



City of San Antonio  
**TRANSPORTATION AND CAPITAL IMPROVEMENTS**

**ADDENDUM No. 1**

**FORMAL INVITATION FOR BIDS (IFB)**

**PROJECT NAME: McCullough Avenue Area Drainage – ID NO.:40-00327**

**DATE: April 19, 2016**

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This addendum is separated into sections for convenience; however, all contractors, subcontractors, material men, and other parties shall be responsible for reading the entire addendum. The failure to list an item or items in all affected sections of this addendum does not relieve any party affected from performing as per instructions, providing that the information is set forth one time any place in this addendum. These documents shall be attached to and become part of the Contract Documents for this project. The contractor shall be required to sign an acknowledgement of the receipt of this addendum and submit with their proposal package.

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**GENERAL:**

1. The following changes and/or additions to the Contract Documents, via this addendum, shall apply to proposals made for and to the execution of the various parts of the work affected thereby.
2. Careful note of the Addendum shall be taken by all interested parties and all trades affected shall be fully advised in their performance of the work involved.

**GENERAL COMMENTS:**

1. The following forms have been revised as part of this Addendum
  - Form 020 Bid Form
  - Form 025 Unit Pricing Form
2. The following plan sheets have been revised or added and included as part of this Addendum:
  - Quantity Summaries - Sheet Numbers 21 to 25 - **Revised**
  - SW3P and TCP Summary – Sheet Number 26 - **Revised**
  - Traffic Control Plan Narrative - Sheet Number 36 - **Revised**
  - Roadway Plans – Sheet Numbers 81, 84 to 85 - **Revised**
  - Drainage Plans – Sheet Numbers 114, 116, 118 - to 121, 148 - **Revised**
  - Structures Plans – Sheet Numbers 156, 157, 158, 159, 161, 169 to 170 - **Revised**
  - SW3P Plans – Sheet Number 175, 177 - **Revised**
  - Landscape Plans - Sheet Numbers 195-196 – **Revised**
  - CPS Energy Plans – Sheet Number 348 to 358 - **Added**
3. The following specification, special specifications and special provisions have been removed, added or revised as part of this Addendum
  - City of San Antonio Specification – Item 550 TRENCH EXCAVATION SAFETY PROTECTION - Removed
  - City of San Antonio Special Specification – Item 2000 DIVERSION AND CARE OF WATER – Added
  - City of San Antonio Standard Specifications for Construction – Dated June 2008, Special Provisions No. 4, dated April 2016 – Revised (Added Special Provision to Item 540 Temporary Erosion, Sedimentation & Water Pollution Prevention).
  - CPS Energy Specifications – CPS Energy Exhibit GAS-1 – Additions to the Project Bid Documents
  - CPS Energy Specifications – CPS Energy Exhibit GAS-2 – Specifications for Construction of Natural Gas Distribution Facilities
  - CPS Energy Specifications – CPS Energy Exhibit GAS-3 – Design Standards (Steel Gas Pipe)
  - CPS Energy Specifications – CPS Energy Exhibit GAS-4 – Design Standards (Plastic Gas Pipe)
  - CPS Energy Specifications – CPS Energy Exhibit GAS-5 – Compensation Schedule Construction of Natural Gas Distribution Facilities
  - CPS Energy Specifications – CPS Energy Exhibit GAS-7 – CPS Energy Covered Tasks Regulated by 49 CFR Part 192

## QUESTIONS FROM PROSPECTIVE BIDDERS:

1. Question: There are Base Bid drainage bid items for Box Culverts and RCP that total 4,286 LF (excluding the work at the river), a bid item for Trench Excavation Safety Protection with 4,000 LF, and a Temporary Special Shoring bid item with 28,000 SF. Please clarify where Trench Excavation Safety Protection will be measured and paid and where Temporary Special Shoring will be measured and paid. Are they based on depth, stationing, or some other criteria?  
**Response:**
  - **Trench Excavation Protection is to be based on depth of excavation. For better clarity on this intent, COSA Bid Item 550.1 - TRENCH EXCAVATION SAFETY PROTECTION is removed and replaced with TXDOT BID ITEM TRENCH EXCAVATION PROTECTION.**
  - **The temporary special shoring for TxDOT Item 403-6001 is removed. However, as shown in Sheet 161, some form of temporary special shoring in the San Antonio River area may be needed. Since it is unknown what type of cofferdam will be installed for this area, any temporary special shoring required for the work in the area of the river, in order to maintain the integrity of the Newell Bridge or the approach roadway is subsidiary to the cost of TxDOT Bid Item 403-6006 - TEMPORARY SPL SHORING (COFFERDAM).**
  - **The approximate station limits for COSA Bid Item 551.1 - TEMPORARY SPECIAL SHORING are Sta 15+00 to Sta 32+00.**
2. Question: There is Alt 1 drainage bid items for RCP that total 288 LF, a bid item for Trench Excavation Safety Protection with 288 LF, and a Temporary Special Shoring bid item with 200 SF. Please clarify where Trench Excavation Safety Protection will be measured and paid and where Temporary Special Shoring will be measured and paid. Are they based on depth, stationing, or some other criteria?  
**Response: BID ALTERNATE No. 1 is removed.**
3. Question: Note 2 on Sheet 36 indicate that up to two Phases can be worked at one time. Please confirm that this is possible.  
**Response: This statement has been removed and revised on Sheet 36.**
4. Question: For phases where the road is closed, can construction materials be stored in the work area?  
**Response: For purpose of bidding, assume a storage yard will be needed in proximity of the project for proper staging. Final decision for where equipment can be stored must be approved by the Resident Engineer.**
5. Question: How is the 30'x5'x8" minimum depth riprap shown on Sheet 114 measured and paid?  
**Response: This should be 30'x5'x6". It is to be paid by TxDOT Item 432-6022 - RIPRAP (STONE COMMON) (DRY) (6IN) by the cubic yard. The plan sheet has been revised, and the summary sheet is updated to reflect the change.**
6. Question: Reference the Box Culvert Backfill Detail on Sheet 148:
  - a. Does the referenced detail on Sheet 148 supersede the standard detail shown on Sheet 147?  
**Response: Yes, for the box culvert backfill detail. Sheet 148 supersedes Sheet 147.**
  - b. Is the Clean Gravel Subgrade Filler under the box culverts measured and paid under Item 410.1 CONCRETE SUBGRADE FILLER - 440.24 CY or is it incidental to the box culverts?  
**Response: It will be paid under Item 410.1 - additional quantities will be added in Addendum 1.**  
Is the Flowable Fill along the sides of the box culverts measured and paid under Item 413.1 FLOWABLE BACKFILL (LOW STRENGTH) - 2,535.83 CY or is it incidental to the box culverts?  
**Response: Measured and paid under Item 413.1.**
  - c. Is the Select Granular Fill above the box culverts measured and paid under Item 247 FL BS (CMP IN PLC) (TYA GR1 - 2) (FNAL POS) - 8,453.57 CY or is it incidental to the box culverts?  
**Response: Measured and paid under Item 247.**
  - d. Is the Secondary Backfill above the Select Granular Fill measured and paid under Item 107.1 EMBANKMENT (FINAL) (ORD COMP) (TY B) - 1,135.53 CY or is it incidental to the box culverts?  
**Response: Measured and paid under Item 107.1.**
7. Question: Reference the Pipe Bedding and Backfill Detail on Sheet 147; is all of the excavation, backfill, and filter fabric incidental to the RCP items or are they measured and paid elsewhere?  
**Response: Excavation, backfill, and filter fabric are incidental to the cost of the RCP.**
8. Question: On Sheet 156, the design for the relocation of the Light Pole is on the Contractor. What is the design criteria? Why is the Contractor designing this and not the Engineer?  
**Response: Refer to the SARA As-Builts specified on Sheet 156. These will be provided. Regarding the reasoning for the contractor designing, the City of San Antonio decided to have the contractor provide these drawings.**
9. Question: The notes on Sheet 156 reference SARA as-built drawings that are not in the bid package. Please provide the referenced as-built drawings.  
**Response: These will be provided.**
10. Question: For Section A-A on Sheets 158 and 159, how is the Select Granular Fill measured and paid?  
**Response: Select Granular Fill is subsidiary to Retaining Wall construction, and will be paid under Item 423-6005. See clouded note on Sheet 166.**
11. Question: Keynote 6 on Sheet 160 states that the waterstop on the demolished wall/bulkhead needs to remain and be utilized when constructing the new wall/bulkhead. It will be nearly impossible to salvage the PVC waterstop during demolition; can an alternate product such as a strip applied waterstop be utilized instead of reusing the existing PVC waterstop?  
**Response: Alternate waterstop products may be substituted for the reuse of the PVC waterstop at these locations. Alternate waterstop shall be submitted for approval prior to use.**
12. Question: Is there a plan holders list available?  
**Response: Yes. This can be provided for all bidders.**
13. Question: Do the box culverts have a standard Ram-Nek joint or gasketed joint?  
**Response: Please refer COSA Specification Item 309 - PRECAST REINFORCED CONCRETE BOX CULVERTS.**
14. Question: Is DR18 C900 the type of pipe being proposed for the proposed water?  
**Response:**
  - **Water mains 12" and smaller shall be AWWA C900 (Blue). All C900 PVC pipe shall be Class 150 (DR 18) having a sustained pressure requirement of 500 psi (ASTM D2241) and a minimum burst pressure of 755 psi (ASTM D1599).**

- *Water mains larger than 12" shall be AWWA C905 (blue). All C-905 PVC pipe shall have a pressure rating of 235 PSI and a dimension ratio of 18 or have the highest pressure rating available for each size of pipe.*
  - *Contractor shall refer to SAWS Material Specifications for more details.*
15. Question: For 18" sewer pipes, SDR26 CL160 2241 Pipe is not available. Is DR25 C905 CL165 Green in Color acceptable?  
**Response:**
- *Contractor may use 18" DR25 C905 CL165 (Green) PVC pipe in lieu of 18" SDR26 CL160 ASTM D-2241 Pipe.*
  - *Contractor shall refer to SAWS Material Specifications for more details.*
16. Question: Are there any dead end runs for the water mains or are all of them fed from two directions?  
**Response:** *The Water plans indicate all adjusted water mains are connected to "Tied" existing water mains. No "Dead End" is anticipated. Contractor, however, shall coordinate all tie-ins with SAWS prior to shutting or cutting any existing water mains.*
17. Question: Are there details available for the Special Junction Boxes?  
**Response:** *Sheet 114 and 120 revised for more clarification. See Sheet 169-170 for the Special Junction Box Details in the San Antonio River.*
18. Question: For stability, the geotechnical report indicates that the structural work (diversion box, CIP box culverts, and retaining walls) should be excavated with a 1:1 slope and backfilled with select fill (flex base). Shoring is required and shown on the drawings which would not permit a full 1:1 open excavation which may or may not affect the stability as described in the geotech report. Please clarify which governs.  
**Response:** *The geotech report also states that lateral bracing systems are anticipated to be required where "there is not sufficient room to perform trench excavations with temporary slopes for installation of the SBCs, RCP, junction boxes, and manholes". What governs is amount of space available in the working area. Considering the tight restrictions in this project due to the available ROW, space will be at a premium, particularly for the very deep excavation areas along Newell between Park and Elmira.*
19. Question: I also have another question, On the 18"X6" Sewer Services; will you allow 18"X6" Inserta Tees instead of a tee wye? Huge expense on a full size Tee-Wye compared to an inserta tee.  
**Response:** *SAWS Specification Item 854, paragraph 854.4.3 states; "Lateral Installation: All lateral installations shall be performed in accordance with Item Nos. 848; "Sanitary Sewers" 804, "Excavation, Trenching and Backfill," and as described herein. For sanitary sewer mains that are 12 inch in diameter or smaller, all laterals shall be connected using the appropriate size tee/wye placed in line with the main line. For mains larger than 12 inch, insert-a-tee conforming to ASTM 3034-08, or approved or equal, shall be used. Where waterline crossings with sanitary sewer laterals are less than the regulated separation distances, all lateral piping shall be SDR-26 PVC pipe (ASTM D2241-09), with a pressure rating of 150 psi."*
20. Question: Due to the direction of flow in the 18" Sanitary Sewer line, can the Sanitary Sewer work be done concurrently in Phase 1, Phase 1 Intersection, Phase 2A, Phase 2B? If not, there will be a timely bypass operation involved. Is that your intention?  
**Response:** *It is a contractor's option to bypass, divert, or support the existing pipe across the excavation trenches. Bridging the proposed permanent sewer main across the trenches while constructing the storm drains is not allowed.*
21. With regards to the box culvert backfill detail there are 2 in the plans. Can you verify that the detail we are to use is the one on sheet 148 of the plans with the following requirements: 4" Subgrade filler and flow fill 2' on either side of the box?  
**Response:** *The box culvert backfill detail on Sheet 148 supersedes the box culvert backfill detail on Sheet 147 (CoSA Standard). The standard, however, still applies to bedding/backfill requirements for RCP, as well as the structural excavation at junction boxes and inlets.*
22. I also have a question with regards to the Wing Gates for TY C1 Inlets. I do not see a detail. Can you include a detail for it in the addendum?  
**Response:** *The WingGate™ is a brand-specific item (from United Storm Water Inc.) designed to prevent debris from entering into the storm drain system for small storm events (less than the 25-year design flood). The wing gates specified in the plans are not intended to be vendor-specific, but as an example of the type of debris/ trash prevention system to be utilized on the grade curb inlets. Please research and provide the appropriate system that has the same function and operation as the example wing gate system.*

**END OF ADDENDUM No. 1**

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# CITY OF SAN ANTONIO

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Project Name: McCullough Avenue Area Drainage (Addendum #1)  
ID NO.: 40-00327

Date Issued: April 19, 2016  
Page 1 of 2

*The estimated construction budget for this contract is \$9,822,475.01*

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**020**  
**BID FORM**

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**Legal Name of Company (print)**

**I. BASE BID**

Amount of Street/Roadway Construction Base Bid (Insert Amount in Words and Numbers):

Total Amount of Base Bid (Including City, SAWS Water, SAWS Sewer, CPS Gas) Insert Amount in Words and Numbers):

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\$

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**II. ALTERNATES**

Amount of each Alternate (if applicable) insert in Words and Numbers: Write N/A, if not applicable

Total Amount of Bid for Additive Alternate #2 (Insert Amount in Words and Numbers):

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\$

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**III. UNIT PRICES**

Bidders shall submit unit pricing on the 025 Unit Pricing form, and it shall be attached immediately following this sheet.

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Person Authorized to Sign Bid/Contract (Print)

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Title of Person Signing

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Address

---

Fax No.

Local Headquarters

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City, State and Zip Code

Local Branch Office

*(Check one)*

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Telephone No.

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E-mail Address

Name of the proposed **Project Manager:** \_\_\_\_\_

Name of the proposed **Site Superintendent:** \_\_\_\_\_

CITY OF SAN ANTONIO  
025 UNIT PRICING FORM

PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	100.1			MOBILIZATION	LS	1			
	100.2			INSURANCE AND BOND	LS	1			
	101.1			PREPARATION OF RIGHT-OF-WAY	LS	1			
	103.1			REMOVE CONCRETE CURB (> 10,000 L.F.)	LF	7380.00			
	103.3			REMOVE CONCRETE SIDEWALKS & DRIVEWAYS (> 10,000 S.F.)	SF	40914.00			
	104	6024		REMOVING CONC (RETAINING WALLS)	SY	84.00			
	104.1			STREET EXCAVATION (1,000 C.Y. < X < 10,000 C.Y.)	CY	10044.00			
	106.1			BOX CULVERT EXCAVATION & BACKFILL (> 10,000 C.Y.)	CY	27710.74			
	107.1			EMBANKMENT (FINAL)(DENS CONT)(TY B)	CY	490.00			
	107.1			EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	1135.53			
	108.1			LIME TREATED SUBGRADE (6" COMPACTED DEPTH)	SY	17228.00			
	108.2			LIME (> 100 TON.)	TON	285.00			
	168	6001		VEGETATIVE WATERING	MD	264			
	169	6002		SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	83.00			
	192	6001		PLANT MATERIAL (4" CNTR)	EA	275.00			
	192	6002		PLANT MATERIAL (1 - GAL)	EA	172.00			
	192	6004		PLANT MATERIAL (5 - GAL)	EA	58.00			
	192	6012		MULCH	CY	11.00			
	192	6014		PLANT SOIL MIX	CY	33.00			
	192	6026		PLANT MATERIAL (65 GAL) (TREE)	EA	45.00			
	192	6027		PLANT MATERIAL (100 GAL) (TREE)	EA	24.00			
	192	6067		LANDSCAPE EDGE (TYPE 1)	LF	73.50			
	203.1			TACK COAT	GAL	1576.00			
	205.2			HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	12911.00			
	205.2			HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH)	SY	4317.00			
	205.4			HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" SURFACE)	SY	15759.00			
	247	6041		FL BS (CMP IN PLC) (TYA GR1 - 2) (FNAL POS)	CY	8453.57			
	308.1			DRILLED SHAFTS (24")	LF	35.00			
	308.1			DRILLED SHAFTS (30")	LF	23.00			
	308.1			DRILLED SHAFTS (36")	LF	14.00			
	309.1			PRECAST REINFORCED CONCRETE CULVERT (5' x 3')	LF	380.00			
	309.1			PRECAST REINFORCED CONCRETE BOX CULVERT (7x4')	LF	55.00			
	309.1			PRECAST REINFORCED CONCRETE BOX CULVERT (8x4')	LF	700.00			
	309.1			PRECAST REINFORCED CONCRETE BOX CULVERT (9x5')	LF	1886.00			
	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(24" DIA)	LF	510.00			
	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(30" DIA)	LF	418.00			

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ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(36" DIA)	LF	254.00			
	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(48" DIA)	LF	83.00			
	402	6001		TRENCH EXCAVATION PROTECTION	LF	4000.00			
	403	6006		TEMPORARY SPL SHORING (COFFERDAM)	LS	1			
	403.1		1	JUNCTION BOX 4'x4'x4'	EA	1.00			
	403.13		4	INLET TYPE A (COMPLETE)	EA	13.00			
	403.2		1	JUNCTION BOX 5'x5'x5'	EA	3.00			
	403.3		1	JUNCTION BOX 6'x6'x6'	EA	1.00			
	403.4		1	JUNCTION BOX 7'x7'x7'	EA	1.00			
	403.6		1	SPECIAL JUNCTION BOX (10'X6')	EA	1.00			
	403.6		1	SPECIAL JUNCTION BOX (11'X6')	EA	1.00			
	403.8		1	INLET TYPE II (COMPETE)(10 FT)	EA	13.00			
	403.9		1	INLET EXTENSIONS (10 FT)	EA	4.00			
	410.1			CONCRETE SUBGRADE FILLER	CY	572.08			
	413.1			FLOWABLE BACKFILL (LOW STRENGTH)	CY	2535.83			
	420	6074		CL C CONC (MISC)	CY	4.8			
	420	6143		CL S CONC (JUNCTION BOX)	CY	39.9			
	423	6005		RETAINING WALL (SPREAD FOOTING)	SF	1246			
	432	6022		RIPRAP (STONE COMMON) (DRY) (6 IN)	CY	3.80			
	462	6010		CONC BOX CULV (6 FT X 3 FT)	LF	59			
	465	6002		MANH (COMPL) (PRM) (48IN)	EA	14.00			
	465	6003		MANH (COMPL) (PRM) (60IN)	EA	2.00			
	496	6040		REMOVE STR (RET WALL)	LF	135			
	500.1			CONCRETE CURBING (>1,000 LF)	LF	7380.00			
	502.1		1	CONCRETE SIDEWALKS(1,000 S.Y.< X <10,000S.Y.)	SY	3408.00			
	502.1		1	CONCRETE SIDEWALKS (150 S.Y. < X < 1,000 S.Y.)	SY	540.00			
	503.1		1	PORTLAND CEMENT CONCRETE DRIVEWAYS (100S.Y.<X<1000S.Y.)	SY	557.00			
	503.2		1	PORTLAND CEMENT CONCRETE DRIVEWAYS - COMMERCIAL	SY	581.00			
	505.1		1	CONCRETE RIPRAP (4" THICK)	CY	1.02			
	506.1			CONCRETE RETAINING WALLS-COMB. TYPE (<20 C.Y.)	CY	17.00			
	507.2			CHAIN LINK FENCE	LF	802.00			
	507.5			GATES - VEHICULAR (PER OPENING)	EA	2.00			
	507.6			WROUGHT IRON FENCE (6' HIGH)	LF	190.00			
	0512	6009		PORT CTB (FUR & INST)(LOW PROF)(TY 1)	LF	600.00			
	0512	6010		PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	220.00			
	0512	6033		PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	500.00			
	0512	6034		PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	120.00			
	0512	6057		PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	600.00			
	0512	6058		PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	220.00			

CITY OF SAN ANTONIO  
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PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	529	6066		CONCRETE CURB (RIBBON) (MOD)	LF	4.00			
	530.1			BARRICADES, SIGNS & TRAFFIC HANDLING	LS	1			
	531.13			R3-7 LEFT LANE MUST TURN LEFT OR RIGHT LANE MUST TURN RIGHT (30"x30")(HIGH INTENSITY)	EA	3.00			
	531.14		4	R3-8 LANE-USE CONTROL (30"x30")(HIGH INTENSITY)	EA	1.00			
	531.18		4	R5-1 DO NOT ENTER (30"x30")(HIGH INTENSITY)	EA	4.00			
	531.19		4	R6-1 ONE WAY (36"x12")(HIGH INTENSITY)	EA	5.00			
	531.21		4	R7-1 NO PARKING ANYTIME (18"x24")(HIGH INTENSITY)	EA	14.00			
	531.22		4	R7-18 NO PARKING THIS SIDE THIS BLOCK (18"x24")(HIGH INTENSITY)	EA	3.00			
	531.24		4	R9-3A PEDESTRIAN CROSSING PROHIBITED (18"x18")(HIGH INTENSITY)	EA	1.00			
	531.3		4	R1-1 STOP (30")(HIGH INTENSITY)	EA	13.00			
	531.51		4	W11A-2 PED CROSSING (30"x30")(HIGH INTENSITY)	EA	1.00			
	531.57		4	9 INCH (229mm) STREET NAME, BLOCK NUMBER (VARIES x9")(HIGH INTENSITY)	EA	24.00			
	531.59		4	SPECIAL SIGN (HIGH INTENSITY)	EA	2.00			
	531.6		4	R2-1 SPEED LIMIT (24"x30")(HIGH INTENSITY)	EA	2.00			
	531.62		4	W16-9P AHEAD (36"x20")(HIGH INTENSITY)	EA	1.00			
	531.7		4	R3-1 NO RIGHT TURN (24"x24")(HIGH INTENSITY)	EA	1.00			
	531.8		4	R3-2 NO LEFT TURN (24"x24")(HIGH INTENSITY)	EA	2.00			
	531.86		4	R3-5hTP DISTANCE (30"x8")(HIGH DENSITY)	EA	1.00			
	531.87		4	M1-1 INTERSTATE ROUTE (24"x24")(HIGH DENSITY)	EA	1.00			
	531.88		4	M1-4 INTERSTATE ROUTE (30"x24")(HIGH DENSITY)	EA	1.00			
	531.89		4	M1-6 LOOP (24"x24")(HIGH DENSITY)	EA	1.00			
	531.90		4	M3-1 CARDINAL DIRECTION (24"x12")(HIGH DENSITY)	EA	3.00			
	531.91		4	M4-5 TO (24"x12")(HIGH DENSITY)	EA	2.00			
	531.92		4	M6-1 DIRECTIONAL ARROW (21"x15")(HIGH DENSITY)	EA	1.00			
	531.93		4	M6-3 DIRECTIONAL ARROW (21"x15")(HIGH DENSITY)	EA	2.00			
	531.94		4	W2-1 INTERSECTION WARNING (30"x30")(HIGH DENSITY)	EA	2.00			
	531.95		4	W4-1 MERGING TRAFFIC (30"x30")(HIGH DENSITY)	EA	1.00			
	535.1		4	4 INCH WIDE YELLOW LINE	LF	724.00			
	535.11		4	COMBINATION THRU/LEFT WHITE ARROW	EA	3.00			
	535.12		4	WORD "ONLY"	WORD	3.00			
	535.13		4	STRAIGHT WHITE ARROW	EA	1.00			
	535.2		4	4 INCH WIDE WHITE LINE	LF	1315.00			
	535.22		4	6 INCH WIDE WHITE LINE	LF	52.00			
	535.23		4	24 INCH WIDE YELLOW LINE	LF	415.00			
	535.3		4	8 INCH WIDE YELLOW LINE	LF	407.00			
	535.4		4	8 INCH WIDE WHITE LINE	LF	692.00			
	535.7		4	24 INCH WIDE WHITE LINE	LF	313.00			
	535.9		4	LEFT WHITE ARROW	EA	4.00			

CITY OF SAN ANTONIO  
025 UNIT PRICING FORM

PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	537.6			PAVEMENT MARKER (TYPE I-C)	EA	35.00			
	537.8			PAVEMENT MARKER (TYPE II A-A)	EA	64.00			
	537.9			PAVEMENT MARKER (TYPE II C-R)	EA	27.00			
	540.1		4	ROCK FILTER DAMS(INSTALL)(TYPE 1)	LF	100.00			
	540.1		4	ROCK FILTER DAMS(REMOVE)(TYPE 1)	LF	100.00			
	540.1		4	CURB INLET GRAVEL FILTERS	LF	1122.00			
	540.11			LOW IMPACT DEVELOPMENT (LID) BEST MANAGEMENT PRACTICES	EA				
			4	(BMP) STRUCTURE - FILTERRA		11.00			
	540.6		4	CONSTRUCTION EXITS (INSTALL)	SY	80.00			
	540.6		4	CONSTRUCTION EXITS (REMOVE)	SY	80.00			
	540.9		4	TEMPORARY SEDIMENT CONTROL FENCE	LF	1886.00			
	551.1			TEMPORARY SPECIAL SHORING	SF	29375.00			
	552.1			REMOVING AND RELOCATING IRRIGATION SYSTEM	LF	400.00			
	615.1			TRAFFIC SIGNAL CONTROLLER ASSEMBLY (TYPE 332 CABINET)	EA	1.00			
	618.1			CONDUIT (2 INCH/PVC SCHEDULE 40)	L.F.	187.00			
	618.2			CONDUIT (3 INCH/PVC SCHEDULE 40)	L.F.	6.00			
	618.5			CONDUIT (3 INCH/PVC SCHEDULE 40)(BORE)	L.F.	438.00			
	620.1			ELECTRICAL CONDUCTORS (NO. 6)(BARE)	L.F.	18.00			
	620.2			ELECTRICAL CONDUCTORS (NO. 8)(BARE)	L.F.	375.00			
	620.3			ELECTRICAL CONDUCTORS (NO. 6)(INSULATED)	L.F.	26.00			
	624.5			GROUND BOXES TYPE A (122311) W/ APRON	EA	4.00			
	624.8			GROUND BOXES TYPE D (162922) W/ APRON	EA	1.00			
	628.1			ELECTRICAL SERVICES (PER INSTALLATION)	EA	1.00			
	628.2			REMOVE ELECTRICAL SERVICES (PER REMOVAL)	EA	1.00			
	633.1			BATTERY BACKUP SYSTEM	EA	1.00			
	655.1			TYPE 332 CONTROLLER FOUNDATION	EA	1.00			
	0662	6001		WK ZN PAV MRK NON-REMOV (W)4"(BRK)	LF	380.00			
	0662	6004		WK ZN PAV MRK NON-REMOV (W)4"(SLD)	LF	935.00			
	0662	6006		WK ZN PAV MRK NON-REMOV (W)6"(DOT)	LF	52.00			
	0662	6012		WK ZN PAV MRK NON-REMOV (W)8"(SLD)	LF	692.00			
	0662	6016		WK ZN PAV MRK NON-REMOV (W)24"(SLD)	LF	304.00			
	0662	6017		WK ZN PAV MRK NON-REMOV (W)(ARROW)	EA	5.00			
	0662	6018		WK ZN PAV MRK NON-REMOV (W)(DBL ARW)	EA	3.00			
	0662	6029		WK ZN PAV MRK NON-REMOV(W)(WORD)	EA	3.00			
	0662	6034		WK ZN PAV MRK NON-REMOV (Y)4"(SLD)	LF	724.00			
	0662	6038		WK ZN PAV MRK NON-REMOV (Y)8"(SLD)	LF	407.00			
	0662	6041		WK ZN PAV MRK NON-REMOV (Y)24"(SLD)	LF	415.00			
	0662	6048		WK ZN PAV MRK REMOV (REFL) TY I-C	EA	35.00			
	0662	6050		WK ZN PAV MRK REMOV (REFL) TY II-A-A	EA	64.00			

CITY OF SAN ANTONIO  
025 UNIT PRICING FORM

PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	0662	6052		WK ZN PAV MRK REMOV (REFL) TY II-C-R	EA	27.00			
	0662	6109		WK ZN PAV MRK SHT TERM (TAB)TY W	EA	114.00			
	0662	6111		WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	36.00			
	680.1			INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (ISOLATED)	EA	1.00			
	682.1			INSTALL VEHICLE SIGNAL SECTION WITH BACK PLATE (3 SECONDS)	EA	7.00			
	682.2			INSTALL VEHICLE SIGNAL SECTION WITH BACK PLATE (4 SECONDS)	EA	1.00			
	682.4			INSTSALL PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	8.00			
	683.1			LED COUNTDOWN PEDESTRIAN MODULE	EA	8			
	684.1			TRAFFIC SIGNAL CABLES (TYPE A)(14 AWG)(CONDUCTOR NO. 4)	EA	239			
	684.1			TRAFFIC SIGNAL CABLES (TYPE A)(14 AWG)(CONDUCTOR NO. 9)	EA	1442			
	686.1			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)(1 ARM 24')	EA	1			
	686.1			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)(1 ARM 32')	EA	1			
	686.1			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)(1 ARM 48')	EA	1			
	687.1			PEDESTAL POLE ASSEMBLY	EA	6			
	688.3			AUDIBLE PEDESTRIAN SIGNAL UNITS [TYPE]	EA	8			
	693.1			INTERNALLY LIGHTED STREET NAME SIGNS [ILSN SIGN 6' S]	LF	3			
	695.2			EMERGENCY PREEMPTION PHASE SELECTOR	EA	1			
	695.3			EMERGENCY PREEMPTION DETECTOR	EA	3			
	695.4			EMERGENCY PREEMPTION DETECTOR CABLE	EA	426			
	696.06			RVDD INTERFACE MODULE (2-CHANNEL)	EA	2			
	696.11			RVDD SETUP SYSTEM	EA	1			
	696.16			RVDD COMMUNICATION AND POWER CABLE	LF	189			
	696.21			INSTALL RADAR VEHICLE DETECTION DEVICE	EA	3			
	696.26			INSTALL RVDD COMMUNICATION AND POWER CABLE	LF	189			
	802.2			TREE PRUNING AND PROTECTIONS	LS	1			
	1003	6004		LANDSCAPE BOULDERS (TY 2)	EA	29.00			
	1005	6003		LOOSE AGGR FOR GROUNDCOVER (TY III)	CY	73.00			
	6001	6001		PORTABLE CHANGEABLE MESSAGE SIGN	DAY	74.00			
							Subtotal Base Bid Amount:		





CITY OF SAN ANTONIO  
025 UNIT PRICING FORM

PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.					
	1			Install Gas Main or Casing (Distance as measured along top of trench)					
				2" Plastic Pipe and Tracer Wire	LF	2231			
				4" Plastic Pipe and Tracer Wire	LF	1340			
				8" Plastic Pipe and Tracer Wire	LF	290			
	2			Rerun and Lower Gas Service off New Main					
				(Main to 1ft inside Property Line)					
				Short Side	EA	22			
				Long Side	EA	18			
						Subtotal Base Bid Amount:			
						Total Bid Amount:			
<p>_____ certifies that the unit prices shown on this complete computer print-out for all of the bid items and the alternates contained in this proposal are the unit prices intended and that its bid will be tabulated using these unit prices and no other information from this print-out.</p> <p>_____ Acknowledged and agrees that the total bid amount shown will be read as its total bid and further agrees that the official total bid amount will be determined by multiplying the unit bid prices shown in this print-out by the respective estimated quantities shown in the proposal and then totaling all of the extended amounts. _____ agrees to the terms, conditions, and requirements of the bidder's bid proposal.</p> <p>Signed: _____ Date: _____</p> <p>Title: _____</p>									

CITY OF SAN ANTONIO  
025 UNIT PRICING FORM

PROJECT NAME: McCullough Avenue Area Drainage  
PROJECT NO.: 40-00327

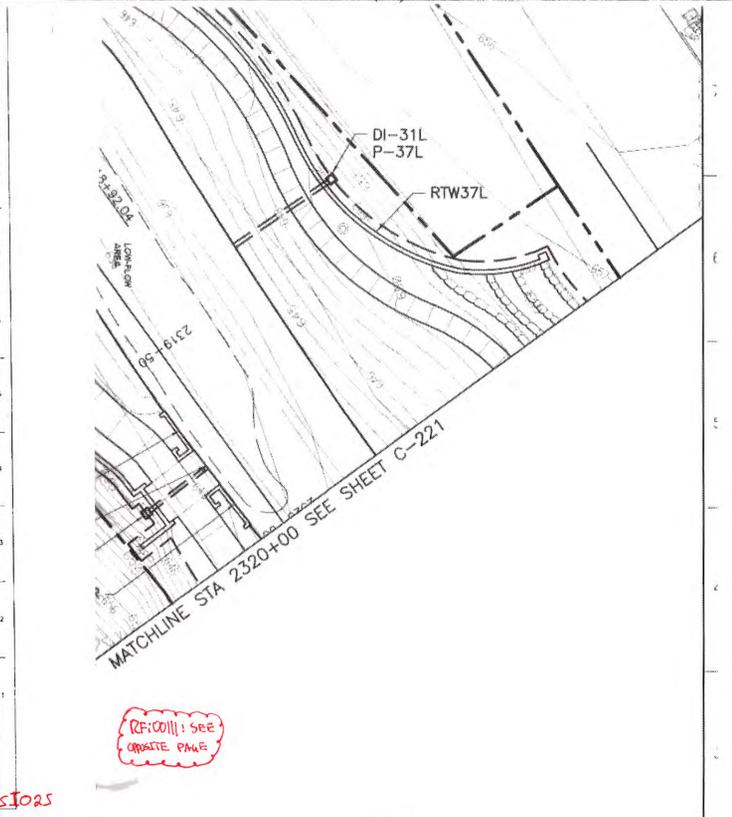
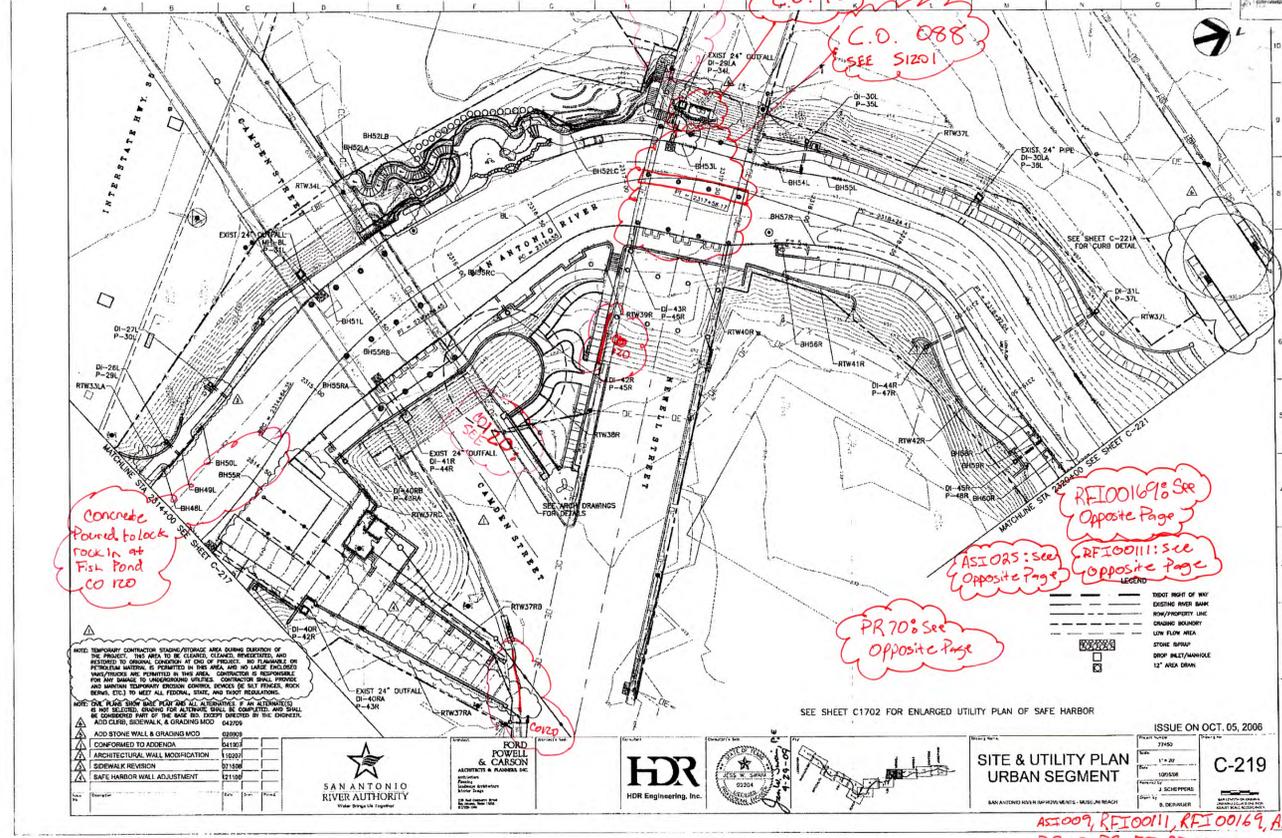
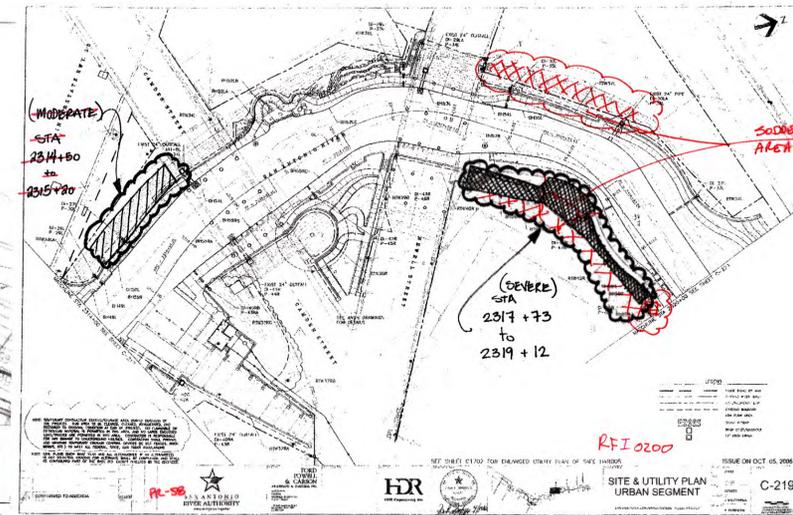
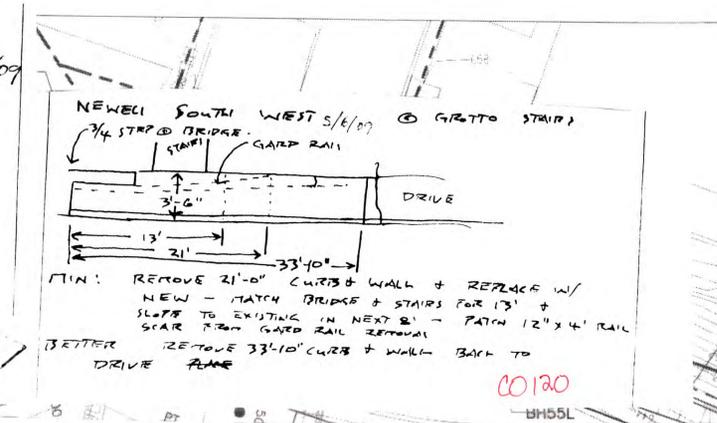
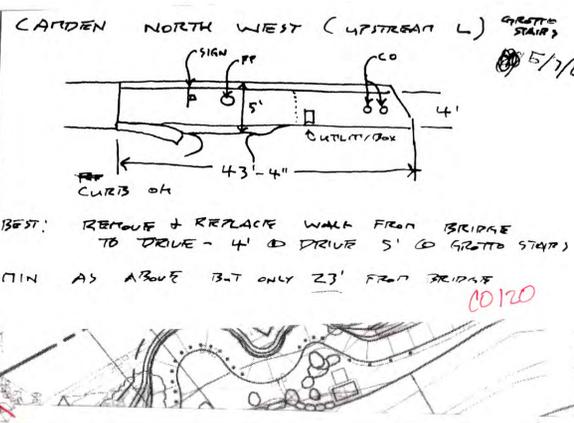
ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
2	100.1			MOBILIZATION	LS	1			
2	100.2			INSURANCE AND BOND	LS	1			
2	101.1			PREPARATION OF RIGHT-OF-WAY	LS	1			
2	103.1			REMOVE CONCRETE CURB (< 700 L.F.)	L.F.	315.00			
2	103.3			REMOVE CONCRETE SIDEWALKS & DRIVEWAYS (< 1,000 S.F.)	SF	282.00			
2	104.1			STREET EXCAVATION (< 1,000 C.Y.)	CY	275.75			
2	107.1			EMBANKMENT (FINAL)(DENS CONT)(TY B)	CY	35.91			
2	108.1			LIME TREATED SUBGRADE (6" COMPACTED DEPTH)	SY	590.00			
2	108.2			LIME (< 100 TON.)	TON	10.00			
2	203.1			TACK COAT	GAL	53.00			
2	205.2			HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	590.00			
2	205.4			HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" SURFACE)	SY	527.00			
2	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(24" DIA)	LF	22.00			
2	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(30" DIA)	LF	191.00			
2	401.1		1	REINFORCED CONCRETE PIPE (CLASS III)(36" DIA)	LF	75.00			
2	403.2		1	JUNCTION BOX 5'x5'x5'	EA	275.00			
2	403.8		1	INLET TYPE II (COMPETE)(10 FT)	EA	172.00			
2	465	6002		MANH (COMPL) (PRM) (48IN)	EA	58.00			
2	500.1			CONCRETE CURBING (< 1,000 L.F.)	LF	315.00			
2	502.1			CONCRETE SIDEWALKS (150 S.Y. < X < 1,000 S.Y)	SY	203.00			
2	503.1			PORTLAND CEMENT CONCRETE DRIVEWAYS (< 100 S.Y.)	SY	45.00			
2	530.1			BARRICADES, SIGNS & TRAFFIC HANDLING	LS	24			
2	540.1		4	CURB INLET GRAVEL FILTERS	LF	40.00			
2	540.6		4	CONSTRUCTION EXITS (INSTALL)	SY	80.00			
2	540.6		4	CONSTRUCTION EXITS (REMOVE)	SY	80.00			
2	402	6001		TRENCH EXCAVATION PROTECTION	LF	73.50			
Subtotal Bid Alternate 2 Amount:									



## PLAN ROOMS DISTRIBUTION LISTING

CONSULTANT NAME	NAME	E-MAIL ADDRESS	PHONE	FAX
PLANS & RECORDS/CS 114 W. COMMERCE, 8th Floor MUNICIPAL PLAZA BLDG. MAILING ADDRESS: CITY OF SAN ANTONIO P.O. BOX 839966 SAN ANTONIO, TX. 78283-3966	Hope Perez	<a href="mailto:Esperanza.Perez@sanantonio.gov">Esperanza.Perez@sanantonio.gov</a>	207-2090	207-8035
AGC OF HOUSTON, 3825 DACOMA ST. HOUSTON, TX. 77092 FED-EX ACCT.#2915-3754-5	Karen	<a href="mailto:mthomas@isqft.com">mthomas@isqft.com</a>	713-843-3700	713-843-3777
AGC OF SAN ANTONIO 10806 GULFDALÉ SAN ANTONIO, TX 78216-3607	Dana Mary L.	<a href="mailto:dmarsh@sanantonioagc.org">dmarsh@sanantonioagc.org</a>	349-4921	349-4017
AGC OF TEXAS 5825 CALLAGHAN RD. Suite 103 SAN ANTONIO, TEXAS	Susan Rodriguez	<a href="mailto:satx@agctx.org">satx@agctx.org</a>	647-0151	647-5888
AMTEK INFORMATION SERVICE - 7801 N. LAMAR, STE. A137 AUSTIN, TX. 78752 FED-EX ACCT.# 1521-94-59-5	JOHN RUGH Austin Delivery	<a href="mailto:john@amtekusa.com">john@amtekusa.com</a>	512-323-0508	512-323-0920
COSA -INTERNATIONAL & ECONOMIC DEVELOPMENT DEPT. 100 W. HOUSTON ST., SUITE 1900	SBEDA	<a href="mailto:sbedadocs@sanantonio.gov">sbedadocs@sanantonio.gov</a>	207-0071 207-8088	207-3909
DODGE REPORT (McGraw-Hill) 1223 ARION PARKWAY, SUITE 108	Hector Bustos	<a href="mailto:dodge_planroomMW@mcgraw-hill.com">dodge_planroomMW@mcgraw-hill.com</a>	1-800-393-6343	
iSqFt Planroom 903 Isom Rd San Antonio, Tx 78216	Ben Kelly	<a href="mailto:sanantoniotemp01@gmail.com">sanantoniotemp01@gmail.com</a> <a href="mailto:gcprojects@isqft.com">gcprojects@isqft.com</a>	800-364-2059	866-570-8187
Virtual BUILDERS' EXCHANGE 4047 NACO PERRIN BLVD #100 San Antonio, Tx 78217	Jeannette Olguin	<a href="mailto:jeannette@virtualbx.com">jeannette@virtualbx.com</a>	564-6900	564-6921
UTSA SBDC PTAC 215 S. San Saba, Suite 100 San Antonio, Texas 78207	Terri Williams	<a href="mailto:terri.williams@utsa.edu">terri.williams@utsa.edu</a>	458-2458	458-2754

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NOTE: TEMPORARY CONTRACTOR STAGING/STORAGE AREA DURING DURATION OF THE PROJECT. THIS AREA TO BE CLEARED, CLEANED, REVEGETATED, AND RESTORED TO ORIGINAL CONDITION AT END OF PROJECT. NO FLAMMABLE OR PETROLEUM MATERIAL IS PERMITTED IN THIS AREA, AND NO LARGE ENCLOSED VANS/TRUCKS ARE PERMITTED IN THIS AREA. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND UTILITIES. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY EROSION CONTROL DEVICES (E SILT FENCES, ROCK BERMS, ETC.) TO MEET ALL FEDERAL, STATE, AND TXDOT REGULATIONS.

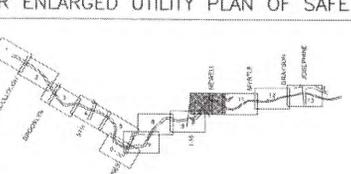
NOTE: CIVIL PLANS SHOW BASE PLAN AND ALL ALTERNATIVES. IF AN ALTERNATE(S) IS NOT SELECTED, GRADING FOR ALTERNATE SHALL BE COMPLETED, AND SHALL BE CONSIDERED PART OF THE BASE BID, EXCEPT DIRECTED BY THE ENGINEER.

Item No.	Description	Date	Drawn	Revised
1	ARCHITECTURAL WALL MODIFICATION	11/02/07		
2	CONFORMED TO ADDENDA	04/19/07		



Architect  
**FORD POWELL & CARSON**  
 ARCHITECTS & PLANNERS, INC.  
 Architecture  
 Planning  
 Landscape Architecture  
 Interior Design  
 1208 East Commerce Street  
 San Antonio, Texas 78205  
 214/205-1544

Consultants  
**HDR**  
 HDR Engineering, Inc.



SEE SHEET C1702 FOR ENLARGED UTILITY PLAN OF SAFE HARBOR

ISSUE ON OCT. 05, 2006

Project Number: 77450  
 Scale: 1" = 20'  
 Date: 10/05/06  
 Reviewed by: J. SCHEPPERS  
 Drawn by: B. DERINGER

**SITE & UTILITY PLAN URBAN SEGMENT**

SAN ANTONIO RIVER IMPROVEMENTS - MUSEUM REACH

**C-219**

RFI00169, ASIOAS, RFI00111, CO 100

**AIA** Document G710™ - 1992

**Architect's Supplemental Instructions**

**PROJECT (Name and address):**  
San Antonio River Improvements  
Project  
San Antonio, Texas

**OWNER (Name and address):**  
San Antonio River Authority  
P.O. Box 839980  
San Antonio, Texas 78283-9980

**FROM ARCHITECT (Name and address):**  
Ford, Powell & Carson, Inc.  
1138 East Commerce  
San Antonio, Texas 78205

**TO CONTRACTOR (Name and address):**  
Zachry Construction Corporation  
P.O. Box 15885  
San Antonio, Texas 78212

**ARCHITECT'S SUPPLEMENTAL  
INSTRUCTION NO:** 025

**DATE OF ISSUANCE:** July 28, 2008  
**CONTRACT FOR:** General Construction

**CONTRACT DATE:** February 27, 2007

**ARCHITECT'S PROJECT NUMBER:** 77450

**OWNER:**   
**ARCHITECT:**   
**CONSULTANT:**   
**CONTRACTOR:**   
**FIELD:**   
**OTHER:**

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgment that there will be no change in the Contract Sum or Contract Time.

**DESCRIPTION:**

Revised civil sheets C-217, C-218, C-219, & C-220 based on BH 50L & BH 49L sidewalk elevations revisions. Returned Submittals 03208-149.001 and 03208-150.001 contained civil sheets as a supplement attachment.

**ATTACHMENTS:**

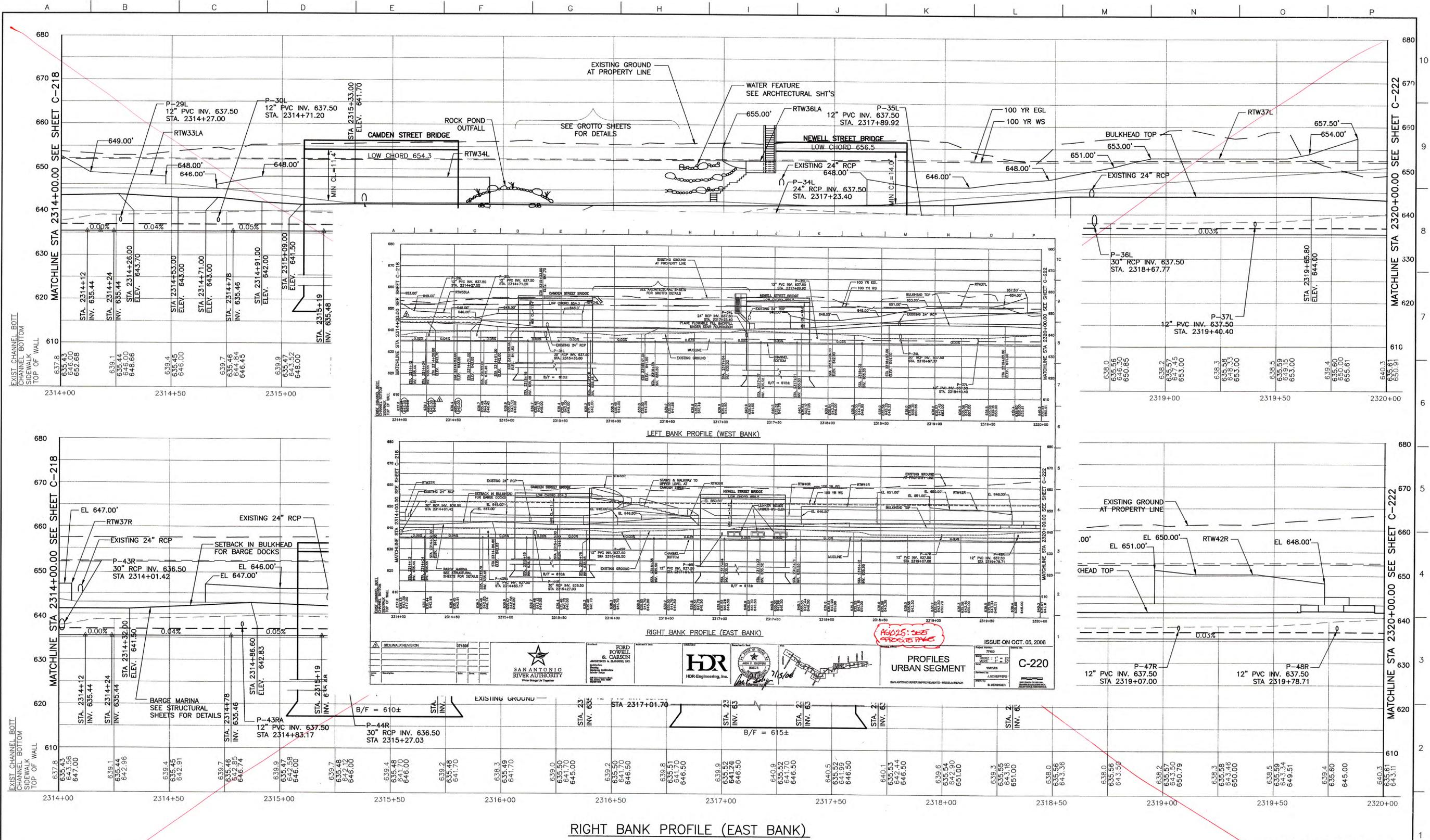
(Here insert listing of documents that support description.)

HDR revised civil sheet C-217 delta 4 (dated: 7/15/08)  
HDR revised civil sheet C-218 delta 2 (dated: 7/15/08)  
HDR revised civil sheet C-219 delta 3 (dated: 7/15/08)  
HDR revised civil sheet C-220 delta 3 (dated: 7/15/08)

**ISSUED BY THE ARCHITECT:**

  
(Signature)

John Mize, Managing Principal  
(Printed name and title)



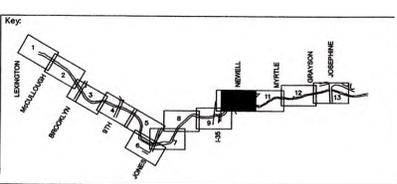
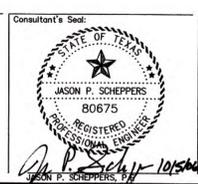
Issue No.	Description	Date	Drawn	Revised



Architect:  
**FORD POWELL & CARLSON**  
 ARCHITECTS & PLANNERS, INC.  
 Architecture  
 Planning  
 Landscape Architecture  
 Interior Design  
 1138 East Commerce Street  
 San Antonio, Texas 78205  
 210/228-1244

Architect's Seal:  
**HDR**  
 HDR Engineering, Inc.

Consultant:  
**HDR**  
 HDR Engineering, Inc.



Drawing Name:  
**PROFILES URBAN SEGMENT**  
 SAN ANTONIO RIVER IMPROVEMENTS - MUSEUM REACH

Project Number:  
 77450

Scale:  
 HORIZ : 1" = 20'  
 VERT : 1" = 10'

Date:  
 10/05/06

Reviewed by:  
 J. SCHEPPERS

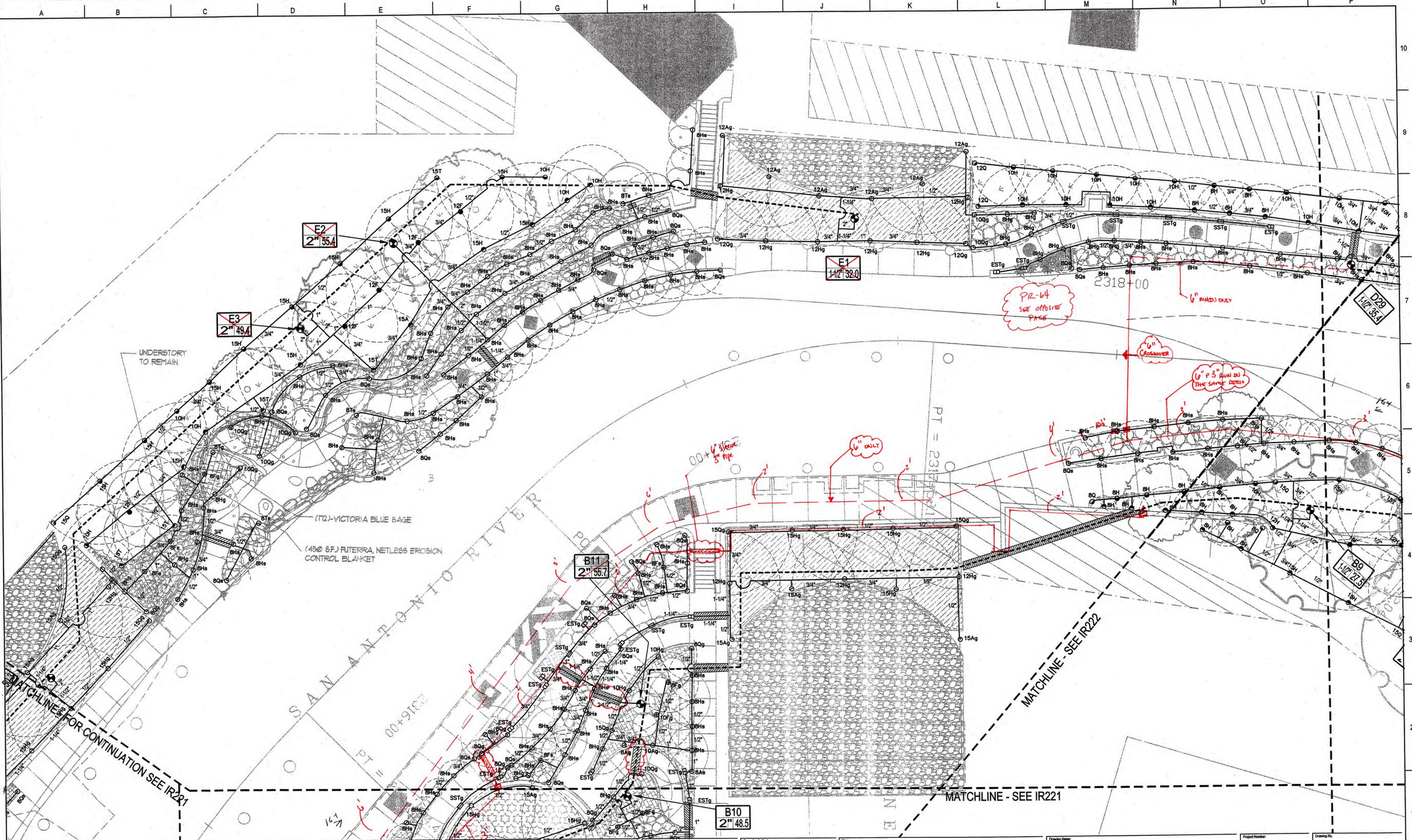
Drawn by:  
 B. DERINGER

ISSUE ON OCT. 05, 2006

**C-220**

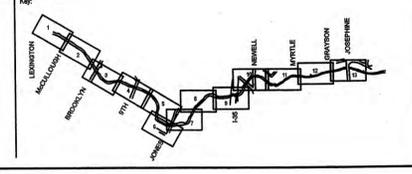
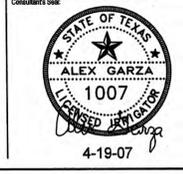
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY.

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**FORD POWELL & CARSON**  
 ARCHITECTS & PLANNERS, INC.  
 Architecture  
 Planning  
 Landscape Architecture  
 Interior Design  
 1221 TRIPLETT  
 SAN ANTONIO, TEXAS  
 PHONE (210) 490-1192  
 201-201-201

**GARZA CONSULTING**  
 IRRIGATION DESIGN  
 PLANNING & COST ANALYSIS  
 1221 TRIPLETT  
 SAN ANTONIO, TEXAS  
 PHONE (210) 490-1192

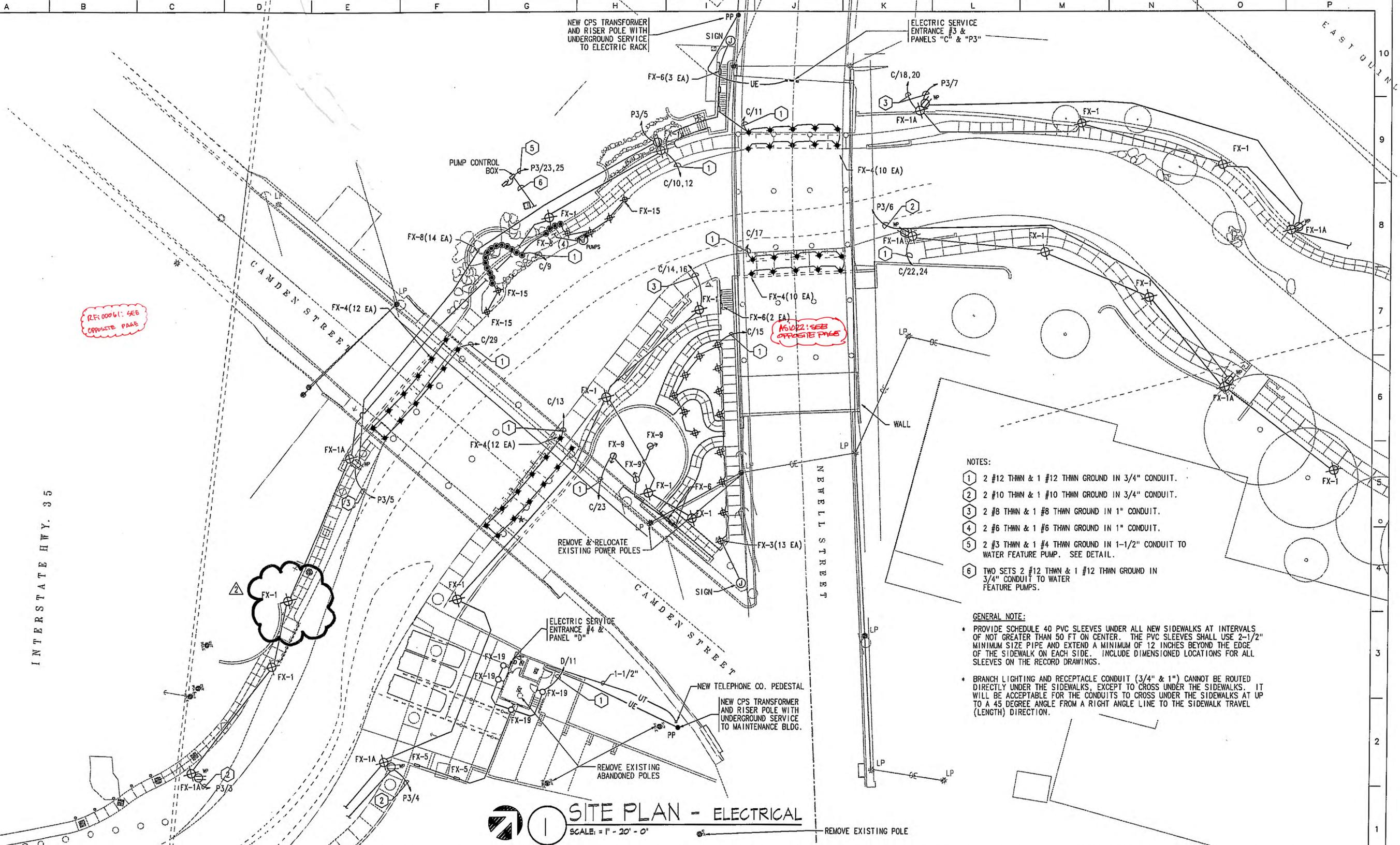


**IRRIGATION PLAN**  
 SAN ANTONIO RIVER IMPROVEMENTS - MUSEUM REACH

Project Number:	77450
Scale:	1"=10'
Date:	10/05/2006
Reviewed by:	BP
Drawn by:	

**IR220**

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH, ADJUST SCALE ACCORDINGLY.



