

GUAJOLOTE RANCH COLLECTOR PHASE 1

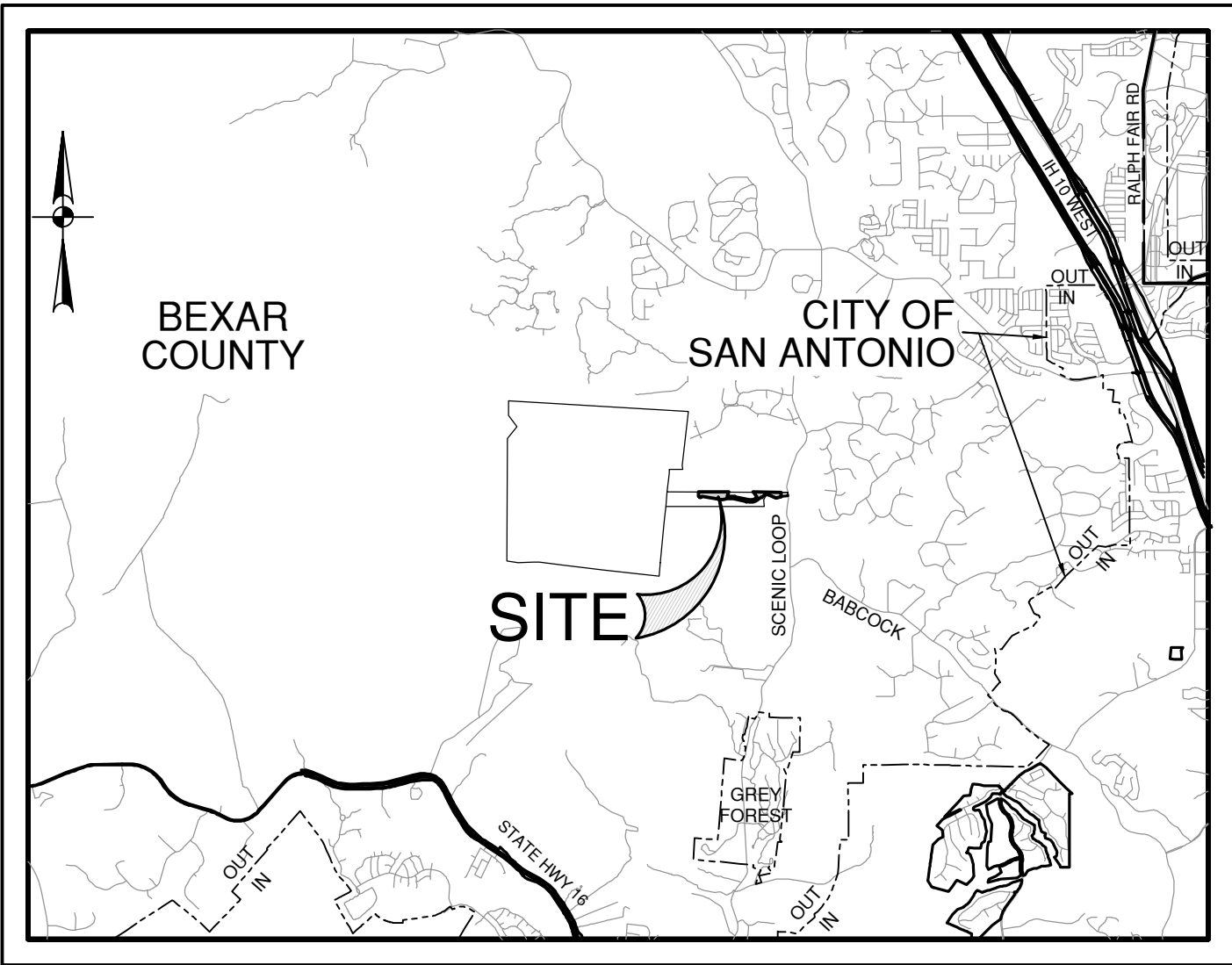
BEXAR COUNTY, TEXAS

CIVIL CONSTRUCTION PLANS

NO. REVISION DATE
1 ADDED GUARDRAIL PLANS 12/23/25

Sheet List Table

Sheet Title	Sheet Description	Sheet Number
COVER SHEET		C0.00
PROPOSED DRAINAGE PLAN		C1.00
POST-DEVELOPMENT DRAINAGE CALCULATIONS		C1.01
ULTIMATE DRAINAGE PLAN		C1.02
ULTIMATE DRAINAGE CALCULATIONS		C1.03
DRAIN A - PLAN AND PROFILE	STA. 1+00.00 TO END	C1.04
DRAIN B - PLAN AND PROFILE	STA. 1+00.00 TO END	C1.05
DRAIN C - PLAN AND PROFILE	STA. 1+00.00 TO END	C1.06
DRAIN C - DETAILS		C1.07
DRAIN D1 - PLAN AND PROFILE	STA. 1+00.00 TO END	C1.08
DRAIN D2 & E - PLAN AND PROFILE	STA. 1+03.00 TO END & STA. 1+05.50 TO END	C1.09
DRAIN F - PLAN AND PROFILE	STA. 0+90.50 TO END	C1.10
DRAIN F DETAILS		C1.11
INTERCEPTOR CHANNEL G - PLAN AND PROFILE	STA. 1+00.00 TO 5+00.00	C1.12
INTERCEPTOR CHANNEL G - PLAN AND PROFILE	STA. 5+00.00 TO 9+00.00	C1.13
INTERCEPTOR CHANNEL G - PLAN AND PROFILE	STA. 9+00.00 TO END	C1.14
DRAINAGE DETAILS	SHEET 1 OF 3	C1.20
DRAINAGE DETAILS	SHEET 2 OF 3	C1.30
DRAINAGE DETAILS	SHEET 3 OF 3	C1.40
GUAJOLOTE RANCH - PLAN AND PROFILE	STA. 1+00.00 TO 11+50.00	C2.00
GUAJOLOTE RANCH - PLAN AND PROFILE	STA. 11+50.00 TO 22+50.00	C2.01
GUAJOLOTE RANCH - PLAN AND PROFILE	STA. 22+50.00 TO 33+50.00	C2.02
GUAJOLOTE RANCH - PLAN AND PROFILE	STA. 33+50.00 TO 43+00.00	C2.03
GUAJOLOTE RANCH - PLAN AND PROFILE	STA. 43+00.00 TO END	C2.04
STREET DETAILS	SHEET 1 OF 4	C2.10
STREET DETAILS	SHEET 2 OF 4	C2.20
STREET DETAILS	SHEET 3 OF 4	C2.30
STREET DETAILS	SHEET 4 OF 4	C2.40



LOCATION MAP

SCALE: NTS

PREPARED FOR:

LENNAR HOMES OF TEXAS
100 NE LOOP 410, STE. 1155
SAN ANTONIO TX, 78216

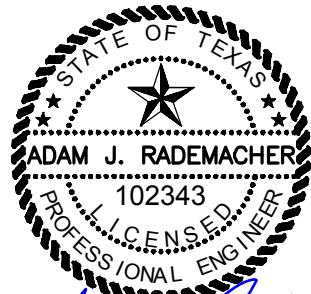
DECEMBER 2025

PAPE-DAWSON

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Sheet List Table

Sheet Title	Sheet Description	Sheet Number
OVERALL SIGNAGE PLAN	SHEET 1 OF 2	C3.00
OVERALL SIGNAGE PLAN	SHEET 2 OF 2	C3.01
OVERALL SIGNAGE DETAILS	SHEET 1 OF 3	C3.10
OVERALL SIGNAGE DETAILS	SHEET 2 OF 3	C3.20
OVERALL SIGNAGE DETAILS	SHEET 3 OF 3	C3.30
OVERALL WATER DISTRIBUTION PLAN	SHEET 1 OF 2	C4.00
OVERALL WATER DISTRIBUTION PLAN	SHEET 2 OF 2	C4.01
WATER DISTRIBUTION DETAILS		C4.10
WATER DISTRIBUTION NOTES		C4.20
OVERALL UTILITY PLAN	SHEET 1 OF 2	C5.00
OVERALL UTILITY PLAN	SHEET 2 OF 2	C5.01
STORM WATER POLLUTION PREVENTION PLAN	SHEET 1 OF 4	C8.00
STORM WATER POLLUTION PREVENTION PLAN	SHEET 2 OF 4	C8.01
STORMWATER POLLUTION PREVENTION PLAN	SHEET 3 OF 4	C8.02
STORMWATER POLLUTION PREVENTION PLAN	SHEET 4 OF 4	C8.03
STORM WATER POLLUTION PREVENTION PLAN DETAILS	SHEET 1 OF 2	C8.10
STORM WATER POLLUTION PREVENTION PLAN DETAILS	SHEET 2 OF 2	C8.20
BASIN A		C9.00
BASIN A DETAILS		C9.01
BASIN B		C9.10
BASIN B DETAILS		C9.11
BASIN C		C9.20
BASIN C DETAILS		C9.21
OVERALL GRADING PLAN		C10.00
GRADING PLAN	SHEET 1 OF 11	C10.01
GRADING PLAN	SHEET 2 OF 11	C10.02
GRADING PLAN	SHEET 3 OF 11	C10.03
GRADING PLAN	SHEET 4 OF 11	C10.04
GRADING PLAN	SHEET 5 OF 11	C10.05
GRADING PLAN	SHEET 6 OF 11	C10.06
GRADING PLAN	SHEET 7 OF 11	C10.07
GRADING PLAN	SHEET 8 OF 11	C10.08
GRADING PLAN	SHEET 9 OF 11	C10.09
GRADING PLAN	SHEET 10 OF 11	C10.10
GRADING PLAN	SHEET 11 OF 11	C10.11
GRADING DETAILS		C10.12
GUARDRAIL PLAN	SHEET 1 OF 3	C11.00
GUARDRAIL PLAN	SHEET 2 OF 3	C11.01
GUARDRAIL PLAN	SHEET 3 OF 3	C11.02



Adam J. Rademacher

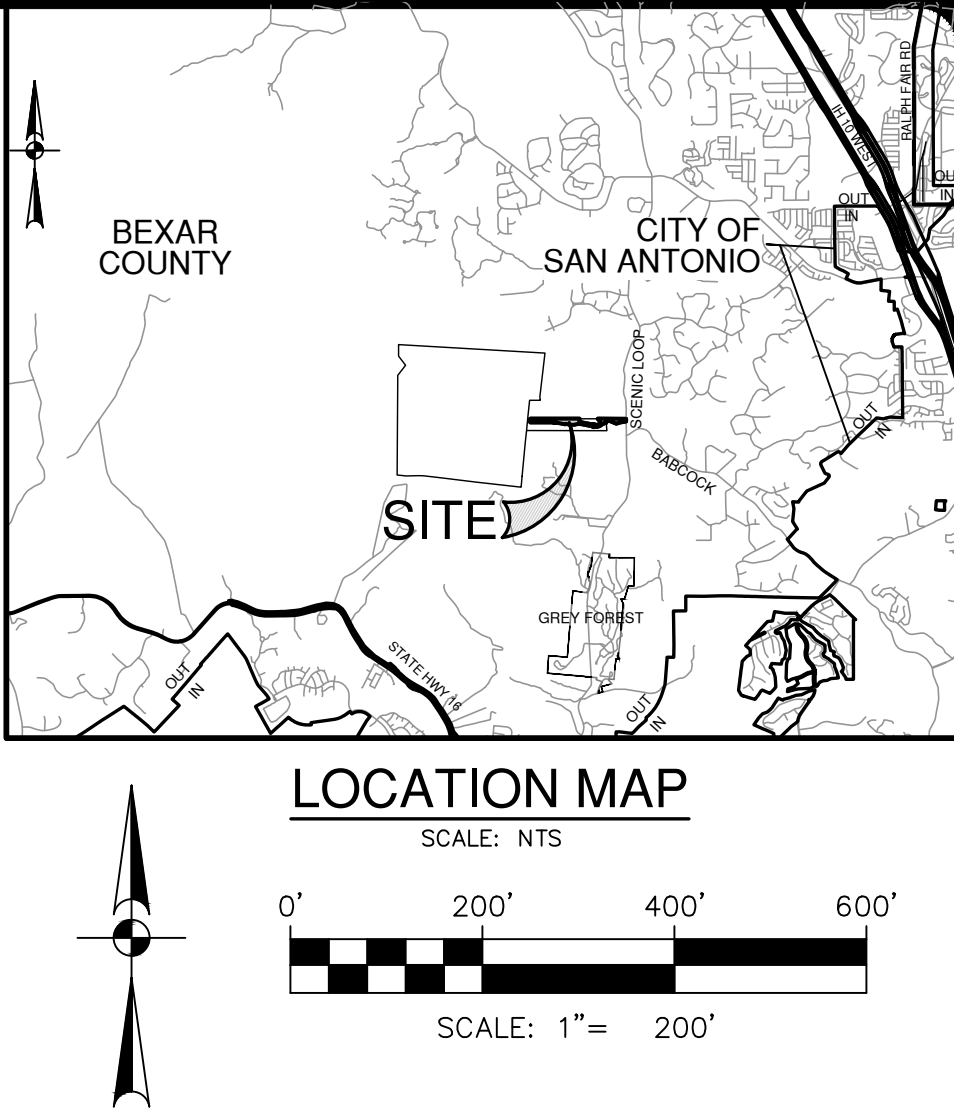
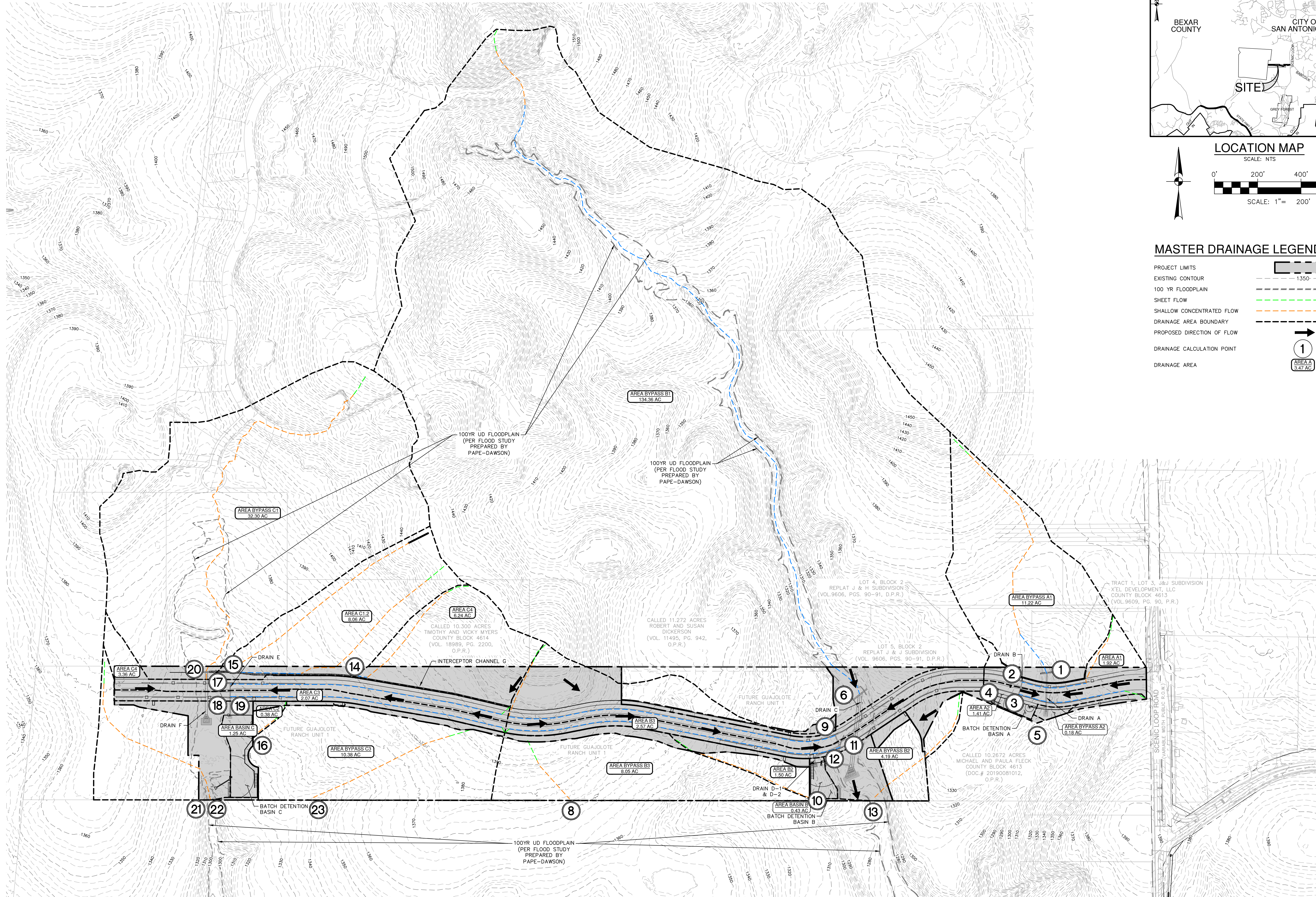
WATER (SAWS PRESSURE ZONE 1610)

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS	
ADDRESS: 100 NE LOOP 410, STE. 1155	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200	FAX# N/A
SAWS BLOCK MAP# 170536 TOTAL ECU'S 10 TOTAL ACREAGE 28.387	
TOTAL LINEAR FOOTAGE OF PIPE: 5,042 LF. ~ 8" PVC 457 LF. ~ 8" PVC	
NUMBER OF LOTS 0	SAWS JOB NO. 25-1086

SHEET C0.00

Date: Dec 15, 2025 4:04pm User ID: jayawar2
File: P:\12315610\Design\Ch1\250728-INT-DRMP_1235810.dwg

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MASTER DRAINAGE LEGEND	
PROJECT LIMITS	
EXISTING CONTOUR	
100 YR FLOODPLAIN	
SHEET FLOW	
SHALLOW CONCENTRATED FLOW	
DRAINAGE AREA BOUNDARY	
PROPOSED DIRECTION OF FLOW	
DRAINAGE CALCULATION POINT	
DRAINAGE AREA	

DATE: 12/15/25

NO. REVISION:

STATE OF TEXAS
ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER

Adam Rademacher

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
PROPOSED DRAINAGE PLAN

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED *JD* DRAWN *JQ*
SHEET C1.00

Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (Seeley)			Shallow Concentrated Flow - 1**						Shallow Concentrated Flow - 2**						Channelized Flow**						Rational Method Q=CIA IDF Curve: C0SA A14_P42			
		#	Area (Ac)	C		L _O (FT)	S _O (ft/ft)	T _O * (MIN)	L _{SC} (FT)	Condition***	Slope (ft/ft)	V _{BC} (FPS)	T _{BC} ** (MIN)	L _{SC} (FT)	Condition***	Slope (ft/ft)	V _{BC} (FPS)	T _{BC} ** (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)	To-Tor	T _{Lag}	Return Year	Intensity (in/hr)	Q (cfs)				
1	CONCENTRATION POINT	BYPASS A1	11.22	HEC-HMS	1,292	100	0.20	8	971	U	0.07	4.3	3.8			-	-	221	6.0	0.6			12 7.2 1 20.0							
																							12 7.2 5 43.2	HEC-						
																							12 7.2 25 72.9	HMS						
																							12 7.2 100 98.3							
2	CURB INLET	A1	1.92	0.80	643	100	0.03	12	241	U	0.07	4.3	0.9			-	-	302	6.0	0.8			13 7.8 1 3.86 5.9							
																							13 7.8 5 5.71 8.8							
																							13 7.8 25 7.96 12.2							
																							13 7.8 100 10.02 15.4							
3	CURB INLET	A2	1.41	0.88	596	100	0.02	14				-	-			-	-	496	6.0	1.4			15 9.0 1 3.60 4.5							
																							15 9.0 5 5.32 6.6							
																							15 9.0 25 7.40 9.2							
																							15 9.0 100 9.27 11.5							
4	CONCENTRATION POINT	A1+A2	3.33	0.83	596	100	0.02	14				-	-			-	-	496	6.0	1.4			15 9.0 1 3.60 10.0							
																							15 9.0 5 5.32 14.7							
																							15 9.0 25 7.40 20.5							
																							15 9.0 100 9.27 25.6							
5	CONCENTRATION POINT	BYPASS A1+BYPASS A2+A	14.73																				1 21.8							
																							5 HEC- 48.3							
																							25 HMS 82.5							
																							100 127.7							
6	CONCENTRATION POINT	BYPASS B1	134.36	0.71	3,854	100	0.20	8	293	U	0.38	9.9	0.5			-	-	3,461	6.0	9.6			18 10.8 1 198.4							
																							18 10.8 5 427.7	HEC-						
																							18 10.8 25 720.7	HMS						
																							18 10.8 100 981.8							
7	CONCENTRATION POINT	BYPASS B2	4.19	0.53	645	100	0.01	20	545	U	0.13	5.8	1.6			-	-		-	-										

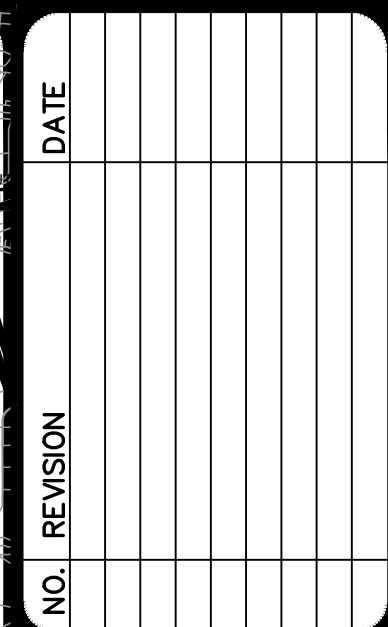
From TR-55 Figure 3-1²⁴

$$T_o = \frac{(0.007(n \cdot L)^{0.8})}{(P_2^{-5} \cdot S^4)} * 60 \quad v = \frac{k}{n} R^{2/3} S_o^{1/2}$$

P: For Paved: $n = 0.025$, $R = 0.2$

U: For Unpaved: $n = 0.05$, $R = 0.4$

D: For Default: $v = 6$ fps



12/15/25



ADAM J. RADEMACHER
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

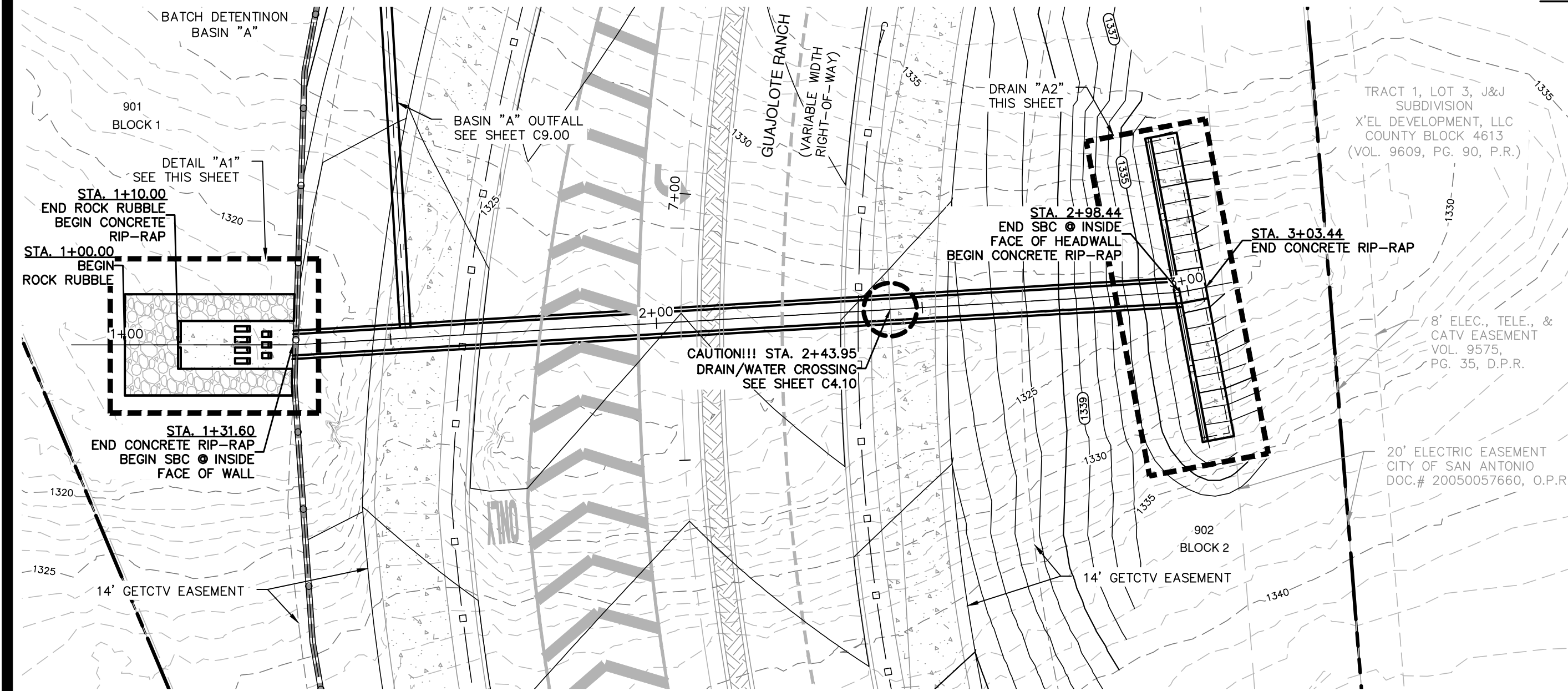
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

POST-DEVELOPMENT DRAINAGE CALCULATIONS

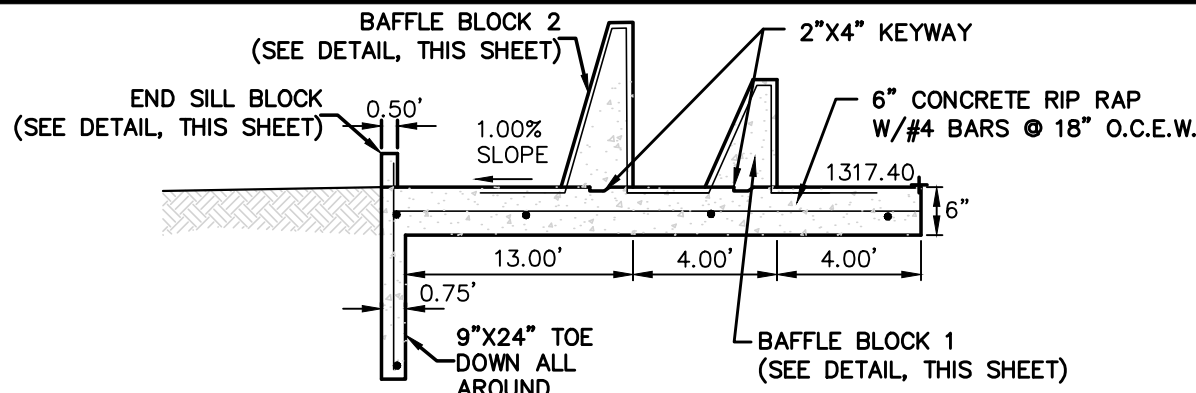
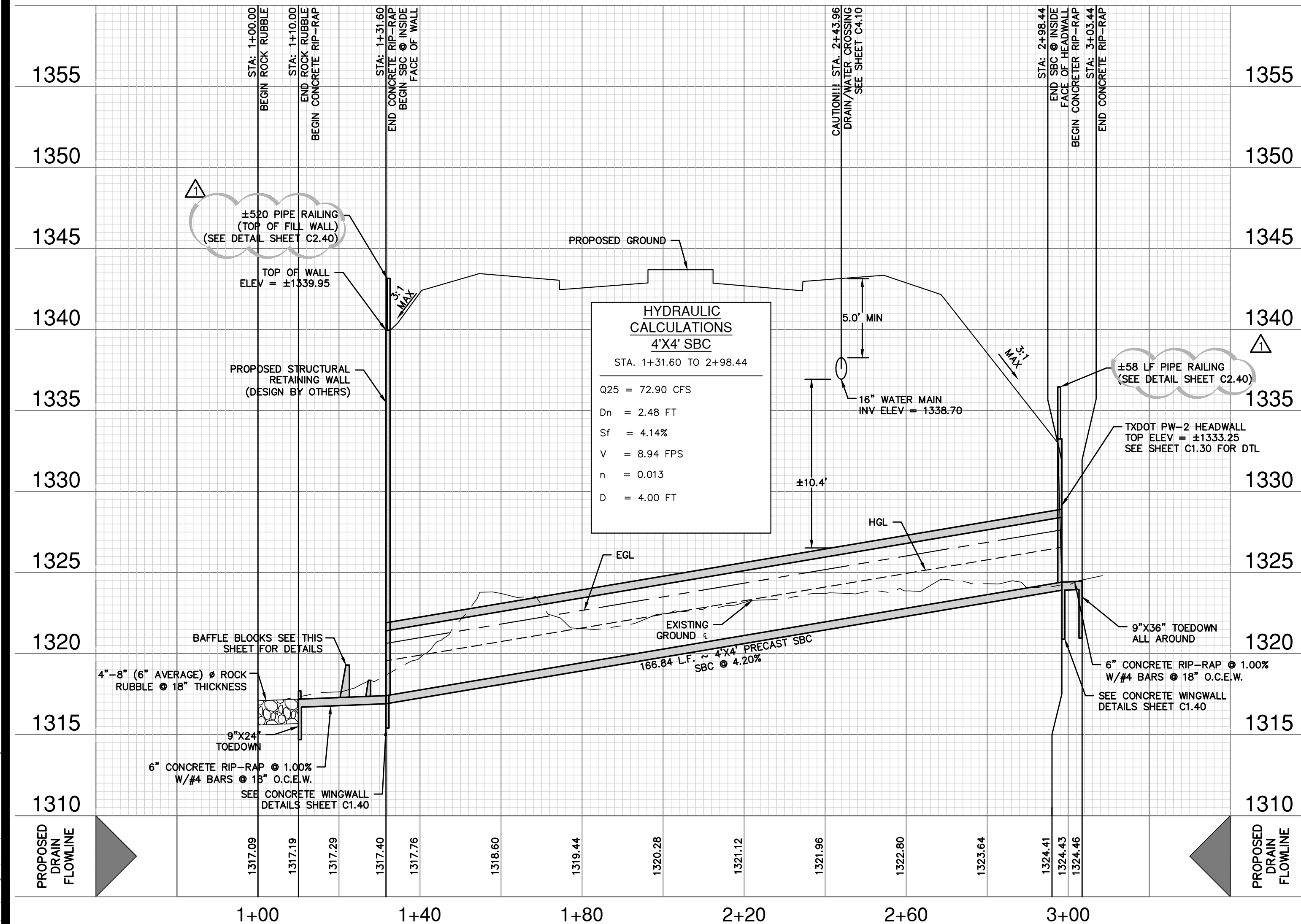
PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JQ
SHEET C1.01

Ultimate Development Calculations

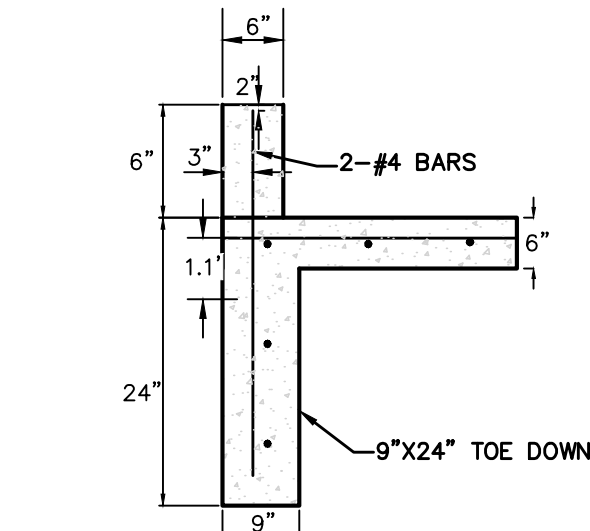
Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (Seelye)			Shallow Concentrated Flow - 1**				Shallow Concentrated Flow - 2**				Channelized Flow**				Tc-TOT	TLag	Rational Method Q=CIA								
		#	Area (Ac)	C		L0 (FT)	S0 (ft/ft)	T0* (MIN)	LSC (FT)	Condition**	Slope (ft/ft)	VSC (FPS)	TSC** (MIN)	LSC (FT)	Condition**	Slope (ft/ft)	VSC (FPS)	TSC** (MIN)	LCH (FT)	VCH (FPS)			TCH** (MIN)	Return Year	Intensity (in/hr)	Q (cfs)					
1	CONCENTRATION POINT	BYPASS A1	11.22		1,307	100	0.20	8	1,207	U	0.07	4.3	4.7											12	7.2	1	20.0				
																								12	7.2	5	43.2				
																								12	7.2	25	72.9				
																								12	7.2	100	98.3				
2	CURB INLET	A1	2.13	0.82	341	100	0.03	12	241	U	0.07	4.3	0.9													12	7.2	1	3.99	7.0	
																										12	7.2	5	5.92	10.3	
																										12	7.2	25	8.25	14.4	
																										12	7.2	100	10.41	18.2	
3	CURB INLET	A2	1.33	0.89	596	100	0.02	14																			15	9.0	1	3.60	4.3
																											15	9.0	5	5.32	6.3
																											15	9.0	25	7.40	8.8
																											15	9.0	100	9.27	11.0
4	CONCENTRATION POINT	A1+A2	3.46	0.85	596	100	0.02	14																			15	9.0	1	3.60	10.6
																											15	9.0	5	5.32	15.6
																											15	9.0	25	7.40	21.8
																											15	9.0	100	9.27	27.3
5	CONCENTRATION POINT	BYPASS A1+BYPASS A2	14.86	HEC-HMS																				1	21.8						
				5	HEC-	48.3																									
				25	HMS	82.5																									
				100		112.7																									
6	CONCENTRATION POINT	BYPASS B1	131.79	0.71	3,859	100	0.20	8	298	U	0.38	9.9	0.5														18	10.8	1	178.5	
																											18	10.8	5	HEC-	384.9
																											18	10.8	25	HMS	650.3
																											18	10.8	100		886.0
7	CONCENTRATION POINT	BYPASS B2	5.57	0.64	706	100	0.06	10	606	U	0.06	4.0	2.6														12	7.2	1	11.4	
																											12	7.2	5	HEC-	23.1
																											12	7.2	25	HMS	38.1
																											12	7.2	100		51.3
8	CURB INLET	B1	9.54	0.77	1,549	100	0.15	9	487	U	0.14	6.0	1.3														13	7.8	1	3.86	28.4
																											13	7.8	5	5.71	41.9
																											13	7.8	25	7.96	58.5
																											13	7.8	100	10.02	73.6
9	CONCENTRATION POINT	B2	2.61	0.83	1,313	38	0.26	6																			10	6.0	1	4.25	9.2
																											10	6.0	5	6.36	13.8
																											10	6.0	25	8.88	19.2
																											10	6.0	100	11.23	24.3
10	CONCENTRATION POINT	B3	5.10	0.67	697	100	0.08	10	140	U	0.14	6.0	0.4														11	6.6	1	4.12	14.1
																											11	6.6	5	6.13	20.9
																											11	6.6	25	8.56	29.2
																											11	6.6	100	10.81	36.9
11	CURB INLET	B4	2.57	0.97	1,574	26	0.04	7																			11	6.8	1	3.99	9.9
																											11	6.8	5	6.13	15.3
																											11	6.8	25	8.56	21.3
																											11	6.8	100	10.81	26.9
12	CONCENTRATION POINT	B1+B4	12.11	0.81	2,167	100	0.15	9	487	U	0.14	6.0	1.3														14	8.4	1	3.73	36.6
																											14	8.4	5	5.51	54.0
																											14	8.4	25	7.67	75.2
																											14	8.4	100	9.64	94.6
13	CONCENTRATION POINT	BYPASS B1+BYPASS B2+B1+B2+B3+B4	157.18	HEC-HMS																				1	222.6						
				5	HEC-	465.3																									
				25	HMS	780.6																									
				100		1,060.2																									
14	INTERCEPTOR CHANNEL	C1.1	6.24	0.72	692	100	0.11	10	549	U	0.11	5.4	1.7														11	6.6	1	4.12	15.5
																											11	6.6	5	6.13	27.5
																											11	6.6	25	8.56	38.5
																											11	6.6	100	10.81	48.6
15	INTERCEPTOR CHANNEL	C1.1+C1.2	14.31	0.73	1,151	100	0.11	10	1,051	U	0.09	4.8	3.6														13	7.8	1	3.86	40.3
																											13	7.8	5	5.71	59.6
																											13	7.8	25	7.96	83.2
																											13	7.8	100	10.02	104.7
16	INTERCEPTOR CHANNEL	C2	6.30	0.72	1,380	38	0.26	6																			10	6.0	1	#N/A	#N/A
																											10	6.0	5	6.36	28.8
																											10	6.0	25	8.88	40.3
																											10	6.0	100	11.23	50.9
17	CURB INLET	C3	2.07	0.97	1,293	26	0.04	7																			10	6.0	1	4.25	8.5
																											10	6.0	5	6.36	12.8
																											10	6.0	25	8.88	17.8
																											10	6.0	100	11.23	22.5
18	CURB INLET	C4	3.35	0.93	1,317	52	0.80	3																			10	6.0	1	4.25	13.2
																											10	6.0	5	6.36	19.8
																											10	6.0	25	8.88	27.7
																											10	6.0	100	11.23	35.0
19	CURB INLET	C3+C4	5.42	0.95	1,375	52	0.80	3																			10	6.0	1	4.25	21.9
																											10	6.0	5	6.36	32.7
																											10	6.0	25	8.88	45.7
																											10	6.0	100	11.23	57.8
20	CONCENTRATION POINT	BYPASS C1+C1	-	-	2,076	100	0.14	9	1,976	U	0.07	4.3	7.7														16	9.6	1		79.3
																											16	9.6	5	HEC-	166.7
																											16	9.6	25	HMS	278.1
																											16	9.6	100		376.7
21	CONCENTRATION POINT	BYPASS C2	2.18	HEC-HMS	446	100	0.14	13	346	U	0.08	4.7	1.2														14	8.4	1		3.3
																											14	8.4	5	HEC-	7.5
																											14	8.4	25	HMS	12.9
																											14	8.4	100		17.7
22	CONCENTRATION POINT	BYPASS C3	5.34	-	1,375	100	0.08	10	1,275	U	0.06	4.0	5.4														15	9.0	1		9.9
																											15	9.0	5	HEC-	20.1
																											15	9.0	25	HMS	33.2
																											15	9.0	100		44.7
23	CONCENTRATION POINT	D1	4.22	0.71	535	92	0.03	12																			13	7.8	1	3.86	11.6
																											13	7.8	5	5.71	17.1
																											13	7.8	25	7.96	23.8
																											13	7.8	100	10.02	30.0
24	CONCENTRATION POINT	BYPASS C1+ BYPASS C2+BYPASS C3+C1+C2+BASIN C1+D1+BASIN D	59.20	HEC-HMS																				1	98.4						
				5	HEC-	215.9																									
				25	HMS	354.3																									
				100		475.8																									



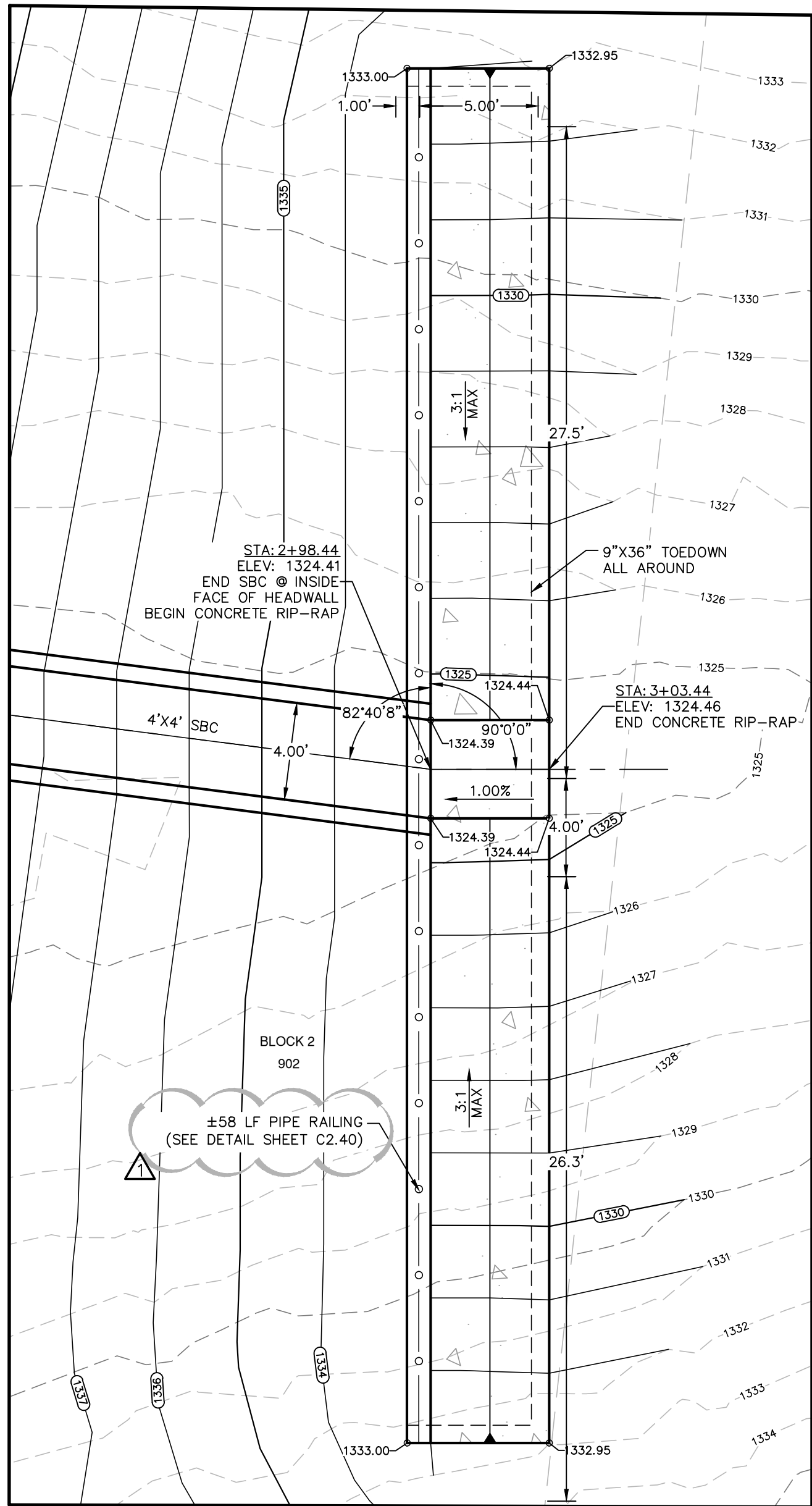
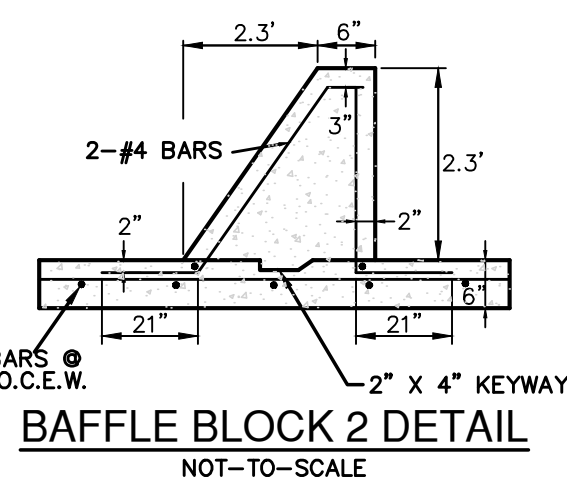
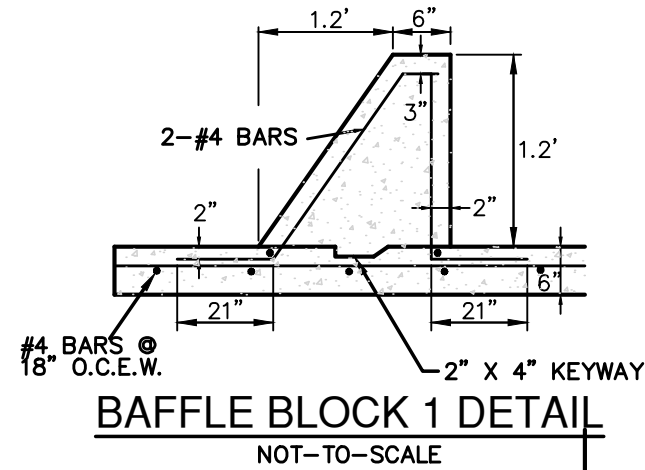
DRAIN "A"
STA. 1+00.00 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



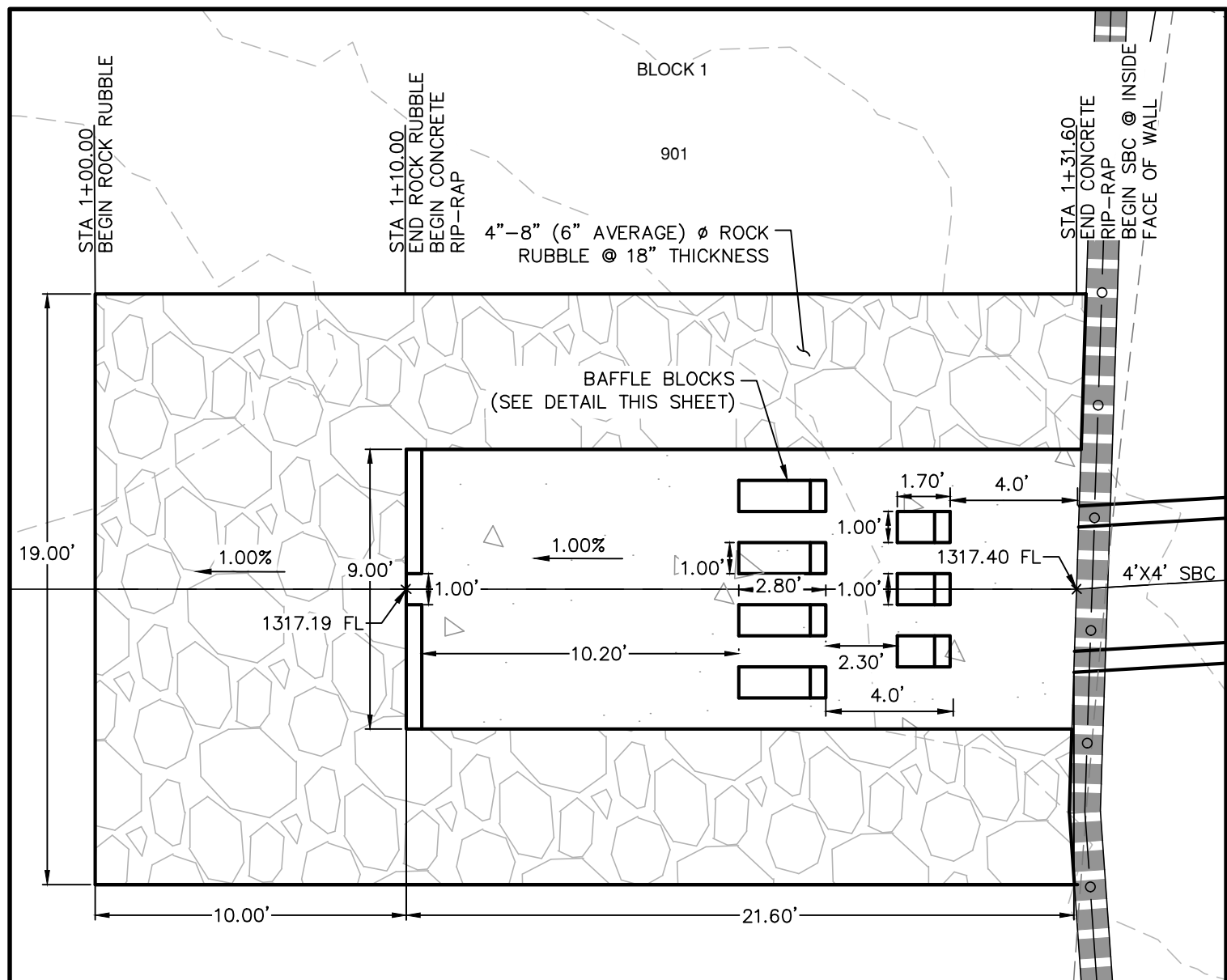
DETAIL "B"
BAFFLE BLOCK DETAILS
NOT-TO-SCALE



END SILL BLOCK DETAIL
NOT-TO-SCALE

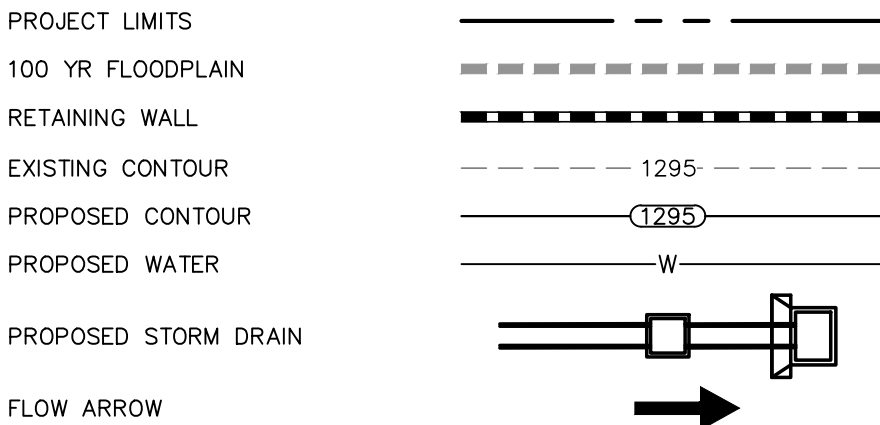


DETAIL "A2"
SCALE: 1" = 5'



DETAIL "A1"
SCALE: 1" = 5'

DRAINAGE LEGEND



DRAINAGE & GRADING NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOOD PLAIN GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
2. NO CONSTRUCTION MATERIAL AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.

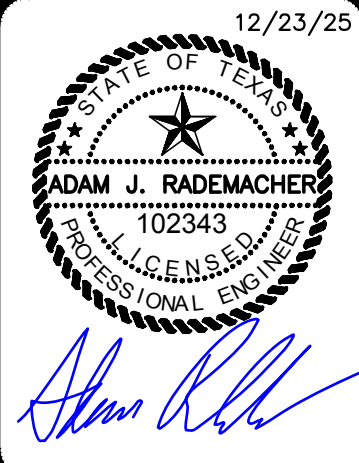
TRENCH EXCAVATION SAFETY PROTECTION:

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 SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

DATE	12/23/25
NO.	1
REVISION	1 RAILING

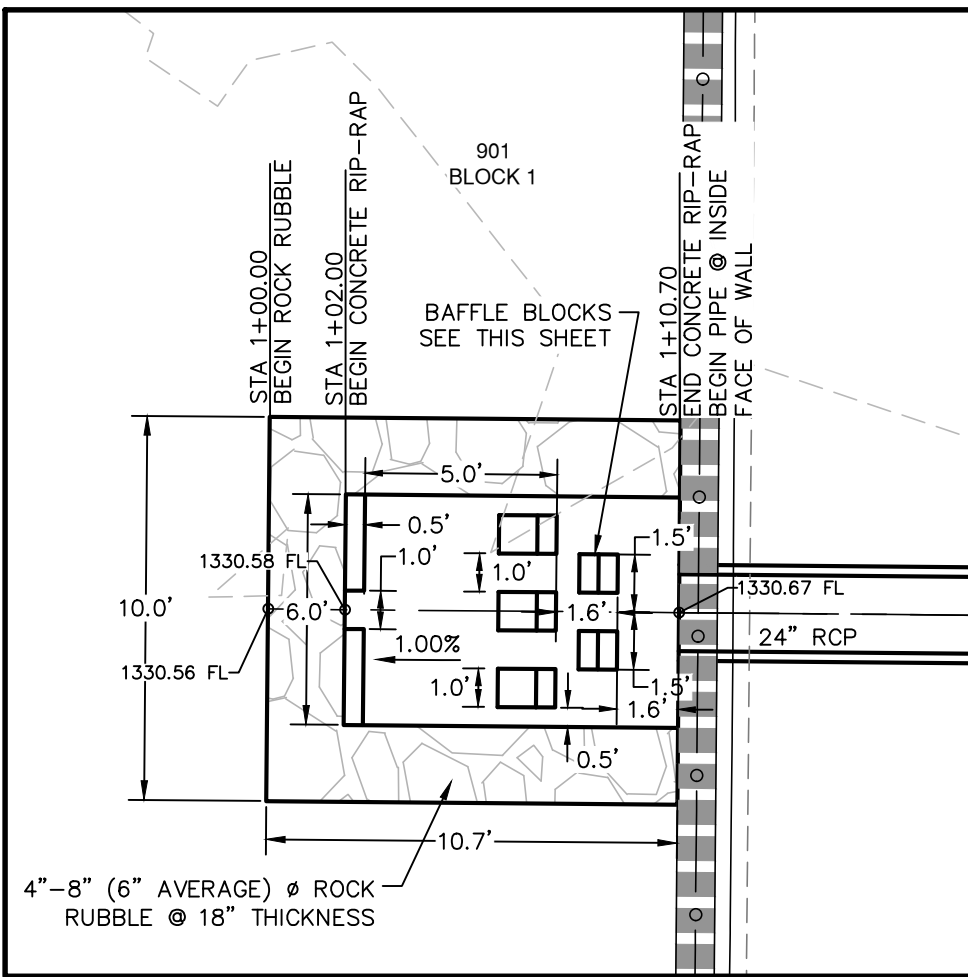


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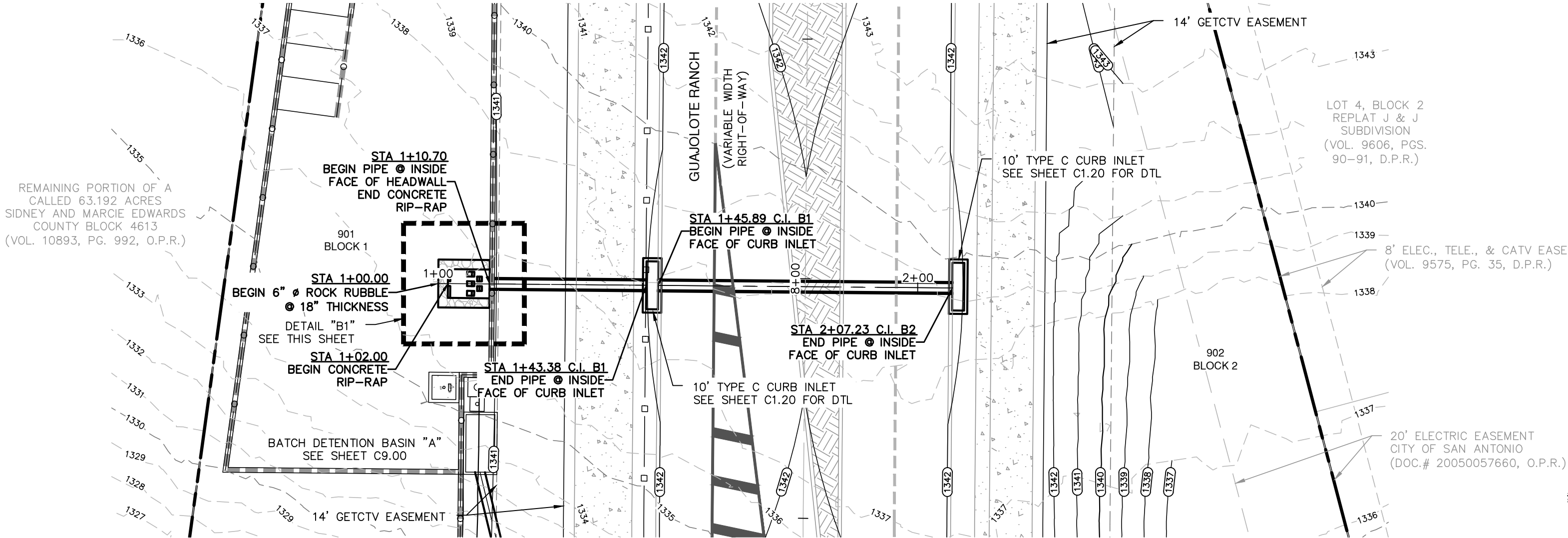
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

DRAIN A - PLAN AND PROFILE
STA. 1+00.00 TO END

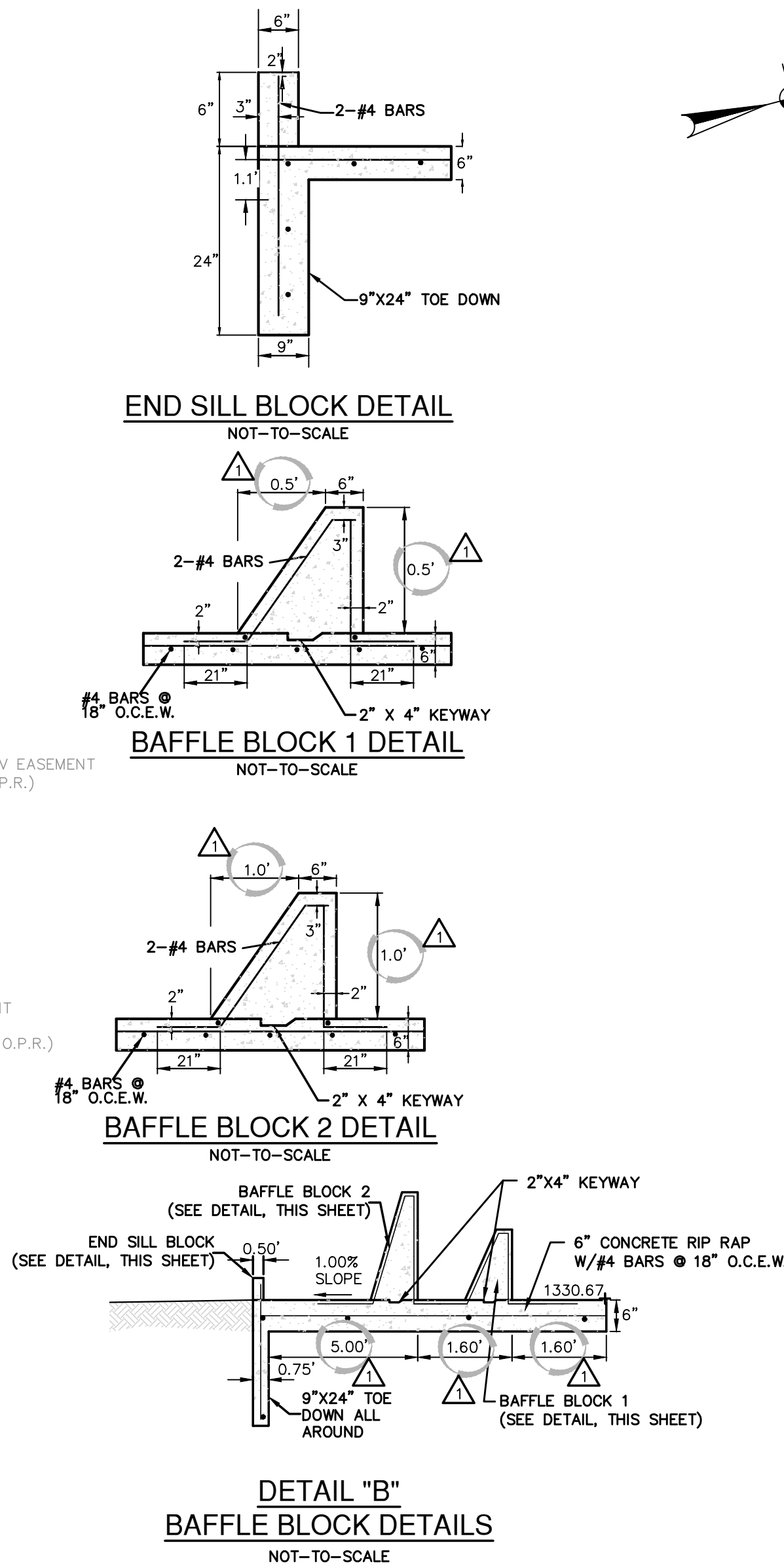
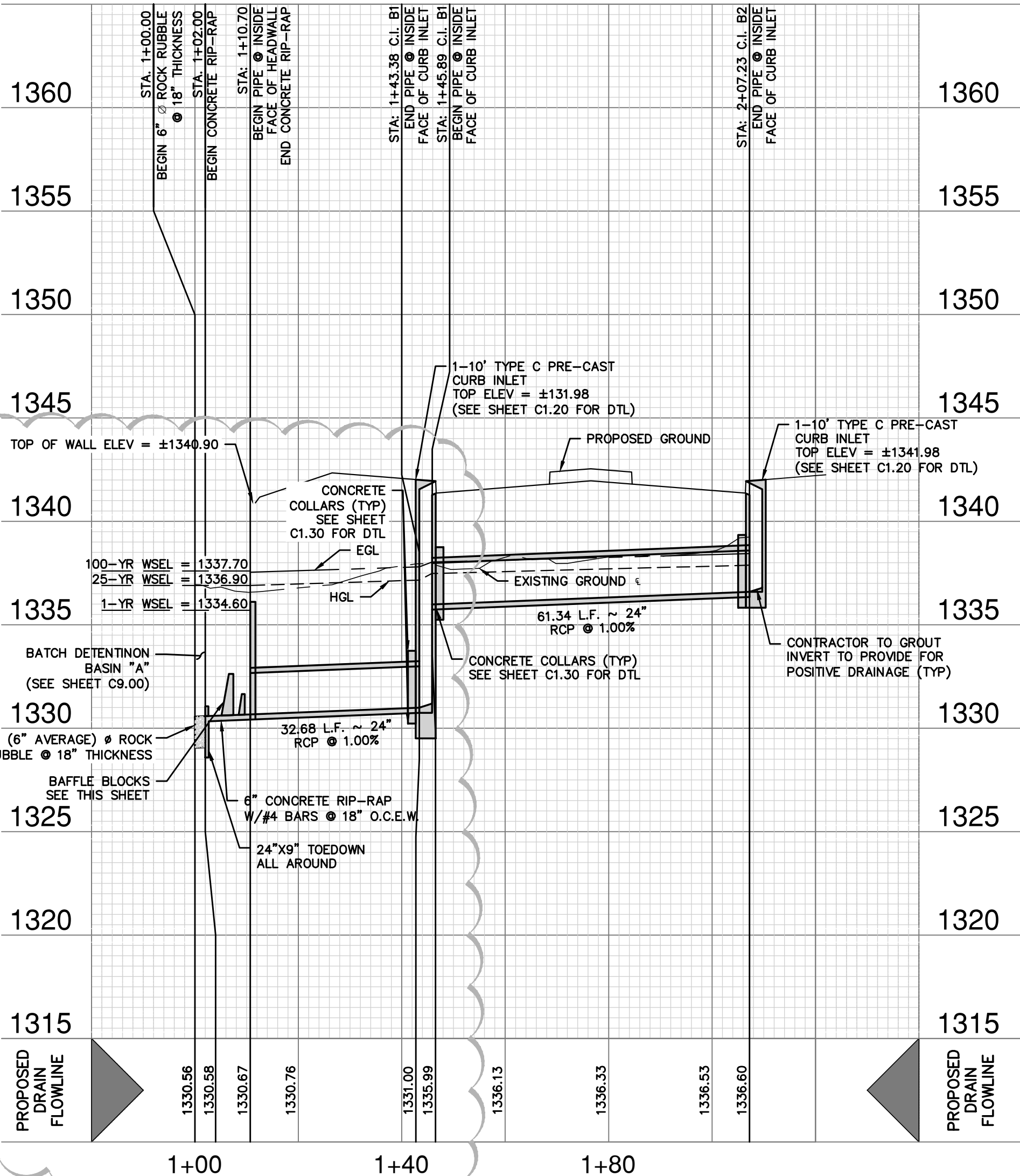
PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JQ
CHECKED	JB
SHEET	C1.04



DETAIL "B1"
SCALE: 1" = 5'



DRAIN "B"
STA. 1+00.00 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
RETAINING WALL	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
PROPOSED WATER	---
PROPOSED STORM DRAIN	---
FLOW ARROW	---

DRAINAGE & GRADING NOTES:

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- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
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- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

OPEN EARTHEN CHANNEL NOTE:

CONTRACTOR SHALL REFERENCE TABLE 9.3.8.1 - "RETARDATION CLASS FOR LINING MATERIALS" PROVIDED ON SHEET C1.20 AND SUPPLIED RETARDANCE CLASS (RC) FOR CHOICE OF COVER WITHIN OPEN EARTHEN CHANNEL CROSS-SECTIONS.

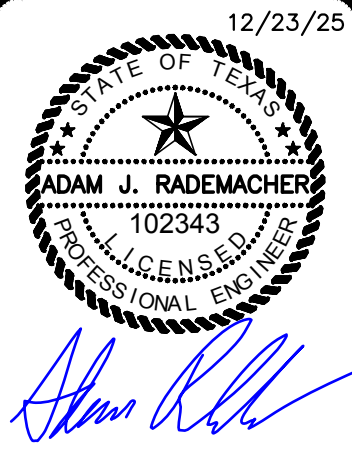
BEXAR COUNTY FLOOD PLAIN GENERAL CONSTRUCTION NOTES:

- CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
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CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NO.	REVISION	DATE
1	DRAIN DEPTH & HYDRAULICS	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

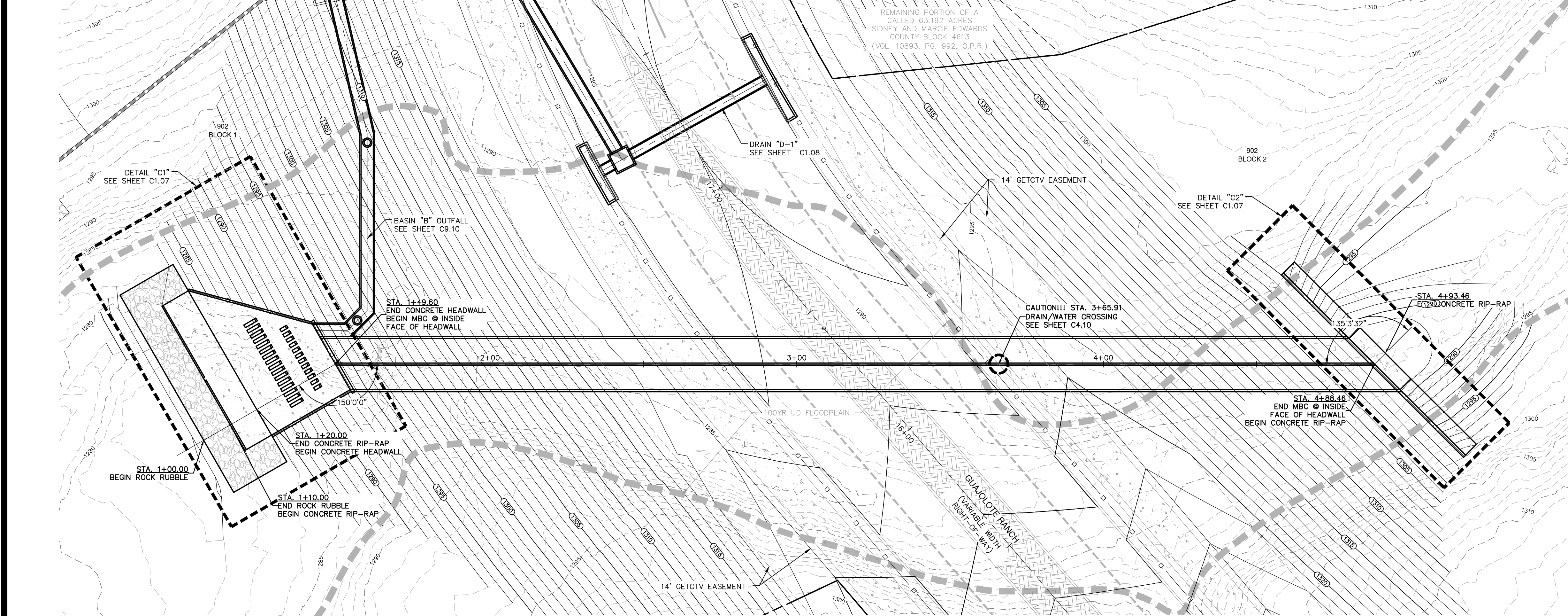
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

DRAIN B - PLAN AND PROFILE
STA. 1+00.00 TO END

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
DRAWN	JQ
SHEET	C1.05

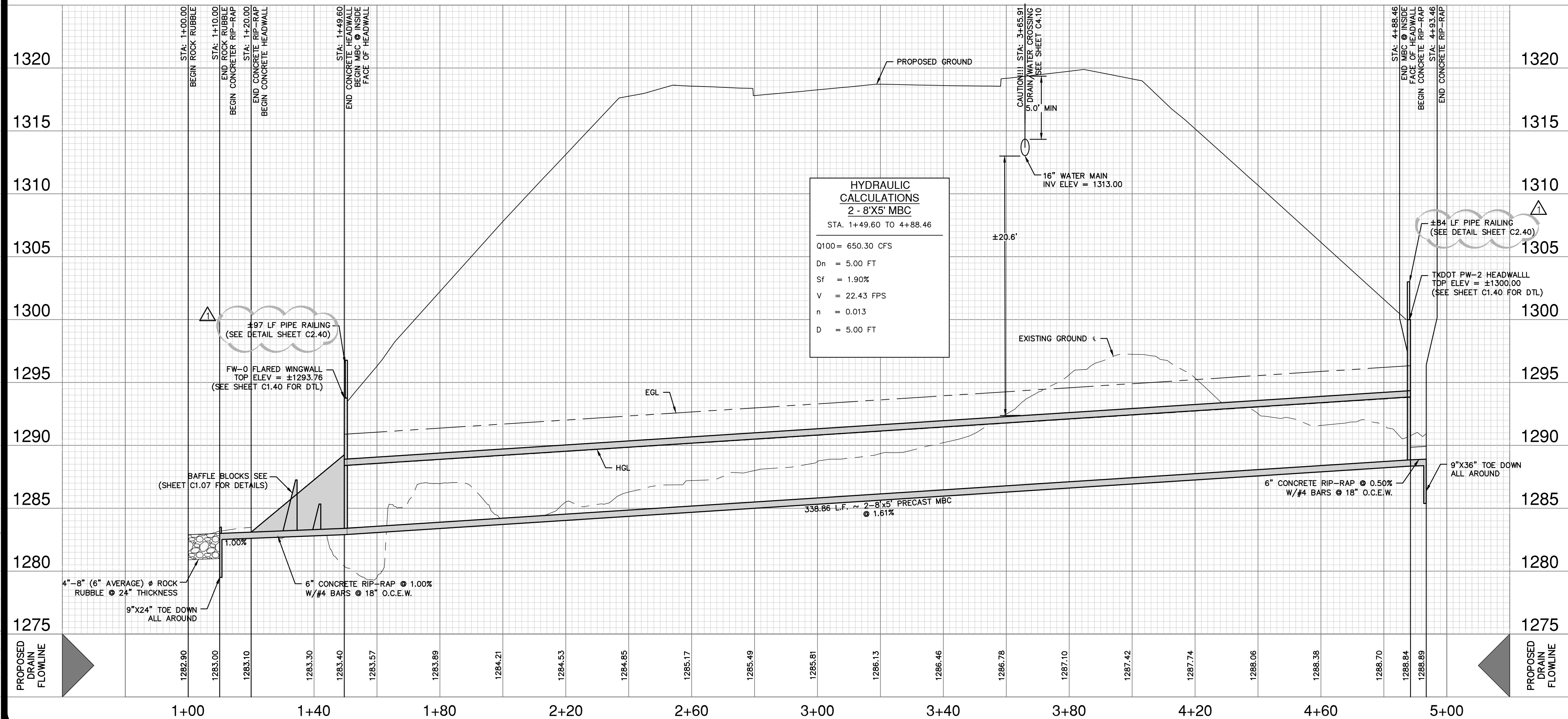
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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARD COPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE/UNLESS OTHERWISE NOTED. Imagery © 2016, Copco/Digital Globe, Texas Orthomography Program, USDA Farm Service Agency.



DRAIN "C"
STA. 1+00.00 TO END

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



HYDRAULIC
CALCULATIONS
2-8'x5' MBC
STA. 1+49.60 TO 4+88.46
Q100 = 650.30 CFS
Dn = 5.00 FT
Sf = 1.90%
V = 22.43 FPS
n = 0.013
D = 5.00 FT

DRAINAGE LEGEND

- PROJECT LIMITS
100 YR FLOODPLAIN
RETAINING WALL
EXISTING CONTOUR
PROPOSED CONTOUR
PROPOSED WATER
PROPOSED STORM DRAIN
FLOW ARROW

DRAINAGE & GRADING NOTES:

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- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
- BOX CULVERT MANHOLES MAY BE INSTALLED IMMEDIATELY BEFORE OR AFTER HORIZONTAL POINT OF INTERSECTION FOR CONSTRUCTABILITY IF DEEMED APPROPRIATE BY THE CONTRACTOR.

BEXAR COUNTY FLOOD PLAIN GENERAL CONSTRUCTION NOTES:

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NO.	REVISION	DATE
1	REVISED PIPE RAILING CALLOUTS	12/23/25



PAPE-DAWSON

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

DRAIN C - PLAN AND PROFILE
STA. 1+00.00 TO END

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
DRAWN	JQ
SHEET	C1.06

[illegible]

BEXAR COUNTY, TEXAS

DRAIN C - DETAILS

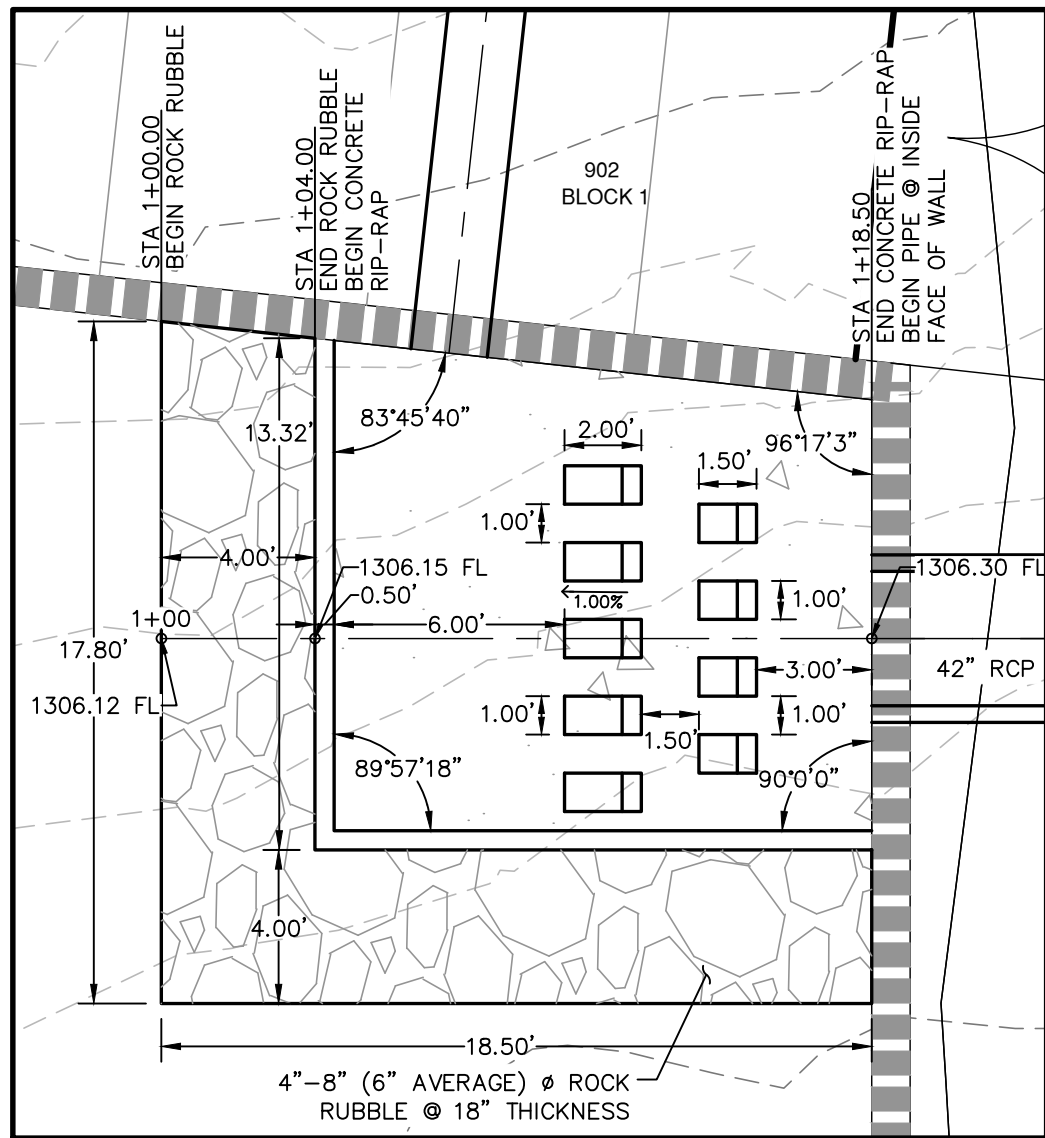
1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER ANY EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. IF THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS, ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, ROADWAY DETAILS, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING AFTER CONSTRUCTION. SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
8. BOX CULVERT MANHOLES MAY BE INSTALLED IMMEDIATELY BEFORE OR AFTER HORIZONTAL PITCH POINT OF INTERSECTION FOR CONSTRUCTABILITY IF DEEMED APPROPRIATE BY THE CONTRACTOR.

1. CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
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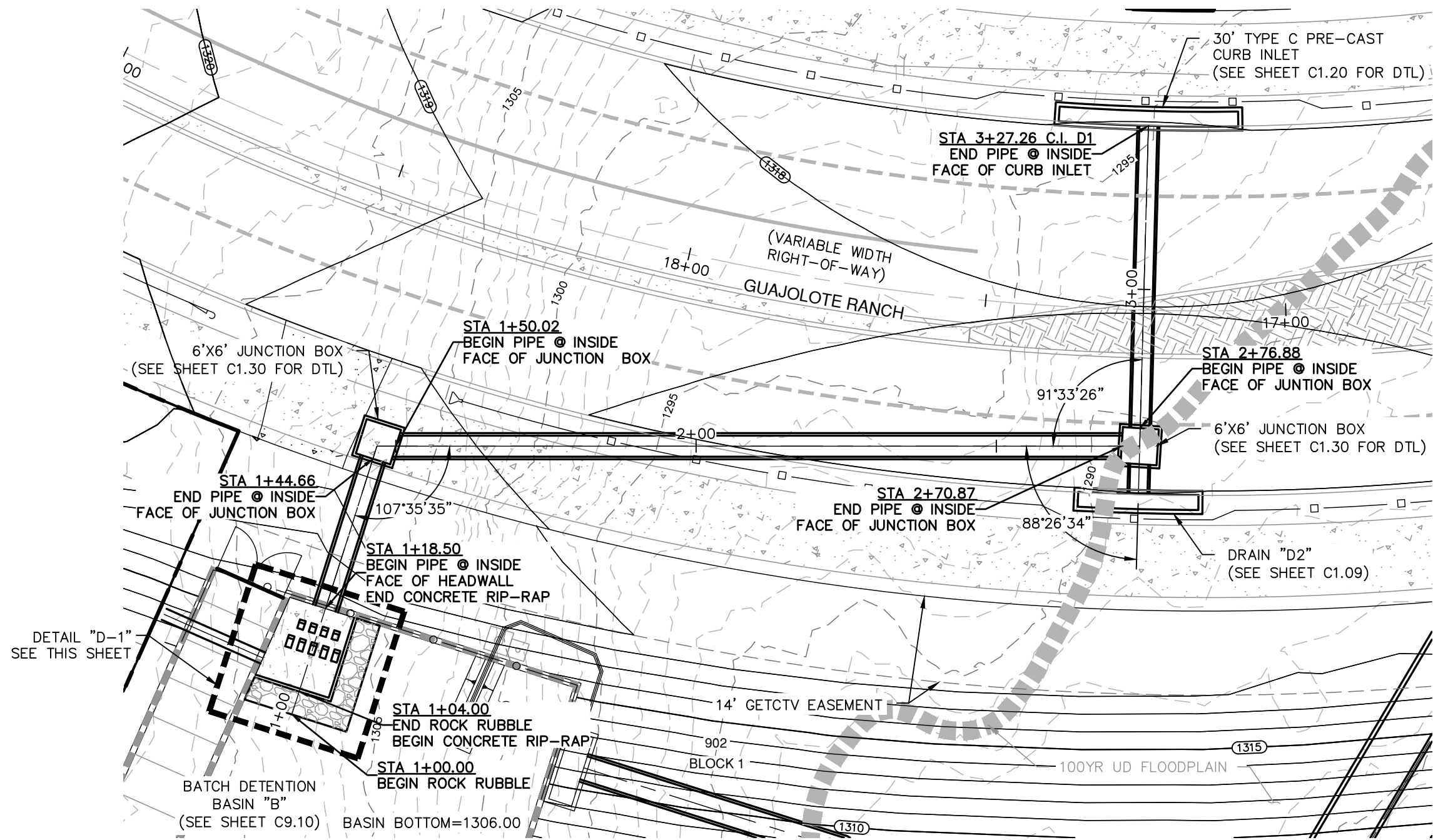
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE
OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT
IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL
INFORMATION AND THE ASSOCIATED INSTALLATION WITHIN THE
PROJECT WORK AREA IN ORDER TO DETERMINE CONTRACTOR'S
EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR
PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS
THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS
AND PROCEDURES MEET THE REQUIREMENTS FOR ADEQUATE
SAFETY PROTECTION THAT COMPLY WITH THE MINIMUM, OSHA STANDARDS
FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR
CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY
CONSULTANT SHALL IMPLEMENT TRENCH SAFETY PROGRAM IN
ACCORDANCE WITH THE FOLLOWING STANDARDS
ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRICAL, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JQ
SHEET C1.07

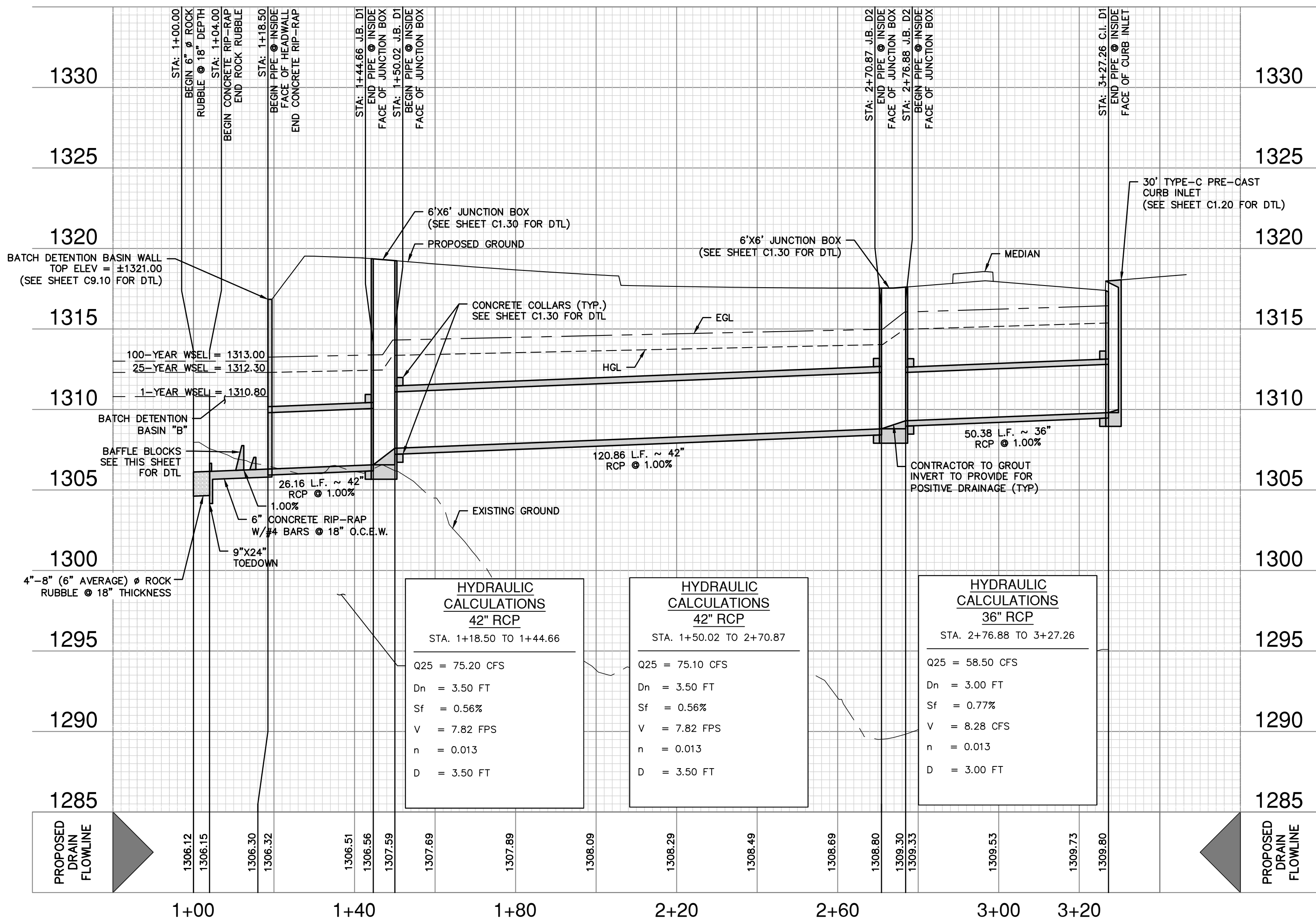


DETAIL "D-1"
SCALE: 1" = 5'



DRAIN "D1"
STA. 1+00.00 TO END

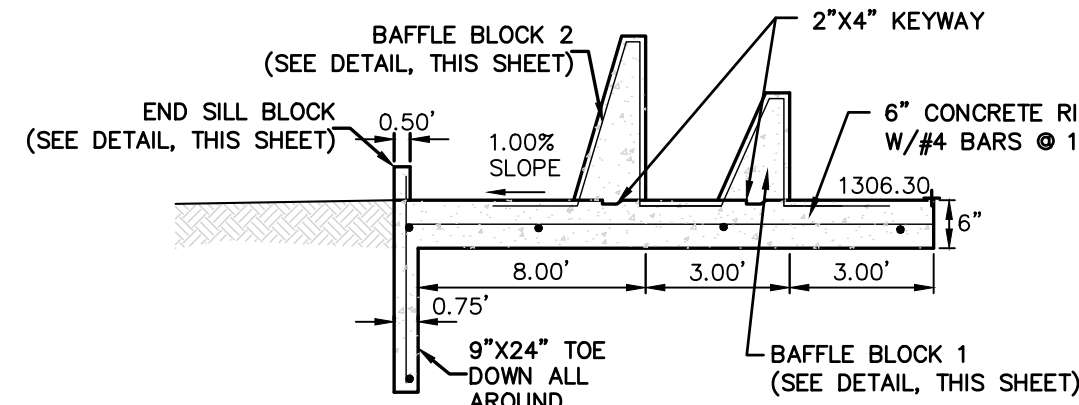
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



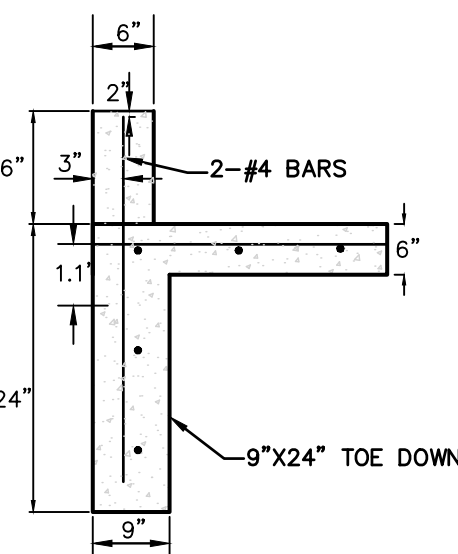
HYDRAULIC CALCULATIONS 42" RCP	
STA. 1+18.50 TO 1+44.66	
Q25 = 75.20 CFS	
Dn = 3.50 FT	
Sf = 0.56%	
V = 7.82 FPS	
n = 0.013	
D = 3.50 FT	

HYDRAULIC CALCULATIONS 42" RCP	
STA. 1+50.02 TO 2+70.87	
Q25 = 75.10 CFS	
Dn = 3.50 FT	
Sf = 0.56%	
V = 7.82 FPS	
n = 0.013	
D = 3.50 FT	

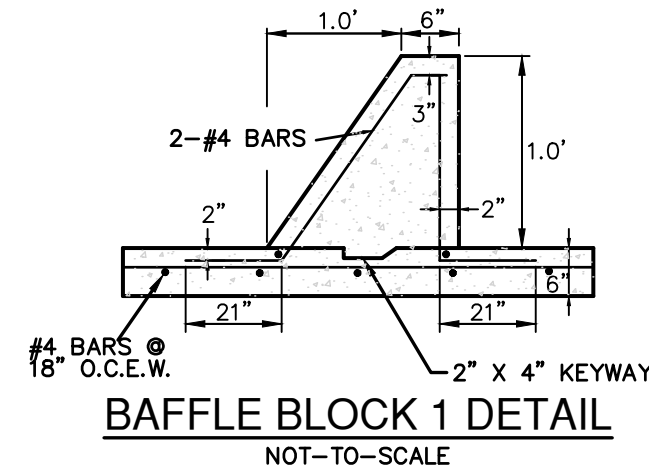
HYDRAULIC CALCULATIONS 36" RCP	
STA. 2+76.88 TO 3+27.26	
Q25 = 58.50 CFS	
Dn = 3.00 FT	
Sf = 0.77%	
V = 8.28 CFS	
n = 0.013	
D = 3.00 FT	



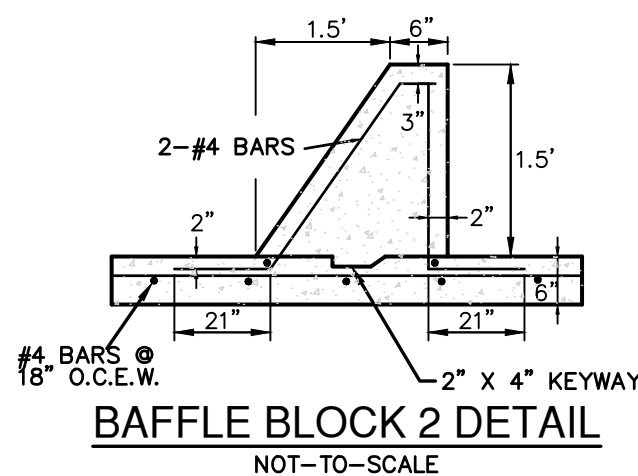
DETAIL "B"
BAFFLE BLOCK DETAILS
NOT-TO-SCALE



END SILL BLOCK DETAIL
NOT-TO-SCALE

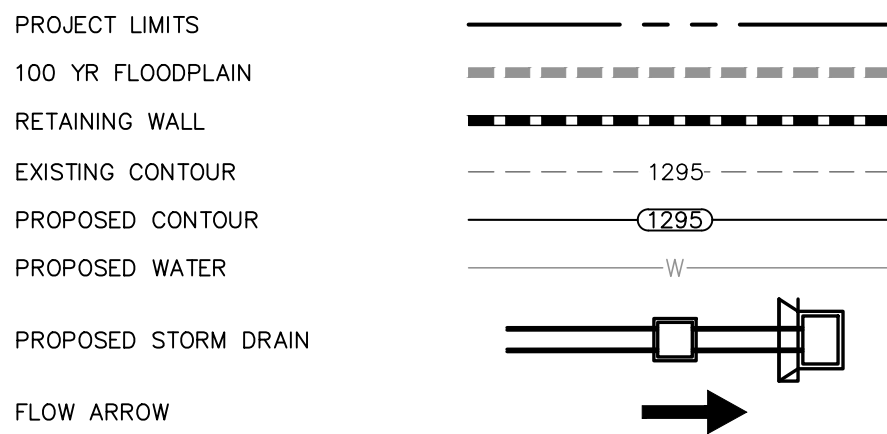


BAFFLE BLOCK 1 DETAIL
NOT-TO-SCALE



BAFFLE BLOCK 2 DETAIL
NOT-TO-SCALE

DRAINAGE LEGEND



CURB INLET HYDRAULIC CALCULATIONS-DRAIN "D1"

TOTAL Q₂₅ = 58.50 CFS

Q₂₅ = Cw x L x H^{3/2} (WEIR FORMULA)

Cw = 3.087, H = 0.79

L = $\frac{58.58 \text{ CFS}}{(3.087) (0.79)^{3/2}}$

L = 26.99 FT USE 1 ~ 30' CURB INLET

CHECK WITH WEIR FORMULA
 $H = \left(\frac{Q}{(CL)} \right)^{2/3} = \left(\frac{58.50}{(3.087) (20)} \right)^{2/3} = 0.74 \text{ FT.}$

H = 0.74 < 0.79 OK

DRAINAGE & GRADING NOTES:

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- ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOOD PLAIN GENERAL CONSTRUCTION NOTES:

- CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
- NO CONSTRUCTION MATERIAL AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.

TRENCH EXCAVATION SAFETY 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 SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

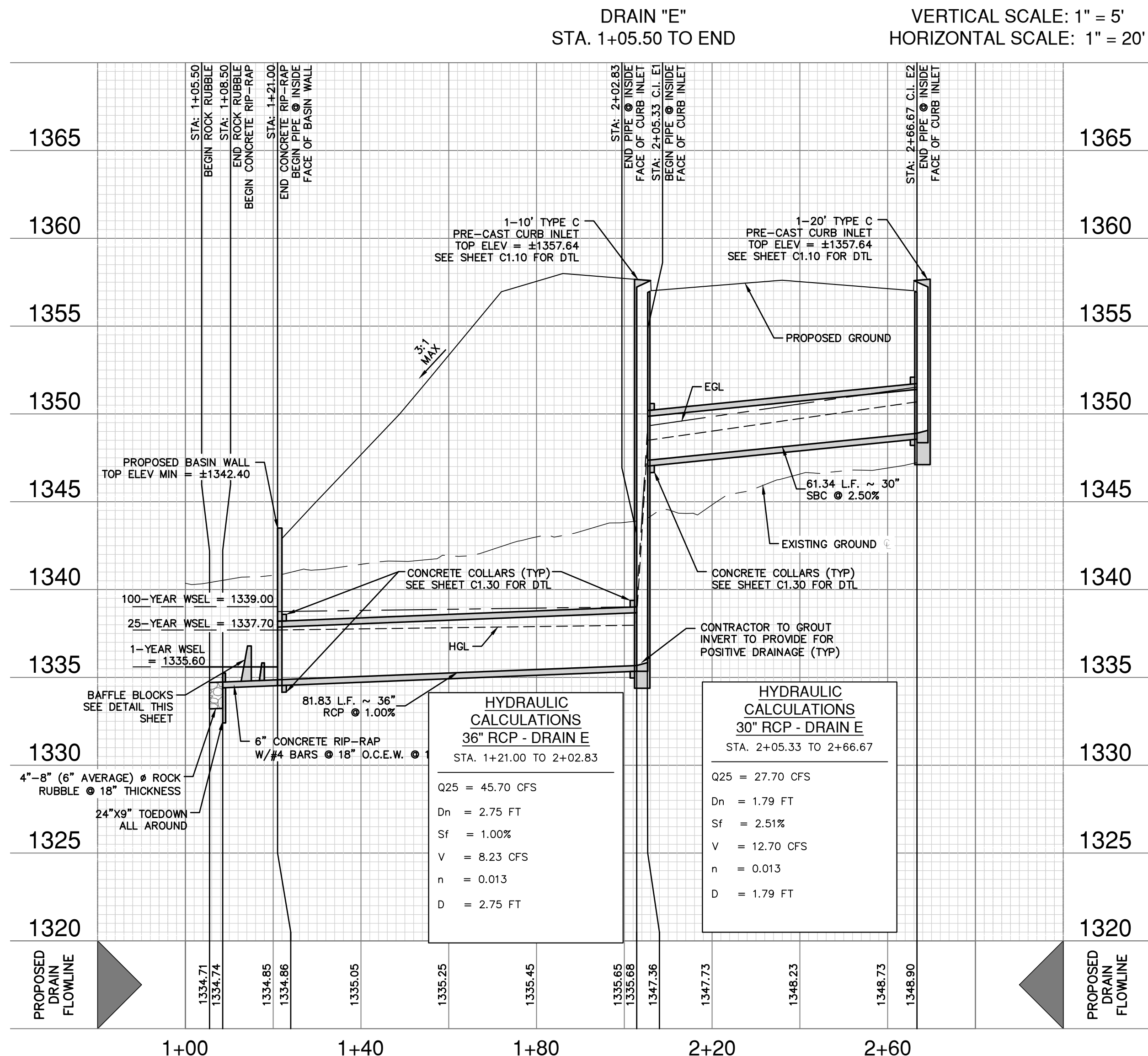
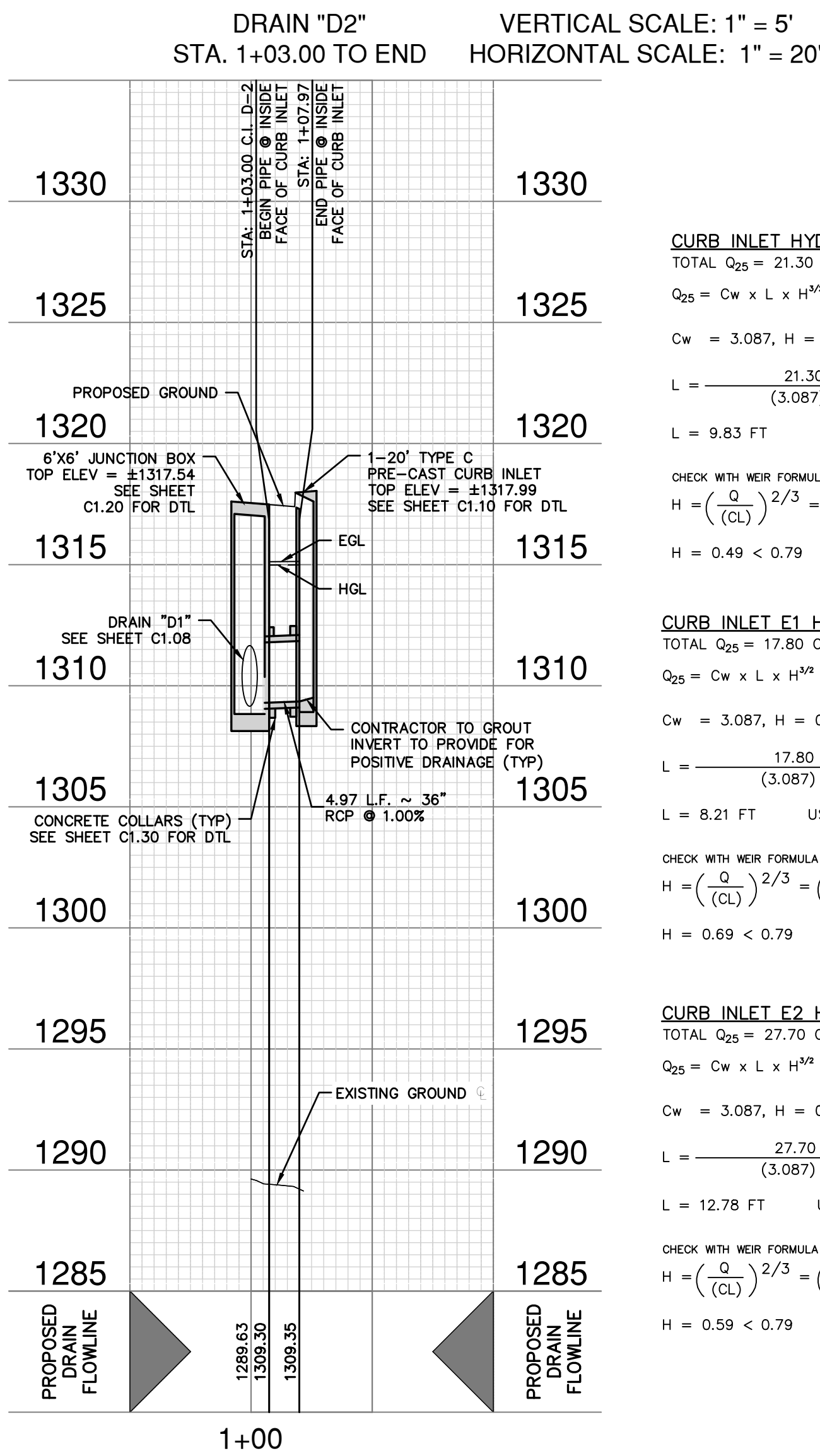
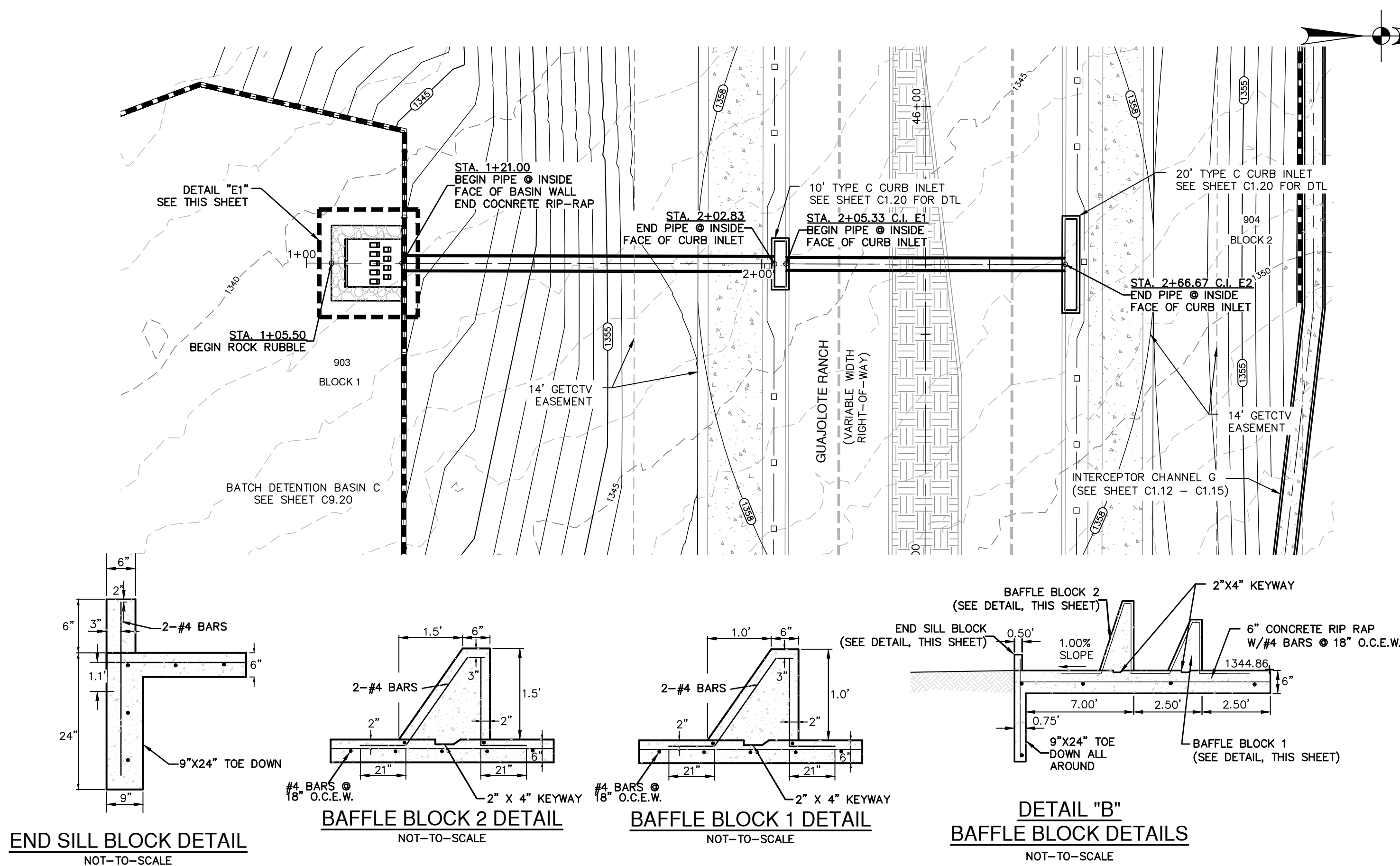
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJALOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

DRAIN D1 - PLAN AND PROFILE
STA. 1+00.00 TO END

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER JA
CHECKED *JB* DRAWN JQ
SHEET C1.08

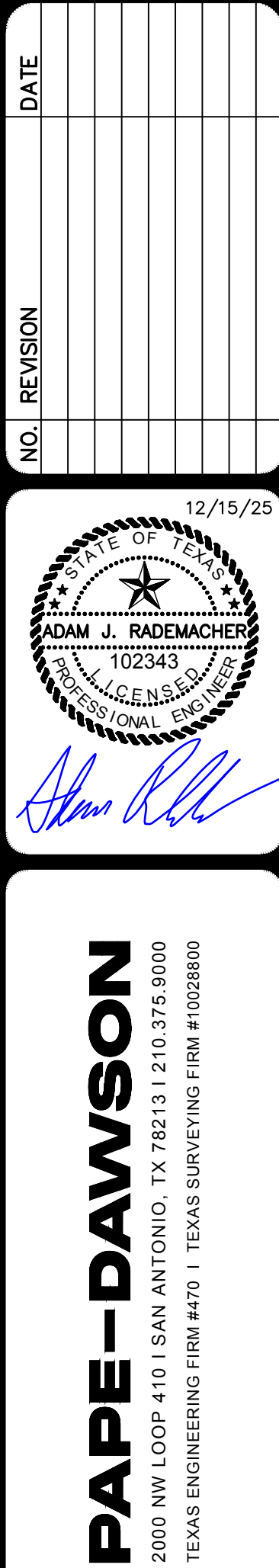


1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN WITH THE BEAR COUNTY ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXISTING LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER ALL UTILITIES AND DRAINAGE STRUCTURES TO VERIFY SIZE, DEPTH, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
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5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. BOX OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND SURFACE. MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

1. CONTRACTOR IS TO MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION.
2. NO CONSTRUCTION MATERIAL AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.

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/OR RECORDS AND/OR DATA AND/OR INFORMATION AND/OR PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE IN ACCORDANCE WITH ALL APPLICABLE TRENCH SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT TRENCH SAFETY PROGRAM AND PROCEDURES WITH REGARD TO TRENCH EXCAVATIONS, THE PREPARATION AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

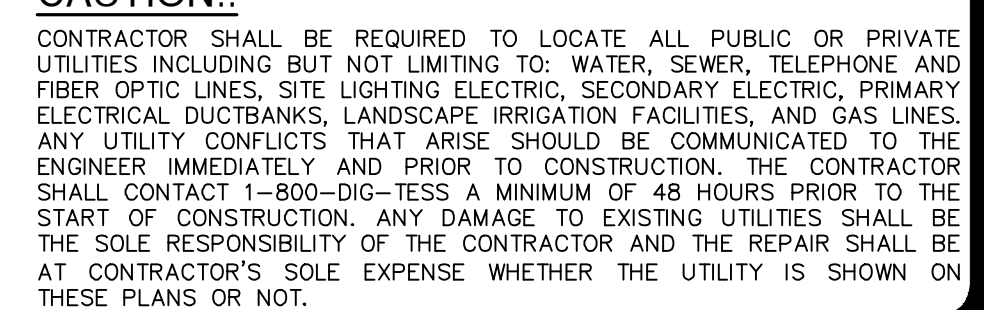
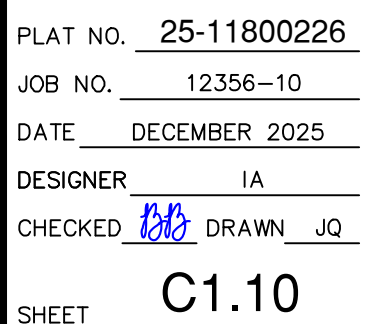
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GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

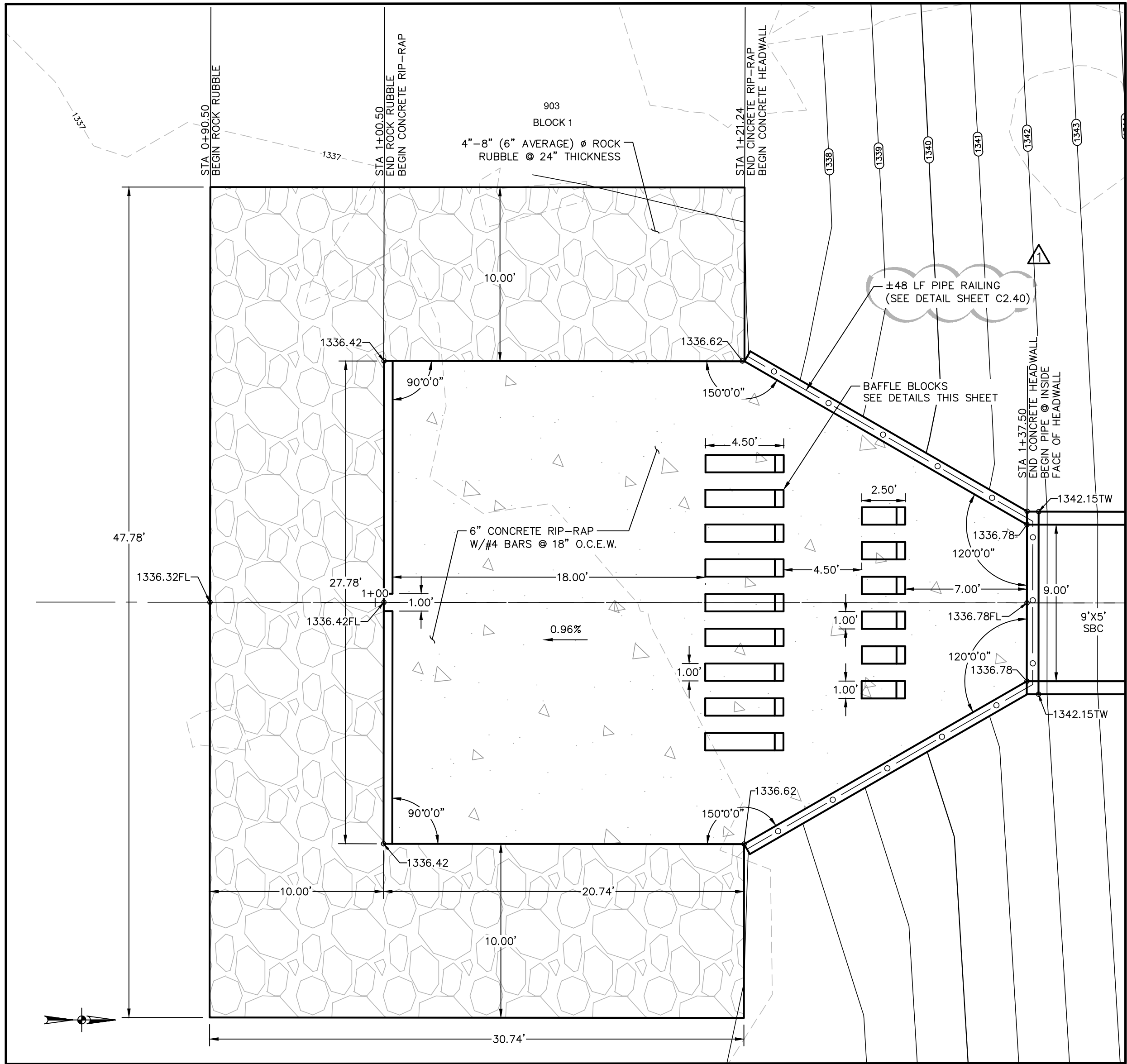
DRAIN D2 & E - PLAN AND PROFILE
STA. 1+03.00 TO END & STA. 1+05.50 TO END

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BAB DRAWN JQ
SHEET C1.09

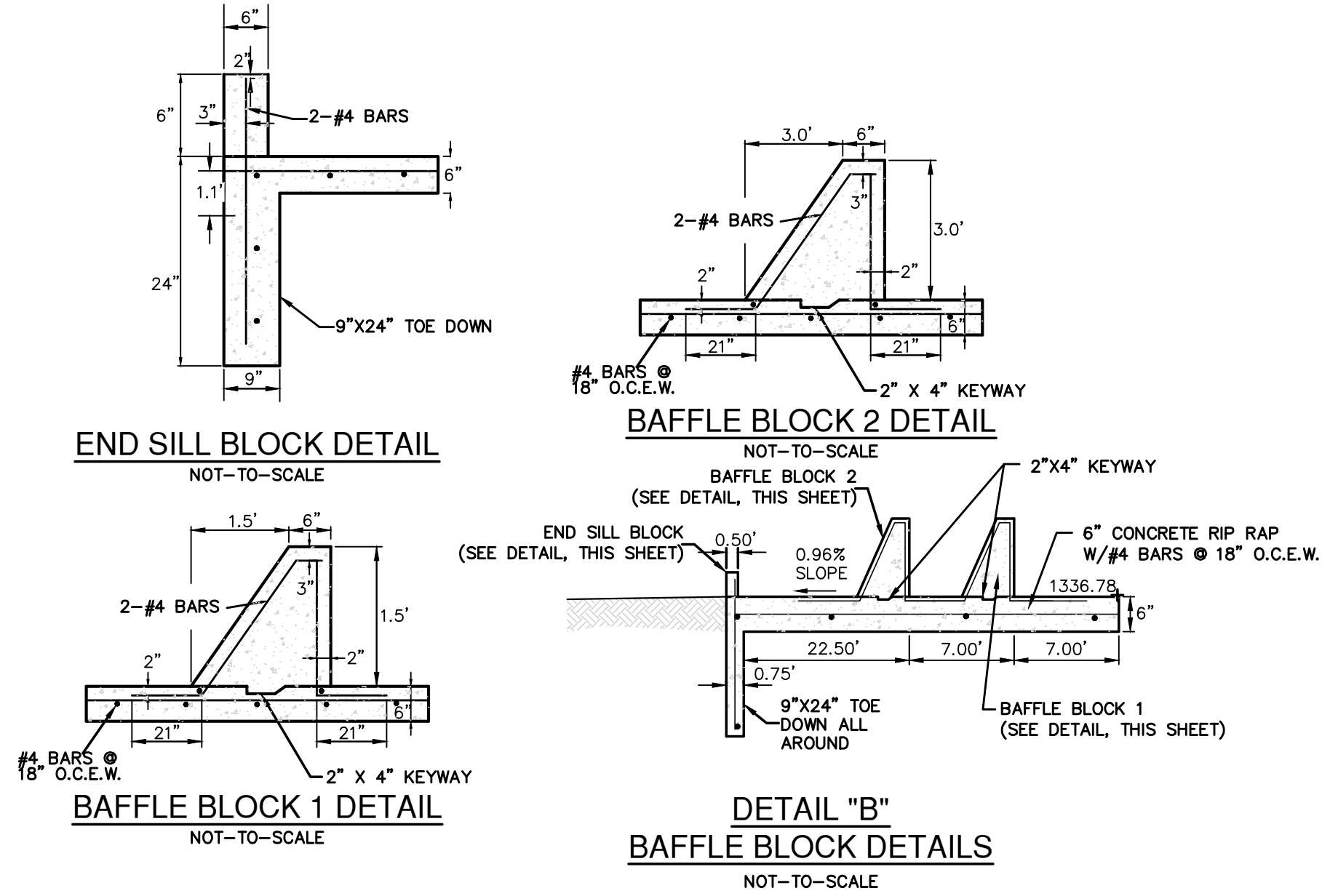


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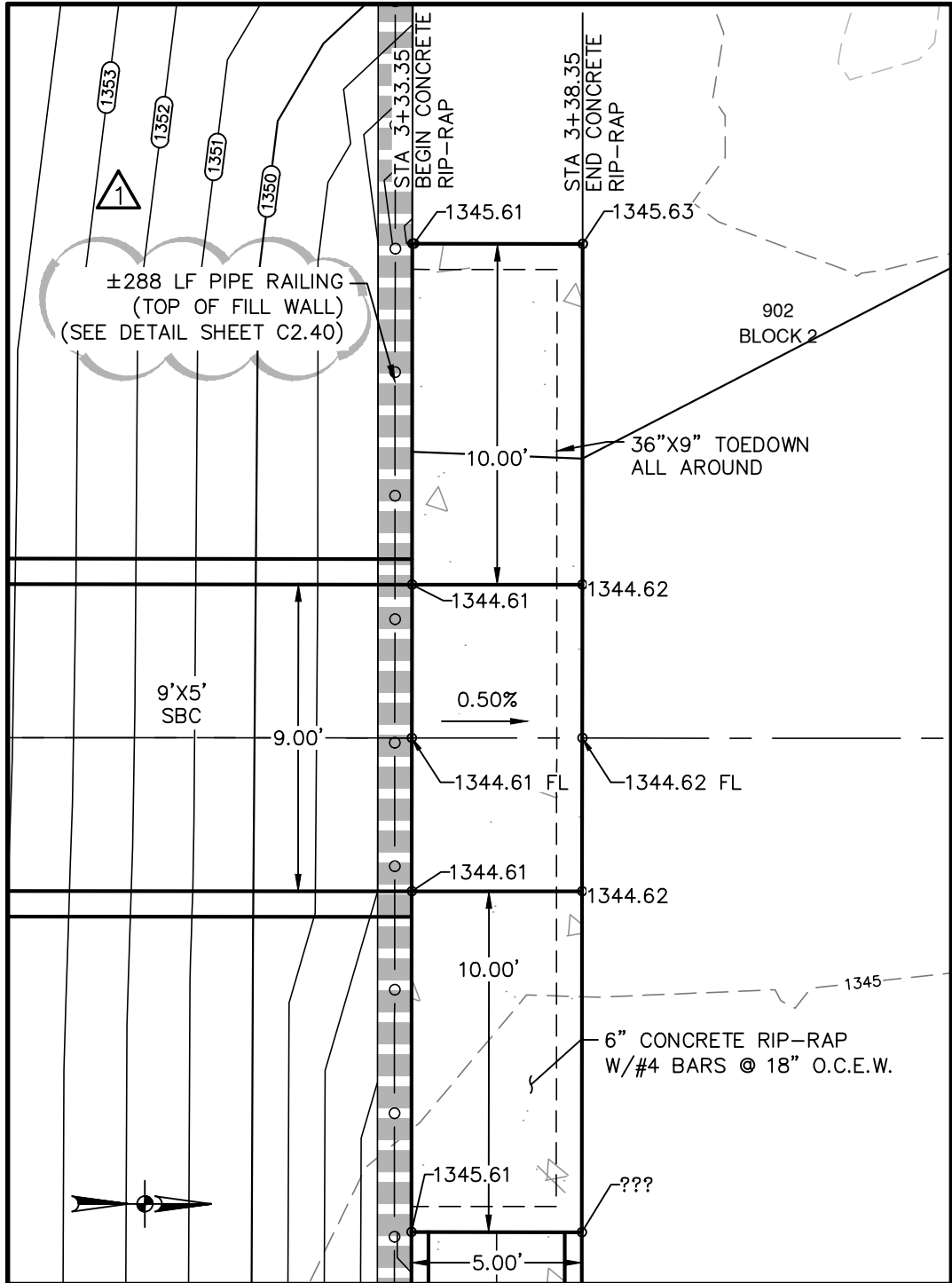
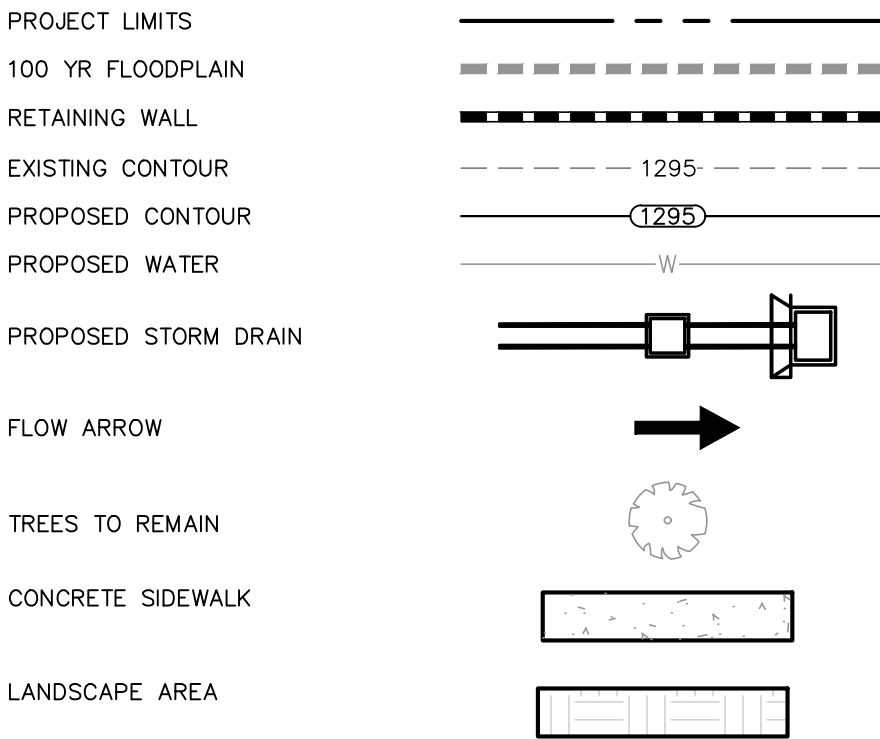
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DETAIL "F1"
SCALE: 1" = 5'



DRAINAGE LEGEND



DETAIL "F2"
SCALE: 1" = 5'

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DATE	12/23/25
NO.	1
REVISION	RAILING



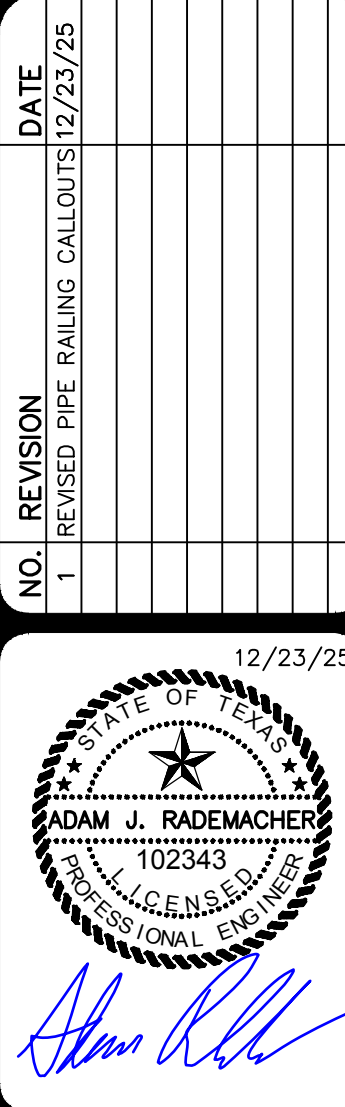
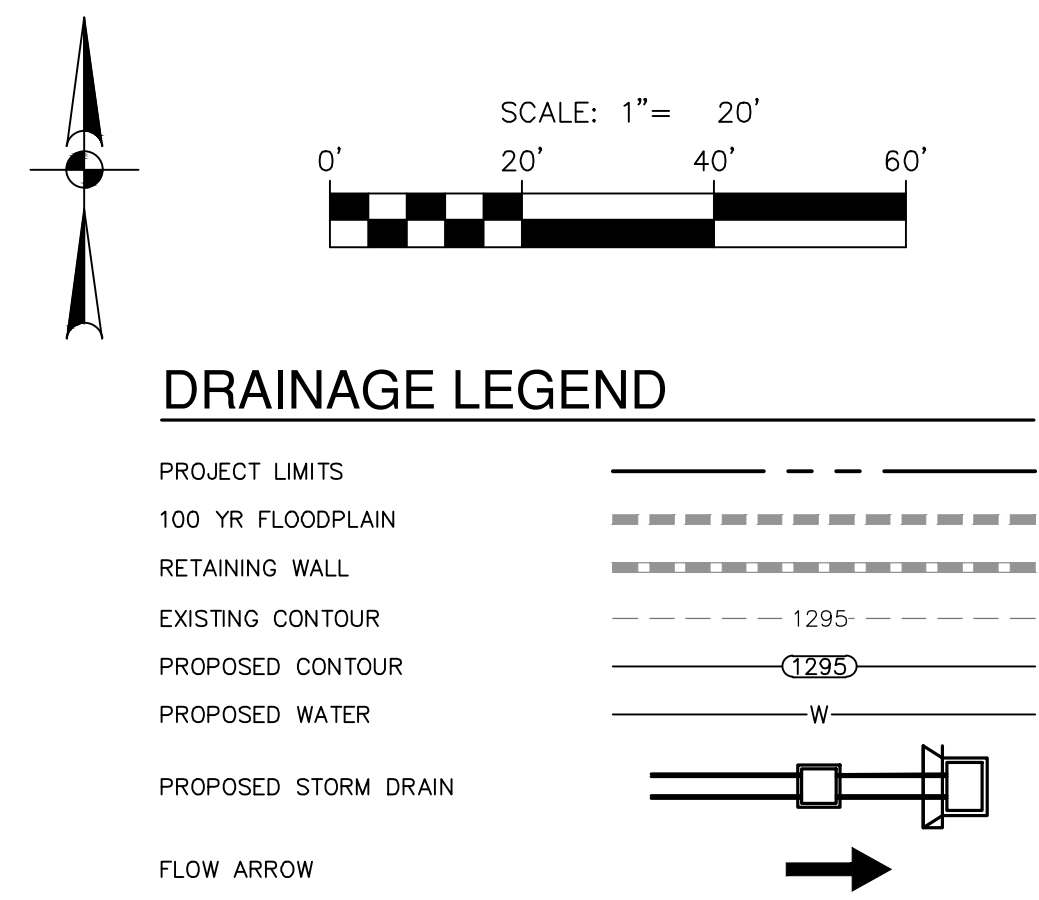
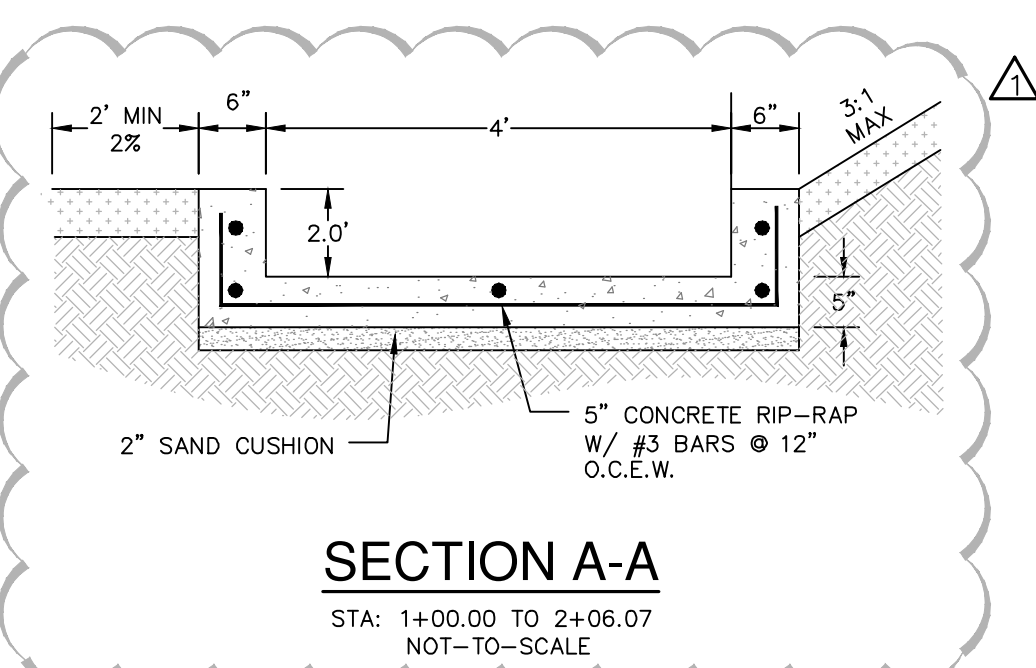
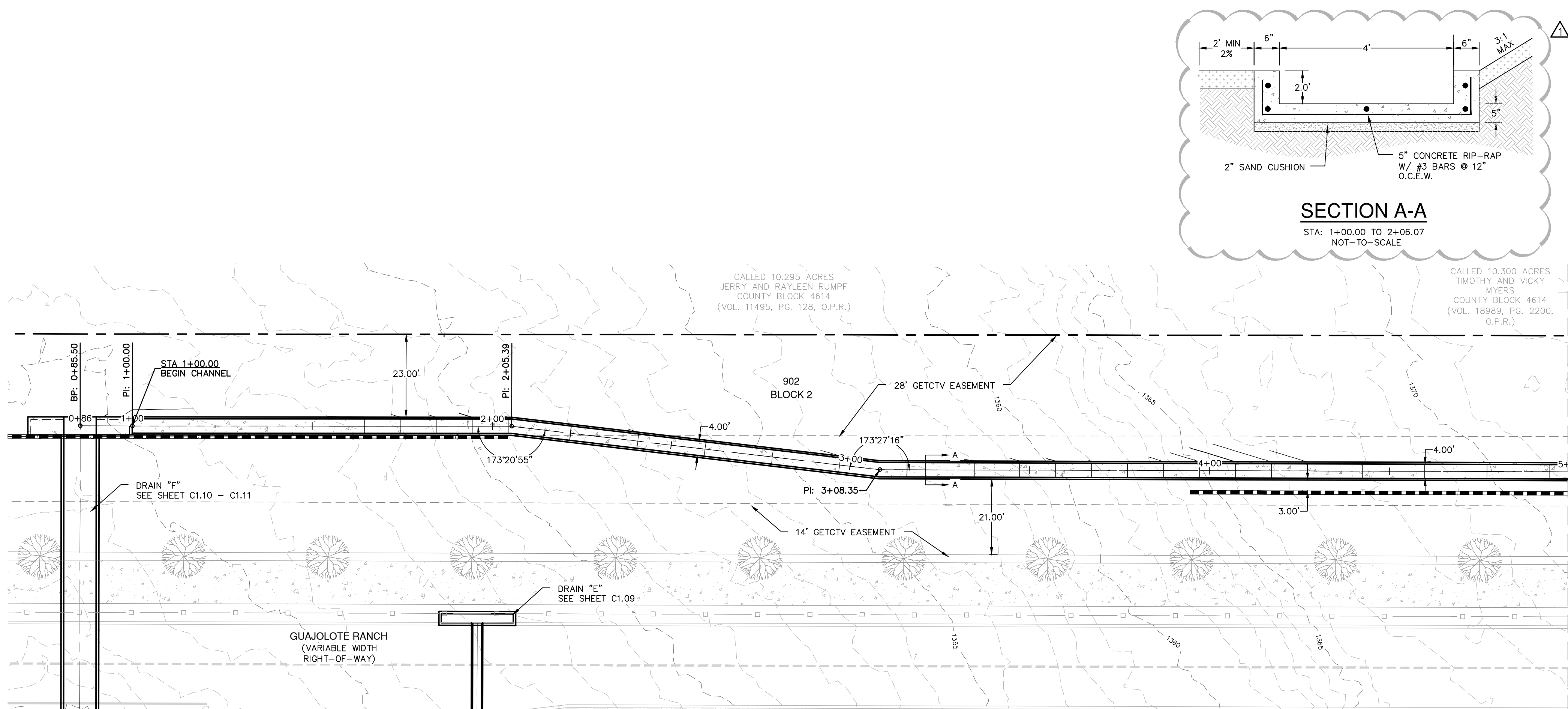
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
DRAIN F DETAILS

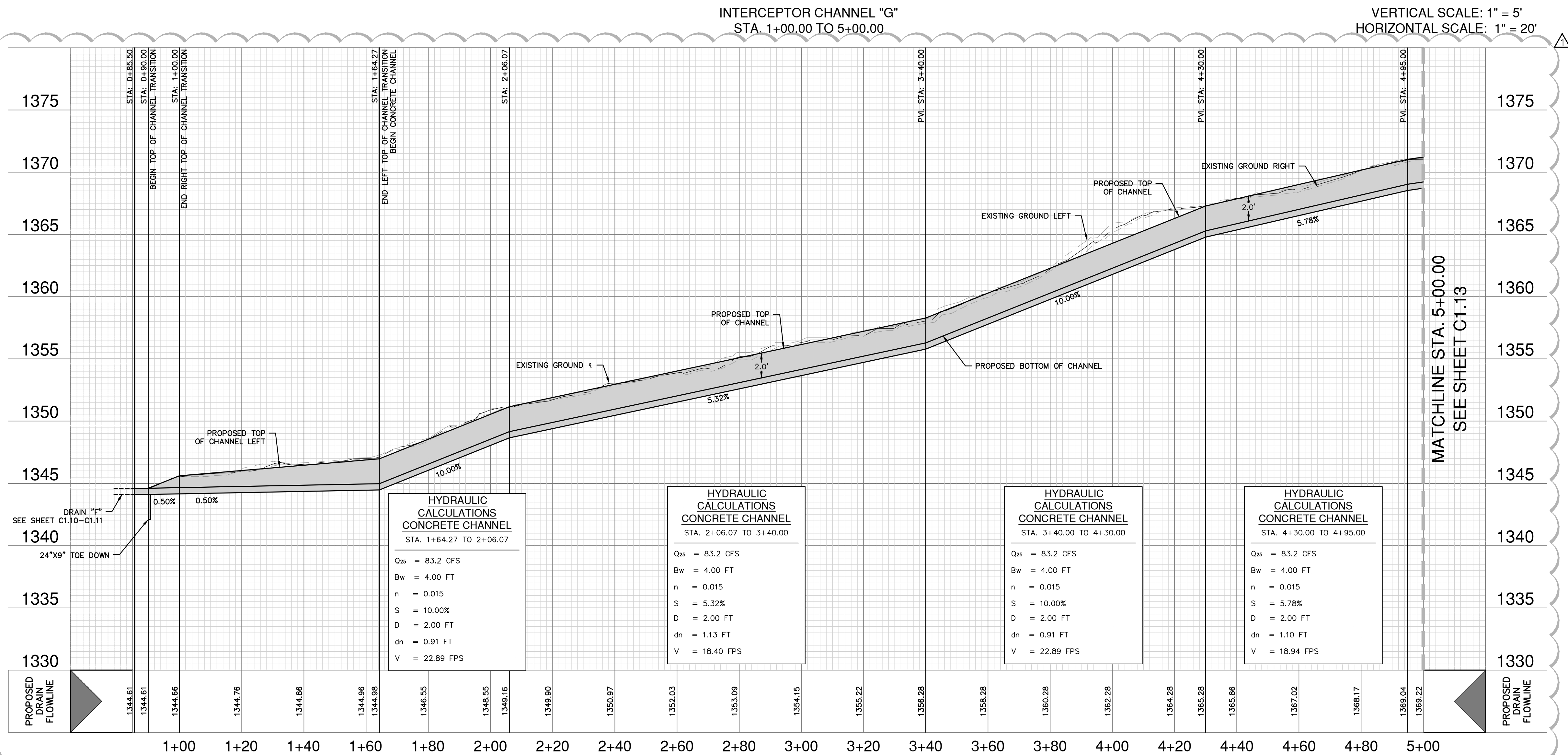
PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
DRAWN	JQ
SHEET	C1.11

Date: Dec 21, 2025, 2:12pm, User ID: chabert
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800



DRAINAGE & GRADING NOTES:

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- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

OPEN EARTHEN CHANNEL NOTE:
CONTRACTOR SHALL REFERENCE TABLE 9.3.8.1 - "RETARDATION CLASS FOR LINING MATERIALS" PROVIDED ON SHEET C1.20 AND SUPPLIED RETARDANCE CLASS (RC) FOR CHOICE OF COVER WITHIN OPEN EARTHEN CHANNEL CROSS-SECTIONS.

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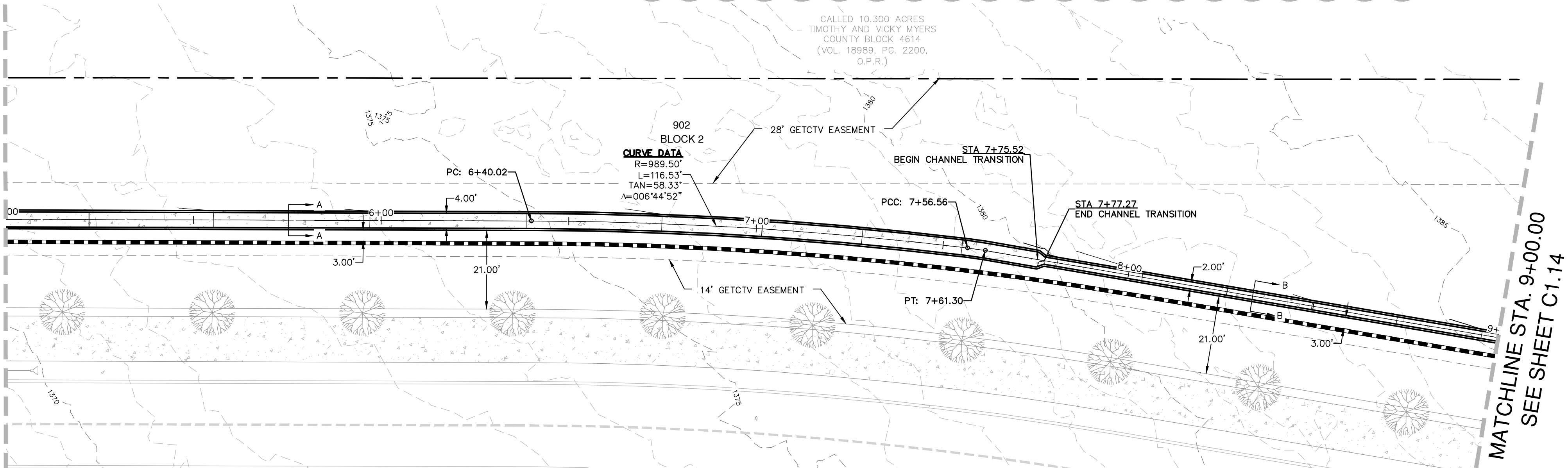
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
INTERCEPTOR CHANNEL G - PLAN AND PROFILE
STA. 1+00.00 TO 5+00.00

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER JA
CHECKED JQ DRAWN JQ
SHEET C1.12

Date: Dec 21, 2025, 2:12pm, User ID: chabert
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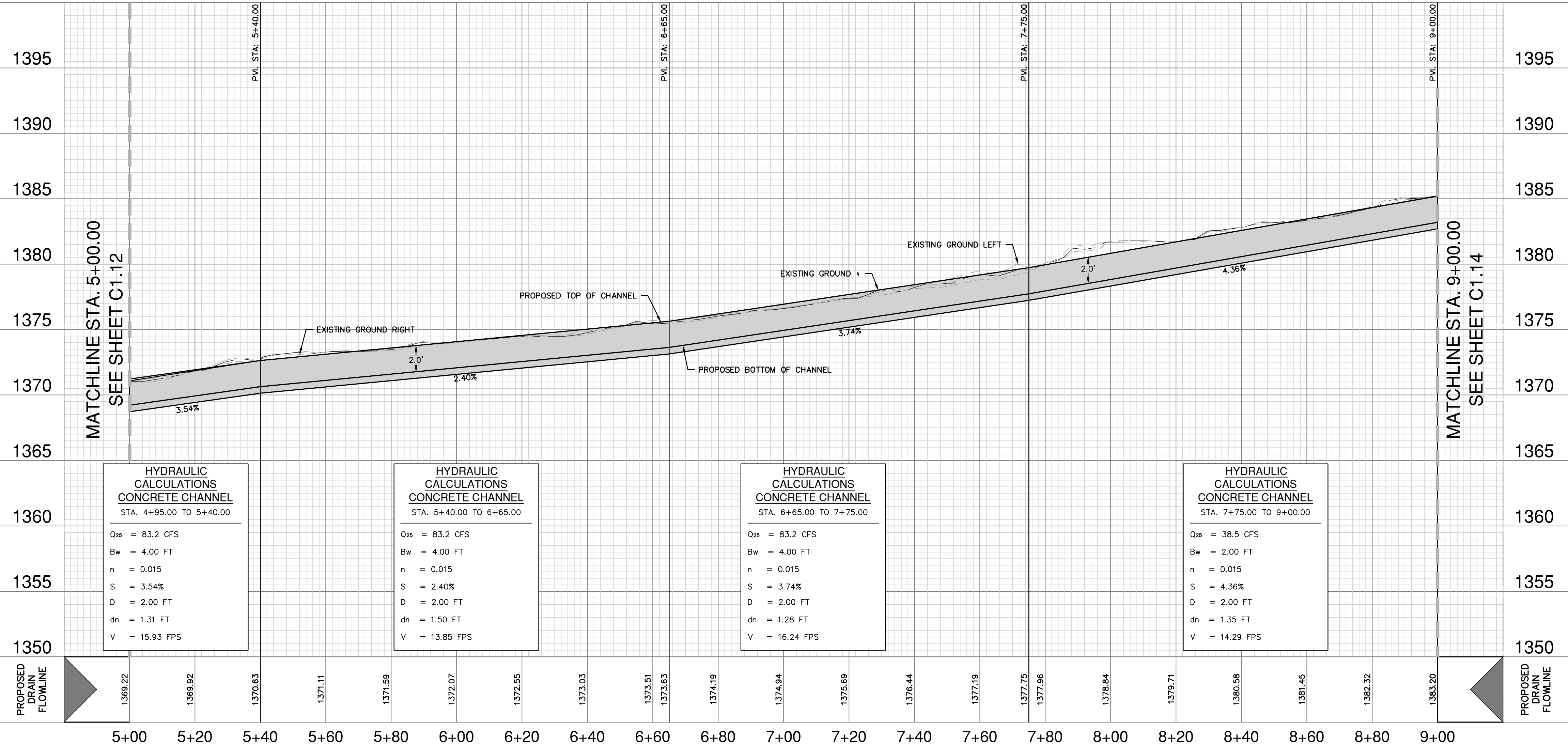
MATCHLINE STA. 5+00.00
SEE SHEET C1.12



INTERCEPTOR CHANNEL "G"
STA. 5+00.00 TO 9+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'

MATCHLINE STA. 5+00.00
SEE SHEET C1.12



HYDRAULIC CALCULATIONS CONCRETE CHANNEL	
STA. 4+95.00 TO 5+40.00	
Q ₂₅ = 83.2 CFS	
B _w = 4.00 FT	
n = 0.015	
S = 3.54%	
D = 2.00 FT	
dn = 1.31 FT	
V = 15.93 FPS	

HYDRAULIC CALCULATIONS CONCRETE CHANNEL	
STA. 5+40.00 TO 6+65.00	
Q ₂₅ = 83.2 CFS	
B _w = 4.00 FT	
n = 0.015	
S = 2.40%	
D = 2.00 FT	
dn = 1.50 FT	
V = 13.85 FPS	

HYDRAULIC CALCULATIONS CONCRETE CHANNEL	
STA. 6+65.00 TO 7+75.00	
Q ₂₅ = 83.2 CFS	
B _w = 4.00 FT	
n = 0.015	
S = 3.74%	
D = 2.00 FT	
dn = 1.28 FT	
V = 16.24 FPS	

HYDRAULIC CALCULATIONS CONCRETE CHANNEL	
STA. 7+75.00 TO 9+00.00	
Q ₂₅ = 38.5 CFS	
B _w = 2.00 FT	
n = 0.015	
S = 4.36%	
D = 2.00 FT	
dn = 1.35 FT	
V = 14.29 FPS	

MATCHLINE STA. 9+00.00
SEE SHEET C1.14

DRAINAGE & GRADING NOTES:

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4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
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OPEN EARTHEN CHANNEL NOTE:

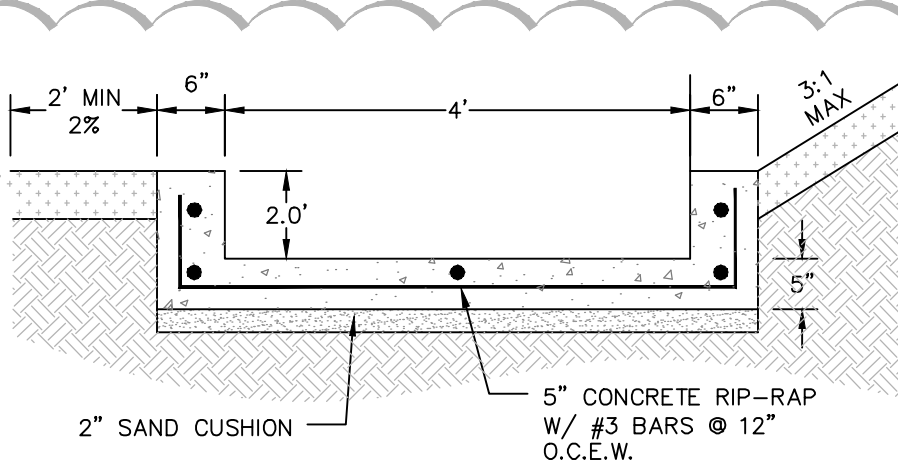
CONTRACTOR SHALL REFERENCE TABLE 9.3.8.1 - "RETARDATION CLASS FOR LINING MATERIALS" PROVIDED ON SHEET C1.20 AND SUPPLIED RETARDANCE CLASS (RC) FOR CHOICE OF COVER WITHIN OPEN EARTHEN CHANNEL CROSS-SECTIONS.

