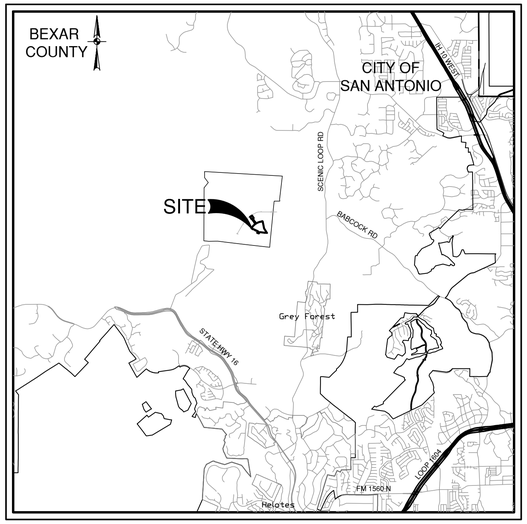
GUAJOLOTE RANCH - UNIT 6

BEXAR COUNTY, TEXAS

CIVIL CONSTRUCTION PLANS

Sheet List Table

Sheet Title	Sheet Description	Sheet Number
COVER SHEET		C0.00
MASTER DRAINAGE PLAN	PROPOSED CONDTIONS	C1.00
MASTER DRAINAGE PLAN	ULTIMATE CONDITIONS	C1.00A
DRAIN B PLAN AND PROFILE	(STA. 0+98.87 TO END)	C1.01
DRAIN C & DRAIN F PLAN & PROFILE	DRAIN C (STA. 1+02.00 TO END) DRAIN F (STA. 1+02.50 TO END)	C1.02
DRAIN D PLAN AND PROFILE	(STA. 1+26.63 TO END)	C1.03
DRAIN D PLAN AND PROFILE	(STA. 3+00.00 TO END)	C1.04
DRAIN E PLAN AND PROFILE	(STA. 1+03.01 TO END)	C1.05
INTERCEPTOR DRAIN G PLAN AND PROFILE	(STA. 1+10.00 TO END)	C1.06
DRAIN H PLAN AND PROFILE	(STA. 1+04.78 TO END)	C1.07
DRAIN I PLAN AND PROFILE	(STA. 1+03.69 TO END)	C1.08
DRAIN J PLAN AND PROFILE	(STA. 1+35.37 TO END)	C1.09
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 PEAK PLAN & PROFILE	STA. 10+15.00 TO END	C2.00
PERU POINT PLAN & PROFILE	STA. 10+15.01 TO 16+50.00	C2.01
PERU POINT PLAN & PROFILE	STA. 16+50.00 TO END	C2.02
SPRING BLIND PLAN & PROFILE	STA. 10+15.00 TO END	C2.03
GALPOULA GROVE PLAN & PROFILE	STA. 10+50.00 TO END	C2.04
BLACKBUCK RIDGE PLAN & PROFILE	STA. 10+50.00 TO END	C2.05
SCIMITAR HILL PLAN & PROFILE	STA. 10+15.43 TO END	C2.06
ELAND HILL PLAN & PROFILE	STA. 10+17.00 TO END	C2.07
STREET DETAILS		C2.10
STREET DETAILS		C2.20
STREET DETAILS		C2.30
OVERALL SIGNAGE PLAN		C3.00
OVERALL SIGNAGE PLAN		C3.01
OVERALL SIGNAGE PLAN		C3.02
SIGNAGE DETAILS		C3.10
SIGNAGE DETAILS		C3.20
OVERALL SANITARY SEWER PLAN		C4.00
OVERALL SANITARY SEWER PLAN		C4.01
OVERALL SANITARY SEWER PLAN		C4.02



LOCATION MAP

NOT-TO-SCALE

PREPARED FOR:

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

May 2026

Sheet List Table

Sheet Title	Sheet Description	Sheet Number
SANITARY SEWER LINE A PLAN & PROFILE	STA. 1+00.00 TO 10+00.00	C4.03
SANITARY SEWER LINE A PLAN & PROFILE	STA. 10+00.00 to 20+50.00	C4.04
SANITARY SEWER LINE A PLAN & PROFILE	STA. 20+50.00 TO END	C4.05
SANITARY SEWER LINE C PLAN & PROFILE	STA. 1+00.00 TO END	C4.06
SANITARY SEWER LINE D, LINE H & LINE AA PLAN & PROFILE	LINE D, LINE H, LINE AA STA. 1+00.00 TO END	C4.07
SANITARY SEWER LINE F PLAN & PROFILE	LINE F STA. 1+00.00 TO END	C4.08
SANITARY SEWER LINE G PLAN AND PROFILE	STA. 1+00.00 TO END	C4.09
SANITARY SEWER LINE AK AND LINE AL PLAN & PROFILE	LINE AK AND LINE AL STA. 1+00.00 TO END	C4.10
SANITARY SEWER LINE O & LINE AM PLAN & PROFILE	LINE O STA. 21+51.69 LINE AM 6+42.83 TO END	C4.11
SANITARY SEWER DETAILS		C4.12
SANITARY SEWER NOTES		C4.13
WATER DISTRIBUTION PLAN		C5.00
WATER DISTRIBUTION PLAN		C5.01
WATER DISTRIBUTION PLAN		C5.02
WATER DISTRIBUTION DETAILS		C5.10
WATER DISTRIBUTION NOTES		C5.20
OVERALL UTILITY PLAN		C6.00
OVERALL UTILITY PLAN		C6.01
OVERALL UTILITY PLAN		C6.02
OVERALL UTILITY PLAN		C6.03
OVERALL GRADING PLAN	(1 OF 3)	C7.00
OVERALL GRADING PLAN	(2 OF 3)	C7.01
OVERALL GRADING PLAN	(3 OF 3)	C7.02
GRADING PLAN NOTES AND DETAILS		C7.10
STORM WATER POLLUTION PREVENTION PLAN		C8.00
STORM WATER POLLUTION PREVENTION DETAILS		C8.01
BASIN B PLAN		C9.00
BASIN B DETAILS		C9.01
BASIN D PLAN		C9.02
BASIN D DETAILS		C9.03
BASIN E PLAN		C9.04
BASIN E DETAILS		C9.05

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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/3/26

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 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,419LF-8" PVC 88LF-12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

SHEET C0.00

PERMIT SET

PLAT NO. 25-11800485 PD JOB NO. 12356-21 GUAJOLOTE RANCH - UNIT 6

Date: May 21, 2026, 9:20am User ID: eraucedo
File: P:\123\56\21\Design\Civil\Civ 12356p1.dwg

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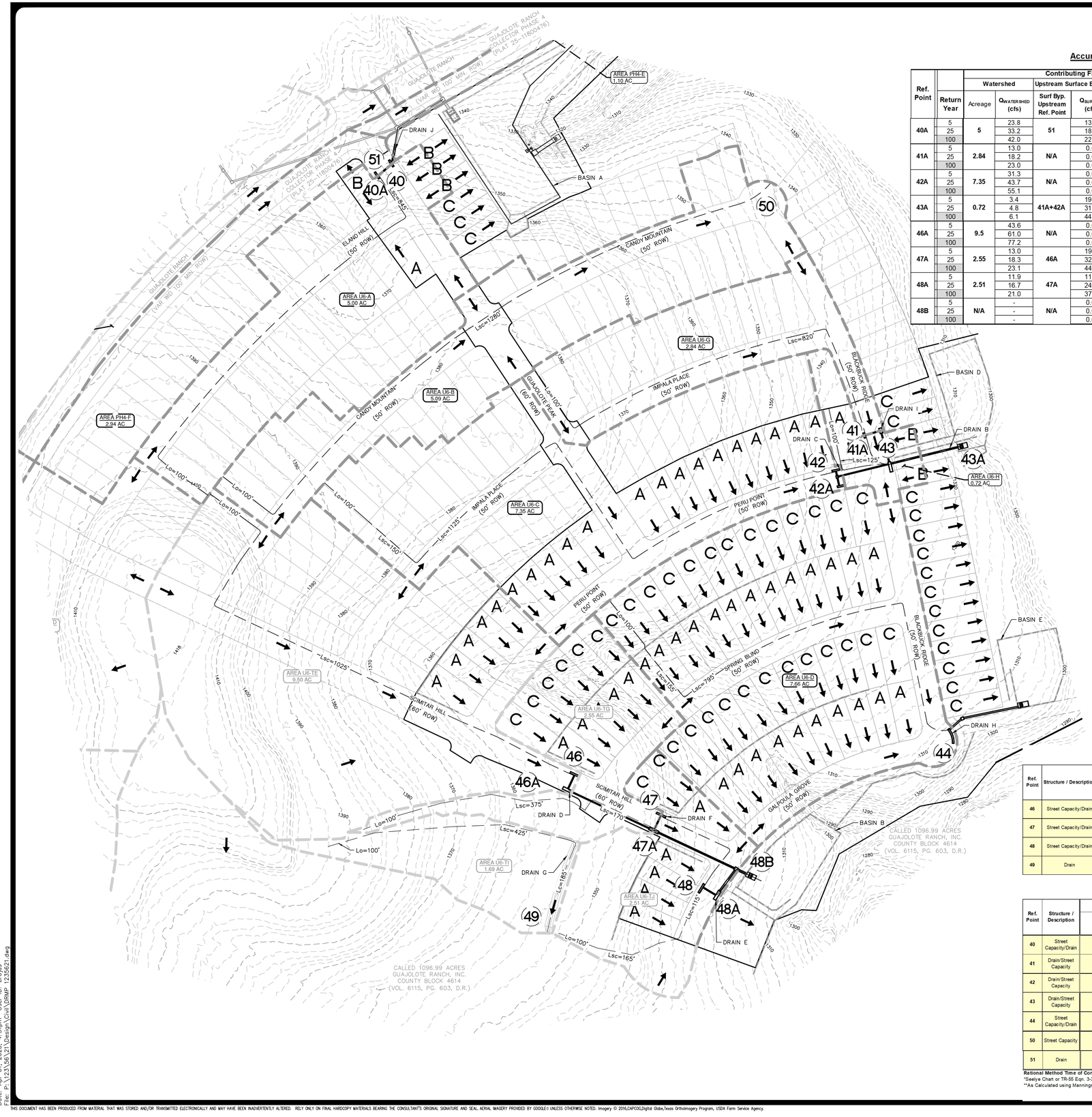
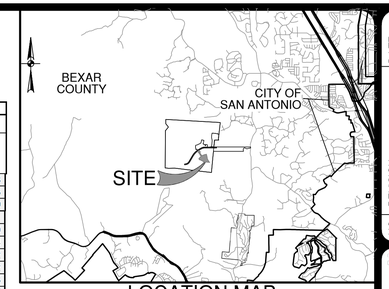


Accumlated Flow Rates

Ref. Point	Return Year	Contributing Flow: Watershed Acreage	Watershed $Q_{WATERSHED}$ (cfs)	Upstream Surface Bypass: Surf Byp. Upstream Ref. Point	Upstream Surface Bypass $Q_{BURF-UP}$ (cfs)	Upstream Pipe Flow: Pipe Upstream Ref. Point	Upstream Pipe Flow $Q_{PIPE-UP}$ (cfs)	Reference Sub-point T $Q_{INLET-TOTAL}$ (cfs)	Reference Sub-point C $Q_{CAPTURED}$ (cfs)	Reference Sub-point B Q_{BYPASS} (cfs)	Reference Sub-point P Q_{PIPE} (cfs)
40A	5	5	23.8	51	13.0	N/A	0.0	**36.8**	36.8	-	36.8
	25		33.2		18.1		0.0	**51.3**	51.3	-	51.3
	100		42.0		22.9		0.0	**64.9**	64.9	-	64.9
41A	5	2.84	13.0	N/A	0.0	N/A	0.0	**13.0**	9.1	3.9	9.1
	25		18.2		0.0		0.0	**18.2**	11.0	7.2	11.0
	100		23.0		0.0		0.0	**23.0**	12.4	10.6	12.4
42A	5	7.35	31.3	N/A	0.0	N/A	0.0	**31.3**	16.2	15.1	16.2
	25		43.7		0.0		0.0	**43.7**	19.2	24.5	19.2
	100		55.1		0.0		0.0	**55.1**	21.6	33.5	21.6
43A	5	0.72	3.4	41A+42A	19.0	41A+42A	25.3	**22.4**	22.4	-	47.7
	25		4.8		31.7		30.2	**36.5**	36.5	-	66.7
	100		6.1		44.1		34.0	**50.2**	50.2	-	84.2
46A	5	9.5	43.6	N/A	0.0	N/A	0.0	**43.6**	24.1	19.5	24.1
	25		61.0		0.0		0.0	**61.0**	28.8	32.2	28.8
	100		77.2		0.0		0.0	**77.2**	32.6	44.6	32.6
47A	5	2.55	13.0	46A	19.5	46A	24.1	**32.5**	20.6	11.9	44.7
	25		18.3		32.2		28.8	**50.5**	26.2	24.3	55.0
	100		23.1		44.6		32.6	**67.7**	30.3	37.4	62.9
48A	5	2.51	11.9	47A	11.9	N/A	0.0	**23.8**	23.8	0.0	23.8
	25		16.7		24.3		0.0	**41.0**	41.0	0.0	41.0
	100		21.0		37.4		0.0	**58.4**	58.4	0.0	58.4
48B	5	N/A	-	N/A	0.0	47A+48A	68.5	**0.0**	0.0	0.0	68.5
	25		-		0.0		96.0	**0.0**	0.0	0.0	96.0
	100		-		0.0		121.3	**0.0**	0.0	0.0	121.3

Composite Runoff Coefficient Calculations

DA	Condition	C VALUE 0.53 Area (ac)	C VALUE 0.72 Area (ac)	Total Area (ac)	Composite C Value
U6-TE	Proposed	4.04	5.46	9.50	0.64
U6-TG	Proposed	0.60	1.95	2.55	0.68
U6-TJ	Proposed	1.15	1.36	2.51	0.63



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 100'
0' 100' 200' 300'

MASTER DRAINAGE LEGEND

- UNIT BOUNDARY
- TEMPORARY DRAINAGE AREA BOUNDARY
- DRAINAGE AREA BOUNDARY
- Lo=246' OVERLAND FLOW PATH
- Lsc=246' SHALLOW CONCENTRATED FLOW PATH
- Lc=246' CONCENTRATED FLOW PATH
- 690 EXISTING CONTOUR
- (11) DRAINAGE CALCULATION POINT
- A,B,C LOT GRADING TYPE
- DRAINAGE FLOW ARROW

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

MASTER DRAINAGE PLAN
PROPOSED CONDITIONS

Proposed Conditions Calculations

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (TR-55) L_T (FT)	n	P_2	S_o (ft/ft)	T_T* (MIN)	Shallow Concentrated Flow - 1** L_{SC} (FT)	Condition**	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Shallow Concentrated Flow - 2** L_{SC} (FT)	Condition**	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MIN)	T_{C-TOT}	Rational Method Q=CIA IDF Curve: CoSA_A14_PA2 Return Year	Intensity (in/hr)	Q (cfs)
46	Street Capacity/Drain	U6-TE	9.50	0.64	1,125	100	0.150	4.04	0.0600	5	1,025	S	0.07	7.5	2.3				-	-	-	-	-	7	5	7.17	43.6
																								7	25	10.03	61.0
																								7	100	12.69	77.2
47	Street Capacity/Drain	U6-TG	2.55	0.68	645	100	0.150	4.04	0.0600	5	375	U	0.09	4.8	1.3	170	S	0.07	7.5	0.4	-	-	-	6	5	7.52	13.0
																								6	25	10.53	18.3
																								6	100	13.30	23.1
48	Street Capacity/Drain	U6-TJ	2.51	0.63	380	100	0.150	4.04	0.0500	6	165	U	0.08	4.6	0.6	115	S	0.07	7.5	0.3	-	-	-	6	5	7.52	11.9
																								6	25	10.53	16.7
																								6	100	13.30	21.0
49	Drain	U6-TI	1.69	0.53	710	100	0.150	4.04	0.0800	5	425	U	0.08	4.6	1.6				-	-	185	2.1	1.5	8	5	6.87	6.2
																								8	25	9.61	8.6
																								8	100	12.16	10.9

Master Drainage Plan Calculations
(Ultimate Development)