RF:00061: SEE OPPOSITE PAGE

AS:022: SEE OPPOSITE PAGE

- NOTES:
- 1 2 #12 THWN & 1 #12 THWN GROUND IN 3/4" CONDUIT.
  - 2 2 #10 THWN & 1 #10 THWN GROUND IN 3/4" CONDUIT.
  - 3 2 #8 THWN & 1 #8 THWN GROUND IN 1" CONDUIT.
  - 4 2 #6 THWN & 1 #6 THWN GROUND IN 1" CONDUIT.
  - 5 2 #3 THWN & 1 #4 THWN GROUND IN 1-1/2" CONDUIT TO WATER FEATURE PUMP. SEE DETAIL.
  - 6 TWO SETS 2 #12 THWN & 1 #12 THWN GROUND IN 3/4" CONDUIT TO WATER FEATURE PUMPS.

GENERAL NOTE:

- \* PROVIDE SCHEDULE 40 PVC SLEEVES UNDER ALL NEW SIDEWALKS AT INTERVALS OF NOT GREATER THAN 50 FT ON CENTER. THE PVC SLEEVES SHALL USE 2-1/2" MINIMUM SIZE PIPE AND EXTEND A MINIMUM OF 12 INCHES BEYOND THE EDGE OF THE SIDEWALK ON EACH SIDE. INCLUDE DIMENSIONED LOCATIONS FOR ALL SLEEVES ON THE RECORD DRAWINGS.
- \* BRANCH LIGHTING AND RECEPTACLE CONDUIT (3/4" & 1") CANNOT BE ROUTED DIRECTLY UNDER THE SIDEWALKS, EXCEPT TO CROSS UNDER THE SIDEWALKS. IT WILL BE ACCEPTABLE FOR THE CONDUITS TO CROSS UNDER THE SIDEWALKS AT UP TO A 45 DEGREE ANGLE FROM A RIGHT ANGLE LINE TO THE SIDEWALK TRAVEL (LENGTH) DIRECTION.

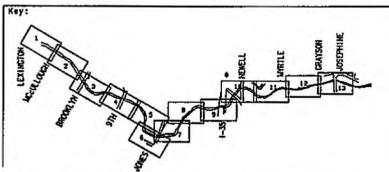
**SITE PLAN - ELECTRICAL**  
SCALE: 1" = 20' - 0"

Issue No.	Description	Date	Drawn	Revised
1	SITE COORDINATION	12/18/07		
2	CONFORMED TO ADDENDA	04/19/07		



Architect:  
**FORD POWELL & CARSON**  
ARCHITECTS & PLANNERS, INC.  
Architecture  
Planning  
Landscape Architecture  
Interior Design  
100 East Commerce Street  
San Antonio, Texas 78205  
210/224-1200

Consultant:  
**JAMES T. RODRIGUEZ**  
CONSULTING ENGINEERS, INC.  
2702 N. LOOP WEST, SUITE 101  
SAN ANTONIO, TEXAS 78222-1706  
(210) 488-0880

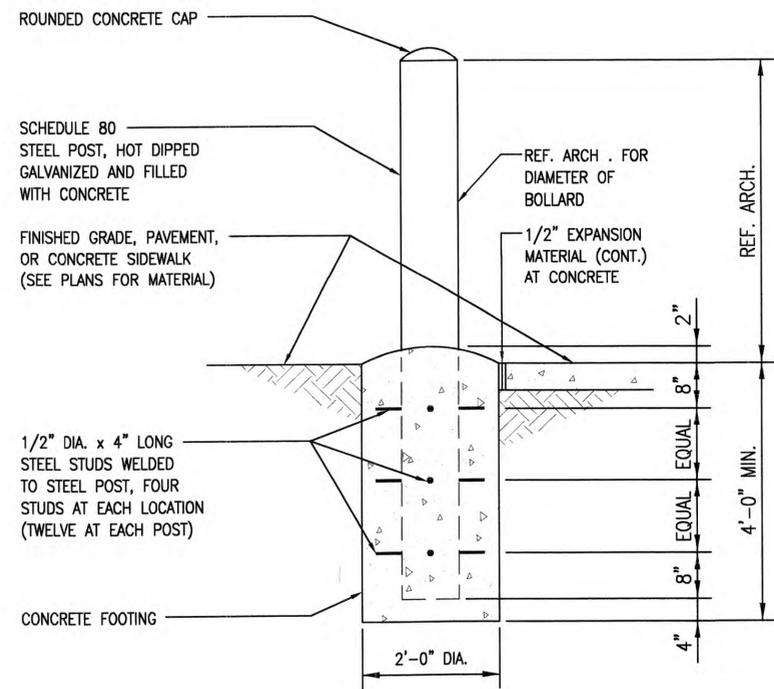


Drawing Name:  
**ELECTRICAL PLAN**  
SAN ANTONIO RIVER IMPROVEMENTS - MUSEUM REACH

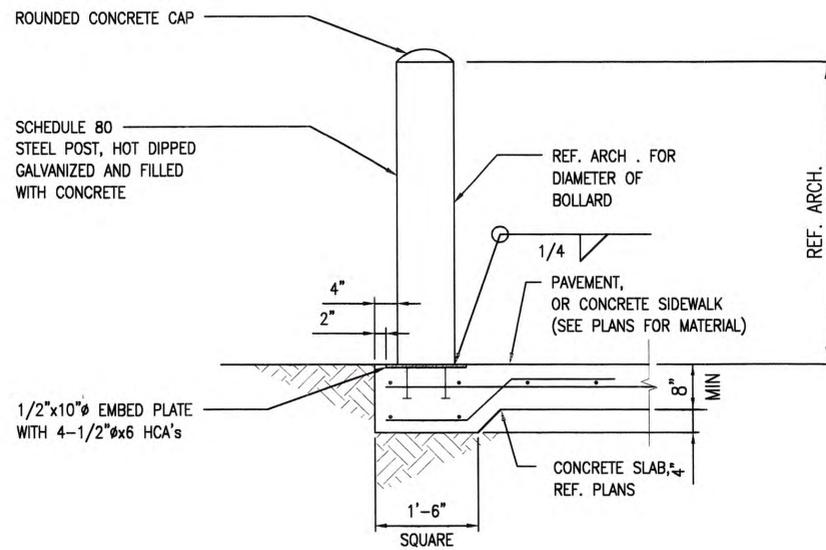
Project Number:  
77450  
Scale:  
1" = 20' - 0"  
Date:  
10/05/2006  
Reviewed by:  
JT RODRIGUEZ  
Drawn by:  
RRL

Drawing No.  
**E210**  
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY.

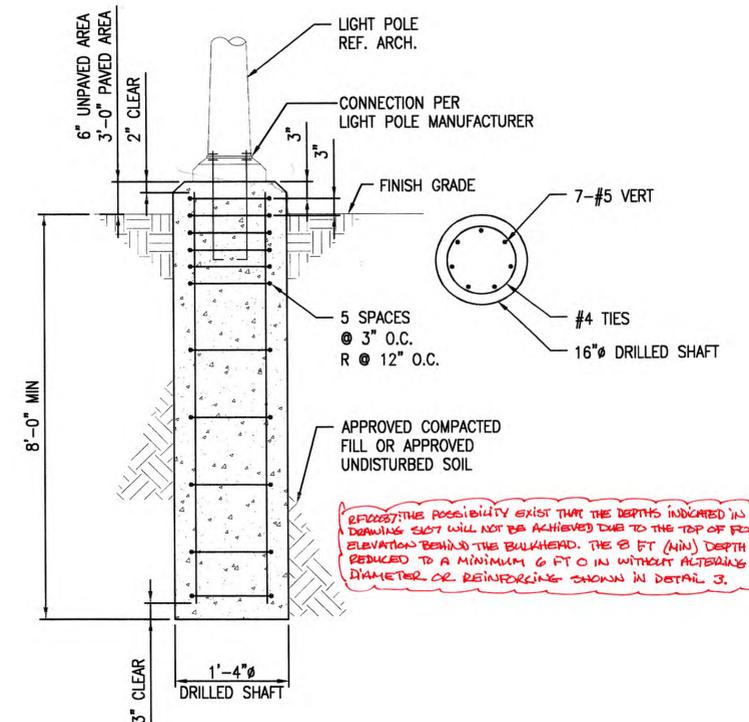
RF:00001, RF:00061, RF:00073, AS:022, AS:029.1



1 BOLLARD DETAIL  
NOT TO SCALE

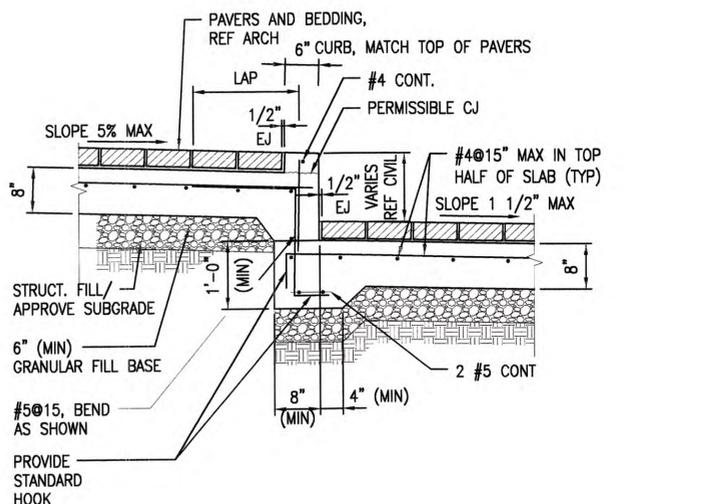


2 BOLLARD DETAIL  
NOT TO SCALE



3 LIGHT POLE FOUNDATION  
NOT TO SCALE

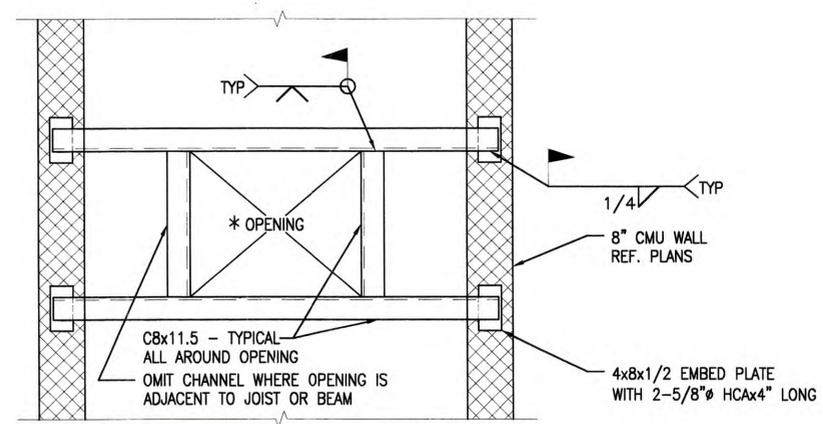
IF POSSIBLE THE POSSIBILITY EXIST THAT THE DEPTHS INDICATED IN DETAIL 3 ON A DRAWING SET WILL NOT BE ACHIEVED DUE TO THE TOP OF RECASTING ELEVATION BEING BELOW THE BULKHEAD. THE 8 FT (MIN) DEPTH MAY BE REDUCED TO A MINIMUM 6 FT 0 IN WITHOUT ALTERING THE PIER DIAMETER OR REINFORCING SHOWN IN DETAIL 3.



CONC PAVEMENT NOTES: 1) PROVIDE CONTROL JOINTS AT 40'x40' SPACING (MAX) AND 1/2" SEALED EXPANSION JOINTS AT 80'x80' SPACING (MAX)  
2) CONTRACTOR SHALL PROPOSE JOINT LOCATIONS FOR ENGINEER APPROVAL, WITH CONSIDERATION FOR MAXIMUM SPACING AND LOCATIONS OF PAVEMENT DISCONTINUITY/ GEOMETRY CHANGE.

4 TYPICAL STEP AT CONCRETE UNIT PAVERS  
NOT TO SCALE

BRICKS: SEE OPPOSITE PAGE  
ASIA13: SEE OPPOSITE PAGE



\* NOTE: REF. PLANS FOR WIDTH OF OPENING.

5 TYP. FRAMED ROOF OPENING  
3/4" = 1'-0"

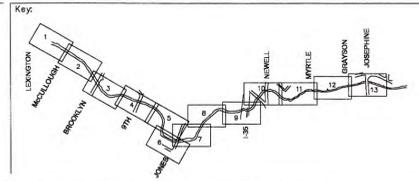
Issue No.	Description	Date	Drawn	Revised



Architect: **FORD POWELL & CARSON**  
ARCHITECTS & PLANNERS, INC.  
Architecture  
Planning  
Landscape Architecture  
Interior Design  
1139 East Commerce Street  
San Antonio, Texas 78205  
210/228-1548

Architect's Seal: **HDR**  
HDR Engineering, Inc.

Consultant's Seal: **JEFFREY JAMES MITCHELL**  
REGISTERED PROFESSIONAL ENGINEER  
84745  
10/5/06



Drawing Name: **TYPICAL STRUCTURAL DETAILS**  
SAN ANTONIO RIVER IMPROVEMENTS - MUSEUM REACH

ISSUE ON OCT. 05, 2006  
Project Number: 77450  
Scale: AS SHOWN  
Date: 10/05/06  
Reviewed by: J. MITCHELL  
Drawn by: B. THOMAS  
Drawing No.: **S107**  
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY.

ASIA13, BRAC0037, RFI00013

Update: April 2016

THE FOLLOWING ITEMS ARE SPECIAL PROVISIONS TO THE  
CITY OF SAN ANTONIO  
STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED  
JUNE 2008

- |  |        |
|--|--------|
| 1. Item 531 Signs  | Page 2 |
| 2. Item 535 Hot Applied Thermoplastic Pavement Markings    | Page 2 |
| 3. Item 403 Storm Sewer Junction Boxes and Inlets          | Page 2 |
| 4. Bid Item Summary Revisions                              | Page 3 |
| 5. Item 540 Temporary Erosion, Sedimentation & WPP Control | Page 4 |

## Item 531 Signs

### **Section 531.7 Bid Item**

Add:

- Item 531.86 – R3-5hTP DISTANCE (30"X8")(HIGH INTENSITY)
- Item 531.87 – M1-1 INTERSTATE ROUTE (24"X24")(HIGH INTENSITY)
- Item 531.88 – M1-4 INTERSTATE ROUTE (30"X24")(HIGH INTENSITY)
- Item 531.89 - M1-6 LOOP (24"X24")(HIGH INTENSITY)
- Item 531.90 – M3-1 CARDINAL DIRECTION (24"X12")(HIGH INTENSITY)
- Item 531.91 - M4-5 TO (24"X12")(HIGH INTENSITY)
- Item 531.92 - M6-1 DIRECTIONAL ARROW (21"X15")(HIGH INTENSITY)
- Item 531.93 - M6-3 DIRECTIONAL ARROW (21"X15")(HIGH INTENSITY)
- Item 531.94 - W2-1 INTERSECTION WARNING (30"X30")(HIGH INTENSITY)
- Item 531.95 - W4-1 MERGING TRAFFIC (30"X30")(HIGH INTENSITY)

## Item 535 Hot Applied Thermoplastic Pavement Markings

### **Section 535.7 Bid Item**

Add:

- Item 535.22 – 6 INCH WIDE WHITE LINE
- Item 535.23 – 24 INCH WIDE YELLOW LINE

## Item 403 Hot Applied Thermoplastic Pavement Markings

### **Section 403.6 Bid Item**

Add:

- Item 403.13 – INLET TYPE A (COMPLETE)

Note: See Bid Item Summary revisions.

## Bid Item Summary Revisions

- Add Item 531.86 – R3-5hTP DISTANCE (30"X8")(HIGH INTENSITY)
- Add Item 531.87 – M1-1 INTERSTATE ROUTE (24"X24")(HIGH INTENSITY)
- Add Item 531.88 – M1-4 INTERSTATE ROUTE (30"X24")(HIGH INTENSITY)
- Add Item 531.89 – M1-6 LOOP (24"X24")(HIGH INTENSITY)
- Add Item 531.90 – M3-1 CARDINAL DIRECTION (24"X12")(HIGH INTENSITY)
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- Add Item 531.95 – W4-1 MERGING TRAFFIC (30"X30")(HIGH INTENSITY)
- Add Item 535.22 – 6 INCH WIDE WHITE LINE
- Add Item 535.23 – 24 INCH WIDE YELLOW LINE
- Add Item 403.13 - INLET TYPE A (COMPLETE)

## Item 531 Temporary Erosion, Sedimentation and Water Pollution Prevention and Control

### **Section 540.4 Construction**

#### **A. Contractor Responsibilities**

- 1.** SW3P. Implement the City's Storm Water Pollution Prevention Plan (SWP3) for the project site in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site. The Contractor shall effectively prevent and control erosion and sedimentation on the site at the earliest practicable time as outlined in the approved schedule. Control measures, where applicable, will be implemented prior to the commencement of each construction operation or immediately after the area has been disturbed. Other responsibilities of Section 540.4.A.1 are as follows:
  - a. Storm Water Inspector(s) must be certified and attend the SAWS TPDES Stormwater Compliance Workshop per City Ordinance 2014-06-19-0472.
  - b. Contractor will notify SAWS before a Notice of Termination (NOT) is filed to conduct a final inspection in order to verify both compliance with final stabilization and removal of temporary BMPs from the project site per City Ordinance 2014-06-19-0472.
  - c. Contractor will adhere to the "EPA & TCEQ General Permit – Checklist of Record Keeping Responsibilities City of San Antonio (COSA) – January 2015" attached herein as part of this Special Provision.

# EPA & TCEQ Construction General Permit - Checklist of Record Keeping Responsibilities City of San Antonio (COSA) - January-2015

## ENGINEER

### Pre Construction

- Design of structural controls
- Development of SWP3
- Development of SWP3 site diagram(s) including grading plans/contours anticipated at initial, interim and final grade
- Development of project phasing schedule
- Water Pollution Abatement Plan (WPAP) (Edwards Aquifer)
- AST Plan (Edwards Aquifer)
- Environmental Preconstruction Meeting

### During Construction

- Evaluation of BMP effectiveness
- Review of SWP3 Modifications

### Post Construction

- Close Out Inspection
  - o Ensure removal of temporary BMPs,
  - o Verify correct installation of permanent BMPs,
  - o Assess final stabilization achieved to allow Notice of Termination

## COSA CONSTRUCTION PROJECT MANAGER

### Pre Construction

- Review SWP3 Plans
- Environmental Preconstruction Meeting
- Conduct SWP3 Training (EPA only)

### Construction

- Ensure inspection are performed and document every 7 days
- Ensure maintenance of up to date copies of SWP3 and associated records
  - o Corrective Action Documentation- within 7 days of time of discovery (EPA)
  - o Maintenance- document if unable to fix/install item within 7 days. (EPA)
- Ensure records of rainfall events are being maintained
  - o Rainfall during normal business hours that measures 0.25 inches or greater (EPA)
  - o Rainfall- record of total rainfall measured and the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections (TCEQ)
- Follow Up on incidents and spill reports to ensure proper corrective actions
  - o Construction Manager would be responsible for notifying COSA Environmental of a Reportable Quantity Release (e.g., sheen on water, 25 gallons of "oil" to land, etc.)
  - o Provide a description of spills and incidents & information obtained regarding quality and quantity of stormwater discharges to COSA Environmental.
- Ensure completing of the Grading Log (dates when activities start and end) and Construction Activities Log (daily)
  - o Ensure Construction Activities Log includes dates when construction activities temporarily or permanently cease on site (TCEQ) and dates when stabilization measures are initiated
- Ensure upkeep of the on-site Material Inventory
- Coordinate between Contractor, COSA, and Engineer when the SWP3 requires modification and/or when BMPs are not effective, are missing, or need maintenance/repair
- Ensure contractor is noting SWP3 accordingly (Dates of installment of BMPs, removal of BMPs, maintenance of BMPS, concrete washout pits date of install and removal, etc.)

### Post Construction

- Close Out Inspection
  - o Ensure removal of temporary BMPs,
  - o Verify correct installation of permanent BMPs,
  - o Assess final stabilization achieved to allow Notice of Termination

## COSA ENVIRONMENTAL GROUP

### Pre Construction

- Review SWP3 Plans
- File Notice of Intent
- Environmental Preconstruction Meeting
- Conduct SWP3 Training (EPA only)
- Post Construction Site Notice

### Construction

- Ensure inspection are performed and document every 7 days
- Ensure maintenance of up to date copies of SWP3 and associated records
  - o Corrective Action Documentation- within 7 days of time of discovery (EPA)
  - o Maintenance- document if unable to fix/install item within 7 days. (EPA)
- Ensure records of rainfall events are being maintained
  - o Rainfall during normal business hours that measures 0.25 inches or greater (EPA)
  - o Rainfall- record of total rainfall measured and the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections (TCEQ)
- Follow Up on incidents and spill reports to ensure proper corrective actions
  - o Conduct TCEQ notification as required for spills above a reportable quantity (e.g., sheen on water, 25 gallons of "oil" to land, etc.)
- Ensure completion of the Grading Log (dates when activities start and end) and Construction Activities Log (daily)
  - o Ensure Construction Activities Log includes dates when construction activities temporarily or permanently cease on site (TCEQ) and dates when stabilization measures are initiated
- Ensure upkeep of the on-site Material Inventory
- Coordinate between Construction Project Manager, Contractor, and Engineer when the SWP3 requires modification and/or when BMPs are not effective, are missing, or need maintenance/repair
- Ensure contractor is noting SWP3 accordingly (Dates of installment of BMPs, removal of BMPs, maintenance of BMPS, concrete washout pits date of install and removal, etc.)

### Post Construction

- Close Out Inspection
  - o Ensure removal of temporary BMPs,
  - o Verify correct installation of permanent BMPs,
  - o Assess final stabilization achieved to allow Notice of Termination
- Obtain and file all records associated with the TPDES/NPDES Permit activities at the project for 3 years
- File Notice of Termination, when appropriate

## CONTRACTOR

### Pre Construction

- Review SWP3 Plans
- File Notice of Intent
- Environmental Preconstruction Meeting
- Conduct SWP3 Training (EPA only)
- Post Construction Site Notice

### Construction

- **Conduct inspections every 7 days and maintain records of inspections and corrective actions**
- Maintain up to date copies of SWP3 and associated records
  - o Corrective Action Documentation- within 7 days of time of discovery (EPA)
  - o Maintenance- document if unable to fix/install item within 7 days. (EPA)
- Record rainfall events and maintain documentation with the SWP3
  - o Rainfall during normal business hours that measures 0.25 inches or greater (EPA)
  - o Rainfall- record of total rainfall measured and the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections (TCEQ)
- Conduct and record environmental monitoring-
  - o Retain all related records including: TSS (Once per week), Turbidity (Twice per day upstream and downstream) (EPA)
  - o Sampling-(onsite batch plant) document if sampling is not completed within the first 30 minutes of discharge (TCEQ).
- Follow Up on incidents and spill reports to ensure proper corrective actions
  - o Notify Construction Site Project Manager immediately of spills above a reportable quantity (e.g., sheen on water, 25 gallons of "oil" to land, etc.)
  - o Provide a description of spills and incidents & information obtained regarding quality and quantity of stormwater discharges to the Project Manager, as necessary.
- Complete the Grading Log (dates when activities start and end) and Construction Activities Log (daily)
  - o Ensure Construction Activities Log includes dates when construction activities temporarily or permanently cease on site (TCEQ) and dates when stabilization measures are initiated
- Maintain an on-site Material Inventory
- Update SWP3 to depict actual locations and types of BMPs, potential pollutant sources, etc., as the project proceeds.
- Coordinate between Construction Project Manager, COSA Environmental, and Engineer when the SWP3 requires modification and/or when BMPs are not effective, are missing, or need maintenance/repair
- Ensure SWP3 is being noted accordingly (Dates of installment of BMPs, removal of BMPs, maintenance of BMPS, concrete washout pits date of install and removal, etc.)

## CONTRACTOR (Cont'd)

### Post Construction

- Close Out Inspection
  - o Ensure removal of temporary BMPs,
  - o Verify correct installation of permanent BMPs,
  - o Assess final stabilization achieved to allow Notice of Termination
- Provide COSA Environmental with copies of all records associated with the TPDES/NPDES Permit
- Maintain a copy of these records for Contractor Permit compliance for 3 years following submittal of the Notice of Termination
- File Notice of Termination, when appropriate

### Close Out Inspection

- Obtain and file all records associated with the TPDES/NPDES Permit activities at the project for 3 years
- File Notice of Termination, when appropriate

JANUARY 2015

CITY OF SAN ANTONIO  
TRANSPORTATION AND CAPITOL IMPROVEMENTS

STORM WATER POLLUTION  
GENERAL NOTES

***** SUBMITTAL PROJECT NO. *****	DATE: *****
DRWN. BY: *****	DSGN. BY: *****
CHKD. BY: *****	SHEET NO. :

## **Special Specification – City of San Antonio**

### **Item 2000 – DIVERSION AND CARE OF WATER**

#### **PART 1 – GENERAL**

##### **1.01 SCOPE**

This specification relates to work conducted at or below the top of bank (TOB) of the San Antonio River that requires water to be diverted and removed from the work area. Also included in this specification are those Erosion/Sedimentation/Water Pollution Prevention control devices that are necessary to prevent water from entering the work area and also causing degradation of conditions downstream of the work area. These measures are in addition to those described in the SWPPP design sheets and captured under Item 540.

The Contractor shall furnish all labor, equipment, materials, and services to:

- A. Control and divert water from the work areas at or below the TOB of the San Antonio River without increasing the risk of flooding to properties adjacent to and upstream of the project area.
- B. Dewater work areas at or below the TOB of the San Antonio River due to any source of water, including, but not limited to: groundwater seepage, runoff, precipitation, and performance of diversion and control measures.
- C. Control erosion and sedimentation resulting from construction and dewatering activities.

##### **1.02 RELATED SECTIONS**

- A. ITEM 551.1 – Temporary Special Shoring
- B. ITEM 106.1 – Box Culvert Excavation & Backfill
- C. ITEM 423-6005 – Retaining Wall Construction

##### **1.03 REFERENCES**

- A. Comply with all governmental, regional, and local standards and permits, including the US Army Corps of Engineers 401 Certification and 404 and 402 Permits with respect to requirements for care of water discharges to natural streams.
- B. Support COSA-provided biologists in aquatic resource (e.g., fish, freshwater mussels) relocation as needed during the dewatering process by coordinating the timing of the dewatering event with them, ensuring that the aquatic resources are properly supported within the work area until the biologists are able to remove them, and in the case of breaches, alerting the biologists of the event and the timing of the next

dewatering event. The Contractor will not be responsible for hiring the biologists for the work described in this section.

#### **1.04 SUBMITTALS**

- A. The Contractor shall submit for acceptance, a plan showing the proposed method for diverting the perennial flow of water and storm water runoff from the work area, including dewatering of the items listed in Section 1.02. The plan may be placed in operation upon approval from the City of San Antonio (COSA) Transportation and Capital Improvements (TCI) Department Environmental Management Division (EMD), but nothing in this paragraph shall relieve the Contractor from full responsibility for the adequacy of the method used. Once all measures have been put in place on site, the functionality and success of the plan will be determined and final approval given to begin operation. However, should the measures fail at any time during operation; implementation of a remedial action plan will be required at no additional charge to the Owner. Upon approval of the plan, the Contractor will upload the final version to the Primelink system under the project submittal file.
- B. At a minimum, the Contractor's care of water plan should contain:
1. A list of best management practice (BMP) devices proposed for use and how each will be used.
  2. Provide a detailed step-by-step procedure for all activities that will occur at or below the TOB of the San Antonio River, including all activities associated with the items listed in Section 1.02.
  3. Provide a detailed step-by-step procedure for diverting water and establishing, maintaining, and removing the BMPs listed above.
  4. A remedial action plan should the plan previously described fail, all or in part.

#### **1.05 GROUNDWATER INFORMATION**

- A. The geologic descriptions, drawings, logs of subsurface exploration, and water-level elevations, shown on the drawings or given elsewhere in these specifications are presented solely for the information of the bidders and for the contractor in planning the construction operations. The Owner and the Engineer assume no responsibility for any deductions, interpretations, or conclusions which may be made from this information.

#### **1.06 CARE OF WATER**

- A. The Owner shall observe the Contractor's Care of Water, diversion and dewatering facilities, erosion and sediment control measures, and response to performance issues throughout the duration of the Contract. Any deviations from the accepted Care of Water Plan shall be submitted to TCI EMD for review and acceptance a minimum of 3 working days prior to installation of controls in the field, unless immediate action is

required for the proper care and diversion of storm water flows due to runoff from a precipitation event or the failure of a control.

- B. Adequacy of the Contractor's measures will be determined based upon the avoidance of degradation to the water quality of the San Antonio River and waterways within and immediately downstream of the work area and the avoidance of increased flood risk to properties adjacent to and upstream of the work area. Should degradation occur, the Contractor shall take all reasonable steps consistent with the requirements herein to provide additional facilities to alleviate the cause of degradation and to rehabilitate the affected area(s).

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. The Contractor shall supply all labor, equipment, materials, and services required for the appropriate diversion and care of water at or below the TOB of the San Antonio River.

### **2.02 OTHER MATERIALS**

- A. The contractor shall supply Temporary Erosion, Sedimentation and Water Pollution Prevention Control devices. The following list provides example measures. This list is not all-inclusive.

- filter bags
- filter socks
- rock filter dams
- erosion control matting
- hay bale structures
- floating baffle curtains
- temporary sedimentation basins
- coffer dams

- B. Should an alternate device/measure be required (other than those listed above), the Contractor shall receive approval from the TCI EMD prior to implementing those devices/measures. The Contractor shall demonstrate that any such substitutions would provide at least the equivalent performance of the measures listed above.

## **PART 3 – EXECUTION**

### **3.01 GENERAL**

- A. This Care of Water Specification holds the Contractor responsible for the care of water related to work at or below the TOB of the San Antonio River and in no way

eliminates or supersedes the SWPPP plans or narrative described in the design plans. The Contractor shall provide, operate, and maintain all ditches, basins, sumps, culverts, cofferdams, site grading, and pumping facilities required to divert, collect, filter, and remove water from the work areas.

- B. All water removed from the work areas, shall be pumped or diverted to settling ponds, or through other erosion and sedimentation controls as appropriate for the flow quantity and velocity, before being allowed to discharge into natural drainage ways at locations approved by the Owner. Water discharged into natural drainage ways or water bodies shall be of equal or better quality than the receiving waters.

### **3.02 DEWATERING**

- A. Groundwater seepage and leaking diversion devices are anticipated to be a source of water into the Contractor's construction work areas. This will be augmented by direct precipitation and resultant runoff from the construction work area, upstream drainage areas, and existing and proposed closed systems which outfall within the project limits.
- B. The Contractor shall be responsible for providing all facilities required to divert, collect, filter, control, and evacuate water from all construction work areas and excavations. Water shall generally be conducted away from all construction work areas or to temporary drainage conveyances within the work areas.
- C. Temporary or natural drainage conveyances shall have sufficient capacity to provide continuous evacuation to avoid prolonged flooding of work areas. Temporary or natural drainage conveyances shall be arranged and altered, with approval from TCI EMD, so as to avoid degradation of the water quality of the San Antonio River and waterways immediately downstream of the project area.
- D. The Contractor shall utilize all necessary erosion and sedimentation control measures as needed and approved by TCI EMD to avoid construction related degradation of the natural water quality.
- E. Excavation dewatering shall be accomplished so as to prevent siltation of land or designated water bodies. Sumps shall be located and shaped so as to minimize entry of silt to dewatering pumps. Settling basins will be provided by the Contractor to receive pumped water when directed by Owner.

### **3.03 EROSION AND SEDIMENTATION CONTROL**

- A. The Contractor shall utilize Temporary Erosion, Sedimentation and Water Pollution Prevention Control devices recommended in Section 2.02a or approved alternative sediment trapping methods and temporary sedimentation basins along the edge of,

within, and downstream of the work area to trap sediment and minimize soil erosion in areas affected by construction activities. The Contractor should also employ site management strategies to minimize the potential for erosion. Such strategies shall include, but not be limited to the following:

1. Conducting construction operations to minimize the duration of exposure of bare earth surfaces,
  2. Prompt stabilization of disturbed areas,
  3. Controlling rainfall runoff, and
  4. Effective maintenance of erosion and sediment control measures during the construction period.
- B. Methods used for handling, collecting, filtering, and discharging runoff from disturbed areas shall be in accordance with Section 401 (of the Clean Water Act) requirements and will be subject to review by the Owner.
- C. Temporary diversion of drainage conveyances shall be accomplished to avoid erosion at the diversion location. Culverts or channel linings shall be provided where it is not possible to construct stable earth diversion conveyances.
- D. Streams and water bodies in or adjacent to the construction area shall be protected from disturbance by construction operations. Measures to protect streams and water bodies shall include the following:
1. Avoidance by excessive equipment traffic,
  2. Preventing siltation of streams or water bodies by construction of water conveyances, diversions, and sedimentation and erosion controls as appropriate, and
  3. Cleanout and restoration where sedimentation occurs as a result of construction operations.
- E. Earth moving and land grading shall be conducted in a manner to minimize erosion impact.
- F. Soils and stockpiles shall not be placed in floodplain or in locations where blockage of natural drainage ways can occur.
- G. Sediment depositions resulting from construction operations which are damaging or potentially damaging to the site or land offsite shall be removed and disposed of as directed by the Owner.
- H. Haul and access roads shall be wetted with water on a frequent basis as required to prevent excessive dust.

- I. The contractor shall make frequent periodic inspections of the site and installed erosion and sedimentation control measures to check effectiveness of control measures and to determine conditions needing remedial action. Control measures shall be maintained to function at full effectiveness throughout the construction period. The Contractor shall refer to the TPDES General Permit (Part III, Section F, 7(a)) to determine the standard frequency of inspection, though it is the COSA preference for 7-day inspections as documented in the SWPPP narrative sheet in the design plans. However, inspections may be required at more frequent intervals based upon the performance of the control measures.
- J. The Contractor shall submit copies of the inspection reports to the Owner within 2 working days of the inspection.

**3.04 STABILIZATION OF DISTURBED AREAS**

- A. Excess excavated material is for the Contractor’s use in developing laydown areas, access roads, and associated drainage features and may also be used to stabilize disturbed areas. These materials shall be used in conjunction with geotextile stabilization fabric to stabilize disturbed areas as quickly and efficiently as possible to minimize potential further disturbance.

**3.05 FLOOD CONTROL**

- A. The Contractor shall ensure the means and methods of construction, diversion and care of water, and any related activities do not increase the risk of flooding for properties adjacent to the project area. Table 1 below provides flow information for multiple theoretical storm events within the project area. Hydrologic and hydraulic models of the existing site conditions may be made available, upon request, for the Contractor’s use.

**Table 1 – San Antonio River Flow**

Estimated Storm Event	Flow (cfs)
10 Year	1,162
25 Year	1,423
50 Year	1,667
100 Year	1,979

**PART 4 – MEASUREMENT AND PAYMENT**

- A. Payment for diversion and care of water will be made as a lump sum price bid in the bid schedule paid monthly after TCI EMD monthly review and approval. The price shall include all costs to complete the work required for the diversion and care of water including all labor, equipment, materials; and the cost of repair and maintenance of the controls.

- B. Measures used to complete diversion and care of water tasks must comply with all requirements put forth in this specification and related regulatory documents and meet TCI EMD approval before payment will be made. If measures fail or do not comply, payment will be withheld until measures comply with all requirements and are adequate to prevent the degradation of downstream waterways and prevent flooding of adjacent and upstream properties.
  
- C. The work performed, materials furnished, equipment, labor, tools and incidentals will not be measured or paid for directly but will be subsidiary to the cost of TxDOT Bid Item 403-6006 (TEMPORARY SPL SHORING (COFFERDAM)).

**END OF SPECIFICATION**

**CPS ENERGY  
EXHIBIT GAS-1**

**ADDITIONS TO THE PROJECT BID DOCUMENTS**

**1. MINIMUM REQUIREMENTS FOR BIDDING ON CPS WORK**

A. Contractor used for the gas pipeline work must have performed utility gas pipeline work within the past (3) three years of similar technical scope and magnitude as the services to be performed under this contract. With their bid, Contractor shall provide evidence of qualifications in this regard and of any licenses, permits or registrations possessed that pertain to the services or are required in the specifications. Contractor may contact CPS Energy prior to the letting of this project to determine if their previous experience meets this requirement.

B. The Contractor shall have a program complying with 49 CFR Part 199, "Control of Drug Use in Natural Gas, Liquefied Natural Gas, and Hazardous Liquid Pipeline Operations" and 49 CFR Part 40, "Procedures for Transportation Workplace Drug and Alcohol Testing Programs" to test employees for the presence of prohibited drugs as prescribed and to provide an employee assistance program. The Contractor agrees to provide CPS Energy with an affidavit prior to the date of execution of the Contract which states that Contractor and its employees have complied with all applicable laws, statutes, and regulations pertaining to ensuring a drug free workplace including, but not limited to, the requirements of Part 199 and Part 40. Furthermore, the Contractor agrees to allow CPS Energy Human Resources personnel periodic on-site access to Contractor's records documenting compliance with Part 199 and Part 40. Contractor will provide the name and contact person for the agency or consortium used by the Contractor to comply with this requirement prior to the date of execution of the Contract.

C. The Contractor agrees to provide CPS Energy with an affidavit prior to the date of execution of the contract which states that Contractor and its employees have complied with all applicable laws, statutes, and regulations pertaining to ensuring a drug free workplace including, but not limited to, the requirements of 49 CFR as amended by the Research and Special Programs Administration (RSPA).

D. CPS Energy requires the following to verify Contractor and Sub-Contractor compliance with all applicable laws, statutes and regulations pertaining to the qualification of pipeline personnel including, but not limited to the applicable requirements of 49 CFR Part 192 – Subpart N -“Qualification of Pipeline Personnel” as adopted by the Railroad Commission of Texas (RCC) within the Pipeline Safety Rules.

1. ***A Notarized Affidavit that states the company placing the bid and its sub-contractors are in compliance with 49 CFR 192 and RRC Pipeline Safety Rules pertaining to the qualification of pipeline personnel.***

- 2. A current copy of its Operator Qualification Plan, unless currently on file, and approval of its plan by a CPS Energy Gas Operation's Representative. A copy of CPS Energy Covered Tasks is shown in Exhibit Gas-7 - CPS Energy Covered Tasks Regulated by 49 CFR Part 192.**
- 3. Current listing of employees and qualifications.**

E. The Contractor shall submit a copy of SMWBA Form 101 to CPS Energy prior to date of execution of the contract.

F. Prospective Contractors bidding on the Project shall submit to CPS Energy through the City of San Antonio a properly executed Certificate of Insurance from its insurance agent or carrier of such insurance coverages as required and set forth in the Project Contract Documents prior to award of the contract. Failure to provide proof of insurance will result in City's Contractor not being approved for award of the CPS Energy utility work on the Project.

# ADDITIONS TO THE PROJECT CONTRACT DOCUMENTS

## 1. DEFINITION OF TERMS

Add to the City of San Antonio Article I. Contract Definitions: 49. CPS – CPS Energy Board, a municipal agency of the City of San Antonio.

## 2. LAWS TO BE OBSERVED

The Contractor shall make himself familiar with and at all times shall observe and comply with all Federal, State, and local laws, ordinances, and regulations which in any manner affect the conduct of the work and shall indemnify and save harmless CPS Energy and its representatives against any claim arising from the violation of any such law, ordinance, or regulation, whether by himself or by his employees.

## 3. PERMITS, LICENSES AND TAXES

The Contractor and his subcontractors shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incident to the due and lawful prosecution of the work and upon request by the City Engineer give evidence of the same.

## 4. RESPONSIBILITY FOR DAMAGE CLAIMS

**The Contractor agrees to indemnify and save harmless CPS Energy, its agents, and employees from all suits, action or claims and from all liability and damages for any and all injuries or damages sustained by any person or property of any character in consequence of any neglect in the performance of the contract by the Contractor and from any claims or amounts arising or recovered under the “Workers’ Compensation Laws”; Chapter 101, Texas Civil Practice and Remedies Code (Texas Tort Claims Act), or any other laws. He shall further so indemnify and be responsible for all damages or injury to property of any character occurring during the prosecution of the work to the extent resulting in whole or in part from any act, omission, neglect or misconduct on his part in the manner or method of executing the work; or from failure to properly execute the work; or from defective work or materials purchased by Contractor, except those claims for damages caused solely by the negligence of CPS Energy. Contractor shall not be released from these responsibilities until all claims have been settled and suitable evidence to the effect furnished to CPS Energy. The indemnification provided herein shall survive the termination of this Contract.**

## 5. CONTRACTOR REQUIREMENT

A. The Contractor shall abide by the regulations promulgated in 49 Code of Federal Regulations Part 40 and 49 Code of Federal Regulations Part 199 and any modifications thereto listed below in this Article. CPS Energy will require such compliance to be a part of this Contract and will immediately terminate this Contract if Contractor is found to not be in

compliance with said regulations. Contractor shall indemnify CPS Energy against any fines, penalties, damages, costs or attorney fees based upon any violation by Contractor of the same.

B. The Contractor shall abide by the regulations promulgated by the Federal Highway Administration (FHWA) which states that contractors subject to FHWA mandates shall be in compliance with those parts of 49 Code of Federal Regulations (CFR) which relate to the illegal use of alcohol and controlled substances.

## **6. PROSECUTION AND PROGRESS**

All workers or subcontractors employed by the Contractor shall have such skill and experience as will enable them to properly perform the duties assigned them.

## **7. WARRANTY**

The Contractor shall warrant all components, materials and workmanship for a period of at the least one (1) year from the date of final completion of gas pipeline work by Contractor. The Contractor warrants the title and guarantees the equipment, materials and workmanship furnished under this Contract to be specified and to be free from defects in design, workmanship and materials. If within the warranty period the work fails to meet the provisions of this guarantee, CPS Energy shall notify the Contractor thereof immediately and the Contractor shall promptly correct any defects, including nonconformance with the Contract Documents, by adjustment, repair or replacement F.O.B. the Project site of all defective work at its sole costs.

## **8. INSURANCE**

The Contractor agrees to keep in full force during the performance of services hereunder insurance sufficient to fully protect CPS Energy from all damages, claims, suits and/or judgements, caused or claimed to have been caused by or in connection with the performance or failure to perform any services undertaken by Contractor, his subcontractor, or their agents, or employees.

## **9. COORDINATION**

All questions about the gas construction shall be addressed to Luis Castellano, CPS Energy Gas Construction, at (210) 353-6370. Design and engineering questions may be addressed to the CPS Energy Gas Engineering Division, Civic Improvements Section, at (210) 353-2430.

**CPS ENERGY  
EXHIBIT GAS-2  
SPECIFICATIONS FOR CONSTRUCTION OF  
NATURAL GAS DISTRIBUTION FACILITIES**

**1. GENERAL**

The work to be done includes mobilization and clearing right-of-way where necessary; receiving, transporting and unloading all materials from a designated CPS Energy center; stringing pipe, welding steel pipe and pipe fittings, and fusing high density polyethylene gas pipe and pipe fittings; excavating trenches and ditching for the burial of the gas piping facilities; installation of gas piping into the excavation along with required appurtenances such as anodes, anodes lead wires, and tracer wires; backfilling of ditches, repair of damage to any street, road, highway, sidewalk, drainage structures, driveways, signs, other utilities, fencing, or other existing structures; clean-up of right-of-way and any other item enumerated in these specifications.

The work shall conform with Title 49 of the Code of Federal Regulations, Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" and to the CPS Energy design standards attached to this document as Exhibits GAS-3 and GAS-4, as applicable.

**2. ROUTE OF THE GAS LINE**

Construction of the gas line will, in general, follow the route shown on Exhibit GAS-6 (CPS Energy Job Sketch). Gas services to be installed, relocated or adjusted are also indicated on Exhibit GAS-6, as applicable.

CPS Energy reserves the right to make any changes in the routing which may be deemed necessary and such changes shall in no manner alter the terms or compensations payable under this contract except as they are affected by linear measurements of work completed.

All gas lines shall be installed in a separate trench apart from any other utility lines unless joint trenching with other utilities is specifically required on the CPS Energy Job Sketch or prior written approval is obtained from the CPS Energy representative allowing joint trench construction.

**3. RIGHT-OF-WAY**

The CPS Energy Job Sketch will indicate the planned route of the gas lines to be installed. The construction plans will show as much information as can be reasonably obtained by CPS Energy regarding the location of other existing buried utilities and structures in/or crossing the rights-of-way, but CPS Energy assumes no responsibility for the correctness or completeness of this information. Contractor will be held responsible for locating all such utilities and structures and for avoiding damage to them and for making repairs or paying for any damage thereto. CPS Energy will provide and furnish all necessary right-of-way, federal, state, county and city roadway crossing permits, which shall be necessary for the construction.

Most of CPS Energy's gas facilities are constructed within public rights-of-way; however, CPS Energy may acquire easements on private property for construction of gas distribution facilities when public rights-of-way are not available or unusable. When gas facilities are planned for construction within easements on private property, the exact boundaries of such easements will be shown on the CPS Energy Job Sketch, and CPS Energy will survey and stake the easement boundaries in the field. Contractor shall preserve such field staking of easement boundaries. If the Contractor's construction activities disturb the field survey stakes, then the Contractor shall be responsible for resurveying the easement boundary when necessary. Contractor shall comply with all reasonable requirements of landowners, tenants or lessees which are designed to reduce interference of construction. It will be the Contractor's responsibility to limit traffic on the right-of-way to only such vehicles as may be necessary for construction. Contractor will be held liable for damage claims arising from grass and brush fires that may be set during his operations.

In addition, the term "right-of-way" shall also apply to those portions of public streets, roads or highways in which sections of the utility lines will be constructed. The Contractor working in any public right-of-way is responsible for the safe movement of traffic (pedestrian and/or vehicular) through the construction area. The Contractor shall meet all requirements for barricading and traffic control as specified in the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

#### **4. MATERIALS TO BE FURNISHED BY CPS**

CPS Energy agrees to furnish all steel pipe, polyethylene (plastic) gas pipe, casing pipe, valves, valve boxes, stop cocks, service risers, couplings, casing insulators, casing end seals, steel pipe insulating joints, miscellaneous pipe fittings, anodes, cathodic protection test lead boxes, pipeline warning signs, gas pipe tracer wire, tracer wire clamps, pipe coating primer, and pipe coating tape and/or shrink sleeves necessary to complete the job except when these materials are to be specifically provided by the Contractor in accordance with written requirements of the Compensation Schedule (Exhibit GAS-5) or CPS Energy Job Sketch (Exhibit GAS-6).

#### **5. CLEARING, GRADING AND PREPARATION OF RIGHT-OF-WAY**

The Contractor shall clear and grade right-of-way sufficiently for his need and for hauling and stringing pipe and other material but not to exceed the width of right-of-way. Contractor shall be responsible for any damages outside of right-of-way limits. Contractor shall perform all necessary grading and compaction at road, stream, and gully crossings and at other locations where needed to permit the passage of equipment, cars, and trucks. Before any brush or timber is cut to clear right-of-way, approval from CPS Energy in writing must be obtained. All brush and timber cut to clear right-of-way must be removed from the right-of-way and disposed of to the satisfaction of the CPS Energy representative. Any trimming of an oak tree will require the contractor to follow **oak wilt suppression procedures**:

- Avoid pruning or wounding any oaks unless absolutely necessary.
- If pruning is required, request assistance as soon as possible from the CPS Energy Tree & ROW Maintenance Section or one of the Inspectors listed below.

- Any pruning wounds or damage caused by equipment (trucks, diggers, trenchers, backhoes, etc.) must be painted immediately, within a minimum of one hour. This includes any cracked or ripped limbs and wounds to trunks, limbs or root flares which may have been damaged by passing equipment.
- Within a known infection center, all tools must be disinfected with a 10% clorox and water solution or Lysol spray before using these tools on any other oak tree.

Requests for Assistance From the Tree & ROW Maintenance Section

When assistance is required, please provide as much notice as possible or call as soon as damage occurs. Contact names and numbers are listed below:

	Office	Radio#	Cellular	Pager#
Section Office	353-3593	2400		
James F. Koenig	353-3798	2401	844-5457	1336
Terri Minnia	353-5218	2405	394-3580	2241
Margie Regalado	353-5243	2403	394-3579	2428
Clyde Stroud	353-5218	2404	394-3578	2301
Ed Scott	353-5243	2402	275-6935	2852

The Contractor shall promptly repair all bridges, private roads, fences, buildings or other property damaged by him in the progress of the work. Permission must be secured from owner before private roads or bridges are used or blocked.

The Contractor will be notified prior to construction of all known requirements or restrictions of right-of-way by CPS Energy.

The Contractor will be responsible for all preparation of right-of-way. This will include construction operations by removing and disposing of all obstructions from the right-of-way and/or gas easement where removal of such obstructions is not otherwise provided for in the plans and specifications.

Such obstructions shall be considered to include, but not be limited to, remains of houses not completely removed by others, foundations, floor slabs, concrete, brick, lumber, plaster, cisterns, septic tanks, basements, abandoned utility pipes or conduits, equipment or other foundations, fences, retaining walls, outhouses, shacks, and all other debris, as well as buried concrete slabs, curbs, driveways and sidewalks.

This item shall also include the removal of trees, stumps, bushes, shrubs, brush, roots, vegetation, logs, rubbish, paved parking areas, miscellaneous stone, brick, drainage structures, manholes, inlets, abandoned railroad tracks, scrap iron and all debris, whether above or below ground, except live utility facilities.

It is the intent of this specification to provide for the removal and disposal of all obstructions to the new construction, together with other objectionable materials, not specifically provided elsewhere by the plans and specifications.

Unless otherwise shown on the plans, all fences along the right-of-way and/or easement which are damaged or temporarily removed by the Contractor shall be replaced by the Contractor to an equal or better condition at no additional cost to CPS Energy.

Unless otherwise indicated on the plans, all underground obstructions shall be removed to in areas to be excavated to 2 feet below the lowest elevation of the excavation.

Holes remaining after removal of all obstructions, objectionable material, vegetation, etc., shall be backfilled and tamped as directed by the inspector, and the entire area shall be bladed to prevent ponding of water and to provide drainage.

All asphaltic material shall be deposited of or recycled at a facility authorized to accept the asphalt for such purposes.

If the contractor encounters hazardous substances, industrial waste, other environmental pollutants, underground storage tanks, or conditions conducive to environmental damage, Contractor shall immediately stop work in the area affected and report the condition to the Owner's representative in writing. Contractor shall not be responsible for or required to conduct any investigation, site monitoring, containment, cleanup, removal, restoration or other remedial work of any kind or nature (the "remedial work") under any applicable level, state or federal law, regulation or ordinance, or any judicial order. If the contractor agrees in writing to commence and/or prosecute some or all of the remedial work, all costs and expenses, to include any extension of the contract time, of such remedial work shall be paid by Owner to Contractor as additional compensation.

## **6. UNLOADING, HAULING, AND STRINGING MATERIALS**

The Contractor shall unload from trucks and string on the right-of-way, as needed, all gas pipe and other materials in such manner as to prevent damage to same. Pipe shall be unloaded with proper equipment, and not dropped from trucks.

When materials in storage are issued to the Contractor, such materials shall become the responsibility of the Contractor, and adequate methods of inventory and material transfer will be set up by the Contractor. The Contractor and CPS Energy jointly shall inspect materials, which have been stockpiled by CPS Energy prior to hauling. After this inspection, the Contractor shall pay CPS Energy delivered cost of any materials lost or damaged beyond use during the construction operation.

Under no circumstances shall pipe be strung in advance of right-of-way clearing operations.

Stringing of pipe on right-of-way shall be done in such a manner as to cause minimum interference with the normal use of driveways, streets, roads, highways, and land crossed. The Contractor shall prevent entrance of dirt or debris into pipe during stringing.

## **7. LOCATING EXISTING CPS GAS FACILITIES**

**The Contractor shall be required to locate all existing gas facilities as needed for the construction and installation of new gas facilities. Upon request by the Contractor, the**

**CPS Energy inspector will provide copies of the appropriate gas maps to facilitate locating activities for the existing gas facilities at the job site, however; CPS Energy does not guarantee the accuracy of such gas facilities map information. The Contractor shall use conventional pipe locating equipment and techniques in conjunction with information from the gas facilities maps to determine the actual location of existing gas facilities. The Contractor shall be solely liable for any damages to existing gas facilities and any damages to other infrastructure such as the street, drainage structures or other utilities, that are incurred by the Contractor.**

## **8. TRENCHING (CONVENTIONAL OPEN EXCAVATION)**

**A. Equipment and General Methods** - Contractor shall use such equipment and methods that may be required to excavate the trench or ditch along the route specified on the CPS Energy Job Sketch, regardless of the type of soil or rock encountered and regardless of the depth of excavation necessary. Contractor shall furnish all equipment, materials and supplies that may be necessary for the completion and maintenance of the trench or ditch, including water control, shoring, coffer dams and sheet piling.

**B. Survey Stakes** - Contractor shall carefully preserve all survey stakes set by CPS Energy, CPS Energy representatives, or consulting engineers and shall be liable for any extra expense due to Contractor's failure to maintain such stakes.

**C. Trench Specifications** - The trench or ditch shall have sufficient width and be of such depth to allow installation of piping and valves at depths specified on the CPS Energy Job Sketch and/or the CPS Energy Design Standards. When surfaced streets are cut, the paving shall be cut in neat lines defining the width of the trench to be excavated. The cut shall extend entirely through the asphaltic surfacing and shall break the base material to a sufficient depth to assure the removal of the surfacing and base without breaking beyond the lines of the trench. Concrete saws, pneumatic paving chisels, or mechanically operated drop blades may be used for asphalt surface cutting as approved by the governmental authority exercising jurisdiction. A concrete saw must be used to cut concrete driveways, streets, or other concrete surfaces.

**D. Blasting** - No blasting will be permitted by CPS Energy.

**E. Hand Ditch Requirement** - In all cases where shrubbery, trees, or valuable growing timber is encountered in the right-of-way, and in any location where, in the opinion of the CPS Energy representative, the use of ditching equipment may result in unnecessary damage or injury to property crossed by the right-of-way, CPS Energy may require the Contractor to excavate the trench or ditch by hand or other approved method.

**F. Temporary Bridges** - When the trench or ditch is excavated where it is desirable for a property owner, tenant or other pedestrians to have a passageway across the excavation, the Contractor shall provide safe, temporary bridges or provide other safe means of crossing the ditch.

No streets or driveways shall be blocked at night, except with owner's permission, and any street or driveway opened shall be provided with a strong temporary bridge to allow

traffic to move safely. Open trenches and test holes shall be properly marked by means of barricades and warning lights.

**G. Additional Depth of Trench** - Where trenching across or adjacent to, or within the right-of-way of roads or highways, railroads, drainage ditches, creeks, ravines, and other water courses and also at points where the contour of the earth may require extra depth, Contractor shall excavate to such additional depth as may be necessary to meet the requirements of CPS Energy and any public or private authority having jurisdiction over same.

**H. Dust Suppression** - Whenever trenching activities create significant amounts of dust or other undesirable emissions into the atmosphere, then the Contractor may be required, at the sole discretion of the CPS Energy inspector, to take necessary action to reduce such emissions.

**I. Trench Excavation Safety** - The Contractor must comply with 29 CFR Part 1926, Occupational Safety and Health Standards; Subpart P - Excavations. Contractor and/or Contractor's independently retained employee or safety consultant, if any, shall review the construction plans and any available geotechnical information and the anticipated installation sites within the project work area in order to develop the Contractor's trench excavation safety plan and procedures. The plans and procedures shall, at a minimum, comply with OSHA's standards for trench excavations. Specifically, the Contractor and/or the Contractor's independently retained employee or safety consultant shall develop and implement a trench safety program in accordance with OSHA's standards governing the presence and activities of individuals working in and around trench excavation.

## **9. TRENCHLESS CONSTRUCTION METHODS**

The use of guided or directional boring equipment to install new gas distribution facilities is acceptable to CPS Energy provided that the Contractor demonstrates to the satisfaction of the CPS Energy representative that such equipment is capable of installing the gas pipe along a controlled and relatively constant horizontal and vertical alignment for the specific soil conditions that are encountered at each job site. Special provisions must be made to insure that the gas pipe is not damaged as it is pulled or otherwise inserted into the bored hole. The bored hole must be at least one nominal pipe size larger than the gas pipe that is to be installed (i.e. a 4-inch gas pipe requires at least a 6-inch bored hole). When the bored hole is known to have significant deflections, the bored hole must then be at least two nominal pipe sizes larger than the gas pipe.

When such equipment is used to install polyethylene gas pipe, a fusible link shall be used between the pull head and the gas pipe at all times to prevent damage to the gas pipe during the pull-back operation. The fusible link shall be at least 2 feet in length and it shall be a section of CPS Energy polyethylene pipe that is one nominal pipe size smaller than the gas main being installed. The CPS Energy representative shall inspect the fusible link and the leading edge of the installed gas pipe for any significant gouges or scrapes in the outside wall of the pipe or excessive change in length of the fusible link. If such damages to the fusible link or pipe are found to exist, then the Contractor shall remove and replace all of the damaged pipe at the

Contractor's expense, and the Contractor shall reimburse CPS Energy for the cost of the damaged pipe (including CPS Energy inventory and handling expenses).

When such equipment is used to install steel gas pipe, the CPS Energy representative shall inspect the installed gas pipe for any significant gouges or scrapes in the protective coating on the outside wall of the steel pipe. If such damages to the coating are found to exist, then the Contractor shall repair all of the damaged coating at the Contractor's sole expense.

Whenever gas service lines are planned for installation along a section of gas main that is being installed with guided or directional boring equipment, the Contractor shall excavate at least one service tap location prior to pulling the gas main into the bored hole. The purpose of this excavation is to provide the CPS Energy representative with an intermediate inspection hole where the gas pipe can be inspected during the pipe insertion process. Preferably, the intermediate inspection hole shall be located near the middle of the directionally bored section. If several gas service connections are planned along the insertion route, then the CPS Energy representative shall select the location of the service tap that the Contractor must excavate for the intermediate inspection hole before the gas pipe insertion process.

Gas mains and services that are installed by guided or directional boring equipment shall not be routinely installed at depths greater than seven (7) feet unless one of the following conditions apply:

- 1) The CPS Energy Job Sketch (Exhibit Gas - 6) specifically requires installation depths in excess of seven (7) feet.
- 2) Installation depths in excess of seven (7) feet are the shallowest depths necessary to achieve acceptable clearance between the gas pipe and another buried utility or structure while maintaining the minimum burial depth requirements for the gas pipe.
- 3) The CPS Energy representative approves such installations even though conditions described in Items 1) and 2) above are not applicable.

When guided or directional boring equipment is used to install gas distribution facilities special provisions (if any) in the Compensation Schedule (Exhibit Gas-5) for additional compensation due to extra depth of cover shall not apply.

The method of gas service replacement by Insertion involves sliding a new polyethylene service pipe of smaller diameter into the existing steel service pipe. This is an acceptable method of installation provided that the ends of the existing steel pipe are reamed and fitted with bushings for the pipe to be inserted without damage, and a shrink sleeve is applied to keep components in place and prevent damage thereafter. In order to reduce stress on the service line being inserted from the main, the horizontal distance between the end point of the new service alignment and the point of insertion should be, at least, twice the perpendicular distance between the lines (See Insertion Detail, page 19 of 20, exhibit Gas-3). Tracer wires will be inserted through the existing service along with the new pipe. An electrical continuity test will be conducted on each installed tracer wire to verify that the tracer wire has not been "shorted" against the existing steel service during the installation procedure.

## **10. STORM WATER POLLUTION PREVENTION PLAN**

The gas utility construction work shall be performed in accordance with the City of San Antonio Storm Water Pollution Prevention Plan (SWPPP).

## **11. PROTECTION OF GAS PIPE ENDS**

During the course of construction, diligent care shall be exercised to keep the gas pipelines clean. At the end of each day's work and at the other times that the ends of the installed pipe are left unattended, the pipe ends shall be securely closed to prevent the entrance of water, animals, trash or any other obstructions, and shall not be opened until work is resumed.

If there is reasonable cause to believe that water, trash or other obstruction is in a portion of the lines, the Contractor shall take whatever steps are necessary to assure CPS Energy that there is no water, trash or other obstruction in the line or to remove the water or other foreign matter if it is in the lines. Any and all work required to assure CPS Energy that the gas pipes are clear of debris and other such matter or to remove such obstructions shall be at the Contractor's expense.

## **12. WELDING**

Welding shall be in accordance with API Standard 1104, 17th Edition, dated September, 1994.

Welds shall be made the "shielded metal-arc" process. All equipment and welding rods will be furnished by the Contractor. Brand of welding rods proposed to be used by the Contractor shall be approved by CPS Energy prior to use.

Where determined by the CPS Energy representative to be necessary, back-welding or inside-welding of all tube turns, ells, etc., in the pipe lines shall be required by the Contractor as part of the work covered by the Contract. Back-welding shall be performed at the sole expense of the Contractor.

All welds shall be made with not less than three (3) beads. The second or "Hot Pass Bead", should be run on the full circumference of the pipe as soon as practical. The intent of the above is that the Hot Pass or second bead shall be run before the Stringer Bead has cooled.

Prior to being permitted to weld on the line, each welder shall qualify in accordance with Section 3.0 of API Standard 1104 referred to previously and shall pass the tests listed in paragraph 3.4 of the API Standard. The Contractor will conduct, or make arrangements for, and stand the expense of the qualification tests of the welders. The qualifying tests will be conducted in the presence of the CPS Energy representative.

Each welder will be assigned a specific number and it shall be his duty to personally affix such number in crayon on each weld for future identification. Steel die stamping shall not be used.

CPS Energy rights of welding inspection shall be as given in Section 5.1 of API Standard 1104. Unless otherwise directed, the Contractor will test all welds with soapsuds while subjected to an internal air pressure of 90 psig prior to field coating the joints.