BEXAR COUNTY FLOOD PLAIN GENERAL CONSTRUCTION NOTES:

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 2. NO CONSTRUCTION MATERIAL AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF THE EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF THE EXISTING FLOOD PLAIN.
- TRENCH EXCAVATION SAFETY 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 SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

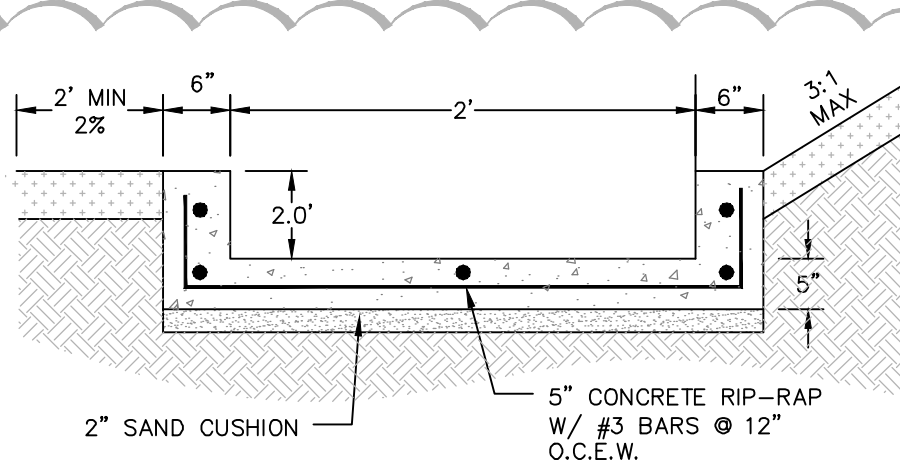
CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



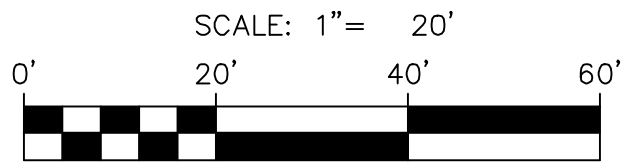
SECTION A-A

STA: 1+00.00 TO 2+06.07
NOT-TO-SCALE



SECTION B-B

STA: 1+00.00 TO 2+06.07
NOT-TO-SCALE



DRAINAGE LEGEND

- PROJECT LIMITS: ---
- 100 YR FLOODPLAIN: - - - - -
- RETAINING WALL: - - - - -
- EXISTING CONTOUR: --- 1295 ---
- PROPOSED CONTOUR: --- 1295 ---
- PROPOSED WATER: --- W ---
- PROPOSED STORM DRAIN: ---
- FLOW ARROW: →

NO.	REVISION	DATE
1	RAILING & CROSS-SECTION	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10208800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

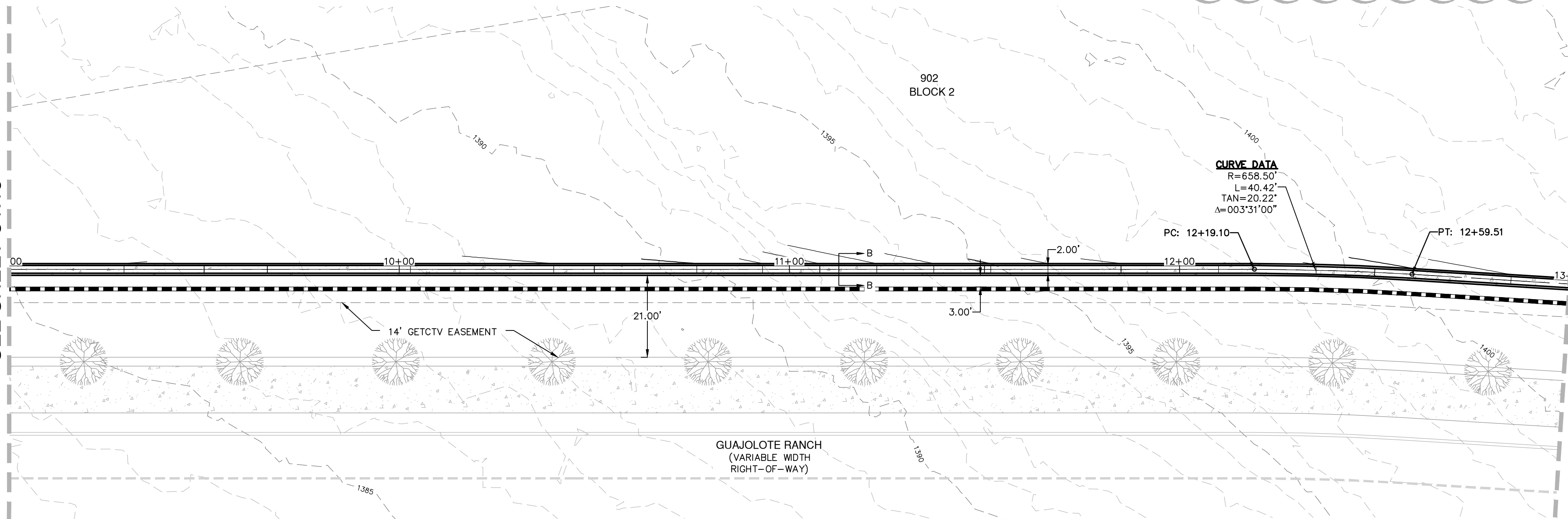
INTERCEPTOR CHANNEL G - PLAN AND PROFILE
STA. 5+00.00 TO 9+00.00

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JQ
CHECKED	JB
SHEET	C1.13

Date: Dec 21, 2025, 2:12pm User ID: rchabert
File: P:\123156\10\Design\Chan\1255610.dwg

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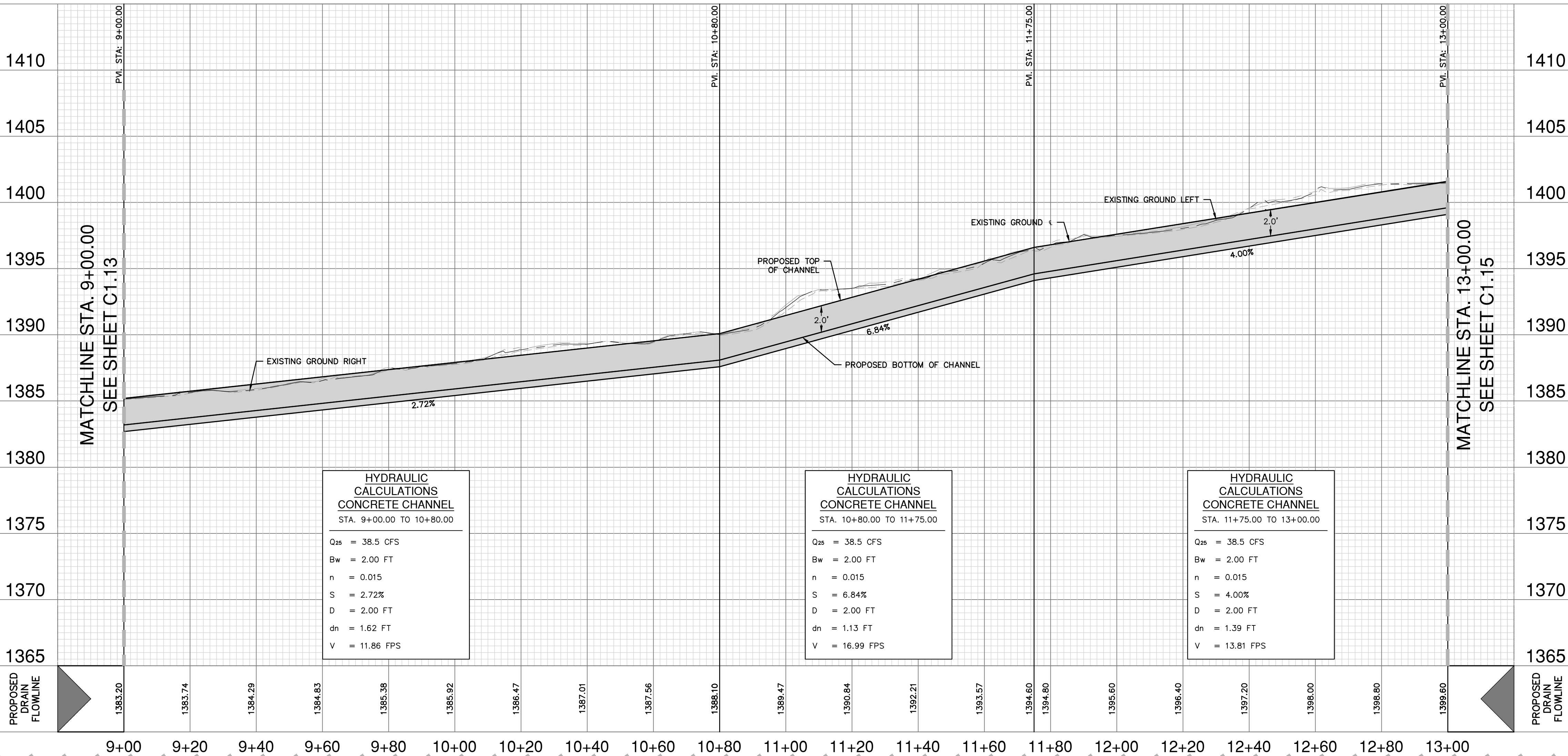
MATCHLINE STA. 9+00.00
SEE SHEET C1.13



MATCHLINE STA. 13+00.00
SEE SHEET C1.15

INTERCEPTOR CHANNEL "G"
STA. 9+00.00 TO 13+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



DRAINAGE & GRADING NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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TRENCH EXCAVATION SAFETY PROTECTION:

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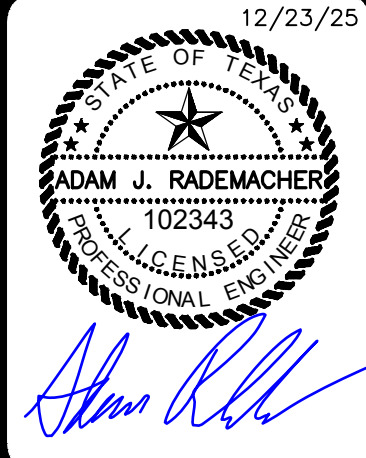
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DRAINAGE LEGEND

- PROJECT LIMITS
100 YR FLOODPLAIN
RETAINING WALL
EXISTING CONTOUR
PROPOSED CONTOUR
PROPOSED WATER
PROPOSED STORM DRAIN
FLOW ARROW

NO.	REVISION	DATE
1	RAILING & CROSS-SECTION	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

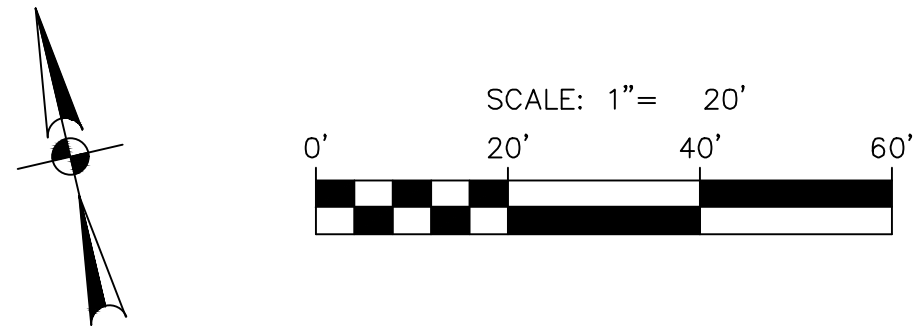
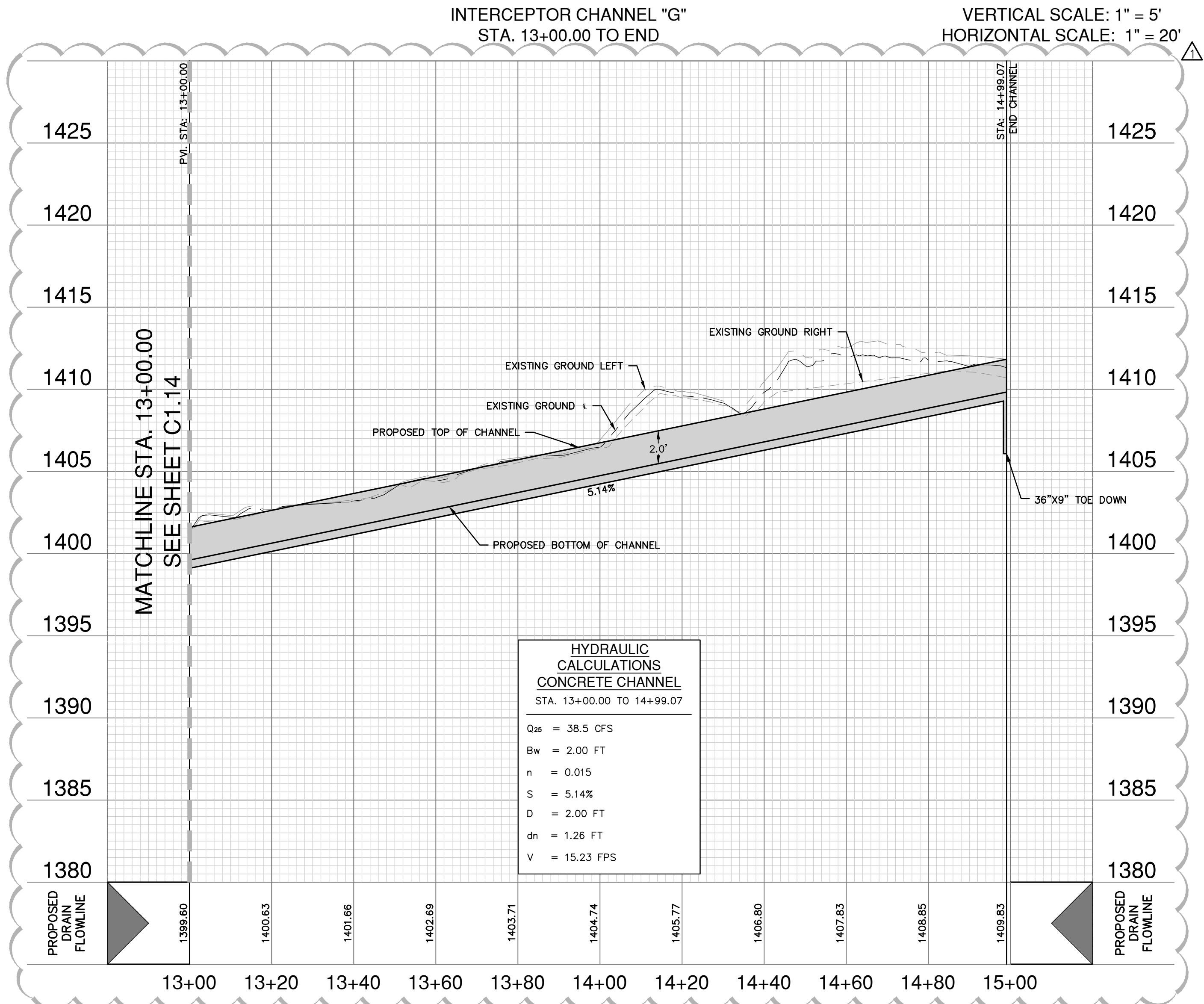
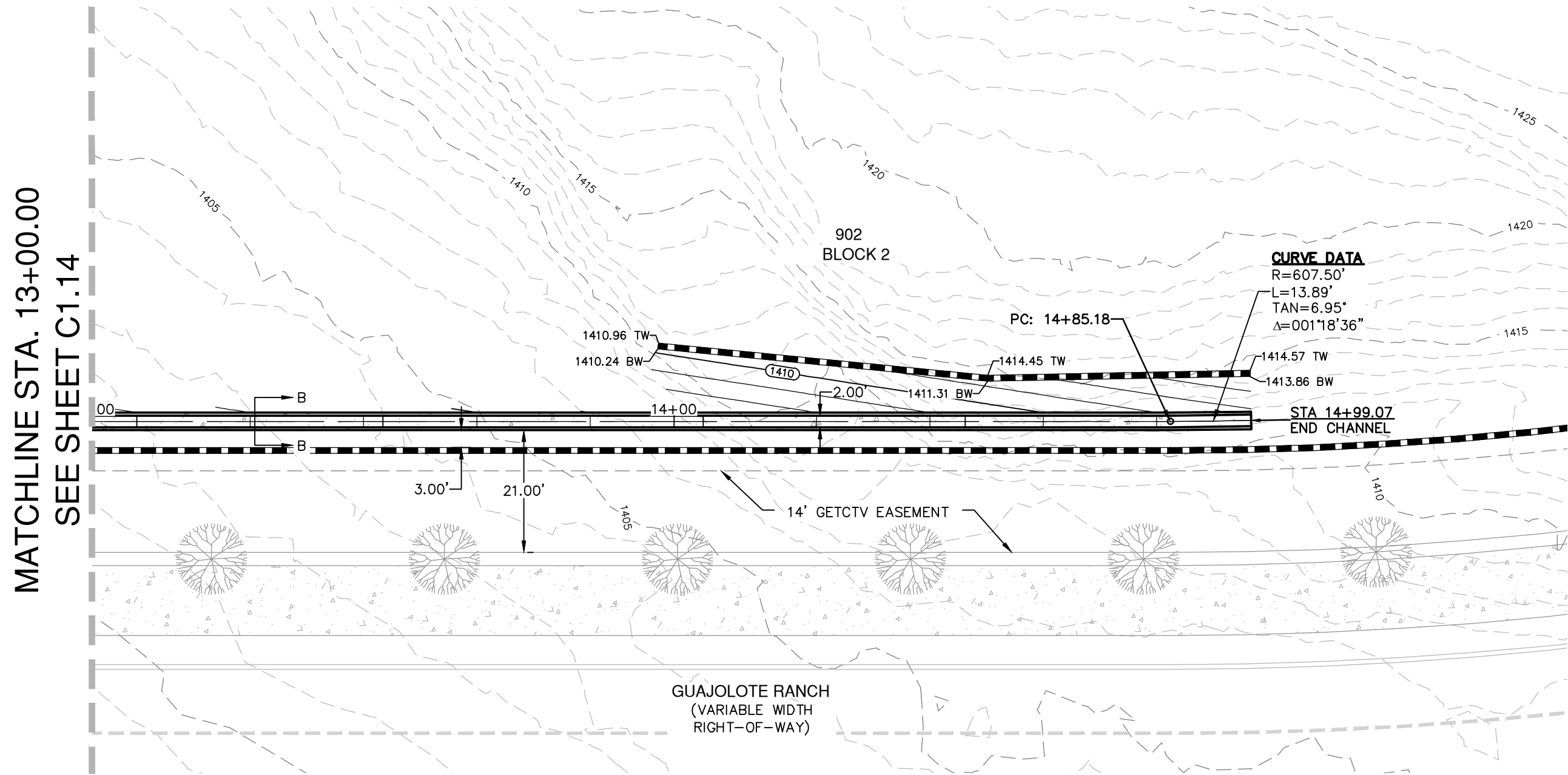
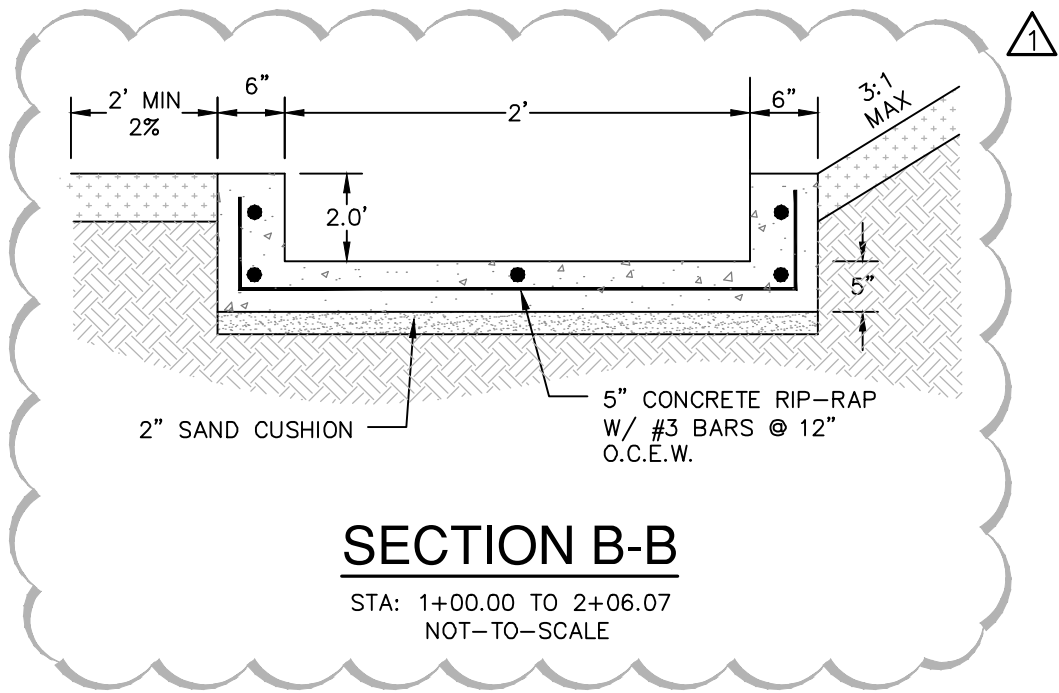
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

INTERCEPTOR CHANNEL G - PLAN AND PROFILE
STA. 9+00.00 TO END

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
SHEET	C1.14

Date: Dec 23, 2025, 2:12pm, User ID: rhesbert
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DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
RETAINING WALL	---
EXISTING CONTOUR	--- 1295 ---
PROPOSED CONTOUR	--- (1295) ---
PROPOSED WATER	---
PROPOSED STORM DRAIN	---
FLOW ARROW	→

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CAUTION!!

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NO.	REVISION	DATE
1	RAILING & CROSS-SECTION	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

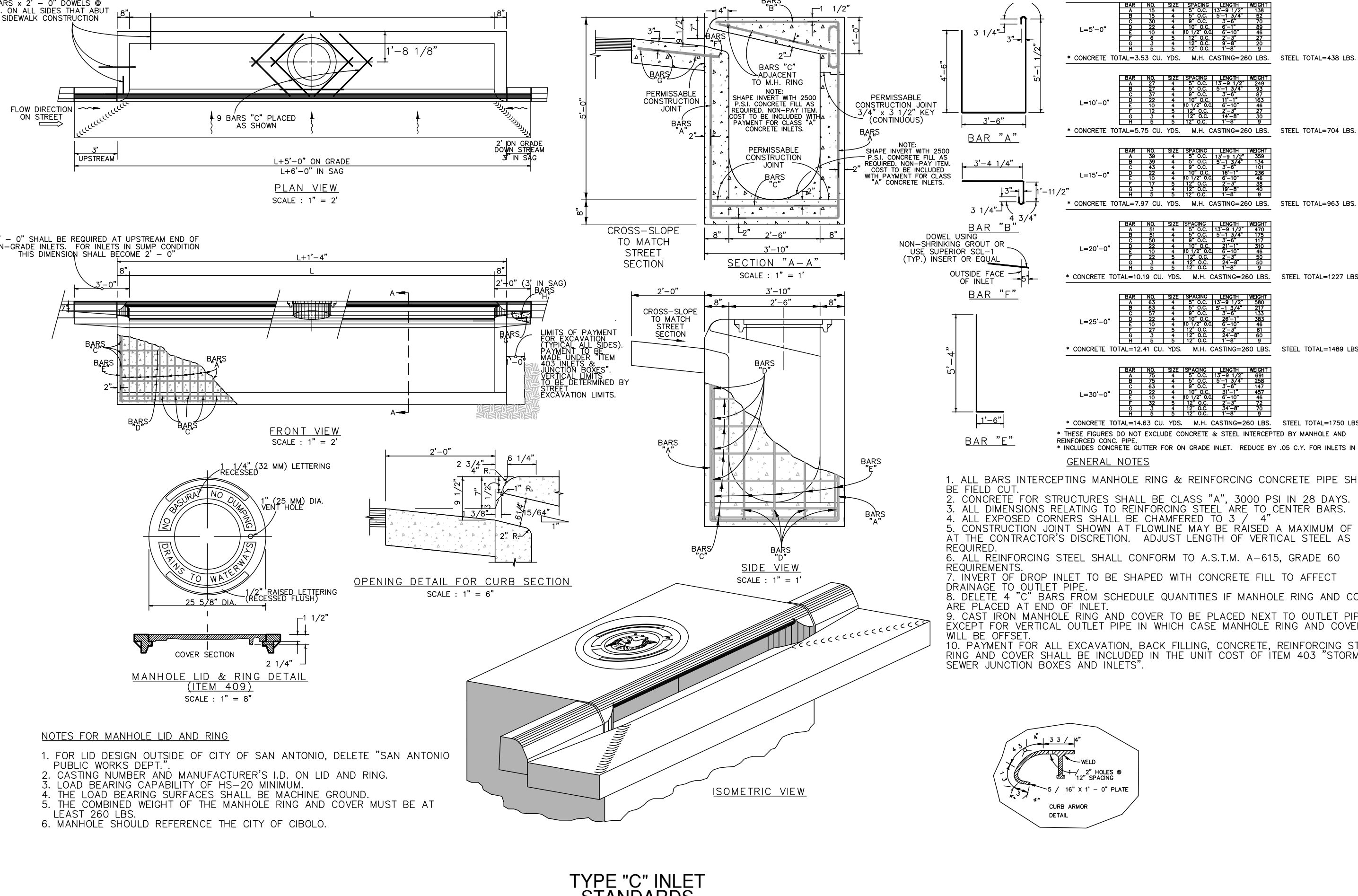
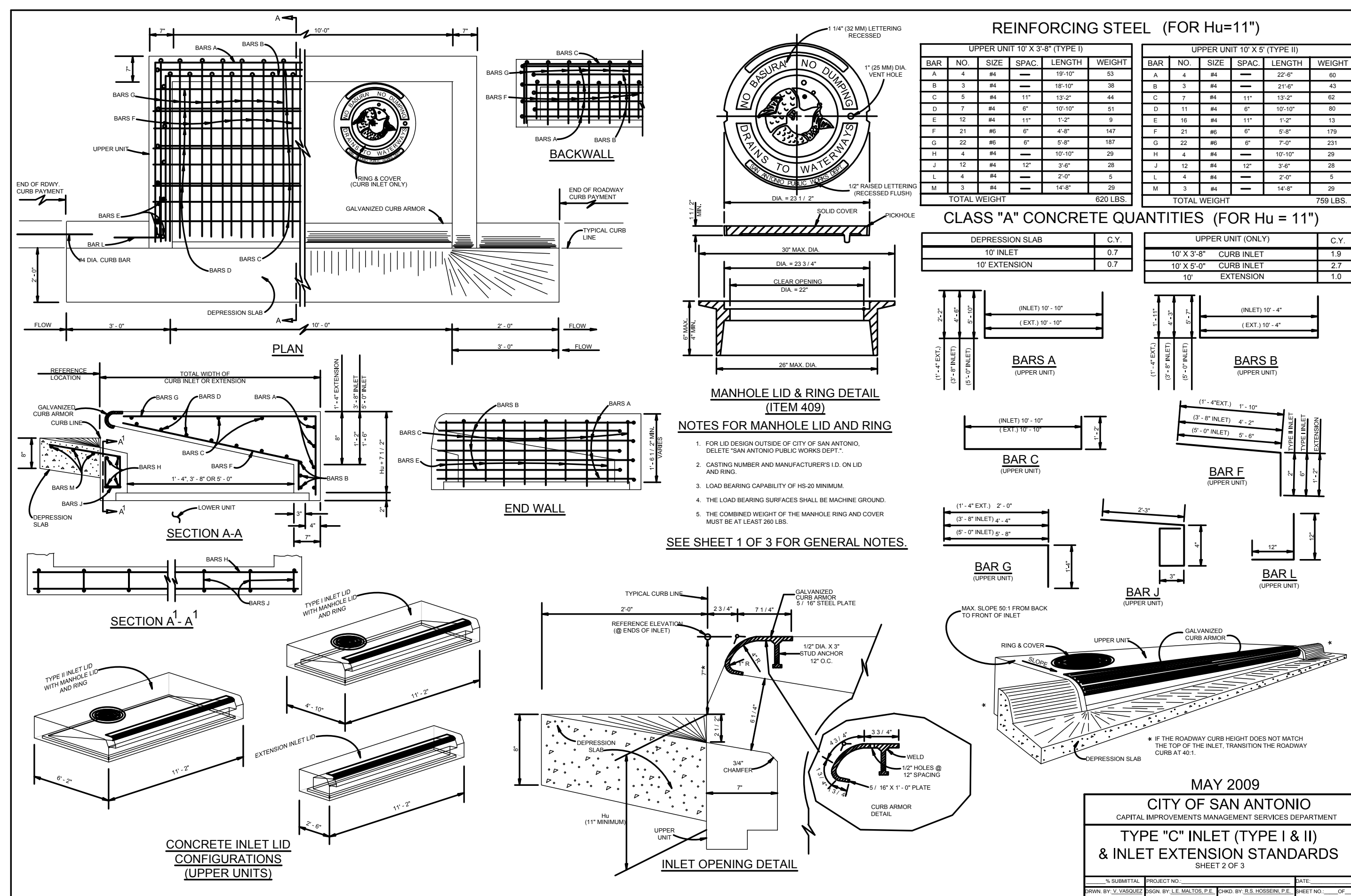
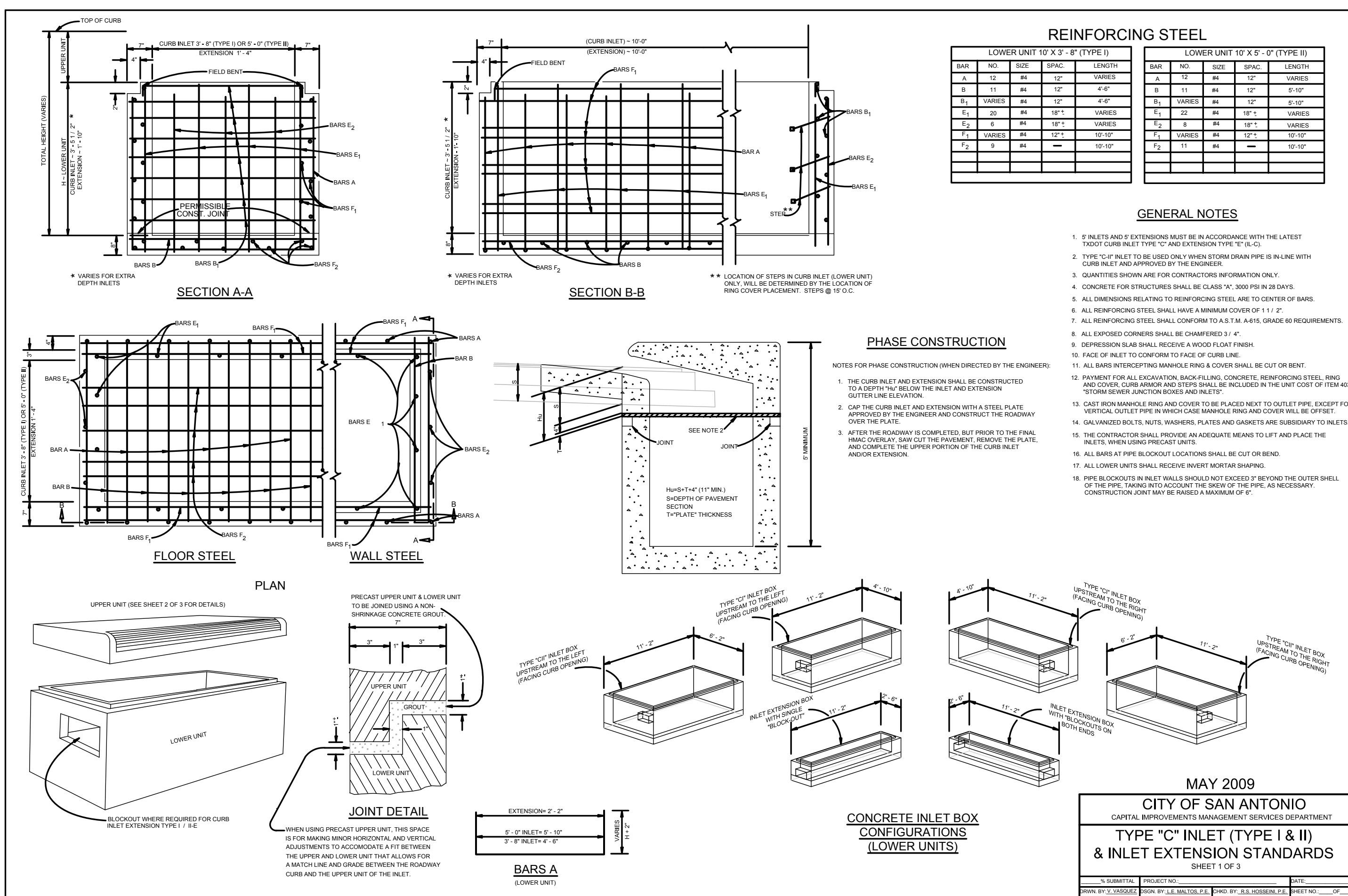
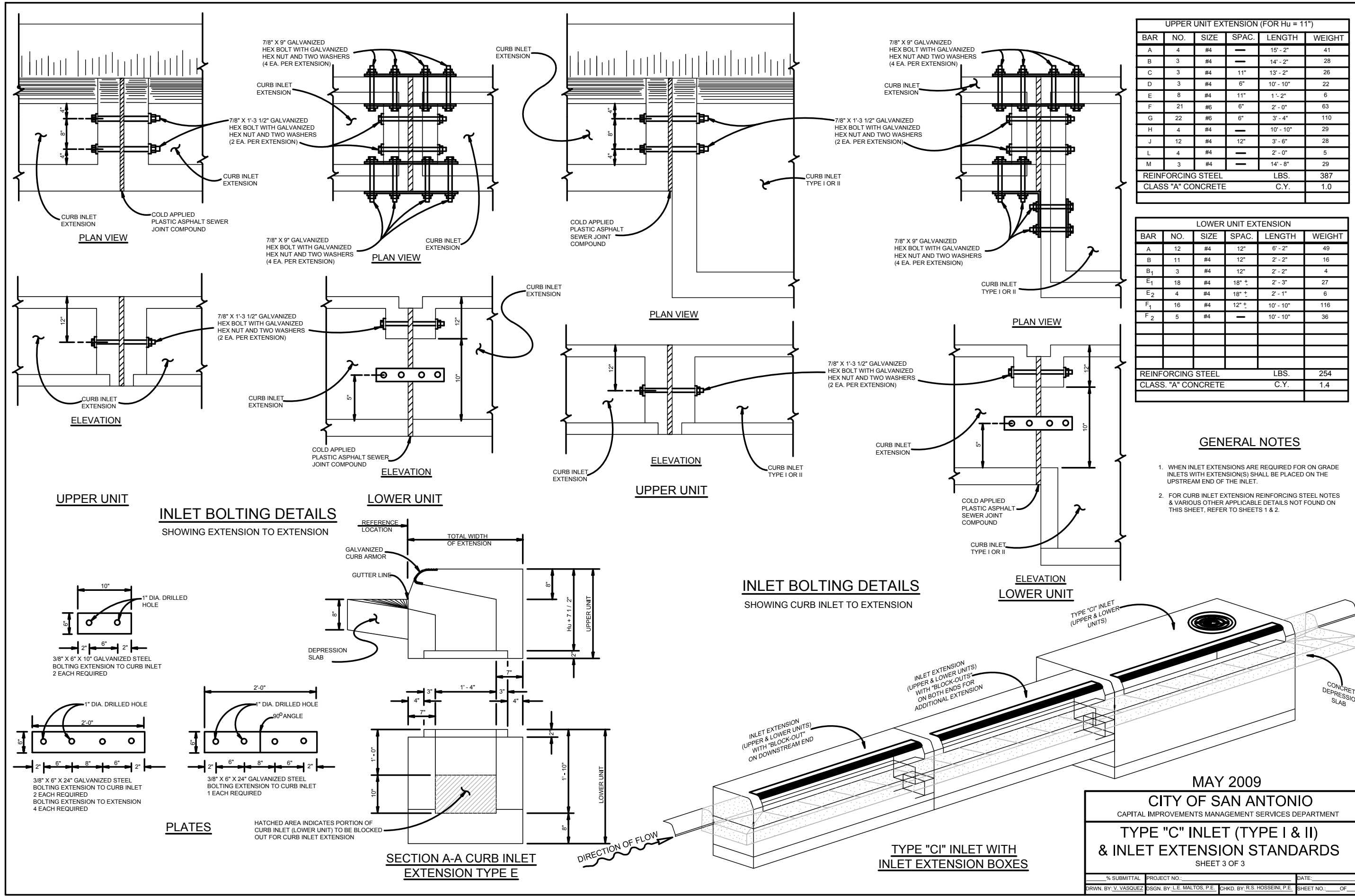
GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

INTERCEPTOR CHANNEL G - PLAN AND PROFILE

STA. 13+00.00 TO END

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
SHEET	C1.15



DATE: 12/15/25

NO. REVISION

12/15/25

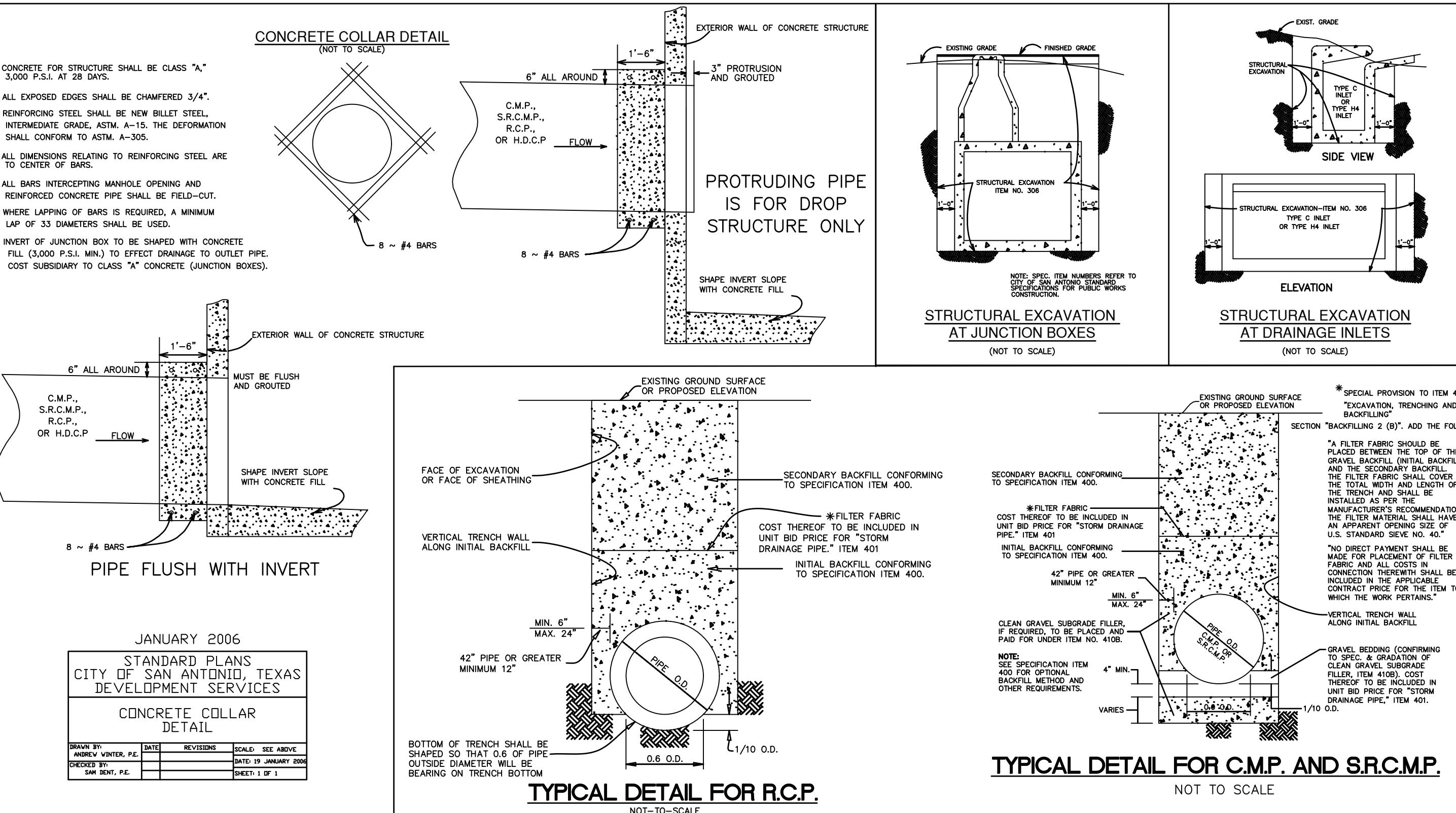
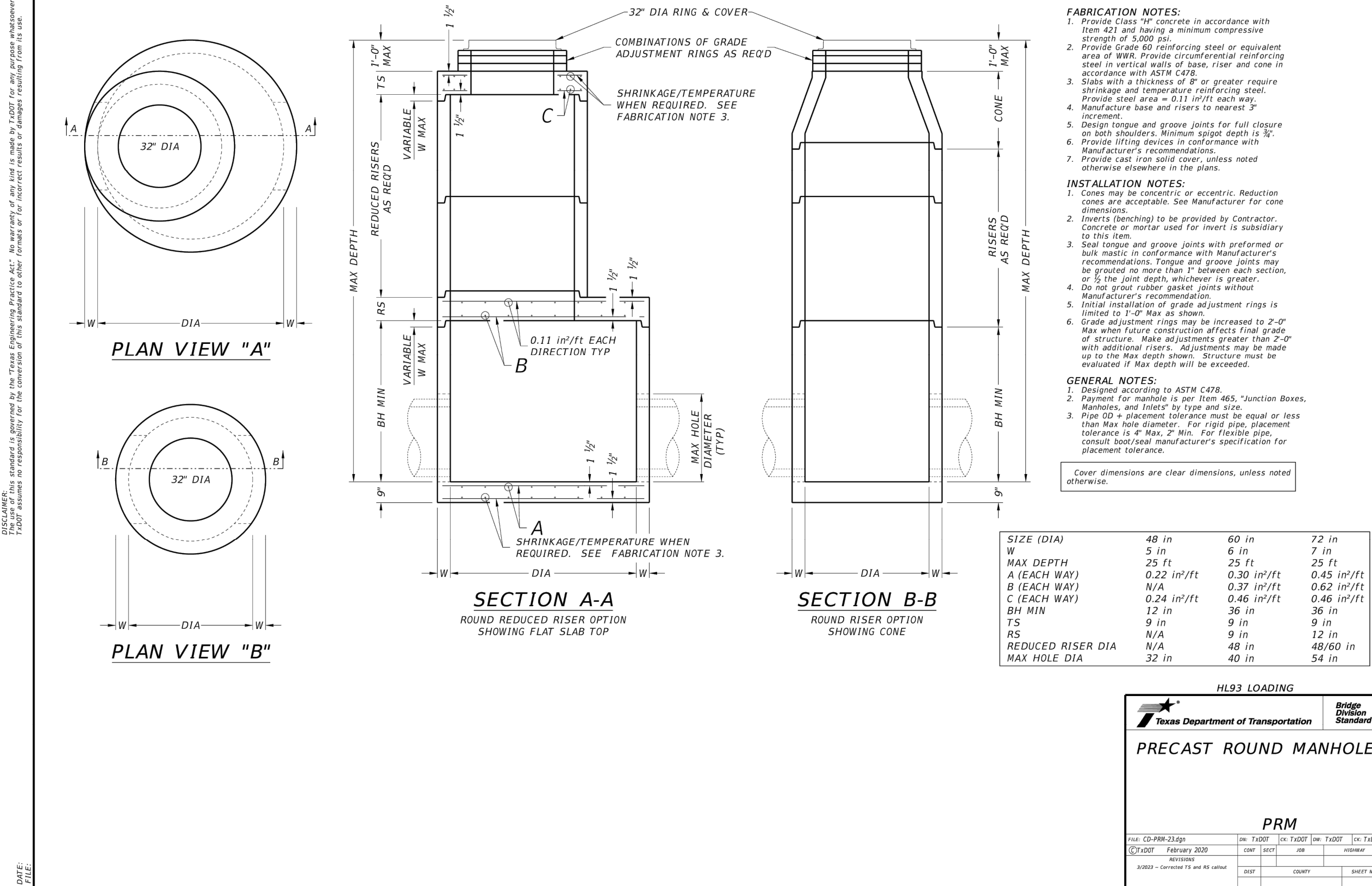
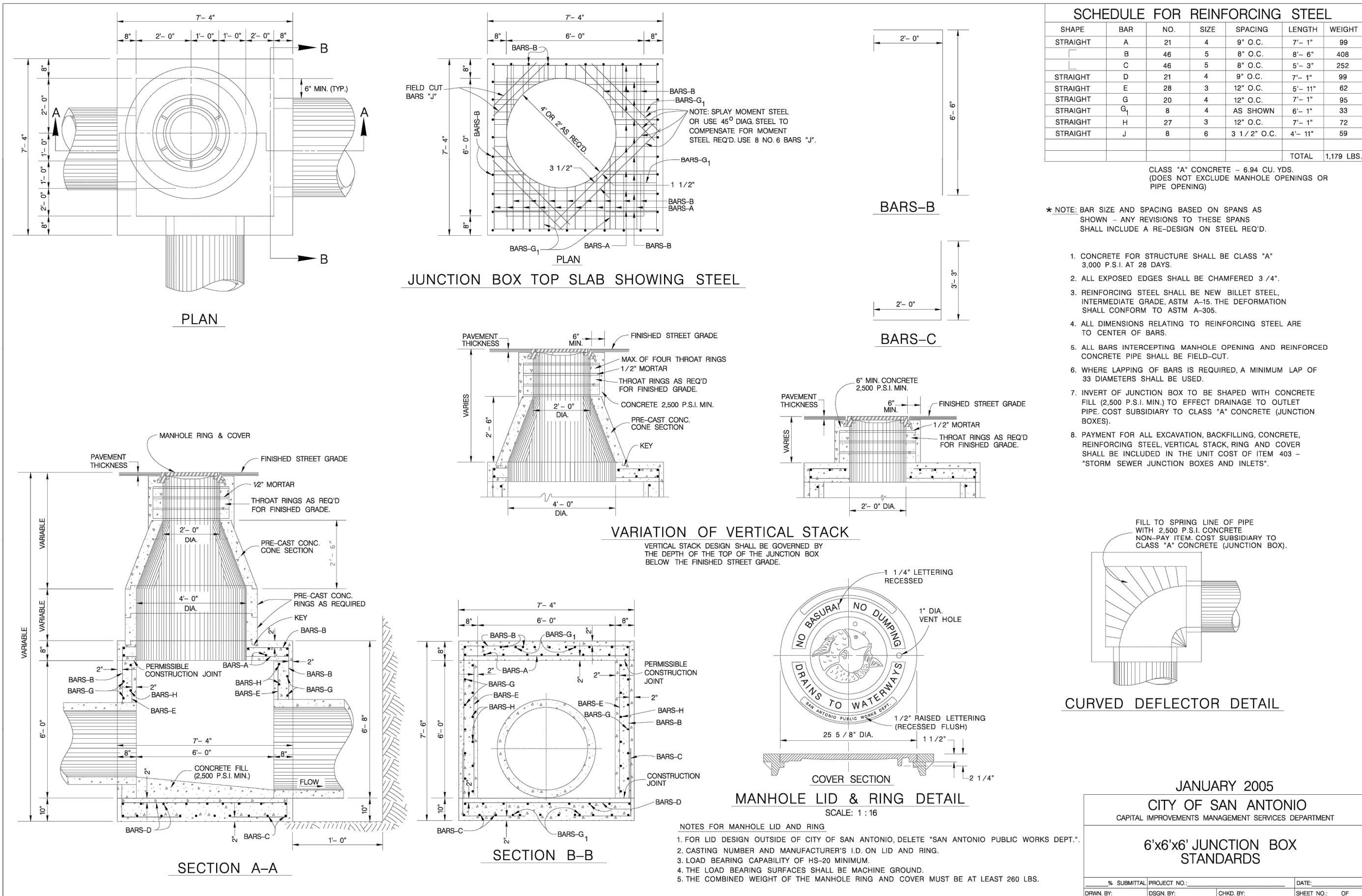
ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJALOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

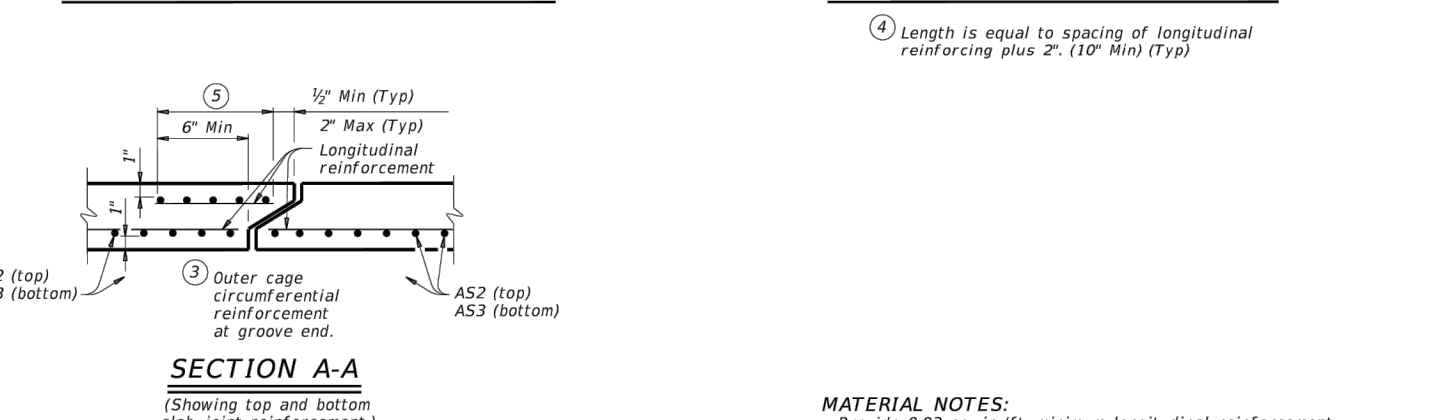
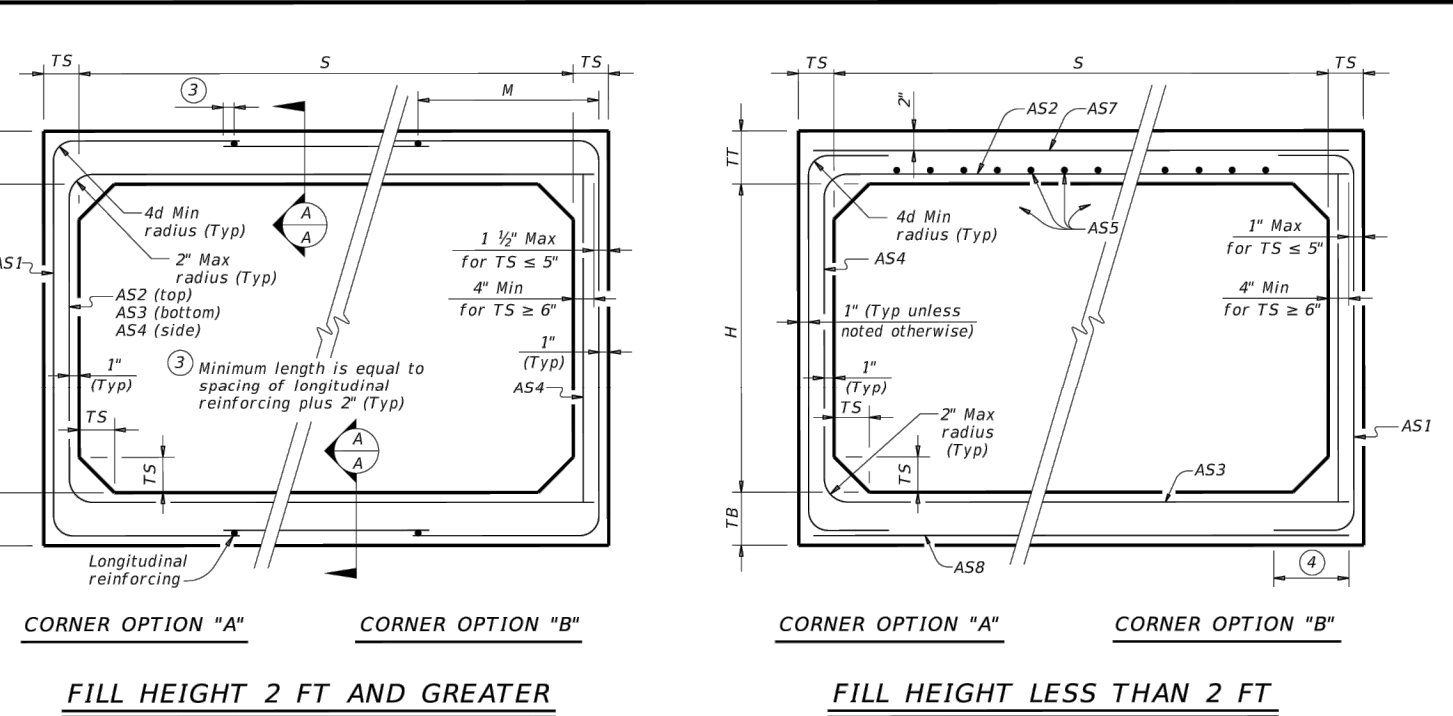
DRAINAGE DETAILS
SHEET 1 OF 3

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE: DECEMBER 2025
DESIGNER: JA
CHECKED: JLB DRAWN: JQ
SHEET: C1.20



BOX DATA									
SECTION DIMENSIONS					REINFORCING (sq. in. / ft.) ⁽²⁾				
S	H	TT	TB	TS	Fill Height	M (Min)	AS1	AS2	AS3
(ft.)	(ft.)	(in.)	(in.)	(in.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)
2	2	6	6	6	< 2	0.19	0.27	0.18	0.18
2	2	6	6	6	2'-3"	0.22	0.20	0.16	0.14
2	2	6	6	6	3'-5"	0.46	0.16	0.14	0.14
2	2	6	6	6	10	0.36	0.15	0.14	0.14
2	2	6	6	6	15	0.26	0.10	0.18	0.14
2	2	6	6	6	20	0.36	0.26	0.23	0.24
2	2	6	6	6	25	0.36	0.33	0.29	0.29
2	2	6	6	6	30	0.36	0.39	0.34	0.35
3	3	8	7	6	< 2	0.19	0.31	0.21	0.14
3	3	8	7	6	2'-3"	0.45	0.18	0.24	0.19
3	3	8	7	6	3'-5"	0.36	0.14	0.17	0.16
3	3	8	7	6	10	0.36	0.14	0.16	0.17
3	3	8	7	6	15	0.36	0.16	0.21	0.22
3	3	8	7	6	20	0.35	0.21	0.27	0.28
3	3	8	7	6	25	0.35	0.26	0.34	0.34
3	3	8	7	6	30	0.35	0.31	0.41	0.41
4	4	8	7	6	< 2	0.19	0.33	0.24	0.14
4	4	8	7	6	2'-3"	0.45	0.16	0.27	0.22
4	4	8	7	6	3'-5"	0.45	0.14	0.19	0.18
4	4	8	7	6	10	0.36	0.14	0.18	0.14
4	4	8	7	6	15	0.35	0.14	0.23	0.24
4	4	8	7	6	20	0.35	0.17	0.30	0.31
4	4	8	7	6	25	0.35	0.21	0.37	0.38
4	4	8	7	6	30	0.35	0.25	0.44	0.45
5	5	8	7	6	< 2	0.19	0.35	0.26	0.14
5	5	8	7	6	2'-3"	0.45	0.14	0.29	0.24
5	5	8	7	6	3'-5"	0.45	0.14	0.21	0.20
5	5	8	7	6	10	0.36	0.14	0.19	0.20
5	5	8	7	6	15	0.36	0.14	0.24	0.25
5	5	8	7	6	20	0.35	0.15	0.31	0.32
5	5	8	7	6	25	0.35	0.18	0.38	0.39
5	5	8	7	6	30	0.35	0.21	0.46	0.47

- 1 For box length = 8'-0"
- 2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



MATERIAL NOTES:
Provide Class C concrete (f'c=3,000 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information on details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

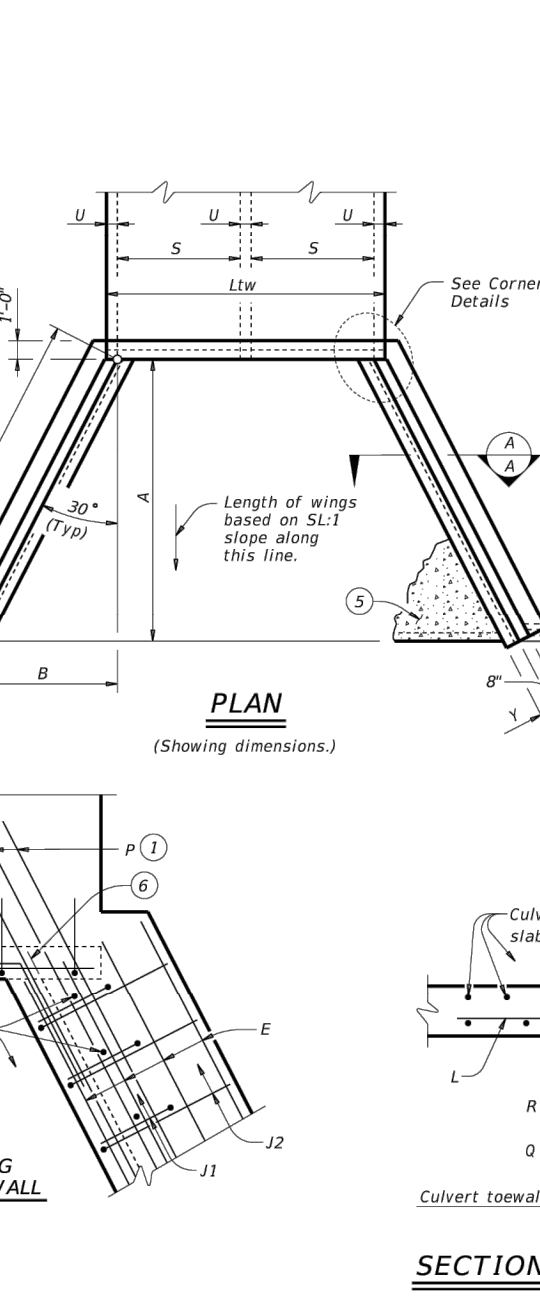
SCP-5

For CD-SRPS-20-09a
February 2020
REVISED

DATE: FILE:

TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)									
Dimensions					Variable Reinforcing				
					Bars J2		Estimated Quantities per ft. of wing length (2-wings)		
					Size	No.	Reinf. (lb/ft)	Conc. (CY/ft)	
					Spa	Spa			
Maximum Wingwall Height	W	X	Y	Z					
(ft.)	(ft.)	(in.)	(in.)	(in.)					
2'-0"	2'-0"	1'-0"	9"	7"	#4	1'-0"	33.73	0.248	
3'-0"	2'-0"	1'-0"	9"	7"	#4	1'-0"	37.07	0.261	
3'-0"	2'-0"	1'-0"	9"	7"	#4	1'-0"	37.74	0.273	
4'-0"	2'-0"	1'-0"	9"	7"	#4	1'-0"	38.41	0.285	
4'-0"	3'-0"	1'-0"	9"	7"	#4	1'-0"	41.75	0.330	
5'-0"	3'-0"	1'-0"	9"	7"	#4	1'-0"	45.09	0.343	
5'-0"	3'-0"	1'-0"	9"	7"	#4	1'-0"	45.75	0.355	
6'-0"	3'-0"	1'-0"	9"	7"	#4	1'-0"	46.42	0.367	
7'-0"	3'-0"	1'-0"	9"	7"	#4	1'-0"	52.77	0.414	
8'-0"	4'-0"	2'-0"	1'-0"	8"	#4	1'-0"	60.19	0.486	
9'-0"	4'-0"	2'-0"	1'-0"	8"	#4	1'-0"	61.49	0.535	
10'-0"	5'-0"	2'-0"	1'-0"	8"	#4	1'-0"	67.25	0.584	
11'-0"	5'-0"	2'-0"	1'-0"	8"	#4	1'-0"	73.01	0.634	
12'-0"	6'-0"	2'-0"	1'-0"	8"	#4	1'-0"	78.77	0.684	
13'-0"	6'-0"	2'-0"	1'-0"	8"	#4	1'-0"	84.53	0.734	
14'-0"	7'-0"	3'-0"	1'-0"	8"	#4	1'-0"	90.29	0.784	
15'-0"	7'-0"	3'-0"	1'-0"	8"	#4	1'-0"	96.05	0.834	
16'-0"	8'-0"	4'-0"	3'-0"	1'-0"	#4	1'-0"	101.81	0.884	

WING DIMENSION FORMULAS:
(All values are in feet.)
 $H_w = H + T + C - 0.250$
 $A = (H - 0.333) (SL)$
 $B = (A) \tan(\theta)$
 $L_w = (A) \cos(\theta)$
For cast-in-place culverts:
 $L_w = (N) (2U + S) + (N - 1) (0.3)$
For precast culverts:
 $L_w = (N) (S) + (N + 1) (U)$
 $L_w = (H + 0.333) (L_w)$
See applicable box culvert standard sheet for H, S, T, and U values.



CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

FW-0

For CD-SRPS-20-09a
February 2020
REVISED

DATE: FILE:

HL93 LOADING

CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

FW-0

For CD-SRPS-20-09a
February 2020
REVISED

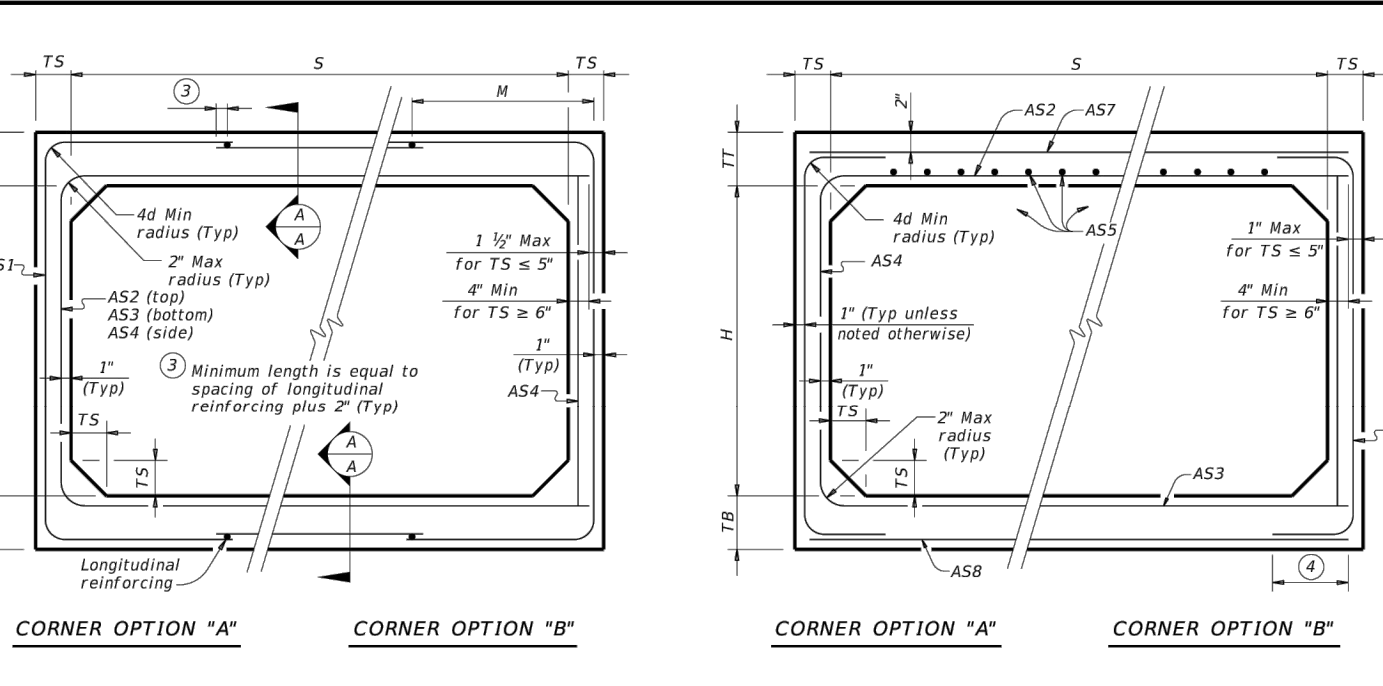
DATE: FILE:

1 For box length = 8'-0"

2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

- 1 For box length = 8'-0"
- 2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

BOX DATA									
SECTION DIMENSIONS					REINFORCING (sq. in. / ft.) ⁽²⁾				
S	H	TT	TB	TS	Fill Height	M (Min)	AS1	AS2	AS3
(ft.)	(ft.)	(in.)	(in.)	(in.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)
2	2	6	6	6	< 2	0.18	0.27	0.15	0.18
2	2	6	6	6	2'-3"	0.18	0.19	0.17	0.12
2	2	6	6	6	3'-5"	0.38	0.13	0.13	0.12
2	2	6	6	6	10	0.38	0.12	0.12	0.12
2	2	6	6	6	15	0.38	0.14	0.16	0.12
2	2	6	6	6	20	0.38	0.18	0.20	0.21
2	2	6	6	6	25	0.38	0.23	0.25	0.22
2	2	6	6	6	30	0.38	0.28	0.30	0.32
3	3	8	7	6	< 2	0.18	0.31	0.18	0.12
3	3	8	7	6	2'-3"	0.38	0.15	0.23	0.20
3	3	8	7	6	3'-5"	0.38	0.12	0.16	0.12
3	3	8	7	6	10	0.38	0.12	0.14	0.12
3	3	8	7	6	15	0.38	0.12	0.18	0.12
3	3	8	7	6	20	0.38	0.14	0.23	0.24
3	3	8	7	6	25	0.38	0.17	0.29	0.32
3	3	8	7	6	30	0.38	0.21	0.35	0.32
4	4	8	7	6	< 2	0.18	0.33	0.20	0.12
4	4	8	7	6	2'-3"	0.38	0.12	0.26	0.23
4	4	8	7	6	3'-5"	0.38	0.12	0.18	0.12
4	4	8	7	6	10	0.38	0.12	0.15	0.12
4	4	8	7	6	15	0.38	0.12	0.19	0.20
4	4	8	7	6	20	0.38	0.12	0.25	0.25
4	4	8	7	6	25	0.38	0.14	0.31	0.31
4	4	8	7	6	30	0.38	0.17	0.37	0.37



MATERIAL NOTES:
Provide Class C concrete (f'c=3,000 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information on details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

SINGLE BOX CULVERTS PRECAST 4'-0" SPAN

SCP-4

For CD-SRPS-20-09a
February 2020
REVISED

DATE: FILE:

1 For box length = 8'-0"

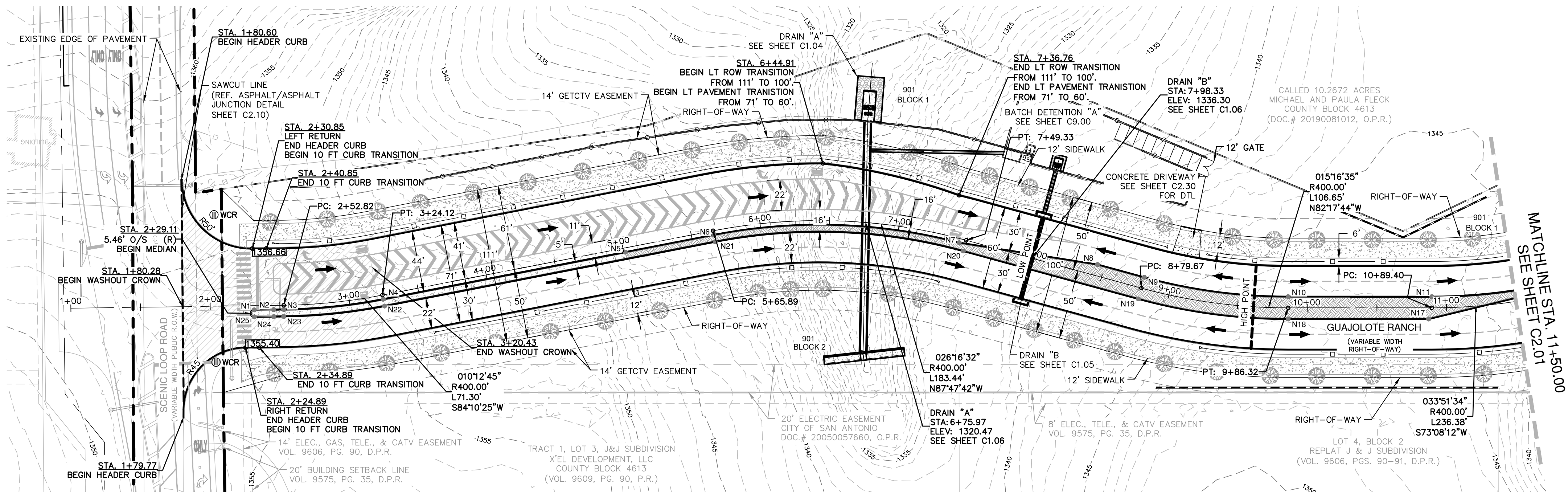
2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

NODE TABLE		
NODE	CENTERLINE STATION	CENTERLINE OFFSET
N1	2+31.61	3.00 (R)
N2	2+45.59	3.00 (R)
N3	2+52.74	3.00 (R)
N4	3+24.12	3.00 (R)
N5	5+01.04	3.00 (R)
N6	5+65.89	3.00 (R)
N7	7+44.92	3.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N8	8+44.89	-8.00 (L)
N9	8+79.67	-8.00 (L)
N10	9+86.32	-8.00 (L)
N11	10+89.40	-8.00 (L)
N12	13+18.05	-8.00 (L)
N13	13+74.63	-8.00 (L)
N14	13+74.63	-4.00 (L)

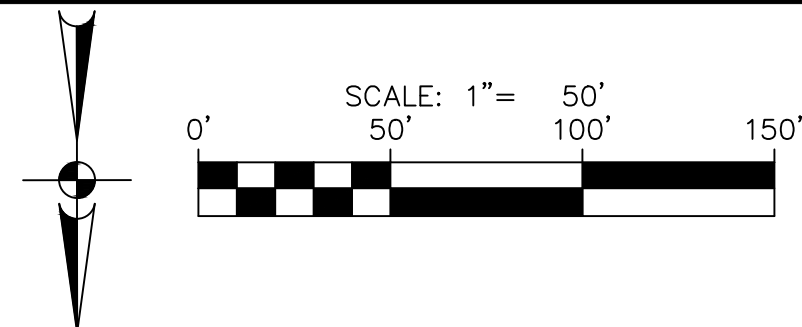
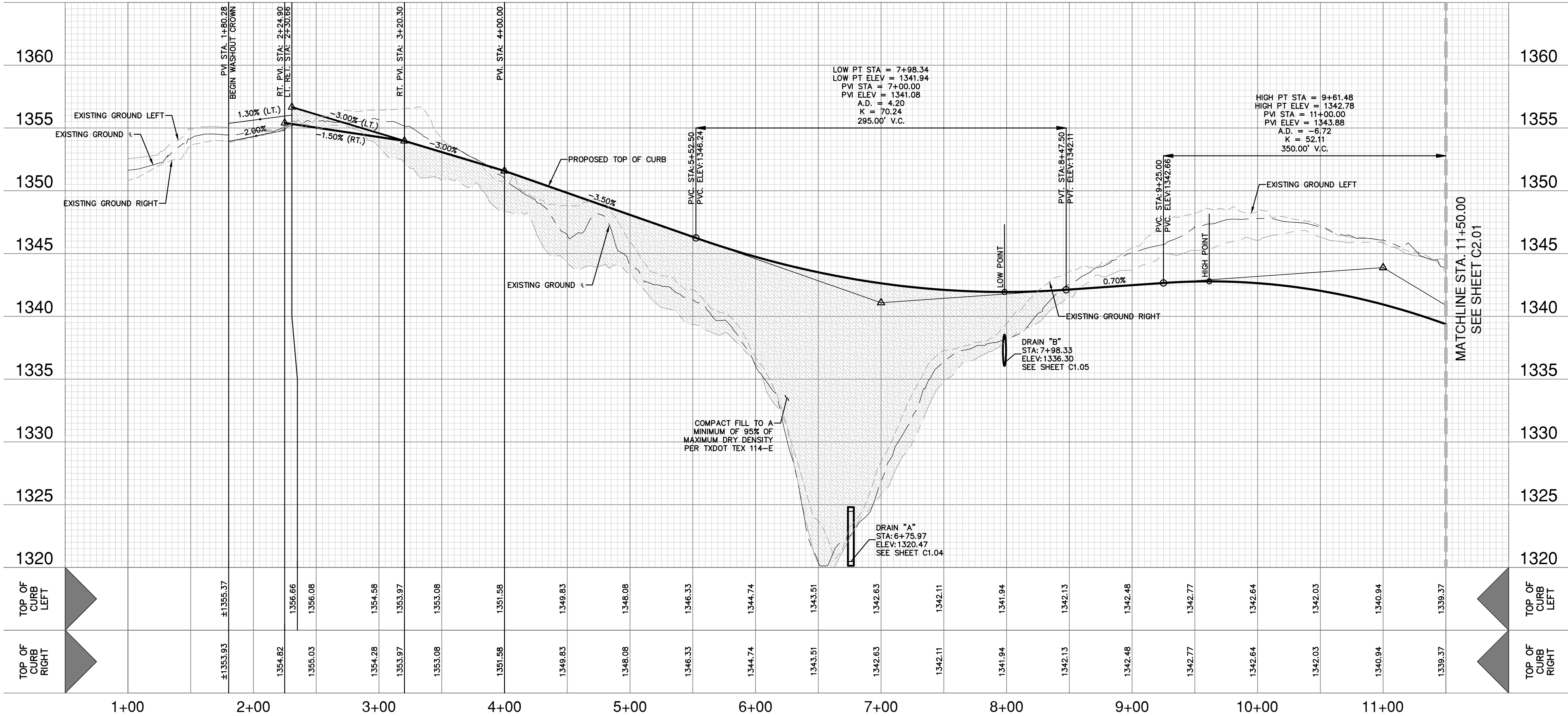
NODE	CENTERLINE STATION	CENTERLINE OFFSET
N15	13+18.21	-4.00 (L)
N16	11+87.12	-4.00 (L)
N17	10+87.12	8.00 (R)
N18	9+86.32	8.00 (R)
N19	8+79.67	8.00 (R)
N20	7+49.33	8.00 (R)
N21	5+65.89	8.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N22	3+24.12	8.00 (R)
N23	2+52.74	8.00 (R)
N24	2+45.59	8.00 (R)
N25	2+31.61	8.00 (R)
N26	14+52.89	-7.96 (L)
N27	16+43.08	-8.00 (L)
N28	19+43.96	-8.00 (L)



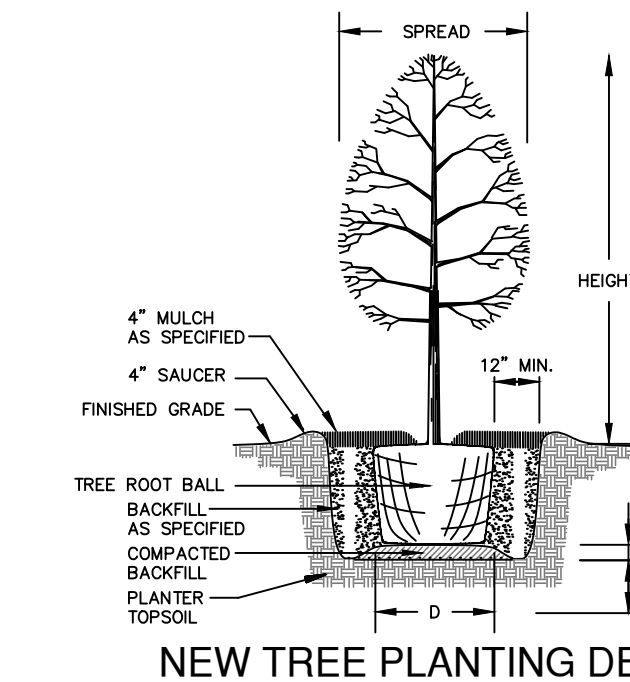
GUAJOLOTE RANCH
STA. 1+00.00 TO 11+50.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STREET LEGEND

- PROJECT LIMITS
MAINTAIN GUTTER
EXISTING CONTOUR
RETAINING WALL
WHEELCHAIR RAMP
CENTERLINE
RADIUS POINT
POINT OF CURVATURE
POINT OF TANGENCY
RETURN
DRAINAGE FLOW ARROW
TOP OF CURB SPOT ELEVATION
PAVEMENT ELEVATION
WASHOUT CROWN SECTION
SIDEWALK (DEVELOPER'S RESPONSIBILITY)
LANDSCAPE AREA
STREET SCAPE TREES
TXDOT TRAFFIC RAIL
100YR UD FLOODPLAIN



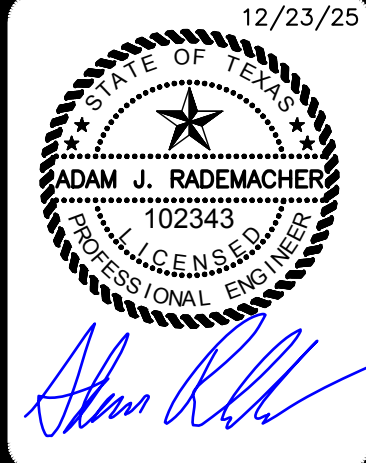
STREETSCAPE TREE PLANTING NOTES:

- LARGE TREES (PER UDC) TO BE PLANTED EVERY 40 FEET PER DETAIL.
- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS.
- DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
- ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED BY THE LATEST VERSION OF AASHTO'S "A" POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."
- TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC, IF OVERHEAD ELECTRIC IS REQUIRED BY OPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES, PER THE UDC.

