



**SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
SAWS Job No. 18-8614  
SAWS Solicitation No. CO-00182**

**ADDENDUM No. 2  
November 6, 2018**

**To Bidder of Record:**

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

**CLARIFICATIONS**

1. The final Questions and Answers responses will be issued by separate addendum.

**QUESTIONS AND ANSWERS**

1. None.

**REVISIONS TO CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS**

**TABLE OF CONTENTS**

- a) Delete the TABLE OF CONTENTS in its entirety and replace with the attached version included as part of this Addendum.

**INVITATION TO BIDDERS**

- a) On the INVITATION TO BIDDERS, delete the text:

Answers to the questions will be posted to the web site by **10:00 AM (CDT) on November 7, 2018** as a separate document or included as part of an addendum.

And replace with:

Answers to the questions will be posted to the web site by **4:00 PM (CDT) on November 7, 2018** as a separate document or included as part of an addendum.

## BID PROPOSAL

- a) Delete the BID PROPOSAL in its entirety and replace with the attached version included as part of this Addendum.

## SPECIAL CONDITIONS

- a) Add the following as SC-1.8:

SC-1.8 The CONTRACTOR shall start and complete all work related to the Halm Blvd. water line replacement during the dry season (June through August). The existing drainage channel must remain open to provide service. The CONTRACTOR shall maintain no less than half the channel open at all times. CONTRACTOR shall employ adequate measures (sand bags, barricades, other) to allow all personnel to safely work within the channel.

- b) Add the following as SC-1.9:

SC-1.9 Archaeological Monitoring is required between Station 900+00 to Station 909+00 given the archaeological sensitivity of the project area. A qualified archaeological monitor provided by SAWS shall be present on-site during all ground disturbing activities in this area. Contractor shall coordinate with the Resident Project Representative at least 72 hours prior to initiating ground disturbing activities in this area to arrange for the archaeological monitor.

- c) Add the following as SC-1.10:

SC-10 Unanticipated Discoveries. If any cultural resources or potential human remains are identified by the contractor during construction activities, the Contractor will halt work within a 200-foot radius of the find(s), delineate the area of the find with flagging tape or rope (may also include dirt spoils from the find area), and immediately notify the Resident Project Representative. The Contractor shall move to a different location while the project Archaeologist assesses the resource as soon as possible and determines the appropriate next steps in coordination with SAWS. This coordination can include consultation and notification of the Texas Historical Commission and/or San Antonio Office of Historic Preservation within the required 24 hours. Such finds will be formally recorded and evaluated. The Contractor shall protect the resource from further disturbance or looting pending evaluation.

- d) Add the following as SC-1.11:

SC-1.11 The CONTRACTOR shall prepare traffic control plans signed and sealed by a registered engineer in the State of Texas for the watermain replacement work at Halm Boulevard. The CONTRACTOR shall base their traffic control concept of providing a minimum of one 12-foot wide temporary travel lane with flagger control at all time when the pipeline is not being constructed within Halm Boulevard but access to the concrete channel is required. A full closure of Halm Boulevard will be allowed to construct the pipeline within Halm Boulevard. Traffic control shall be removed, and

Halm Boulevard opened to traffic at the end of every day. The CONTRACTOR shall submit the signed and sealed traffic control plans for review and approval by COSA. There is no separate pay item for the preparation of the traffic control plans, this shall be considered inclusive to the lump sum bid item for Barricades, Signs, and Traffic Handling.

e) Add the following as SC-1.12:

SC-1.12 Acquisition of Easements. Possession of all temporary and permanent easements is anticipated on or before May 1, 2019.

### SPECIAL PROVISIONS

a) Add to the Table of Contents the following:

830 Butterfly Valve and Box  
13. Service Saddles (100-30)

b) Add Section “**REVISION TO SAWS STANDARD MATERIAL SPECIFICATION 13. SERVICE SADDLES (100-30)**” to the SPECIAL PROVISIONS. This special provision is included with this addendum.

c) Delete Section “**REVISION TO SAWS STANDARD SPECIFICATION ITEM NO. 804 (EXCAVATION, TRENCHING AND BACKFILL)**” in its entirety and replace with the version attached with this addendum.

d) Add Section “**REVISION TO SAWS STANDARD SPECIFICATION ITEM NO. 830 (BUTTEFLY VALVES AND BOX)**” to the SPECIAL PROVISIONS. This special provision is included with this addendum.

e) **REVISION TO COSA STANDARD SPECIFICATION ITEM NO. 103 (REMOVE CONCRETE)** delete the following

“The statement is to be replaced with the following:

**C. Concrete Sidewalk and Driveway.** Concrete sidewalks and driveways removed as prescribed above will be measured by the square foot in its original position regardless of the thickness of the concrete and reinforcing steel encountered.”

And replace with

“The statement is to be replaced with the following:

**C. Concrete Sidewalk and Driveway.** Concrete sidewalks and driveways removed as prescribed above will be measured by the square yard in its original position regardless of the thickness of the concrete and reinforcing steel encountered.”

**TECHNICAL SPECIFICATIONS**

**Section 01040 COORDINATION**

a) Add the following to Part 1.03 CONSTRUCTION CONSTRAINTS

B. The Contractor shall construct and test the sewer main replacement on Mertz Drive prior to excavating and constructing the potable water main.

**REVISIONS TO DRAWINGS**

**SHEET G-3001 – DRAWING INDEX, LEGEND & ABBREVIATIONS**

a) Delete the sheet in its entirety and replace with the sheet attached with this addendum.

**SHEET G-3003 – GENERAL NOTES (SHEET 2 OF 2)**

a) Delete the sheet in its entirety and replace with the sheet attached with this addendum.

**SHEET G-3004 – PROJECT CONTROL PLAN (SHEET 1 OF 2)**

a) Delete the sheet in its entirety and replace with the sheet attached with this addendum.

**SHEET G-3005 – PROJECT CONTROL PLAN (SHEET 2 OF 2)**

a) Delete the sheet in its entirety and replace with the sheet attached with this addendum.

**PIPELINE PLAN AND PROFILE SHEETS**

a) Revise the Spec No. listed for Line No. 9 to be “COSA 208.1”, instead of “COSA 208.0” in the Estimated Quantities table on all plan and profile sheets (except C-3404 and C-3405).

b) Add “(NSPI)” at the end of Construction Note 21 “Existing tree to be removed and disposed” on all sheets that it occurs.

**SHEET C-3401 – 24” PIPELINE PLAN AND PROFILE**

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	150
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SHEET C-3402 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	140
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SHEET C-3403 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	200
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SHEET C-3404 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	120
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SHEET C-3405 – 24” PIPELINE PLAN AND PROFILE

a) Delete Construction Note 5 that currently reads

“CONSTRUCT 42” STEEL CASING (T=0.625”) AND INSTALL CARRIER PIPE PER  
DETAIL 1 ON SHT C-3904”

And replace with

“CONSTRUCT 42” STEEL CASING AND INSTALL CARRIER PIPE PER DETAIL 1 ON  
SHT C-3904”

b) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	30
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c) Delete Line No. 30 – Cathodic Protection from the Estimated Quantities table.

SHEET C-3406 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	70
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b) Delete Line No. 30 – Cathodic Protection from the Estimated Quantities table.

SHEET C-3407 – 24” PIPELINE PLAN AND PROFILE (STA 923+00 TO 926+00)

a) Revise Spec No. listed for Line No. 26 – 2” COMBINATION VACUUM AND AIR RELEASE VALVE ASSEMBLY to 846.

b) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	100
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SHEET C-3408 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	130
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SHEET C-3409 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	130
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SHEET C-3410 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	140
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SHEET C-3411 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	130
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SHEET C-3412 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	120
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SHEET C-3413 – 24” PIPELINE PLAN AND PROFILE

a) Add the following to the end of the ESTIMATED QUANTITY table:

41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	130
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SHEET C-3414 – 24” PIPELINE PLAN AND PROFILE (STA 950+00 TO 954+31 +/-)

a) Delete the Estimated Quantities table in its entirety on Sheet C-3414, and replace with the following table:

ESTIMATED QUANTITIES				
LINE NO.	SPEC NO.	DESCRIPTION	UNIT	QTY
4	COSA 202.1	PRIME COAT	GAL	110
5	COSA 203.1	TACK COAT	GAL	130
6	COSA 205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	340
7	COSA 205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	340
8	COSA 206.1	ASPHALT TREATED BASE (6" COMP. DEPTH)	SY	290
9	COSA 208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	340
10	COSA 413.1	FLOWABLE FILL	CY	220
15	550	TRENCH EXCAVATION SAFETY PROTECTION	LF	431
17	814	PIPE WATER MAIN (24" DIP)	LF	431
24	840.1	WATER TIE-IN	EA	1
29	862	ABANDONMENT OF WATER MAINS 12" AND LARGER	LF	420
41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	140

SHEET C-3415 – 30” PIPELINE REPLACEMENT PLAN AND PROFILE

a) Delete Sheet C-3415 and replace with the revised version included as part of this Addendum.

SHEET C-3416 – 8” SEWER REPLACEMENT PLAN AND PROFILE

- a) Add Sheet C-3416 to the Contract Drawings as included as part of this Addendum.

SHEET C-3440 – STORM WATER POLLUTION PREVENTION PLAN

- a) Delete Sheet C-3440 – STORM WATER POLLUTION PREVENTION PLAN and replace with revised version included as part of this Addendum.

SHEET C-3441 – STORM WATER POLLUTION PREVENTION PLAN

- a) Delete Sheet C-3441 – STORM WATER POLLUTION PREVENTION PLAN and replace with revised version included as part of this Addendum.

SHEET C-3443 – STORM WATER POLLUTION PREVENTION NOTES

- a) Delete Sheet C-3443 – STORM WATER POLLUTION PREVENTION NOTES and replace with Sheet C-3443 – STORM WATER POLLUTION PREVENTION PLAN included as part of this Addendum.

SHEET C-3444 – STORM WATER POLLUTION PREVENTION DETAILS

- a) Delete Sheet C-3444 – STORM WATER POLLUTION PREVENTION DETAILS and replace with Sheet C-3444 – STORM WATER POLLUTION PREVENTION NOTES included as part of this Addendum.

SHEET C-3445 – STORM WATER POLLUTION PREVENTION DETAILS

- a) Delete Sheet C-3445 – STORM WATER POLLUTION PREVENTION DETAILS and replace with Sheet C-3445 – STORM WATER POLLUTION PREVENTION DETAILS included as part of this Addendum.

SHEET C-3446 – STORM WATER POLLUTION PREVENTION DETAILS

- a) Add Sheet C-3446 – STORM WATER POLLUTION PREVENTION DETAILS included as part of this Addendum.

SHEET C-3901 – PIPE TRENCH DETAILS

- a) Delete Sheet C-3901 and replace with the revised version included as part of this Addendum.

SHEET C-3902 – PIPE TRENCH DETAILS

- a) Delete Sheet C-3902 and replace with the revised version included as part of this Addendum.



SHEET C-3905 – TYPICAL CHANNEL SECTION

- a) Delete Sheet C-3905 and replace with the revised version included as part of this addendum.

SHEET TC-101 – TRAFFIC CONTROL PLAN NARRATIVE

- a) Change the work hours listed in General Note 5 from:  
“Work hours will be Monday through Saturday 7:00 am (sun up) to 7:00 pm (sun down).”  
to:  
“Work hours shall be from 8:00 a.m. to 5 p.m., Monday through Friday unless approved otherwise by the Owner.”

The remainder of the bid documents remain unchanged.

This addendum is comprised of a total of 36 pages (including attachments).



**Mark W. Bush, P.E.**  
Tetra Tech, Inc.



11-06-2018

END OF ADDENDUM No. 2

## Contract Documents Table of Contents

<u>BIDDING AND CONTRACT REQUIREMENTS</u>	<u>PAGE</u>
Invitation to Bidders ( <i>Rev. 9/21/2017</i> ).....	IV-1
Instructions to Bidders ( <i>Rev. 7/9/2018</i> ) .....	IB-1
Workers' Compensation Insurance Coverage Requirements ( <i>Rev. 9/08/2015</i> ).....	WC-1
Contractor's Bid Packet Checklist ( <i>Rev. 9/4/2018</i> ) .....	BC
Bid Proposal.....	BP-1
Proposal Certification ( <i>Rev. 4/14/2017</i> ).....	PC-1
Good Faith Effort Plan ( <i>Rev. 5/18/2017</i> ) .....	GFEP-1
Conflict of Interest ( <i>Rev. 11/30/2015</i> ). .....	Form CIQ
Wage Decisions .....	WR-1
General Conditions of the Contract ( <i>Rev. 6/15</i> ).....	GC-1
Contract Agreement ( <i>Rev.01/17/2018</i> ) .....	CA-1
Performance and Payment Bond ( <i>Rev. 01/17/2018</i> ) .....	PB-1
Contractor Suspension Policy ( <i>Rev. 3/14</i> ) .....	SP-1
Contractor Security Procedures ( <i>Rev. 3/14</i> ).....	SP-10
Request for Taxpayer Identification Number and Certification Form ( <i>Rev. 12/2014</i> ).....	W-9
Instructions for Completing the ACORD Certificate of Liability Insurance ( <i>Rev. 1/23/2017</i> ).....	ICS
Supplemental Conditions ( <i>Rev. 5/10/18</i> ).....	SS-1
Special Conditions. ....	SC-1
Special Provisions to the Technical Specifications.....	SPTS-1

(Separate Documents)

### CITY OF SAN ANTONIO (COSA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (Latest Edition)

CoSA standard specifications are incorporated herein as if copied verbatim and are available at the following link:  
<http://www.sanantonio.gov/Portals/0/Files/CIMS/StandardSpecifications/CIMSConstructionSpecifications062008.pdf>

### SAWS SPECIFICATIONS FOR WATER & SANITARY SEWER CONSTRUCTION (February 2017)

SAWS standard specifications are incorporated herein by reference as if copied verbatim and are available at the following link:  
[http://www.saws.org/business\\_center/specs/constspecs/](http://www.saws.org/business_center/specs/constspecs/)

The following is a listing of applicable specifications for reference:

- SAWS 100      Mobilization and Demobilization
- SAWS 101      Preparing Right-of-Way

- SAWS 300 Concrete (Natural Aggregate)
- SAWS 301 Reinforcing Steel
- SAWS 307 Concrete Structures
- SAWS 550 Trench Excavation Safety Protection
- SAWS 804 Excavation, Trenching and Backfill
- SAWS 812 Water Main Installation
- SAWS 813 Water Service for Fireline
- SAWS 814 Ductile Iron Pipe
- SAWS 826 Valve Box Adjustments
- SAWS 828 Gate Valves
- SAWS 830 Butterfly Valve and Box
- SAWS 833 Meter and Meter Box Installation
- SAWS 834 Fire Hydrant With 6" Valve and Box
- SAWS 836 Grey Iron and Ductile Iron Fittings
- SAWS 839 Anchorage/Thrust Blocking and Joint Restraint
- SAWS 840 Water Tie In
- SAWS 841 Hydrostatic Testing
- SAWS 844 Blowoff Assemblies
- SAWS 845 Gate, Fencing, and Property Marker Details
- SAWS 846 2" Combination Vacuum and Air Release Valve Assembly
- SAWS 847 Disinfection
- SAWS 848 Sanitary Sewers
- SAWS 851 Existing Manhole Adjustments
- SAWS 852 Sanitary Sewer Manholes
- SAWS 856 Jacking, Boring, or Tunneling Pipe
- SAWS 858 Concrete Encasement, Cradles, Saddles and Collars
- SAWS 869 Project Signs
- SAWS 902 Construction Safety and Health Program
- SAWS 903 Construction QC/QA Program
- SAWS 904 Construction Phase Procedures
- SAWS 910 Manhole Rehabilitation
- SAWS 1110 Progress Schedule
- SAWS 1112 Project Record Documents
- SAWS 1114 Pre-Construction Video
- SAWS 3000 Removal, Transportation, and Disposal of Asbestos Cement Pipe

## APPENDICES

- Appendix A Record Drawings – Western Ave Project No. 74 Ph. II Drainage Channel Limits from Loop 410 to Chulie EN-933
- Appendix B Record Drawings – Halm Water 94-5012
- Appendix C Record Drawings – Halm Sewer 94-5572

**BID 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 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 to wit:

**PRICES FOR:**

LINE NO.	ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	100	MOBILIZATION AND DEMOBILIZATION	LS	1		
2	101	PREPARING RIGHT-OF-WAY	LS	1		
3	COSA 103.1	REMOVE CONCRETE CURB	LF	170		
4	COSA 202.1	PRIME COAT	GAL	1,190		
5	COSA 203.1	TACK COAT	GAL	2,260		
6	COSA 205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	6,310		
7	COSA 205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	3,570		
8	COSA 206.1	ASPHALT TREATED BASE (6" COMP. DEPTH)	SY	3,020		
9	COSA 208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	6,310		
10	COSA 413.1	FLOWABLE FILL (LOW STRENGTH)	CY	3,810		
11	COSA 500.1	CONCRETE CURB	LF	170		
12	COSA 520	HYDROSEEDING	SY	4,500		
13	COSA 530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING	LS	1		
14	COSA 540	TEMPORARY EROSION, SEDIMENTATION, AND WATER POLLUTION PREVENTION AND CONTROL	LS	1		
15	550	TRENCH EXCAVATION SAFETY PROTECTION	LF	5,321		
16	15060	PIPE WATER MAIN (30" DIPS, DR-11 HDPE)	LF	1,611		
17	814	PIPE WATER MAIN (24" DIP)	LF	3,425		
18	814	PIPE WATER MAIN (30" DIP)	LF	219		
19	856	BORE AND JACK	LF	461		
20	856	CARRIER PIPE (24" DIA.) FOR JACKING, BORING OR TUNNELING	LF	461		
21	856	CASING (42" DIA.)	LF	461		
22	834.1	FIRE HYDRANT WITH 6" VALVE AND BOX	EA	1		
23	836	GREY IRON AND DUCTILE IRON FITTINGS	TN	18		
24	840.1	WATER TIE-IN	EA	5		
25	841	HYDROSTATIC TESTING	LS	1		

Central Water Integration Pipeline Segment 5-4 Project  
 SAWS Job No. 18-8614  
 SAWS Solicitation No. CO-00182

26	846	2" COMBINATION VACUUM AND AIR RELEASE VALVE ASSEMBLY	EA	7		
27	830	BUTTERFLY VALVE AND BOX (24")	EA	3		
28	830	BUTTERFLY VALVE AND BOX (30")	EA	2		
29	862	ABANDONMENT OF WATER MAINS 12" AND LARGER	LF	2,145		
30	16640	CATHODIC PROTECTION MONITORING	LS	1		
31	COSA 515.1	6" TOPSOIL	CY	150		
32	COSA 505.1	CONCRETE RIPRAP (5 INCHES THICK)	SY	156		
33	COSA 103.4	REMOVE MISCELLANEOUS CONCRETE	SF	1,400		
34	100A	INTERMEDIATE DEMOBILIZATION AND REMOBILIZATION	EA	1		
35	2480	LANDSCAPE PLANTING	LS	1		
36	3000	REMOVAL, TRANSPORTATION, AND DISPOSAL OF ASBESTOS CEMENT PIPE	LF	16		
37	858	CONCRETE ENCASEMENT	CY	53		
38	848	8" SDR 26 PVC SEWER PIPE	LF	66		
39	864-S1	BYPASS PUMPING	LS	1		
40	910	INTERIOR COATING OF EXISTING MANHOLES	VFT	18		
41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	1,890		
42	851	EXISTING MANHOLE ADJUSTMENT (REPLACE RING AND COVER)	EA	2		
43	830.1	VALVE LOCK COVERS (V-LOCK)	EA	45		
44	N/A	GENERAL ALLOWANCE	LS	1	\$100,000	\$100,000

**TOTAL BID PRICE**

**\$ \_\_\_\_\_**

Mobilization and Demobilization lump sum bid shall be limited to a maximum 5% of the total of Bid Items 3 - 43. Preparing Right-of-Way shall be limited to a maximum 5% of the total of Bid Items 3 - 43. **If the percentage for these Items exceeds the allowable maximum stated for Mobilization and Demobilization and/or Preparation of ROW, SAWS reserves the right to cap the amount at 5% and adjust the extension of the bid item accordingly.**

\_\_\_\_\_  
 BIDDER'S SIGNATURE & TITLE

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

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

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

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

Central Water Integration Pipeline Segment 5-4 Project  
SAWS Job No. 18-8614  
SAWS Solicitation No. CO-00182

The Contractor herein acknowledges receipt of the following:

Addendum Nos. \_\_\_\_\_

**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, to complete all work on or before December 31, 2019, 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.

**END OF SECTION**

## REVISION TO SAWS STANDARD SPECIFICATION ITEM NO. 804 (EXCAVATION, TRENCHING, AND BACKFILL)

The statements to be modified currently reads as follows:

### 804.2 TRENCHING

**Minimum Width of Trench:** The minimum width of pipe trenches, measured at the crown of the pipe, shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of bells. The minimum base width of such trench shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of special structures or connections. Such minimum width shall be exclusive of trench supports and not greater than the width at the top of the trench.

**Maximum Width of Trench:** The maximum allowable width of trench for pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of bells or collars) plus 24 inches. A trench wider than the outside diameter plus 24 inches may be used without special bedding if the Contractor, at his sole expense, furnishes pipe of the required strength to carry additional trench load. Such modifications shall be submitted to the Inspector and approved in writing. Whenever such maximum allowable width of trench is exceeded, except as provided for in the contract documents, or by written approval of the Engineer, the Contractor, at his sole expense, shall encase the pipe in concrete from trench wall to trench wall, or with other approved pipe bedding material. Any excavation wider than this maximum width or subsequent surface or paving work, will be done at the Contractor's sole expense.

2. When unsuitable bearing materials such as water, silt, muck, trash, debris or rock in ledge, boulder or coarse gravel (particle size larger than 1- $\frac{3}{4}$  inch) is encountered at the bearing level, the Contractor shall overexcavate and remove such materials to a depth no less than 6 inches below the bottom of the pipe and replace it with a material conforming to the requirements of Paragraph 804.5.2.a, 804.6, or as approved by the Engineer and/or Inspector.

### 804.8 QUALITY CONTROL:

2. Quality Assurance Testing: The Owner shall have such tests and inspections as he may desire performed by a nationally-accredited, independent testing laboratory for his guidance and control of the work. Payment for such tests shall be the responsibility of the Owner, including the material proctor tests and density tests. The Contractor shall request testing work performed by the Owner by notifying the Owner of the areas available by Station Numbers or Dimensions and Lift Numbers. The Contractor shall provide access to the test area, associated trench excavation safety protection, and backfilling of the test areas. The frequency and location of testing shall be determined solely by the Owner. The Owner may test any lift of fill at any time, location, or elevation.
3. Quality Control Testing: The Contractor shall be responsible for compaction in accordance with the appropriate Specification. Compaction tests will be done at one

location point randomly selected or as indicated by the SAWS Inspector/Test Administrator, per each 12 inch loose lift per 400 linear feet. The inspector shall determine the depth at which the density test shall be taken. All depths shall be considered for testing without a predetermined maximum or minimum.

***Note:** Any failed test shall require the Contractor to remove and replace that layer of backfill to 50 feet from either side from the failed test location. The Contractor will also be required at no cost to SAWS to provide two additional tests at the replaced location where the initial test failed and at one location point, randomly selected or as indicated by the SAWS Inspector/Test Administrator.*

***Note:** Sanitary Sewer Laterals will be subject to compaction tests at the discretion of the SAWS Inspector/Test Administrator within 400 linear foot segments. Any failed test shall require the Contractor to remove and replace failed backfill. The Contractor will also be required at no additional cost to SAWS to provide one test at the replaced location where the initial tests failed.*

The Contractor shall be responsible for all costs associated with the proctor and density tests, and for providing to SAWS and Consultant, if applicable, verification that necessary compaction levels were achieved. These tests shall be performed by a nationally-accredited, independent testing laboratory.

The Owner will determine in-place density and moisture content by any one or combination of the following methods: The latest provisions of ASTM D2922 (density of soil and soil aggregate in-place by nuclear methods – shallow depth), D1556 (density and unit weight of soil in-place by sand cone method), D2216 (lab density of water content of soil and rock), D3017 (water content of soil and rock – shallow depth in-place by nuclear methods) or most applicable approved equal provisions.

**804.9**           **MEASUREMENT:** Excavation, Trenching and Backfill will not be measured for payment.

**804.10**          **PAYMENT:** No direct payment shall be made for incidental costs associated with quality control testing, excavation, trenching and backfilling for water mains and sanitary sewers, and all costs in connection therewith shall be include dint he applicable contract price or the item to which the work pertains.

The statements are to be replaced with the following:

**804.2**           **TRENCHING**

Minimum Width of Trench: Unless otherwise noted on the plans, the minimum width of pipe trenches, measured at the crown of the pipe, shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of bells. The minimum base width of such trench shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of special structures or connections. Such minimum width shall be exclusive of trench supports and not greater than the width at the top of the trench.

Maximum Width of Trench: Unless otherwise noted on the plans, the maximum



allowable width of trench for pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of bells or collars) plus 24 inches. A trench wider than the outside diameter plus 24 inches may be used without special bedding if the Contractor, at his sole expense, furnishes pipe of the required strength to carry additional trench load. Such modifications shall be submitted to the Inspector and approved in writing. Whenever such maximum allowable width of trench is exceeded, except as provided for in the contract documents, or by written approval of the Engineer, the Contractor, at his sole expense, shall encase the pipe in concrete from trench wall to trench wall, or with other approved pipe bedding material. Any excavation wider than this maximum width or subsequent surface or paving work, will be done at the Contractor's sole expense.

3. When unsuitable bearing materials such as water, silt, muck, trash, debris or rock in ledge, boulder or coarse gravel (particle size larger than 1- 3/4 inch) is encountered at the bearing level, the Contractor shall overexcavate and remove such materials and replace it with a material conforming to the requirements of Paragraph 804.5.2.a, 804.6, or as approved by the Engineer and/or Inspector. The refill material shall be wrapped in filter fabric. The filter fabric shall be nonwoven fabric consisting of only continuous chains of polymeric filaments or yarns of polyester formed into a stable network by needle punching. The fabric shall be inert to commonly encountered chemicals; shall be resistant to mildew, rot, ultraviolet light, insects and rodents; and shall have the following properties:

<u>Property</u>	<u>Test Method</u>	<u>Unit</u>	<u>Minimum Average Roll Value*</u>
Fabric Weight	ASTM D3776	oz/yd <sup>2</sup>	8.0
Grab Strength	ASTM D4632	lb	215
Grab Elongation	ASTM D4632	percent	50
Mullen Burst Strength	ASTM D3786	psi	375
Apparent Opening Size	CW-02215	US Standard Sieve Size	70

\* Minimum average roll value in weakest principal direction.

**804.8 QUALITY CONTROL:**

2. Quality Assurance Testing: All tests and inspections shall be performed by a nationally-accredited, independent testing laboratory provided by the Contractor. The Contractor shall submit the independent testing laboratory to SAWS for approval. The Contractor shall notify the Owner no less than 48 hours prior to performing of any tests and shall provide certified and signed copies of final test reports to the Owner within 1 week of test completion.
3. Quality Control Testing: The Contractor shall be responsible for testing for competent subgrade and compaction in accordance with the appropriate Specification. Due to the clays in the local area, over excavation is anticipated. The Contractor shall provide a

geotechnical engineer registered in the state of Texas on-site to confirm competent subgrade has been reached. Compaction tests shall be performed at a minimum of one location point, randomly selected or as indicated by the SAWS Inspector, per each 12-inch loose lift per 400 linear feet. The SAWS inspector shall determine the depth at which the density test shall be taken. All depths shall be considered for testing without predetermined maximum or minimum.

***Note:** Any failed test shall require the Contractor to remove and replace that layer of backfill to 50 feet from either side from the failed test location. The Contractor will also be required at no cost to SAWS to provide two additional tests at the replaced location where the initial test failed and at one location point, randomly selected or as indicated by the SAWS Inspector.*

***Note:** Sanitary Sewer Laterals will be subject to compaction tests at the discretion of the SAWS Inspector within 400 linear foot segments. Any failed test shall require the Contractor to remove and replace failed backfill. The Contractor will also be required at no additional cost to SAWS to provide one test at the replaced location where the initial tests failed.*

The Contractor shall be responsible for all costs associated with the proctor and density tests, and for providing to SAWS and Consultant signed/certified verification (test result reports) that necessary compaction levels were achieved. These tests shall be performed by a nationally-accredited, independent testing laboratory.

In-place density and moisture content shall be determined by any one or combination of the following methods: The latest provisions of ASTM D2922 (density of soil and soil aggregate in-place by nuclear methods – shallow depth), D1556 (density and unit weight of soil in-place by sand cone method), D2216 (lab density of water content of soil and rock), D3017 (water content of soil and rock – shallow depth in-place by nuclear methods) or most applicable approved equal provisions.

**804.9**      **MEASUREMENT:** Excavation, Trenching and Backfill will not be measured for payment. Over-excavation and re-fill material will be measured per the cubic yard. For purposes of bidding, an over-excavation depth of 2-feet has been assumed from bottom of pipe bedding.

**804.10**      **PAYMENT:** No direct payment shall be made for incidental costs associated with quality control testing, excavation, trenching and backfilling for water mains and sanitary sewers, and all costs in connection therewith shall be included in the applicable contract price or the item to which the work pertains. Payment for over-excavation and re-fill material will be made per the specific bid item for this work. The payment will be based on the actual quantity used based on the field directive from the geotechnical engineer.

All other language in specification 804 remains in full force.

**REVISION TO SAWS STANDARD SPECIFICATION ITEM NO. 830 (BUTTERFLY VALVE AND BOX)**

**830.3 MATERIALS:**

Add the following paragraph to the end of the existing section:

For all valve boxes, the Contractor shall provide V-Lock valve covers as manufactured and supplied by Hydra-Shield Manufacturing. V-Lock shall be compatible with 2-inch square nut operators.