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (TR-55) L_T (FT)	n	P_2	S_o (ft/ft)	T_T* (MIN)	Shallow Concentrated Flow - 1** L_{SC} (FT)	Condition**	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Shallow Concentrated Flow - 2** L_{SC} (FT)	Condition**	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MIN)	T_{C-TOT}	Rational Method Q=CIA IDF Curve: CoSA_A14_PA2 Return Year	Intensity (in/hr)	Q (cfs)
40	Street Capacity/Drain	U6-A	5.00	0.72	945	100	0.150	4.04	0.0327	7	845	S	0.05	6.1	2.3				-	-	-	-	-	9	5	6.60	23.8
																								9	25	9.23	33.2
																								9	100	11.68	42.0
41	Drain/Street Capacity	U6-G	2.84	0.72	920	100	0.150	4.04	0.0210	8	820	S	0.04	5.6	2.4				-	-	-	-	-	10	5	6.36	13.0
																								10	25	8.88	18.2
																								10	100	11.23	23.0
42	Drain/Street Capacity	U6-C	7.35	0.72	1,375	100	0.150	4.04	0.0210	8	150	U	0.01	1.6	1.5	1,125	S	0.04	5.6	3.3	-	-	-	12	5	5.92	31.3
																								12	25	8.25	43.7
																								12	100	10.41	55.1
43	Drain/Street Capacity	U6-H	0.72	0.72	225	100	0.150	4.04	0.0161	9	125	S	0.01	2.8	0.7				-	-	-	-	-	9	5	6.60	3.4
																								9	25	9.23	4.8
																								9	100	11.68	6.1
44	Street Capacity/Drain	U6-D	7.66	0.72	1,050	100	0.150	4.04	0.0528	5	155	U	0.02	2.3	1.1	795	S	0.05	6.3	2.1	-	-	-	8	5	6.87	37.9
																								8	25	9.61	53.0
																								8	100	12.16	67.1
50	Street Capacity	U6-B	4.96	0.72	1,380	100	0.150	4.04	0.0382	6	1,280	S	0.05	6.5	3.3				-	-	-	-	-	9	5	6.60	23.6
																								9	25	9.23	33.0
																								9	100	11.68	41.7
51	Drain	PH4-F	2.94	0.72	1,125	100	0.150	4.04	0.0200	8	1,025	S	0.03	4.5	3.8				-	-	-	-	-	11	5	6.13	13.0
																								11	25	8.56	18.1
																								11	100	10.81	22.9

Rational Method Time of Concentration
*Seeley Chart or TR-55 Eqn. 3-3
**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

From TR-55 Equation 3-3*: $T_o = \frac{(0.007(n*)^{0.8})}{(P2^{0.5}*s^{0.4})} * 60$

From TR-55 Figure 3-1**: $v = \frac{k}{n} R^{2/3} S_o^{1/2}$, $k = 1.486\ ft^{1/3}/s$

S: For Streets: n = 0.018, R = 0.2 (Adapted from Mannings)
P: For Paved: n = 0.025, R = 0.2
U: For Unpaved: n = 0.05, R = 0.4
D: For Default: v = 6 fps

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.00

Date: Apr 01, 2026, 4:31pm User ID: brojas
File: P:\123\56\21\Design\Civil\DRMP 12356211.dwg
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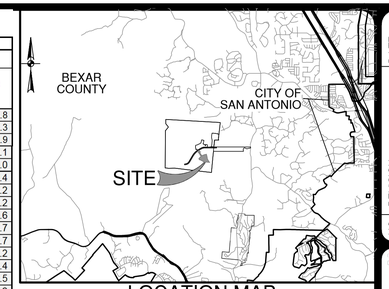
Accumulated Flow Rates

Ref. Point	Return Year	Contributing Flow: Watershed Acreage	Watershed $Q_{WATERSHED}$ (cfs)	Upstream Surface Bypass: Surf Byp. Upstream Ref. Point	Upstream Surface Bypass $Q_{SURF-UP}$ (cfs)	Upstream Pipe Flow: Pipe Upstream Ref. Point	Upstream Pipe Flow $Q_{PIPE-UP}$ (cfs)	Reference Sub-point T $Q_{INLET-TOTAL}$ (cfs)	Reference Sub-point C $Q_{CAPTURED}$ (cfs)	Reference Sub-point B Q_{BYPASS} (cfs)	Reference Sub-point P Q_{PIPE} (cfs)
40A	5	5	23.8	51	13.0	N/A	0.0	**36.8**	36.8	-	36.8
	25		33.2		18.1		0.0	**51.3**	51.3	-	51.3
	100		42.0		22.9		0.0	**64.9**	64.9	-	64.9
41A	5	2.84	13.0	N/A	0.0	N/A	0.0	**13.0**	9.1	3.9	9.1
	25		18.2		0.0		0.0	**18.2**	11.0	7.2	11.0
	100		23.0		0.0		0.0	**23.0**	12.4	10.6	12.4
42A	5	7.35	31.3	N/A	0.0	N/A	0.0	**31.3**	16.2	15.1	16.2
	25		43.7		0.0		0.0	**43.7**	19.2	24.5	19.2
	100		55.1		0.0		0.0	**55.1**	21.6	33.5	21.6
43A	5	0.72	3.4	41A+42A	19.0	41A+42A	25.3	**22.4**	22.4	-	47.7
	25		4.8		31.7		30.2	**36.5**	36.5	-	66.7
	100		6.1		44.1		34.0	**50.2**	50.2	-	84.2
46A	5	10.17	54.8	N/A	0.0	N/A	0.0	**54.8**	27.4	27.4	27.4
	25		76.7		0.0		0.0	**76.7**	32.5	44.2	32.5
	100		97.0		0.0		0.0	**97.0**	36.2	60.8	36.2
47A	5	4.27	22.0	46A	27.4	46A	27.4	**49.4**	24.9	24.5	52.3
	25		30.8		44.2		32.5	**75.0**	30.6	44.4	63.1
	100		39.0		60.8		36.2	**99.8**	35.2	64.6	71.4
48A	5	3.19	15.8	47A	24.5	N/A	0.0	**40.3**	40.3	-	40.3
	25		22.1		44.4		0.0	**66.5**	66.5	-	66.5
	100		27.9		64.6		0.0	**92.5**	92.5	-	92.5
48B	5	N/A	0.0	N/A	0.0	47A+48A	92.6	**0.0**		-	92.6
	25		0.0		0.0		129.6	**0.0**		-	129.6
	100		0.0		0.0		163.9	**0.0**		-	163.9



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 100'
0' 100' 200' 300'

MASTER DRAINAGE LEGEND

- UNIT BOUNDARY
- TEMPORARY DRAINAGE AREA BOUNDARY
- DRAINAGE AREA BOUNDARY
- Lo=246' — OVERLAND FLOW PATH
- Lsc=246' — SHALLOW CONCENTRATED FLOW PATH
- Lc=246' — CONCENTRATED FLOW PATH
- 690 — EXISTING CONTOUR
- (11) — DRAINAGE CALCULATION POINT
- A,B,C — LOT GRADING TYPE
- DRAINAGE FLOW ARROW
- A,B,C — FUTURE LOT GRADING TYPE
- FUTURE DRAINAGE FLOW ARROW

Master Drainage Plan Calculations
(Ultimate Development)

Ref. Point	Structure / Description	Drainage Areas: #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (TR-55): L_o (FT)	n	P_2	S_o (ft/ft)	T_o* (MIN)	Shallow Concentrated Flow - 1**: L_{sc} (FT)	Condition**	V_{sc} (FPS)	T_{sc}** (MIN)	Shallow Concentrated Flow - 2**: L_{sc} (FT)	Condition**	V_{sc} (FPS)	T_{sc}** (MIN)	Channelized Flow**: L_{ch} (FT)	V_{ch} (FPS)	T_{ch}** (MIN)	T_{C-TOT}	Rational Method Q=CIA: DF Curve	CoSA_A14_PA2 Return Year	Intensity (in/hr)	Q (cfs)
40	Street Capacity/Drain	U6-A	5.00	0.72	945	100	0.150	4.04	0.0327	7	845	S	0.05	6.1	2.3				-	-	-	9	5	6.60	23.8
																						9	25	9.23	33.2
																						9	100	11.68	42.0
41	Drain/Street Capacity	U6-G	2.84	0.72	920	100	0.150	4.04	0.0210	8	820	S	0.04	5.6	2.4				-	-	-	10	5	6.36	13.0
																						10	25	8.88	18.2
																						10	100	11.23	23.0
42	Drain/Street Capacity	U6-C	7.35	0.72	1,375	100	0.150	4.04	0.0210	8	150	U	0.01	1.6	1.5	1,125	S	0.04	5.6	3.3		-	-	12	5	5.92	31.3
																						12	25	8.25	43.7
																						12	100	10.41	55.1
43	Drain/Street Capacity	U6-H	0.72	0.72	225	100	0.150	4.04	0.0161	9	125	S	0.01	2.8	0.7				-	-	-	9	5	6.60	3.4
																						9	25	9.23	4.8
																						9	100	11.68	6.1
44	Street Capacity/Drain	U6-D	7.66	0.72	1,050	100	0.150	4.04	0.0528	5	155	U	0.02	2.3	1.1	795	S	0.05	6.3	2.1		-	-	8	5	6.87	37.9
																						8	25	9.61	53.0
																						8	100	12.16	67.1
46	Street Capacity/Drain	U6-E	10.62	0.72	1,125	100	0.150	4.04	0.0600	5	1,025	S	0.07	7.2	2.4				-	-	-	7	5	7.17	54.8
																						7	25	10.03	76.7
																						7	100	12.69	97.0
47	Street Capacity/Drain	U6-I	4.27	0.72	720	100	0.150	4.04	0.0600	5	160	U	0.02	2.3	1.2	460	S	0.06	6.9	1.1	-	-	7	5	7.17	22.0
																						7	25	10.03	30.8
																						7	100	12.69	39.0
48	Street Capacity/Drain	U6-F	3.19	0.72	525	100	0.150	4.04	0.0500	6	155	U	0.02	2.3	1.1	270	S	0.03	5.1	0.9		-	-	8	5	6.87	15.9
																						8	25	9.61	22.1
																						8	100	12.16	27.9
50	Street Capacity	U6-B	5.09	0.72	1,380	100	0.150	4.04	0.0382	6	1,280	S	0.05	6.5	3.3				-	-	-	9	5	6.60	24.2
																						9	25	9.23	33.8
																						9	100	11.68	42.8
51	Drain	PH4-F	2.94	0.72	1,125	100	0.150	4.04	0.0200	8	1,025	S	0.03	4.5	3.8				-	-	-	11	5	6.13	13.0
																						11	25	8.56	18.1
																						11	100	10.81	22.9

Rational Method Time of Concentration
*Seelye Chart or TR-55 Eqn. 3-3
**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

From TR-55 Equation 3-3*: $T_o = \frac{(0.007(nL)^{0.8})}{(P_2^{0.5} s_o^{0.4})} * 60$

From TR-55 Figure 3-1**: $v = \frac{k}{n} R^{2/3} S_o^{1/2}$, $k = 1.486\ ft^{1/3}/s$

S: For Streets: n = 0.018, R = 0.2 (Adapted from Mannings)
P: For Paved: n = 0.025, R = 0.2
U: For Unpaved: n = 0.05, R = 0.4
D: For Default: v = 6 fps

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Date: Apr 01, 2026, 3:32pm User ID: brops
File: P:\123\36\21\Design\Civil\DRMP 123621-ULT.dwg

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

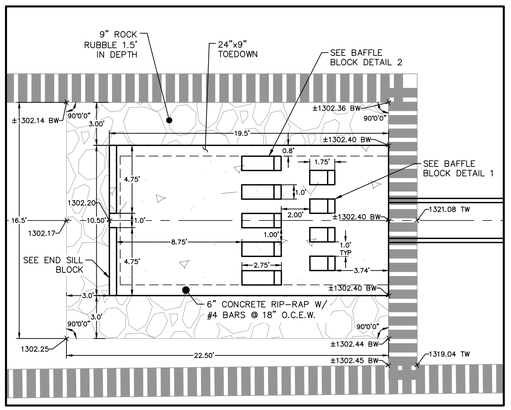
MASTER DRAINAGE PLAN
ULTIMATE CONDITIONS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.00A

HYDRAULIC CALCULATIONS 30" RCP
STA. 1+21.37 TO 2+63.50
Q25 = 66.7 CFS
Dn = 2.50'
Sf = 2.65%
S = 10.00%
V = 13.59 FPS
n = 0.013
D = 2.50'

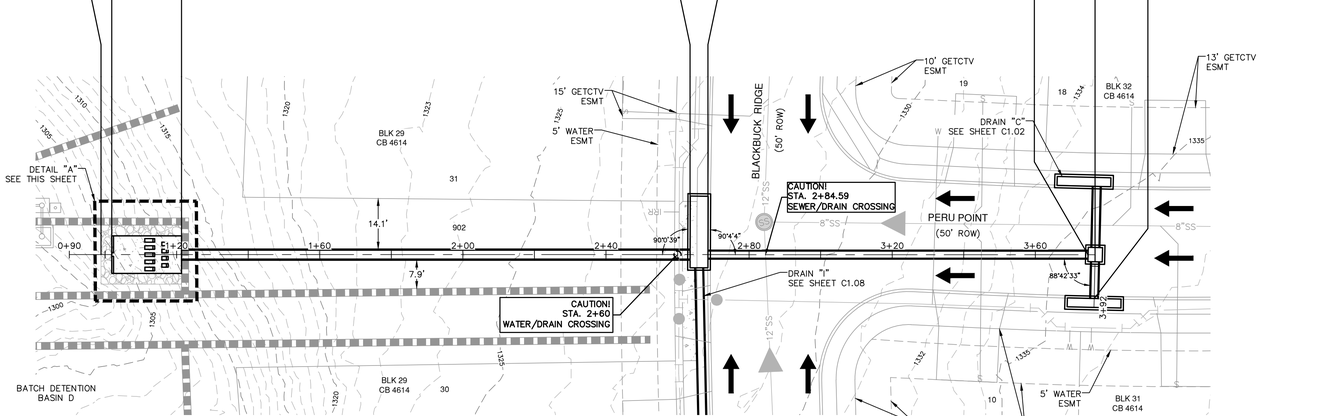
HYDRAULIC CALCULATIONS 24" RCP
STA. 2+68.50 TO 3+74.74
Q25 = 19.2 CFS
Dn = 1.69'
Sf = 0.00%
S = 5.00%
V = 6.80 FPS
n = 0.013
D = 2.00'

HYDRAULIC CALCULATIONS 24" RCP
STA. 3+78.74 TO 3+89.03
Q25 = 19.2 CFS/2 = 9.60 CFS
Dn = 2.00'
Sf = 0.18%
S = 2.00%
V = 3.06 FPS
n = 0.013
D = 2.00'



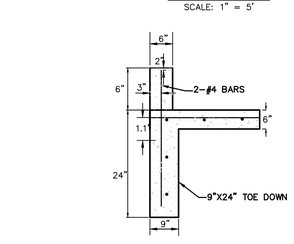
DETAIL "A"

SCALE: 1" = 5'



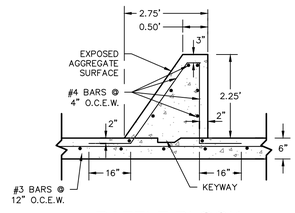
DRAIN B
STA. 0+98.87 TO END

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



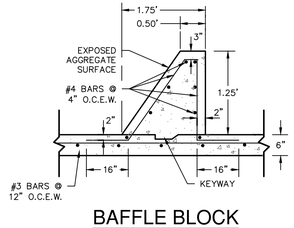
END SILL BLOCK DETAIL

NOT-TO-SCALE



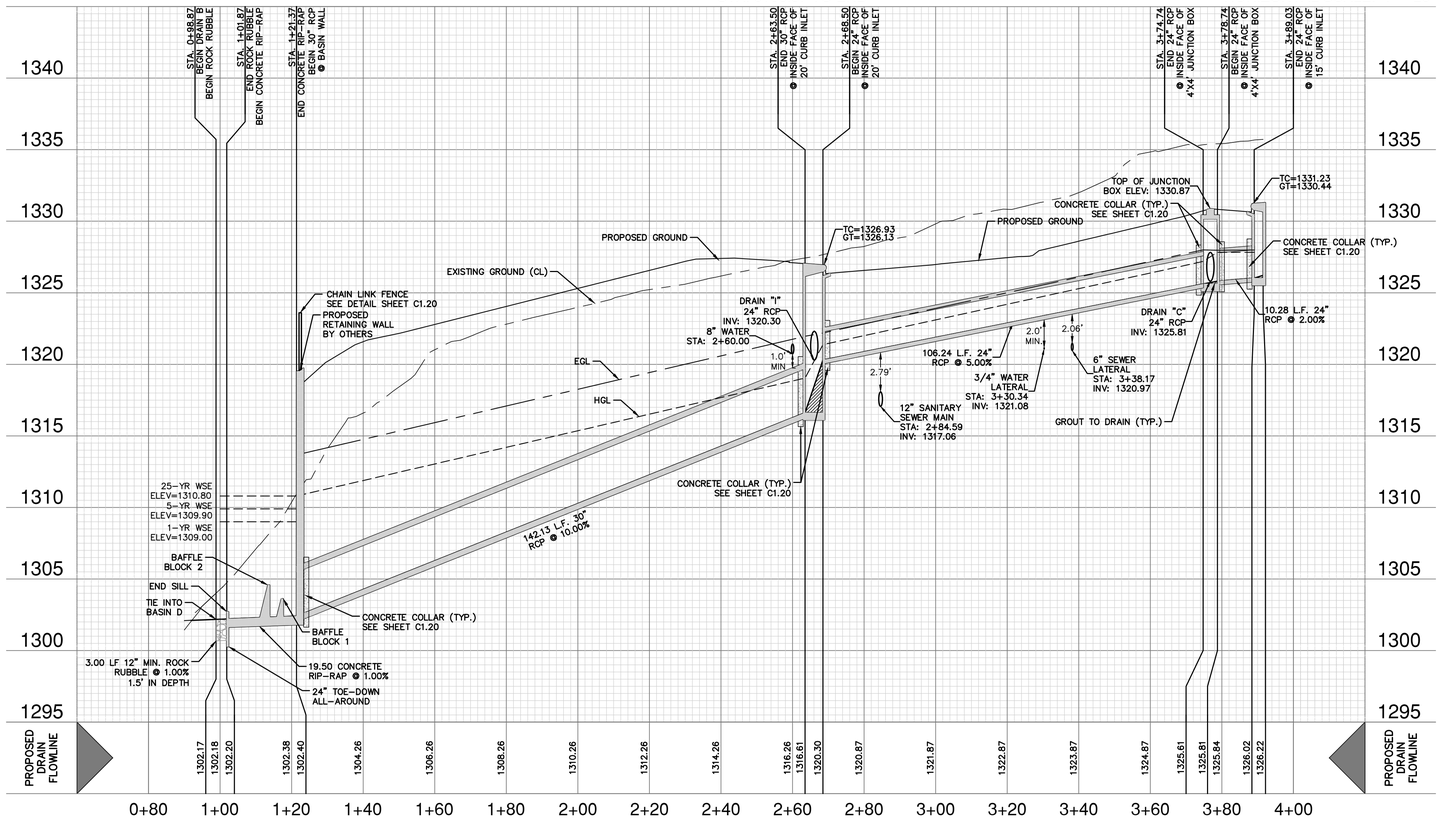
BAFFLE BLOCK DETAIL 2

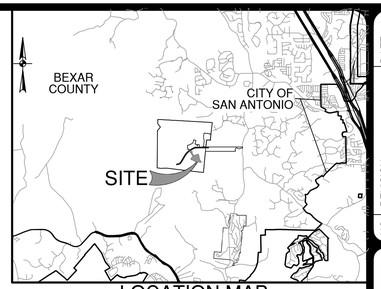
NOT-TO-SCALE



BAFFLE BLOCK DETAIL 1

NOT-TO-SCALE





LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 20' 0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- RETAINING WALL BY OTHERS