STREET NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- SIDEWALKS SHALL BE CONSTRUCTED 5-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
- CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (O)(6).
- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE



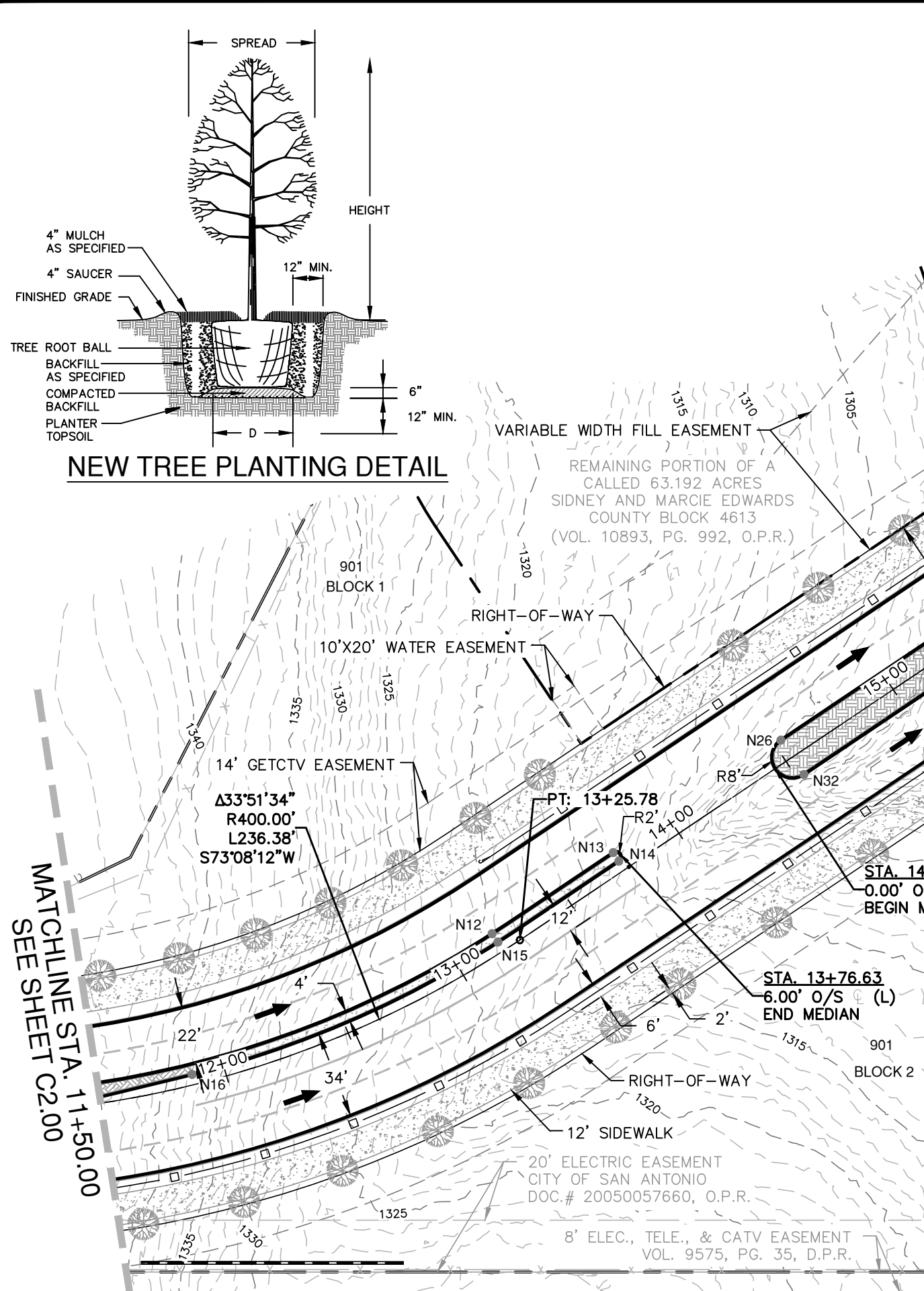
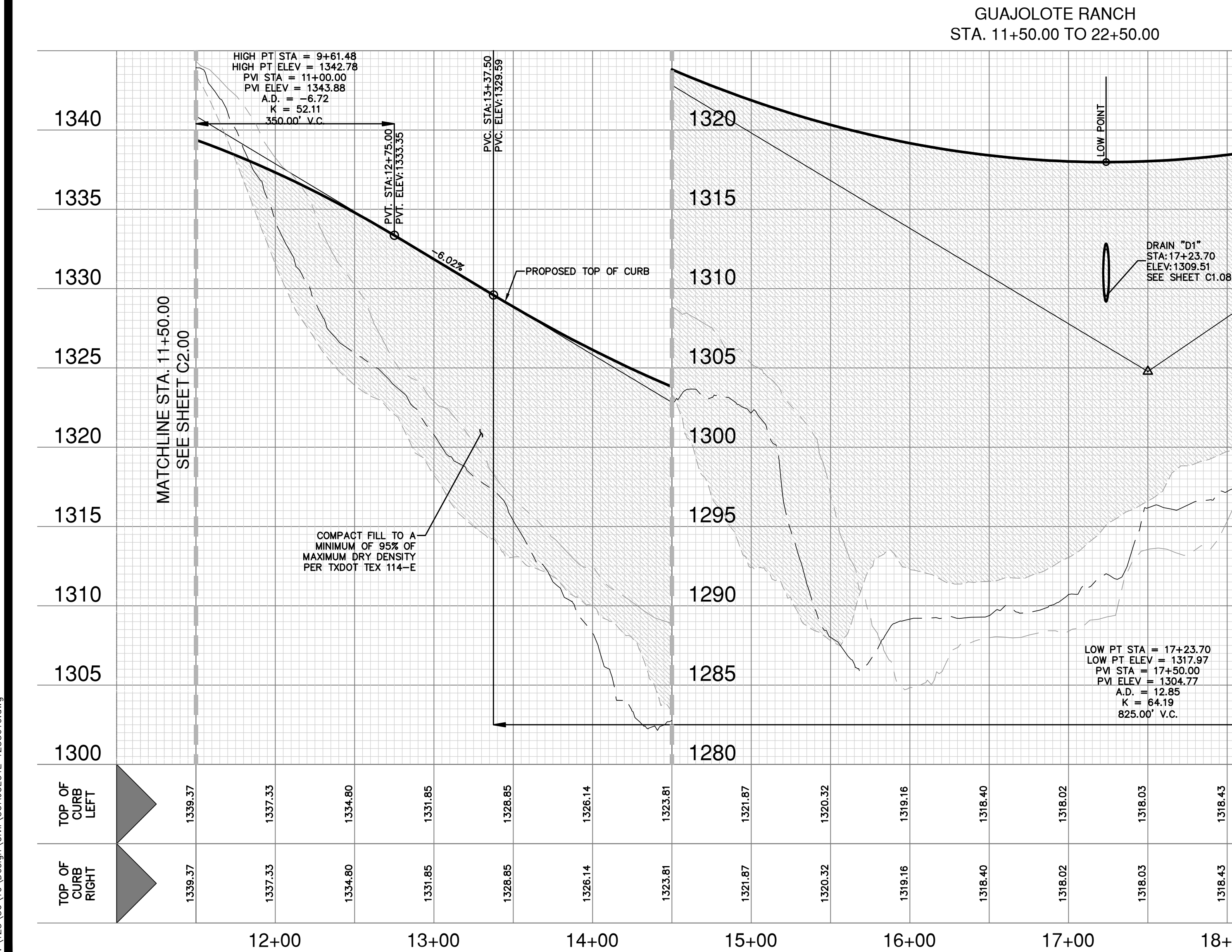
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GUAJOLOTE RANCH - PLAN AND PROFILE
STA. 1+00.00 TO 11+50.00

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
SHEET	C2.00

Date: Dec 23, 2025 3:33pm User ID: jerrygo
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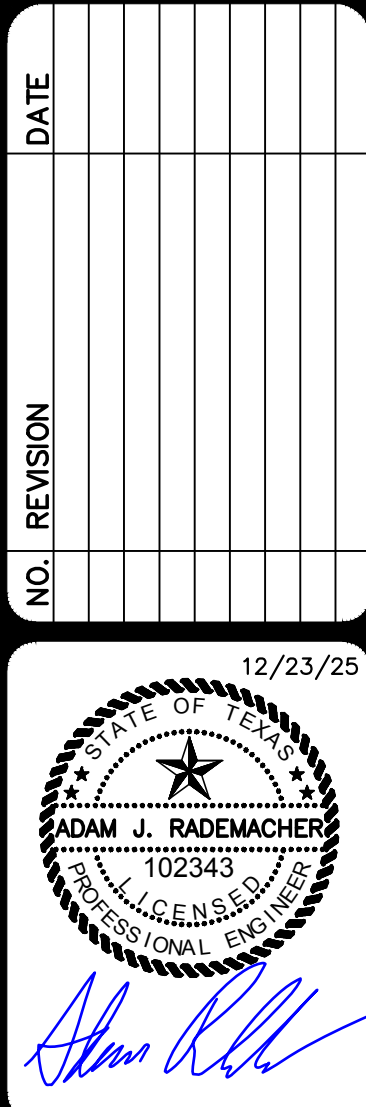
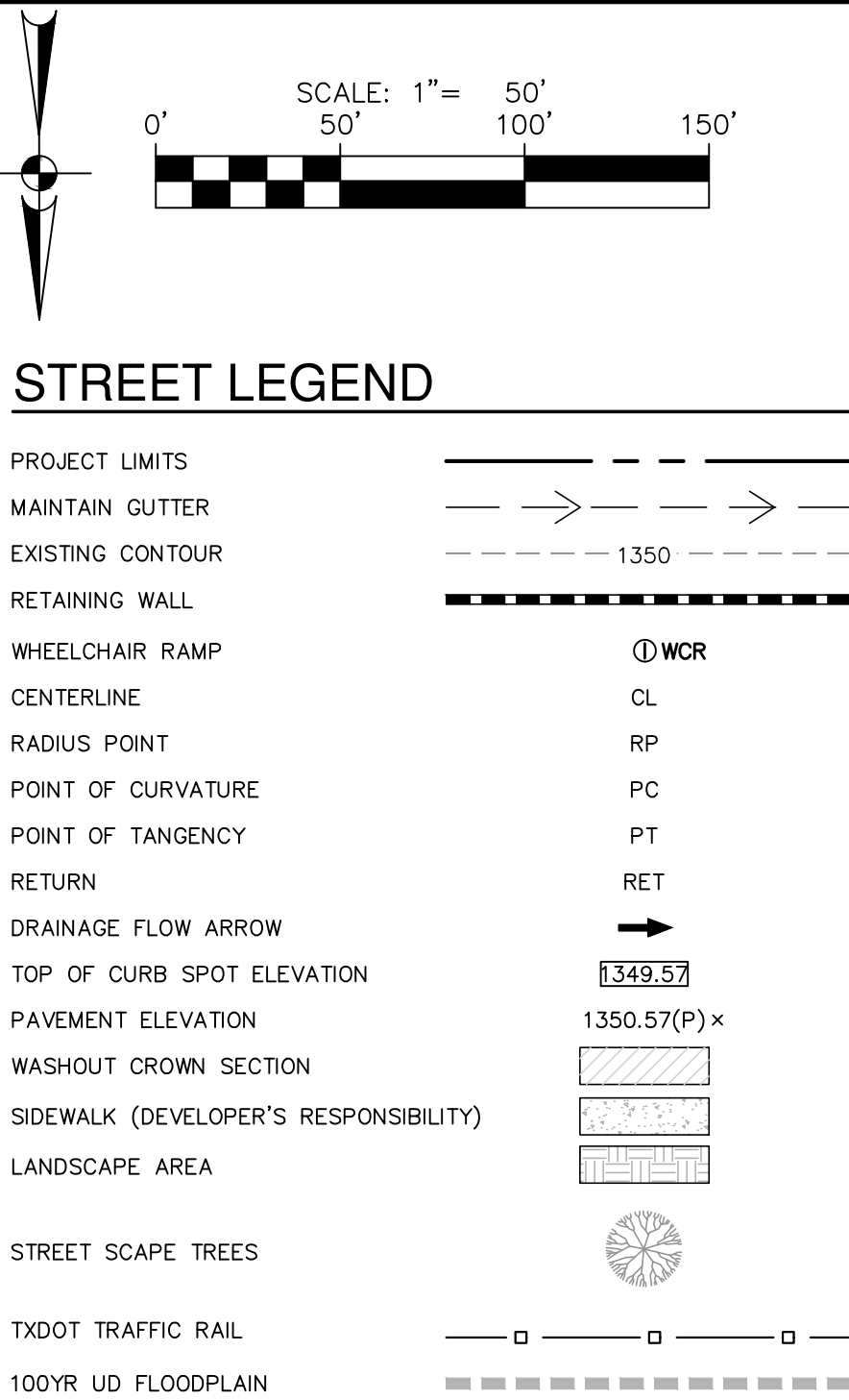
NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET
N15	13+18.21	-4.00 (L)	N22	3+24.12	8.00 (R)	N29	19+43.96	-4.00 (L)	N36	30+00.42	-8.00 (L)	N43	39+70.70	-4.00 (L)	N50	29+03.73	8.00 (R)
N16	11+87.12	-4.00 (L)	N23	2+52.74	8.00 (R)	N30	17+52.19	-4.00 (L)	N37	32+97.74	-8.00 (L)	N44	38+31.46	-4.00 (L)	N51	26+31.05	8.00 (R)
N17	10+87.12	8.00 (R)	N24	2+45.59	8.00 (R)	N31	16+52.19	8.00 (R)	N38	35+19.10	-8.00 (L)	N45	37+28.73	8.00 (R)	N52	20+22.19	8.00 (R)
N18	9+86.32	8.00 (R)	N25	2+31.61	8.00 (R)	N32	14+52.89	8.04 (R)	N39	35+55.07	-8.00 (L)	N46	35+55.07	8.00 (R)	N53	41+07.45	4.00 (R)
N19	8+79.67	8.00 (R)	N26	14+52.89	-7.96 (L)	N33	20+22.19	-8.00 (L)	N40	39+70.70	-8.00 (L)	N47	35+19.10	8.00 (R)	N54	42+91.55	4.00 (R)
N20	7+49.33	8.00 (R)	N27	16+43.08	-8.00 (L)	N34	26+31.05	-8.00 (L)	N41	40+02.84	-8.00 (L)	N48	32+97.74	8.00 (R)	N55	43+91.55	-8.00 (L)
N21	5+65.89	8.00 (R)	N28	19+43.96	-8.00 (L)	N35	29+03.73	-8.00 (L)	N42	40+02.84	-4.00 (L)	N49	30+00.42	8.00 (R)	N56	48+57.49	-8.00 (L)

STREETSCAPE TREE PLANTING NOTES:

- LARGE TREES (PER UDC) TO BE PLANTED EVERY 40 FEET PER DETAIL.
- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS.
- DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
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- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
- CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

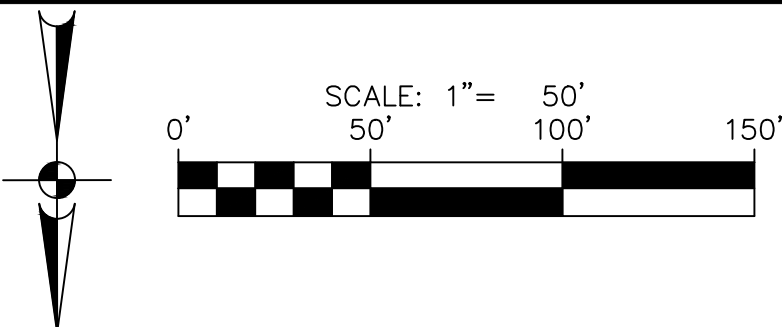


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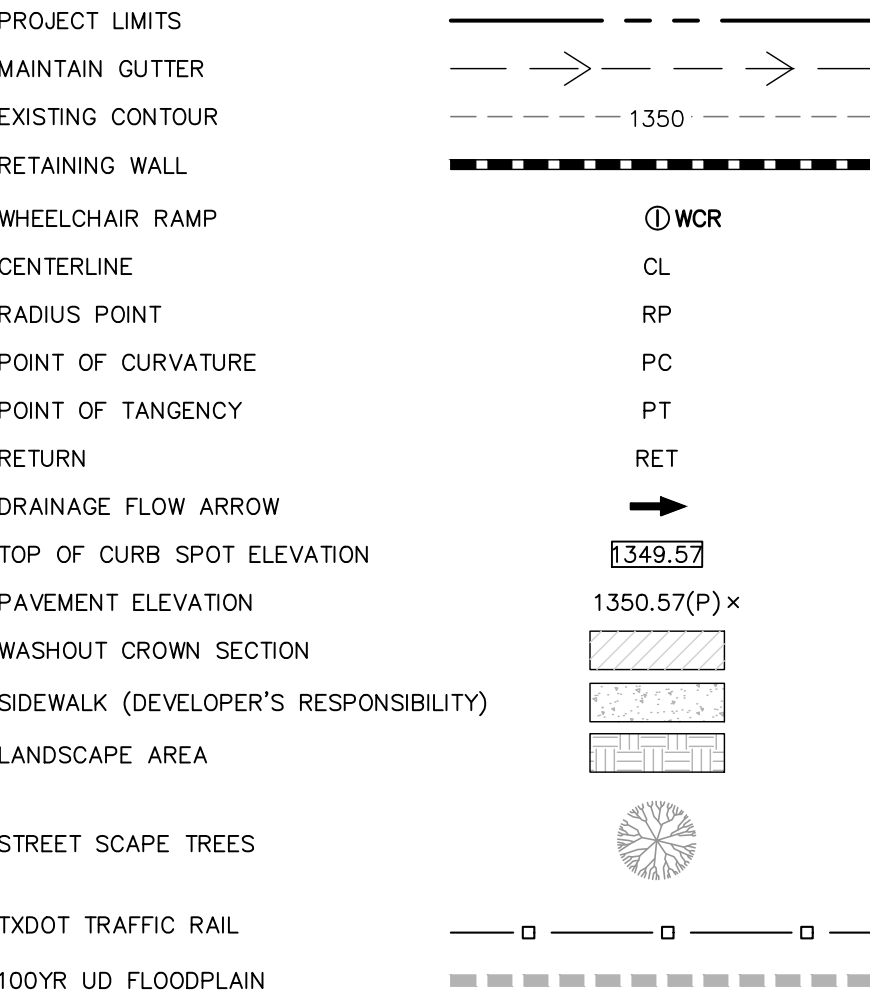
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
GUAJOLOTE RANCH - PLAN AND PROFILE
STA. 11+50.00 TO 22+50.00

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED *JB* DRAWN JQ
SHEET C2.01

NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET	NODE	CENTERLINE STATION	CENTERLINE OFFSET
N29	19+43.96	-4.00 (L)	N36	30+00.42	-8.00 (L)	N43	39+70.70	-4.00 (L)	N50	29+03.73	8.00 (R)
N30	17+52.19	-4.00 (L)	N37	32+97.74	-8.00 (L)	N44	38+31.46	-4.00 (L)	N51	26+31.05	8.00 (R)
N31	16+52.19	8.00 (R)	N38	35+19.10	-8.00 (L)	N45	37+28.73	8.00 (R)	N52	20+22.19	8.00 (R)
N32	14+52.89	8.04 (R)	N39	35+55.07	-8.00 (L)	N46	35+55.07	8.00 (R)	N53	41+07.45	4.00 (R)
N33	20+22.19	-8.00 (L)	N40	39+70.70	-8.00 (L)	N47	35+19.10	-8.00 (R)	N54	42+91.55	4.00 (R)
N34	26+31.05	-8.00 (L)	N41	40+02.84	-8.00 (L)	N48	32+97.74	8.00 (R)	N55	43+91.55	-8.00 (L)
N35	29+03.73	-8.00 (L)	N42	40+02.84	-4.00 (L)	N49	30+00.42	8.00 (R)	N56	48+57.49	-8.00 (L)



STREET LEGEND



DATE

NO. REVISION

12/23/25

STATE OF TEXAS
ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER

PAPE-DAWSON

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

GUAJOLOTE RANCH - PLAN AND PROFILE

STA. 22+50.00 TO 33+50.00

PLAT NO. 25-11800226

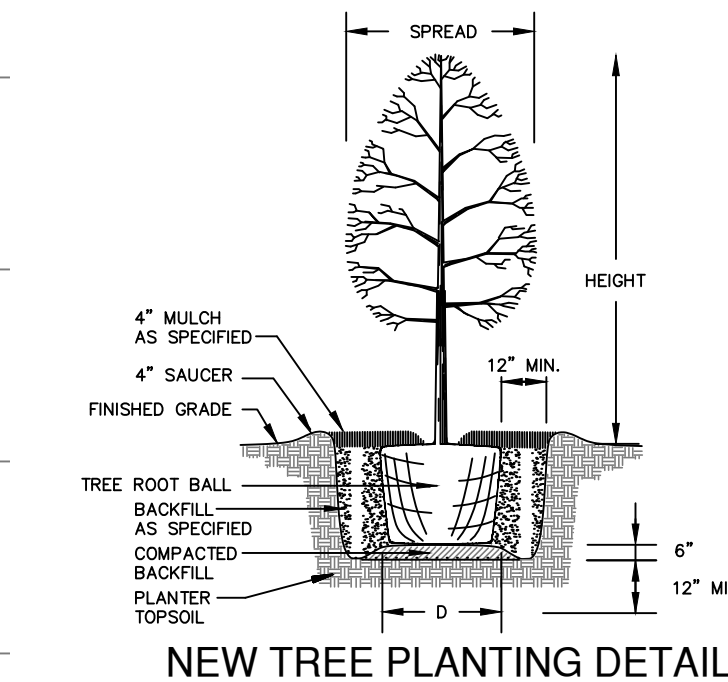
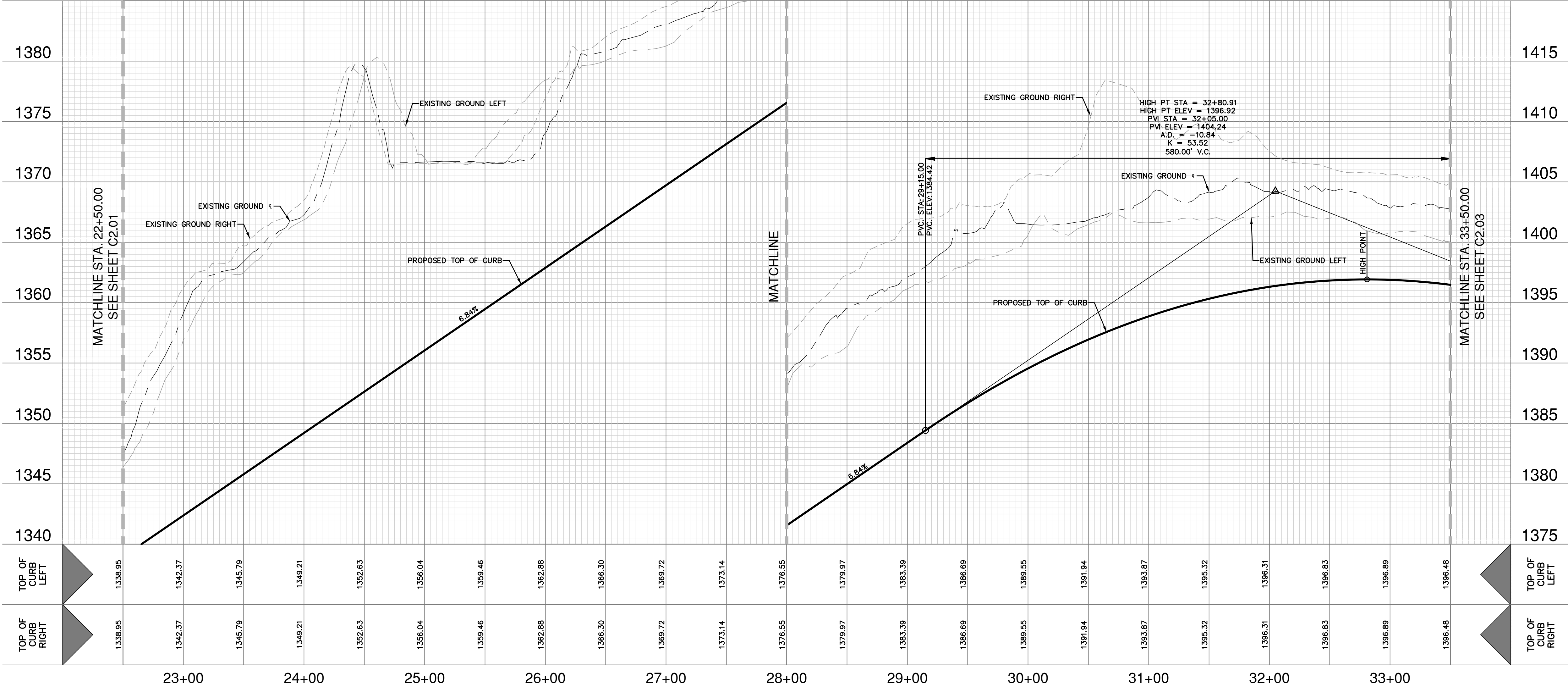
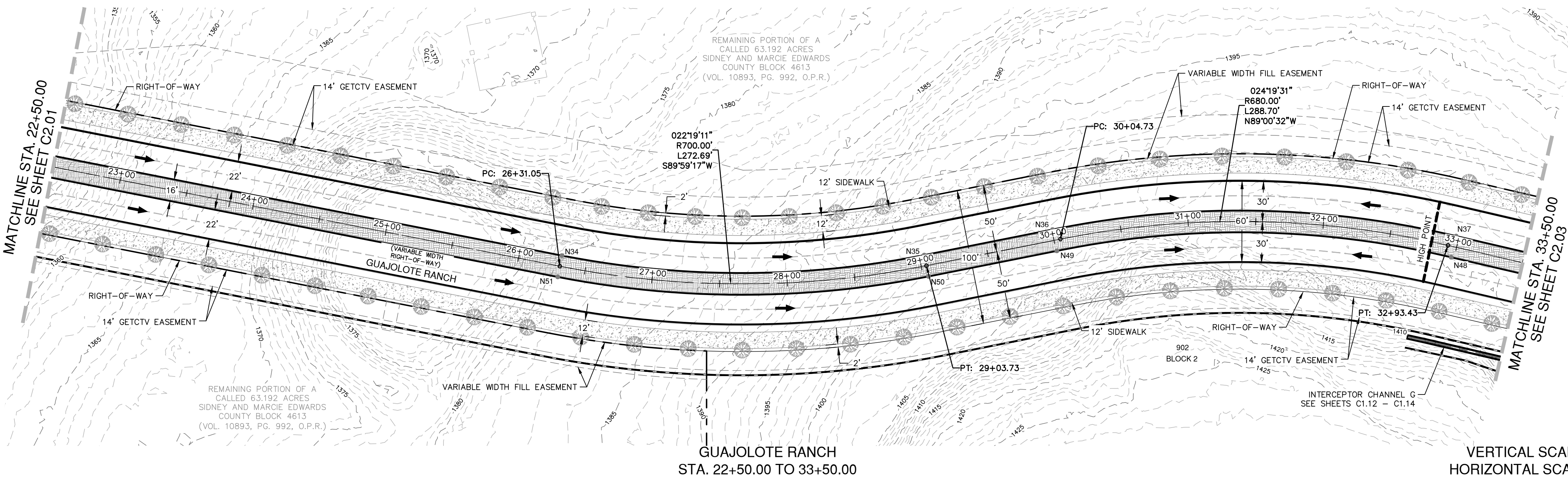
JOB NO. 12356-10

DATE DECEMBER 2025

DRAWN JA

CHECKED

SHEET C2.02



STREETSCAPE TREE PLANTING NOTES:

- LARGE TREES (PER UDC) TO BE PLANTED EVERY 40 FEET PER DETAIL.
- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS.
- DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
- ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED BY THE LATEST VERSION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."
- TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC, IF OVERHEAD ELECTRIC IS REQUIRED BY OPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES, PER THE UDC.

STREET NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- SIDEWALKS SHALL BE CONSTRUCTED 5-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
- CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (0)(6).
- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NODE TABLE		
NODE	CENTERLINE STATION	CENTERLINE OFFSET
N1	2+31.61	3.00 (R)
N2	2+45.59	3.00 (R)
N3	2+52.74	3.00 (R)
N4	3+24.12	3.00 (R)
N5	5+01.04	3.00 (R)
N6	5+65.89	3.00 (R)
N7	7+44.92	3.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N8	8+44.89	-8.00 (L)
N9	8+79.67	-8.00 (L)
N10	9+86.32	-8.00 (L)
N11	10+89.40	-8.00 (L)
N12	13+18.05	-8.00 (L)
N13	13+74.63	-8.00 (L)
N14	13+74.63	-4.00 (L)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N15	13+18.21	-4.00 (L)
N16	11+87.12	-4.00 (L)
N17	10+87.12	8.00 (R)
N18	9+86.32	8.00 (R)
N19	8+79.67	8.00 (R)
N20	7+49.33	8.00 (R)
N21	5+65.89	8.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N22	3+24.12	8.00 (R)
N23	2+52.74	8.00 (R)
N24	2+45.59	8.00 (R)
N25	2+31.61	8.00 (R)
N26	14+52.89	-7.96 (L)
N27	16+43.08	-8.00 (L)
N28	19+43.96	-8.00 (L)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N29	19+43.96	-4.00 (L)
N30	17+52.19	-4.00 (L)
N31	16+52.19	8.00 (R)
N32	14+52.89	8.04 (R)
N33	20+22.19	-8.00 (L)
N34	26+31.05	-8.00 (L)
N35	29+03.73	-8.00 (L)

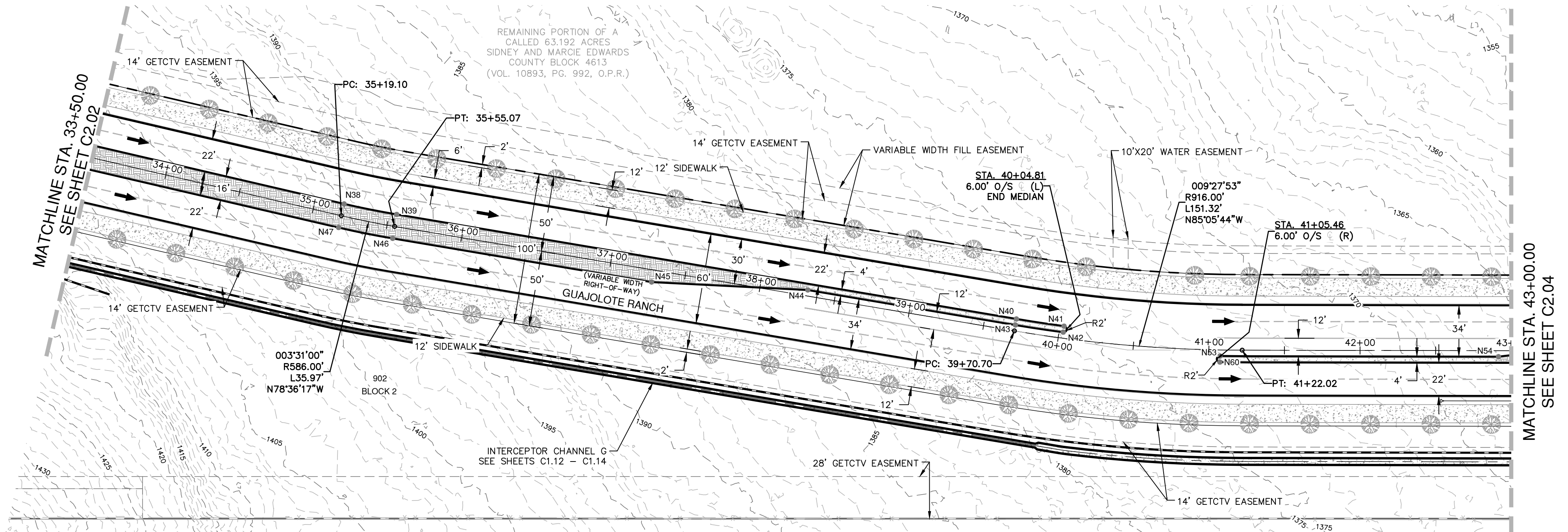
NODE	CENTERLINE STATION	CENTERLINE OFFSET
N36	30+00.42	-8.00 (L)
N37	32+97.74	-8.00 (L)
N38	35+19.10	-8.00 (L)
N39	35+55.07	-8.00 (L)
N40	39+70.70	-8.00 (L)
N41	40+02.84	-8.00 (L)
N42	40+02.84	-4.00 (L)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N43	39+70.70	-4.00 (L)
N44	38+31.46	-4.00 (L)
N45	37+28.73	8.00 (R)
N46	35+55.07	8.00 (R)
N47	35+19.10	8.00 (R)
N48	32+97.74	8.00 (R)
N49	30+00.42	8.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N50	29+03.73	8.00 (R)
N51	26+31.05	8.00 (R)
N52	20+22.19	8.00 (R)
N53	41+07.45	4.00 (R)
N54	42+91.55	4.00 (R)
N55	43+91.55	-8.00 (L)
N56	48+57.49	-8.00 (L)

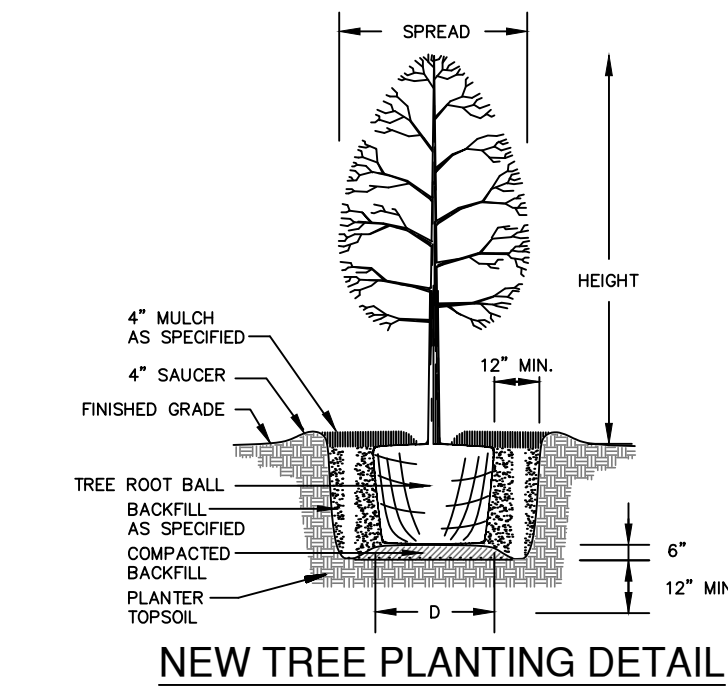
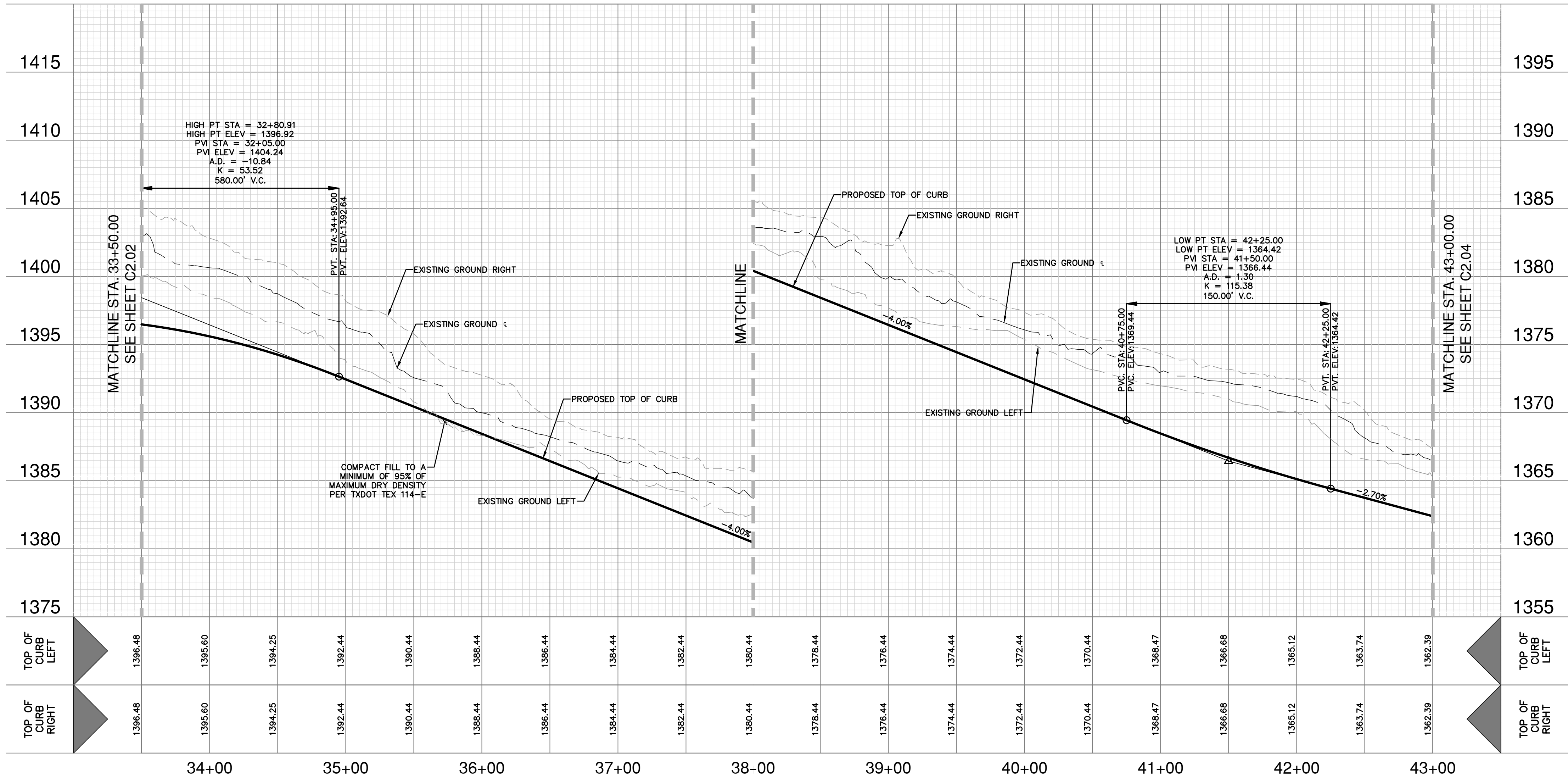
NODE	CENTERLINE STATION	CENTERLINE OFFSET
N57	48+57.49	-4.00 (L)
N58	46+40.40	-4.00 (L)
N59	45+40.40	8.00 (R)
N60	41+07.45	8.00 (R)
N61	49+22.49	-8.00 (L)
N62	50+62.13	-8.00 (L)
N63	50+62.13	8.00 (R)

NODE	CENTERLINE STATION	CENTERLINE OFFSET
N64	49+22.49	8.00 (R)



GUAJOLOTE RANCH
STA. 33+50.00 TO 43+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STREETSCAPE TREE PLANTING NOTES:

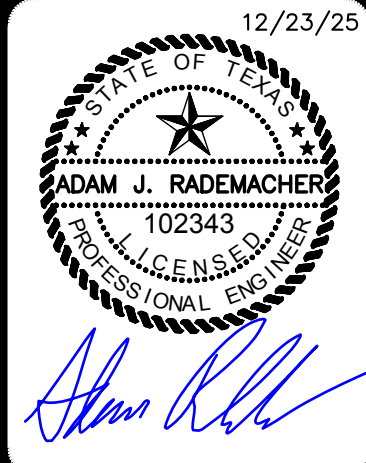
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- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

DATE	
NO.	
REVISION	



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
GUAJOLOTE RANCH - PLAN AND PROFILE
STA. 33+50.00 TO 43+00.00

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	IA
CHECKED	JB
DRAWN	JQ
SHEET	C2.03

3.0 PAVEMENT DESIGN RECOMMENDATIONS

3.1 PAVEMENT DESIGN PARAMETERS

PSI understands that flexible pavements will be considered for this project. Therefore, pavement design recommendations based on the criteria presented in the *City of San Antonio Transportation & Capital Improvements Design Guidance Manual* (adopted October 2017) a traffic loading of 100,000 and 1,000,000 18-kip Equivalent Single Axle Loads (ESALs) for flexible pavement was evaluated for a street classification of Local Streets Type A without bus traffic and with bus traffic, respectively. A traffic load of 2,000,000 18-kip ESALs for flexible pavement was evaluated for a street classification of Collector and Local Type B streets. A traffic load of 3,000,000 18-kip ESALs for flexible pavement was evaluated for a street classification of Arterial streets. PSI utilized the "AASHTO Guide for Design of Pavement Structures" published by the American Association of State Highway and Transportation Officials to evaluate the pavement thickness recommendations in this report. This method of design considers pavement performance, traffic, roadbed soil, pavement materials, environment, drainage, and reliability. Each of these items is incorporated into the design methodology. PSI is available to provide laboratory testing and engineering evaluation to refine the site-specific design parameters and sections, upon request.

PSI collected bulk soil samples of the native soils encountered at the site to conduct Atterberg Limits, Percent Finer than the No. 200 Sieve, California Bearing Ratio (CBR) test, and Lime Series Testing. The results for the Moisture Density Relationship and the CBR Tests are presented in the Appendix. The following table presents a summary of the results from our laboratory testing performed on the native soil.

TABLE 3.1: NATIVE SOIL TEST SUMMARY

Material	Liquid Limit (ASTM D4318)	Plasticity Index (ASTM D4318)	Percent Passing No. 200 Sieve	Laboratory CBR Value (ASTM D1883)	Optimum MC (ASTM D698-12)	95% Max Dry Density (ASTM D698-12)
Sandy Clean Lean (CL) (bulk sample)	44	19	55	7.8	21 %	94.5

TABLE 3.2: LIME SERIES RESULTS

% Lime By Weight	pH	PI
0	10.91	19
2	12.23	7
4	12.41	5
6	12.42	6
8	12.48	3
10	12.45	3

Based on the results of the laboratory testing, PSI has provided recommended pavement sections for pavements constructed on an improved subgrade. Details regarding the basis for this design are presented in the table below.

TABLE 3.3: PAVEMENT DESIGN PARAMETERS AND ASSUMPTIONS

City of San Antonio Local Type A Streets	
Reliability, percent	70
Initial Serviceability Index, Flexible Pavement	4.2
Terminal Serviceability Index	2.0
Design Traffic Loading, Flexible Pavement	100,000 ESALs without bus traffic and 1,000,000 ESALs with bus traffic
Standard Deviation, Flexible Pavement	0.45
Subgrade California Bearing Ratio (CBR)	7
Subgrade Modulus of Subgrade Reaction, k in pci	170
City of San Antonio Collector and Local B Streets	
Reliability, percent	90
Initial Serviceability Index, Flexible Pavement	4.2
Terminal Serviceability Index	2.5
Design Traffic Loading, Flexible Pavement	2,000,000 ESALs
Standard Deviation, Flexible Pavement	0.45
Subgrade California Bearing Ratio (CBR)	7
Subgrade Modulus of Subgrade Reaction, k in pci	170
City of San Antonio Arterial Streets	
Reliability, percent	95
Initial Serviceability Index, Flexible Pavement	4.2
Terminal Serviceability Index	2.5
Design Traffic Loading, Flexible Pavement	3,000,000 equivalent single axle loads (ESALs)
Standard Deviation, Flexible Pavement	0.45
Subgrade California Bearing Ratio (CBR)	7
Subgrade Modulus of Subgrade Reaction, k in pci	170

Asphaltic concrete pavements founded on top of expansive soils will be subjected to PVM soil movements estimated and presented in this report. These potential soil movements are typically activated to some degree during the life of the pavement. Consequently, pavements can be expected to crack and require periodic maintenance to reduce damage to the pavement structure.

During the paving life, maintenance to seal surface cracks within asphalt paving should be undertaken to achieve the desired paving life. Perimeter drainage should be controlled to prevent or retard influx of surface water from areas surrounding the paving. Water penetration leads to paving degradation. Water penetration into base or subgrade materials, sometimes due to irrigation or surface water infiltration leads to pre-mature paving degradation. Curbs should be used in conjunction with asphalt paving to reduce potential for infiltration of moisture into the base course. Curbs should extend the full depth of the base course and should

extend at least 3 inches into the underlying clayey subgrade. The base layer should be tied into the area inlets to drain water that may collect in the base.

Material specifications, construction considerations, and section requirements are presented in following sections.

The presented recommended pavement sections are based on the field and laboratory test results for the project, local pavement design practice, design assumptions presented herein and previous experience with similar projects. The project Civil Engineer should verify that the ESAL and other design values are appropriate for the expected traffic and design life of the project. PSI should be notified in writing if the assumptions or design parameters are incorrect or require modification.

3.2 PAVEMENT SECTION RECOMMENDATIONS

PSI anticipated that the roadways and parking areas will be used primarily by passenger vehicles and delivery vehicles. PSI is providing parking and drive area sections based on experience with similar facilities constructed on similar soil conditions for the design traffic loading anticipated.

3.2.1 FLEXIBLE PAVEMENT

Recommendations for flexible asphaltic concrete pavement for roadways and parking areas are provided below.

FIGURE 3.1: FLEXIBLE PAVEMENT TYPICAL SECTION

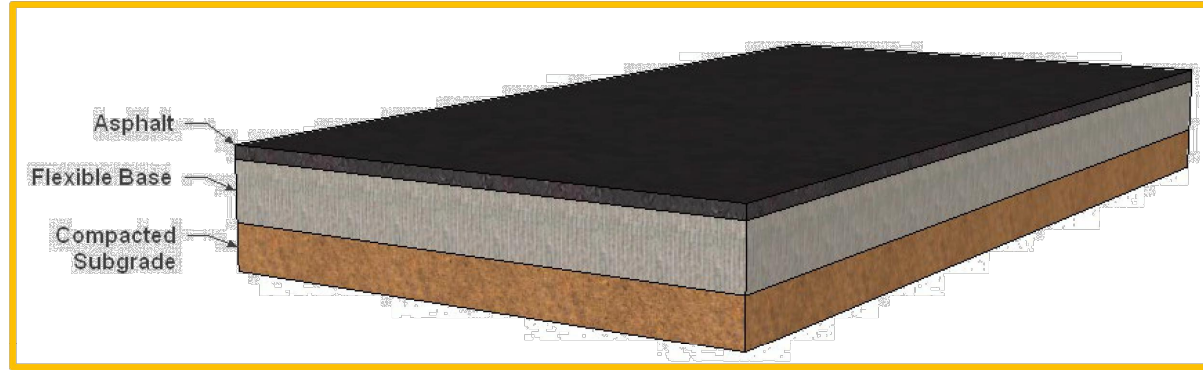


TABLE 3.4: FLEXIBLE PAVEMENT SECTION OPTIONS

Material	Thicknesses			
	Local Type A without bus traffic	Local Type A with bus traffic	Collector and Local Type B	Arterial
Design Traffic Load, ESALs	100,000	1,000,000	2,000,000	3,000,000
Hot Mix Asphaltic Concrete Type D	2.5 inches	3 inches	4 inches	4.5 inches
Import Flexible Base	6 inches	10 inches	12 inches	14 inches
Compacted Subgrade ¹	6"			

1. Lime treatment of subgrade to a depth of 6-inches will be required for subgrade with a PI greater than 20. Treatment will require application rate of about 17.0 pounds per square yard for 6-inches of treatment. The actual application rate should be determined at the time of construction from a lime series test on the blended native subgrade soils at the final subgrade elevation.

TABLE 3.7: COMPACTION AND TESTING RECOMMENDATIONS FOR PAVEMENT AREAS

Location	Material	Density Test Method	Soil Type	Percent Compaction	Optimum Moisture Content	Testing Frequency
Pavement Areas	Subgrade, General Fill Soil, Low PI Material	Tex-114-E	PI ≥ 25	94% to 98%	0 to +4%	1 per 10,000 SF; min. 3 tests
			PI < 25	≥ 95%	0 to +4%	
			COSA Item 200	≥ 95%	±3%	1 per 5,000 SF; min. 3 per lift
	Flexible Base Material	TEX-113-E		≥ 100%	±2%	

3.2.3 CHEMICAL ATTACK POTENTIAL FOR DEGRADATION OF LIME TREATED SUBGRADE

The concentration of water-soluble sulfates is considered to be a good indicator of the potential chemical attack on concrete and adverse reaction with lime. Based on the TxDOT San Antonio District Pavement Design Standards Operating Procedure (effective since September 1, 2022) the amount of water-soluble sulfate in soil can be used to evaluate ability to employ lime as chemical stabilizer for treatment of subgrade.

TABLE 3.8: LEVEL OF SULFATES FOR TREATMENT OPTION

Water Soluble Sulfate in soil (ppm)	Level of Sulfates
< 3000 PPM	Low
3000 - 7000	Moderate
>7000	High

The result of the laboratory sulfate ion concentration test performed on a soil sample obtained at the site is as follows.

TABLE 3.9: SULFATE TEST RESULTS

Boring Locations	Depth (ft)	Sulfate Content (ppm)
B - 01	0 – 1.5	< 100

Based on the test result of the selected soil sample, the sulfate ion concentration is approximately less than 100 ppm and the potential for reactions within lime exposed to sulfates is low. Evaluations of soluble sulfate content contained within the selected samples suggest lime treatment is applicable. The actual verification of sulfate content be determined at the time of construction by TEX-145-E procedure.

TABLE 3.5: FLEXIBLE PAVEMENT SECTION OPTIONS (GEOGRID)

Material	Thicknesses			
	Local Type A without bus traffic	Local Type A with bus traffic	Collector and Local Type B	Arterial
Design Traffic Load, ESALs	100,000	1,000,000	2,000,000	3,000,000
Hot Mix Asphaltic Concrete Type D	1.5 inches	2.5 inches	3 inches	3.5 inches
Import Flexible Base	6 inches	8 inches	9 inches	11 inches
Geogrid ¹	Yes			
Compacted Subgrade ²	6 inches			

1. Tensar® Geogrid HX145 or equivalent for Local Type A, Collector and Local Type B. Tensar® HX5.5 or equivalent for Arterial Streets.
2. Lime treatment of subgrade to a depth of 6-inches will be required for subgrade with a PI greater than 20. Treatment will require application rate of about 17.0 pounds per square yard for 6-inches of treatment. The actual application rate should be determined at the time of construction from a lime series test on the blended native subgrade soils at the final subgrade elevation.

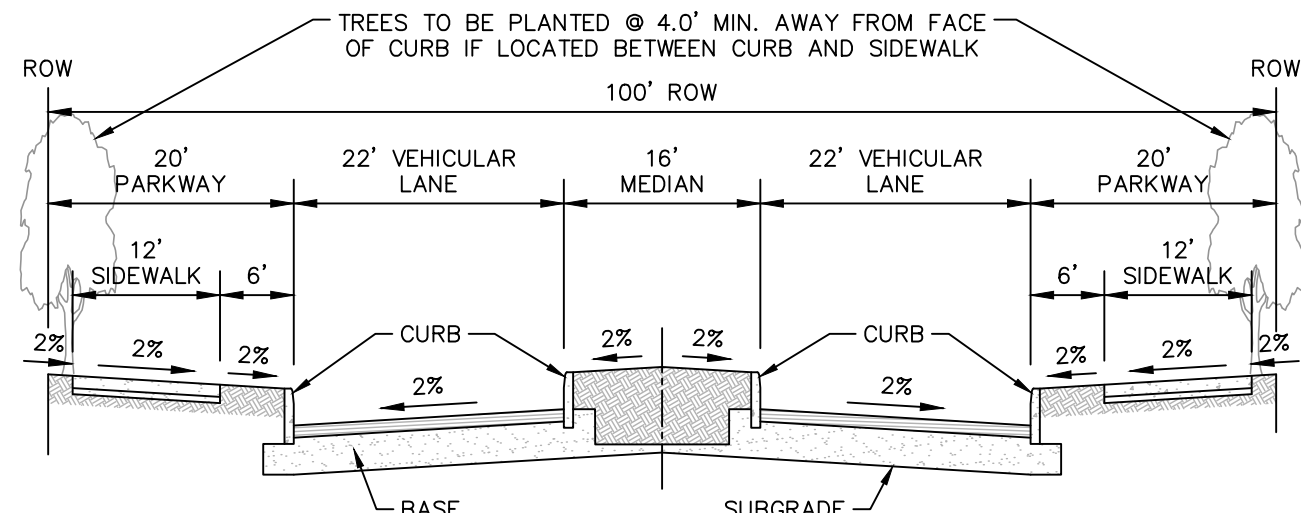
3.2.2 GENERAL PAVEMENT DESIGN AND CONSTRUCTION RECOMMENDATIONS

TABLE 3.6: PAVEMENT DESIGN AND CONSTRUCTION RECOMMENDATIONS

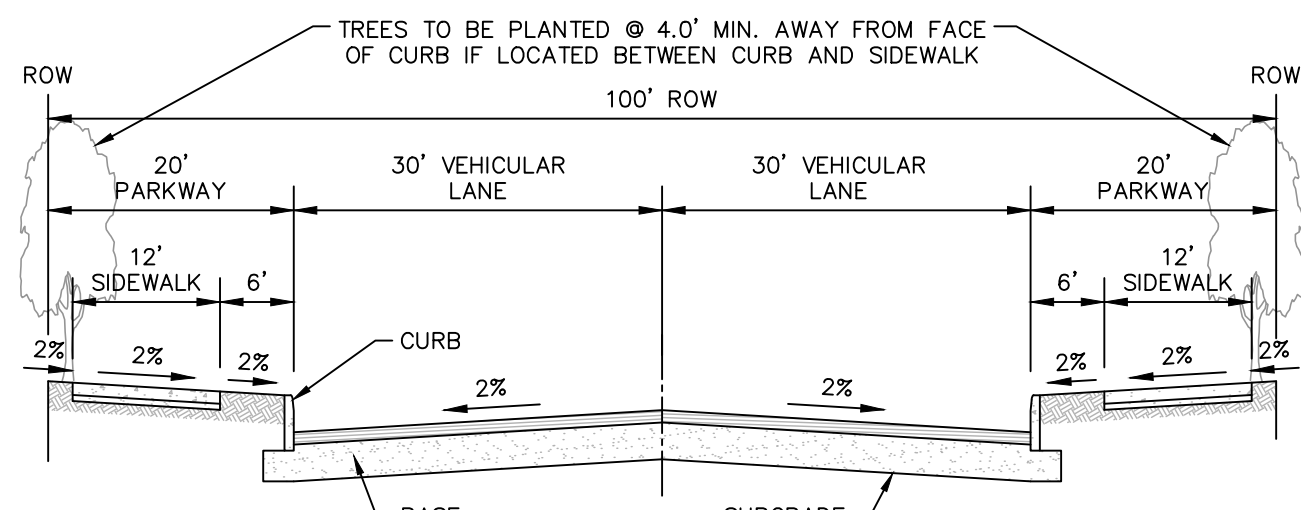
Minimum Undercut Depth	6 inches or as needed to remove roots
Reuse Excavated Soils	Must be free of roots and debris and meet material requirements of intended use
Exposed Subgrade Treatment	Proof-roll subgrade with rubber-tired vehicle weighing at least 20 tons. A representative of the Geotechnical Engineer should be present during proof-roll.
Proof-Rolled Pumping and Rutting Areas	Excavate to firmer materials and replace with compacted general or select fill under direction of a representative of the Geotechnical Engineer
General Fill	Materials free of roots, debris, and other deleterious materials with a maximum rock size of 4 inches with a CBR greater than 3
Minimum General Fill Thickness	As required to achieve grade
Maximum General Fill Loose Lift Thickness	9 Inches
Lime Treatment	The lime treatment, if needed, is to be performed in general accordance with COSA Item 108. Subgrade stabilized with lime should achieve a pH of 12.4 or greater.
Flexible Base	COSA Item 200
Maximum Flexible Base Loose Lift Thickness	6 Inches
Hot Mix Asphaltic Concrete	COSA Item 205 Type D

PAVEMENT SECTION DETAIL

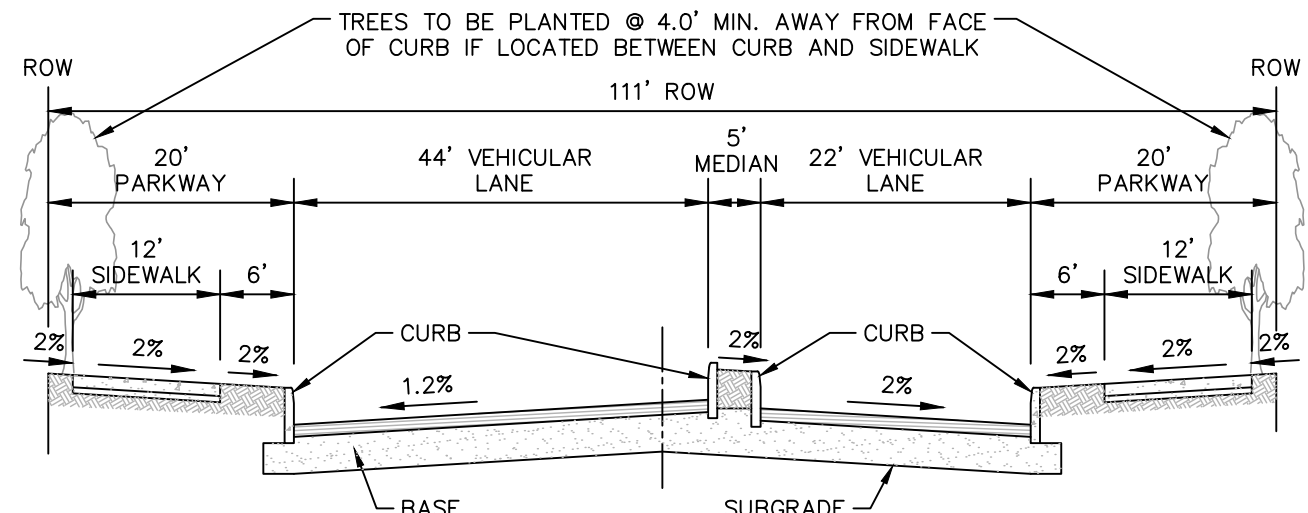
STREET NAME	STATION	TYPE "D" HMA	CRUSHED LIMESTONE BASE	LIME STABILIZED SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR
GUAJOLOTE RANCH	1+00.00 TO END	4"	12"	6"	NO	7



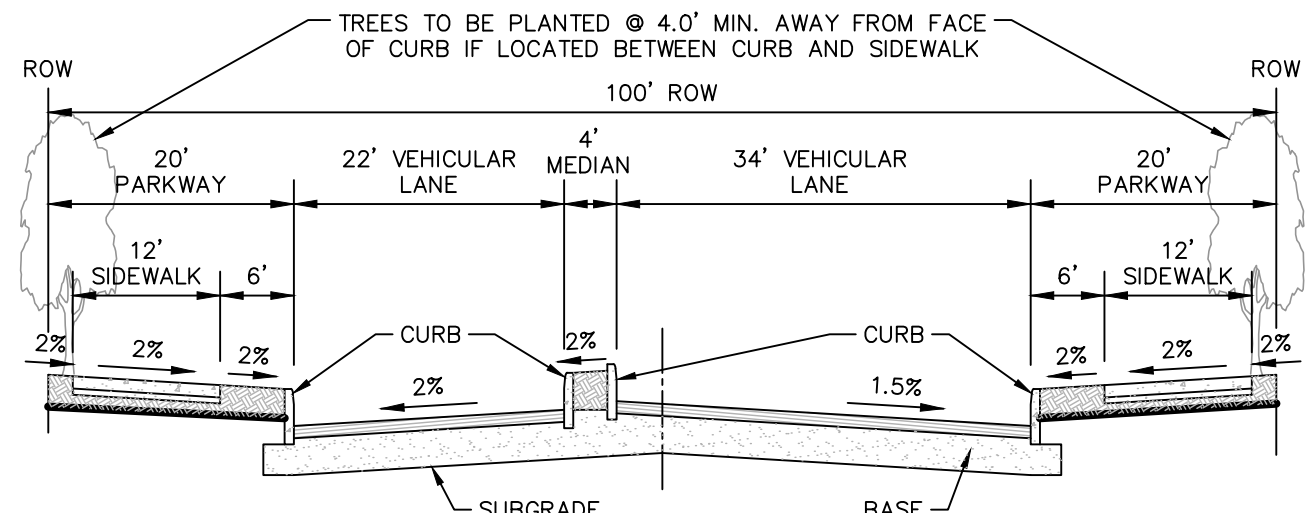
100' COLLECTOR STREET SECTION
NOT-TO-SCALE



100' COLLECTOR STREET SECTION - NO MEDIAN
NOT-TO-SCALE



100' COLLECTOR STREET SECTION - RIGHT TURN LANE
NOT-TO-SCALE



100' COLLECTOR STREET SECTION - LEFT TURN LANE
NOT-TO-SCALE

GENERAL NOTES:

CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC. DATED APRIL 2ND, 2025.

- CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
- GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
- THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TxDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
- IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
- WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2- FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.
- FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2 AND A PI WITHIN RANGE OF 5 AND 20. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME OR CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES. CONTRACTOR TO VERIFY EXACT SPECIFICATIONS WITH PROJECT GEOTECHNICAL ENGINEERING REPORT.
- A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN THE BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

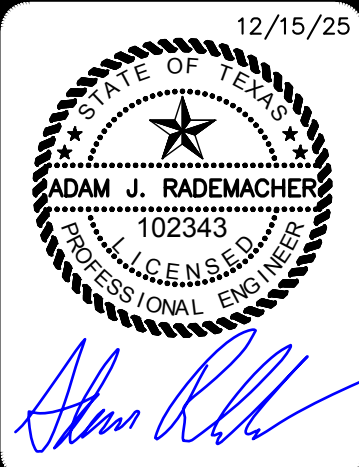
STREET SUBGRADE NOTES:

- IF THE STREET SUBGRADE PLASTICITY INDEX VALUE IS GREATER THAN 20, SUBGRADE STABILIZATION IS NEEDED AS PER CITY OF SAN ANTONIO REQUIREMENTS.
- IF THE SUBGRADE PLASTICITY INDEX VALUE IS 20 OR LESS, SUBGRADE STABILIZATION IS NOT NEEDED. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED (COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MINIMUM MOISTURE CONTENT OF OPTIMUM PLUS 2 PERCENT (TEXT114E)).
- THE SUBGRADE SHOULD BE STABILIZED USING 6 PERCENT LIME TO A DEPTH OF 6 INCHES AS NOTED ABOVE.
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE / RECOMMENDATION WILL BE NEEDED.
- LIME APPLICATION RATE OF 27.5 LBS PER SQ YARD FOR 6 INCH DEPTH OF STABILIZATION IS RECOMMENDED.
- APPROVED FILL MATERIAL SHOULD BE USED TO RAISE THE GRADE. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.5. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
- THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.

LIME NOTES:

- FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
 - AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 3/8 INCH SIEVE FROM THE SAMPLE):
 - MINIMUM PASSING 1/2" SIEVE 100
 - MINIMUM PASSING 3/8" SIEVE 85
 - MINIMUM PASSING NO. 4 SIEVE 60
 - SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE BEXAR COUNTY FLEXIBLE PAVEMENT DESIGN CRITERIA GUIDE FOR MIXTURE DESIGN.
 - COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
 - CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
 - VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

DATE	
NO.	
REVISION	

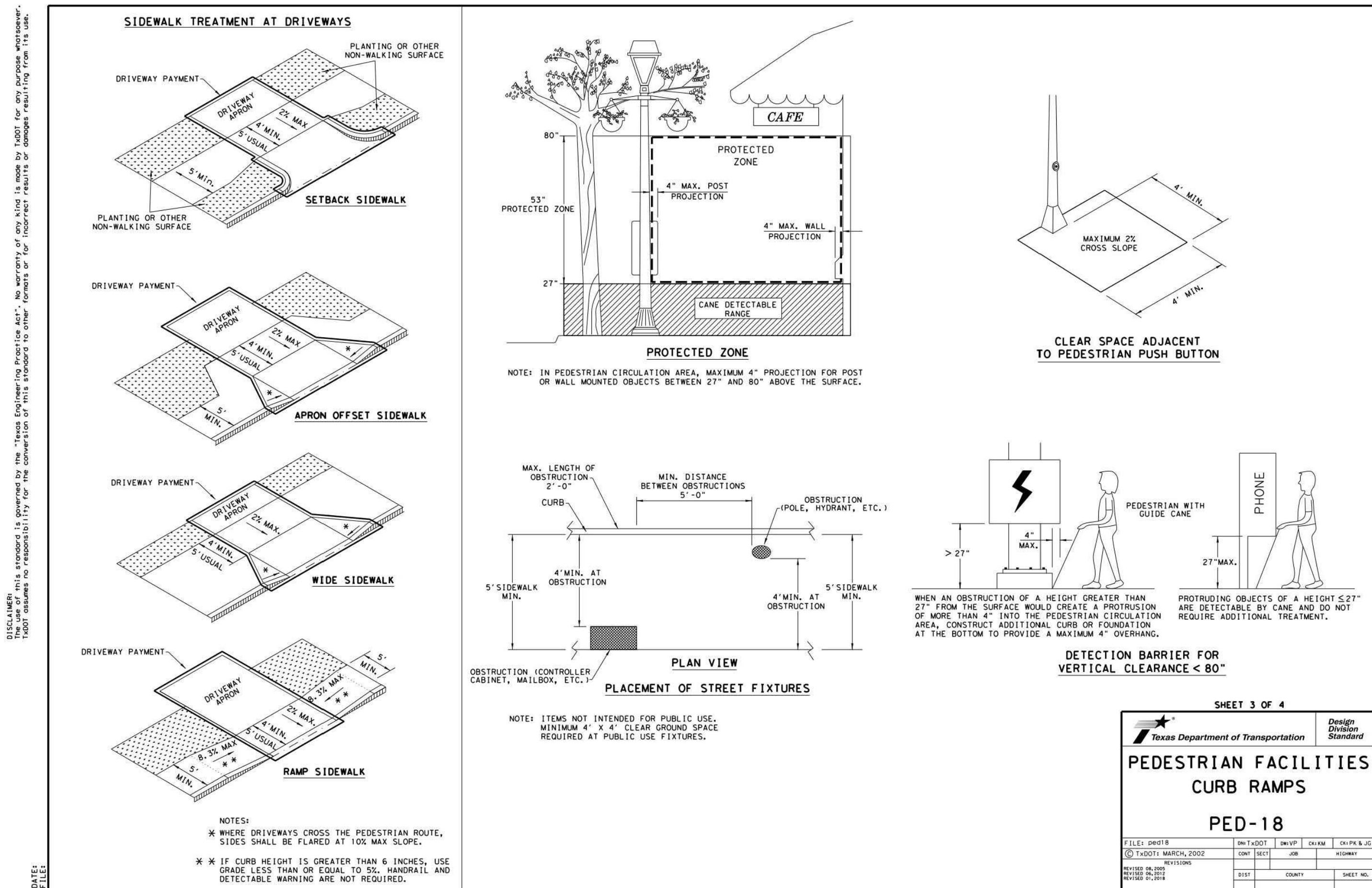
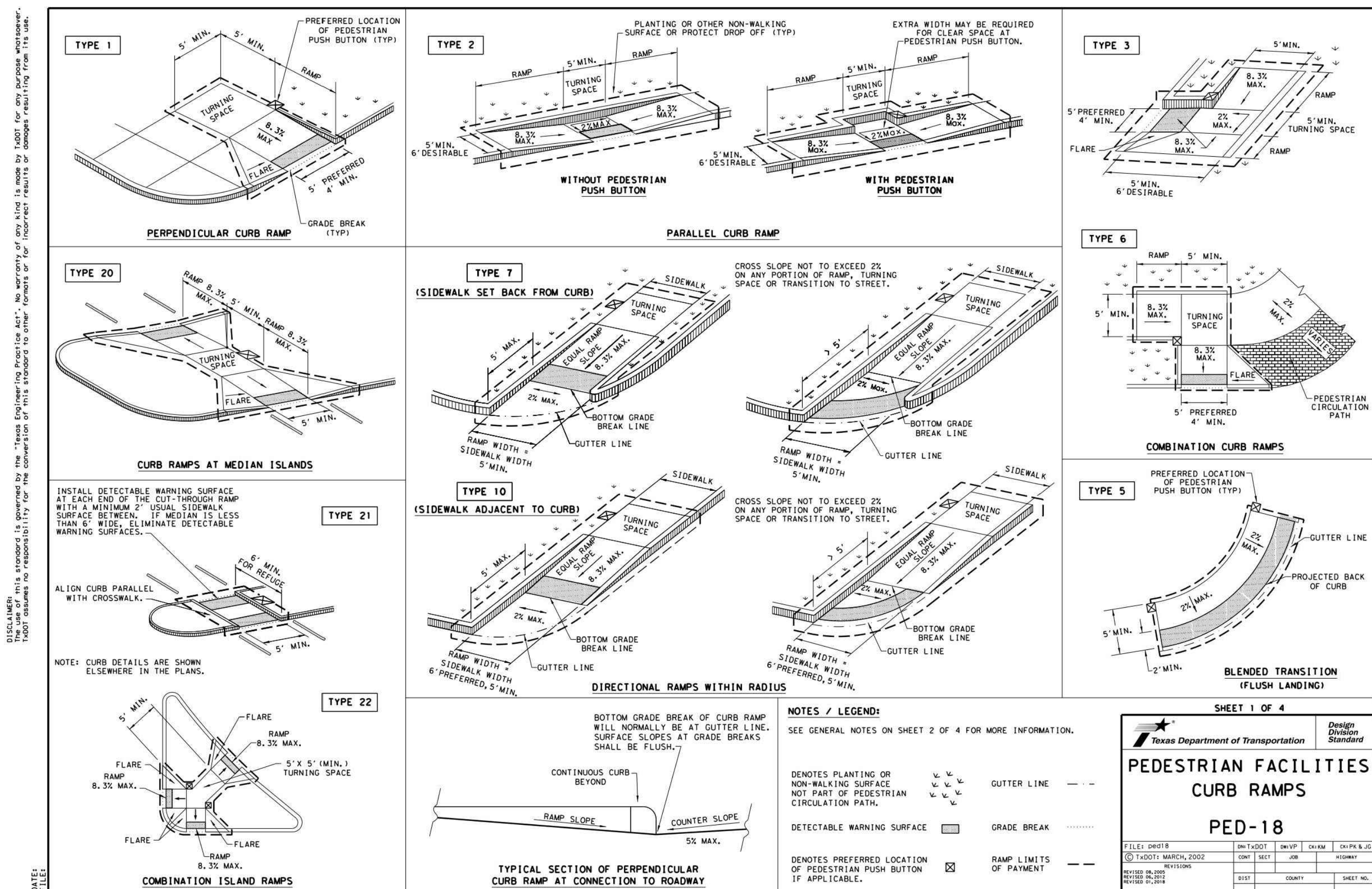


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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

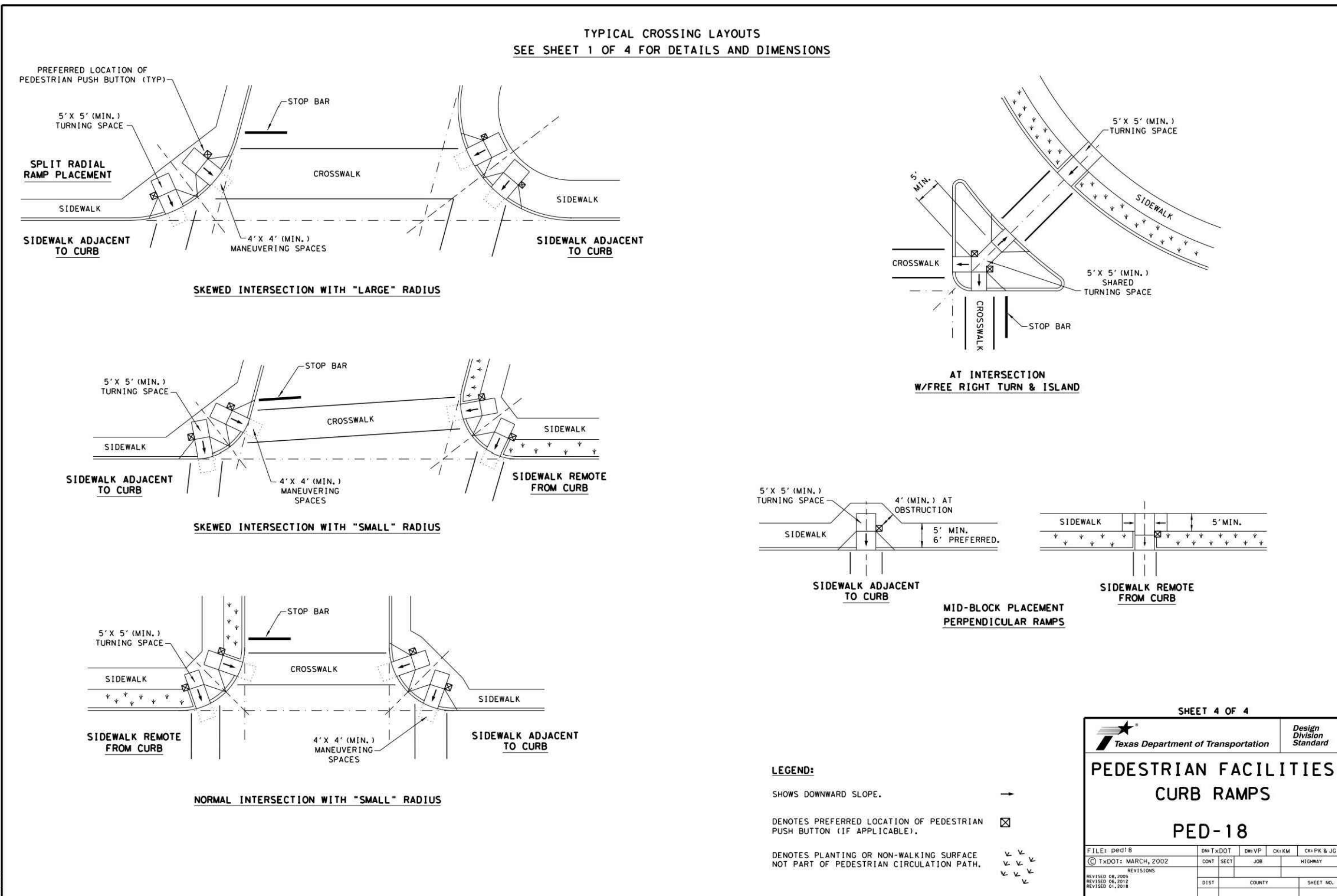
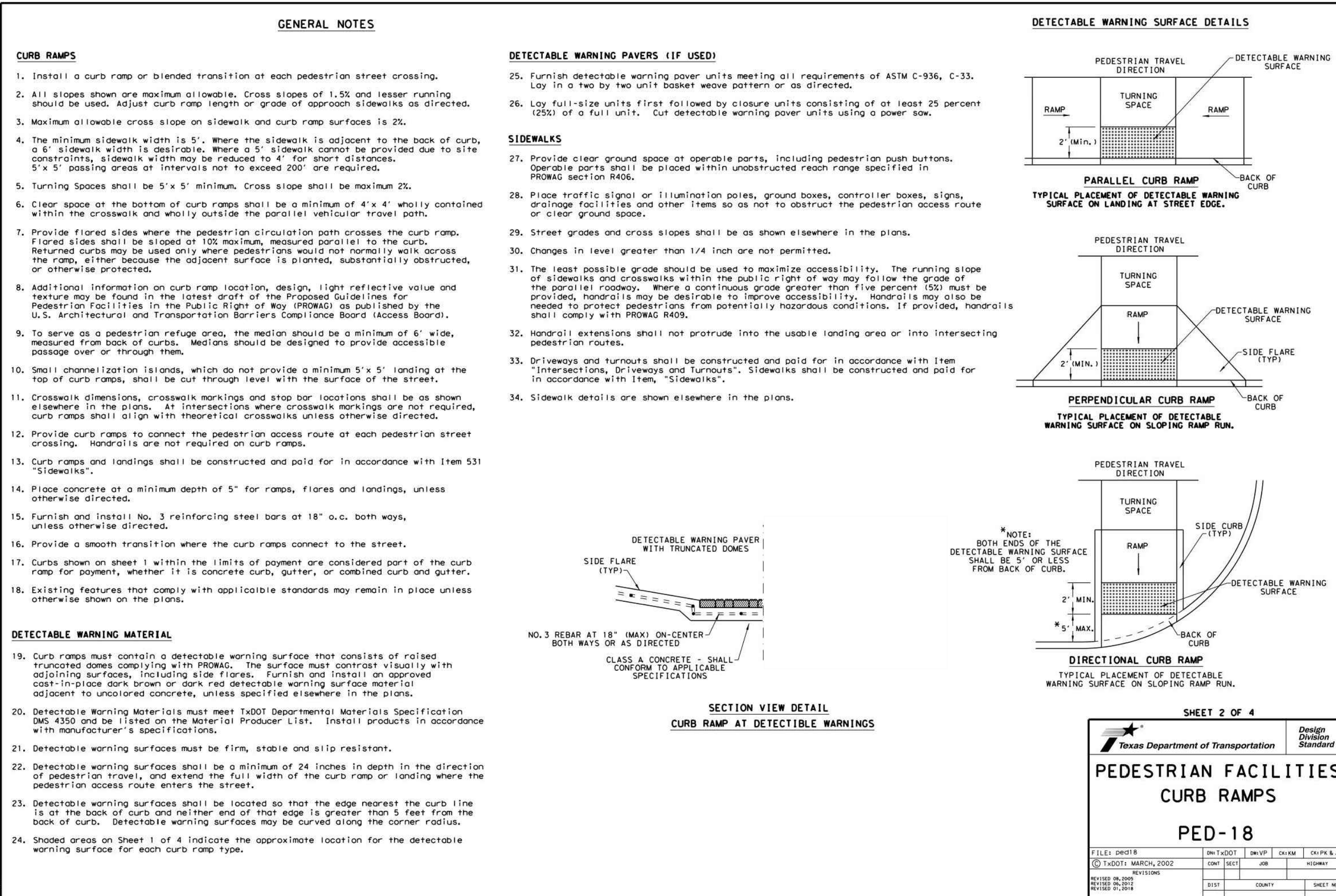
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

STREET DETAILS
SHEET 1 OF 4

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C2.10



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BEXAR COUNTY ROW NOTES:

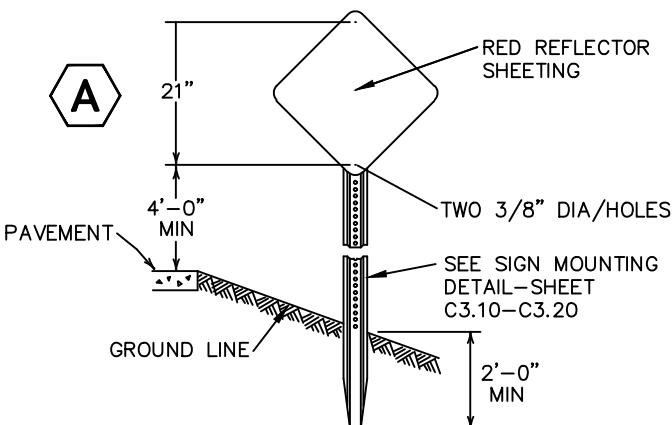
A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

DRIVEWAY NOTE:

DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.

TRENCH EXCAVATION SAFETY PROTECTION:

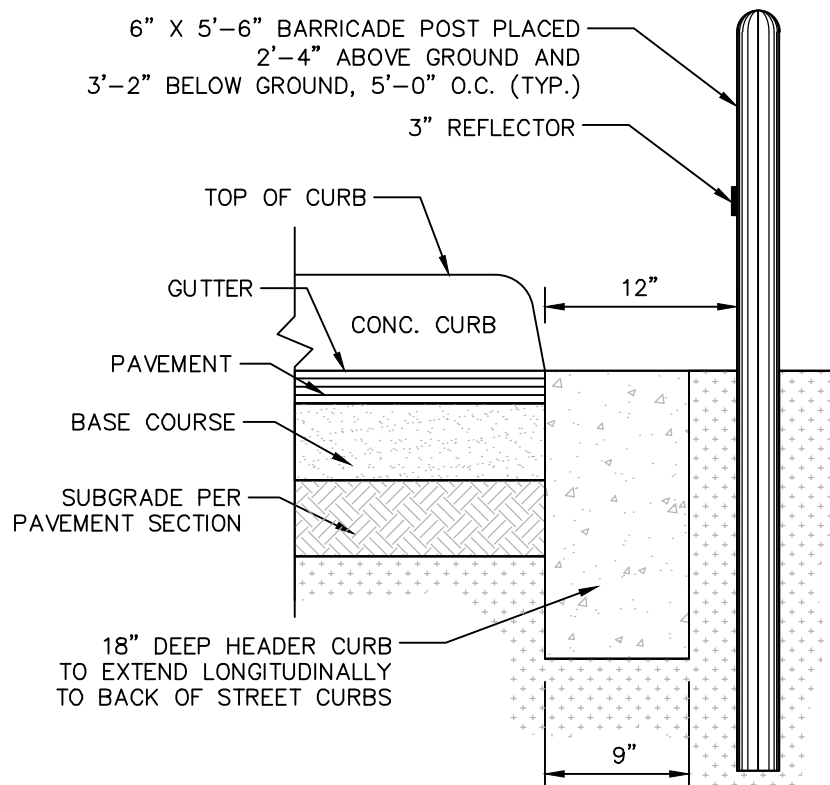
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



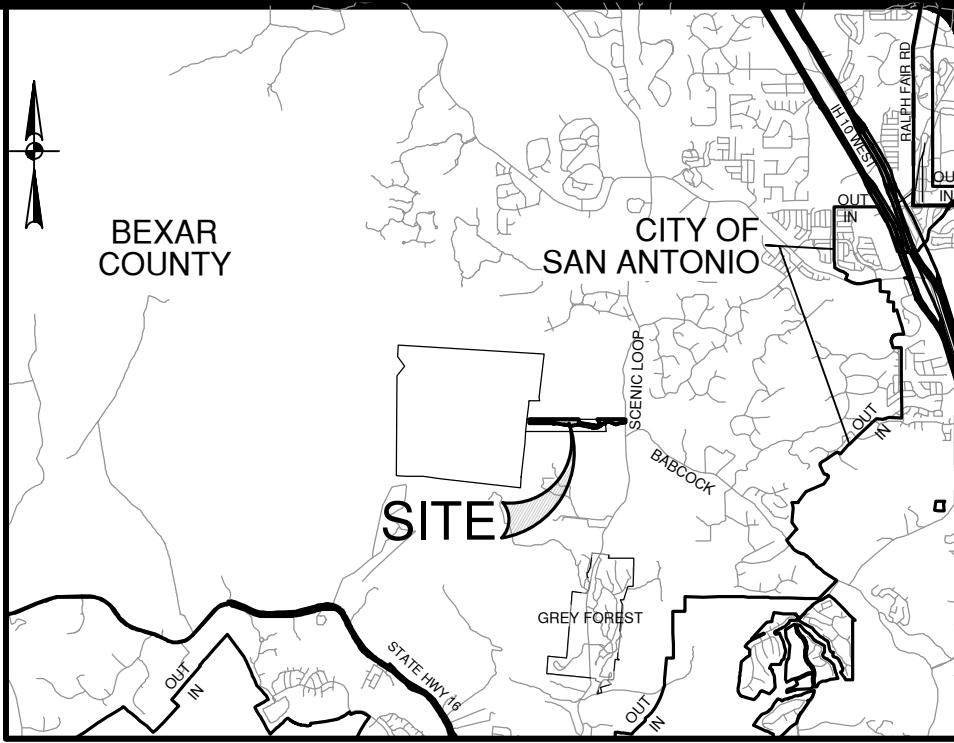
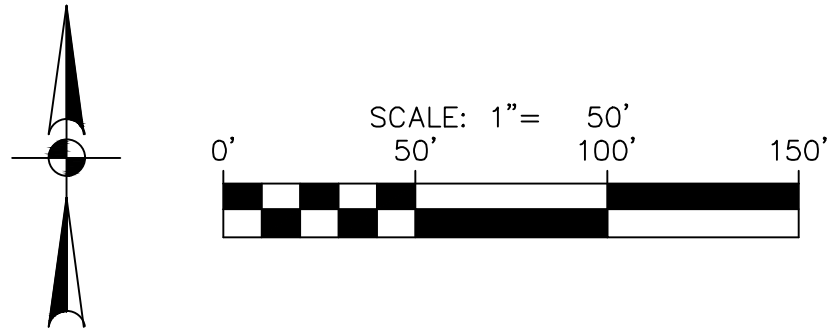
UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.

