**ASR Pipeline Cathodic Protection System Replacement**
**Solicitation Number: CO-00619**
**Job No.: 22-8602**

**ADDENDUM 2**
**October 26, 2023**

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

**RESPONSES TO QUESTIONS**

1. **Question: On sheets CP-1 – CP-3 (44-46) of the plans, we have TEST STATION NO. – STATION NUMBER – PIPE DIAMETER – ACTION TYPE – ACTION REQUIRED – TEST STATION TYPE – STRUCTURES – DETAIL REFERENCES followed by APPROXIMATE COVER DEPTH. It is our understanding that we are to perform all items described in the DETAIL REFERENCE column. Is this correct?**
   *Response: The Contractor is responsible for completing the work in the "Action Required" column of the schedules on sheets CP1-CP3 in accordance with the full description of the test station schedule. The Detail Reference Column provides relevant details for installation.*

2. **Question: Does SAWS anticipate the use of any Multiple Foreign Line Test Stations. I do not see any called out within the schedule.**
   *Response: The Cathodic Protection test station schedule identifies two multiple foreign pipeline test stations for Segment VI on drawing number CP-3.*

3. **Question: Does SAWS have GPS points for the exact location of all Isolation Joints? If so, please provide.**
   *Response: The 2019 Cathodic Protection System Survey Report, referenced in Special Condition SC1, indicates the GPS locations of all originally installed test stations. Additionally, the GPS coordinates of originally installed test stations can be found in the Record Drawings for each Segment. The record drawings will be shared with the successful bidder after bid award.*

4. **Question: Page 44 of CO_00619_ASR CP System Replacement Plan SS, TS 50 reads, " REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND INSTALL COUPON," but page 15 on "(E) TS #50" it makes no mention of repairs.**
   *Response: It is understood this question applies to drawing number CP-1. Test Station #50 will not be modified under this project. Please refer to "Changes to the Plans", item 4 in this Addendum.*

5. **Question: Page 44 of CO_00619_ASR CP System Replacement Plan SS, TS 89 reads, "REPLACE UNLOCATED FLUSH-MOUNT TEST STATION WITH NEW POST MOUNTED TEST STATION," but page 19 of the same document reads "TS #89 – REPLACE EX. TS WITH POST-MOUNTED IJTS." Do we know if the test station is unlocated or located?**
   *Response: It is understood this question applies to drawing number P-10. This test station was not located in the 2019 survey. Please refer to "Changes to the Plans", item 1 in this Addendum.*

6. **Question: Page 24 of CO_00619_ASR CP System Replacement Plan SS, shows TS #31 is to receive replacement anodes, but on page 45 of the same document Segment 5 does not call out test station #31 in the Cathodic Protection Schedule.**
*Response: It is understood this question pertains to drawing number P-14. The callout for Test Station #31 on the plan sheets should read Test Station #30. TS #30 should be replaced with a flush mounted IJTS as indicated on drawing P-14. Replacement anodes are not required for TS #30. Please refer to "Changes to the Plans", item 3 in this Addendum.*

7. **Question: In CO_001619_ASR CP System Replacement Plan SS, on the Test Station Schedules, specifically pages 44, 45, and 46. The word "Unlocated" is used along with the word "Replace". Is the Contractor to assume that these test stations are there, but have not been located? If they cannot be located or do not exist, what would be the next step?**
*Response: It is understood this question pertains to drawings number CP-1 through CP-3. "Unlocated" indicates that these test stations were installed as part of the original Cathodic Protection system, but are historically unlocated during previous annual surveys. The unlocated test stations require replacement of the test station housing and test leads at the location of the original test station as described in note 3 of the referenced Cathodic Protection Test Station Schedule drawings.*

8. **Question: Several mentions of "Install new Flush Mounted FPTS with all components (if buried foreign pipe Is metallic)". What is the direction if the line is non-metallic?**
*Response: It is understood this question pertains to drawings number CP-1 through CP-3. If it is determined that the foreign pipeline is non-metallic, then that associated flush mounted FPTS with all components is not required. This is mentioned on the applicable plan drawings for each of the test stations in question. Please refer to Note 3 on drawing number P-4 for one example.*

9. **Question: Is Flowable Fill Required or acceptable in the street?**
*Response: The City of San Antonio Standard for Construction allows flowable fill as an approved backfill in the street as described in document item 413.*

10. **Question: Will the street excavation have to be covered or backfilled over night?**
*Response: The City of San Antonio Standard for Construction requires street excavations to be covered overnight per document item Part 3, 3.01 K 1.*

11. **Question: Do the streets require Mill & Overley? No Line Item.**
*Response: The City of San Antonio Standard for Construction does require mill and overlay of the streets per document item 208.3 B.*

12. **Question: Will ROW Permits be obtained by SAWS or the GC?**
*Response: The Contractor shall obtain all necessary permits to complete the project work, including the ROW permit (see SAWS Solicitation No. CO-00619 Contract Documents 01 11 00 Section 1.06). The exception to this is the Union Pacific Railroad maintenance agreement, which has already been obtained by SAWS and a copy of this agreement is included in the contract documents.*

13. **Question: Is there Liquidated Damages for this project?**
*Response: Yes. SAWS Solicitation No. CO-00619 Contract Documents Supplemental Conditions Article VIII identifies liquid damages of $1,300 per day.*

## CHANGES TO THE SPECIFICATIONS

1. **Bid Proposal**

Remove the Bid Proposal in its entirety and replace with the attached revised Bid Proposal. Bidders shall use the revised Bid Proposal when submitting a bid for this project. Failure to use the revised version may result in the bid being found non-responsive.

Clarification: The Bid Proposal is revised in this Addendum to add a line item for private property and debris relocation.

**2. Special Conditions**

REMOVE and REPLACE the Special Conditions in its entirety with the attached Special Conditions.

Clarification: The Special Conditions is revised in this Addendum to add a special condition pertaining to the relocation of private property and debris removal.

**3. Section 01 29 00 Payment Procedures**

ADD the following after Item No. 17:

"Item No. 18: Relocation of Private Property and Debris within SAWS Water Line Easement

1. Description – This item shall include all labor, equipment, tools, materials and incidentals required to complete the relocation of private property and debris within the water line easement prior to construction. This includes, but is not limited to, relocation of trees, brush, abandoned vehicles, boats, and any other various property items uncovered or found within SAWS easement for the complete in place water main cathodic protection and stray current interference installation. This is limited to Segment IV between STA 273+30 and STA 293+30.
2. Measurement – Measurement of Item No. 18 will be lump sum.
3. Payment of the full 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; and for performing all operations required to furnish to the Owner this item, as specified and as indicated in the Contract Drawings and Specifications."

REVISE:

"Item No. 18: CPS Energy Allowance" to be "Item No. 19: CPS Energy Allowance"

REVISE:

"Item No. 19: Permit Allowance" to be "Item No. 20: Permit Allowance"

**CHANGES TO THE PLANS**

**1. Sheet P-10 – Segment IV Plan (STA 254+00 to 282+00)**

REMOVE and REPLACE in its entirety with attached Sheet P-10.

**2. Sheet P-11 – Segment IV Plan (STA 282+00 to 296+81)**

REMOVE and REPLACE in its entirety with attached Sheet P-11.

**3. Sheet P-14 – Segment V Plan (STA 69+00 to 98+00)**

REMOVE and REPLACE in its entirety with attached Sheet P-14.