Pin holes, leaks, cold laps, rivers, undercutting or any defects whatsoever occurring in any weld shall, at the discretion of the CPS Energy representative, be repaired by cutting out the entire weld and completely rewelding at no additional expense to CPS Energy. Whenever it thus becomes necessary to remove a weld from the completed line, replacement shall be made, at the sole expense of the Contractor, by welding into the line a pup joint having a minimum length of ten (10) feet.

### **13. RADIOGRAPHIC INSPECTION**

This Section applies when radiographic inspection is specified in the contract documents.

**A. Standards and Codes** - The latest available edition of the following referenced documents shall be applied when required:

1. Department of Transportation, Title 49, Part 192 - "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards."
2. Recommended Practice No. SNT-TC-1A, Supplement A - "Radiographic Testing Method."
3. ANSI B31.8, "Gas Transmission and Distribution Piping Systems."
4. ASME Code Section V, "Nondestructive Examination."
5. United States Nuclear Regulatory Commission, Title 10, Chapter 1, CFR - Energy and other federal, state and local regulations for protection against radiation hazards.

**B. Radiographic Procedure** - All radiographic inspections shall be performed in accordance with written procedures per Section 8.2 of API Standard 1104. Contractor shall provide a copy of the written procedure to the CPS Energy representative who shall determine the acceptance of the procedure.

**C. Personnel Qualifications** - Radiographic certification shall be the result of a qualification and certification program that incorporates the requirements of Recommended Practice SNT-TC-1A, Supplement A in accordance with Section 8.7 of API Standard 1104.

**D. Equipment and Material** - Contractor shall furnish all equipment and materials necessary for the performance of the radiographic inspection. Such materials and equipment include all film and supplies for the processing, film identification, recording, filing and storage of same. Also, Contractor shall provide all barriers, warning systems, film badges, documentation and records as is necessary for the protection and personnel monitoring of every person near a radiation source.

**E. Production Radiography Procedures** - Contractor will notify the CPS Energy representative if any welds fail to meet the specification. All repaired welds or welded joints, which have been completely replaced, shall be radiographed.

**F. Film Identification Procedure** - Film identification shall be in accordance with Section 8.6 of API Standard 1104. The exact method of identification will be approved by the CPS Energy representative prior to the start of radiographic inspection.

**G. Radiographic Reports and File** - Contractor shall be responsible for furnishing the CPS Energy representative with a report for each calendar day the unit is on the project. All radiographs made by Contractor shall be delivered to the CPS Energy representative and shall become the property of CPS Energy.

#### **14. PRESSURE TESTING**

**A. General** - The Contractor shall demonstrate to the satisfaction of the CPS Energy representative, by performing a pressure test, that the mains and/or services installed do not leak and that they will operate safely at the desired maximum allowable operating pressure. Pressure tests are performed to verify satisfactory workmanship and the strength of materials. To the extent practical, the test shall be conducted to the entire pipeline so as to minimize the number of untested tie-in connections. All joints used to tie-in a test segment of pipeline after the test shall be soap bubble tested at not less than its operating pressure. The Contractor shall be responsible for locating and repairing any leaks or failures, which are revealed by the test.

The Contractor shall furnish all supervision, labor, materials and equipment to perform the pressure test required, including but not limited to, pumps, compressors, pigs, test instrumentation and water. Pressure test specifications will be indicated on the CPS Energy Job Sketch (Exhibit GAS-6). The specifications will indicate the minimum and maximum test pressure, test fluid and test duration, as appropriate. The Contractor shall conduct the test in accordance with the applicable requirements of Title 49 CFR 192 and shall take all necessary safety precautions to protect construction personnel and the general public during the course of the test. The Contractor shall be responsible for obtaining all permits necessary to conduct the test except for the Railroad Commission of Texas test water discharge permit that is required for hydrostatic pressure tests.

**B. Standard Air Test** - A standard air test will generally be specified for gas mains and services to be operated at pressures of 60 psig or less. This test will be indicated on the CPS Energy Job Sketch without a test duration period. The minimum test pressure shall be 90 psig and shall not exceed 120 psig. The test duration shall be a time sufficient to insure discovery of all potentially hazardous leaks. At the minimum, each weld, butt fusion and any other fitting and connection shall be soap bubble tested at the specified test pressure. The test pressure shall be measured with a dial type gauge and shall be monitored during the course of the test to detect leakage. Upon completion of the test(s), the Contractor shall sign and date, in the appropriate location, the "as built" job sketch to indicate successful completion of the test. Pending acceptance by the CPS Energy representative, the CPS Energy representative shall also sign the "as built" job sketch at the appropriate location.

**C. High Pressure Test** - When the CPS Energy Job Sketch specifies a test pressure greater than 90 psig or if a specific test duration period is specified, then the following requirements for a High Pressure Test shall also apply.

Prior to initiating any work required for a High Pressure Test, the Contractor must hold a pre-test meeting with the CPS Energy representative and a CPS Energy engineer from the Gas Engineering Division. At this meeting, the Contractor will be required to discuss all aspects of plans for conducting the High Pressure Test. The key points of discussion for hydrostatic pressure tests will include the following: 1) optimum direction and injection rate for filling the pipe section with water while minimizing air entrapment; 2) optimum direction and discharge location for safely and completely draining the pipe section; 3) the type, quantity and condition of pipeline pigs; 4) installation and use of temporary pig launchers and/or receivers; 5) capacities of water pumping equipment; 6) pressurization procedures; 7) written test documentation; 8) limitations on refilling and/or discharging test water during the pressure test without invalidating the test and causing the test to be restarted; 9) test water stabilization period after filling the pipe section; 10) appropriate procedure for dewatering the pipe section to minimize the amount of water that remains in the pipe; 11) any other critical aspects of the High Pressure Test.

The test medium may be either air or water and will be specified on the CPS Energy Job Sketch. A hydrostatic test shall be conducted in general conformance with API Recommended Practice 1110. Air tests shall also be conducted in conformance with API RP 1110 with regard to safety and instrumentation.

All filling and pressurization procedures are subject to the approval of the CPS Energy representative. When a hydrostatic test is to be performed, the Contractor shall fill the pipeline in such a manner that no air is entrapped, making use of pipeline pigs as necessary. The Contractor shall be required to furnish all pipeline pigging equipment, including appropriate styles and types of pipeline pigs and temporary pig traps and launchers. The CPS Energy representative must inspect all pigging equipment, and such equipment must be acceptable to the CPS Energy representative prior to use by the Contractor.

The Contractor shall allow a suitable time for temperature stabilization of the test fluid. The stabilization period shall be a minimum of twenty-four (24) hours after the filling operation is complete for a hydrostatic test, and the stabilization period shall be a minimum of eight (8) hours after the pipeline is pressurized to the minimum test pressure for all High Pressure Tests performed with air or other compressed gases. At the sole discretion of the CPS Energy representative, the stabilization period may be reduced for short sections of pipe such as offsets and valve complexes.

The Contractor shall note each significant step or event during the filling, pressurization and testing operation and comments shall be added for any incidents which may affect the results of the tests. Where the specified test duration is two hours or less, deadweight pressure, pipe temperature and ambient temperature measurements shall be recorded at 15 minute intervals. Where the specified test duration is greater than two hours, these measurements shall be recorded at 30 minute intervals.

Upon completion of the test, the Contractor shall obtain the approval of the CPS Energy representative prior to depressurizing the pipeline. The Contractor shall then depressurize, dewater, clean and dry the pipeline to the satisfaction of the CPS Energy

representative. Water shall be disposed of in the manner required by any permits and to the satisfaction of the CPS Energy representative.

**D. Test Records** - The Contractor shall submit to the CPS Energy representative all documentation associated with the test, including a completed Form I, "Hydrostatic Test Record and Certification" of Appendix I, API RP 1110, (or substantially similar documentation), testing logs and all recorder charts. All documentation shall be labeled to identify the pipeline section that was tested, and it must be signed and dated by the Contractor and approved by the CPS Energy representative.

## 15. COATING OF PIPE

The Contractor will be furnished coated and wrapped pipe in accordance with such specifications as CPS Energy may in its sole discretion determine. The Contractor will be responsible for coating all field joints and repairing damaged and defective coating on the pipe regardless of the nature, extent or cause of such damage or defect in the coating. However, if the damaged or defective coating is of such magnitude as requires an extra or additional charge by the Contractor, then the Contractor shall first refer such matter to the CPS Energy representative and not proceed until the Contractor has obtained prior written authorization from CPS Energy to do so, in which event the provisions of the Contract relating to extra or additional work shall be applicable.

Coating materials for coating field joints and repairing damaged or defective coating will be furnished by CPS Energy.

For coating field joints, the coating on the pipe must be cut back a distance of 8" to 12" from the joint. The edge of the enamel and felt wrapping shall be feathered at these points to assure a firm bond between the original coating and the field coating. After the joints are welded and tested, and the welds cleaned and brushed, the bare ends of the pipe shall be thoroughly cleaned, then immediately given a hand-brushed coat of primer to dry surfaces. Care shall be exercised to prevent primer from being applied too heavily, especially at the base of the welds; any runs or sags which have dried or dead primer shall be scraped off and the pipe reprimed. After the tape primer has dried to a tacky consistency, apply cold wrap tape with a 30 percent overlap taking care not to create any voids between the pipe and tap coating. No primer or coating will be applied to wet or damp pipe.

After the field joints have been coated and immediately before the pipe is lowered into the ditch, the entire coating will be tested to locate breaks or pinholes and other flaws in the enamel with an approved "holiday" detector in good working condition capable of producing the testing voltage in pulsating cycles at very low amperage. The voltage used shall not exceed 14,000 volts for pipe coatings of 3/32. All defective places will be plainly marked immediately after they are detected. The Contractor will furnish the holiday detector, and will check the coating for holidays in the presence of the CPS Energy representative.

All repairs to damaged coating which exceeds 2 square inches will be made by breaking out the old coating, scraping the pipe to bare metal, feathering the edges to assure a firm bond and repriming. After the primer has dried to a tacky consistency, apply cold wrap tape taking care not to create any voids between the pipe and the tape coating. For repairs less than 2 square

inches, the pipe need not be scraped to bare metal and primed; however, the good enamel around the damaged portion shall be feathered before the cold wrap is applied.

Compression type couplings, valves, welded fittings, etc., will receive a cold applied mastic after the pipe is in the ditch and they have been tested for leaks. A plastic wrap supplied by CPS Energy will be placed over the mastic to protect the coating during backfilling.

Handling of Coated Pipe - Coated pipe shall be handled only with suitable equipment in such a manner as to prevent damage to the coating. The coated pipe shall be placed on skids alongside the ditch until it is to be welded and lowered into the ditch. The skids shall be of sufficient width or padded with sandbags or resilient pads to prevent the skid edges from cutting the coating and wrapping. The skids shall be arranged to permit the coated pipe to bear on the full width of the skid.

At all times, coated and wrapped pipe shall be carefully handled with wide rubber, leather, composition, or canvas slings or belts containing no protruding rivets or belts that may injure the coating. Wire rope, tongs, chairs, hooks, and bare cables shall not be permitted to come into contact with the coating. Coated pipe shall not be handled when the temperature is low enough to cause cracking of the enamel.

## **16. CATHODIC PROTECTION**

The Contractor shall install packaged anodes, insulating joints and insulating flange sets as provided for in the exhibits. Welding machines will not be used to test insulation or otherwise be grounded across insulating devices. Insulation will be checked by the CPS Energy representative and declared acceptable only after testing establishes satisfactory performance.

## **17. POLYETHYLENE GAS PIPE**

Polyethylene pipe, which is commonly referred to as plastic, PE or HDPE pipe, shall be handled only with suitable equipment in such a manner as to prevent damage to the pipe such as fracture, kinking, deep gouges or cuts. The polyethylene pipe shall not be subjected to abuse by dropping, throwing or dragging except over smooth non-scratching terrain or surface.

An insulated copper wire shall be installed with all polyethylene pipe for the purpose of locating the pipe after backfilling. This wire shall be installed with 2 to 6 inches separation between the tracer wire and the polyethylene pipe. Under no circumstances shall the tracer wire be taped or otherwise secured against the outside wall of the polyethylene pipe or spirally wrapped around the pipe.

Fusion of polyethylene pipe joints shall be done by the Contractor in accordance with requirements of D.O.T., Title 49, Part 192 - Transportation of Natural Gas by Pipeline: Minimum Federal Safety Standards, Paragraphs 192.281, 192.283, 192.285, 192.287.

Prior to starting production fusing under this contract each Contractor employee that will be making polyethylene fusion joints shall qualify according to Paragraph 192.285 of the D.O.T. code using a CPS Energy approved procedure. Qualifying tests will be conducted in the presence of the CPS Energy representative.

The Contractor shall furnish all specialty tools and equipment that are required to handle, install, butt fuse and squeeze-off polyethylene pipe. The Contractor shall insure that all specialty tools and equipment are specifically designed for use on polyethylene piping systems and are in good working condition. The CPS Energy representative shall be allowed to inspect all specialty tools and equipment furnished by the Contractor. The CPS Energy representative may disallow the use of any specialty tools or equipment that are not specifically designed for use on high density polyethylene piping systems or are deemed to not be in good working condition. CPS Energy routinely uses the Steve Vick 6" Mark II Coil Trailer for handling large diameter coiled pipe, McElroy equipment for making butt fusions on polyethylene pipe and Mustang squeeze-off tools for stopping the flow of gas in existing polyethylene piping systems. The Contractor shall be required to provide copies of the original manufacturer's literature for all comparable equipment from other manufacturers. At the sole discretion of CPS Energy, comparable equipment from other manufacturers may be approved for use by the Contractor.

All polyethylene pipe joints shall be tested with soap and water with the line having an internal pressure of between 90 and 120 psig. All pressure tests on polyethylene pipe must be observed and approved by the CPS Energy representative. It shall be the Contractor's responsibility to coordinate pressure tests on polyethylene pipe so that such test can be performed with a CPS Energy representative present.

## **18. LOWERING IN AND BACKFILLING**

The ditch shall be free of rocks and clods before the pipe is lowered into the ditch. No pipe will be lowered into the ditch until the ditch has been inspected and approved by the CPS Energy representative.

All stumps and roots found in the ditch line shall be cut so that they will not come in contact with the pipe. All loose rocks, stones, blocks, skids, chocks, tools, heavy clods, tree limbs, and other items, which may damage the pipe, shall be removed from the bottom of the ditch before the pipe is lowered in.

The ditch shall be excavated with sufficient depth to allow for a minimum thickness of four (4) inches of pit run sand to be placed in the ditch below the pipe. Pit run sand placed in the ditch to cushion the pipe shall be leveled and tamped so that the weight of the pipe is as evenly distributed as possible on solid ground.

Backfilling shall be so conducted that the ditch shall be neatly backfilled and compacted. Rock, gravel or like materials shall not be backfilled directly onto the pipe. The Contractor shall provide and shall haul sufficient pit run sand to be backfilled around and over the pipe to form a protective padding or cushion between the pipe and the rock, gravel and other such unexcavated materials. After the pipe has a six (6) inch minimum cover of pit run sand, the remaining backfill may contain rocks and gravel, except that large rocks in excess of four (4) inches in diameter, width or length, shall not be backfilled into the ditch. Such rocks shall be removed from the right-of-way and disposed of to the satisfaction of the landowner, tenant, and/or CPS Energy representative. Care shall be exercised to prevent hand shovels and tampers from damaging the pipe.

Trenches in public roadways will be backfilled and paved in accordance with the requirements of the governmental authority having jurisdiction over the street or road.

Where paving is cut, backfilling and finishing of the top of the trench will be in accordance with the requirements of the authority having jurisdiction over the pavement. On state highways, U.S. highways, expressways and freeways and their frontage roads, and any streets or roadways that are being maintained or rebuilt by the Texas Department of Transportation (TxDOT), the TxDOT specifications and requirements for backfilling trenches will apply. On county roads, private roads, streets in incorporated townships, driveways or paved parkways the backfill will be a mixture of concrete or other material mixtures with depths as required by the authority having jurisdiction and shall be placed in trench to within one and one-half (1-1/2) inches of the surface of the existing pavement. The Contractor shall apply final and finishing topping to cuts in paving with hot mix, hot lay asphalt. Inspection and approval by the authority having jurisdiction over the pavement shall be obtained by the Contractor before the job will be accepted as completed by CPS Energy.

Backfill in public and private thoroughfares shall be hydra-tamped with special care to prevent settlement or damage to other buried utilities.

The Contractor shall not use soil from the right-of-way except from the spoil bank. Any surplus soil shall be disposed of by the Contractor.

When crossing drainage ditches and minor streams, the Contractor shall furnish and install all materials necessary for bank reinforcement. Such backfill must be properly maintained by the Contractor until the entire job has been completed and accepted by an authorized representative of CPS Energy. No reimbursement will be made for repairing of backfill due to floods and/or other conditions occurring before final acceptance.

The Contractor shall control the ditching and backfilling so as to have a minimum amount of open ditch commensurate with good construction practices.

As soon as backfill is completed on a section of line, Contractor shall immediately clean up the right-of-way, removing all surplus and defective materials to CPS Energy-designated locations. Disposal of all refuse such as brush, broken skids, rock, etc., shall be to the satisfaction of the CPS Energy representative. Insofar as possible, the earth on both sides of the line ditch which has been disturbed during the construction of the line shall be leveled, and the ditch line shall be left in a condition satisfactory to the CPS Energy representative. All temporary fills and bridges shall be removed and the area cleaned to the satisfaction of the CPS Energy representative. The Contractor shall, at his expense, furnish, haul and install black top soil on the ditch line and right-of-way area where necessary in the opinion of the CPS Energy representative to leave such area in the same condition as existed prior to the commencement of the work and/or to obtain the minimum required cover for the utility lines as specified.

Upon completion of all backfilling and cleaning of the right-of-way, permanent repairs shall be made to all fences by using equivalent or new fencing materials. All fence repairs must be satisfactory to CPS Energy representative. These repairs are to be made by Contractor at no extra compensation.

## **19. FINAL PIPING CONNECTIONS AND/OR TIE-INS**

The Contractor will make all connections of new gas lines to existing gas lines. This includes all necessary preparations for tie-ins and purging for all sections of gas lines installed by the Contractor. The Contractor will be required to weld short stop fittings and other necessary fittings on existing steel gas lines that will be used by CPS Energy personnel to control the flow of gas into the new gas lines. CPS Energy personnel will control the flow of gas on all operative gas facilities while the Contractor is making final piping connections and/or tie-ins.

The Contractor shall be responsible for insuring that all tie-ins between new and existing gas mains are performed in a safe manner. The Contractor shall furnish all necessary equipment and instrumentation that is required to insure that the final tie-in welds and/or fusions between new and existing gas facilities are performed in a safe manner. Such equipment and instrumentation may include pneumatic air movers, combustible gas indicators (CGI's), oxygen monitors, self-contained breathing apparatus and fire retardant clothing for construction personnel, and fire extinguishers.

## **20. REMOVAL OF EXISTING PIPE**

The asphaltic wrap on pipe removed under this contract may contain asbestos. In handling the pipe (including the excavation, cutting, removal, loading and unloading of such pipe), Contractor shall observe all State and Federal worker protection regulations and standards, and all environmental and public safety standards that are applicable to such work, including the OSHA standard found at 29 CFR Section 1926.1101, and following, that relates to the occupational exposure standard to asbestos for the construction industry.

The Contractor will indicate in its bid the manner in which the pipe shall be managed after removal. For example, Contractor shall indicate whether the pipe will be disposed at a licensed landfill facility, will be recycled as pipe by Contractor, will be sold to and recycled as pipe by a third party, will be recycled by a third party as scrap metal, etc. If dealing with a third party, Contractor shall identify the various third parties Contractor will rely upon to provide the indicated services.

For all pipe removed from the ground under the terms of this contract, Contractor shall place the following notice, beginning approximately two (2), feet from each end of the pipe, in stenciled or comparable lettering, i.e. not attached labels, of not less than 3 inches in height;

### **PIPE WRAP MAY CONTAIN ASBESTOS**

Upon removal of the pipe from the ground, ownership of the pipe is transferred to the Contractor.

## **21. PURGING NEW GAS FACILITIES**

CPS Energy personnel will purge the new gas mains, and the Contractor will purge all new gas service lines or existing gas service lines that have been tied-over to the new gas mains or otherwise adjusted.

## **22. GOODWILL OF GAS CUSTOMERS & RESIDENTS IN THE WORK AREA**

The Contractor shall make reasonable efforts to create goodwill among the property owners, tenants and lessees along the right-of-way of the gas construction project.

**For this reason, no gas service shall be cut-off after 2:30 p.m. each day. All gas services that have been cut-off during the day must be restored before 4:00 p.m. that same day. If the Contractor is consistently late in restoring gas service by 4:00 p.m., the contract may, at CPS Energy's discretion, be adjusted to reflect an earlier cut-off time.**

**When customer gas service is to be interrupted, the Contractor must use CPS Energy approved door-hangers to inform the customers of the impending construction activity. The door-hangers must be placed on the front door of each residence at least 48 hours prior to construction, and the Contractor must contact each customer by telephone or in person before the gas service is cut off.**

The Contractor shall provide approved sanitary facilities in sufficient quantities and at such locations as may be needed for workers on the job.

## **24. WORKDAYS, WORKING HOURS AND HOLIDAYS**

Normal working hours for this contract shall be from 7:30 a.m. to 4:00 p.m. Work days shall include Monday through Friday, except for holidays. Holidays shall include the following days: New Year's Day, San Jacinto Day (observed on Friday of Fiesta Week), Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day. If the holiday falls on a Saturday, it will be observed on the preceding Friday. If the holiday falls on a Sunday, it will be observed on the following Monday. Christmas Eve and New Year's Eve will be observed as holidays when Christmas Day and New Year's Day fall on Tuesday through Friday. Exceptions to these working hours and work days will be allowed by CPS Energy when required by the governing entity, mutually agreed upon by both Contractor and CPS Energy or the customer approves or requests work to be performed outside of these established times. **At the sole discretion of CPS Energy, service renewal work can be suspended during periods of extremely cold weather.**

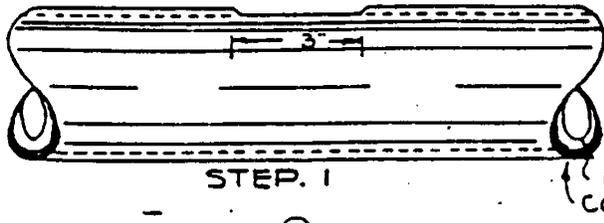
## **25. ACCEPTANCE**

The CPS Energy representative will make all inspections and final acceptance of the work performed by the Contractor for CPS Energy.

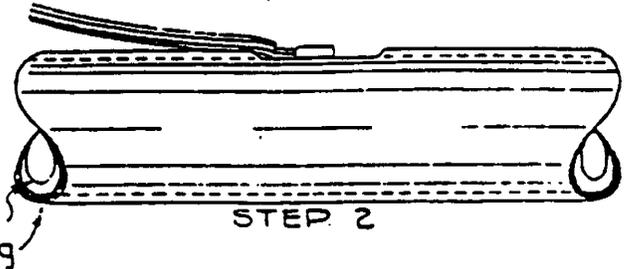
As required by CPS Energy, Contractor shall maintain and provide a copy of the "as-built" job sketch and all associated documents once the work is completed.

**CPS**  
**Design Standards**  
**(Steel Gas Pipe)**  
**Exhibit GAS-3**

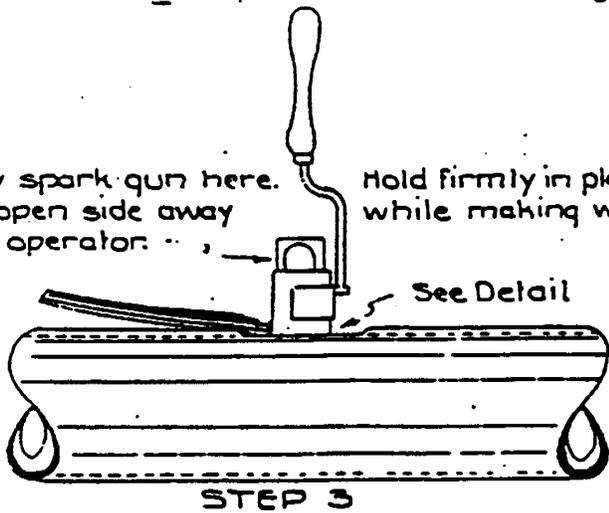
Remove a section of coating 3" long and file pipe bright so that a space 1" wide and 2" long is clean and dry.



Strip 1/2" of insulation from wire and place copper sleeve on #10 and smaller wire.

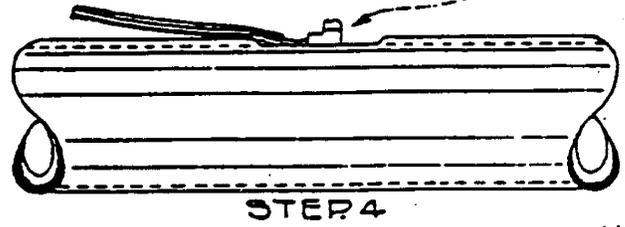


Apply spark gun here. Keep open side away from operator.

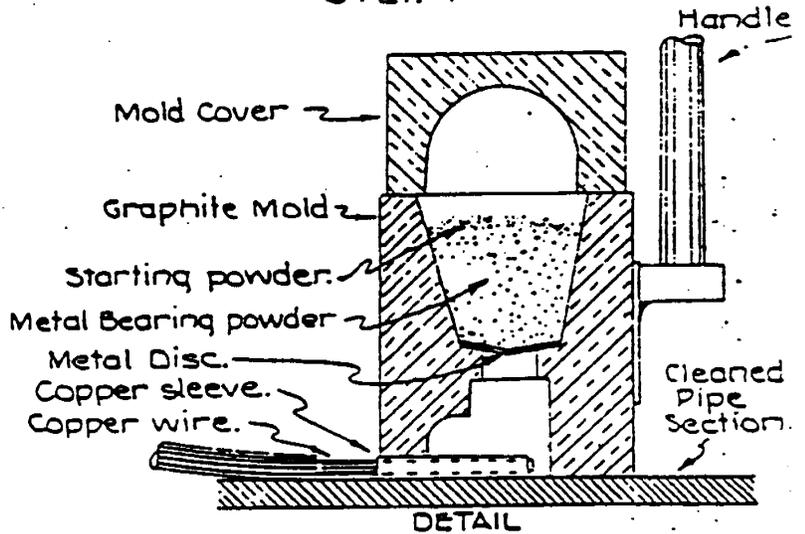
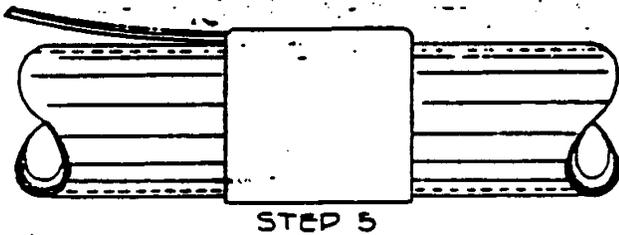


Hold firmly in place while making weld.

Remove slag with hammer and paint thoroughly with primer.



Repair pipe coating with care. Cover entire weld.



**IMPORTANT**

1. REMOVE RED CAP OF CADWELD CARTRIDGE AND DUMP ALL OF CONTENTS INTO MOLD. THE CHARGE WILL NOT IGNITE WITHOUT THE FINE STARTING POWDER ON TOP.
2. THE CARTRIDGES MUST BE KEPT DRY AT ALL TIMES.

Cadweld mold with sleeve for #10 wire and smaller.

CITY PUBLIC SERVICE BOARD  
SAN ANTONIO, TEXAS  
GAS DEPARTMENT

COPPER WIRE CONNECTION TO PIPE USING CADWELD.

INSTRUCTION SHEET - TYPE TB-3 WELDER**PREPARATION OF SURFACE:**

To obtain a good weld, surface must be bright clean and dry.

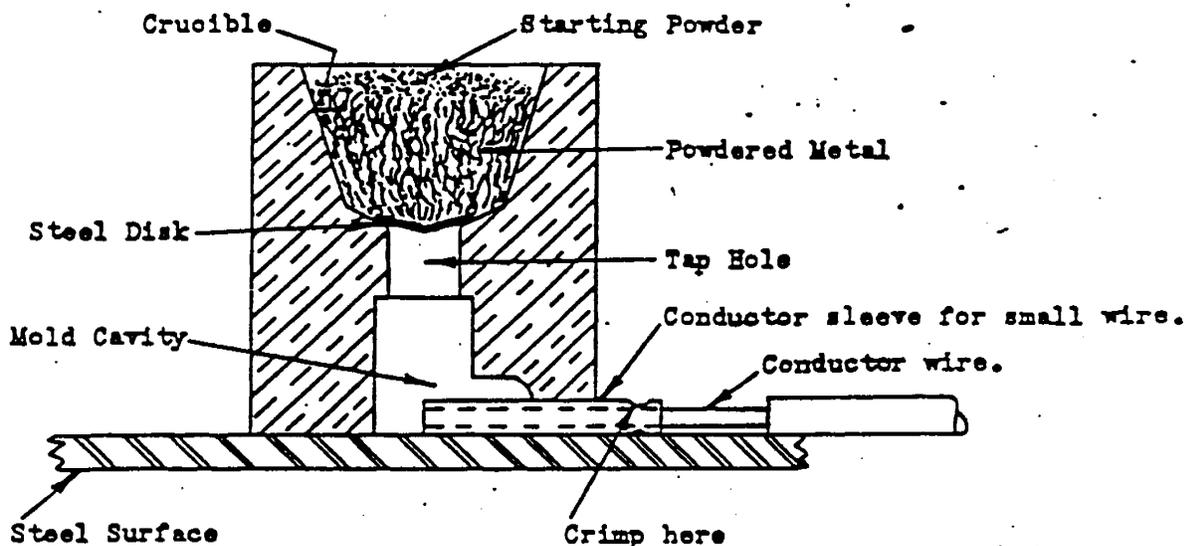
Steel surface should be ground or filed to remove all scale, rust, grease and dirt.

Galvanized steel must be cleaned with emery cloth to remove oxide.

**PREPARATION OF WIRE:**

Strip the insulation from the conductor and scrape until wire is bright and clean.

For #10 and smaller sizes, place the wire in a copper sleeve, ends flush, and crimp the sleeve tightly to the wire at the insulation to provide additional mechanical strength at the weld.

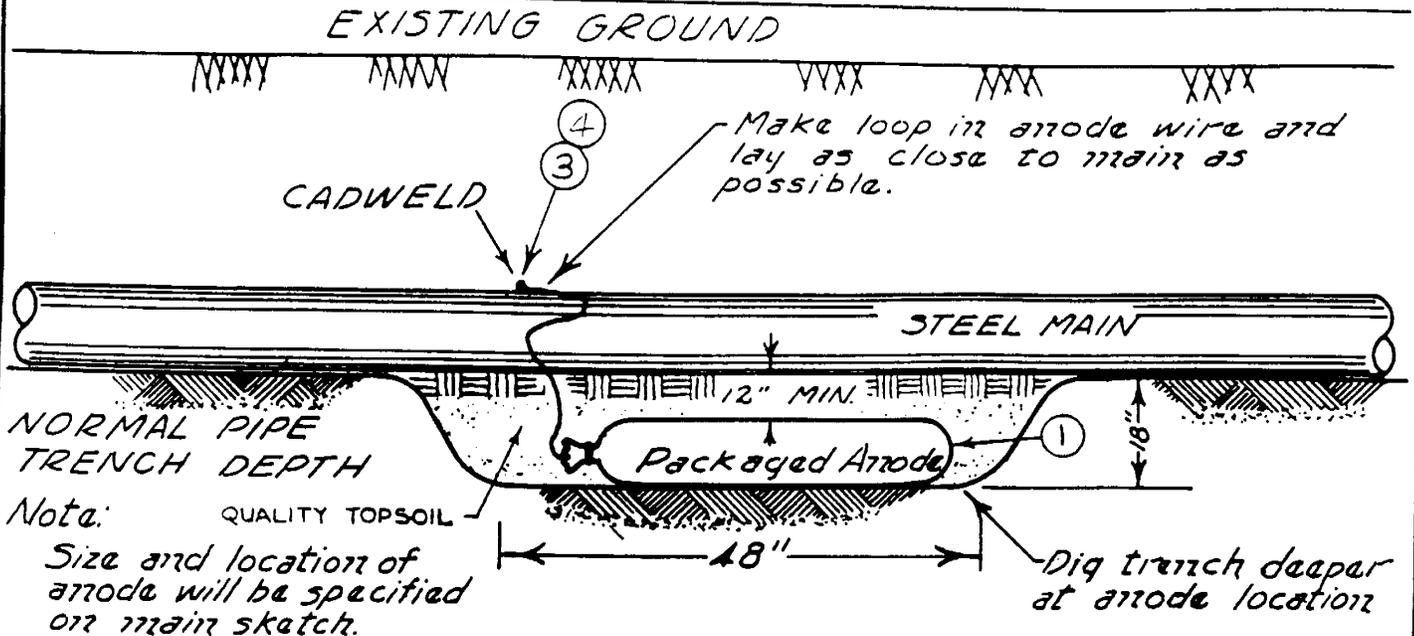
**WELDING PROCEDURE:**

- (1) PLACE WELDER OVER CLEAN STEEL SURFACE and insert the wire until it is under the CENTER of the tap hole.
- (2) COVER TAP HOLE WITH STEEL DISK.
- (3) DUMP CARTRIDGE IN CRUCIBLE AND CLOSE COVER. (Tap bottom of cartridge to be sure starting powder is emptied). Replace empty cartridge in box to keep remaining cartridges in an upright position.
- (4) HOLD DOWN ON WELDER TO PREVENT LEAKS AND IGNITE WITH FLINT GUN. Jerk gun away to prevent fouling. Should gun become fouled, soak in Spirits of Ammonia.
- (5) DO NOT REMOVE WELDER UNTIL METAL HAS SOLIDIFIED.
- (6) ALL SLAG MUST BE CLEANED FROM MOLD BEFORE MAKING NEXT WELD.

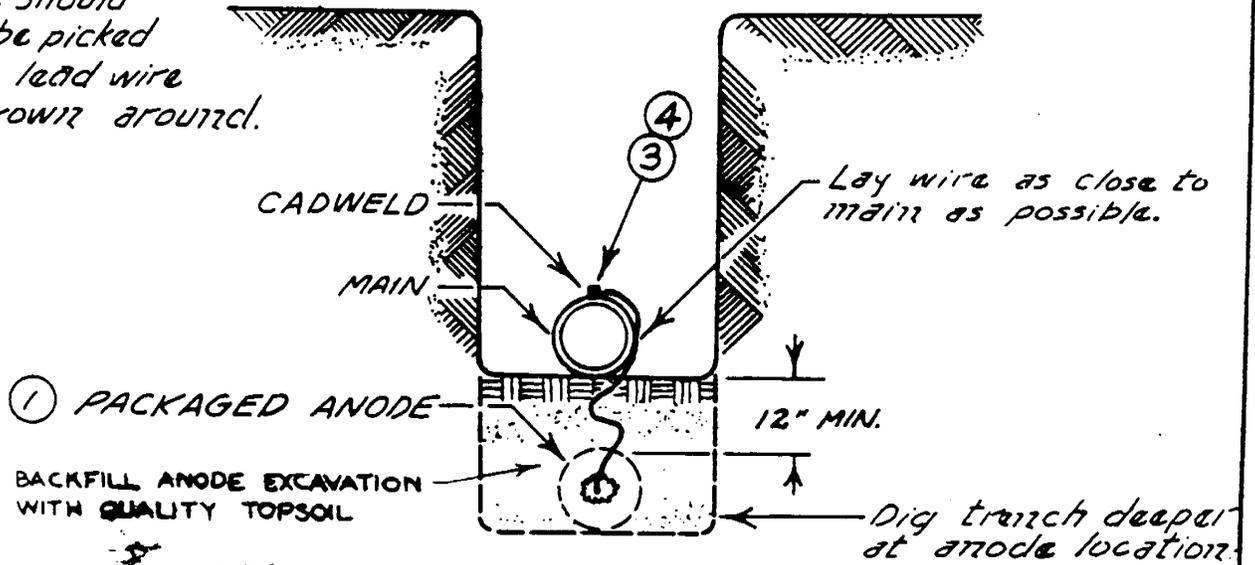
Note: Wet or damp molds produce porous welds. Mold can be dried out by firing a charge before making the desired weld.

4.5

PACKAGED ANODES



Anode should never be picked up by lead wire or thrown around.

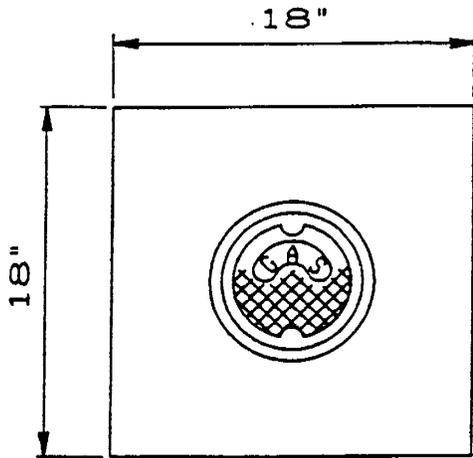


NOTES:

- a. Cadweld connection to be primed and coated carefully.
- b. Packaged anode should be covered with fine soil containing no rocks, clods, or sand.
- c. Pour 5 gallons of water over anode location and tamp thoroughly.
- d. Provide test leads when specified. (See test lead standard)
- e. Anode specification sheet will be attached to main order, and is to be completed by the main construction foreman.

ISSUED	9-1-70	APPROVED	CJH	CITY PUBLIC SERVICE BOARD	DRAWING DS-33
REVISED					CONSTRUCTION STANDARD (GAS)

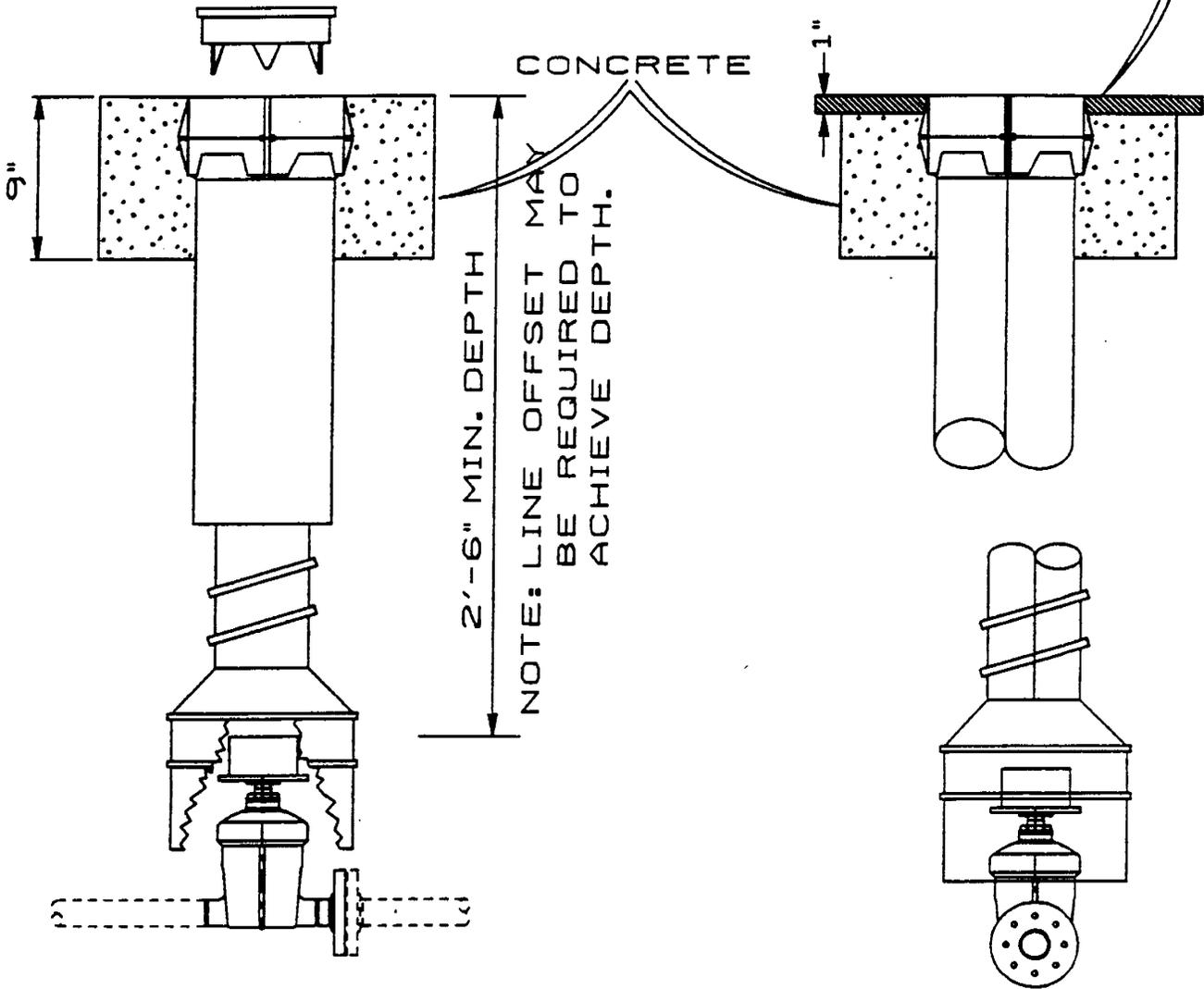
VALVE, STEEL  
(WELD x FLANGE)



CAM UNITS
VGS2WXF
VGS4WXF

NOTE: TAMP & BACKFILL VALVE BOX ABOVE PIPE.

OPTIONAL METHOD FOR ASPHALT STREETS

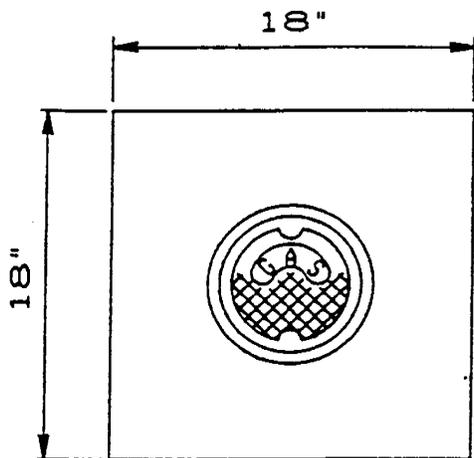


NOTE: COAT VALVE UP TO TOP OF PACKING GLAND.

AVAILABLE SIZES: 2, 4 Page 5 of 19

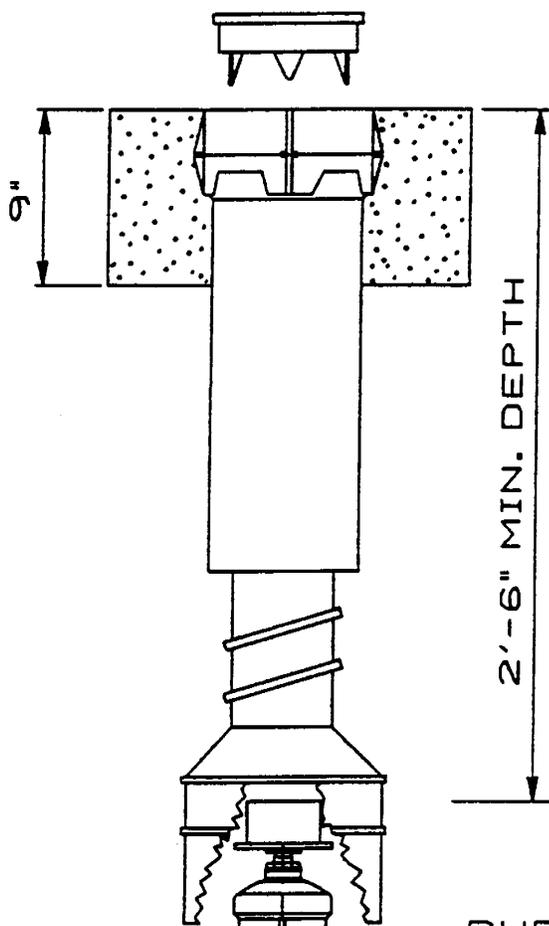
ISSUED	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD (GAS)	G - S - 127 - 1 - 0 DRAWING DS-36
REVIS				

VALVE, STEEL  
(WELD x WELD)



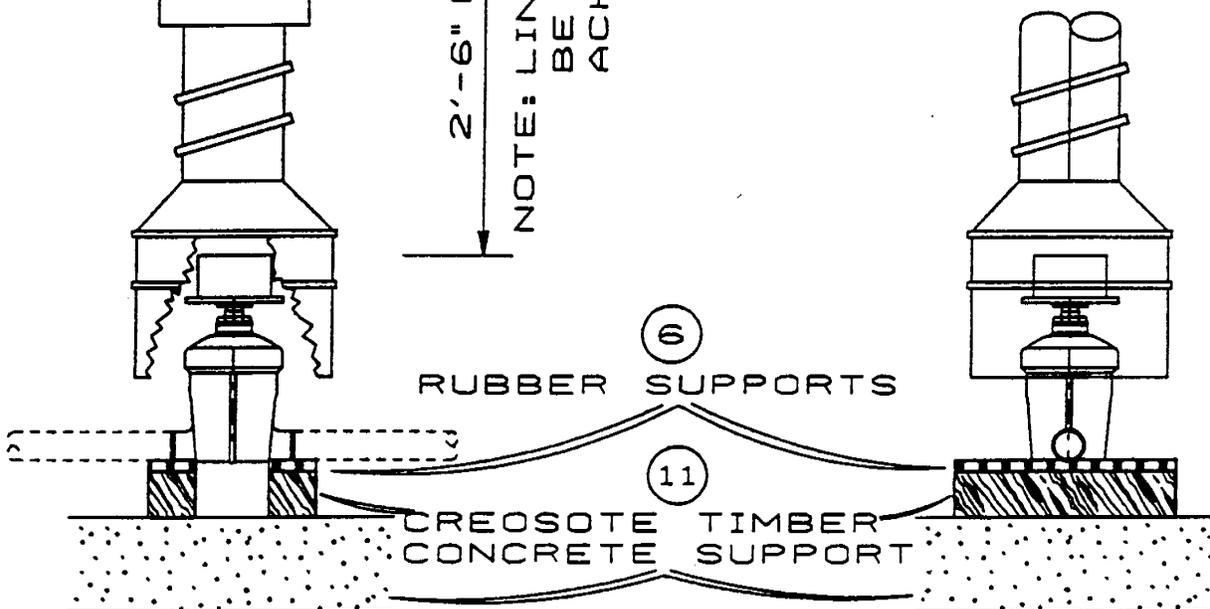
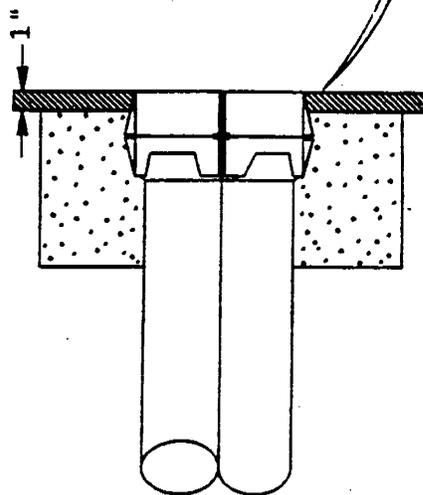
CAM UNITS	
VGS2WE	VGS8WE
VGS4WE	VGS12WE
VGS6X8WE	VGS16WE

OPTIONAL METHOD FOR ASPHALT STREETS



CONCRETE

NOTE: LINE OFFSET MAY BE REQUIRED TO ACHIEVE DEPTH.



RUBBER SUPPORTS

CREOSOTE TIMBER CONCRETE SUPPORT

NOTE: ITEMS 6 AND 11 ARE TO BE INSTALLED FOR 12" VALVES, OR LARGER. COAT VALVE UP TO TOP OF PACKING GLAND.

AVAILABLE SIZES: 2, 4, 8x6, 8, 12

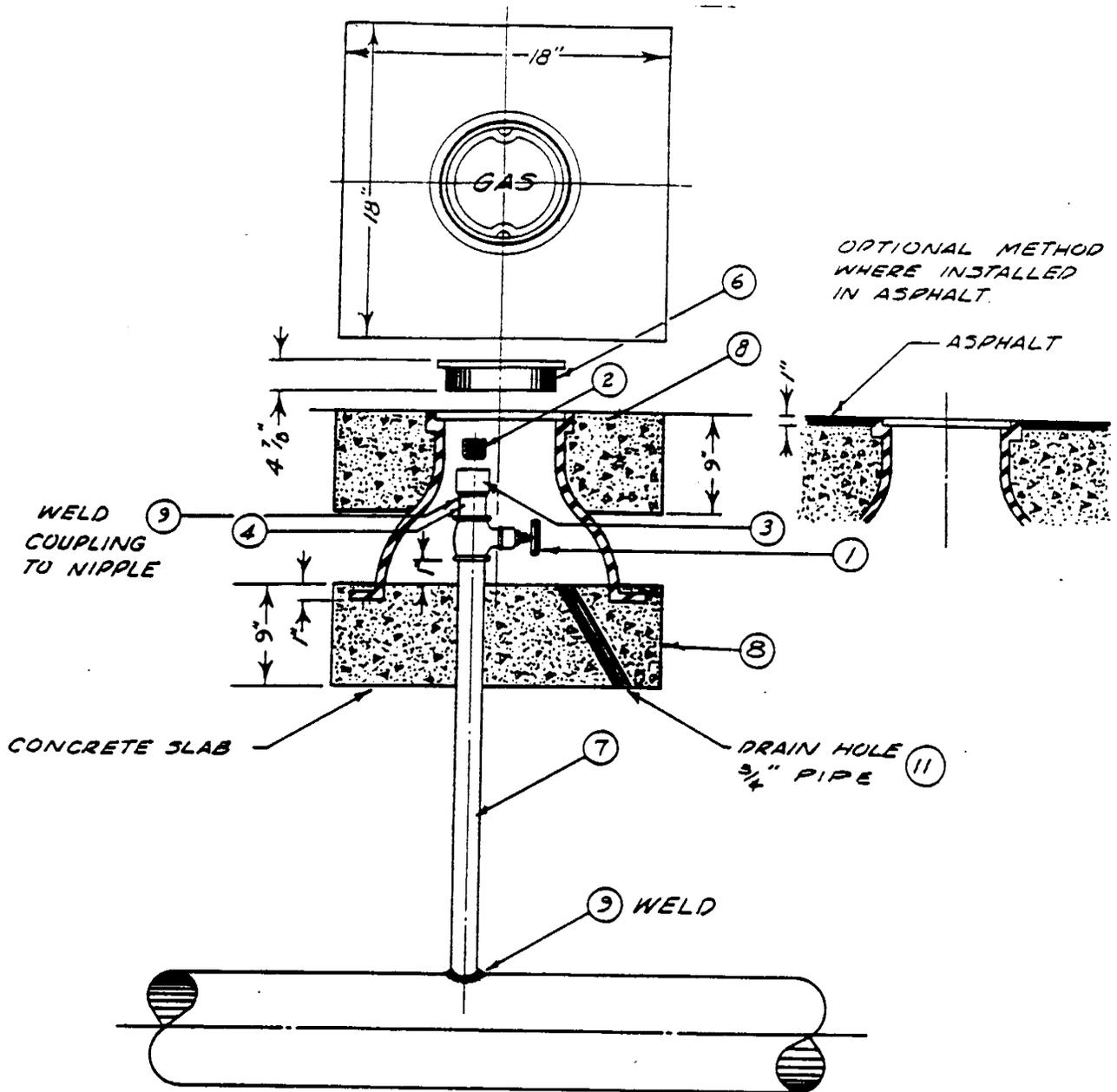
Page 6 of 19

ISSUED	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD (GAS)	G - S - 127 - 2 - 0
REVIS				



4.5

TEST RISER, 1 IN.

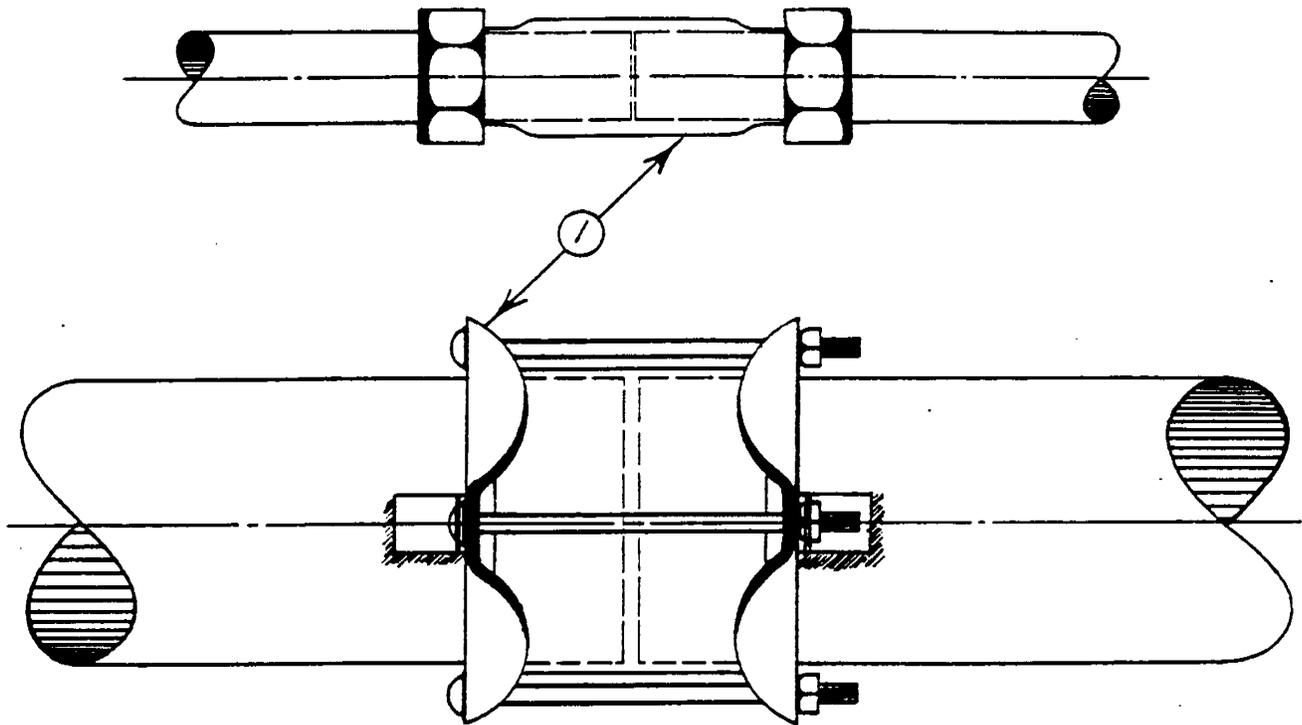


	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION STANDARD (GAS)	DRAWING DS-39
ISSUED	9-1-70	WHP		G-S-141-1-0
REVISED				

4.5

COUPLING, BONDED

WITH WELD LUGS



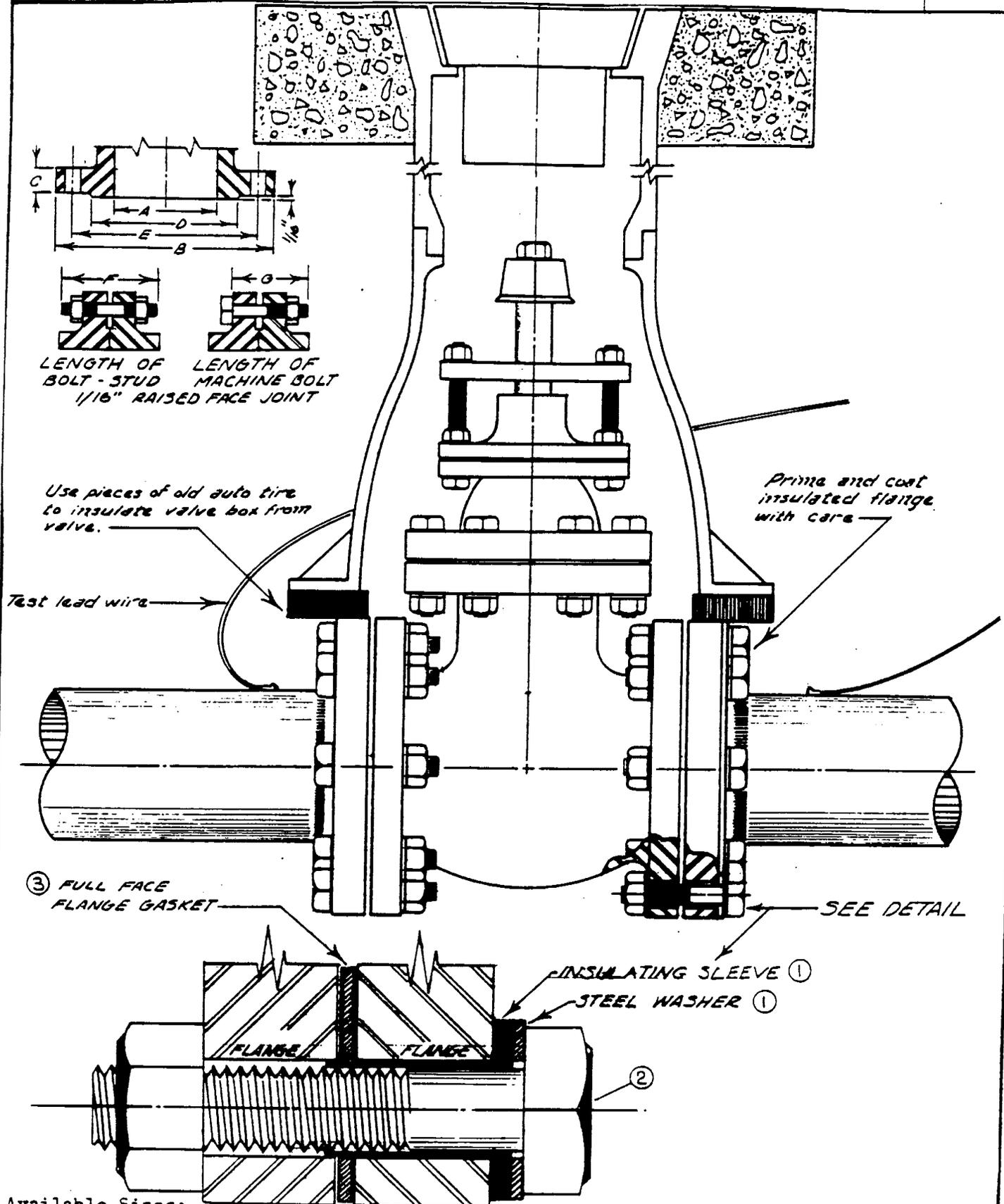
- NOTE: 1 All couplings to be centered over pipe joint with minimum spacing between pipe ends. Spacing shall not exceed 1".  
 2 File pipe to bright finish over areas covered by bonding gaskets. Area should be a minimum of 2-1/2" wide.  
 3 Lubricate gaskets with soap water before installing.  
 4 Tighten all bolts on coupling uniformly.