TYPE 4 OM4-3
18" x 18"

OBJECT MARKER TYPE 4
NOT-TO-SCALE



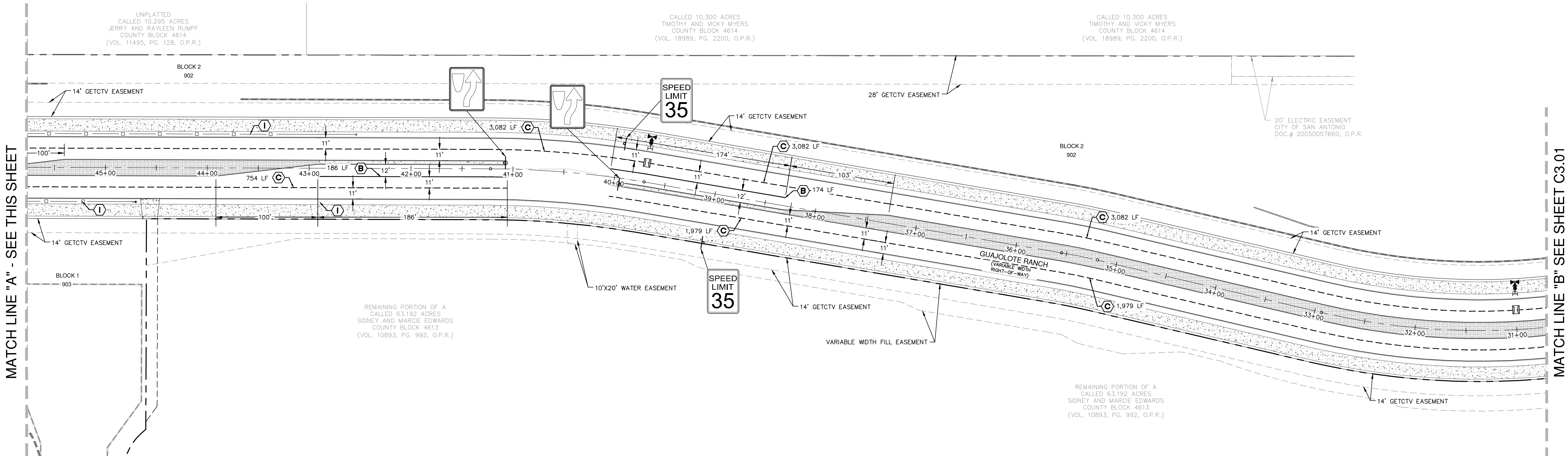
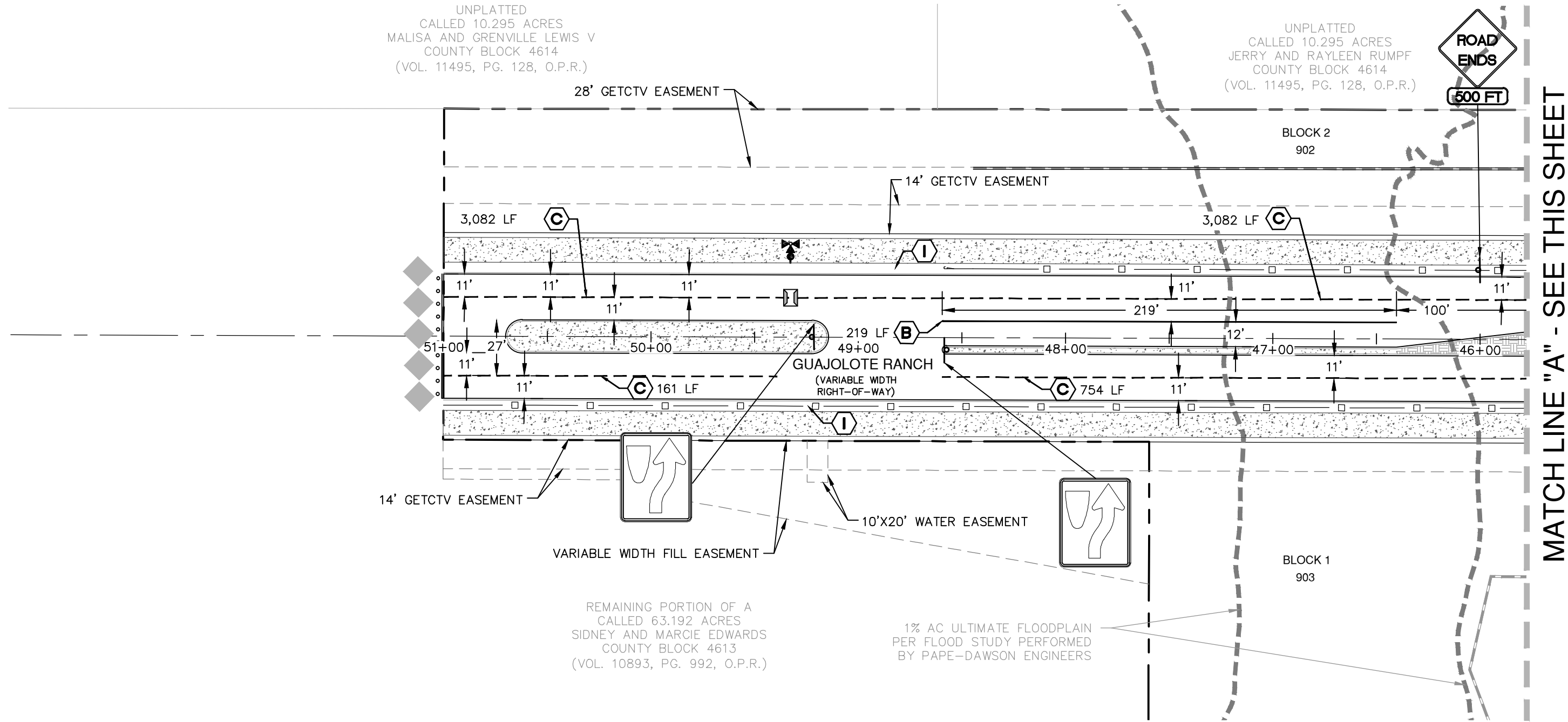
HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE



LOCATION MAP
SCALE: NTS

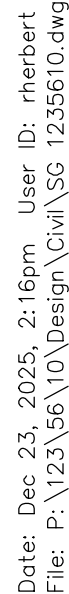
SYMBOL	ITEM NUMBER
	UNIT BOUNDARY
	SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)
	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)
	END OF ROAD MARKER OM4-3
	HEADER CURB W/ BARRICADE POSTS
	WHEELCHAIR RAMP
	STREET SIGN
	W14-1T
	W16-2aP

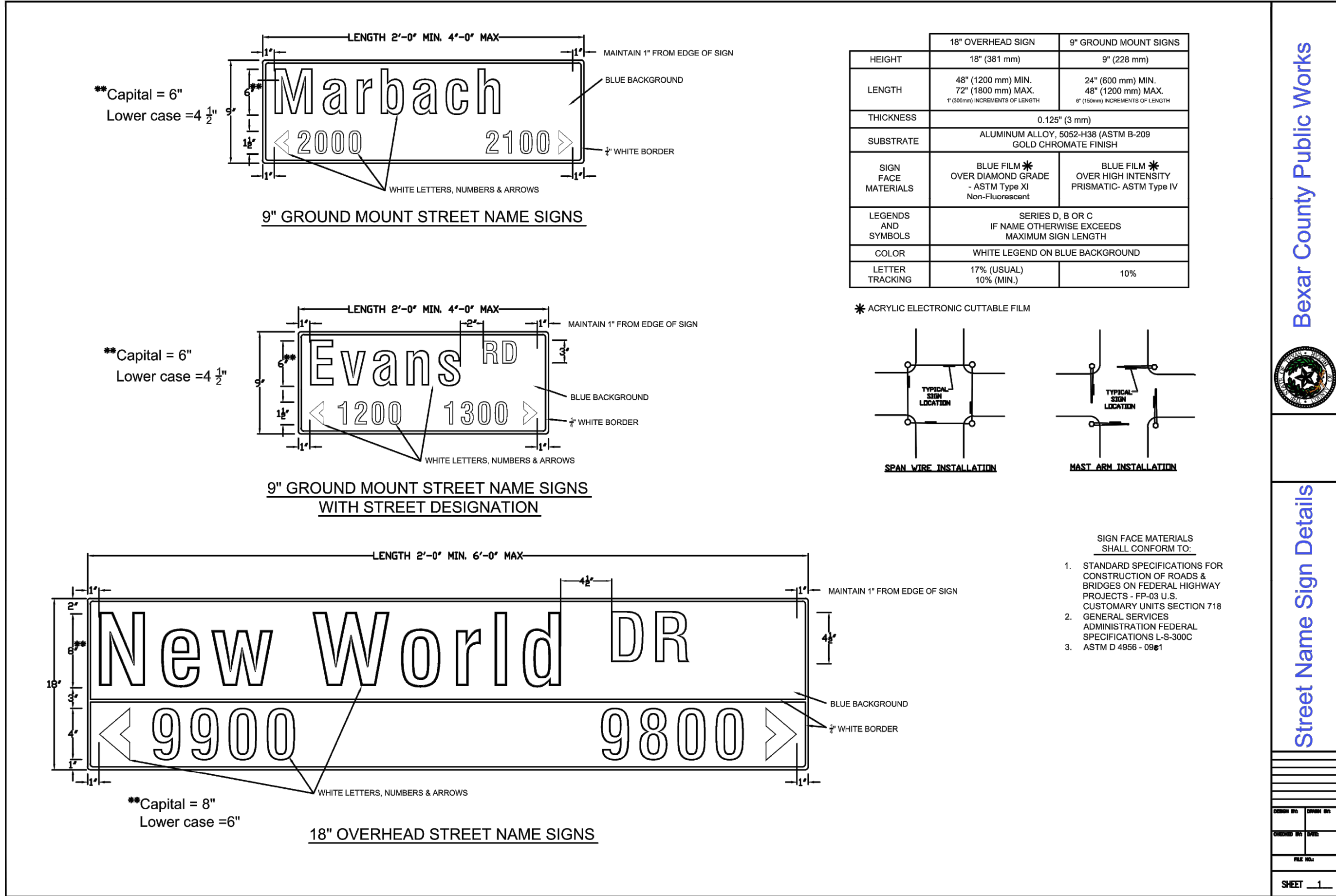
SYMBOL	ITEM NUMBER
	R1-1 (30"x30") 531.3
	R2-1 (30"x36") 531.6
	R4-7 24"x30" 531.17
	R4-7C 18"x30"
	WHITE 8" SOLID LINE - THERMOPLASTIC WITH TYPE II C-R RPMS (962 LF)
	WHITE 6" BROKEN LINE - THERMOPLASTIC WITH TYPE II C-R RPMS (8,710 LF)
	WHITE LEFT, RIGHT OR STRAIGHT ARROW STANDARD PAVEMENT MARKING - THERMOPLASTIC
	WHITE 24" STOP BAR - THERMOPLASTIC (44 LF)
	WHITE 24" CROSSWALK - THERMOPLASTIC (170 LF TOTAL)
	YELLOW 8" SOLID LINES PAINTED AROUND PERIMETER WITH 24" SOLID DIAGONAL YELLOW LINES STRIPED IN THE PATTERN SHOWN WITH TEMPORARY WORK ZONE PAINT (LANE CLOSURES ARE A TEMPORARY CONDITION)
	WHITE "ONLY" STANDARD PAVEMENT MARKING - THERMOPLASTIC
	PROPOSED GUARD RAIL (REF. SHEETS C11.00 - C11.02 FOR LENGTHS)



GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
OVERALL SIGNAGE PLAN
SHEET 1 OF 2

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED *JB* DRAWN JQ
SHEET C3.00

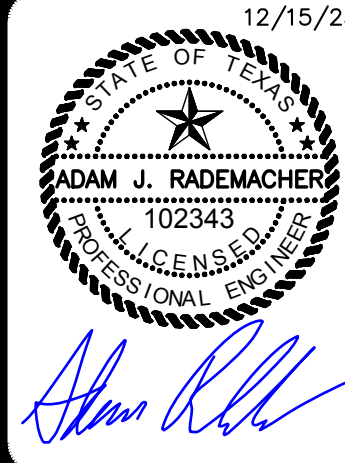
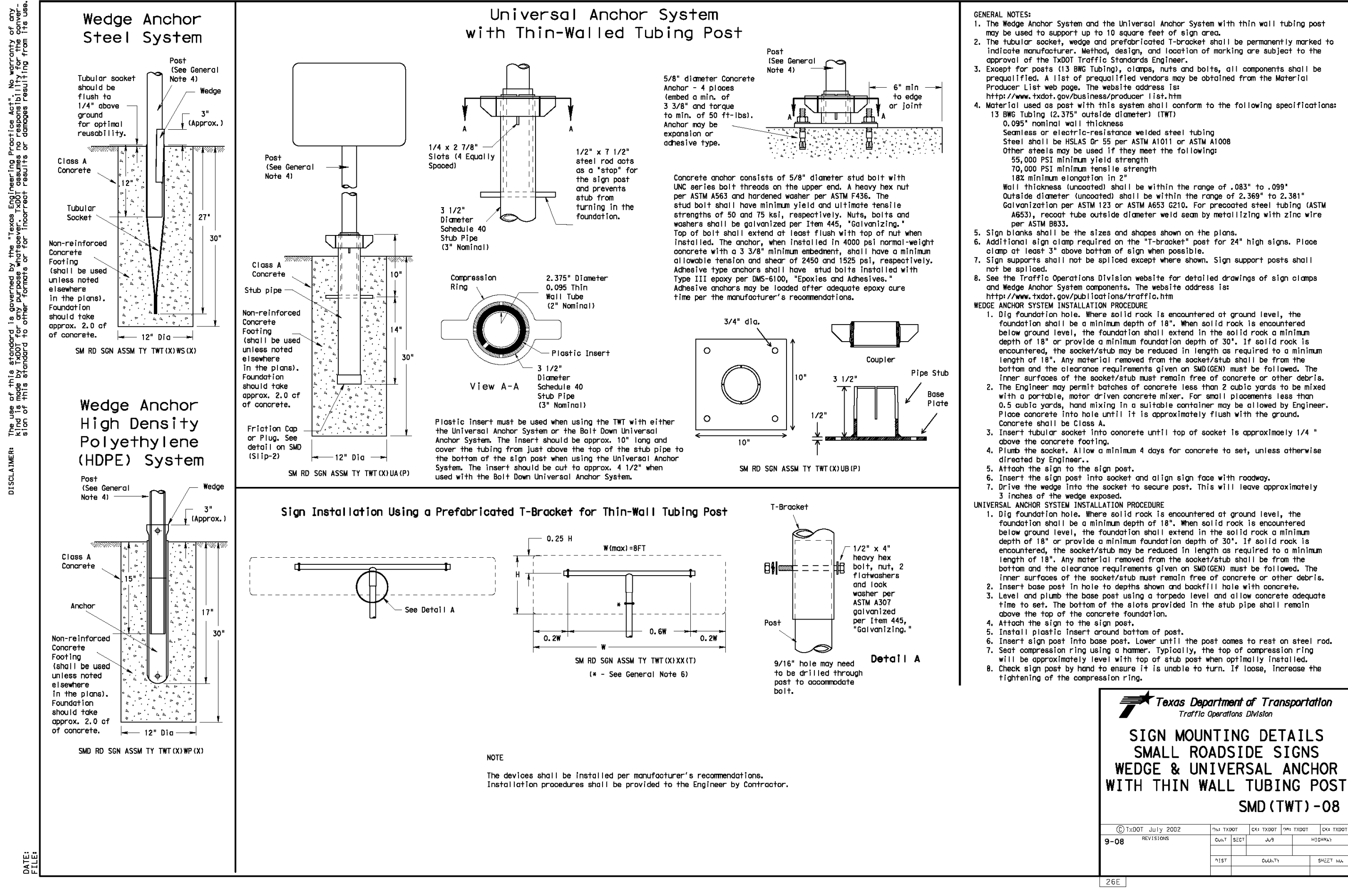




Bexar County Public Works

Street Name Sign Details

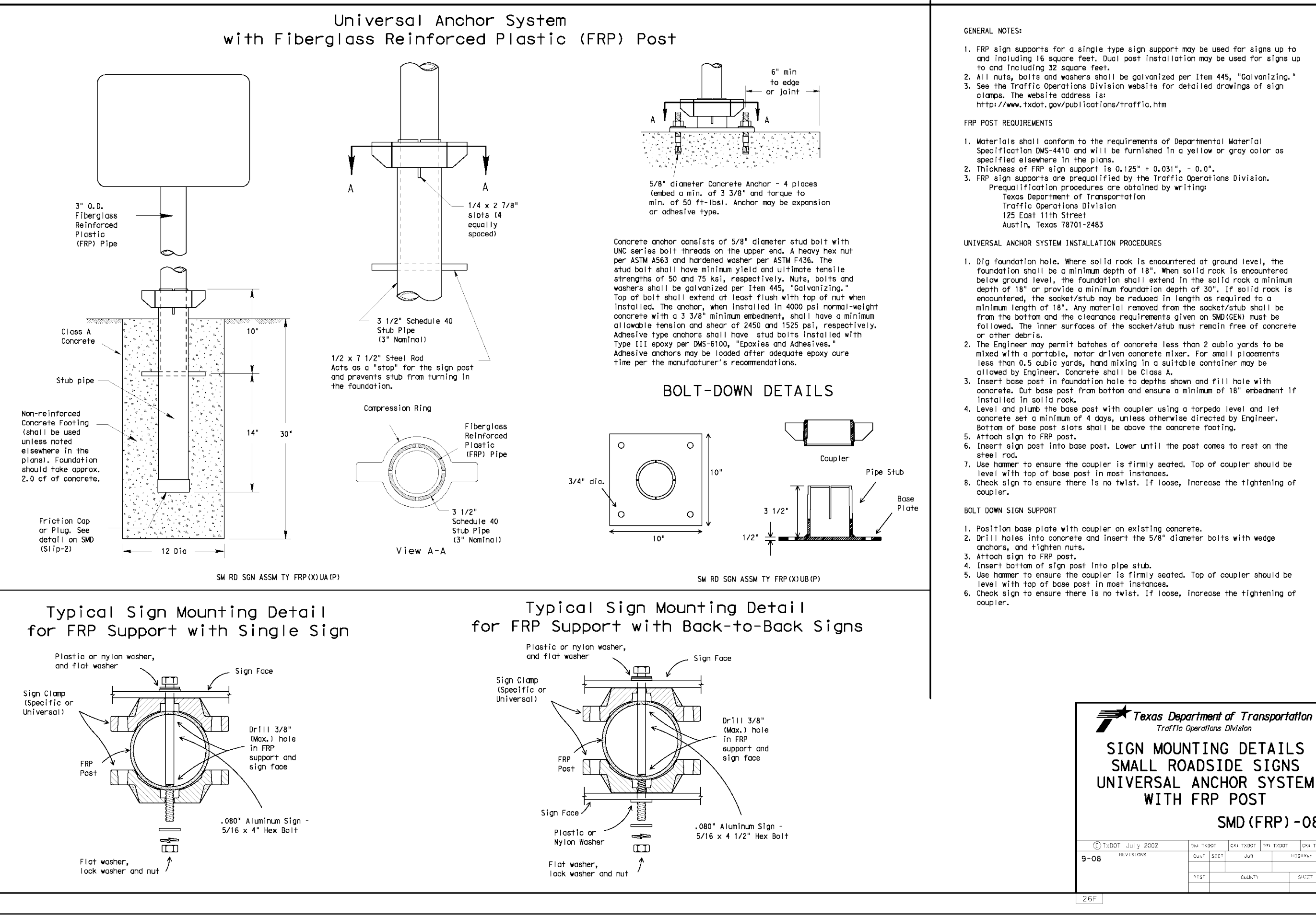
SHEET 1



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800



Texas Department of Transportation Traffic Operations Division

Sign Mounting Details

Small Roadside Signs

Universal Anchor System

with FRP Post

SMD (FRP) -08

SHEET 2

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

OVERALL SIGNAGE DETAILS

SHEET 2 OF 3

PLAT NO. 25-11800226

JOB NO. 12356-10

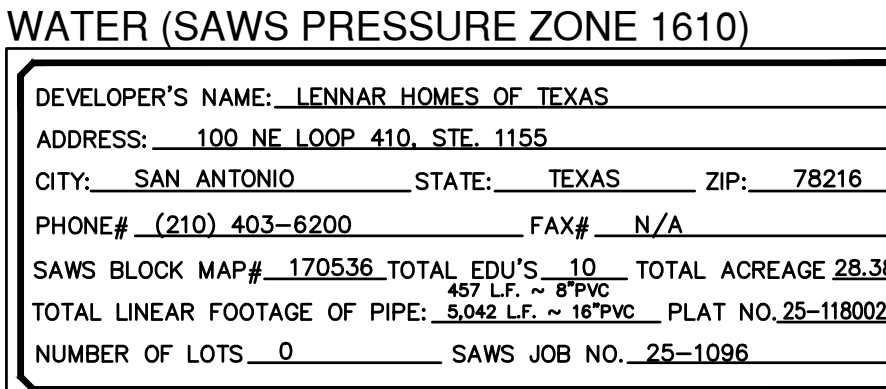
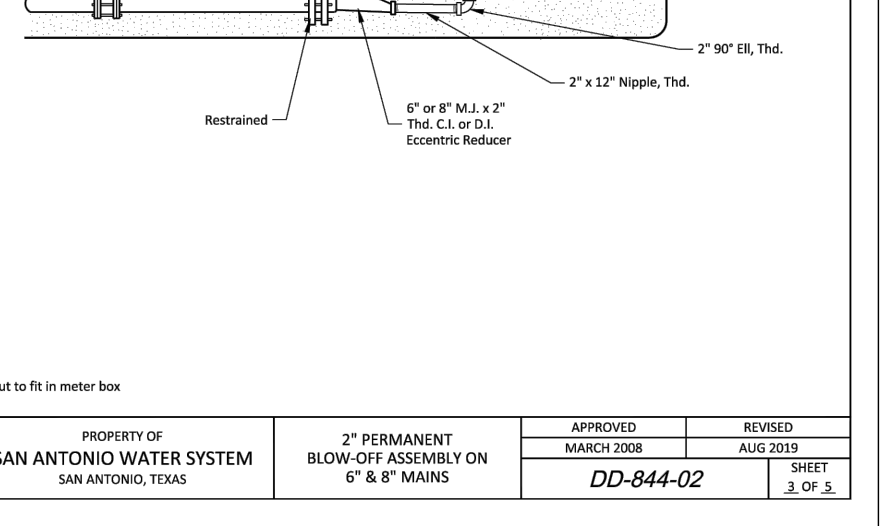
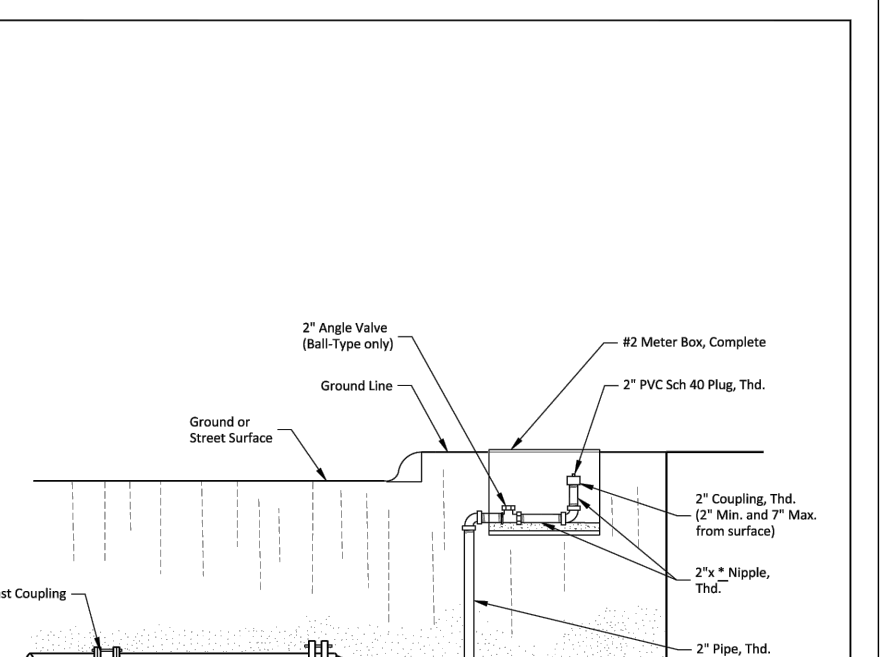
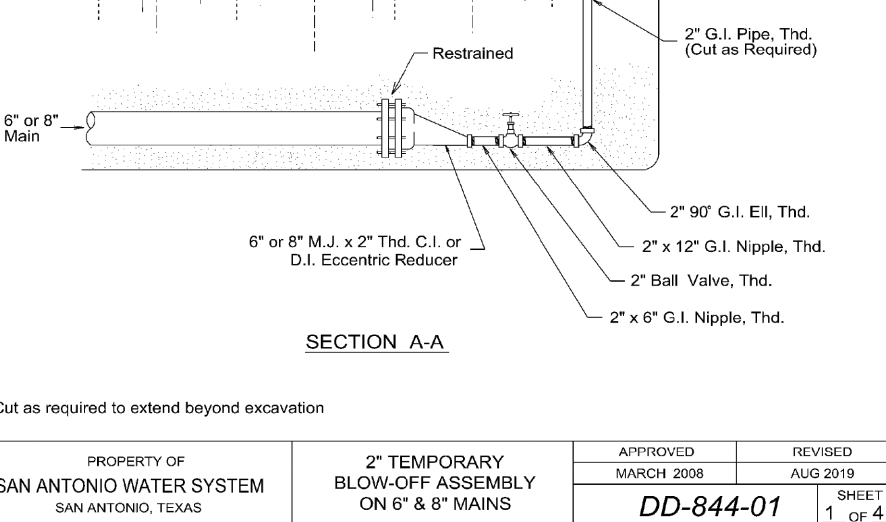
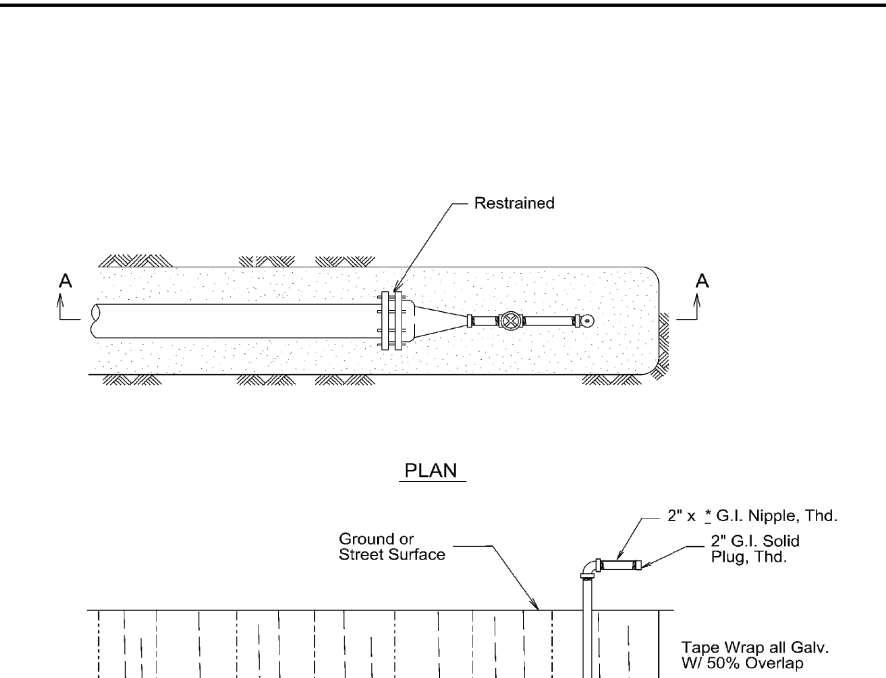
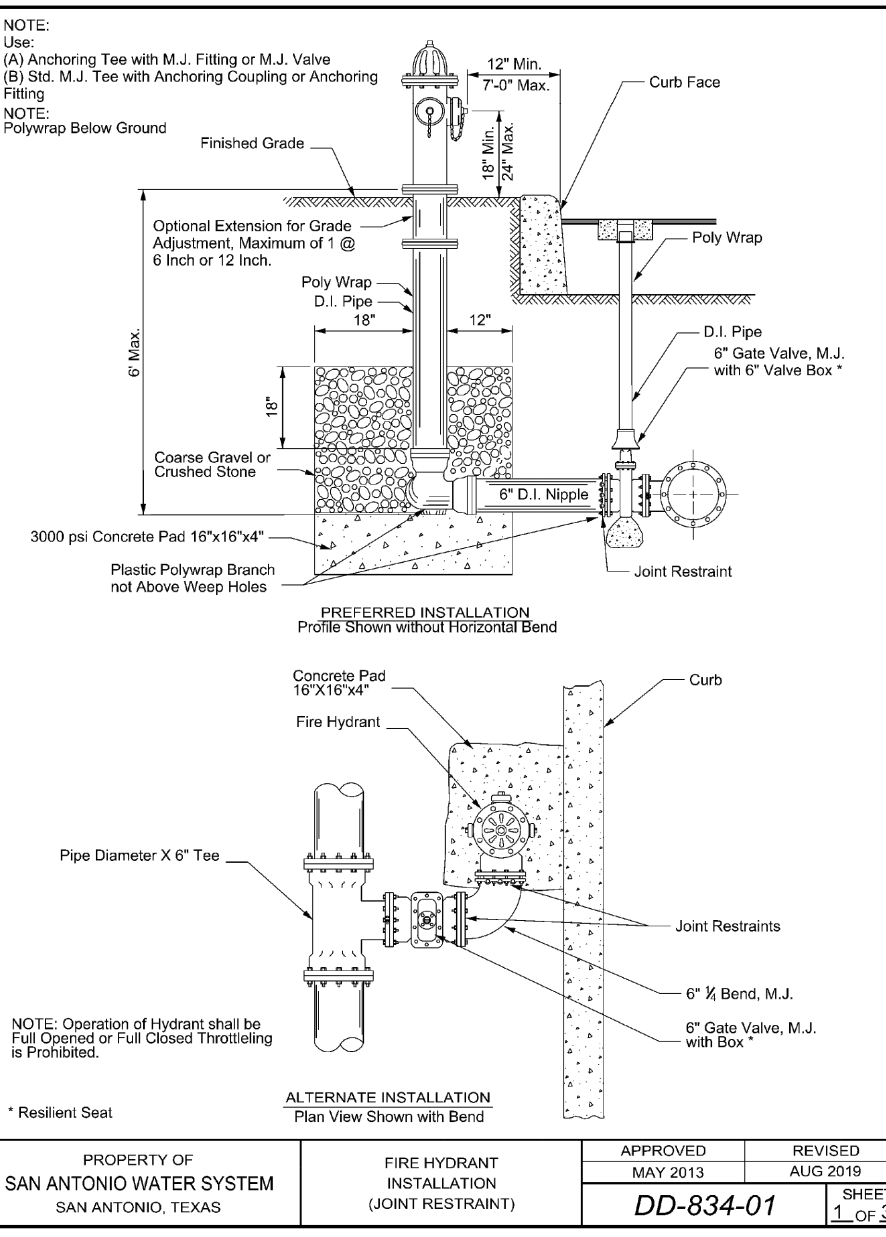
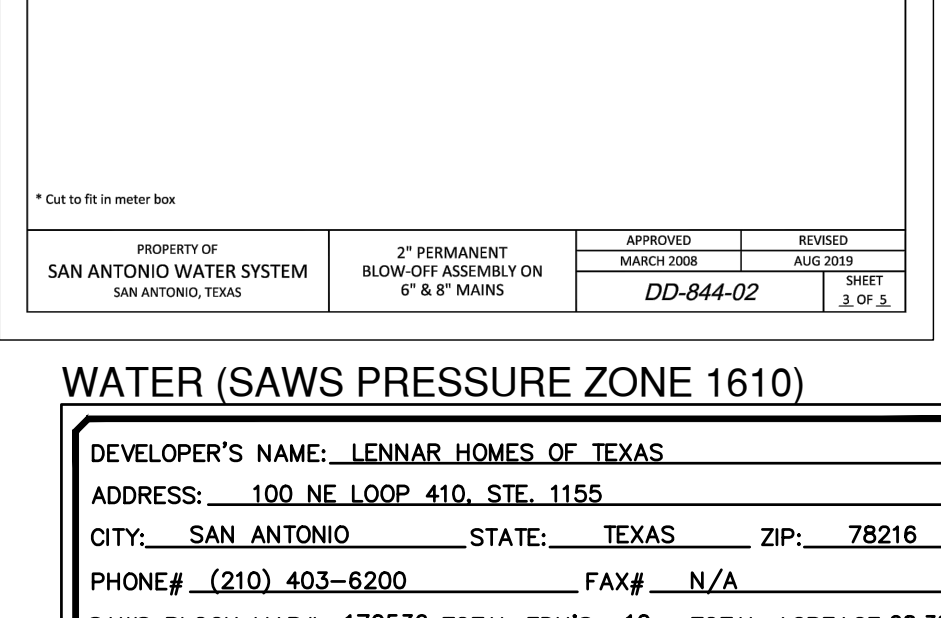
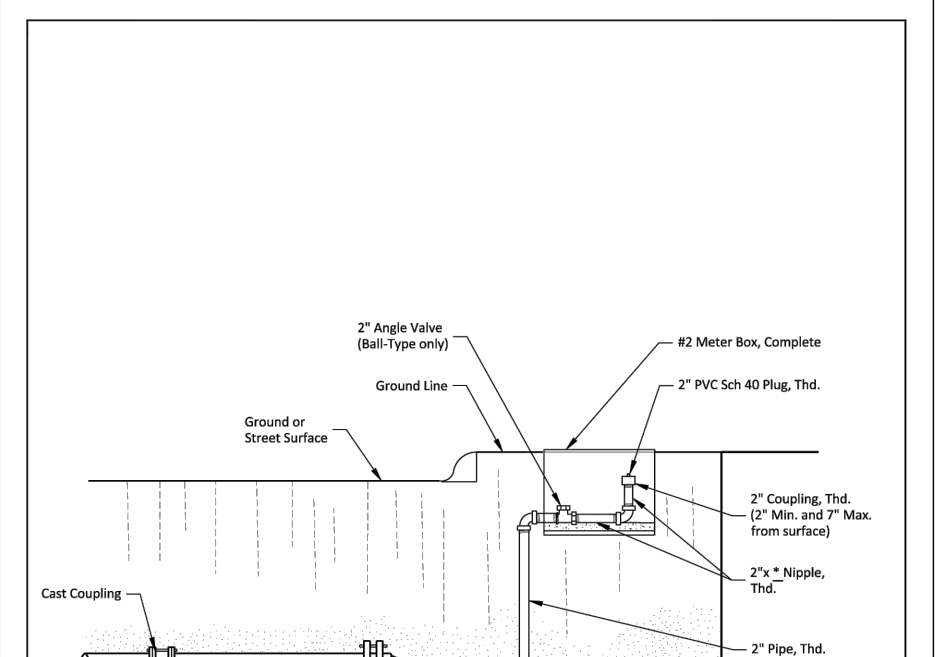
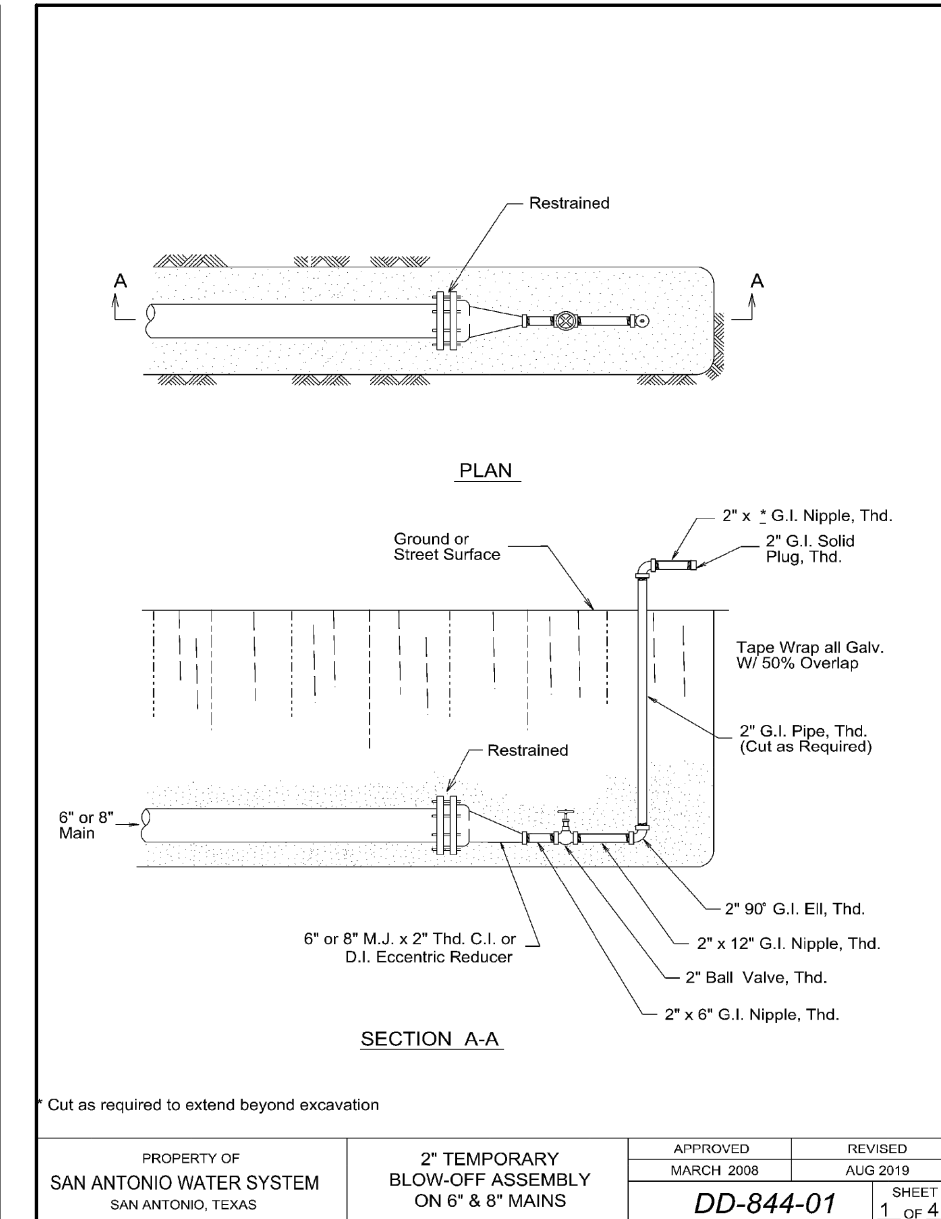
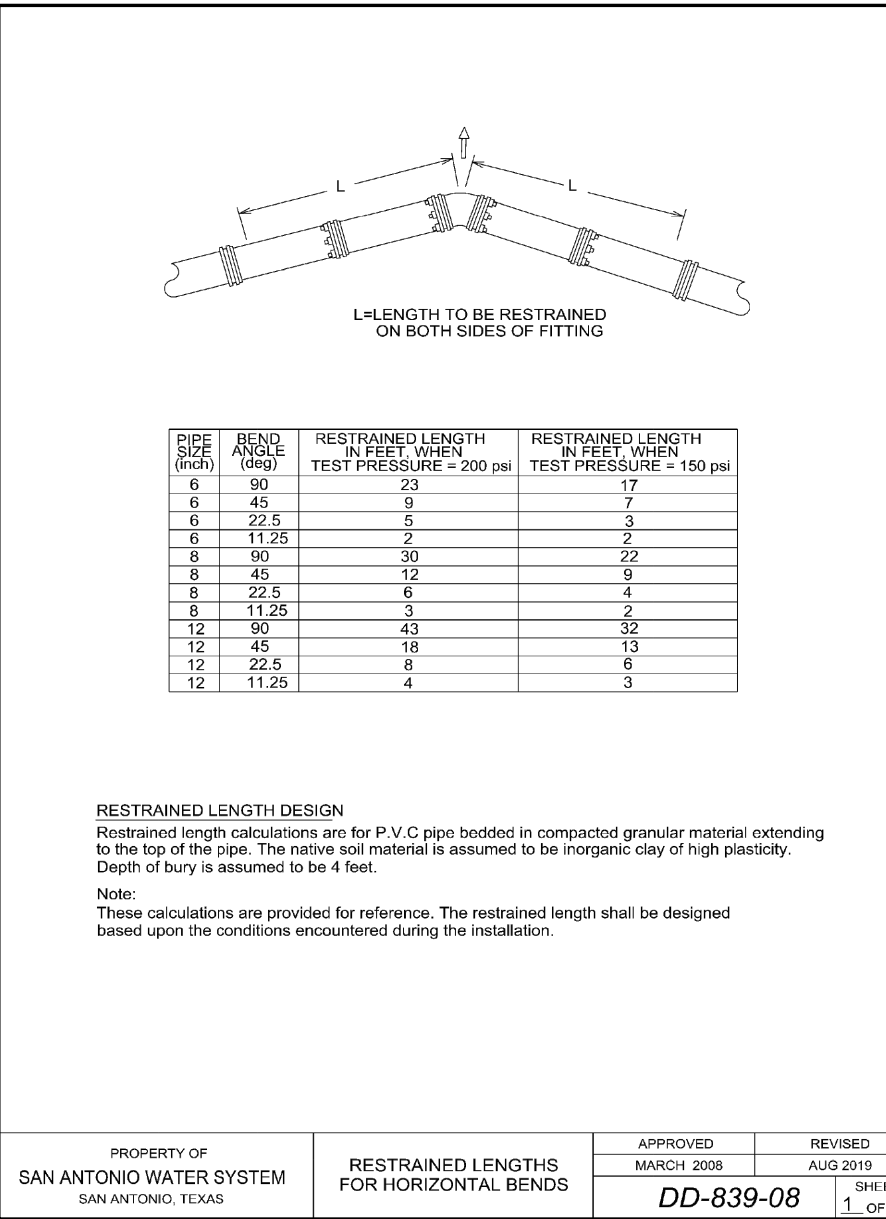
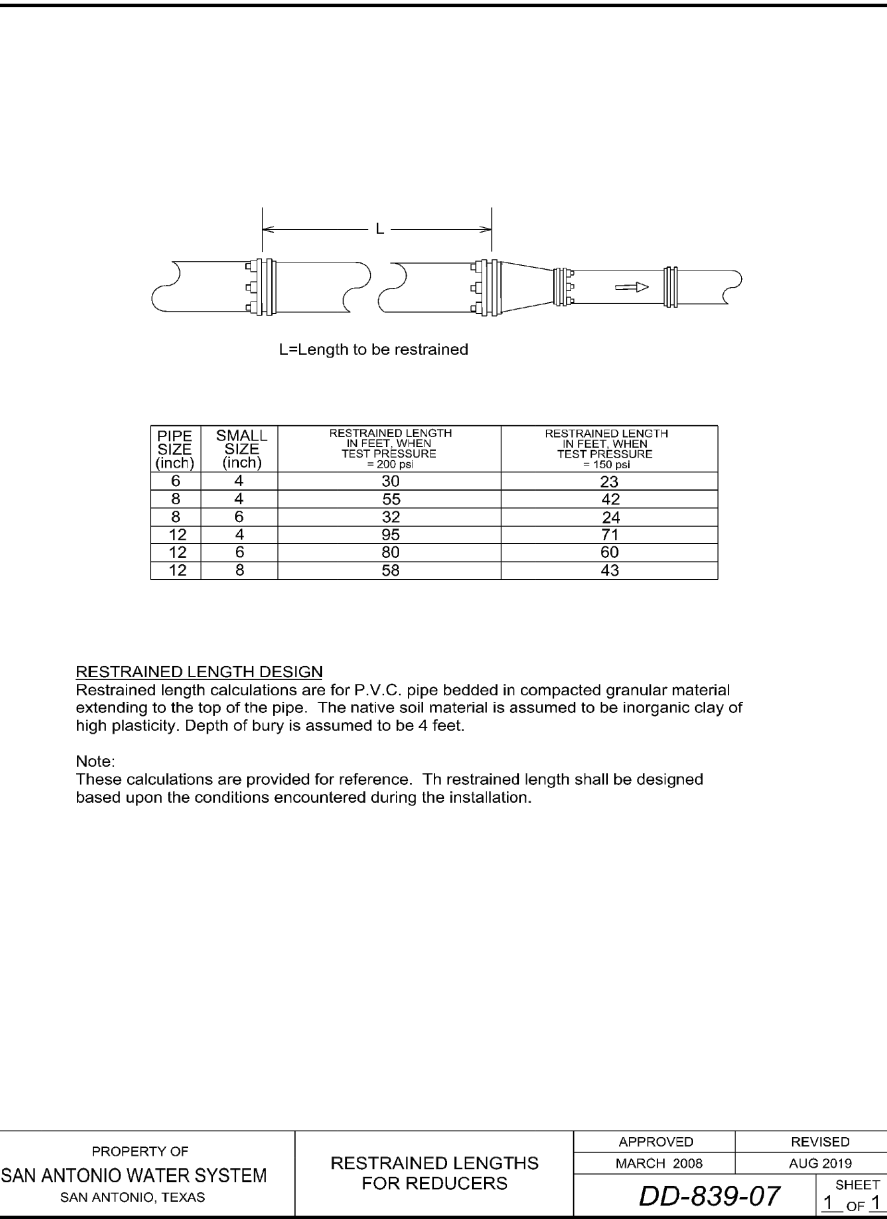
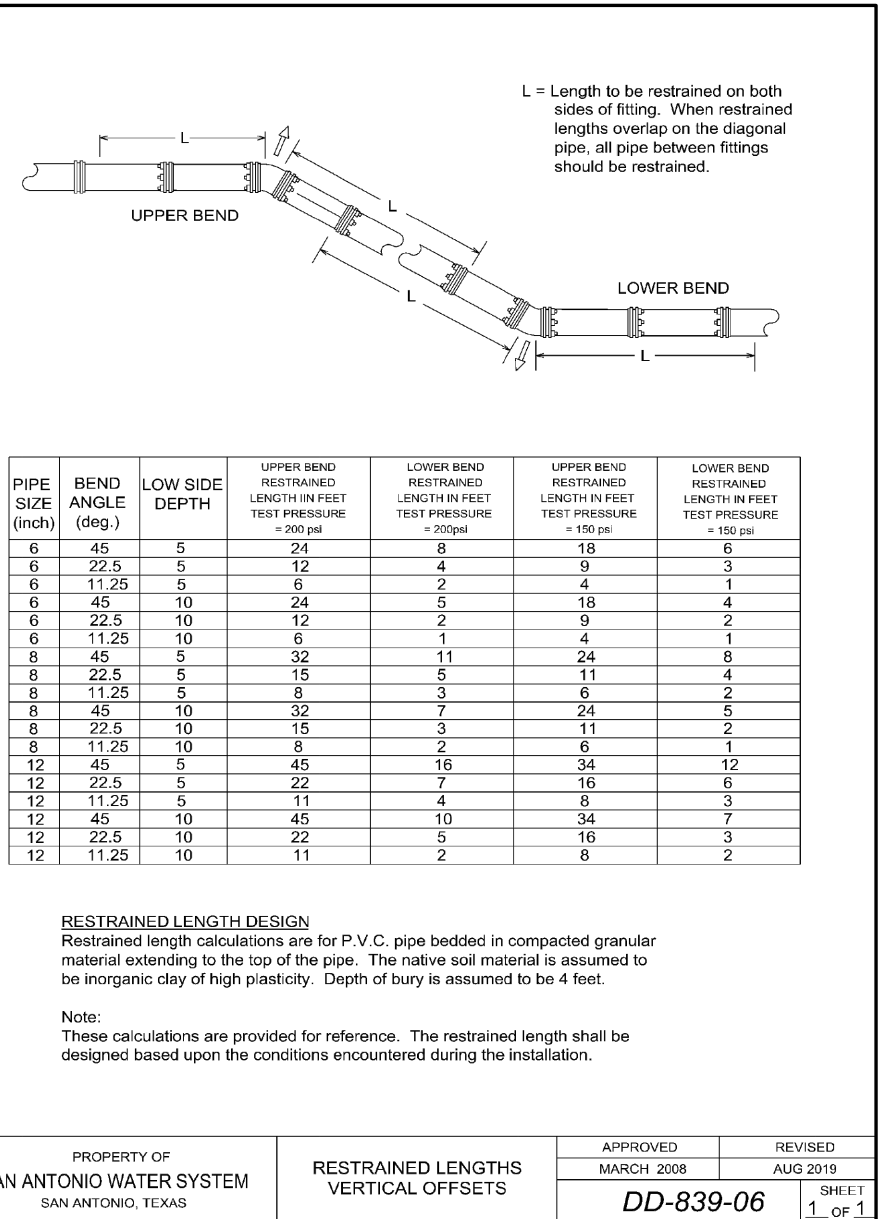
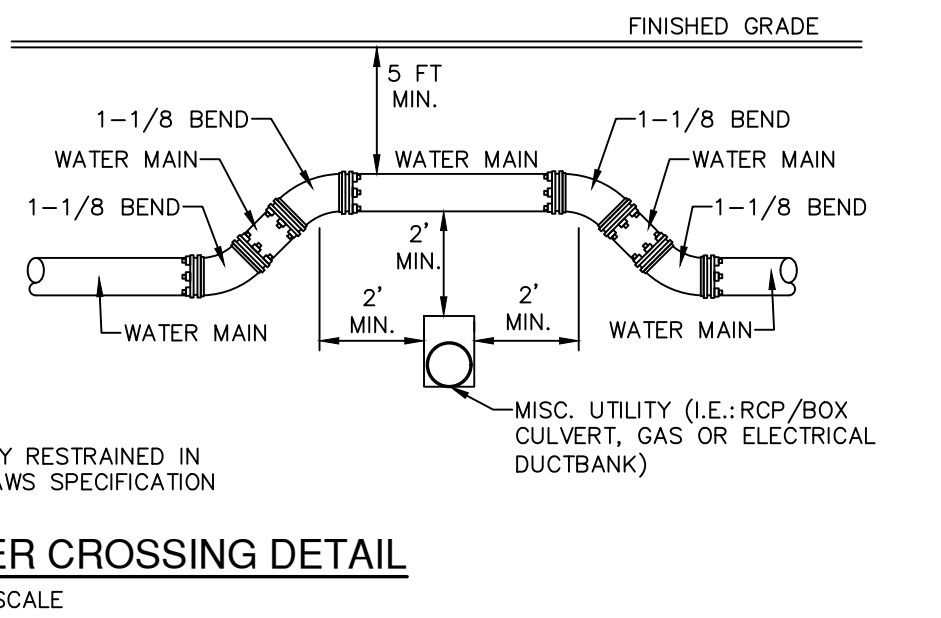
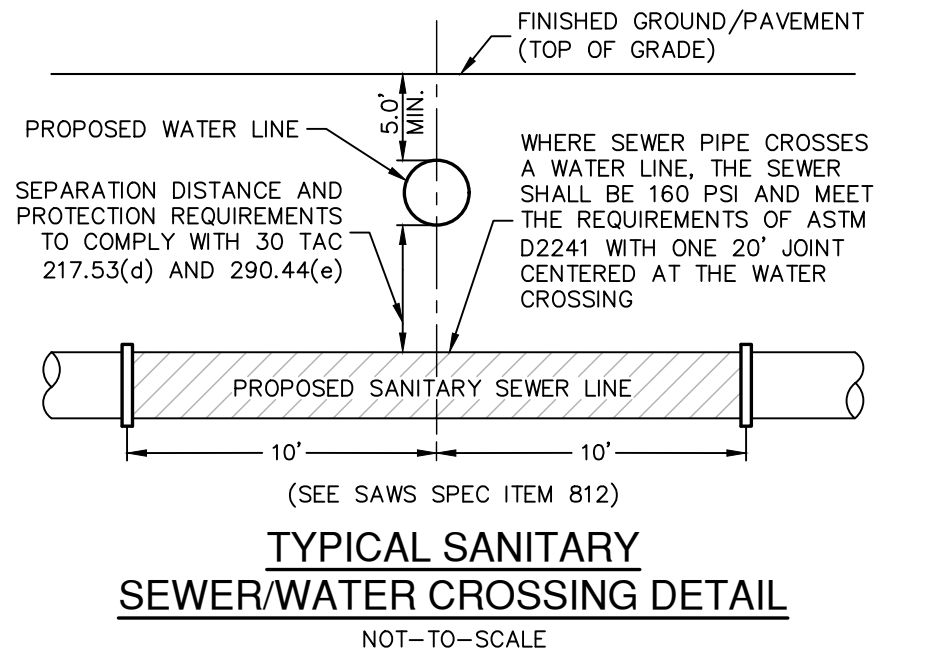
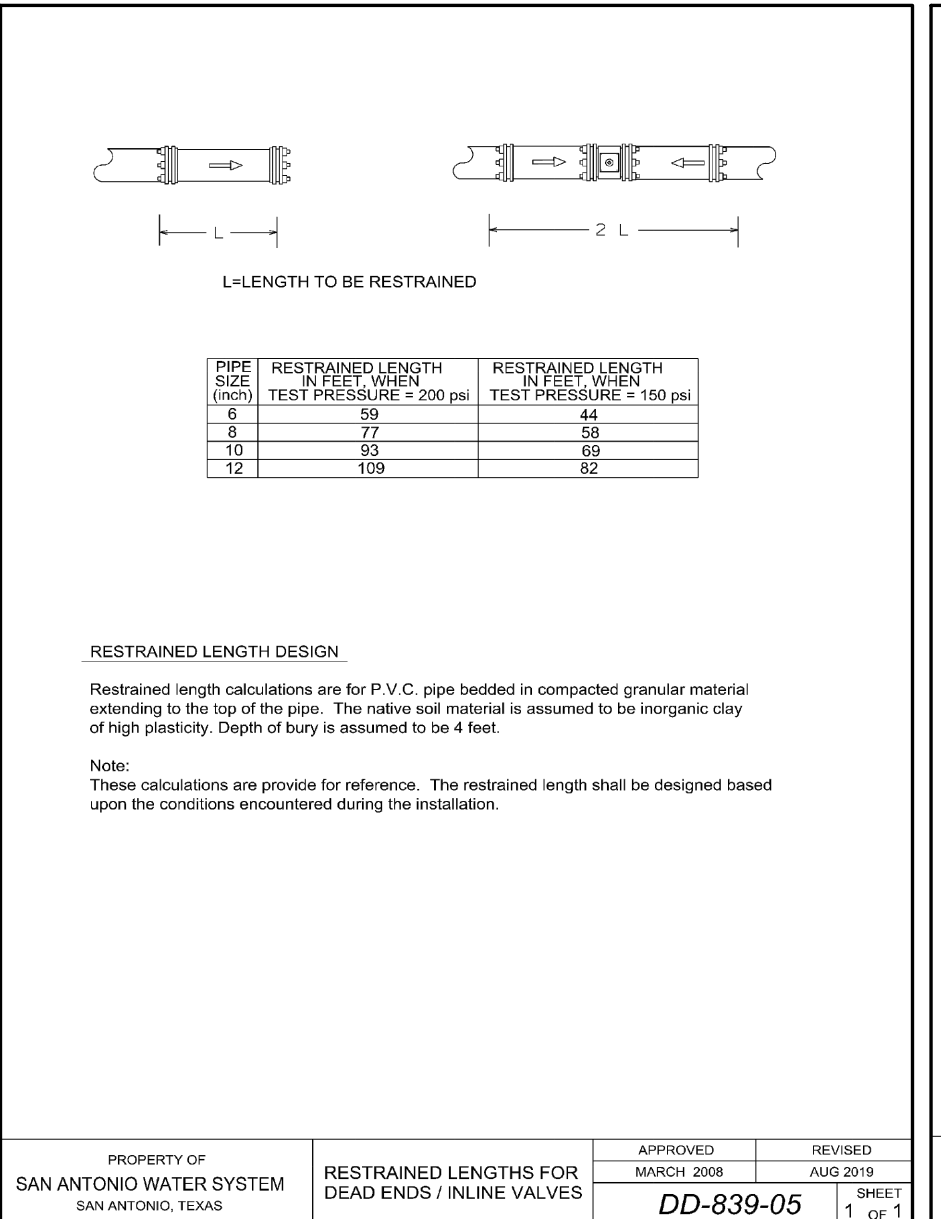
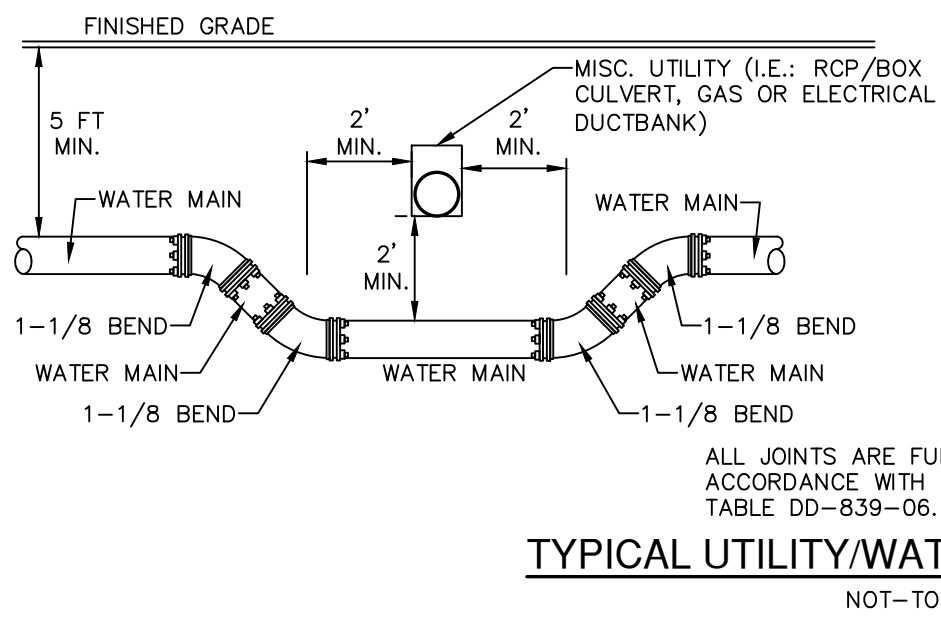
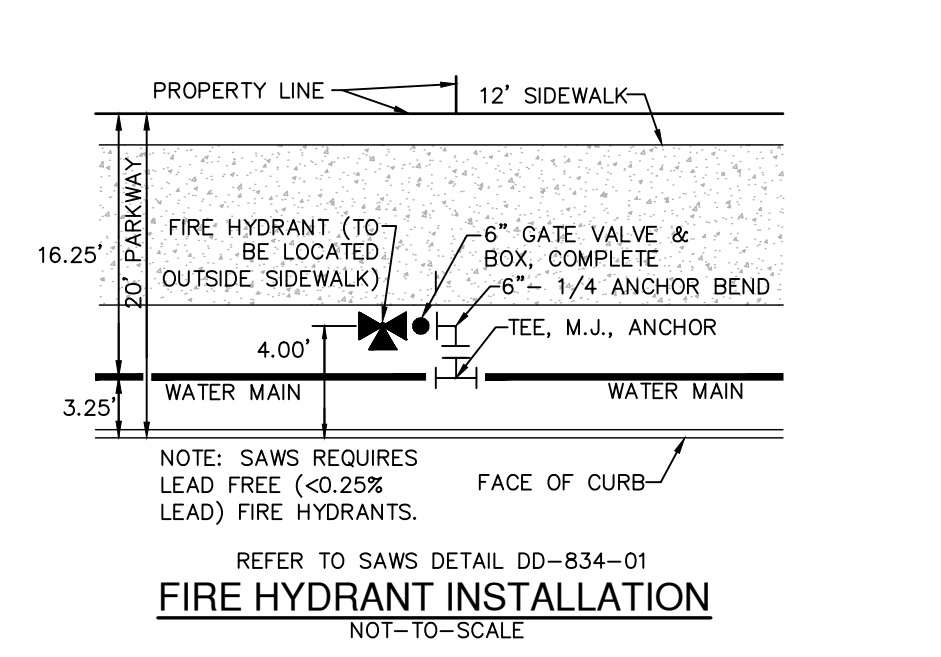
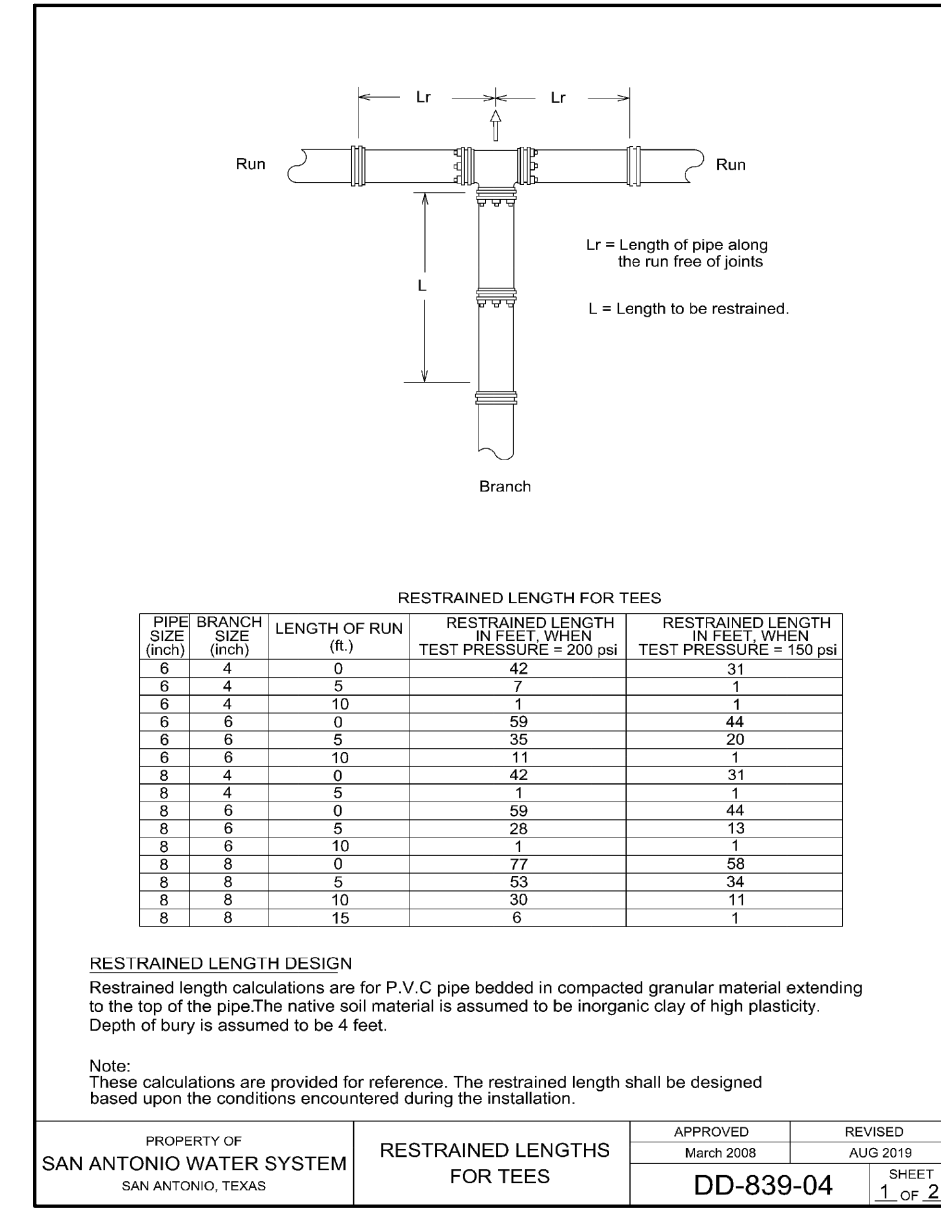
DATE DECEMBER 2025

DESIGNER IA

CHECKED C3.20

DRAWN JQ

SHEET



DATE

NO.

REVISION

12/15/25

ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER

Adam Rademacher

PAPE-DAWSON

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

WATER DISTRIBUTION DETAILS

PLAT NO.

25-11800226

JOB NO.

12356-10

DATE

DECEMBER 2025

DRAWN

JA

CHECKED

JD

DRAWN

JD

SHEET

C4.10

SAWS CONSTRUCTION NOTES
(LAST REVISED JANUARY 2022)

SAWS GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM," TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER," TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.

3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.

4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES. REQUESTING MARKERS LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

- SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
- COSA DRAINAGE (210) 207-0724 OR (210) 207-6026
- COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8490
- COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
- TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.

8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.

9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.

12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SAWS WATER NOTES

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS. THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

- FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS CENTER (210) 233-2014

2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS- CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".

3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSP)

4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

5. ALL VALVES SHALL READ "OPEN RIGHT".

6. PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 1425 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 1425 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF *PRV IS/ARE REQUIRED FOR SUCH LOT(S). ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.

8. BACKFLOW PREVENTION DEVICES:

- ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
- ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.

9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.

10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

PROJECT WATER NOTES

1. MACHINE CHLORINATION BY THE S.A.W.S.

2. ALL 8", 12" AND 16" PIPE SHALL BE P.V.C. C-900 CLASS 235 DR 18.

3. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR, AS PROVIDED FOR IN THE SPECIAL CONDITIONS.

4. THE WATER LINES WILL BE SET FROM THE STREET HUBS BEFORE THE CONTRACT BEGINS. STREET CUT SHEETS WILL BE SUPPLIED TO THE CONTRACTOR. THERE SHOULD BE NO ADDITIONAL STAKES REQUIRED, AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE AND VERIFY THAT ALL STAKES REQUIRED FOR HIS WORK ARE IN PLACE AT THE TIME THE CONSTRUCTION BEGINS. IF ANY STAKES ARE MISSING THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY. AFTER CONSTRUCTION BEGINS, ALL CONSTRUCTION STAKES, MARKS, ETC., SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR, AND IN CASE OF DESTRUCTION OR REMOVAL BY THE CONTRACTOR, HIS EMPLOYEE OR ANY OTHER MEANS, SUCH STAKES, MARKS, ETC., SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL THE FINAL MEASUREMENTS, TAPS AND LENGTH OF SERVICE CONNECTIONS.

6. THE LOT CORNERS WILL BE SET BY THE ENGINEER FOR INSTALLATION OF ALL WATER SERVICES. THESE LOT CORNERS SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR SO THE METER BOXES CAN BE SET IN PHASE II. ANY LOT CORNER DESTROYED OR REMOVED BY THE CONTRACTOR, HIS EMPLOYEES, OR BY ANY OTHER MEANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

7. STREETS WILL HAVE BEEN EXCAVATED DOWN TO SUBGRADE AND THE PARKWAY WILL BE CUT DOWN TO TOP OF CURB BY THE STREET CONTRACTOR, PRIOR TO CONSTRUCTION OF THE WATER MAINS. IT WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT.

8. WATER METER BOXES IF APPLICABLE SHALL BE INSTALLED NINE FEET FROM FACE OF CURB TO CENTER OF THE METER BOX.

9. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.

10. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE S.A.W.S. RELEASES THE MAIN FOR TIE-IN AND USE.

11. UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUDE FIRE HYDRANT, 6-INCH GATE VALVE AND 6-INCH VALVE BOX COMPLETE, ANCHOR BEND, AND ALL 6-INCH DI PIPE REQUIRED (DI PIPE REQUIRED SHALL INCLUDE ALL PIPE FROM THE TEE ON THE MAIN LINE TO THE FIRE HYDRANT).

12. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO).

13. A CLEAR SPACE SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. THIS AREA SHOULD HAVE A MINIMUM DIAMETER OF 3.0' AND BE CLEAN OF VERTICAL OBSTRUCTIONS, VALVES, AND METER BOXES.

14. SAWS REQUIRES LEAD FREE (< 0.25%) FIRE HYDRANTS.

15. UNLESS OTHERWISE NOTED ALL SERVICES SHALL BE 3/4" WITH 5/8" METER.

WATER (SAWS PRESSURE ZONE 1610)

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS			
ADDRESS: 100 NE LOOP 410, STE. 1155			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78216	
PHONE# (210) 403-6200	FAX# N/A		
SAWS BLOCK MAP# 170536 TOTAL EDU'S 10 TOTAL ACREAGE 28.387			
TOTAL LINEAR FOOTAGE OF PIPE: 5,042 LF. ~ 8" PVC PLAT NO. 25-1180026			
NUMBER OF LOTS 0	SAWS JOB NO. 25-1086		

DATE	NO.	REVISION



PAPE – DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

WATER DISTRIBUTION NOTES

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C4.20

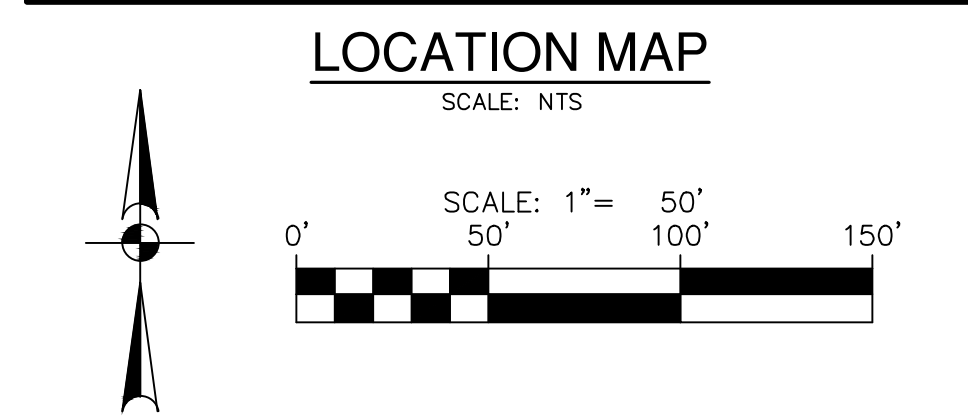
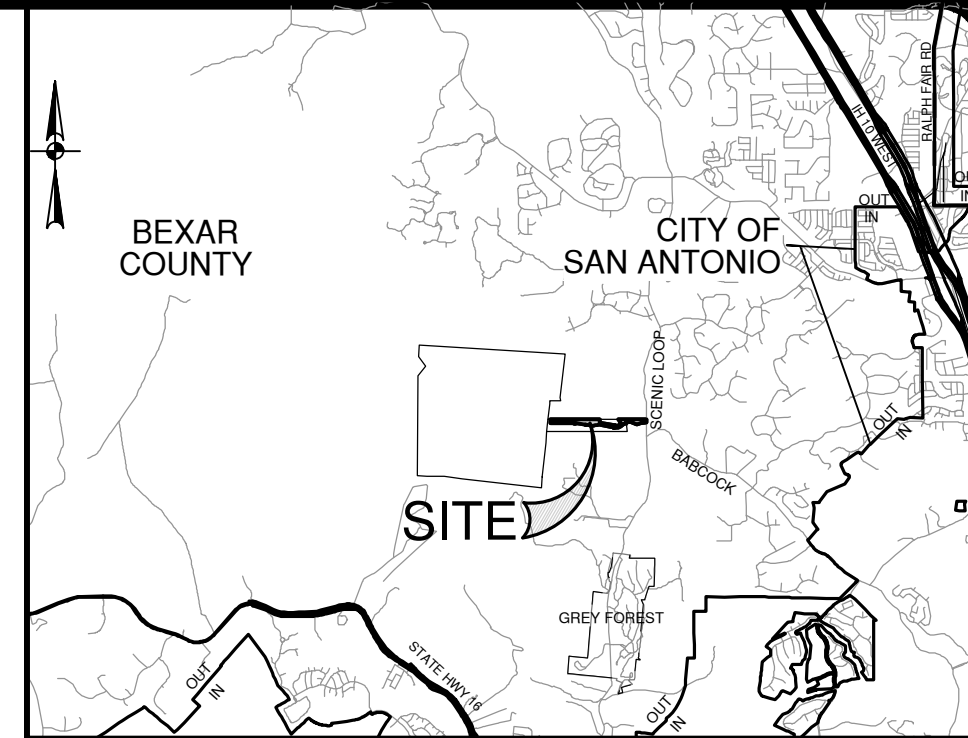
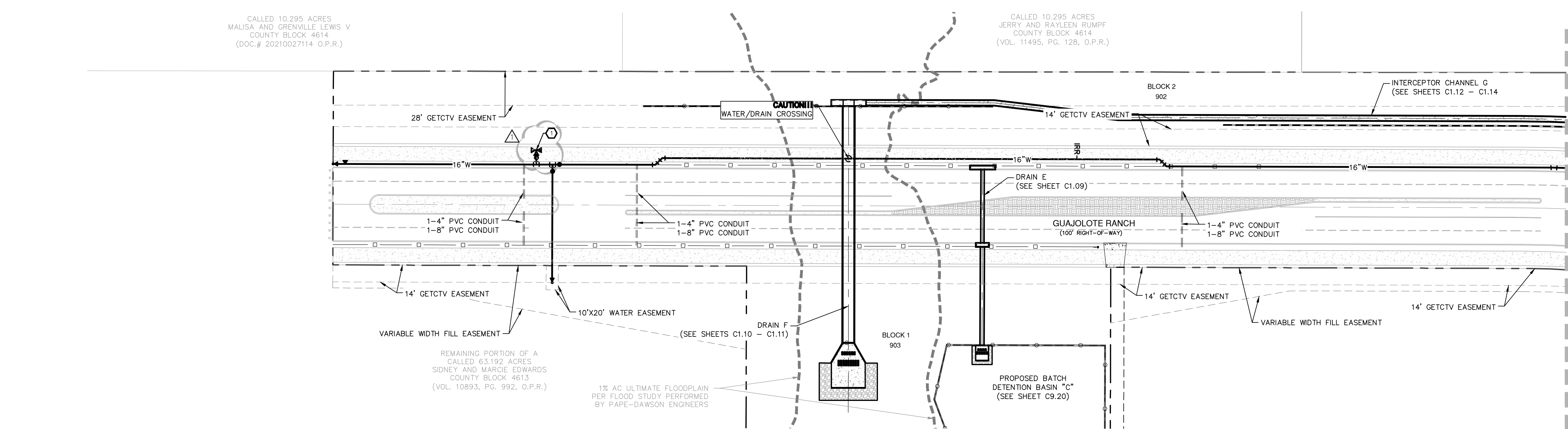
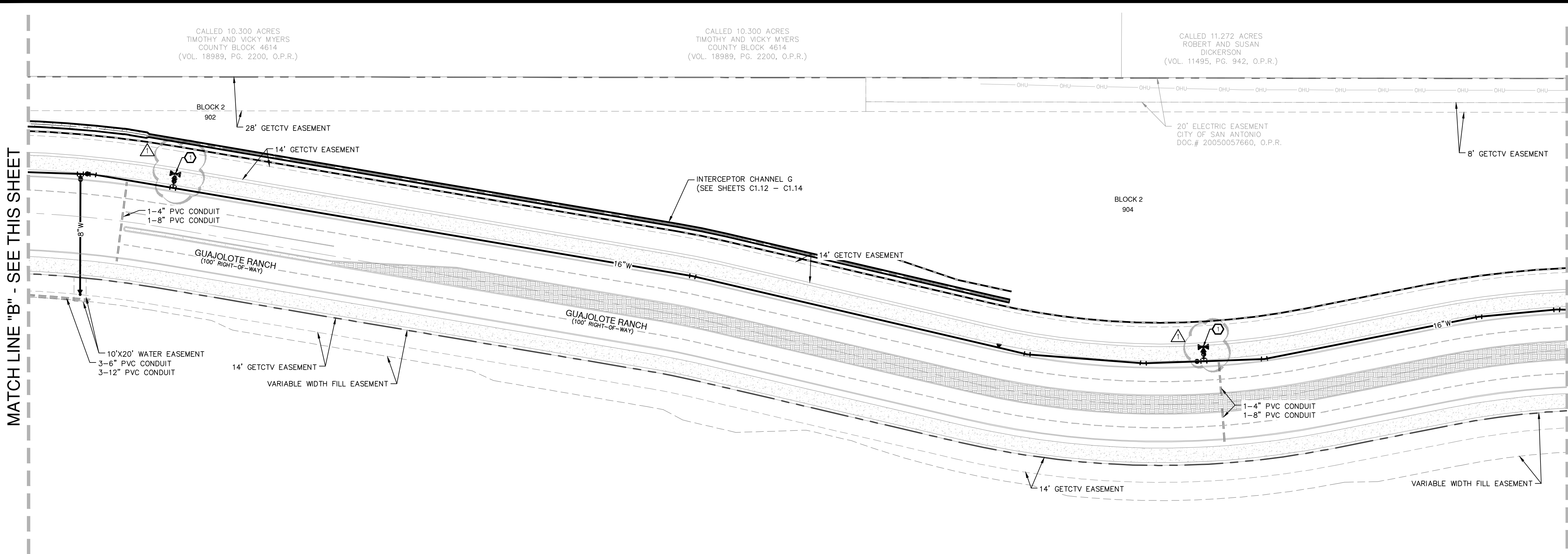
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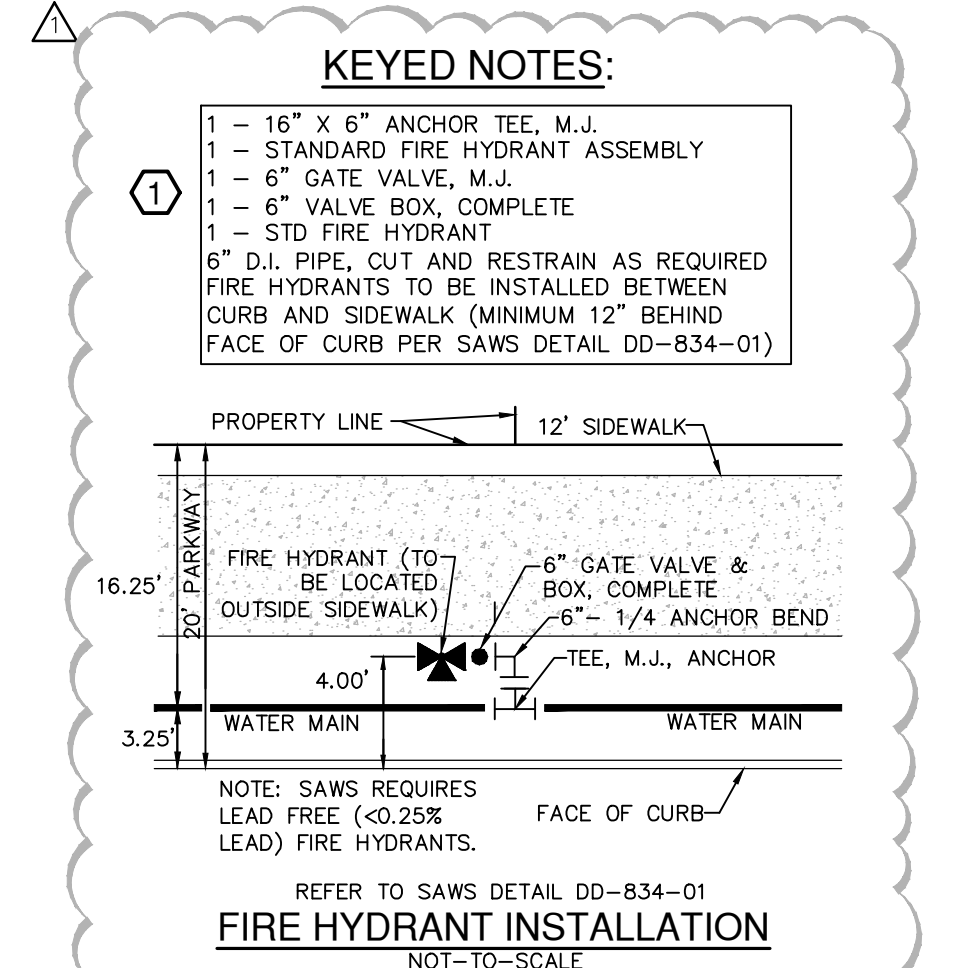
MATCH LINE "B" - SEE THIS SHEET

MATCH LINE SEE SHEET C5.00

MATCH LINE "B" - SEE THIS SHEET



UTILITY LEGEND	
PROJECT LIMITS	---
EXISTING WATER	---
PROPOSED WATER	---
STREET LIGHTS	SL
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV
TREE, SEE TREE PRESERVATION PLANS	---
100 YR FLOODPLAIN	---
RETAINING WALL	---



- CONDUIT NOTES:**
- CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
 - CONDUITS SHALL BE PVC WITH MINIMUM BURY OF 36 INCHES BELOW PROPOSED FINISHED GRADE. SCHEDULE 80 TO BE USED FOR CPS CONDUITS, ALL OTHER CONDUITS ARE SCHEDULE 40.
 - ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.
 - ALL CONDUIT SLEEVES TO BE USED FOR ELECTRIC, GAS, OR TELECOMMUNICATION UTILITY CROSSINGS SHALL BE INSTALLED TO MEET OR EXCEED DESIGN REQUIREMENTS FOR THE UTILITY AGENCY WHICH THEY ARE SERVING, INCLUDING BUT NOT LIMITED TO THE DEPTH, TRENCH PLACEMENT, AND PROXIMITY TO OTHER UTILITIES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING AND INSTALLING THE CONDUIT SLEEVES TO MEET THESE SPECIFICATIONS INCLUDING COORDINATING WITH THE UTILITY AGENCY FOR ANY REQUIRED INSPECTIONS.

