

# CONSTRUCTION CONTRACT CHANGE ORDER NUMBER: 003

1. CONTRACTOR: ICON, LLC

2. Change Order Work Limits: Sta. 82+50 to Sta. 108+25

3. Type of Change (on federal-aid non-exempt projects): Major (Major/Minor)

4. Describe the change and the reason for the change order. When necessary, include exceptions to this agreement.

The CR 58 project has a sanitary sewer relocation that is joint bid within the construction project. The relocation is shown on the attached plan sheets 187-197. The plan sheets have a trenchless placement method for lines that cross roadways, however they are not shown to be cased. The County requirements state that crossing underneath County roadways must be cased. Therefore, this change order is to add steel casing underneath the County roadways.

**CCSJ:** 0912-31-304  
**Project:** STP 1702 (437) MM  
**Highway:** CR 58  
**County:** Brazoria  
**District:** Houston  
**Contract Number:** \_\_\_\_\_

5. New or revised plan sheet(s) are attached and numbered: N/A

Each signatory hereby warrants that each has the authority to execute this Change Order.

<p>By signing this change order, the contractor agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit; or loss of compensation as a result of this change. Further, the contractor agrees that this agreement is made in accordance with Item 4 and the Contract. Exceptions should be noted in the response for #5 above.</p> <p>THE CONTRACTOR _____ Date _____</p> <p>By _____</p> <p>Typed/Printed Name _____</p> <p>Typed/Printed Title _____</p>	<p><b>The following information must be provided</b></p> <p>Time Ext. #: <u>N/A</u> Days added on this C.O.: <u>N/A</u></p> <p>Amt. added by this change order: <u>\$48,588.27</u></p>
	<p><b>For TxDOT use only:</b></p> <p>Days participating: _____</p> <p>Amount participating: _____</p>
	<p>Signature _____ Date _____</p>
	<p>Name/Title _____</p>

## RECOMMENDED FOR EXECUTION:

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_  
☐ APPROVED ☐ REQUEST APPROVAL

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_  
☐ APPROVED ☐ REQUEST APPROVAL

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_  
☐ APPROVED ☐ REQUEST APPROVAL

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Name/Title \_\_\_\_\_ Date \_\_\_\_\_  
☐ APPROVED

Engineer's Seal:



**Client:** Brazoria County

**Project:** CR 58 Widening From CR 48 to Sav

**Number:** C14-001-58

## Change Details

**Submitted To Name:** Winkler, Mike

**Submitted To Company:** AECOM

**Submitted By Name:** Winkler, Mike

**Submitted By Company:** AECOM

**Change ID (External #):** CHG-2024-0003

**Summary Description:**

Sanitary Sewer Casing

**Status of Change:** 2) RE Approved (6/26/2024 8:13 PM)

### Change Value:

**Cost:** \$48,588.27

**Schedule:** 0 day(s)

### Detailed Description of Change:

Change Order No. 3 (CO 3) provides a new work item to place casing to protect sanitary sewer installations. This change order does not impact the critical path, therefore no time adjustments are made.

The CR 58 project has a sanitary sewer relocation that is joint bid within the construction project. The relocation is shown on the attached plan sheets 187-197. The plan sheets have a trenchless placement method for lines that cross roadways, however they are not shown to be cased. The County requirements state that crossing underneath County roadways must be cased. Therefore, this change order is to add steel casing underneath the County roadway crossing shown on the attached plan sheets.

The Alvin ISD has an agreement with the Brazoria County Engineering Office to fund the relocation of the sanitary sewer since it serves the local school. Therefore, Alvin ISD has been involved in this change order development which is shown in the attached documentation. Since the ISD is funding the sanitary sewer relocation, this work is not considered for federal participation.

The Contractor has submitted a price of \$48,588.27 to complete the casing installations which breaks down to a unit price of \$141.93/LF. The required casing is a 12" steel casing to cap the well and remove the septic system. The County has reviewed the pricing submitted and determined it to be fair and reasonable for the work required.

There are no added or revised plan sheets included with this change order.

No amended or additional environmental clearance, permits or authorizations are required for this change order.

### Attachment List

No Attachments

**NOT VALID UNTIL SIGNED BY THE CONTRACTOR/OWNER/SUBCONTRACTOR**

**ACCEPTED:**

**CONTRACTOR/OWNER/SUBCONTRACTOR:**

**By:** \_\_\_\_\_

**By:** \_\_\_\_\_

\_\_\_\_\_  
**PRINT NAME/TITLE**

\_\_\_\_\_  
**PRINT NAME/TITLE**

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

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

**Matt Hanks, P.E., CFM**  
COUNTY ENGINEER



**Karen McKinnon, P.E.**  
ASST. COUNTY ENGINEER

**Wael Tabara, P.E., CFM**  
ASST. COUNTY ENGINEER

(979) 864-1265  
ANGLETON

(979) 388-1265  
CLUTE

(281) 756-1265  
HOUSTON

(979) 864-1270  
FAX

**BRAZORIA COUNTY ENGINEERING**

451 N VELASCO, SUITE 230  
ANGLETON, TEXAS 77515

Document Type: Change Order Memorandum  
Subject: Change Order 03  
Project: 0912-31-304; CR 58  
Description: Sanitary Sewer Casing Placement

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Change Order No. 3 (CO 3) provides a new work item to place casing to protect sanitary sewer installations. This change order does not impact the critical path, therefore no time adjustments are made.

The contract plans, designed by Austin Mclean, P.E., of McDonough Engineering, provide for the reconstruction and widening of CR 58 from CR 48 to the Savannah Development. The Contractor, ICON, remains on-site and continues to perform the contract according to the plans and the 2014 Texas Standard Specifications. All change order work is within the project limits.

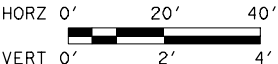
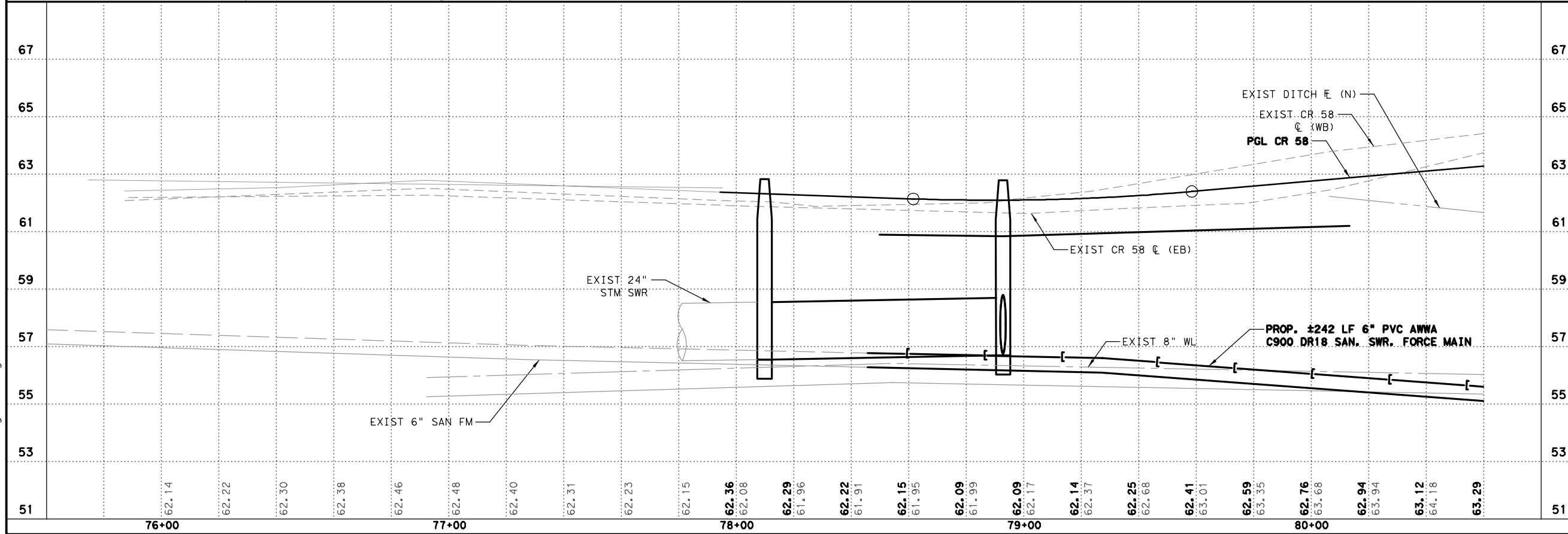
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**LEGEND:**

- W — WATER  
 — OE — OVERHEAD ELECTRIC  
 — SAW — SANITARY SEWER  
 — G — GAS  
 — PL — PRODUCT LINE  
     • MANHOLE  
     □ GRATE INLET  
     └ CURB INLET  
       WITH EXTENSION  
 → ... — € DITCH  
 === PROP STORM SEWER  
     ⇨ EXIST DIRECTION  
       OF TRAFFIC  
     ➔ PROPOSED DIRECTION  
       OF TRAFFIC  
 - - - - - PROP EASEMENT  
 [ Hatched Box ] PROP TRENCHLESS  
                     INSTALL  
 —└— PROP SAN SWR  
       FORCE MAIN  
 ——— PROP WATER

**NOTE:**

1. PIPE LENGTHS SHOWN IN PROFILE ARE PAY LENGTHS. CENTER OF STRUCTURE TO CENTER OF STRUCTURE LENGTHS ARE SHOWN IN HYDRAULIC CALCULATIONS.
2. STATION AND OFFSET ARE MEASURED TO CENTER OF INLET AT FACE OF CURB FOR ALL CURB INLETS AND JUNCTION BOXES. AREA ZONE DRAINS ARE MEASURED TO CENTER OF STRUCTURE.
3. ALL HORIZONTAL & VERTICAL BENDS SHALL HAVE THRUST BLOCKS, SEE DETAIL SHEET 191.
4. CONTRACTOR TO COORDINATE WITH BC MUD NO. 21 ENGINEER-KANE MUDD, PE (KAMUDDL@LA.COM), ED-BREAK CAMPBELL (281-902-0983), AND ALVIN TSI (ALVIN.TSI@MARNES.MBARNES-ADP.VINISD.NET) PRIOR TO TAKING ANY EXISTING LINES OUT OF SERVICE.



**McDONOUGH**  
Civil Engineers ▼ Project Managers  
TBPLS Firm Registration No. 10103900  
TBPE Registration No. F-000340  
5625 Schumacher Lane  
Houston, Texas 77057  
(713) 975-9999  
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
**BRAZORIA COUNTY  
ENGINEERING DEPARTMENT**

CR 58  
FROM SAVANNAH DEVELOPMENT TO CR 48  
UTILITY RELOCATIONS  
BEGIN TO STA 80+60

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
12	TEXAS	STP 1702(437)MM			CR 5
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOU	BRAZORIA	0912	31	304	187



**LEGEND:**

- W — WATER  
 — OE — OVERHEAD ELECTRIC  
 — SW — SANITARY SEWER  
 — G — GAS  
 — PL — PRODUCT LINE  
 • MANHOLE  
 □ GRATE INLET  
 ▢ CURB INLET  
   WITH EXTENSION  
 → . . . — € DITCH  
 ——— PROP STORM SEWER  
 ⇨ EXIST DIRECTION  
   OF TRAFFIC  
 → PROPOSED DIRECTION  
   OF TRAFFIC  
 - - - - - PROP EASEMENT  
 PROP TRENCHLESS  
   INSTALL  
 — f — PROP SAN SWR  
   FORCE MAIN  
 ——— PROP WATER

## NOTES:

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**McDONOUGH**

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TBPE Registration No. F-000340

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Houston, Texas 77057 [www.mectx.com](http://www.mectx.com)