AVAILABLE SIZES: 3/4", 1", 1-1/4", 1-1/2"  
 2", 4", 8", 12", 16", 18", 20", 24", 30"

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION STANDARD (GAS)	DRAWING DS-40
ISSUED	9-1-70	CJH		G-S-051-1-1
REVISED				

4.5

INSULATE FLANGE



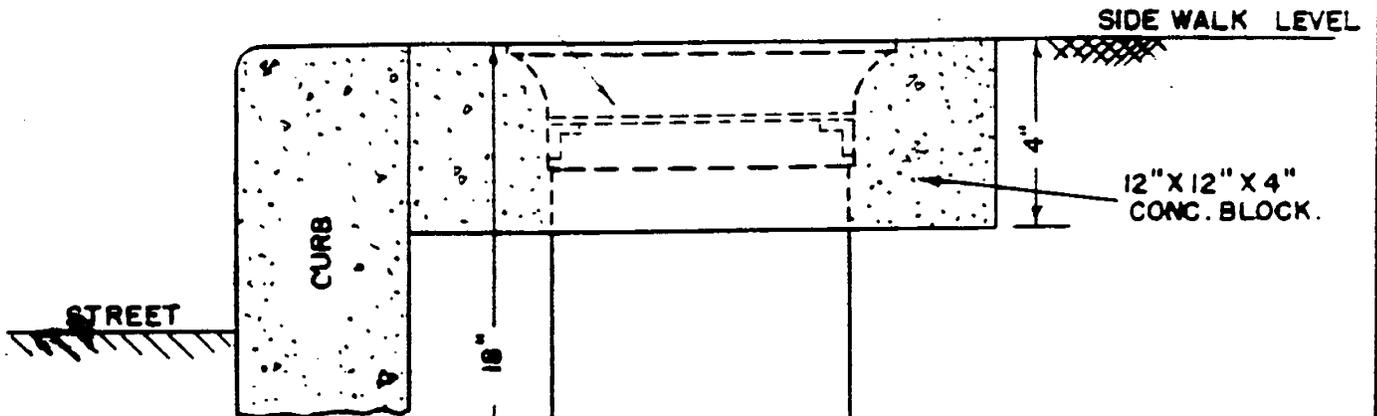
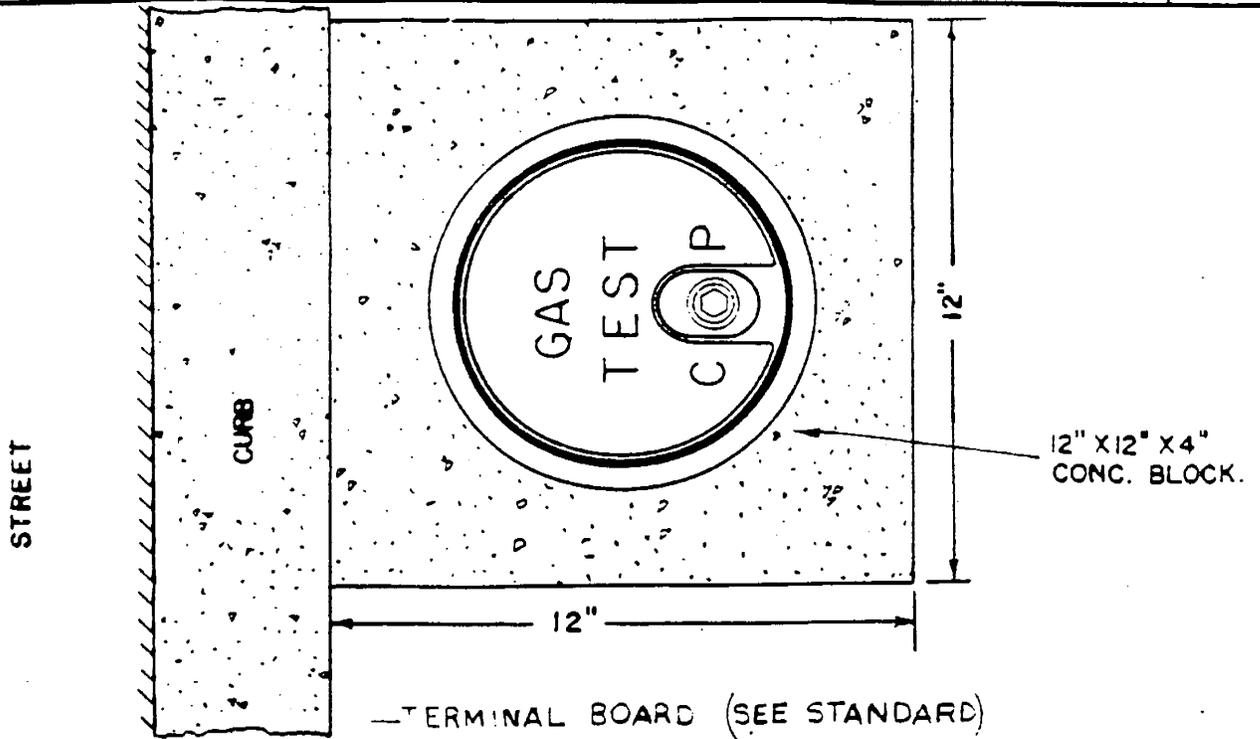
Available Sizes:

150# Flg (2, 4, 8, 12, 16); 150# Exist Flg (2, 4, 8, 12, 16); 300# Flg (8, 12, 16, 20)

ISSUED	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION STANDARD (GAS)	DRAWING DS-41
REVISED	9-1-70	JH		G-S-118-1-1

4.5

CATHODIC PROTECTION TEST POINT



NOTE:

1. BE SURE BOTTOM OF TEST LEAD OFFON IS AT LEAST 6" BELOW END OF TEST POINT BARREL.

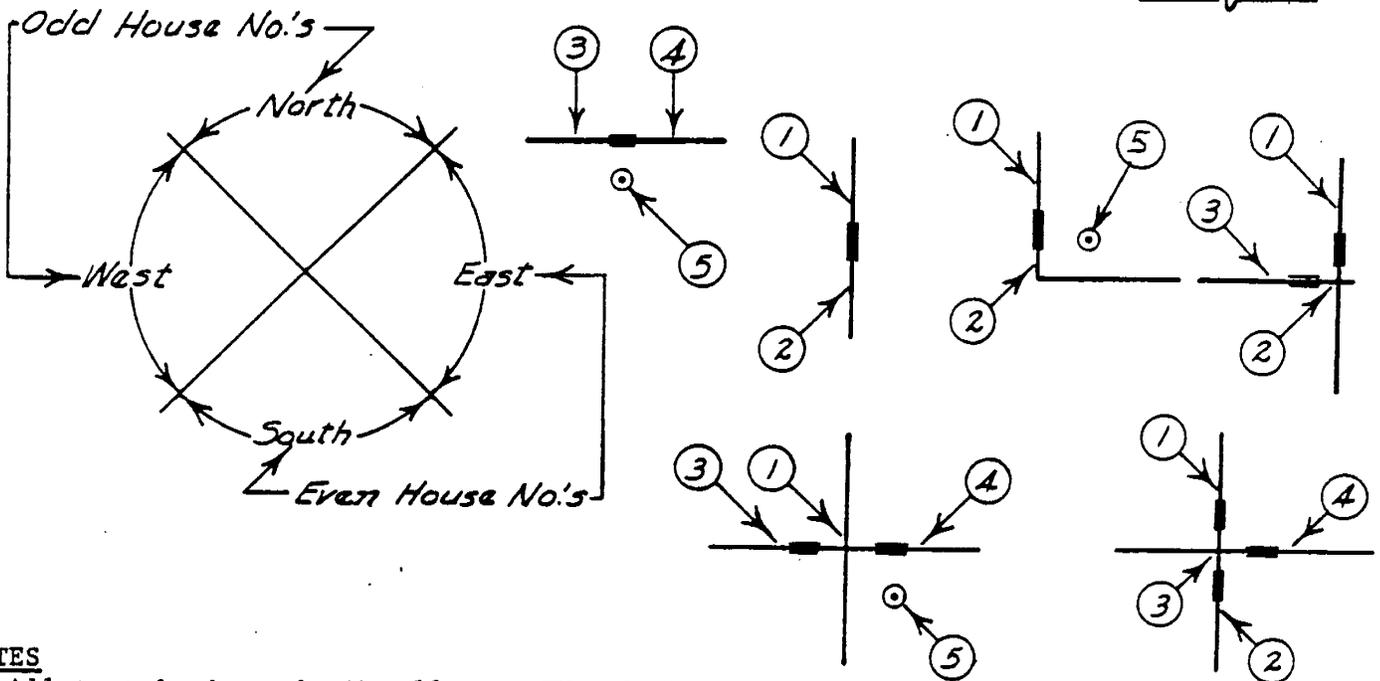
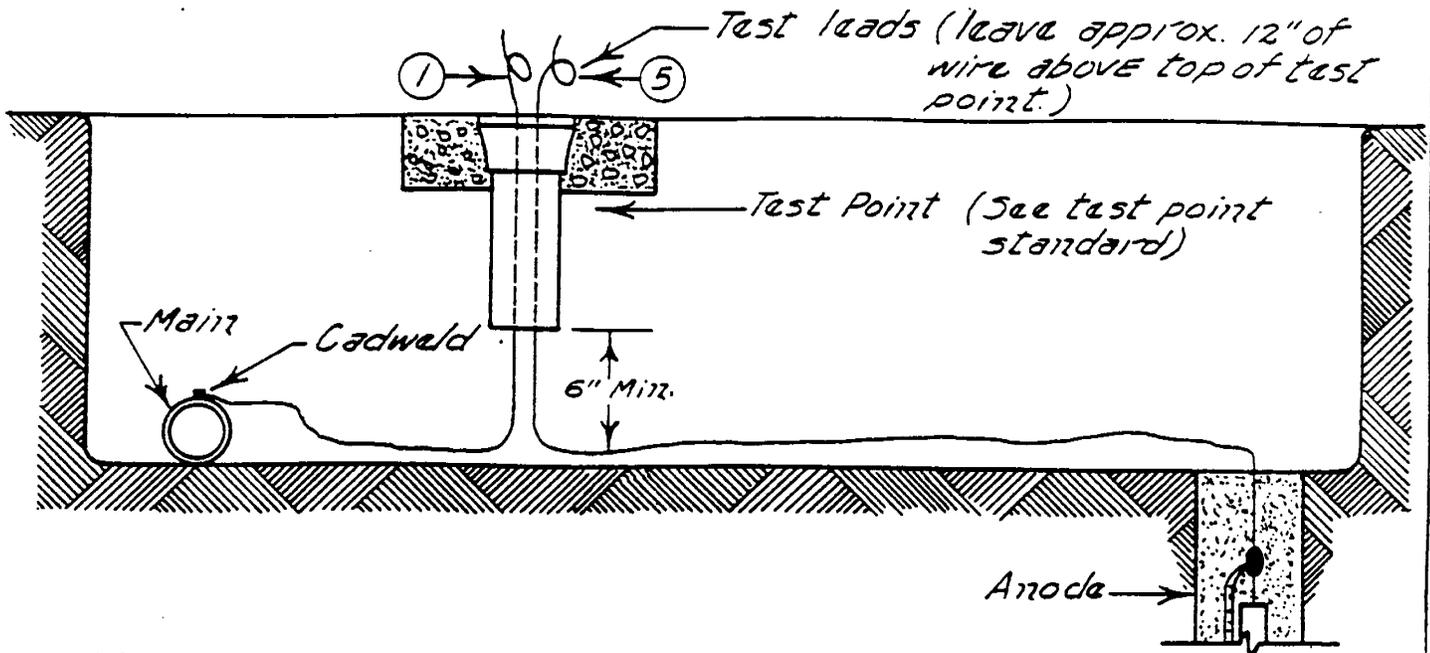
2. TEST POINT RECORD SHEETS WILL BE ATTACHED TO MAIN ORDER AND ARE TO BE COMPLETED BY MAIN FOREMAN.

TEST LEADS (NO 10 TYPE TW COPPER WIRE)

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-42
ISSUED	9-1-70	CJH		G-S-182-2-0
REVISED				

4.5

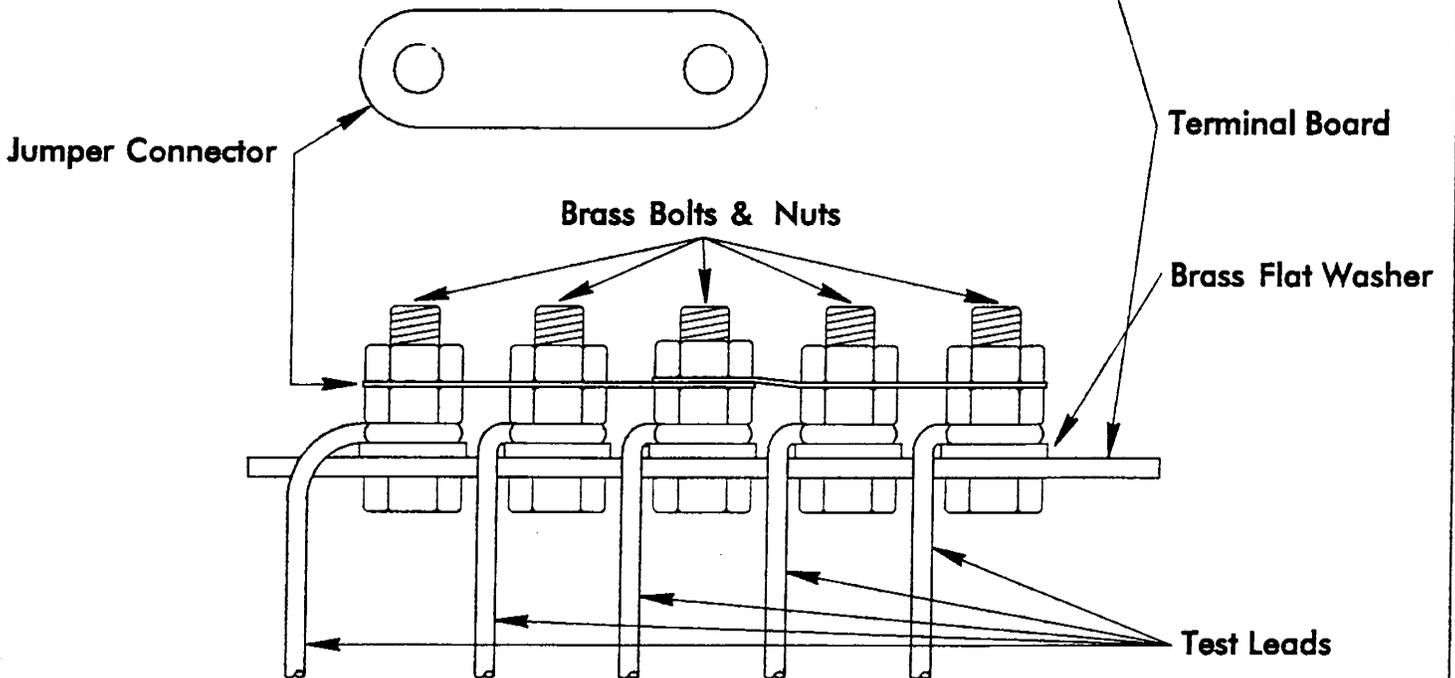
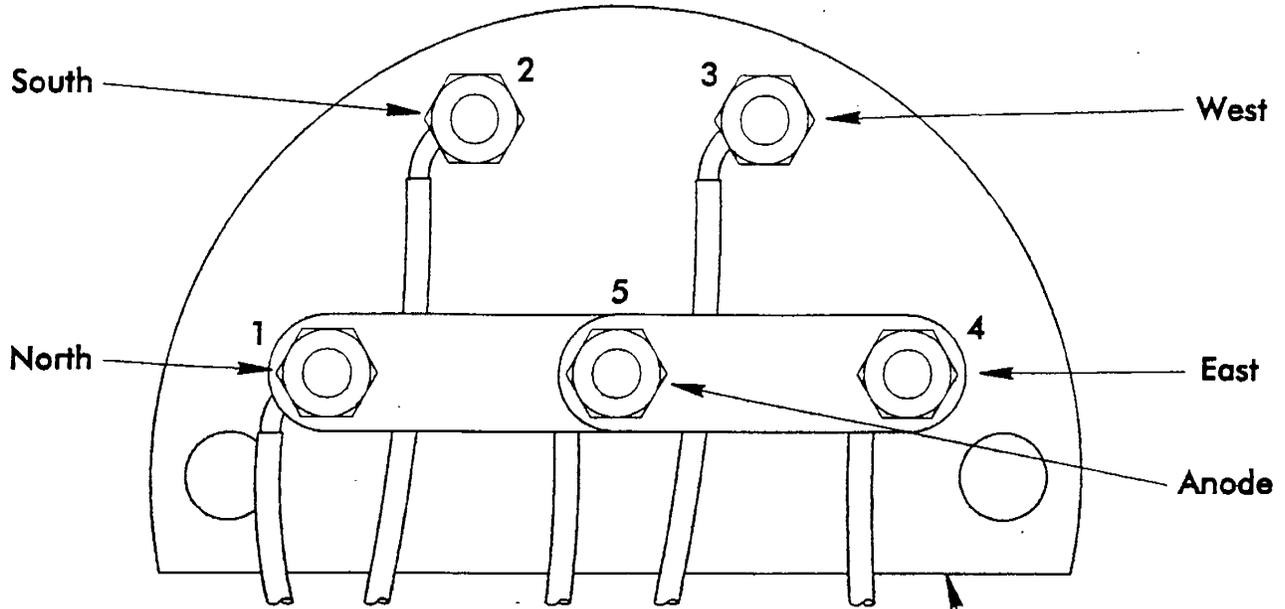
CATHODIC PROTECTION TEST LEAD CONNECTION TO MAIN



NOTES

1. All test leads to be No. 10 type TW solid copper wire.
2. Test point record cards will be attached to main order, and are to be completed by the main foreman.
3. All test leads should be tagged with a metal tag about 6" from end of lead according to the following numbering code:
  - 1 North
  - 2 South
  - 3 West
  - 4 East
  - 5 Anode

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-43
ISSUED	9-1-70	CJH		G-S-182-1-0
REVISED				

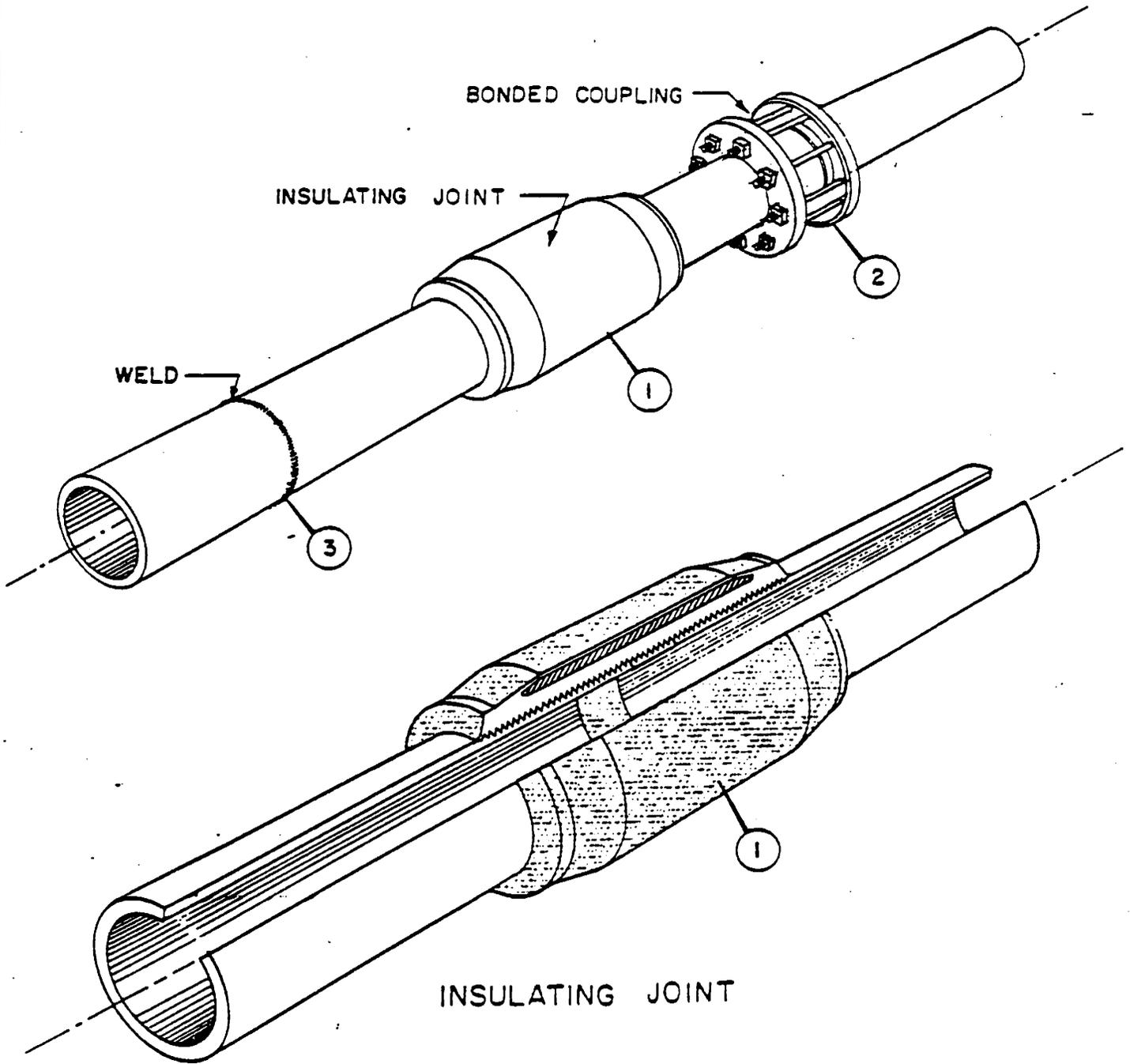


**Note:**  
Connect test leads on top side of terminal board

	Date	Approved
Issued	11-28-94	<i>M. Kotara</i>
Revised		

4.5

INSULATING JOINT 8" & 12"



AVAILABLE SIZES: 8" & 12"

DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-45
ISSUED 6/5/80	S.R.J.	CONSTRUCTION DRAWING (GAS)	



PLUGGING EQUIPMENT INSTALLATION

**IMPORTANT**

THE ARROW ON THE TEE HANDLE AND THE PLUGGING HEAD SHOULD BOTH FACE TOWARD THE SECTION OF MAIN BEING CUT.

TYPICAL SETUP  
4" THROUGH 12"

SHORTSTOPP 60  
PLUGGING  
MACHINE

GASKET

SHORTCUT  
VALVE

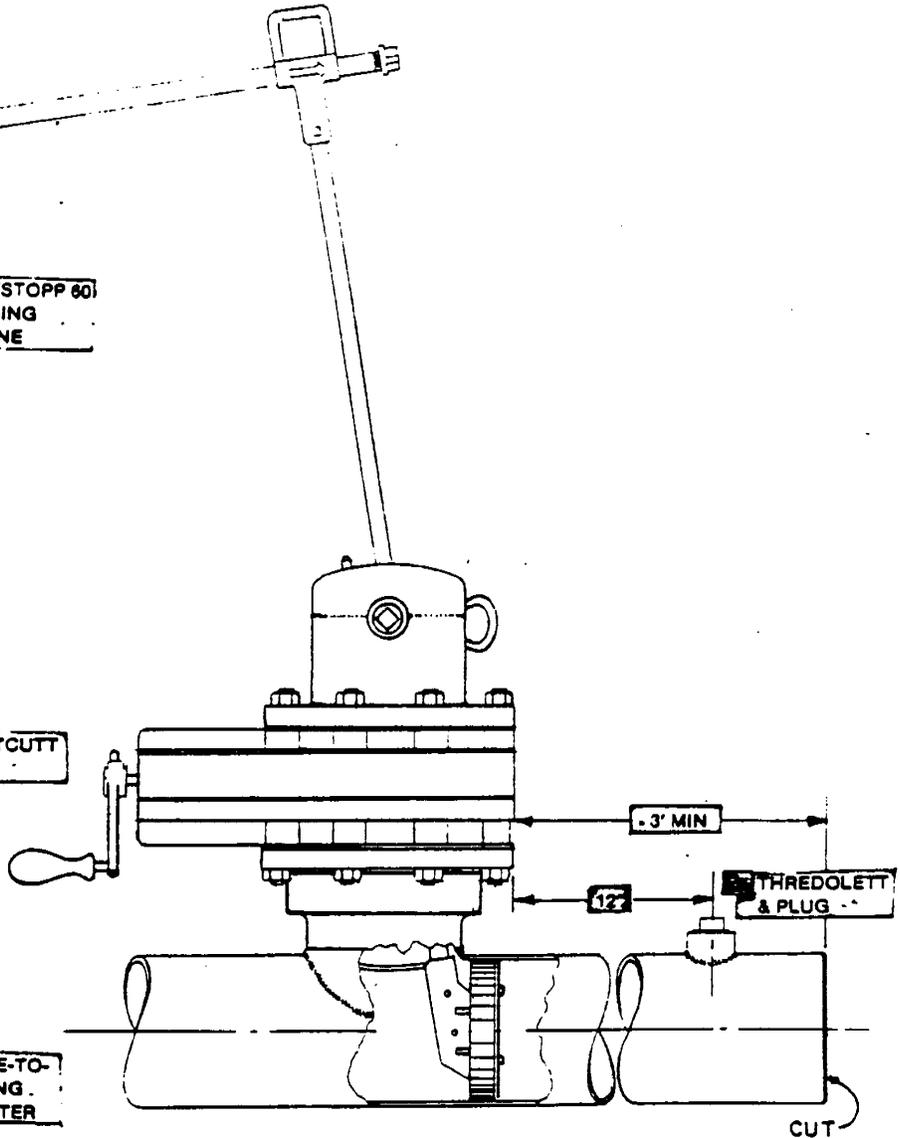
GASKET

VALVE-TO-  
FITTING  
ADAPTER

GASKET

SHORTSTOPP  
WELDING  
FITTING

PIPELINE



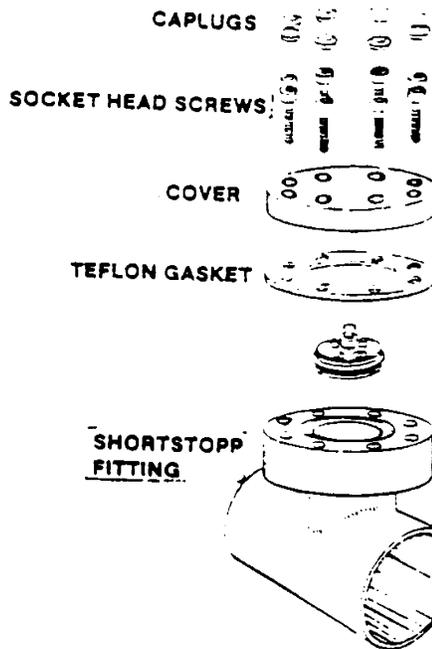
ALL SIZES MEET ANSI CLASS 150 SERVICE RATINGS. WHEN USED WITH TOW PLUGGING MACHINES, THE MAXIMUM RECOMMENDED WORKING PRESSURE IS 60 PSI FOR SHORTSTOPP 60 PLUGGING MACHINES.

APPROVED	WRG	FR								
DATE	10/07	10/13								

CITY PUBLIC SERVICE BOARD  
CONSTRUCTION STANDARD

**INSTALLATION INSTRUCTIONS TYPE II SHORTSTOPP® FITTING**

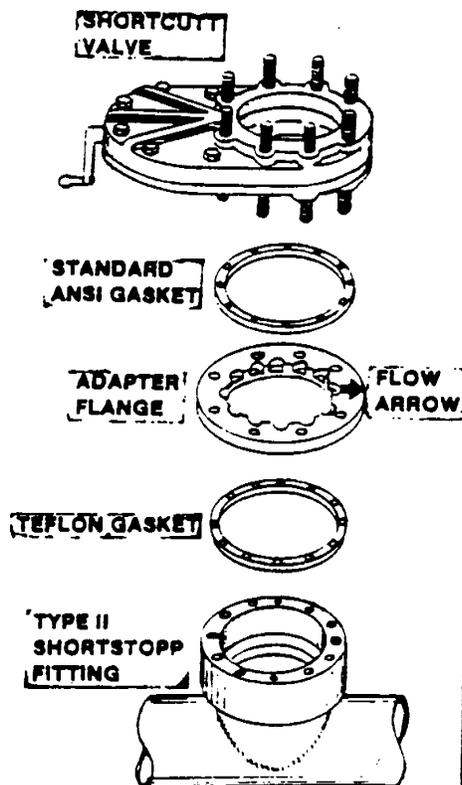
1. Remove completion plug from inside fitting before welding.
2. Clean all weld edges thoroughly — remove all paint, dirt, rust, oil, etc.
3. Apply grease to machined surface inside fitting to protect machined surface from weld spatter.
4. Center and level fitting. Flange centerline should intersect centerline of pipe, and flange gasket surface parallel to pipe.
5. Maintain 1/16" to 1/8" gap between fitting and pipe surface for proper penetration. DO NOT WELD INSIDE of fitting to avoid tapping problems.
6. Place white Teflon gasket on face of fitting.
7. Position reusable valve adapter flange on fitting so that the flow arrow stamped on flange adapter is in line with the pipe. Be sure that fitting and valve adapter flange bores are concentric.
8. Attach valve adapter flange to face of fitting; use socket head screws furnished with the fitting. A minimum torque on socket head screws assures a leak-tight joint.  
 4" fitting...40 to 60 ft. lbs.  
 8" fitting...60 to 90 ft. lbs.  
 12" fitting...60 to 90 ft. lbs.



**CAUTION**

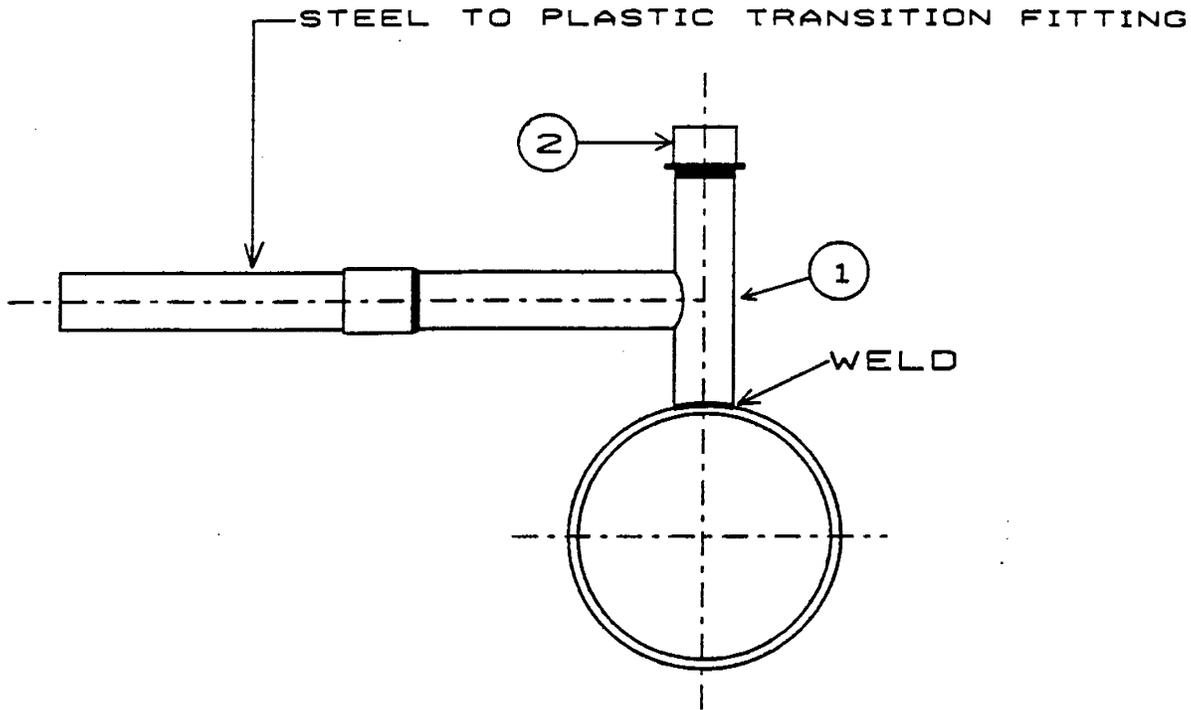
Excessive overtightening can break socket head screws. Broken socket head screws can be difficult to remove and could allow gasket to leak.

9. Place a standard ANSI flange gasket on face of valve adapter flange. Then install T.D.W. Shortcutt® Valve on the valve adapter flange.
10. Proceed and use standard T.D.W. Shortstopp equipment.
11. After completion plug has been set and Shortcutt Valve has been removed, remove reusable valve adapter flange.
12. Install cover (blind flange) on fitting with use of socket head screws and Teflon gasket. Use minimum torque values as shown in Item 8.
13. Insert plastic Caplugs into hex holes of socket head screws on cover. Caplugs help protect fitting from dirt and other foreign matter.



APPROVED	WRG	12/13							
DATE	12/13	10/13							

TEE SERVICE WELDED TRANSITION  
STEEL TO PLASTIC



SIZE SERVICE	DRILL SIZE
1"	7/8"
1-1/4"	1-1/8"

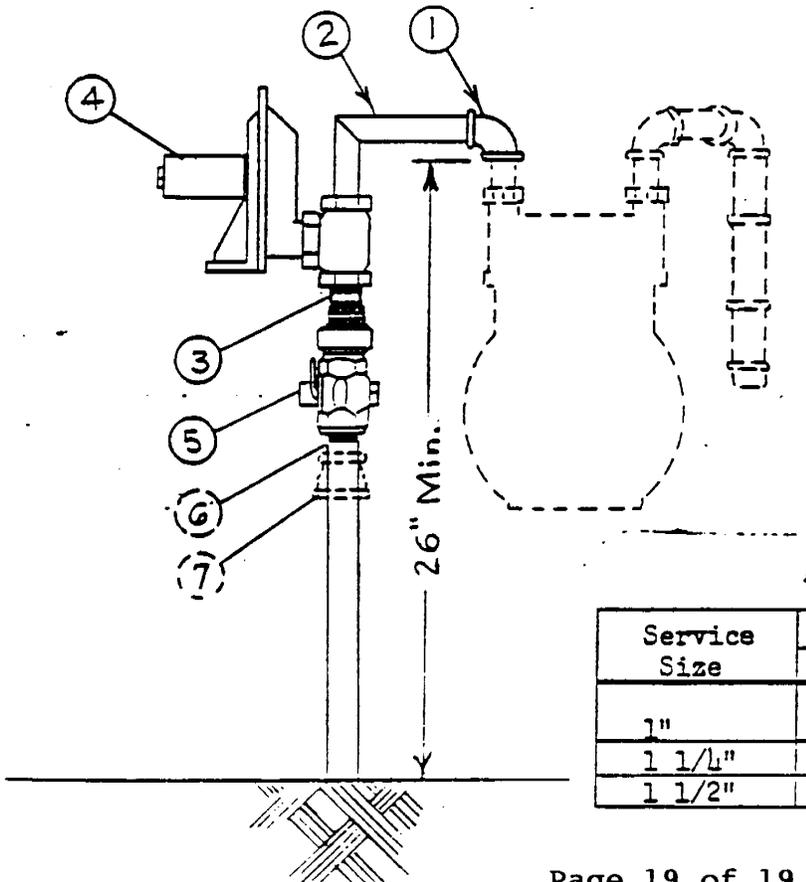
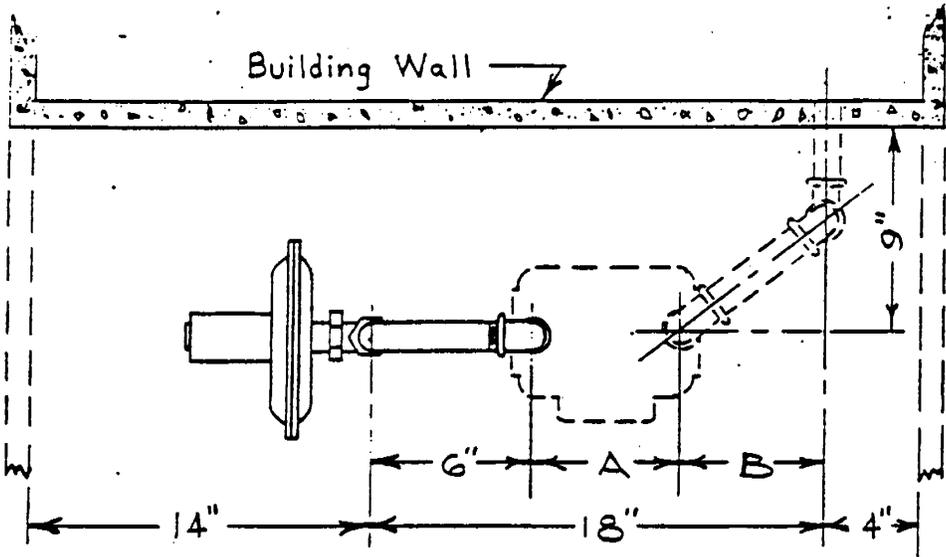
TEE SERVICE WELDED TRANSITION STEEL TO PLASTIC 1"  
C.P.S. STOCK \*520700204  
TEE SERVICE WELDED TRANSITION STEEL TO PLASTIC 1 1/4"  
C.P.S. STOCK \*520700220

ISSUED	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD (GAS)	G - 8 - 127 - 2 - 0
REVIS				DRAWING DS-49

4.5

RISER AND REGULATOR FOR 5, 10, 30 & 35 LT. METERS

NOTE: FOR DIMENSIONS OF METERS REFER TO EXHIBIT 8-1 IN THE PLANNING INSTRUCTIONS.



Available Sizes: ●

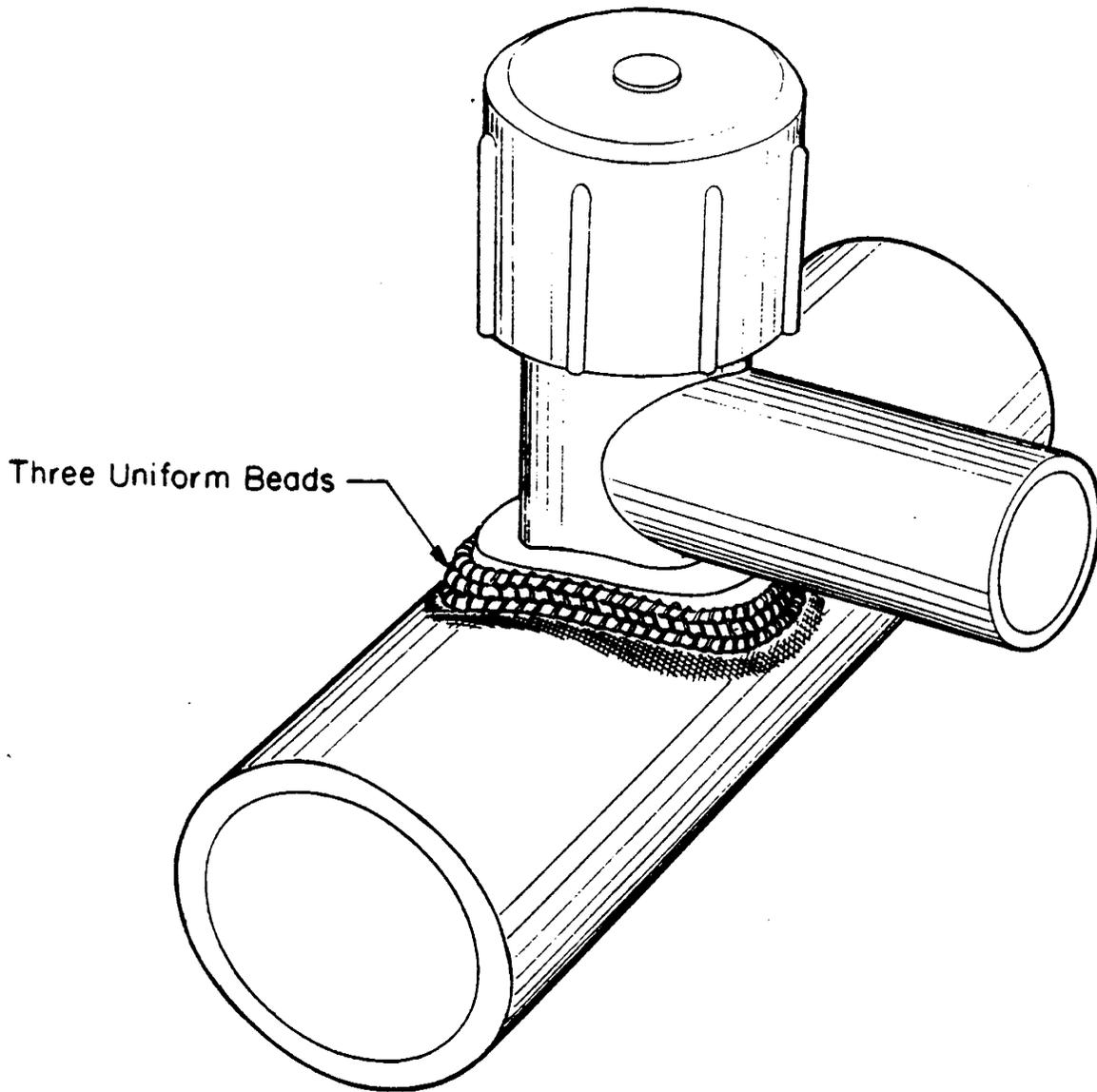
Service Size	Size of Meter Connection		
	1"	1 1/4"	1 1/2"
1"	●	●	●
1 1/4"	●	●	●
1 1/2"			●

DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-50
ISSUED		CONSTRUCTION STANDARD (GAS)	G-S-222-1-1
REVISED			

**CPS**  
**Design Standards**  
**(Plastic Gas Pipe)**  
**Exhibit GAS-4**

4.5

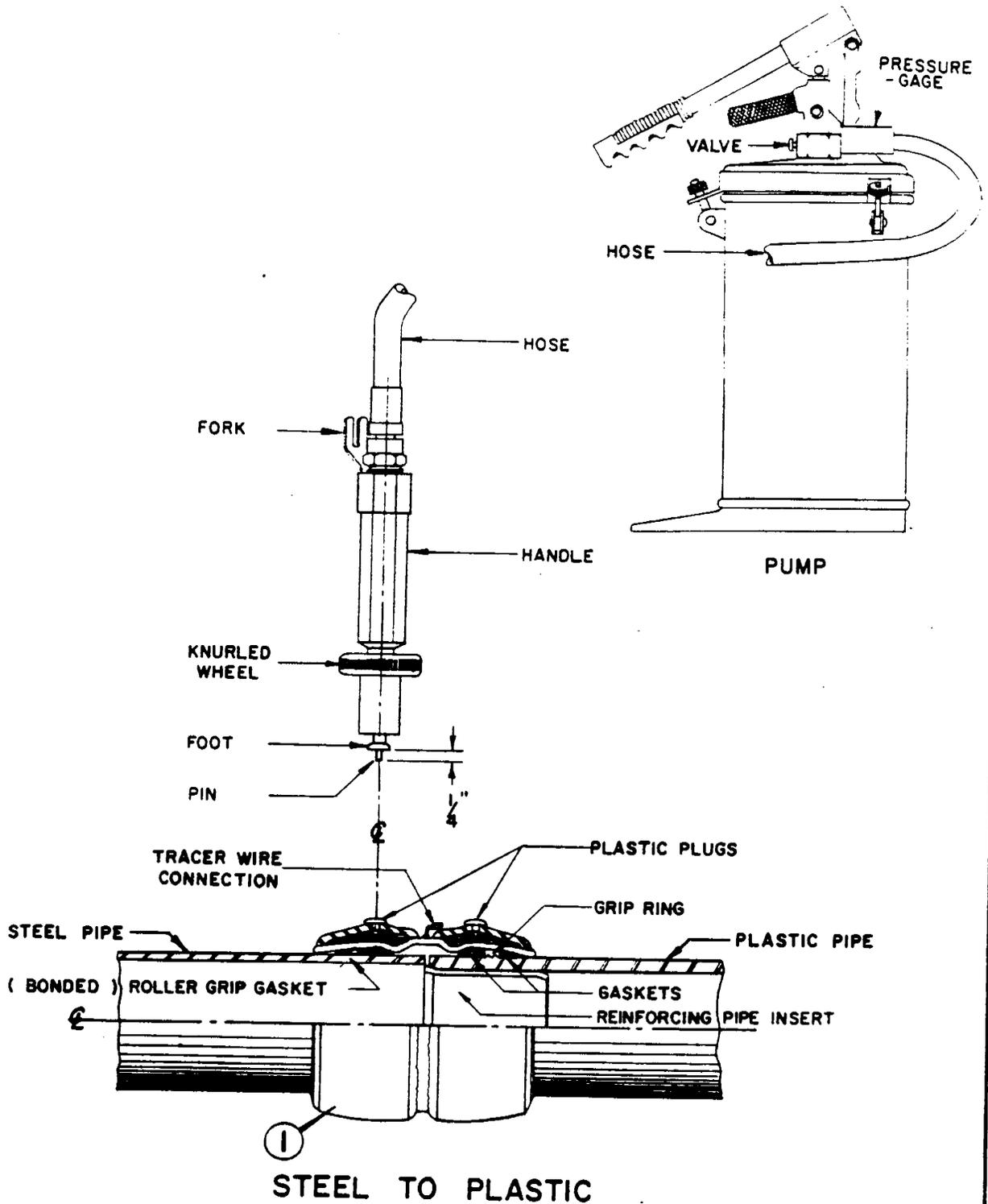
PLASTIC PIPE, TAPPING TEE



	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION STANDARD ( GAS )	DRAWING DS-21
ISSUED	3/00	RKJ.		G-S-505-6-0
REVISED				

4.5

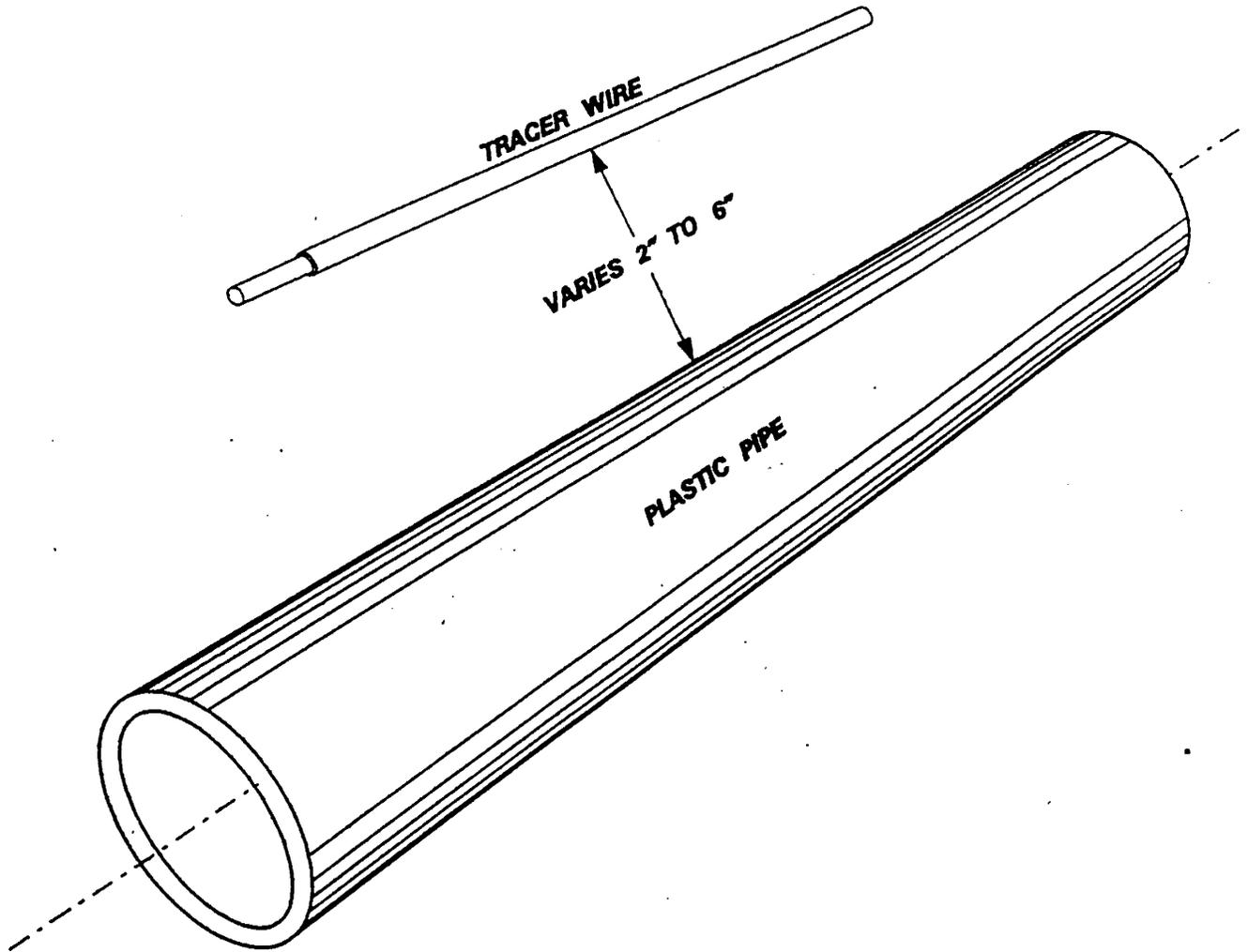
POSI-HOLD COUPLING INSTALLATION



ISSUED	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION DRAWING ( GAS )	DRAWING DS-24
REVISED	5/60	ARK		G-S-507-8-0

4.5

PLASTIC PIPE & TRACER WIRE



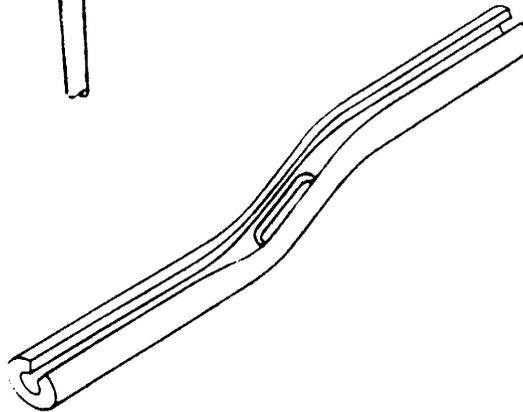
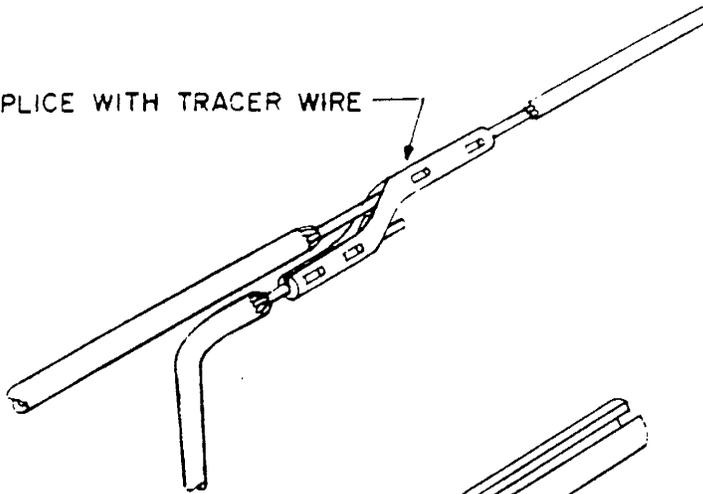
**NOTE: THERE IS TO BE 2" TO 6" OF SEPARATION BETWEEN PIPE AND TRACER WIRE.**

	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD	G-S-501-2-1
ISSUED	6-6-80	D.R.S.		
REVISED				DATE: 18-Dec-82 12:47

4.5

TEE SPLICE

TEE SPLICE WITH TRACER WIRE



TEE SPLICE

NOTE:

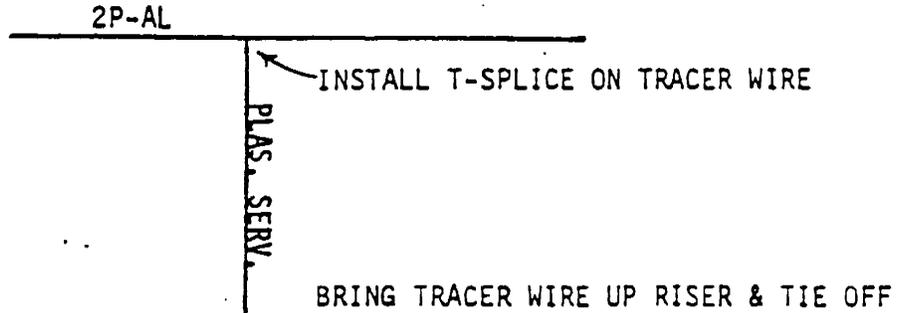
1. APPLY PIPELINE TAPE WRAP PRIMER ( ALLOW TO DRY UNTIL TACKY )
2. USE PIPELINE TAPE WRAP ONLY ( CIGARETTE WRAP )

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION DRAWING (GAS)	DRAWING DS-27
ISSUED	6/25/00	R.R.S.		G-S-541-1-0
REVISED				

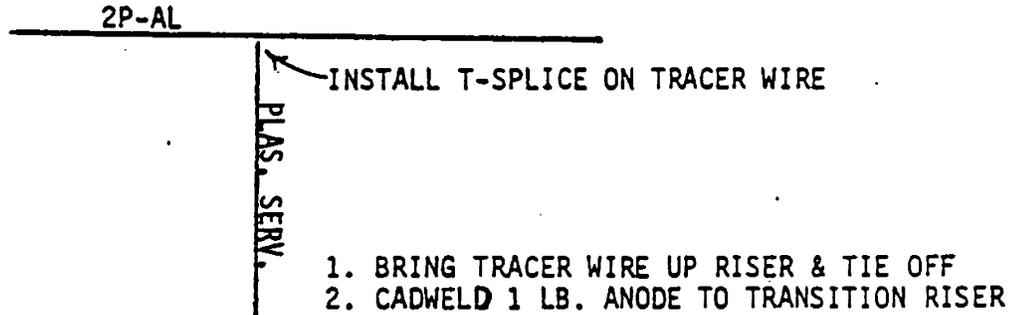
DRAWING DS-28  
 EXAMPLES FOR ANODELESS RISERS  
 (Page 1 of 2)

4/1/03

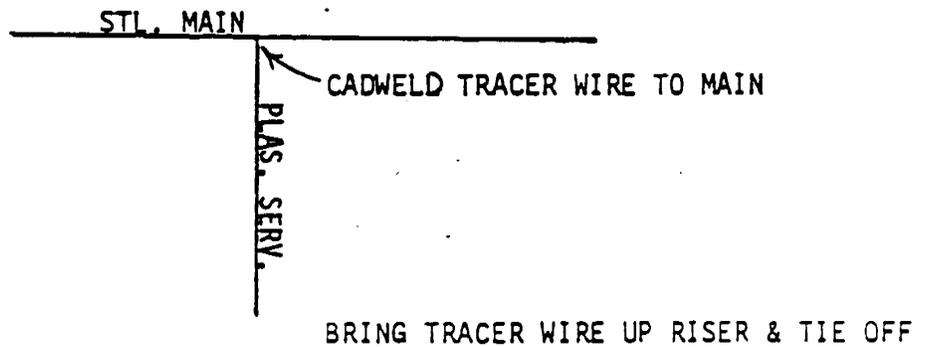
- ① ANODELESS TRACER WIRE ON PLASTIC MAIN - PLASTIC SERVICE WITH ANODELESS RISER



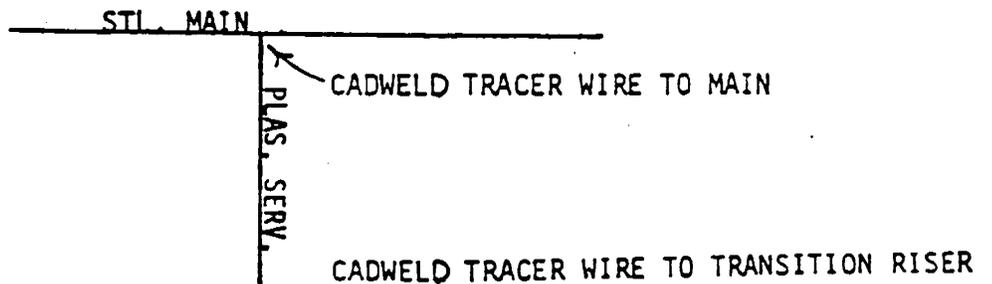
- ② ANODELESS TRACER WIRE ON PLASTIC MAIN - PLASTIC SERVICE WITH STEEL TRANSITION RISER



- ③ STEEL MAIN - PLASTIC SERVICE WITH ANODELESS RISER - ALSO RERUNS



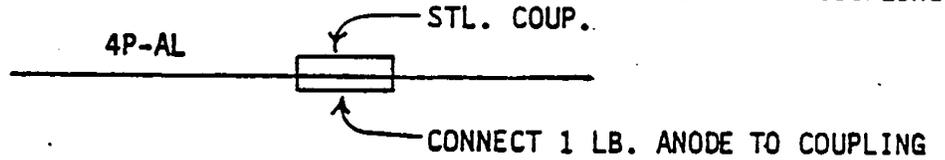
- ④ STEEL MAIN - PLASTIC SERVICE WITH STEEL TRANSITION RISER



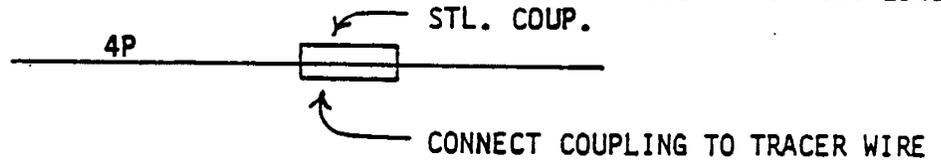
- ⑤ PROTECTED TRACER WIRE ON PLASTIC MAIN - 2" OR 4" PLASTIC SERVICE WITH STEEL TRANSITION RISER



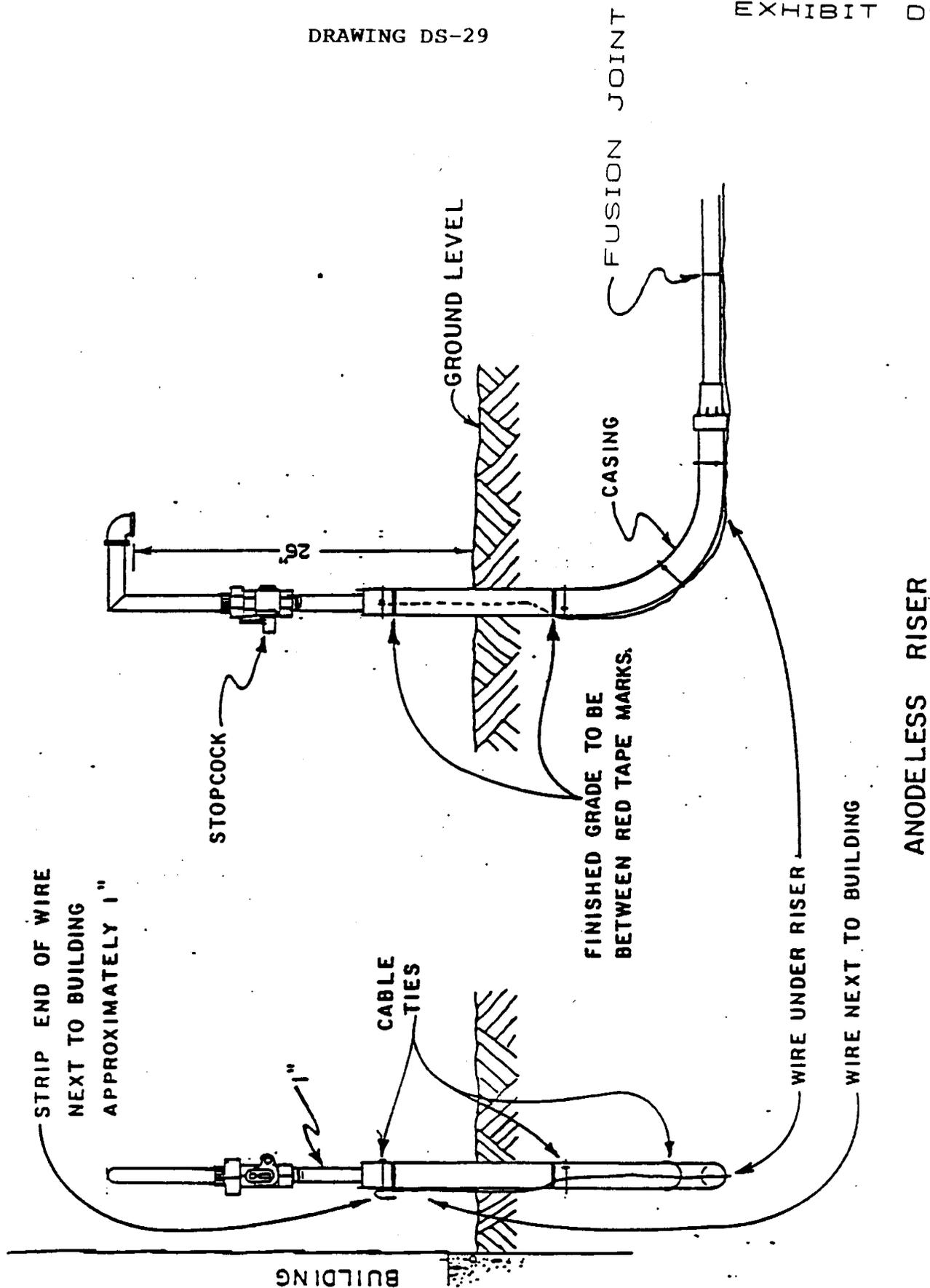
- ⑥ ANODELESS TRACER WIRE ON PLASTIC MAIN OR SERVICE WITH STEEL REPAIR COUPLING



- ⑦ PROTECTED TRACER WIRE ON PLASTIC MAIN OR SERVICE WITH STEEL REPAIR COUPLING

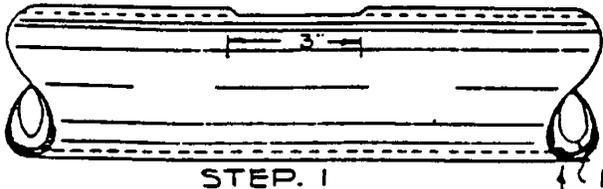


NOTE - NEVER CADWELD TRACER WIRE TO THE NEW ANODELESS SERVICE RISER



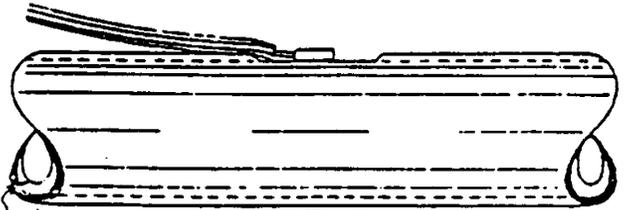


Remove a section of coating 3" long and file pipe bright so that a space 1" wide and 2" long is clean and dry.



STEP 1

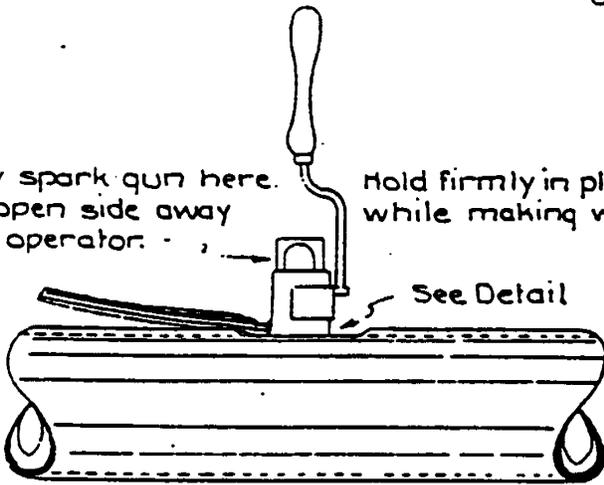
Strip 1/2" of insulation from wire and place copper sleeve on #10 and smaller wire.



STEP 2

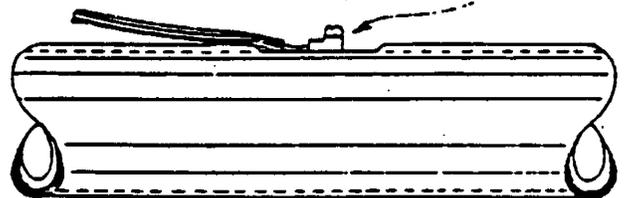
Apply spark gun here. Keep open side away from operator.

Hold firmly in place while making weld.



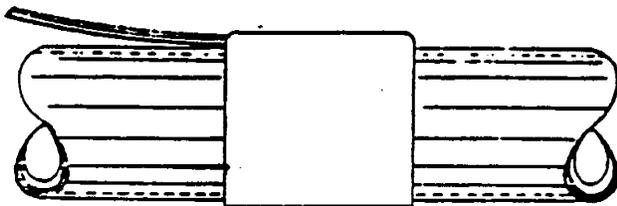
STEP 3

Remove slag with hammer and paint thoroughly with primer.

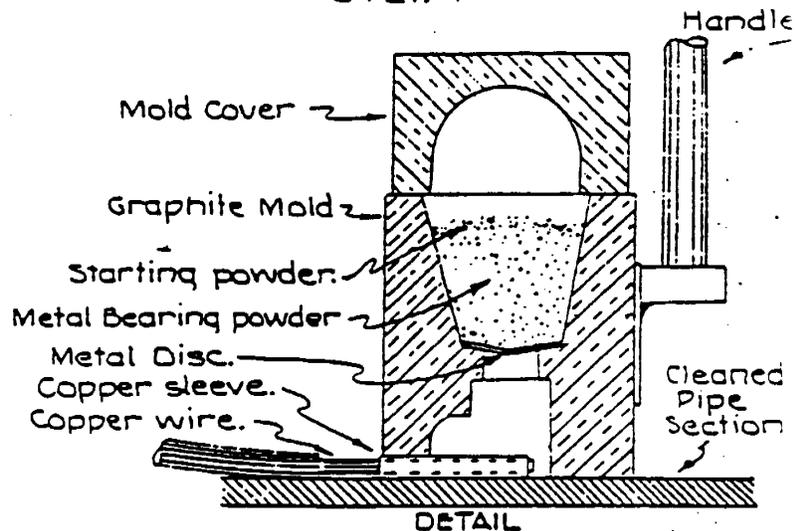


STEP 4

Repair pipe coating with care. Cover entire weld.



STEP 5



DETAIL

**IMPORTANT**

1. REMOVE RED CAP OF CADWELD CARTRIDGE AND DUMP ALL OF CONTENTS INTO MOLD. THE CHARGE WILL NOT IGNITE WITHOUT THE FINE STARTING POWDER ON TOP.
2. THE CARTRIDGES MUST BE KEPT DRY AT ALL TIMES.