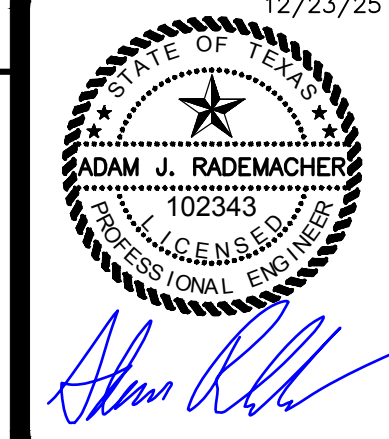
TRENCH EXCAVATION SAFETY PROTECTION:

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 SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBARR, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-468-7855 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NO.	REVISION	DATE
1	REVISED FIRE HYD. INSTALLATION	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
OVERALL UTILITY PLAN
SHEET 2 OF 2

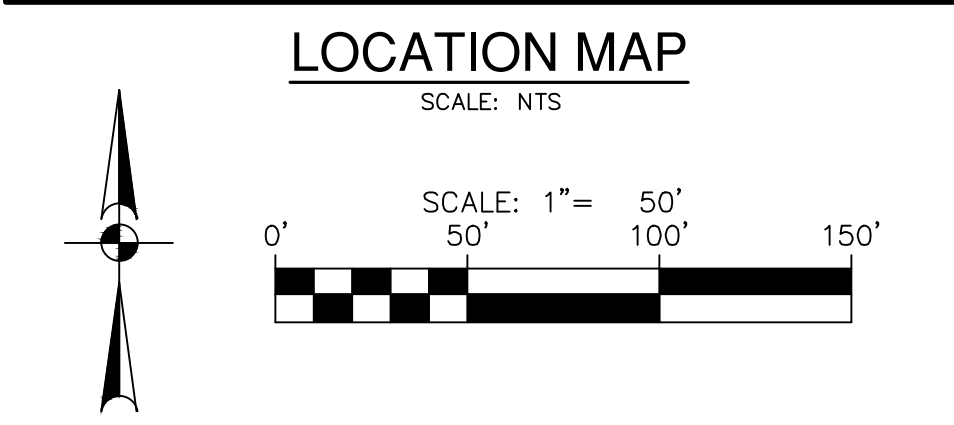
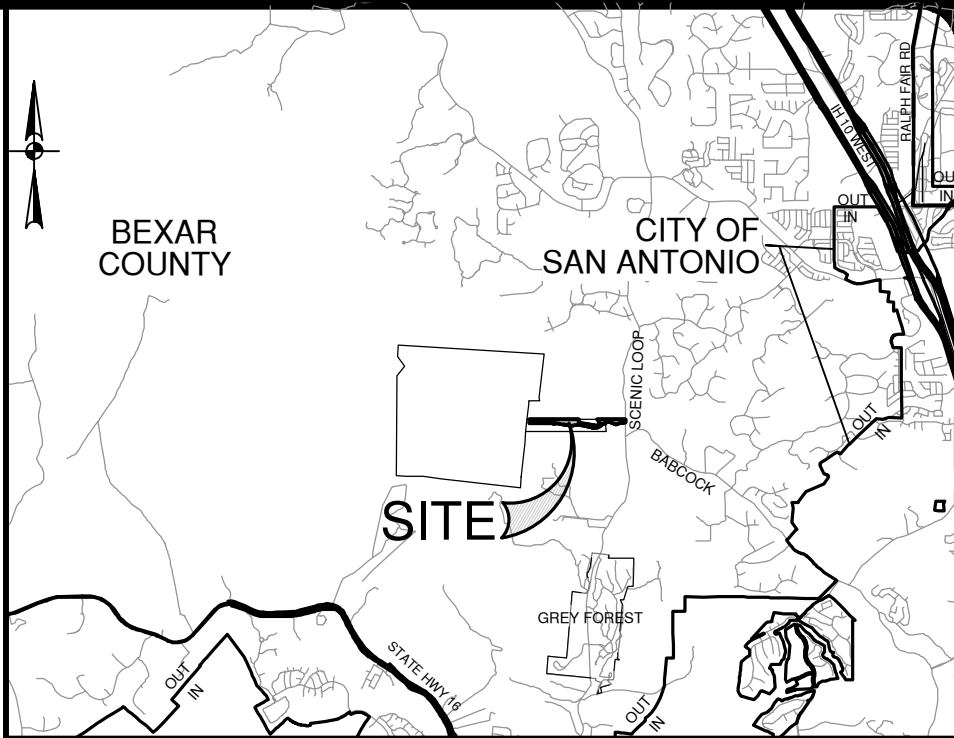
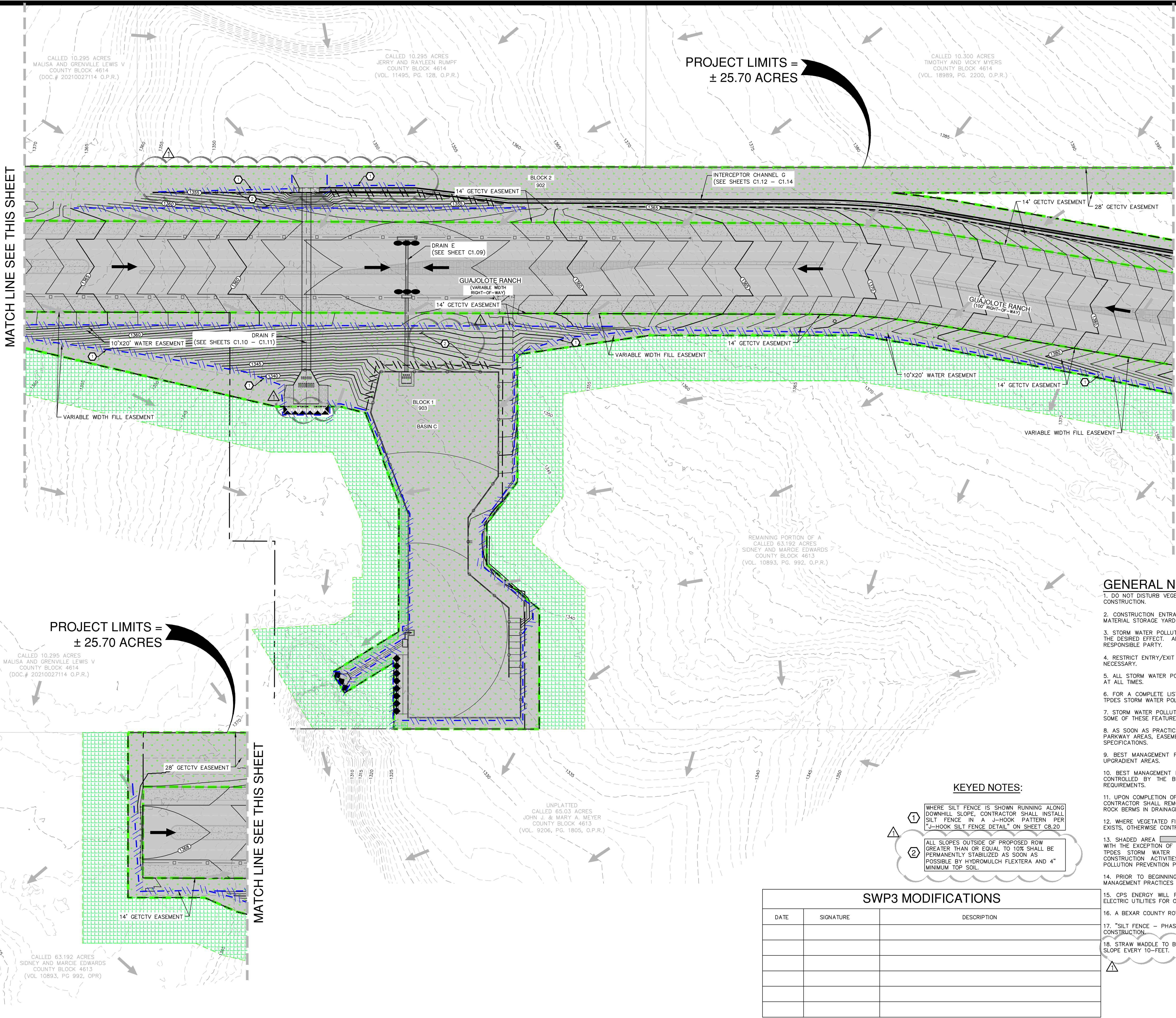
PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C5.01

Date: Dec 21, 2025, 2:17pm User ID: chubert
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MATCH LINE SEE THIS SHEET

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GENERAL NOTES

- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
- CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
- STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
- RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
- ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
- FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
- STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
- AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
- BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
- BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
- UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
- WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
- SHADED AREA DENOTES LIMITS OF DISTURBED AREAS, OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.
- CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.
- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN ANY BEXAR COUNTY ROW.
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KEYED NOTES:

- WHERE "SILT FENCE" IS SHOWN RUNNING ALONG DOWNHILL SLOPE, CONTRACTOR SHALL INSTALL SILT FENCE IN A "J-HOOK" PATTERN PER "J-HOOK SILT FENCE DETAIL" ON SHEET C8.20
- ALL SLOPES OUTSIDE OF PROPOSED ROW GREATER THAN OR EQUAL TO 10% SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE BY HYDROMULCH FLEXTERA AND 4" MINIMUM TOP SOIL.

SWP3 MODIFICATIONS

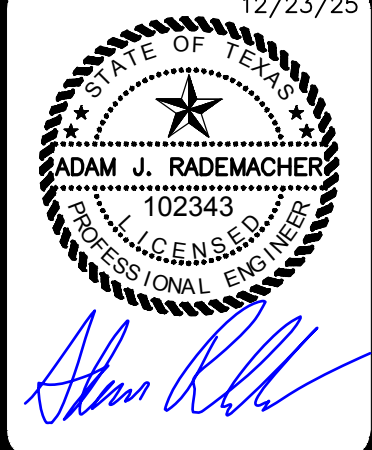
DATE	SIGNATURE	DESCRIPTION

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

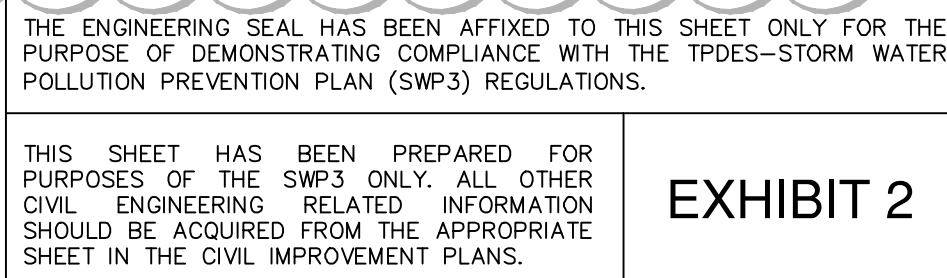
NO.	REVISION	DATE
1	REVISED BMP MEASURES	12/23/25



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
STORM WATER POLLUTION PREVENTION PLAN
SHEET 1 OF 4

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C8.00



PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JK
SHEET C8.01

MATCH LINE SEE SHEET C8.02

1 WHERE SILT FENCE IS SHOWN RUNNING ALONG DOWNHILL SLOPE, CONTRACTOR SHALL INSTALL SILT FENCE IN A J-HOOK PATTERN PER "J-HOOK SILT FENCE DETAIL" ON SHEET C8.20

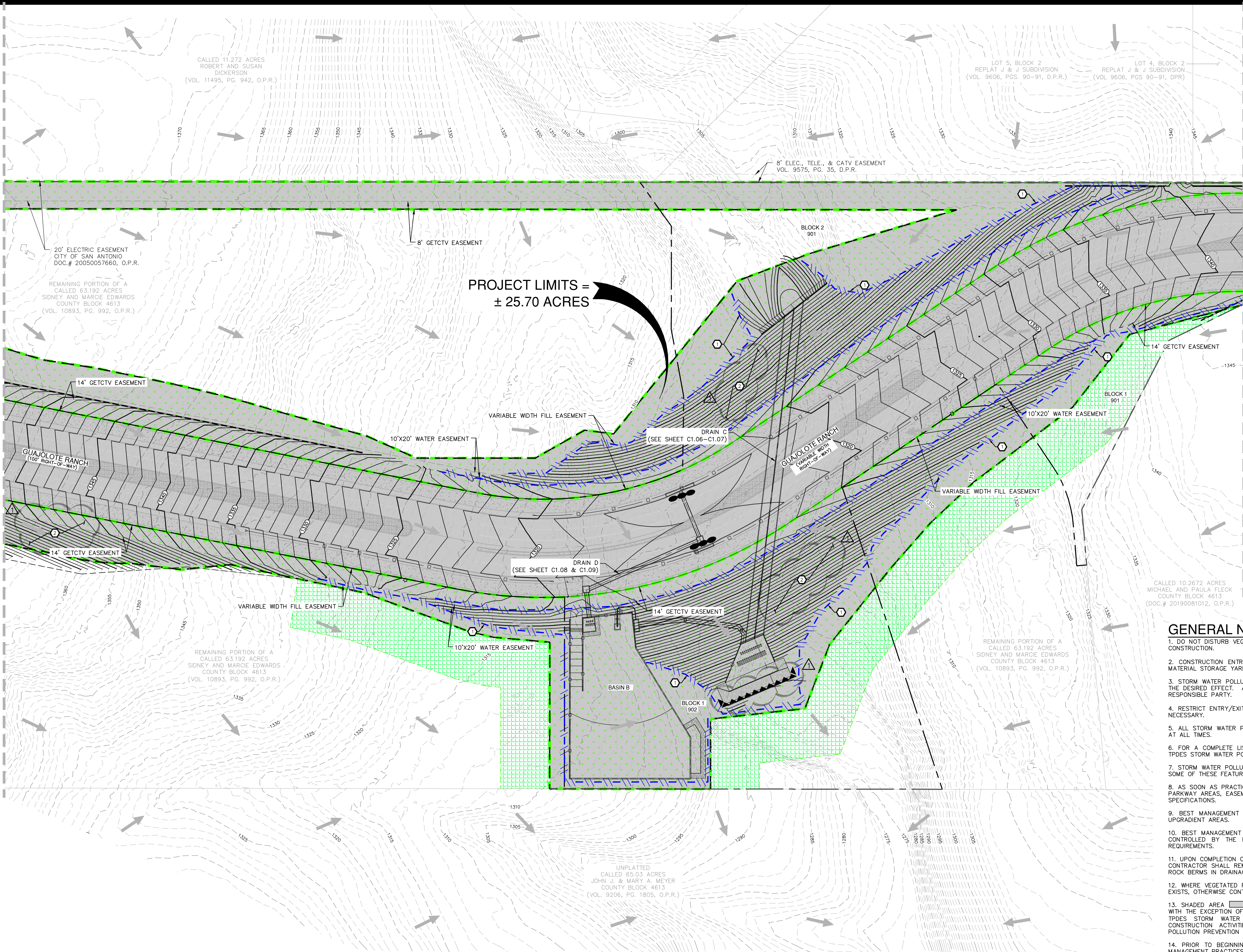
2 ALL SLOPES OUTSIDE OF PROPOSED ROW GREATER THAN OR EQUAL TO 10% SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE BY HYDROMULCH FLEXTERA AND 4" MINIMUM TOP SOIL.

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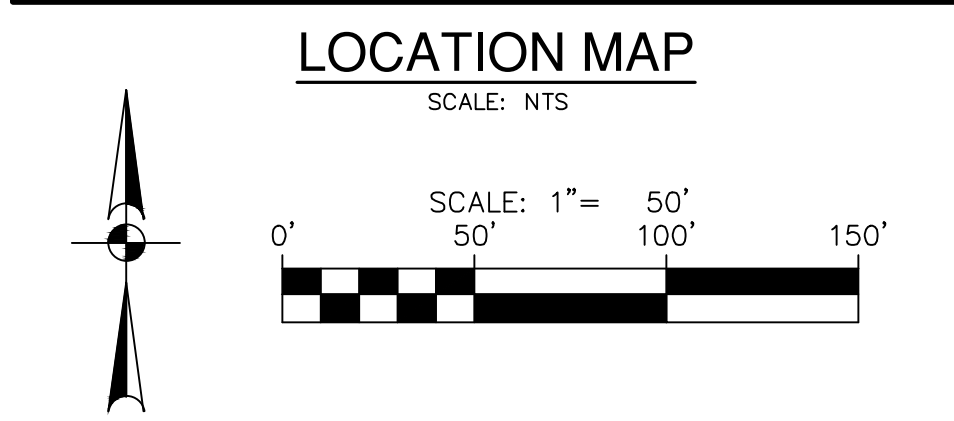
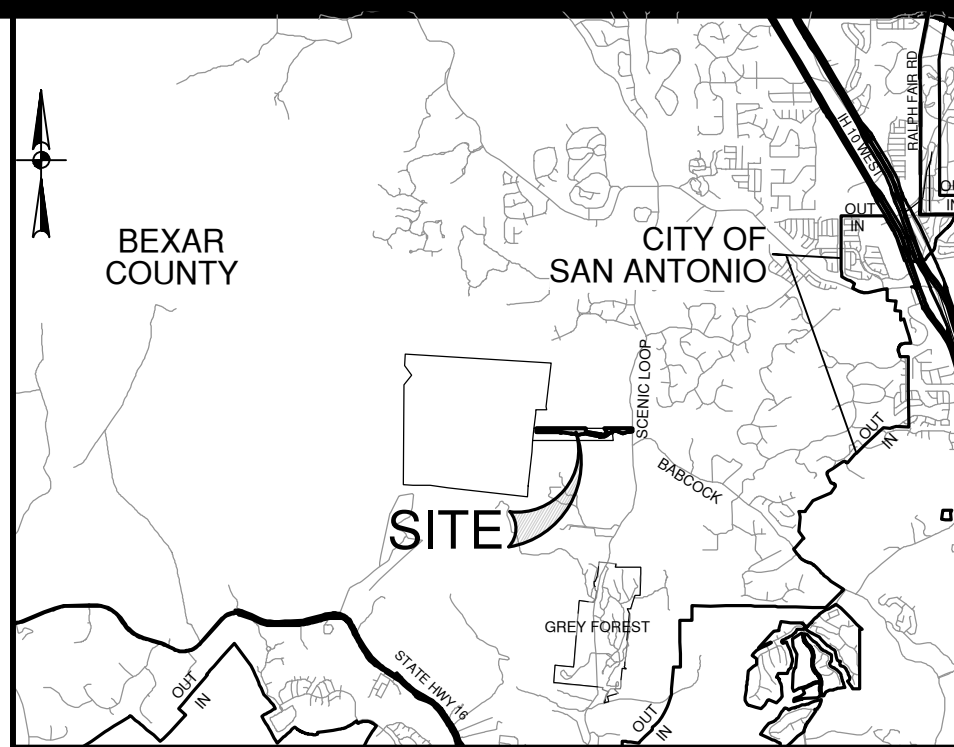
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MATCH LINE SEE SHEET C8.01



MATCH LINE SEE SHEET C8.03



SWPPP LEGEND

PROPERTY LINE	---
EXISTING CONTOUR	---1376---
PROPOSED CONTOUR	---1375---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE - PHASE 1	
SILT FENCE - PHASE 1 & 2 (SEE NOTE 17)	
ROCK BERM (18")	◆◆◆
TXDOT TYPE 3 ROCK BERM (36")	◆◆◆
GRAVEL FILTER BAGS	◆◆◆
GRATE INLET PROTECTION	◆◆◆
SEDIMENT CONTROL ROLLS	◆◆◆
LIMITS OF DISTURBED AREA	◆◆◆
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	◆◆◆
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	◆◆◆
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	◆◆◆
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	◆◆◆
NATIVE VEGETATED FILTER STRIP (SHOWN AS 50-FT WHERE POSSIBLE) (CONTRACTOR SHALL NOT DISTURB)	◆◆◆

GENERAL NOTES

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KEYED NOTES:

- WHERE SILT FENCE IS SHOWN RUNNING ALONG DOWNHILL SLOPE, CONTRACTOR SHALL INSTALL SILT FENCE IN A J-HOOK PATTERN PER "J-HOOK SILT FENCE DETAIL" ON SHEET C8.20
- ALL SLOPES OUTSIDE OF PROPOSED ROW GREATER THAN OR EQUAL TO 10% SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE BY HYDROMULCH FLEXTERA AND 4" MINIMUM TOP SOIL.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

EXHIBIT 2

NO. 1
REVISION
12/23/25

DATE
12/23/25

12/23/25

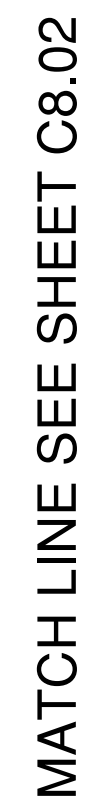
ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER
TEXAS
Adam Rademacher

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

STORMWATER POLLUTION PREVENTION PLAN
SHEET 3 OF 4

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED *JD* DRAWN *JD*
SHEET C8.02



PROPERTY LINE	-----
EXISTING CONTOUR	----- -1376-
PROPOSED CONTOUR	----- (1375) -----
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE - PHASE 1	--- --- --- --- --- ---
SILT FENCE - PHASE 1 & 2 (SEE NOTE 17)	--- --- --- --- --- ---
ROCK BERM (18")	◆◆◆
TXDOT TYPE 3 ROCK BERM (36")	▲▲▲
GRAVEL FILTER BAGS	●●●
GRATE INLET PROTECTION	●●●●●
SEDIMENT CONTROL ROLLS	▨▨▨▨▨▨▨▨▨▨
LIMITS OF DISTURBED AREA	▬▬▬▬▬▬▬▬▬▬
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	▨▨▨▨▨▨▨▨▨▨
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	▨▨▨▨▨▨▨▨▨▨
CONCRETE TRUCK WASH--OUT PIT (FIELD LOCATE)	▨▨▨▨▨▨▨▨▨▨
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	▨▨▨▨▨▨▨▨▨▨
NATIVE VEGETATED FILTER STRIP (SHOWN AS 50'-FT WHERE POSSIBLE) (CONTRACTOR SHALL NOT DISTURB)	▨▨▨▨▨▨▨▨▨▨

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TYPES STORM WATER POLLUTION PREVENTION PLAN.
7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PAVING, ASPHALT, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADATION AREAS.
10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TYPES REQUIREMENTS.
11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
13. SHADED AREA [] DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TYPES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
14. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TYPOT RIGHT-OF-WAY WITH TYPOT.
15. CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.
16. A BEAXOR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN ANY BEAXOR COUNTY ROW.
17. "SILT FENCE - PHASES 1 & 2" IS TO BE INSTALLED PRIOR TO CONSTRUCTION AND THEN REPLACED AFTER CONSTRUCTION.
18. STRAW WADDE TO BE INSTALLED ON TOP OF WALLS AND ON TOP OF STEEP SLOPE AREAS AND DOWN THE SLOPE EVERY 10-15 FEET.

WHERE SILT FENCE IS SHOWN RUNNING ALONG DOWNHILL SLOPE, CONTRACTOR SHALL INSTALL SILT FENCE IN A J-HOOK PATTERN PER "J-HOOK SILT FENCE DETAIL" ON SHEET C8.20

ALL SLOPES OUTSIDE OF PROPOSED ROW GREATER THAN OR EQUAL TO 10% SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE BY HYDROMULCH FLEXTERA AND 4" MINIMUM TOP SOIL.

[illegible]

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE PROJECT DOCUMENTS.

EXHIBIT 2

12/23/25



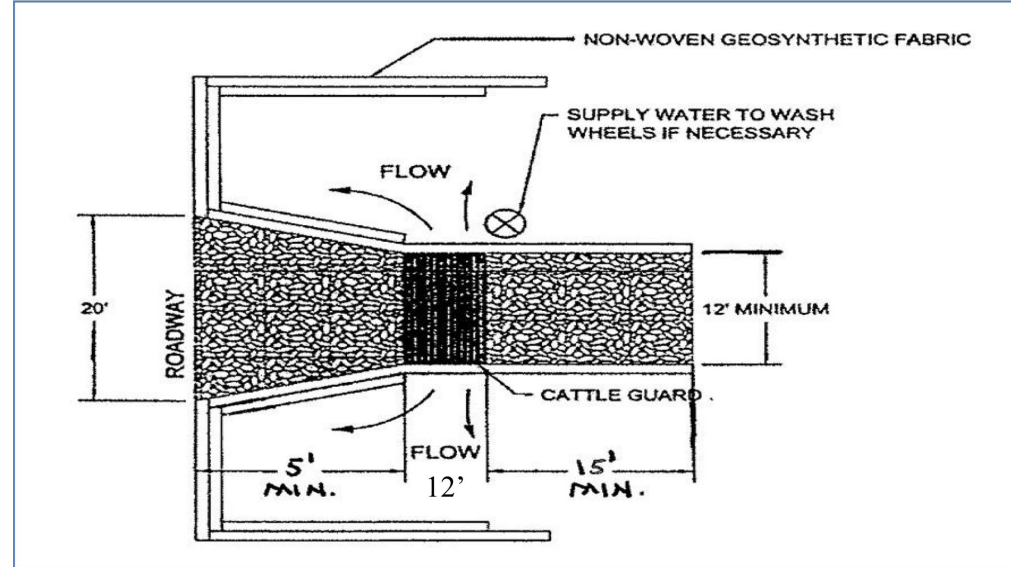
ADAM J. RADEMACHER
102343
LICENSED
PROFESSIONAL ENGINEER

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

STORMWATER POLLUTION PREVENTION PLAN
SHEET 4 OF 4

PLAT NO. 25-1180022
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JC
SHEET C8.03

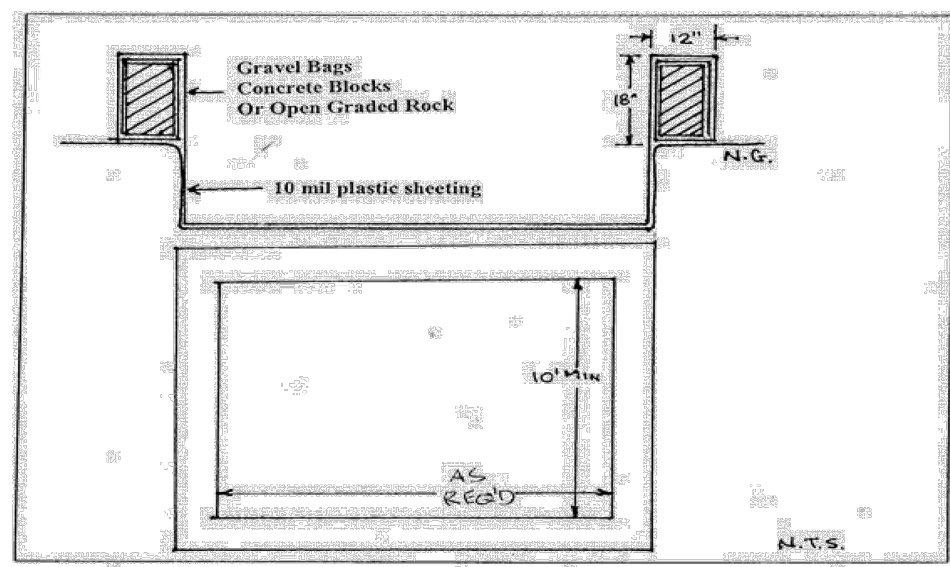
EXHIBIT F
Stabilized Construction Exit



1. THE GRID CONSISTS OF PIPES OR TUBES WITH A MINIMUM DIAMETER OF 3 INCHES, AND SPACED SUCH THAT THERE IS A MINIMUM CLEAR DISTANCE OF 4 1/2 INCHES BETWEEN THEM. ELEVATE THE GRID ABOVE THE GROUND SURFACE A MINIMUM OF 8 INCHES TO ALLOW WATER, DEBRIS AND SOIL TO DRAIN.
2. THE GRID SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF ANY AND ALL VEHICLES ENTERING AND LEAVING THE CONSTRUCTION SITE.
3. THE GRID SHALL BE FIRMLY PLACED IN THE GROUND AT THE EXIT, AND SHALL BE OF SUFFICIENT LENGTH THAT THE AGITATION WILL REMOVE THE SOIL FROM THE TIRES, OR A MINIMUM OF 12 FEET.
4. AT THE STREET SIDE APPROACH OF THE GRID, THERE SHALL BE AN IMPERVIOUS SURFACE OR IT SHALL CONSIST OF 3" x 5" ANGULAR CRUSHED STONE/ROCK 5 FEET IN LENGTH MINIMUM, AND 8 INCHES DEEP, MINIMUM. ON THE JOB SITE SIDE OF THE GRID, THERE SHALL BE 3" x 5" ANGULAR CRUSHED STONE/ROCK 15 FEET IN LENGTH, MINIMUM, 8 INCHES DEEP, MINIMUM. THE STEEL GRID WILL BE BETWEEN THE STREET SIDE APPROACH AND THE JOB SITE. CRUSHED STONE/ROCK, ALL CRUSHED STONE/ROCK SHALL HAVE FILTER FABRIC PLACED BENEATH IT.
5. THE STEEL GRID AREA SHALL BE USED AS THE TIRE WASH AREA. WHEN TIRE WASH IS IN USE (RAINY OR MUDDY DAYS), THE AREA SHALL BE MANNED AND THE TIRES SHALL BE WASHED USING A HIGH PRESSURE HOSE/NOZZLE.
6. THE AREA BENEATH THE GRID SHALL BE SLOPED SUCH THAT DEBRIS, SOIL AND WATER SHALL BE DIVERTED BACK ON TO THE CONSTRUCTION SITE OR TO A SEDIMENT BASIN. NO WATER, SOIL OR DEBRIS SHALL LEAVE THE CONSTRUCTION SITE, AND THE RESULTING DISCHARGE SHALL BE DISPOSED OF PROPERLY.

08/01/13 Issuance
06/02/14 Revision
Section 01 57 23
Page 24 of 25

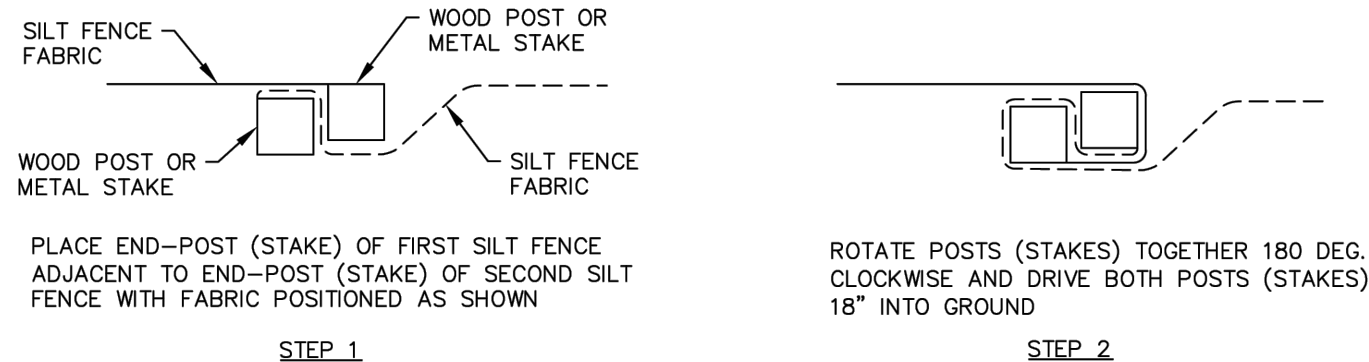
EXHIBIT G
Concrete Truck Washout



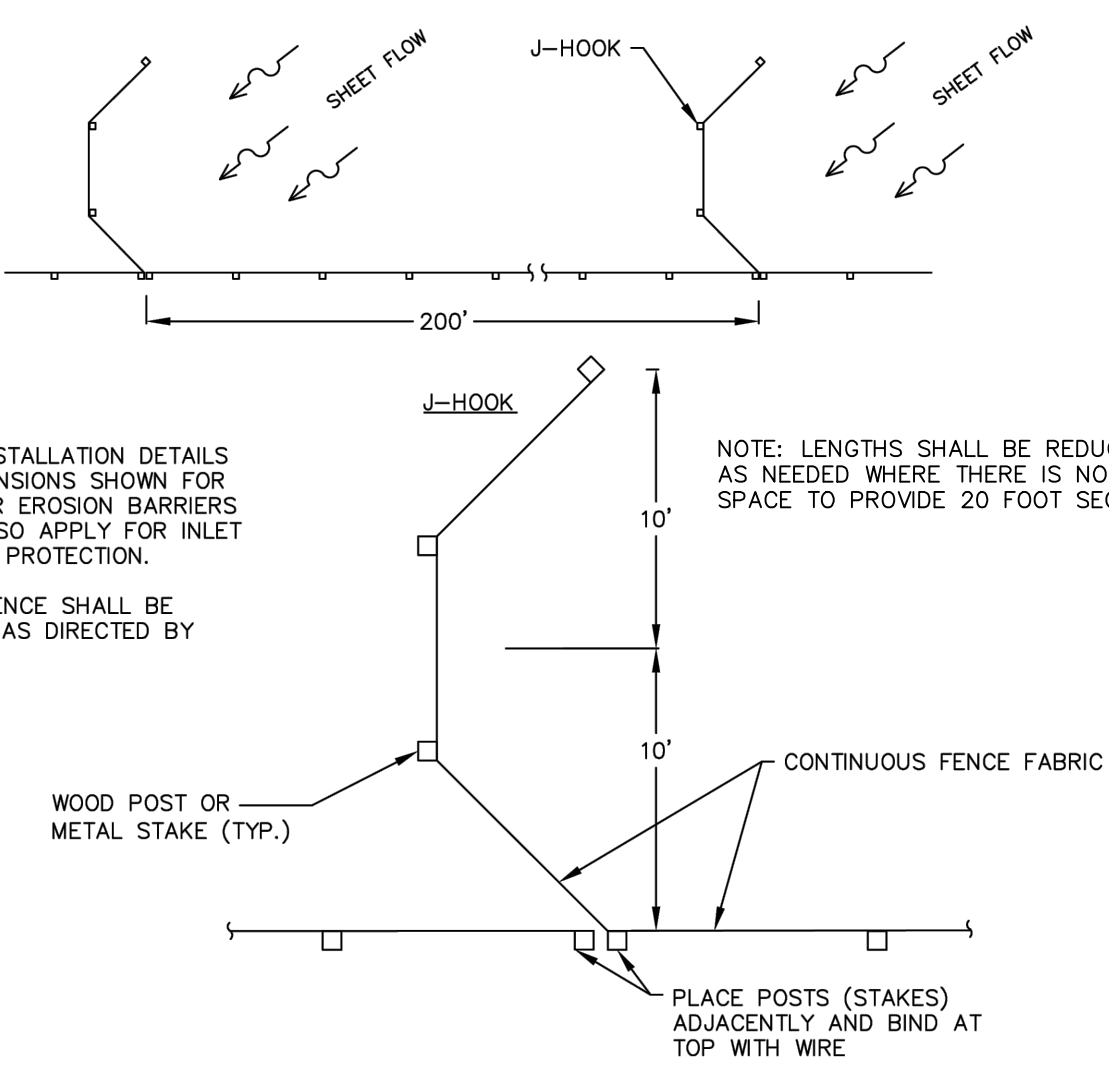
1. THE EXCAVATION FOR THE CONCRETE TRUCK WASHOUT SHALL BE A MINIMUM OF 10 FEET WIDE AND OF SUFFICIENT LENGTH AND DEPTH TO ACCOMMODATE 7 GALLONS OF WASHOUT WATER AND CONCRETE PER TRUCK PER DAY AND/OR 50 GALLONS OF WASHOUT WATER AND CONCRETE PER PUMP TRUCK PER DAY.
2. IN THE EVENT THAT THE CONCRETE TRUCK WASHOUT IS CONSTRUCTED ABOVE GROUND, IT SHALL BE 10 FEET WIDE AND 10 FEET LONG, WITH THE SAME REQUIREMENTS FOR CONTAINMENT AS DESCRIBED IN ITEM 1.
3. THE CONTAINMENT AREA SHALL BE LINED WITH 10 MIL PLASTIC SHEETING WITHOUT HOLES OR TEARS, WHERE THERE ARE SEAMS, THESE SHALL BE SECURED ACCORDING TO MANUFACTURERS' DIRECTIONS.
4. THE BERM CONSISTING OF GRAVEL BAGS, CONCRETE BLOCKS OR OPEN GRADED ROCK SHALL BE NO LESS THAN 18 INCHES HIGH AND NO LESS THAN 12 INCHES WIDE.
5. THE PLASTIC SHEETING SHALL BE OF SUFFICIENT SIZE SO THAT IT WILL OVERLAP THE TOP OF THE CONTAINMENT AREA AND BE WRAPPED AROUND THE GRAVEL BAGS, CONCRETE BLOCKS OR OPEN GRADED ROCK AT LEAST 2 TIMES.
6. THE GRAVEL BAGS OR CONCRETE BLOCKS SHALL BE PLACED ABUTTING EACH OTHER TO FORM A CONTINUOUS BERM AROUND THE OUTER PERIMETER OF THE CONTAINMENT AREA.
7. THE WASHOUT MATERIAL IN THE CONTAINMENT AREA SHALL NOT EXCEED 50% OF CAPACITY AT ANY ONE TIME.
8. SOLIDS SHALL BE REMOVED FROM CONTAINMENT AREA AND DISPOSED OF PROPERLY. ANY DAMAGE TO THE PLASTIC SHEETING SHALL BE REPAIRED OR SHEETING REPLACED BEFORE THE NEXT USE.

08/01/13 Issuance
07/26/13 Revision
Section 01 57 23
Page 25 of 25

ATTACHING TWO SILT FILTER FENCES
(NOT APPLICABLE FOR J-HOOKS)



SILT FILTER J-HOOK PLACEMENT



NOTES:

1. THE INSTALLATION DETAILS AND DIMENSIONS SHOWN FOR PERIMETER EROSION BARRIERS SHALL ALSO APPLY FOR INLET AND PIPE PROTECTION.
2. SILT FENCE SHALL BE REMOVED AS DIRECTED BY ENGINEER.

NOTE: LENGTHS SHALL BE REDUCED AS NEEDED WHERE THERE IS NOT ADEQUATE SPACE TO PROVIDE 20 FOOT SECTIONS.

J-HOOK SILT FENCE DETAIL

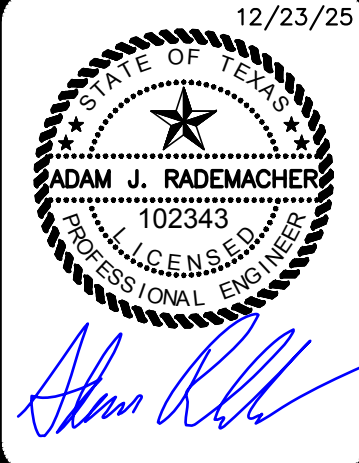
NOT-TO-SCALE

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 3

NO.	REVISION	DATE
1	ADDED DETAILS	12/23/25



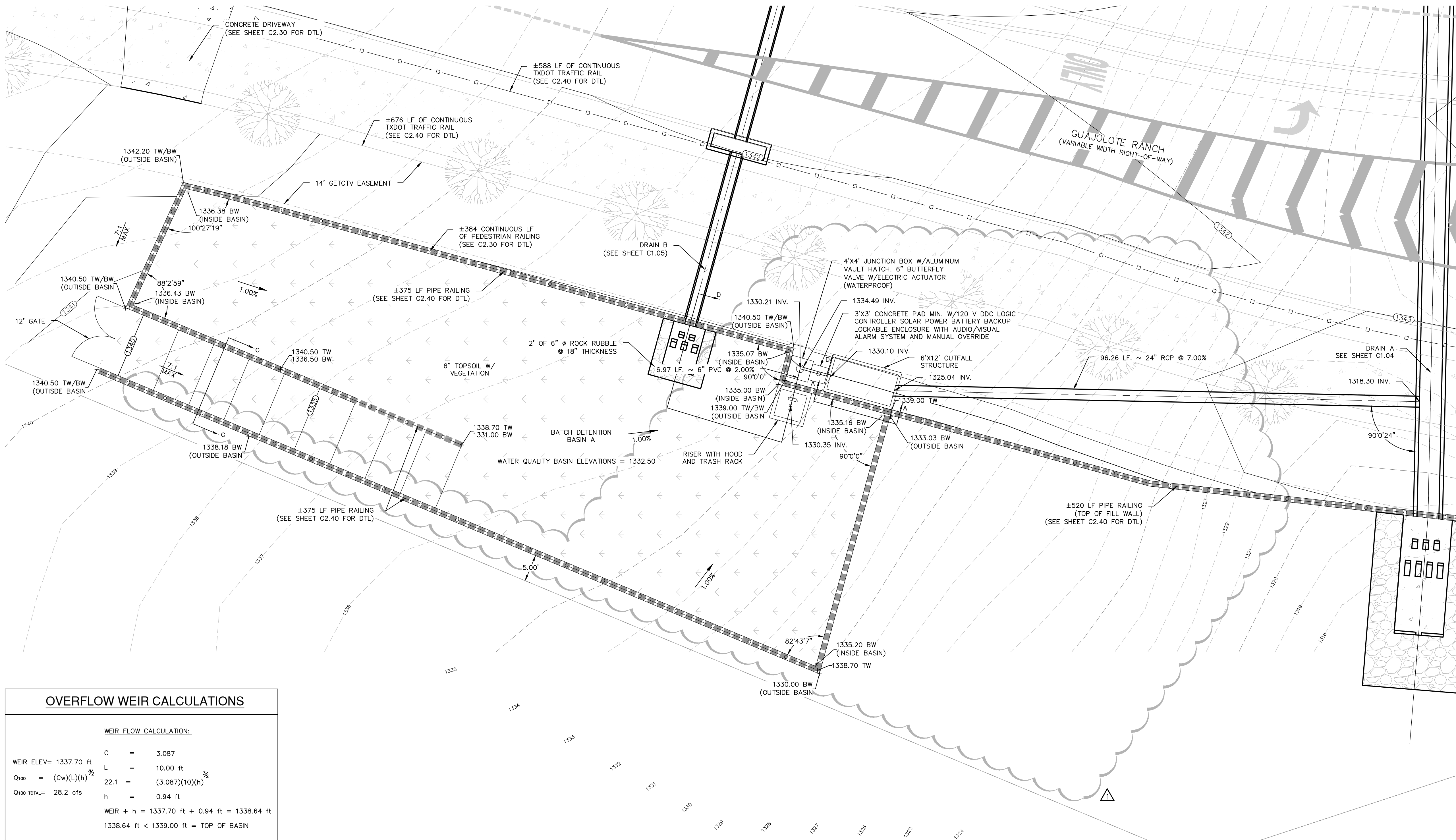
PAPE-DAWSON
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 1 TEXAS SURVEYING FIRM #10028800

GUAJALOTE RANCH COLLECTOR PHASE 1

BEAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS
SHEET 2 OF 2

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C8.20



OVERFLOW WEIR CALCULATIONS			
WEIR FLOW CALCULATION:			
WEIR ELEV= 1337.70 ft	C	=	3.087
$Q_{100} = (C_w)(L)(h)^{3/2}$	L	=	10.00 ft
$Q_{100} \text{ TOTAL} = 28.2 \text{ cfs}$	22.1	=	$(3.087)(10)(h)^{3/2}$
	h	=	0.94 ft
WEIR + h = 1337.70 ft + 0.94 ft = 1338.64 ft			
1338.64 ft < 1339.00 ft = TOP OF BASIN			

TRENCH EXCAVATION SAFETY 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 SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

FLOODPLAIN NOTE

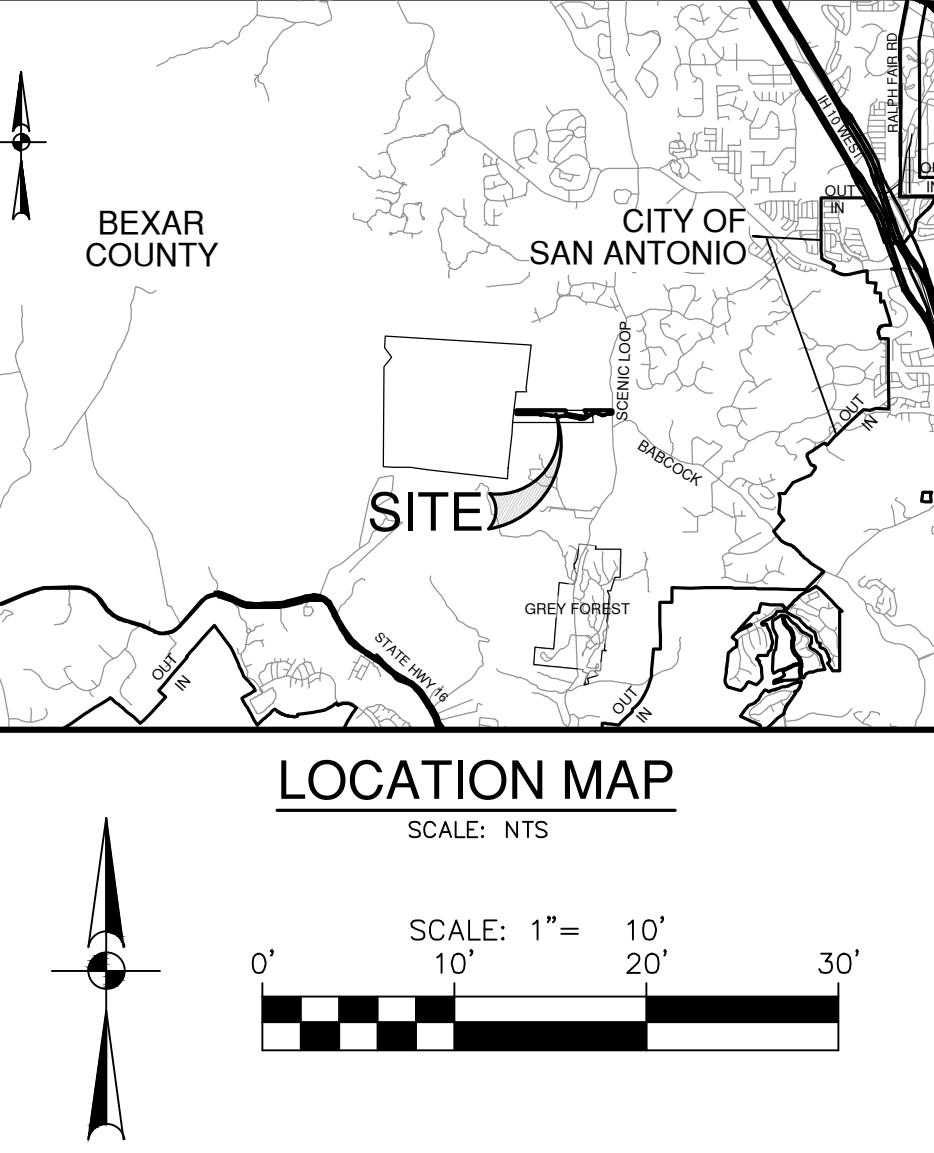
NO PORTION OF ANY LOT ON THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0245F EFFECTIVE DATE 11/02/2007.

DRAINAGE LEGEND

PROJECT LIMITS	
100 YR UD FLOODPLAIN	
EXISTING CONTOUR	
PROPOSED CONTOUR	
TOP OF BERM	
BOTTOM OF BERM	
TOP OF WALL	
TOP OF BERM	
PROPOSED SWALE	
PROPOSED WALL (REF GRADING PLANS FOR WALL TYPES)	
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	
PROPOSED CONCRETE	
PROPOSED ROCK RUBBLE	
PROPOSED STORM DRAIN	

DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
8. GUADALUPE COUNTY DOES NOT MAINTAIN SIDEWALKS, CURB AND GUTTER, CURB RAMPS, PAVERS, LUMINARIES, STORM SEWER, OR DETENTION APPURTENANCES.
9. MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF DRAINAGE STRUCTURES, PONDS, AND EASEMENTS DESIGNATED WITHIN THE SUBJECT PROPERTY. MAINTENANCE RESPONSIBILITY FOR DRAINAGE WILL NOT BE ACCEPTED BY THE COUNTY OTHER THAN THAT ACCEPTED IN CONNECTION WITH DRAINING OR PROTECTING THE ROAD SYSTEM. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS WILL REMAIN WITH THE MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY.



DATE
12/23/25

NO. REVISION
1 REVISED BASIN DESIGN

12/23/25

Adam J. Rademacher

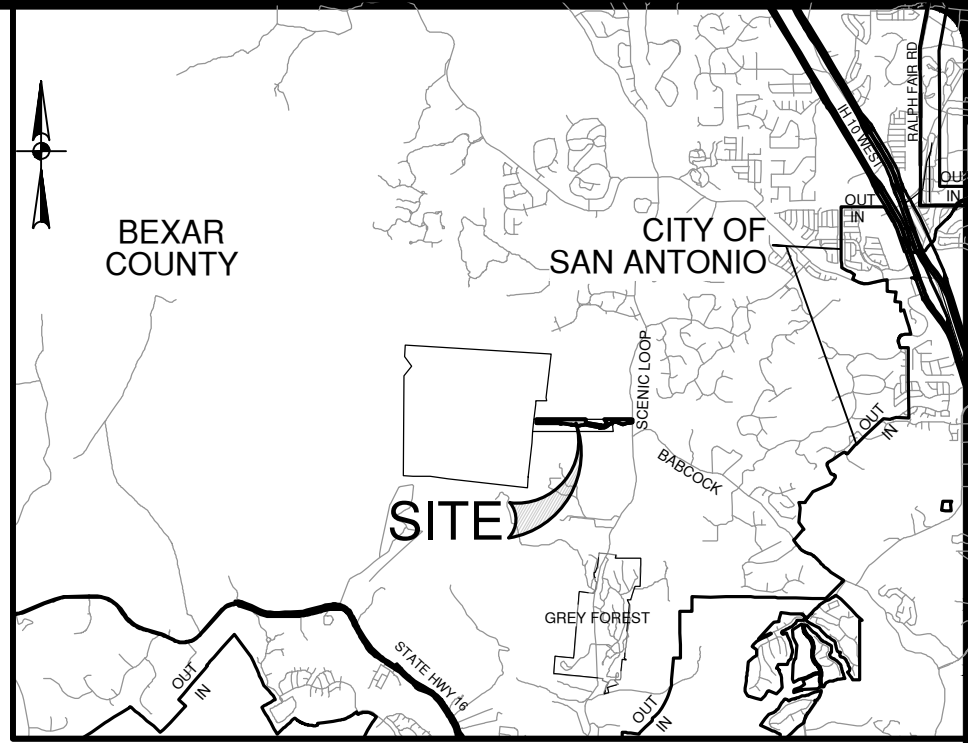
PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
BASIN A

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER JA
CHECKED *JB* DRAWN JQ
SHEET C9.00

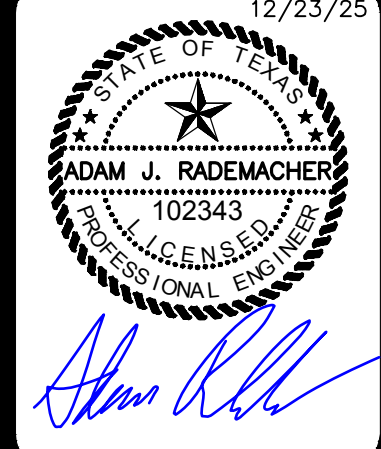
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LOCATION MAP
SCALE: NTS

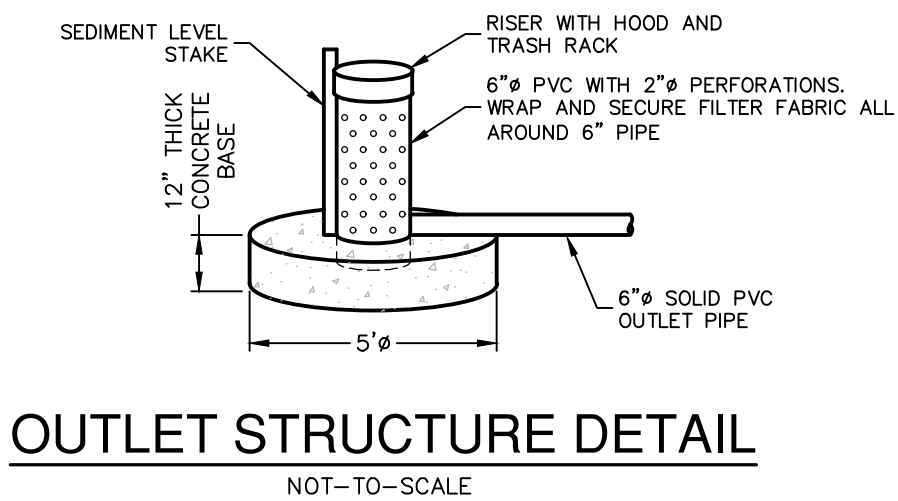
NO.	REVISION	DATE
1	REVISED BASIN DETAILS	12/23/25



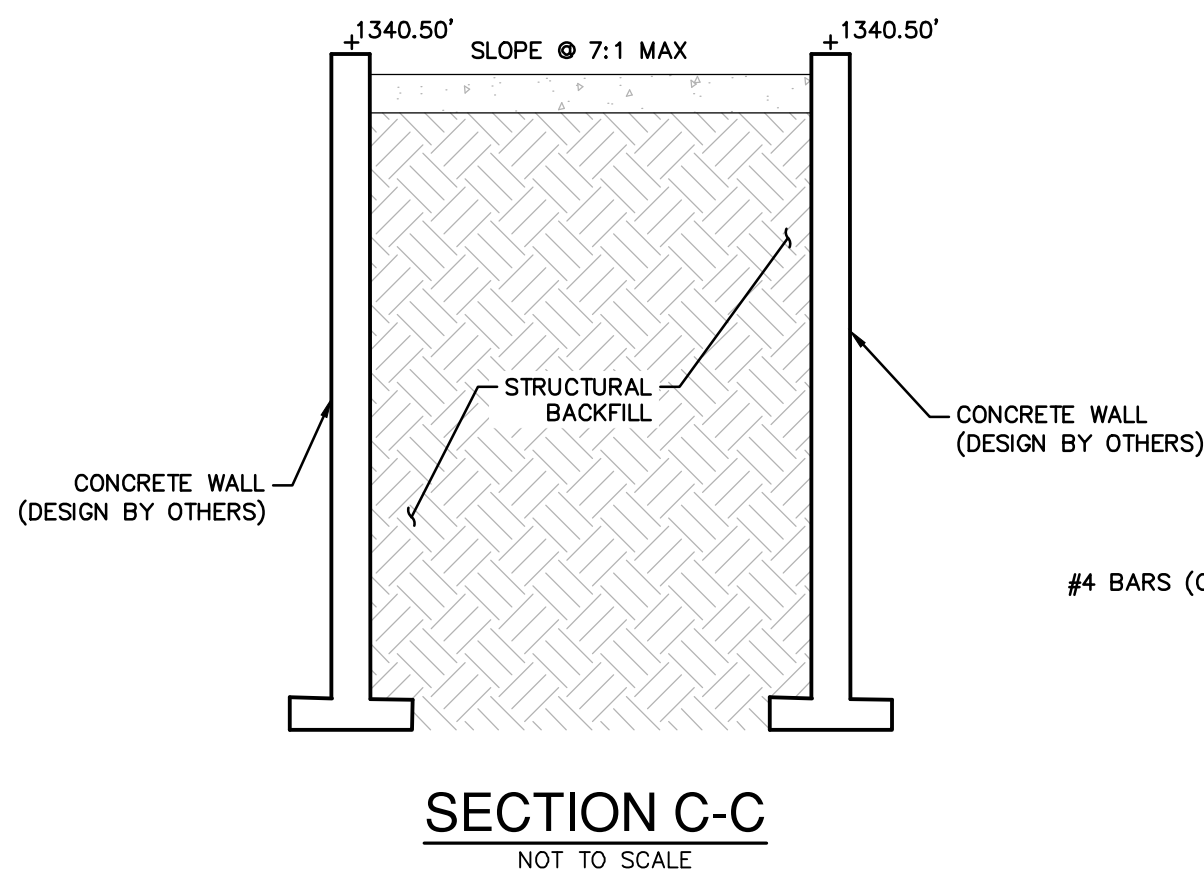
PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
BASIN A DETAILS

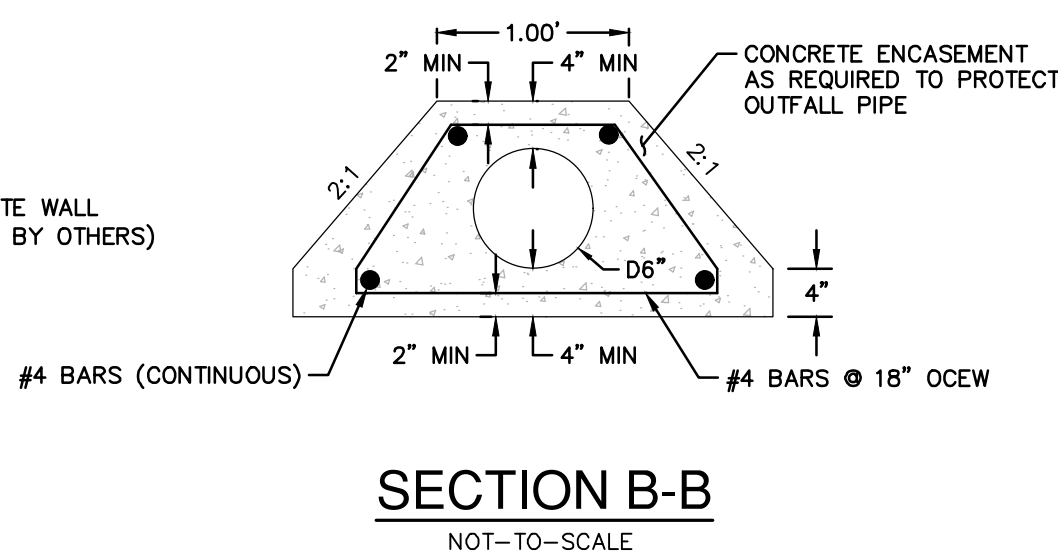
PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C9.01



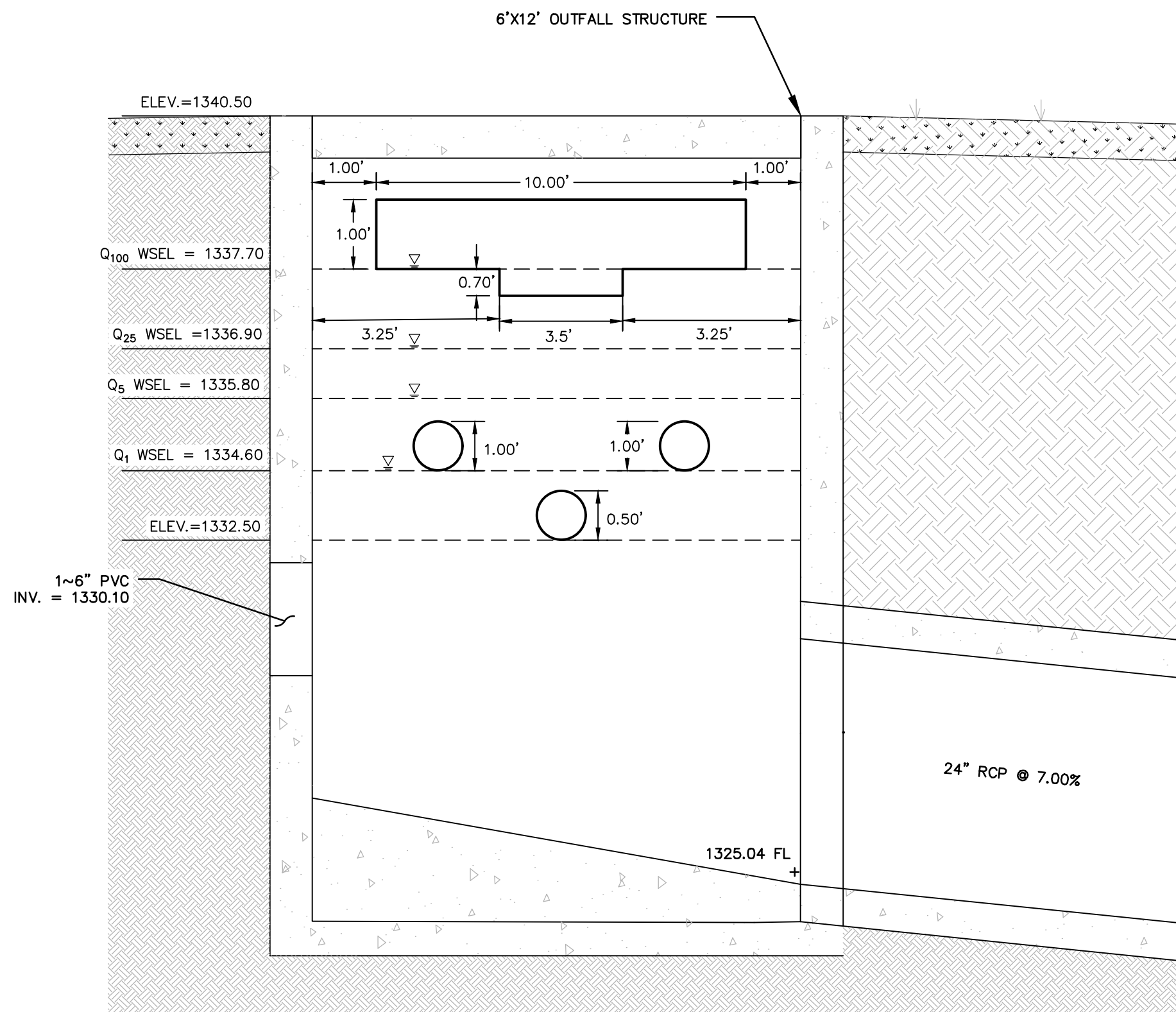
OUTLET STRUCTURE DETAIL
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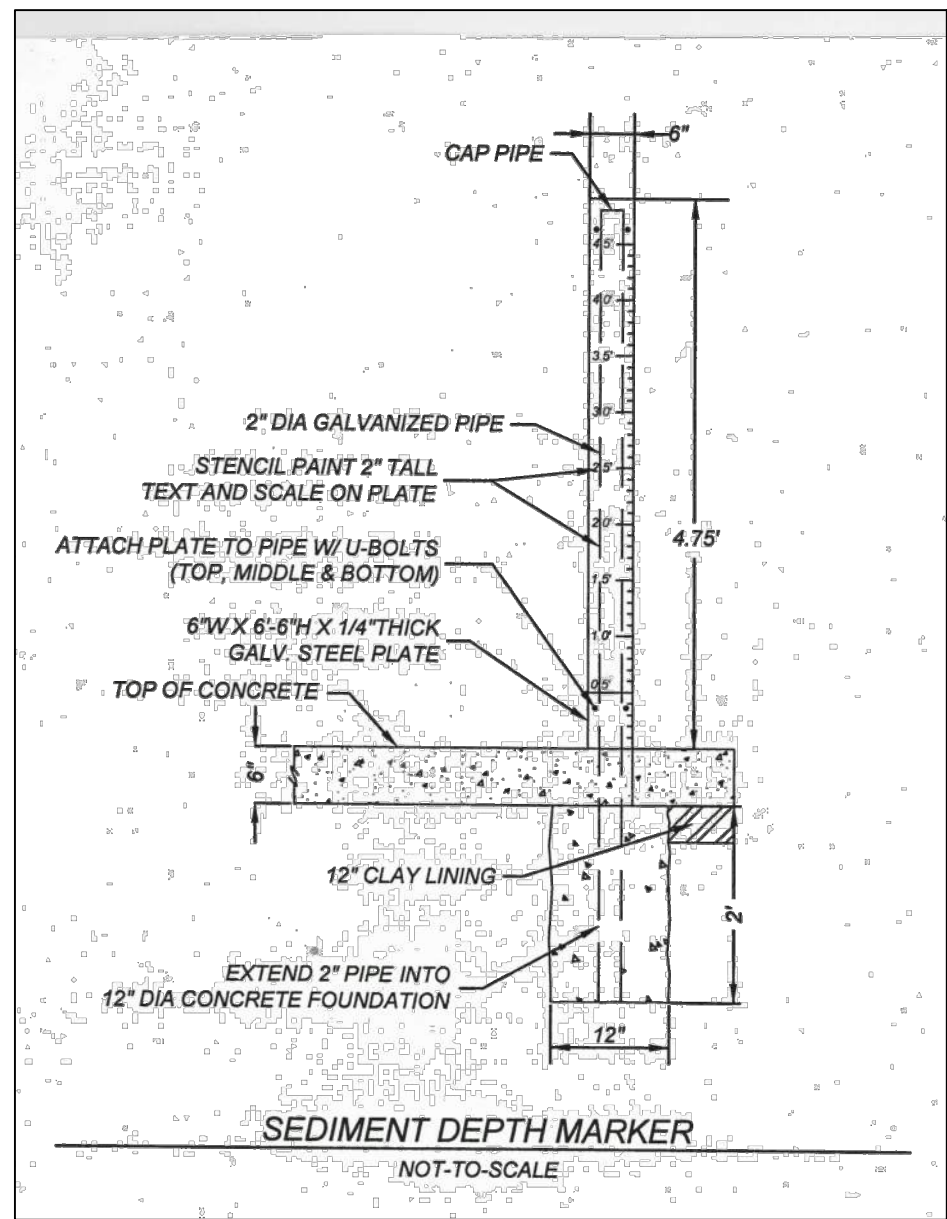
SECTION C-C
NOT TO SCALE



SECTION B-B
NOT-TO-SCALE



SECTION "A-A"
NOT TO SCALE



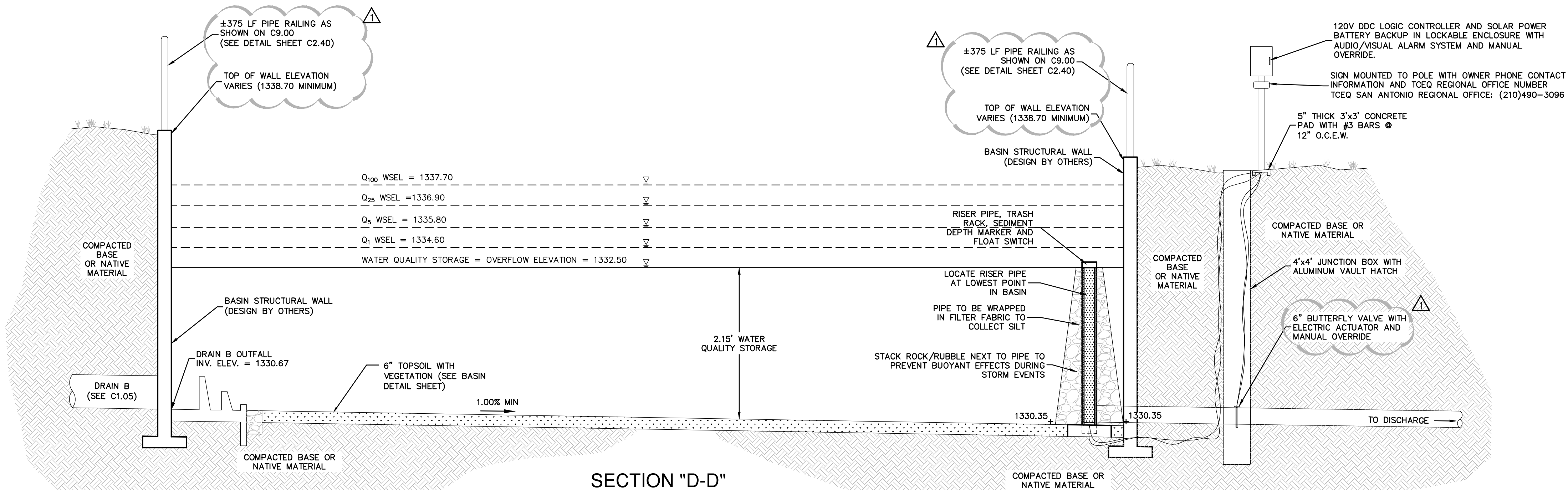
SEDIMENT DEPTH MARKER
NOT-TO-SCALE

NOTES TO CONTRACTOR FOR EACH PHASE OF BASIN CONSTRUCTION

- CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.
- CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:
 - REINFORCING STEEL FOR BASIN OVERFLOW WALL OR RIP-RAP HAS BEEN SET. CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.
 - BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).
- WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.
 - TOP OF BANK/WALL AT EACH CORNER OF BASIN
 - TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
 - SPLASH PAD/INLET PIPES
 - OVERFLOW WEIR
- UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:
 - TOP OF BANK/WALL AT EACH CORNER OF BASIN
 - TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
 - SPLASH PAD/INLET PIPES
 - OVERFLOW WEIR
- BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.
- THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 48 HOURS. THE CONTRACTOR SHALL RESTRICT THE FLOW THROUGH THE BASIN BY ADJUSTING THE GATE VALVE ON THE DISCHARGE PIPE SO AS TO PROVIDE THE MINIMUM 48 HOUR DRAIN-DOWN TIME.

NOTES:

- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
- UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTER STRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
- ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.



SECTION "D-D"
N.T.S.

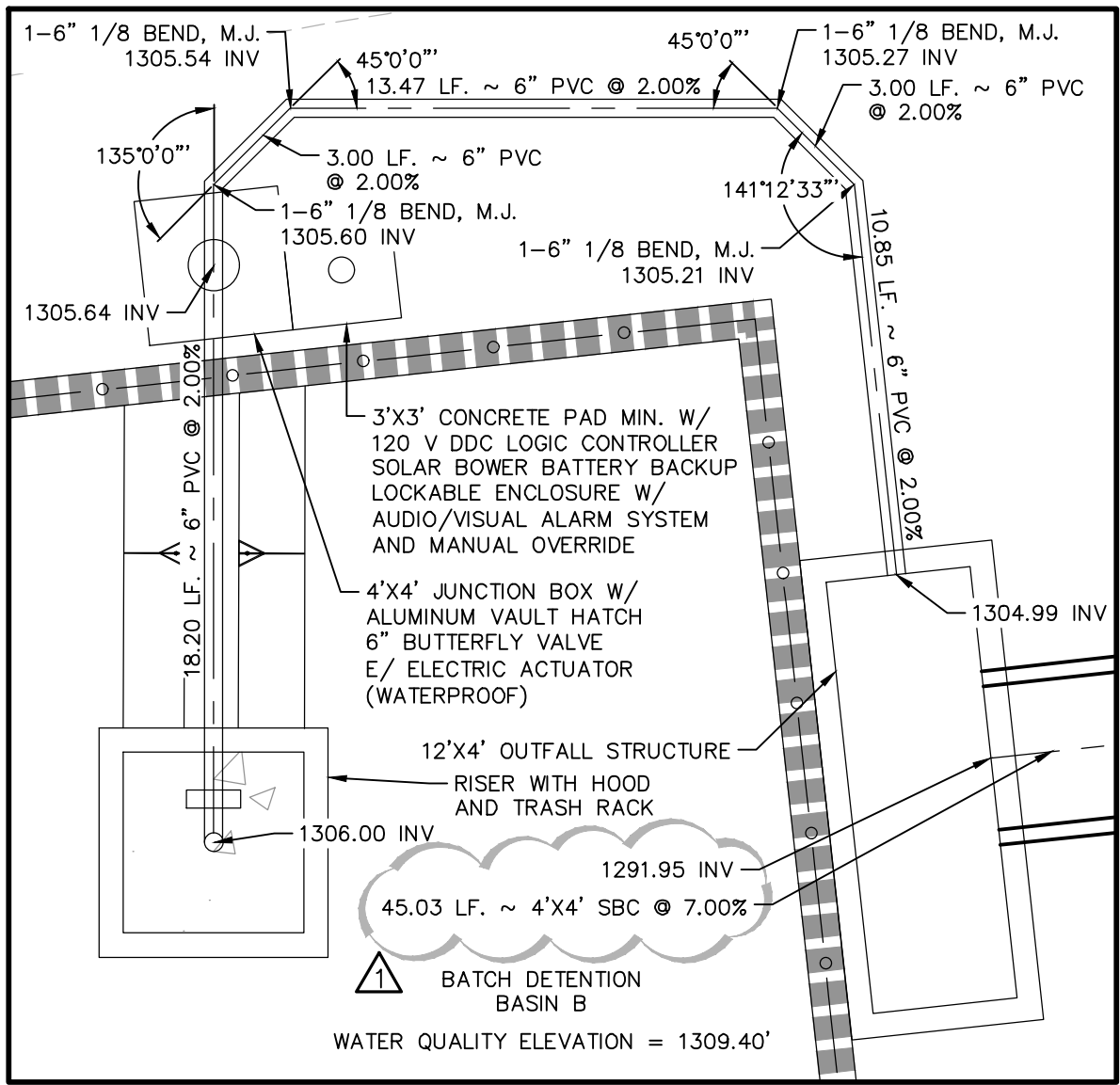
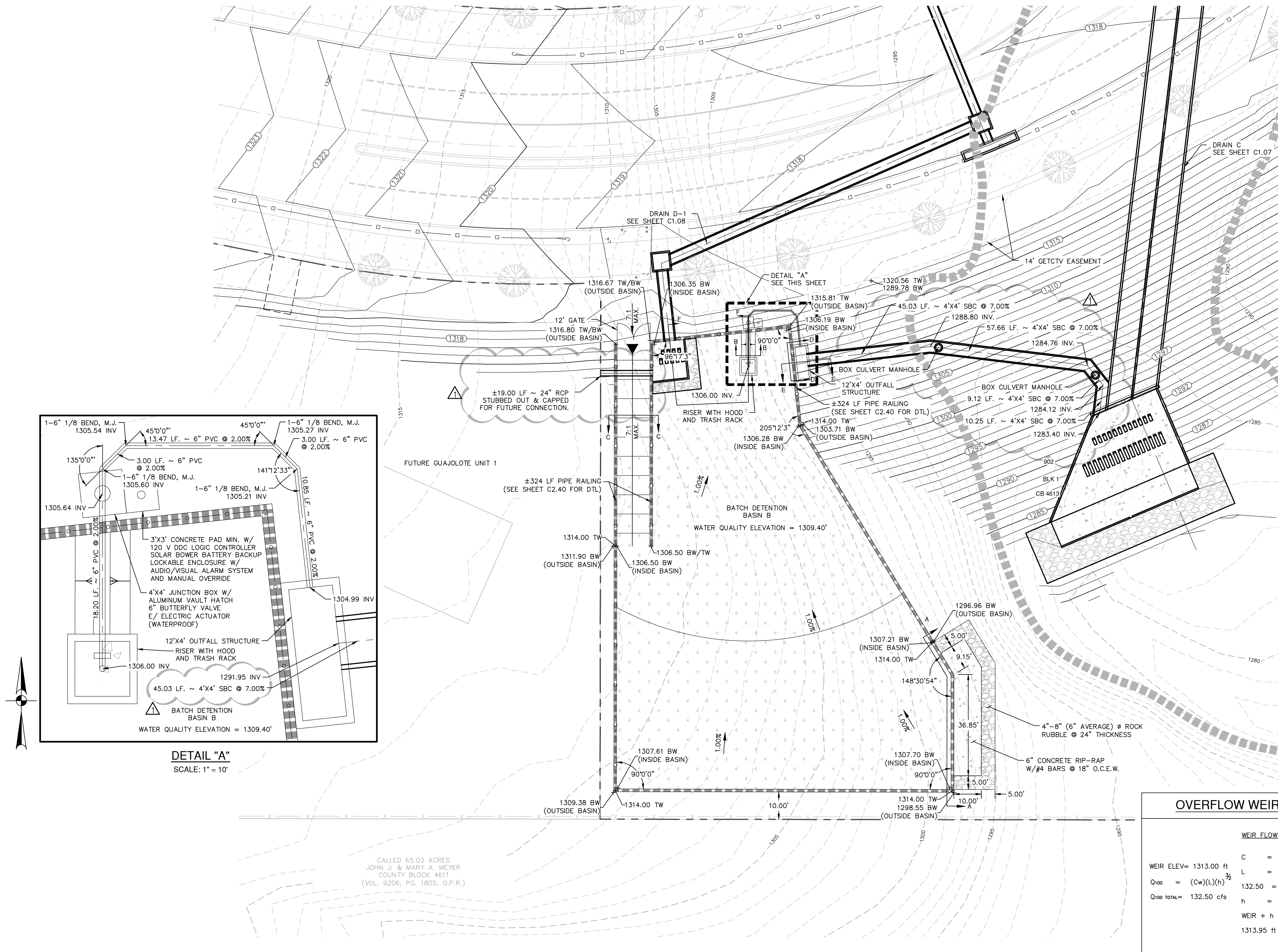
THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS' AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 5

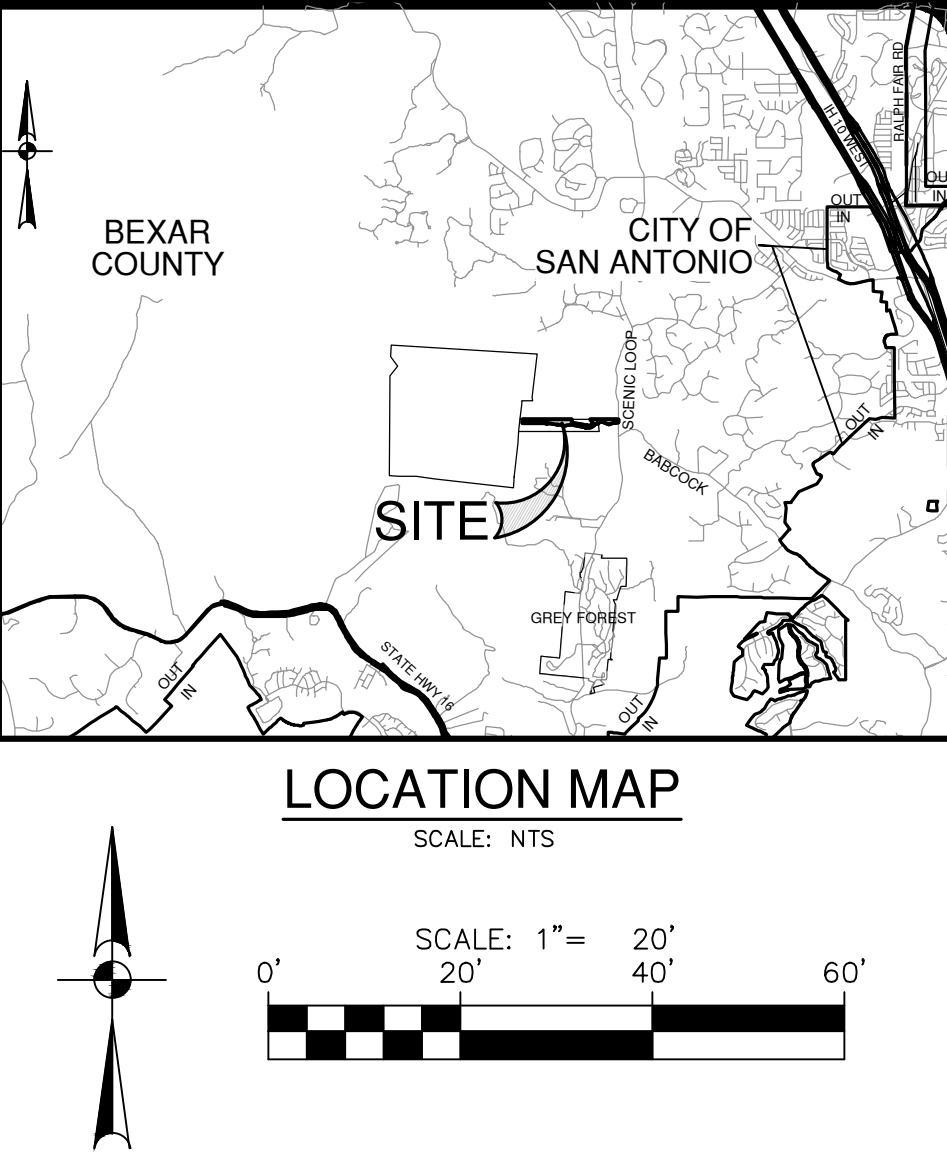
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DETAIL "A"
SCALE: 1" = 10'

OVERFLOW WEIR CALCULATIONS		
WEIR FLOW CALCULATION:		
WEIR ELEV= 1313.00 ft	C =	3.087
$Q_{100} = (Cw)(L)(h)^{3/2}$	L =	46.00 ft
$Q_{100} \text{ TOTAL} = 132.50 \text{ cfs}$	$132.50 = (3.087)(46)(h)^{3/2}$	
	h =	0.95 ft
$WEIR + h = 1313.00 \text{ ft} + 0.95 \text{ ft} = 1313.95 \text{ ft}$		
$1313.95 \text{ ft} < 1314.00 \text{ ft} = \text{TOP OF BASIN}$		



DRAINAGE LEGEND

PROJECT LIMITS	
100 YR UD FLOODPLAIN	
EXISTING CONTOUR	
PROPOSED CONTOUR	
TOP OF BERM	
BOTTOM OF BERM	
TOP OF WALL	
TOP OF BERM	
PROPOSED SWALE	
PROPOSED CONCRETE WALL	
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	
PROPOSED CONCRETE	
PROPOSED ROCK RUBBLE	
PROPOSED STORM DRAIN	

FLOODPLAIN NOTE

NO PORTION OF ANY LOT ON THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0245F EFFECTIVE DATE 11/02/2007.