**BRAZORIA COUNTY  
ENGINEERING DEPARTMENT**

CR 58  
FROM SAVANNAH DEVELOPMENT TO CR 4  
UTILITY RELOCATIONS  
STA 80+60 TO STA 85+40

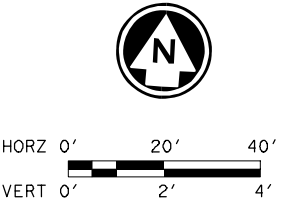
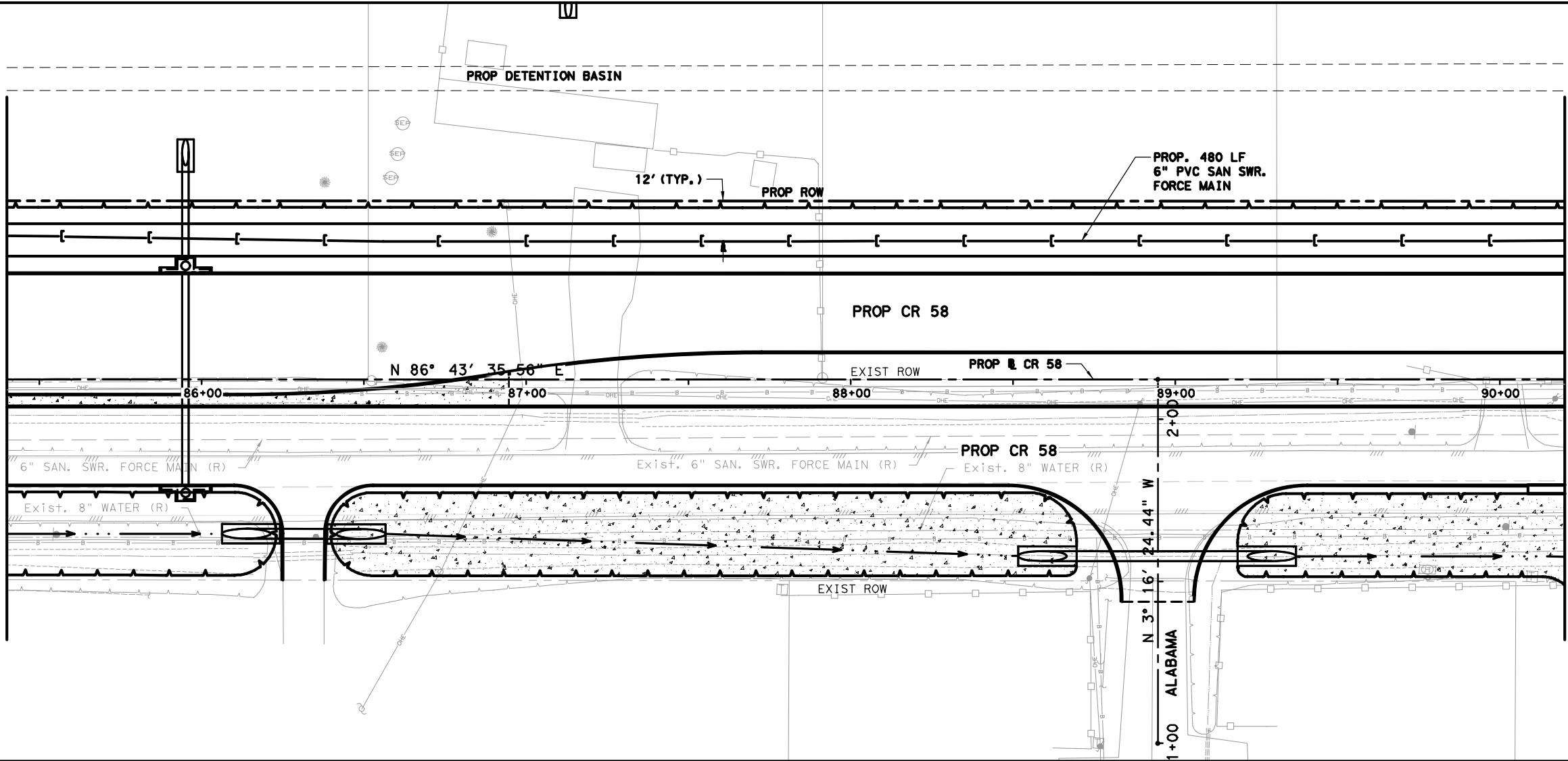
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12	TEXAS	STP 1702 (437) MM			CR
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOU	BRAZORIA	0912	31	304	188

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MATCH LINE STA 85+40

MATCH LINE STA 90+20

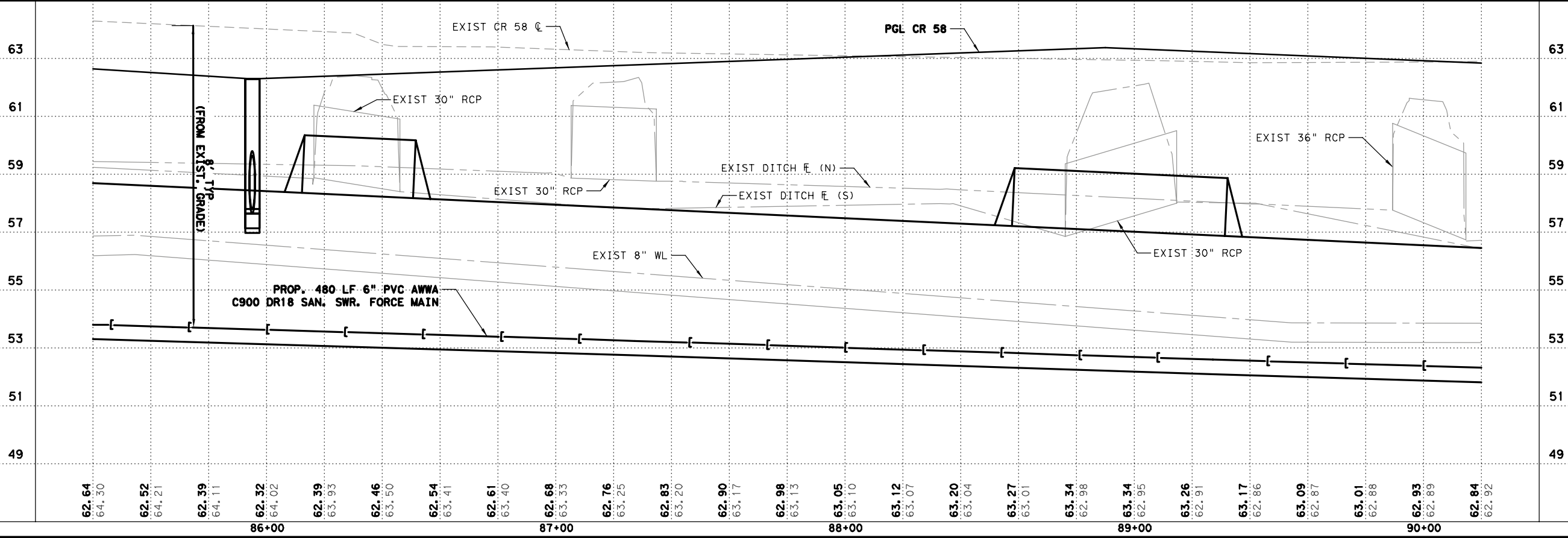


LEGEND:

- W — WATER
- OE — OVERHEAD ELECTRIC
- SAW — SANITARY SEWER
- G — GAS
- PL — PRODUCT LINE
- MANHOLE
- GRATE INLET
- ⊥ CURB INLET WITH EXTENSION
- DITCH
- PROP STORM SEWER
- EXIST DIRECTION OF TRAFFIC
- PROPOSED DIRECTION OF TRAFFIC
- PROP EASEMENT
- PROP TRENCHLESS INSTALL
- PROP SAN SWR FORCE MAIN
- PROP WATER

NOTES:

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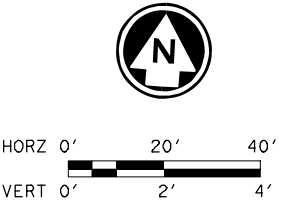
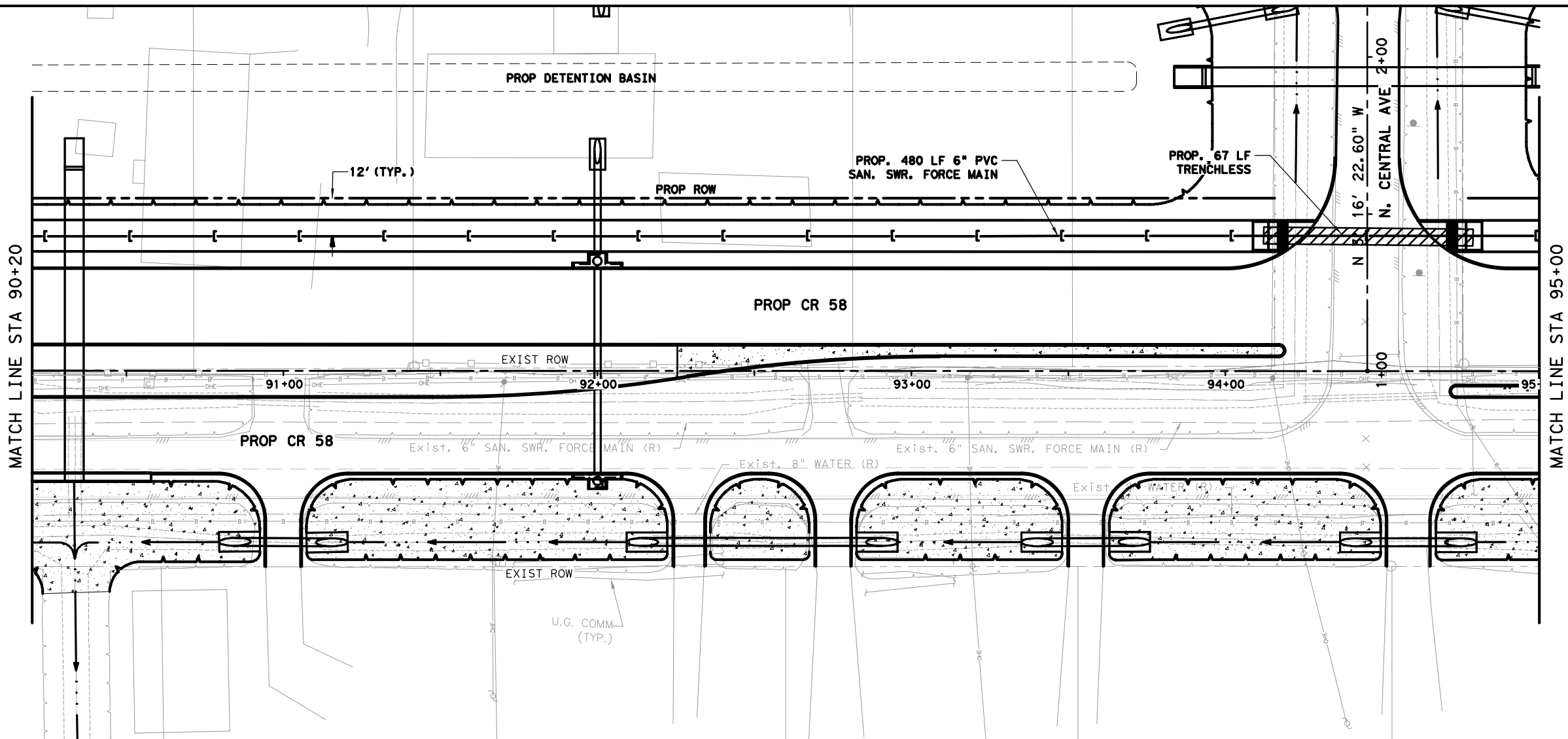
**BRAZORIA COUNTY**  
ENGINEERING DEPARTMENT

**CR 58**  
FROM SAVANNAH DEVELOPMENT TO CR 48  
**UTILITY RELOCATIONS**  
**STA 85+40 TO STA 90+20**

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
12	TEXAS	STP 1702(437)MM	CR 58
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
HOU	BRAZORIA	0912	31
JOB NO.	SHEET NO.		
304	189		

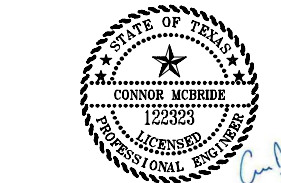


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- LEGEND:**
- W — WATER
  - OE — OVERHEAD ELECTRIC
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  - PROPOSED DIRECTION OF TRAFFIC
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  - PROP TRENCHLESS INSTALL
  - PROP SAN SWR FORCE MAIN
  - PROP WATER

- NOTES:**
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**CR 58**  
FROM SAVANNAH DEVELOPMENT TO CR 48  
**UTILITY RELOCATIONS**  
STA 90+20 TO STA 95+00

