13/2015 3:54:00 PM - P:\09508200-09508-14003\CAD\SHEETFILES\C-102-TANK PIPING AND REHAB DETAILS I.DWG - MARTINEZ, LORENZO



**1 TANK EXTERIOR LADDER**  
SCALE: NOT TO SCALE



**2 VANDAL DETERRENT DETAIL**  
SCALE: NOT TO SCALE



NOTES:  
1. NEW "KINDORF" CLAMPS FOR CONDUIT AND CABLE INSTALLATION. INSTALL 7" MAX FROM LADDER SIDE RAILS. (MAX. 10 FT. O.C. VERTICAL SPACING)

**3 CABLE SUPPORT BRACKETS**  
SCALE: NOT TO SCALE



**TETRA TECH**  
www.tetra.tech.com  
Texas Registration No. F-3924  
700 N. St Mary's, Suite 300  
San Antonio, TX 78205  
Ph (210) 269-7900 Fax (210) 226-9497

**SAN ANTONIO WATER SYSTEM**

MARK	DATE	DESCRIPTION	BY
△	07.13.15	REVISIONS	

SAN ANTONIO WATER SYSTEM  
ANDERSON GROUND STORAGE TANK No. 1  
PAINTING AND REHABILITATION PROJECT  
**TANK LADDER AND ROOF REHAB DETAILS I**

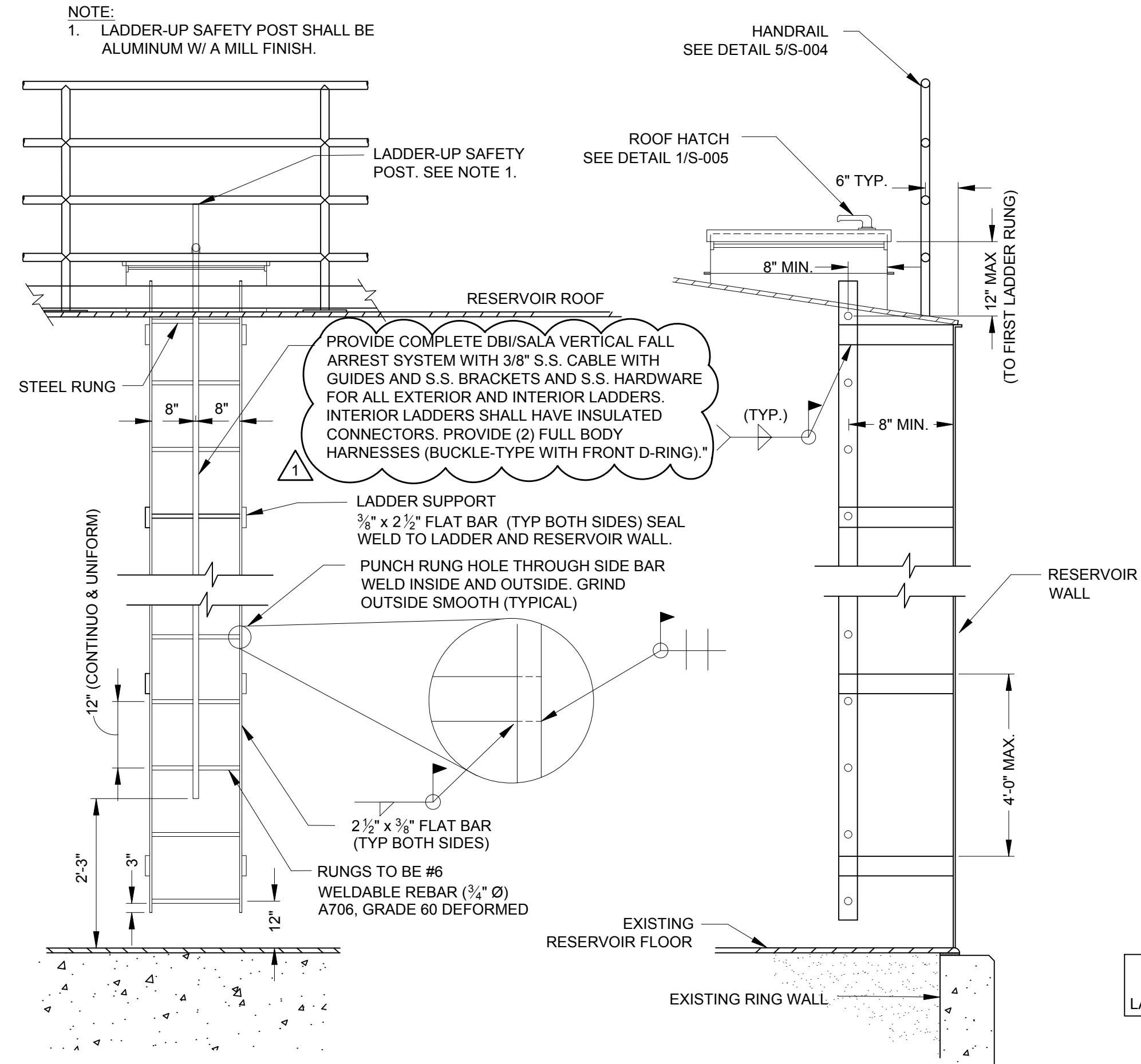
SAWS Job No.: 13-0129  
Designed By: BLE  
Drawn By: DAC  
Checked By: JRK