**4. Sheet CP-1 – Segment IV Cathodic Protection Schedule (Sheet 1 of 3)**

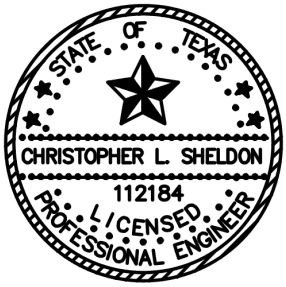
REMOVE and REPLACE in its entirety with attached Sheet CP-1.

**END OF ADDENDUM**

This Addendum, including these four (4) pages, is sixteen (16) pages with attachments in its entirety.
Attachments:

- Bid Proposal (4 pages)
- Special Conditions (4 pages)
- Drawing Number P-10 – Segment IV Plan (STA 254+00 to 282+00) (1page)
- Drawing Number P-11 – Segment IV Plan (STA 282+00 to 296+81) (1page)
- Drawing Number P-14 – Segment V Plan (STA 69+00 to 98+00) (1page)
- Drawing Number CP-1– Segment IV Cathodic Protection Schedule (Sheet 1 of 3) (1 page)

Christopher L. Sheldon
V&A Consulting Engineers, Inc.



BID PROPOSAL

PROPOSAL OF _____, a corporation

a partnership consisting of _____

an individual doing business as _____

THE SAN ANTONIO WATER SYSTEM:
Pursuant to Instructions and Invitation to Bidders, the undersigned proposes 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 in the bid proposal to wit:

***PLEASE SEE ATTACHED LIST OF PRICE ITEMS.***

_____
BIDDER'S SIGNATURE AND TITLE

_____
FIRM'S NAME (TYPE OR PRINT)

_____
FIRM'S ADDRESS

_____
FIRM'S PHONE NO. /FAX NO.

_____
FIRM'S EMAIL ADDRESS

The Contractor herein acknowledges receipt of the following:
Addendum No(s). _____

**OWNER RESERVES THE RIGHT TO ACCEPT THE OVERALL MOST RESPONSIBLE BID.**

The Bidder offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within **412** calendar days after the start date, as set forth in the Authorization to Proceed. **The Bidder understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.**

Complete the additional requirements of the Bid Proposal which are included on the following pages.

## Statement on President's Executive Orders

Has your firm previously performed work subject to the President's Executive Orders Numbers 11246 and 11375 or any preceding similar executive orders (Numbers 10925 and 11114)? Yes ☐ No ☐

**Texas Government Code Chapter 2274 Verifications**

(1) Are you, Contractor, held or controlled by individuals who are citizens of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274? Yes ☐ No ☐

(2) Are you, Contractor, held or controlled by a company or other entity, including a governmental entity, that is owned or controlled by citizens of or directly controlled by the government of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274? Yes ☐ No ☐

(3) Are you, Contractor, headquartered in China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?
Yes ☐ No ☐

## BID PROPOSAL LINE ITEMS

| Item No. | Description | Unit | Quantity | Unit Price | Total Price |
|---|---|---|---|---|---|
| 1 | DEMOLITION | LS | 1 | $_____ | $_____ |
| 2 | SEGMENT IV DEEP ANODE WELL | LS | 1 | $_____ | $_____ |
| 3 | SEGMENT IV CATHODIC PROTECTION RECTIFIER AND ASSOCIATED ELECTRICAL WORK | LS | 1 | $_____ | $_____ |
| 4 | SEGMENT IV TEST STATION REHABILITATION | LS | 1 | $_____ | $_____ |
| 5 | SEGMENT V DEEP ANODE WELL | LS | 1 | $_____ | $_____ |
| 6 | SEGMENT V CATHODIC PROTECTION RECTIFIER AND ASSOCIATED ELECTRICAL WORK | LS | 1 | $_____ | $_____ |
| 7 | SEGMENT V TEST STATION REHABILITATION | LS | 1 | $_____ | $_____ |
| 8 | SEGMENT V AC MITIGATION DEEP WELL | LS | 1 | $_____ | $_____ |
| 9 | SEGMENT V AC MITIGATION SYSTEM | LS | 3 | $_____ | $_____ |
| 10 | SEGMENT VI DEEP ANODE WELL | LS | 1 | $_____ | $_____ |
| 11 | SEGMENT VI CATHODIC PROTECTION RECTIFIER AND ASSOCIATED ELECTRICAL WORK | EA | 1 | $_____ | $_____ |

| Item No. | Description | Unit | Quantity | Unit Price | Total Price |
|---|---|---|---|---|---|
| 12 | SEGMENT VI TEST STATION REHABILITATION | LS | 1 | $_____ | $_____ |
| 13 | SURFACE RESTORATION | LS | 1 | $_____ | $_____ |
| 14 | TRAFFIC CONTROL | LS | 1 | $_____ | $_____ |
| 15 | SYSTEM COMMISSIONING SURVEY | LS | 1 | $_____ | $_____ |
| 16 | ANNUAL AND QUARTERLY SYSTEM TESTING THROUGH TWO-YEAR CONSTRUCTION WARRANTY | LS | 1 | $_____ | $_____ |
| 17 | RIGHT-OF-WAY MOWING | LS | 1 | $_____ | $_____ |
| 18 | RELOCATION OF PRIVATE PROPERTY AND DEBRIS WITHIN SAWS WATER LINE EASEMENT | LS | 1 | $_____ | $_____ |
| 550 | TRENCH EXCAVATION SAFETY PROTECTION | LF | 4,500 | $_____ | $_____ |
| SUBTOTAL (ITEMS 1 – 18, 550) | | | | $ | |
| 19 | **CPS ENERGY ALLOWANCE** | ALW | 1 | $12,000 | $12,000 |
| 20 | **PERMIT ALLOWANCE** | ALW | 1 | $30,000 | $30,000 |
| 100 | **Mobilization and Demobilization, Max 5% of Subtotal Line Items 1 – 18 & 550** | LS | 1 | $_____ | $_____ |

| Item No. | Description | Unit | Quantity | Unit Price | Total Price |
|---|---|---|---|---|---|
| 102 | **Intermediate Demobilization and Remobilization** | EA | 1 | $_____ | $_____ |
| SUBTOTAL (ITEMS 19, 20, 100, AND 102) | | | | $ | |

Mobilization and demobilization lump sum bid shall be limited to a maximum 5% of the Line Item ”A” Sub-total Base Bid amount. The Line Item “A” Sub-total base bid is defined as all bid items **EXCLUDING** Items 19, CPS Energy Allowance, 20, Permit Allowance, 100, Mobilization and Demobilization, and Item 102, Intermediate Demobilization and Remobilization. **In the event of a discrepancy between the written percentage and dollar amount shown for Mobilization and Demobilization and bid items the written percentage will govern. If the percentage written exceeds the allowable maximum stated for mobilization, SAWS reserves the right to cap the amount at the percentages shown and adjust the extensions of the bid items accordingly.**

**SUPPLEMENTARY UNIT PRICES:**

| Item No. | Description | Unit | Quantity | Unit Price | Total Price |
|---|---|---|---|---|---|
| S-1 | FURNISH ALL MATERIALS, LABOR, EQUIPMENT, AND APPURTENANCES FOR “INSTALLING NEW INSULATING FLANGE KIT” COMPLETE IN PLACE | EA | 1 | $_____ | $_____ |

| | |
|---|---|
| **TOTAL BID PRICE (TO INCLUDE LINE ITEMS 1-20, 100, 102, 550, AND S-1)** | **$** |

# Special Conditions

**SC1.** The report from the most recent annual system survey of the existing galvanic anode cathodic protection systems for ASR Pipeline Segment 4-6 (2019) has been made available for CONTRACTORS for informational purposes only. SAWS will require the execution of a SAWS disclaimer form by the CONTRACTOR as a condition of and prior to the release of the report. To complete the disclaimer form and obtain the report, please go to the following link on SAWS website:

https://www.saws.org/business_center/ContractSol/

**SC2.** **Pre-bid Meeting and Site Visit**: The CONTRACTOR may visit the site on their own to verify the conditions pre-bid. No interaction with SAWS employees at the site shall be permitted.