Cadweld mold with sleeve for #10 wire and smaller.

CITY PUBLIC SERVICE BOARD  
SAN ANTONIO TEXAS  
GAS DEPARTMENT

COPPER WIRE CONNECTION TO PIPE USING CADWELD.

INSTRUCTION SHEET - TYPE TB-3 WELDER**PREPARATION OF SURFACE:**

To obtain a good weld, surface must be bright clean and dry.

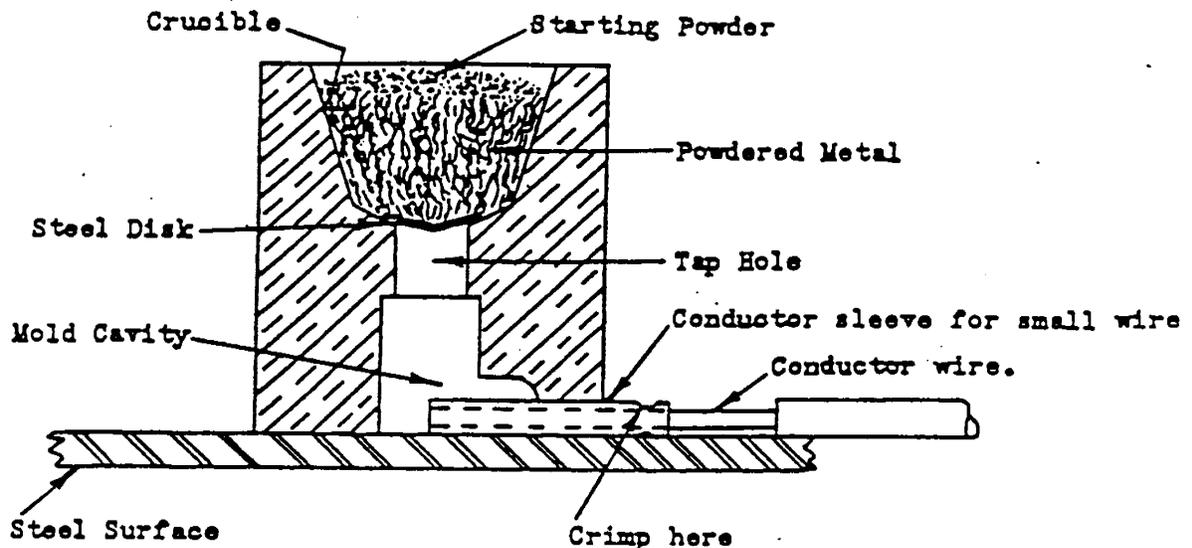
Steel surface should be ground or filed to remove all scale, rust, grease and dirt.

Galvanized steel must be cleaned with emery cloth to remove oxide.

**PREPARATION OF WIRE:**

Strip the insulation from the conductor and scrape until wire is bright and clean.

For #10 and smaller sizes, place the wire in a copper sleeve, ends flush, and crimp the sleeve tightly to the wire at the insulation to provide additional mechanical strength at the weld.

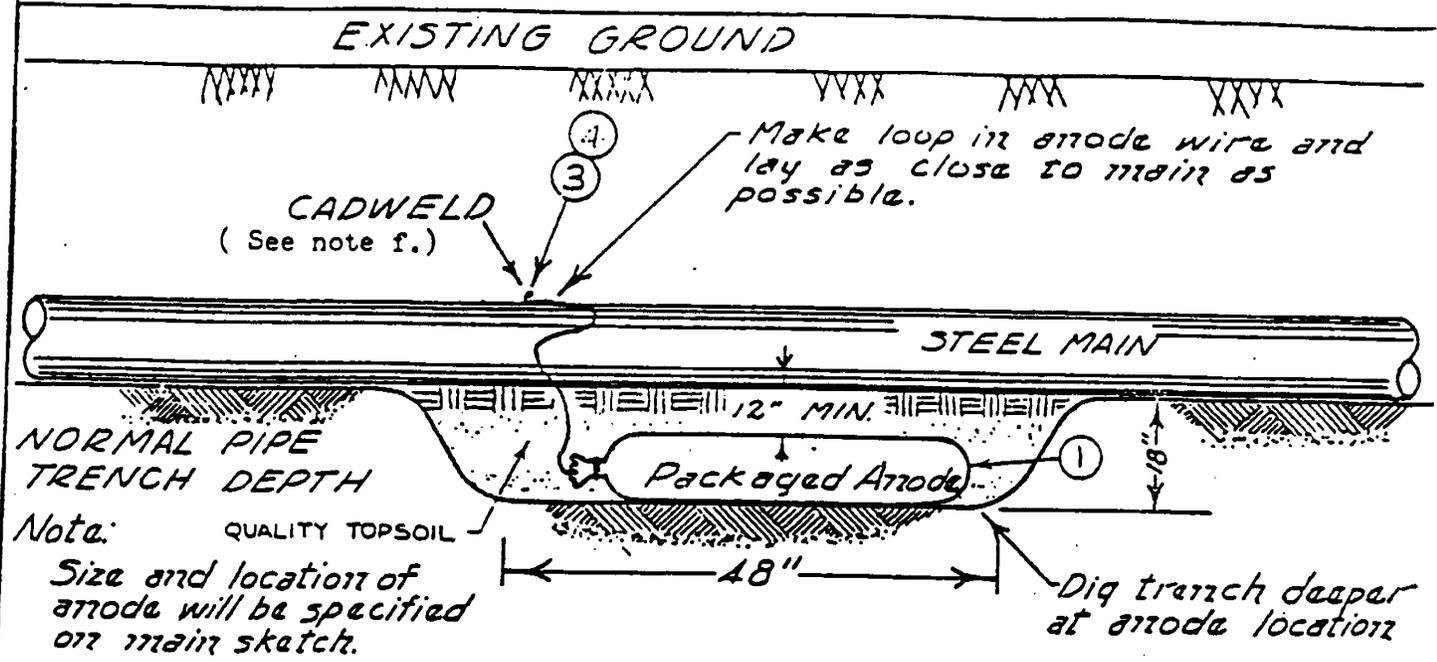
**WELDING PROCEDURE:**

- (1) PLACE WELDER OVER CLEAN STEEL SURFACE and insert the wire until it is under the CENTER of the tap hole.
- (2) COVER TAP HOLE WITH STEEL DISK.
- (3) DUMP CARTRIDGE IN CRUCIBLE AND CLOSE COVER. (Tap bottom of cartridge to be sure starting powder is emptied). Replace empty cartridge in box to keep remaining cartridges in an upright position.
- (4) HOLD DOWN ON WELDER TO PREVENT LEAKS AND IGNITE WITH FLINT GUN. Jerk gun away to prevent fouling. Should gun become fouled, soak in Spirits of Ammonia.
- (5) DO NOT REMOVE WELDER UNTIL METAL HAS SOLIDIFIED.
- (6) ALL SLAG MUST BE CLEANED FROM MOLD BEFORE MAKING NEXT WELD.

Note: Wet or damp molds produce porous welds. Mold can be dried out by firing a charge before making the desired weld.

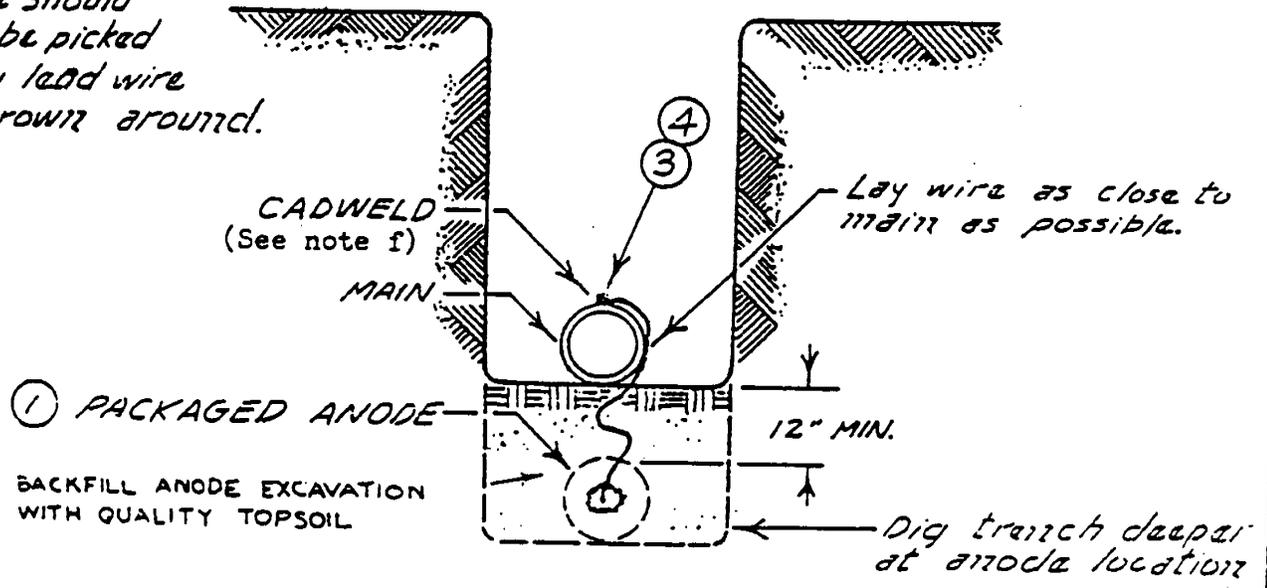
4.5

PACKAGED ANODES



*Note:* Size and location of anode will be specified on main sketch.

Anode should never be picked up by lead wire or thrown around.



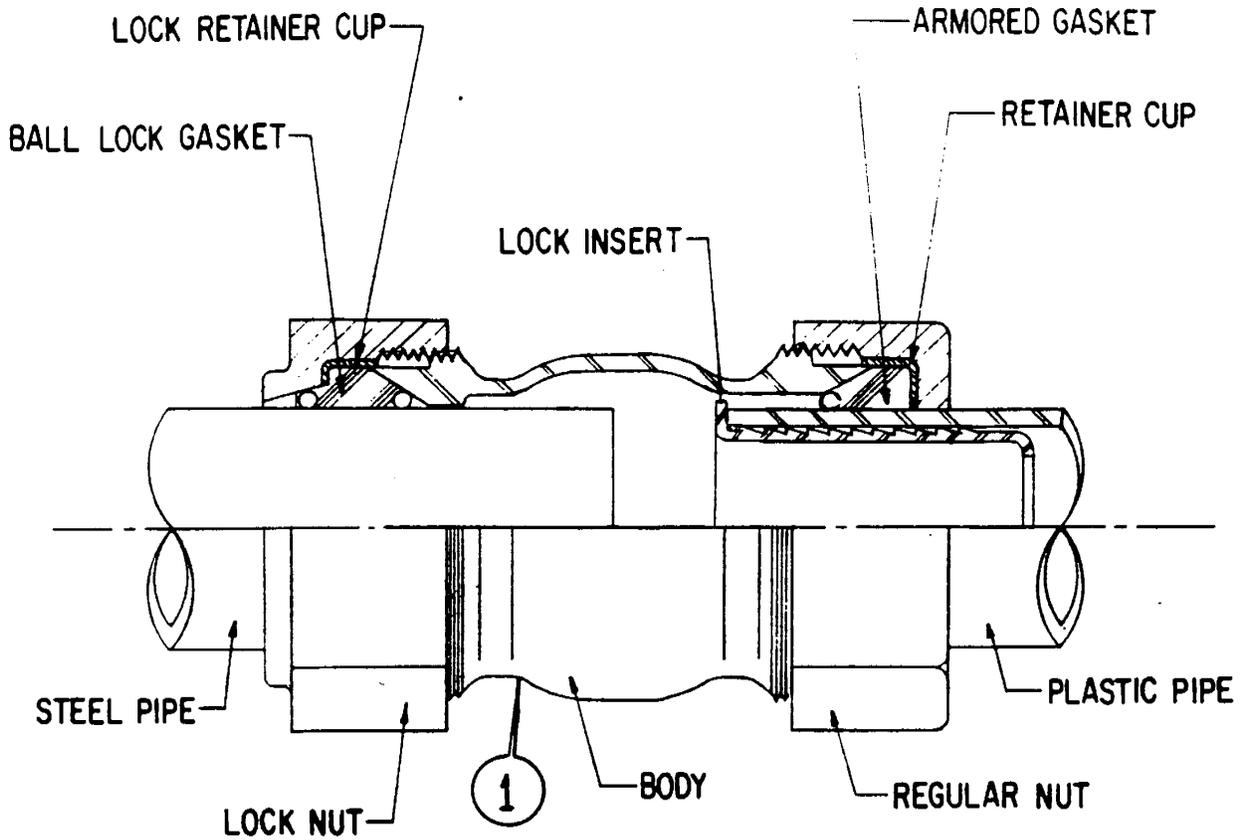
NOTES:

- a. Cadweld connection to be primed and coated carefully.
- b. Packaged anode should be covered with fine soil containing no rocks, clods, or sand.
- c. Pour 5 gallons of water over anode location and camp thoroughly.
- d. Provide test leads when specified. (See test lead standard)
- e. Anode specification sheet will be attached to main order, and is to be completed by the main construction foreman.
- f. Where plastic main is installed in place of steel, use tee splice to connect anode wire to tracer wire.

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION STANDARD (GAS)	DRAWING DS-33
ISSUED				G-S-171-1-2
REVISED	12-14-77	J. J. L.		

4.5

PLASTI-LOK TRANSITION COUPLING INSTALLED



STEEL TO PLASTIC

AVAILABLE SIZES: 1", 1 1/4", 2"

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD CONSTRUCTION DRAWING ( GAS )	DRAWING DS-34
ISSUED	9/81	GRB		G-S-507-4-Ø
REVISED				

**CPS ENERGY  
EXHIBIT GAS-5  
COMPENSATION SCHEDULE  
CONSTRUCTION OF NATURAL GAS DISTRIBUTION FACILITIES**

PROJECT NAME: McCullough Avenue

JOB #: 1953965

NOTE A: For each of the items below, the Contractor's work is to include: trenching, joining, testing, coating steel, building and painting risers and meter set-ups, connecting new pipe to existing pipe and installing all necessary fittings for tie-ins such as, stopper fittings and 3-way stopper tees, valves, insulating joints. Installing all necessary cathodic protection devices such as CPTLB's and anodes, sand padding, backfilling and compacting to consistency of original soil, replacing paving, curbs, and sidewalks removed or damaged during construction, and cleanup as may be necessary in each instance.

NOTE B: Trenching is considered to be the normal method of service installation and is required on all service adjustments. A gas service can be rerun by INSERTION, when the old service is PULLED from the riser to one foot inside the property line, ONLY at the discretion of the CPS Energy inspector.

NOTE C: Bid quantities shown are estimates by CPS Energy. Per foot prices shall be applied to the actual distance measured along the top of the trench or the actual length of the bore, as applicable.

NOTE D: Unit prices shall include insurance costs. CPS Energy's insurance requirements are specified in Exhibit GAS-1.

SAP NO.	ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	BID QUANTITY	TOTAL PRICE
	1.	Install Gas Main or Casing (Distance As Measured Along the Top of Trench)				
		2" Plastic Pipe and Tracer Wire	1 LF.	\$ _____	X 2231'	= \$ _____.
		4" Plastic Pipe and Tracer Wire	1 LF.	\$ _____	X 1340'	= \$ _____.
		8" Plastic Pipe and Tracer Wire	1 LF.	\$ _____	X 290'	= \$ _____.

The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.

2. Rerun and Lower Gas Service  
off New Main (Main to 1 ft. inside Prop. Line)  
Sizes 1" through 4"

Short Side	1 EA.	\$ _____	X	22	= \$ _____.
Long Side	1 EA.	\$ _____	X	18	= \$ _____.

TOTAL COST: \$ \_\_\_\_\_

**CPS ENERGY  
EXHIBIT GAS-5  
COMPENSATION SCHEDULE  
CONSTRUCTION OF NATURAL GAS DISTRIBUTION FACILITIES**

COMPANY: \_\_\_\_\_

PREPARED BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

## EXHIBIT GAS-7

### CPS Energy Covered Tasks Regulated by 49 CFR Part 192

<u>Tasks Regulated By 49 CFR Part 192</u>	<u>CFR 192</u>	<u>ReQual Interval</u>	<u>Tasks Regulated By 49 CFR Part 192</u>	<u>CFR 192</u>	<u>ReQual Interval</u>
Examining PE pipe for defects	192.59	3 year		192.287	3 year
Visually inspecting metallic components for defects	192.144	3 year		192.305	3 year
Welding	192.225	6 month		192.307	3 year
	192.225	-----		192.309 192.713	3 year
	192.241	3 year		192.311	3 year
	192.243	3 year	Installation of pipe in a ditch	192.319	3 year
	192.243	3 year	Inserting PE pipe into a casing	192.321	3 year
Repair or removal of weld defects	192.245 192.715	6 month	Installing customer meters and regulators	192.357	3 year
Making welded joints	192.273	6 month	Installation of service lines	192.361	3 year
Inspecting welded joints	192.273	3 year	Installation and maintenance of cathodic protection systems	192.453	3 year
Joining PE pipe by heat fusion or mechanical joint	192.281	1 year		192.457	-----
Qualifying PE pipe joining procedures	192.283	1 time		192.457	3 year
	192.285	-----	Inspecting pipe coating	192.459 192.461	3 year
	192.285	-----		192.465	3 year
Testing cathodic protection system with pipe-to-soil reads	192.465	3 year	Line locating and marking pipelines	192.614	3 year
Inspect interference bonds, diodes & reverse current switches	192.465	3 year		192.615	-----
Remedial actions to correct cathodic protection deficiencies	192.465	3 year		192.615	3 year
Connecting test lead wires to the pipeline <sup>1,2</sup>	192.471	-----	Making safe a pipeline emergency	192.615	3 year
Taking action to minimize the effect of stray currents	192.473	3 year		192.615	-----
	192.475	3 year		192.619 192.621	3 year
Cleaning and coating pipe for control of atmospheric corrosion	192.479	3 year		192.625	3 year
	192.479	3 year		192.625	3 year
	192.479 192.483	3 year	Tapping pipelines under pressure	192.627	3 year

## Covered Tasks (cont)

Pipeline pressure testing	192.503	3 year	Purging of pipelines	192.629	3 year
	192.605	3 year			
	192.605	-----			
<sup>2</sup>	192.605	-----	Abandoning or deactivating pipeline facilities	192.727	3 year
Starting up and shutting down any part of a pipeline	192.605	3 year			3 year
Taking precautions against hazardous atmospheres in trenches <sup>2,3</sup>	192.605	-----			3 year
Recognizing safety-related conditions that require reporting	192.605	3 year			3 year
	192.605	3 year			3 year
	192.605	3 year	Prevention of accidental ignition	192.751	3 year
	192.613	3 year			

<sup>1</sup> Not an operations or maintenance task

<sup>2</sup> Does not affect the operation or integrity of the pipeline

<sup>3</sup> Not an activity performed on the pipeline

<sup>4</sup> Not required by CFR Part 192

Any Contractor employed by CPS Energy to perform a covered task will have their employees qualified by an approved consortium or training provider. CPS Energy will require Contractor to supply a list of all qualified personnel and may require the Contractor to supply the qualified employee with a qualification card stating tasks that employee is qualified for, the qualification date, qualification method and the name of the qualifier.

CPS Energy will accept qualification of Contractor employees by any approved combination of the following methods:

- (a) approved qualification and training program (i.e. TEEX/TGA)
- (b) approved certifications (i.e. AWS Certified Welding Inspector, ASNT)
- (c) field evaluation
- (d) work performance history (See Note); and
- (e) other forms of assessment approved by CPS Energy

Contractor employee will be subject, at a minimum, to the same requalification intervals as CPS Energy employees. CPS Energy shall have the right to require removal of any employee of Contractor, or of Subcontractors, who in the CPS Energy representative's opinion, may be incompetent or unqualified to perform work.

Note: Work performance history cannot be the sole method for qualifying an employee after October 28, 2002.

Scale: 1:1  
Plotted on: 4/18/2016

### ROADWAY (COSA)

103.1	REMOVE CONCRETE CURB (> 10,000 L.F.)	L.F.	7380.00
103.3	REMOVE CONCRETE SIDEWALKS & DRIVEWAYS (> 10,000 S.F.)	SF	40914.00
104.1	STREET EXCAVATION (1,000 C.Y. < X < 10,000 C.Y.)	CY	10044.00
107.1	EMBANKMENT (FINAL) (DENS CONT) (TY B)	CY	490.00
108.1	LIME TREATED SUBGRADE (6" COMPACTED DEPTH)	SY	17228.00
108.2	LIME (> 100 TON.)	TON	285.00
203.1	TACK COAT	GAL	1576.00
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH) - PG-64-22	SY	12911.00
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (12" COMP. DEPTH) - PG-64-22	SY	4317.00
*205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" SURFACE)	SY	15759.00
500.1	CONCRETE CURBING (>1,000 LF)	LF	7380.00
502.1	CONCRETE SIDEWALKS (1,000 S.Y. < X < 10,000 S.Y.)	SY	3408.00
503.1	PORTLAND CEMENT CONCRETE DRIVEWAYS (100S.Y. < X < 1000S.Y.)	SY	557.00
503.2	PORTLAND CEMENT CONCRETE DRIVEWAYS - COMMERCIAL	SY	581.00
506.1	CONCRETE RETAINING WALLS-COMB. TYPE (<20 C.Y.)	CY	17.00
507.2	CHAIN LINK FENCE	L.F.	802.00
507.5	GATES - VEHICULAR (PER OPENING)	EA	2.00
507.6	WROUGHT IRON FENCE (6' HIGH)	L.F.	190.00

### ROADWAY (TXDOT)

104 6024	REMOVING CONC (RETAINING WALLS)	SY	84.00
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PG-76-22 - ST. MARY'S, ELMIRA - SECONDARY ARTERIALS  
PG-70-22 - EUCLID, BROOKLYN, ERIE, ATLANTA, WILMINGTON, NEWELL

### DRAINAGE (COSA)

106.1	BOX CULVERT EXCAVATION & BACKFILL (> 10,000 C.Y.)	CY	27710.74
107.1	EMBANKMENT (FINAL) (ORD COMP) (TY B)	CY	1135.53
309.1	PRECAST REINFORCED CONCRETE CULVERT (5' x 3')	LF	380.00
309.1	PRECAST REINFORCED CONCRETE BOX CULVERT (7' x 4')	LF	55.00
309.1	PRECAST REINFORCED CONCRETE BOX CULVERT (8' x 4')	LF	700.00
309.1	PRECAST REINFORCED CONCRETE BOX CULVERT (9' x 5')	LF	1886.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (24" DIA)	LF	510.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (30" DIA)	LF	418.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (36" DIA)	LF	254.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (48" DIA)	LF	83.00
403.1	JUNCTION BOX 4' x 4' x 4'	EA	1.00
403.2	JUNCTION BOX 5' x 5' x 5'	EA	3.00
403.3	JUNCTION BOX 6' x 6' x 6'	EA	1.00
403.4	JUNCTION BOX 7' x 7' x 7'	EA	1.00
403.6	SPECIAL JUNCTION BOX (10' x 6')	EA	1.00
403.6	SPECIAL JUNCTION BOX (11' x 6')	EA	1.00
403.8	INLET TYPE II (COMPLETE) (10 FT)	EA	13.00
403.9	INLET EXTENSIONS (10 FT)	EA	4.00
403.13	INLET TYPE A (COMPLETE)	EA	13.00
410.1	CONCRETE SUBGRADE FILLER	CY	572.08
413.1	FLOWABLE BACKFILL (LOW STRENGTH)	CY	2535.83
505.1	CONCRETE RIPRAP (4" THICK)	CY	1.02
540.11	LOW IMPACT DEVELOPMENT (LID) BEST MANAGEMENT PRACTICES (BMP) STRUCTURE - FILTERRA	EA	11
551.1	TEMPORARY SPECIAL SHORING	SF	29375.00

### DRAINAGE (TXDOT)

247 6041	FL BS (CMP IN PLC) (TYA GR1 - 2) (FNAL POS)	CY	8453.57
402 6001	TRENCH EXCAVATION SAFETY PROTECTION	LF	4000
432 6022	RIPRAP (STONE COMMON) (DRY) (6 IN)	CY	3.80
465 6002	MANH (COMPL) (PRM) (48IN)	EA	14.00
465 6003	MANH (COMPL) (PRM) (60IN)	EA	2.00

Pen Table: TexasTwoStep\*Pentab\*le\*co.\*td  
Design File name: 63195\*QTY\*SUMMARY

NO.	DATE	QUANTITY/ITEM REVISIONS	REVISION	APP.
1	4/2016			

**HNTB** 130 East Travis Street, Suite 200  
San Antonio, TX 78205  
(210)349-2277  
TBE FIRM REGISTRATION NO: 420 WWW.HNTB.COM

**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**

**QUANTITY SUMMARY**

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECKED: AR SHEET NO. 21

# SIGNAL

308.1	DRILLED SHAFTS (24")	L.F.	35.00
308.1	DRILLED SHAFTS (30")	L.F.	23.00
308.1	DRILLED SHAFTS (36")	L.F.	14.00
615.1	TRAFFIC SIGNAL CONTROLLER ASSEMBLY (TYPE 332 CABINET)	EA	1.00
618.1	CONDUIT (2 INCH/PVC SCHEDULE 40)	L.F.	187.00
618.2	CONDUIT (3 INCH/PVC SCHEDULE 40)	L.F.	6.00
618.5	CONDUIT (3 INCH/PVC SCHEDULE 40) (BORE)	L.F.	438.00
620.1	ELECTRICAL CONDUCTORS (NO. 6) (BARE)	L.F.	18.00
620.2	ELECTRICAL CONDUCTORS (NO. 8) (BARE)	L.F.	375.00
620.3	ELECTRICAL CONDUCTORS (NO. 6) (INSULATED)	L.F.	26.00
624.5	GROUND BOXES TYPE A (122311) W/ APRON	EA	4.00
624.8	GROUND BOXES TYPE D (162922) W/ APRON	EA	1.00
628.1	ELECTRICAL SERVICES (PER INSTALLATION)	EA	1.00
628.2	REMOVE ELECTRICAL SERVICES (PER REMOVAL)	EA	1.00
633.1	BATTERY BACKUP SYSTEM	EA	1.00
655.1	TYPE 332 CONTROLLER FOUNDATION	EA	1.00
680.1	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (ISOLATED)	EA	1.00
682.1	INSTALL VEHICLE SIGNAL SECTION WITH BACK PLATE (3 SECONDS)	EA	7.00
682.2	INSTALL VEHICLE SIGNAL SECTION WITH BACK PLATE (4 SECONDS)	EA	1.00
682.4	INSTALL PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	8.00
683.1	LED COUNTDOWN PEDESTRIAN MODULE	EA	8.00
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR NO. 4)	EA	239.00
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR NO. 9)	EA	1442.00
686.1	INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 24')	EA	1.00
686.1	INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 32')	EA	1.00
686.1	INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 48')	EA	1.00
687.1	PEDESTAL POLE ASSEMBLY	EA	6.00
688.3	AUDIBLE PEDESTRIAN SIGNAL UNITS @TYPE E	EA	8.00
693.1	INTERNALLY LIGHTED STREET NAME SIGNS @ILSN SIGN 6' SE	LF	3.00
695.2	EMERGENCY PREEMPTION PHASE SELECTOR	EA	1.00
695.3	EMERGENCY PREEMPTION DETECTOR	EA	3.00
695.4	EMERGENCY PREEMPTION DETECTOR CABLE	EA	426.00
696.06	RVDD INTERFACE MODULE (2-CHANNEL)	EA	2.00
696.11	RVDD SETUP SYSTEM	EA	1.00
696.16	RVDD COMMUNICATION AND POWER CABLE	LF	189.00
696.21	INSTALL RADAR VEHICLE DETECTION DEVICE	EA	3.00
696.26	INSTALL RVDD COMMUNICATION AND POWER CABLE	LF	189.00

# SA RIVER ITEMS (TXDOT)

DELETED			
403-6006	TEMPORARY SPL SHORING (COFFERDAM)	LS	1
420-6074	CL C CONC (MISC)	CY	4.8
420-6143	CL S CONC (JUNCTION BOX)	CY	39.90
423-6005	RETAINING WALL (SPREAD FOOTING)	SF	1246
462-6010	CONC BOX CULV (6 FT X 3 FT)	LF	59.00
496-6040	REMOVE STR (RET WALL)	LF	135

# SW3P

540.1	ROCK FILTER DAMS (INSTALL) (TYPE 1)	LF	128.00
540.1	ROCK FILTER DAMS (REMOVE) (TYPE 1)	LF	128.00
540.6	CONSTRUCTION EXITS (INSTALL)	SY	80.00
540.6	CONSTRUCTION EXITS (REMOVE)	SY	80.00
540.9	TEMPORARY SEDIMENT CONTROL FENCE	LF	1886.00
540.1	CURB INLET GRAVEL FILTERS	LF	1178.00

# TCP (TXDOT)

0512 6009	PORT CTB (FUR & INST) (LOW PROF) (TY 1)	LF	600.00
0512 6010	PORT CTB (FUR & INST) (LOW PROF) (TY 2)	LF	220.00
0512 6033	PORT CTB (MOVE) (LOW PROF) (TY 1)	LF	500.00
0512 6034	PORT CTB (MOVE) (LOW PROF) (TY 2)	LF	120.00
0512 6057	PORT CTB (REMOVE) (LOW PROF) (TY 1)	LF	600.00
0512 6058	PORT CTB (REMOVE) (LOW PROF) (TY 2)	LF	220.00
0662 6001	WK ZN PAV MRK NON-REMOV (W) 4" (BRK)	LF	380.00
0662 6004	WK ZN PAV MRK NON-REMOV (W) 4" (SLD)	LF	935.00
0662 6006	WK ZN PAV MRK NON-REMOV (W) 6" (DOT)	LF	52.00
0662 6012	WK ZN PAV MRK NON-REMOV (W) 8" (SLD)	LF	692.00
0662 6016	WK ZN PAV MRK NON-REMOV (W) 24" (SLD)	LF	313.00
0662 6017	WK ZN PAV MRK NON-REMOV (W) (ARROW)	EA	5.00
0662 6018	WK ZN PAV MRK NON-REMOV (W) (DBL ARW)	EA	3.00
0662 6029	WK ZN PAV MRK NON-REMOV (W) (WORD)	EA	3.00
0662 6034	WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)	LF	724.00
0662 6038	WK ZN PAV MRK NON-REMOV (Y) 8" (SLD)	LF	407.00
0662 6041	WK ZN PAV MRK NON-REMOV (Y) 24" (SLD)	LF	428.00
0662 6048	WK ZN PAV MRK REMOV (REFL) TY I-C	EA	35.00
0662 6050	WK ZN PAV MRK REMOV (REFL) TY II-A-A	EA	64.00
0662 6052	WK ZN PAV MRK REMOV (REFL) TY II-C-R	EA	27.00
0662 6109	WK ZN PAV MRK SHT TERM (TAB) TY W	EA	114.00
0662 6111	WK ZN PAV MRK SHT TERM (TAB) TY Y-2	EA	36.00
6001 6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	74.00

Scale: 1:1  
Plotted on: 4/18/2016

Pen Table: TexasTwoStep\*PenTable\*co.tbl  
Design Filename: 63195\*QTY\*SUMMARY

1	4/2016	QUANTITY/ITEM REVISIONS	
NO.	DATE	REVISION	APP.

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT**

**QUANTITY SUMMARY**

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: MAR 2016
DRAWN: DAG	DESIGN: EG	CHECK: AR
SHEET NO. 22		

# SIGNING AND STRIPING

531.3	R1-1 STOP (30") (HIGH INTENSITY)	EA	13.00
531.6	R2-1 SPEED LIMIT (24"x30") (HIGH INTENSITY)	EA	2.00
531.7	R3-1 NO RIGHT TURN (24"x24") (HIGH INTENSITY)	EA	1.00
531.8	R3-2 NO LEFT TURN (24"x24") (HIGH INTENSITY)	EA	2.00
531.13	R3-7 LEFT LANE MUST TURN LEFT OR RIGHT LANE MUST TURN RIGHT (30"x30") (HIGH INTENSITY)	EA	3.00
531.14	R3-8 LANE-USE CONTROL (30"x30") (HIGH INTENSITY)	EA	1.00
531.18	R5-1 DO NOT ENTER (30"x30") (HIGH INTENSITY)	EA	4.00
531.19	R6-1 ONE WAY (36"x12") (HIGH INTENSITY)	EA	5.00
531.21	R7-1 NO PARKING ANYTIME (18"x24") (HIGH INTENSITY)	EA	14.00
531.22	R7-18 NO PARKING THIS SIDE THIS BLOCK (18"x24") (HIGH INTENSITY)	EA	3.00
531.24	R9-3A PEDESTRIAN CROSSING PROHIBITED (18"x18") (HIGH INTENSITY)	EA	1.00
531.51	W11A-2 PED CROSSING (30"x30") (HIGH INTENSITY)	EA	1.00
531.57	9 INCH (229mm) STREET NAME, BLOCK NUMBER (VARIES x9") (HIGH INTENSITY)	EA	24.00
531.59	SPECIAL SIGN (HIGH INTENSITY)	EA	2.00
531.62	W16-9P AHEAD (36"x20") (HIGH INTENSITY)	EA	1.00
531.86	R3-5hTP DISTANCE (30"x8") (HIGH DENSITY)	EA	1.00
531.87	M1-1 INTERSTATE ROUTE (24"x24") (HIGH DENSITY)	EA	1.00
531.88	M1-4 INTERSTATE ROUTE (30"x24") (HIGH DENSITY)	EA	1.00
531.89	M1-6 LOOP (24"x24") (HIGH DENSITY)	EA	1.00
531.90	M3-1 CARDINAL DIRECTION (24"x12") (HIGH DENSITY)	EA	3.00
531.91	M4-5 TO (24"x12") (HIGH DENSITY)	EA	2.00
531.92	M6-1 DIRECTIONAL ARROW (21"x15") (HIGH DENSITY)	EA	1.00
531.93	M6-3 DIRECTIONAL ARROW (21"x15") (HIGH DENSITY)	EA	2.00
531.94	W2-1 INTERSECTION WARNING (30"x30") (HIGH DENSITY)	EA	2.00
531.95	W4-1 MERGING TRAFFIC (30"x30") (HIGH DENSITY)	EA	1.00
535.1	4 INCH WIDE YELLOW LINE	LF	724.00
535.2	4 INCH WIDE WHITE LINE	LF	1315.00
535.3	8 INCH WIDE YELLOW LINE	LF	407.00
535.4	8 INCH WIDE WHITE LINE	LF	692.00
535.7	24 INCH WIDE WHITE LINE	LF	313.00
535.9	LEFT WHITE ARROW	EA	4.00
535.11	COMBINATION THRU/LEFT WHITE ARROW	EA	3.00
535.12	WORD "ONLY"	WORD	3.00
535.13	STRAIGHT WHITE ARROW	EA	1.00
535.22	6 INCH WIDE WHITE LINE	LF	52.00
535.23	24 INCH WIDE YELLOW LINE	LF	415.00
537.6	PAVEMENT MARKER (TYPE I-C)	EA	35.00
537.8	PAVEMENT MARKER (TYPE II A-A)	EA	64.00
537.9	PAVEMENT MARKER (TYPE II C-R)	EA	27.00

# LANDSCAPING (COSA)

DELETED			
502.1	CONCRETE SIDEWALKS (150 S.Y. < X < 1,000 S.Y.)	SY	540.00
552.1	REMOVING AND RELOCATING IRRIGATION SYSTEM	LF	400.00

# LANDSCAPING (TXDOT)

168 6001	VEGETATIVE WATERING	MD	264.00
169 6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	SY	83.00
192 6001	PLANT MATERIAL (4" CNTR)	EA	275.00
192 6002	PLANT MATERIAL (1 - GAL)	EA	172.00
192 6004	PLANT MATERIAL (5 - GAL)	EA	58.00
192 6012	MULCH	CY	11.00
192 6014	PLANT SOIL MIX	CY	33.00
192 6026	PLANT MATERIAL (65 GAL) (TREE)	EA	45.00
192 6027	PLANT MATERIAL (100 GAL) (TREE)	EA	24.00
192 6067	LANDSCAPE EDGE (TYPE I)	LF	73.50
529 6066	CONCRETE CURB (RIBBON) (MOD)	LF	4.00
1003 6004	LANDSCAPE BOULDERS (TY 2)	EA	29.00
1005 6003	LOOSE AGGR FOR GROUND COVER (TY III)	CY	73.00

Scale: 1:1  
Plotted on: 4/18/2016

Pen Table: TexasTwoStep.pentable\*co.tb1  
Design Filename: 63195\*QTY\*SUMMARY

NO.	DATE	QUANTITY/ITEM REVISIONS	REVISION	APP.
1	4/2016			

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT**

**QUANTITY SUMMARY**

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: MAR 2016
DRAWN: DAG	DESIGN: EG	CHECK: AR
SHEET NO. 23		

Scale: 1:1  
Plotted on: 4/18/2016

BID ALT NO. 1 (COSA)

BID ALT #1 DELETED <sup>1</sup>			

BID ALT NO. 1 (TXDOT)

BID ALT #1 DELETED <sup>1</sup>			

Pen Table: TexasTwoStep\*pentable\*co.tbl  
Design Filename: 63195\*QTY\*SUMMARY

1	4/2016	DELETED BID ALT 1	APP.
NO.	DATE	REVISION	APP.

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT**

**QUANTITY SUMMARY**

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: MAR 2016
DRAWN: DAG	DESIGN: EG	CHECK: AR SHEET NO. 24

BID ALT NO. 2 (COSA)

103.1	REMOVE CONCRETE CURB (< 700 L.F.)	L.F.	315.00
103.3	REMOVE CONCRETE SIDEWALKS & DRIVEWAYS (< 1,000 S.F.)	SF	282.00
104.1	STREET EXCAVATION (< 1,000 C.Y.)	CY	275.75
107.1	EMBANKMENT (FINAL) (DENS CONT) (TY B)	CY	35.91
108.1	LIME TREATED SUBGRADE (6" COMPACTED DEPTH)	SY	590.00
108.2	LIME (< 100 TON.)	TON	10.00
203.1	TACK COAT	GAL	53.00
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	590.00
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" SURFACE)	SY	527.00
500.1	CONCRETE CURBING (< 1,000 L.F.)	LF	315.00
502.1	CONCRETE SIDEWALKS (150 S.Y. < X < 1,000 S.Y)	SY	203.00
503.1	PORTLAND CEMENT CONCRETE DRIVEWAYS (< 100 S.Y.)	SY	79.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (24" DIA)	LF	22.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (30" DIA)	LF	191.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (36" DIA)	LF	75.00
403.2	JUNCTION BOX 5'x5'x5'	EA	1.00
403.8	INLET TYPE II (COMPETE) (10 FT)	EA	2.00
550.1	TRENCH EXCAVATION SAFETY PROTECTION	LF	288.00



BID ALT NO. 2 (TXDOT)

465 6002	MANH (COMPL) (PRM) (48IN)	EA	1.00
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Scale: 1:1  
Plotted on: 4/18/2016

Pen Table: TexasTwoStep.pentable.co.tbl  
Design Filename: 63195-QTY-SUMMARY

1	4/2016	QUANTITY/ITEM REVISIONS	
NO.	DATE	REVISION	APP.

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT**

**QUANTITY SUMMARY**

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: MAR 2016
DRAWN: DAG	DESIGN: EG	CHECK: AR SHEET NO. 25

BID ALT NO. 2 (COSA)

103.1	REMOVE CONCRETE CURB (< 700 L.F.)	L.F.	315.00
103.3	REMOVE CONCRETE SIDEWALKS & DRIVEWAYS (< 1,000 S.F.)	SF	282.00
104.1	STREET EXCAVATION (< 1,000 C.Y.)	CY	275.75
107.1	EMBANKMENT (FINAL) (DENS CONT) (TY B)	CY	35.91
108.1	LIME TREATED SUBGRADE (6" COMPACTED DEPTH)	SY	590.00
108.2	LIME (< 100 TON.)	TON	10.00
203.1	TACK COAT	GAL	53.00
205.2	HOT MIX ASPHALTIC PAVEMENT, TYPE B (10" COMP. DEPTH)	SY	590.00
205.4	HOT MIX ASPHALTIC PAVEMENT, TYPE D (2" SURFACE)	SY	527.00
500.1	CONCRETE CURBING (< 1,000 L.F.)	LF	315.00
502.1	CONCRETE SIDEWALKS (150 S.Y. < X < 1,000 S.Y)	SY	203.00
503.1	PORTLAND CEMENT CONCRETE DRIVEWAYS (< 100 S.Y.)	SY	79.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (24" DIA)	LF	22.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (30" DIA)	LF	191.00
401.1	REINFORCED CONCRETE PIPE (CLASS III) (36" DIA)	LF	75.00
403.2	JUNCTION BOX 5'x5'x5'	EA	1.00
403.8	INLET TYPE II (COMPETE) (10 FT)	EA	2.00
550.1	TRENCH EXCAVATION SAFETY PROTECTION	LF	288.00



BID ALT NO. 2 (TXDOT)

465 6002	MANH (COMPL) (PRM) (48IN)	EA	1.00
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Scale: 1:1  
Plotted on: 4/18/2016

Per Table: TexasTwoStepPentable\*co.tbl  
Design File name: 63195\*QTY\*SUMMARY

NO.	DATE	QUANTITY/ITEM REVISIONS	REVISION	APP.
1	4/2016			

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TRANSPORTATION AND CAPITAL IMPROVEMENTS

**CITY OF SAN ANTONIO**

MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT

**QUANTITY SUMMARY**

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 25



Scale: \$SCALE\$\$\$\$\$  
Plotted on: \$TIME\$\$\$\$\$

Pen Table: \$PEN\$\$\$\$\$  
Design Filename: ... \63195\TCP\Narrative\01.dgn

I. SEQUENCE OF WORK.

MCCULLOUGH AVENUE DRAINAGE PROJECT SHALL BE CONSTRUCTED IN THREE MAIN PHASES WITH SUB-PHASES AS NOTED IN THIS NARRATIVE.

- NOTES: 1. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" ON RIGHT OF WAY AND UTILITY ADJUSTMENT STATUS FOR SPECIFIC COMPLETION DATES.
2. THIS CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST TXDOT BARRICADE AND CONSTRUCTION STANDARDS, CITY OF SAN ANTONIO (COSA) BARRICADE AND CONSTRUCTION STANDARDS, AND SHALL CONFORM TO THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).

ANY QUESTIONS REGARDING PHASING OR STAGING WILL BE STRICTLY HANDLED BY THE DEPARTMENT OF PUBLIC WORKS WHICH HAS COMPLETE AUTHORITY TO MAKE FINAL DECISIONS ON ANY CHANGES OR MODIFICATIONS. THE CONTRACTOR MUST CONTACT THE CITY'S CONSTRUCTION INSPECTOR 48 HOURS IN ADVANCE (NOT INCLUDING WEEKENDS OR HOLIDAYS) OF ANY MINOR STREET CLOSURE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ADVISE CONSTRUCTION INSPECTIONS TEN (10) DAYS IN ADVANCE OF ANY ARTERIAL STREET CLOSURE. THIS MUCH TIME IS NECESSARY TO INSTALL ADVISORY SIGNS AND GIVE THE MOTORISTS A MINIMUM OF SEVEN (7) DAYS' NOTICE BEFORE STREET CLOSURE. THE CONSTRUCTION INSPECTOR, AFTER HAVING BEEN NOTIFIED, WILL CONTACT THE ENGINEERING OFFICE IMMEDIATELY TO MAKE THE NECESSARY ARRANGEMENTS. THE TEMPORARY BARRICADES AND WARNING SIGNS SHALL BE LOCATED SO AS TO AFFORD THE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO FACILITATE AN EXPEDITIOUS FLOW OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION.

△ PARTIAL CONSTRUCTION AT DIFFERENT SCATTERED LOCATIONS WITHIN THE PROJECT WILL NOT BE ALLOWED, UNLESS APPROVED BY THE ENGINEER. PROJECTS THAT CONSIST OF DISTINCT AND SEPARATE AREAS MAY BE UNDER CONSTRUCTION AT THE SAME TIME WITH AN APPROVED FIELD ALTERATION. ALL REMAINING STREETS WITHIN THE PROJECT OR SEPARATE AREA SHALL REMAIN OPEN AT ALL TIMES.

A. PEDESTRIAN CONTROL PLAN

AT ALL LEGAL CROSSWALKS, A TEMPORARY CROSSING WILL BE PROVIDED. THE CROSSING SHALL CONSIST OF TY A ASPHALT CONCRETE PAVEMENT (ACP) AND SHALL BE STRIPED WITH CROSSWALK MARKING AND STOP BARS. AT ALL OTHER LOCATIONS WITHIN THE IDENTIFIED AREA, TY A ACP CROSSING, WITHOUT MARKINGS, SHALL BE USED (AT MINOR INTERSECTIONS).

THE CONTRACTOR WILL BE REQUIRED TO USE PLASTIC CONSTRUCTION FENCING TO SEPARATE PEDESTRIAN TRAFFIC FROM THE WORK AREA. AT DRIVEWAYS, THE FENCE SHALL END, THEN RESUME ON THE OTHER SIDE OF THE DRIVE.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY SHALL REMAIN OPERATIONAL DURING THE CONSTRUCTION SEQUENCE. IF, FOR ANY REASON, A CROSSWALK CONTROLLED BY A SIGNAL DISPLAY NEEDS TO BE CLOSED, THE PEDESTRIAN TRAFFIC SIGNAL DISPLAY SHALL BE COVERED AND DEACTIVATED UNTIL THE CROSSWALK IS OPERATIONAL.

UPON COMPLETION OF THE CONSTRUCTION PHASE, THE PLASTIC FENCING SHALL BE REMOVED AND THE NEW SIDEWALK OPENED FOR PEDESTRIAN TRAFFIC.

REFER TO "RIVERWALK PEDESTRIAN DETOUR PLAN" FOR DETAILS ON PEDESTRIAN WALKWAYS.

B. PHASE 1 - ROADWAY/DRAINAGE CONSTRUCTION

PRIOR TO THE BEGINNING OF THIS PHASE, THE CONTRACTOR SHALL HAVE TRAFFIC CONTROL DEVICES AS SHOWN AND/OR AS DIRECTED BY THE ENGINEER, IN PLACE. CONSTRUCTION WORK SHALL NOT BEGIN UNTIL APPROVAL IS GIVEN BY THE ENGINEER.

(MUSEUM REACH/SAN ANTONIO RIVER OUTFALL CONSTRUCTION)

THE CONTRACTOR SHALL HAVE ALL SIGNAGE FOR PEDESTRIAN DETOUR, AND SIDEWALK BARRICADES INSTALLED PRIOR TO CONSTRUCTION. INSTALL COFFER DAM. PERFORM INSTALLATION OUTFALL STRUCTURE, SPECIAL JUNCTION BOX, AND OTHER MUSEUM REACH ITEMS.

(NEWELL AVE - 200' SOUTH OF E. QUINCY ST TO N. ST. MARY'S ST)

BOTH EASTBOUND AND WESTBOUND TRAFFIC WILL BE CLOSED ON NEWELL AVE FROM CAMDEN ST TO N. ST. MARY'S ST THROUGHOUT THIS PHASE.

TRAFFIC INTENDING TO HEAD NORTHBOUND ON E. PARK AVE FROM NEWELL AVE TO E. QUINCY ST/NEWELL AVE WILL BE DETOURED WEST ALONG CAMDEN ST. NORTHBOUND TRAFFIC WILL TURN WEST ON CAMDEN ST, THEN HEAD NORTH ON N. ST. MARY'S ST. TRAFFIC INTENDING TO HEAD SOUTHBOUND ON E. PARK AVE FROM E. ELMIRA ST TO E. QUINCY ST WILL BE DETOURED WEST ALONG E. EUCLID AVE. TRAFFIC WILL TURN SOUTH ON N. ST. MARY'S ST, THEN FINALLY TO THE EAST ON CAMDEN ST.

REFER TO DETOUR LAYOUTS FOR ADDITIONAL INFORMATION.

CONSTRUCT STORM SEWER, ROADWAY, SAWS WATER, SAWS SEWER AND CPS GAS BETWEEN THESE LIMITS.

PHASE 1 INTERSECTION - N. ST. MARY'S ST/E. ELMIRA ST

TRAFFIC INTENDING TO HEAD NORTHBOUND ON N. ST. MARY'S ST FROM E. QUINCY ST TO E. EUCLID AVE WILL BE DETOURED WEST TO BROOKLYN AVE ALONG CAMDEN ST. TRAFFIC WILL CONTINUE NORTH ON BROOKLYN AVE THEN TURN EAST ON E. EUCLID AVE. SOUTHBOUND TRAFFIC ON N. ST. MARY'S ST FROM E. EUCLID AVE TO E. QUINCY ST WILL BE DETOURED WEST TO BROOKLYN AVE ON E. EUCLID AVE. WESTBOUND TRAFFIC ALONG E. ELMIRA ST FROM E. PARK AVE TO WILMINGTON AVE WILL BE DETOURED NORTH ALONG E. PARK AVE TO E. EUCLID AVE. TRAFFIC WILL CONTINUE WEST ON E. EUCLID AVE THEN TURN SOUTH ON BROOKLYN AVE.

REFER TO DETOUR LAYOUTS FOR ADDITIONAL INFORMATION.



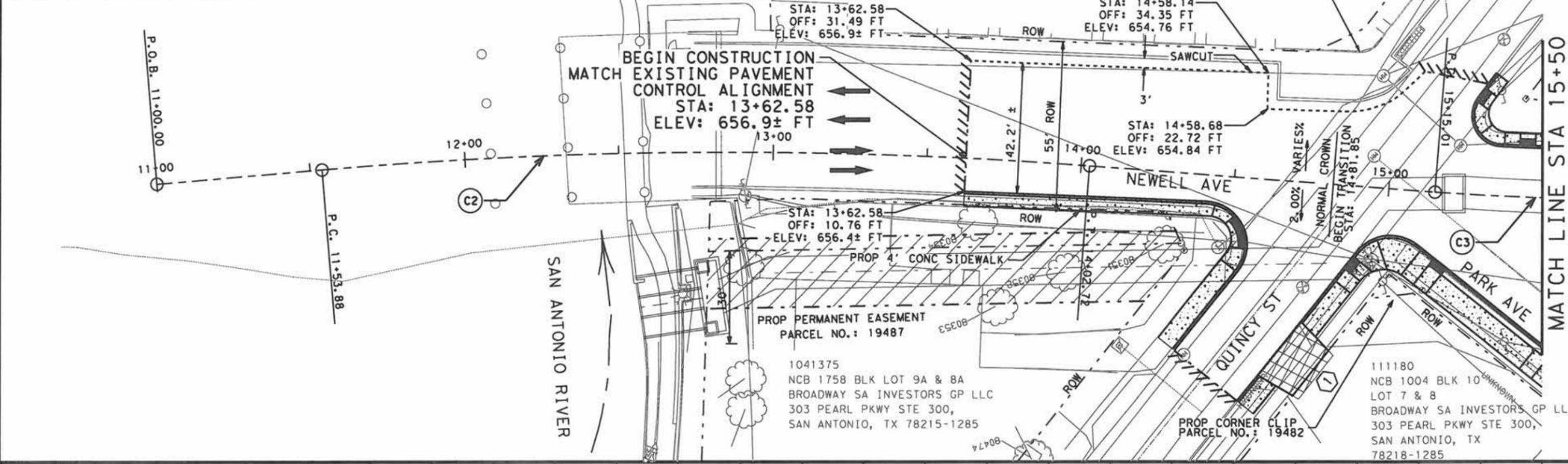
*Martin M. Gonzales*  
4-18-16

1	4/18/16	REVISED TCP	MG
NO.	DATE	REVISION	APP.
		115 E. TRAVIS ST., SUITE 800 SAN ANTONIO, TX 78205 P: 210.208.9400 F: 210.208.9401 TBP# No. F-10015 TBP# No. 1019922	
<b>GONZALEZ DE LA GARZA</b>			
		130 East Travis St., Suite 200 San Antonio, TX 78205 (210)349-2277	
TBP# FIRM REGISTRATION NO. 420		WWW.HNTB.COM	
<b>CITY OF SAN ANTONIO</b> CAPITAL IMPROVEMENTS MANAGEMENT SERVICES			
<b>MCCULLOUGH AVENUE AREA DRAINAGE PROJECT</b> <b>TRAFFIC CONTROL PLAN NARRATIVE</b>			
100% SUBMITTAL	PROJECT NO. 40-00327	DATE: 3/16/16	
DRAWN: MG	DESIGN: MG	CHECK: CA	SHEET NO. 36

Curve C2	P.I. Station	12+78.56	N	13,710,550.4714	E	2,133,561.4998	Curve C3	P.I. Station	17+39.05	N	13,710,721.9431	E	2,133,133.5524
	Delta	9° 13' 41.13"	(RT)						30° 02' 19.42"	(LT)			1197453
	Degree	3° 42' 30.47"							6° 51' 42.37"				NCB 1758 (E QUINCY TOWNHOMES IDZ),
	Tangent	124.6889							224.0401				LOT 901 (EASEMENT)
	Length	248.8386							437.7694				EAST QUINCY TOWNHOMES LP
	Radius	1,545.0000							835.0000				PO BOX 1249,
	External	5.0233							29.5340				PEARLSALL, TX 78061-1249
	Long Chord	248.5697							432.7730				
	Mid. Ord.	5.0071							28.5250				
	P.C. Station	11+53.88	N	13,710,523.2563	E	2,133,683.1825			15+15.01	N	13,710,638.6141	E	2,133,341.5192
	P.T. Station	14+02.71	N	13,710,596.8480	E	2,133,445.7563			19+52.78	N	13,710,689.9748	E	2,132,911.8048
	C.C. Station		N	13,712,031.0059	E	2,134,020.4005				N	13,709,863.5190	E	2,133,030.9510
	Back Chord	N 77° 23' 34.45" W							Back Chord	N 68° 09' 53.32" W			
	Ahead Chord	N 68° 09' 53.32" W							Ahead Chord	S 81° 47' 47.25" W			
	Chord Bear	N 72° 46' 43.89" W							Chord Bear	N 83° 11' 03.04" W			

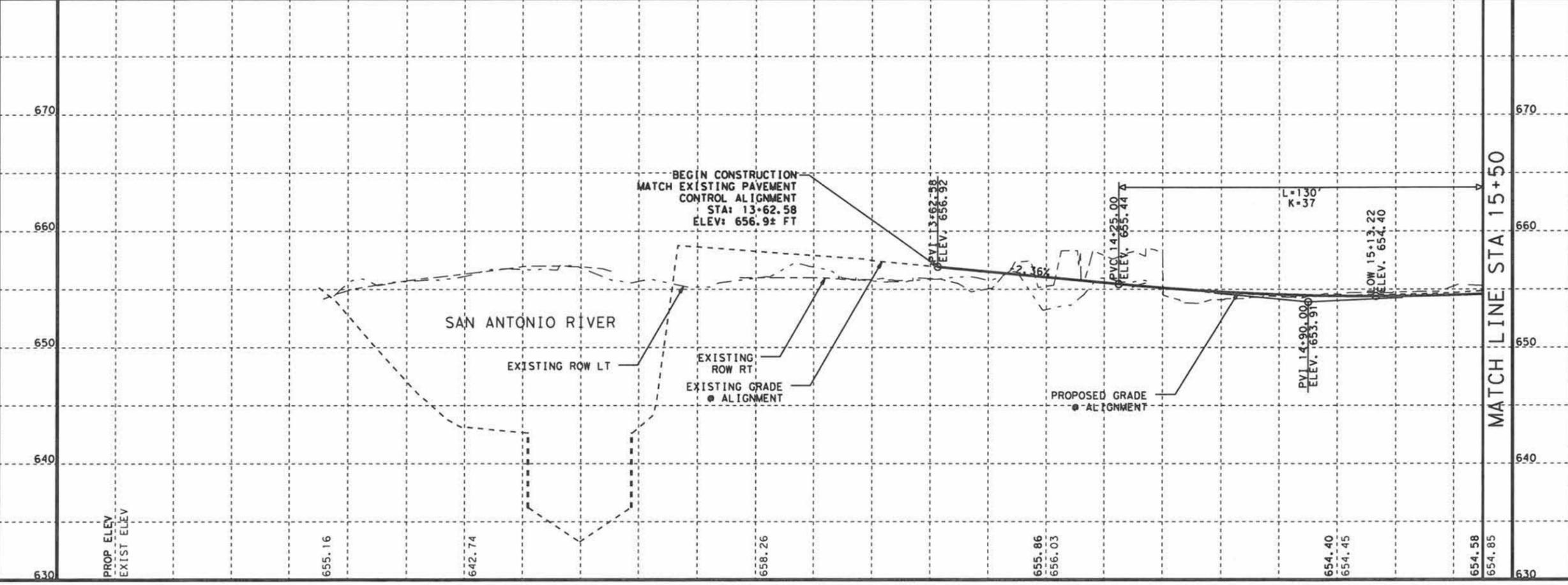


Scale: \$SCALE\$\$\$\$\$  
Plotted on: \$TIME\$\$\$\$\$



- NOTES:
- REFER TO DRIVEWAY DETAIL SHEETS FOR MORE INFORMATION.
  - REFER TO INTERSECTION LAYOUT SHEETS FOR WHEELCHAIR RAMP INFORMATION. UNLESS SPECIFIED OTHERWISE IN SHEET
  - SAWCUT LINES SHOWN ARE APPROXIMATE AND ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS TO VERIFY AND MATCH EXISTING ELEVATIONS.
  - REFER TO CROSS SECTIONS FOR CROSS SLOPE INFORMATION.
  - REFER TO PLATS AND FIELD NOTES FOR PERMANENT EASEMENT, CONSTRUCTION EASEMENTS, AND ROW CLIPS.
  - REFER TO UTILITY BASE MAP FOR ALL PROPOSED POWER POLE LOCATIONS.

Pen Table: \$PEN\$\$\$\$\$  
Design Filename: ... \DGN\63195\*RDWY\*PLAN\*PROF.dgn



SCALE: 1"=40'-H  
SCALE: 1"=10'-V

SHEET 1 OF 8

NO.	DATE	REVISION	APP.
4	2016	GENERAL NOTES	

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**

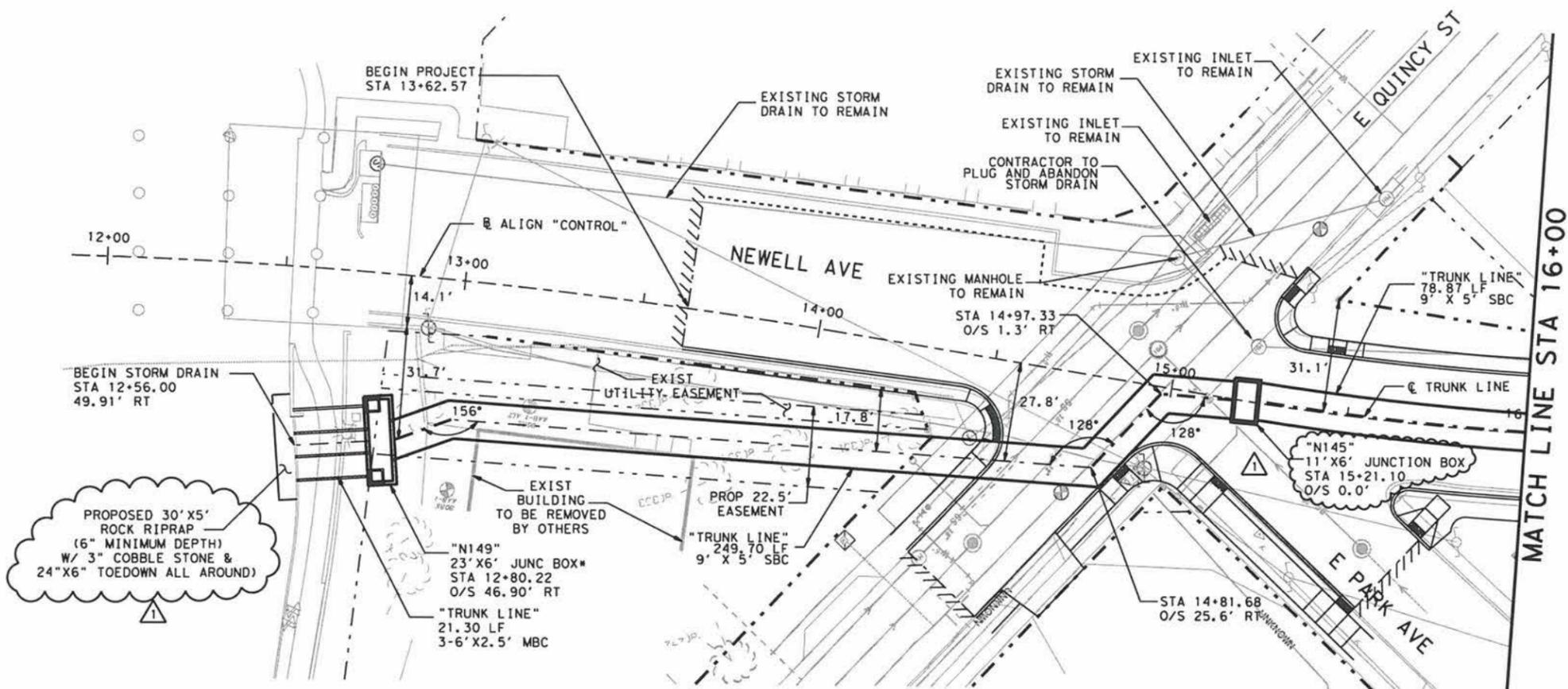
**PLAN AND PROFILE**  
BEGIN TO STA 15+50

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 91

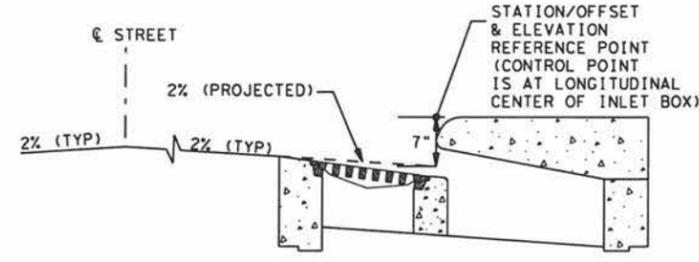




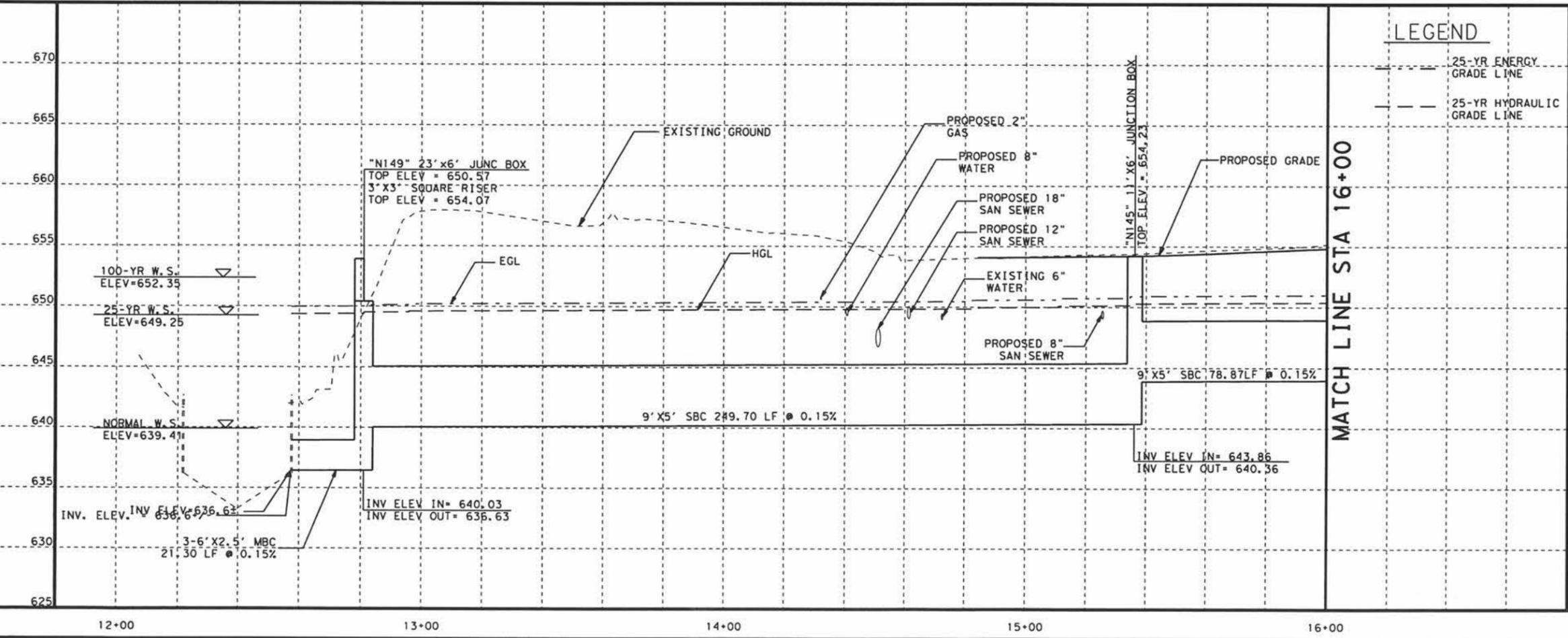
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Plotted on: 4/18/2016



- NOTES:
- #1. REFER TO SPECIAL JUNCTION BOX DETAIL FOR MORE INFORMATION
  - \*\*2. REFER TO "3-6' X 2.5' MBC" DETAILS FOR MORE INFORMATION.
  3. CONTROL POINT OF MANHOLES AND JUNCTION BOXES IS AT CENTER OF BOX AND TOP OF RISER AT FINISHED GRADE.
  4. ALL EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR DISPLAY PURPOSES ONLY, CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION.
  5. "N145" 11' X 6' JUNCTION BOX TO UTILIZE SCP-11. LID AND FLOOR TO UTILIZE SCP-11 DECK DETAILS.