**C-203**

Bar Measures 1 inch

Copyright: Tetra Tech

7/13/2015 3:54:02 PM - P:\09508\200-09508-14003\CAD\SHEETFILES\C-106-TANK INTERIOR REHAB DETAILS I.DWG - MARTINEZ, LORENZO



NOTE:  
1. LADDER-UP SAFETY POST SHALL BE ALUMINUM W/ A MILL FINISH.

LADDER-UP SAFETY POST. SEE NOTE 1.

PROVIDE COMPLETE DBI/SALA VERTICAL FALL ARREST SYSTEM WITH 3/8\"/>

LADDER SUPPORT  
3/8\"/>

PUNCH RUNG HOLE THROUGH SIDE BAR  
WELD INSIDE AND OUTSIDE. GRIND  
OUTSIDE SMOOTH (TYPICAL)

2 1/2\"/>

RINGS TO BE #6  
WELDABLE REBAR (3/4\"/>

HANDRAIL  
SEE DETAIL 5/S-004

ROOF HATCH  
SEE DETAIL 1/S-005

6\"/>

8\"/>

12\"/>

(TO FIRST LADDER RUNG)

8\"/>

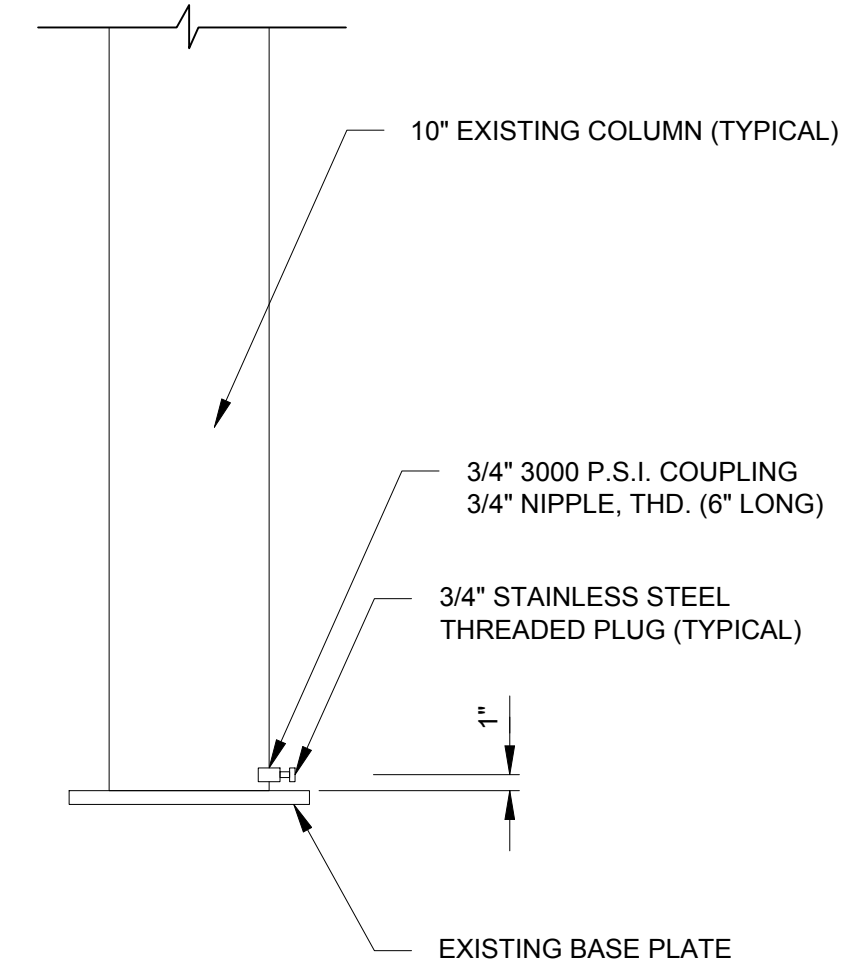
(TYP.)