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
12	TEXAS	STP 1702(437)MM	CR 58
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.
HOU	BRAZORIA	0912	31
JOB NO.	SHEET NO.		
304	190		





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VERT 0' 2' 4'


LEGEND:

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**ENGINEERING DEPARTMENT**

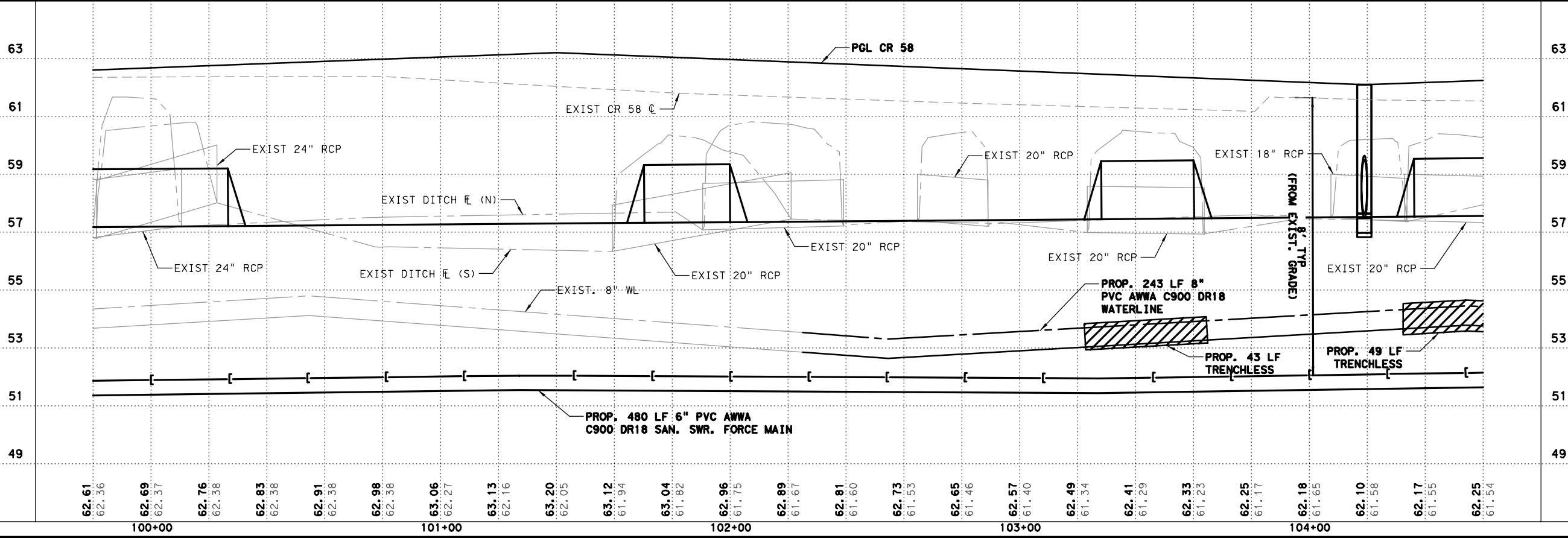
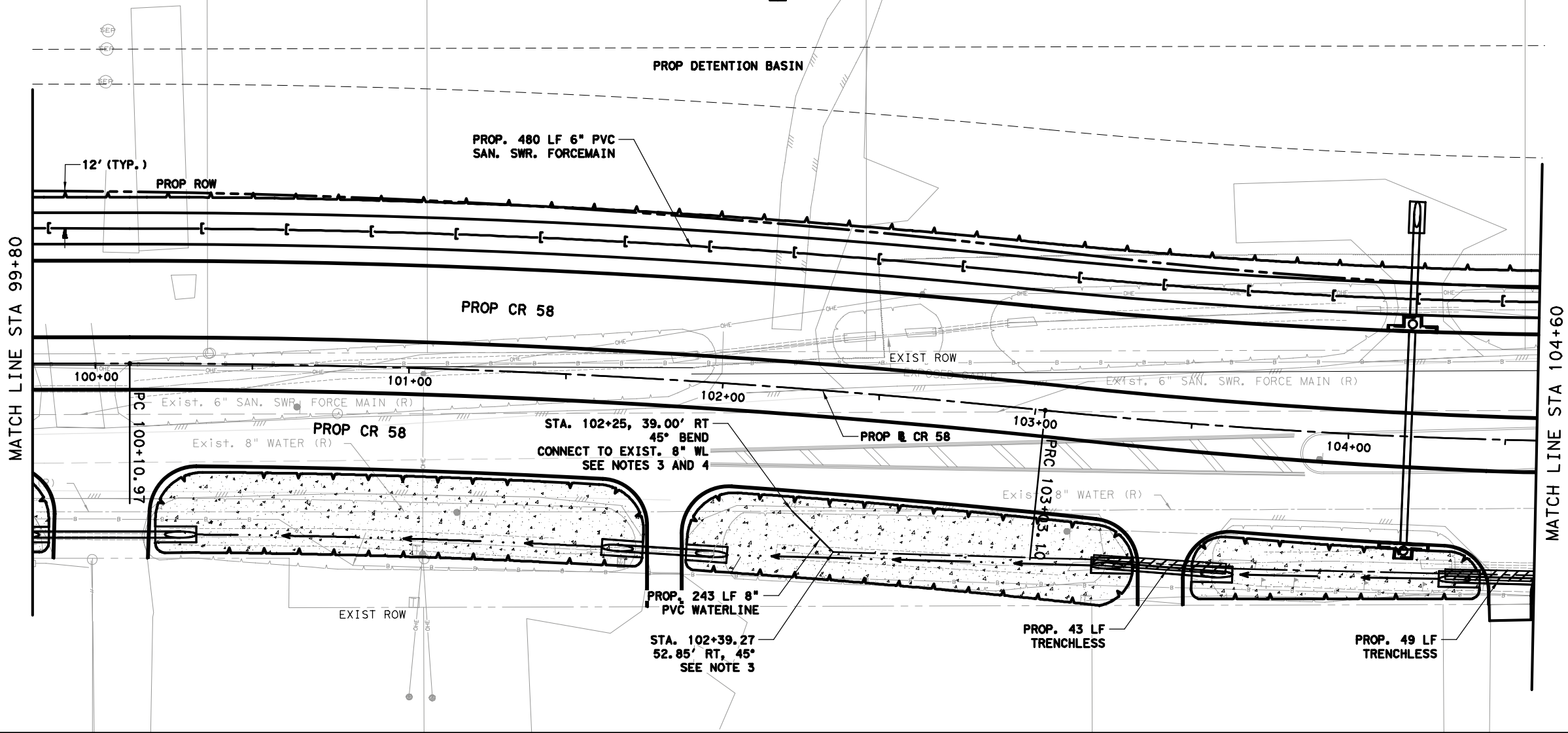
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**CR 58**  
**FROM SAVANNAH DEVELOPMENT TO CR 48**

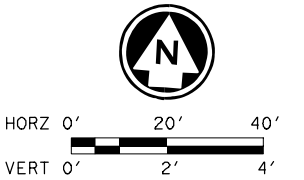
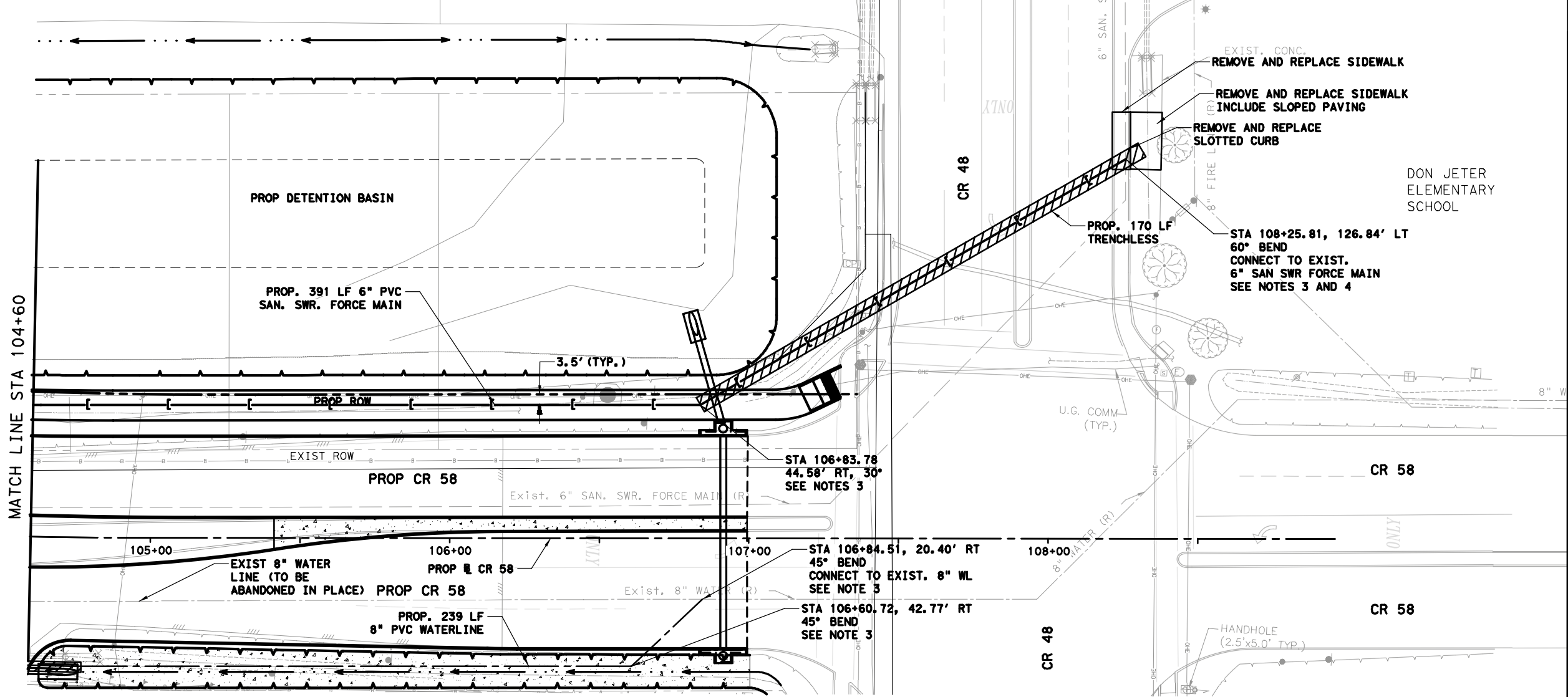
**UTILITY RELOCATIONS**  
**STA 99+80 TO STA 104+60**

SHEET 6 of 7

ED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
12	TEXAS	STP 1702(437)MM	CR 58
STATE DISTRICT	COUNTY	CONTROL NO.	JOB NO.
HOU	BRAZORIA	0912	31 304
			SHEET NO.
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  - HORIZONTAL & VERTICAL BENDS BETWEEN 10 DEGREES & 90 DEGREES SHALL HAVE THRUST RESTRAINTS
  - CONTRACTOR TO COORDINATE WITH BC MUD NO. 21 ENGINEER-KANE MUDD, PE (KAMUDD@JA.COM), EDP-BREAH CAMPBELL (281-902-0983), AND ALVIN ISO-MICHAEL BARNES (MBARNES@ALVINISO.NET) PRIOR TO TAKING ANY EXISTING LINES OUT OF SERVICE.