**830.4 CONSTRUCTION:**

Add the following paragraph to the end of the existing section:

Contractor shall install V-Lock type valve lock covers on all valves boxes per manufacturer instructions.

Contractor shall provide four (4) V-lock wrench and pole assemblies, as manufactured and supplied by Hydra-Shield Manufacturing, to SAWS. Additional V-Locks, Item 830.1, and the four wrench and pole assemblies shall be delivered by the Contractor to the SAWS Operation Yard. The Contractor shall unload the V-locks and wrench and pole assemblies and place the materials per the direction of SAWS and per the recommendations of the manufacturer.

**830.5 MEASUREMENT:**

Add the following paragraph to the end of the existing section:

Valve locks will not be measured for units installed as part of this contract, except as noted below.

For the additional lockable valve cans, Item 830.1, these shall be measured by units of each.

**830.6 PAYMENT:**

The paragraph to be revised currently reads as follows:

Payment for butterfly valves, complete with box, will be made at the unit price bid for each assembly of the various types and sizes of valves and valve boxes installed. Payment shall also include: excavation, selected embedment material, anti-corrosion embedment, hauling, and disposition of excavated surplus material, backfill, concrete collar at the valve box (where subjected to vehicular traffic), ductile iron riser pipe, cast iron boot, packing, tar paper, concrete grout, concrete reaction blocking, protective coating material for bolts, nuts, and ferrous surfaces, and polyethylene sleeve. For butterfly valves only, in addition to the above, such payment shall also include mechanical and transition couplings, coated and wrapped steel pipe and nipples required to complete the connection.

The first sentence of the paragraph shall be replaced with the following:

Payment for butterfly valves, complete with box and V-locks, will be made at the unit price bid for each assembly of the various types and sizes of valves and valve boxes installed.

Add the following paragraph to the end of the existing section:

Payment for additional V-locks under this project, Item 830.1, will be made at a unit price after delivery, unloading and acceptance by SAWS. No separate payment shall be made for V-lock wrench and pole assemblies.

All other language in specification 830 remains in full force.

**REVISION TO SAWS STANDARD MATERIAL SPECIFICATION 13. SERVICE SADDLES (100-30)**

**2 GENERAL REQUIREMENTS**

The statements to be modified currently reads as follows:

2.b) Saddle casting or body of asbestos clay, ductile iron, cast iron and C905 pipe in sizes above 16" sixteen-inch may be ductile iron and shall be of the double or triple band stainless steel type of the size and application specified. Material shall be in accordance with ASTM A-536 requirements and fabricated to ANCI/AWWA C800, latest revision. The saddle casting or body shall be coated with a fusion-bonded epoxy or high-density polyethylene. The body shall be NSF 61 approved. The coating shall be NSF 61 or U.L approved to the NSF 61 standard.

The statements are to be replaced with the following:

2.b) Saddle casting or body of asbestos clay, ductile iron, cast iron and C905 pipe in sizes above 16" sixteen-inch shall be 316 stainless steel and shall be of the double or triple band stainless steel type of the size and application specified. Material shall be fabricated in conformance to ANCI/AWWA C800, latest revision. The body shall be NSF 61 approved.

All other language in specification 100-30 remains in full force.

### SHEET INDEX

SHEET NO.	SHEET SEQ.	SHEET TITLE
<b>GENERAL</b>		
G-3000	1	COVER
G-3001	2	DRAWING INDEX, LEGEND & ABBREVIATIONS
G-3002	3	GENERAL NOTES (SHEET 1 OF 2)
G-3003	4	GENERAL NOTES (SHEET 2 OF 2)
G-3004	5	PROJECT CONTROL PLAN (SHEET 1 OF 2)
G-3005	6	PROJECT CONTROL PLAN (SHEET 2 OF 2)
G-3006	7	PROJECT LAYOUT
<b>CIVIL</b>		
C-3401	8	30" PIPELINE PLAN & PROFILE STA 900+00 TO 904+00
C-3402	9	30" PIPELINE PLAN & PROFILE STA 908+00 TO 908+00
C-3403	10	30" PIPELINE PLAN & PROFILE STA 912+00 TO 912+00
C-3404	11	30" PIPELINE PLAN & PROFILE STA 912+00 TO 915+60
C-3405	12	24" PIPELINE PLAN & PROFILE STA 915+60 TO 919+00
C-3406	13	24" PIPELINE PLAN & PROFILE STA 919+00 TO 923+00
C-3407	14	24" PIPELINE PLAN & PROFILE STA 923+00 TO 926+00
C-3408	15	24" PIPELINE PLAN & PROFILE STA 926+00 TO 930+00
C-3409	16	24" PIPELINE PLAN & PROFILE STA 930+00 TO 934+00
C-3410	17	24" PIPELINE PLAN & PROFILE STA 934+00 TO 938+00
C-3411	18	24" PIPELINE PLAN & PROFILE STA 938+00 TO 942+20
C-3412	19	24" PIPELINE PLAN & PROFILE STA 942+20 TO 946+00
C-3413	20	24" PIPELINE PLAN & PROFILE STA 946+00 TO 950+00
C-3414	21	24" PIPELINE PLAN & PROFILE STA 950+00 TO END
C-3415	22	30" PIPELINE PLAN & PROFILE
C-3416	23	8" SEWER REPLACEMENT PLAN AND PROFILE
C-3420	24	CONNECTION DETAILS
C-3430	25	24" PIPELINE ABANDONMENT PLAN
C-3431	26	24" PIPELINE ABANDONMENT PLAN
C-3440	27	STORM WATER POLLUTION PREVENTION PLAN
C-3441	28	STORM WATER POLLUTION PREVENTION PLAN
C-3442	29	STORM WATER POLLUTION PREVENTION PLAN
C-3443	30	STORM WATER POLLUTION PREVENTION PLAN
C-3444	31	STORM WATER POLLUTION PREVENTION NOTES
C-3445	32	STORM WATER POLLUTION PREVENTION DETAILS
C-3446	33	STORM WATER POLLUTION PREVENTION DETAILS
<b>DETAILS</b>		
C-3901	34	PIPE TRENCH DETAILS
C-3902	35	MISCELLANEOUS DETAILS
C-3903	36	MISCELLANEOUS DETAILS
C-3904	37	JACK AND BORE
C-3905	38	TYPICAL CHANNEL SECTION
<b>CATHODIC PROTECTION</b>		
CP-001	39	SEGMENT 5-4 24" PIPELINE CATHODIC PROTECTION ABBREVIATIONS AND TS SCHEDULE
CP-901	40	SEGMENT 5-4 24" PIPELINE CATHODIC PROTECTION TEST STATION DETAILS
CP-902	41	SEGMENT 5-4 30" PIPELINE CATHODIC PROTECTION MISCELLANEOUS DETAILS I
CP-903	42	SEGMENT 5-4 30" PIPELINE CATHODIC PROTECTION MISCELLANEOUS DETAILS II
<b>TRAFFIC CONTROL</b>		
TC-101	43	TRAFFIC CONTROL PLAN NARRATIVE
TC-102	44	PHASE 1 DETOUR 1
TC-103	45	PHASE 2 DETOUR 2
TC-104	46	PHASE 3 DETOUR 3
TC-105	47	PHASE 4 DETOUR 4
TC-106	48	PHASE 5
TC-107	49	PHASE 5 DETOUR 5
TC-108	50	TRAFFIC CONTROL STANDARDS
TC-109	51	TRAFFIC CONTROL STANDARDS
TC-110	52	TRAFFIC CONTROL STANDARDS
TC-111	53	TRAFFIC CONTROL STANDARDS
TC-112	54	TRAFFIC CONTROL STANDARDS
TC-113	55	TRAFFIC CONTROL STANDARDS
TC-114	56	TRAFFIC CONTROL STANDARDS
TC-115	57	TRAFFIC CONTROL STANDARDS
TC-116	58	TRAFFIC CONTROL STANDARDS
TC-117	59	TRAFFIC CONTROL STANDARDS
TC-118	60	TRAFFIC CONTROL STANDARDS
TC-119	61	TRAFFIC CONTROL STANDARDS
TC-120	62	TRAFFIC CONTROL STANDARDS
TC-121	63	TRAFFIC CONTROL STANDARDS
TC-122	64	TRAFFIC CONTROL STANDARDS
TC-123	65	TRAFFIC CONTROL STANDARDS

TREE PRESERVATION		
TP-3400	66	TREE PRESERVATION PLANS
TP-3401	67	TREE PRESERVATION PLANS
TP-3402	68	TREE PRESERVATION PLANS
TP-3403	69	TREE PRESERVATION PLANS
TP-3404	70	TREE PRESERVATION PLANS
TP-3405	71	TREE PRESERVATION PLANS
TP-3406	72	TREE PRESERVATION PLANS
TP-3407	73	TREE PRESERVATION PLANS
TP-3408	74	TREE PRESERVATION PLANS
TP-3409	75	TREE PRESERVATION PLANS
TP-3410	76	TREE PRESERVATION PLANS
TP-3411	77	TREE PRESERVATION PLANS
TP-3412	78	DETAILS
TP-3413	79	DETAILS

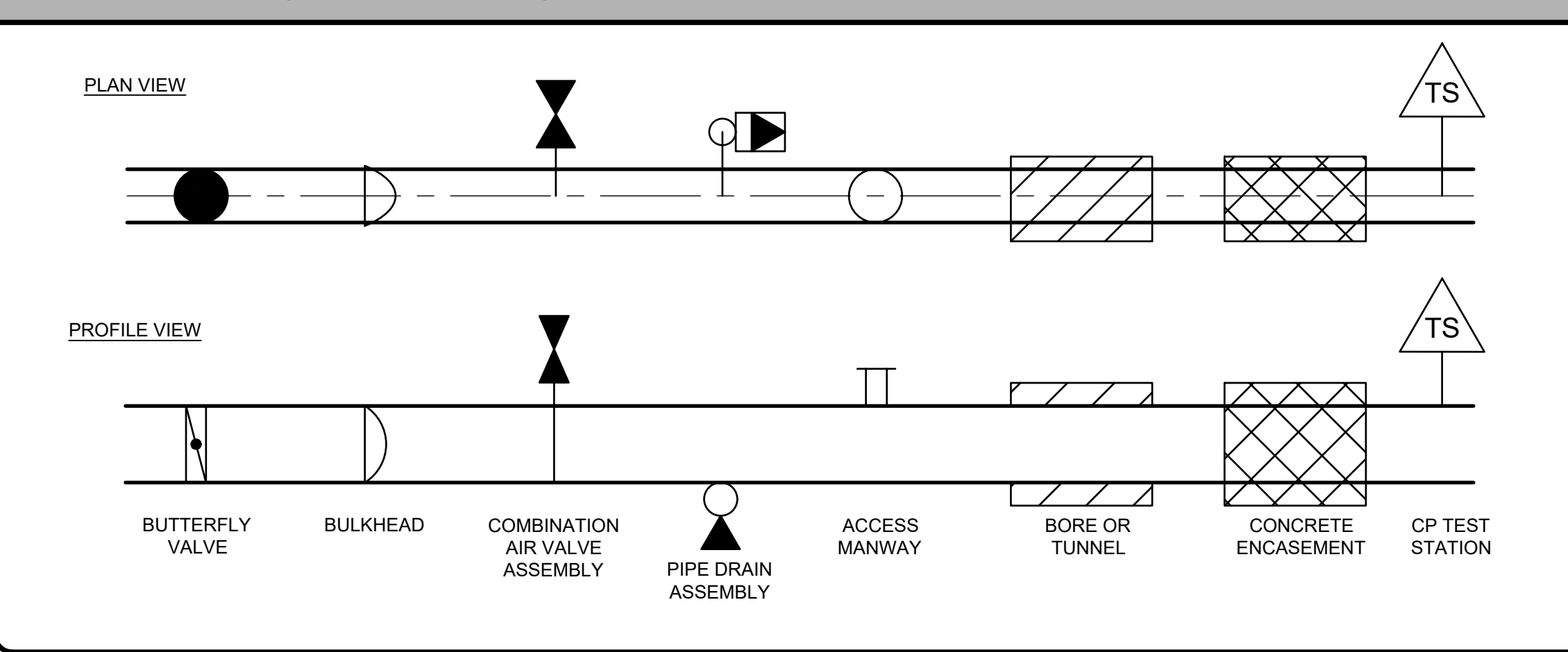
### CIVIL LEGEND

	CENTERLINE
	RIGHT-OF-WAY
	PROPERTY LINE
	CURB & GUTTER
	CONCRETE CURB
	POTABLE WATER
	SEWER
	STORM DRAIN
	GAS
	UNDERGROUND TELEPHONE OR COMMUNICATION
	UNDERGROUND ELECTRICAL
	OVERHEAD ELECTRIC
	FORCE MAIN
	FENCE (WOOD)
	FENCE (STEEL)
	FENCE (CHAINLINK)
	100-YEAR WATER SURFACE LIMITS
	LIMITS OF TEMPORARY CONSTRUCTION EASEMENT
	PERMANENT EASEMENT
	PIPE TO BE ABANDONED
	EXISTING EASEMENT
	PROPOSED PIPE LINE
	REDUCER
	PLUG AND THRUST BLOCK
	VALVE
	STREET LIGHT
	TRAFFIC LIGHT
	FIRE HYDRANT
	WATER METER
	GAS METER
	TRAFFIC SIGNAL BOX
	UTILITY BOX
	POWER POLE
	SIGN
	STORM DRAIN MANHOLE
	STORM DRAIN CATCH BASIN
	SEWER MANHOLE
	SEWER CLEAN OUT
	PALM TREE
	TREE
	GEOTECHNICAL BORING
	GEOTECHNICAL PROBE
	CP TEST STATION
	CP RECTIFIER
	CONTROL POINT
	BENCHMARK
	CURVE DESIGNATION

### LIST OF STANDARD ABBREVIATIONS

<b>A</b> AARV AUTOMATIC AIR RELEASE VALVE	<b>E</b> EA EAST	<b>LS</b> LUMP SUM	<b>S</b> SAN SAN ANTONIO WATER SYSTEM
<b>AB</b> AB ANCHOR BOLT	<b>EB</b> EB ELECTRIC BOX / EAST BOUND	<b>M</b> M METER	<b>SCH</b> SCHEDULE
<b>ABBREV</b> ABBREVIATIONS	<b>EC</b> EC END CURVE	<b>MAINT</b> MAINTAIN OR MAINTENANCE	<b>SD</b> STORM DRAIN
<b>ABV</b> ABOVE	<b>ECC</b> ECC ECCENTRIC	<b>MAN</b> MANUALLY	<b>SE</b> SOUTHEAST
<b>AC</b> ASPHALT CONCRETE	<b>EF</b> EF EACH FACE	<b>MATL</b> MATERIAL	<b>SEQ</b> SEQUENCE
<b>ACP</b> ASPBESTOS CEMENT PIPE	<b>EI</b> EI EASEMENT LINE	<b>MAX</b> MAXIMUM	<b>SECT</b> SECTION
<b>AFS</b> ABOVE FINISHED GRADE	<b>EL / ELEV</b> ELEVATION	<b>ME</b> MITERED END	<b>SF</b> SQUARE FOOT OR FEET
<b>AHD</b> AHEAD	<b>ELAST</b> ELASTOMERIC	<b>MISC</b> MISCELLANEOUS	<b>SIG</b> SIGNAL
<b>AL</b> ALUMINUM	<b>ELEC</b> ELECTRIC	<b>MG</b> MILLION GALLONS	<b>SHT</b> SHEET(ED)(ING)
<b>ALT</b> ALTERNATE	<b>ELBOW</b> ELBOW	<b>MGD</b> MILLION GALLONS PER DAY	<b>SIM</b> SIMILAR
<b>AMT</b> AMOUNT	<b>EMER</b> EMERGENCY	<b>MH</b> MANHOLE	<b>SLV</b> SLEEVE
<b>ANG</b> ANGLE	<b>ENGR</b> ENGINEER	<b>MI</b> MILE(S)	<b>SOLN</b> SOLUTION
<b>APRX</b> APPROXIMATE(LY)	<b>EQUIP</b> EQUIPMENT	<b>MIN</b> MINIMUM, MINUTE(S)	<b>SP</b> SOIL PIPE, SPACE(ING)
<b>APPROX</b> APPROX	<b>EASEMENT</b> EASEMENT	<b>MISC</b> MISCELLANEOUS	<b>SPEC</b> SPECIFICATION
<b>ARCH</b> ARCHITECT(URAL)	<b>EST</b> ESTIMATE(D)	<b>MJ</b> MECHANICAL JOINT	<b>SPRT</b> SUPPORT
<b>ARV</b> ARCHITECT AIR RELEASE AND VACUUM VALVE	<b>ECV</b> END OF VERTICAL CURVE	<b>MON</b> MONUMENT	<b>SQ</b> SQUARE
<b>ASSY</b> ASSEMBLY	<b>EW</b> EACH WAY	<b>MPH</b> MILES PER HOUR	<b>SS</b> SANITARY SEWER/ STAINLESS STEEL
<b>AVE</b> AVENUE	<b>EXC</b> EXCAVATE	<b>MPT</b> MALE PIPE THREAD	<b>SST</b> STAINLESS STEEL
<b>AWWA</b> AMERICAN WATER WORKS ASSOCIATION	<b>EXP</b> EXPANSION	<b>MTD</b> MOUNTED	<b>ST</b> STREET
	<b>EXT</b> EXISTING	<b>MW</b> MANWAY	<b>STA</b> STATION
	<b>EXTN</b> EXTENSION		<b>STD(S)</b> STANDARD
			<b>STL</b> STEEL
			<b>STR</b> STRAIGHT
			<b>STRUC</b> STRUCTURAL
			<b>SURF</b> SURFACE
			<b>SVCE</b> SERVICE
			<b>SW</b> SOUTHWEST
			<b>SYM</b> SYMBOL
			<b>SYMM</b> SYMMETRICAL
			<b>SW</b> SIDEWALK
			<b>SWPPP</b> STORM WATER POLLUTION PREVENTION PLAN
			<b>SY</b> SQUARE YARDS
			<b>T</b> TANGENT
			<b>TAN</b> TO BE ABANDONED
			<b>TBA</b> TEMPORARY BENCH MARK
			<b>TBM</b> TEXAS COMMISSION ENVIRONMENTAL QUALITY
			<b>TCEQ</b> TOTAL DYNAMIC HEAD
			<b>TDH</b> TELEPHONE
			<b>TEL</b> TELEPHONE
			<b>TEMP</b> TEMPORARY
			<b>THD</b> THICK(ED)
			<b>THK</b> THICK(NESS)
			<b>TN</b> TON
			<b>TOL</b> TOLERANCE
			<b>TOT</b> TOTAL
			<b>TP</b> TELEPHONE POLE
			<b>TS</b> TRAFFIC SIGNAL TEST STATION
			<b>TV</b> TELEVISION
			<b>TYP</b> TYPICAL
			<b>T&amp;B</b> TOP AND BOTTOM
			<b>TXDOT</b> TEXAS DEPARTMENT OF TRANSPORTATION
			<b>U</b> UNDERDRAIN
			<b>UE</b> UNDERGROUND ELECTRIC
			<b>UG</b> UNDERGROUND
			<b>ULT</b> ULTIMATE
			<b>UN</b> UNION
			<b>UT/UTIL</b> UTILITY
			<b>UV</b> ULTRAVIOLET
			<b>V</b> VACUUM
			<b>VAC</b> VARIES
			<b>WB</b> WEST BOUND
			<b>WF</b> WIDE FLANGE
			<b>WL</b> WATER LINE
			<b>WLD</b> WELDED
			<b>WM</b> WATER MAIN, WATER METER
			<b>WP</b> WATER PROOF(ING), WORKING POINT
			<b>WPR</b> WORKING PRESSURE
			<b>WS</b> WATER SURFACE
			<b>WSP</b> WELDED STEEL PIPE
			<b>WT</b> WEIGHT
			<b>W/</b> WITH
			<b>W/O</b> WITHOUT
			<b>Y</b> YARD(S)
			<b>YD</b> YEAR(S) YR
			<b>Z</b> ZONE
			<b>Q</b> QUANTITY
			<b>R / RAD</b> RADIUS
			<b>RC</b> REINFORCED CONCRETE
			<b>RCB</b> REINFORCED CONCRETE BOX
			<b>RCP</b> REINFORCED CONCRETE PIPE
			<b>RD</b> ROAD
			<b>RDCR</b> REDUCER
			<b>REBAR</b> REINFORCING STEEL
			<b>REF</b> REFERENCE
			<b>REINF</b> REINFORCE(D)(ING)(MENT)
			<b>REM</b> REMOVE(ABLE)
			<b>REQD</b> REQUIRED
			<b>RJ</b> RESTRAINED JOINT
			<b>RPBP</b> REDUCED PRESSURE BACKFLOW PREVENTER
			<b>RPM</b> REVOLUTIONS PER MINUTE
			<b>RR</b> RAILROAD
			<b>RT</b> RIGHT
			<b>ROW / R/W</b> RIGHT-OF-WAY
			<b>S</b> SOUTH / SLOPE
			<b>SA</b> SAMPLE LINE
			<b>SAN</b> SANITARY

### PIPELINE LEGEND (PROPOSED ITEMS)



**TETRA TECH**  
Texas Registration No. F-3924  
www.tetra-tech.com  
700 N. St. Mary's, Suite 300  
San Antonio, TX 78205  
Ph (210) 298-7900 Fax (210) 226-8487

### ADDENDUM

BY	DATE	DESCRIPTION
MWB	11/02/18	ADDENDUM NO. 2

MARK	DATE	DESCRIPTION
1	11/02/18	ADDENDUM NO. 2

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
DRAWING INDEX & ABBREVIATIONS

11/02/18  
PROJ: 200-09308-18001  
DESIGN: ML  
DRAWN: JB  
CHKD: MB  
**G-3001**

**GENERAL NOTES CON'T**

**TRENCHLESS**

55. CONTRACTOR SHALL SUBMIT BORING/TUNNELING PLAN TO INSPECTOR AND ENGINEER FOR REVIEW AND APPROVAL. BORE/RECEIVING SHAFT LOCATIONS AND DIMENSIONS ARE FOR INFORMATIONAL PURPOSES ONLY UNLESS OTHERWISE STATED ON THE PLANS. (N.S.P.I.) \*

**SUPPLEMENTARY**

- 56. NO EXTRA-PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED FROM THE ENGINEER AND INSPECTOR WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
- 57. THE MAXIMUM ALLOWED LENGTH OF OPEN TRENCH EXCAVATION IN ADVANCE OF THE UTILITY SHALL BE 400 FEET PER COSA ROW ORDINANCE SEC 29-143, NO TRENCH SHALL BE OPENED IN ANY STREET MORE THAN 400 FEET WITHOUT PRIOR WRITTEN CONSENT OF THE DIRECTOR. THIS LENGTH INCLUDES OPEN EXCAVATION, PIPE LAYING, AND APPURTENANT CONSTRUCTION AND BACKFILL WHICH HAS NOT BEEN TEMPORARILY RESURFACED.
- 58. CONTRACTOR MUST CALL FOR BACKFILL INSPECTIONS.
- 59. DENSITY REPORTS MUST BE SUBMITTED TO THE SAWS INSPECTOR WITHIN 24 HOURS OF TESTING.

**FLOODPLAIN / STORM WATER**

- 60. THE CONTRACTOR SHALL COMPLY WITH THE APPROVED COSA FLOODPLAIN DEVELOPMENT PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.
- 61. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF WORK, MATERIAL, AND EQUIPMENT PRIOR TO RAIN EVENTS. THE LOCATION OF THE PROJECT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN AND FLOODWAY AREAS OF THE UPPER SAN ANTONIO RIVER. THE PROJECT SITE IS SUSCEPTIBLE TO QUICKLY RISING WATER IN RESPONSE TO RAINFALL EVENTS. NO MATERIAL SHALL BE STORED IN THE 100 - YEAR FLOODPLAIN LONGER THAN THE END OF THE SHIFT IN WHICH IT WAS GENERATED. CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTING TRENCHES, PITS, MATERIALS, AND EQUIPMENT FROM DAMAGE/INUNDATION OF FLOOD WATERS. ROADWAYS TO THE PROJECT SITE CAN BE EXPECTED TO BE BLOCKED OFF AS LOW WATER CROSSING DURING STORM EVENTS AND FOR EXTENDED PERIODS THEREAFTER. CONTRACTOR SHALL COORDINATE WITH SAWS TO DETERMINE WHETHER CONTRACTOR MAY RETURN TO WORK ONSITE AFTER RAIN EVENT.
- 62. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL REQUIRED STORM WATER PERMITS, FEES, AND APPROVALS. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PERMITS REQUIRED FOR CONSTRUCTION IN DRAINAGE EASEMENTS, RIGHT-OF-WAYS, AND FLOODPLAINS.
- 63. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AND SAWS AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET RIGHT-OF-WAY NOT INDICATED ON THE CONSTRUCTION PLANS.
- 64. CONSTRUCTION SPOILS WILL NOT BE ALLOWED TO BE DEPOSITED ANYWHERE WITHIN A DRAINAGE EASEMENT, RIGHT-OF-WAY OR FLOODPLAIN WITHIN THE LIMITS OF THE PROJECT AND SHALL BE DISPOSED OFFSITE IN COMPLIANCE WITH CURRENT APPLICABLE REGULATIONS.
- 65. NO STRUCTURE, FENCES, WALLS, LANDSCAPING, OR OTHER OBSTRUCTIONS THAT IMPEDE DRAINAGE SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THE CONSTRUCTION DOCUMENTS.
- 66. UPON COMPLETION OF TRENCHING, THE AREA WILL BE BACKFILLED AND COMPACTED TO ITS ORIGINAL CONDITION. TRENCHES/BORE PITS TO BE OPEN AND UNATTENDED LONGER THAN 24 HOURS SHALL BE PROTECTED TO WITHSTAND ALL HYDRODYNAMIC AND HYDROSTATIC FORCES AND PREVENT DOWNSTREAM IMPACTS. TRENCHES/BORE PITS TO BE OPEN LONGER THAN 30 DAYS AFTER STARTING EXCAVATION SHALL BE BACKFILLED WITH A SEMI-PERMANENT REPAIR BACKFILL.
- 67. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING DRAINAGE FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING DRAINAGE SYSTEMS, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT HIS EXPENSE. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT **210-207-8052** AS SOON AS CONFLICT WITH UTILITIES ARE ENCOUNTERED OR ANY DRAINAGE SYSTEM IS DAMAGED DURING CONSTRUCTION.

**TRAFFIC CONTROL**

- 68. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ARE TO BE GENERALLY LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES. DURING THE PROGRESS OF WORK, THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
- 69. CONTRACTOR TO ESTABLISH AND MAINTAIN TRAFFIC BARRICADING AND CONTROL DEVICES ALONG THE ALIGNMENT IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN.

**ROAD NOTES**

- 70. PRIOR TO BEGINNING ANY TRENCHING WITHIN ROADWAY PAVEMENT, CONTRACTOR IS EXPECTED TO PERFORM SURVEY CROSS SECTIONS OF EXISTING PAVED SURFACE AT 50-FT INTERVALS AND POINT OF CURVATURE. EACH CROSS SECTION SHOULD CONTAIN A SURVEYED ELEVATION AT THE EDGE OF PAVEMENT ON EACH SIDE OF THE ROAD, AND AT THE CENTERLINE OF THE ROAD. THE CONTRACTOR SHALL USE THESE ELEVATIONS TO CONSTRUCT THIS TYPICAL SECTION AT PRIOR ROAD ELEVATIONS (NSPI).
- 71. ROAD STRIPING SHALL BE INSTALLED TO MEET CURRENT COSA STANDARDS. ALL STRIPING SHALL BE SUBSIDIARY TO HOT MIX ASPHALTIC PAVEMENT LINE ITEM. STRIPING SHALL BE IN ACCORDANCE WITH THE LATEST LOCAL AND STATE REQUIREMENTS.
- 72. CONTRACTOR SHALL SALVAGE RUBBER SPEED BUMP MATS OR REPLACE THEM AS REQUIRED PER COSA. CONTRACTOR SHALL RE-INSTALL MATS AT SAME LOCATION AFTER PAVEMENT INSTALLATION (NSPI)

**GENERAL NOTES CON'T**

**ROAD NOTES CON'T**

73. THE CONTRACTOR SHALL CONTACT THE FOLLOWING UTILITY AGENCIES PRIOR TO CONSTRUCTION TO REQUEST PIPE LOCATION MARKERS AT NOT COST TO SAWS. ALLOW UP TO 7 BUSINESS DAYS FROM DATE OF REQUEST FOR LOCATES AND PIPE LOCATION MARKERS FOR SAWS FACILITIES.

SAN ANTONIO WATER SYSTEM	210-233-3589
SAWS UTILITY LOCATES	HTTP://WWW.SAWS.ORG/SERVICE/LOCATES/
COSA STORMWATER ENGINEERING	210-207-8052
COSA SIDEWALK & TRENCHING DIVISION	210-871-3240
COSA TRAFFIC SIGNAL OPERATIONS	210-207-7720
TEXAS STATE WIDE ONE CALL LOCATOR 811	1-800-545-6005
CPS ENERGY	210-978-3500
TIME WARNER CABLE	210-352-4672
VALERO ENERGY CO.	1-800-545-6005
AT&T	1-800-344-8377

**CAUTION OVERHEAD UTILITIES**

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER " HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER. FEDERAL LAW STIPULATES IF WORKING INSIDE A 20 FT. CLEARANCE ZONE FROM HIGH-VOLTAGE OF THE ENERGIZED LINES AFFECTED. A SPECIFIC WORK PLAN MUST BE DEVELOPED BY THE OPERATOR TO ENSURE NO CLEARANCE REQUIREMENTS (REFER TO TABLE A BELOW)

**TABLE A**

UP TO 50kV - 10 FT.
OVER 50kV TO 200kV - 15 FT.
OVER 200kV TO 350kV - 20 FT.
OVER 350kV TO 500kV - 25 FT.
OVER 500kV TO 750kV - 30 FT.