RESERVOIR WALL

4'-0\"/>

EXISTING RESERVOIR FLOOR

EXISTING RING WALL



2 COLUMN DRAIN PLUG  
SCALE: 1\"/>



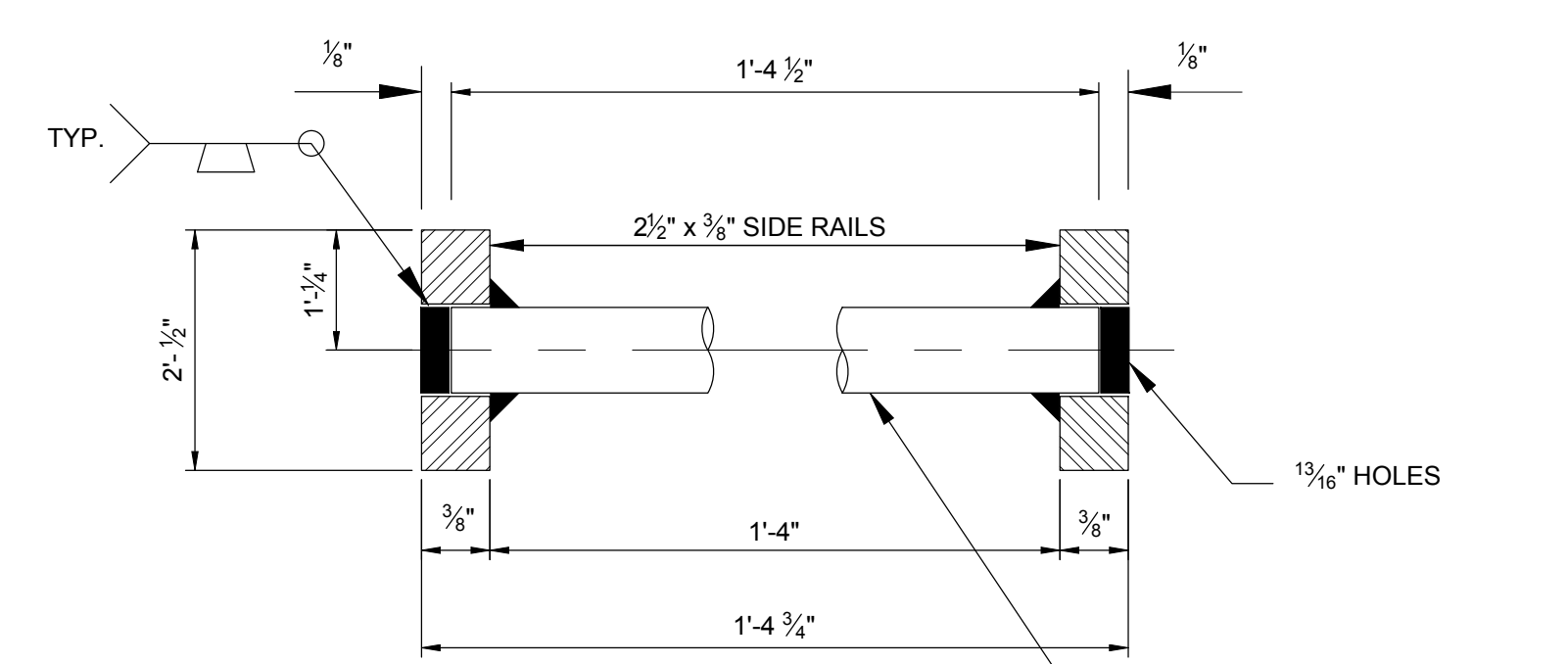
CROWS NEST TO BE REPLACED PER ORIGINAL SHOP DRAWINGS WITH MODIFICATIONS. SEE SHEET C-210.