**SC4.** Due to the limits of the provided easements and joint use agreements within the project site, the working space is restricted to the limits of the easements.

a) Trench Materials and excavated spoils shall be contained within the easement provided.
b) Other than the Limit of Construction indicated on the Plans, no designated Storage and Staging Area has been secured for the CONTRACTOR'S use. This does not preclude the CONTRACTOR from securing the use of property for this purpose, provided the use of such property is in conformance with the requirements of all local, state and federal requirements. The CONTRACTOR'S storage and staging areas shall be fenced, screened, secured and maintained in a neat, clean, dust-free, and sanitary condition at all times. Any stockpiled construction materials subject to erosion (dirt, gravely, sand, etc.) shall be covered, sandbagged, or otherwise protected with erosion control measures to prevent erosion and tracking such material onto adjacent streets, inlets or drains at no additional cost to SAWS. No material shall be stored within the 100-year floodplain. A copy of the agreement between the CONTRACTOR and Property Owner should be provided to SAWS and uploaded to CPMS.
c) Temporary off-site storage of equipment and materials may be necessary; designated areas for storage of such equipment shall be coordinated and agreed upon with SAWS, when necessary, prior to placement of such equipment/material.

**SC5.** Within the Union Pacific Railroad Property, refer to the attached Maintenance Consent Letter dated August 25, 2023. Contractor should follow the guidelines required by Union Pacific Railroad per the following information.

1. Union Pacific Railroad (UPRR) Permit Application Number 2063903 and Project Number 0790139 (0655521) will need the following requirements met by the Contractor before Construction on UPRR property shall commence:
    a. Contractor's Right of Entry Agreement (please refer to attached Maintenance Consent Letter Exhibit B) shall be executed by the Contractor in order to enter UPRR property and/or perform any Maintenance activities.

b. In accordance with the terms of the Agreement, the Contractor is required to notify a Railroad approved flagger provided at the following link (http://www.up.com/flagging), Manager of Signal Maintenance, and visit the Telecommunications ("Call Before You Dig") website to complete the required form at least ten (10) days in advance of the date the Contractor plans on entering the right of way for further instructions and approval to commence construction.
c. The Maintenance Consent Letter expires on August 25, 2024. The Contractor shall prioritize project work on the UPRR property to ensure completion of work and system testing before the expiration of the Maintenance Consent Letter.

2. The Contractor shall comply with insurance requirements set forth in the attached UPRR Maintenance Consent Letter Exhibit C.

**SC6.** The CONTRACTOR shall notify SAWS and the Consultant of anticipated work within TxDOT right-of-way at least 48 hours prior to any work within that TxDOT right-of-way.

---

**SC8.** The Contract Documents reflect the general location and routing for existing utilities near in the vicinity of the proposed rectifier locations for Segment 4-6 and along the proposed AC grounding cable alignments on Segment 5. The CONTRACTOR shall visit the site, meet with the local utility company representatives, and coordinate and confirm the requirements for securing and protecting utilities as required to install the proposed cathodic protection system improvements. It shall be the CONTRACTOR'S responsibility to locate existing utilities along Segments 4-6 as required for construction and to protect them during construction at no additional cost to SAWS. CONTRACTOR shall verify depth and location of existing utilities and all related appurtenances in advance of trenching. Prior to commencement of construction, CONTRACTOR shall submit a plan for the proposed methods and frequency of test holes for utility verification as required to complete the work. No separate payment will be made for utility verification required to complete the work. CONTRACTOR assumes all liability for any damage that may results in not properly or adequately locating and protecting existing utilities.

**SC9. Communication Protocol:** All communication from the SAWS Construction Inspector to the CONTRACTOR shall be through the CONTRACTOR'S Project Manager and/or Superintendent. Communication to/from the CONTRACTOR'S Subcontractors shall be routed to the SAWS Construction Inspector through the CONTRACTOR. Contact information for the SAWS Construction Inspector and the CONTRACTOR will be provided at the pre-construction conference.

---

**SC10. Construction Phasing and Sequencing:** The CONTRACTOR may follow the proposed construction sequencing in the Contract Documents. If the CONTRACTOR does not plan to follow the construction sequence included in the Contract Documents, the CONTRACTOR shall submit via CPMS the proposed alternative sequence of construction in writing to SAWS and the Consultant for review and approval. It is the CONTRACTOR'S responsibility to provide sufficient workforce, materials, and equipment to complete the work in accordance with the Contract duration.

---

**SC11. Public Relations Contact Person:** The CONTRACTOR shall direct any and all questions from the public or media regarding the project to SAWS Public Relations contact Byron Gipson (email: byron.gipson@saws.org; phone: 210-233-2977). The CONTRACTOR will coordinate with SAWS COI and the SAWS COI will coordinate with SAWS Public Relations contact person to provide a response to public inquiries.

---

**SC12. Coordination with On-Site Personnel:** The CONTRACTOR agrees to cooperate and coordinate its work with the work conducted by other supplier(s), CONTRACTOR(s) and/or SAWS Operations staff within the project area so that this project can be completed in an orderly and coordinated manner, reasonably free of significant disruption to any party. Without limitation of the foregoing, the CONTRACTOR understands and agrees that access areas to the project site may be utilized by other supplier(s) and/or CONTRACTOR(s). All parties shall be solely required and obligated to coordinate and cooperate with each other to accomplish the scope of work required by their respective contracts, meaning SAWS shall have no duty to administer, perform or supervise the coordination for the use of the project site by all suppliers/Contractors. The CONTRACTOR agrees that any delay or hindrance caused by or contributed to by failure to cooperate and/or coordinate among all parties will be governed by this Section and Security Procedures of this contract.