**CAUTION UNDERGROUND UTILITIES**

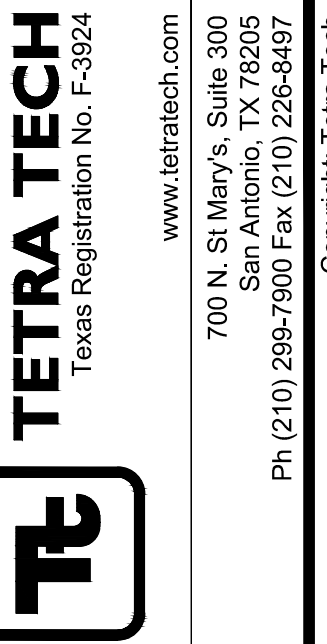
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING GAS MAINS AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS EXISTING GAS MAIN COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATED ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, TELEPHONE, AND FIBER OPTICAL LINES, SITE PRIMARY ELECTRICAL DUCT BANKS, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

**ESTIMATED QUANTITIES**

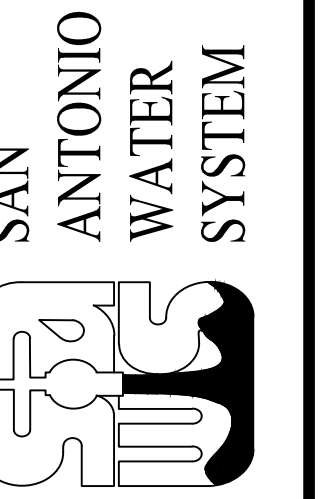
LINE NO.	SPEC NO.	DESCRIPTION	UNIT	QTY
1	100	MOBILIZATION AND DEMOBILIZATION	LS	1
2	101	PREPARING RIGHT-OF-WAY	LS	1
3	COSA 103.1	REMOVE CONCRETE CURB	LF	170
4	COSA 202.1	PRIME COAT	GAL	1190
5	COSA 203.1	TACK COAT	GAL	2260
6	COSA 205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	6310
7	COSA 205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	3570
8	COSA 206.1	ASPHALT TREATED BASE (6" COMP. DEPTH)	SY	3020
9	COSA 208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	6310
10	COSA 413.1	FLOWABLE FILL	CY	3810
11	COSA 500.1	CONCRETE CURB	LF	170
12	COSA 520	HYDROSEEDING	SY	4500
13	COSA 530.1	BARRICADES, SIGNS, AND TRAFFIC HANDLING	LS	1
14	COSA 540	TEMPORARY EROSION, SEDIMENTATION, AND WATER POLLUTION PREVENTION AND CONTROL	LS	1
15	550	TRENCH EXCAVATION SAFETY PROTECTION	LF	5321
16	15080	PIPE WATER MAIN (30" DIPS, DR-11 HDPE)	LF	1611
17	814	PIPE WATER MAIN (24" DIP)	LF	3425
18	814	PIPE WATER MAIN (30" DIP)	LF	219
19	856	BORE AND JACK	LF	461
20	856	CARRIER PIPE (24" DIA.) FOR JACKING, BORING, OR TUNNELING	LF	461
21	856	CASING (42" DIA.)	LF	461
22	834.1	FIRE HYDRANT WITH 6" VALVE AND BOX	EA	1
23	836	GREY IRON AND DUCTILE IRON FITTINGS	TN	18
24	840.1	WATER TIE-IN	EA	5
25	841	HYDROSTATIC TESTING	LS	1
26	846	2" COMBINATION VACUUM AND AIR RELEASE VALVE ASSEMBLY	EA	7
27	830	BUTTERFLY VALVE AND BOX (24")	EA	3
28	830	BUTTERFLY VALVE AND BOX (30")	EA	2
29	862	ABANDONMENT OF WATER MAINS 12" AND LARGER	LF	2145
30	16640	CATHODIC PROTECTION MONITORING	LS	1
31	COSA 515.1	6" TOPSPOIL	CY	150
32	COSA 505.1	CONCRETE RIPRAP (5 INCHES THICK)	SY	156
33	COSA 103.4	REMOVE MISCELLANEOUS CONCRETE	SF	1400
34	100A	INTERMEDIATE DEMOBILIZATION AND REMOBILIZATION	EA	1
35	2480	LANDSCAPE PLANTING	LS	1
36	3000	REMOVAL, TRANSPORTATION, AND DISPOSAL OF ASBESTOS CEMENT PIPE	LF	16
37	858	CONCRETE ENCASUREMENT	CY	53
38	848	8" SDR 26 PVC SEWER PIPE	LF	66
39	864-S1	BYPASS PUMPING	LS	1
40	910.1	INTERIOR COATING OF EXISTING MANHOLES	VFT	18
41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	1890
42	851	EXISTING MANHOLE ADJUSTMENT (REPLACE RING AND COVER)	EA	2
43	830.1	VALVE LOCK COVERS (V-LOCK)	EA	45
44	N/A	GENERAL ALLOWANCE	LS	1

ITEM NO. 846.1			
COMBINATION AIR VALVE ASSEMBLY SCHEDULE			
NUMBER	SIZE	LOCATION	SHEET
1	2"	906+42	C-3402
2	2"	915+90	C-3405
3	2"	923+38	C-3407
4	2"	925+00	C-3407
5	2"	931+95	C-3409
6	2"	940+77	C-3411

ITEM NO. 830			
BUTTERFLY VALVE SCHEDULE			
NUMBER	SIZE	LOCATION	SHEET
1	24"	916+00	C-3405
2	24"	921+19	C-3406
3	24"	934+40	C-3410

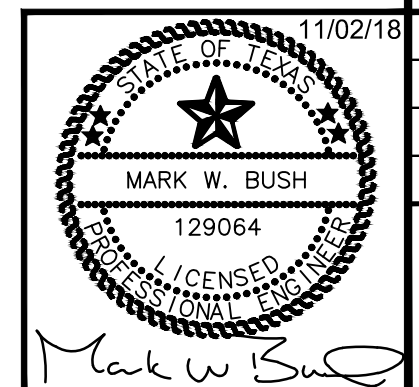


**ADDENDUM**



MARK	DATE	DESCRIPTION	BY
1	11/02/18	ADDENDUM NO. 2	MWB

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
**GENERAL NOTES**  
(SHEET 2 OF 2)

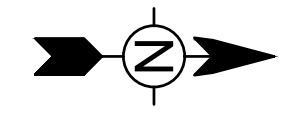
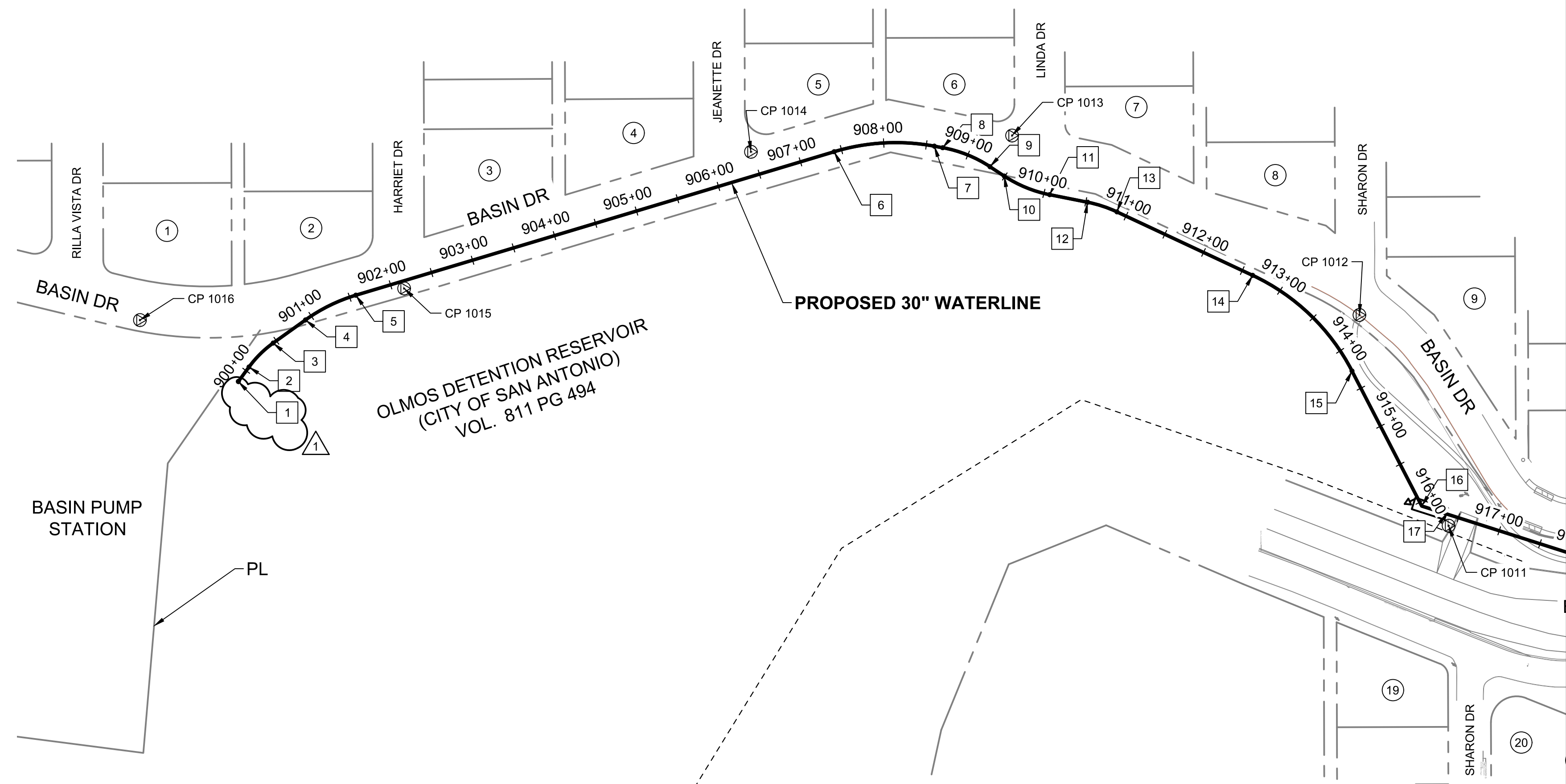


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CHKD:	MB

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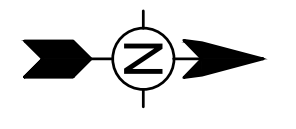
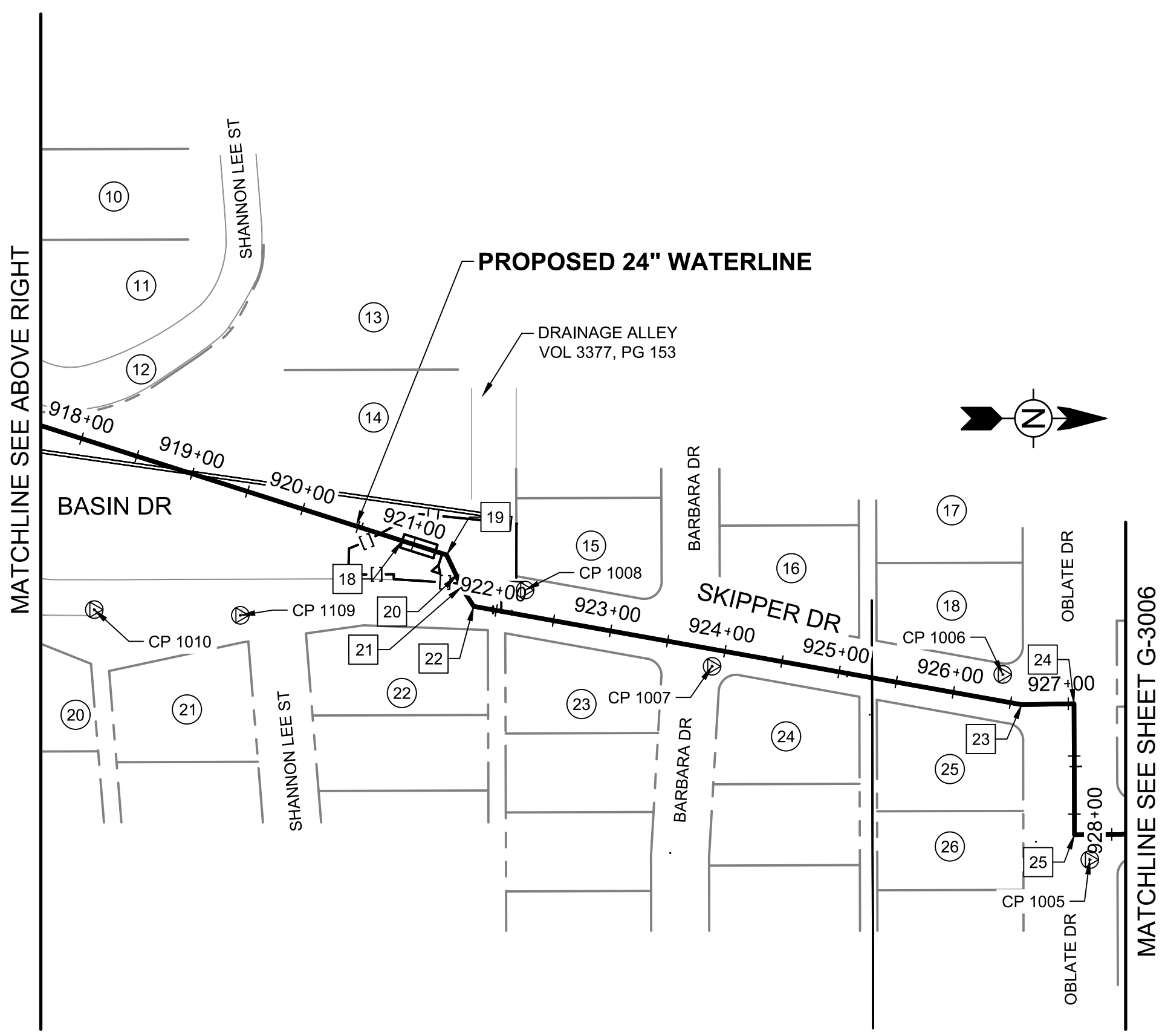
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HORIZONTAL CONTROL TABLE				
PT#	STA.	DESCRIPTION	NORTHING	EASTING
1	899+84±	BEGIN PIPELINE	13728834.38	2131267.34
2	900+05.42	BEGIN CURVE	13728846.77	2131250.36
3	900+45.34	END CURVE	13728875.01	2131222.38
4	900+91.71	BEGIN CURVE	13728912.72	2131195.40
5	901+57.62	END CURVE	13728971.62	2131166.49
6	907+41.17	BEGIN CURVE	13729530.55	2130998.79
7	908+59.37	END CURVE	13729647.48	2130992.35
8	908+69.31	BEGIN CURVE	13729657.25	2130994.14
9	909+29.27	END CURVE	13729712.54	2131016.30
10	909+49.26	BEGIN CURVE	13729729.25	2131027.27
11	910+06.93	END CURVE	13729782.28	2131049.00
12	910+52.07	BEGIN CURVE	13729826.56	2131057.82
13	910+88.27	ANGLE POINT	13729860.86	2131069.09
14	912+63.36	BEGIN CURVE	13730019.43	2131143.34
15	914+27.41	END CURVE	13730135.55	2131255.04
16	916+05.00	ANGLE POINT	13730217.03	2131412.83
17	916+35.00	BEGIN J/B	13730245.61	2131421.95
18	920+90.01	END J/B	13730679.11	2131560.20
19	921+30.11	ANGLE POINT	13730717.31	2131572.38
20	921+50.11	PULLED JOINT	13730725.86	2131590.46
21	921+60.59	ANGLE POINT	13730730.01	2131600.09
22	921+80.19	ANGLE POINT	13731212.79	2131701.23
23	926+59.88	ANGLE POINT	13730740.64	2131616.56
24	927+04.91	ANGLE POINT	13731257.82	2131700.39
25	928+17.83	ANGLE POINT	13731258.18	2131813.31

MATCHLINE SEE BELOW LEFT



PROPERTY INFORMATION					
#	OWNER	ADDRESS	NCB	BLOCK	LOT
1	EDGAR TRUST	411 RILLA VISTA DR	10450	26	12
2	SHARANDAL LTD	330 HARRIET DR	10450	26	19
3	DOUGLAS GLYNN OLDE	331 HARRIET DR	10451	27	7
4	SUE FRANCES IVANS	334 JEANETTE DR	10451	27	14
5	LARRY W & MARTHA K HAEFLING	335 JEANETTE DR	10452	28	14
6	PAMELA TSCHIRHART	334 LINDA DR	10452	28	1
7	CALLAWAY & COMPANY	339 LINDA DR	10453	29	10
8	JUSTIN GRAY	342 SHARON DR	10453	29	1
9	MICHAEL J & DIANE R PRODGER	351 SHARON DR	12013	5	16
10	JACOB GARZA	354 SHANNON LEE ST	12013	5	13
11	CITY OF SAN ANTONIO	358 SHANNON LEE ST	12013	5	14
12	CITY OF SAN ANTONIO	362 SHANNON LEE ST	12013	5	15
13	CITY OF SAN ANTONIO	363 SHANNON LEE ST	12011	3	S
14	CITY OF SAN ANTONIO	369 SHANNON LEE ST	12011	3	S
15	JAMES A & GRACE CODD	274 BARBARA DR	12011	3	17
16	IRIS C VERA	275 BARBARA DR	12009	1	36
17	ENEDINA CARDONA	1230 OBLATE DR	12009	1	17
18	AGARITA INVESTMENTS LLC	1234 OBLATE DR	12009	1	18
19	PEDRO H ARTEAGA	402 SHARON DR	12015	7	1
20	JOSHUA STUTTS & MICHAEL L THOMPSON	407 SHARON DR	12014	6	20
21	RAYMOND VALDEZ GARCIA	406 SHANNON LEE ST	12014	6	1
22	KIMBERLY SALAZAR	403 SHANNON LEE ST	12012	4	20
23	DENNIS M DONELSON	302 BARBARA DR	12012	4	1
24	MONICA & JESSICA GARCIA	307 BARBARA DR	12010	2	19
25	KIRK BATES & CINDY REYNOLDS	1238 OBLATE DR	12010	2	1
26	JAVIER MUNOZ	1302 OBLATE DR	12010	2	2

CONTROL POINT TABLE				
PT#	DESCRIPTION	NORTHING	EASTING	ELEV
CP 1005	1005	13731271.39	2131834.73	760.03
CP 1006	1006	13731196.42	2131675.24	758.68
CP 1007	1007	13730945.99	2131668.26	749.38
CP 1008	1008	13730784.89	2131602.62	740.20
CP 1010	1010	13730413.78	2131619.44	729.71
CP 1011	1011	13730248.34	2131435.82	728.98
CP 1012	1012	13730144.20	2131189.52	729.15
CP 1013	1013	13729738.38	2130979.91	728.82
CP 1014	1014	13729433.29	2130998.87	729.01
CP 1015	1015	13729028.04	2131158.56	726.00
CP 1016	1016	13728719.33	2131195.53	N/A

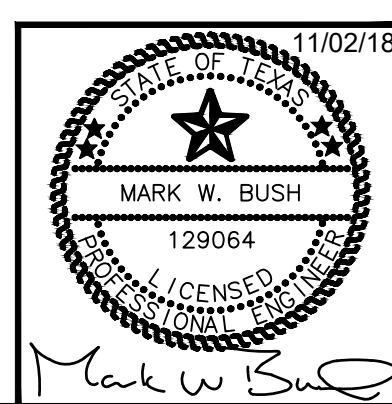
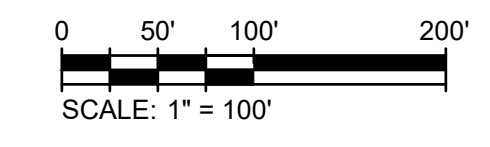
BASIS OF BEARING

COORDINATES ARE BASED ON THE STATE PLANE COORDINATE SYSTEM, TEXAS SOUTH CENTRAL ZONE (4204) NAD83. COORDINATES PROVIDED ARE NAD83 (2011). COORDINATES HAVE BEEN ADJUSTED TO SURFACE VALUES BY APPLYING A SCALE FACTOR ADJUSTMENT OF 1.0001635 AT N: 13728375.93612, E: 2131194.12935 GRID TO SURFACE ADJUSTMENT.

BEARINGS ARE BASED ON TEXAS STATE PLAN COORDINATES SOUTH CENTRAL ZONE (83)

BENCHMARK

ELEVATIONS ARE BASED ON NAVD 88 (GEOID 12 B) DERIVED FROM GPS OBSERVATIONS.



**TETRA TECH**  
Texas Registration No. F-3924  
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Ph (210) 299-7900 Fax (210) 226-9497  
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ADDENDUM

**SAN ANTONIO WATER SYSTEM**

MARK	DATE	DESCRIPTION
1	11/02/18	ADDENDUM NO. 2

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
PROJECT CONTROL PLAN  
(SHEET 1 OF 2)

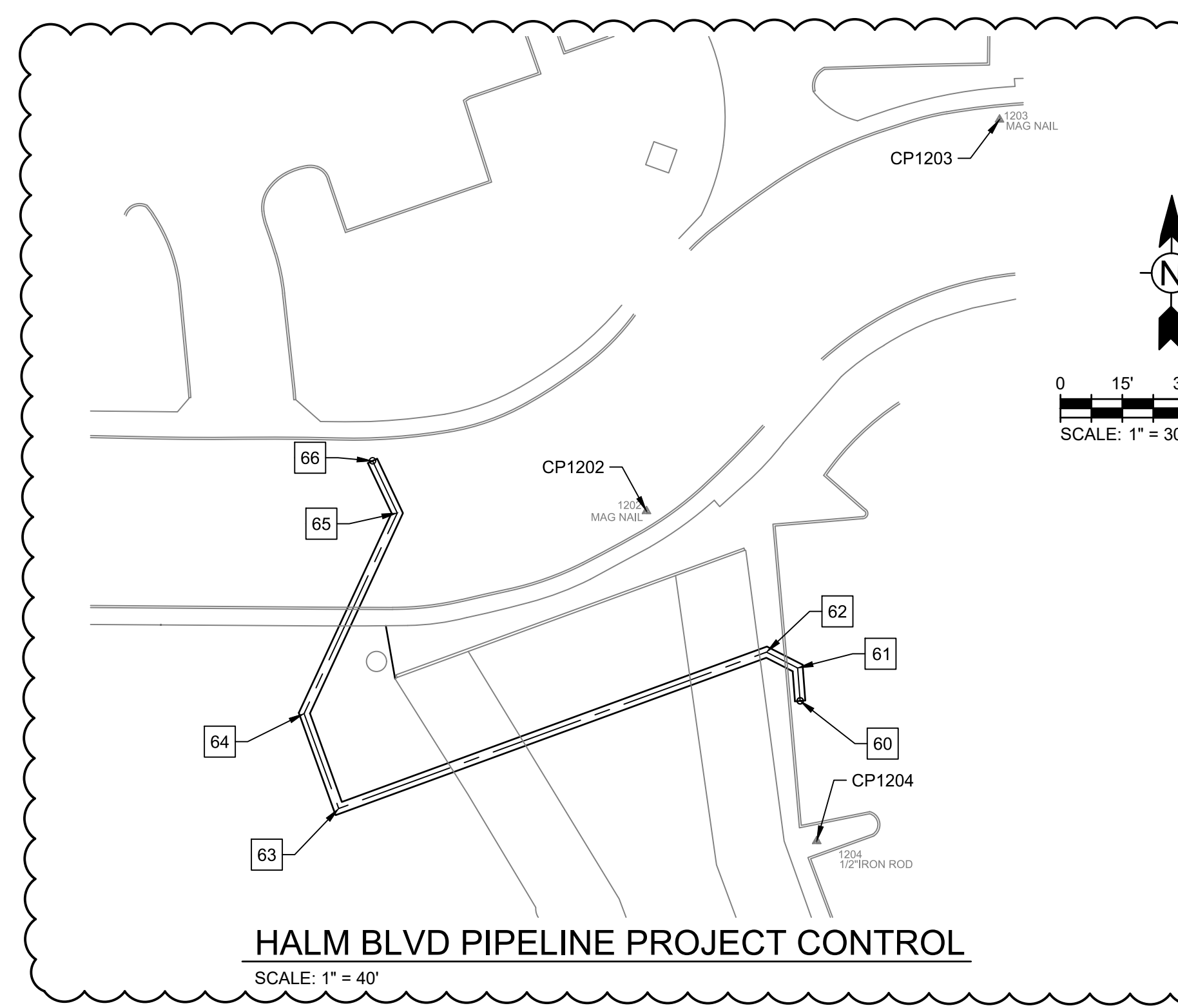
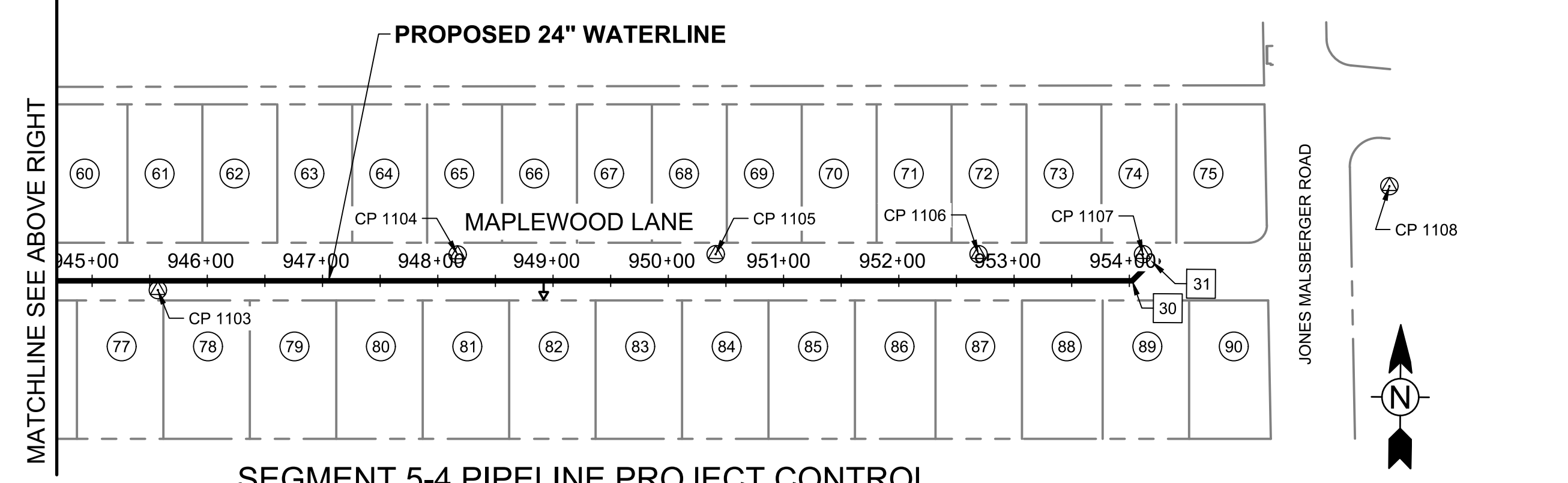
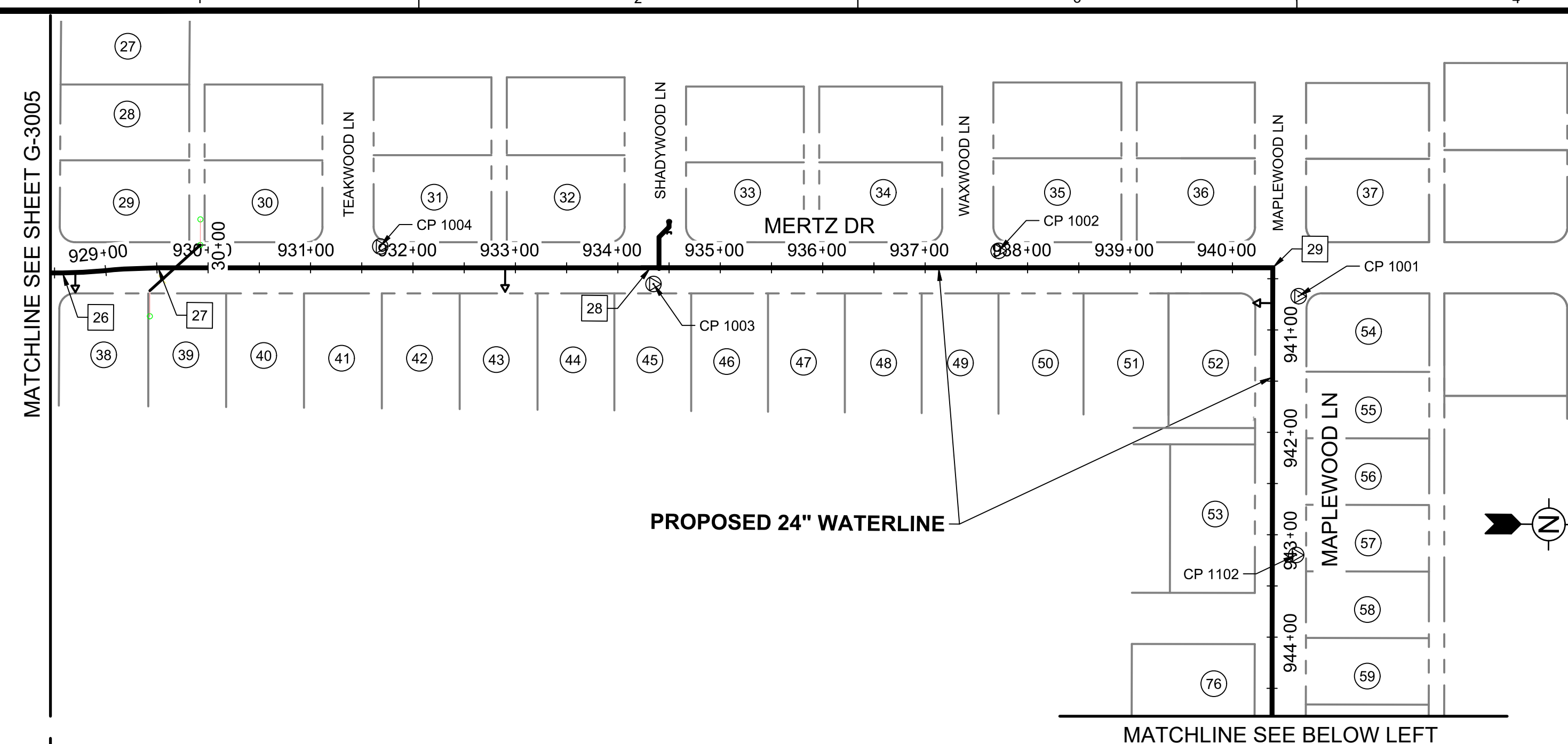
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CHKD:	MB