PROPOSED 30' X 5' ROCK RIPRAP (6" MINIMUM DEPTH) W/ 3" COBBLE STONE & 24" X 6" TOEDOWN ALL AROUND



LEGEND

- 25-YR ENERGY GRADE LINE
- 25-YR HYDRAULIC GRADE LINE



*Daniel De Leon*  
4/18/16

0 20 40  
SCALE: 1" = 40' -H  
SCALE: 1" = 10' -V

1	4/2016	11X6 JB; OUTFALL RIPRAP
NO.	DATE	REVISION
		APP.

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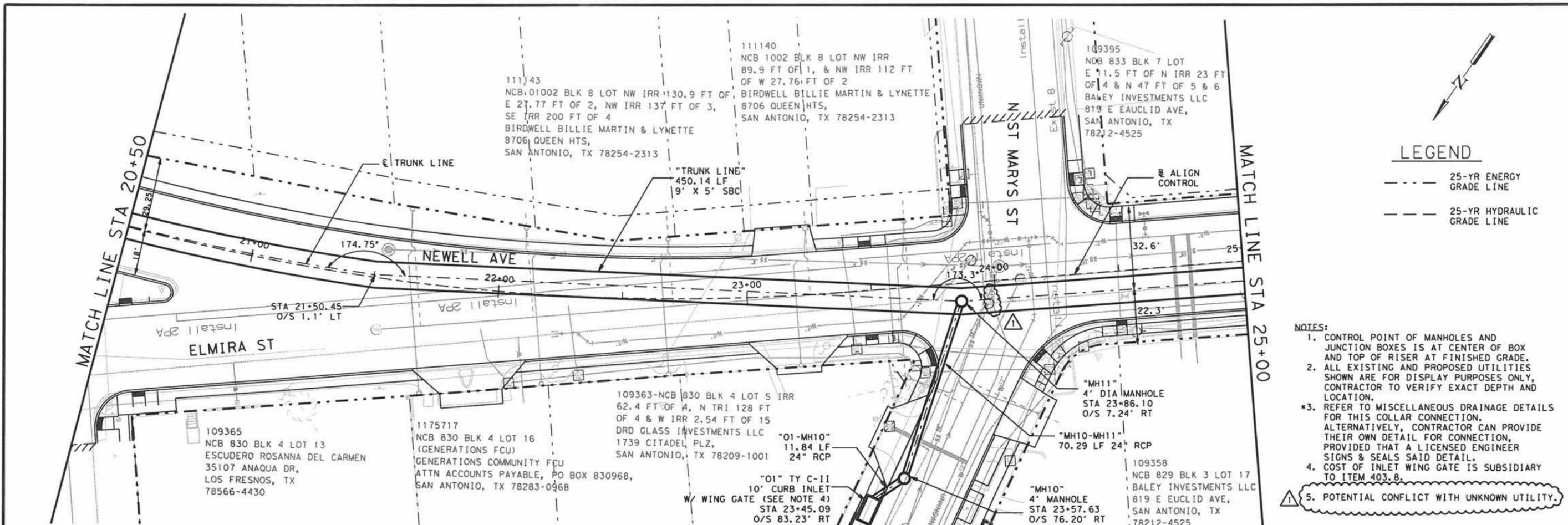
**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS  
MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT  
DRAINAGE LAYOUT  
PLAN & PROFILE  
STA 12+00 TO STA 16+00

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: MAR 2016
DRAWN: DAG	DESIGN: EG	CHECK: AR
SHEET NO. 114		

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Plotted on: 4/18/2016

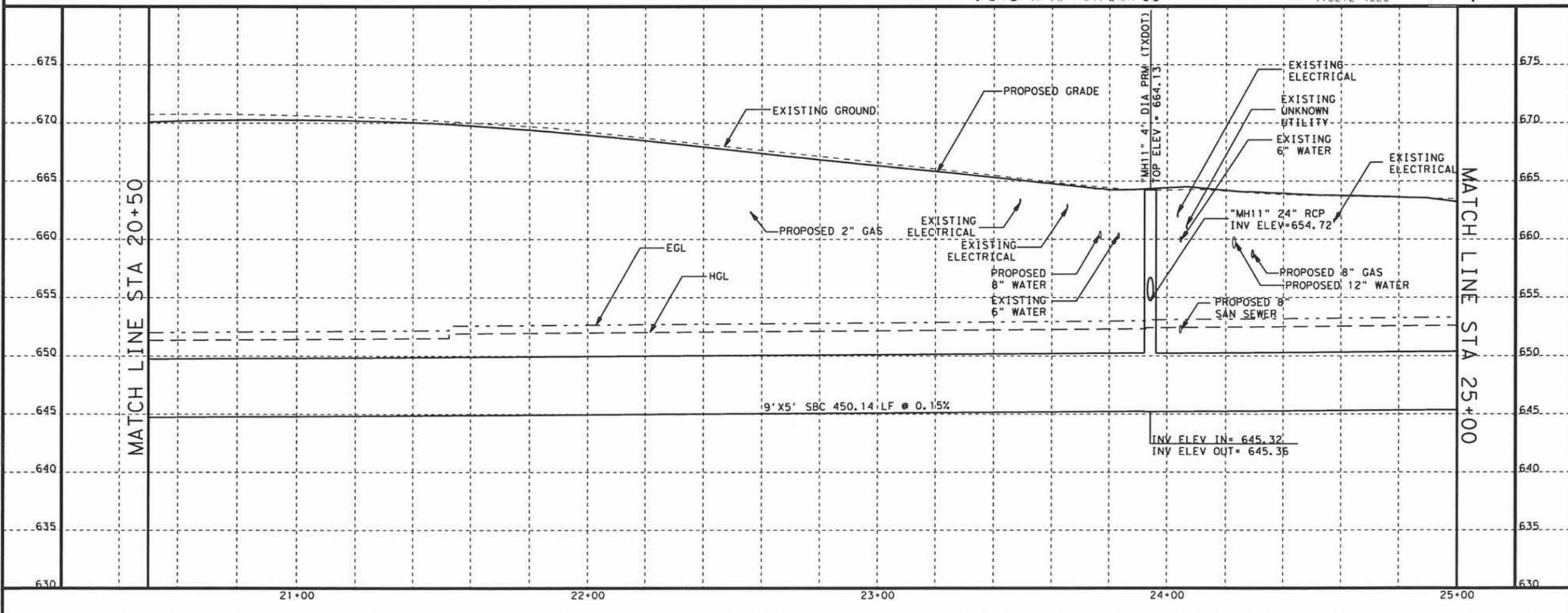
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LEGEND

- 25-YR ENERGY GRADE LINE
- 25-YR HYDRAULIC GRADE LINE

- NOTES:
- CONTROL POINT OF MANHOLES AND JUNCTION BOXES IS AT CENTER OF BOX AND TOP OF RISER AT FINISHED GRADE.
  - ALL EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR DISPLAY PURPOSES ONLY, CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION.
  - REFER TO MISCELLANEOUS DRAINAGE DETAILS FOR THIS COLLAR CONNECTION. ALTERNATIVELY, CONTRACTOR CAN PROVIDE THEIR OWN DETAIL FOR CONNECTION, PROVIDED THAT A LICENSED ENGINEER SIGNS & SEALS SAID DETAIL.
  - COST OF INLET WING GATE IS SUBSIDIARY TO ITEM 403.8.
  - POTENTIAL CONFLICT WITH UNKNOWN UTILITY.



*Daniel De Leon*  
4/18/16



SCALE: 1"=40' -H  
SCALE: 1"=10' -V

NO.	DATE	REVISION	APP.
1	4/2016	"UNKNOWN" UTIL CONFLICT	
		REVISION	

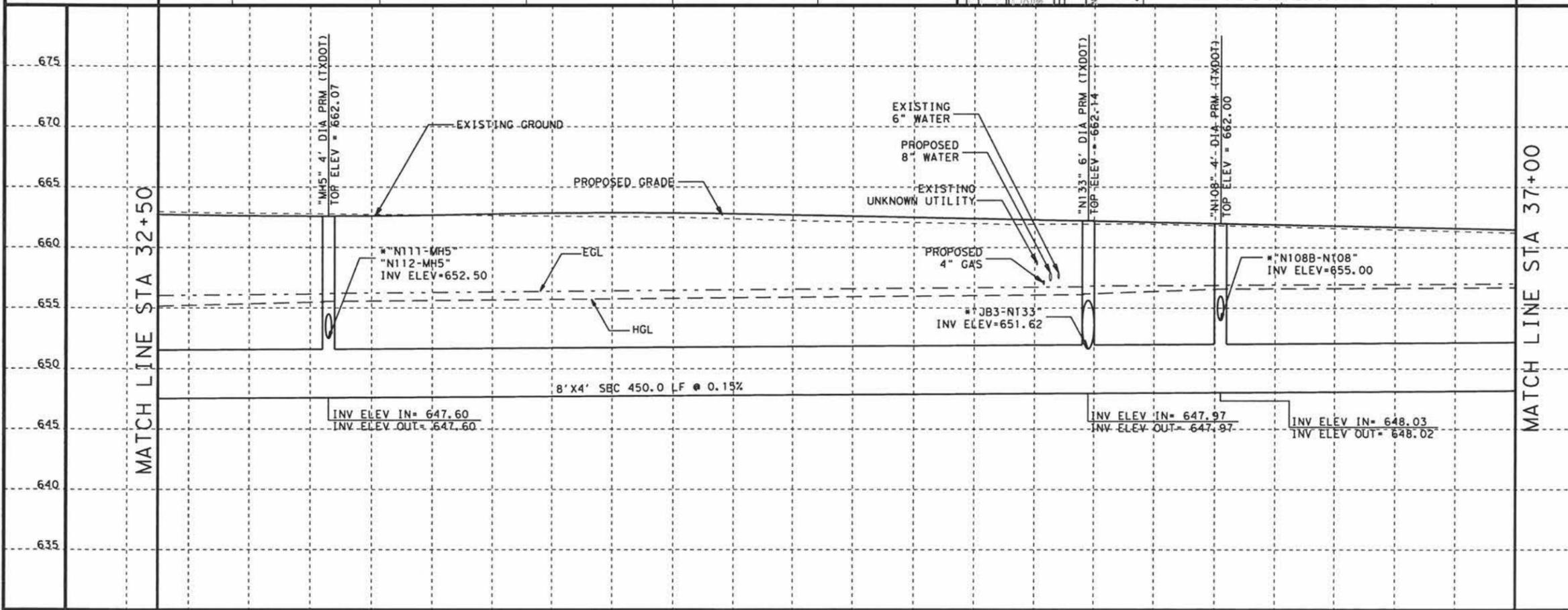
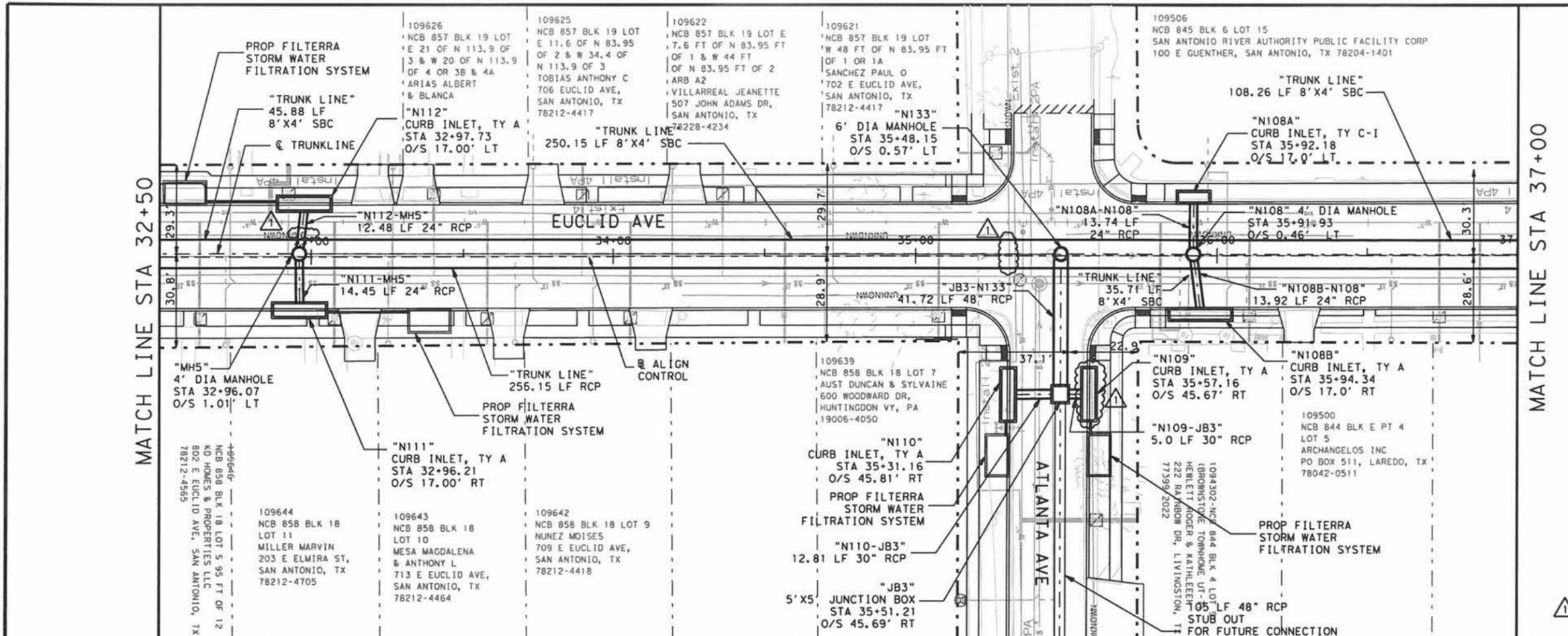
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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS  
MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT  
DRAINAGE LAYOUT  
PLAN & PROFILE  
STA 20+50 TO STA 25+00



Scale: 1"=40'  
Plotted on: 4/18/2016

Pen Tab: TexasTwoStep.pentab1.evc.tb1  
Design File Name: 63195\*STRM\*PLAN\*PROF.dgn



**LEGEND**

- - - 25-YR ENERGY GRADE LINE
- - - 25-YR HYDRAULIC GRADE LINE

- NOTES:**
1. CONTROL POINT OF MANHOLES AND JUNCTION BOXES IS AT CENTER OF BOX AND TOP OF RISER AT FINISHED GRADE.
  2. ALL EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR DISPLAY PURPOSES ONLY, CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION.
  3. REFER TO MISCELLANEOUS DRAINAGE DETAILS FOR THIS COLLAR CONNECTION. ALTERNATIVELY, CONTRACTOR CAN PROVIDE THEIR OWN DETAIL FOR CONNECTION, PROVIDED THAT A LICENSED ENGINEER SIGNS & SEALS SAID DETAIL.
  4. POTENTIAL CONFLICT WITH UNKNOWN UTILITY.

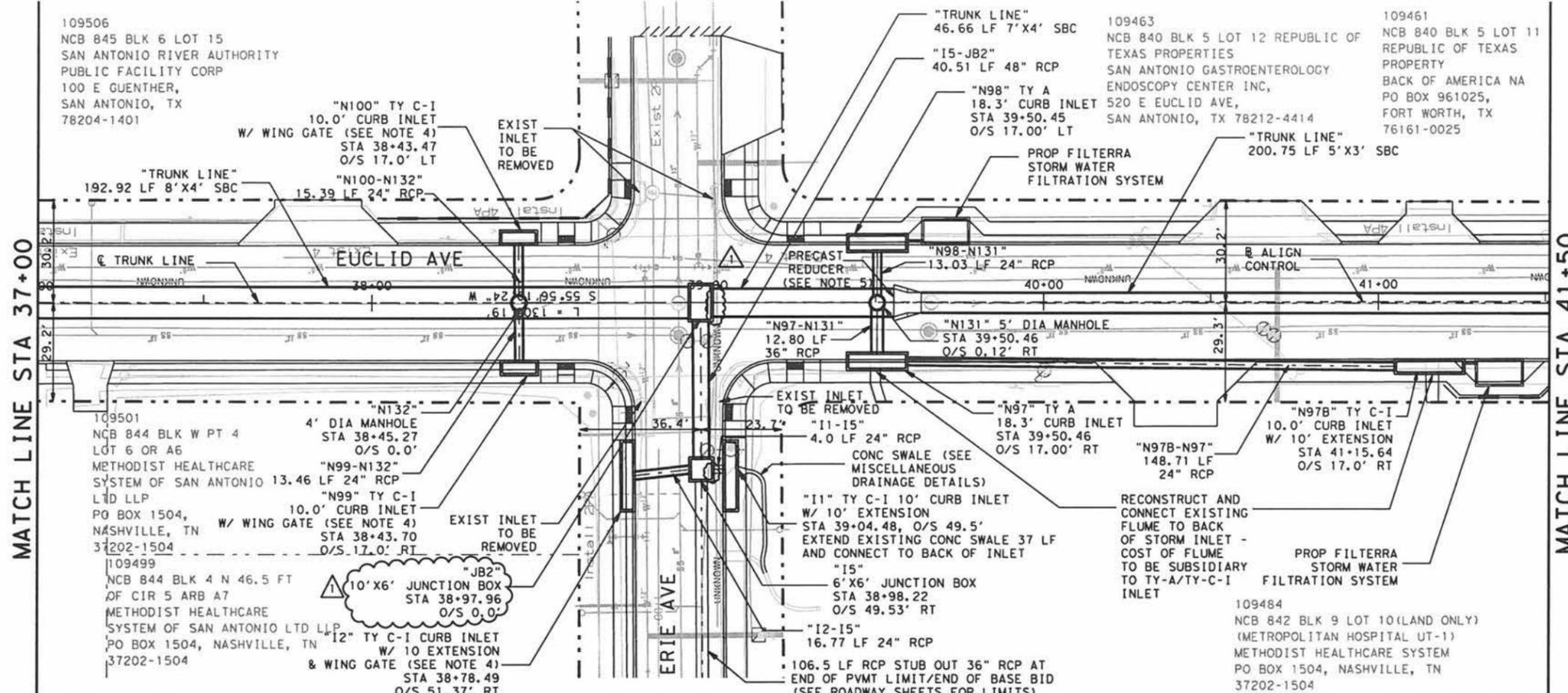


*Daniel De Leon*  
4/18/16

0 20 40  
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SCALE: 1"=10'-V

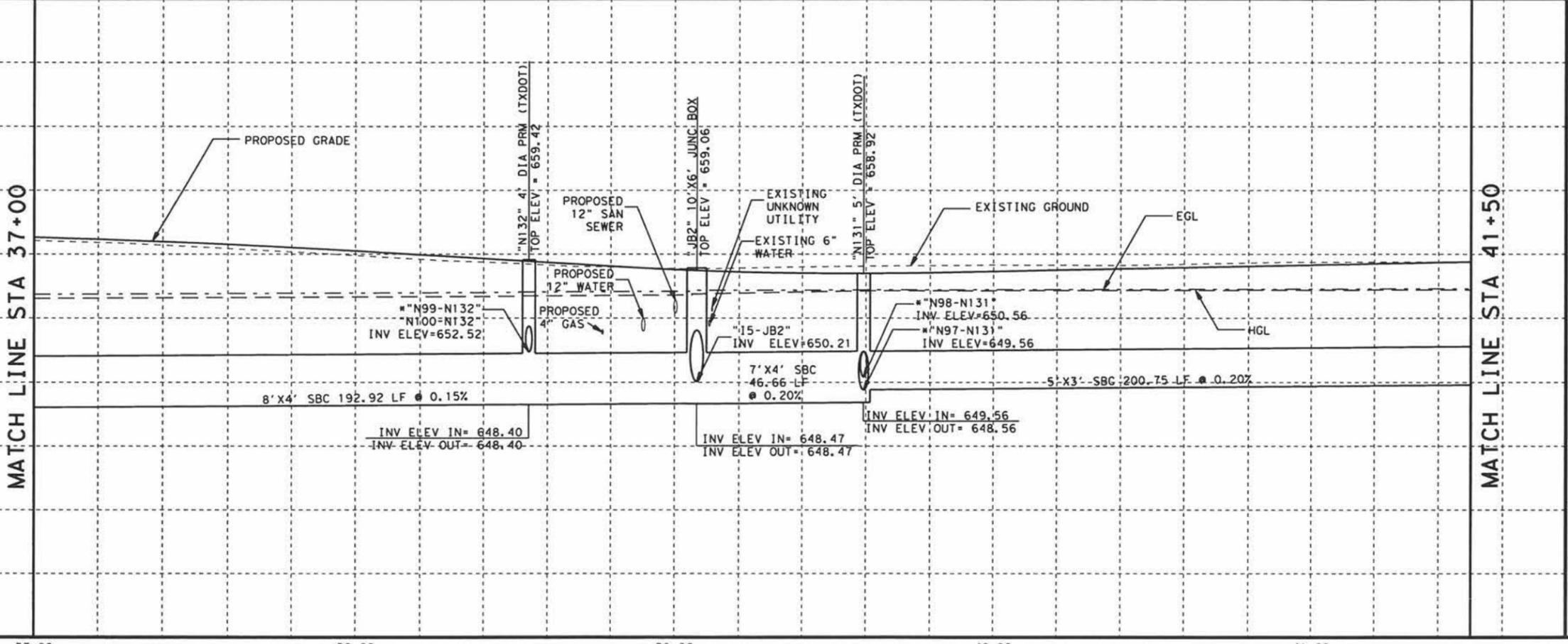
1	4/2016	"UNKNOWN" UTIL CONFLICT	
NO.	DATE	REVISION	APP.
<p><b>HNTB</b> 130 East Travis Street, Suite 200 San Antonio, TX 78205 (210)349-2277</p> <p>TRANSPORTATION AND CAPITAL IMPROVEMENTS</p> <p><b>CITY OF SAN ANTONIO</b> MCCULLOUGH AVENUE AREA DRAINAGE PROJECT DRAINAGE LAYOUT PLAN &amp; PROFILE STA 32+50 TO STA 37+00</p>			
<p>100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016 DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 119</p>			

Scale: 1"=40'  
Plotted on: 4/18/2016

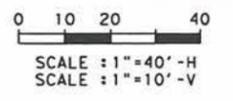


- LEGEND**
- - - 25-YR ENERGY GRADE LINE
  - - - 25-YR HYDRAULIC GRADE LINE

- NOTES:**
1. CONTROL POINT OF MANHOLES AND JUNCTION BOXES IS AT CENTER OF BOX AND TOP OF RISER AT FINISHED GRADE.
  2. ALL EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR DISPLAY PURPOSES ONLY, CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION.
  3. REFER TO MISCELLANEOUS DRAINAGE DETAILS FOR THIS COLLAR CONNECTION. ALTERNATIVELY, CONTRACTOR CAN PROVIDE THEIR OWN DETAIL FOR CONNECTION, PROVIDED THAT A LICENSED ENGINEER SIGNS & SEALS SAID DETAIL.
  4. COST OF INLET WING GATES ARE SUBSIDIARY TO THE COST OF ITEM 403.8.
  5. COST OF PRECAST REDUCER (5'X3' TO 7'X4') IS SUBSIDIARY TO THE COST OF ITEM 309.1.
  6. "JB2" 10'X6' JUNCTION BOX TO UTILIZE SCP-10. LID AND FLOOR OF JUNCTION BOX TO UTILIZE SCP-10 DECK DETAILS.
  7. POTENTIAL CONFLICT WITH UNKNOWN UTILITY.



*Daniel De Leon*  
4/18/16



1	4/2016	"UNKNOWN" UTIL CONFLICT	
NO.	DATE	REVISION	APP.

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TYPE FIRM REGISTRATION NO.: 420 WWW.HNTB.COM

**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

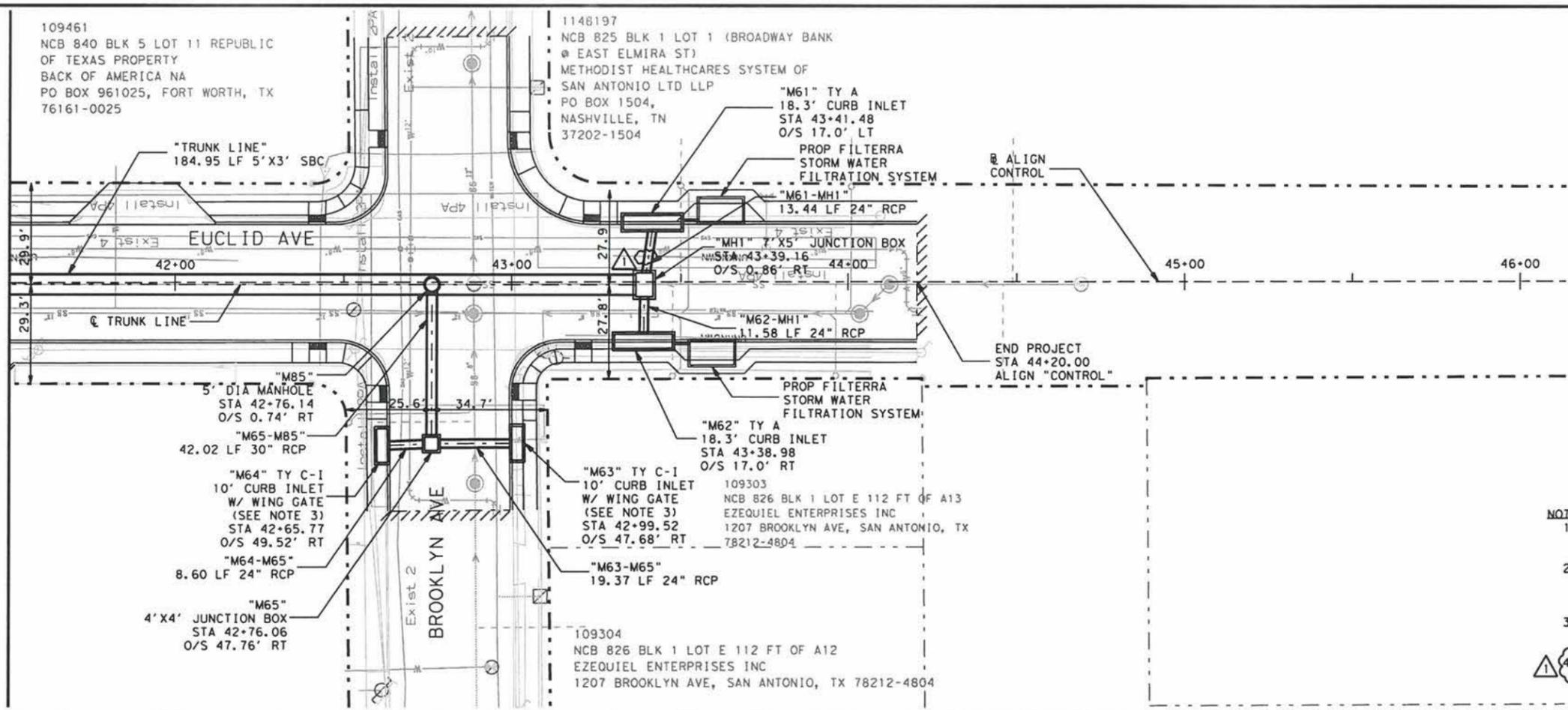
**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT  
DRAINAGE LAYOUT  
PLAN & PROFILE  
STA 37+00 TO STA 41+50**

100% SUBMITTAL PROJECT NO. 40-00327 DATE/MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 120

Pen Tables: TexasTwoStep.pentable.co.tbl  
Design File name: 63195-STRM+PLAN+PROF.dgn

Scale: 1"=40'  
Plotted on: 4/18/2016

MATCH LINE STA 41+50



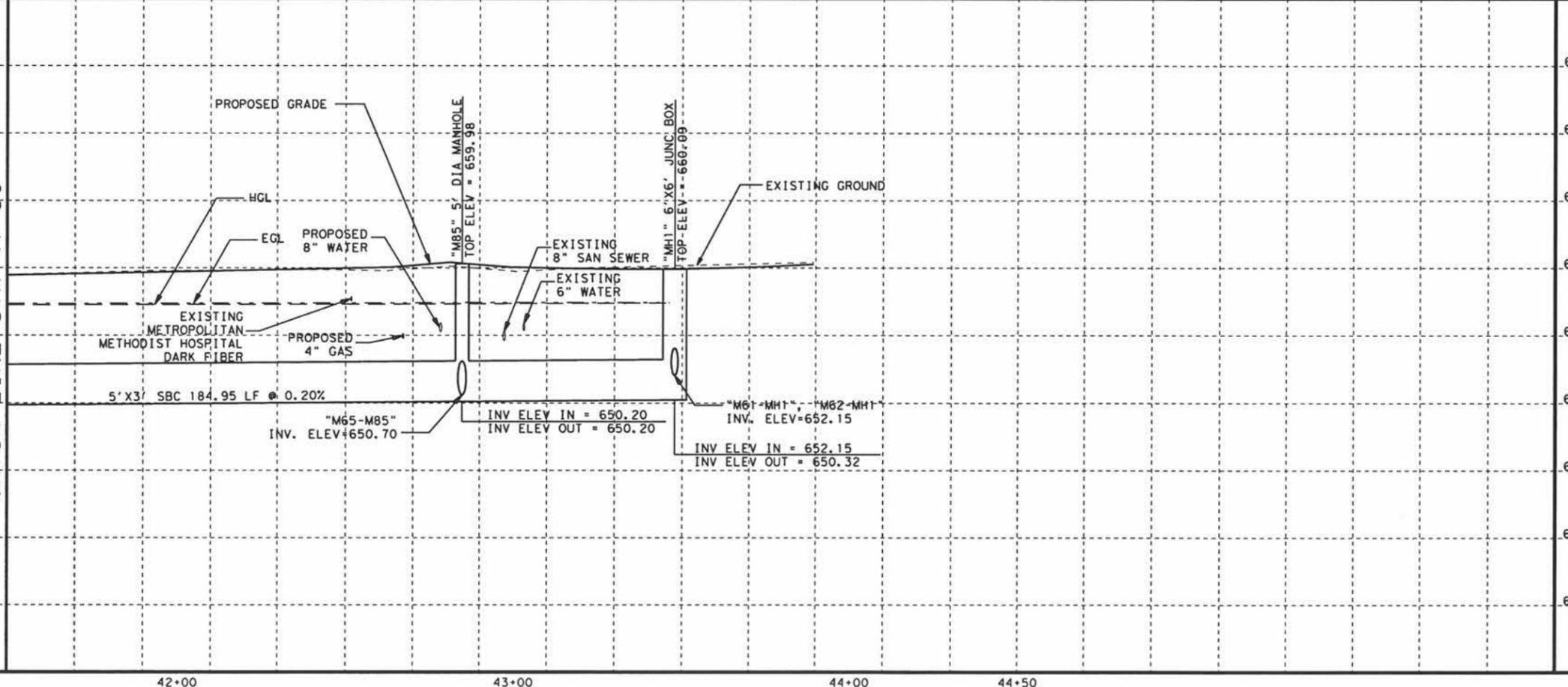
LEGEND

- - - 25-YR ENERGY GRADE LINE
- - - 25-YR HYDRAULIC GRADE LINE

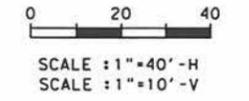
- NOTES:
1. CONTROL POINT OF MANHOLES AND JUNCTION BOXES IS AT CENTER OF BOX AND TOP OF RISER AT FINISHED GRADE.
  2. ALL EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR DISPLAY PURPOSES ONLY, CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION.
  3. COST OF INLET WING GATES ARE SUBSIDIARY TO THE COST OF ITEM 403.8.
  4. POTENTIAL CONFLICT WITH UNKNOWN UTILITY.

Pen: Tabler; TexasTwoStep; pentable; co. fbi  
Design: File name: 63195\*STRM\*PLAN\*PROF.dgn

MATCH LINE STA 41+50



*Daniel De Leon*  
4/18/16

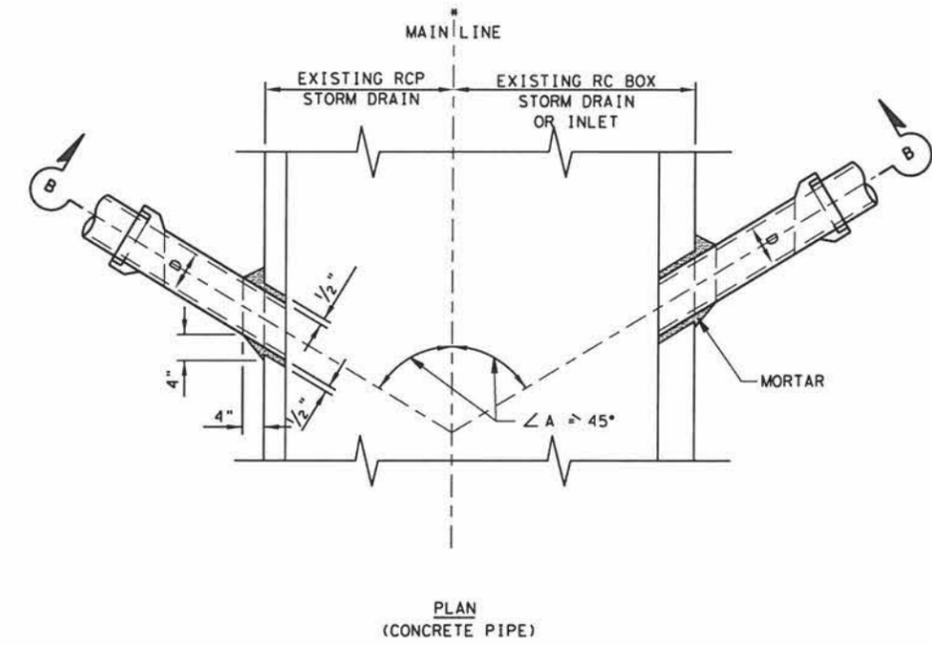
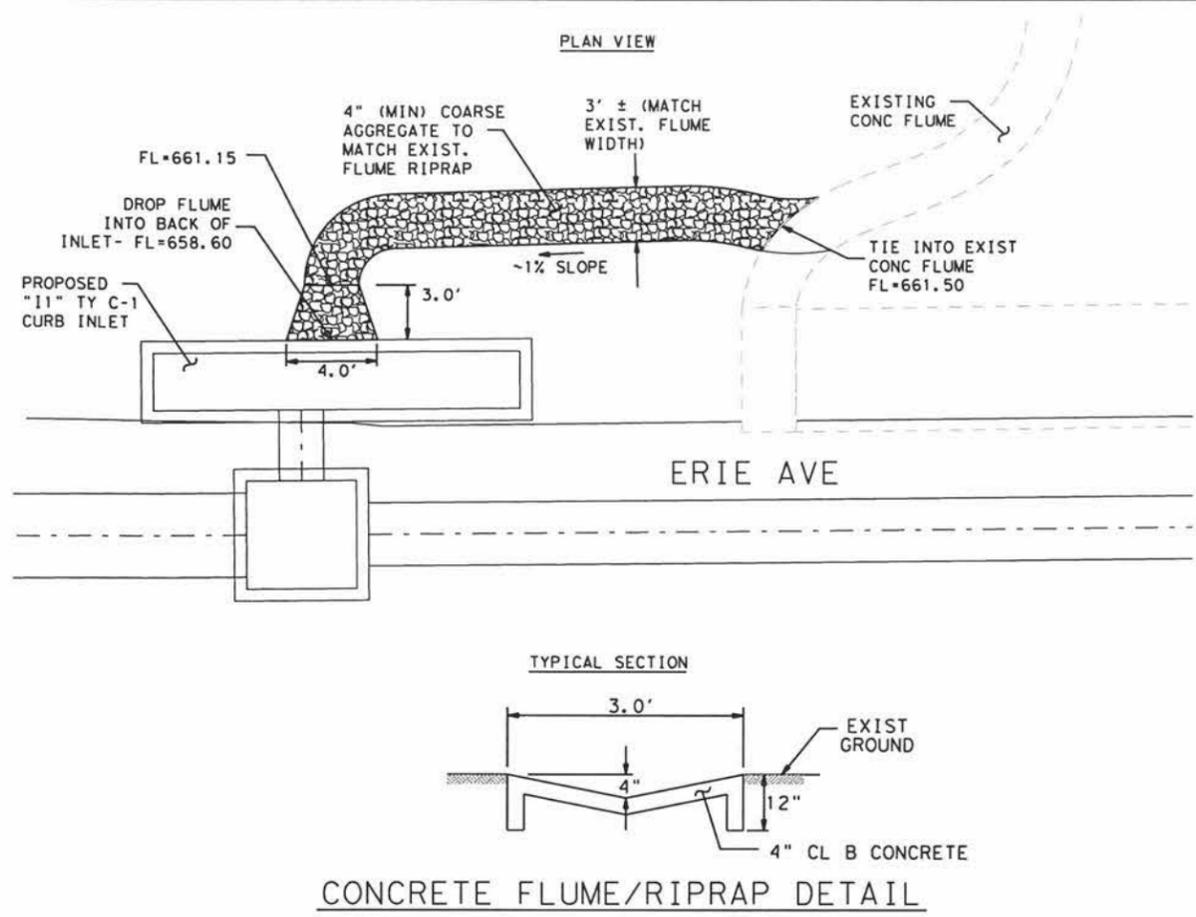


NO.	DATE	REVISION	APP.
1	4/2016	"UNKNOWN" UTIL CONFLICT	

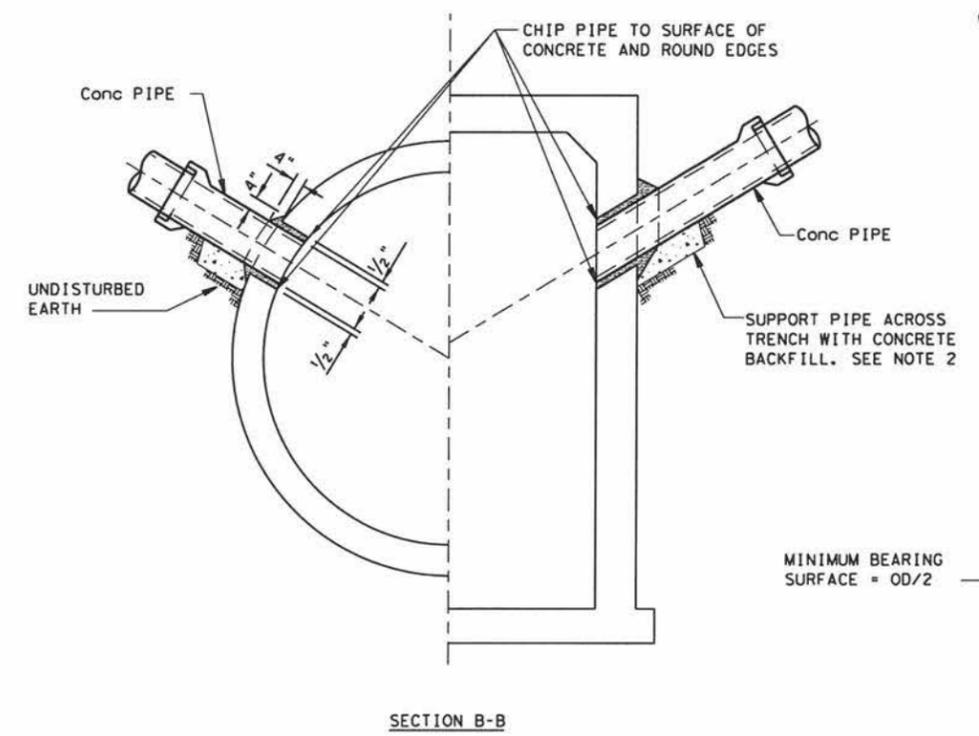
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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS  
MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT  
DRAINAGE LAYOUT  
PLAN & PROFILE  
STA 41+50 TO END

Scale: 1:20  
Plotted on: 4/18/2016

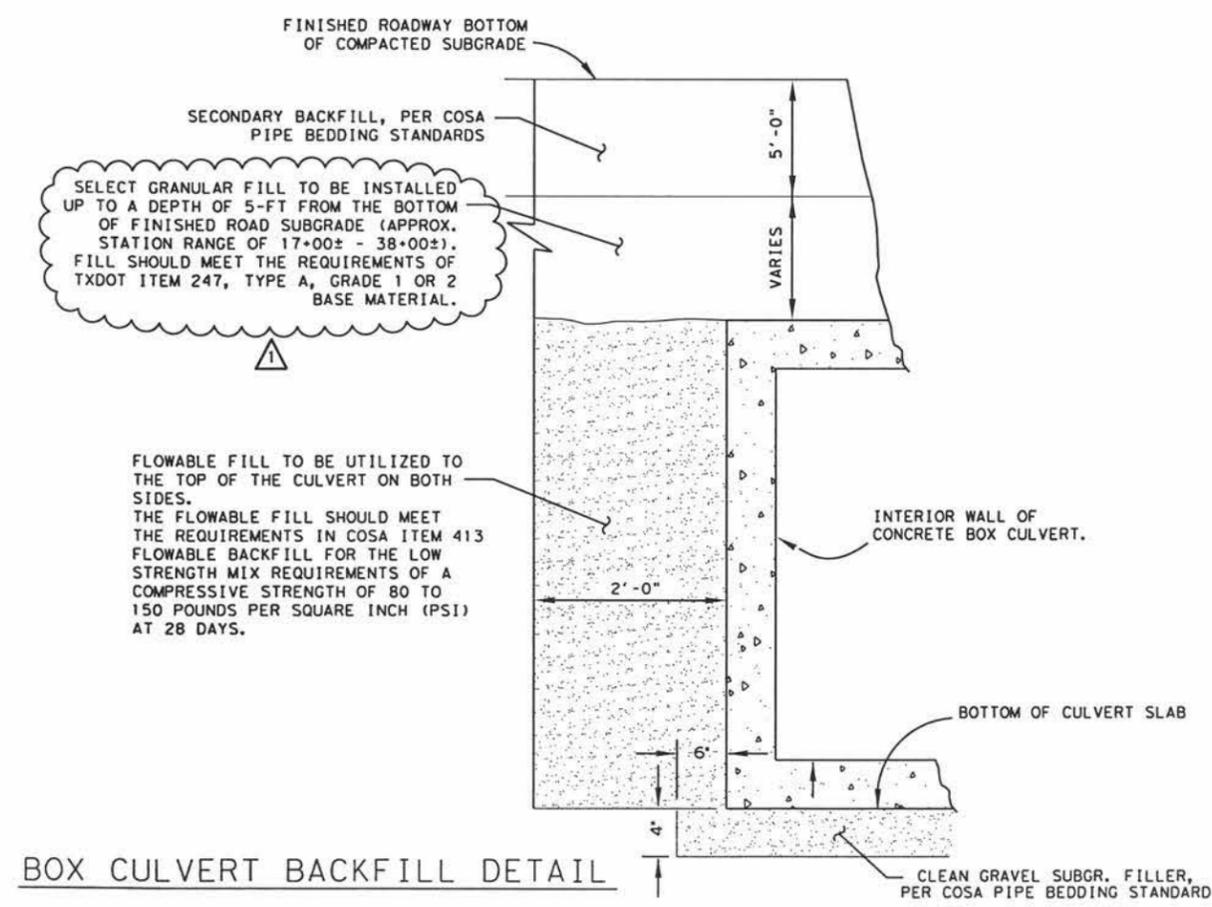


- NOTES:**
1. OUTSIDE DIAMETER OF THE CONNECTOR PIPE SHALL NOT BE GREATER THAN 1/2 THE INSIDE DIAMETER OF THE RCP MAIN LINE.
  2. THE MINIMUM OPENING INTO THE EXISTING STORM DRAIN SHALL BE THE OUTSIDE DIAMETER OF THE CONNECTING PIPE PLUS 1". THE CONCRETE BACKFILL SUPPORTING THE CONNECTING PIPE MAY BE OMITTED IF THE PIPE IS LAID ON UNDISTURBED EARTH TO STORM DRAIN WALL.
  3. CONNECTOR PIPES SHALL BE NOT MORE THAN 5' ABOVE THE INVERT.
  4. CONNECTOR PIPES SHALL ENTER MAIN LINE RCP RADIALLY.
  5. WHEN CONNECTING TO A RCB, DD-55 SHALL BE USED IF THE TOP OF THE CONNECTOR PIPE IS LESS THAN 12" BELOW THE SOFFIT OF THE RCB OR THE FLOW LINE OF THE PIPE IS LESS THAN 13" ABOVE THE FLOOR OF THE RCB AT THE INSIDE FACE.
  6. COST OF CONCRETE COLLAR/MORTAR JOINT SHALL BE SUBSIDIARY TO THE COST OF THE MANHOLE, INLET OR CULVERT BEING CONNECTED TO.



STATE OF TEXAS  
DANIEL DE LEON  
112795  
LICENSED PROFESSIONAL ENGINEER

*Daniel De Leon*  
4/18/16



NO.	DATE	REVISION	APP.
1	4/2016	"SELECT FILL" NOTE REV.	

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**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

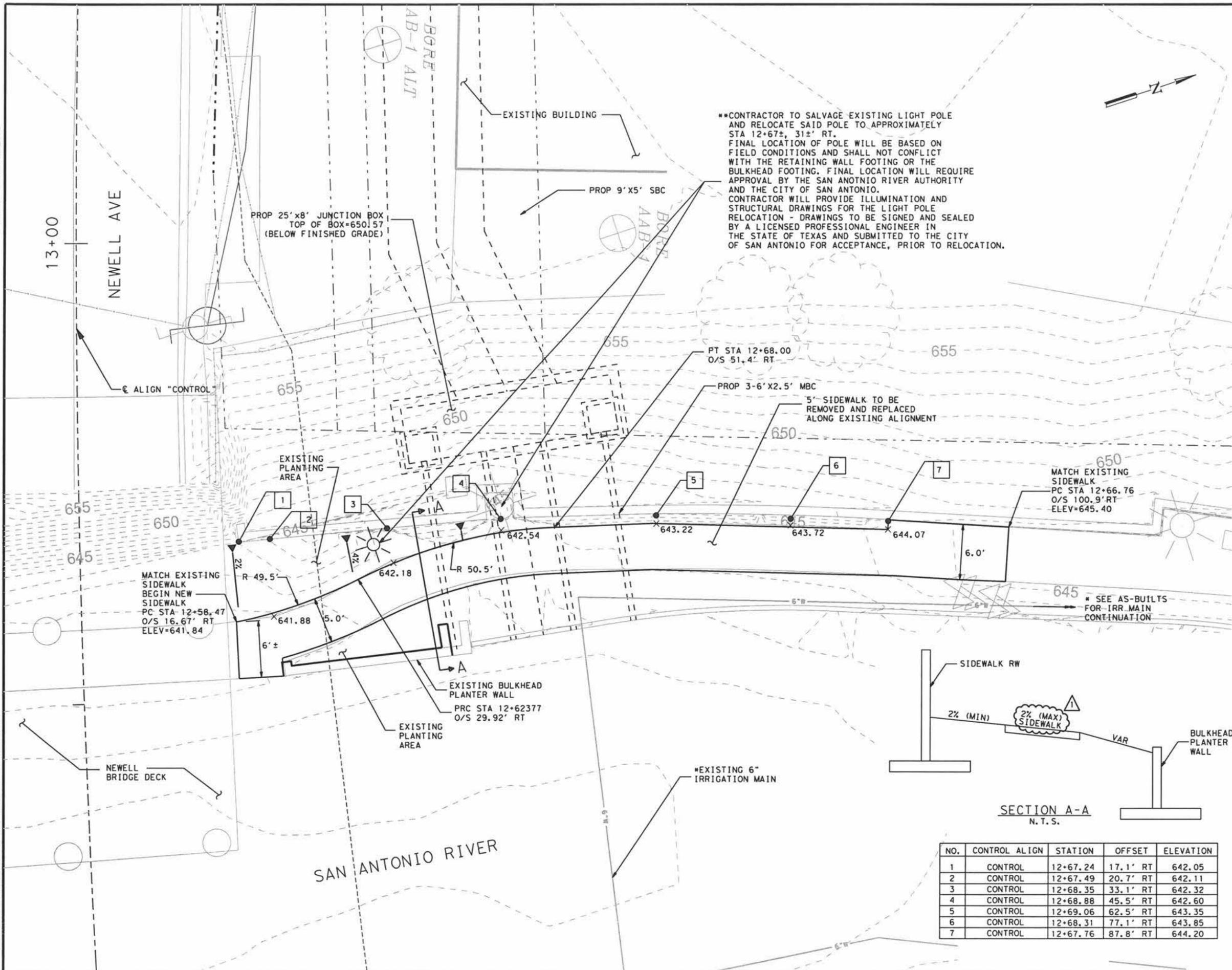
**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**  
MISCELLANEOUS DRAINAGE DETAILS

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 148

Pen: Tablet: TexasTwoStep\*pentablet\*co.tbi  
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Scale: 1"=10'  
 Plotted on: 4/18/2016

Pen Table: TexasTwoStep.pentable\*.co.tbi  
 Design File name: 63195\*RET\*WALL\*PLAN\*PROF.dgn



CONTRACTOR TO SALVAGE EXISTING LIGHT POLE AND RELOCATE SAID POLE TO APPROXIMATELY STA 12+67±, 31±' RT. FINAL LOCATION OF POLE WILL BE BASED ON FIELD CONDITIONS AND SHALL NOT CONFLICT WITH THE RETAINING WALL FOOTING OR THE BULKHEAD FOOTING. FINAL LOCATION WILL REQUIRE APPROVAL BY THE SAN ANTONIO RIVER AUTHORITY AND THE CITY OF SAN ANTONIO. CONTRACTOR WILL PROVIDE ILLUMINATION AND STRUCTURAL DRAWINGS FOR THE LIGHT POLE RELOCATION - DRAWINGS TO BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS AND SUBMITTED TO THE CITY OF SAN ANTONIO FOR ACCEPTANCE, PRIOR TO RELOCATION.

**LEGEND**

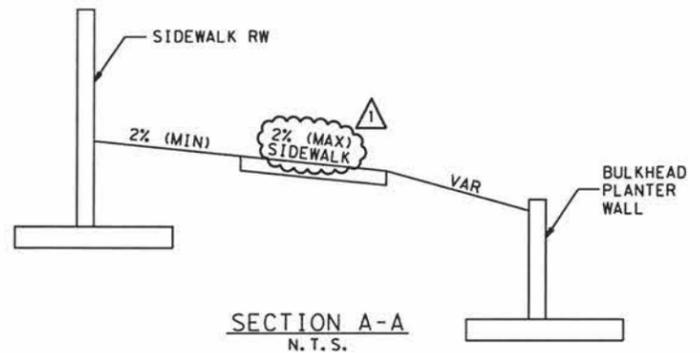
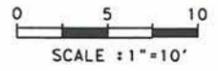
Xxxx.xx EXISTING ELEVATION

**NOTES:**

- #1. CONTRACTOR TO RELOCATE EXISTING 6" IRRIGATION MAIN AS PART OF THE SAN ANTONIO RIVER BULKHEAD, SIDEWALK WALL, STORM DRAIN OUTFALL WORK.
- #2. CONTRACTOR TO PROVIDE IRRIGATION PLAN DRAWINGS, SIGNED AND SEALED BY A LICENSED IRRIGATOR IN THE STATE OF TEXAS TO THE CITY OF SAN ANTONIO, AND THE SAN ANTONIO RIVER AUTHORITY (SARA) FOR ACCEPTANCE, PRIOR TO RELOCATION.
- #3. CONTRACTOR TO COORDINATE WITH MR. BRIAN WRIGHT (SARA) FOR THIS TEMPORARY DECOMMISSIONING AND RELOCATION OF 6" IRRIGATION MAIN AND THE SHUTDOWN OF THE WEST RIVER BANK IRRIGATION SYSTEM. MR. WRIGHT'S PHONE NUMBER IS (210) 415-8587.
- #4. FOR CONTRACTOR INFORMATION, REFER TO THE MUSEUM REACH AS-BUILTS, PAGE IR200-IR223. PAGE IR 220 REFERS SPECIFICALLY TO THE MCCULLOUGH AVE AREA PROJECT AREA.
- #5. FOR CONTRACTOR INFORMATION, TO RELOCATE LIGHT POLE/FIXTURE, REFER TO MUSEUM REACH AS-BUILTS, PAGES E101 TO E1717. PAGE E210 REFERS SPECIFICALLY TO THE "ELECTRICAL PLAN" AFFECTED BY THE MCCULLOUGH AVE AREA PROJECT AREA. COST FOR LIGHT POLE RELOCATION TO BE SUBSIDIARY TO THE COST OF RETAINING WALL A (SEE RW 'A' LAYOUT FOR MORE INFORMATION).
- #6. FOR CONTRACTOR'S INFORMATION, TO RELOCATE LIGHT POLE/FIXTURE, REFER TO MUSEUM REACH AS-BUILTS, PAGES S101 TO S107. PAGE S107 REFERS SPECIFICALLY TO THE TYPE OF THE LIGHT POLE FOUNDATION TO BE USED FOR THE RELOCATION.
- #7. THE COST OF 6" IRRIGATION MAIN RELOCATION TO BE SUBSIDIARY TO THE COST OF THE COFFERDAM.



*Daniel De Leon*  
 4/18/16



NO.	CONTROL ALIGN	STATION	OFFSET	ELEVATION
1	CONTROL	12+67.24	17.1' RT	642.05
2	CONTROL	12+67.49	20.7' RT	642.11
3	CONTROL	12+68.35	33.1' RT	642.32
4	CONTROL	12+68.88	45.5' RT	642.60
5	CONTROL	12+69.06	62.5' RT	643.35
6	CONTROL	12+68.31	77.1' RT	643.85
7	CONTROL	12+67.76	87.8' RT	644.20

1	4/2016	MAX SIDEWALK GRADE	
NO.	DATE	REVISION	APP.

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 TBPE FIRM REGISTRATION NO.: 420 WWW.HNTB.COM

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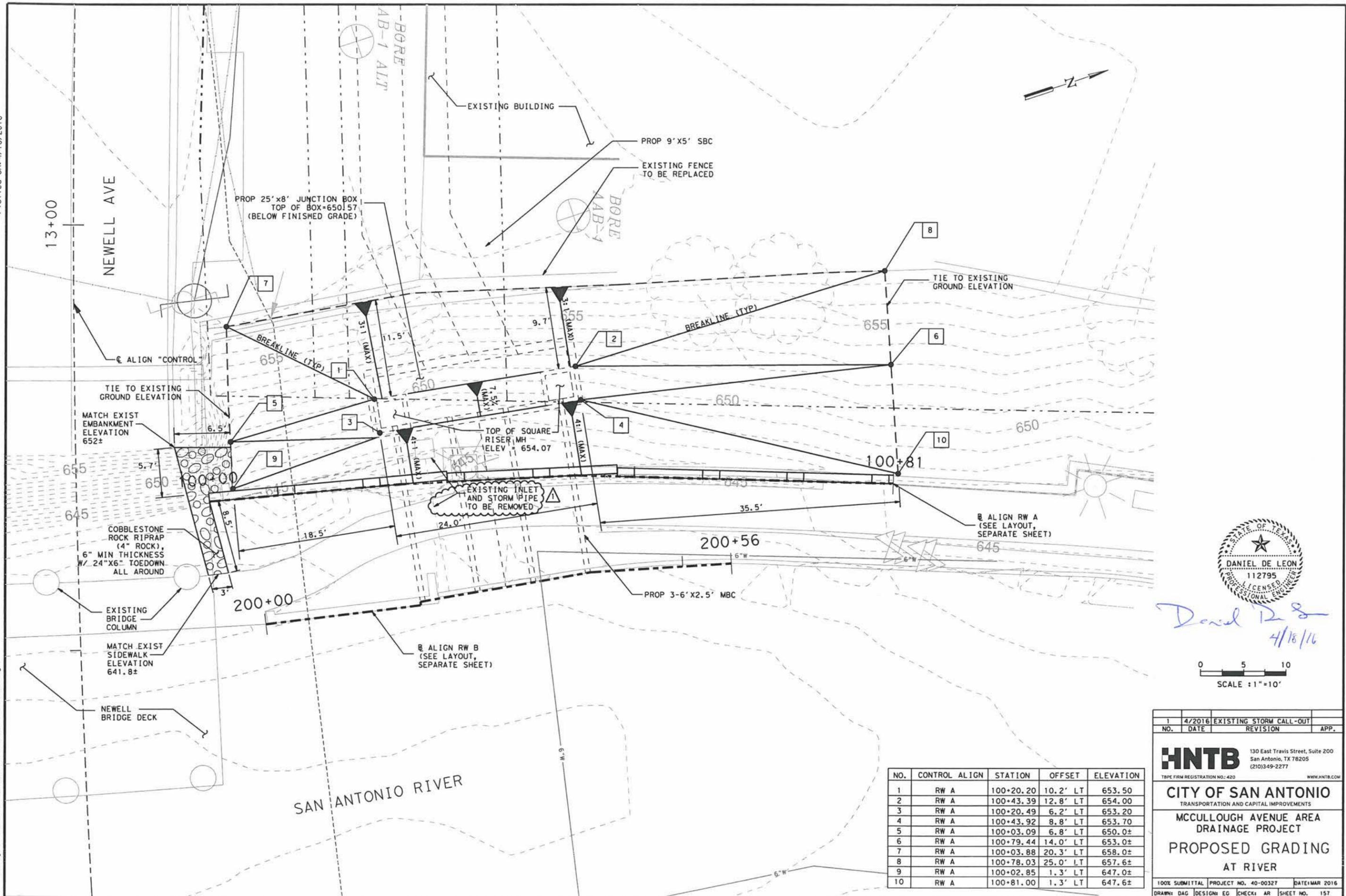
**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**

**PROPOSED GRADING AT SIDEWALK**

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
 DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 156

Scale: 1:10  
Plotted on: 4/18/2016

Pen Tab: TexasTwoStep.pentablex.co.tbl  
Design File: 63195\*RET\*WALL\*PLAN\*PROF.dgn



*Daniel De Leon*  
4/18/16

0 5 10  
SCALE: 1"=10'

NO.	CONTROL ALIGN	STATION	OFFSET	ELEVATION
1	RW A	100+20.20	10.2' LT	653.50
2	RW A	100+43.39	12.8' LT	654.00
3	RW A	100+20.49	6.2' LT	653.20
4	RW A	100+43.92	8.8' LT	653.70
5	RW A	100+03.09	6.8' LT	650.0±
6	RW A	100+79.44	14.0' LT	653.0±
7	RW A	100+03.88	20.3' LT	658.0±
8	RW A	100+78.03	25.0' LT	657.6±
9	RW A	100+02.85	1.3' LT	647.0±
10	RW A	100+81.00	1.3' LT	647.6±

1	4/2016	EXISTING STORM CALL-OUT	
NO.	DATE	REVISION	APP.