---

**SC13. City of San Antonio (COSA) Pavement Restoration Standards:**

The CONTRACTOR shall coordinate pavement restoration with the City of San Antonio (COSA) Right-of-Way Supervisor and shall adhere to the following COSA guidelines:

1. All final pavement restorations shall be made with a saw to straight and uniform lines and shall meet the following requirements:
    a. Must be perpendicular and parallel to the curb line with no diagonals.
    b. Must be of uniform width for its length producing a square or rectangular shape.
    c. No patch shall be placed within an existing patch. Cuts within 2-ft of the curb shall be restored to the curb line or edge of the pavement. Any existing pavement markings that are removed or damaged during the execution of the CONTRACTOR'S work shall be replaced with thermoplastic as a condition to final acceptance.
2. Excavation that is proposed in a street and/or parkway and is classified as a Local/Residential area with a PCI below 85 will require normal trench restoration only. Work in the parkway shall be restored to its original or better condition. All final pavement cuts shall be made with a saw to straight and uniform lines. Trench restoration shall include resurfacing to a constant width equal to the widest part of the excavation plus 12 inches on each side.
    a. Springfield Road from Wehman Drive to Old Seguin Road (Segment V) is considered a PCI below 85.
3. Excavation that is proposed in a street that is classified as a Residential street with a PCI rating above 86 should not be cut without additional pavement restoration. A 2-inch mill

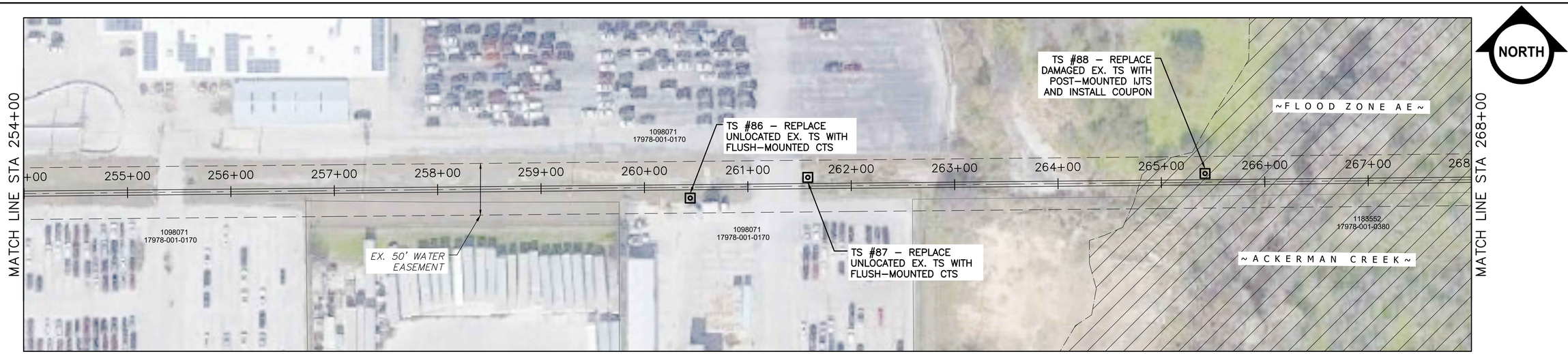
& overlay for a minimum length of 50-lineal feet may be approved as a variance from the block-to-block requirement. The stability of the temporary surface repair shall be maintained until the final mill & overlay is performed. Work located within the parkway shall be restored to its original or better condition. However, final restoration limits can be determined by ROW Supervisor.

a. Springfield Road from Corner Parkway to Wehman Drive (Segment V) is considered a PCI of 86 or better.
b. Eagle Crest Boulevard (Segment VI) is considered a PCI of 86 or better.

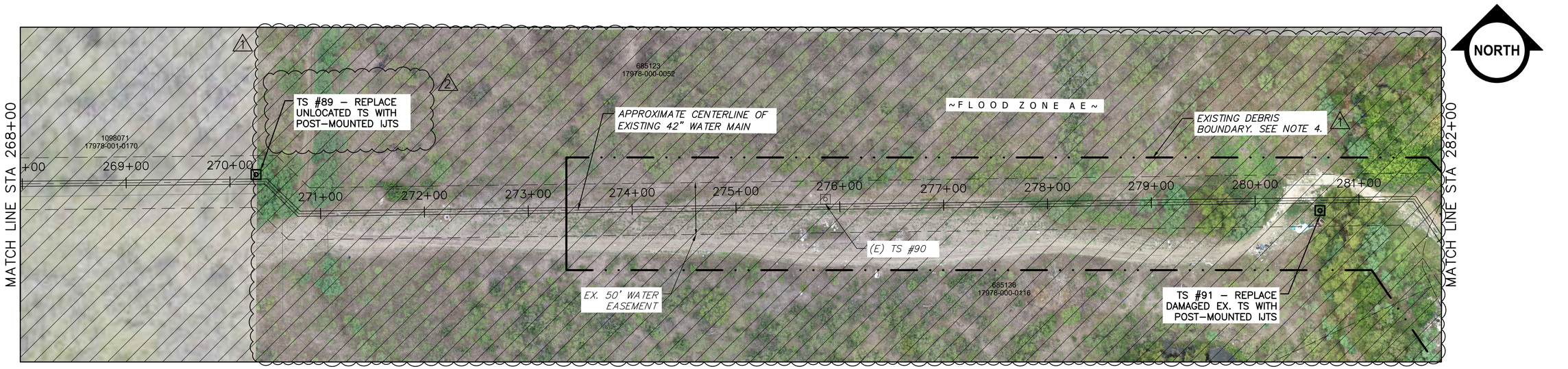
⚠1 **SC14. <u>Relocation of Private Property and Debris Within SAWS Water Line Easement Lump Sum Line Item:</u>**

Contractor will be responsible for coordination with Property Owner at least 30 days in advance of mobilization or construction activities for all necessary relocation of private property and debris within water line easement prior to construction. The lump sum line item includes, but is not limited to, relocation of trees, brush, abandoned vehicles, boats and any other various property items uncovered or found within SAWS easement for a complete in place water main cathodic protection and stray current interference installation. This is limited to Segment IV between STA 273+30 and STA 293+30.

**END OF SECTION**




PLAN 9 – SEGMENT IV 254+00 TO 268+00




PLAN 9 – SEGMENT IV 268+00 TO 281+00

NOTES:
1. TEST STATION SYMBOL NTS
2. FLOOD ZONE DEPICTED ON THIS SHEET IS ZONE AE PER FEMA PANEL 4800450430G (EFFECTIVE SEPTEMBER 29, 2010)
3. EASEMENT DIMENSIONS SHOWN IN THESE PLANS ARE TAKEN FROM THE RECORD DRAWINGS (SEE GENERAL NOTE 1, SHEET N–1). CONTRACTOR SHALL VERIFY EXISTING EASEMENTS PRIOR TO STARTING PROJECT WORK. REFER TO SHEET N–2 FOR EXISTING EASEMENT DOCUMENTATION PROVIDED BY SAWS.
4. EXISTING DEBRIS HAS ACCUMULATED ALONG THE PROJECT PIPE ALIGNMENT FROM APPROXIMATELY STA 273+30 TO STA 293+30 IN AND AROUND THE SAWS EASEMENT. THE CONTRACTOR IS DIRECTED TO MOVE SAID DEBRIS OUT OF THE WORK AREA TO THE EDGE OF THE EASEMENT LIMITS AS REQUIRED TO COMPLETE THE PROJECT WORK AS SHOWN IN THE PLANS. THE LEVEL OF EFFORT REQUIRED TO MOVE THE DEBRIS SHALL BE FULLY INCLUDED IN THE CONTRACTOR'S BID PROPOSAL. (1)

PROPERTY LEGEND

PROPERTY ID: XXXXXX
GEOGRAPHIC ID: XXXXX-XXX-XXXX

| ESTIMATED QUANTITIES | | | |
|---|---|---|---|
| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
| 8 | FLUSH-MOUNTED TEST STATION REPLACMENT | EA | 2 |
| 9 | POST-MOUNTED TEST STATION REPLACEMENT | EA | 3 |
| 13 | COUPON INSTALLATION | EA | 1 |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| ZONE | REV. | DESCRIPTION | BY | DATE | APP. |
| | 1 | ADDENDUM NO. 2 | ET | 10/23 | CS |
| | 2 | ADDENDUM NO. 2 | ET | 10/23 | CS |