**G-3004**

Bar measures 1 inch, otherwise drawing is not to scale



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### HORIZONTAL CONTROL TABLE

PT#	STA.	DESCRIPTION	NORTHING	EASTING
26	928+70±	START PULLED JOINTS	13731298.17	2131812.96
27	929+51±	END PULLED JOINTS	13731391.32	2131807.15
28	940+39.35	ANGLE POINT	13732479.44	2131797.75
29	954+02.47	ANGLE POINT	13732488.95	2133160.84
30	954+26.38	ANGLE POINT	13732505.98	2133177.63
31	954+31±	END PIPELINE	13732506.01	2133182.63

### CONTROL POINT TABLE

PT#	DESCRIPTION	NORTHING	EASTING	ELEV
CP 1001	1001	13732504.90	2131825.28	773.29
CP 1002	1002	13732211.66	2131783.46	771.87
CP 1003	1003	13731875.03	2131818.82	770.58
CP 1004	1004	13731607.98	2131784.43	769.81
CP 1102	1102	13732504.67	2132077.96	769.03
CP 1103	1103	13732474.95	2132315.51	765.13
CP 1104	1104	13732507.71	2132575.36	759.24
CP 1105	1105	13732509.49	2132799.30	754.11
CP 1106	1106	13732511.09	2133027.34	750.40
CP 1107	1107	13732512.08	2133170.01	747.93
CP 1108	1108	13732572.48	2133383.41	N/A

### HORIZONTAL CONTROL TABLE

PT#	STA.	DESCRIPTION	NORTHING	EASTING
60	10+00.00	BEGIN PIPELINE	13738720.47	2133664.57
61	10+08.00	ANGLE POINT	13738728.45	2133663.97
62	10+16.47	ANGLE POINT	13738732.29	2133656.42
63	11+26.90	ANGLE POINT	13738694.38	2133552.71
64	11+51.39	ANGLE POINT	13738717.39	2133544.30
65	12+05.00	ANGLE POINT	13738766.01	2133566.89
66	12+18.99	END PIPELINE	13738778.66	2133560.89

### CONTROL POINT TABLE

PT#	DESCRIPTION	NORTHING	EASTING	ELEV
CP 1202	1202	13738766.46	2133627.31	749.47
CP 1203	1203	13738861.37	2133712.91	749.53
CP 1204	1204	13738686.48	2133668.59	750.72

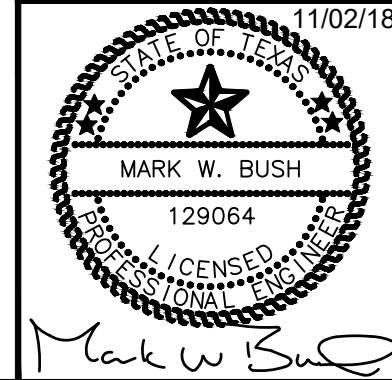
### PROPERTY INFORMATION

#	OWNER	ADDRESS	NCB	BLOCK	LOT
27	ROBERT J & JO C MENCHACA	1231 OBLATE DR	11938	7	19
28	JOSEFINA & JUAN M LUEVANO	1236 OBLATE DR	11938	7	20
29	DAVID & ANGEL PECHE	1239 OBLATE DR	11938	7	21
30	CRISTINA M RAMIREZ & LAVONNA A DIETERING	146 TEAKWOOD LN	11938	7	11
31	BURTON L III CHASE & DIANA L PRIBYLA-CHASE	147 TEAKWOOD LN	11940	9	25
32	LEROY R VOGEL	458 SHADYWOOD LN	11940	9	13
33	MICHAEL & ROBYN ASCHBACHER	463 SHADYWOOD LN	11941	10	32
34	MAYME BURKHALTER	162 WAXWOOD LN	11941	10	16
35	JAVIER & ARCHER PAREDas	163 WAXWOOD LN	11942	11	32
36	OSCAR & KRISTINA GALVES	386 MAPLEWOOD LN	11942	11	16
37	EDUARDO ESTRADA	379 MAPLEWOOD LN	12070	13	44
38	ROSALINDA M GARCIA	7602 MERTZ DR	11943	12	1
39	DOMINY-GRAFE HOLDINGS LLC	7606 MERTZ DR	11943	12	2
40	MARY AGNES DIMOTISIS	7610 MERTZ DR	11943	12	3
41	BEATRICE A QUINTERO	7614 MERTZ DR	11943	12	4
42	ENRIQUETA ROMERO	7618 MERTZ DR	11943	12	5
43	DANIEL & RUSSELL GREENE	7622 MERTZ DR	11943	12	6
44	MARY ALICE FRANCO	7626 MERTZ DR	11943	12	7
45	MARIA R HERNANDEZ	7630 MERTZ DR	11943	12	8
46	JOYCE T CODD	7702 MERTZ DR	11943	12	9
47	IRENE A RENDON	7706 MERTZ DR	11943	12	10
48	GUILLERMO & JANIE T GUERRA	7710 MERTZ DR	11943	12	11
49	JUAN A & ROSA M GRIMALDO	7714 MERTZ DR	11943	12	12
50	TIFFANY MOREY	7802 MERTZ DR	11943	12	17
51	JULIA MORALES	7806 MERTZ DR	11943	12	18
52	DOLORES MILLER	7810 MERTZ DR	11943	12	19
53	LETICIA BARRIENTOS	411 TANGLEWOOD DR	11944	1	14
54	GILBERT BARAJAS	403 MAPLEWOOD LN	12072	15	37
55	ALFREDO & DAISY ESTRADA	407 MAPLEWOOD LN	12072	15	38
56	ALFRED & LYDIA CANTU	411 MAPLEWOOD LN	12072	15	39
57	MARIA ARMILLO	415 MAPLEWOOD LN	12072	15	40
58	RAYMOND & EMMA	419 MAPLEWOOD LN	12072	15	41
59	CHARLES & MARGARITA LOPEZ	423 MAPLEWOOD LN	12072	15	42
60	JUAN SOSA	427 MAPLEWOOD LN	12072	15	43
61	JANIE LOZANO	431 MAPLEWOOD LN	12072	15	44
62	CRISTELLA RAMIREZ	435 MAPLEWOOD LN	12072	15	45
63	ANTHONY GONZALES	439 MAPLEWOOD LN	12072	15	46
64	MERCEDES HARO	443 MAPLEWOOD LN	12072	15	47
65	GONZALO REYNA	447 MAPLEWOOD LN	12072	15	48
66	RAMON & GUADALUPE AGUILAR	451 MAPLEWOOD LN	12072	15	49
67	ERNESTO & BRISEIDA CARDOZA	455 MAPLEWOOD LN	12072	15	50
68	WILLIAM GREGORY	459 MAPLEWOOD LN	12072	15	51
69	JUANITA GUERRERO	463 MAPLEWOOD LN	12072	15	52
70	AIDA MARTINEZ	467 MAPLEWOOD LN	12072	15	53
71	LILLY FROST	471 MAPLEWOOD LN	12072	15	54
72	AT ACQUISITIONS LLC	475 MAPLEWOOD LN	12072	15	55
73	JOSUE ALAMARAZ	479 MAPLEWOOD LN	12072	15	56
74	GREGORIO GLORIA	483 MAPLEWOOD LN	12072	15	57
75	EZRA DIAZ	487 MAPLEWOOD LN	12072	15	58
76	ANN JUDITH LANKFORD	422 MAPLEWOOD LN	11945	2	1
77	DAVID BUGENHAGEN	426 MAPLEWOOD LN	11945	2	2
78	HOMER GALINDO	430 MAPLEWOOD LN	11945	2	3
79	YOLANDA ORTIZ	434 MAPLEWOOD LN	11945	2	4
80	ROBERT & CANDELARIA MARTINEZ	438 MAPLEWOOD LN	11945	2	5
81	DAVID & ISABEL HERNANDEZ	442 MAPLEWOOD LN	11945	2	6
82	BEATRIZ GARCIA	446 MAPLEWOOD LN	11945	2	7
83	WILLIAM RICHARD ZANDER	450 MAPLEWOOD LN	11945	2	8
84	LINDA ROSSETT	454 MAPLEWOOD LN	11945	2	9
85	RITA TURNER	458 MAPLEWOOD LN	11945	2	10
86	REED JAMIESON TAYLOR	462 MAPLEWOOD LN	11945	2	11
87	EMMA & RAMON ALONSO	466 MAPLEWOOD LN	11945	2	12
88	ANDREW OBAYA	470 MAPLEWOOD LN	11945	2	13
89	ROBERT FRAGOSO	474 MAPLEWOOD LN	11945	2	14
90	MARIA & THOMAS SANCHES	478 MAPLEWOOD LN	11945	2	15

**BASIS OF BEARING**  
 COORDINATES ARE BASED ON THE STATE PLANE COORDINATE SYSTEM, TEXAS SOUTH CENTRAL ZONE (4204) NAD83. COORDINATES PROVIDED ARE NAD83 (2011). COORDINATES HAVE BEEN ADJUSTED TO SURFACE VALUES BY APPLYING A SCALE FACTOR ADJUSTMENT OF 1.0001635 AT N: 13728375.93612, E: 2131194.12935 GRID TO SURFACE ADJUSTMENT.

BEARINGS ARE BASED ON TEXAS STATE PLAN COORDINATES SOUTH CENTRAL ZONE (83)

**BENCHMARK**  
 ELEVATIONS ARE BASED ON NAVD 88 (GEOID 12 B) DERIVED FROM GPS OBSERVATIONS.



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ADDENDUM

SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION
1	11/02/18	ADDENDUM NO. 2

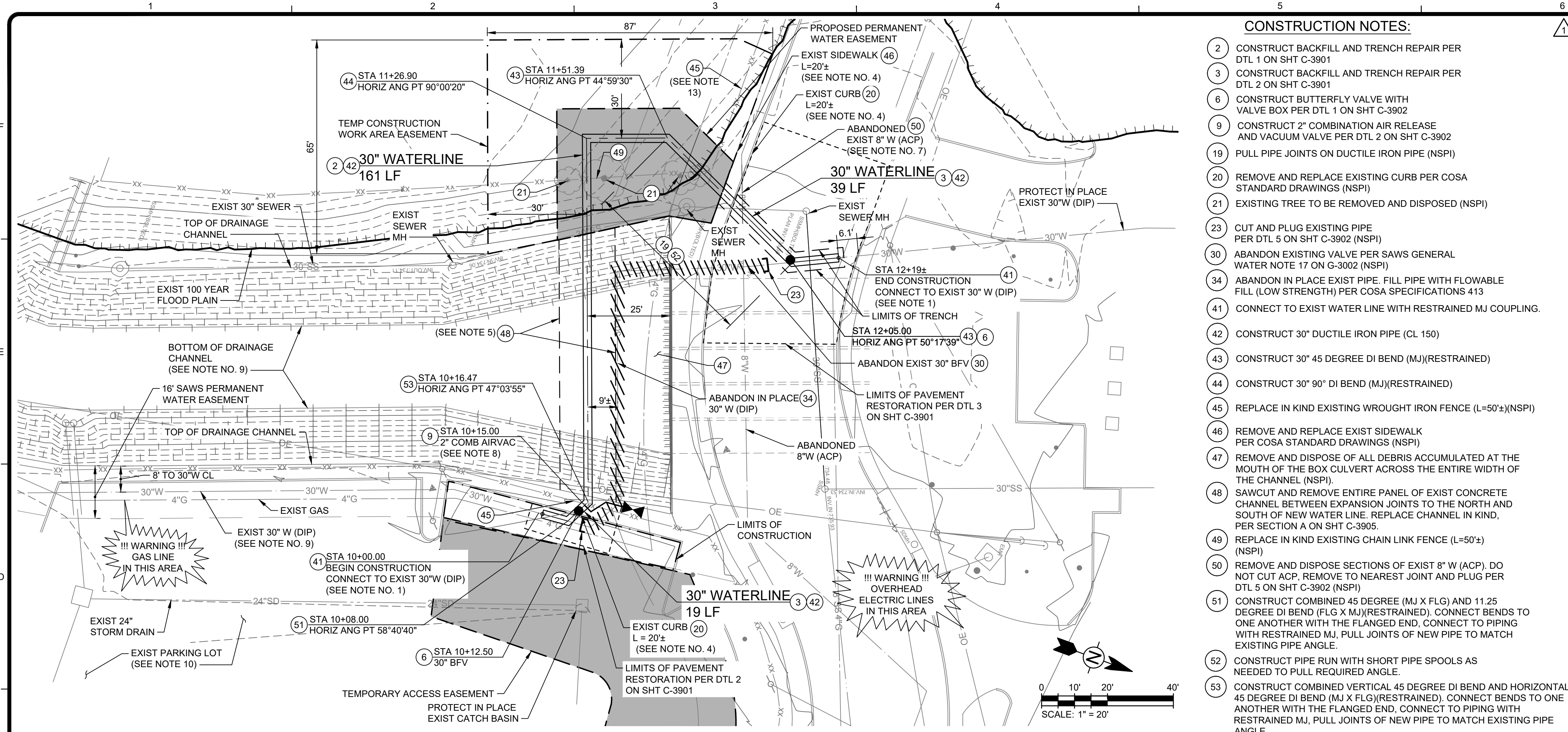
SAN ANTONIO WATER SYSTEM  
 CENTRAL WATER INTEGRATION PIPELINE  
 SEGMENT 5-4  
**PROJECT CONTROL PLAN**  
 (SHEET 2 OF 2)

PROJ: 200-09308-18001  
 DESN: CH  
 DRWN: EM  
 CHKD: MB

G-3005

Bar measures 1 inch, otherwise drawing is not to scale

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CONSTRUCTION NOTES:

- 2 CONSTRUCT BACKFILL AND TRENCH REPAIR PER DTL 1 ON SHT C-3901
- 3 CONSTRUCT BACKFILL AND TRENCH REPAIR PER DTL 2 ON SHT C-3901
- 6 CONSTRUCT BUTTERFLY VALVE WITH VALVE BOX PER DTL 1 ON SHT C-3902
- 9 CONSTRUCT 2" COMBINATION AIR RELEASE AND VACUUM VALVE PER DTL 2 ON SHT C-3902
- 19 PULL PIPE JOINTS ON DUCTILE IRON PIPE (NSPI)
- 20 REMOVE AND REPLACE EXISTING CURB PER COSA STANDARD DRAWINGS (NSPI)
- 21 EXISTING TREE TO BE REMOVED AND DISPOSED (NSPI)
- 23 CUT AND PLUG EXISTING PIPE PER DTL 5 ON SHT C-3902 (NSPI)
- 30 ABANDON EXISTING VALVE PER SAWS GENERAL WATER NOTE 17 ON G-3002 (NSPI)
- 34 ABANDON IN PLACE EXIST PIPE. FILL PIPE WITH FLOWABLE FILL (LOW STRENGTH) PER COSA SPECIFICATIONS 413
- 41 CONNECT TO EXIST WATER LINE WITH RESTRAINED MJ COUPLING.
- 42 CONSTRUCT 30" DUCTILE IRON PIPE (CL 150)
- 43 CONSTRUCT 30" 45 DEGREE DI BEND (MJ)(RESTRAINED)
- 44 CONSTRUCT 30" 90° DI BEND (MJ)(RESTRAINED)
- 45 REPLACE IN KIND EXISTING WROUGHT IRON FENCE (L=50±)(NSPI)
- 46 REMOVE AND REPLACE EXIST SIDEWALK PER COSA STANDARD DRAWINGS (NSPI)
- 47 REMOVE AND DISPOSE OF ALL DEBRIS ACCUMULATED AT THE MOUTH OF THE BOX CULVERT ACROSS THE ENTIRE WIDTH OF THE CHANNEL (NSPI).
- 48 SAWCUT AND REMOVE ENTIRE PANEL OF EXIST CONCRETE CHANNEL BETWEEN EXPANSION JOINTS TO THE NORTH AND SOUTH OF NEW WATER LINE. REPLACE CHANNEL IN KIND, PER SECTION A ON SHT C-3905.
- 49 REPLACE IN KIND EXISTING CHAIN LINK FENCE (L=50±) (NSPI)
- 50 REMOVE AND DISPOSE SECTIONS OF EXIST 8" W (ACP). DO NOT CUT ACP. REMOVE TO NEAREST JOINT AND PLUG PER DTL 5 ON SHT C-3902 (NSPI)
- 51 CONSTRUCT COMBINED 45 DEGREE (MJ X FLG) AND 11.25 DEGREE DI BEND (FLG X MJ)(RESTRAINED). CONNECT BENDS TO ONE ANOTHER WITH THE FLANGED END, CONNECT TO PIPING WITH RESTRAINED MJ. PULL JOINTS OF NEW PIPE TO MATCH EXISTING PIPE ANGLE.
- 52 CONSTRUCT PIPE RUN WITH SHORT PIPE SPOOLS AS NEEDED TO PULL REQUIRED ANGLE.
- 53 CONSTRUCT COMBINED VERTICAL 45 DEGREE DI BEND AND HORIZONTAL 45 DEGREE DI BEND (MJ X FLG)(RESTRAINED). CONNECT BENDS TO ONE ANOTHER WITH THE FLANGED END, CONNECT TO PIPING WITH RESTRAINED MJ. PULL JOINTS OF NEW PIPE TO MATCH EXISTING PIPE ANGLE.

ESTIMATED QUANTITIES

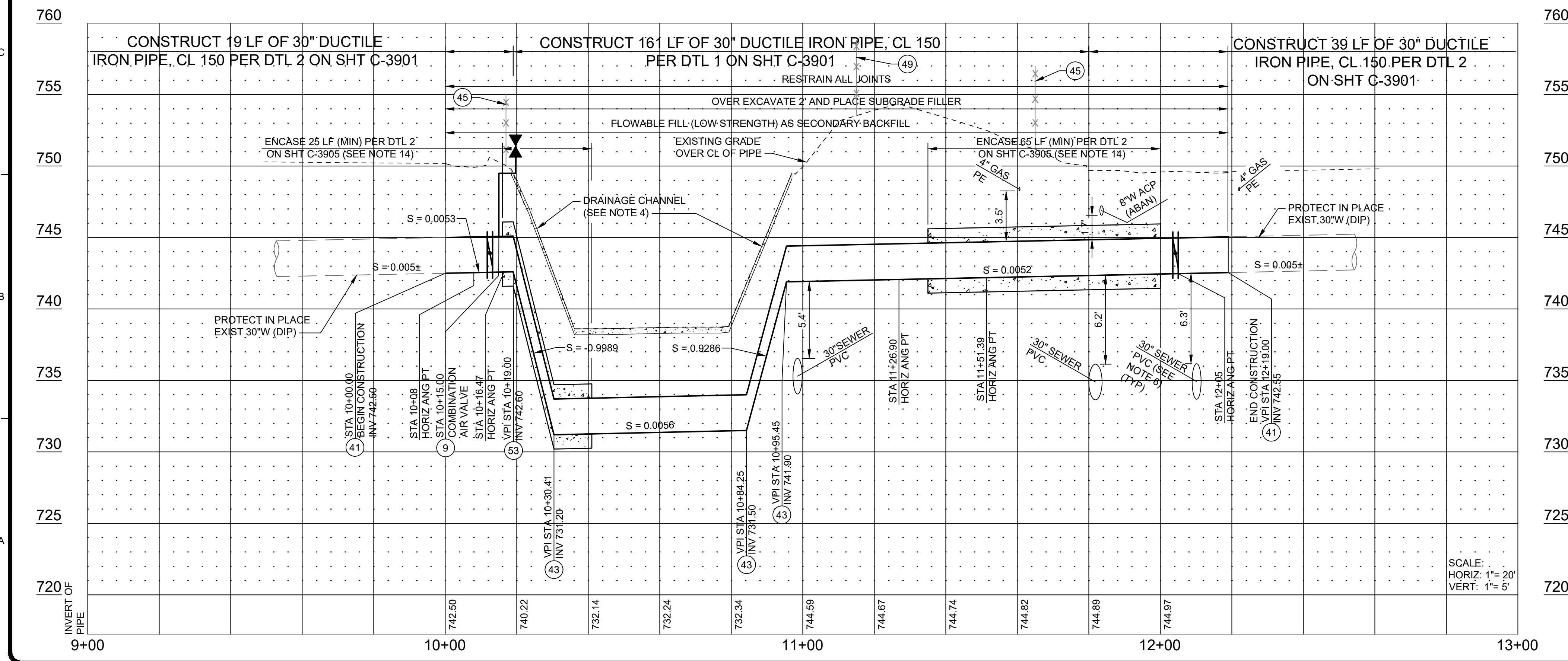
LINE NO.	SPEC NO.	DESCRIPTION	UNIT	QTY
3	COSA 103.1	REMOVE CONCRETE CURB	LF	40
4	COSA 202.1	PRIME COAT	GAL	20
5	COSA 203.1	TACK COAT	GAL	120
6	COSA 205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	380
7	COSA 205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	70
8	COSA 206.1	ASPHALT TREATED BASE (6" COMP. DEPTH)	SY	60
9	COSA 208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	380
10	COSA 413.1	FLOWABLE FILL	CY	400
11	COSA 500.1	CONCRETE CURB	LF	40
15	550	TRENCH EXCAVATION SAFETY PROTECTION	LF	219
18	814	PIPE WATER MAIN (30" DIP)	LF	219
23	836	GREY IRON AND DUCTILE IRON FITTINGS	TN	8
24	840.1	WATER TIE-IN	EA	2
26	846	2" COMBINATION VACUUM AND AIR RELEASE VALVE ASSEMBLY	EA	1
28	830	BUTTERFLY VALVE AND BOX (30")	EA	2
29	862	ABANDONMENT OF WATER MAINS 12" AND LARGER	LF	135
31	COSA 515.1	6" TOPSPOIL	CY	20
32	COSA 505.1	CONCRETE RIPRAP (5 INCHES THICK)	SY	156
33	COSA 103.4	REMOVE MISCELLANEOUS CONCRETE	SF	1400
36	3000	REMOVAL, TRANSPORTATION, AND DISPOSAL OF ASBESTOS CEMENT PIPE	LF	16
37	858	CONCRETE ENCASEMENT	CY	53
41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	130

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY EQUIPMENT CONSULT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACTOR DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING AND OR AROUND TRENCH EXCAVATION.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL CONNECTION POINTS AND UTILITY CROSSINGS PRIOR TO CONSTRUCTION (NSPI).
2. LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PER SAWS GENERAL CONSTRUCTION NOTES 4 AND 5 ON SHT G-3002 (NSPI).
3. AREA IS WITHIN THE 100 YEAR FLOOD PLAIN. CONTRACTOR SHALL COMPLY WITH COSA FLOOD PLAIN DEVELOPMENT PERMIT REQUIREMENTS. SEE NOTE 61 NO. ON SHT G-3003.
4. THE CONTRACTOR SHALL REMOVE AND REPLACE CURB, GUTTER AND SIDEWALK PER COSA STANDARD DRAWINGS (NSPI).
5. SEE EXISTING STORM CHANNEL SECTION PER SECTION A ON SHT C-3905.
6. CONTRACTOR SHALL MAINTAIN 9' CLEARANCE BETWEEN PIPE JOINT AND CROSSING SEWER LINE IN ACCORDANCE WITH TCEQ CODE 290.44(e)(4)(B)(i).
7. ACP PIPE SHALL BE HANDLED, REMOVED AND DISPOSED IN ACCORDANCE WITH SAWS 3000. FOR BIDDING PURPOSES THE CONTRACTOR SHALL REMOVE TWO JOINTS OF ACP (TOTAL 16 LF). DO NOT CUT ACP.
8. INSTALL AIR VALVE BESIDE EXISTING FENCE ON THE SAME SIDE AS THE DRAINAGE CHANNEL. AIR VENT HOLES SHALL BE LOCATED ABOVE THE 100-YR FLOOD PLAIN ELEVATION (753.00)
9. EXISTING STRUCTURES AND UTILITIES SHOWN ARE BASED ON RECORD DRAWINGS FOUND IN THE APPENDICES OF THE SPECIFICATION
10. RESTORE PARKING LOT TO ORIGINAL CONDITION INCLUDING, BUT NOT LIMITED TO, PAVEMENT, CURB, PARKING BLOCKS AND STRIPING.
11. WORK SHALL BE PERFORMED ONLY DURING THE DRY SEASON (JUNE THROUGH AUGUST). DRAINAGE CHANNEL SHALL REMAIN PARTIALLY IN SERVICE AT ALL TIMES, SEE SPECIAL CONDITIONS IN SPECIFICATIONS.
12. FOR ACCESS PLAN SEE DWG C-3905.
13. CONTRACTOR SHALL MAINTAIN 8' TALL TEMPORARY SECURITY FENCING TO PROHIBIT ACCESS TO THE PRIVATE PROPERTY DURING CONSTRUCTION. FENCE TYPE AND PLACEMENT MUST BE ACCEPTED BY SAWS AND THE PROPERTY OWNER PRIOR TO INSTALLATION. (NSPI)
14. PIPELINE ENCASEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SAWS 858 EXCEPT AS MODIFIED BY DTL 2 ON SHT C-3905.
15. THE CPS INSPECTOR MUST BE PRESENT DURING WORK NEAR AND CROSSING THE 4" GAS LINES. HYDRO-EXCAVATION POTHOLES MUST BE UTILIZED TO LOCATE THE GAS LINES WITH THE INSPECTOR PRESENT. BACKFILL AROUND THE EXISTING GAS LINES MUST BE DONE WITH THE INSPECTOR PRESENT. CONTRACTOR TO USE THE CONTACT NUMBER OF 210-252-4285 TO COORDINATE INSPECTIONS.