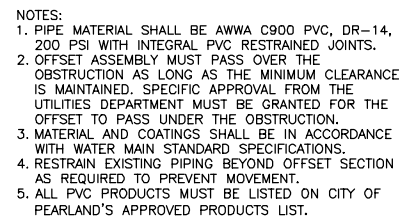
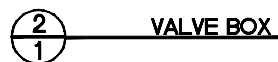
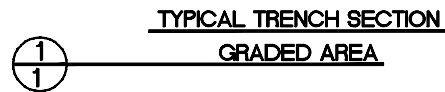
**MCDONOUGH**  
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Houston, Texas 77057 www.mectx.com



**CR 58**  
FROM SAVANNAH DEVELOPMENT TO CR 48  
**UTILITY RELOCATIONS**  
STA 104+60 TO END

SHEET 1 OF 7

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
12	TEXAS	STP 1702(437)MM			CR 58
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
HOU	BRAZORIA	0912	31	304	193



MIN. PIPE WALL THICKNESS		
4"	—	0.250"
6"	—	0.280"
8"	—	0.322"
12" AND LARGER	—	0.375"



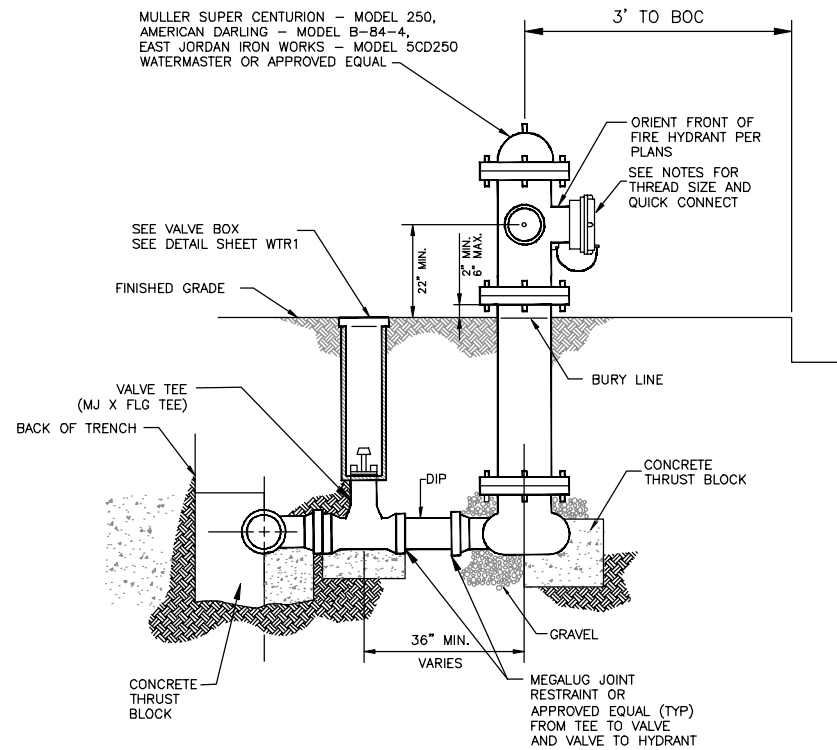
S I Z E	90° BEND		45° BEND		22 1/2° BEND		TEES		PLUGS	
	A	B	A	B	A	B	A	B	C	D
4" 6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"
18"	42"	30"	24"	30"	12"	24"	24"	30"	24"	60"
24"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*78"
30"	60"	48"	36"	48"	20"	36"	36"	48"	36"	*96"

7 WHEN SERVICE METER IS NEAR WATER MAIN  
1



Job No.: 17260	Scale:	SHEET  194
Date: JAN 2020	HORZ: 1" = NONE VERT: 1" = NONE	
Dwn By: PRP	CAD FILE:	
Chkd By: RS	CCP-WTR1	

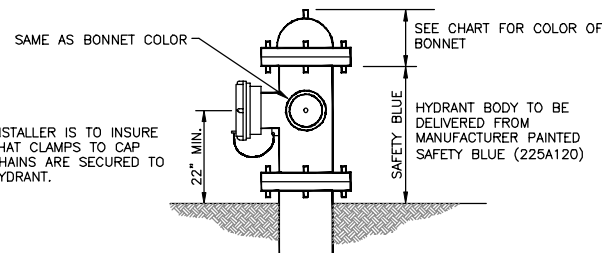




1  
2

## FIRE HYDRANT

NOTE:  
SHALL BE DUCTILE IRON  
PIPE. NO PVC IS ALLOWED



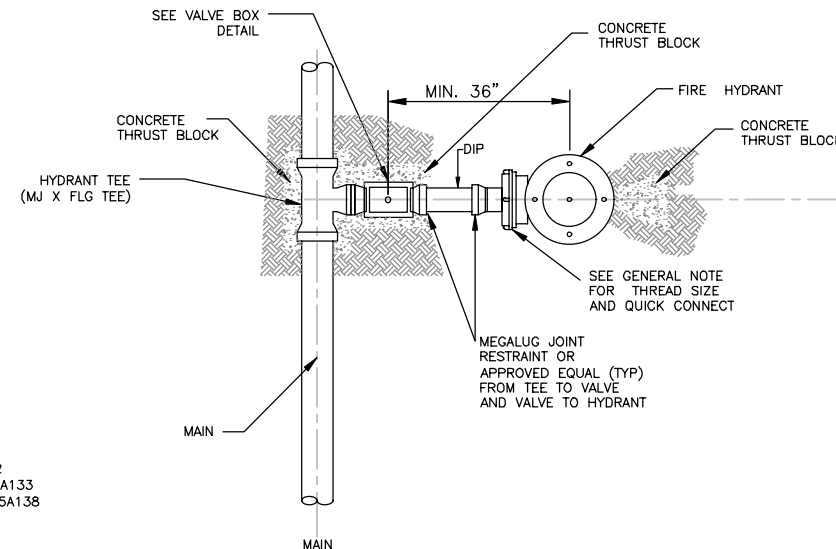
COLOR CODE  
FIRE HYDRANT BARREL SAFETY BLUE CODE NO. 225A120  
FIRE HYDRANT CAPS SAME AS BONNET COLOR

## COLOR CODE (BONNETS AND CAPS)

### MAIN SIZE

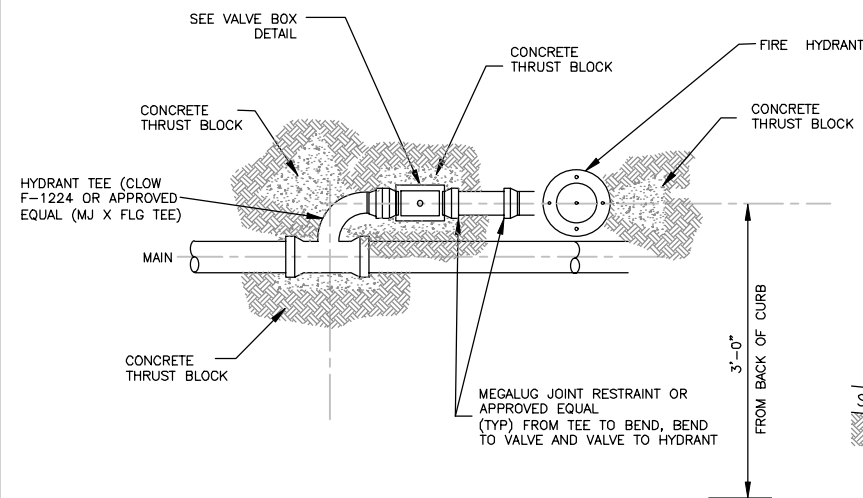
6" GLOSS WHITE CODE NO. 225A100  
8" SAFETY ORANGE CODE NO. 225A122  
10" AND 12" JOHN DEERE GREEN CODE NO. 225A133  
16" AND 20" JOHN DEERE YELLOW CODE NO. 225A138  
22" AND UP SAFETY RED CODE NO. 225A123

## 2 2 FIRE HYDRANT - COLOR CODE



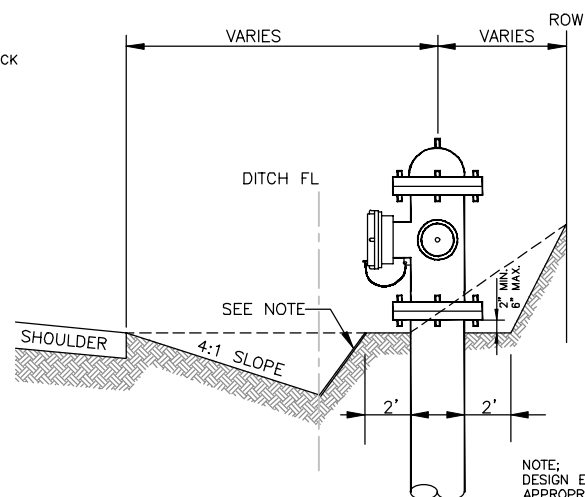
3  
2

## FIRE HYDRANT - PLAN



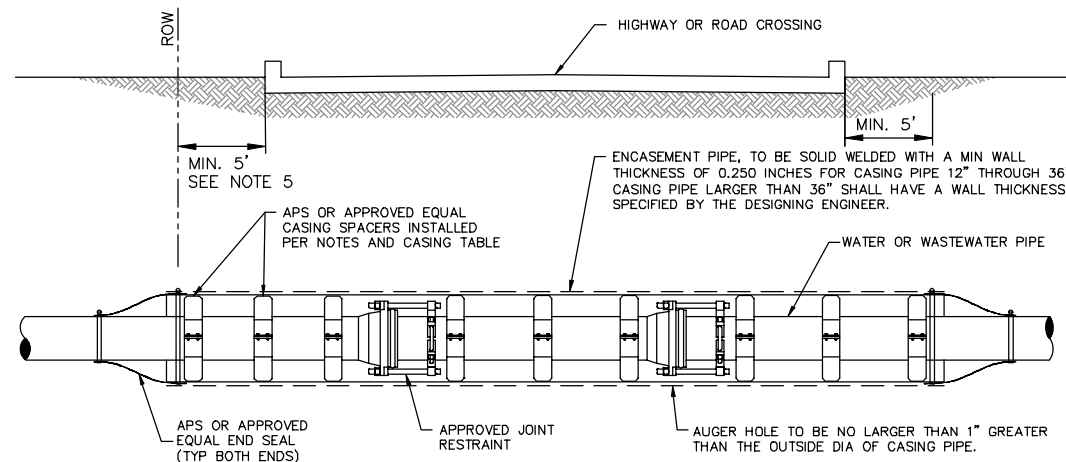
4  
2

## ALTERNATE FIRE HYDRANT - PLAN



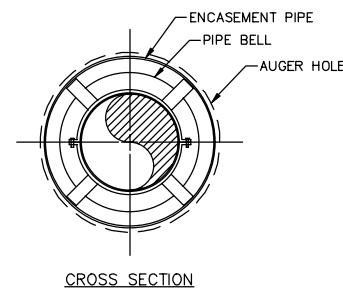
5  
2

## TYPICAL SECTION STREET WITHOUT CURB AND GUTTER



## LONGITUDINAL SECTION

CASING TABLE		
NOMINAL PIPE SIZE DIA IN INCHES	MIN CASING SIZE INSIDE DIA IN INCHES	MAX SKID SUPPORT SPACING IN FEET
4	12	4.7
6	12	6.3
8	16	7.4
10	18	8.5
12	20	9.6
15 & 16	22	11.0
18	26	12.0
20 & 21	30	12.0
24	33	12.0
27	36	12.0



## CROSS SECTION

### NOTES:

- SPACERS FOR CARRIER PIPE SHALL BE STAINLESS STEEL, NEOPRENE OR APPROVED EQUAL AND SHALL BE INSTALLED TO CENTER CARRIER PIPE WITHIN CASING WITH A MAX TOLERANCE OF 1/2" BETWEEN RUNNER AND CASING INSIDE AS WELL AS PREVENT THE CARRIER PIPE FROM RESTING ON THE BELLS WITHIN THE CASING. SEE CASING TABLE FOR SPACER DISTANCE AND NUMBER OF SPACERS.
- SPACERS TO BE PLACED A MIN OF 1' BACK FROM EACH JOINT THAT FALLS WITHIN CASING, A GREATER SET BACK MAY BE REQUIRED FOR LARGER PIPE. SEE CASING TABLE FOR ADDITIONAL INFO ON SPACING OF SUPPORTS.
- WHEN INSTALLING GRAVITY PIPE WITH CASING CONTRACTOR SHALL TAKE INTO CONSIDERATION PIPE GRADE SO THAT THE SEWER PIPE MAINTAINS THE PROPER FALL.
- JOINT RESTRAINTS ARE REQUIRED ON ALL JOINTS THAT FALL UNDER OR WITHIN 10' OF HIGHWAY CROSSINGS REGARDLESS OF PIPE MATERIAL, CASED OR NOT.
- THE LENGTH OF CASING MAY VARY DEPENDING ON THE TYPE OF ROADWAY. THE CASING SHALL BE EXTENDED FROM ROW TO ROW FOR STATE HIGHWAYS, THOROUGHFARES, AND COLLECTOR STREETS.