0 25 50 100
1"=50' (FULL)
1"=100' (HALF)

JOB NO 21-0284
DRAWN ACR
DESIGNED ACR
CHECKED CS

SUBMITTED: _____
DATE: _____
APPROVED: _____
DATE: _____
APPROVED: _____
DATE: _____

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED PROFESSIONAL ENGINEER
OCTOBER 2023

V&A
15720 Park Row, Suite 500
Houston, TX 77084
Tel. (713) 568-9067, Fax (713) 568-9068
Firm No. F-9154
V&A Project No.: 21-0284

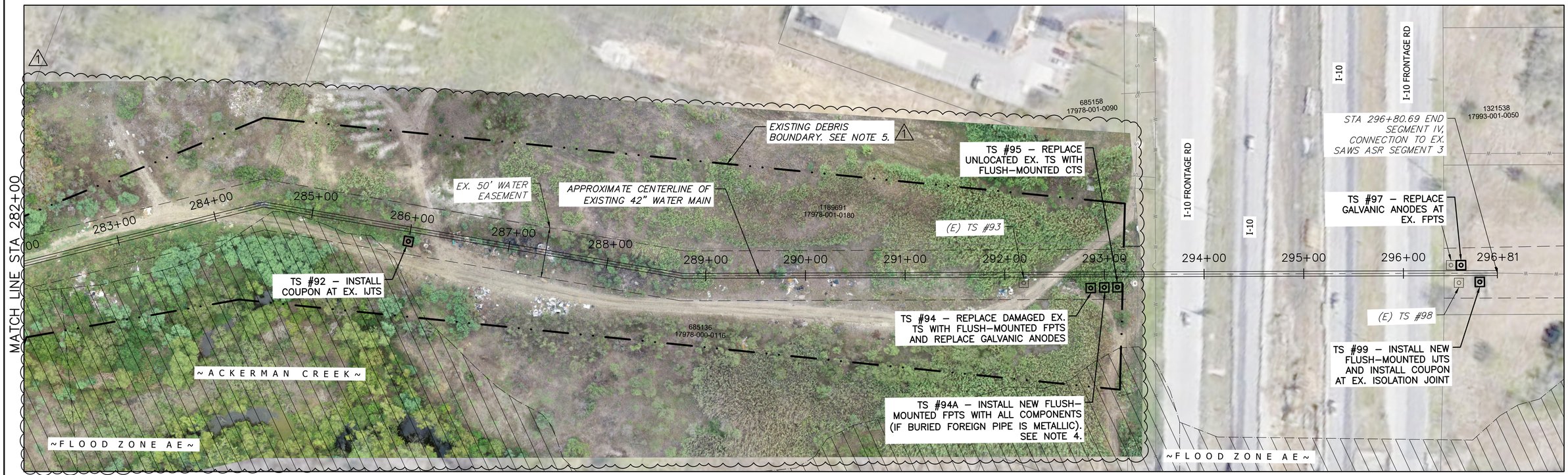
APPROVED
FOR CONSTRUCTION

SAN ANTONIO WATER SYSTEM
ASR PIPELINE CATHODIC PROTECTION SYSTEM REPLACEMENT

SEGMENT IV
PLAN
(STA 254+00 TO 282+00)

SCALE 1" = 50'
DRAWING NUMBER P-10
SHEET NUMBER 19 of 84

File: SAWS ASR SEGMENT 4 0101 PLANS Date: 10/24/2023 5:33 PM Last Saved By: EBIRBECK




PLAN 11 – SEGMENT IV 282+00 TO 296+81

NOTES:

1. TEST STATION SYMBOL NTS
2. FLOOD ZONE DEPICTED ON THIS SHEET IS ZONE AE PER FEMA PANEL 48004504306 (EFFECTIVE SEPTEMBER 29, 2010)
3. EASEMENT DIMENSIONS SHOWN IN THESE PLANS ARE TAKEN FROM THE RECORD DRAWINGS (SEE GENERAL NOTE 1, SHEET N–1). CONTRACTOR SHALL VERIFY EXISTING EASEMENTS PRIOR TO STARTING PROJECT WORK. REFER TO SHEET N–2 FOR EXISTING EASEMENT DOCUMENTATION PROVIDED BY SAWS.
4. THE CONTRACTOR SHALL PERFORM SUE WORK AT THIS LOCATION TO DETERMINE FOREIGN PIPE MATERIAL. THE COST OF EXCAVATION SHALL BE INCLUDED IN PROJECT COST. IF FOREIGN PIPE IS NON–METALLIC, NO TEST STATION SHALL BE INSTALLED.
5. EXISTING DEBRIS HAS ACCUMULATED ALONG THE PROJECT PIPE ALIGNMENT FROM APPROXIMATELY STA 273+30 TO STA 293+30 IN AND AROUND THE SAWS EASEMENT. THE CONTRACTOR IS DIRECTED TO MOVE SAID DEBRIS OUT OF THE WORK AREA TO THE EDGE OF THE EASEMENT LIMITS AS REQUIRED TO COMPLETE THE PROJECT WORK AS SHOWN IN THE PLANS. THE LEVEL OF EFFORT REQUIRED TO MOVE THE DEBRIS SHALL BE FULLY INCLUDED IN THE CONTRACTOR'S BID PROPOSAL. (1)

PROPERTY LEGEND

PROPERTY ID: XXXXXX
GEOGRAPHIC ID: XXXXX-XXX-XXXX

| ESTIMATED QUANTITIES | | | |
|---|---|---|---|
| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
| 8 | FLUSH-MOUNTED TEST STATION REPLACEMENT | EA | 2 |
| 10 | FLUSH-MOUNTED TEST STATION NEW CONSTRUCTION | EA | 2 |
| 12 | REPLACING 2 GALVANIC ANODES AT EXISTING FPTS | EA | 1 |
| 13 | COUPON INSTALLATION | EA | 2 |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| ZONE | REV. | DESCRIPTION | BY | DATE | APP. |
| | (1) | ADDENDUM NO. 2 | ET | 10/23 | CS |

0 25 50 100
1"=50' (FULL)
1"=100' (HALF)

JOB NO 21-0284
DRAWN ACR
DESIGNED ACR
CHECKED CS

SUBMITTED:
DATE:
APPROVED:
DATE:
APPROVED:
DATE:

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED PROFESSIONAL ENGINEER
OCTOBER 2023

V&A
15720 Park Row, Suite 500
Houston, TX 77084
Tel. (713) 568-9067, Fax (713) 568-9068
Firm No. F-9154
V&A Project No.: 21-0284