HYDRAULIC CALCULATIONS–DRAIN "B"

TOTAL Q_{25} = 36.5 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.53, g = 32.2, c = 0.70

$$L = \frac{36.5 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.53)}$$

L = 17.16 FT USE 1 ~ 20 FT CURB INLET

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{36.5}{(3.087)\ (20)}\right)^{2/3} = 0.70 \text{ FT.}$$

h = 0.70 < 0.79 OK

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.

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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN B PLAN AND PROFILE
(STA. 0+98.87 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.01

Date: Jun 05, 2026, 5:52am User ID: arodriguez
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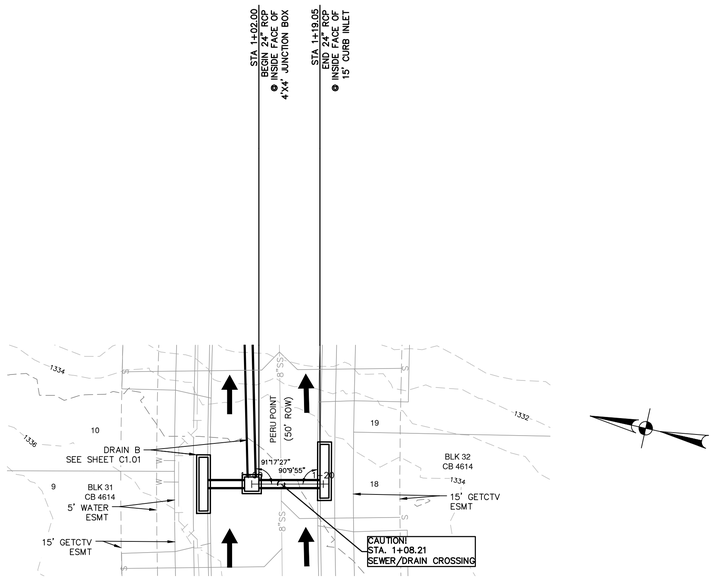
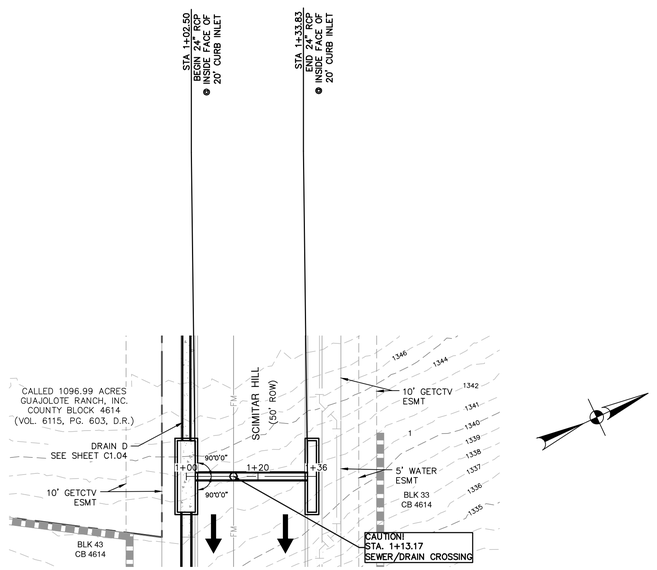
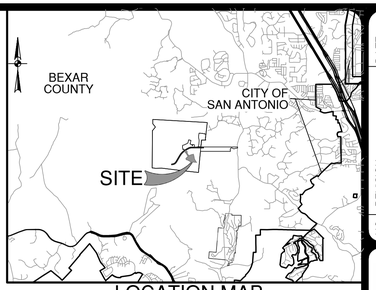






LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 20'

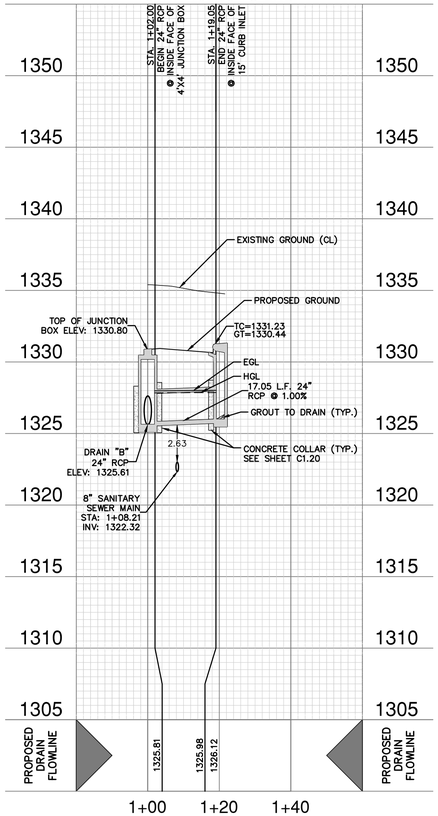
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW

DRAIN C
STA. 1+02.00 TO END

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

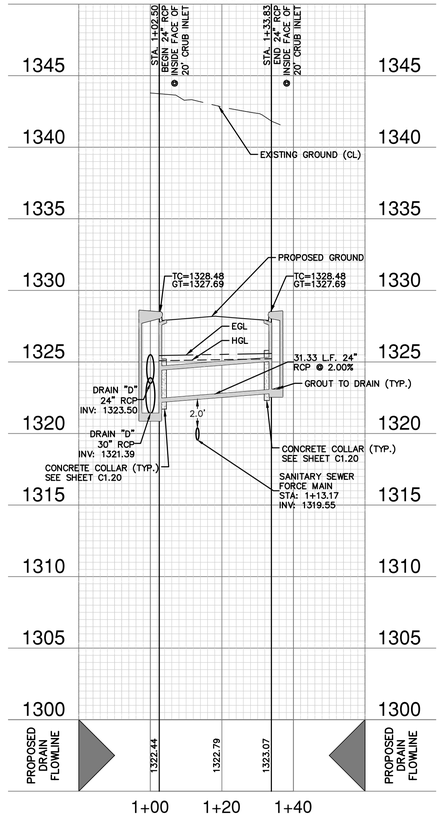


HYDRAULIC CALCULATIONS
24" RCP
STA. 1+02.00 TO 1+19.05

- Q25 = 9.60 CFS
- Dn = 2.00'
- Sf = 0.18%
- S = 1.00%
- V = 3.06 FPS
- n = 0.013
- D = 2.00'

DRAIN F
STA. 1+02.50 TO END

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



HYDRAULIC CALCULATIONS
24" RCP
STA. 1+02.50 TO 1+33.83

- Q25 = 15.3 CFS
- Dn = 2.00'
- Sf = 0.46%
- S = 2.00%
- V = 4.87 FPS
- n = 0.013
- D = 2.00'

DRAINAGE & GRADING NOTES:

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CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN C & DRAIN F PLAN & PROFILE

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.02

Date: Jun 05, 2026, 6:00am User ID: arodriguez
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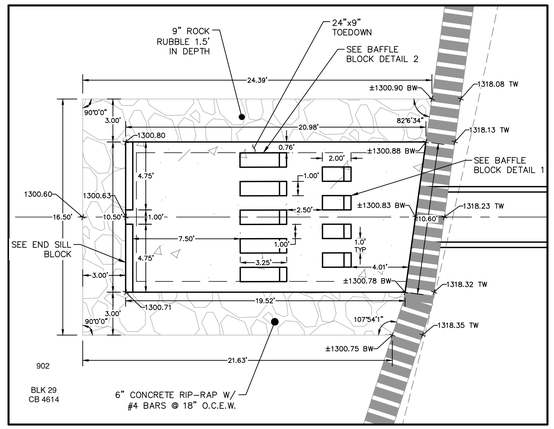
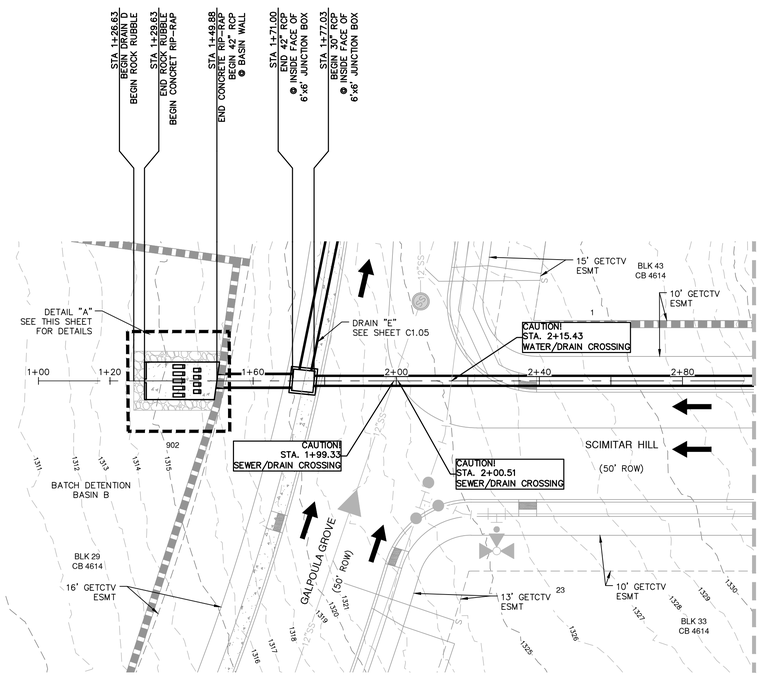


DETAIL "A"
SCALE: 1" = 5'



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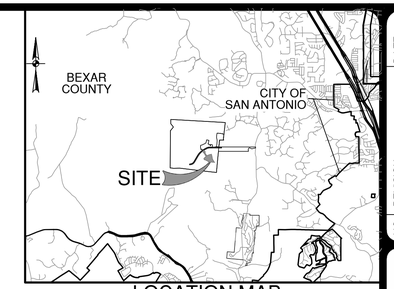

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- RETAINING WALL BY OTHERS

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
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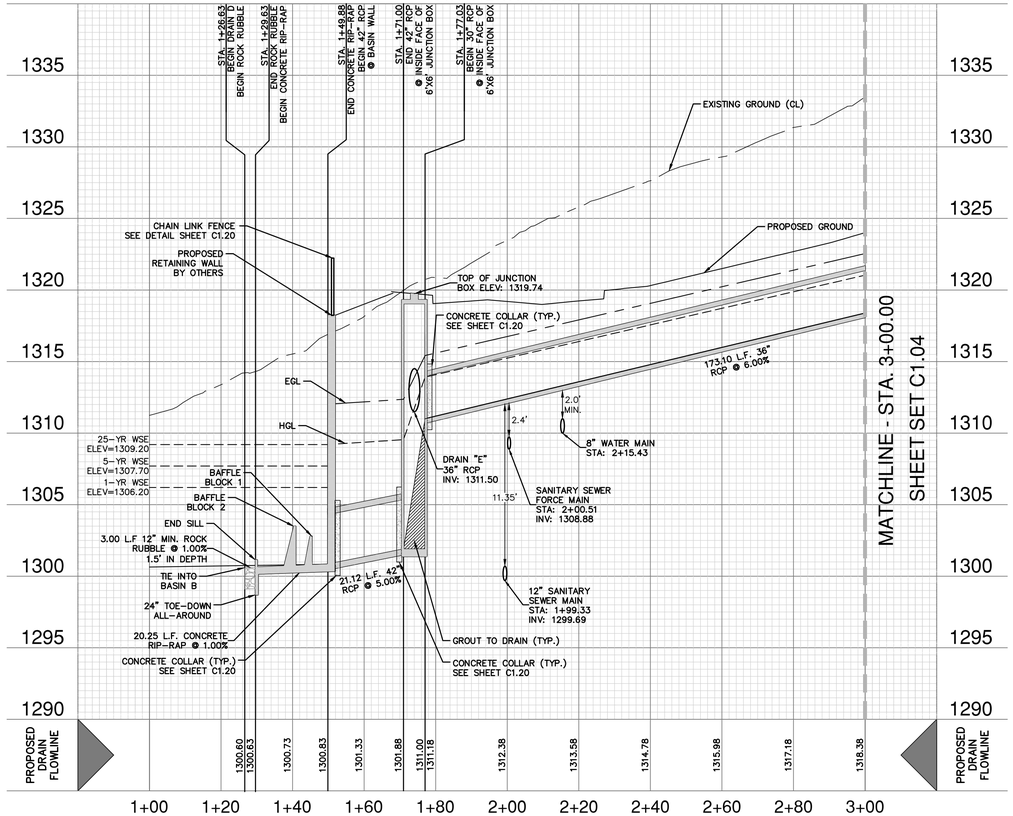
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

DRAIN D
STA. 1+26.63 TO END

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



MATCHLINE - STA. 3+00.00
SHEET SET C1.04

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.

TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

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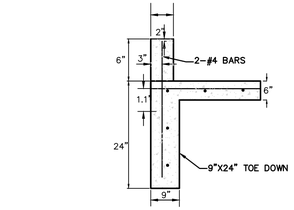
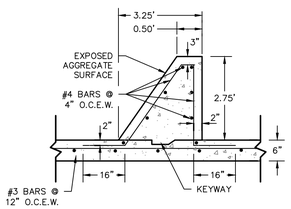
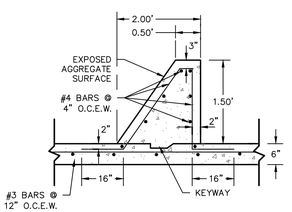


END SILL BLOCK DETAIL
NOT-TO-SCALE



BAFFLE BLOCK DETAIL 2
NOT-TO-SCALE



BAFFLE BLOCK DETAIL 1
NOT-TO-SCALE

HYDRAULIC CALCULATIONS 42" RCP	
STA. 1+49.88 TO 1+71.00	
Q25	= 129.6 CFS
Dn	= 3.50'
Sf	= 1.66%
S	= 5.00%
V	= 13.47 FPS
n	= 0.013
D	= 3.50'

HYDRAULIC CALCULATIONS 36" RCP	
STA. 1+77.03 TO 3+50.14	
Q25	= 63.1 CFS
Dn	= 2.91'
Sf	= 0.00%
S	= 6.00%
V	= 9.01 FPS
n	= 0.013
D	= 3.00'

Rock Rubble Gradation COA ECM 1.4.6.D			
Location	100 Year Velocity (ft/s)	D50 (IN)	Class
Drain D	7.19	8.0	I
D50= 0.0105*V^2.06 per COA ECM 1.4.6.D.5			

Rock Rubble Manning's N-Value COA ECM 1.4.6.D			
Location	d (Average Channel Flow Depth (ft))	D50 (FT)	Manning's N-Value
Drain D	1.847	0.67	0.064
Manning's N-Value= [0.262d^(1/6)]/[2.25+5.23Log(d/D50)] per COA ECM 1.4.6.D.4			
Rock Rubble Rounded up to nearest 3" Value			

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN D PLAN AND PROFILE
(STA. 1+26.63 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.03

Date: Jun 08, 2026, 2:18pm User ID: arodriguez
File: P:\123\56\21\Design\Civil\DR-D-123621.dwg

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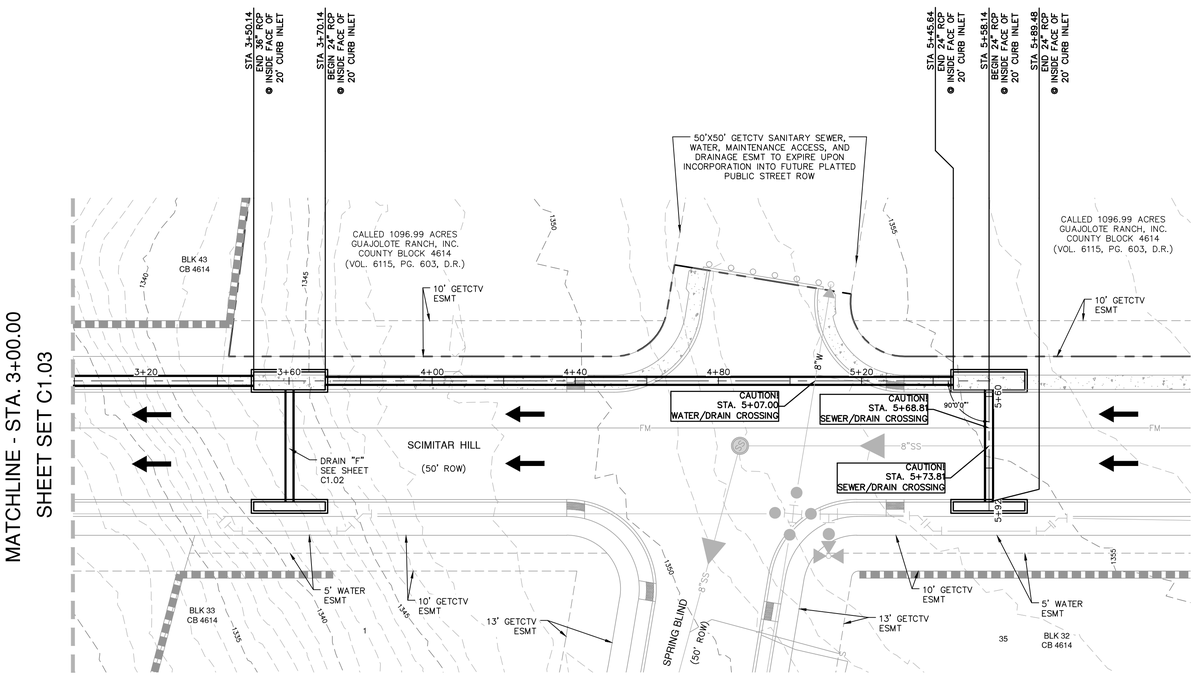
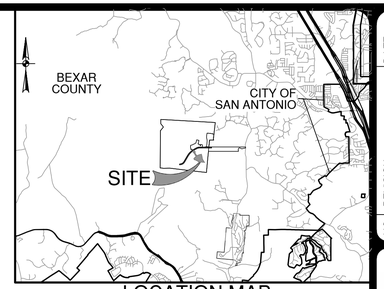




LOCATION MAP
NOT-TO-SCALE

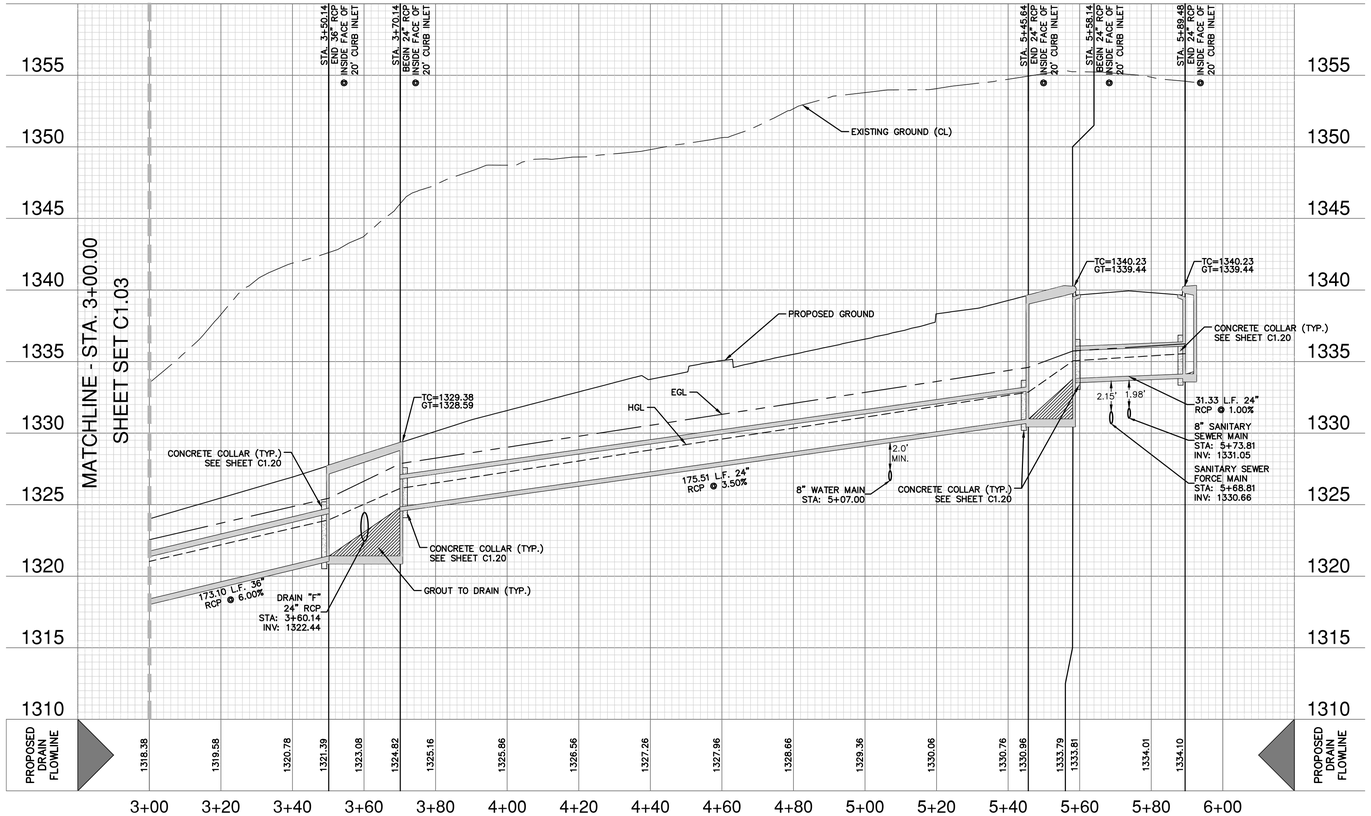
SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- RETAINING WALL BY OTHERS

DRAIN D
STA. 3+00.00 TO END

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



HYDRAULIC CALCULATIONS 36" RCP
STA. 1+77.03 TO 3+50.14

Q25 = 63.1 CFS
Dn = 2.91'
Sf = 0.00%
S = 6.00%
V = 9.01 FPS
n = 0.013
D = 3.00'

HYDRAULIC CALCULATIONS 24" RCP
STA. 3+70.14 TO 5+45.64

Q25 = 32.5 CFS
Dn = 1.31'
Sf = 0.00%
S = 3.50%
V = 14.84 FPS
n = 0.013
D = 2.00'

HYDRAULIC CALCULATIONS 24" RCP
STA. 5+58.14 TO 5+89.48

Q25 = 16.25 CFS
Dn = 1.26'
Sf = 0.00%
S = 1.00%
V = 7.80 FPS
n = 0.013
D = 2.00'

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN D PLAN AND PROFILE
(STA. 3+00.00 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.04

Date: Jun 05, 2026, 6:47am User ID: arodriguez
File: P:\123\56\21\Design\Civil\DR-D--1235621.dwg
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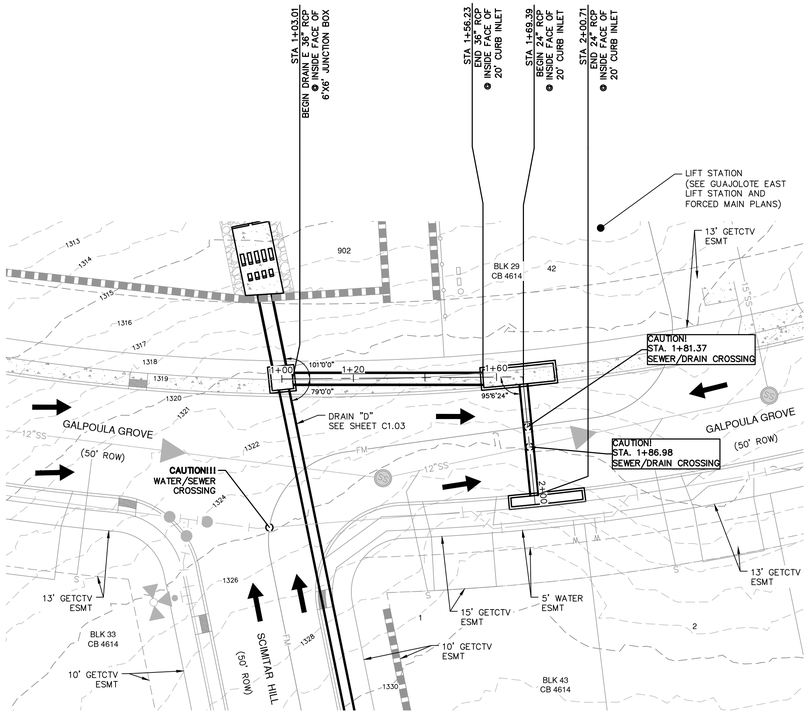
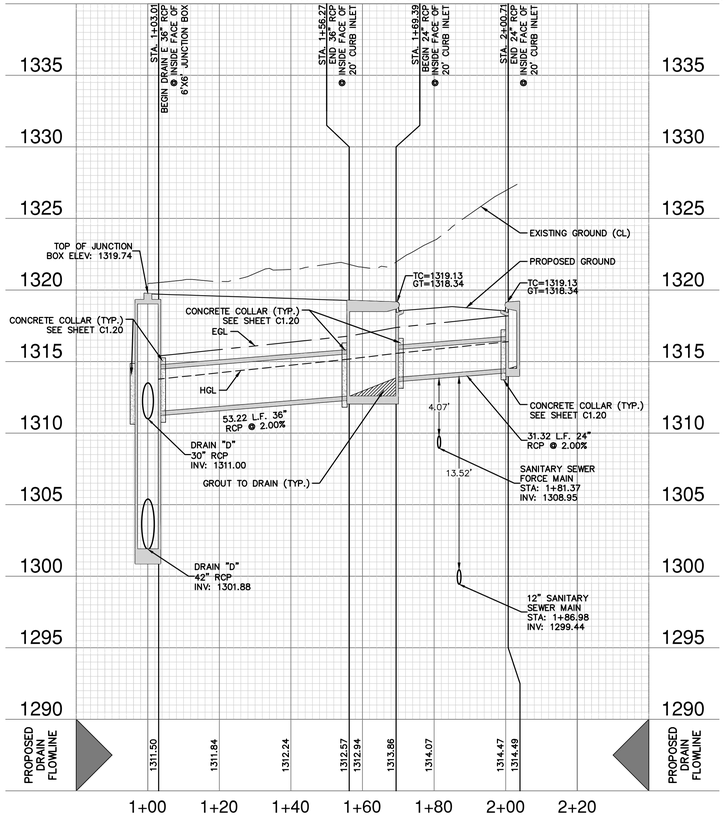


DRAIN E
STA. 1+03.01 TO END

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

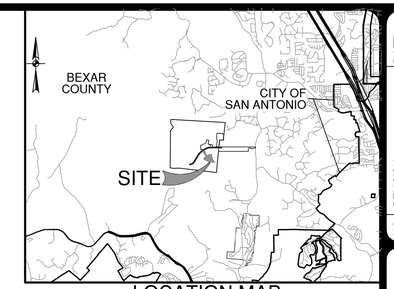


HYDRAULIC CALCULATIONS
36" RCP
STA. 1+03.01 TO 1+56.27

Q25	= 66.5 CFS
Dn	= 2.27'
Sf	= 0.00%
S	= 2.00%
V	= 11.58 FPS
n	= 0.013
D	= 3.00'

HYDRAULIC CALCULATIONS
24" RCP
STA. 1+69.39 TO 2+00.71

Q25	= 33.25 CFS
Dn	= 1.71'
Sf	= 0.00%
S	= 2.00%
V	= 11.60 FPS
n	= 0.013
D	= 2.00'



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

PROJECT LIMITS
100 YR FLOODPLAIN
EXISTING CONTOUR 690
PROPOSED CONTOUR 690
PROPOSED WATER W
PROPOSED SEWER SS
PROPOSED STORM DRAIN
EXISTING STORM DRAIN
FLOW ARROW

HYDRAULIC CALCULATIONS–DRAIN "E"

TOTAL Q_{25} = 33.25 CFS (66.5 CFS DIVIDED BY TWO)

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.53, g = 32.2, c = 0.70

$$L = \frac{33.25 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.53)}$$

L = 15.64 FT USE 2 ~ 20 FT CURB INLETS

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{33.25}{(3.087)\ (20)}\right)^{2/3} = 0.66 \text{ FT.}$$

h = 0.66 < 0.79 OK

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN E PLAN AND PROFILE
(STA. 1+03.01 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.05

Date: Jun 05, 2026, 6:54am User ID: arodriguez
Files: P:\123\56\21\Design\Civil\DR-E-123562l.dwg

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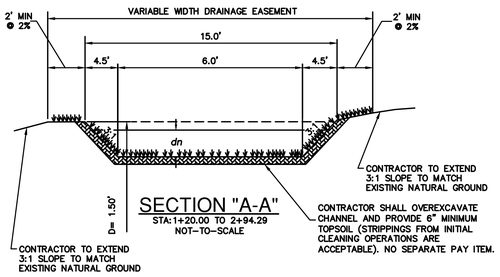
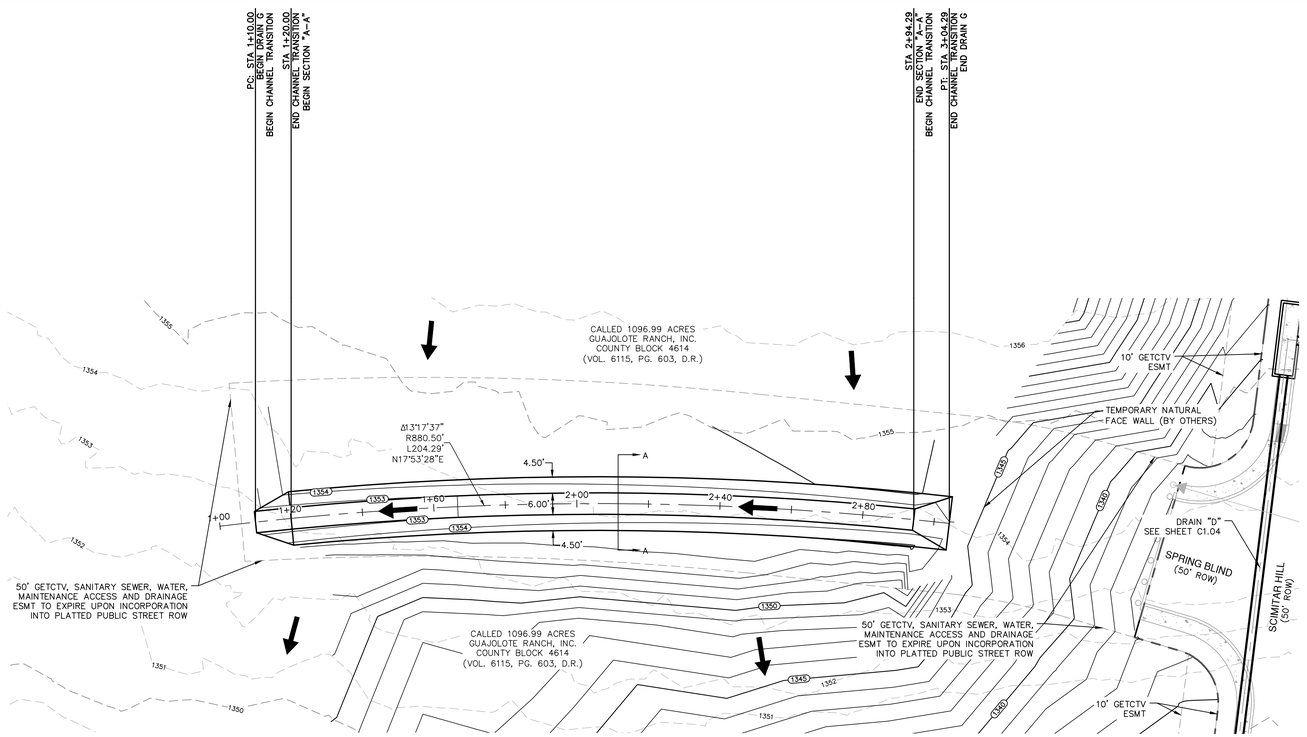
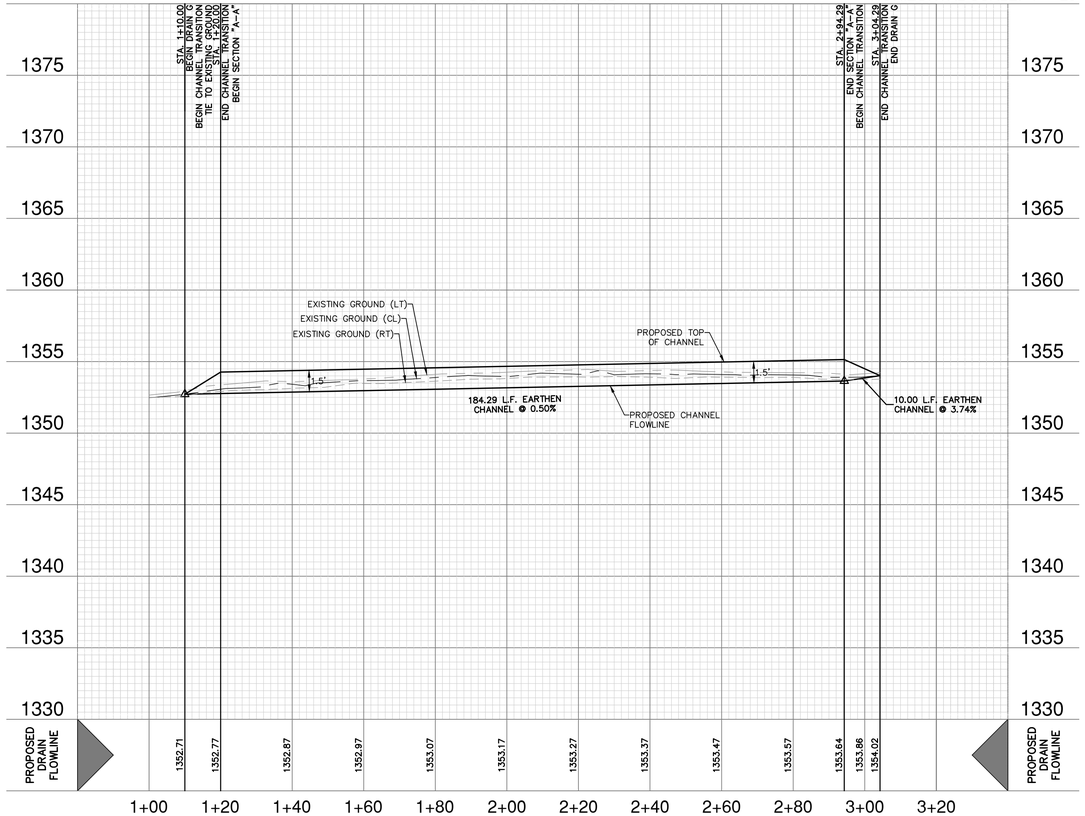