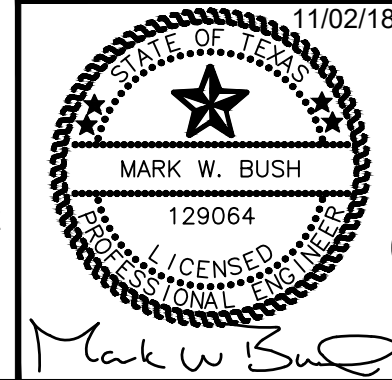
**TETRA TECH**  
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San Antonio, TX 78205  
Ph (210) 299-7900 Fax (210) 226-8487

ADDENDUM

**SAN ANTONIO WATER SYSTEM**

BY	DATE	DESCRIPTION
MWB	11/02/18	ADDENDUM NO. 2

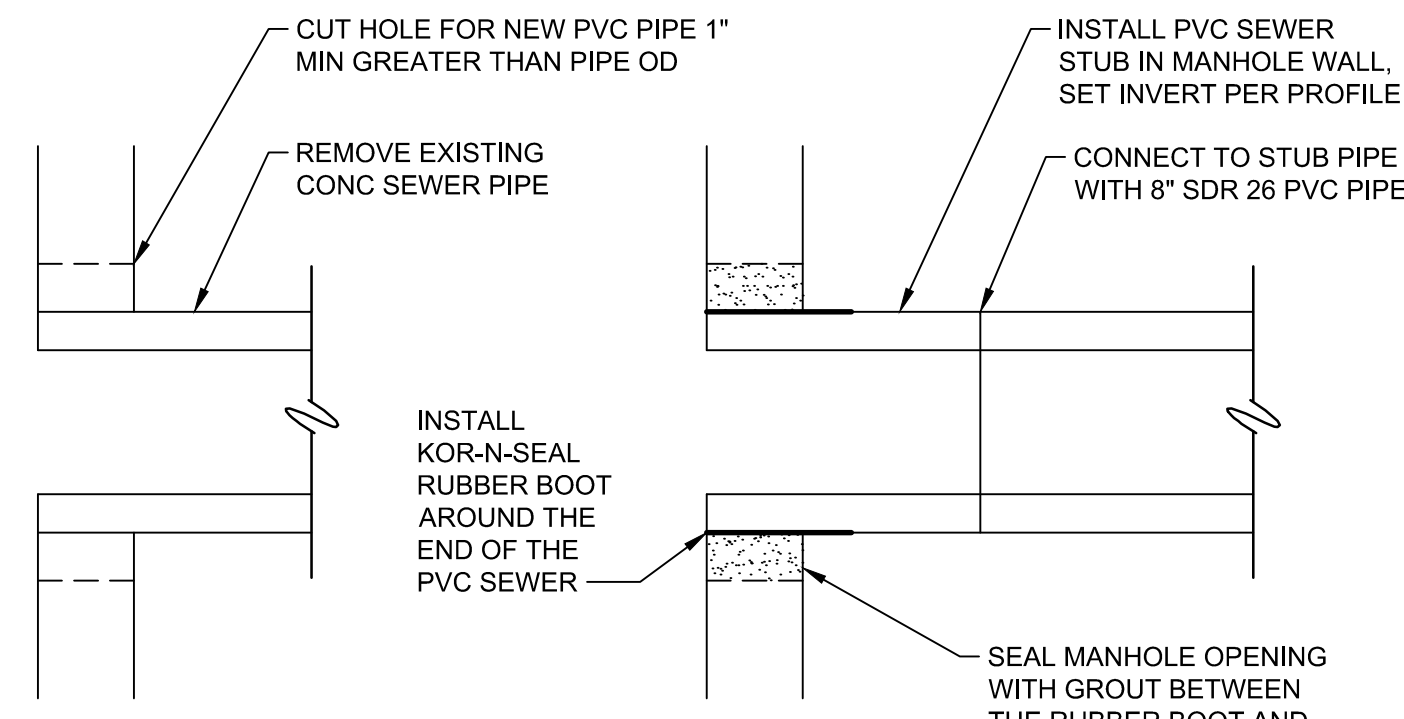
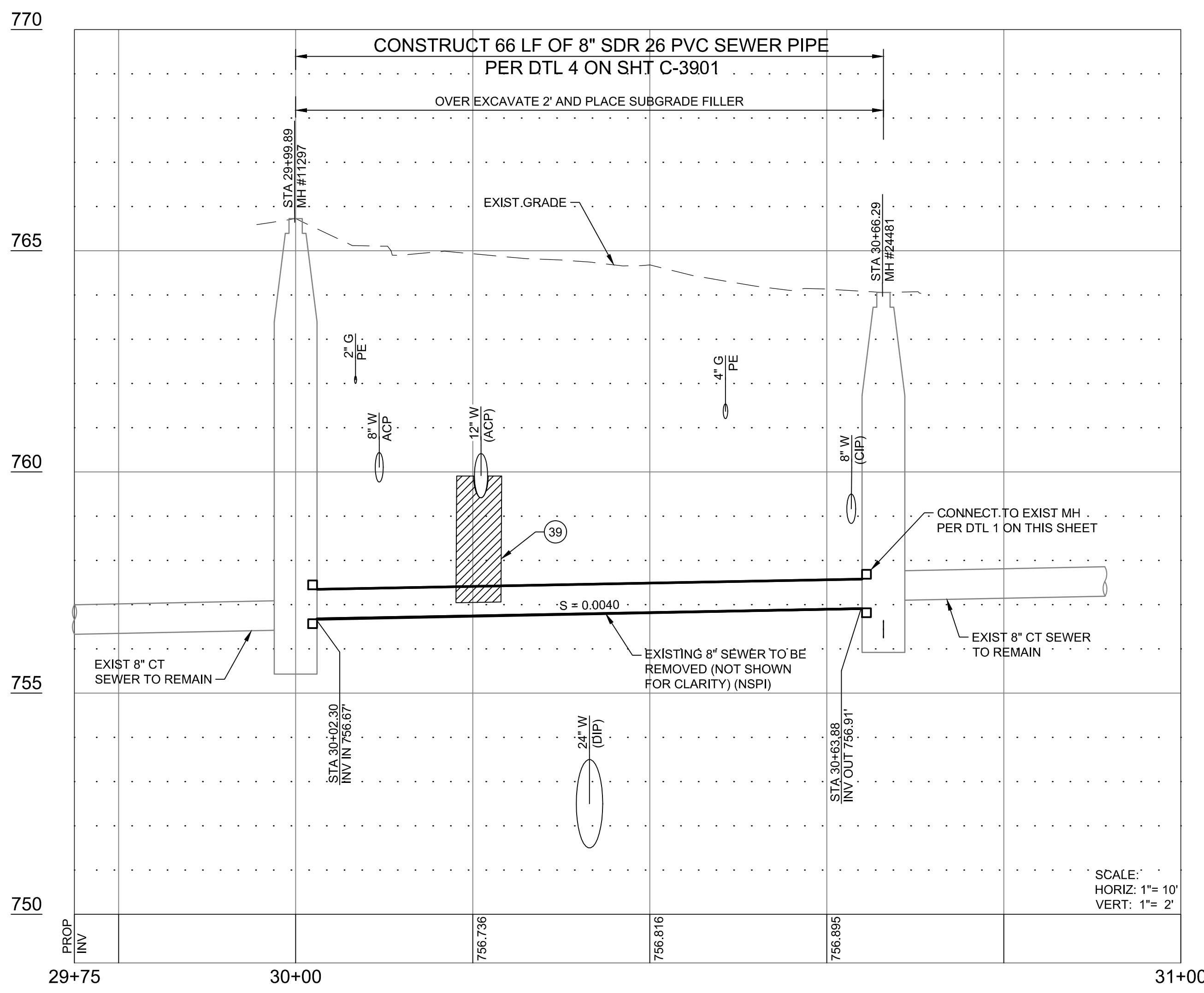
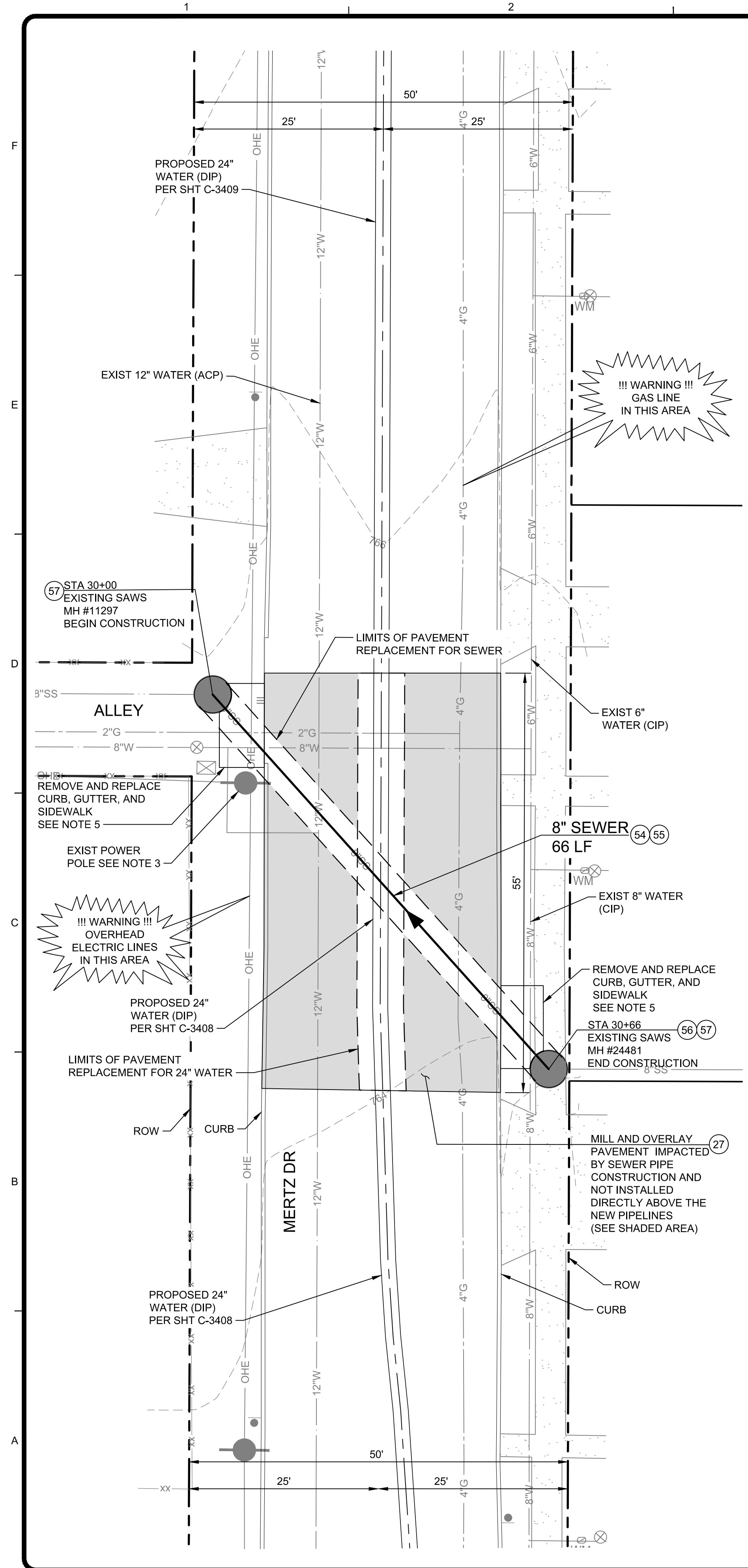
SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
30" PIPELINE REPLACEMENT  
PLAN AND PROFILE



PROJ: 200-09308-18001  
DES: DK  
DRW: RW  
CHKD: MB  
**C-3415**

Bar measures 1 inch, otherwise drawing is not to scale

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CONSTRUCTION NOTES:

- 27 2" MILL AND OVERLAY EXISTING PAVEMENT PER DTL 3 ON SHT C-3901
- 39 BACKFILL WITH FLOWABLE FILL FROM SPRINGLINE OF EXIST PIPE TO SPRINGLINE OF NEW PIPE (5' MIN ON EACH SIDE)
- 54 REMOVE AND DISPOSE OF EXISTING CONCRETE SEWER (NSPI)
- 55 CONSTRUCT 8" PVC SEWER SDR 26 (D2241 160 PSI)
- 56 REMOVE MANHOLE RING AND COVER, AND REPLACE PER SAWS STD 851
- 57 COAT THE INTERIOR OF EXISTING MANHOLE PER SAWS STD 852.4

ESTIMATED QUANTITIES

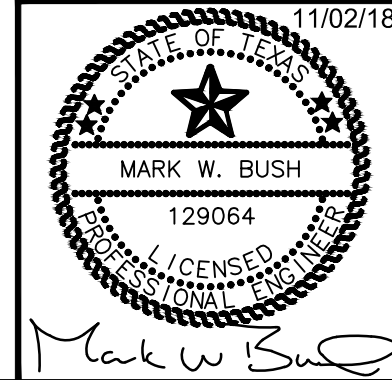
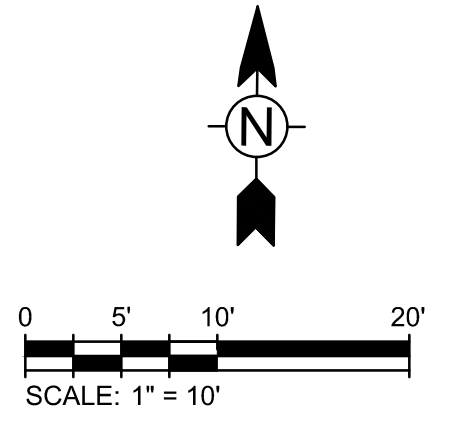
LINE NO.	SPEC NO.	DESCRIPTION	UNIT	QTY
3	COSA 103.1	REMOVE CONCRETE CURB	LF	20
4	COSA 202.1	PRIME COAT	GAL	20
5	COSA 203.1	TACK COAT	GAL	70
6	COSA 205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" COMP. DEPTH)	SY	160
7	COSA 205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	50
8	COSA 206.1	ASPHALT TREATED BASE (6" COMP. DEPTH)	SY	50
9	COSA 208.1	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	160
10	COSA 413.1	FLOWABLE FILL	CY	60
11	COSA 500.1	CONCRETE CURB	LF	20
15	550	TRENCH EXCAVATION SAFETY PROTECTION	LF	66
38	848	8" SDR 26 PVC SEWER PIPE	LF	66
40	910.1	INTERIOR COATING OF EXISTING MANHOLES	VFT	18
41	804.A	OVER-EXCAVATION AND RE-FILL MATERIAL	CY	30
42	851	EXISTING MANHOLE ADJUSTMENT (REPLACE RING AND COVER)	EA	2

NOTES:

1. LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PER SAWS GENERAL CONSTRUCTION NOTES 4 AND 5 ON SHT G-3002 (NSPI).
2. THE CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED.
3. CONTRACTOR MUST CONTACT AND COORDINATE SUPPORT OF EXISTING POWER POLE WITH CPS.
4. CONTRACTOR TO PROVIDE AND OPERATE A BYPASS PUMPING SYSTEM PER SAWS CONSTRUCTION SPECS SECTION ITEM NO. 864.
5. CONTRACTOR SHALL REMOVE AND REPLACE CURB, GUTTER AND SIDEWALK PER OCSA STANDARD DWGS. ASSUME LENGTH OF 10FT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGNER/GEOTECHNICAL/SAFETY EQUIPMENT CONSULT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACTOR DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING AND OR AROUND TRENCH EXCAVATION.



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ADDENDUM

**SAN ANTONIO WATER SYSTEM**

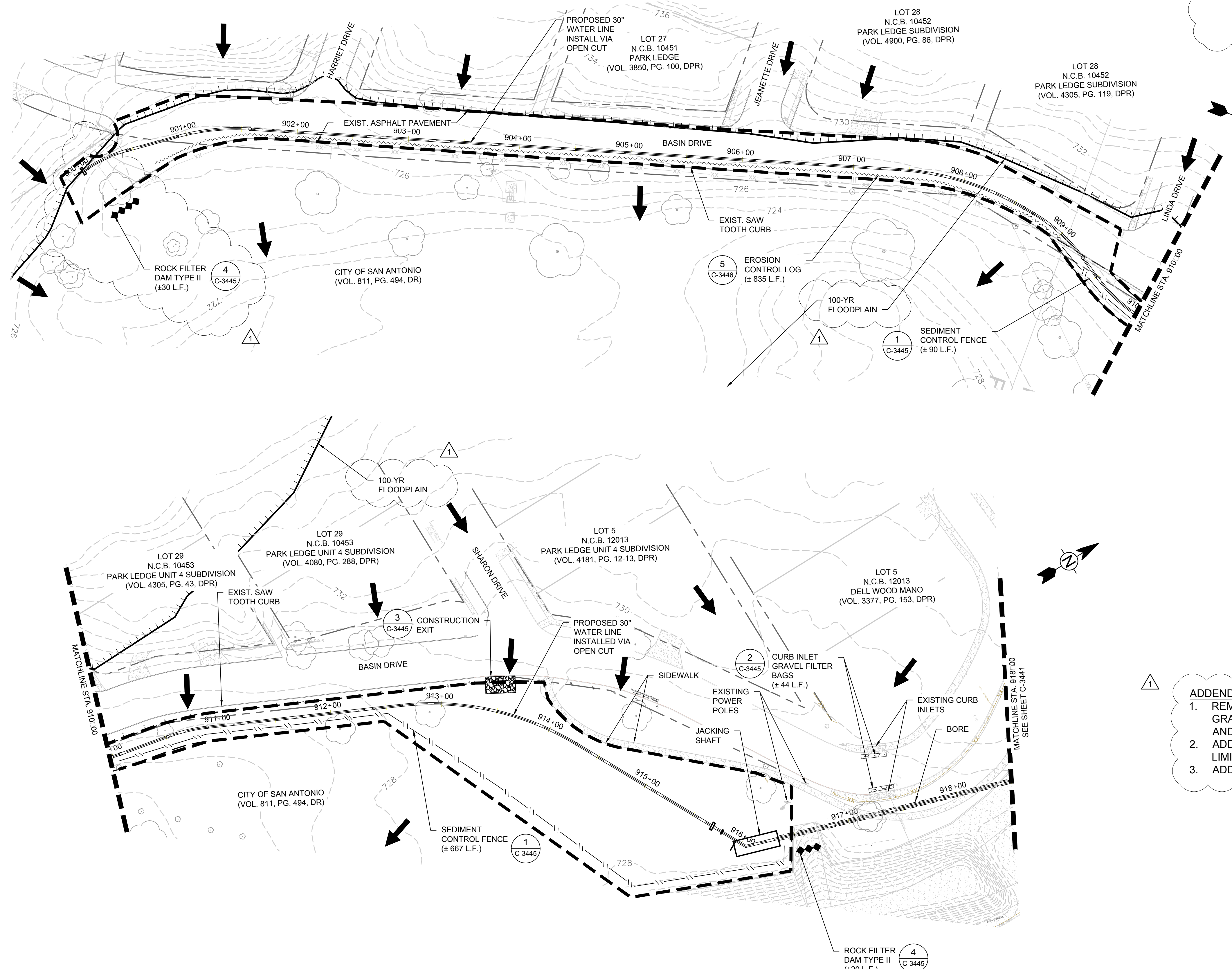
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1	11/05/18	ADDENDUM NO. 2	MWB

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
**8" SEWER REPLACEMENT  
PLAN AND PROFILE**

PROJ:	200-09308-18001
DESUN:	RJW
DRWN:	RJW
CHKD:	MB

**C-3416**

11/5/2018 1:45:29 PM - W:\WORK\1471 SAWS VISTA RIDGE INTEGRATION PROJECT (TETRA TECH)\DESIGN\CIVIL\CWP TRANSMISSION PIPELINES\SEGMENT 5-4\CONSTRUCTION DOCUMENTS\1. STORM WATER POLLUTION PREVENTION PLAN.DWG - NICHOLAS RAMONES

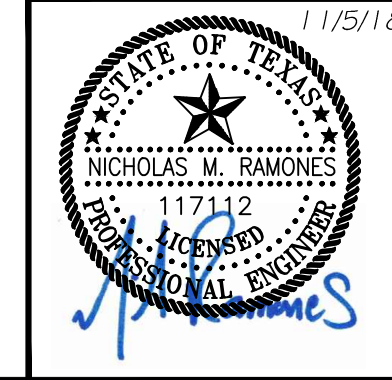
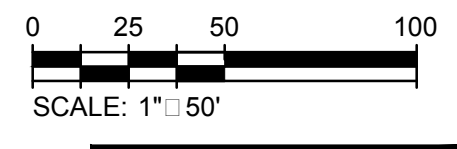


**FLOODPLAIN NOTE:**  
 1. WORK SHOWN ON THIS SHEET IS LOCATED WITHIN THE 100-YEAR FEMA REGULATED FLOODPLAIN. CONTRACTOR TO OBTAIN COSA FLOODPLAIN PERMIT PRIOR TO CONSTRUCTION.

**LEGEND**

- PROJECT LIMITS
- EXISTING CONTOURS
- EXISTING TREE
- SEDIMENT CONTROL FENCE
- STORM WATER RUNOFF FLOW ARROWS
- CONSTRUCTION EXIT (FINAL LOCATION TO BE DETERMINED IN FIELD)
- ROCK FILTER DAM TYPE II
- GRAVEL FILTER BAGS
- EROSION CONTROL LOGS

**ADDENDUM 2 REVISIONS:**  
 1. REMOVED SEDIMENT CONTROL FENCE AND GRAVEL FILTER BAGS AT END OF BASIN DR. AND ADDED ROCK FILTER DAM TYPE II.  
 2. ADDED & LABELED 100-YR FLOODPLAIN LIMITS.  
 3. ADDED FLOODPLAIN NOTE.



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**ADDENDUM**

**MB**  
**BAIN MEDINA BAIN, INC.**  
 7075 San Pedro Ave., Suite 200  
 San Antonio, TX 78216  
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 TDD: (210) 490-1180  
 TDD: (210) 490-1180  
 TDD: (210) 490-1180

**SAN ANTONIO WATER SYSTEM**

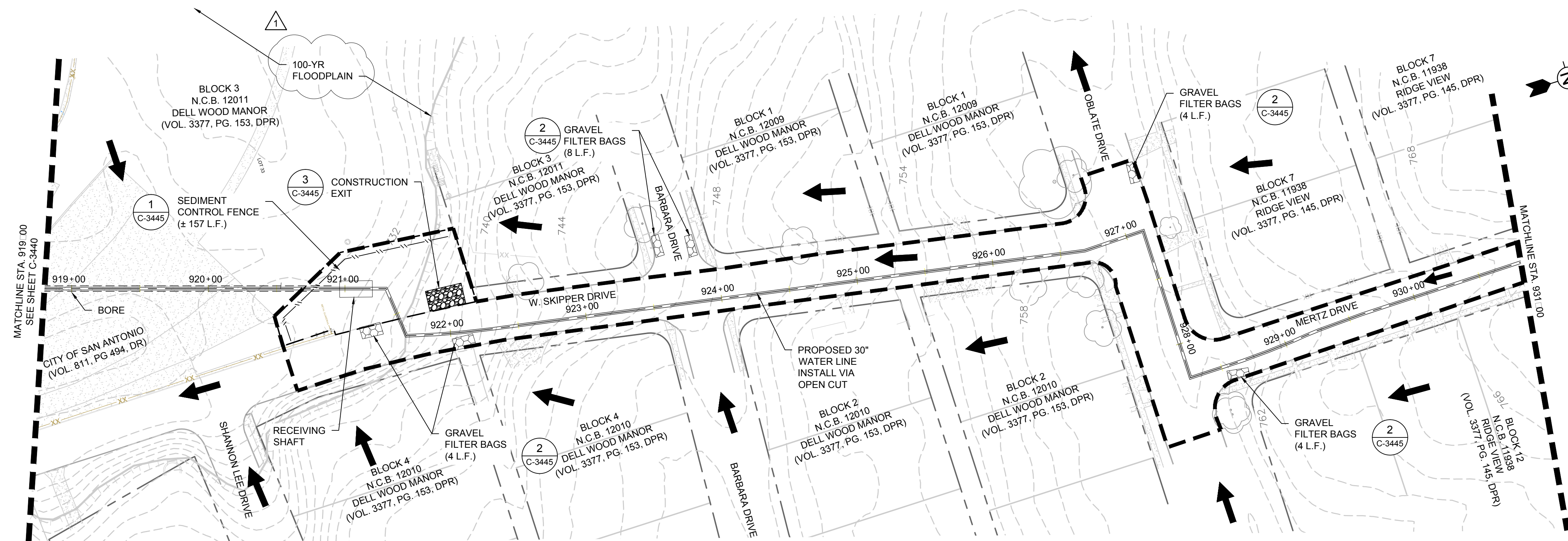
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1	11/5/18	PER ADDENDUM 2		

**SAN ANTONIO WATER SYSTEM**  
 CENTRAL WATER INTEGRATION PIPELINE  
 SEGMENT 5-4  
**STORM WATER POLLUTION PREVENTION PLAN**

PROJ:	200-09308-18001
DESN:	NR
DRWN:	VS
CHKD:	CB

**C-3440**

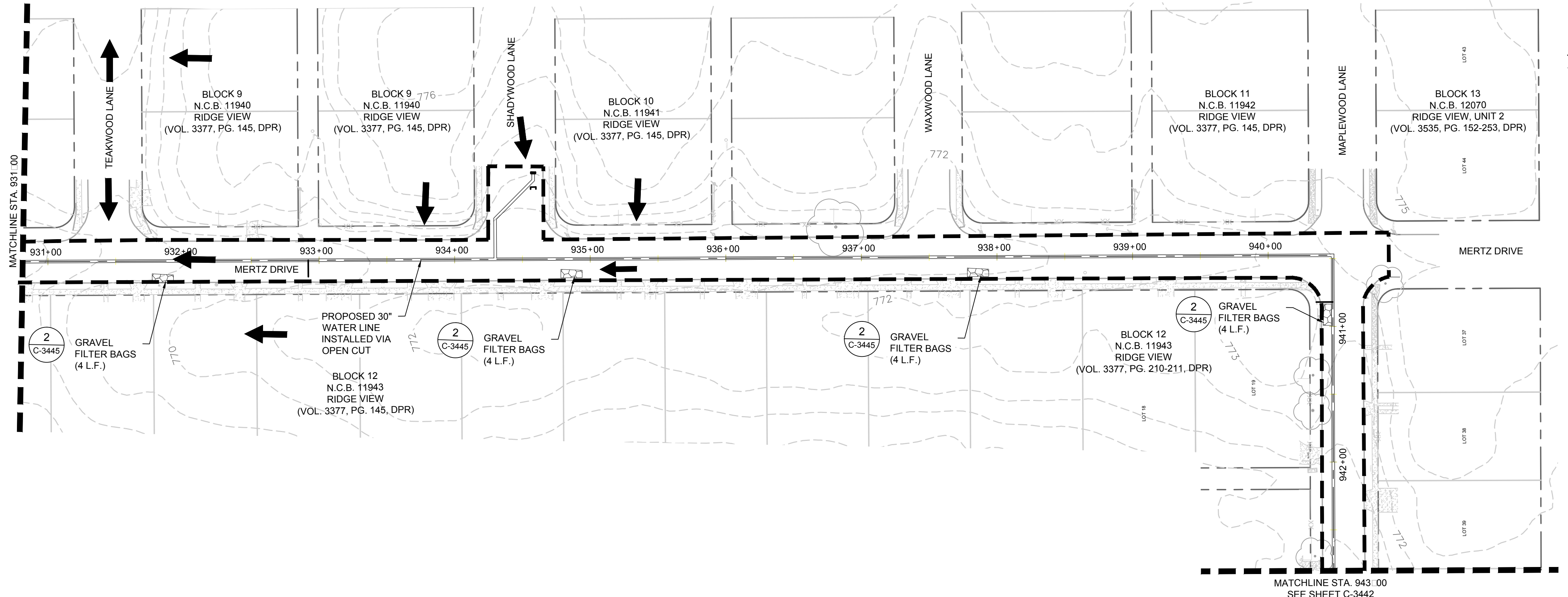
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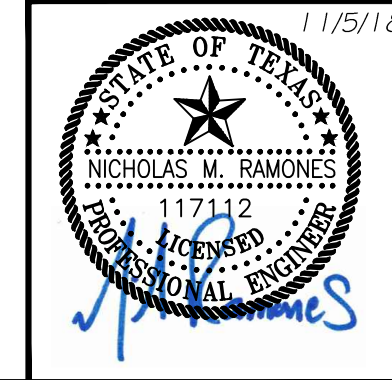
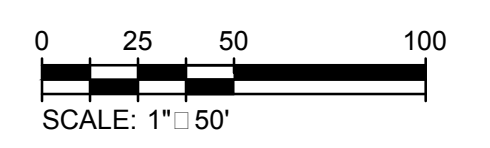
**FLOODPLAIN NOTE:**  
 1. WORK SHOWN ON THIS SHEET IS LOCATED WITHIN THE 100-YEAR FEMA REGULATED FLOODPLAIN. CONTRACTOR TO OBTAIN COSA FLOODPLAIN PERMIT PRIOR TO CONSTRUCTION.

**LEGEND**

- PROJECT LIMITS
- EXISTING CONTOURS
- EXISTING TREE
- SEDIMENT CONTROL FENCE
- STORM WATER RUNOFF FLOW ARROWS
- GRAVEL FILTER BAGS
- CONSTRUCTION EXIT (FINAL LOCATION TO BE DETERMINED IN FIELD)



**ADDENDUM 2 REVISIONS:**  
 1. ADDED & LABELED 100-YR FLOODPLAIN LIMITS.  
 2. ADDED FLOODPLAIN NOTE.



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**ADDENDUM**

**BAIN MEDINA BAIN, INC.**  
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 Ph: (210) 494-2223 Fax: (210) 492-5189  
 TBPB No. F-1712 WWW.BMBI.COM

**SAN ANTONIO WATER SYSTEM**

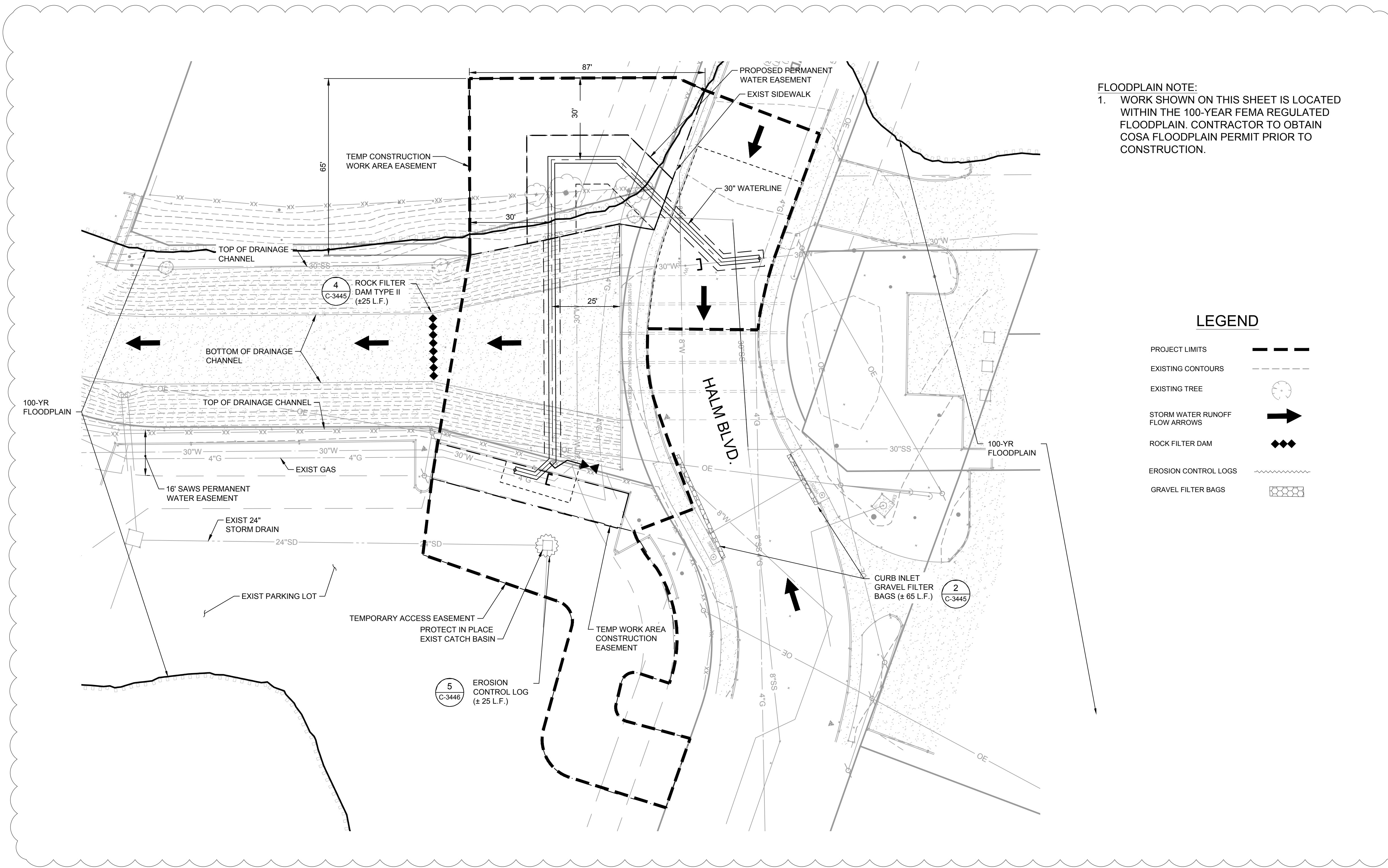
MARK	DATE	DESCRIPTION

**SAN ANTONIO WATER SYSTEM**  
 CENTRAL WATER INTEGRATION PIPELINE  
 SEGMENT 5-4  
**STORM WATER POLLUTION PREVENTION PLAN**

PROJ:	200-09308-18001
DESN:	NR
DRWN:	VS
CHKD:	CB

**C-3441**

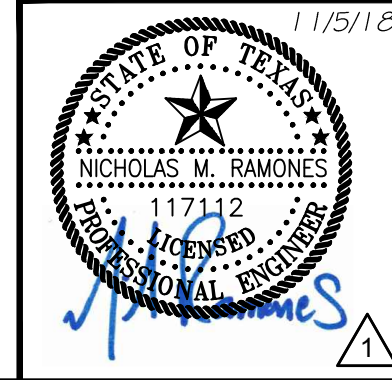
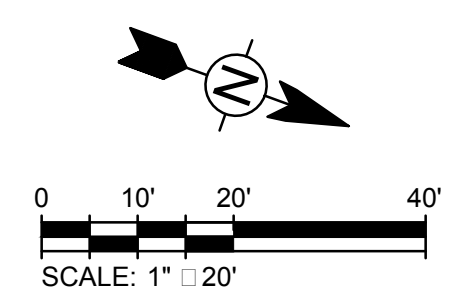
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**FLOODPLAIN NOTE:**  
 1. WORK SHOWN ON THIS SHEET IS LOCATED WITHIN THE 100-YEAR FEMA REGULATED FLOODPLAIN. CONTRACTOR TO OBTAIN COSA FLOODPLAIN PERMIT PRIOR TO CONSTRUCTION.