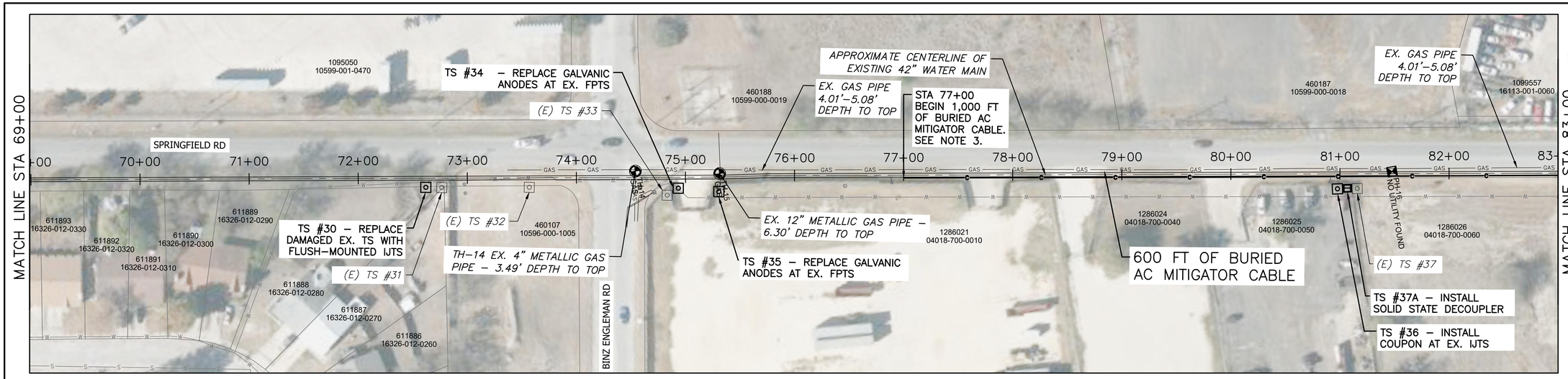
APPROVED
FOR CONSTRUCTION

SAN ANTONIO WATER SYSTEM
ASR PIPELINE CATHODIC PROTECTION SYSTEM REPLACEMENT

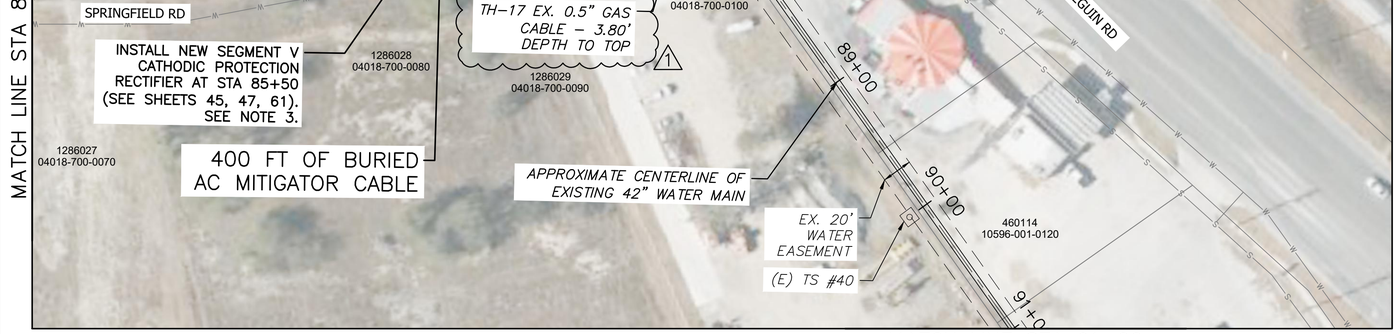
SEGMENT IV
PLAN
(STA 282+00 TO 296+81)

SCALE 1" = 50'
DRAWING NUMBER P-11
SHEET NUMBER 20 of 84

File: SAWS ASR SEGMENT 4 011 PLAN6 Date: 10/24/2023 5:33 PM Last Saved By: EBIRBECK



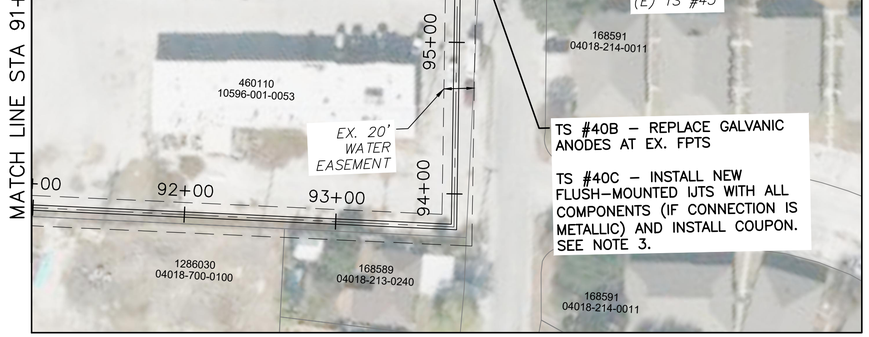

PLAN 14 – SEGMENT V 69+00 TO 83+00




PLAN 14 – SEGMENT V 83+00 TO 98+00

MATCH LINE STA 91+00

MATCH LINE STA 98+00




PLAN 14 – SEGMENT V 91+00 TO 98+00

NOTES:
1. TEST STATION, RECTIFIER, SOLID STATE DECOUPLER, ELECTRICAL, VALVE, METER, MANHOLE, AND COMMUNICATION SYMBOLS NTS
2. EASEMENT DIMENSIONS SHOWN IN THESE PLANS ARE TAKEN FROM THE RECORD DRAWINGS (SEE GENERAL NOTE 1, SHEET N–1). CONTRACTOR SHALL VERIFY EXISTING EASEMENTS PRIOR TO STARTING PROJECT WORK. REFER TO SHEET N–2 FOR EXISTING EASEMENT DOCUMENTATION PROVIDED BY SAWS.
3. THE CONTRACTOR SHALL PERFORM SUE WORK AT THIS LOCATION AND ALONG THE LENGTH OF THE PROPOSED MITIGATOR CABLE TO DETERMINE FOREIGN PIPE MATERIAL OR LOCATION AND DEPTH OF EXISTING UTILITIES IN CONFLICT WITH THE PROPOSED MITIGATOR CABLE AND RECTIFIER. THE COST OF EXCAVATION SHALL BE INCLUDED IN PROJECT COST. IF FOREIGN PIPE IS NON–METALLIC, NO TEST STATION SHALL BE INSTALLED.
4. THE PAVEMENT CONDITION INDEX (PCI) OF SPRINGFIELD RD FROM STA 66+00 TO 88+00 IS LESS THAN 85. SEE SPECIAL CONDITION #13 FOR PAVEMENT RESTORATION STANDARDS.

| ESTIMATED QUANTITIES | | | |
|---|---|---|---|
| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
| 14 | SEGMENT V DEEP WELL ANODE BED | EA | 1 |
| 15 | SEGMENT V RECTIFIER | EA | 1 |
| 16 | FLUSH-MOUNTED TEST STATION REPLACEMENT | EA | 1 |
| 17 | FLUSH-MOUNTED TEST STATION NEW CONSTRUCTION | EA | 2 |
| 18 | REPLACING 2 GALVANIC ANODES AT EXISTING FPTS | EA | 3 |
| 19 | COUPON INSTALLATION | EA | 2 |
| 21 | AC MITIGATOR CABLE | LF | 1,000 |
| 22 | SOLID STATE DECOUPLER | EA | 1 |

PROPERTY LEGEND

PROPERTY ID: XXXXXX
GEOGRAPHIC ID: XXXXX-XXX-XXXX

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| ZONE | REV. | DESCRIPTION | BY | DATE | APP. |
| | 1 | ADDENDUM NO. 2 | ET | 10/23 | CS |