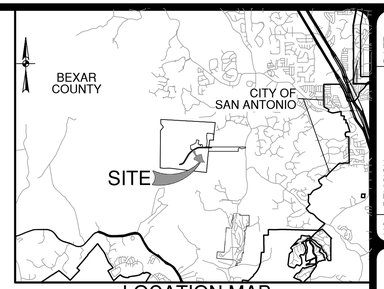
SECTION "A-A"
STA:1+20.00 TO 2+94.29
NOT-TO-SCALE



INTERCEPTOR DRAIN G
STA. 1+10.00 TO END

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





LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

PROJECT LIMITS	
100 YR FLOODPLAIN	
EXISTING CONTOUR	690
PROPOSED CONTOUR	690
PROPOSED WATER	W
PROPOSED SEWER	SS
PROPOSED STORM DRAIN	
EXISTING STORM DRAIN	
FLOW ARROW	

HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 1+10.00 TO 2+94.29

Q25	= 8.6 CFS
Bw	= 6.0'
n	= 0.035
S	= 0.50%
D	= 1.50'
dn	= 0.60'
V	= 1.84 FPS
T	= 0.15 LB/FT^2
RC	= B, C, D, E

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.

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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

INTERCEPTOR DRAIN G PLAN AND PROFILE
(STA. 1+10.00 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.06

Date: Jun 03, 2026, 3:32pm User ID: arodriguez
File: P:\123\56\21\Design\Civil\DR-G-123621.dwg

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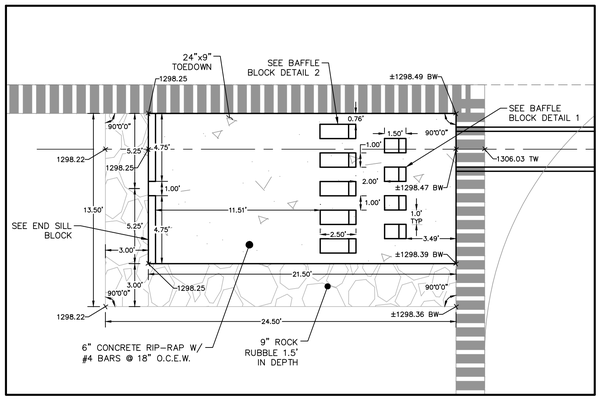
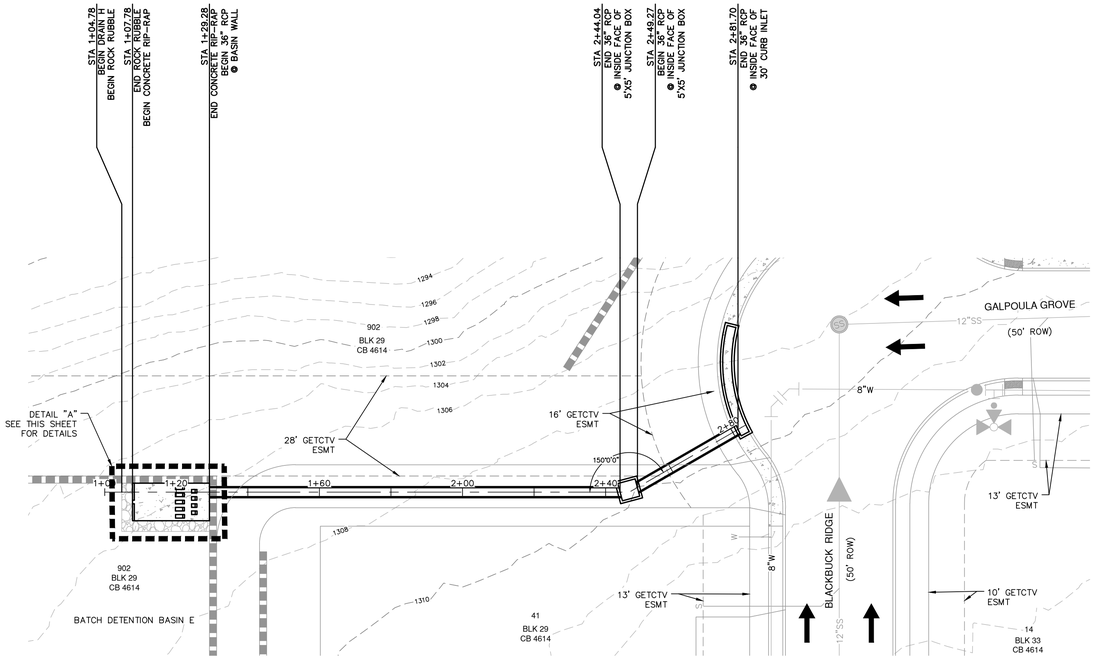
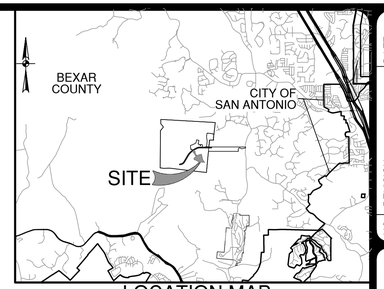


DETAIL "A"

SCALE: 1" = 5'





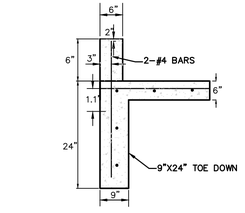
LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 20' 0' 20' 40' 60'

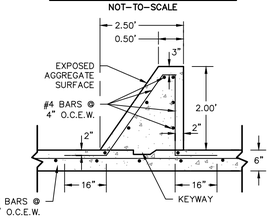
DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- RETAINING WALL BY OTHERS



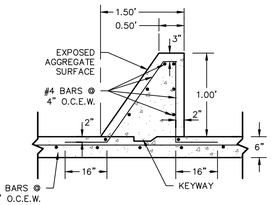
END SILL BLOCK DETAIL

NOT-TO-SCALE



BAFFLE BLOCK DETAIL 2

NOT-TO-SCALE



BAFFLE BLOCK DETAIL 1

NOT-TO-SCALE

HYDRAULIC CALCULATIONS 36" RCP

STA. 1+29.28 TO 2+44.04

- Q25 = 53.0 CFS
- Dn = 3.00'
- Sf = 0.63%
- S = 4.59%
- V = 7.50 FPS
- n = 0.013
- D = 3.00'

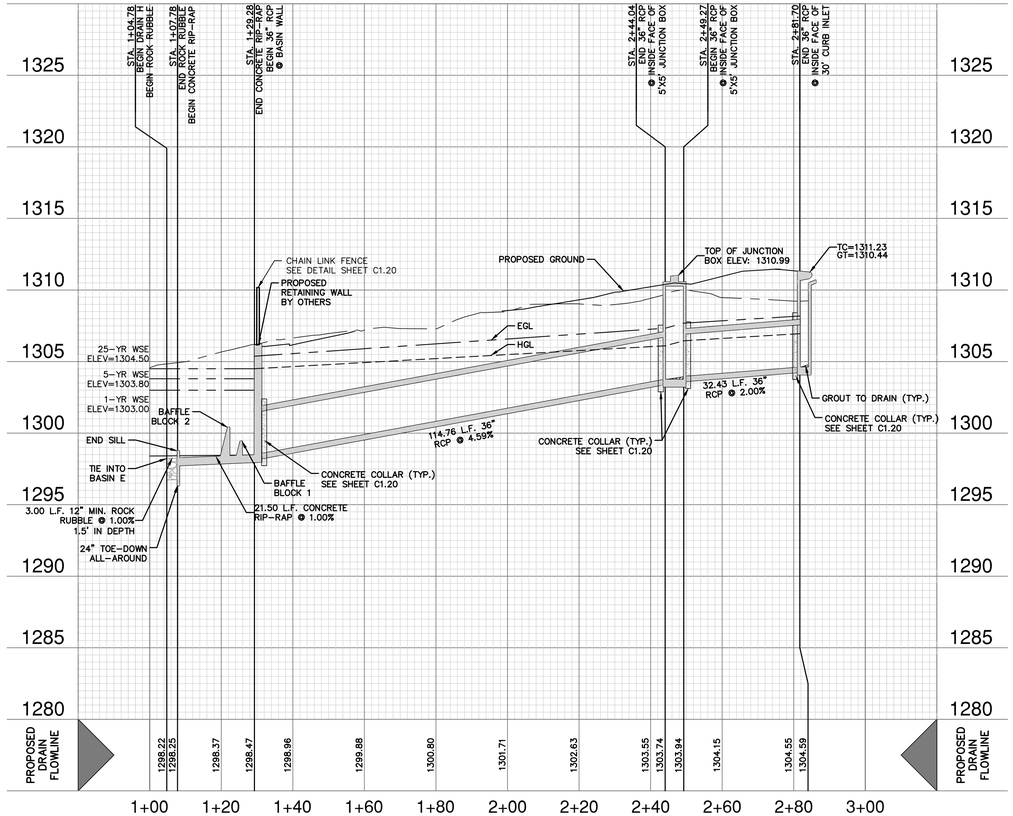
HYDRAULIC CALCULATIONS 36" RCP

STA. 2+49.27 TO 2+81.70

- Q25 = 53.0 CFS
- Dn = 2.51'
- Sf = 0.00%
- S = 2.00%
- V = 8.38 FPS
- n = 0.013
- D = 3.00'

DRAIN H
STA. 1+04.78 TO END

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



HYDRAULIC CALCULATIONS–DRAIN "H"

TOTAL Q_{25} = 53.0 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.53, g = 32.2, c = 0.70

$$L = \frac{53.0 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.53)}$$

L = 24.9 FT USE 1 ~ 30 FT CURB INLET

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{53}{(3.087)\ (30)}\right)^{2/3} = 0.69 \text{ FT.}$$

h = 0.69 < 0.79 OK

DRAINAGE & GRADING NOTES:

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN H PLAN AND PROFILE
(STA. 1+04.78 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.07

Date: Jun 08, 2026, 2:30pm User ID: arodriguez
File: P:\123\56\21\Design\Civil\DR-H-123621.dwg

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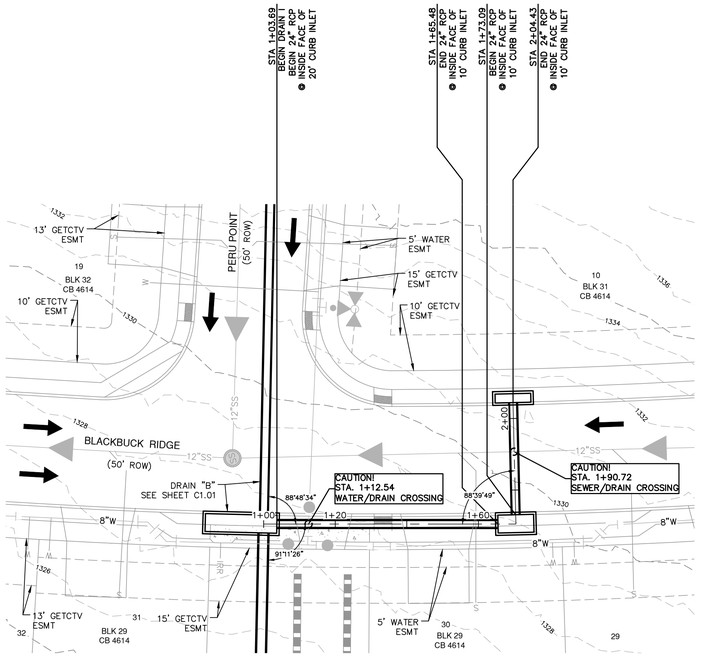
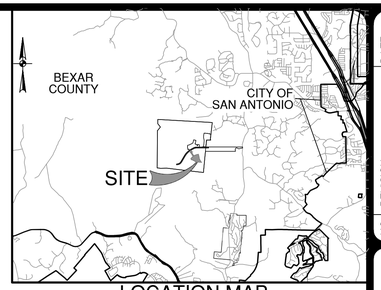




LOCATION MAP
NOT-TO-SCALE

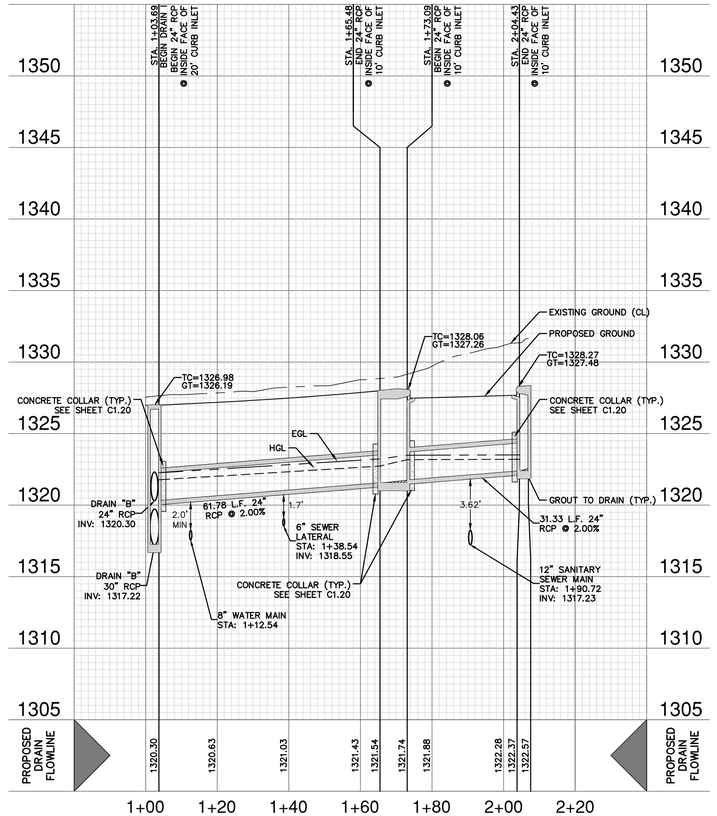
SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- RETAINING WALL BY OTHERS