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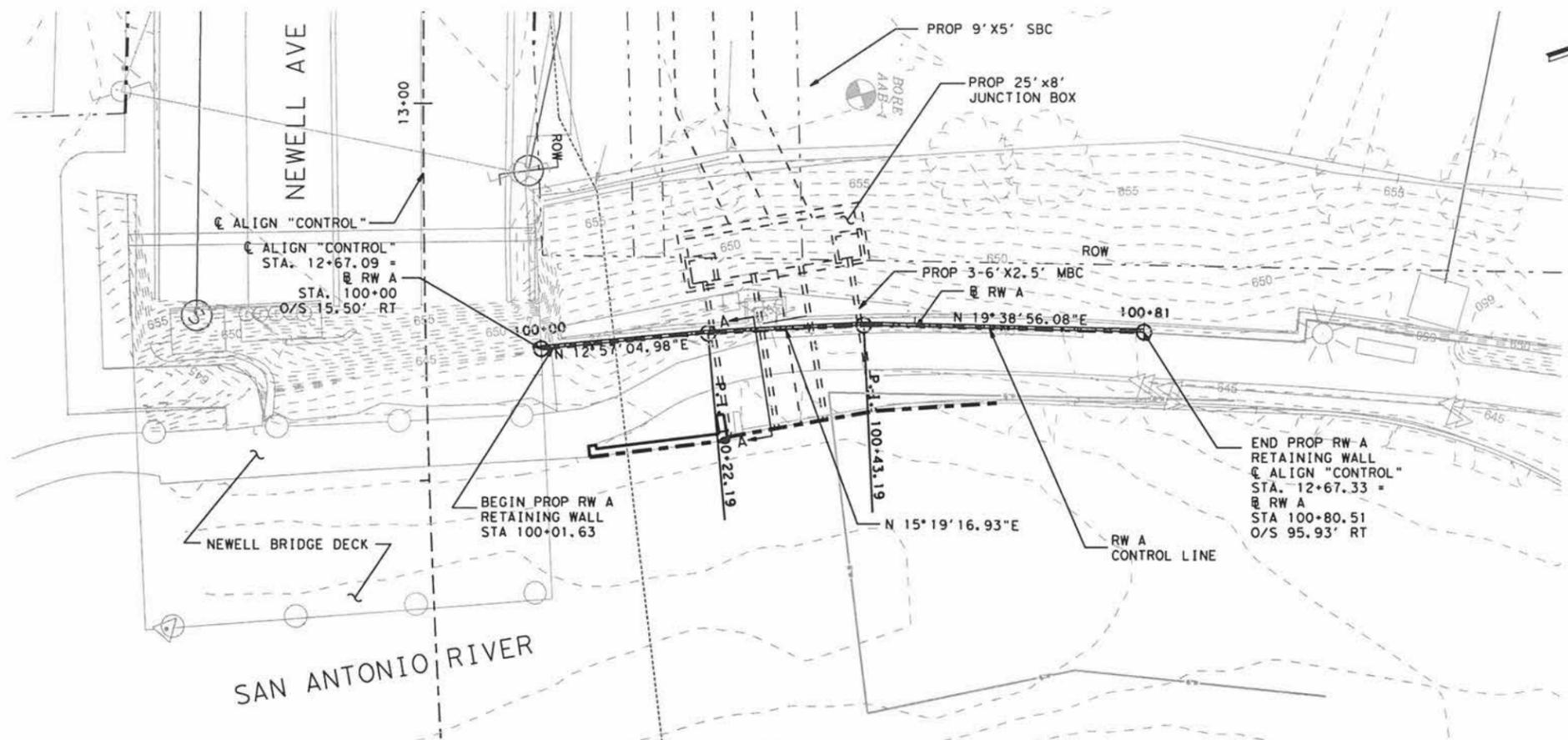
**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT**

**PROPOSED GRADING  
AT RIVER**

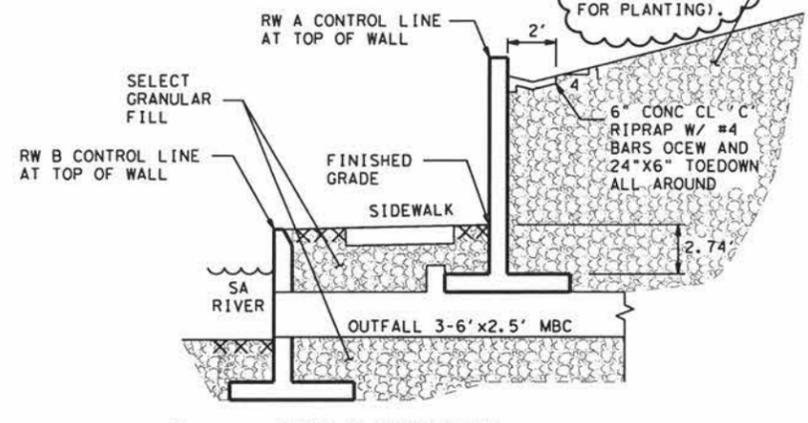
100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 157

Scale: 1:20  
Plotted on: 4/18/2016



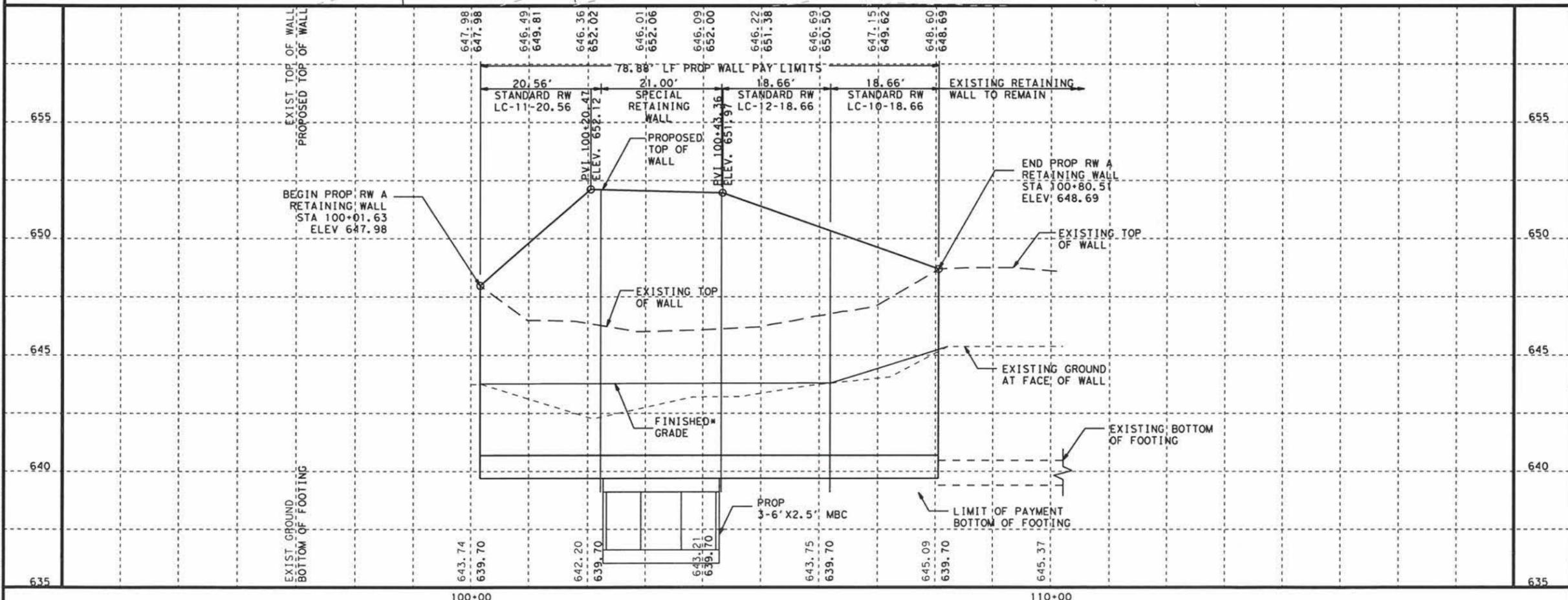
- NOTES:
1. PROPOSED FINISHED GRADE TO MATCH EXISTING GROUND AT LIMITS OF WALL.
  2. ALIGN FACE OF RW A TO MATCH FACE OF EXISTING WALL.
  3. MATCH TOP ELEVATION OF EXISTING SIDEWALK WALL.
  - \*4. REFER TO GRADING PLAN AT RIVER FOR MORE INFORMATION.

SELECT GRANULAR FILL (SEE SHEET LP-01, PLANTING DETAILS FOR LIMITS OF SELECT FILL AS IT RELATES TO PREPARED SOIL FOR PLANTING).



REFER TO GEOTECHNICAL REPORT (BEDDING & BACKFILL REQUIREMENTS - PAGES 43-45) FOR SUBSURFACE MATERIAL REQUIREMENTS

SECTION A-A  
NTS



*Daniel De Leon*  
4/18/16

0 10 20  
SCALE: 1"=20'-H  
SCALE: 1"=5'-V

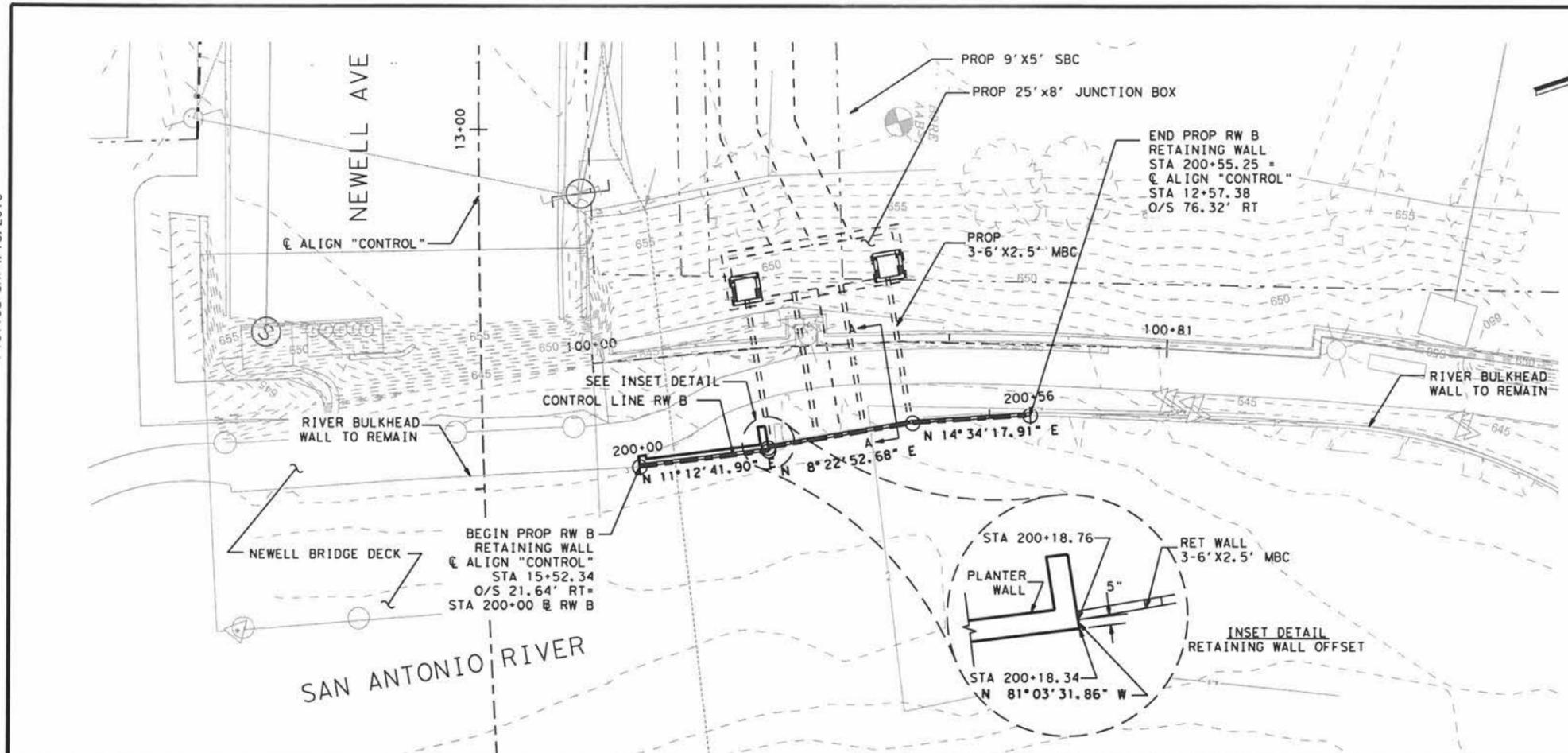
NO.	DATE	REVISION	APP.
1	4/2016	SELECT FILL NOTE	

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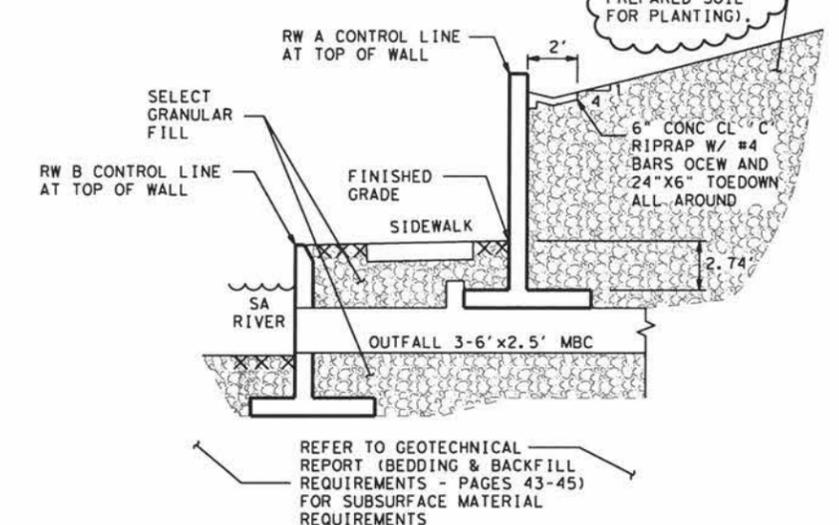
**CITY OF SAN ANTONIO**  
TRANSPORTATION AND CAPITAL IMPROVEMENTS  
MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT  
RETAINING WALL A  
LAYOUT

Pen Tables: Texas\TwoStep\pentable\co.tbl  
Design Filename: 63195\*RET\*WALL\*PLAN\*PROF.dgn

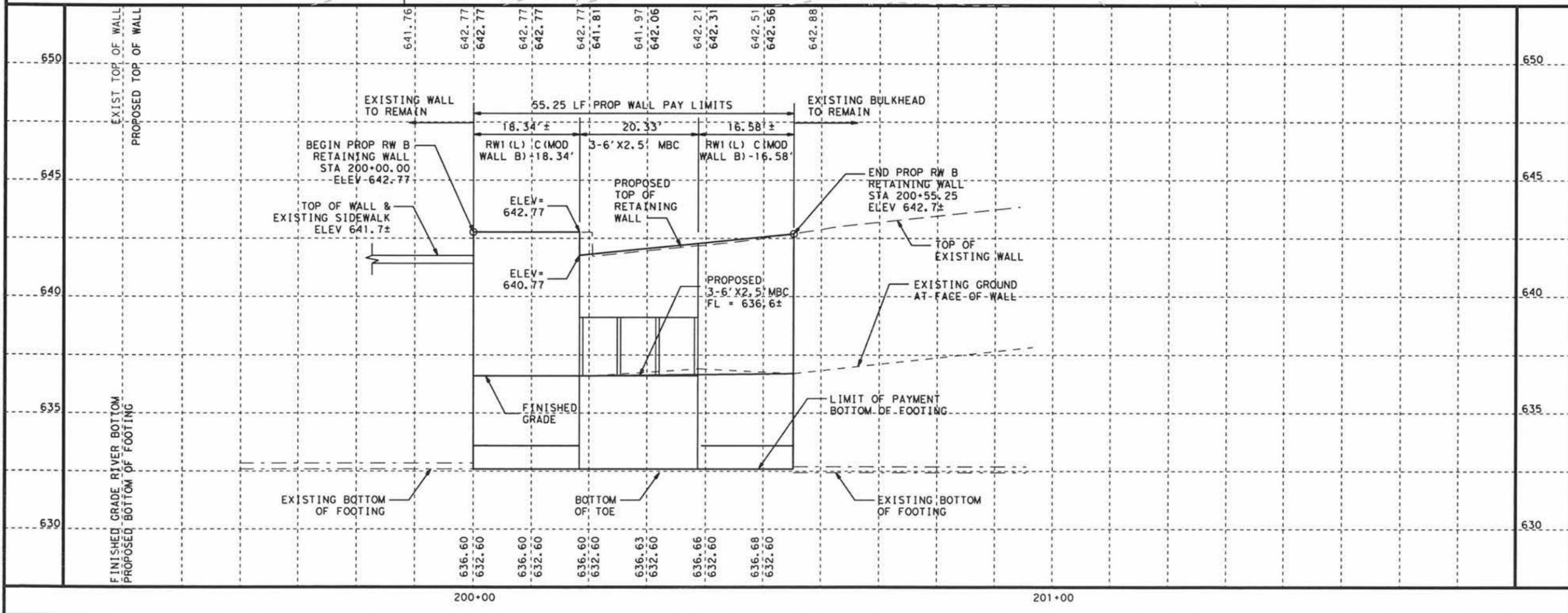
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Plotted on: 4/18/2016



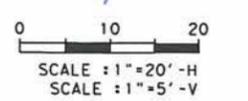
- NOTES:
1. PROPOSED FINISHED GRADE TO MATCH EXISTING GROUND AT LIMITS OF WALL.
  2. ALIGN FACE OF RW A TO MATCH FACE OF EXISTING WALL.
  3. MATCH TOP ELEVATION OF EXISTING SIDEWALK WALL.
  4. REFER TO GRADING PLAN AT RIVER FOR MORE INFORMATION.



SELECT GRANULAR FILL (SEE SHEET LP-01, PLANTING DETAILS FOR LIMITS OF SELECT FILL AS IT RELATES TO PREPARED SOIL FOR PLANTING).



*Daniel De Leon*  
4/15/16



NO.	DATE	REVISION	APP.
1	4/2016	SELECT FILL NOTE	

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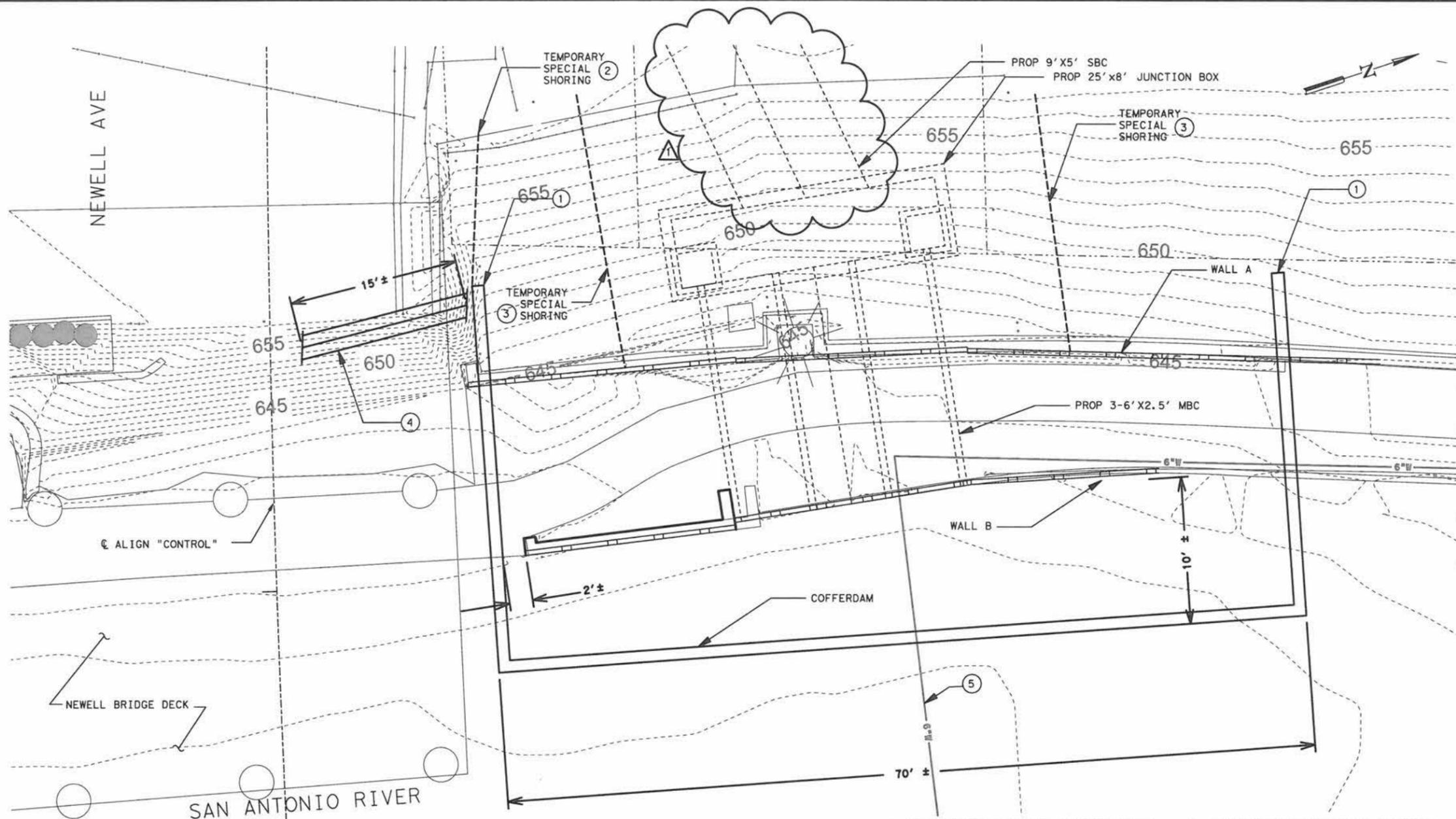
**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**  
**RETAINING WALL B LAYOUT**

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 159

Pen Table: TexasTwoStep\*pentab1e\*co.tbi  
Design File name: 63195\*RET\*WALL\*PLAN\*PROF.dgn

Scale: \$SCALE\$  
 Plotted on: \$TIME\$

Per Title: \$PEN\$  
 Design Filename: 63195\*RET\*WALL\*PLAN\*PROF.dgn



① THE DEPICTED COFFERDAM IS SHOWN PROJECTING INTO THE UPPER SLOPES OF THE SAN ANTONIO RIVER EMBANKMENT ABOVE THE RETAINING WALL. THIS REPRESENTS COFFERDAM PROTECTION UP TO APPROXIMATE ELEVATION 650. THE LEVEL OF PROTECTION PROVIDED DURING CONSTRUCTION SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE BID AS SUCH. NO ADDITIONAL COMPENSATION WILL BE PROVIDED BEYOND WHAT IS INCLUDED IN THE BID. THE POTENTIAL RIVER FLOOD ELEVATIONS ARE PROVIDED BELOW FOR VARIOUS RAIN EVENTS. THESE FLOOD ELEVATIONS DO NOT ACCOUNT FOR ANY BLOCKAGE OF RIVER FLOW BEYOND THE 10 FT OFFSET LINE DEPICTED IN THE PLAN VIEW REPRESENTING THE POTENTIAL COFFERDAM LIMIT.

POTENTIAL RIVER FLOOD ELEVATIONS:  
 5 YEAR EVENT = 648.96  
 10 YEAR EVENT = 650.01  
 25 YEAR EVENT = 652.12

② THE TEMPORARY SPECIAL SHORING SHOWN IN THE PLANS IS FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. TEMPORARY SPECIAL SHORING HAS BEEN INCLUDED FOR PROTECTION OF THE ADJACENT NEWELL AVENUE ROADWAY AND BRIDGE ABUTMENT. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE ADJACENT NEWELL AVENUE BRIDGE AND ROADWAY DURING CONSTRUCTION. THE QUANTITY SHOWN IN THE PLANS HAS BEEN CREATED FOR BIDDING PURPOSES ONLY AND INCLUDES 15 LINEAR FEET OF SHORING THAT EXTENDS TO A DEPTH OF 15 FEET. ANY SHORING NEEDS FOR THE ROADWAY OR BRIDGE BEYOND WHAT IS BID SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM "TEMPORARY SPL SHORING (COFFERDAM)".

**CONSTRUCTION COFFERDAM AND SHORING NOTES:**

1. THE CONTRACTOR SHALL SUBMIT FOR REVIEW ALL DESIGNS AND DRAWINGS, SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS, NECESSARY FOR THE CONSTRUCTION OF A CONSTRUCTION COFFERDAM AND BRIDGE / ROADWAY SHORING.
2. THE COFFERDAM AND SHORING SHOWN IN THE PLANS IS FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. THE CONTRACTOR MAY ELECT TO DEVELOP THE CONCEPT SHOWN OR MAY DEVELOP AN ENTIRELY DIFFERENT COFFERDAM AND SHORING DESIGN, INDEPENDENT OF WHAT IS DEPICTED IN THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT OF THE COFFERDAM AND SHORING CONCEPT, ALL ASSOCIATED DESIGN CALCULATIONS, CREATION OF DRAWINGS AND ALL DETAILS, SUBMITTAL, AND FULL CONSTRUCTION INSTALLATION AND FUTURE REMOVAL OF THE CHOSEN COFFERDAM AND SHORING.
3. THE COFFERDAM SHALL PROVIDE A SAFE AND DRY WORKING ENVIRONMENT FOR CONSTRUCTION OF THE RIVER BULKHEAD WALLS, BOX CULVERTS, JUNCTION BOX, SINGLE BOX CULVERT, AND ANY OTHER ACTIVITIES THAT MAY REQUIRE PROTECTION FROM THE SAN ANTONIO RIVER. THE COFFERDAM AND SHORING SHALL BE DESIGNED IN ACCORDANCE WITH THE MOST CURRENT VERSION OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ANY APPLICABLE OSHA GUIDELINES. THE PROPOSED COFFERDAM AND SHORING CONCEPT SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO DESIGN AND CONSTRUCTION. ALL COMPONENTS OF THE SHORING SYSTEM SHALL BE REMOVED AFTER COMPLETION OF CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE OWNER.

4. THE BID ITEM "TEMPORARY SPL SHORING (COFFERDAM)" SHALL INCLUDE ALL SERVICES NECESSARY TO DESIGN, DETAIL, CONSTRUCT, MAINTAIN, AND REMOVE THE RIVER COFFERDAM, AND SHALL BE BID BASED ON THE CONTRACTORS INTENDED COFFERDAM SOLUTION. THE ITEM "TEMPORARY SPL SHORING (COFFERDAM)" WILL NOT BE MEASURED BUT WILL BE PAID FOR AS LUMP SUM, AND SHALL BE FULL COMPENSATION FOR: ENGINEERING DESIGN SERVICES, DRAWINGS, SUBMITTALS, ANY NECESSARY EXCAVATION, FILL MATERIAL, SITE MODIFICATIONS, SHEET PILING, WALERS, BEAMS, STRUTS, BRACING, DEWATERING, DIVERSION OF WATER, AND ALL APPURTENANCES NECESSARY FOR THE FULL INSTALLATION, OPERATION, AND SUBSEQUENT REMOVAL OF THE COMPLETE FUNCTIONING COFFERDAM SYSTEM, INCLUDING ALL EQUIPMENT, LABOR, MATERIALS, TOOLS, AND INCIDENTALS. NO PAYMENT WILL BE MADE FOR ADDITIONAL TEMPORARY SPECIAL SHORING MADE NECESSARY BY THE SELECTION OF THE CONTRACTOR'S COFFERDAM DESIGN OR A SEQUENCE OF WORK THAT CREATES THE NEED FOR SHORING BEYOND WHAT IS QUANTIFIED IN THE PLANS. THE RIVER BOTTOM, CONCRETE WALLS, SIDEWALK, LANDSCAPING, AND ANY OTHER ITEMS WITHIN AREAS OF THE SITE NOT BEING CONSTRUCTED UNDER THIS CONTRACT SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AFTER REMOVAL OF THE COFFERDAM AT NO ADDITIONAL COST.
5. THE CONTRACTOR SHALL OBTAIN RIVER VESSEL PASSAGE GUIDELINES AND PROTECTION REQUIREMENTS FROM THE CITY OF SAN ANTONIO AND THE SAN ANTONIO RIVER AUTHORITY. THE CONTRACTOR SHALL ENSURE ALL SAFETY AND PROTECTION REQUIREMENTS FOR VESSELS TRAVELING THE RIVER ARE ADHERED TO WHEN DESIGNING AND INSTALLING THE COFFERDAM, AS WELL AS THROUGHOUT CONSTRUCTION. VESSEL SPEED LIMITS, ONE WAY OR TWO WAY VESSEL TRAFFIC, SIGNAGE, BLUNT END IMPACT PROTECTION, AND ALL OTHER APPLICABLE SAFETY CONSIDERATIONS SHALL BE ACCOUNTED FOR BY THE CONTRACTOR.

③ THE TEMPORARY SPECIAL SHORING SHOWN IN THE PLANS IS FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. TEMPORARY SPECIAL SHORING HAS BEEN INCLUDED FOR EXCAVATION AND CONSTRUCTION OF THE JUNCTION BOX AND ADJACENT SEGMENT OF BOX CULVERTS AS DEPICTED IN THE PLAN VIEW. THE QUANTITY SHOWN IN THE PLANS HAS BEEN CREATED FOR BIDDING PURPOSES ONLY AND INCLUDES 25 LINEAR FEET OF SHORING ON EACH SIDE OF THE JUNCTION BOX THAT EACH EXTEND TO A DEPTH OF 23 FEET. ANY SHORING NEEDS FOR THE BOX CULVERTS OR JUNCTION BOX BEYOND WHAT IS BID SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM "TEMPORARY SPL SHORING (COFFERDAM)".

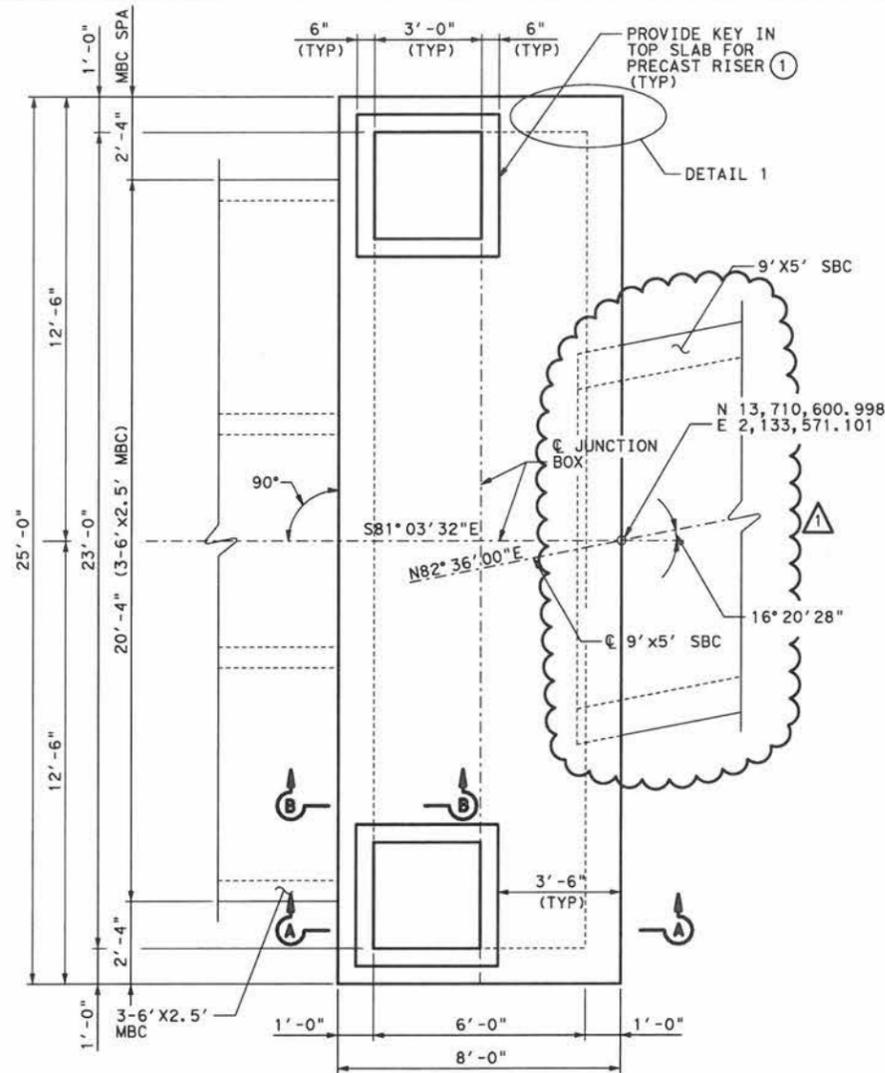
④ SHORING IS NECESSARY TO MAINTAIN THE STABILITY OF THE NEWELL AVENUE BRIDGE ABUTMENT DURING CONSTRUCTION. THE DEPICTED 15 FOOT LENGTH OF POTENTIAL SHOTCRETE OR OTHER MEANS OF SLOPE STABILIZATION HAS BEEN SHOWN FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE ADJACENT NEWELL AVENUE BRIDGE AND ROADWAY DURING CONSTRUCTION. ANY SHORING NECESSARY UNDER THE BRIDGE HAS NOT BEEN INCLUDED AS A BID ITEM AND SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM "TEMPORARY SPL SHORING (COFFERDAM)".

⑤ THE EXISTING 6" IRRIGATION WATERLINE IS IN POTENTIAL CONFLICT WITH THE COFFERDAM INSTALLATION AND WALL/MBC CONSTRUCTION. CONTRACTOR SHALL PROTECT WATER LINE DURING CONSTRUCTION AND PROVIDE FOR RELOCATION OF WATERLINE IF NECESSARY TO ENSURE UNINTERRUPTED SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL DESIGN RELOCATION OF WATERLINE TO PROVIDE RELOCATION DRAWING, SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS, TO THE CITY OF SAN ANTONIO FOR REVIEW. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY INFORMATION ON THE WATER LINE FROM THE CITY OF SAN ANTONIO AND THE SAN ANTONIO RIVER AUTHORITY.

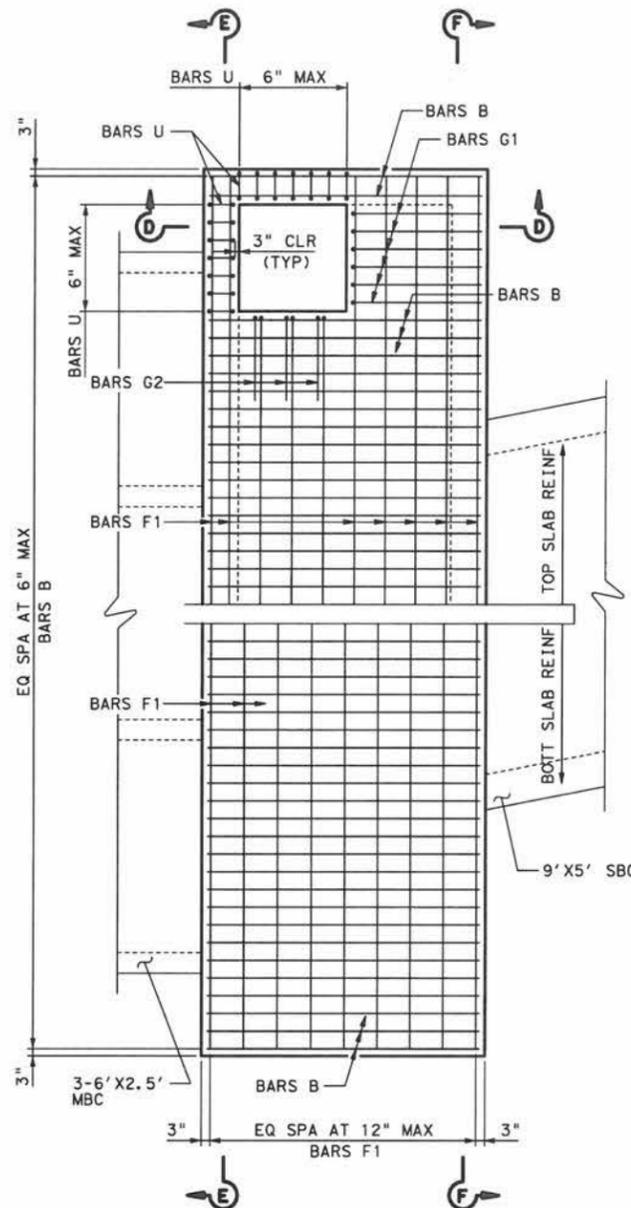
1	4/13/16	AMENDMENT #2	SFK
NO.	DATE	REVISION	APP.
<b>HNTB</b>			
130 East Travis Street, Suite 200 San Antonio, TX 78205 (210)349-2277			
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MCCULLOUGH AVENUE AREA DRAINAGE PROJECT			
RETAINING WALL CONSTRUCTION GUIDANCE			
100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016			
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 161			

Scale: \$SCALE\$  
 Plotted on: \$TIME\$

Pen Table: \$PEN\$  
 Design Filename: JUNCTIONBOX\*1.dgn



**PLAN**  
 SCALE: 1"=5'

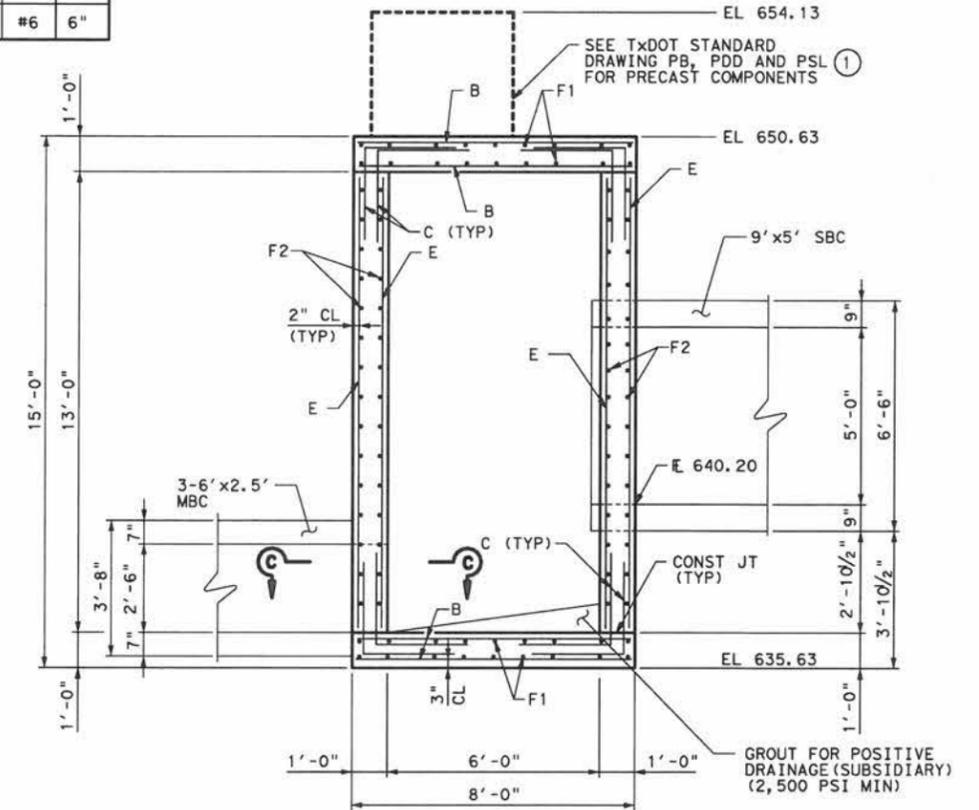


**TYPICAL TOP/BOTTOM SLAB REINFORCING**  
 SCALE: 1"=5'

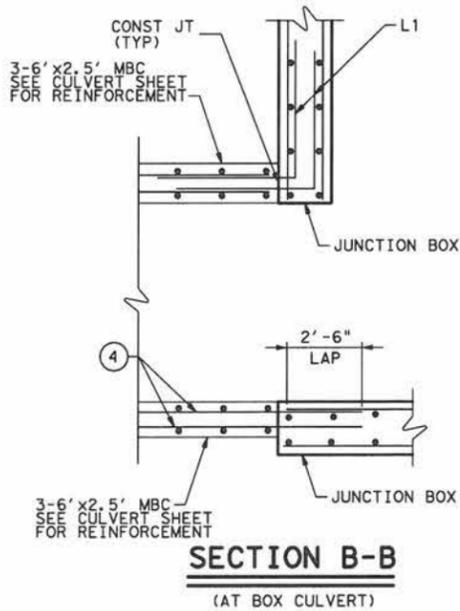
BAR	SIZE	SPA
B	#6	6"
C	#6	6"
E	#6	6"
F1	#5	12"
F2	#5	12"
G1	#6	6"
G2	#5	12"
L1	#5	12"
L2	#5	12"
U	#6	6"

BAR	SIZE	SPA
P1	#6	6"
P2	#6	6"
P3	#5	12"
P4	#5	12"

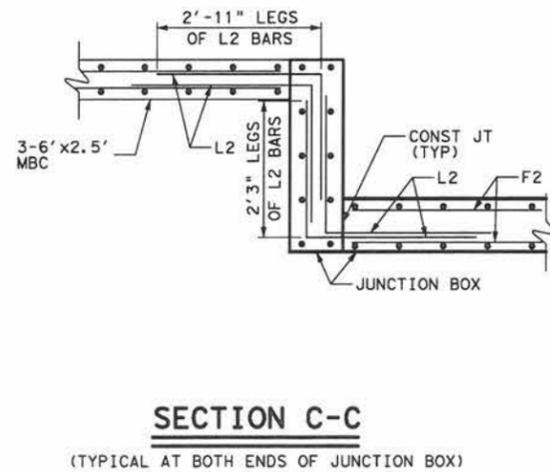
JUNCTION BOX SUMMARY OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
420	6143	CLASS S CONC (JUNCTION BOX)	CY	39.9
465	6070	INLET (COMPL) (PSL) (RC) (3FTX3FT)	EA	2



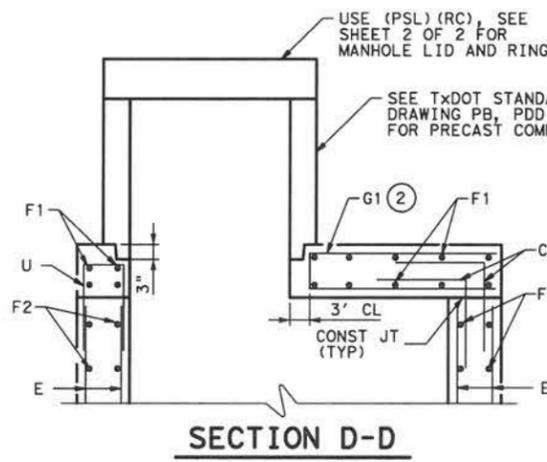
**SECTION A-A**  
 SCALE: 1"=5'  
 (L1 CORNER BARS NOT SHOWN, SEE SHEET 2)



**SECTION B-B**  
 (AT BOX CULVERT)



**SECTION C-C**  
 (TYPICAL AT BOTH ENDS OF JUNCTION BOX)



**SECTION D-D**

**GENERAL NOTES:**

- DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
- DESIGNED TO THE MAXIMUM FILL HEIGHT OF 15 FEET.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- ALL CONCRETE SHALL BE CLASS "S"
- THE USE OF PERMANENT FORMS IS NOT ALLOWED.
- MATCH BARS L1 & L2 WITH BARS F1 & F2.

- USE STANDARD SHEET PDD. REDUCED RISER SIZE RWSxRWL=3'x3', MAX DEPTH=25' TO DETERMINE BSHORT AND BLONG RISER REINFORCING.
- MATCH BARS G1 WITH BARS E AND C.
- MATCH BARS G2 WITH BARS F1.
- EXTEND MBC F2 BARS INTO SLAB OF JUNCTION BOX.



1	4/13/16	AMENDMENT #2	SFK
NO.	DATE	REVISION	APP.

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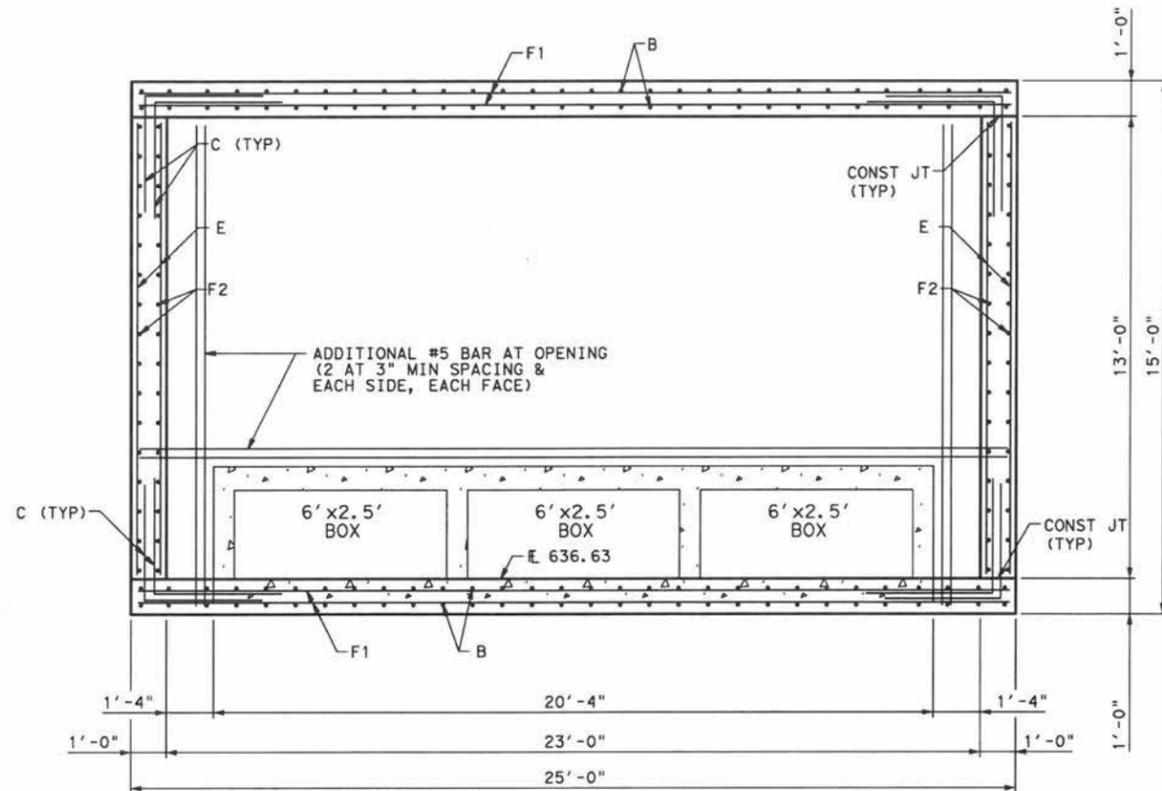
**CITY OF SAN ANTONIO**  
 TRANSPORTATION AND CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**  
**JUNCTION BOX**

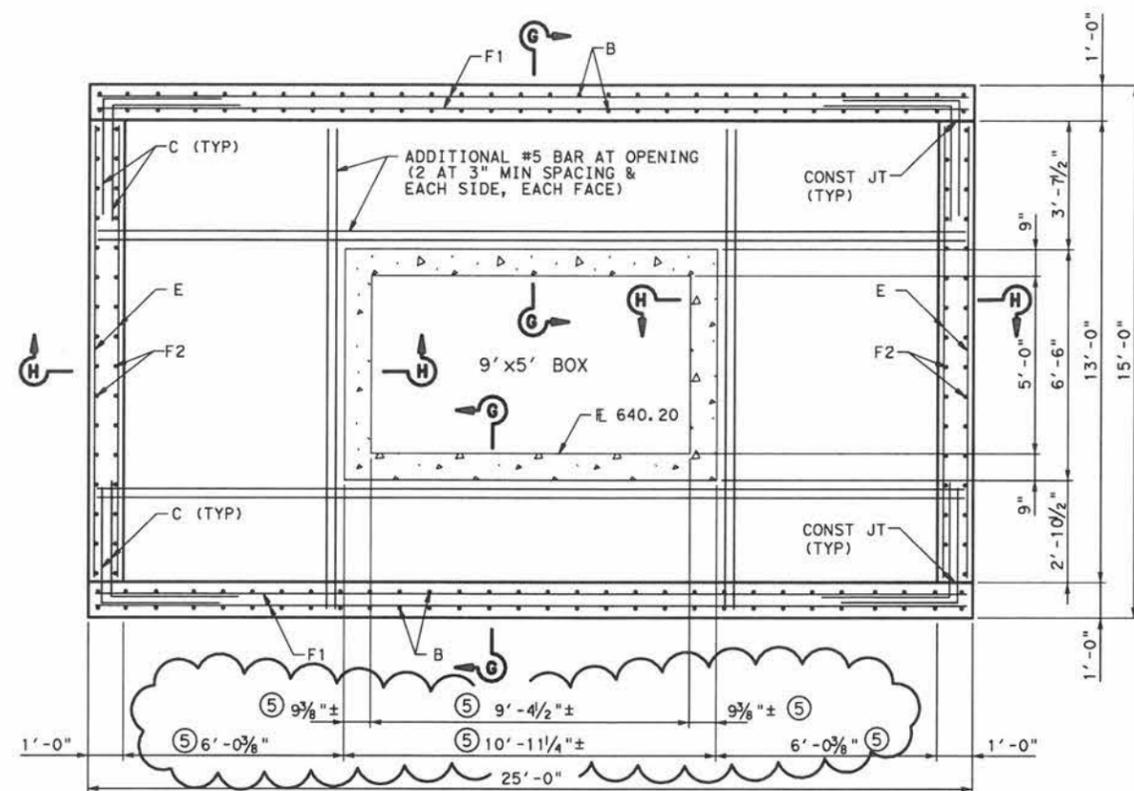
SHEET 1 OF 2

100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016  
 DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 169

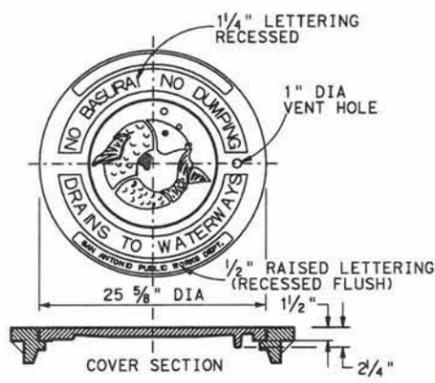
Scale: \$SCALE\$  
 Plotted on: \$TIME\$



**SECTION E-E**  
 SCALE: 1"=5'  
 (CUT AND BEND WALL REINFORCING STEEL TO CLEAR OPENINGS)

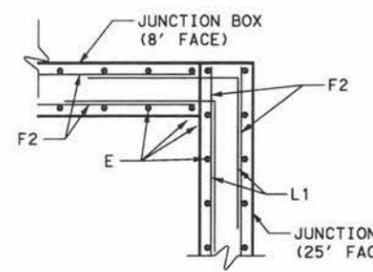


**SECTION F-F**  
 SCALE: 1"=5'  
 ⑤ DIMENSIONS SHOWN ARE AT THE EXTERIOR FACE OF THE JUNCTION BOX AS THE 9'X5' BOX ENTERS THE WALL OF THE JUNCTION BOX. ADJUST CONCRETE DIMENSIONING AND REINFORCING OF THE JUNCTION BOX WALL TO ACCOMMODATE THE SKEW OF THE OPENING REQUIRED FOR THE 9'X5' BOX.

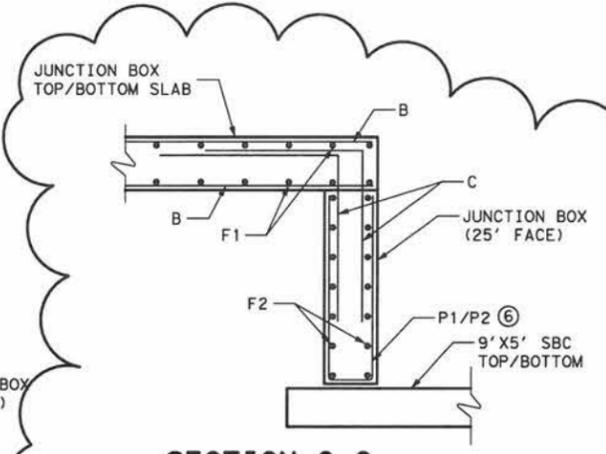


**MANHOLE LID & RING DETAIL**  
 SCALE: NTS

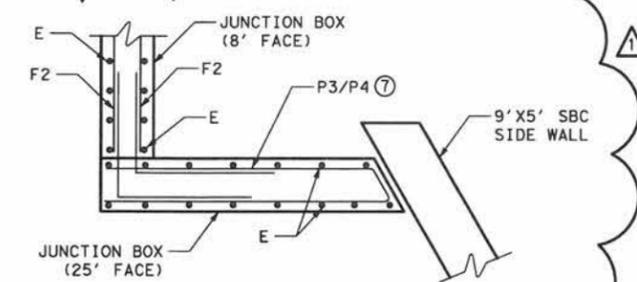
- NOTES FOR MANHOLE LID AND RING:**
1. CASTING NUMBER AND MANUFACTURER'S ID ON LID AND RING.
  2. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
  3. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
  4. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.



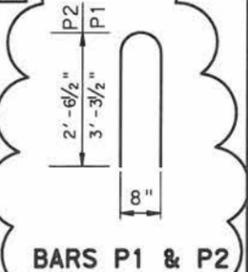
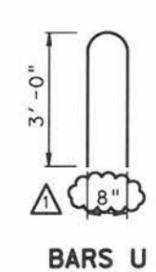
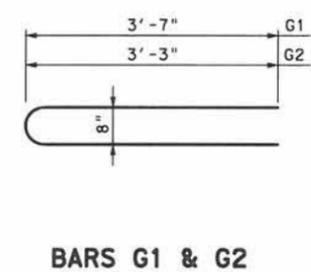
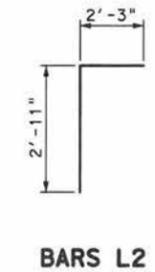
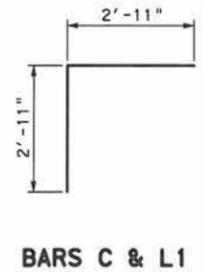
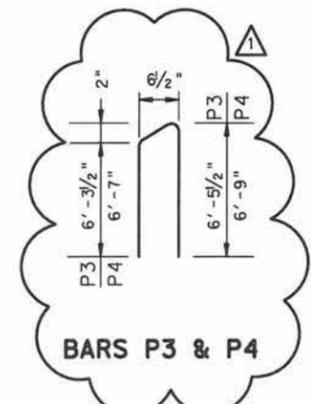
**DETAIL 1**  
 (TYPICAL AT ALL CORNERS)



**SECTION G-G**  
 ⑥ P1 BARS ABOVE TOP OF 9'X5' SBC  
 P2 BARS BELOW BOTTOM OF 9'X5' SBC



**SECTION H-H**  
 (LEFT SIDE SHOWN LOOKING AT SECTION F)  
 ⑦ MIRROR BAR AND DIRECTION OF CONCRETE TAPER FOR OPPOSITE SIDE OF 9'X5' SBC & PROVIDE P4 BAR AT OPPOSITE SIDE



1	4/13/16	AMENDMENT #2	SFK
NO.	DATE	REVISION	APP.
<b>HNTB</b>			
130 East Travis Street, Suite 200 San Antonio, TX 78205 (210)349-2277			
CITY OF SAN ANTONIO TRANSPORTATION AND CAPITAL IMPROVEMENTS			
MCCULLOUGH AVENUE AREA DRAINAGE PROJECT JUNCTION BOX			
SHEET 2 OF 2			
100% SUBMITTAL PROJECT NO. 40-00327 DATE: MAR 2016			
DRAWN: DAG DESIGN: EG CHECK: AR SHEET NO. 170			

Pen Table: \$PEN\$  
 Design Filename: JUNCTION-BOX.v2.dgn

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

**I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402**

Texas Pollutant Discharge Elimination System (TPDES) TXR 150000: Stormwater Discharge Permit or Construction General Permit (CGP) required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 540.

No Action Required     Required Action

Action No.

- Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000.
- Comply with the Storm Water Pollution Prevention Plan (SW3P) and revise when necessary to control pollution or required by the Engineer.
- Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and Texas Commission on Environmental Quality (TCEQ), Environmental Protection Agency (EPA) or other inspectors.
- When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, Contractor shall submit Notice of Intent (NOI) to TCEQ and the Engineer.
- NOI required:  Yes     No

Note: If amount of soil disturbance changes, permit requirements may change.

**II. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**

NPDES required for projects disturbing 1 or more acres of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land.

No Action Required     Required Action

- Prevent stormwater pollution by controlling erosion and sedimentation in accordance with NPDES.
- Comply with the Storm Water Pollution Prevention Plan (SW3P) and revise when necessary to control pollution or required by the Engineer.
- A notice must be posted which should include the NPDES Permit tracking number contact name and phone number for obtaining additional project information.
- EPA NOI required:  Yes     No

**III. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404**

US Army Corps of Engineers (USACE) Permit required for filling, dredging, excavating or other work in any potential USACE jurisdictional water, such as, rivers, creeks, streams, or wetlands.

The Contractor shall adhere to all of the terms and conditions associated with the following permit(s):

- No Permit Required
- Nationwide Permit (NWP) 14 - Pre-construction Notice (PCN) not Required
- Nationwide Permit 14 - PCN Required
- Individual 404 Permit Required
- Other Nationwide Permit Required: \_\_\_\_\_ NWP# 12

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices (BMPs) planned to control erosion, sedimentation and post-project total suspended solids (TSS).

- Refer to Care of Water Specifications for all activities related to the diversion of waters within the San Antonio River.

401 Best Management Practices: (Not applicable if no USACE permit)

Erosion	Sedimentation	Post-Construction TSS
<input type="checkbox"/> Temporary Vegetation	<input checked="" type="checkbox"/> Silt Fence	<input checked="" type="checkbox"/> Vegetative Filter Strips
<input checked="" type="checkbox"/> Blankets/Matting	<input type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input checked="" type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> Sedimentation Chambers
		<input type="checkbox"/> Grassy Swales

**IV. CULTURAL RESOURCES**

Cultural resources fall under the Antiquities Code of Texas and/or the National Historic Preservation Act, as amended in 1966. If a previously unidentified archeological site is encountered during construction work, activities should be immediately stopped in the vicinity and the City Archeologist (210-207-7306) notified and/or the SHPO.

No Action Required     Required Action

Action No.

- Construction within and west of the intersection of Elmira and N. St. Mary's will require archeology monitoring due to the potential presence of an acequia.

**V. VEGETATION RESOURCES**

Preserve native vegetation to the extent practical.

No Action Required     Required Action

Action No.

- Ensure that a tree permit is in place for this project.
- Follow the tree preservation/mitigation plan provided in the design plan set. If there are any questions or concerns, please contact the City Arborist at 210-207-0278, before any work begins.

**VI. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.**

No Action Required     Required Action

Action No.

- MIGRATORY BIRD NESTS: Schedule construction activities as needed to meet the following requirements:
  - Do not remove or destroy any active migratory bird nests (nests containing eggs and/or flightless birds) at any time of year. If there are any active nests, they shall not be removed until the nests become inactive.
  - On/in structures, if there are any active nests, they shall not be removed until all nests become inactive. After inactive nests are removed and/or before nest activity begins, deterrent materials may be applied to the structures to prevent future nest building.
- 
- 
- 

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the COSA Inspector immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediated area, and contact the COSA Inspector immediately.

**VII. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES**

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the COSA Inspector immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the COSA Inspector if any of the following are detected:

- \* Dead or distressed vegetation (not identified as normal)
- \* Trash piles, drums, canister, barrels, etc.
- \* Undesirable smells or odors
- \* Evidence of leaching or seepage of substances

Hazardous Materials or Contamination Issues Specific to this Project:

No Action Required     Required Action

Action No.

- 
- 
- 

Does the project involve the demolition of a span bridge?

Yes     No (No further action required)

If "Yes", a pre-demolition notification must be submitted to the Texas Department of State Health Services.

**VIII. OTHER ENVIRONMENTAL ISSUES**

(includes regional issues such as Edwards Aquifer District, etc.)

No Action Required     Required Action

Action No.

- Texas Parks and Wildlife Code Title 2 Chapter 12: For any dewatering event that may result in the take, death, or injury to Texas aquatic resources (e.g., mussels, fish), an Aquatic Resource Relocation Plan must be in place and executed by a permitted biologist under the direction of the COSA Environmental Management Division (EMD). The Contractor is to coordinate all dewatering activities with EMD to ensure compliance. Any fees and/or fines resulting from a violation of the law due to lack of coordination by the Contractor will be reimbursed to the City by the Contractor.