0 25 50 100
1"=50' (FULL)
1"=100' (HALF)

JOB NO 21-0284
DRAWN ACR
DESIGNED ACR
CHECKED CS

SUBMITTED:
DATE:
APPROVED:
DATE:
APPROVED:
DATE:

STATE OF TEXAS
CHRISTOPHER L SHELDON
112184
LICENSED PROFESSIONAL ENGINEER
OCTOBER 2023

V&A
15720 Park Row, Suite 500
Houston, TX 77084
Tel. (713) 568-9067, Fax (713) 568-9068
Firm No. F-9154
V&A Project No.: 21-0284

APPROVED
FOR CONSTRUCTION

SAN ANTONIO WATER SYSTEM
ASR PIPELINE CATHODIC PROTECTION SYSTEM REPLACEMENT

SEGMENT V
PLAN
(STA 69+00 TO 98+00)

SCALE 1" = 50'
DRAWING NUMBER P-14
SHEET NUMBER 24 of 84

File: SAWS ASR SEGMENT 5 007 PLAN2 Date: 10/3/2023 6:09 PM Last Saved By: EBIRBECK

NOTES:

1. FOR THE REHABILITATION OF THE EXISTING TEST STATIONS, THE CONTRACTOR'S NACE CP4 CERTIFIED ENGINEER SHALL INTERPRET THE POTENTIALS MEASURED FOR EACH TEST LEAD TO DETERMINE IF THE TEST LEADS ARE INTACT AND FUNCTIONING AS INTENDED. THIS PROCESS ALSO APPLIES TO ISOLATION JOINTS TO VERIFY IF THEY ARE PROVIDING ELECTRICAL ISOLATION. ALL TEST RESULTS SHALL BE DOCUMENTED AND PROVIDED TO THE PROJECT ENGINEER. FUNCTIONAL TEST LEADS AND ISOLATION JOINTS CAN REMAIN IN SERVICE AS–IS. NON–FUNCTIONING TEST LEADS AND FAILED ISOLATION JOINTS SHALL BE REPAIRED OR REPLACED AS NEEDED.
2. FOR REHABILITATION OF TEST STATIONS REQUIRING POSTS, SPLICES MAY BE REQUIRED TO EXTEND THE LEAD WIRES TO THE TERMINAL BOARD.
3. IF EXISTING TEST STATION CANNOT BE LOCATED BY CONTRACTOR FOR REHABILITATION, THE CONTRACTOR SHALL INSTALL A NEW TEST STATION WITH ALL COMPONENTS BASED ON THE SCHEDULE LOCATION AND TEST STATION TYPE.
4. CONTRACTOR SHALL COLLECT SOIL SAMPLES AT THREE LOCATIONS ALONG THE SEGMENT IV WATER TRANSMISSION MAIN FOR MICROBIOLOGICALLY INDUCED CORROSION (MIC) TESTING. THE TEST STATION LOCATIONS FOR SOIL SAMPLE COLLECTION ARE INDICATED IN THE MIC SOIL SAMPLES TABLE ON THIS SHEET. CONTRACTOR SHALL COLLECT APPROXIMATELY ONE QUART OF SOIL AT APPROXIMATELY PROJECT PIPE INVERT DEPTH. THE SAMPLES SHALL BE CONTAINED IN INDIVIDUAL RESEALABLE PLASTIC BAGS, LABELED WITH SAMPLE LOCATION AND DEPTH, AND SHIPPED TO THE ENGINEER FOR LABORATORY TESTING.

SEGMENT 4 IMPRESSED ANODE & RECTIFIER SCHEDULE

| DIA | PIPE MATERIAL | RECTIFIER NO. | STATION NO. | SIZE | | ANODES | | ANODE WELL DIA (INCHES) | ANODE WELL DEPTH (FEET) | STRUCTURE | DETAIL REFERENCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AMPS | VOLTS | NO. | TYPE | | | | |
| 42" | STEEL WITH DIELECTRIC COATING | 1 | 148+85 | 15 | 15 | 10 | HIGH-SILICON CAST IRON (2284) | 10 | 190 | 42" WATER LINE | 1/CP-4, 2/CP-4, 3/CP-4, 4/CP-4, 5/CP-4, 1/CP-5, 5/CP-13, 2/E-3 |