DRAIN I
STA. 1+03.69 TO END

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



HYDRAULIC CALCULATIONS 24" RCP

STA. 1+03.69 TO 1+65.48

- Q25 = 11.0 CFS
- Dn = 2.00'
- Sf = 0.24%
- S = 2.00%
- V = 3.50 FPS
- n = 0.013
- D = 2.00'

HYDRAULIC CALCULATIONS 24" RCP

STA. 1+73.09 TO 2+04.43

- Q25 = 5.5 CFS
- Dn = 1.44'
- Sf = 0.00%
- S = 2.00%
- V = 2.28 FPS
- n = 0.013
- D = 2.00'

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.
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TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

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NO.	REVISION	DATE

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN I PLAN AND PROFILE
(STA. 1+03.69 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.08

Date: Jun 05, 2026, 7:05am User ID: arodriguez
File: P:\123\56\21\Design\Civil\DR-I-123621.dwg

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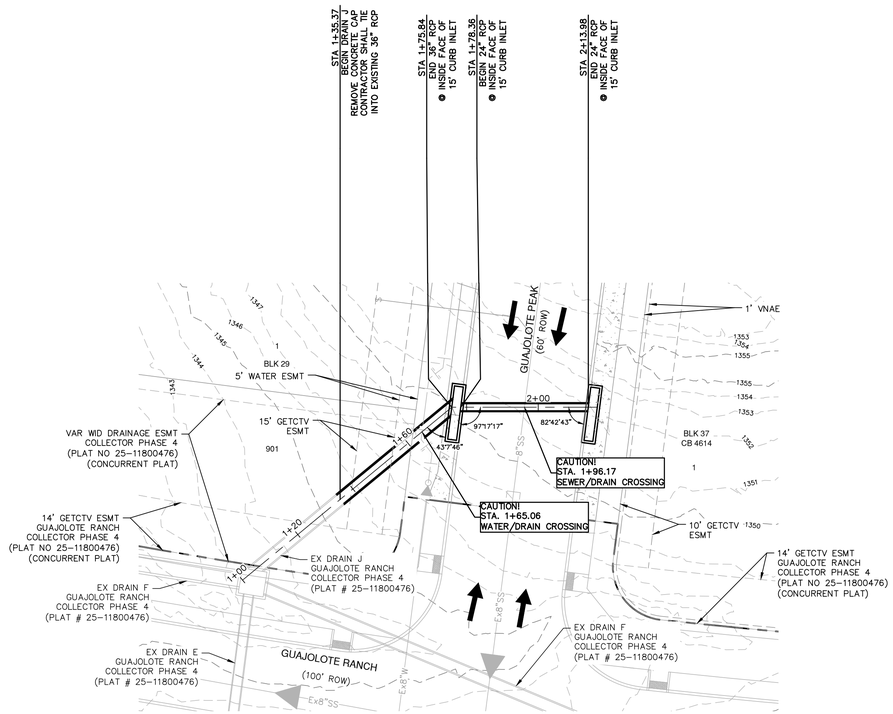
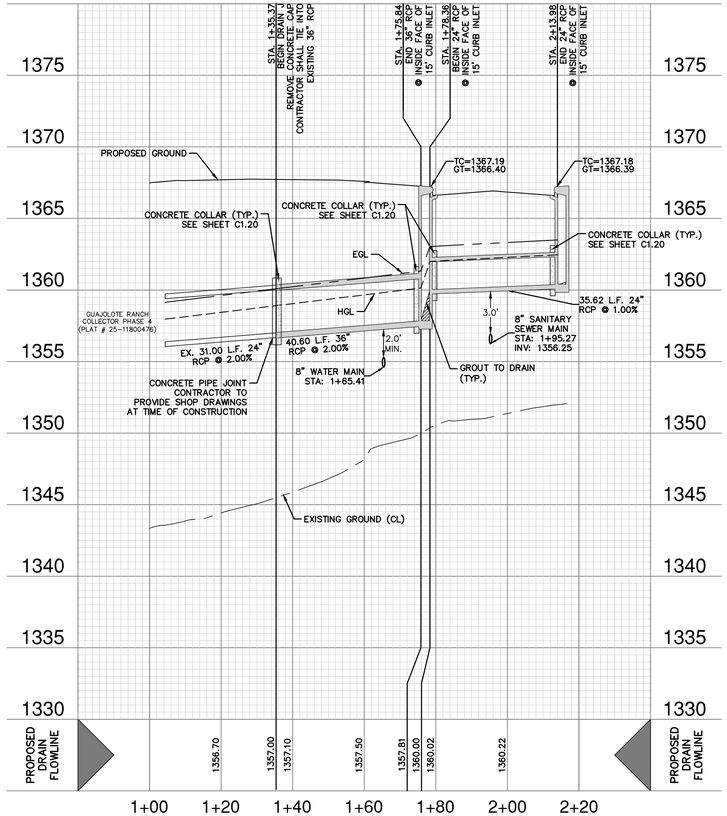


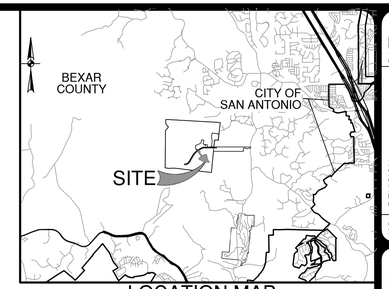
DRAIN J
STA. 1+35.37 TO END

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



HYDRAULIC CALCULATIONS 36" RCP
STA. 1+30.96 TO 1+74.94
Q25 = 51.3 CFS
Dn = 1.58'
Sf = 0.00%
S = 2.00%
V = 13.59 FPS
n = 0.013
D = 3.00'

HYDRAULIC CALCULATIONS 24" RCP
STA. 1+77.48 TO 2+13.10
Q25 = 25.7 CFS
Dn = 2.00'
Sf = 1.29%
S = 1.00%
V = 8.17 FPS
n = 0.013
D = 2.00'



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

PROJECT LIMITS
100 YR FLOODPLAIN
EXISTING CONTOUR 690
PROPOSED CONTOUR 690
PROPOSED WATER W
PROPOSED SEWER SS
PROPOSED STORM DRAIN
EXISTING STORM DRAIN
FLOW ARROW

HYDRAULIC CALCULATIONS–DRAIN "J"

TOTAL Q_{25} = 25.7 CFS (51.3 CFS DIVIDED BY TWO)

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.53, g = 32.2, c = 0.70

$$L = \frac{25.7 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.53)}$$

L = 12.09 FT USE 2 ~ 15 FT CURB INLET

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{25.7}{(3.087)\ (15)}\right)^{2/3} = 0.68 \text{ FT.}$$

h = 0.68 < 0.79 OK

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

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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAIN J PLAN AND PROFILE
(STA. 1+35.37 TO END)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.09

Date: Jun 05, 2026, 7:11am User ID: arodriguez
File: P:\123\56.21\Design\Civil\DR-J-123621.dwg

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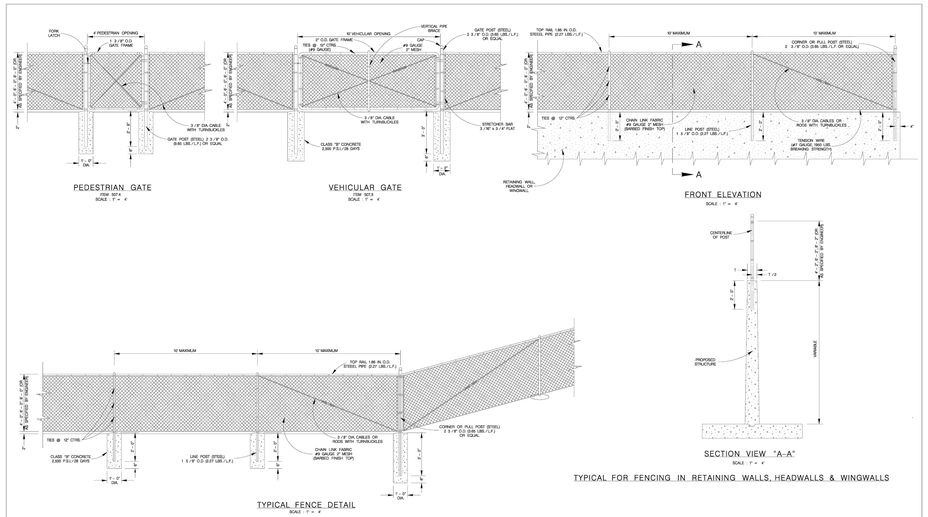


TYPICAL FOR FENCING IN RETAINING WALLS, HEADWALLS & WINGWALLS

GENERAL NOTES

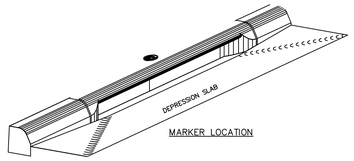
1. ALL CONCRETE FOOTINGS SHALL BE ORDERED A MINIMUM OF 1' ABOVE THE EXISTING GROUND WHERE FOOTINGS ARE REQUIRED ONLY.
2. FENCING SHALL BE LOCATED IN RETAINING WALLS, HEADWALLS & WINGWALLS AT LOCATIONS SHOWN ON THE PLANS.
3. CORNER OR PULL POSTS WILL BE REQUIRED AT ALL END POINTS AND ANGLE POINTS.
4. CONCRETE FOR ALL FENCE FOOTINGS SHALL BE IN ACCORDANCE WITH ITEM 421 "HYDRAULIC CONCRETE".
5. PAYMENT SHALL BE MADE AS SPECIFIED IN ITEM NO. 557 "CHAIN LINK WIRE FENCE" OF CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CHAIN LINK WIRE FENCE STANDARDS

%	SUBMITTAL PROJECT NO.:	DATE:
DRAWN BY: D. MINSHEW	CHKD BY: R.S. HOSSENLOPP, P.E.	SHEET NO.:	OF



MARKER LOCATION

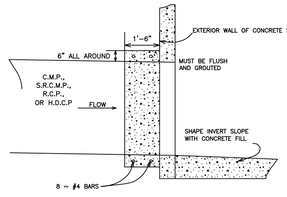
NOTE:
MARKER TO BE CONSTRUCTED OF ALUMINUM OR STAINLESS STEEL AND SHALL BE PERMANENTLY AFFIXED TO CONCRETE CURB WITH RIVET

METAL MEDALLION DRAINAGE INLET MARKER

NOT-TO-SCALE

Table 9.3.8.1 - Retardation Class for Lining Materials
(Source TXDOT - Hydraulic Design Manual, Chapter 7, Section 3 - Roadside Channel Design)

Retardance Class	Permissible Shear Stress (τ) (lb./sq.ft.)	Cover	Condition
B	2.1	Bermuda grass	Good stand, tall (average 12 in. or 305 mm)
		Native Grass Mixture little bluestem, bluestem, blue gamma, other short and long stem midwest grasses	Good stand, unmowed
		Lespedeza sericea	Good stand, not woody, tall (average 19 in. or 480 mm)
		Alfalfa	Good stand, uncut (average 11 in. or 280 mm)
		Blue gamma	Good stand, uncut (average 13 in. or 330 mm)
		Crabgrass	Fair stand, uncut (10-to-48 in. or 55-to-1220 mm)
C	1.1	Bermuda grass	Good stand, mowed (average 6 in. or 150 mm)
		Common lespedeza	Good stand, uncut (average 11 in. or 280 mm)
		Grass-legume mixture: summer (orchard grass redtop, Italian ryegrass, and common lespedeza)	Good stand, uncut (6-8 in. or 150-200 mm)
		Centipede grass	Very dense cover (average 6 in. or 150 mm)
		Kentucky bluegrass	Good stand, headed (6-12 in. or 150 mm)
D	0.6	Bermuda grass	Good stand, cut to 2.5 in. or 65 mm
		Common lespedeza	Excellent stand, uncut (average 4.5 in. or 115 mm)
		Buffalo grass	Good stand, uncut (3-6 in. or 75-150 mm)
		Grass-legume mixture: fall, spring (orchard grass, Italian ryegrass, and common lespedeza)	Good stand, uncut (4-5 in. or 100-125 mm)
		Lespedeza sericea	After cutting to 2 in. or 50 mm (very good before cutting)
E	0.35	Bermuda grass	Good stand, cut to 1.5 in. or 40 mm
		Bermuda grass	Burned stubble



PIPE FLUSH WITH INVERT

JANUARY 2006

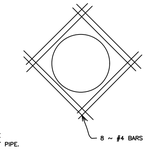
STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEVELOPMENT SERVICES

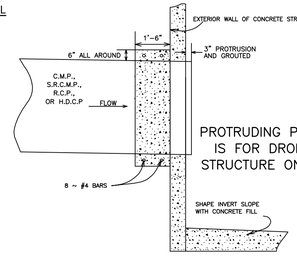
CONCRETE COLLAR DETAIL

DRAWN BY: ANDREW VONTER, P.E.	DATE:	REVISIONS:	SCALE: SEE ABOVE
CHECKED BY: SAM BENT, P.E.			DATE: 19 JANUARY 2006
			SHEET: 1 OF 1

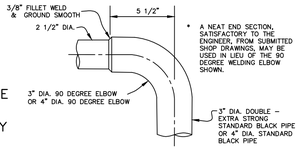
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL., INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).

CONCRETE COLLAR DETAIL
(NOT TO SCALE)





PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY



* A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90 DEGREE WELDING ELBOW SHOWN.

DETAIL OF 90° WELDING ELBOWS
NOT TO SCALE

DIMENSIONS FOR CIRCULAR PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"G"		SINGLE	DOUBLE
		PVC CMP	RCP	"W"	
12"	1'-6"	1'-0"	0'-7"	4'-0"	6'-0"
15"	2'-0"	1'-0"	0'-8"	4'-3"	6'-6"
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-6"

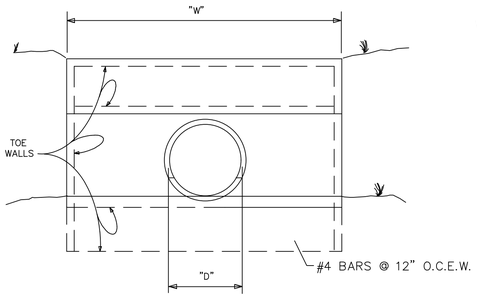
NOTES:

1.) FOR RIPRAP QUANTITIES AND SLOPES, SEE CULVERT LAYOUT SHEET.

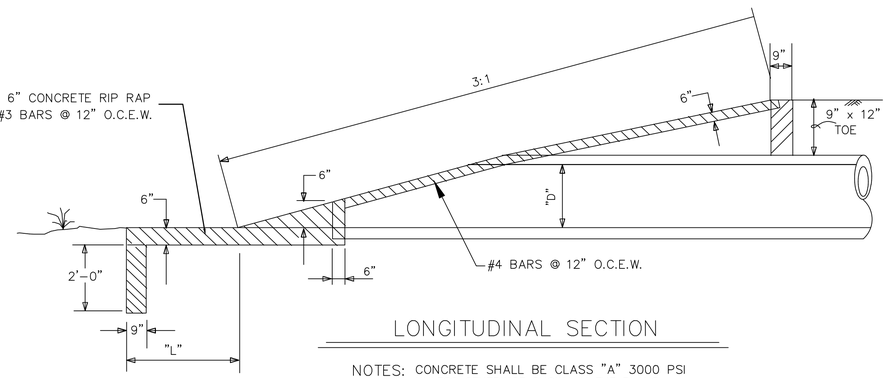
2.) ALL METAL PIPES (CGM AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WORK WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL ITEM.

3.) FOR CONCRETE ARCH PIPES, THE ABOVE DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.

4.) IF THE SIDES OF THE HEAD WALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEAD WALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.



SINGLE CIRCULAR PIPE CULVERTS

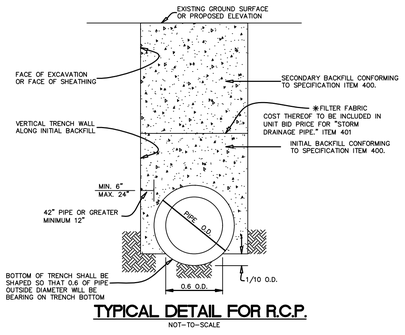


LONGITUDINAL SECTION

NOTES: CONCRETE SHALL BE CLASS "A" 3000 PSI UNLESS OTHERWISE SHOWN IN THE PLANS.

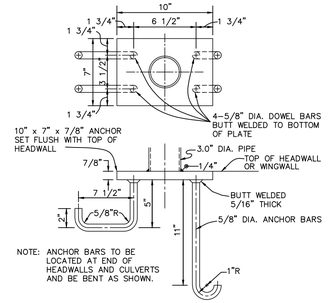
CONCRETE RIP-RAP END SECTION
(RH-15 HEADWALL)

(NOT TO SCALE)



TYPICAL DETAIL FOR R.C.P.

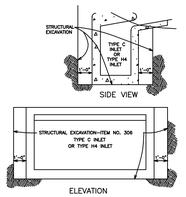
NOT-TO-SCALE



NOTE: ANCHOR BARS TO BE LOCATED AT END OF HEADWALLS AND CULVERTS AND BE BENT AS SHOWN.