### NOTES:-

- THE FIRE HYDRANT SUPPLY LINE FROM PUBLIC WATER MAIN TO THE FIRE HYDRANT SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE. PVC SHALL NOT BE ALLOWED.
- FIRE HYDRANT THREAD SIZE: PUMPER CONNECTION 4-492 SIZE=4.492".
- PROVIDE "UNI-FLANGE" OR APPROVED EQUAL PIPE RESTRAINT AND CASING SYSTEM ON UNDERGROUND PRESSURE PIPE SYSTEMS.
- FIRE HYDRANT ASSEMBLIES SHALL NORMALLY BE LOCATED THREE FEET BEHIND BACK OF CURB, DEFLECT WATERLINES AS NECESSARY TO MAINTAIN THREE FOOT CLEARANCE. REQUIRED ASSEMBLY SHALL INCLUDE ONE LINE SIZE BY SIX INCH TEE, ONE SIX INCH GATE VALVE AND BOX, ONE FIRE HYDRANT AND SIX INCH LEAD PIPING AND TIE BACKS.
- ALL CONCRETE THRUST BLOCKING SHALL BE PLACED TO FORM A SOLID CONNECTION BETWEEN FITTINGS, VALVES, AND FIRE HYDRANTS AND UNDISTURBED EARTH. CONCRETE FOR THRUST BLOCKING SHALL HAVE A MINIMUM OF 2500 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS.
- INSTALL CONCRETE BLOCK BENEATH FIRE HYDRANTS BEFORE PLACING CONCRETE THRUST BLOCKING TO INSURE THAT FIRE HYDRANTS ARE INSTALLED LEVEL.
- ALL FIRE HYDRANTS AND VALVE BOXES ARE TO BE ADJUSTED TO FINISH GRADE AFTER PAVING IS COMPLETE.
- ALL FIRE HYDRANTS ARE TO BE EQUIPPED WITH HYDRA-STORZ QUICK CONNECT HYDRANT SYSTEM (1/4 X 5" BASE) WITH DEBRIS CAP. MANUFACTURED BY HYDRA-SHIELD, INC. OR APPROVED EQUAL. DEBRIS CAP IS TO BE TETHERED WITH A 12" STAINLESS STEEL CABLE, UTILIZING THE EYELET ON THE FIRE HYDRANT AND THE DEBRIS CAP.
- CONTRACTOR SHALL NOTIFY CITY ENGINEER 48 HOURS BEFORE START OF CONSTRUCTION.
- ALL FIRE HYDRANT RESTRAINTS TO BE MJ FITTING.
- ALL BONNETS AND CAP SHALL BE FACTORY PRIMED

PLEASE READ THE APPLICABLE COP SPECIFICATION SECTIONS FOR DETAILED INFORMATION.

PLEASE REFERENCE THE COP APPROVED PRODUCT LIST FOR APPLICABLE PRODUCT INFORMATION.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON STANDARD CITY OF PEARLAND PROJECTS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS.



City of Pearland, Texas

STANDARD DETAILS

WATER 2 of 2

Job No.: 17260	Scale: HORIZ: 1"=NONE VERT: 1"=NONE	SHEET
Date: JAN 2020	Dwn By: PRP	195
Chkd By: RS	CAD FILE: COP-WTR2	

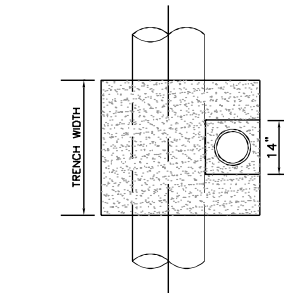
1. PVC PIPE (POLYVINYL CHLORIDE) SHALL BE IN ACCORDANCE WITH ASTM D3034, SDR 26 GRAVITY.
2. ALL PVC PIPE (ALL TYPES AND SDR/DR WALL THICKNESS TO BE USED) SHALL HAVE RUBBER GASKET EQUIPPED BELL AND SPOT JOINTS CONFORMING TO ASTM D-3212. THE GASKET MATERIAL SHALL CONFORM TO ASTM F-477. SOLVENT WELDED JOINTS WILL NOT BE APPROVED FOR CITY SEWER LINES.
3. MAINTAIN 12-INCH MINIMUM CLEARANCE BETWEEN ALL SANITARY SEWERS, AND CULVERTS UNLESS OTHERWISE NOTED.
4. BEDDING FOR ALL TYPES OF SANITARY SEWER PIPE SHALL BE CLASS "AA" AT ALL DEPTHS (NO SEPARATE PAY).
5. FOR ALL PVC PIPE, USE MANHOLE WATER STOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS (NO SEPARATE PAY).
6. SANITARY SEWER MANHOLES SHALL BE STANDARD TYPE, UNLESS OTHERWISE NOTED, AND BACKFILLED WITH CEMENT STABILIZED SAND AS SPECIFIED (NO SEPARATE PAY). ALL SANITARY MANHOLES SHALL BE AT LEAST 1 FOOT ABOVE THE 100 YEAR BASE FLOOD ELEVATION. SECTIONS FOR PRECAST MANHOLES SHALL BE JOINED WITH RUBBER GASKET JOINTS. "RAM NEK" MAY BE ADDED BUT CAN NOT SUBSTITUTE THE RUBBER GASKET.
7. ALL FAR-SIDE LEADS SHALL BE 6" DIAMETER AT 0.7% OR 8" DIAMETER AT 0.44% MIN. SLOPE AND SHALL BE PVC, DR 26, 150 PSI PRESSURE PIPE CONFORMING TO ASTM D-2241.
8. LEADS SERVING TWO LOTS SHALL HAVE A SERVICE "WYE" WITH PLUGS (NO SEPARATE PAY). THE "WYE" SHALL BE LOCATED WITHIN THE STREET RIGHT-OF-WAY OR ADJOINING UTILITY EASEMENT.
9. IF WET SAND IS ENCOUNTERED IN THE FIELD, USE SPECIAL BEDDING AS DETERMINED BY THE CITY.
10. PROVIDE "UNI-FLANGE" OR APPROVED EQUAL PIPE RESTRAINT AND CASING SYSTEM ON UNDERGROUND PRESSURE PIPE SYSTEMS.
11. CONTRACTOR SHALL MARK AND MAINTAIN RECORDS OF STUBS, STACKS, AND END OF SERVICE LEAD LOCATION AS A PART OF AS-BUILT.

1. THE UTILITY CONTRACTOR IS RESPONSIBLE FOR LOCATING AND MARKING ALL STACKS AND FAR SIDE LEADS AFTER THE PAVING IN THIS SECTION IS COMPLETE. A 1/4-INCH DEEP NOTCH SHALL BE CUT IN THE CURB AND PAINTED WITH A GREEN LINE ADJACENT TO THE STACK OR LEAD.



2  
1

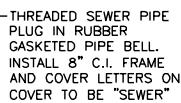
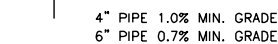
LIFT STATION ACCESS ROAD



**SECTION "A-A"**

NOTES:  
1. PROVIDE STACKS FOR SERVICE CONNECTION WHEREVER THE CROWN OF THE SEWER IS 8 FEET OR MORE BELOW FINISHED GRADE.

1 SANITARY SEWER STACK  
2



NOTES:

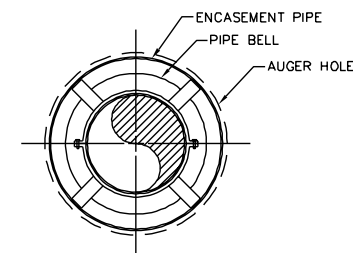
1. ALL SANITARY SEWER SERVICES WILL BE BROUGHT TO WITHIN 4 TO 6 FEET OF FINISHED LOT GRADE ELEVATION AT PROPERTY LINE (RIGHT OF WAY).
2. SEWER SERVICE LEADS SHALL NOT BE BACKFILLED UNTIL VISUALLY INSPECTED BY CITY INSPECTOR.
3. SANITARY SEWER SERVICES SHALL NOT BE CONNECTED TO MANHOLE.

(MARK ACTUAL STATION AND FLOW LINE  
ELEVATION OF EACH SERVICE CONNECTION  
AT PLUG ON AS-BUILT DRAWINGS.)

**2** **DOUBLE SEWER SERVICE**



CASING TABLE			
NOMINAL PIPE SIZE DIA IN INCHES	MIN CASING SIZE INSIDE DIA IN INCHES	MAX SKID SUPPORT SPACING IN FEET	
4	12	4.7	
6	12	6.3	
8	16	7.4	
10	18	8.5	
12	20	9.6	
15 & 16	22	11.0	
18	26	12.0	
20 & 21	30	12.0	
24	33	12.0	
27	36	12.0	

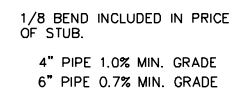


CROSS SECTION

NOTES:

1. SPACERS FOR CARRIER PIPE SHALL BE STAINLESS STEEL, NEOPRENE OR APPROVED EQUAL AND SHALL BE INSTALLED TO CENTER CARRIER PIPE WITHIN CASING WITH A MAX TOLERANCE OF  $\frac{1}{2}$ " BETWEEN RUNNER AND CASING INSIDE AS WELL AS PREVENT THE CARRIER PIPE FROM RESTING ON THE BELLS WITHIN THE CASING. SEE CASING TABLE FOR SPACER DISTANCE AND NUMBER OF SPACERS.
2. SPACERS TO BE PLACED A MIN OF 1' BACK FROM EACH JOINT THAT FALLS WITHIN CASING, A GREATER SET BACK MAY BE REQUIRED FOR LARGER PIPE. SEE CASING TABLE FOR ADDITIONAL INFO ON SPACING OF SUPPORTS.
3. WHEN INSTALLING GRAVITY PIPE WITH CASING CONTRACTOR SHALL TAKE INTO CONSIDERATION PIPE GRADE SO THAT THE SEWER PIPE MAINTAINS THE PROPER FALL.
4. JOINT RESTRAINTS ARE REQUIRED ON ALL JOINTS THAT FALL UNDER OR WITHIN 10' OF HIGHWAY CROSSINGS REGARDLESS OF PIPE MATERIAL, CASED OR NOT.
5. THE LENGTH OF CASING MAY VARY DEPENDING ON THE TYPE OF ROADWAY. THE CASING SHALL BE EXTENDED FROM ROW TO ROW FOR STATE HIGHWAYS, THOROUGHFARES, AND COLLECTOR STREETS.

**3 STEEL PIPE CASING**



NOTES:

1. ALL SINGLE SEWER SERVICES AND DOUBLE SEWER SERVICES, AS SHOWN, ARE INTERCHANGEABLE, AS REQUIRED, TO CONNECT WITH STACKS, DOUBLE WYES AND WYES, AS REQUIRED, TAPS FOR PVC PIPE TO BE PVC "T" OR "Y".
2. SANITARY SEWER SERVICES SHALL NOT BE CONNECTED TO MANHOLE.

1. ALL SANITARY SEWER TAPS WILL BE PLACED IN LINE WITH PROPERTY CORNER OR PLACED HALF WAY BETWEEN THE FRONT LOT CORNERS, OR AT PC OF CURB RETURN IN MULTI LOT SUBDIVISIONS.
2. IF LOTS ARE LESS THAN 60', IN WIDTH TAPS ARE TO BE PLACED AT PROPERTY CORNERS.

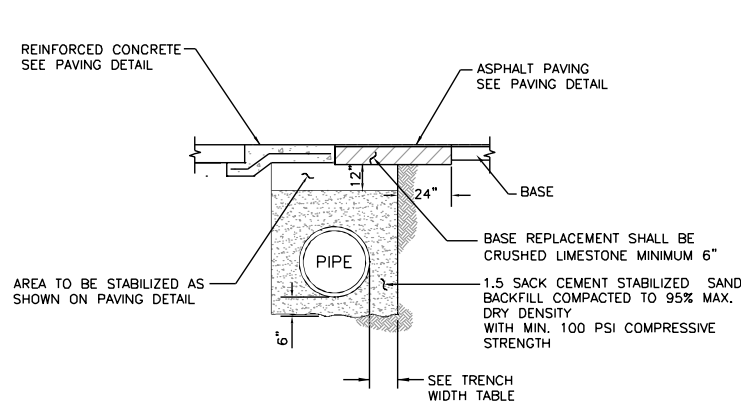
THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON STANDARD CITY OF PEARLAND PROJECTS.  
AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS.