DRAINAGE & GRADING NOTES:

- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
- ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
- GUADALUPE COUNTY DOES NOT MAINTAIN SIDEWALKS, CURB AND GUTTER, CURB RAMPS, PAVERS, LUMINARIES, STORM SEWER, OR DETENTION APPURTENANCES.
- MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF DRAINAGE STRUCTURES, PONDS, AND EASEMENTS DESIGNATED WITHIN THE SUBJECT PROPERTY. MAINTENANCE RESPONSIBILITY FOR DRAINAGE WILL NOT BE ACCEPTED BY THE COUNTY OTHER THAN THAT ACCEPTED IN CONNECTION WITH DRAINING OR PROTECTING THE ROAD SYSTEM. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS WILL REMAIN WITH THE MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY.

CAUTION!!

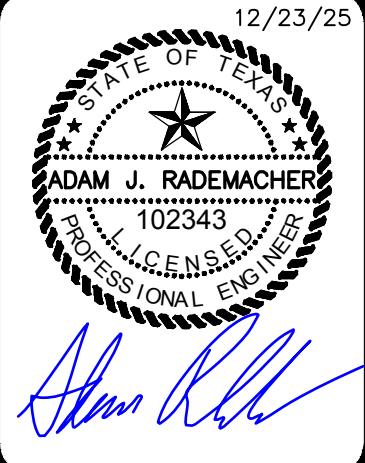
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 4

NO.	REVISION	DATE
1	ADDED PIPE STUB OUT & REVISED BASIN OUTFALL	12/23/25

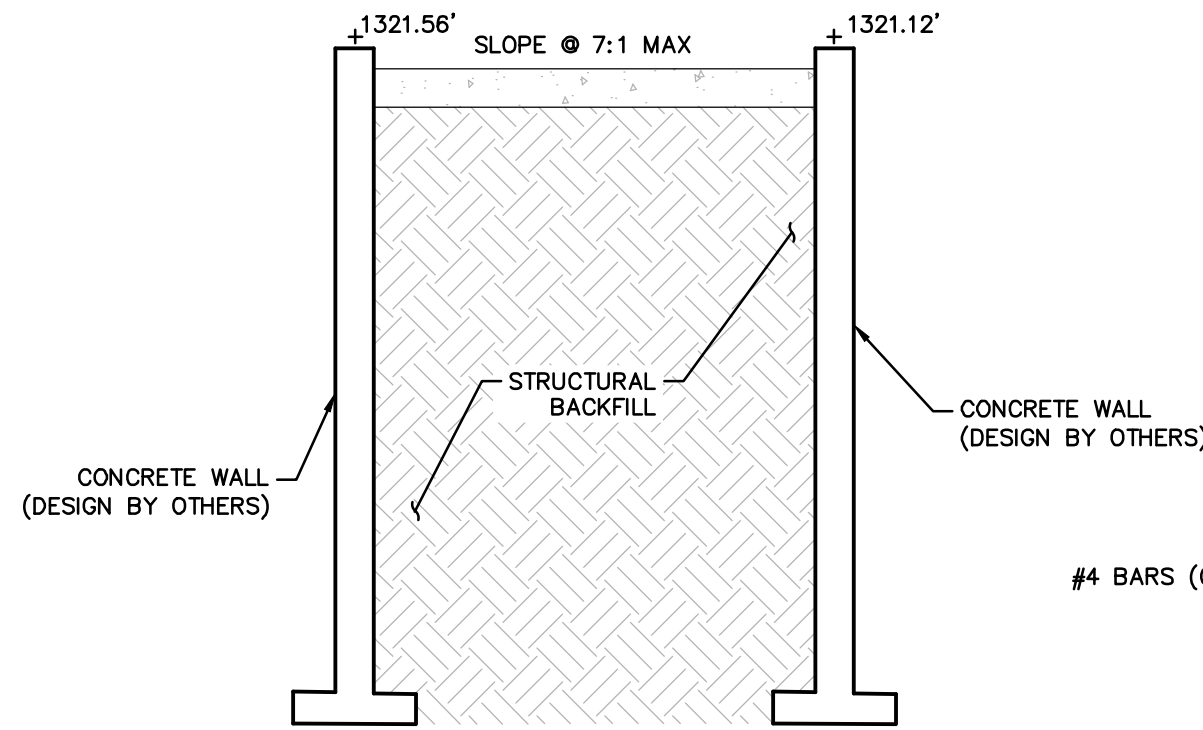


PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

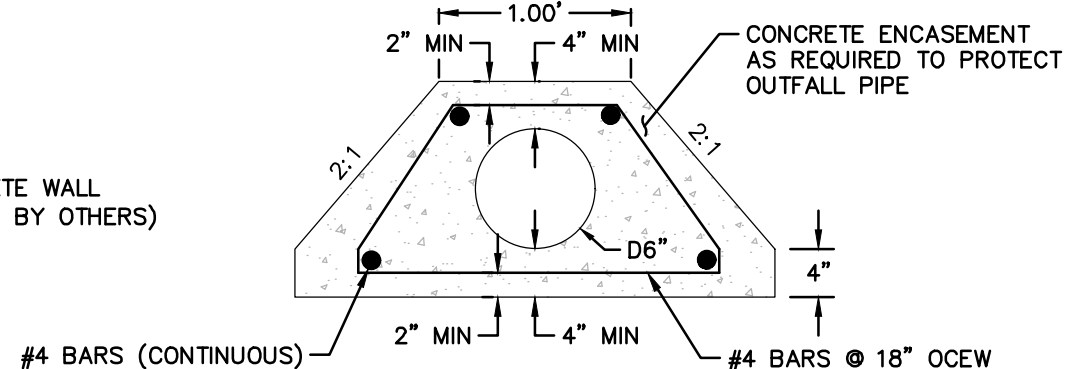
GUAJALOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

BASIN B

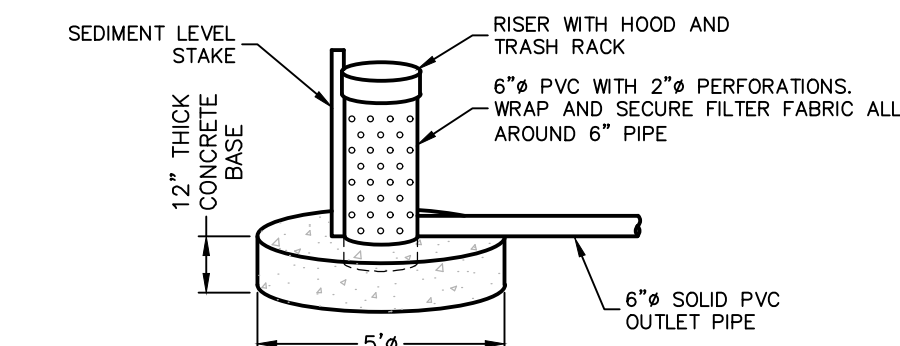
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JOB NO.	12356-10
DATE	DECEMBER 2025
DRAWN	JA
CHECKED	JB
DRAWN	JQ
SHEET	C9.10



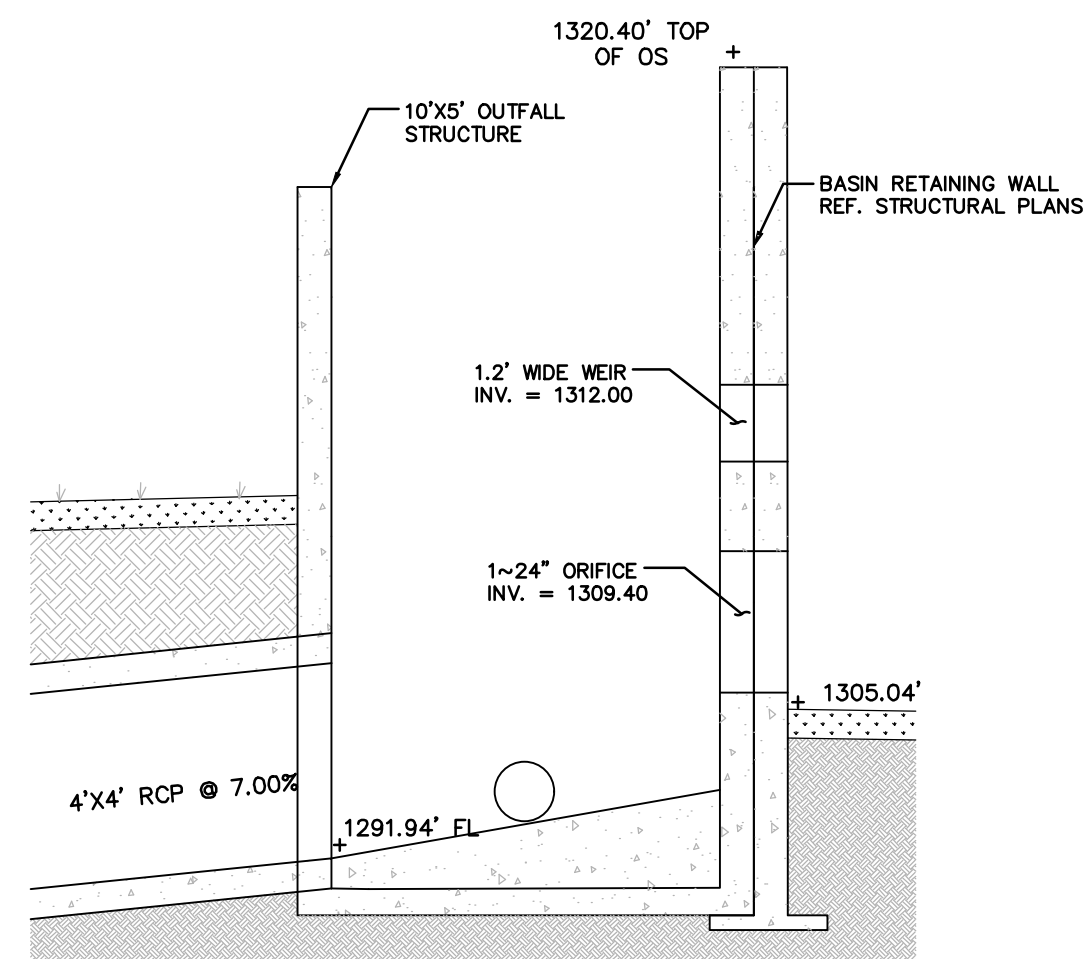
SECTION C-C
NOT TO SCALE



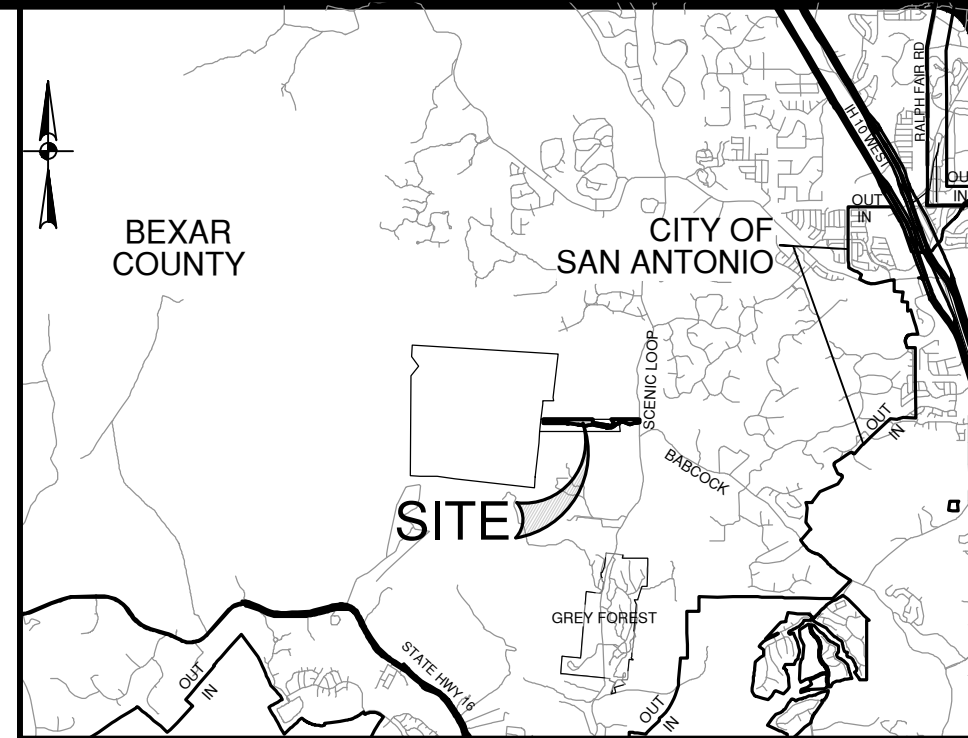
SECTION B-B
NOT-TO-SCALE



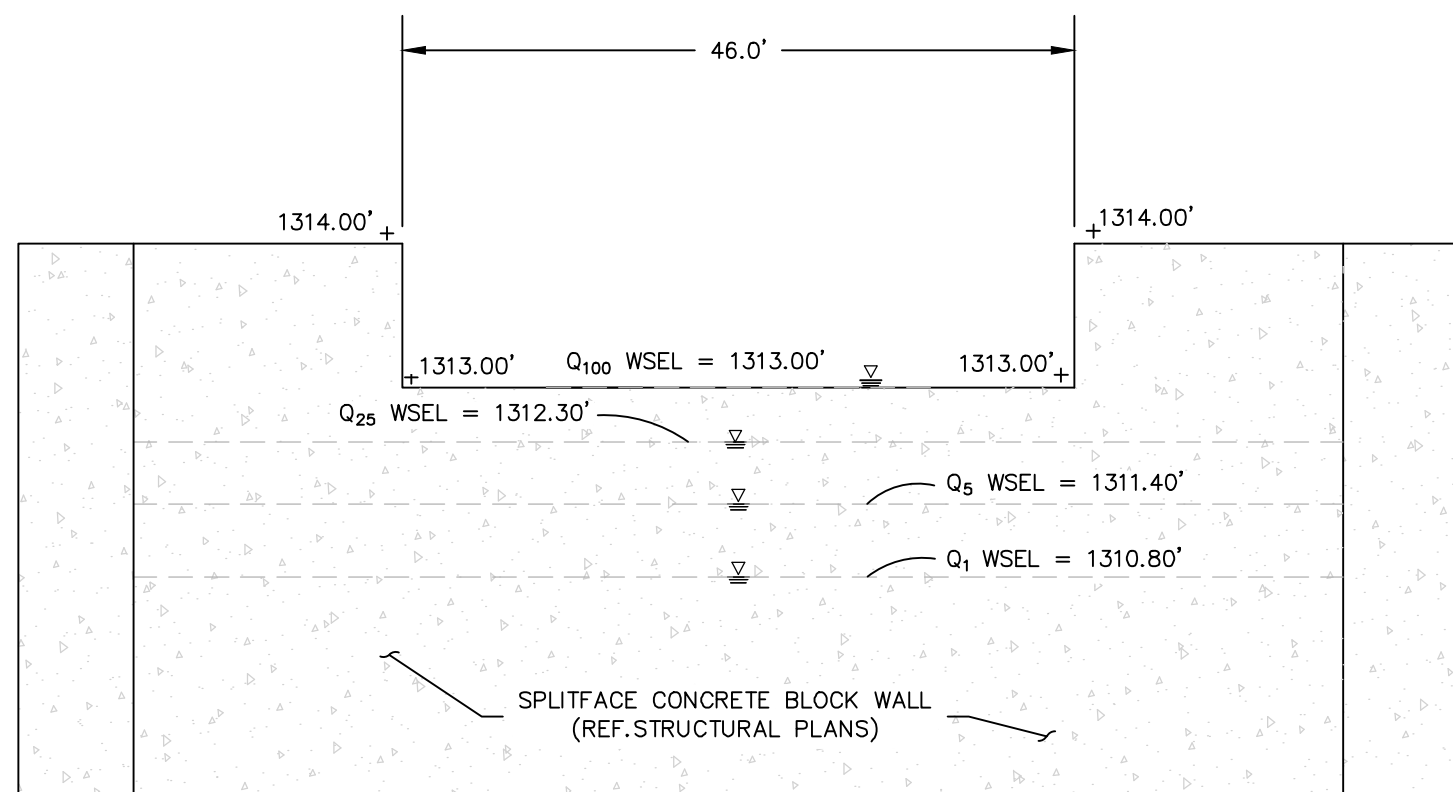
OUTLET STRUCTURE DETAIL
NOT-TO-SCALE



SECTION "E-E"
NOT TO SCALE

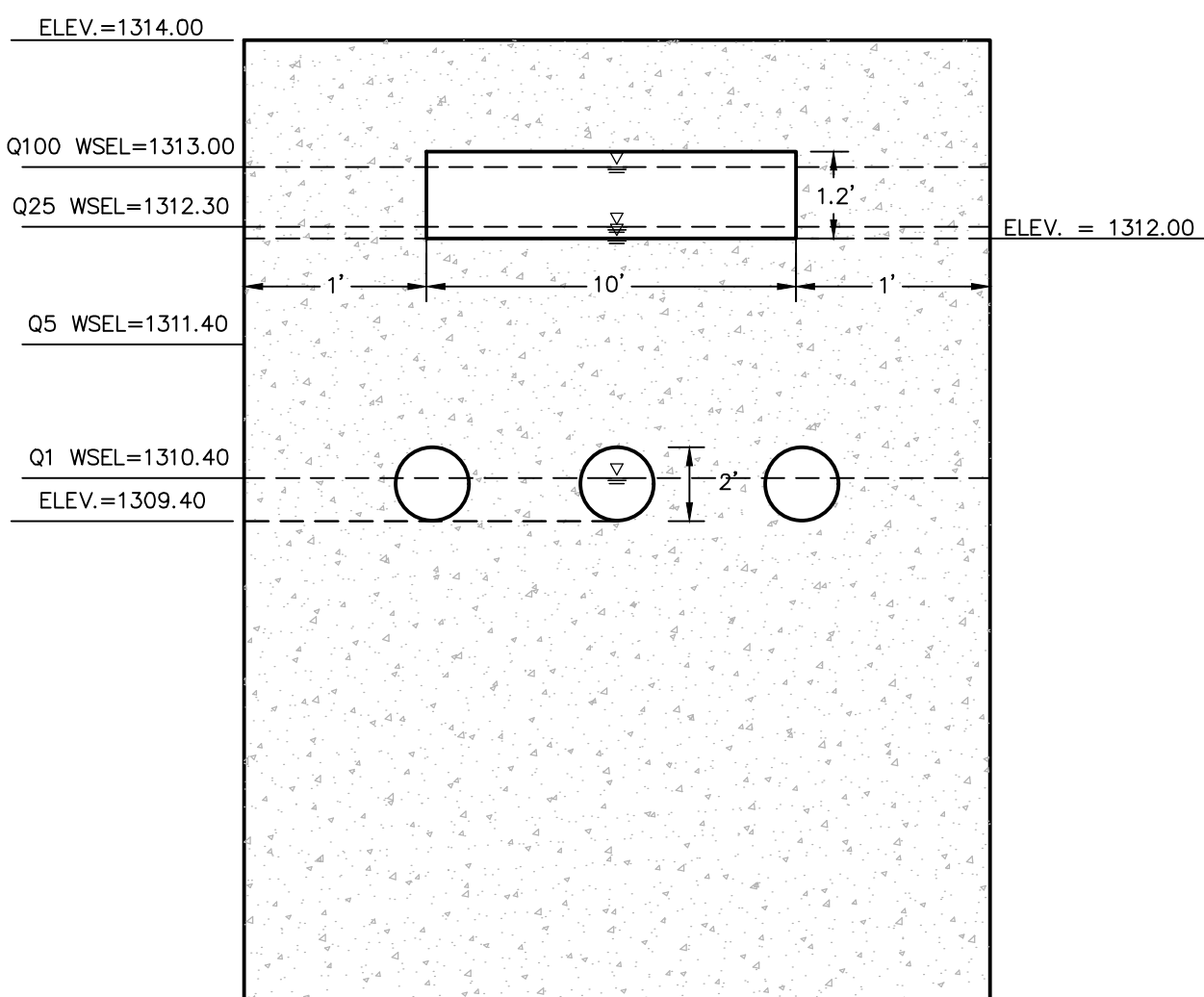


LOCATION MAP
SCALE: NTS

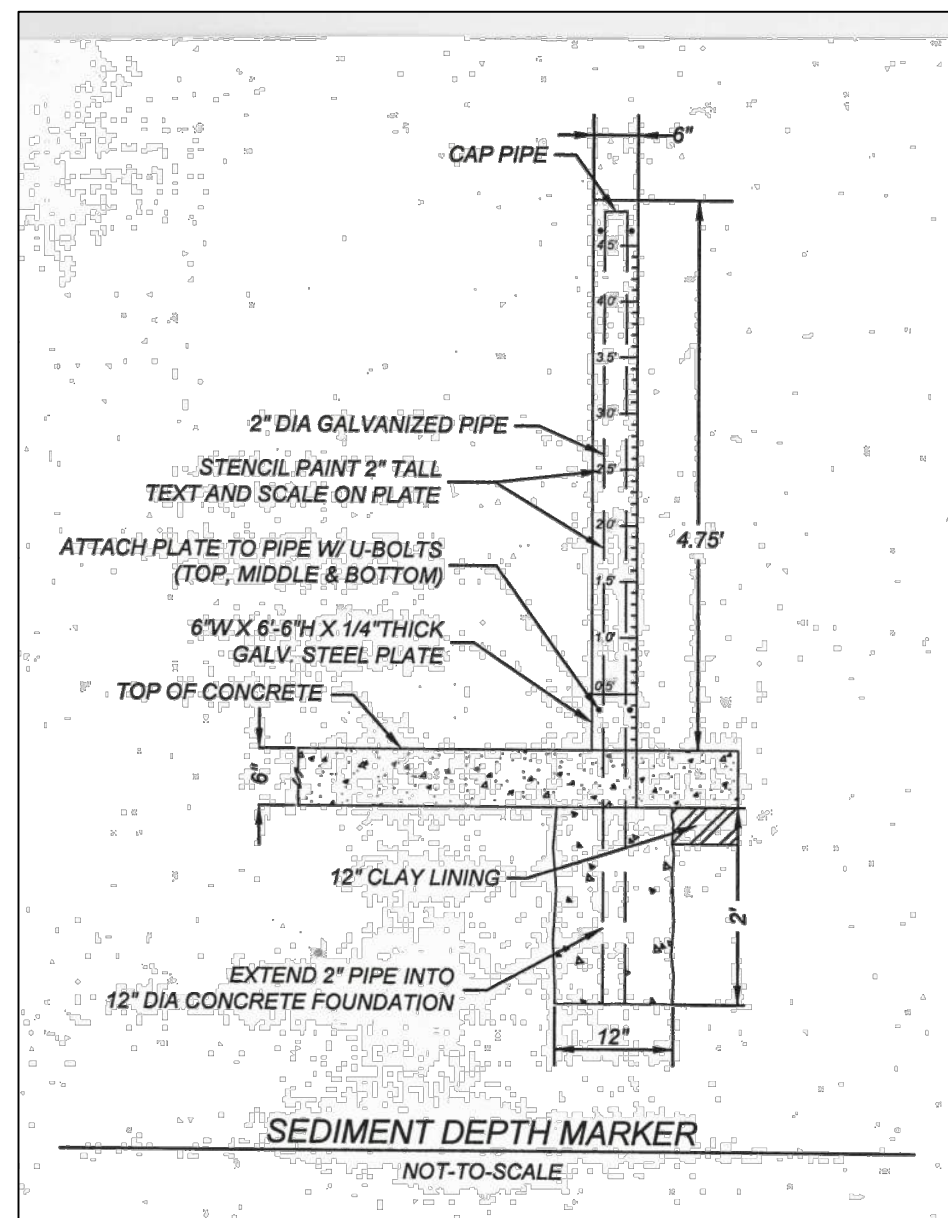


SECTION A-A
NOT TO SCALE

OVERFLOW WEIR CALCULATIONS	
WEIR FLOW CALCULATION:	
WEIR ELEV= 1313.00 ft	C = 3.087
Q ₁₀₀ = (Cw)(L)(h) ^{3/2}	L = 46.00 ft
Q ₁₀₀ TOTAL= 132.50 cfs	132.50 = (3.087)(46)(h) ^{3/2}
	h = 0.95 ft
	WEIR + h = 1313.00 ft + 0.95 ft = 1313.95 ft
	1313.95 ft < 1314.00 ft = TOP OF BASIN

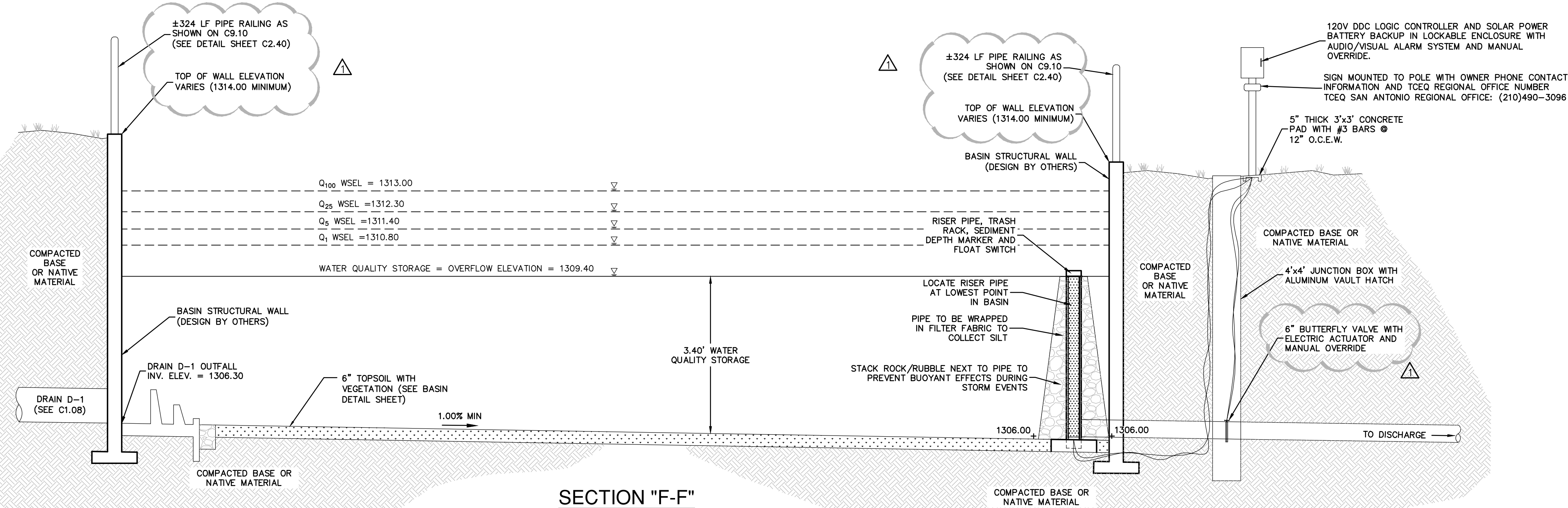


SECTION "D-D"
(NOT TO SCALE)



NOTES TO CONTRACTOR
FOR EACH PHASE OF BASIN CONSTRUCTION

- CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.
 - CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:
 - REINFORCING STEEL FOR BASIN OVERFLOW WALL OR RIP-RAP HAS BEEN SET. CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.
 - BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).
 - WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.
 - UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:
 - TOP OF BANK/WALL AT EACH CORNER OF BASIN
 - TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
 - SPLASH PAD/INLET PIPES
 - OVERFLOW WEIR
 - BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.
 - THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 48 HOURS. THE CONTRACTOR SHALL RESTRICT THE FLOW THROUGH THE BASIN BY ADJUSTING THE GATE VALVE ON THE DISCHARGE PIPE SO AS TO PROVIDE THE MINIMUM 48 HOUR DRAW-DOWN TIME.
- NOTES:
- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
 - UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTER STRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
 - ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.



SECTION "F-F"
N.T.S.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 5

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
BASIC B DETAILS

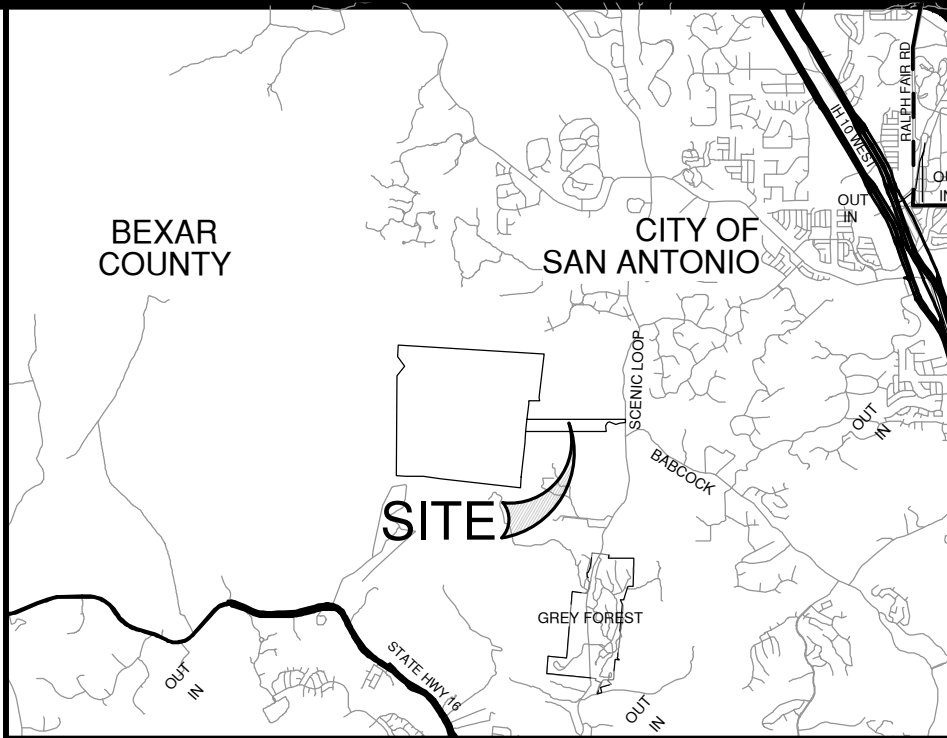
PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED *JB* DRAWN *JQ*
SHEET C9.11

FLOODPLAIN NOTE

NO PORTION OF ANY LOT ON THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0245F EFFECTIVE DATE 11/02/2007.

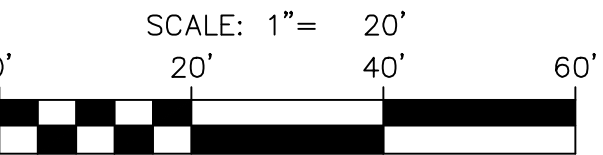
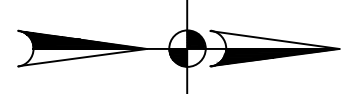
CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



LOCATION MAP

SCALE: NTS



DRAINAGE LEGEND

PROJECT LIMITS	
100 YR UD FLOODPLAIN	
EXISTING CONTOUR	
PROPOSED CONTOUR	
TOP OF BERM	TB
BOTTOM OF BERM	BB
TOP OF WALL	TW
TOP OF BERM	BW
PROPOSED SWALE	
PROPOSED CONCRETE WALL	
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	
PROPOSED CONCRETE	
PROPOSED ROCK RUBBLE	
PROPOSED STORM DRAIN	

DRAINAGE & GRADING NOTES:

- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
- ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
- GUADALUPE COUNTY DOES NOT MAINTAIN SIDEWALKS, CURB AND GUTTER, CURB RAMPS, PAVERS, LUMINARIES, STORM SEWER, OR DETENTION APPURTENANCES.
- MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF DRAINAGE STRUCTURES, PONDS, AND EASEMENTS DESIGNATED WITHIN THE SUBJECT PROPERTY. MAINTENANCE RESPONSIBILITY FOR DRAINAGE WILL NOT BE ACCEPTED BY THE COUNTY OTHER THAN THAT ACCEPTED IN CONNECTION WITH DRAINING OR PROTECTING THE ROAD SYSTEM. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS WILL REMAIN WITH THE MARION OAKS MUNICIPAL UTILITY DISTRICT OF GUADALUPE COUNTY.

TRENCH EXCAVATION SAFETY PROTECTION:

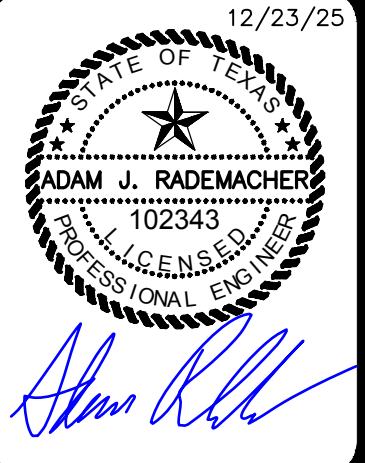
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

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EXHIBIT 4

NO.	REVISION	DATE
1	ADDED PIPE STUB OUT AND PIPE RAILING CALLOUTS	12/23/25



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

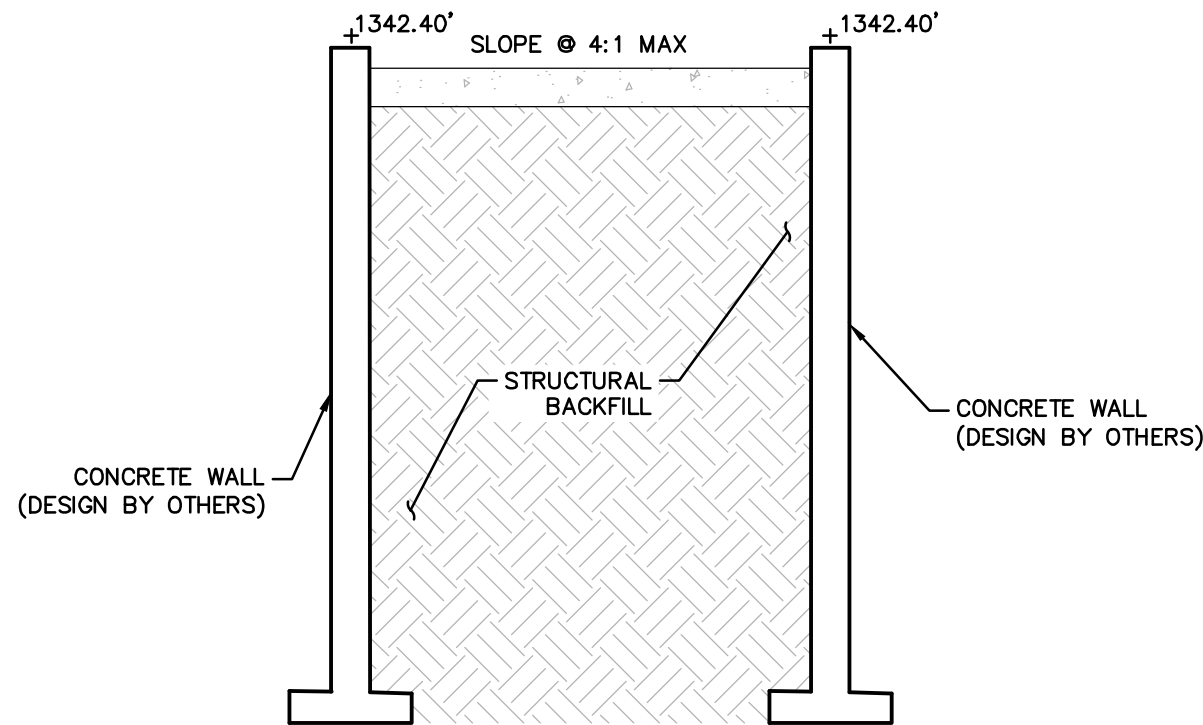
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

BASIN C

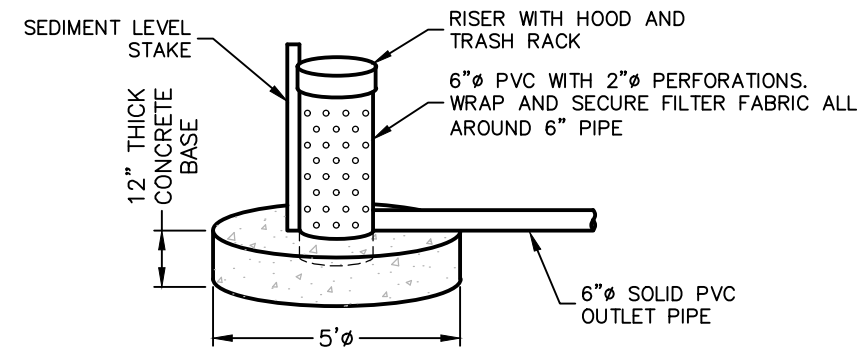
PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C9.20

Date: Dec 21, 2025, 2:19pm User: d:\chubert
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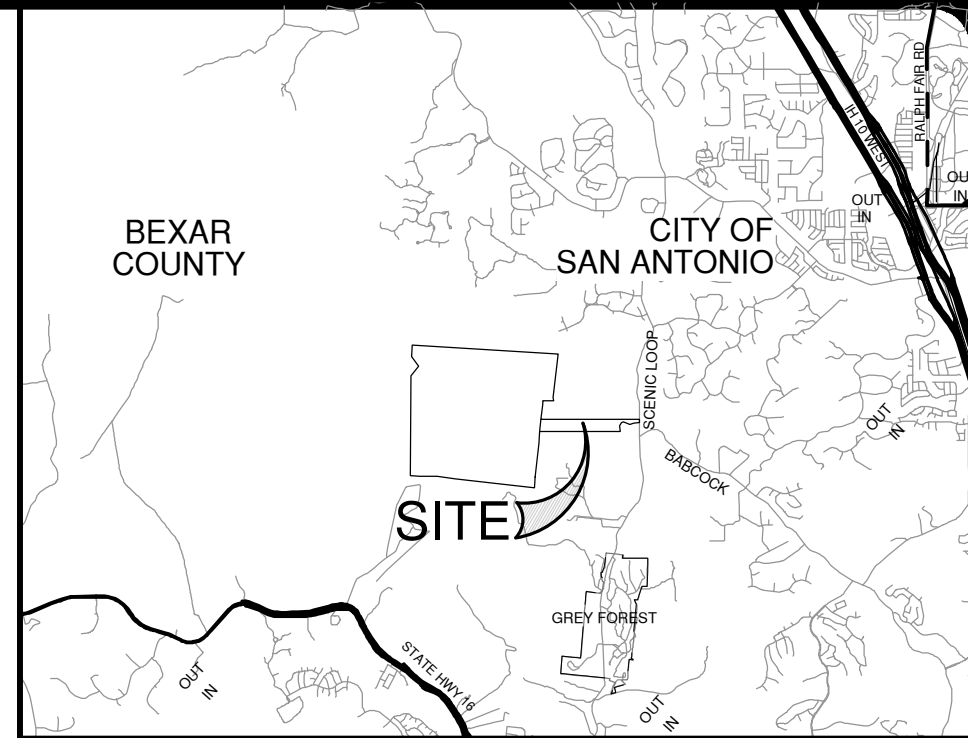
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE/UNLESS OTHERWISE NOTED. Imagery © 2016, CAPOCO, Digital Globe, Texas Orthomography Program, USDA Farm Service Agency.



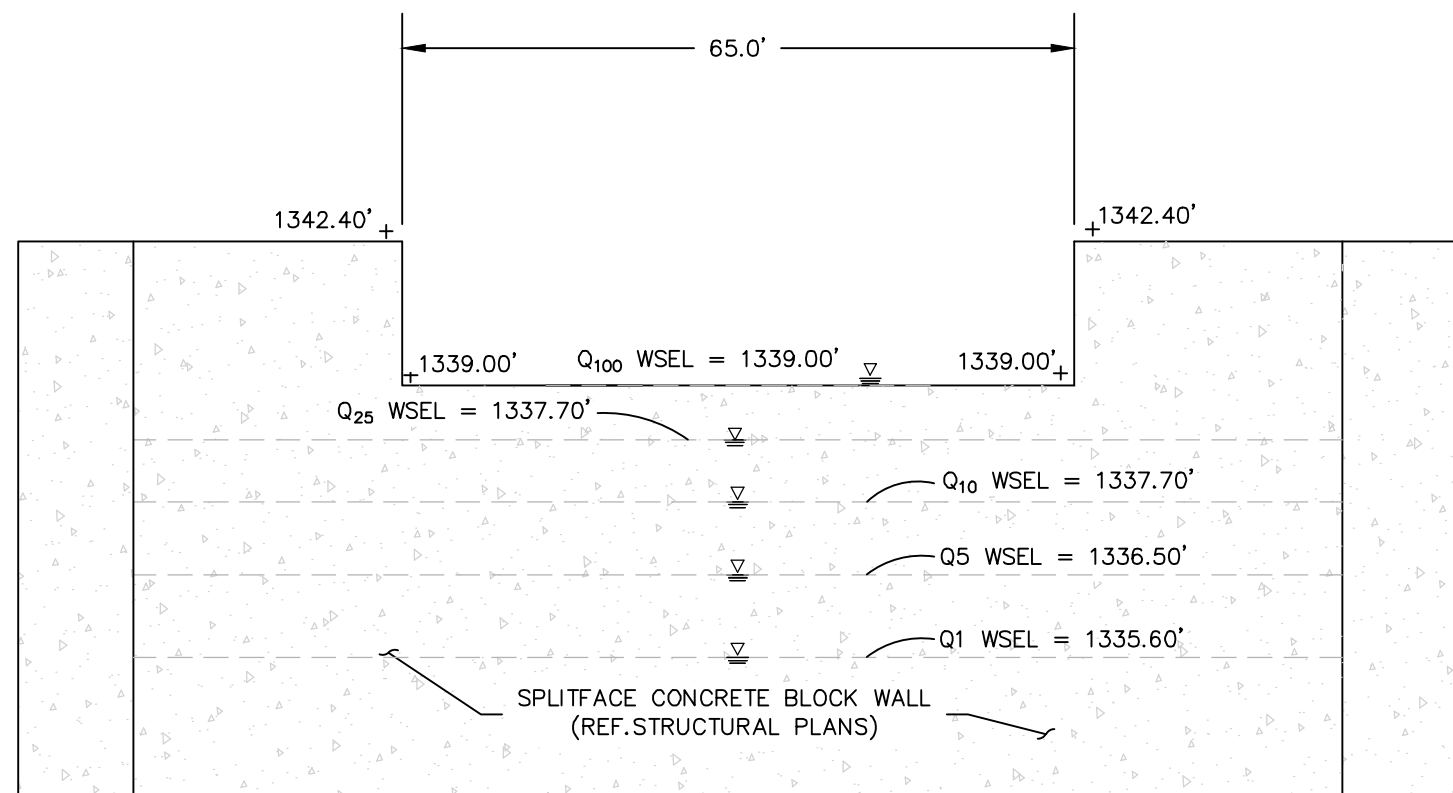
SECTION B-B
NOT TO SCALE



OUTLET STRUCTURE DETAIL
NOT-TO-SCALE



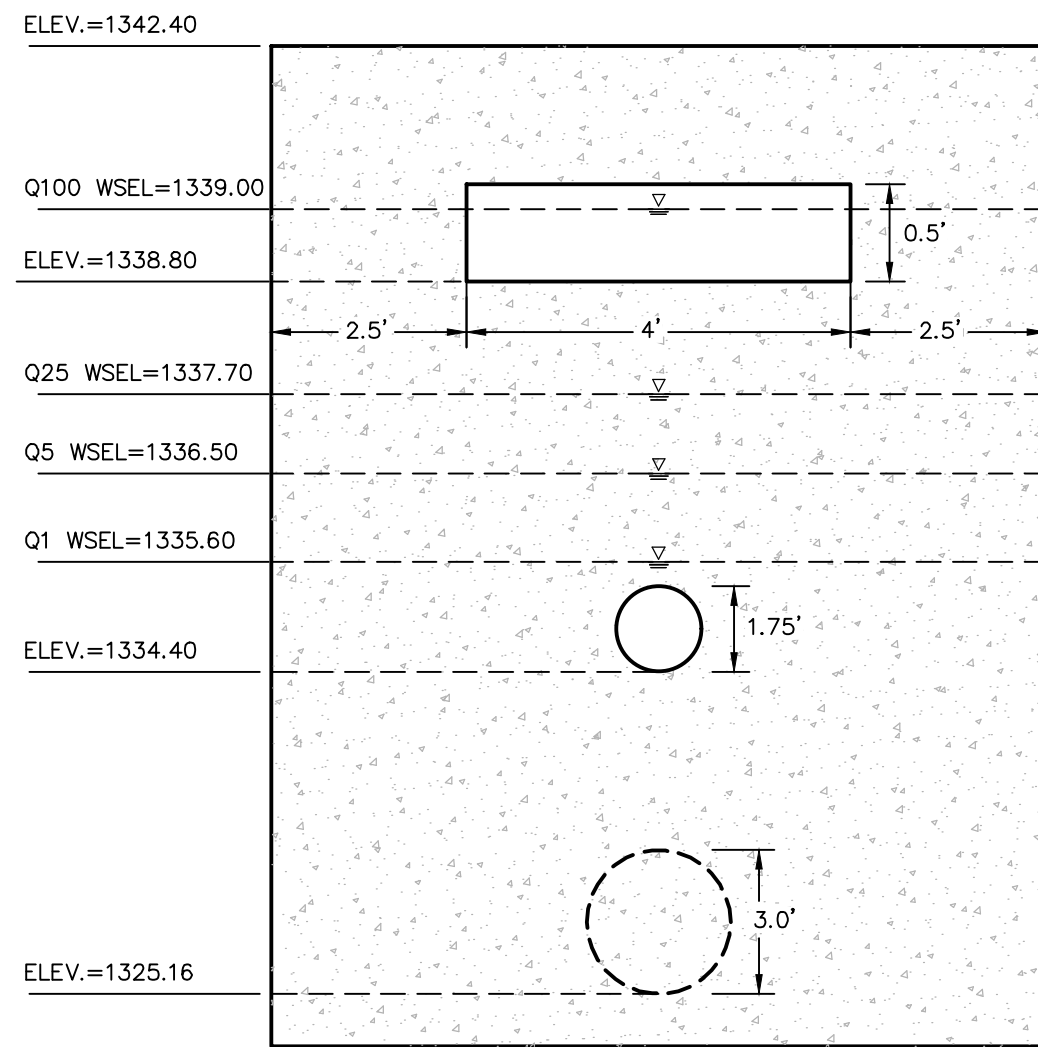
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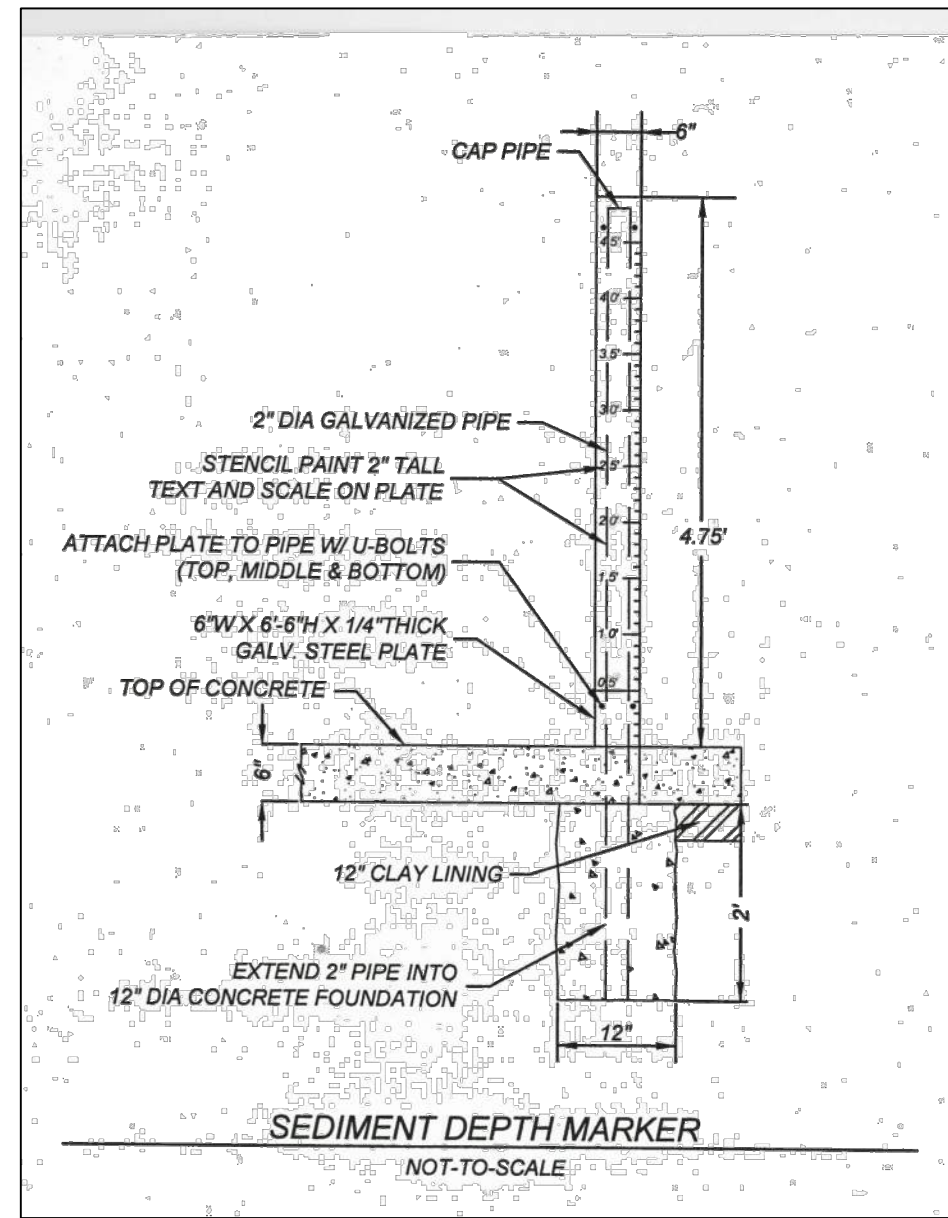
SECTION C-C
NOT TO SCALE

OVERFLOW WEIR CALCULATIONS

WEIR FLOW CALCULATION:	
WEIR ELEV= 1339.00 ft	C = 3.087
$Q_{100} = (C_w)(L)(h)^{3/2}$	L = 65.00 ft
$Q_{100} \text{ TOTAL} = 120.70 \text{ cfs}$	$120.70 = (3.087)(65)(h)^{3/2}$
	h = 0.99 ft
	WEIR + h = 1339.00 ft + 0.71 ft = 1339.71 ft
	1339.71 ft + < 1342.40 ft = TOP OF BASIN



SECTION "A-A"
(NOT TO SCALE)



NOTES TO CONTRACTOR FOR EACH PHASE OF BASIN CONSTRUCTION

- CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.
- CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:
 - REINFORCING STEEL FOR BASIN OVERFLOW WALL OR RIP-RAP HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.
 - BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).
- WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.
- UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:
 - TOP OF BANK/WALL AT EACH CORNER OF BASIN
 - TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
 - SPLASH PAD/INLET PIPES
 - OVERFLOW WEIR
- BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.
- THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 48 HOURS. THE CONTRACTOR SHALL RESTRICT THE FLOW THROUGH THE BASIN BY ADJUSTING THE GATE VALVE ON THE DISCHARGE PIPE SO AS TO PROVIDE THE MINIMUM 48 HOUR DRAW-DOWN TIME.

- NOTES:
- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
 - UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTER STRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
 - ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

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EXHIBIT 5

GUAJALOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

BASIN C DETAILS

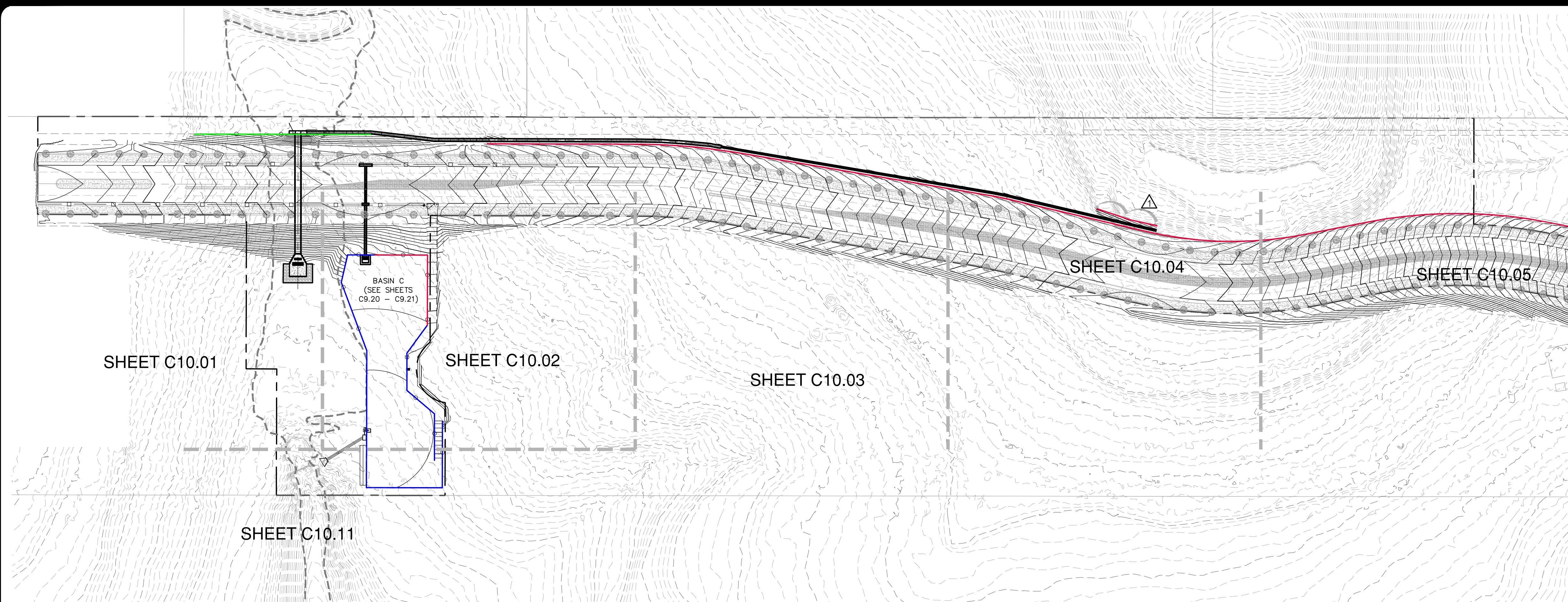
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JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER JA
CHECKED JLB DRAWN JQ
SHEET C9.21

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

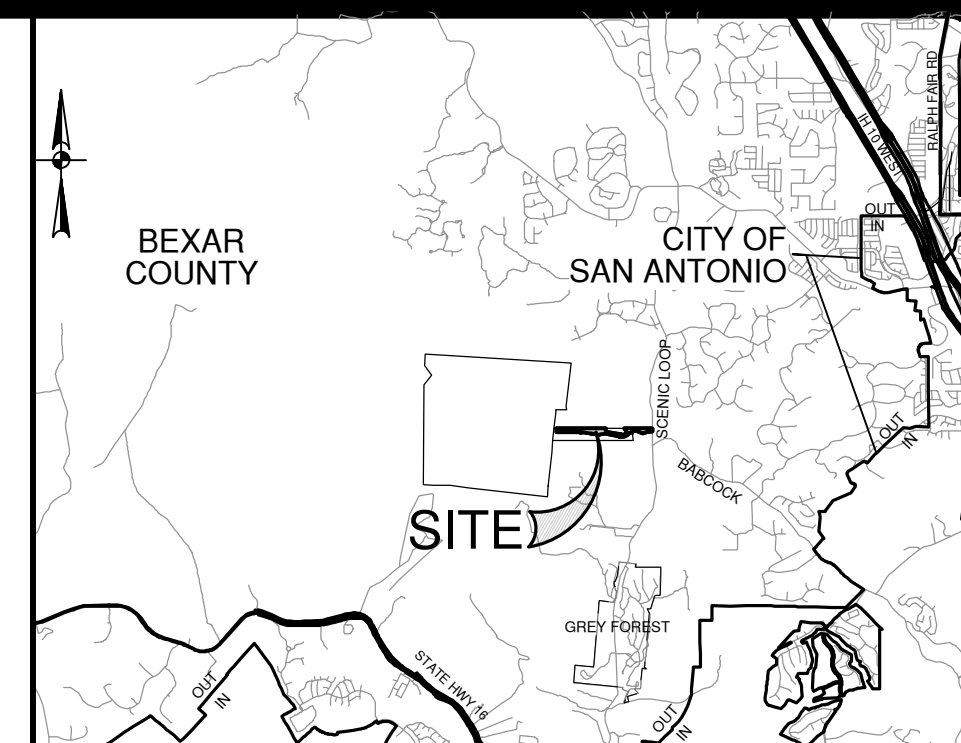
STATE OF TEXAS
ADAM J. RADEMACHER
102343
PROFESSIONAL ENGINEER
12/23/25
DATE
12/23/25
NO. REVISION
1 REVISED FENCING CALLOUT

Date: Dec 21, 2025, 2:19pm, User: jk, sheet
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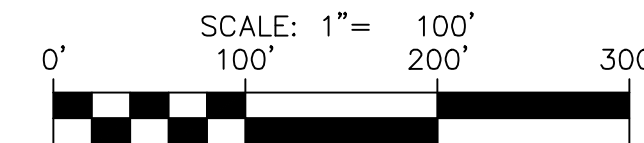
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MATCH LINE 'A' - SEE THIS SHEET



LOCATION MAP
SCALE: NTS

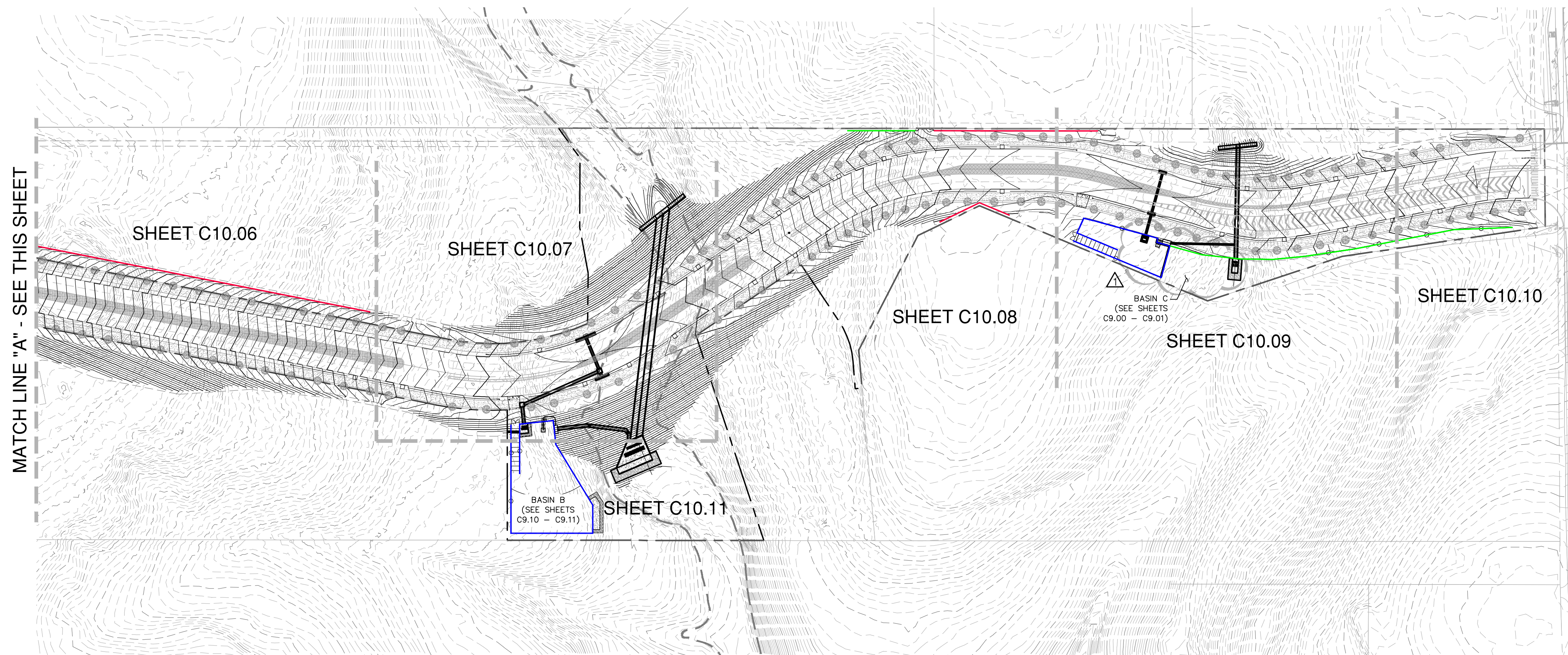


GRADING LEGEND

PROJECT LIMITS	---
FILL WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	---
CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	---
CONCRETE CANTILEVER OR FILL WALLS (SEE NOTE 20) (BY GENERAL CONTRACTOR)	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	---
FLOW ARROW (PROPOSED)	---
SPOT ELEVATION TOP WALL	01376.75 TW
SPOT ELEVATION BOTTOM WALL	01375.25 BW

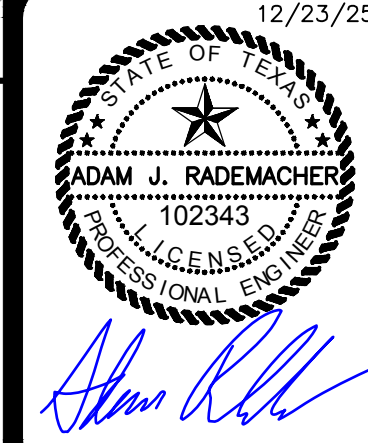
GRADING NOTES:

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- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
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- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
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- THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
- IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
- THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
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MATCH LINE 'A' - SEE THIS SHEET

NO.	REVISION	DATE
1	CUT WALLS & FILL WALLS	12/23/25



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

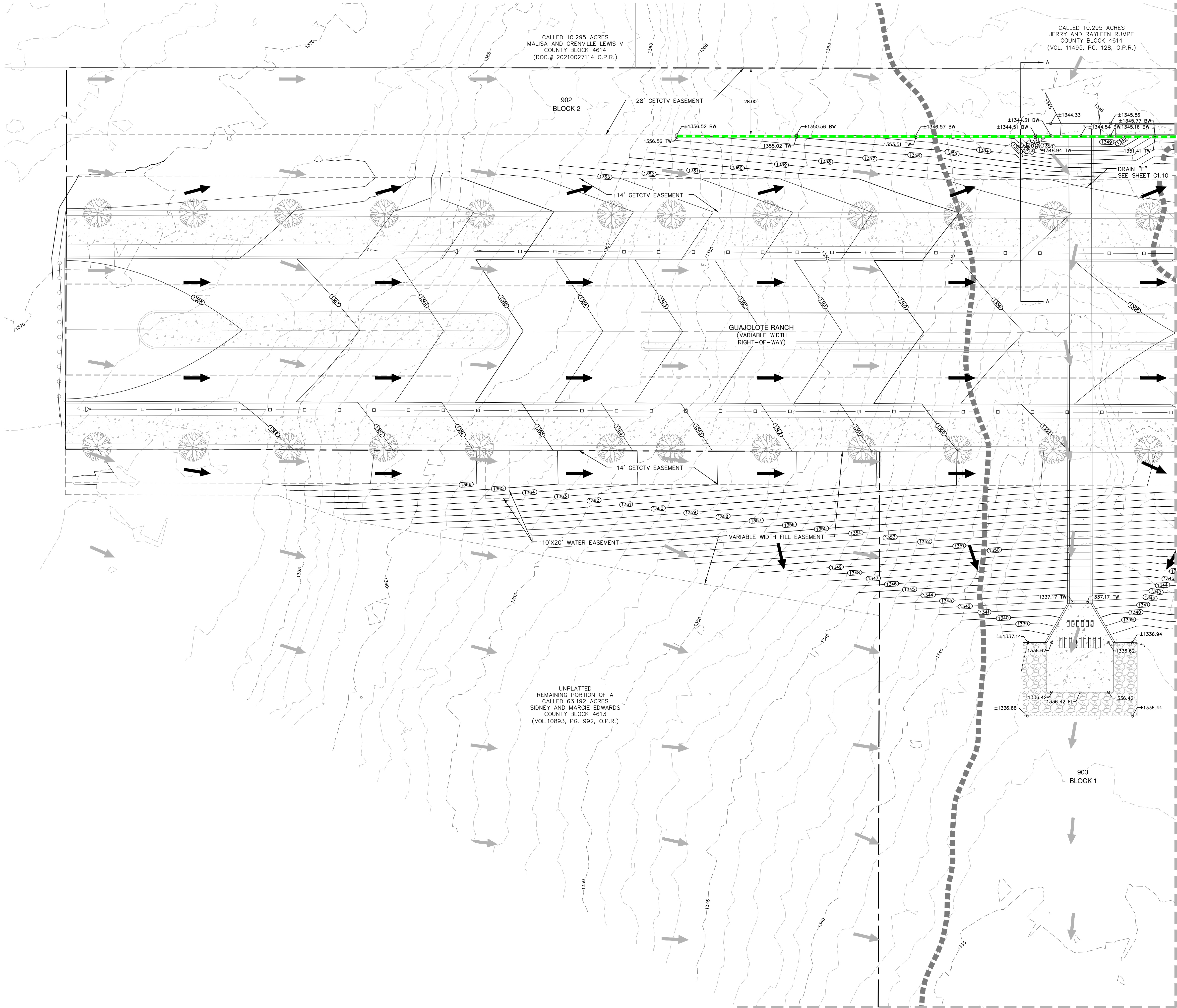
BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.00

Date: Dec 15, 2025 4:48pm User ID: juarez
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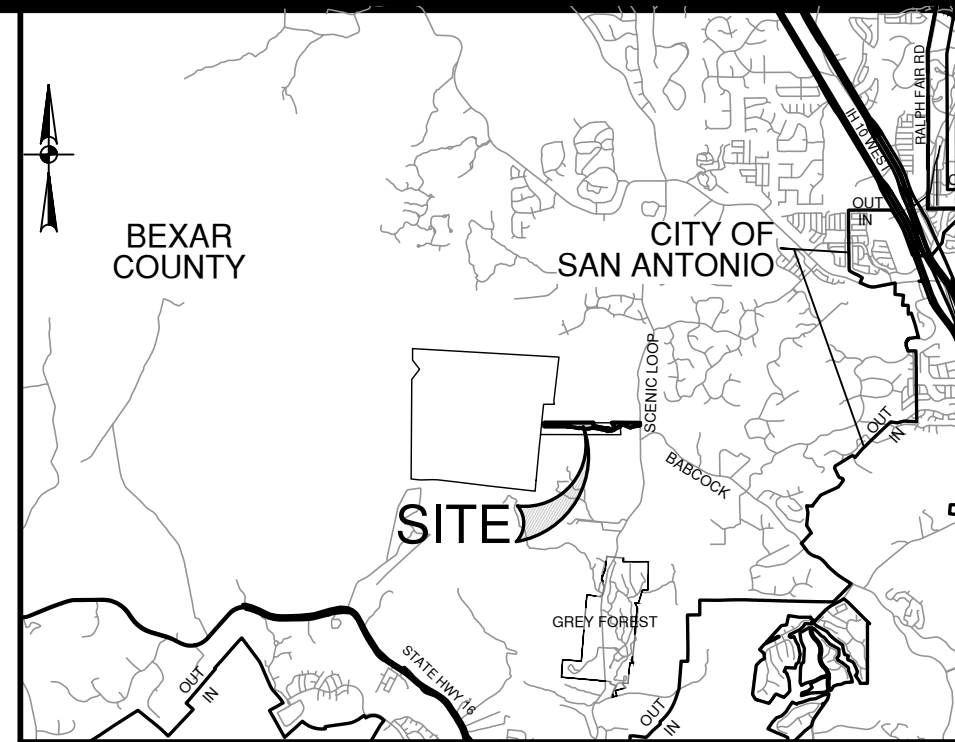
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MATCH LINE "B" - SEE SHEET C10.01

MATCH LINE "C" - SEE SHEET C10.11

CALLED 10,295 ACRES
JERRY AND RAYLEEN RUMPF
COUNTY BLOCK 4614
(VOL. 11495, PG. 128, O.P.R.)

CALLED 10,300 ACRES
TIMOTHY AND WORY MYERS
COUNTY BLOCK 4614
(VOL. 18989, PG. 2200, O.P.R.)