**LEGEND**

- PROJECT LIMITS
- EXISTING CONTOURS
- EXISTING TREE
- STORM WATER RUNOFF FLOW ARROWS
- ROCK FILTER DAM
- EROSION CONTROL LOGS
- GRAVEL FILTER BAGS



PROJ:	200-09308-18001
DESN:	NR
DRWN:	VS
CHKD:	CB

**C-3443**

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**SAN ANTONIO WATER SYSTEM**

MARK	DATE	DESCRIPTION	BY	NR
1	11/5/18	PER ADDENDUM 2		

SAN ANTONIO WATER SYSTEM  
 CENTRAL WATER INTEGRATION PIPELINE  
 SEGMENT 5-4  
**STORM WATER POLLUTION PREVENTION PLAN**

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## SITE DESCRIPTION

PROJECT NAME AND LOCATION: CENTRAL WATER INTEGRATION PIPELINE SEGMENT 5-4

LINEAR PIPELINE PROJECT BEGINNING NEAR INTERSECTION OF RILLA VISTA DRIVE AND BASIN DRIVE, CONTINUING NORTH AND TERMINATING NEAR INTERSECTION OF MAPLEWOOD LANE AND JONES MALTSBERGER ROAD, REPLACING AN EXISTING 30" WATER MAIN AT THE HALM CHANNEL CROSSING.

PROJECT DESCRIPTION: PIPELINE PROJECT CONSISTING OF INSTALLATION OF APPROXIMATELY 5,600 L.F. OF 30" WELDED HPDE, 30" DUCTILE IRON PIPE, AND 24" DI STEEL PIPE. THE MAJORITY OF INSTALLED WILL BE DONE VIA OPEN CUT AND TUNNELING.

MAJOR SOIL DISTURBING ACTIVITIES: MAJOR SOIL DISTURBING ACTIVITIES INCLUDE THE FOLLOWING:

- CLEARING AND GRUBBING
- PREPARING RIGHT-OF-WAY
- EXCAVATION FOR WATERLINE
- EROSION AND SEDIMENT CONTROLS

TOTAL PROJECT AREA (ACRES): ± 6.6 ACRES

TOTAL AREA TO BE DISTURBED: APPROXIMATELY 6.6 ACRES

WEIGHTED RUNOFF COEFFICIENT: (AFTER CONSTRUCTION) 0.95

EXISTING CONDITION OF SOIL, VEGETATIVE COVER AND % OF VEGETATIVE COVER: THE EXISTING SOIL CONSISTS OF FAT CLAY (CH) AND LEAN CLAY (CL), FIRM TO HARD, DARK BROWN, BROWN, TAN AND GRAY, WITH CALCAREOUS DEPOSITS, FERROUS STAINS, SCATTERED GRAVEL AND SAND SEAMS.

DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION: SHEET FLOW

NAME OF RECEIVING WATERS: UPPER SAN ANTONIO RIVER

IDENTIFY STORMWATER DISCHARGE POINTS: UPPER SAN ANTONIO RIVER

A DESCRIPTION AND TIME FRAME FOR INSTALLATION OF STABILIZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION: CONTRACTOR TO PLACE CONTROLS BEFORE STARTING PIPELINE CONSTRUCTION.

### SOIL STABILIZATION PRACTICES:

- HYDROMULCHING
- TEMPORARY SEEDING
- PERMANENT PLANTING, SODDING OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

### OTHER:

DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED TEMPORARILY OR PERMANENTLY, SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME AND DONE WITHIN 21 DAYS.

## EROSION AND SEDIMENTATION CONTROLS

### STRUCTURAL PRACTICES:

- SILT FENCES
- HAY BALES
- GRAVEL FILTRATION BAGS
- ROCK BERMS
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- DIVERSION, DIKE AND SWALE COMBINATIONS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- TIMBER MATTING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT BASINS
- STORM INLET SEDIMENT TRAP
- STONE OUTLET SEDIMENT STRUCTURES
- CURBS AND GUTTERS
- STORM SEWERS
- VELOCITY CONTROL STRUCTURES
- GEOTEXTILES

### OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORMWATER MANAGEMENT) ACTIVITIES: THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

- INSTALL CONTROLS.
- CLEAR, GRUB & EXCAVATE AS NECESSARY FOR BORE PITS.
- OPEN CUT WHERE NECESSARY IN STREETS/PARKING LOTS FOR WATERLINES
- CONSTRUCT WATER LINES
- WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED AND APPROVED BY THE PROJECT ENGINEER, REMOVE ALL TEMPORARY STRUCTURAL CONTROLS AND RESEED OR SOD ANY AREAS AN INSPECTION WILL BE PERFORMED BY THE CONTRACTOR EVERY 14 DAYS AS WELL AS AFTER EVERY 1 / 2" OR MORE DISTURBED BY THEIR REMOVAL.

A DESCRIPTION OF MAINTENANCE PROCEDURES FOR CONTROL MEASURES USED: N/A

STORMWATER MANAGEMENT: STORM WATER DRAINAGE WILL BE CONVEYED BY STREETS AND DRAINAGE SYSTEM.

A DESCRIPTION OF PERMANENT STORM WATER MANAGEMENT CONTROLS: HYDROMULCHING OR SODDING ON ALL EXPOSED GROUNDS THAT ARE NOT COVERED BY HARDSCAPE.

### OTHER EROSION AND SEDIMENTATION CONTROLS

#### MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

#### INSPECTION:

AN INSPECTION WILL BE PERFORMED BY A DESIGNATED EVERY WEEK AS WELL AS AFTER EVERY HALF INCH OR MORE OF RAIN (RECORDED ON A NON-FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE CORRECTED BEFORE THE NEXT SCHEDULED INSPECTION.

#### WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION MATERIALS WILL BE BURIED ON SITE.

#### HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, GASOLINE, MOTOR OIL, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENTS, THE NATIONAL RESPONSE CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MADE TO THE SWPPP. IN THE EVENT OF A LIFE THREATENING SPILL THE SAN ANTONIO FIRE DEPARTMENT SHOULD BE NOTIFIED AS WELL AS THE APPROPRIATE CITY INSPECTORS.

### SANITARY WASTE:

ALL SANITARY WASTE WILL BE COLLECTED FORM PORTABLE UNITS AS NECESSARY OR AS REQUIRED BY LOCAL REGULATIONS BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

OFFSITE EXCAVATION SOURCE LOCATION N/A

OFFSITE FILL SOURCE LOCATION N/A

OFFSITE VEHICLE TRACKING N/A

HAUL ROADS DAMPENED FOR DUST CONTROL.

LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN

EXCESS DIRT ON ROAD TO BE REMOVED DAILY

STABILIZED CONSTRUCTION ENTRANCE.

### OTHER:

### REMARKS:

DISPOSAL AREAS, STOCKPILES AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT ENTERS RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATER BODY, OR STUMBED. CONSTRUCTED STAGING AREAS AND VEHICLE MAINTENANCE AREA SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS POSSIBLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING, DEBRIS, OR OTHER OBSTRUCTIONS DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.

#### OWNERS CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE DATE

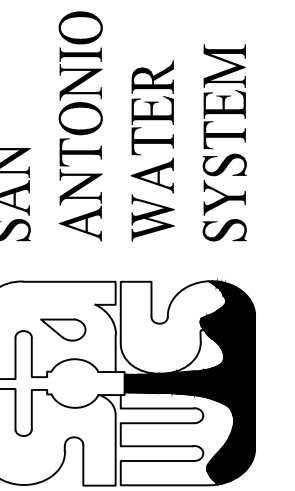
#### CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification plan.

SIGNATURE (CONTRACTOR) DATE



### ADDENDUM



BY

NR

DESCRIPTION

PER ADDENDUM 2

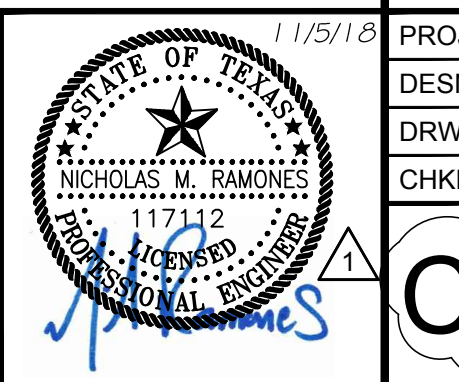
DATE

11/5/18

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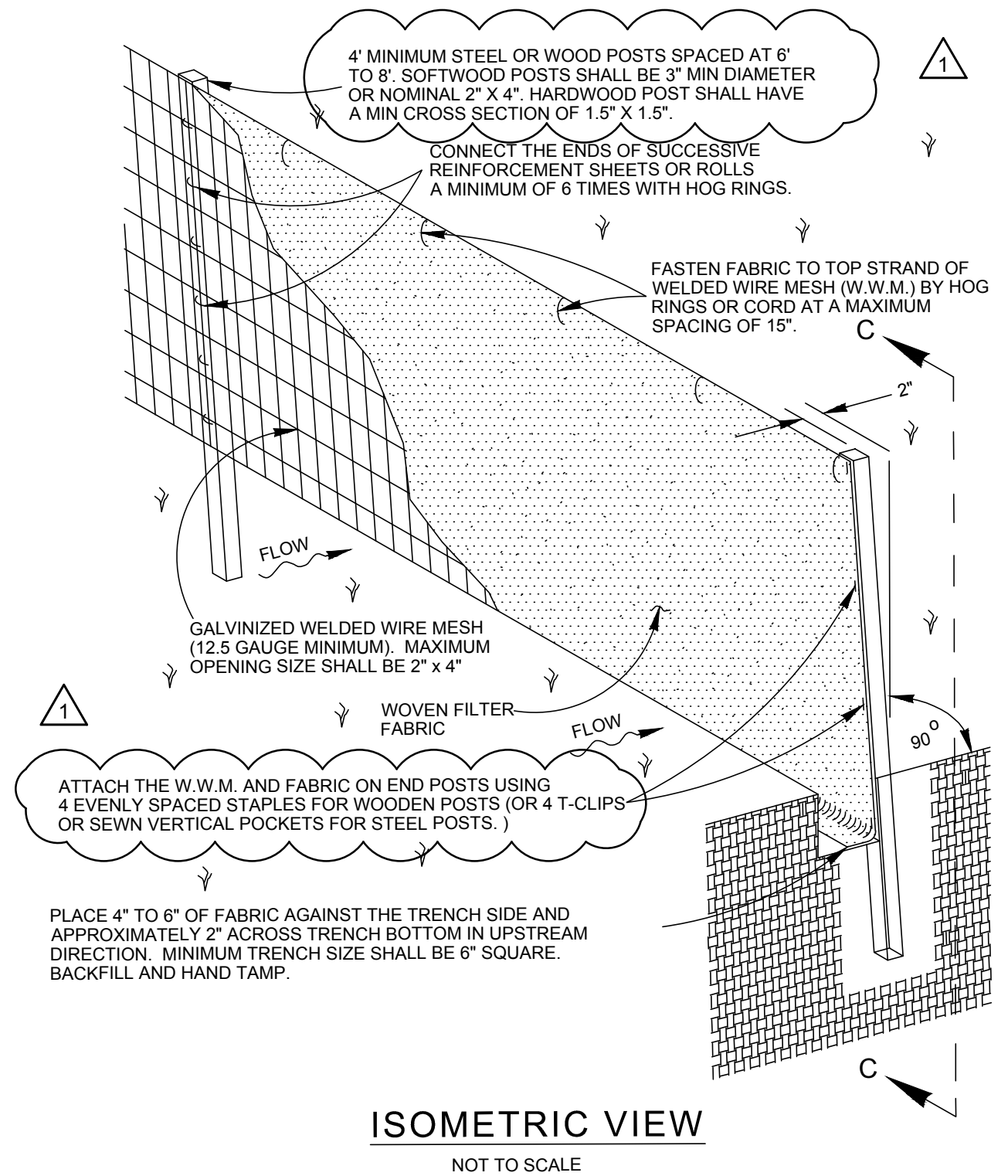
SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
STORM WATER POLLUTION  
PREVENTION NOTES



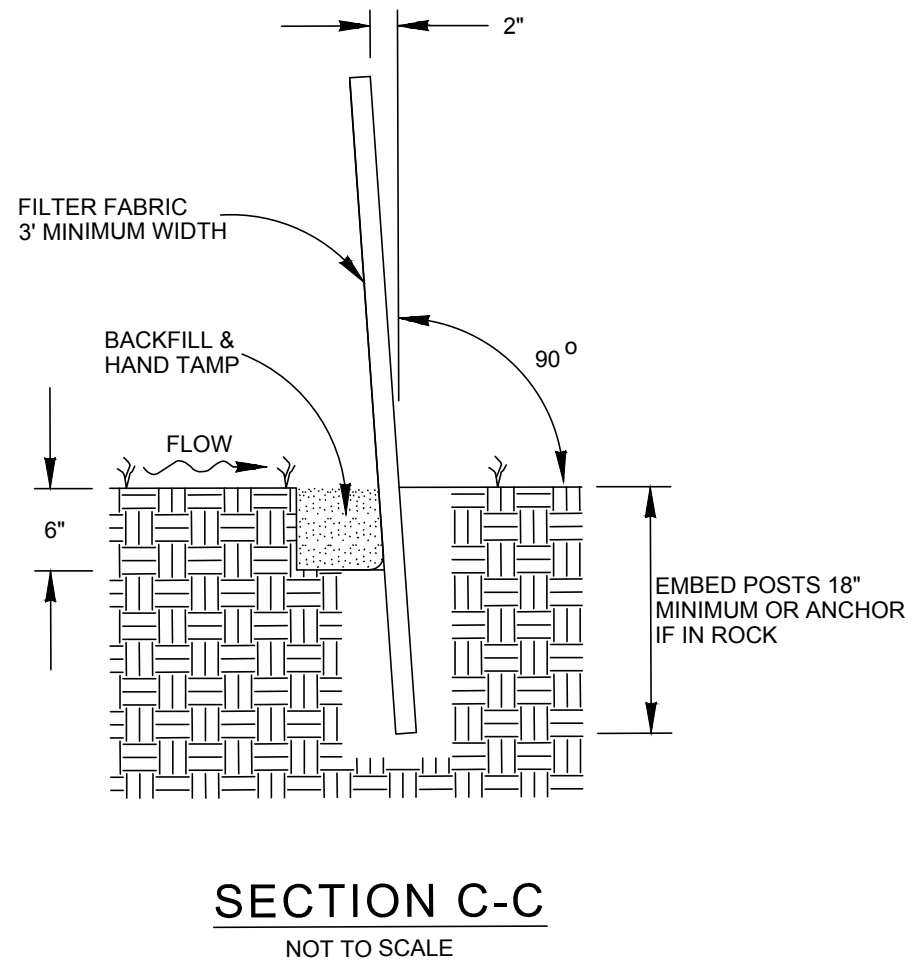
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CHKD: CB

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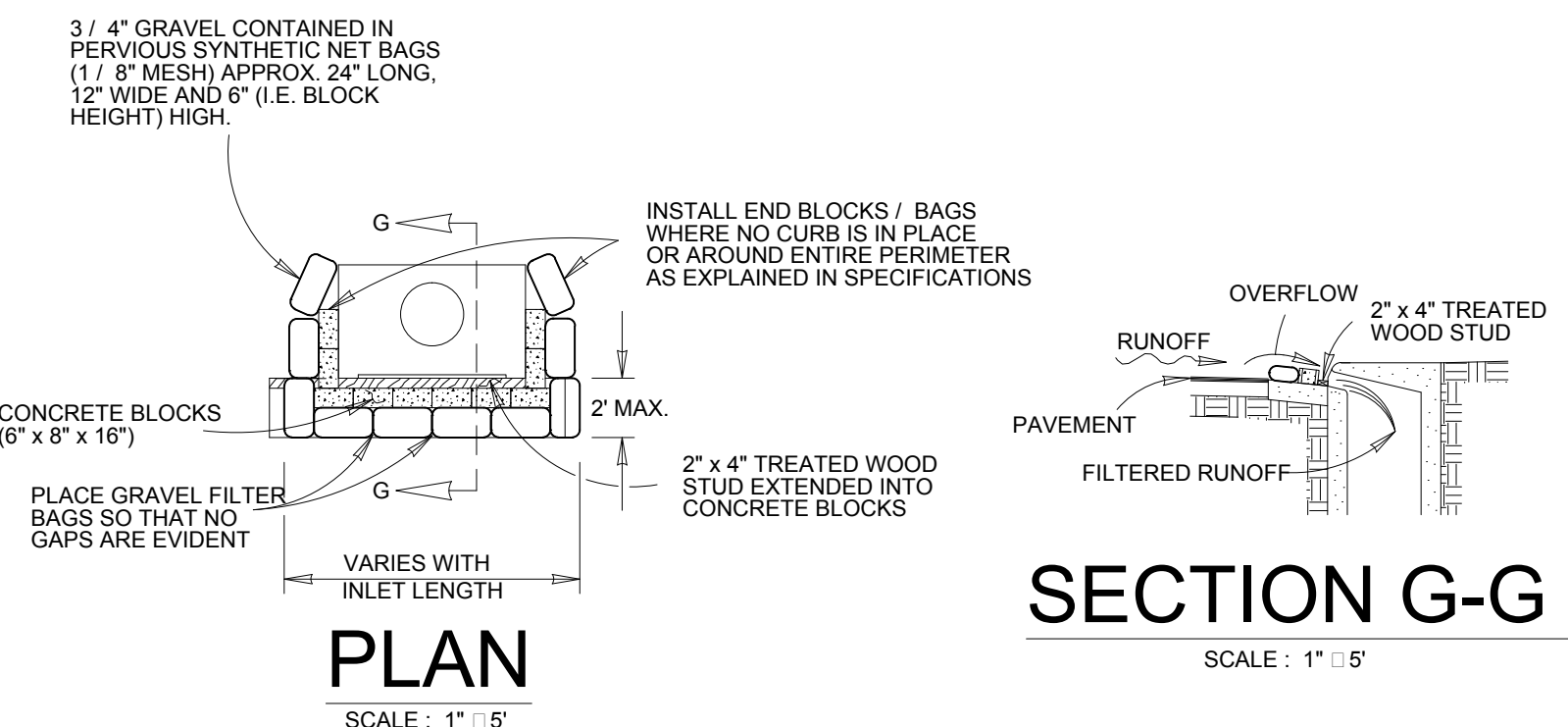
**1 TEMPORARY SEDIMENT CONTROL FENCE**  
SCALE: NTS



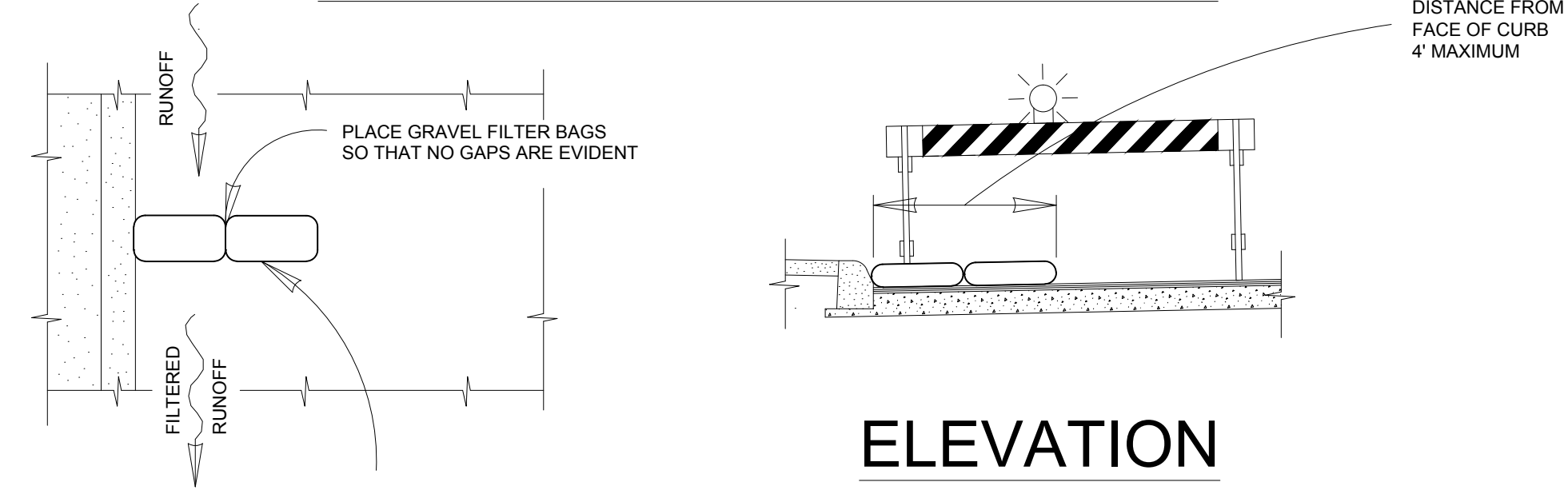
**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

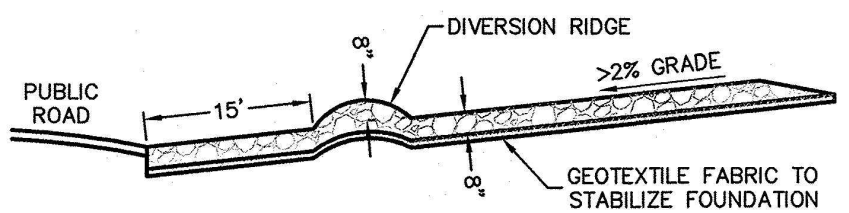
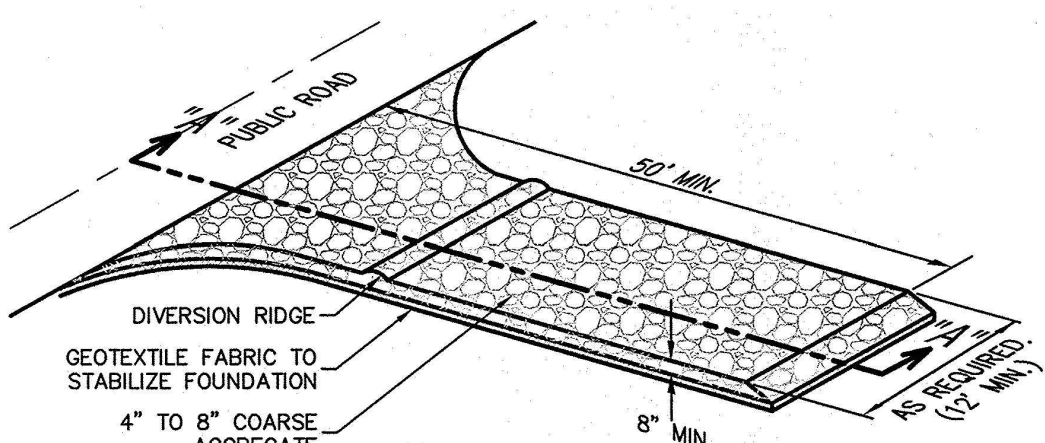
SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM / FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.



**CURB INLET GRAVEL FILTER**

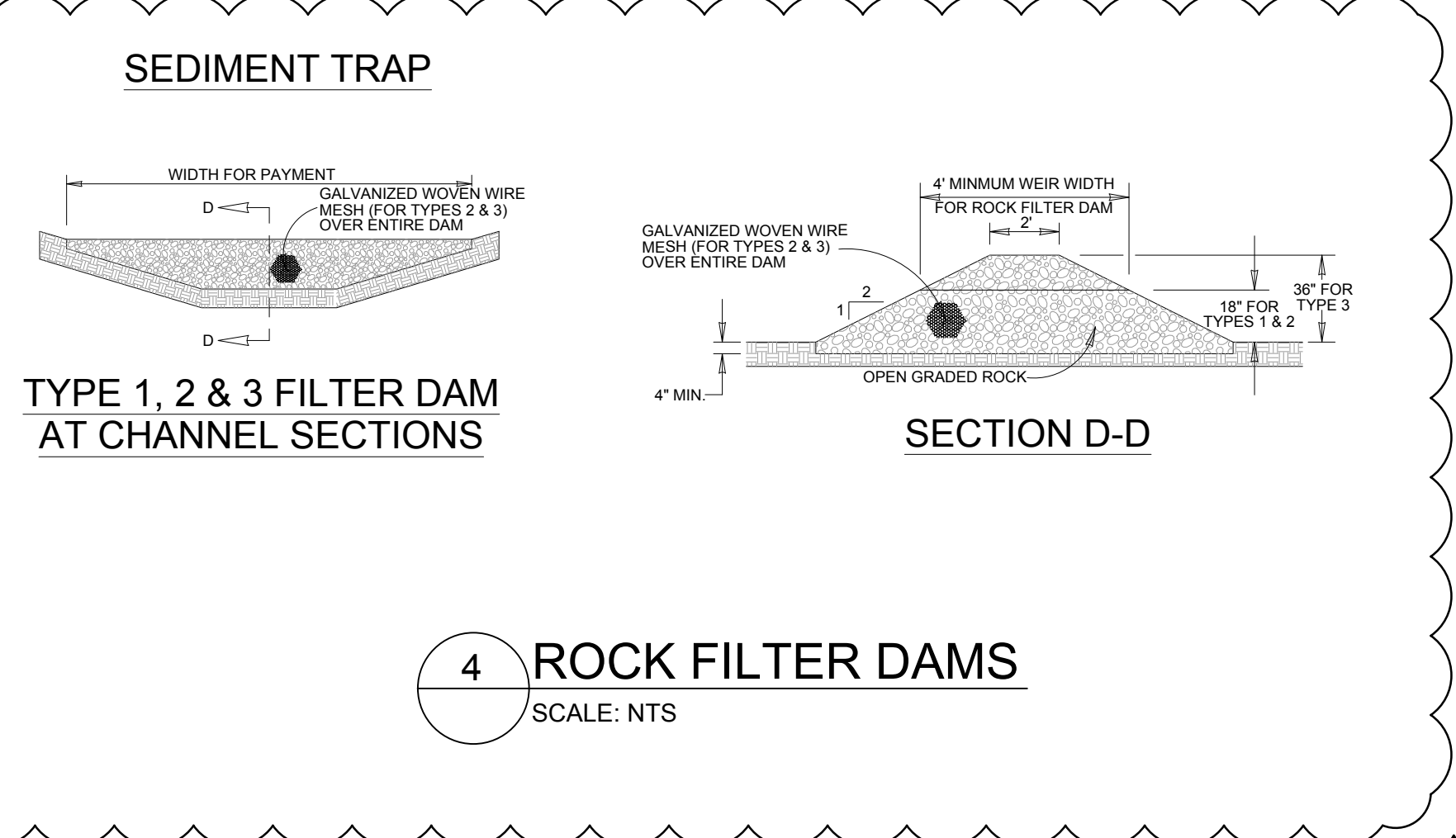


**2 GRAVEL FILTER BAGS**  
SCALE: NTS



- MATERIALS**
- THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
  - THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
  - THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ./YD<sup>2</sup>, A MULLEN BURST RATING OF 140 LB./IN<sup>2</sup>, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
  - IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.
- INSTALLATION**
- AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
  - THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
  - THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
  - IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
  - PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
  - PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
  - DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
  - INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

**3 STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL**  
SCALE: NTS



**4 ROCK FILTER DAMS**  
SCALE: NTS

**ROCK FILTER DAM USAGE GUIDELINES**

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND / OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM / FT SQUARED OF CROSS SECTIONAL AREA. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

**TYPE 1 (18" HIGH WITH NO WIRE MESH):**  
TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCEN- TRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT / SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