McCullough Avenue Area Drainage  
January 2016

ENVIRONMENTAL PERMITS,  
ISSUES AND COMMITMENTS  
EPIC

FILE: epic_2015-10-09_SAT.dgn	DN: TxDOT	CK: TxDOT	DW: BW	CK: GAG
© TxDOT OCTOBER 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				175

Scale: \$SCALE\$  
 Plotted on: \$TIME\$

**LEGEND**

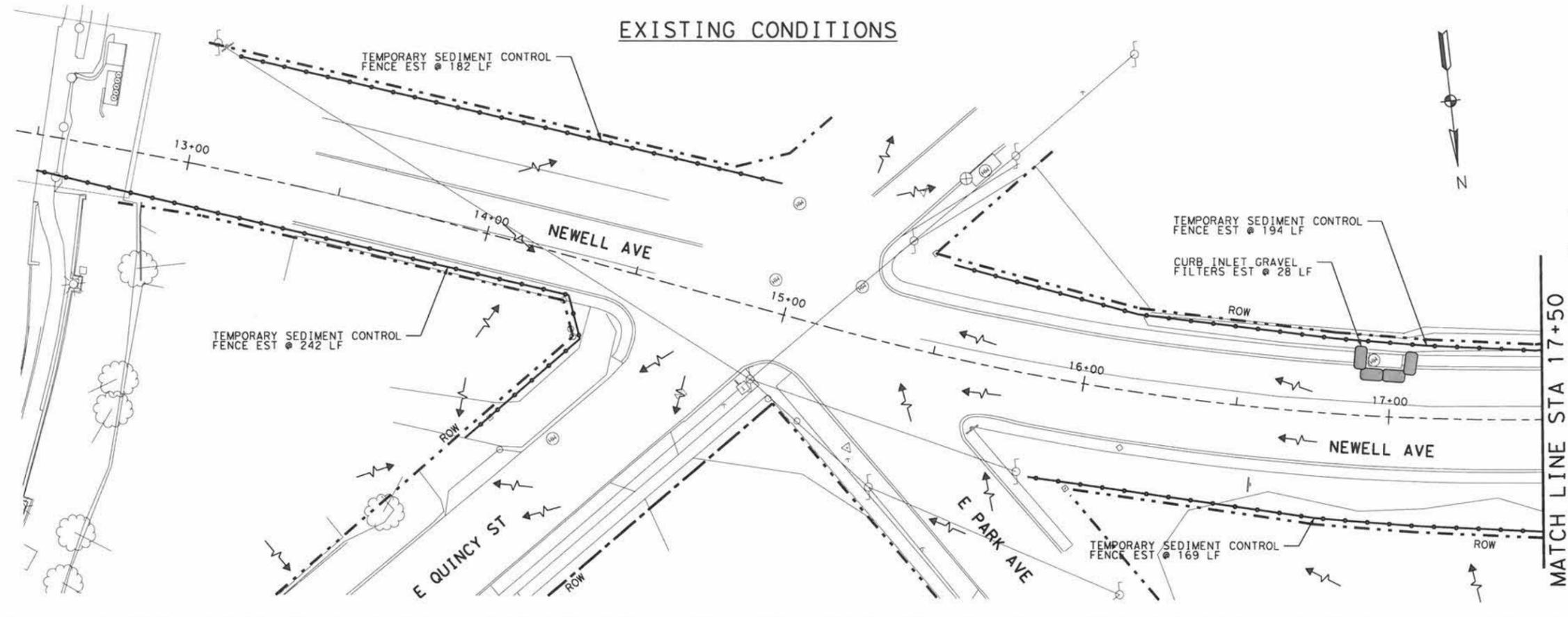
-  CURB INLET GRAVEL FILTERS
-  RFD - ROCK FILTER DAMS
-  FLOW ARROW
-  TEMPORARY SEDIMENT CONTROL FENCE

**NOTES:**

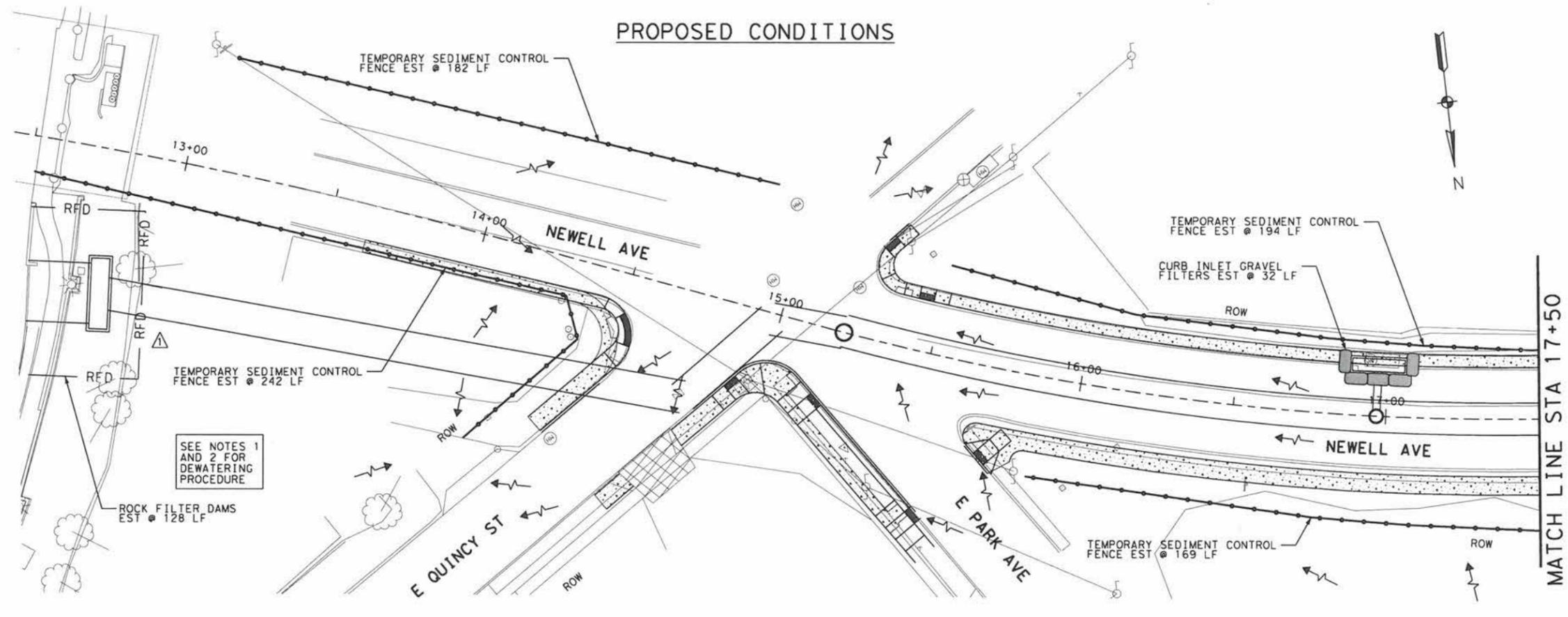
1. PLEASE SEE SECTION VIII OF EPIC SHEET CONCERNING DEWATERING.
2. CONTRACTOR SHALL TREAT WATER AND PROVIDE DEWATERING PLAN TO SAN ANTONIO RIVER AUTHORITY FOR APPROVAL (SARA). SARA CONTACT IS MR. BRIAN WRIGHT, HIS PHONE NUMBER IS (210) 415-8587

PHASE 1

**EXISTING CONDITIONS**



**PROPOSED CONDITIONS**



SEE NOTES 1 AND 2 FOR DEWATERING PROCEDURE



0 10 20 40  
 SCALE : 1" = 40'

SHEET 1 OF 8

NO.	DATE	REVISION	APP.
1	4/6/16	ADDED ROCK FILTER DAMS	CA

**GD**  
 GONZALEZ DE LA GARZA  
 115 E. TRAVIS ST., SUITE 800  
 SAN ANTONIO, TX 78205  
 P. 210.208.9400 F. 210.208.9401  
 TBP# No. F-10015  
 TBP# No. 10193922

**HNTB**  
 130 East Travis Street, Suite 200  
 San Antonio, TX 78205  
 (210) 349-2277  
 TBP# FIRM REGISTRATION NO. 420 WWW.HNTB.COM

**CITY OF SAN ANTONIO**  
 TRANSPORTATION & CAPITAL IMPROVEMENTS

**MCCULLOUGH AVENUE AREA DRAINAGE PROJECT**  
 SW3P

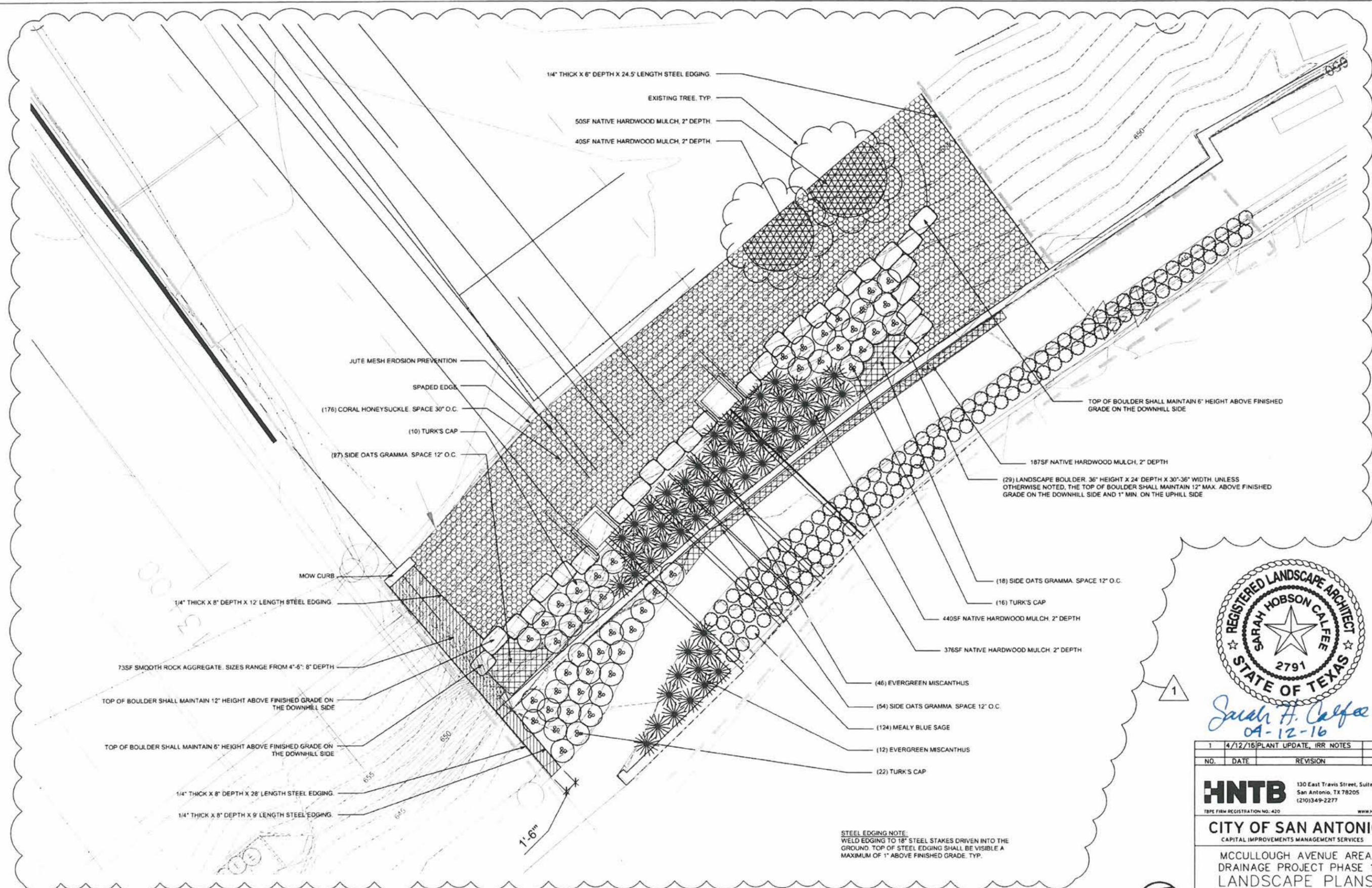
STA 13+00 TO STA 17+50

100% SUBMITTAL	PROJECT NO. 12-5587-00	DATE: 4/6/16
DRAWN: HH	DESIGN: HH	CHECK: CA
		SHEET NO. 177

Pen Table: \$PEN\$  
 Design Filename: ... For Subs \63195\SW3P\01.dgn

Scale: Plotted on: 4/12/2016 9:56:19 AM

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*Sarah H. Calfee*  
04-12-16

NO.	DATE	REVISION	APP.
1	4/12/16	PLANT UPDATE, IRR NOTES	

**HNTB**  
TYPE FIRM REGISTRATION NO. 420  
130 East Travis Street, Suite 200  
San Antonio, TX 78205  
(210) 349-2277  
WWW.HNTB.COM

**CITY OF SAN ANTONIO**  
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES

MCCULLOUGH AVENUE AREA  
DRAINAGE PROJECT PHASE 1  
LANDSCAPE PLANS  
LP-08

100% SUBMITTAL	PROJECT NO. 40-00327	DATE: APR 2016
DRAWN: SHC	DESIGN: SHC	CHECK: SBL
		SHEET NO. 195



PLANTING PLAN AT OUTFALL

SCALE: 1" = 10'

### LANDSCAPE PLANTING NOTES

- COMPLETE ALL LANDSCAPE PLANTING AND RELATED EARTHWORK INCLUDING ALL PRODUCTS, EQUIPMENT AND LABOR, FOR THE LANDSCAPE AREAS SHOWN ON THE DRAWING AND DESCRIBED IN THE SPECIFICATIONS.
- INFORMATION PROVIDED ON THIS PLAN IS GENERAL IN NATURE. DIMENSIONS, LOCATIONS, AND AREAS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO BIDDING & INSTALLATION.
- QUANTITIES SHOWN FOR PLANT MATERIALS ARE APPROXIMATE. ACTUAL INSTALLED QUANTITIES OF PLANT MATERIALS MAY VARY FROM THE PLAN AND SHOULD BE FIELD DETERMINED ACCORDING TO THE GIVEN SPACING AND FIELD CONDITIONS. DISCREPANCIES BETWEEN FIELD CONDITIONS INCLUDING SITE GRADING AND THE PLAN WHICH LIMIT THE CONTRACTOR SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- BY BIDDING, THE CONTRACTOR ACKNOWLEDGES THAT HE/SHE HAS SATISFIED HIMSELF/HERSELF AS TO THE NATURE AND LOCATION OF THE WORK AND TO THE QUALITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES INsofar AS THIS DATA IS REASONABLY ASCERTAINABLE FROM AN INSPECTION OF THE SITE. ANY FAILURE BY THE CONTRACTOR TO ACQUAINT HIMSELF/HERSELF WITH THE AVAILABLE INFORMATION WILL NOT RELIEVE HIM/HER FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK AS DESCRIBED.
- INSTALLATION OF ALL LANDSCAPING SHALL BE COORDINATED WITH THE INSTALLATION OF RELATED SITE WORK AND GRADING.
- UNLESS SPECIFICALLY NOTED, INSTALL ALL MASSED PLANTING UTILIZING EQUILATERAL TRIANGULAR SPACING.
- EVENLY APPLY THREE (3) INCHES OF MULCH TO ALL TREES AND TWO (2) INCHES OF MULCH TO ALL CONTINUOUS PLANTING BEDS. MULCH SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
- SUBSTITUTIONS OF PLANT SPECIES, SIZES, OR OTHER SPECIFIED MATERIALS SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT.
- PLANT MATERIAL AND LAYOUT SHALL BE APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL IDENTIFICATION TAGS PROVIDED BY GROWERS AND PLACED ON TREES AND SHRUBS SHALL REMAIN ON THE PLANTS THROUGH THE PUNCH-LIST INSPECTION. TAGS SHALL BE REMOVED PRIOR TO FINAL ACCEPTANCE, OR UPON REQUEST OF THE PROJECT LANDSCAPE ARCHITECT.
- HYDROMULCH PER CITY OF SAN ANTONIO SPECIFICATIONS SHALL BE APPLIED TO ALL CONSTRUCTION-DAMAGED GROUND SURFACES NOT OTHERWISE PLANTED. CONTRACTOR SHALL REVIEW RELATED CONSTRUCTION DRAWINGS FOR LIMITS OF CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH OTHER SITE CONTRACTORS TO DETERMINE ACTUAL AREAS OF SEEDING REQUIRED, INCLUDING AREAS DISTURBED BY UTILITY EXTENSIONS.
- LIVING EARTH TECHNOLOGIES MIX, OR APPROVED EQUAL, SHALL BE USED FOR PLANTING BACKFILL MIXTURES.
- CONTRACT SHALL MAINTAIN ALL LANDSCAPE AREAS AND PLANT MATERIALS IN A VIGOROUS AND HEALTHY CONDITION, FREE FROM DISEASES, PEST WEEDS, AND LITTER. THIS MAINTENANCE SHALL INCLUDE WEEDING, WATERING, FERTILIZATION, PRUNING, MOWING, EDGING, MULCHING OR OTHER NEEDED MAINTENANCE IN ACCORDANCE WITH GENERALLY ACCEPTED HORTICULTURAL PRACTICES UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE PROJECT LANDSCAPE ARCHITECT.
- ALL INSTALLED TREES, INCLUDING THOSE INSTALL IN FILTERRA BOXES, SHALL BE IRRIGATED WITH SLOW RELEASE WATERING BAGS FOR TREES. THE CONTRACTOR SHALL MAINTAIN THE FULL OPERATION OF THESE BAGS PER THE MANUFACTURER'S SPECIFICATIONS WEEKLY UNTIL THE END OF THE ONE-YEAR WARRANTY. CONTRACTOR SHALL PROVIDE A SCHEDULE AND METHOD OF WATERING THE TREES TO THE CITY FOR THE PROJECT.
- ALL TEXAS REDBUDS INSTALLED IN FILTERRA BOXES SHALL BE PLANTED PER CONTECH'S SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY THAT ALL TREES PLANTED ON THIS PROJECT MEET CITY AND STATE REQUIREMENTS FOR CLEARANCES IN RELATION TO SIDEWALKS.
- 3" DEPTH NATIVE HARDWOOD MULCH AND PREPARED SOIL SHALL BE SUBSIDIARY TO THE COST OF TREES AND HAVE NOT BEEN QUANTIFIED IN THIS DOCUMENT.
- FOR ALL NEW TREE INSTALLATIONS: THE MINIMUM HEIGHT OF THE LOWEST BRANCH FROM ADJACENT PEDESTRIAN PATHS, OR THE HEIGHT TO WHICH THE TRUNK SHALL BE FREE OF BRANCHES IS 80". THE TREE SHALL BEAR A RELATIONSHIP TO THE SIZE AND KIND OF TREE SO THAT THE CROWN OF THE TREE IS IN GOOD BALANCE WITH THE TRUNK.
- TREE PLANTING AND MAINTENANCE: ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED. TREES THAT DIE WITHIN TWELVE MONTHS SHALL BE REPLACED WITH A TREE OF COMPARABLE SIZE AND SPECIES. REGARDING REPLACEMENT OF PRESERVED TREES, SIGNIFICANT TREES SHALL BE REPLACED AT A 1:1 RATIO (OR INCH-FOR-INCH) AND HERITAGE TREES SHALL BE REPLACED AT A 3:1 RATIO (OR THREE-TO-ONE INCHES).

### PLANT LIST

SYM.	QUANT.	COMMON NAME	SCIENTIFIC NAME	SIZE
	2	CEDAR ELM	ULMUS CRASSIFOLIA	65 GAL., 4" CAL.
	5	MEXICAN WHITE OAK	QUERCUS POLYMORPHA	65 GAL., 4" CAL.
	38	TEXAS RED OAK	QUERCUS BUCKLEYI	65 GAL., 4" CAL.
	24	TEXAS REDBUD	CERCIS CANADENSIS VAR. TEXENSIS	95 GAL., 4" CAL.
	58	EVERGREEN MISCANTHUS	MISCANTHUS TRANSMORRISONENSIS	5 GAL.
	48	TURK'S CAP	MALVAVISCUS ARBOREUS	1 GAL.
	124	MEALY BLUE SAGE 'VICTORIA BLUE'	SALVIA FARANACEA 'VICTORIA BLUE'	1 GAL.
	99	SIDEOATS GRAMA	BOUTELOUA CURTIPENDULA	4" POT
	176	CORAL HONEYSUCKLE	LONICERA SEMPERVIRENS	4" POT
	73SF	SMOOTH ROCK AGGREGATE. SIZES RANGE FROM 4"-6"		8" DEPTH
	13CY	MULCH	NATIVE HARDWOOD MULCH, 2" DEPTH	
	25CY	LANDSCAPE SOIL MIX (PREPARED SOIL)	4" DEPTH + ROTOTILL	

265.7" OF TREE MITIGATION NEEDED. 276" OF TREE MITIGATION PROVIDED.

### IRRIGATION NOTES

- THE LANDSCAPE PLANTING AT THE OUTFALL (SEE SHEET LP-08) SHALL BE IRRIGATED WITH THE IRRIGATION SYSTEM THAT EXISTS PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL REMOVE THE EXISTING IRRIGATION SYSTEM FROM WITHIN THE LIMITS OF CONSTRUCTION IN A MANNER THAT DOES NOT PREVENT THE IRRIGATION SYSTEM FROM SUCCESSFULLY IRRIGATING THE LANDSCAPE AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NEEDED PERMITS FOR IRRIGATION MODIFICATION AND INSTALLATION.
- LANDSCAPE IRRIGATION SHALL BE REPLACED TO PRE-EXISTING CONDITION OR BETTER CONDITION AND FUNCTION. SARA WPO STAFF SHALL WITNESS AND APPROVE OF INSTALLATION.
- THE EXISTING IRRIGATION MAIN SHALL REMAIN IN SERVICE THROUGHOUT THE PROJECT.
- CONTRACTOR TO RELOCATE EXISTING 6" IRRIGATION MAIN AS PART OF THE SAN ANTONIO RIVER BULKHEAD, SIDEWALK WALL, STORM DRAIN OUTFALL WORK.
- CONTRACTOR TO PROVIDE IRRIGATION PLAN DRAWINGS, SIGNED AND SEALED BY A LICENSED IRRIGATOR IN THE STATE OF TEXAS TO THE CITY OF SAN ANTONIO, AND THE SAN ANTONIO RIVER AUTHORITY (SARA) FOR ACCEPTANCE, PRIOR TO RELOCATION.
- CONTRACTOR TO COORDINATE WITH MR. BRIAN WRIGHT (SARA) FOR THIS TEMPORARY DECOMMISSIONING AND RELOCATION OF 6" IRRIGATION MAIN AND THE SHUTDOWN OF THE WEST RIVER BANK IRRIGATION SYSTEM. MR. WRIGHT'S PHONE NUMBER IS (210) 415-8587.

1



*Sarah Hobson Caffee*  
04-12-16

1	4/12/16	PLANT UPDATE, IRR NOTES	
NO.	DATE	REVISION	APP.
 130 East Travis Street, Suite 200 San Antonio, TX 78205 (210) 349-2277 <small>TYPE FIRM REGISTRATION NO. 420 WWW.HNTB.COM</small>			
<b>CITY OF SAN ANTONIO</b> CAPITAL IMPROVEMENTS MANAGEMENT SERVICES			
MCCULLOUGH AVENUE AREA DRAINAGE PROJECT PHASE 1 LANDSCAPE DETAILS LP-09			
100% SUBMITTAL	PROJECT NO: 40-00327	DATE: APR 2016	
DRAWN: SHC	DESIGN: SHC	CHECK: SBL	SHEET NO. 196

# Civic Improvement Project

## Contract Exhibit GAS-6

### General Notes

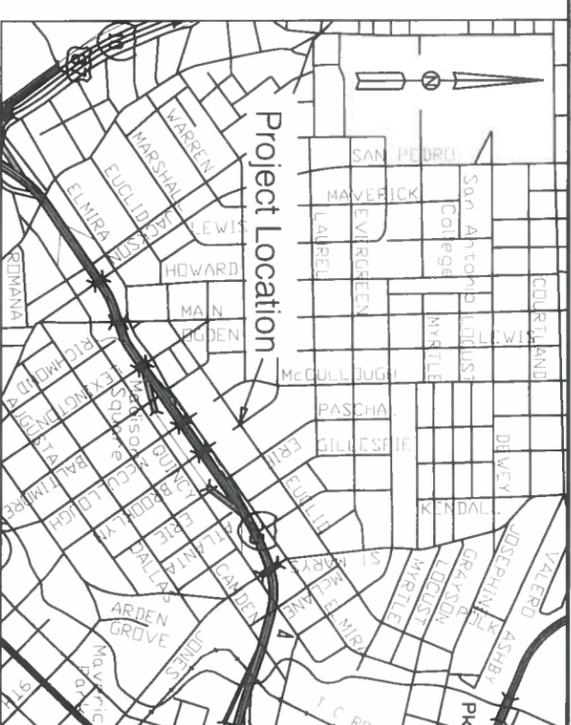
1. All proposed gas mains are to be installed at 5'-0" of cover unless otherwise noted on the sketch, indicated on the Location Data Table, or as directed by the CPS Inspector or Field Representative. All proposed gas services are to be installed at the elevations indicated on the Location Data Table or as directed by the CPS Inspector or Field Representative.
2. All services labeled with an "R" are to be rerun from main to meter and services labeled with a "R1" are to be rerun from main to 1' inside the property line. From main to 1' inside the property line, the services are to be installed at the elevation indicated on the Location Data Table. For services labeled with a "T", the existing service is to be tied over to the new main and services labeled with an "A" are to be abandoned.
3. Gas main is to be abandoned in sections no longer than 300 feet. Each section is to be purged of gas with compressed air, and then the ends are to be sealed with concrete. All abandoned services are to be plugged. All valve boxes on abandoned mains are to be removed.
4. If the general contractor requires temporary tie-ins that are not shown on the CPS Energy sketch due to project phasing or to accommodate this project in any way, this work will be done at the general contractor's expense. General Contractor will also be responsible for all costs associated with power pole bracing whenever bracing is required for the installation of proposed gas facilities.
5. The locations of underground utilities indicated on the job sketch are taken from the best records available and are not guaranteed to be accurate. Foreman shall verify location and depth of all existing utilities, whether shown on the plans or not, and shall be responsible for the protection of existing utilities during construction.
6. Gas valves and underground gas facility access points should remain accessible at all times. Contractor must notify Mike Denning with CPS Energy at (210) 353-2822 at least 48 hours prior to construction in order to adjust existing valve covers or access points within the proposed area of construction.
7. 48 hours before excavating, notify One-Call at 1-800-545-6005. This number should notify all utilities of locates. For Emergency gas locates call 210-353-HELP.
8. In accordance with the Texas Administrative Code Title 16, Part 1, Ch. 3 Rule 3.30 and in compliance with the Clean Water Act, 33 U.S.C. 1251, for projects that will disturb 1 or more acres of land or will disturb less than 1 acre of land but is part of a common plan of development that will ultimately disturb 1 or more acres the General Contractor is responsible for submitting the Notice of Intent (NOI) through the Electronic Notice of Intent Online System (ENOI) at the following web address: [www.epa.gov/npsdes/stormwater/cgpenoi](http://www.epa.gov/npsdes/stormwater/cgpenoi). The General Contractor will need to ensure Sub-Contractor compliance under EPA Construction General Permit requirements. NOI must be certified 14 days prior to earth disturbing activities, in accordance with National Pollutant Discharge Elimination System (NPDES) EPA Construction General Permit.
9. All gas facilities will require proper connection for cathodic protection and locating purposes as indicated by CPS. Call Corrosion Control at 353-3237 prior to installing, adjusting, or abandoning gas lines and before connecting or disconnecting wires to any CP1LB.
10. All new polyethylene gas services and mains are to be joined by butt fusion. Compression couplings must not be used on new gas line construction.
11. TRENCH EXCAVATION PROTECTION: Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, 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 Contract Documents. The Contractor's plans shall provide for adequate trench safety systems that comply with, as a minimum, OSHA standards for trench safety consultant shall develop and implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

### Service Insertion Notes

1. Rerunning of services shall be done as designated (see General Note Number 2).
2. Insert 1" & 1 1/4" steel residential services with anodeless polyethylene (PE) as follows:
  - a. Run 1" PE pipe from main to one foot inside the property line.
  - b. Insert 1/2" PE pipe from one foot inside the property line to the pigtail of an anodeless riser.
  - c. The 1/2" PE insertion shall not exceed 100 feet in length.
3. The minimum service size to a commercial property shall be 1.25"
4. Steel risers are to be replaced with anodeless risers of equal size.
5. Insertion shall not be used:
  - a. On services 1-1/2" or larger.
  - b. On services to a manifold that serves, or has the potential to serve, more than one meter.
  - c. On services requiring a 30 Lt. meter or larger.
6. Any variance from the above standards shall be approved by Gas Engineering.

Construction Points	Install	Abandon			
From	To	Pipe Size	Pipe Size	Length	Length
	2P	2231'			
	4P	1340'			
	8P	290'			
	Total 2P			2116'	
	Total 4P			1340'	
	Total 8P			290'	

Legend	
—	Center Line
—	Existing Property Line
—	Proposed Property Line
—	Easement Line
- - -	Existing Gas Service
- - -	Existing Gas Main
- - -	Install Gas Service
- - -	Install Gas Main
- - -	Abandon Gas
- - -	Cable TV
- - -	Telephone
- - -	Sanitary Sewer
- - -	Proposed Drainage
- - -	Existing Drainage
- - -	Electric
- - -	Water



NTS  
Location Map

<b>Pressure Test</b>		<b>Construction</b>	
Minimum Test	90 PSIG	Contractor	
Tested To	PSIG	Center	
Test Duration		By	
By		Start Date	
Date		Com. Date	
		CPS Inspector	
		No.	
		Drawing Revision	
		0	Planning Completed
		Date	04-06-16
		Checked By:	
		Date Approved	4/19/16
		Approved By:	
		Map Quadrants	X=2131791 Y=13708431
		162-584 164-584	
		Project No.	G-0274
		Job Title	
		Designed By:	Michael Guerra, PE
		Phone: 210-353-2354	
		McCullough Avenue	
		CPS ENERGY	
		P.O. BOX 1771 SAN ANTONIO, TX 78296	
		Job No.	1953965



All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6

POINT SPAN		PIPE PRINT LINE DATA (EXAMPLE SHOWN)	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	
to	" IPS DR	GAS PE3408PE100 CEE ASTM D2513	

Example: 1 to 2 2" IPS DR11 DRISCOPE PIPE 8100 GAS PE3408PE100 CEE ASTM D2513 WTO15 R NR 0356 A1-043 072706 COIL 0152



No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext. 2354	Job Title	Job No.
0	Planning Completed	04-01-16	<i>[Signature]</i>	4/19/16	Michael Guerra		McCullough Avenue	1953965
			Approved By:	Date Approved	Map Quadrant		CPS ENERGY	
			<i>[Signature]</i>	4/19/16	162 - 584		P.O. BOX 1771	
					2131791 13708431		SAN ANTONIO, TX 78296	

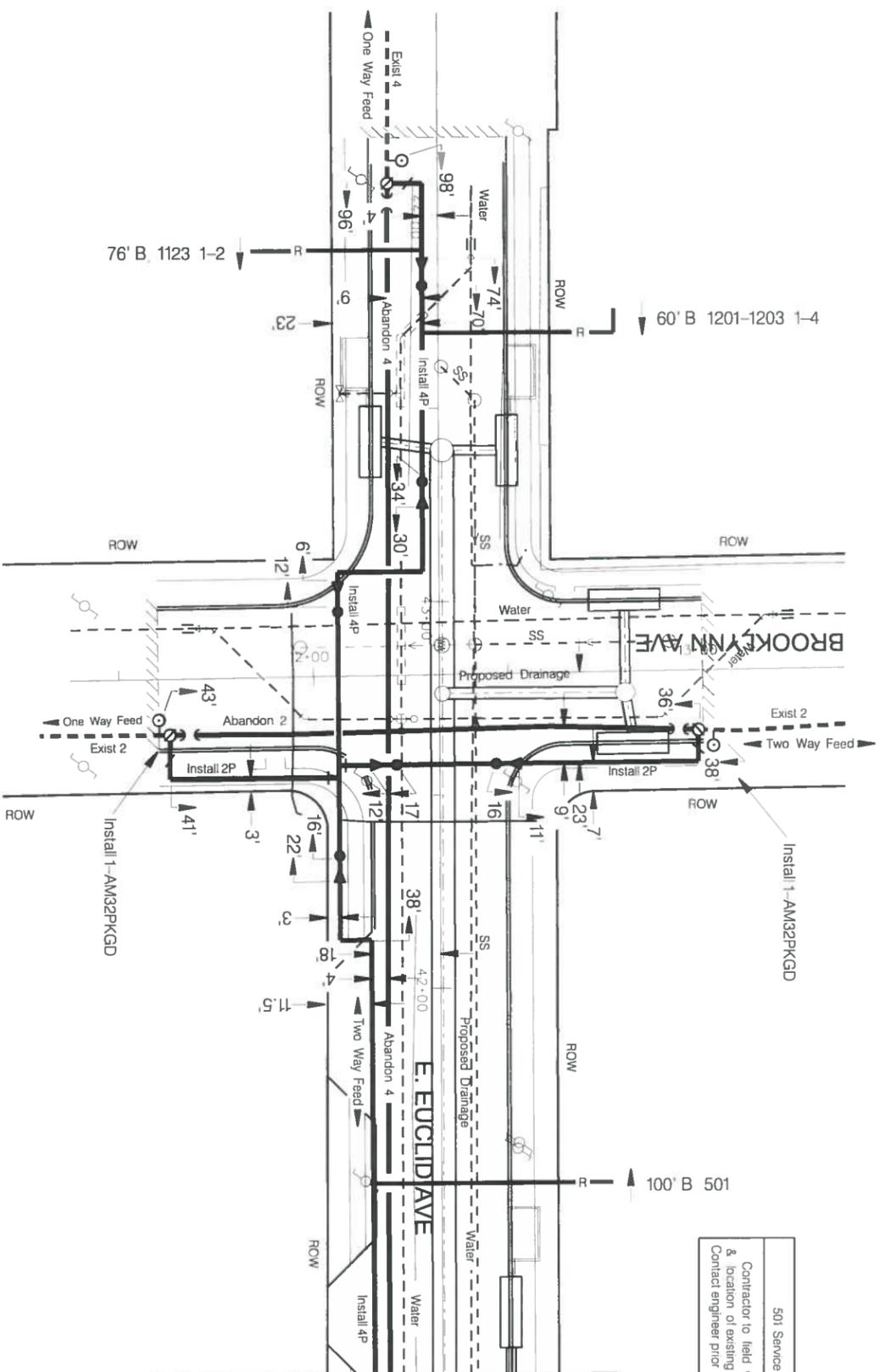
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No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext:	Project No.	Job Title	Job No.
0	Planning Completed	03-21-14	<i>AMC</i>	4/19/16	Michael Guerra	2354	G-0272	McCullough Avenue CPS ENERGY P.O. BOX 1771 SAN ANTONIO, TX 78296	1953965
			<i>[Signature]</i>	4/19/16	2131283 13708199				



Scale  
1" = 40'



501 Service Note  
Contractor to field verify address & location of existing 1" steel service. Contact engineer prior to service return.

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Stick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		340 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		160 FT		1013959
4	Valve Plastic 8" Ball/Pug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Pug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Pug Butt Fuse		0 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		1 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		2 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		1 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		5 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		1 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		1 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		8 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		4 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 4"		1 Ea		1018480
17	Fitting Shortstop Welding 3-Way Tee 2"		2 Ea		1018419
18	Anode, AM32PKGD		3 Ea		1016921
19	Pipe Plastic 1" IPS SDR 11 Coil		0 Ea		1013957
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



*Handwritten signature and date: 9/19/16*

No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext.	Project No.	Job Title	Job No.
0	Planning Completed	04-01-16	<i>Signature</i>	9/19/16	Michael Guerra	2354	G-0272	McCullough Avenue	1953965
			Approved By: <i>Signature</i>	9/19/16					

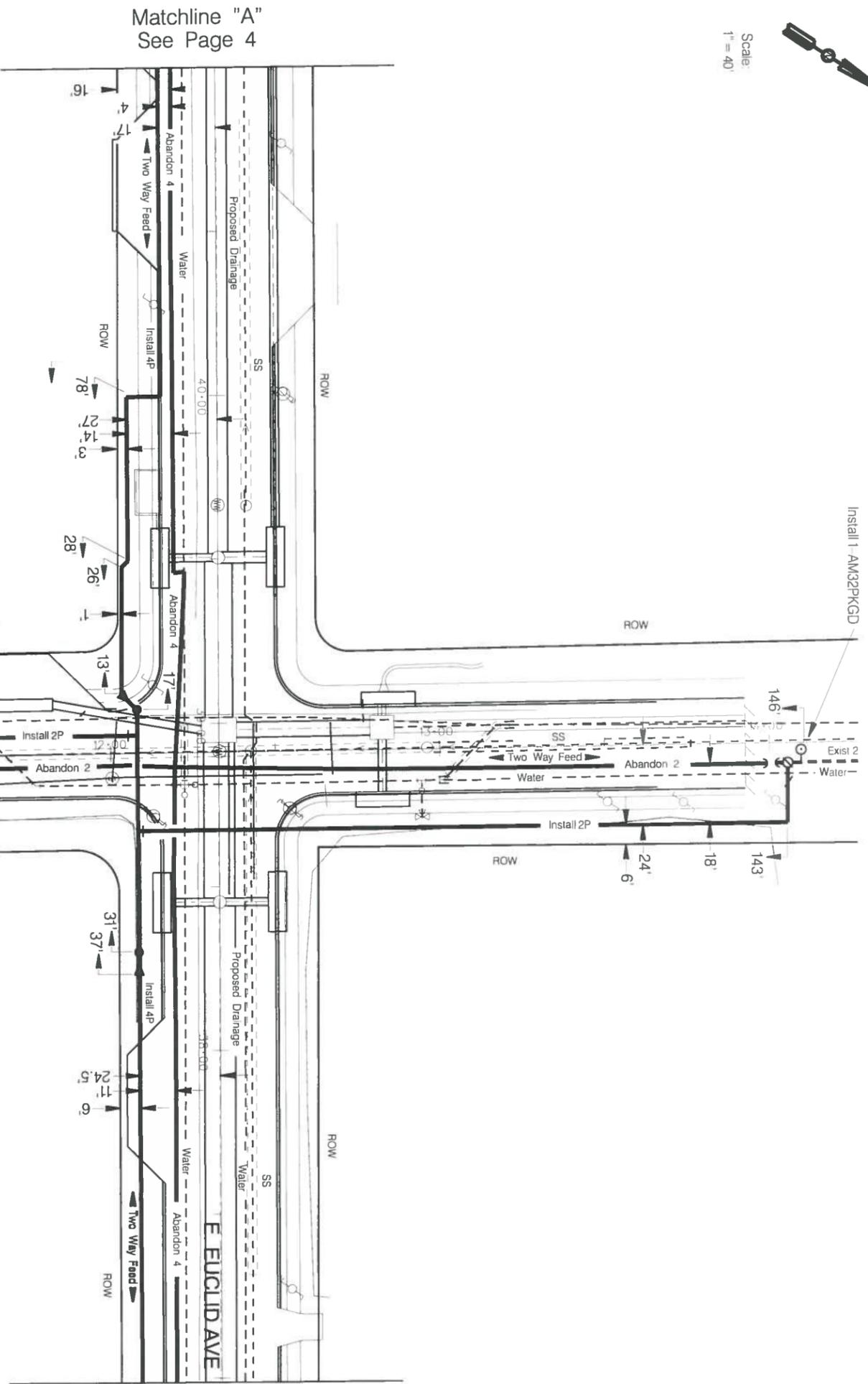
CPS ENERGY  
P.O. BOX 1771  
SAN ANTONIO, TX 78296

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6



Scale  
1" = 40'



Matchline "A"  
See Page 4

Matchline "B"  
See Page 6

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Stick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		340 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		285 FT		1013959
4	Valve Plastic 8" Ball/Plug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Plug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Plug Butt Fuse		0 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		2 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		0 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		2 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		1 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		0 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		8 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		1 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 4"		0 Ea		1018480
17	Fitting Shortstop Welding 3-Way Tee 2"		2 Ea		1018419
18	Anode AM32PKGD		2 Ea		1016921
19	Cap Welded 3"		0 Ea		1016609
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



*[Signature]*  
4/19/16

No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext.	Project No.	Job Title	Job No.
0	Planning Completed	04-01-16	<i>[Signature]</i>	4/19/16	Michael Guerra	2354	G-0272	McCullough Avenue	1953965
			Approved By: <i>[Signature]</i>	Date Approved: 4/19/16	Map Quadrant: 162 - 854			CPS ENERGY	
					2131791 13708431			P.O. BOX 1771 SAN ANTONIO, TX 78296	

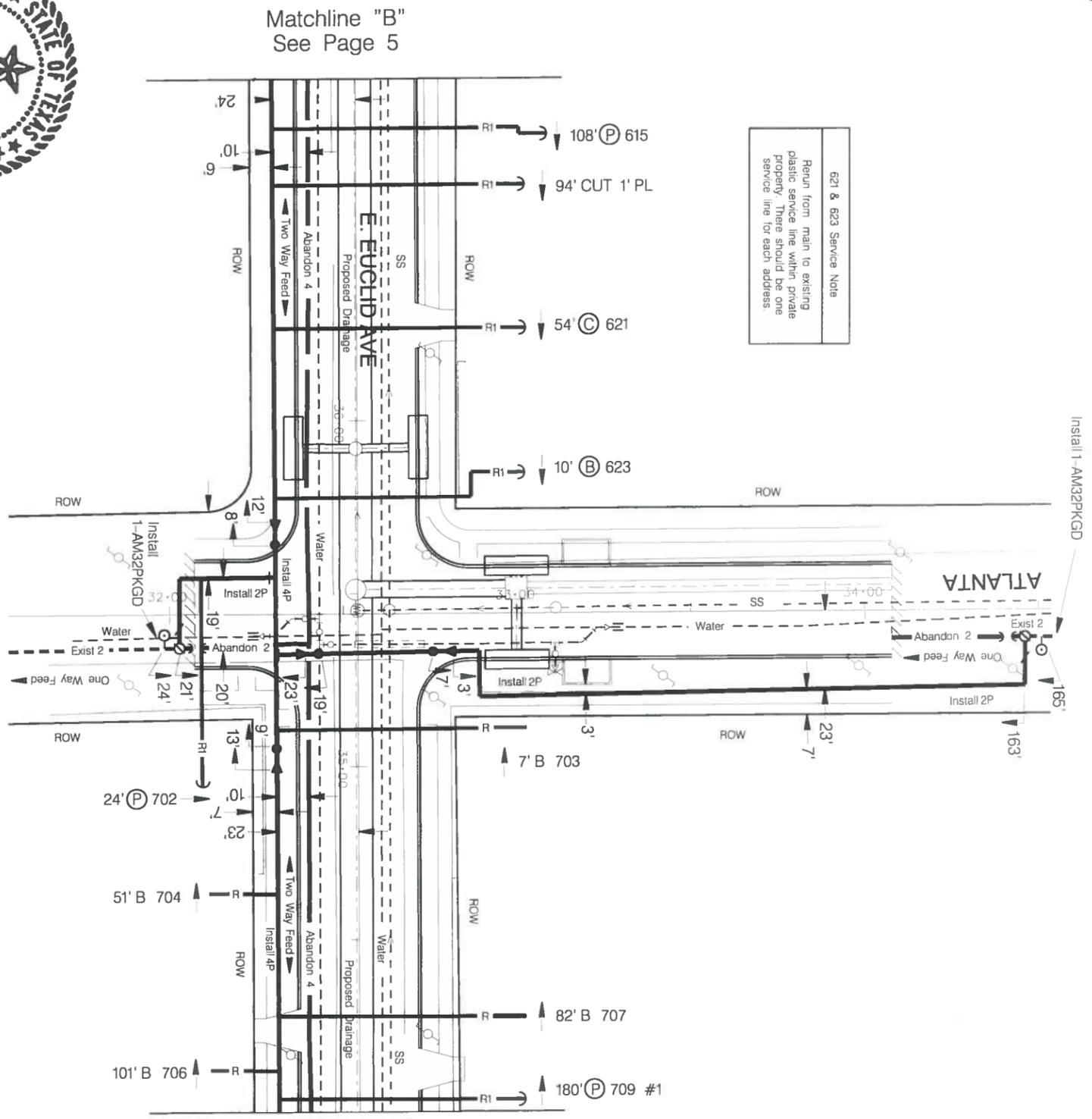
All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6



Scale  
1" = 40'

621 & 623 Service Note  
Run from main to existing plastic service line within private property. There should be one service line for each address.



Matchline "B"  
See Page 5

Matchline "C"  
See Page 7

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Stick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		340 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		160 FT		1013959
4	Valve Plastic 8" Ball/Plug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Plug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Plug Butt Fuse		0 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		2 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		0 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		0 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		1 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		1 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		4 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		0 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 4"		0 Ea		1019480
17	Fitting Shortstop Welding 3-Way Tee 2"		0 Ea		1019419
18	Anode, AM32PKGD		2 Ea		1016921
19	Pipe Plastic 1" IPS SDR 11 Coil		0 Ea		1013957
20	Pipe Plastic 1/2" IPS SDR 11 Coil		0 Ea		1014021
21	Cap Welded 3"		0 Ea		1016609



4/19/16

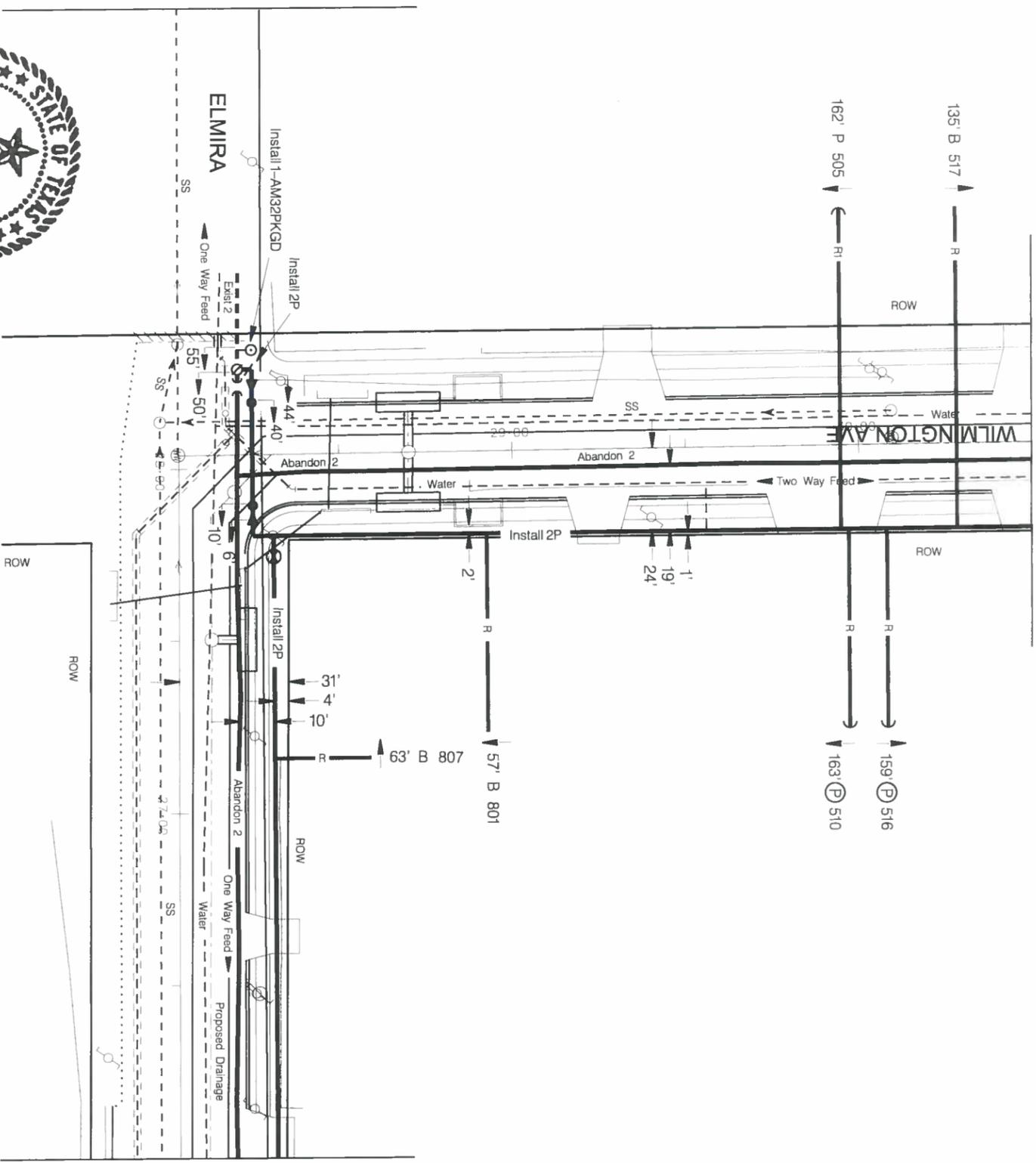
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			Approved By: [Signature]	4/19/16	Map Quadrant 162 - 584 2131791 13708431	CPS ENERGY P.O. BOX 1771 SAN ANTONIO, TX 78296	



All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6

Matchline "D"  
See Page 7



Scale:  
1" = 40'

Matchline "E"  
See Page 9

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Stick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		340 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		457 FT		1013959
4	Valve Plastic 8" Ball/Plug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Plug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Plug Butt Fuse		1 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		1 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		0 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		0 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		1 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		0 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		0 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		0 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 4"		0 Ea		1018480
17	Fitting Shortstop Welding 3-Way Tee 2"		1 Ea		1018419
18	Anode, AM32PKGD		1 Ea		1016921
19	Cap Welded 3"		0 Ea		1016609
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext. 2354	Job Title	Job No.
0	Planning Completed	04-01-16	AM	4/19/16	Michael Guerra		McCullough Avenue	19533965
			Approved By:	Date Approved	Map Quadrant	Project No.	CPS ENERGY	
				4/19/16	162 - 584	G-0272	P.O. BOX 1771 SAN ANTONIO, TX 78296	
				4/19/16	2131791 13708431	Page 8 of 11		

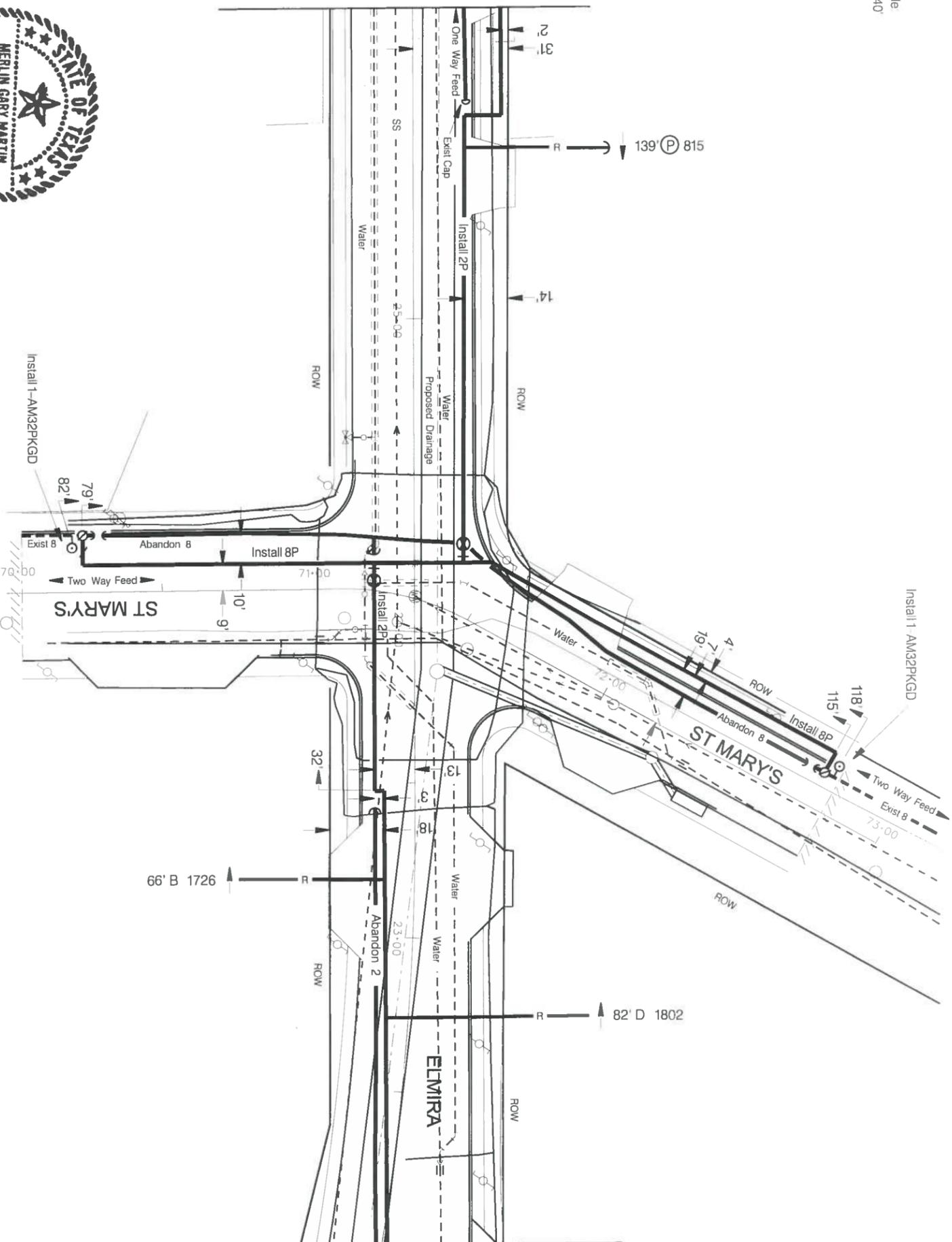
All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6



Scale  
1" = 40'

Matchline "E"  
See Page 8



Matchline "F"  
See Page 10

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Slick		295 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		0 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		413 FT		1013959
4	Valve Plastic 8" Ball/Plug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Plug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Plug Butt Fuse		2 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		2 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		2 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		2 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		0 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		3 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		2 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		0 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		0 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 8"		2 Ea		1018481
17	Fitting Shortstop Welding 3-Way Tee 2"		0 Ea		1018419
18	Anode, AM32PKGD		2 Ea		1016921
19	Cap Welded 3"		0 Ea		1016609
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



4/19/16

No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Ext:	Project No.	Job Title	Job No.
0	Planning Completed	04-01-16	ATM	4/19/16	Michael Guerra	2354	G-0272	McCullough Avenue	1953965
			Approved By:	Date Approved	Map Quadrant			CPS ENERGY	
				4/19/16	173 - 604			P.O. BOX 1771	
					2131283 13708199			SAN ANTONIO, TX 78296	

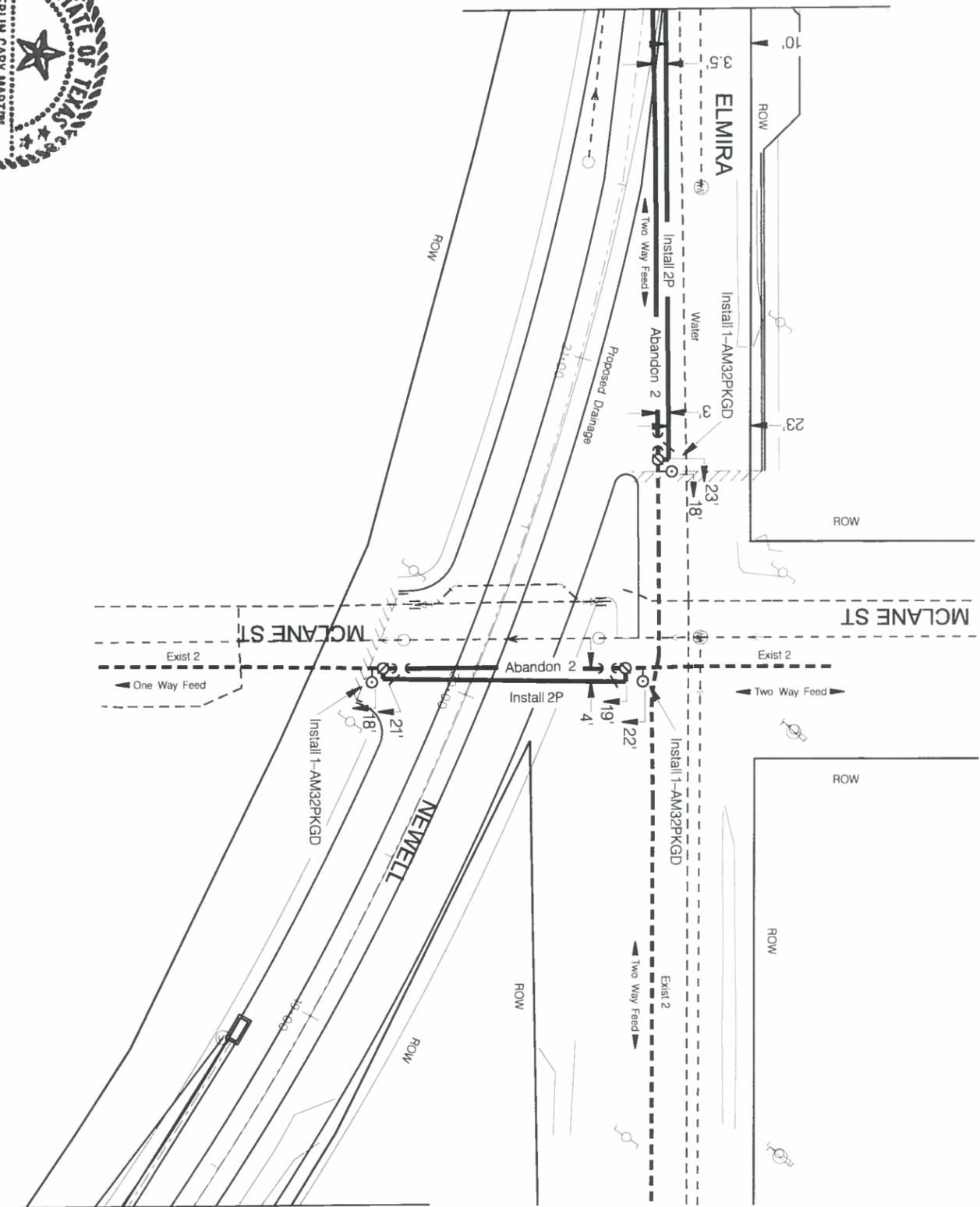
All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6



Scale:  
1" = 40'

Matchline "F"  
See Page 9



Matchline "G"  
See Page 11

Item	Materials Description	Manufacturer	Quantity	As-Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Slick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		0 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		211 FT		1013959
4	Valve Plastic 8" Ball/Plug Butt Fuse		0 Ea		1033267
5	Valve Plastic 4" Ball/Plug Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Plug Butt Fuse		0 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		3 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		0 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		0 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		3 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		0 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		0 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		0 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 2"		3 Ea		1018419
17	Anode, AM32PKGD		3 Ea		1016921
18	Cap Welded 3"		0 Ea		1016609
19	Cap Welded 3"		0 Ea		1016609
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



*4/19/16*

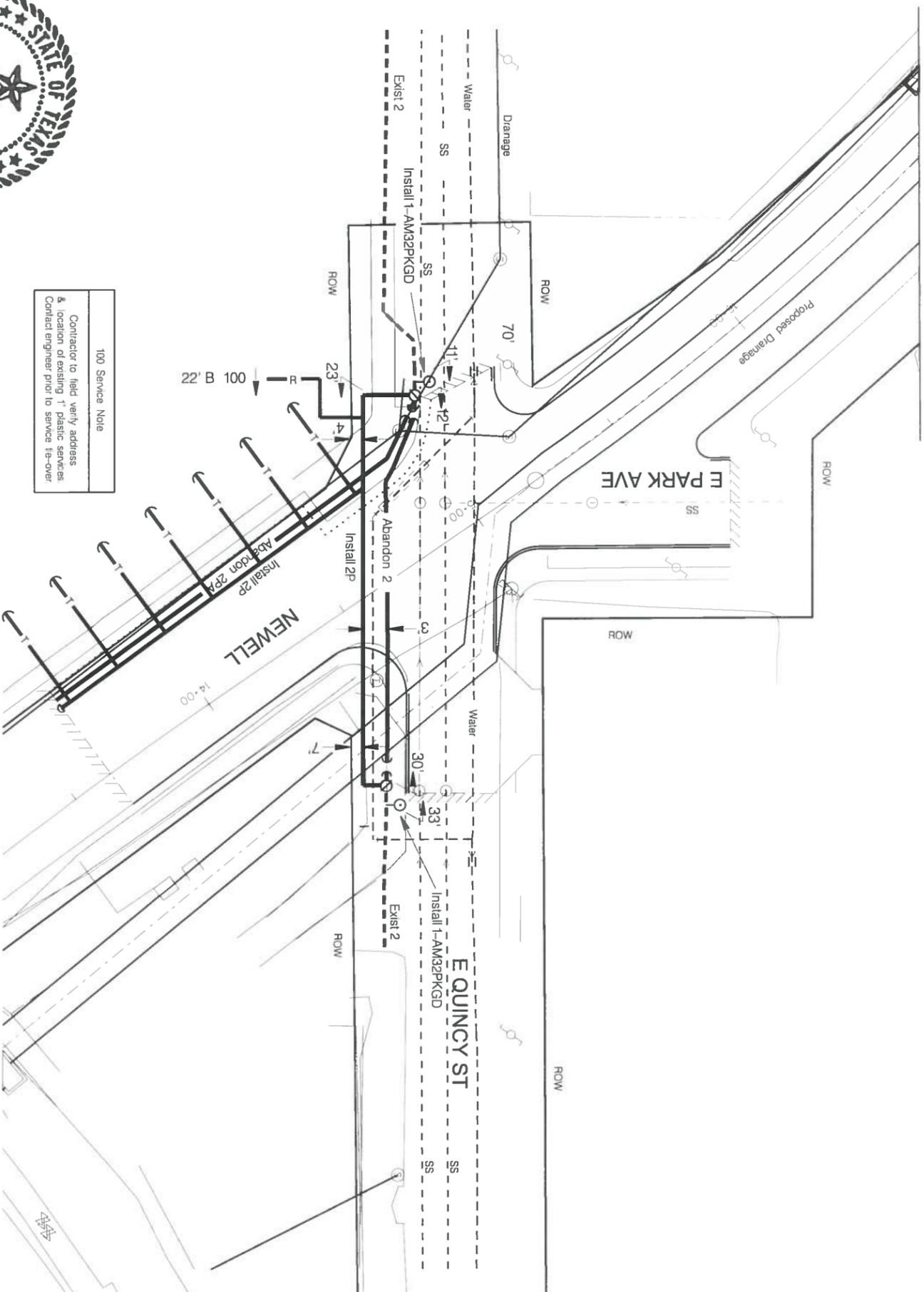
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			<i>AMW</i>	<i>4/19/16</i>				<b>CPS ENERGY</b> P.O. BOX 1771 SAN ANTONIO, TX 78296	

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6

Matchline "G"  
See Page 10

Scale  
1" = 40'



100 Service Note  
Contractor to field verify address & location of existing 1" plastic services. Contact engineer prior to service tie-over.

Item	Materials Description	Manufacturer	Quantity	As Built Qty	Stock #
1	Pipe Plastic 8" IPS SDR 11 Stick		0 FT		1032780
2	Pipe Plastic 4" IPS SDR 11 Coil		340 FT		1014020
3	Pipe Plastic 2" IPS SDR 11 Coil		275 FT		1013959
4	Valve Plastic 8" Ball/Ping Butt Fuse		0 Ea		1033287
5	Valve Plastic 4" Ball/Ping Butt Fuse		0 Ea		1025090
6	Valve Plastic 2" Ball/Ping Butt Fuse		0 Ea		1025029
7	Cap 8" Pipe End Weld CS 0.322 IN WT		0 Ea		1016608
8	Cap 4" Pipe End Weld CS 0.237 IN WT		0 Ea		1016607
9	Cap 2" Pipe End Weld CS 0.154 IN WT		2 Ea		1016606
10	Elbow PE 90 DEG 8" Butt Fuse		0 Ea		1032905
11	Elbow PE 90 DEG 4" Butt Fuse		0 Ea		1015800
12	Elbow PE 90 DEG 2" Butt Fuse		1 Ea		1015679
13	Elbow PE 45 DEG 8" Butt Fuse		0 Ea		1032904
14	Elbow PE 45 DEG 4" Butt Fuse		0 Ea		1015675
15	Elbow PE 45 DEG 2" Butt Fuse		2 Ea		1016609
16	Fitting Shortstop Welding 3-Way Tee 2"		2 Ea		1016419
17	Anode, AM32PKGD		2 Ea		1016921
18	Cap Welded 3"		0 Ea		1016609
19	Cap Welded 3"		0 Ea		1016609
20	Cap Welded 3"		0 Ea		1016609
21	Cap Welded 3"		0 Ea		1016609



4/19/16

No.	Drawing Revision	Date	Checked By:	Date Approved	Designed By:	Project No.	Job Title	Job No.
0	Planning Completed	04-01-16	AM	4/19/16	Michael Guerra	G-0272	McCullough Avenue	1953965
			AM	4/19/16			CPS ENERGY P.O. BOX 1771 SAN ANTONIO, TX 78296	



City of San Antonio  
**TRANSPORTATION AND CAPITAL IMPROVEMENTS**

RECEIPT OF ADDENDUM NUMBER(S) 1 IS HEREBY ACKNOWLEDGED FOR PLANS AND  
SPECIFICATIONS FOR CONSTRUCTION OF THE McCullough Avenue Area Drainage #40-00327

FOR WHICH BIDS WILL BE OPENED ON April 26, 2016 at 2:00pm

THIS ACKNOWLEDGEMENT MUST BE SIGNED AND RETURNED WITH THE BID  
PACKAGE.

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

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

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

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name/Title