LOCATION MAP
SCALE: NTS

SCALE: 1" = 20'
20' = 40'
40' = 60'

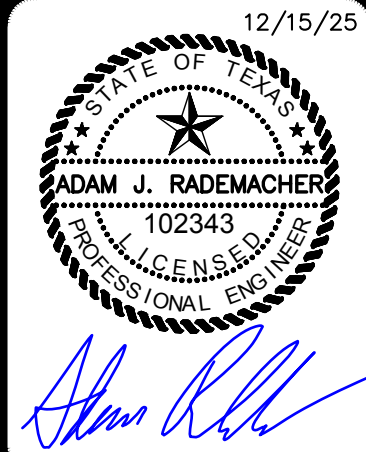
GRADING LEGEND

PROJECT LIMITS	---
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CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	---
CONCRETE CANTILEVER OR FILL WALLS (SEE NOTE 20) (BY GENERAL CONTRACTOR)	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	---
FLOW ARROW (PROPOSED)	---
SPOT ELEVATION TOP WALL	o1376.75 TW
SPOT ELEVATION BOTTOM WALL	o1375.25 BW

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NO.	REVISION	DATE



PAPE-DAWSON

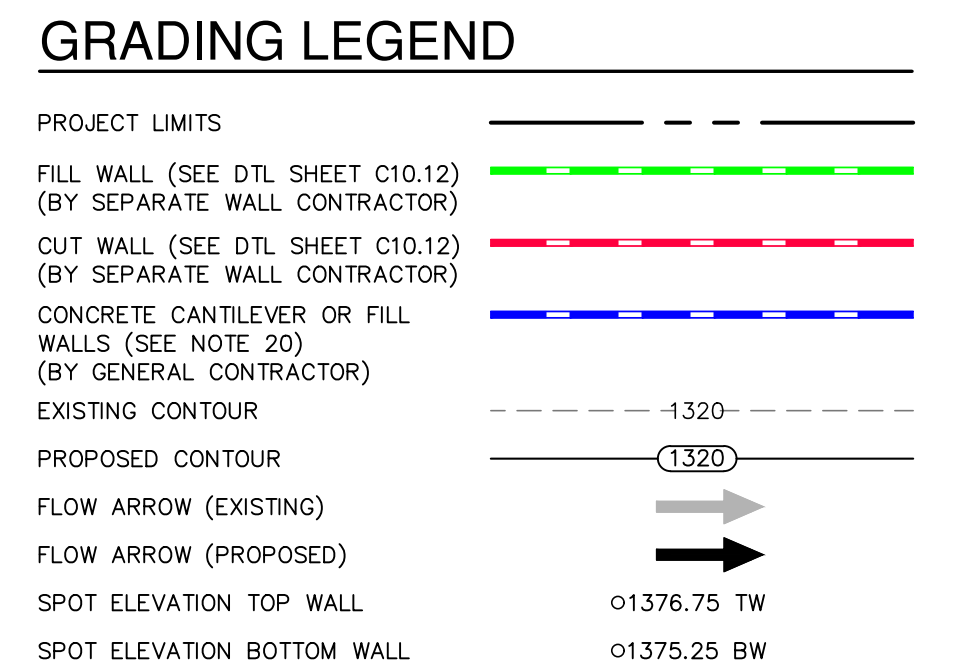
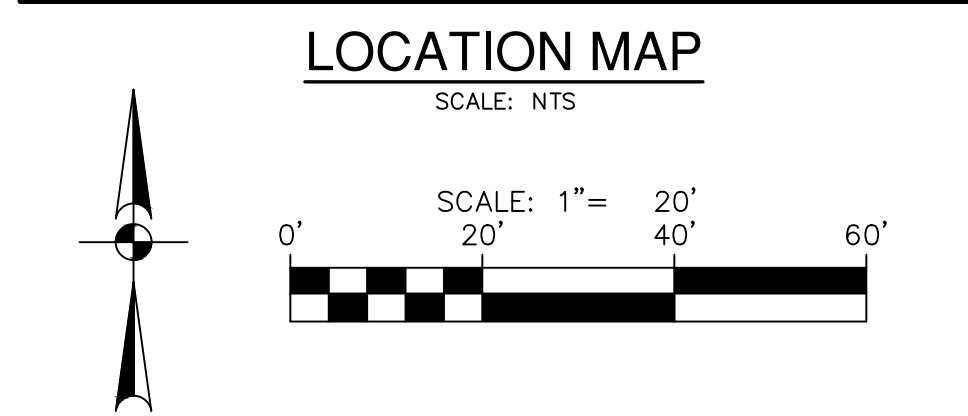
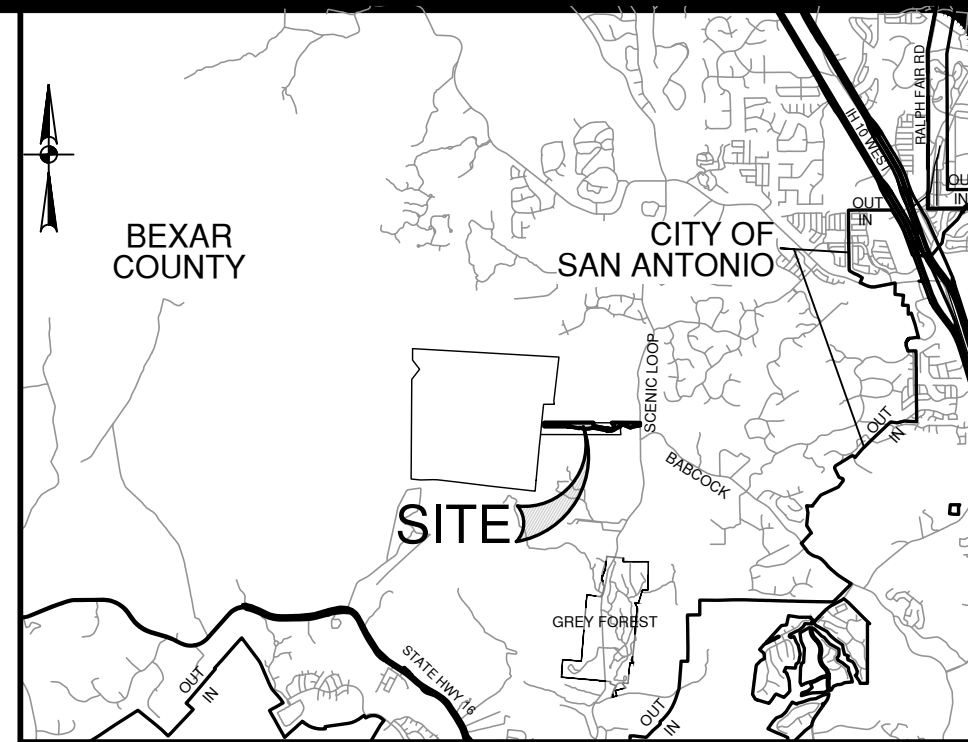
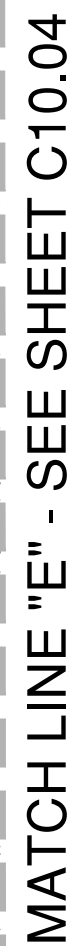
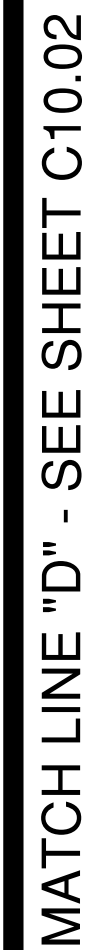
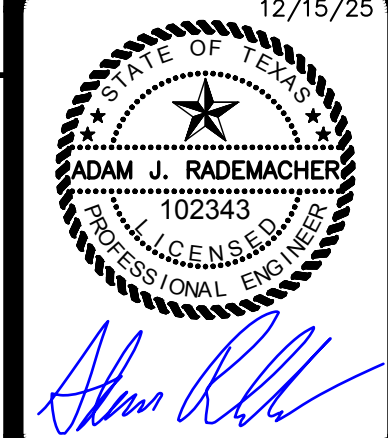
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS SURVEYING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 2 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C10.02

[illegible]

PAPE-DAWSON
22000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288600

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 3 OF 11

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BJS DRAWN JQ
SHEET C10.03

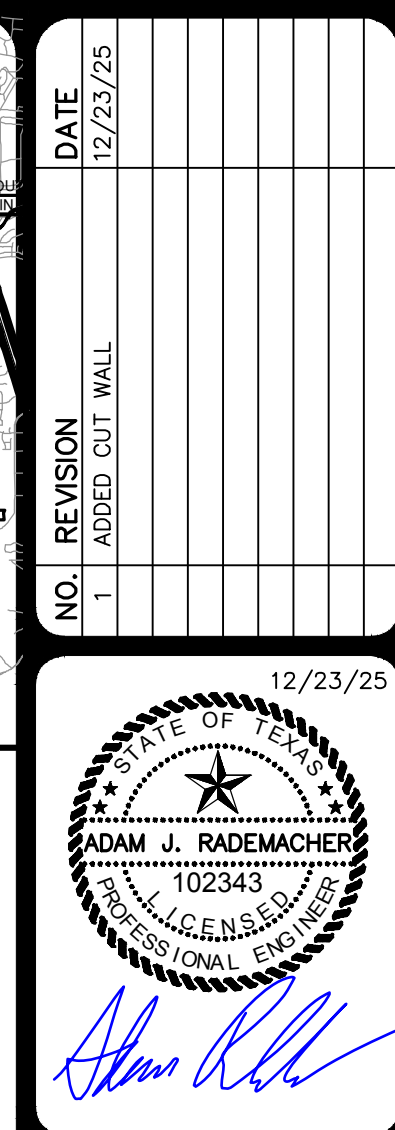
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13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
20. STRUCTURAL DESIGN WILL BE PROVIDED FOR CONCRETE WALLS TO THE CONTRACTOR BY THE ENGINEER. CONTRACTOR SHALL ASSUME DESIGN WILL MATCH TxDOT SPREAD FOOTING RETAINING WALL DESIGN B IN LIEU OF DESIGN FOR PRICING.
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PROJECT LIMITS

FILL WALL (SEE DTL SHEET C10.12)
(BY SEPARATE WALL CONTRACTOR)

CUT WALL (SEE DTL SHEET C10.12)
(BY SEPARATE WALL CONTRACTOR)

CONCRETE CANTILEVER OR FILL
WALLS (SEE NOTE 20)
(BY GENERAL CONTRACTOR)

EXISTING CONTOUR

PROPOSED CONTOUR

FLOW ARROW (EXISTING)

FLOW ARROW (PROPOSED)

SPOT ELEVATION TOP WALL

SPOT ELEVATION BOTTOM WALL

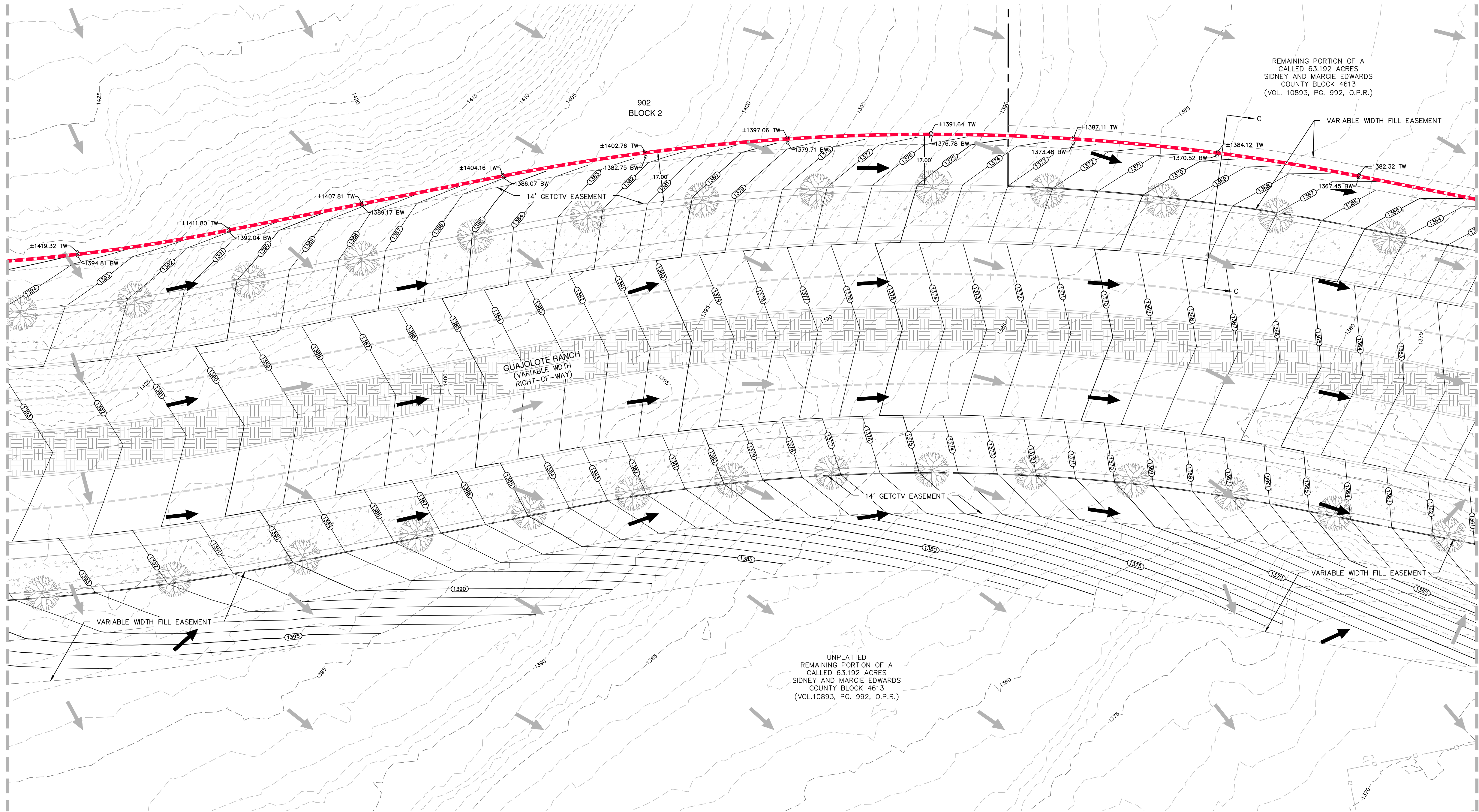
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 4 OF 11

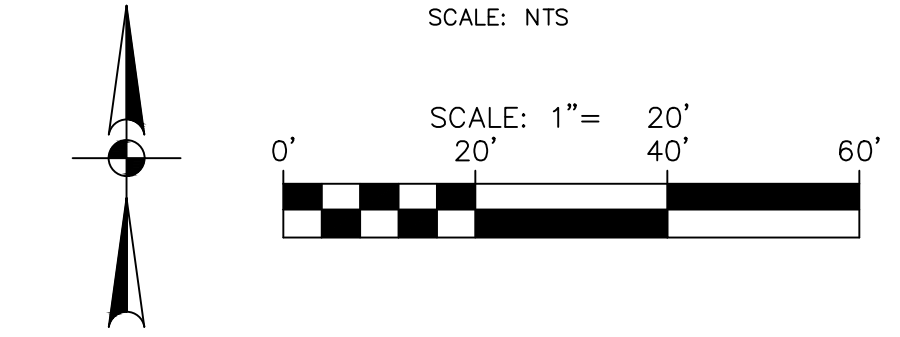
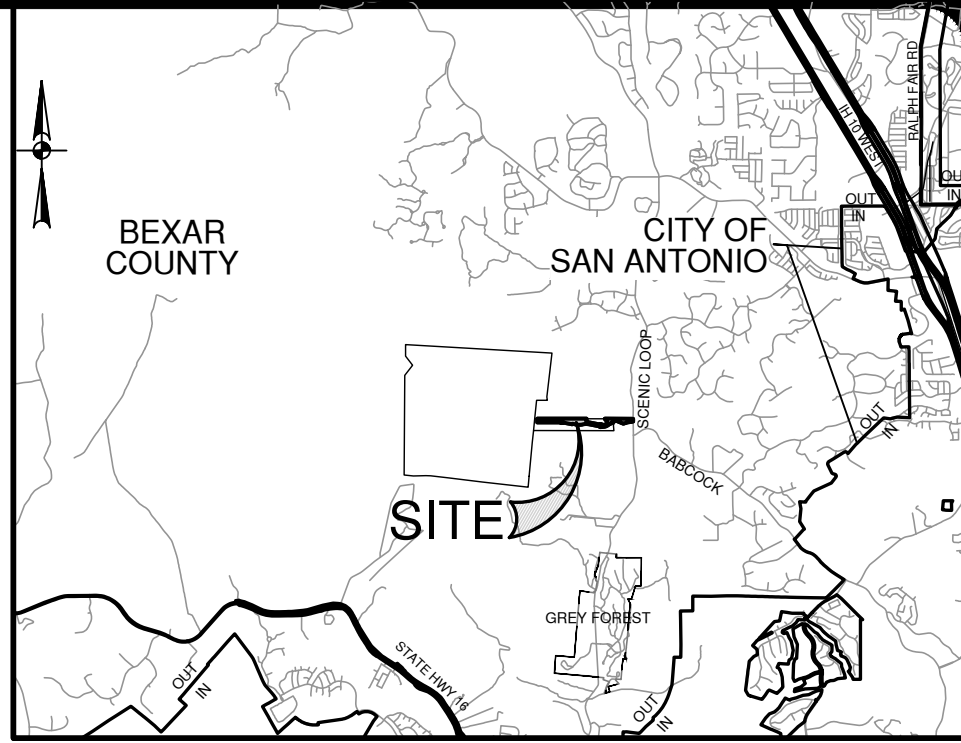
PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED Bob DRAWN JK
SHEET C10.04

Date: Dec 15, 2025 4:49pm User ID: juarez
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MATCH LINE "F" - SEE SHEET C10.04



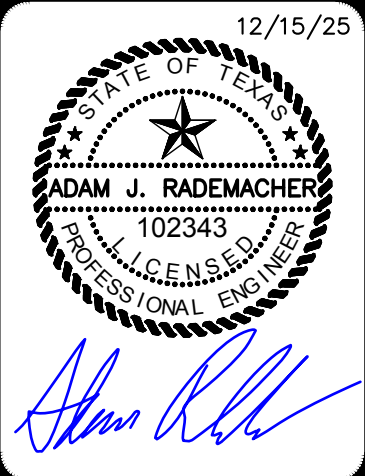
MATCH LINE "G" - SEE SHEET C10.06



GRADING NOTES:

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3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
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9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
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NO.	REVISION	DATE



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

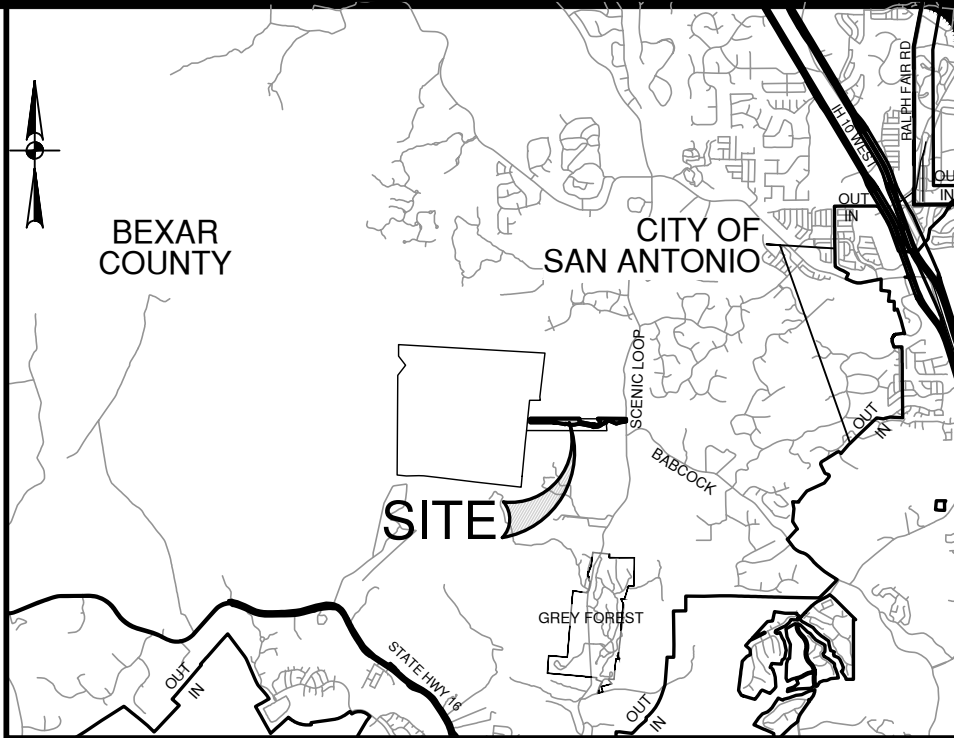
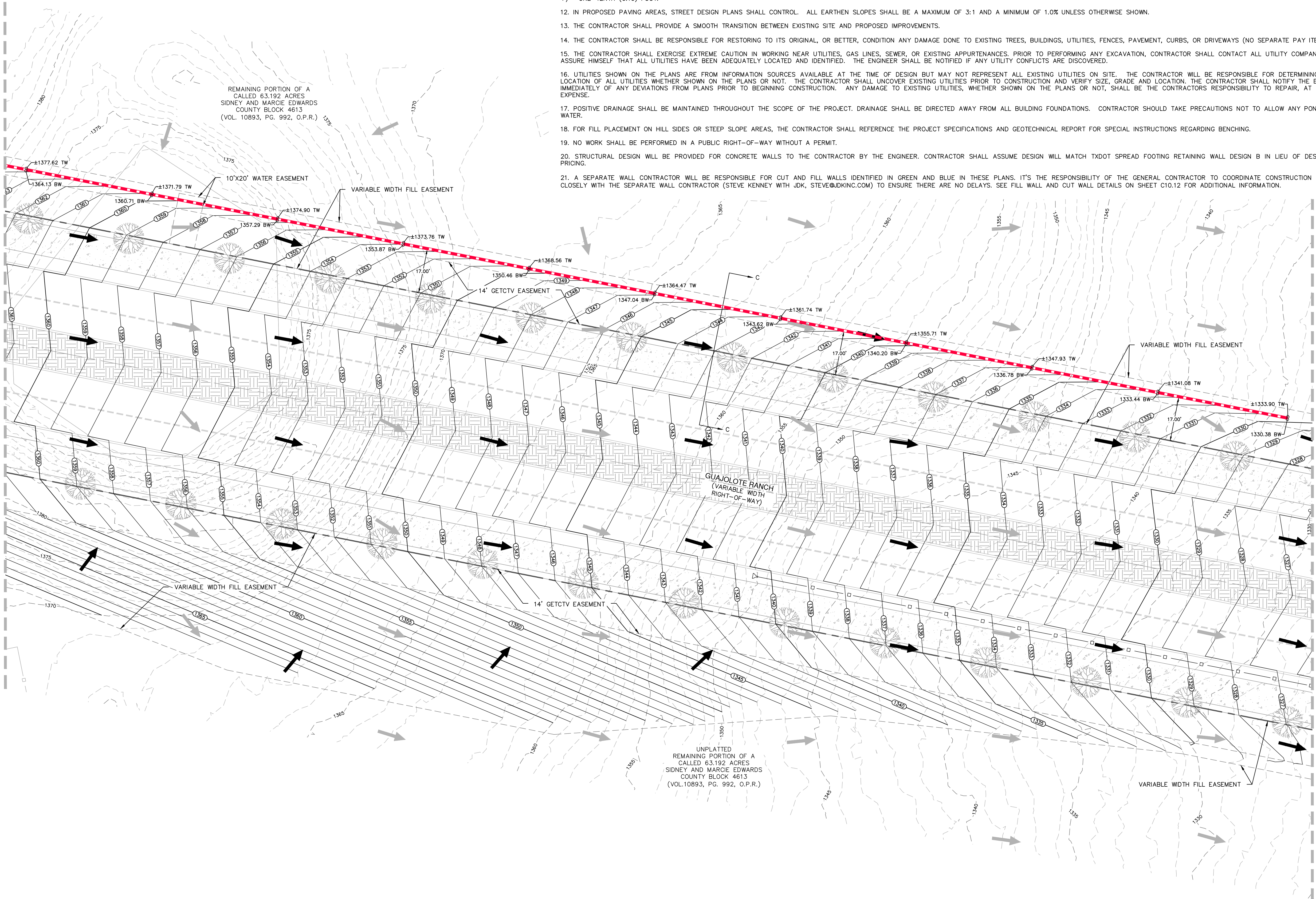
GRADING PLAN
SHEET 5 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.05

GRADING NOTES:

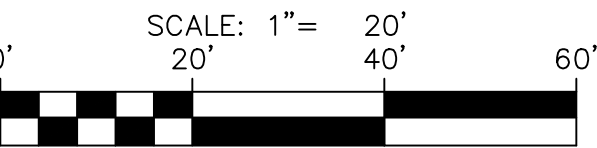
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MATCH LINE "G" - SEE SHEET C10.05



LOCATION MAP

SCALE: NTS

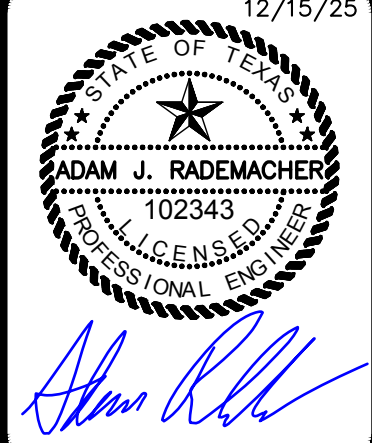


GRADING LEGEND

PROJECT LIMITS

- FILL WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)
- CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)
- CONCRETE CANTILEVER OR FILL WALLS (SEE NOTE 20) (BY GENERAL CONTRACTOR)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SPOT ELEVATION TOP WALL
- SPOT ELEVATION BOTTOM WALL

NO.	REVISION	DATE

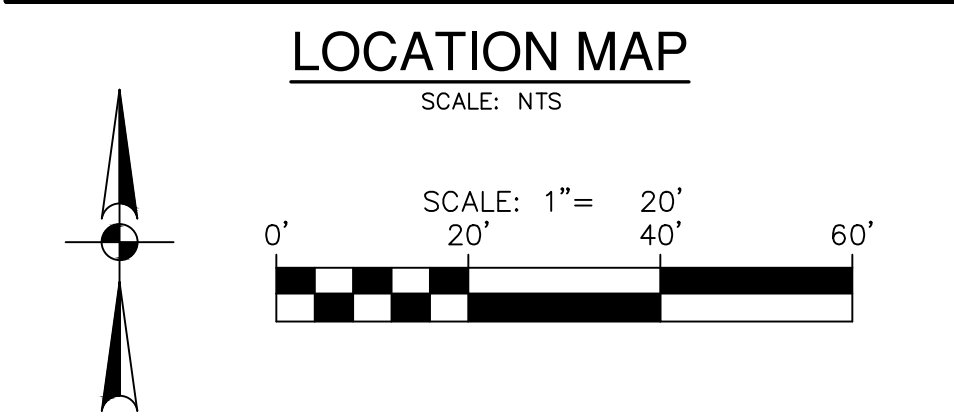
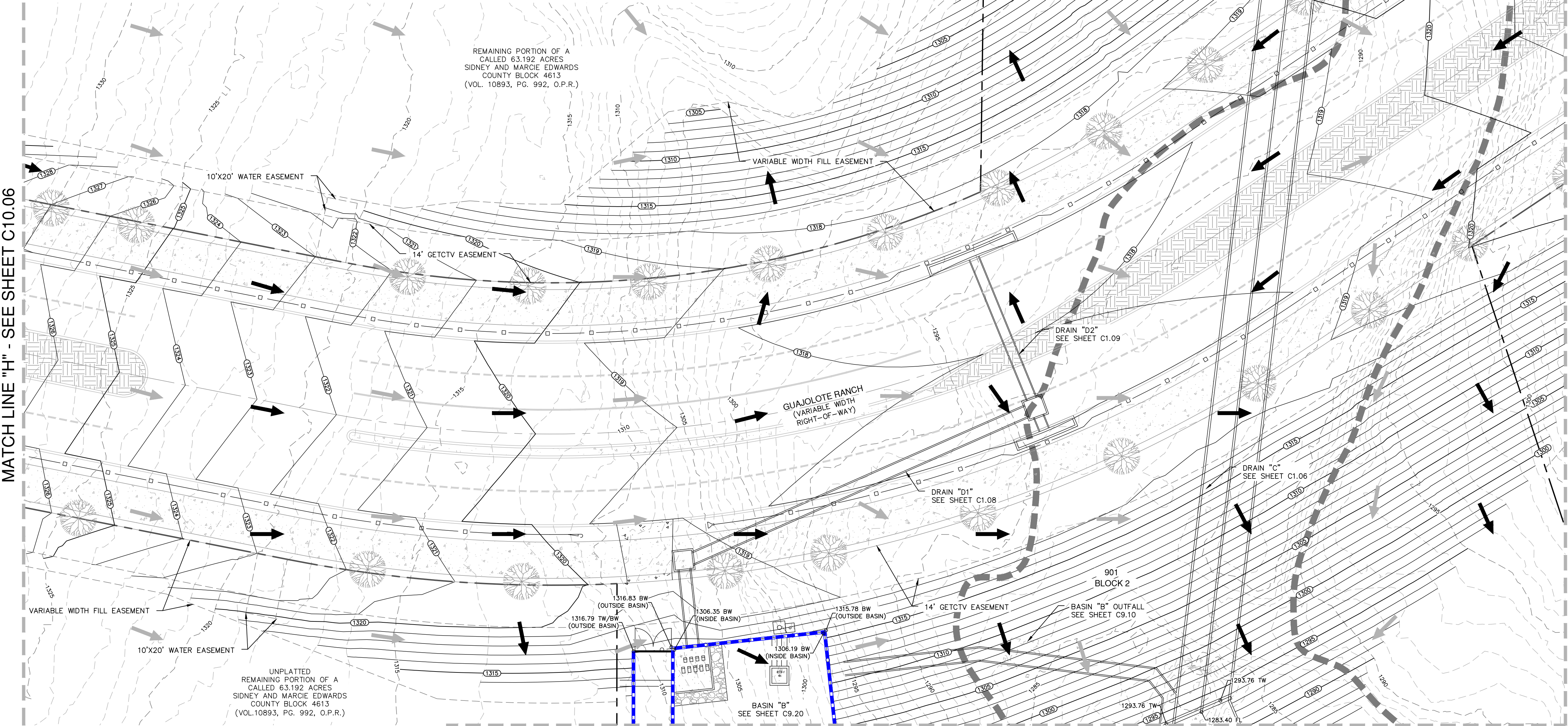


PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
GRADING PLAN
SHEET 6 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.06

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CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	
CONCRETE CANTILEVER OR FILL WALLS (BY GENERAL CONTRACTOR)	
EXISTING CONTOUR	-1320
PROPOSED CONTOUR	1320
FLOW ARROW (EXISTING)	
FLOW ARROW (PROPOSED)	
SPOT ELEVATION TOP WALL	01376.75 TW
SPOT ELEVATION BOTTOM WALL	01375.25 BW

12/15/25



ADAM J. RADEMACHER
102343
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

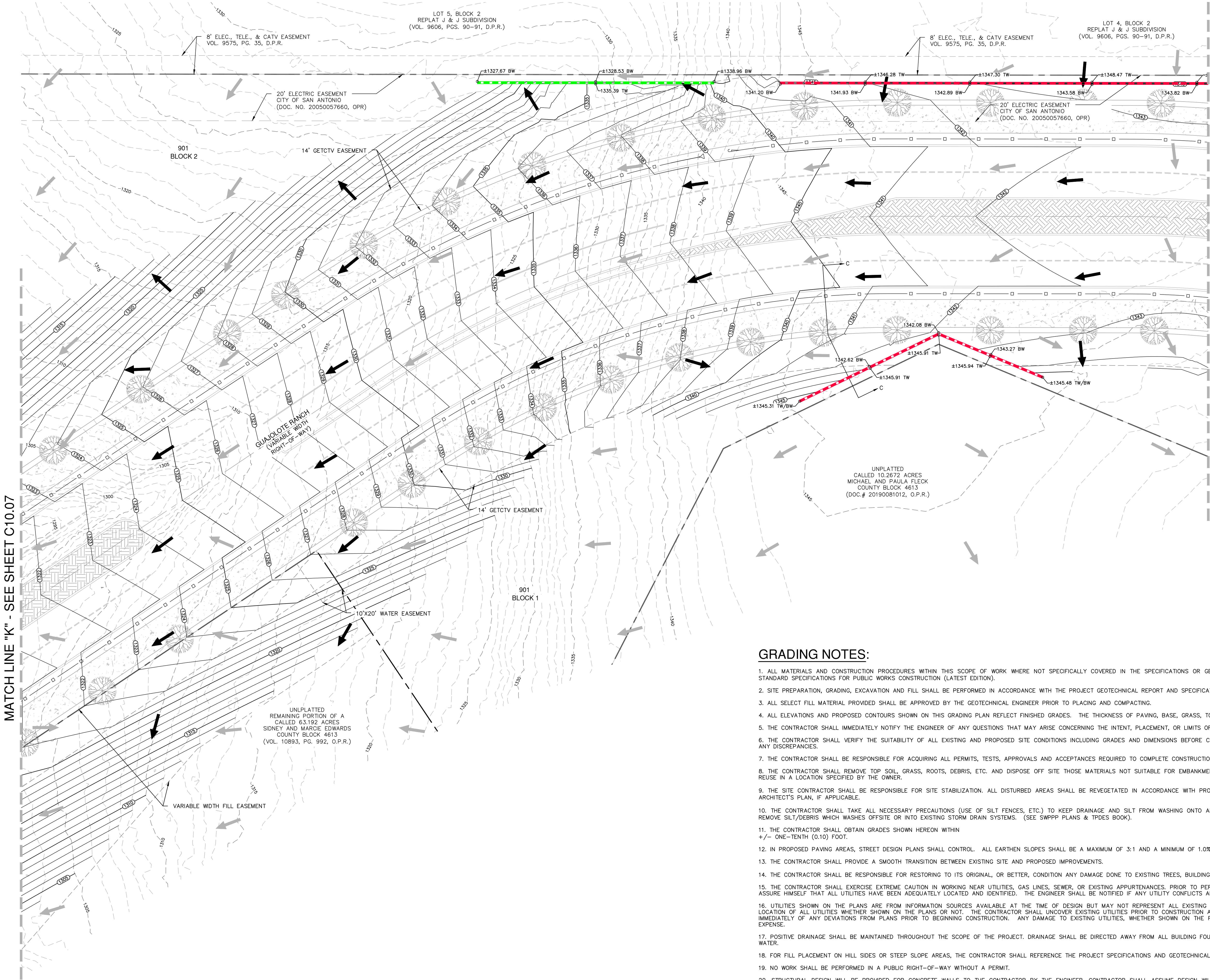
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 7 OF 11

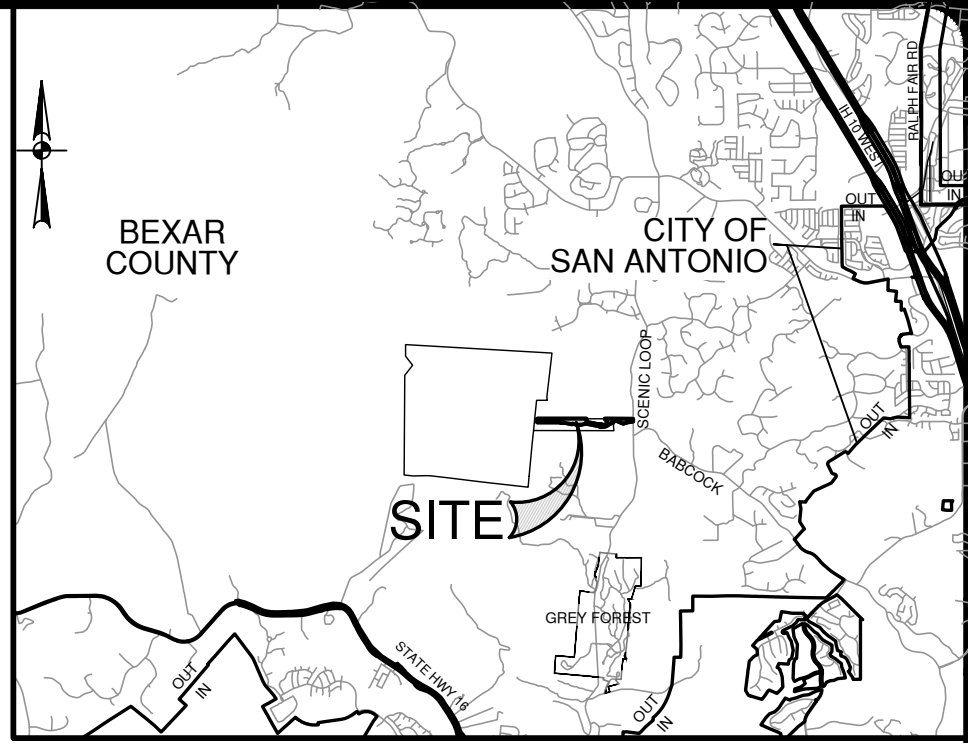
PLAT NO. 25-1180022
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED Blue DRAWN JC
SHEET C10.07

Date: Dec 15, 2025 4:51pm User ID: jaramaz
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MATCH LINE "K" - SEE SHEET C10.07



MATCH LINE "L" - SEE SHEET C10.09



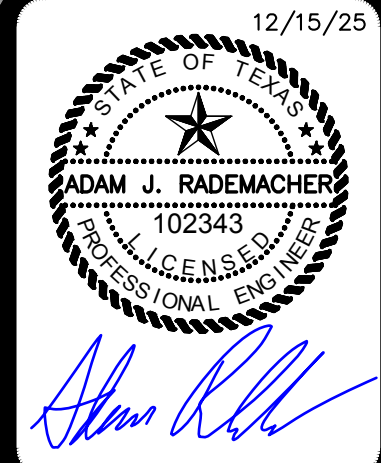
GRADING LEGEND

PROJECT LIMITS	---
FILL WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	---
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FLOW ARROW (EXISTING)	---
FLOW ARROW (PROPOSED)	---
SPOT ELEVATION TOP WALL	---
SPOT ELEVATION BOTTOM WALL	---

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- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
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DATE	
NO.	
REVISION	



PAPE-DAWSON

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1

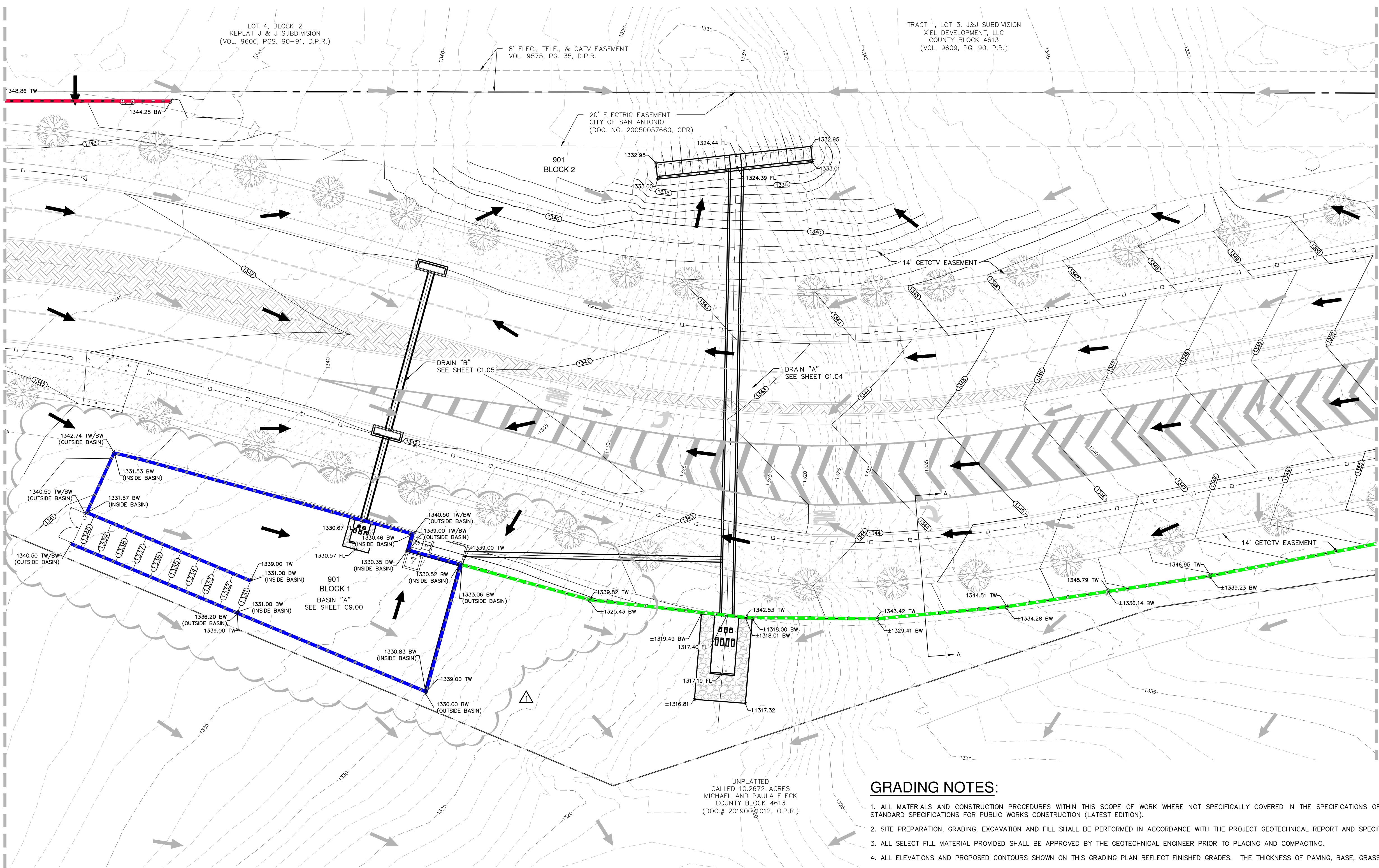
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 8 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.08

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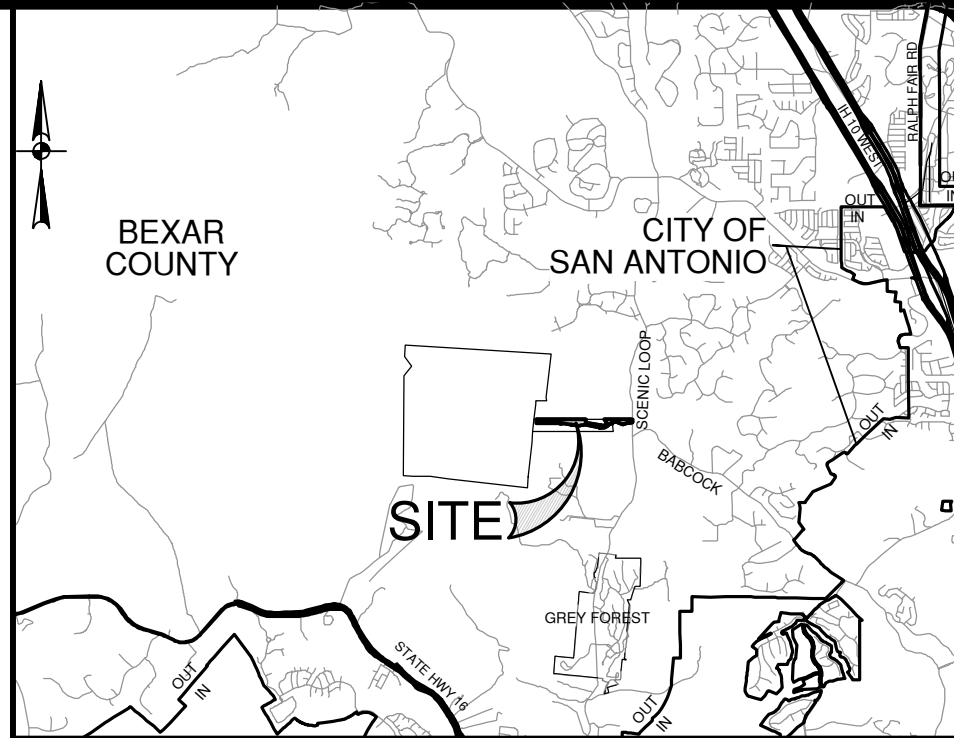
MATCH LINE "L" - SEE SHEET C10.08



UNPLATTED
CALLED 10.2672 ACRES
MICHAEL AND PAULA FLECK
COUNTY BLOCK 4613
(DOC.# 20190001012, D.P.R.)

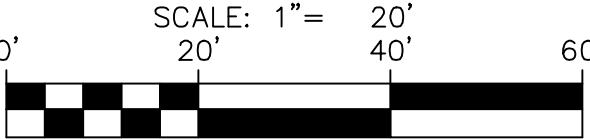
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LOCATION MAP

SCALE: NTS



GRADING LEGEND

PROJECT LIMITS

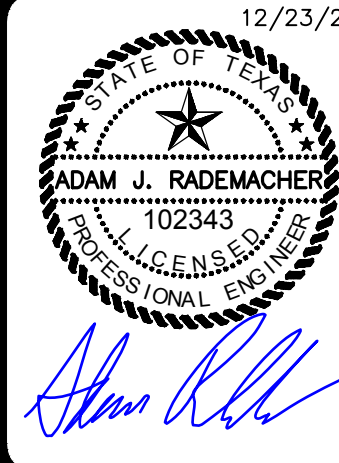
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- PROPOSED CONTOUR
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- FLOW ARROW (PROPOSED)
- SPOT ELEVATION TOP WALL
- SPOT ELEVATION BOTTOM WALL

GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 9 OF 11

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS SURVEYING FIRM #470 | TEXAS SURVEYING FIRM #1028800

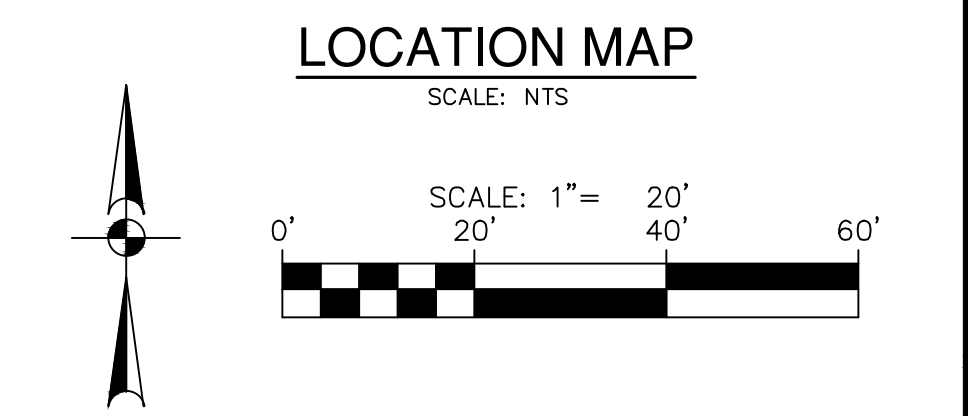
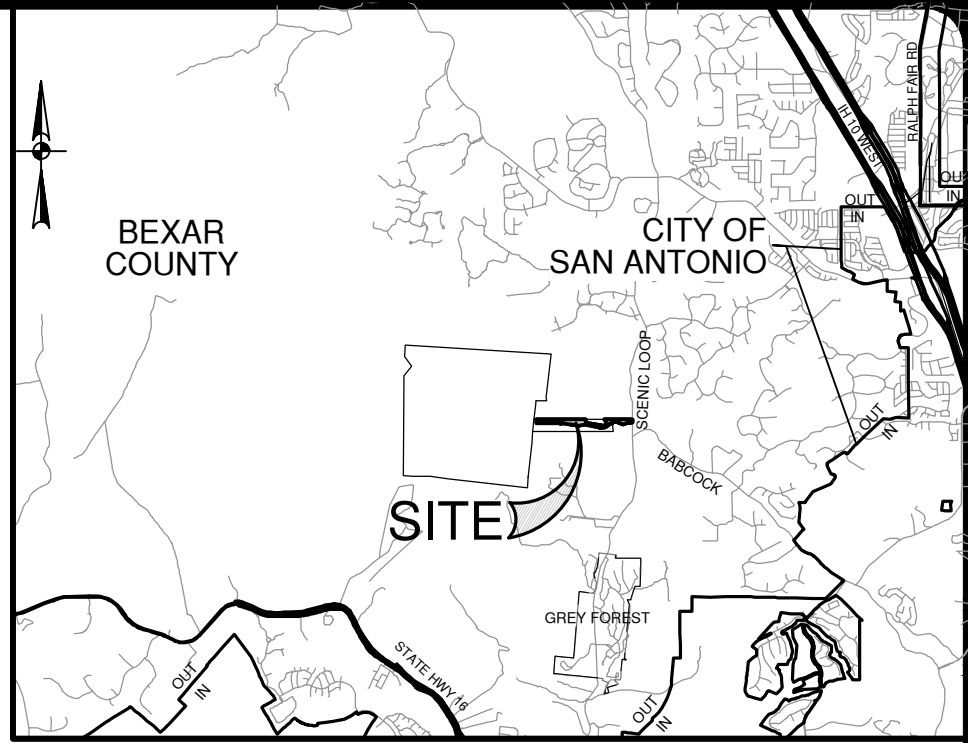
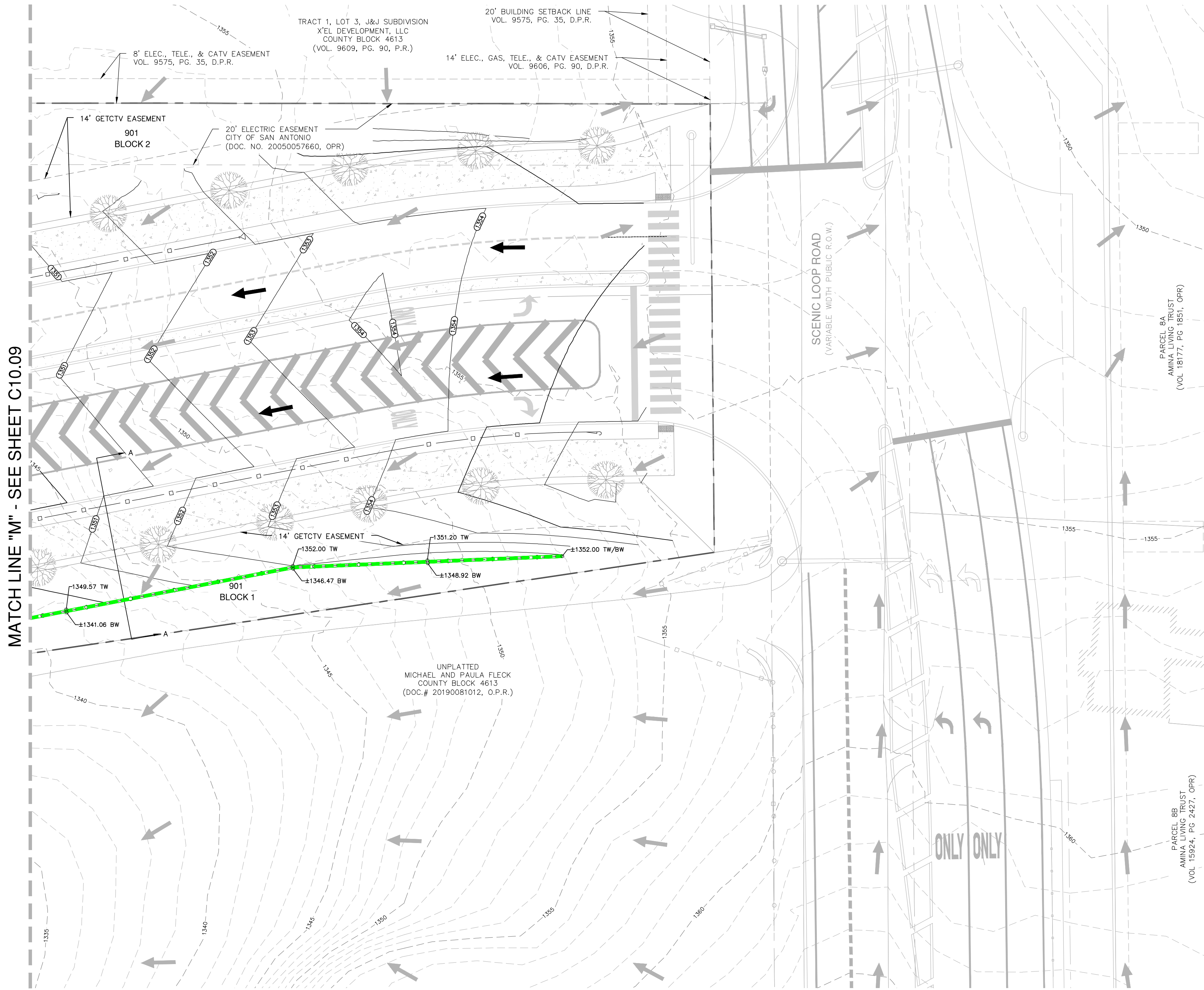


NO.	REVISION	DATE
1	BASIN A, CUT WALL, & FILL WALL	12/23/25

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.09

Date: Dec-23-2025 9:22am User ID: rhaebert
File: P:\123156\10\Design\Ch\12315610.dwg

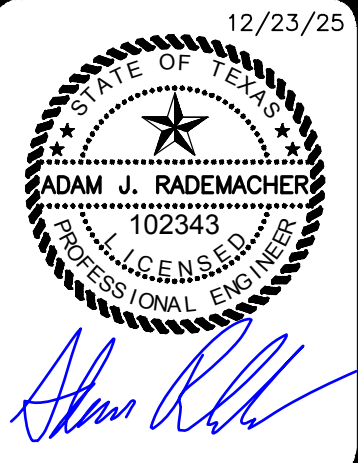
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NO.	REVISION	DATE



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

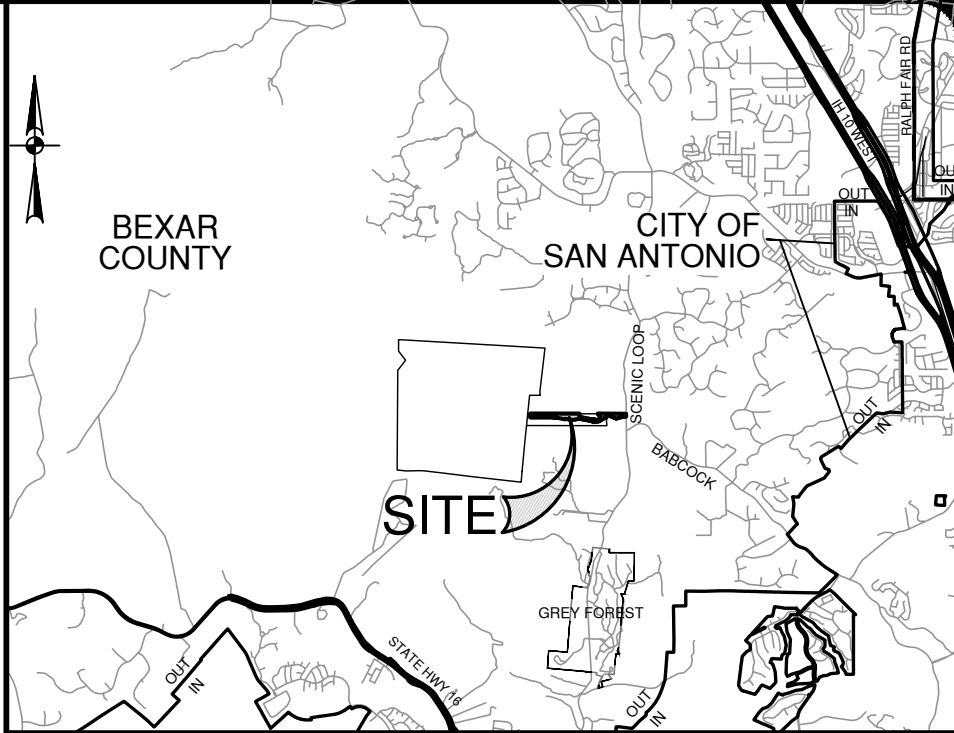
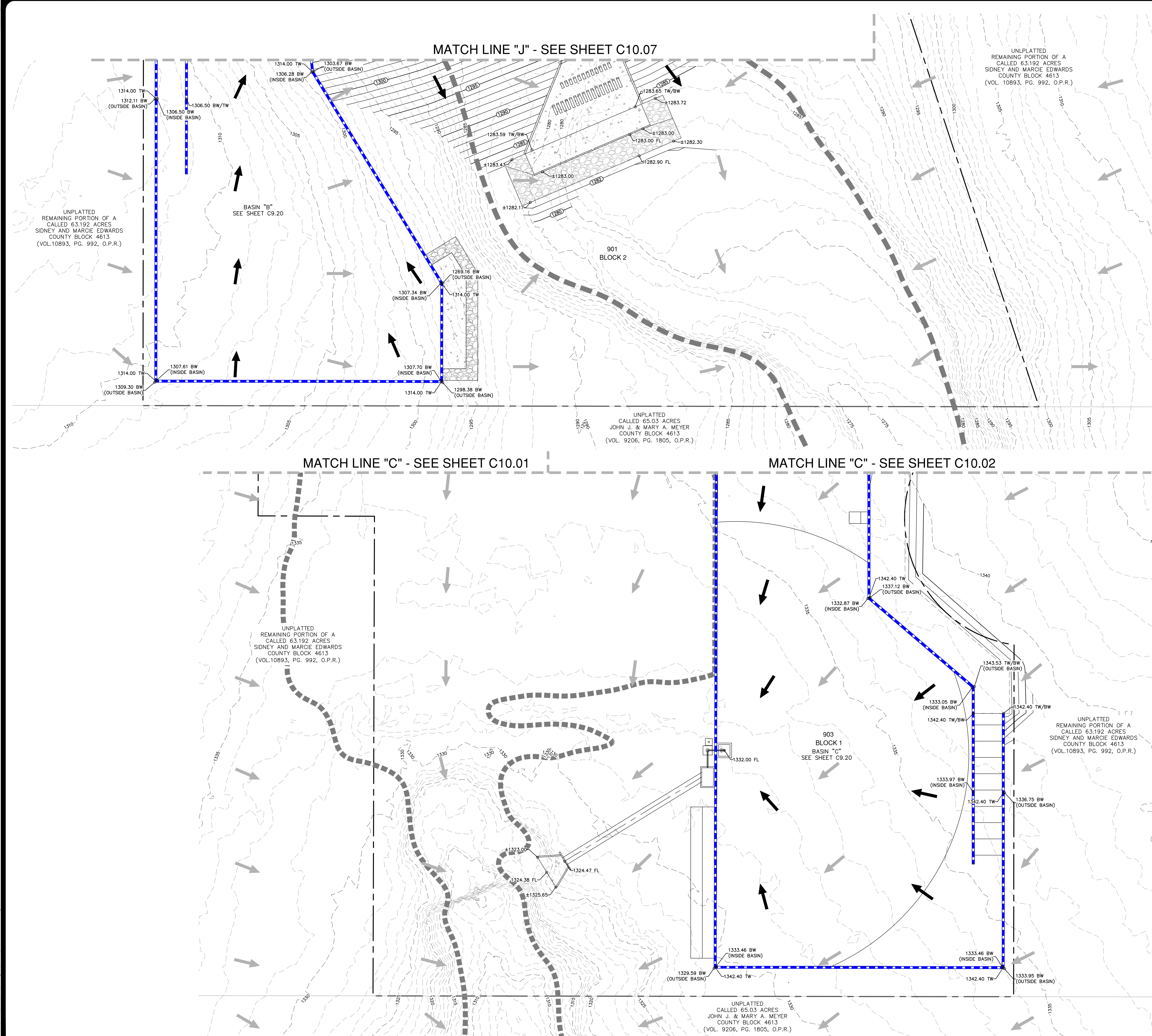
GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 10 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	JA
CHECKED	JB
DRAWN	JQ
SHEET	C10.10

Date: Dec 15, 2025 4:52pm User ID: jruquez
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LOCATION MAP

SCALE: NTS

SCALE: 1" = 20' 20' 40' 60'

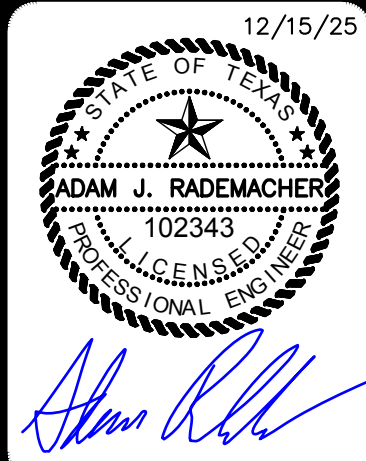
GRADING LEGEND

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CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	---
CONCRETE CANTILEVER OR FILL WALLS (SEE NOTE 20) (BY GENERAL CONTRACTOR)	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	---
FLOW ARROW (PROPOSED)	---
SPOT ELEVATION TOP WALL	o1376.75 TW
SPOT ELEVATION BOTTOM WALL	o1375.25 BW

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- UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
- POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
- FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
- A SEPARATE WALL CONTRACTOR WILL BE PROVIDED FOR CONCRETE WALLS TO THE CONTRACTOR BY THE ENGINEER. CONTRACTOR SHALL ASSUME DESIGN WILL MATCH TXDOT SPREAD FOOTING RETAINING WALL DESIGN B IN LIEU OF DESIGN FOR PRICING.
- A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND BLUE IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEY WITH J.D.K. STEVE@JDKINC.COM) TO ENSURE THERE ARE NO DELAYS. SEE FILL WALL AND CUT WALL DETAILS ON SHEET C10.12 FOR ADDITIONAL INFORMATION.

NO.	REVISION	DATE

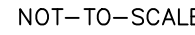
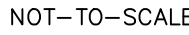
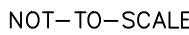


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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GRADING PLAN
SHEET 11 OF 11

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C10.11



12/15/25



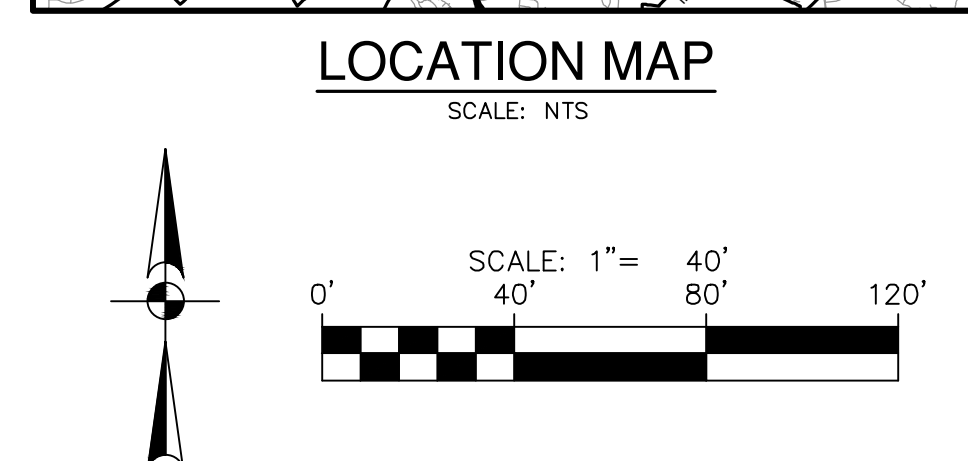
ADAM J. RADEMACHER
102343
LICENSED PROFESSIONAL ENGINEER

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS
GRADING DETAILS

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JD
SHEET **C10.12**

PROJECT LIMITS	
FILL WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	
CUT WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)	
CONCRETE CANTILEVER OR FILL WALLS (SEE NOTE 20) (BY GENERAL CONTRACTOR)	
EXISTING CONTOUR	-1320
PROPOSED CONTOUR	
FLOW ARROW (EXISTING)	
FLOW ARROW (PROPOSED)	
SPOT ELEVATION TOP WALL	01376.75 TW
SPOT ELEVATION BOTTOM WALL	01375.25 BW

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES UNDER THIS SCOPE OF WORK SHALL CONFORM TO SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE. THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL, CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRASSES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0X UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DUE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEM).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APURTANCES PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DRAIN AWAY FROM ALL FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SLOPES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
20. STRUCTURAL DESIGN WILL BE PROVIDED FOR CONCRETE WALLS TO THE CONTRACTOR BY THE ENGINEER. CONTRACTOR SHALL ASSUME DESIGN WILL MATCH TxDOT SPREAD FOOTING RETAINING WALL DESIGN B IN LIEU OF DESIGN FOR PRICING.
21. A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND BLUE IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEL) TO ENSURE THERE ARE NO DELAYS. SEE FILL WALL AND CUT WALL DETAILS ON SHEET C10.12 FOR ADDITIONAL INFORMATION.



12/23/25

STATE OF TEXAS

ADAM J. RADEMACHER

102343

LICENSED PROFESSIONAL ENGINEER

Adam J. Rademacher

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GUARDRAIL PLAN
SHEET 1 OF 3

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BB DRAWN JQ
SHEET C11.00

A.D.T. > 750

G.U. = 3.250 FT

G.D. = 46.750 FT

L.U. = 57.513 FT > 30 FT; USE 30 FT

D.D. = 95.489 FT > 30 FT; USE 30 FT

L.U. = $250 - \left(\frac{250}{D.U.}\right) \times G.U.$

L.D. = $250 - \left(\frac{250}{D.D.}\right) \times G.D.$

L.U. = $250 - \left(\frac{250}{30}\right) \times 3.250$

L.D. = $250 - \left(\frac{250}{30}\right) \times 46.750$

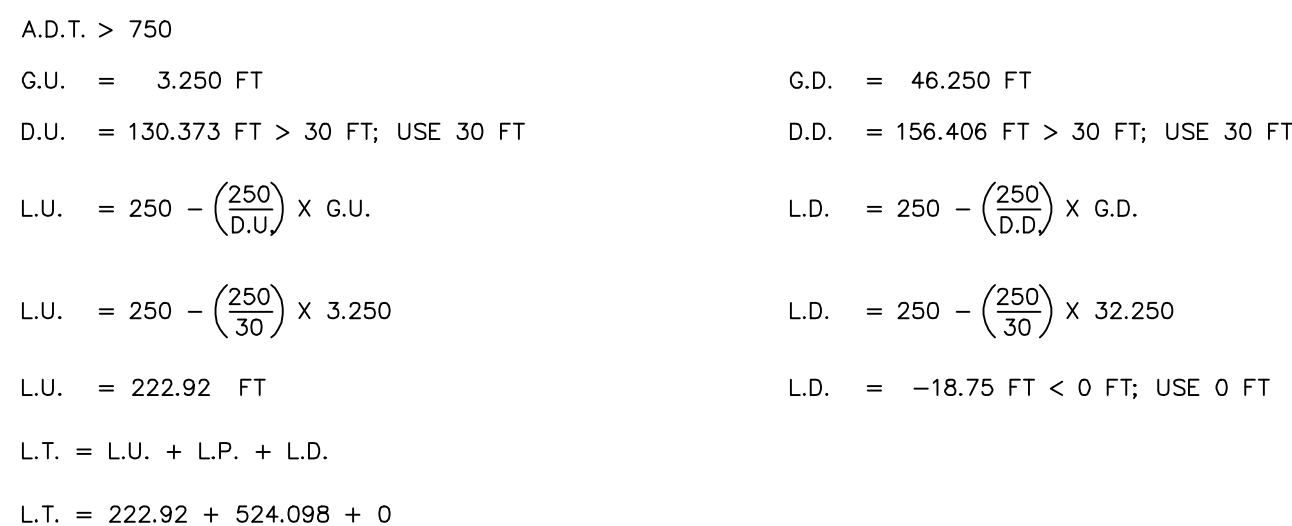
L.U. = 222.92 FT

L.D. = -139.58 FT < 0 FT; USE 0 FT

L.T. = L.U. + L.P. + L.D.

L.T. = 222.92 + 354.035 + 0

L.T. = 576.95 FT



A.D.T.	AVERAGE DAILY TRIPS
C.Z.	CLEAR ZONE
D.D.	DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR DOWNSTREAM TRAFFIC (WHICHEVER IS LEAST)
D.U.	DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR UPSTREAM TRAFFIC (WHICHEVER IS LEAST)
G.D.	GUARD FENCE OFFSET FROM EDGE OF OPPOSING DIRECTION OF TRAVEL LANE (CENTERLINE)
G.U.	GUARD FENCE OFFSET FROM EDGE OF TRAVEL LANE ADJACENT TO PROPOSED GUARD FENCE
L.D.	LENGTH OF DOWNSTREAM BARRIER NEEDED
L.F.	LINEAR FEET
L.P.	LENGTH OF BARRIER PARALLEL TO THE AREA OF CONCERN NEEDED
L.T.	LENGTH OF GUARD FENCE NEEDED
L.U.	LENGTH OF UPSTREAM BARRIER NEEDED
(A)	SINGLE GUARDRAIL TERMINAL (S.G.T.) SEE DETAIL SHEET C11.10
(B)	METAL BEAM GUARD FENCE (M.B.G.F.) SEE DETAIL SHEET C11.10
(C)	DOWNSTREAM ANCHOR TERMINAL (D.A.T.) SEE DETAIL SHEET C11.10

AREA OF CONCERN

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BARRIER LENGTH OF NEED CALCULATION:

A.D.T. > 750
G.U. = 3,250 FT
D.U. = 61,000 FT > 30 FT; USE 30 FT
L.U. = $250 - \left(\frac{250}{D.D.}\right) \times G.U.$
L.U. = $250 - \left(\frac{250}{30}\right) \times 3,250$
L.U. = 222.92 FT
L.T. = L.U. + L.P. + L.D.
L.T. = 222.92 + 710.733 + 0
L.T. = 933.653 FT

G.D. = 46,750 FT
D.D. = 95,489 FT > 30 FT; USE 30 FT
L.D. = $250 - \left(\frac{250}{D.D.}\right) \times G.D.$
L.D. = $250 - \left(\frac{250}{30}\right) \times 46,750$
L.D. = -139,583 FT < 0 FT; USE 0 FT

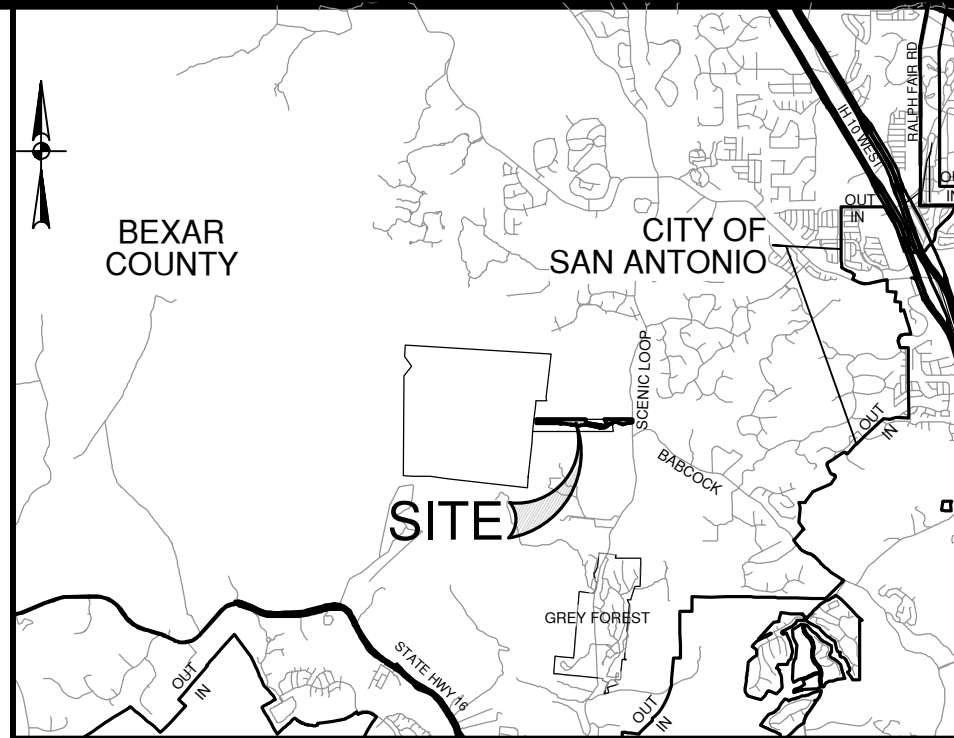
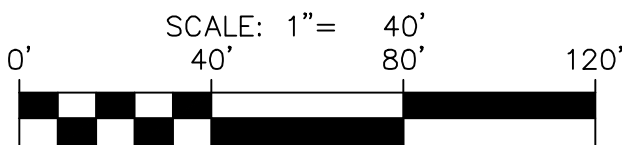
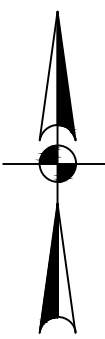
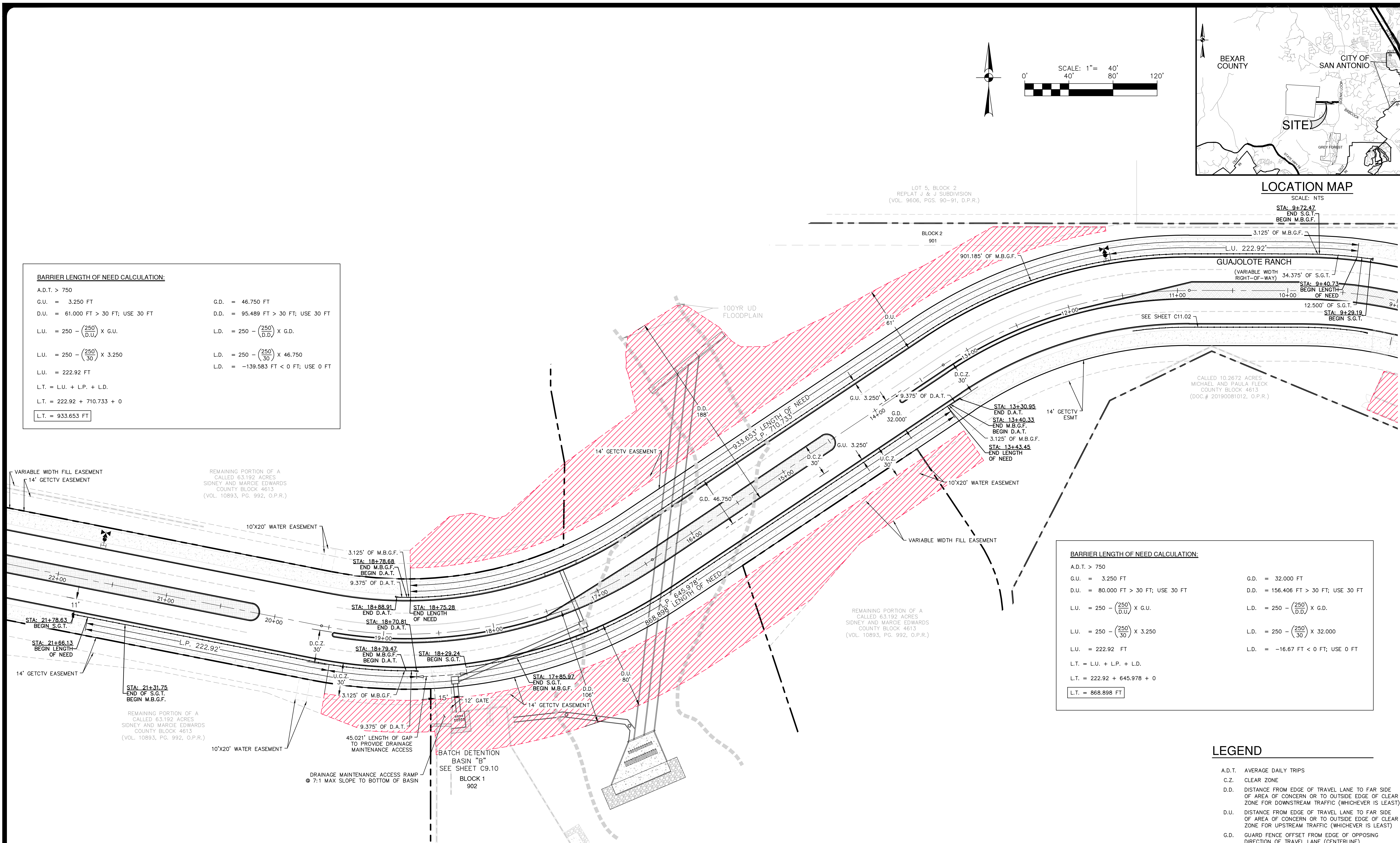
BARRIER LENGTH OF NEED CALCULATION:

A.D.T. > 750
G.U. = 3,250 FT
D.U. = 80,000 FT > 30 FT; USE 30 FT
L.U. = $250 - \left(\frac{250}{D.U.}\right) \times G.U.$
L.U. = $250 - \left(\frac{250}{30}\right) \times 3,250$
L.U. = 222.92 FT
L.T. = L.U. + L.P. + L.D.
L.T. = 222.92 + 645.978 + 0
L.T. = 868.898 FT

G.D. = 32,000 FT
D.D. = 158,406 FT > 30 FT; USE 30 FT
L.D. = $250 - \left(\frac{250}{D.D.}\right) \times G.D.$
L.D. = $250 - \left(\frac{250}{30}\right) \times 32,000$
L.D. = -16.67 FT < 0 FT; USE 0 FT

LEGEND

- A.D.T. AVERAGE DAILY TRIPS
C.Z. CLEAR ZONE
D.D. DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR DOWNSTREAM TRAFFIC (WHICHEVER IS LEAST)
D.U. DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR UPSTREAM TRAFFIC (WHICHEVER IS LEAST)
G.D. GUARD FENCE OFFSET FROM EDGE OF OPPOSING DIRECTION OF TRAVEL LANE (CENTERLINE)
G.U. GUARD FENCE OFFSET FROM EDGE OF TRAVEL LANE ADJACENT TO PROPOSED GUARD FENCE
L.D. LENGTH OF DOWNSTREAM BARRIER NEEDED
L.F. LINEAR FEET
L.P. LENGTH OF BARRIER PARALLEL TO THE AREA OF CONCERN NEEDED
L.T. LENGTH OF GUARD FENCE NEEDED
L.U. LENGTH OF UPSTREAM BARRIER NEEDED
Ⓐ SINGLE GUARDRAIL TERMINAL (S.G.T.)
SEE DETAIL SHEET C11.10
Ⓑ METAL BEAM BUAARD FENCE (M.B.G.F.)
SEE DETAIL SHEET C11.10
Ⓒ DOWNSTREAM ANCHOR TERMINAL (D.A.T.)
SEE DETAIL SHEET C11.10
AREA OF CONCERN



LOCATION MAP

SCALE: NTS

STA: 9+72.47
END S.G.T.
BEGIN M.B.G.F.

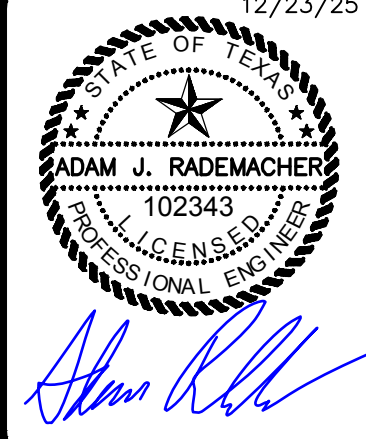
GUAJOLOTE RANCH
(VARIABLE WIDTH
RIGHT-OF-WAY)

STA: 9+40.73
BEGIN LENGTH
OF NEED

12,500' OF S.G.T.
STA: 9+29.19
BEGIN S.G.T.

CALLLED 10,267.2 ACRES
MICHAEL AND PAULA FLECK
COUNTY BLOCK 4613
(VOL. # 20190081012, O.P.R.)

NO.	REVISION	DATE



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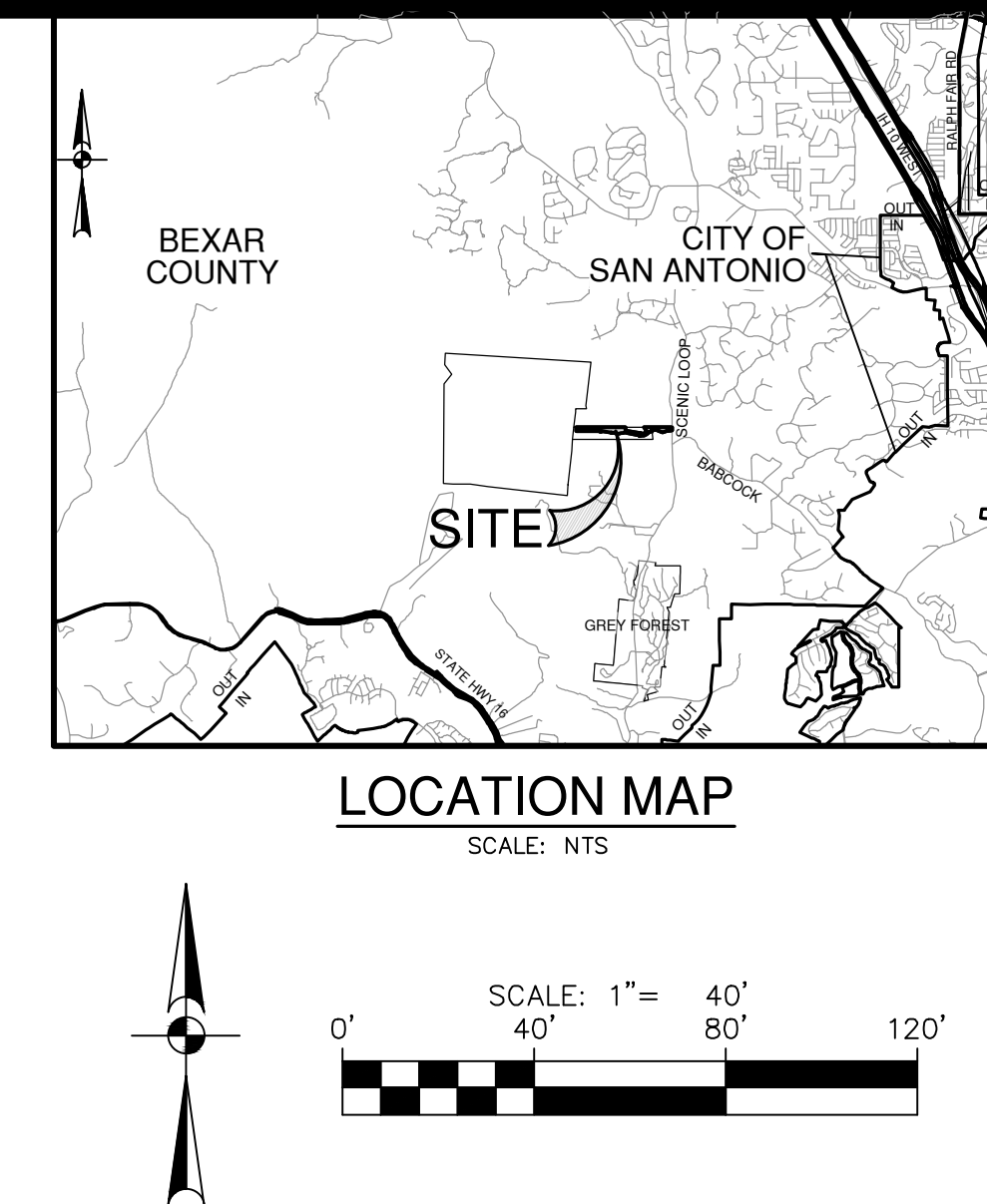
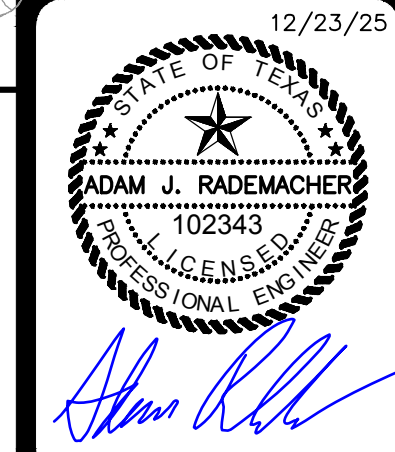
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GUAJOLOTE RANCH COLLECTOR PHASE 1

BEXAR COUNTY, TEXAS

GUARDRAIL PLAN
SHEET 2 OF 3

PLAT NO.	25-11800226
JOB NO.	12356-10
DATE	DECEMBER 2025
DESIGNER	IA
CHECKED	JB
DRAWN	JQ
SHEET	C11.01

[illegible]

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH COLLECTOR PHASE 1
BEXAR COUNTY, TEXAS

GUARDRAIL PLAN
SHEET 3 OF 3

PLAT NO. 25-11800226
JOB NO. 12356-10
DATE DECEMBER 2025
DESIGNER IA
CHECKED BFB DRAWN JQ
SHEET C11.02

A.D.T. > 750

G.U. = 3.250 FT

D.U. = 130.373 FT > 30 FT; USE 30 FT

L.U. = $250 - \left(\frac{250}{D.U.}\right) \times G.U.$

L.U. = $250 - \left(\frac{250}{30}\right) \times 3.250$

L.U. = 222.92 FT

L.T. = L.U. + L.P. + L.D.

L.T. = 222.92 + 648.276 + 0

L.T. = 871.196 FT

G.D. = 46.756 FT

D.D. = 156.406 FT > 30 FT; USE 30 FT

L.D. = $250 - \left(\frac{250}{D.D.}\right) \times G.D.$

L.D. = $250 - \left(\frac{250}{30}\right) \times 46.756$

L.D. = -139.63 FT < 0 FT; USE 0 FT

A.D.T.	AVERAGE DAILY TRIPS
C.Z.	CLEAR ZONE
D.D.	DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR DOWNSTREAM TRAFFIC (WHICHEVER IS LEAST)
D.U.	DISTANCE FROM EDGE OF TRAVEL LANE TO FAR SIDE OF AREA OF CONCERN OR TO OUTSIDE EDGE OF CLEAR ZONE FOR UPSTREAM TRAFFIC (WHICHEVER IS LEAST)
G.D.	GUARD FENCE OFFSET FROM EDGE OF OPPOSING DIRECTION OF TRAVEL LANE (CENTERLINE)
G.U.	GUARD FENCE OFFSET FROM EDGE OF TRAVEL LANE ADJACENT TO PROPOSED GUARD FENCE
L.D.	LENGTH OF DOWNSTREAM BARRIER NEEDED
L.F.	LINEAR FEET
L.P.	LENGTH OF BARRIER PARALLEL TO THE AREA OF CONCERN NEEDED
L.T.	LENGTH OF GUARD FENCE NEEDED
L.U.	LENGTH OF UPSTREAM BARRIER NEEDED
①	SINGLE GUARDRAIL TERMINAL (S.G.T.) SEE DETAIL SHEET C11.10
②	METAL BEAM GUARD FENCE (M.B.G.F.) SEE DETAIL SHEET C11.10
③	DOWNSTREAM ANCHOR TERMINAL (D.A.T.) SEE DETAIL SHEET C11.10

AREA OF CONCERN

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