SEGMENT 4 CATHODIC PROTECTION TEST STATION SCHEDULE

| TEST STATION NO. | STATION NO. | PIPE DIAMETER (IN) | ACTION TYPE | ACTION REQUIRED | TEST STATION TYPE | STRUCTURES | DETAIL REFERENCE | APPROXIMATE COVER DEPTH (FT) |
|---|---|---|---|---|---|---|---|---|
| 1 | 10+12 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND INSTALL COUPON | FLUSH-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND EXISTING 42" WATER LINE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 3 | 10+60 | 42 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 8" GAS LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 25 |
| 9 | 34+79 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 12 | 46+75 | 42 | REPLACEMENT | REPLACE SUNKEN FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND INSTALL COUPON | FLUSH-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 13 | 57+19 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 14 | 57+70 | 42 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 8" GAS LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 15 |
| 19 | 72+12 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND INSTALL COUPON | FLUSH-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 6 |
| 21 | 77+52 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION AND INSTALL COUPON | POST-MOUNTED CASING TEST STATION WITH COUPON | CASING WEST END | 4/CP-5, 3/CP-9, 4/CP-9, 3/CP-13, 5/CP-13, 6/CP-13 | 15 |
| 22 | 77+82 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION | POST-MOUNTED CASING TEST STATION | CASING EAST END | 4/CP-5, 3/CP-8, 4/CP-8, 3/CP-13, 5/CP-13 | 15 |
| 23 | 81+80 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION | POST-MOUNTED CASING TEST STATION | CASING WEST END | 4/CP-5, 3/CP-8, 4/CP-8, 3/CP-13, 5/CP-13 | 15 |
| 24 | 82+50 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION | POST-MOUNTED CASING TEST STATION | CASING EAST END | 4/CP-5, 3/CP-8, 4/CP-8, 3/CP-13, 5/CP-13 | 15 |
| 25 | 82+55 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION AND INSTALL COUPON | POST-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 4/CP-5, 3/CP-7, 4/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 15 |
| 25A | 89+89 | 42 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE POST-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | POST-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 16" WATER | 4/CP-5, 3/CP-10, 1/CP-11, 2/CP-11, 3/CP-13, 5/CP-13 | 8 |
| 25B | 90+07 | 42 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE POST-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | POST-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 8" WATER | 4/CP-5, 3/CP-10, 1/CP-11, 2/CP-11, 3/CP-13, 5/CP-13 | 8 |
| 26 | 90+27 | 42 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION AND INSTALL COUPON | POST-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 4/CP-5, 3/CP-7, 4/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 27A | 96+59 | 42 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE POST-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | POST-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 6" WATER | 4/CP-5, 3/CP-10, 1/CP-11, 2/CP-11, 3/CP-13, 5/CP-13 | 4 |
| 27B | 96+78 | 42 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE POST-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | POST-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 12" WATER | 4/CP-5, 3/CP-10, 1/CP-11, 2/CP-11, 3/CP-13, 5/CP-13 | 8 |
| 28A | 101+04 | 42 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE POST-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | POST-MOUNTED FOREIGN PIPELINE TEST STATION | EXISTING 8" GAS LINE | 4/CP-5, 3/CP-10, 1/CP-11, 2/CP-11, 3/CP-13, 5/CP-13 | 6 |
| 29 | 103+00 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 4 |
| 33 | 117+96 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 39 | 141+35 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 43 | 150+20 | 42 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 42" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 10 |
| 48 | 154+82 | 42 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 2" GAS LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 12 |
| 51 | 156+25 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION, REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB HIGH-POTENTIAL MAGNESIUM GALVANIC ANODES, AND INSTALL COUPON | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION AND ANODE REPLACEMENT | EXISTING 8" GAS LINE AND GALVANIC ANODE REPLACEMENT | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 12 |
| 52 | 161+34 | 60 | REPLACEMENT | RELOCATE FLUSH-MOUNTED TEST STATION OUTSIDE OF FENCE | FLUSH-MOUNTED INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 8" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-6, 2/CP-6, 3/CP-13, 4/CP-13, 5/CP-13 | 5 |
| 53A | 161+94 | 60 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE FLUSH-MOUNTED TEST STATION (IF METALLIC FOREIGN PIPE) | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 2" GAS LINE | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 12 |
| 56 | 162+18 | 60 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 6" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 60 | 177+82 | 60 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 6" PETROLEUM LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 14 |
| 60A | 180+80 | 60 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE FLUSH-MOUNTED TEST STATION | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 30" CSC WATER LINE | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 15 |
| 61 | 180+97 | 60 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 6" PETROLEUM LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 15 |
| 63 | 186+43 | 60 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 8" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 65 | 191+35 | 60 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 6" PETROLEUM LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 17 |
| 74 | 209+11 | 60 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 13 |
| 79 | 236+60 | 60 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 8" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 6 |
| 82 | 241+88 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB HIGH-POTENTIAL MAGNESIUM GALVANIC ANODES | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION AND ANODE REPLACEMENT | EXISTING 6" PETROLEUM PIPELINE AND GALVANIC ANODE REPLACEMENT | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 10 |
| 86 | 260+48 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION | FLUSH-MOUNTED CASING TEST STATION | CASING WEST END | 3/CP-5, 1/CP-8, 2/CP-8, 3/CP-13, 5/CP-13 | 13 |
| 87 | 261+65 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION | FLUSH-MOUNTED CASING TEST STATION | CASING EAST END | 3/CP-5, 1/CP-8, 2/CP-8, 3/CP-13, 5/CP-13 | 10 |
| 88 | 265+40 | 60 | REPLACEMENT | REPLACE DAMAGED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION AND INSTALL COUPON | POST-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 4/CP-5, 3/CP-7, 4/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 8 |
| 89 | 270+21 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION | POST-MOUNTED INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 8" COMBINATION AIR RELEASE VALVE | 4/CP-5, 3/CP-6, 4/CP-6, 3/CP-13, 4/CP-13, 5/CP-13 | 4 |
| 91 | 280+62 | 60 | REPLACEMENT | REPLACE DAMAGED FLUSH-MOUNTED TEST STATION WITH NEW POST-MOUNTED TEST STATION | POST-MOUNTED INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 12" BLOW-OFF VALVE | 4/CP-5, 3/CP-6, 4/CP-6, 3/CP-13, 4/CP-13, 5/CP-13 | 8 |
| 92 | 286+00 | 60 | REPLACEMENT | INSTALL COUPON AT EXISTING TEST STATION | COUPON INSTALLATION AT EXISTING INSULATING JOINT TEST STATION | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND 8" COMBINATION AIR RELEASE VALVE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 5 |
| 94 | 293+08 | 60 | REPLACEMENT | REPLACE DAMAGED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION AND REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB HIGH-POTENTIAL MAGNESIUM GALVANIC ANODES | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION AND ANODE REPLACEMENT | EXISTING 8" GAS LINE | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 13 |
| 94A | 293+24 | 60 | NEW CONSTRUCTION | INSTALL ALL COMPONENTS OF THE FLUSH-MOUNTED TEST STATION | FLUSH-MOUNTED FOREIGN PIPELINE TEST STATION | EX. 24" CSC | 3/CP-5, 1/CP-10, 2/CP-10, 3/CP-10, 3/CP-13, 5/CP-13 | 15 |
| 95 | 293+11 | 60 | REPLACEMENT | REPLACE UNLOCATED FLUSH-MOUNTED TEST STATION WITH NEW FLUSH-MOUNTED TEST STATION | FLUSH-MOUNTED CASING TEST STATION | CASING NORTH END | 3/CP-5, 1/CP-8, 2/CP-8, 3/CP-13, 5/CP-13 | 15 |
| 97 | 296+45 | 60 | REPLACEMENT | REPLACE EXISTING ATTACHED GALVANIC ANODES WITH TWO NEW 60-LB GALVANIC ANODES | FOREIGN PIPELINE TEST STATION ANODE REPLACEMENT | EX. 6" PETROLEUM LINE | 1/CP-10, 1/CP-11 (SEE NOTE 5 ON 1/CP-11) | 10 |
| 99 | 296+81 | 60 | NEW CONSTRUCTION | INSTALL NEW FLUSH-MOUNTED TEST STATION AND INSTALL COUPON | FLUSH-MOUNTED INSULATING JOINT TEST STATION WITH COUPON | ISOLATION BETWEEN 60" SEGMENT 4 WATER LINE AND EXISTING 60" SEGMENT 3 WATER LINE | 3/CP-5, 1/CP-7, 2/CP-7, 3/CP-13, 4/CP-13, 5/CP-13, 6/CP-13 | 10 |

SEGMENT 4 MICROBIOLOGICALLY INDUCED CORROSION (MIC) SOIL SAMPLES

| LOCATION | NO. OF SAMPLES AT LOCATION | SAMPLE SIZE | SAMPLE DEPTH |
|---|---|---|---|
| TS #14 | 1 | 1-QUART | PIPE INVERT DEPTH |
| TS #48 | 1 | | |
| TS #82 | 1 | | |

REVISIONS

| ZONE | REV. | DESCRIPTION | BY | DATE | APP. |
|---|---|---|---|---|---|
| | 1 | ADDENDUM NO. 2 | ET | 10/23 | CS |

JOB NO 21-0284
DRAWN ERT
DESIGNED ACR
CHECKED CS

SUBMITTED: _____
DATE: _____
APPROVED: _____
DATE: _____
APPROVED: _____
DATE: _____

STATE OF TEXAS
CHRISTOPHER L. SHELDON
112184
LICENSED PROFESSIONAL ENGINEER
OCTOBER 2023

V&A
15720 Park Row, Suite 500
Houston, TX 77084
Tel. (713) 568-9067, Fax (713) 568-9068
Firm No. F-9154
V&A Project No.: 21-0284

APPROVED
FOR CONSTRUCTION

SAN ANTONIO WATER SYSTEM
ASR PIPELINE CATHODIC PROTECTION SYSTEM REPLACEMENT

SEGMENT IV
CATHODIC PROTECTION SCHEDULE
(SHEET 1 OF 3)

SCALE NTS
DRAWING NUMBER CP-1
SHEET NUMBER 44 of 84

File: SAWS ASR CP DETAILS COMPILED 100% (21-0284) Date: 10/4/2023 6:10 AM Last Saved By: EBIRBECK