REPLACE ALL EXISTING BOLTS WITH NEW STAINLESS STEEL BOLTS, NUTS AND WASHERS.

3 CROWS NEST  
SCALE: NOT TO SCALE



PROVIDE COLUMN DRAIN PLUG TYP. EACH COLUMN. SEE DETAIL 2 THIS SHEET.



NOTES:  
1. REMOVE EXIST. INTERIOR LADDER AND REPLACE WITH NEW LADDER PER THIS DETAIL.

2. CONTRACTOR TO VERIFY ALL LENGTHS AND DIMENSIONS PRIOR TO FABRICATION TO INSURE 8\"/>

3. INSTALL COMPLETE DBI/SALA VERTICAL FALL ARREST SYSTEM FOR EACH LADDER TO INCLUDE ALL NECESSARY BRACKETS, CABLES, SLEEVE GUIDES, AND MISCELLANEOUS HARDWARE TO PROVIDE FOR A FULLY FUNCTIONAL SYSTEM TO BE INSTALLED BY CERTIFIED PERSONNEL.

RINGS TO BE #6  
WELDABLE REBAR (3/4\"/>

1 TANK INTERIOR LADDER  
SCALE: NOT TO SCALE

REMOVE EXIST. TANK INTERIOR LADDER; REPLACE WITH NEW LADDER PER DETAIL 1 THIS SHEET.



NOTE:  
PROVIDE COMPLETE DBI/SALA VERTICAL FALL ARREST SYSTEM WITH 3/8\"/>

ROOF CHIME: BLAST AND REPAINT ROOF CHIME PER PROJECT SPECIFICATIONS. SIKAFLEX ROOF CHIME AFTER COMPLETE PAINT SYSTEM APPLICATION.

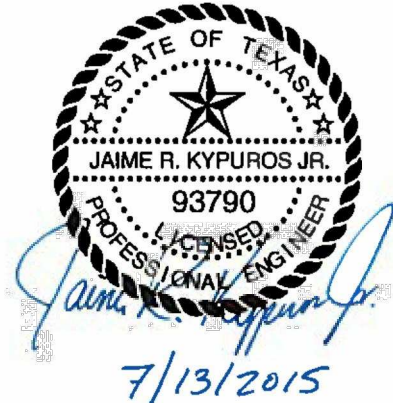


REMOVE EXIST. BOLTS, NUTS AND WASHERS; REPLACE IN KIND WITH NEW STAINLESS STEEL BOLTS, NUTS AND WASHERS. SIKAFLEX PER PROJECT SPECIFICATIONS.



4 TANK ROOF RAFTERS AT CHIME  
SCALE: NOT TO SCALE

NOTE:  
1. PROVIDE ASTM A235, TYPE 3 BOLTS PER THE PROJECT SPECIFICATIONS.  
2. SPACES BETWEEN ROOF AND RAFTERS MUST BE JACKED OR WEDGED IN ORDER TO BLAST AND RECOAT AREAS.  
3. ALL PAINTERS RAILS INSIDE AND OUTSIDE OF TANK MUST BE REMOVED (DO NOT REPLACE)



**TETRA TECH**  
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**SAN ANTONIO WATER SYSTEM**

MARK	DATE	DESCRIPTION
△	07.13.15	REVISIONS

SAN ANTONIO WATER SYSTEM  
ANDERSON GROUND STORAGE TANK No. 1  
PAINTING AND REHABILITATION PROJECT

**TANK INTERIOR REHAB DETAILS I**

SAWS Job No.:	13-0129
Designed By:	TAH
Drawn By:	TAH
Checked By:	JRK

**C-206**

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**San Antonio Water System**  
**Mandatory Pre-Submittal Meeting**  
**Request for Competitive Sealed Proposals (RFCSP)**