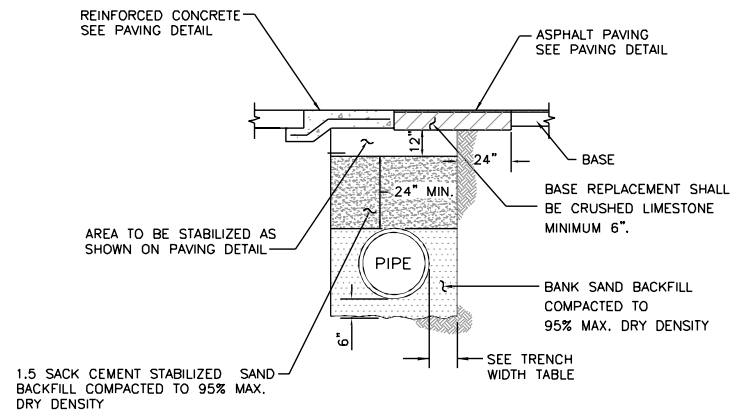
SANITARY SEWER

Job No.:	Scale:	SHEET  196
Date: JAN 2020	HORZ: 1"=NONE VERT: 1"=NONE	
Dwn By: RS	CAD FILE:	
Chkd By: RU	COP-SAN2	

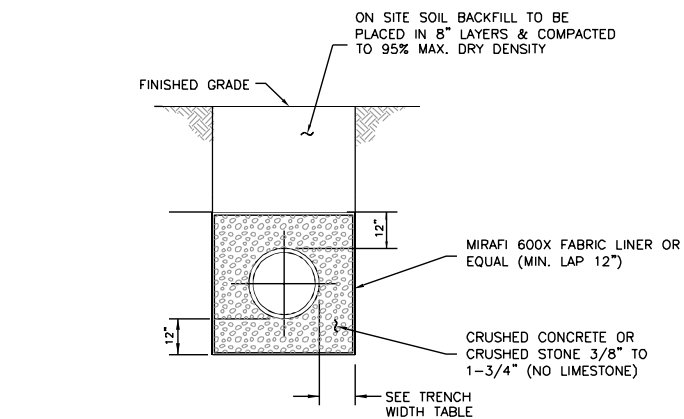




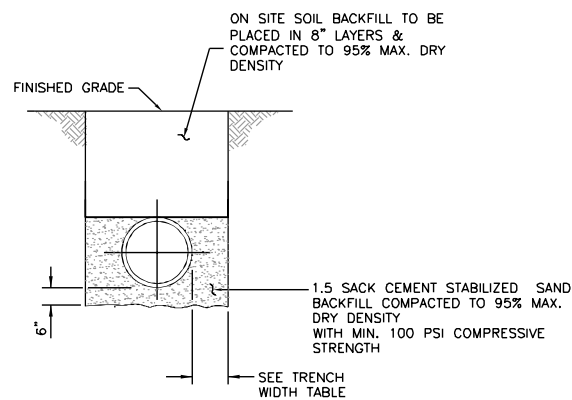
**1**  
**3** TRENCH SECTION FOR GRAVITY SEWER  
UNDER PAVEMENT



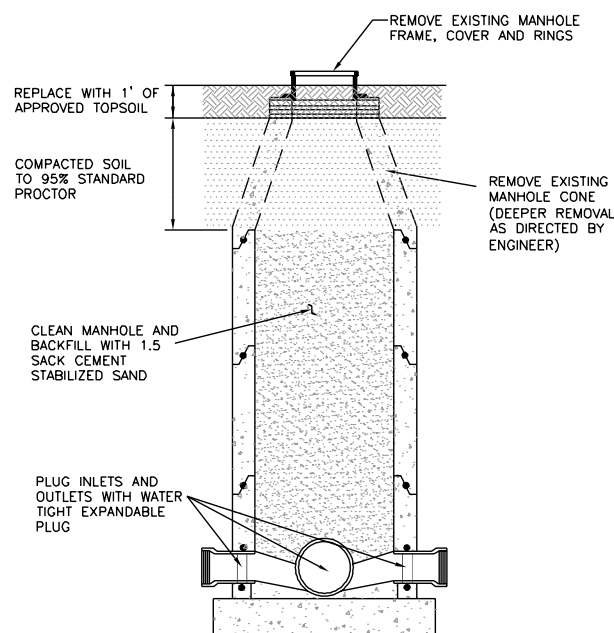
**4**  
**3** BEDDING AND BACKFILL FOR FORCE MAIN  
UNDER PAVEMENT



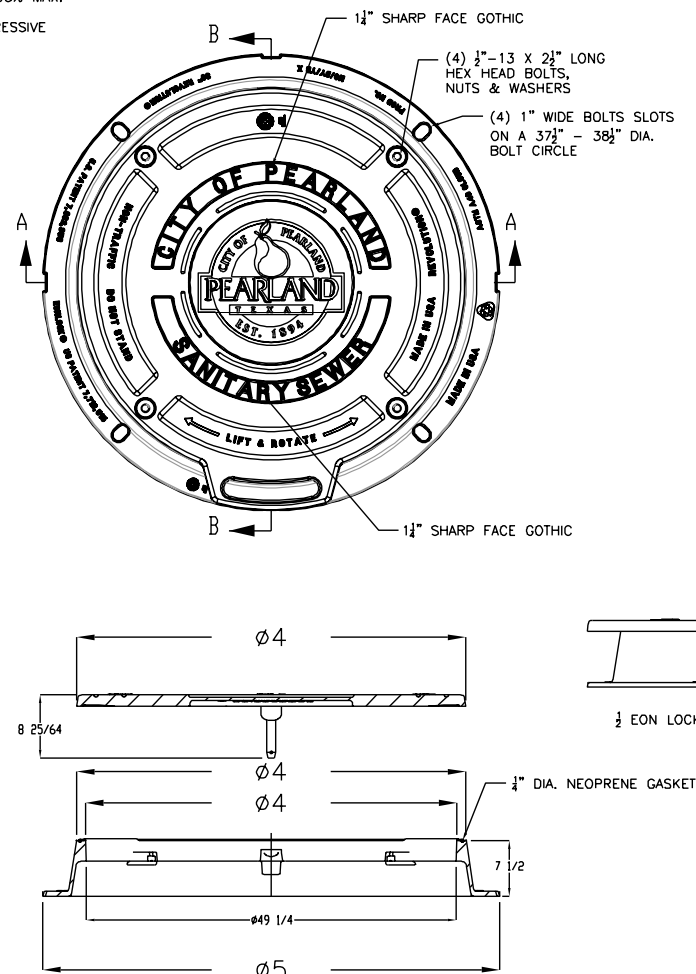
**6**  
**3** BEDDING AND BACKFILL FOR WET SAND  
GRADED AREA



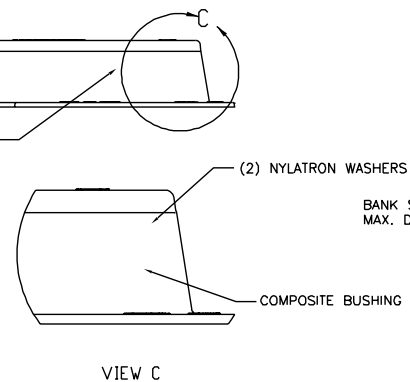
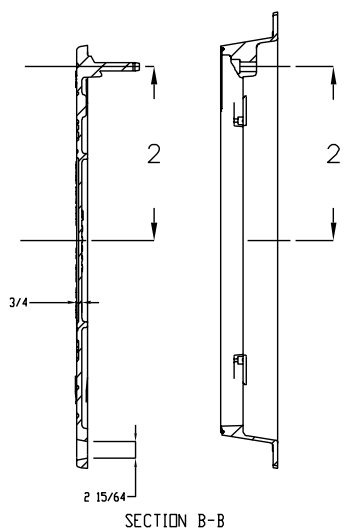
**2**  
**3** AA PIPE BEDDING DETAIL FOR GRAVITY SEWER  
GRADED AREA



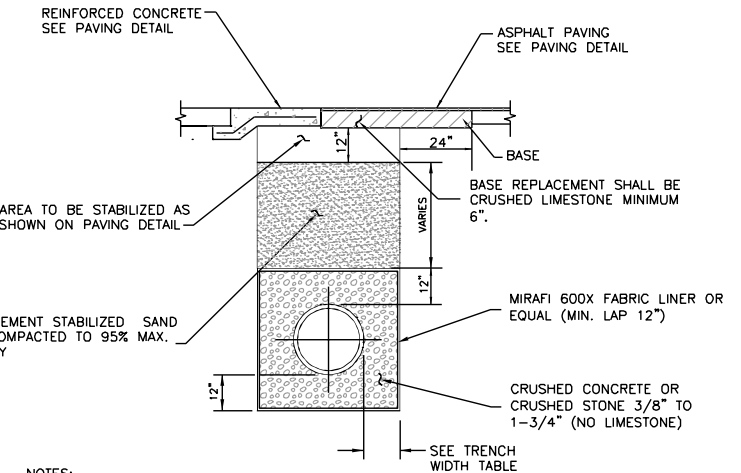
**3**  
**3** SANITARY SEWER MANHOLE ABANDONMENT



**5**  
**3** 30' REVOLUTION ASSEMBLY

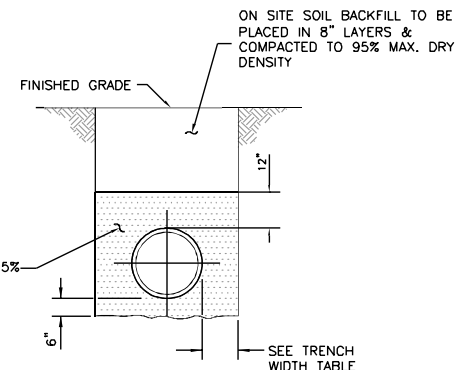


NOTE:  
1. 30" REVOLUTION ASSEMBLY MANHOLE FRAME AND COVER TO BE EJ IRON WORKS, OR OTHER APPROVED EQUAL BY PUBLIC WORKS.  
2. USE REVOLUTION ASSEMBLY FOR MANHOLES COVER 2' ABOVE GRADE.



NOTES:  
1. NECESSITY FOR USE OF THIS SECTION TO BE DETERMINED BY THE ENGINEER AS CONSTRUCTION PROGRESSES AND MAY BE MODIFIED BY THE ENGINEER TO SUIT CONDITIONS ENCOUNTERED.  
2. WELL POINTS TO BE INSTALLED AND TRENCH KEPT DRY DURING CONSTRUCTION UNTIL BACKFILL IS COMPLETELY PLACED AS APPROVED BY ENGINEER.

**7**  
**3** BEDDING AND BACKFILL FOR WET SAND  
UNDER PAVEMENT



**8**  
**3** BEDDING AND BACKFILL FOR FORCE MAIN  
GRADED AREA

NOTE:

1. ALL PVC PIPE SHALL HAVE RUBBER GASKET EQUIPPED BELL AND SPIGOT JOINTS CONFORMING TO ASTM D3212. ELASTOMERIC SEALS SHALL BE A SINGLE DOUBLE-SEALING GASKET SPANNING ONE FULL CORRUGATION WITH THE LEADING EDGE BEING LOWER THAN THE SECOND EDGE TO FACILITATE PROPER JOINING. THE GASKET MATERIAL SHALL CONFORM TO ASTM F477.
2. ALL JOINTS IN PRE-CAST CONCRETE PIPE AND BOX SHALL RECEIVE JOINT SEALANT, RAM-NEK, OR APPROVED EQUAL.
3. ALL PIPE WITHIN 1' OF PAVEMENT SHALL USE BACKFILL DETAIL FOR UNDER PAVEMENT.

TRENCH WIDTH TABLE	
NOMINAL PIPE SIZE (INCHES)	MINIMUM TRENCH WIDTH (INCHES)
LESS THAN 18	O.D. + 18
18 TO 30	O.D. + 24
GREATER THAN 30	O.D. + 36

PLEASE READ THE APPLICABLE COP SPECIFICATION SECTIONS FOR DETAILED INFORMATION.