**TYPE 2 (18" HIGH WITH WIRE MESH):**  
TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

**TYPE 3 (36" HIGH WITH WIRE MESH):**  
TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

**TYPE 4 (SACK GABIONS):**  
TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.

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**ADDENDUM**

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TDRS No. F-1712 www.rainmed.com

**SAN ANTONIO WATER SYSTEM**

MARK	DATE	DESCRIPTION	BY	NR
1	11/5/18	PER ADDENDUM 2		

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
STORM WATER POLLUTION PREVENTION DETAILS

PROJ: 200-09308-18001  
DES: NR  
DRW: VS  
CHKD: CB

**C-3445**

11/5/18  
NICHOLAS M. RAMONES  
117112  
LICENSED PROFESSIONAL ENGINEER

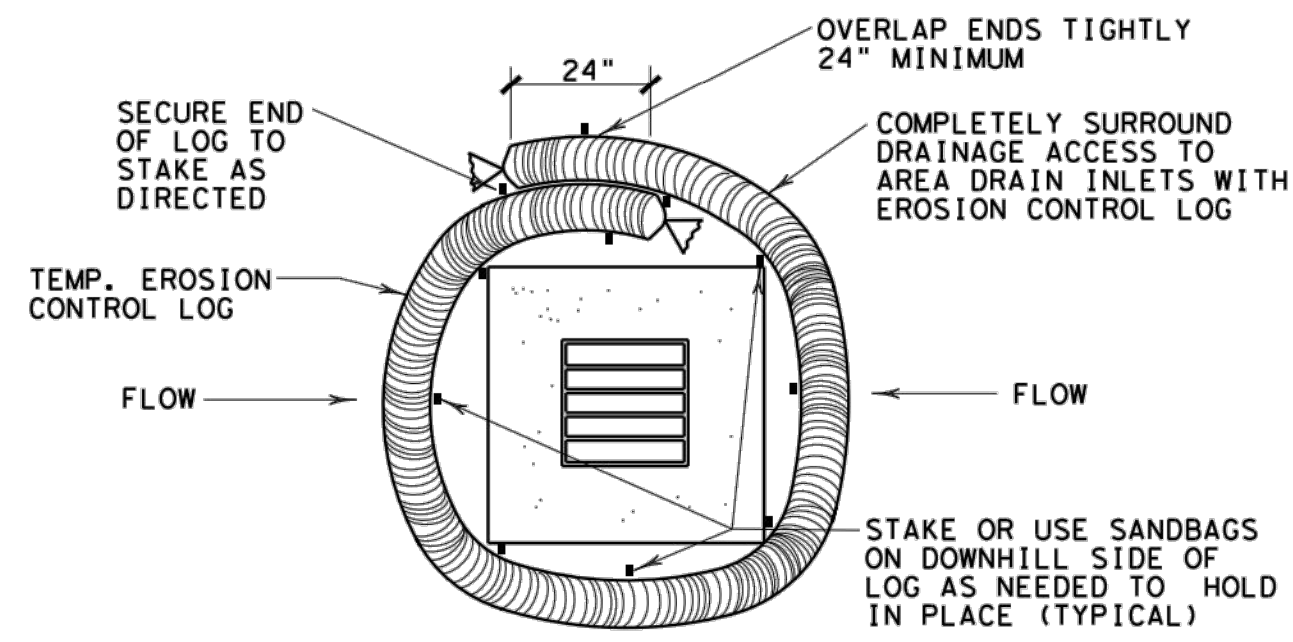
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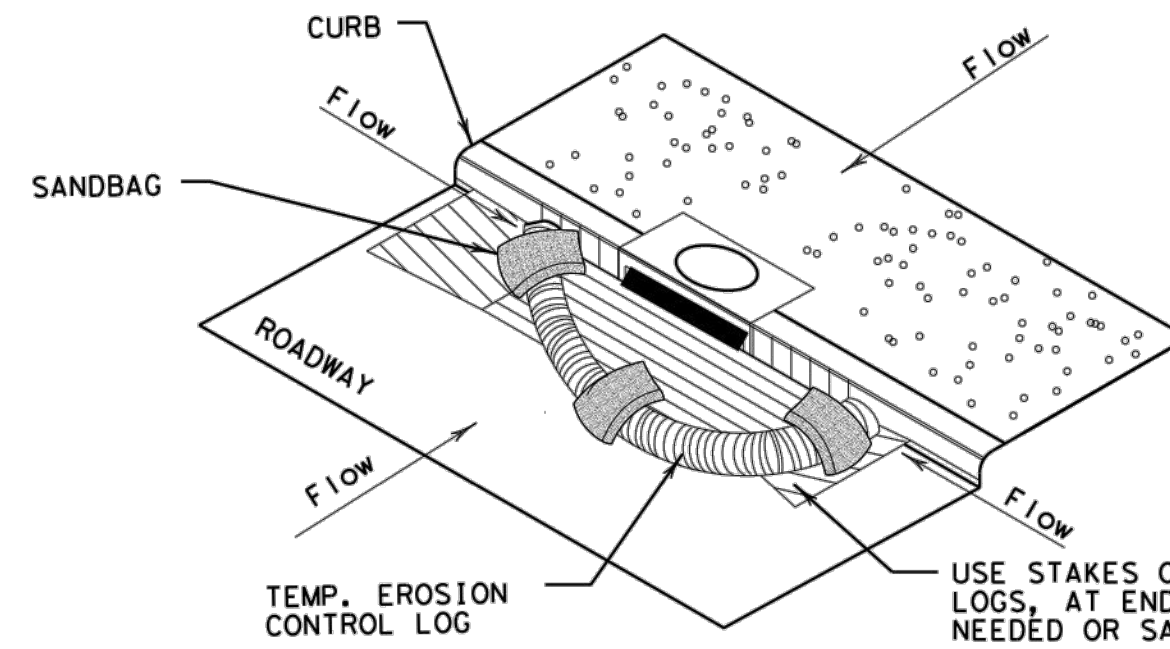
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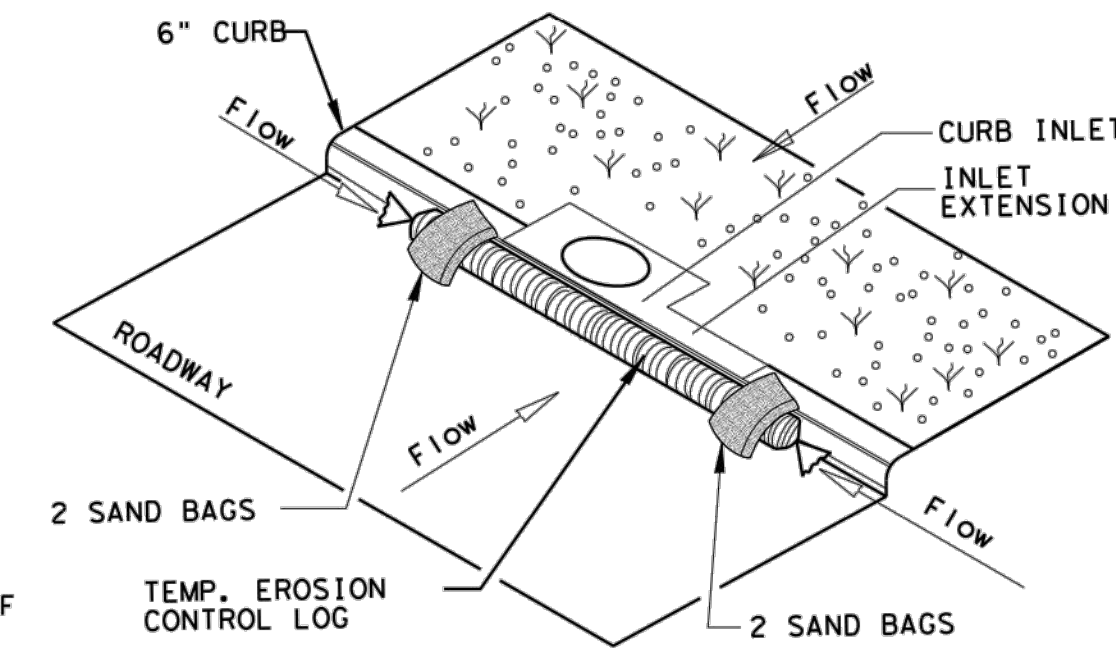
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

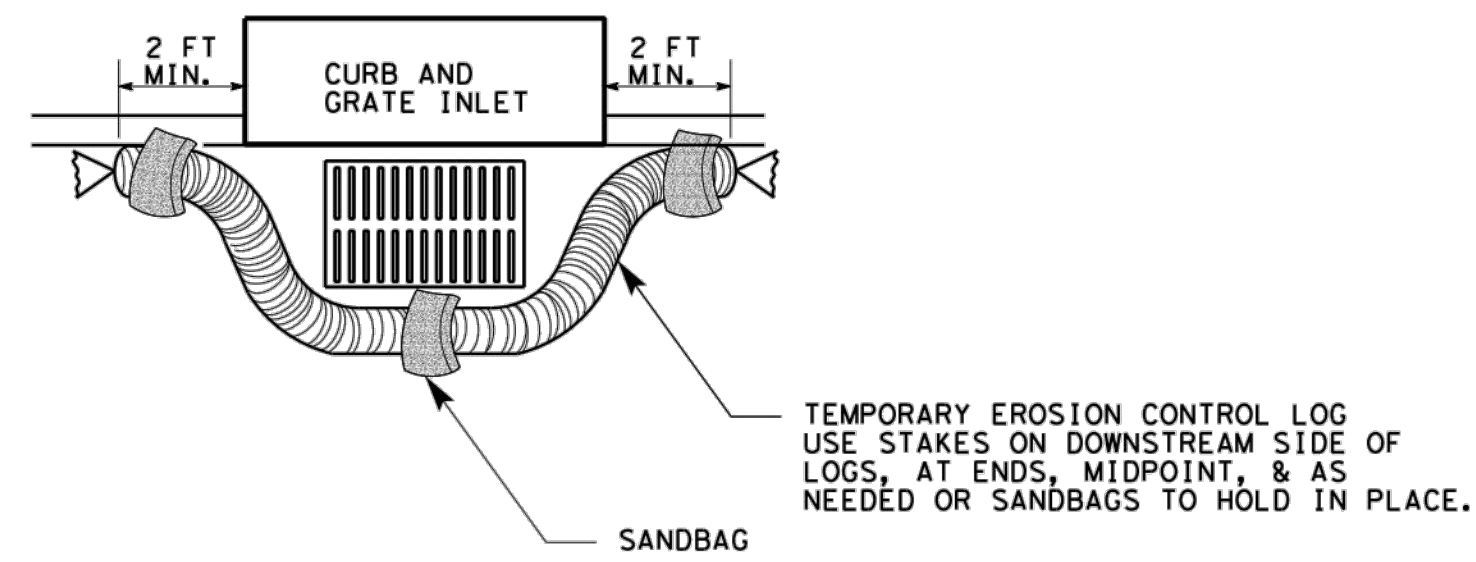
CL-CI



EROSION CONTROL LOG AT CURB INLET

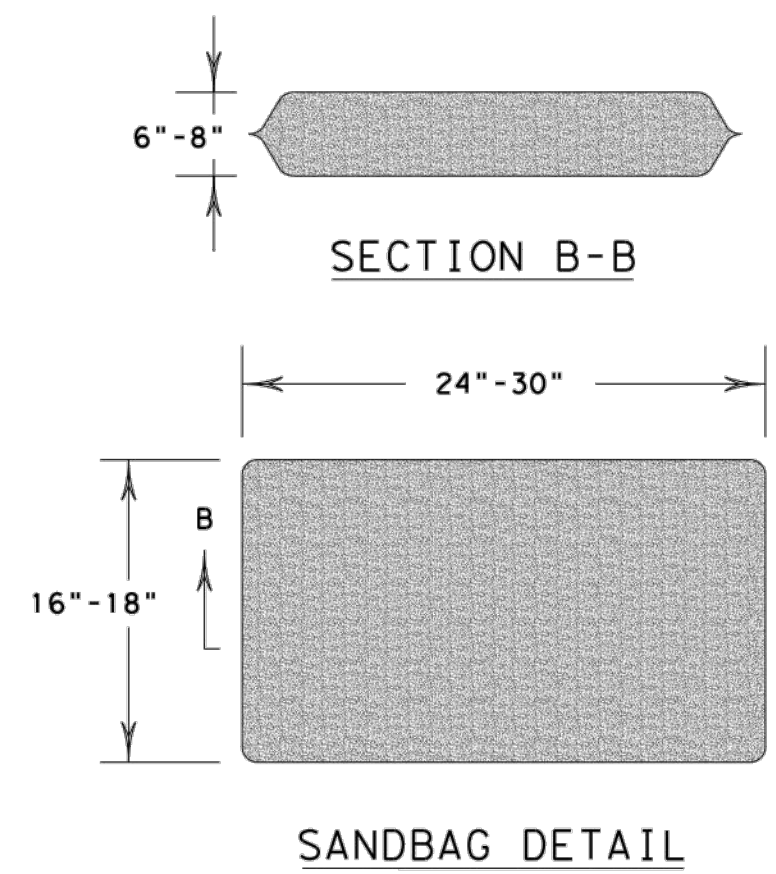
CL-CI

NOTE:  
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

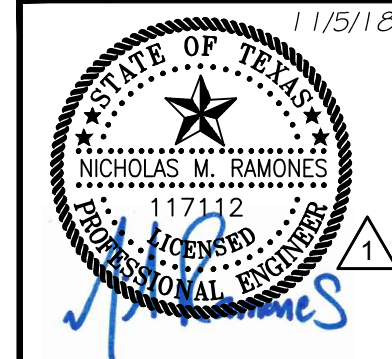
CL-GI



SHEET 3 OF 3

		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>EROSION CONTROL LOG</b> <b>EC (9) - 16</b>			
FILE: ec916	DATE: TxDOT	CHK: KM	DWG: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS			
DIST	COUNTY	SHEET NO.	

5 EROSION CONTROL LOGS  
SCALE: NTS



PROJ: 200-09308-18001  
 DESN: NR  
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 CHKD: CB

C-3446

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ADDENDUM

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**SAN ANTONIO WATER SYSTEM**

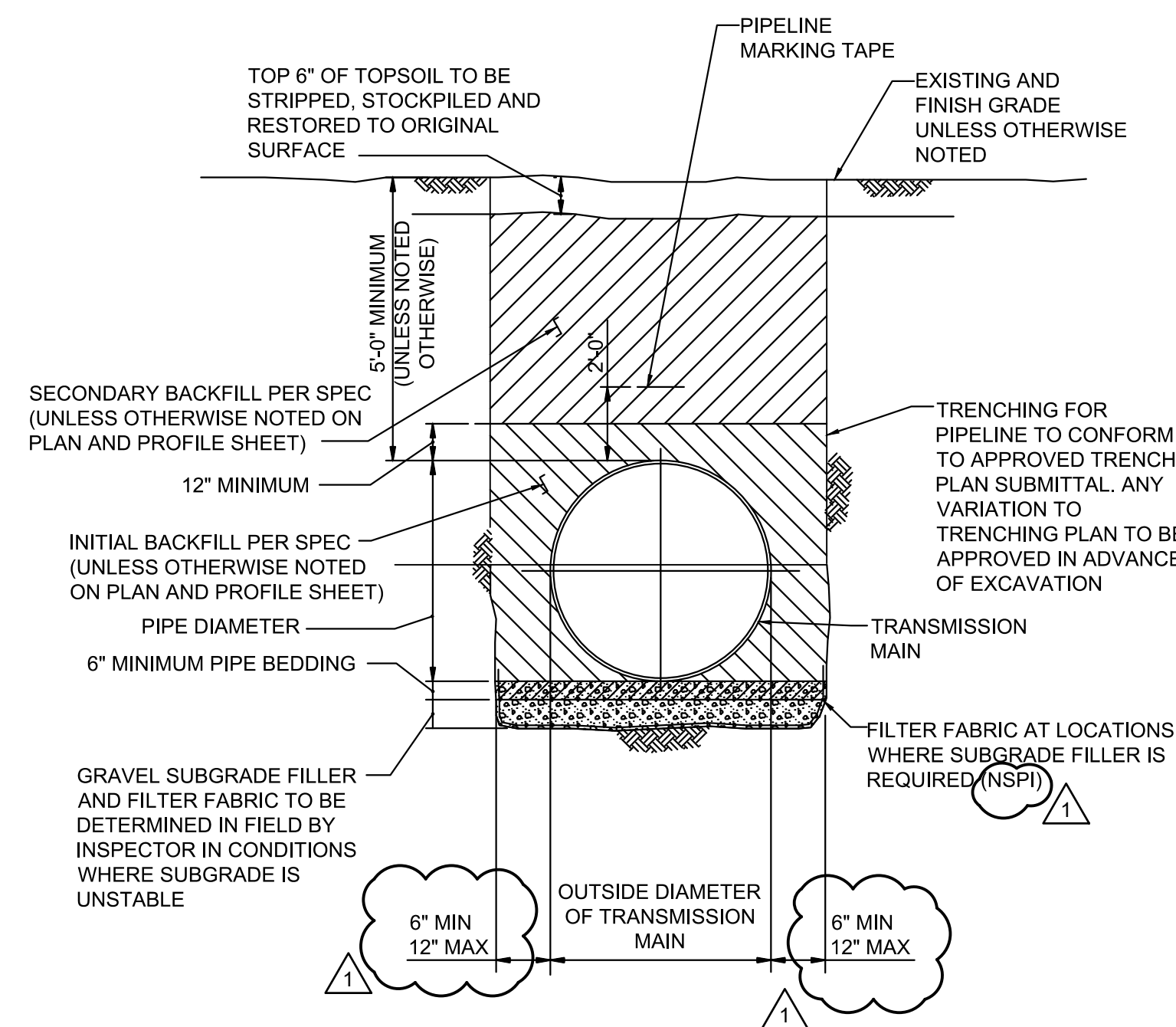
MARK	DATE	DESCRIPTION	BY	NR
1	11/5/18	PER ADDENDUM 2		

SAN ANTONIO WATER SYSTEM  
 CENTRAL WATER INTEGRATION PIPELINE  
 SEGMENT 5-4  
 STORM WATER POLLUTION PREVENTION DETAILS

Bar measures 1 inch, otherwise drawing is not to scale

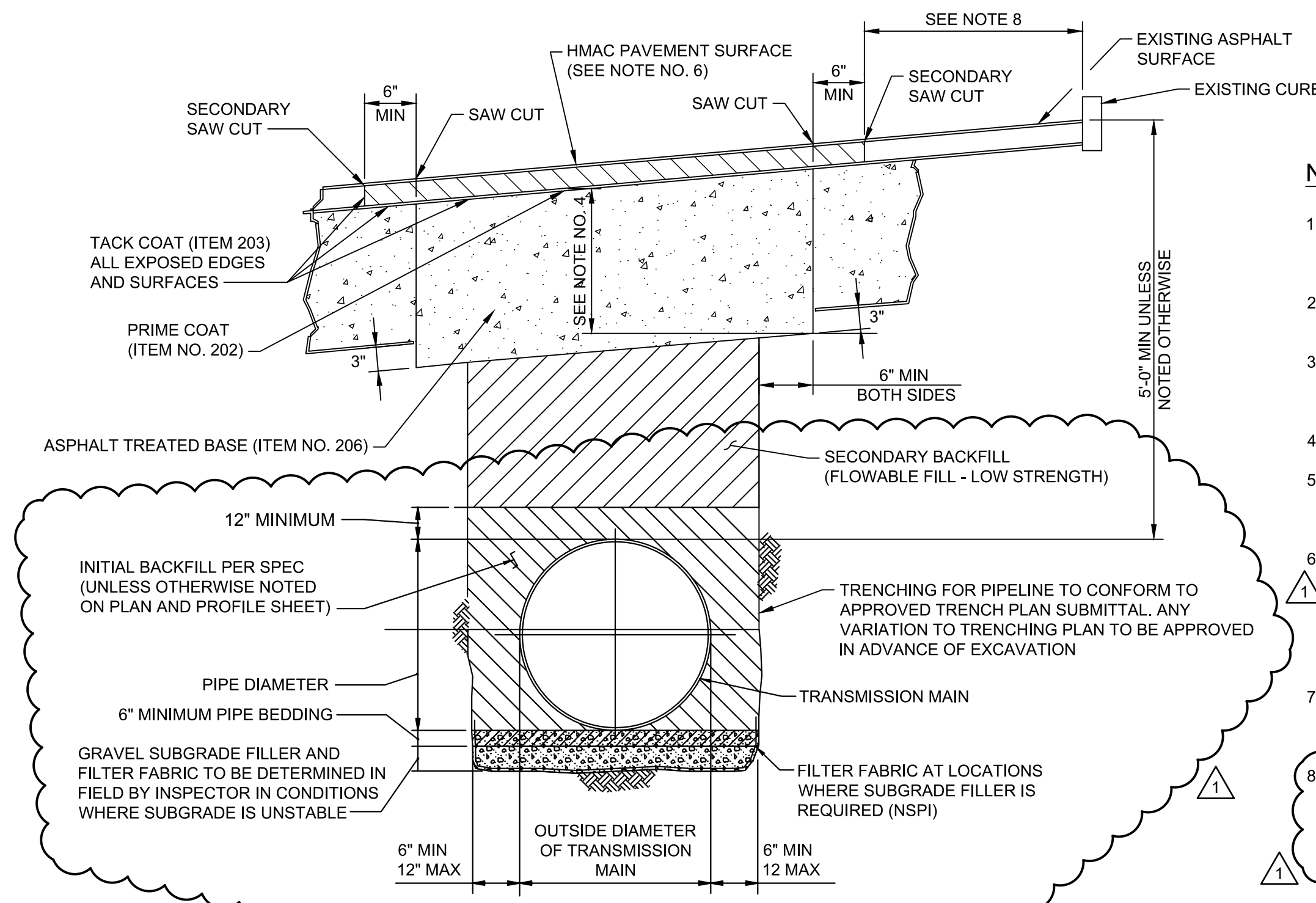
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**TYPICAL PIPE TRENCH (SOIL SURFACE)**



**1** DETAIL  
SCALE: NTS

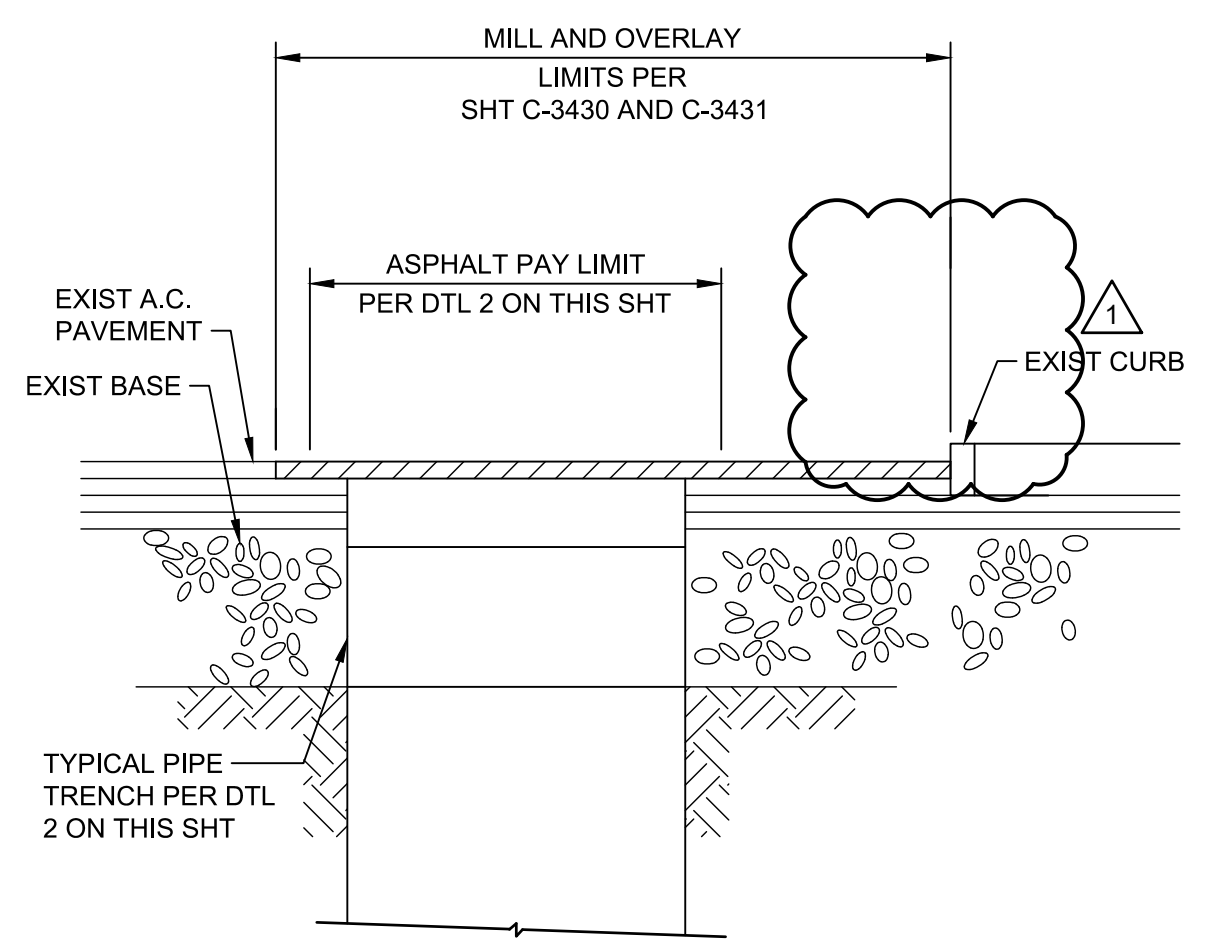
**TYPICAL PIPE TRENCH (ASPHALT SURFACE)**



**2** DETAIL  
SCALE: NTS

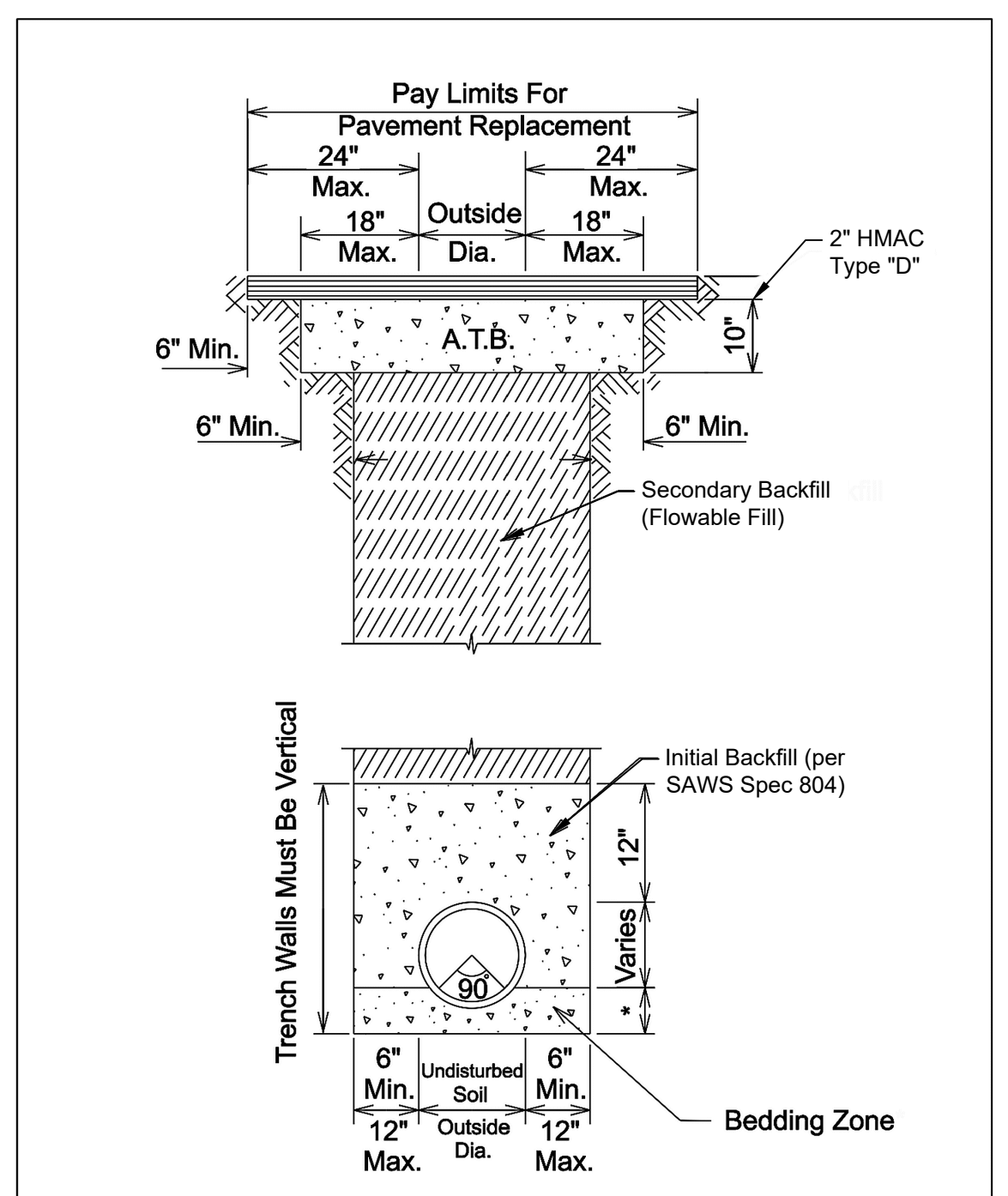
- NOTES:**
- THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN UNDISTURBED SIDES OF THE TRENCH SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
  - ANY CONCRETE PAVING SHALL BE SAW CUT 6" WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
  - IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAC.
  - LOCAL STREETS SHALL BE 10" AND MAJOR/MINOR STREETS SHALL BE 12".
  - DAMAGED PAVEMENT OUTSIDE OF THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE THICKNESS OF 10" OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
  - REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
    - MIN 2" HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
    - MIN 3" HMAC TYPE "C" MODIFIED FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS SEE ITEM 340, SECTION 340.3 (2).
  - CLASS "J" PCC CONCRETE (ITEM 403) OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PCC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
  - WHERE THE EDGE LINE OF THE PAVEMENT REMOVED FOR THE PIPELINE TRENCH EXCAVATION COMES WITHIN 2 FEET OF THE CURB FACE, GUTTER EDGE OR EDGE OF PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO THE CURB FACE, GUTTER EDGE OR EXISTING PAVEMENT AND THE PERMANENT PAVEMENT LAID TO THE GUTTER LINE OR CURB FACE.