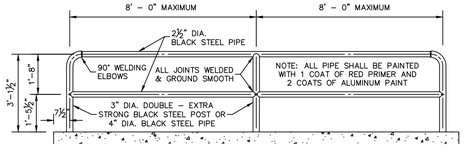
PIPE ANCHORAGE DETAIL

NOT – TO – SCALE



STRUCTURAL EXCAVATION AT DRAINAGE INLETS

(NOT TO SCALE)



NOTE: ALL CONSTRUCTION OF HANDRAIL SHALL FOLLOW THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

PIPE RAILING DETAIL

NOT–TO–SCALE

DATE
NO. REVISION

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 1 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.20

Date: Apr 02, 2026, 9:01am User ID: JonathanGraff
File: P:\123\56\21\Design\Civil\DRGT-123621.dwg

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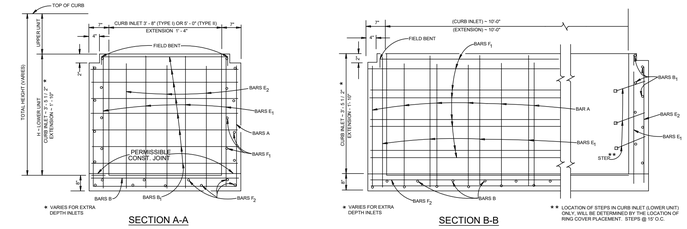


★ VARIES FOR EXTRA DEPTH INLETS

SECTION A-A

★ VARIES FOR EXTRA DEPTH INLETS

★★ LOCATION OF STEPS IN CURB INLET (LOWER UNIT) ONLY, WILL BE DETERMINED BY THE LOCATION OF RING COVER PLACEMENT. STEPS @ 15' O.C.

SECTION B-B

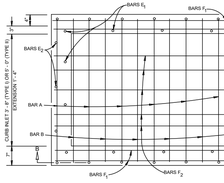
REINFORCING STEEL

LOWER UNIT 10' X 3' - 8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	
A	12	#4	12"	VARIES	
B	11	#4	12"	4'-6"	
B_1	VARIES	#4	12"	4'-6"	
E_1	20	#4	18" ±	VARIES	
E_2	6	#4	18" ±	VARIES	
F_1	VARIES	#4	12" ±	10'-10"	
F_2	9	#4	—	10'-10"	

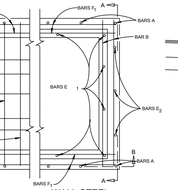
LOWER UNIT 10' X 5' - 0" (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	
A	12	#4	12"	VARIES	
B	11	#4	12"	6'-10"	
B_1	VARIES	#4	12"	5'-10"	
E_1	22	#4	18" ±	VARIES	
E_2	8	#4	18" ±	VARIES	
F_1	VARIES	#4	12" ±	10'-10"	
F_2	11	#4	—	10'-10"	

GENERAL NOTES

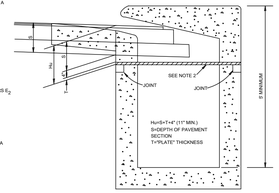
1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE "E" (5-4).
2. TYPE "C-II" INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN-LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/ 2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 / 4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BEND.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SWDW OF THE PIPE, AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".



FLOOR STEEL



WALL STEEL

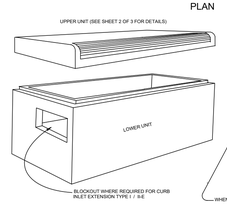


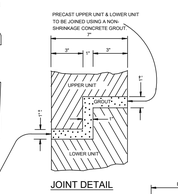
PHASE CONSTRUCTION

NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hx" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE, AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND/OR EXTENSION.

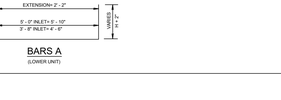
PLAN



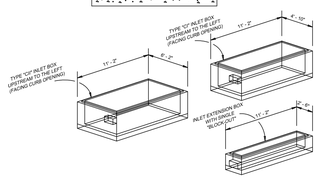


JOINT DETAIL

- WHEN USING PRECAST UPPER UNIT, THIS SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.



BARS A
(LOWER UNIT)



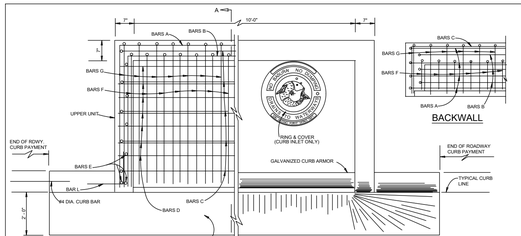
CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

MAY 2009

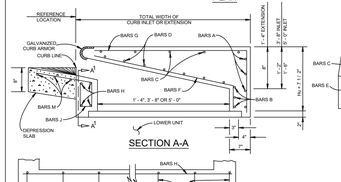
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 3 OF 3

% SUBMITTAL	PROJECT NO.	DATE
DRAWN BY: V. VASQUEZ	DESIGN BY: L.E. WALTON, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.
SHEET NO.	OF	

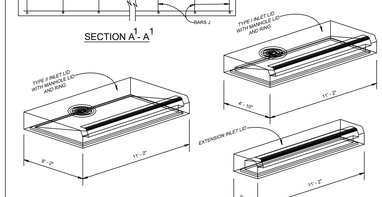


PLAN

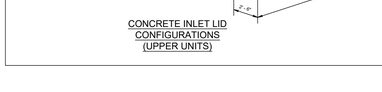


SECTION A-A

SECTION A-A1



END WALL



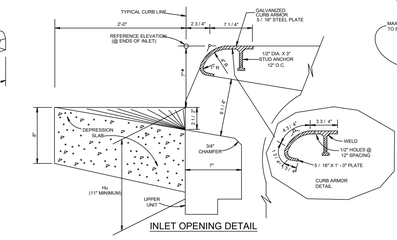
CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.



REINFORCING STEEL (FOR Hu=11")

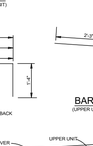
UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	19'-10"	53
B	3	#4	——	18'-10"	38
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-2"	9
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	4	#4	——	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	——	2'-0"	5
M	3	#4	——	14'-8"	29
TOTAL WEIGHT				620 LBS.	

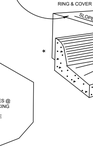
UPPER UNIT 10' X 5'-0" (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	22'-4"	60
B	3	#4	——	21'-4"	43
C	7	#4	11"	13'-2"	62
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-2"	13
F	21	#6	6"	5'-8"	179
G	22	#6	6"	7'-0"	231
H	4	#4	——	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	——	2'-0"	5
M	3	#4	——	14'-8"	29
TOTAL WEIGHT				759 LBS	

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
10' EXTENSION	1.0



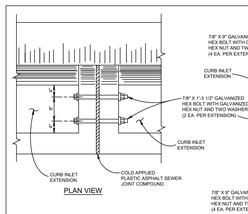


MAY 2009

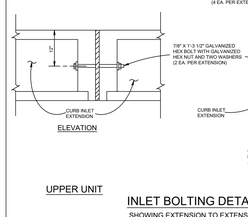
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 2 OF 3

% SUBMITTAL	PROJECT NO.	DATE
DRAWN BY: V. VASQUEZ	DESIGN BY: L.E. WALTON, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.
SHEET NO.	OF	



UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	15'-2"	41
B	3	#4	——	14'-2"	28
C	3	#4	11"	13'-2"	26
D	3	#4	6"	10'-10"	22
E	8	#4	11"	1'-2"	6
F	21	#6	6"	2'-0"	63
G	22	#6	6"	3'-4"	110
H	4	#4	——	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	——	2'-0"	5
M	3	#4	——	14'-8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0



LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6'-2"	49
B	11	#4	12"	2'-2"	16
B_1	3	#4	12"	2'-2"	4
E_1	18	#4	18" ±	2'-3"	27
E_2	4	#4	18" ±	2'-1"	6
F_1	16	#4	12" ±	10'-10"	116
F_2	5	#4	——	10'-10"	36
REINFORCING STEEL				LBS.	254
CLASS. "A" CONCRETE				C.Y.	1.4

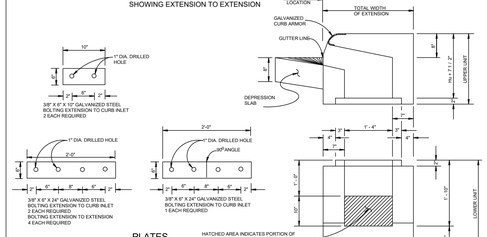
GENERAL NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS WITH EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

UPPER UNIT — LOWER UNIT

INLET BOLTING DETAILS

SHOWING EXTENSION TO EXTENSION

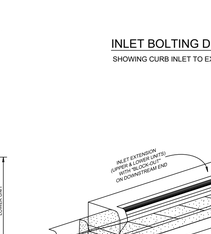


PLATES

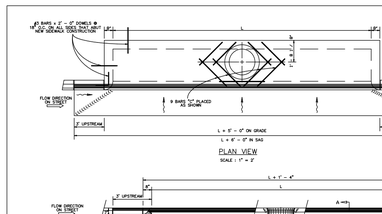
SECTION A-A CURB INLET EXTENSION TYPE E

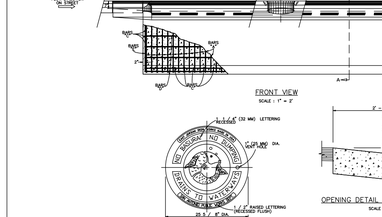
INLET BOLTING DETAILS

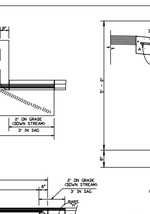
SHOWING CURB INLET TO EXTENSION



TYPE "CI" INLET WITH INLET EXTENSION BOXES





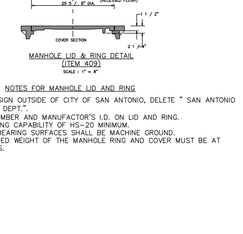


INLET LENGTH	REINFORCING STEEL SCHEDULE						
	BAR	NO.	SIZE	SPACING	LENGTH	SHAPE	WEIGHT
L=5' - 0"	A	4	#4	——	22'-4"	STR	60
	B	3	#4	——	21'-4"	STR	43
	C	7	#4	11"	13'-2"	STR	62
	D	11	#4	6"	10'-10"	STR	80
	E	16	#4	11"	1'-2"	STR	13
	F	21	#6	6"	5'-8"	STR	179
	G	22	#6	6"	7'-0"	STR	231
	H	4	#4	——	10'-10"	STR	29
	J	12	#4	12"	3'-6"	STR	28
	L	4	#4	——	2'-0"	STR	5
	M	3	#4	——	14'-8"	STR	29
* CONCRETE TOTAL=3.53 CU. YDS. W.A. CASTING=360 LBS. STEEL TOTAL=438 LBS.							
L=10' - 0"	A	4	#4	——	32'-4"	STR	86
	B	3	#4	——	31'-4"	STR	63
	C	7	#4	11"	13'-2"	STR	62
	D	11	#4	6"	10'-10"	STR	80
	E	16	#4	11"	1'-2"	STR	13
	F	21	#6	6"	5'-8"	STR	179
	G	22	#6	6"	7'-0"	STR	231
	H	4	#4	——	10'-10"	STR	29
	J	12	#4	12"	3'-6"	STR	28
	L	4	#4	——	2'-0"	STR	5
	M	3	#4	——	14'-8"	STR	29
* CONCRETE TOTAL=4.75 CU. YDS. W.A. CASTING=360 LBS. STEEL TOTAL=704 LBS.							
L=15' - 0"	A	4	#4	——	42'-4"	STR	113
	B	3	#4	——	41'-4"	STR	83
	C	7	#4	11"	13'-2"	STR	62
	D	11	#4	6"	10'-10"	STR	80
	E	16	#4	11"	1'-2"	STR	13
	F	21	#6	6"	5'-8"	STR	179
	G	22	#6	6"	7'-0"	STR	231
	H	4	#4	——	10'-10"	STR	29
	J	12	#4	12"	3'-6"	STR	28
	L	4	#4	——	2'-0"	STR	5
	M	3	#4	——	14'-8"	STR	29
* CONCRETE TOTAL=6.37 CU. YDS. W.A. CASTING=360 LBS. STEEL TOTAL=963 LBS.							
L=20' - 0"	A	4	#4	——	52'-4"	STR	140
	B	3	#4	——	51'-4"	STR	103
	C	7	#4	11"	13'-2"	STR	62
	D	11	#4	6"	10'-10"	STR	80
	E	16	#4	11"	1'-2"	STR	13
	F	21	#6	6"	5'-8"	STR	179
	G	22	#6	6"	7'-0"	STR	231
	H	4	#4	——	10'-10"	STR	29
	J	12	#4	12"	3'-6"	STR	28
	L	4	#4	——	2'-0"	STR	5
	M	3	#4	——	14'-8"	STR	29
* CONCRETE TOTAL=9.19 CU. YDS. W.A. CASTING=360 LBS. STEEL TOTAL=1227 LBS.							

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL DISPLACED BY MANHOLE AND REINFORCED CONC. PIPE.
* INCLUDES CONCRETE BUTTER FOR 24 GRADE (MLT). REDUCE BY 4/9 C.Y. FOR FACTS IN RAMP.

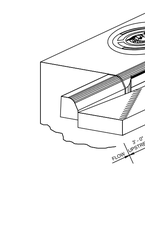
GENERAL NOTES:

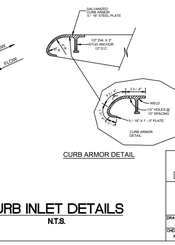
1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3 / 4".
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCRETION. ADJUST LENGTH OF VERTICAL STEEL AS NECESSARY.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO OUTLET PIPE.
8. DELETE A "C" BARS FROM SCHEDULE QUANTITIES IF MANHOLE RING AND COVER ARE PLACED AT END OF INLET.
9. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
10. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".



NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE " SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTOR'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.





CURB ARMOR DETAIL

CURB INLET DETAILS

N.T.S.

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS

TYPE "C" INLET STANDARDS

DRAWN BY: V. VASQUEZ	DATE	REVISIONS	SCALE: SEE ABOVE
DESIGNED BY: MAT HARDY, P.E.			DATE:
			SHEET:

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

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 2 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.30

Date: Apr 01, 2026, 11:18am User ID: zachary.prescot
File: P:\123\56\21\Design\Civil\DRDT-123562I.dwg

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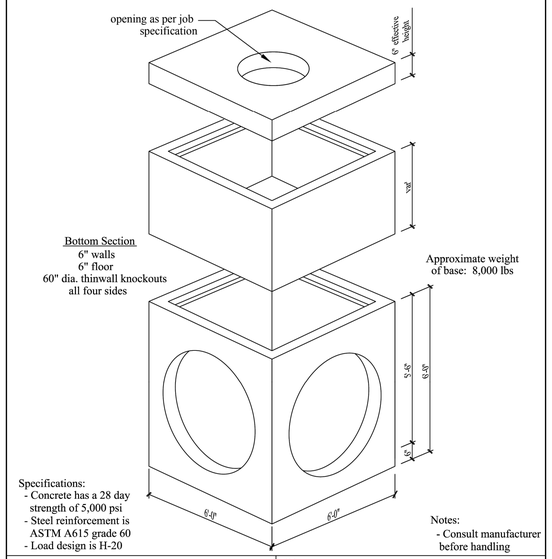
5' x 5' x var Junction Box



Approximate weight of base: 8,000 lbs

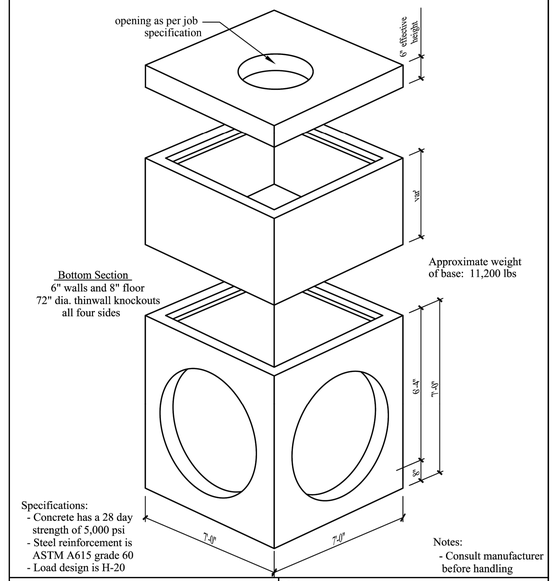
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 5' x 5' x var Junction Box
JOB
DRAWN RW | DATE 12/1/2015 | Rev. No. | SHEET 1 OF 1
FILE catalog\junction boxes\5x5JB