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City of Pearland, Texas

STANDARD DETAILS

SANITARY SEWER

Job No.:	Scale:	SHEET
Date: JAN 2020	HORIZ: 1"=NONE	197
Drawn By: RS	VERT: 1"=NONE	
Checked By: RU	CAD FILE:	
	COP-SAN3	

ESTIMATE SUMMARY - BID PRICES

Bid #	Client Bid#	Description	Total Cost	Total Cost Unit Price	Markup	Balanced Bid Total	Balanced Bid Unit Price	Pricing Status	Bid Price	Bid Total
Quantity	Unit		Cost							
1		BORE 12" CASING FOR 6" FORCEMAIN			15.0%					
291.00			41,300.77	141.93	7,288	48,589	166.97		166.970	48,588.27
TOTALS:			41,300.77		7,288	48,589				48,588.27

Code between Balanced Bid & Bid Price: U=Unbalanced, F=Frozen, C=Closing Biditem (item to absorb unbalancing differences).

\*\* in front of the Biditem indicates a Non-Additive item

ESTIMATE SUMMARY - BID PRICES

Bid #	Client Bid#	Description	Total Cost	Total Cost Unit Price	Markup	Balanced Bid Total	Balanced Bid Unit Price	Pricing Status	Bid Price	Bid Total
	Quantity Unit		Cost							
BID COSTS =====>					41,301					
ACTUAL MARKUP =====>					7,288					
TOTAL BID =====>					48,588					

Spread Indirects on: TOTAL COST    Spread Markup on: TOTAL COST  
Default Markup %:

- Labor: 0%
- Burden: 0%
- Perm Matl: 0%
- Const Matl: 0%
- Sub: 0%
- Eqp Op Exp: 0%
- Co. Equip: 0%
- Rented Eqp: 0%
- Trucking: 0%
- Misc 2: 0%
- Misc 3: 0%

Spread Addons & Bond TOTAL COST

Bond Calculations

Selected Bond Table: B1 Description: Bond

	Contract Amount	Rate per 1000	Bond Amount
First:	\$ 100,000	25.00	\$ 1,214.73
Next:	\$ 400,000	15.00	\$ 0.00
Next:	\$ 2,000,000	10.00	\$ 0.00
Next:	\$ 2,500,000	7.50	\$ 0.00
Next:	\$ 2,500,000	7.00	\$ 0.00
Remainder:		6.50	\$ 0.00
Subtotal:			\$ 1,214.73
Time Threshold 1:	Extended Time Rate 1: %		\$ 0.00
Time Threshold 2:	Extended Time Rate 2: %		\$ 0.00
Length of Job: 1	Total Bond Amount:		\$ 1,214.73

iCON GC, LLC  
23-10020-04      CR58 - FM Casing  
Chris Burke

ESTIMATE SUMMARY - BID PRICES

Bid #	Client Bid#	Description	Total	Total Cost		Balanced	Balanced Bid	Pricing	Bid	Bid
Quantity	Unit		Cost	Unit Price	Markup	Bid Total	Unit Price	Status	Price	Total

----- ESTIMATE NOTES: -----

Bid Date:

Owner:  
Estimator-In-Charge:

Engineering Firm:  
Desired Bid (if specified) = 0

Last Summary on 05/02/2024 at 6:21 PM.  
Last Spread on 05/02/2024 at 6:21 PM.

Cost Report

Biditem - Parent  
1

BORE 12" CASING FOR 6" FORCEMAIN  
Takeoff Qty: 291.000  
Bid Qty: 291.000

Manhours	Unit/MH	MH/Unit	Unit/CH
125.5000	2.3187	0.4313	0.0000

Biditem  
10

BORE #1  
Takeoff Qty: 170.000 LF  
Bid Qty: 170.000 LF

Manhours	Unit/MH	MH/Unit	Unit/CH
43.5000	3.9080	0.2559	17.8947

Activity: 1

Dig Bore Pits

Quantity: 2.00

Unit: EA

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
16.0000	0.1250	8.0000

Calendar: 510

5 Shifts 10 Hours per Shift

Hrs/Shift: 10

WC: 5560

Paving

Crew: C33

(Mod) WET BORE CREW

Prod: HU 2

Eff: 100.00

Crew Hrs: 4.00

Labor Pcs: 4.00

Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8TB	TRENCH BOX	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Activity: 2

Bore 12" Casing & Install Pipe

Quantity: 170.00

Unit: LF

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
0.0088	113.3333	0.1500	1,133.3333	0.0009

Manhours	Unit/MH	MH/Unit
7.5000	22.6667	0.0441

Calendar:5105 Shifts 10 Hours per ShiftHrs/Shift: 10WC: 5560Paving

Crew:C29(Mod) MANHOLE CREWProd: CH 1.5Eff: 100.00Crew Hrs: 1.50Labor Pcs: 5.00Equipment Pcs: 1.00

Resource	Description	Pcs/Wste	Quantity	Unit
2CAS12	12" Steel Casing	1.00	170.00	LF
2CAS1201	12" End Seal	1.00	2.00	EA
2CAS1202	12"x6" Casing Spacers	1.00	28.00	EA
2W060003	6" C-900 DR-18 PVC Pipe	1.00	170.00	LF
4SB0001	Wet Bore	1.00	170.00	LF
8EX20	EXC (20T)	1.00	1.50	HR
UFM	Foreman	1.00	1.50	MH
UL	Laborer - Utility	1.00	1.50	MH
UOE	Excavator Operator (UTILITY)	1.00	1.50	MH
UOP	Pipe Layer	1.00	1.50	MH
UPLH	Pipe Layer Helper	1.00	1.50	MH

Activity:3Backfill Bore PitsQuantity: 2.00Unit: EA

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
20.0000	0.1000	10.0000

Calendar:5105 Shifts 10 Hours per ShiftHrs/Shift: 10WC: 5560Paving

Crew:C33(Mod) WET BORE CREWProd: HU 2Eff: 100.00Crew Hrs: 4.00Labor Pcs: 5.00Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8RSF48	SFC 48	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOC	Compactor Operator	1.00	4.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Biditem

20

BORE #2

Takeoff Qty:67.000 LF

Bid Qty:67.000 LF

Manhours	Unit/MH	MH/Unit	Unit/CH
41.0000	1.6341	0.6119	7.4444



Activity:	1	Dig Bore Pits	(Unreviewed)	Quantity: 2.00	Unit: EA
-----------	---	---------------	--------------	----------------	----------

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
16.0000	0.1250	8.0000

Calendar: 510 5 Shifts 10 Hours per Shift Hrs/Shift: 10 WC: 5560 Paving

Crew: C33 (Mod) WET BORE CREW Prod: HU 2 Eff: 100.00 Crew Hrs: 4.00 Labor Pcs: 4.00 Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8TB	TRENCH BOX	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Activity:	2	Bore 12" Casing & Install Pipe	(Unreviewed)	Quantity: 67.00	Unit: LF
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Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
0.0149	67.0000	0.1000	670.0000	0.0015

Manhours	Unit/MH	MH/Unit
5.0000	13.4000	0.0746

Calendar: 510 5 Shifts 10 Hours per Shift Hrs/Shift: 10 WC: 5560 Paving

Crew: C29 (Mod) MANHOLE CREW Prod: CH 1 Eff: 100.00 Crew Hrs: 1.00 Labor Pcs: 5.00 Equipment Pcs: 1.00

Resource	Description	Pcs/Wste	Quantity	Unit
2CAS12	12" Steel Casing	1.00	67.00	LF
2CAS1201	12" End Seal	1.00	2.00	EA
2CAS1202	12"x6" Casing Spacers	1.00	11.00	EA
2W060003	6" C-900 DR-18 PVC Pipe	1.00	67.00	LF
4SB0001	Wet Bore	1.00	67.00	LF
8EX20	EXC (20T)	1.00	1.00	HR
UFM	Foreman	1.00	1.00	MH
UL	Laborer - Utility	1.00	1.00	MH
UOE	Excavator Operator (UTILITY)	1.00	1.00	MH
UOP	Pipe Layer	1.00	1.00	MH
UPLH	Pipe Layer Helper	1.00	1.00	MH

Activity:	3	Backfill Bore Pits	(Unreviewed)	Quantity: 2.00	Unit: EA
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Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
20.0000	0.1000	10.0000

Calendar:5105 Shifts 10 Hours per ShiftHrs/Shift: 10WC: 5560Paving

Crew:C33(Mod) WET BORE CREWProd: HU 2Eff: 100.00Crew Hrs: 4.00Labor Pcs: 5.00Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8RSF48	SFC 48	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOC	Compactor Operator	1.00	4.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Biditem

30

BORE #3

Takeoff Qty: 54.000 LFBid Qty: 54.000 LF

Manhours	Unit/MH	MH/Unit	Unit/CH
41.0000	1.3171	0.7593	6.0000

Activity:1Dig Bore Pits(Unreviewed)Quantity: 2.00Unit: EA

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
16.0000	0.1250	8.0000

Calendar:5105 Shifts 10 Hours per ShiftHrs/Shift: 10WC: 5560Paving

Crew:C33(Mod) WET BORE CREWProd: HU 2Eff: 100.00Crew Hrs: 4.00Labor Pcs: 4.00Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8TB	TRENCH BOX	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Activity:	2	Bore 12" Casing & Install Pipe	(Unreviewed)	Quantity: 54.00	Unit: LF
-----------	---	--------------------------------	--------------	-----------------	----------

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
0.0185	54.0000	0.1000	540.0000	0.0019

Manhours	Unit/MH	MH/Unit
5.0000	10.8000	0.0926

Calendar: 510 5 Shifts 10 Hours per Shift Hrs/Shift: 10 WC: 5560 Paving

Crew: C29 (Mod) MANHOLE CREW Prod: CH 1 Eff: 100.00 Crew Hrs: 1.00 Labor Pcs: 5.00 Equipment Pcs: 1.00

Resource	Description	Pcs/Wste	Quantity	Unit
2CAS12	12" Steel Casing	1.00	54.00	LF
2CAS1201	12" End Seal	1.00	2.00	EA
2CAS1202	12"x6" Casing Spacers	1.00	9.00	EA
2W060003	6" C-900 DR-18 PVC Pipe	1.00	54.00	LF
4SB0001	Wet Bore	1.00	54.00	LF
8EX20	EXC (20T)	1.00	1.00	HR
UFM	Foreman	1.00	1.00	MH
UL	Laborer - Utility	1.00	1.00	MH
UOE	Excavator Operator (UTILITY)	1.00	1.00	MH
UOP	Pipe Layer	1.00	1.00	MH
UPLH	Pipe Layer Helper	1.00	1.00	MH

Activity:	3	Backfill Bore Pits	(Unreviewed)	Quantity: 2.00	Unit: EA
-----------	---	--------------------	--------------	----------------	----------

Crew Hrs/Unit	Units/Crew Hr	Shifts	Units/Shift	Shifts/Unit
2.0000	0.5000	0.4000	5.0000	0.2000

Manhours	Unit/MH	MH/Unit
20.0000	0.1000	10.0000

Calendar: 510 5 Shifts 10 Hours per Shift Hrs/Shift: 10 WC: 5560 Paving

Crew: C33 (Mod) WET BORE CREW Prod: HU 2 Eff: 100.00 Crew Hrs: 4.00 Labor Pcs: 5.00 Equipment Pcs: 3.00

Resource	Description	Pcs/Wste	Quantity	Unit
8EX30	EXC (30T)	1.00	4.00	HR
8RSF48	SFC 48	1.00	4.00	HR
8TUT	FOREMAN TRUCK	1.00	4.00	HR
UFM	Foreman	1.00	4.00	MH
UL	Laborer - Utility	2.00	8.00	MH
UOC	Compactor Operator	1.00	4.00	MH
UOE	Excavator Operator (UTILITY)	1.00	4.00	MH

Calendars Used In Estimate

510	5 Shifts 10 Hours per Shift
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Winkler, Michael

---

From: Kane Mudd <kmudd@lja.com>  
Sent: Thursday, April 18, 2024 11:07 AM  
To: Wael Tabara; Barbara Martinez; Builder Services  
Cc: Landry, Tony; Cervantes, Javier; Jose Colon; Jason Cortes; Winkler, Michael  
Subject: RE: RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

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Wael,

Please feel free to use the County's specs for this work.