**MILL AND OVERLAY**



**3** DETAIL  
SCALE: NTS

**SANITARY SEWER PIPE TRENCH**



**4** DETAIL  
SCALE: NTS

**TYPICAL PAVING NOTES**

- NOTES:**
- A.C. PAVEMENT REPLACEMENT SHALL BE PLACED NO LESS THAN FLUSH WITH ADJACENT EXISTING A.C. PAVEMENT. PRIOR TO REPLACEMENT OF FINAL A.C. CAP, THE PREVIOUSLY PLACED A.C. PAVEMENT TRENCH REPLACEMENT SHALL BE COLD PLANE (MILL) ALONG WITH THE ADJACENT A.C. PAVEMENT TO THE WIDTH AS SHOWN ON SHT C-3430 AND SHT C-3431.
  - NOT USED
  - THE EXISTING PAVING IS TO BE MECHANICALLY GROUND DOWN A MINIMUM OF THE DEPTH 2 INCHES. THE PERMANENT PAVING SHALL THEN BE EXTENDED AS AN OVERLAY INTO THIS AREA. ALL EXISTING PAVEMENT EDGES ARE TO BE TACK COATED BEFORE APPLICATION OF PERMANENT PAVEMENT. IF THERE IS LESS THAN (2) INCHES OF PAVEMENT AFTER MILLING, THEN THE GROUND AREA SHALL BE REMOVED BY SAW CUTTING AND PERMANENT PAVEMENT PLACED.
  - FOR ALL TRANSVERSE TRENCHES (TRENCHES CUT PERPENDICULAR TO THE STREET) THE LIMITS OF THE PAVEMENT REMOVAL BY MILLING SHALL BE EXTENDED A MIN. OF 25' EACH WIDE OF THE TRENCH.
  - CONTRACTOR SHALL RAISE ALL EXISTING AND NEW WATER/ RECYCLED WATER VALVES, AND SEWER/ WATER/ RECYCLED WATER/ STORM DRAIN MANHOLES TO GRADE AFTER FINAL PAVING IS COMPLETED. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY.
  - CONTRACTOR TO CLEAN STREET WITH SWEEPER PRIOR TO END OF EACH WORK DAY.
  - ALL EXISTING STRIPING AND PAVEMENT MARKERS REMOVED OR DAMAGED BY TRENCHING/ REPAVING OR DAMAGED BY CONSTRUCTION SHALL BE REPLACED PER SPECIFICATIONS.
  - THE CONTRACTOR SHALL PLACE BASE PAVING ( OR TEMPORARY PAVEMENT) FLUSH WITH THE SURROUNDING PAVEMENT WITHIN THREE (3) CALENDAR DAYS AFTER TRAFFIC IS ALLOWED BACK ONTO THE TRENCH.
  - CONTRACTOR SHALL MAINTAIN TRENCH RESTORATION AND PROVIDE TEMPORARY STRIPING AS REQUIRED UNTIL FINAL REPAVING AND STRIPING IS COMPLETED.
  - ALL STEEL PLATES SHALL BE NON-SKID AND LEVELED. STEEL PLATES SHALL BE SECURED BY MILLING THE PAVEMENT DOWN AND SETTING THE PLATES FLUSH WITH THE ADJACENT PAVEMENT. ADVANCED WARNING SIGNS SHALL BE REQUIRED FOR STEEL PLATES WITHIN TRAVELED WAYS.
  - ALL SURVEY MONUMENTS AND POINTS THAT ARE DISTURBED BY THIS WORK SHALL BE REESTABLISHED, PERPETUATED, AND DOCUMENTED PER THE PROFESSIONAL LAND SURVEYORS ACT.

**5** DETAIL  
SCALE: NTS

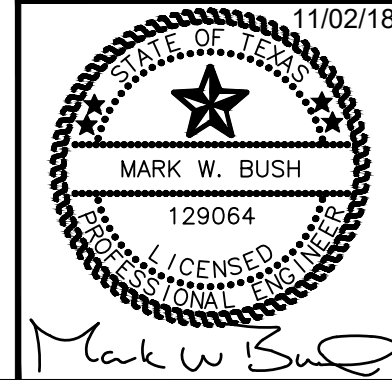
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-804-01	1 OF 1

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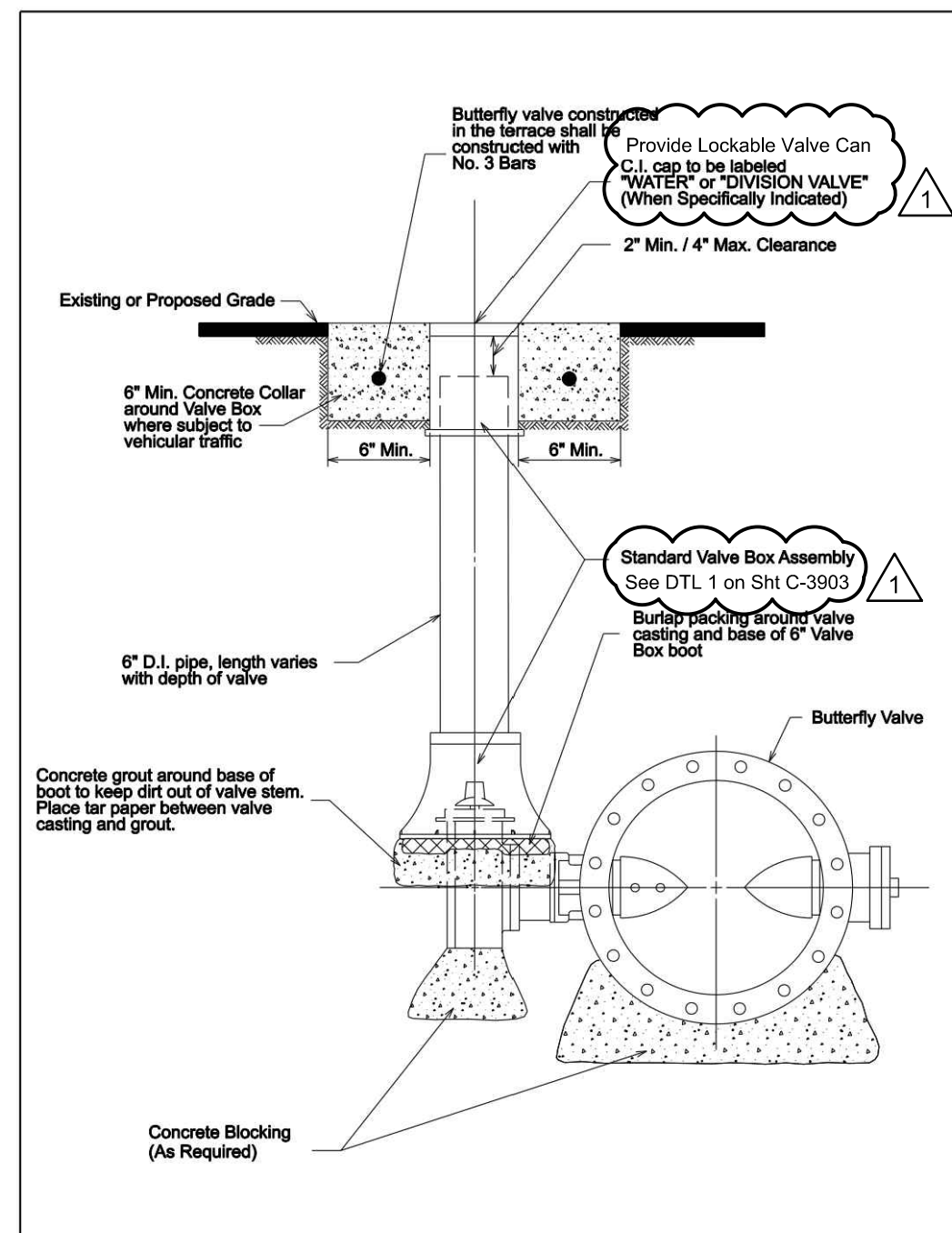
ADDENDUM

**SAN ANTONIO WATER SYSTEM**

BY	MWB
DATE	11/01/18
DESCRIPTION	ADDENDUM NO. 2
MARK	1
SAN ANTONIO WATER SYSTEM	CENTRAL WATER INTEGRATION PIPELINE SEGMENT 5-4
PIPE TRENCH DETAILS	
PROJ:	200-09308-18001
DESN:	CH
DRWN:	ML/SB
CHKD:	MB
<b>C-3901</b>	



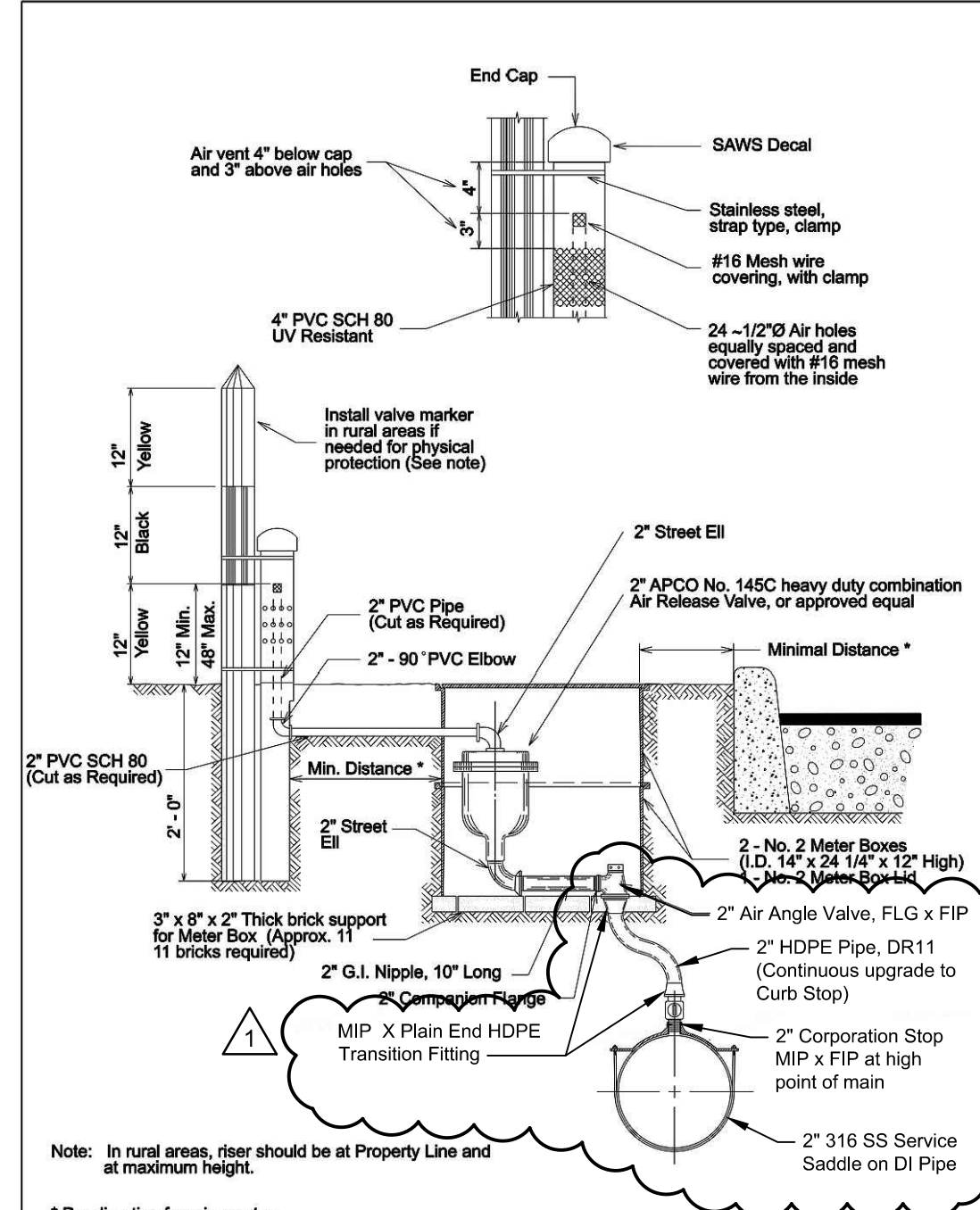
**BURIED BUTTERFLY VALVE**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF BURIED BUTTERFLY VALVE WITH VALVE BOX COMPLETE	APPROVED MARCH 2008	REVISED APRIL 2014
DD-830-01		SHEET 1 OF 4	

**1** DETAIL  
SCALE: NTS

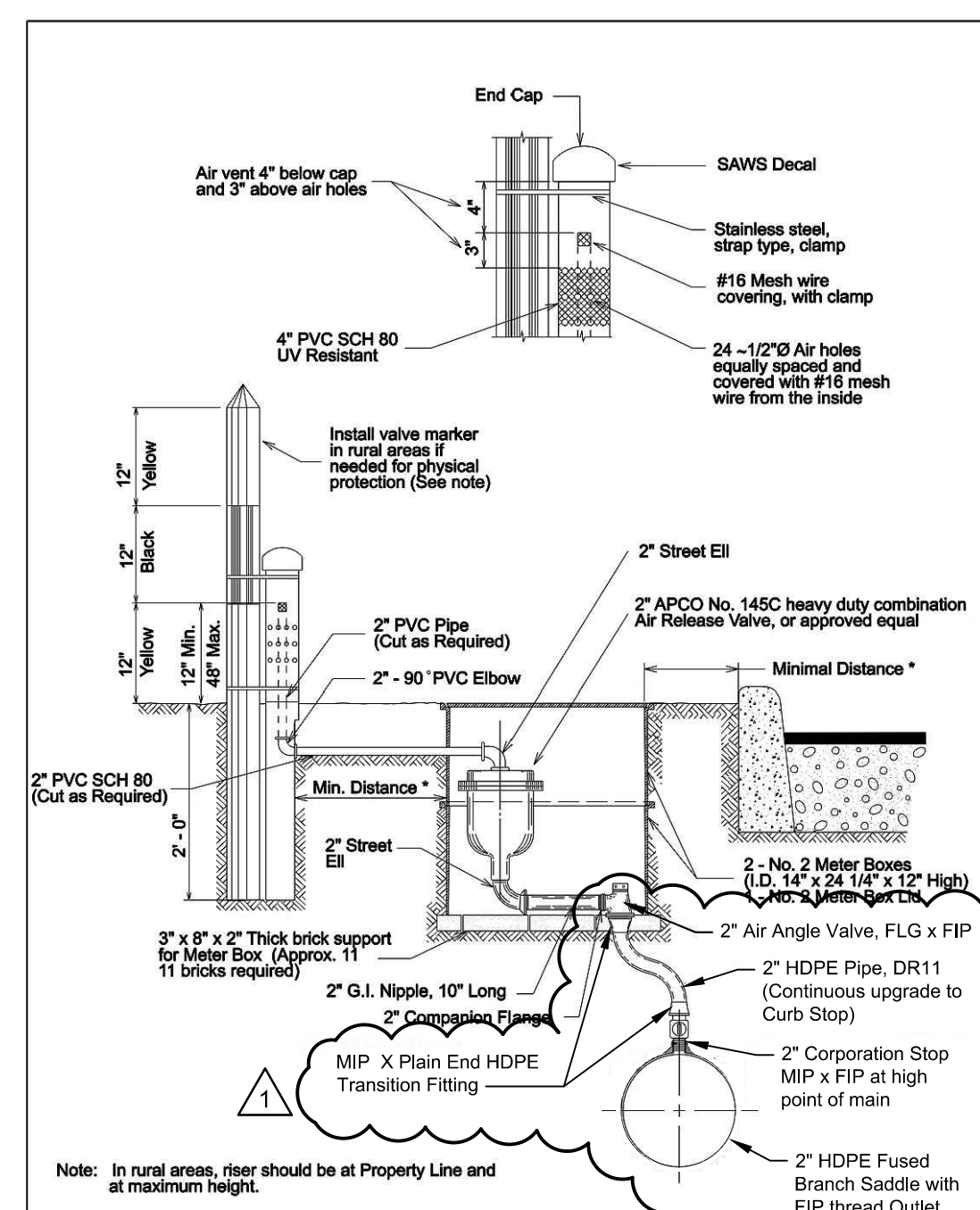
**2" AIR RELEASE VALVE**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF 2" AIR RELEASE VALVE	APPROVED MARCH 2008	REVISED APRIL 2014
DD-846-02		SHEET 1 OF 1	

**2** DETAIL  
SCALE: NTS

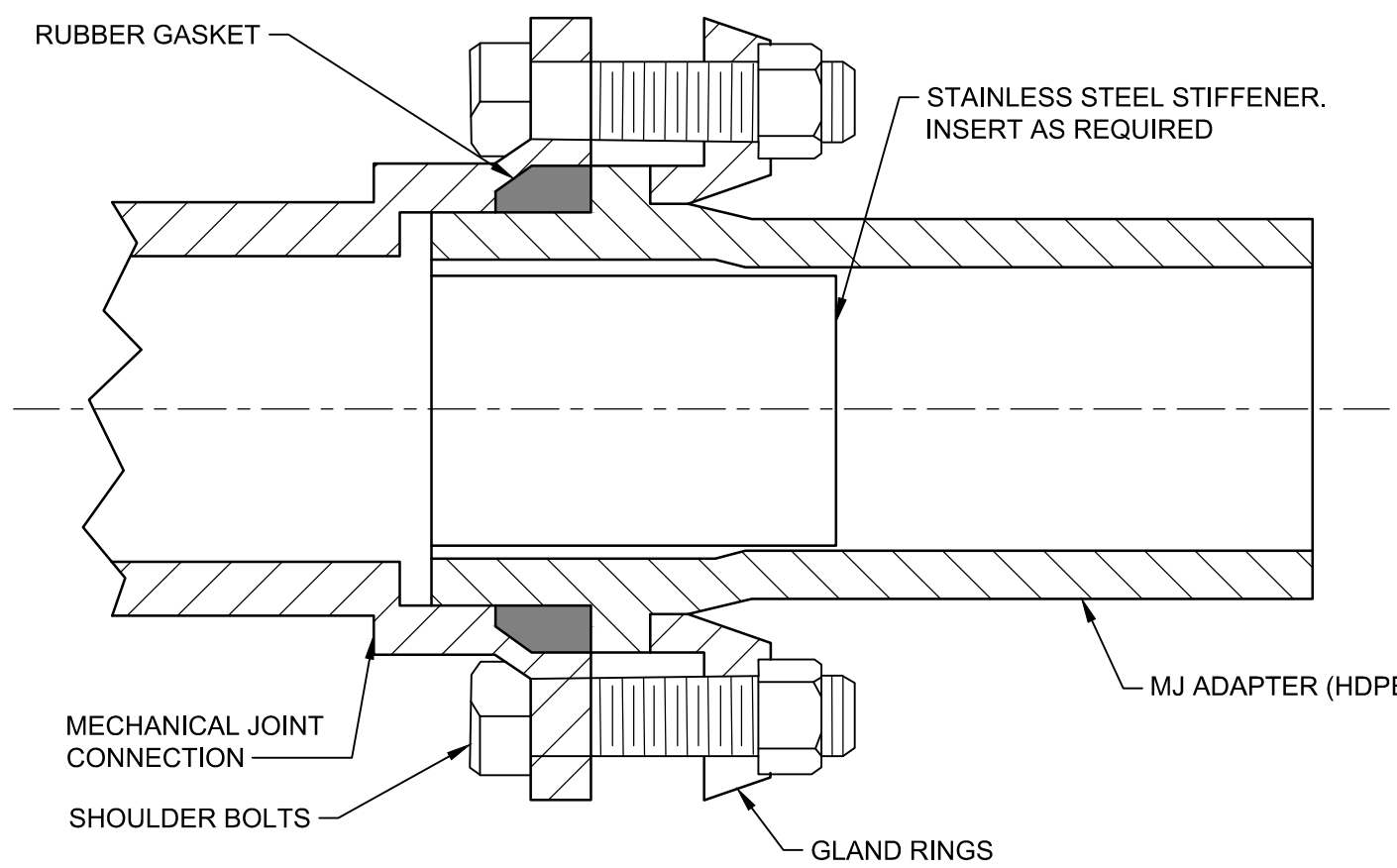
**2" AIR RELEASE VALVE (HDPE)**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF 2" AIR RELEASE VALVE	APPROVED MARCH 2008	REVISED APRIL 2014
DD-846-02		SHEET 1 OF 1	

**3** DETAIL  
SCALE: NTS

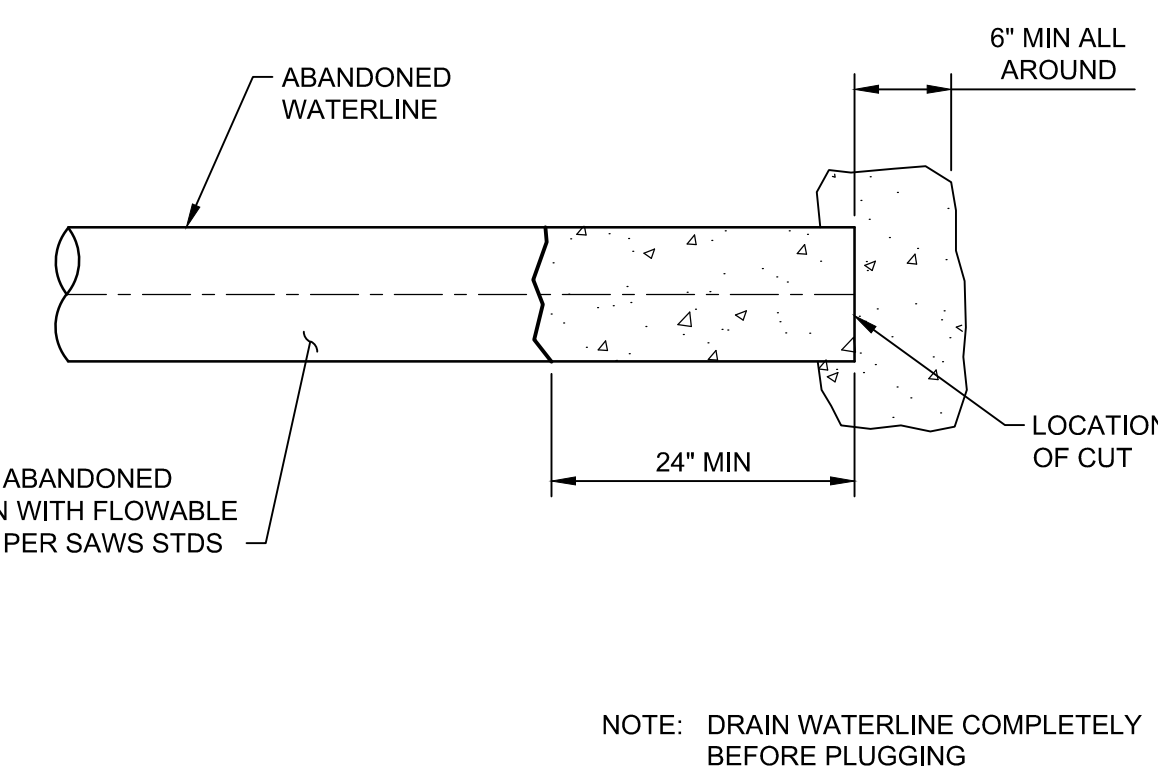
**HDPE MJ ADAPTER (RESTRAINED JOINT)**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF HDPE MJ ADAPTER	APPROVED MARCH 2008	REVISED APRIL 2014
DD-846-02		SHEET 1 OF 1	

**4** DETAIL  
SCALE: NTS

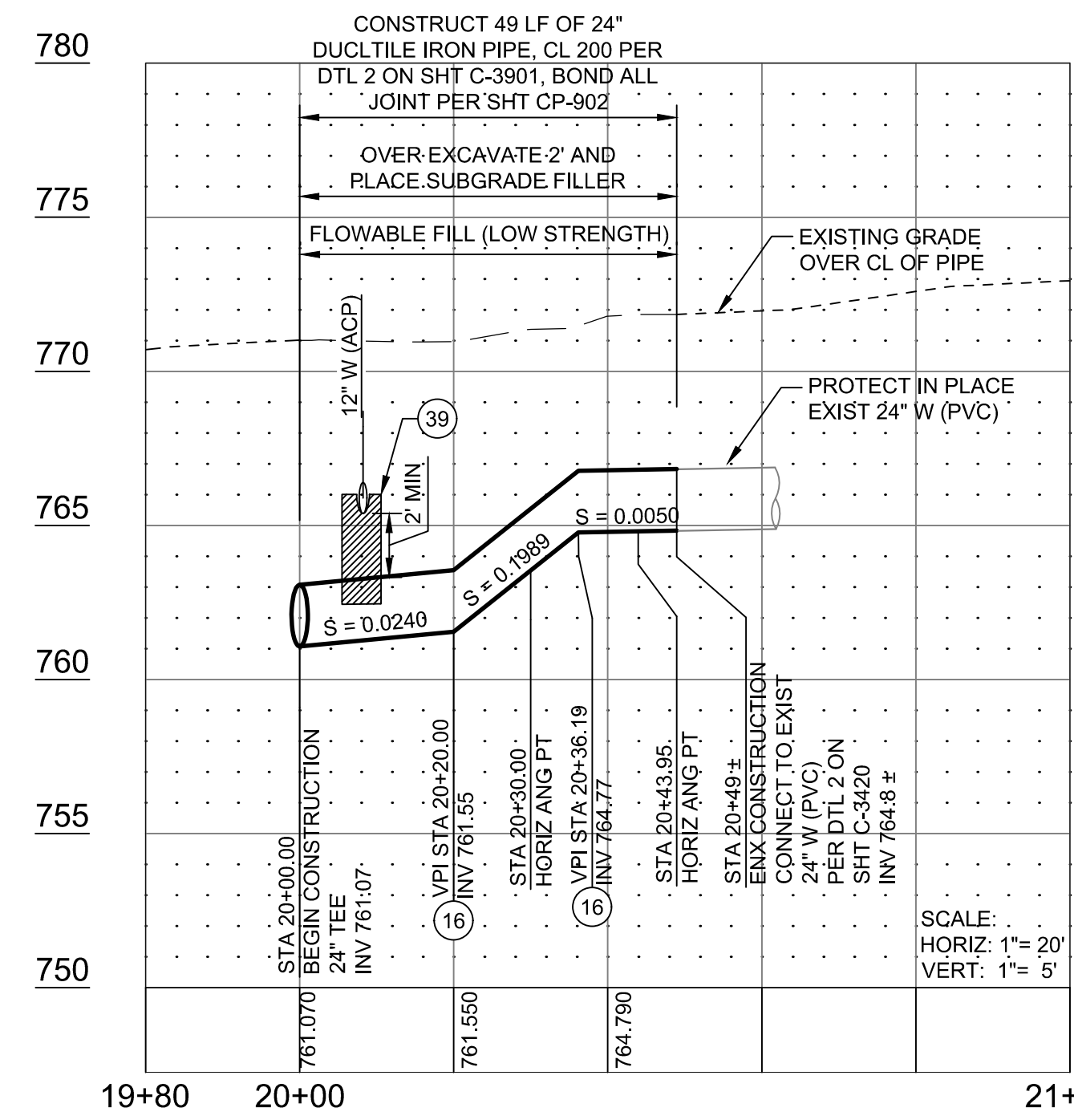
**CUT AND PLUG OF EXISTING PIPELINE**



NOTE: DRAIN WATERLINE COMPLETELY BEFORE PLUGGING

**5** DETAIL  
SCALE: NTS

**24" WATER PIPELINE CONNECTION STA 934+21.81**



SCALE: HORIZ: 1" = 20'  
VERT: 1" = 5'

**6** DETAIL  
SCALE: NTS

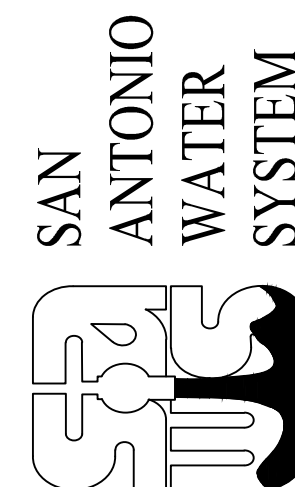
**CONSTRUCTION NOTES:**

- 16 CONSTRUCT 24" 11.25 DEGREE DI BEND (MJ) (RESTRAINED)
- 39 BACKFILL WITH FLOWABLE FILL FROM SPRINGLINE OF EXIST PIPE TO SPRINGLINE OF NEW PIPE (5' MIN ON EACH SIDE)

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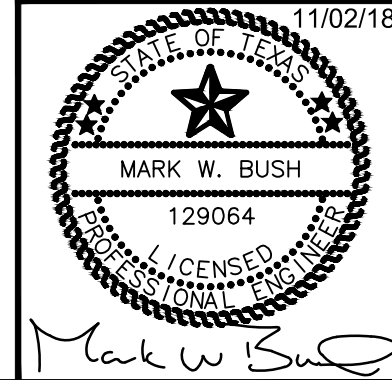


ADDENDUM 2



MARK	DATE	DESCRIPTION
1	11/02/18	ADDENDUM NO. 2

SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
SEGMENT 5-4  
MISCELLANEOUS DETAILS



PROJ:	200-09308-18001
DESN:	CH
DRWN:	ML/SB
CHKD:	MB

**C-3902**

Bar measures 1 inch, otherwise drawing is not to scale