Anderson Ground Storage Tank No. 1 Painting and Rehabilitation)

SAWS Job No. 13-0129

SAWS Solicitation No.: B-15-020-DD

**AGENDA**

**July 7, 2015, 9:00 a.m.**

**SAWS, 2800 U.S. Hwy. 281 North, CR-C137**

**I. Introductions**

- a. **Mandatory Sign-In Sheet:** This is a mandatory pre- proposal meeting (and mandatory site visit). Only those firms that are represented here today by signing in on the sign-in sheet at both locations may submit as a prime contractor for this project.

The sign-in sheet(s) will be posted to the website later today.

- a. **Owner:** Mr. Ismael Rosales is the Project Manager representing SAWS, Ms. Diana Dwyer, SAWS Contracting Administrator, Ms. Sandra Rios, Contract Compliance
- b. **Design Engineer:** TetraTech
- c. **Oral Statements:** Nothing discussed during this pre-proposal meeting conference changes anything in the Bidding/Contract documents. Bidder is to strictly bid the written documents. Any changes to these Contract documents will be issued by written addendum. The meeting minutes will be for information purposes only.

**II. Preliminary Engineering Report -PER (Diana)**

### **III. Contract Requirements**

- a. Certified Payroll (Sandra)
- b. Insurance (Diana)
- c. Liquidated Damages

### **IV. Proposal Evaluation (Diana/Marisol)**

- a. Evaluation Process
- b. Evaluation Criteria
- c. Required Experience
- d. Proposal Packet Preparation
  - i. Proposal Checklist
  - ii. Original vs. Copies
- e. Additional Reminders
- f. Questions- Respondents are directed to submit any questions that require a formal response in writing as indicated in the Contract Documents to Diana Dwyer, email: [Diana.Dwyer@saws.org](mailto:Diana.Dwyer@saws.org) by 4:00 p.m. July 9, 2015. SAWS Project Managers and Engineers will not respond to any questions submitted by phone and / or e-mail directly to them.

### **V. Key Dates**

- a. Questions Due

All questions must be submitted in writing by 4:00 PM (CT) on July 9, 2015 to Diana Dwyer in writing.
- b. Addendum #3 Posted by July 13 by 4:00 p.m.
- c. Deadline to Submit is July 15, 2015 at 2:00 p.m.

### **VI. Underground Utilities**

- a. Contractor shall comply with all requirements in the contract documents, including, but not limited to:
  - 1. *General Conditions, 5.16 PUBLIC UTILITIES;*

### **VII. Project Description**

- a. This project consist of the rehabilitation of a 7,500,000 gallon welded steel, ground storage tank, including the surface preparation and repainting of the interior and exterior surfaces; re-grading of site around perimeter for tank; re-grouting of tank base; repair of tank concrete foundation; repair of overflow weir box; replacement of exterior, interior and weir box ladder and new safety climb systems; replacement of sample taps; replacement of center vent; rehabilitation of four perimeter mushroom vents and 4 gooseneck vents; replacement of specified tank appurtenances; replacement of three butterfly valves; replacement of cathodic protection system; electrical equipment improvements; and other miscellaneous work. In addition, the project includes the replacement of exterior ladders and safety climb systems for five elevated storage tanks located throughout the City of San Antonio.
- b. Addendums posted to date
- c. Special Conditions
- d. Supplemental Conditions

#### **VIII. Project Schedule**

- a. Construction estimate is \$2,202,000
- b. Project Duration: 180 Calendar Days Substantial
  - i. Completion 210 calendar days for all work completion
- c. Intermediate Milestones
- d. Shutdowns

#### **IX. Other Items**

- a. Project Permitting
- b. SAWS Inspector

#### **X. Questions**

#### **XI. Site Visit**

- a. Mandatory site visit following the Pre-Submittal meeting at 5045 N. Loop 1604, San Antonio, Texas, 78253.
- b. Attendees will need to sign in upon arrival at the site.
- c. Questions while at the mandatory site-visit should be submitted in writing.