Best Regards,

KANE MUDD, P.E. | Senior Project Manager

Houston Land Development

O: 713.953.5215 | C: 573.795.5661

3600 W Sam Houston Pkwy S, Suite 600, Houston, TX 77042

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From: Wael Tabara <WaelT@brazoriacountytx.gov>  
Sent: Wednesday, April 17, 2024 7:37 AM  
To: Kane Mudd <kmudd@lja.com>; Barbara Martinez <BarbaraM@brazoriacountytx.gov>; Builder Services <bldrservices@mdswater.com>  
Cc: Landry, Tony <Anthony.Landry@aecom.com>; Cervantes, Javier <javier.cervantes@aecom.com>; Jose Colon <jcolon@mdswater.com>; Jason Cortes <jcortes@mdswater.com>; Winkler, Michael <michael.winkler@aecom.com>  
Subject: RE: [EXTERNAL] RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

[EXTERNAL EMAIL]

Does the Mud have any specs that we shall follow? If no, can we follow the County's specs and share with you first?  
Also, fyi, this will be a change order for the County.

Best Regards,

**Wael Tabara**, P.E., MAsC, CFM, Env SP  
Assistant County Engineer



**Brazoria County Engineering**

451 N. Velasco, Suite 230, Angleton, TX 77515

O (979) 864-1265

**New email address**

E [WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)

[www.brazoriacountytx.gov](http://www.brazoriacountytx.gov)

---

From: Kane Mudd <[kmudd@lja.com](mailto:kmudd@lja.com)>

Sent: Wednesday, April 17, 2024 7:29 AM

To: Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Builder Services <[bldrservices@mdswater.com](mailto:bldrservices@mdswater.com)>

Cc: Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony <[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>; Jose Colon <[jcolon@mdswater.com](mailto:jcolon@mdswater.com)>; Jason Cortes <[jcortes@mdswater.com](mailto:jcortes@mdswater.com)>; Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>

Subject: RE: [EXTERNAL] RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

Good morning Barbara,

The force main under CR 58 should have a case pipe. I'm not too particular about the material, but the added protection and serviceability are worth it. Let me know if you have any questions. Thanks.

Best Regards,

KANE MUDD, P.E. | Senior Project Manager

Houston Land Development

O: 713.953.5215 | C: 573.795.5661

3600 W Sam Houston Pkwy S, Suite 600, Houston, TX 77042

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---

From: Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>

Sent: Tuesday, April 16, 2024 11:58 AM

To: Builder Services <[bldrservices@mdswater.com](mailto:bldrservices@mdswater.com)>; Kane Mudd <[kmudd@lja.com](mailto:kmudd@lja.com)>

Cc: Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony <[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>; Jose Colon <[jcolon@mdswater.com](mailto:jcolon@mdswater.com)>; Jason Cortes <[jcortes@mdswater.com](mailto:jcortes@mdswater.com)>; Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>

Subject: RE: [EXTERNAL] RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

[EXTERNAL EMAIL]

Kane,



Following up on that voicemail I left you this morning, I just wanted to get an update on the email below. Can you confirm whether or not MUD will require casing underneath the CR 48 crossings shown in the plan sheets?

Thank you,

**Barbara X. Martinez, P.E.**  
Staff Engineer



**Brazoria County Engineering**

451 N. Velasco, Suite 230, Angleton, TX 77515

O (979) 864-1265

E [BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)

[www.brazoriacountytx.gov](http://www.brazoriacountytx.gov)

---

From: Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>

Sent: Tuesday, April 9, 2024 8:53 AM

To: Builder Services <[bldrservices@mdswater.com](mailto:bldrservices@mdswater.com)>; [kmudd@lja.com](mailto:kmudd@lja.com)

Cc: Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony

<[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>; Jose Colon

<[jcolon@mdswater.com](mailto:jcolon@mdswater.com)>; Jason Cortes <[jcortes@mdswater.com](mailto:jcortes@mdswater.com)>

Subject: [EXTERNAL] RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

Good Morning Kane,

I had reached out to the City of Pearland and MUD District about a road widening project in Brazoria County. Part of the project involves relocating a sanitary sewer line along CR 58, we were trying to see if casing would be required underneath a particular crossing at CR 48 where the new line will tie into the existing line. I attached the utility sheets from the plan set for your review, it is my understanding that the MUD district will maintain the line.

Will the MUD require casing underneath the CR 48 crossing shown in the plan sheets?

Thank you,

Mike Winkler, PE  
AECOM  
(281) 702-4247 (cell)

---

From: Builder Services <[bldrservices@mdswater.com](mailto:bldrservices@mdswater.com)>

Sent: Monday, April 8, 2024 1:49 PM

To: Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>

Cc: [BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov); Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony

<[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>; Jose Colon

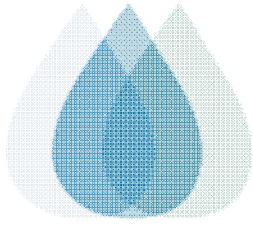
<[jcolon@mdswater.com](mailto:jcolon@mdswater.com)>; Jason Cortes <[jcortes@mdswater.com](mailto:jcortes@mdswater.com)>

Subject: RE: FW: BC21 - Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

Mike,

Please reach out to the District engineer for Brazoria County MUD No. 21 - Kane Mudd <[kmudd@lja.com](mailto:kmudd@lja.com)>

Thank you,



Builder Services Office

Municipal District Services, LLC  
406 W. Grand Parkway S., Suite 260, Katy, Texas 77494  
Main: 281-290-6500 Option 3 | Fax: 281-392-3643  
[bldrservices@mdswater.com](mailto:bldrservices@mdswater.com) | [www.mdswater.com](http://www.mdswater.com)

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---

From: Winkler, Michael [<mailto:michael.winkler@aecom.com>]  
Sent: Thursday, April 4, 2024 7:17 AM  
To: Telge Service <[telgeservice@mdswater.com](mailto:telgeservice@mdswater.com)>  
Cc: Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony <[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>  
Subject: RE: Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

CAUTION: EXTERNAL EMAIL

Good Morning Telge,

To clarify my question below, I had reviewed the City Casing Specifications and the only sanitary sewer roadway crossing in question is the CR 48 crossing at the east end of the project. Please review and provide the MUD's opinion on whether the casing is required. I apologize for any confusion, please feel free to contact me with any questions.

Thank you,

Mike Winkler, PE  
AECOM  
(281) 702-4247 (Cell)

---

From: Winkler, Michael  
Sent: Wednesday, April 3, 2024 4:30 PM  
To: [telgeservice@mdswater.com](mailto:telgeservice@mdswater.com)  
Cc: Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Landry, Tony <[Anthony.Landry@aecom.com](mailto:Anthony.Landry@aecom.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>  
Subject: FW: Brazoria County - CR 58 Utility Casings (Sanitary Sewer)

Good Afternoon,

I am reaching out about a roadway project that I am the project engineer on, I think Barbara with Brazoria County has spoken to you. There is a sanitary sewer line that is to be maintained by MUD No. 21 that our contractor is going to relocate as part of the road project.

In the attached utility plans from our contract, there are 4 sanitary sewer crossings of existing roadways. The e-mail chain below is where I had discussed using steel casing on these crossing with the City of Pearland Engineer. They had recommended using casing underneath the CR 48 crossing, but that I coordinate with the MUD No. 21.

Can you review the attached and advise if steel casing is required at these crossings?

Please let me know if you have any questions or need additional information.

Thank you,

Mike Winkler, PE  
AECOM  
(281) 702-4247 (Cell)

---

From: Winkler, Michael  
Sent: Friday, March 15, 2024 2:19 PM  
To: Rajendra Shrestha <[RShrestha@pearlandtx.gov](mailto:RShrestha@pearlandtx.gov)>  
Cc: Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Chris Burke <[chris@icontx.com](mailto:chris@icontx.com)>; Keith Burke <[keith@icontx.com](mailto:keith@icontx.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>  
Subject: RE: Brazoria County - CR 58 Utility Casings

Raj,

Ok, we will contact the MUD district as well. Thank you for your help.

Thank you,

Mike Winkler, PE  
AECOM  
(281) 702-4247 (Cell)

---

From: Rajendra Shrestha <[RShrestha@pearlandtx.gov](mailto:RShrestha@pearlandtx.gov)>  
Sent: Friday, March 15, 2024 2:12 PM  
To: Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>  
Cc: Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Chris Burke <[chris@icontx.com](mailto:chris@icontx.com)>; Keith Burke <[keith@icontx.com](mailto:keith@icontx.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>  
Subject: RE: Brazoria County - CR 58 Utility Casings

Mike,  
The City's guideline requires steel casing at CR 48 crossing and near Ivy Forest Ln. No issues with spacer.

The area is not in the City ETJ and the water and wastewater service appears that wastewater service is provided by MUD 21. I recommend you contact MUD 21 Engineer as shown on approved construction plan Note 4.

	NOTES:
	1. PIPE LENGTHS SHOWN IN PROFILE ARE FROM LENGTH OF CENTER OF STRUCTURE TO CENTER OF STRUCTURE. LENGTHS ARE SHOWN IN HYDRAULIC CALCULATIONS.
	2. STATION AND OFFSET ARE MEASURED TO CENTER OF INLET AT FACE OF CURB FOR ALL CURB INLETS AND JUNCTION BOXES. AREA ZONE DRAINS ARE MEASURED TO CENTER OF STRUCTURE.
	3. ALL HORIZONTAL & VERTICAL BORDERS SHALL HAVE THROTTLE BLOCKING, SEE DETAIL SHEET 191.
67	4. CONTRACTOR TO COORDINATE WITH NO AND NO. 21 ENGINEER-NAME WOOD, PE (WOOD@AECOM.COM), EOP-MICHAEL CUPPERS (CUPPERS@AECOM.COM), AND ALVIN STONEMAN (STONEMAN@AECOM.COM) PRIOR TO TURNING ANY EXISTING LINES OUT OF SERVICE.
65	
63	
61	
59	
57	
55	
	CR 58 FROM SAVANNAH DEVELOPMENT TO CR 48

Thank you  
Raj

## Rajendra Shrestha, P.E.

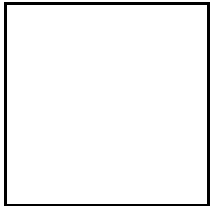
City Engineer | Engineering & Public Works  
City of Pearland | 2016 Old Alvin Rd | Pearland, TX  
77581

P: 281.652.1649

[pearlandtx.gov](http://pearlandtx.gov)



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From: Winkler, Michael <[michael.winkler@aecom.com](mailto:michael.winkler@aecom.com)>

Sent: Friday, March 15, 2024 1:44 PM

To: Rajendra Shrestha <[RShrestha@pearlandtx.gov](mailto:RShrestha@pearlandtx.gov)>

Cc: Wael Tabara <[WaelT@brazoriacountytx.gov](mailto:WaelT@brazoriacountytx.gov)>; Barbara Martinez <[BarbaraM@brazoriacountytx.gov](mailto:BarbaraM@brazoriacountytx.gov)>; Chris Burke <[chris@iconx.com](mailto:chris@iconx.com)>; Keith Burke <[keith@iconx.com](mailto:keith@iconx.com)>; Cervantes, Javier <[javier.cervantes@aecom.com](mailto:javier.cervantes@aecom.com)>

Subject: Brazoria County - CR 58 Utility Casings

[EXTERNAL EMAIL] This email is from outside the COP organization. DO NOT CLICK links or OPEN attachments unless you recognize the sender and know the content is safe.

Raj,

Thank you for calling me today. As a follow up to our conversation, I have attached the utility plan sheets showing where the sanitary sewer line crosses the roadway for this project. There are two smaller crossings that I have circled that I believe do not need steel casing, but the crossing of CR 48 and CR 58 might. Can you give me your opinion if we would need steel casings in the locations circled?

Also, if we do require casings, the contractor has proposed the spacers they would like to use. The City specs state the spacers must be stainless steel, neoprene or an approved equivalent. They have submitted what looks like a good equivalent of Polyethylene spacers. In your opinion, does the attached casing spacer submittal look acceptable?

Thank you for your help. Please let me know if you have any questions.

Thank you,

Mike Winkler, PE  
AECOM  
(281) 702-4247 (Cell)

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