6' x 6' x var Junction Box



Approximate weight of base: 11,200 lbs

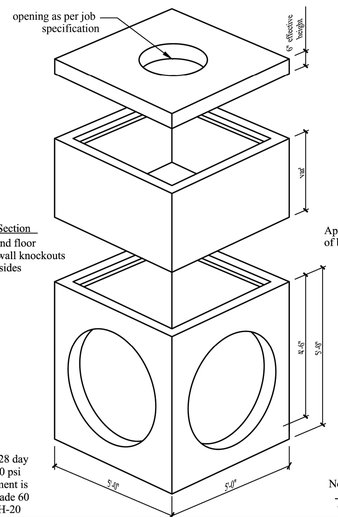
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 6' x 6' x var Junction Box
JOB
DRAWN RW | DATE 12/1/2015 | Rev. No. | SHEET 1 OF 1
FILE catalog\junction boxes\6x6JB

4' x 4' x var Junction Box



Approximate weight of base: 5,900 lbs

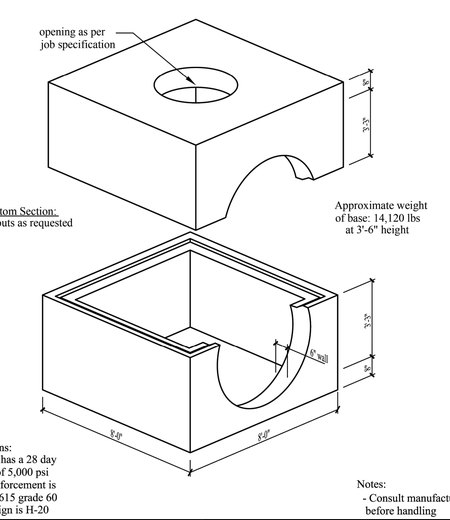
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 4' x 4' x var Junction Box
JOB
DRAWN RW | DATE 12/1/2015 | Rev. No. | SHEET 1 OF 1
FILE catalog\junction boxes\4x4JB

7' x 7' x var Junction Box



Approximate weight of base: 14,120 lbs at 3'-6" height

Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 7' x 7' x var Junction Box
JOB
DRAWN RW | DATE 12/1/2015 | Rev. No. | SHEET 1 OF 1
FILE catalog\junction boxes\7x7JB

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

DATE:
FILE:

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

QUANTITIES

NUMBER OF SPANS	SECTION DIMENSIONS S	H	T	U	Bars B ⑤ No.	Size	Spa	Length	Wt	Bars C & D Bars C: Length	Wt	Bars D: Length	Wt	Bars E No.	Size	Spa	Length	Wt	Bars F1 ~ #4 No.	Spa	Length	Wt	Bars F2 ~ #4 No.	Spa	Length	Wt	Bars M ~ #4 No.	Spa	Length	Wt	Bars Y & Z ~ #4 No.	Spa	Bars Y: Length	Wt	Bars Z: Length	Wt	Bars H ⑤ Length	Wt	Bars K No.	Wt	Per foot of Barrel Conc (CY)	Reinf (Lb)	Curb Conc (CY)	Reinf (Lb)	Total Conc (CY)	Reinf (Lb)
2	10'-0"	4'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	108	#6	9"	11'-0"	1,784	9'-6"	1,541	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	66	18"	39'-9"	1,752	108	9"	4'-0"	289	54	9"	5'-7"	201	10'-3"	370	22'-6"	60	48	134	2.233	354.4	1.7	194	91.0	14,371
3	10'-0"	4'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	108	#6	9"	11'-0"	1,784	9'-6"	1,541	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	95	18"	39'-9"	2,523	108	9"	4'-0"	289	108	9"	5'-7"	403	10'-3"	739	33'-5"	89	70	195	3.245	519.9	2.5	284	132.3	21,078
4	10'-0"	4'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	108	#6	9"	11'-0"	1,784	9'-6"	1,541	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	124	18"	39'-9"	3,293	108	9"	4'-0"	289	162	9"	5'-7"	604	10'-3"	1,109	44'-4"	118	92	256	4.257	685.2	3.3	374	173.6	27,783
5	10'-0"	4'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	108	#6	9"	11'-0"	1,784	9'-6"	1,541	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	153	18"	39'-9"	4,063	108	9"	4'-0"	289	216	9"	5'-7"	806	10'-3"	1,479	55'-3"	148	114	317	5.269	850.7	4.1	465	214.9	34,492
6	10'-0"	4'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	108	#6	9"	11'-0"	1,784	9'-6"	1,541	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	182	18"	39'-9"	4,833	108	9"	4'-0"	289	270	9"	5'-7"	1,007	10'-3"	1,849	67'-10"	181	136	379	6.280	1,031.3	4.9	560	256.1	41,812
2	10'-0"	5'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	108	#6	9"	12'-0"	1,947	9'-6"	1,541	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	72	18"	39'-9"	1,912	108	9"	5'-0"	361	54	9"	5'-7"	201	12'-3"	442	22'-6"	60	48	134	2.335	366.1	1.7	194	93.1	14,838
3	10'-0"	5'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	108	#6	9"	12'-0"	1,947	9'-6"	1,541	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	103	18"	39'-9"	2,735	108	9"	5'-0"	361	108	9"	5'-7"	403	12'-3"	884	33'-5"	89	70	195	3.381	534.7	2.5	284	137.7	21,670
4	10'-0"	5'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	108	#6	9"	12'-0"	1,947	9'-6"	1,541	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	134	18"	39'-9"	3,558	108	9"	5'-0"	361	162	9"	5'-7"	604	12'-3"	1,326	44'-4"	118	92	256	4.426	703.2	3.3	374	180.3	28,500
5	10'-0"	5'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	108	#6	9"	12'-0"	1,947	9'-6"	1,541	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	165	18"	39'-9"	4,381	108	9"	5'-0"	361	216	9"	5'-7"	806	12'-3"	1,768	55'-3"	148	114	317	5.472	871.7	4.1	465	223.0	35,334
6	10'-0"	5'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	108	#6	9"	12'-0"	1,947	9'-6"	1,541	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	196	18"	39'-9"	5,204	108	9"	5'-0"	361	270	9"	5'-7"	1,007	12'-3"	2,209	67'-10"	181	136	379	6.518	1,055.5	4.9	560	265.6	42,278
2	10'-0"	6'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	108	#6	9"	13'-0"	2,109	9'-6"	1,541	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	78	18"	39'-9"	2,071	108	9"	6'-0"	433	54	9"	5'-7"	201	14'-3"	514	22'-6"	60	48	134	2.437	377.7	1.7	194	99.2	15,303
3	10'-0"	6'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	108	#6	9"	13'-0"	2,109	9'-6"	1,541	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	111	18"	39'-9"	2,947	108	9"	6'-0"	433	108	9"	5'-7"	403	14'-3"	1,028	33'-5"	89	70	195	3.516	549.4	2.5	284	143.1	22,260
4	10'-0"	6'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	108	#6	9"	13'-0"	2,109	9'-6"	1,541	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	144	18"	39'-9"	3,824	108	9"	6'-0"	433	162	9"	5'-7"	604	14'-3"	1,542	44'-4"	118	92	256	4.596	727.1	3.3	374	187.1	29,216
5	10'-0"	6'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	108	#6	9"	13'-0"	2,109	9'-6"	1,541	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	177	18"	39'-9"	4,700	108	9"	6'-0"	433	216	9"	5'-7"	806	14'-3"	2,056	55'-3"	148	114	317	5.676	892.8	4.1	465	231.1	36,175
6	10'-0"	6'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	108	#6	9"	13'-0"	2,109	9'-6"	1,541	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	210	18"	39'-9"	5,576	108	9"	6'-0"	433	270	9"	5'-7"	1,007	14'-3"	2,570	67'-10"	181	136	379	6.756	1,079.6	4.9	560	275.1	43,745
2	10'-0"	7'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	108	#6	9"	14'-0"	2,271	9'-6"	1,541	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	78	18"	39'-9"	2,071	108	9"	7'-0"	505	54	9"	5'-7"	201	16'-3"	586	22'-6"	60	48	134	2.539	385.4	1.7	194	103.2	15,609
3	10'-0"	7'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	108	#6	9"	14'-0"	2,271	9'-6"	1,541	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	111	18"	39'-9"	2,947	108	9"	7'-0"	505	108	9"	5'-7"	403	16'-3"	1,172	33'-5"	89	70	195	3.652	558.9	2.5	284	148.6	22,638
4	10'-0"	7'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	108	#6	9"	14'-0"	2,271	9'-6"	1,541	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	144	18"	39'-9"	3,824	108	9"	7'-0"	505	162	9"	5'-7"	604	16'-3"	1,759	44'-4"	118	92	256	4.766	732.3	3.3	374	193.9	29,667
5	10'-0"	7'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	108	#6	9"	14'-0"	2,271	9'-6"	1,541	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	177	18"	39'-9"	4,700	108	9"	7'-0"	505	216	9"	5'-7"	806	16'-3"	2,345	55'-3"	148	114	317	5.880	905.8	4.1	465	239.3	36,698
6	10'-0"	7'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	108	#6	9"	14'-0"	2,271	9'-6"	1,541	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	210	18"	39'-9"	5,576	108	9"	7'-0"	505	270	9"	5'-7"	1,007	16'-3"	2,931	67'-10"	181	136	379	6.993	1,094.5	4.9	560	284.6	44,340
2	10'-0"	8'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	108	#6	9"	15'-0"	2,433	9'-6"	1,541	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	84	18"	39'-9"	2,230	108	9"	8'-0"	577	54	9"	5'-7"	201	18'-3"	658	22'-6"	60	48	134	2.640	397.0	1.7	194	107.3	16,074
3	10'-0"	8'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	108	#6	9"	15'-0"	2,433	9'-6"	1,541	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	119	18"	39'-9"	3,160	108	9"	8'-0"	577	108	9"	5'-7"	403	18'-3"	1,317	33'-5"	89	70	195	3.788	573.7	2.5	284	154.0	23,230
4	10'-0"	8'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	108	#6	9"	15'-0"	2,433	9'-6"	1,541	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	154	18"	39'-9"	4,089	108	9"	8'-0"	577	162	9"	5'-7"	604	18'-3"	1,975	44'-4"	118	92	256	4.936	750.2	3.3	374	200.7	30,382
5	10'-0"	8'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	108	#6	9"	15'-0"	2,433	9'-6"	1,541	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	189	18"	39'-9"	5,019	108	9"	8'-0"	577	216	9"	5'-7"	806	18'-3"	2,633	55'-3"	148	114	317	6.083	926.9	4.1	465	247.4	37,539
6	10'-0"	8'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	108	#6	9"	15'-0"	2,433	9'-6"	1,541	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	224	18"	39'-9"	5,948	108	9"	8'-0"	577	270	9"	5'-7"	1,007	18'-3"	3,292	67'-10"	181	136	379	7.231	1,118.7	4.9	560	294.1	45,307
2	10'-0"	9'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	162	#6	6"	16'-0"	3,893	9'-6"	2,312	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	90	18"	39'-9"	2,390	108	9"	9'-0"	649	54	9"	5'-7"	201	20'-3"	730	22'-6"	60	48	134	2.742	460.4	1.7	194	111.4	18,609
3	10'-0"	9'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	162	#6	6"	16'-0"	3,893	9'-6"	2,312	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	127	18"	39'-9"	3,372	108	9"	9'-0"	649	108	9"	5'-7"	403	20'-3"	1,461	33'-5"	89	70	195	3.924	640.1	2.5	284	159.4	25,889
4	10'-0"	9'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	162	#6	6"	16'-0"	3,893	9'-6"	2,312	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	164	18"	39'-9"	4,355	108	9"	9'-0"	649	162	9"	5'-7"	604	20'-3"	2,191	44'-4"	118	92	256	5.105	819.8	3.3	374	207.5	33,167
5	10'-0"	9'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	162	#6	6"	16'-0"	3,893	9'-6"	2,312	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	201	18"	39'-9"	5,337	108	9"	9'-0"	649	216	9"	5'-7"	806	20'-3"	2,922	55'-3"	148	114	317	6.287	999.6	4.1	465	255.6	40,449
6	10'-0"	9'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	162	#6	6"	16'-0"	3,893	9'-6"	2,312	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	238	18"	39'-9"	6,320	108	9"	9'-0"	649	270	9"	5'-7"	1,007	20'-3"	3,652	67'-10"	181	136	379	7.469	1,194.6	4.9	560	303.7	48,342
2	10'-0"	10'-0"	1'3"	1'1"	162	#6	6"	22'-6"	5,475	162	#6	6"	17'-0"	4,137	9'-6"	2,312	162	#6	6"	9'-10"	2,393	14	18"	39'-9"	372	90	18"	39'-9"	2,390	162	6"	10'-0"	1,082	54	9"	5'-7"	201	22'-3"	803	22'-6"	60	48	134	2.844	479.1	1.7	194	115.4	19,359
3	10'-0"	10'-0"	1'3"	1'1"	162	#6	6"	33'-5"	8,131	162	#6	6"	17'-0"	4,137	9'-6"	2,312	162	#6	6"	19'-10"	4,826	21	18"	39'-9"	558	127	18"	39'-9"	3,372	162	6"	10'-0"	1,082	108	9"	5'-7"	403	22'-3"	1,605	33'-5"	89	70	195	4.060	660.7	2.5	284	164.9	26,710
4	10'-0"	10'-0"	1'3"	1'1"	162	#6	6"	44'-4"	10,787	162	#6	6"	17'-0"	4,137	9'-6"	2,312	162	#6	6"	29'-10"	7,259	28	18"	39'-9"	743	164	18"	39'-9"	4,355	162	6"	10'-0"	1,082	162	9"	5'-7"	604	22'-3"	2,408	44'-4"	118	92	256	5.275	842.2	3.3	374	214.3	34,061
5	10'-0"	10'-0"	1'3"	1'1"	162	#6	6"	55'-3"	13,444	162	#6	6"	17'-0"	4,137	9'-6"	2,312	162	#6	6"	39'-10"	9,692	35	18"	39'-9"	929	201	18"	39'-9"	5,337	162	6"	10'-0"	1,082	216	9"	5'-7"	806	22'-3"	3,210	55'-3"	148	114	317	6.491	1,023.7	4.1	465	263.7	41,414
6	10'-0"	10'-0"	1'3"	1'1"	162	#6	6"	68'-8"	16,708	162	#6	6"	17'-0"	4,137	9'-6"	2,312	162	#6	6"	49'-10"	12,126	42	18"	39'-9"	1,115	238	18"	39'-9"	6,320	162	6"	10'-0"	1,082	270	9"	5'-7"	1,007	22'-3"	4,013	67'-10"	181	136	379	7.708	1,220.5	4.9	560	313.1	49,380

⑤ Bar lengths over 60' include one bar lap; refer to MATERIAL NOTES for minimum lap lengths.

HL93 LOADING SHEET 2 OF 2

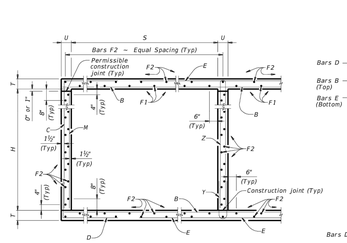
Texas Department of Transportation | Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE

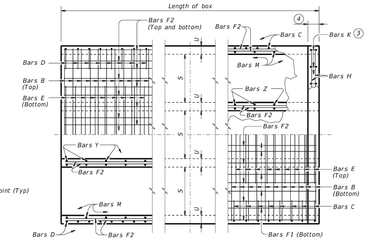
10'-0" SPAN
2' TO 23' FILL

MC-10-23

FILE: CD-MC1023-20.dgn	DN: TBE	CK: BRP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.



TYPICAL SECTION



BOTTOM SLAB PART PLANS TOP SLAB

① 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 7'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, till Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

④ 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

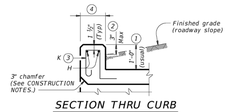
Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR
Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:
Do not use permanent forms.
Chamfer the bottom edge of the top slab 3" at the entrance.
Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (fc = 3,600 psi) for culvert barrel and curb.
Provide bar laps, where required, as follows:
- Uncoated or galvanized – #4 – 2'-0" Min
- Uncoated or galvanized – #5 – 2'-1" Min
- Uncoated or galvanized – #6 – 2'-6" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MQ) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

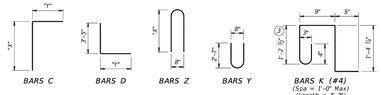
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.



SECTION THRU CURB

TABLE OF BAR DIMENSIONS

H	"X"	"Y"
4'-0"	4'-11 ½"	6'-0 ½"
5'-0"	5'-11 ½"	6'-0 ½"
6'-0"	6'-11 ½"	6'-0 ½"
7'-0"	7'-11 ½"	6'-0 ½"
8'-0"	8'-11 ½"	6'-0 ½"
9'-0"	9'-11 ½"	6'-0 ½"
10'-0"	10'-11 ½"	6'-0 ½"



BARS C BARS D BARS Z BARS Y BARS K (#4) (Spa = 1'-0" Max) (Length = 4'-2")

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE

10'-0" SPAN
2' TO 23' FILL

MC-10-23

FILE: CD-MC1023-20.dgn	DN: TBE	CK: BRP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

NO. REVISION DATE

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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 3 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C1.40

Date: Apr 01, 2026, 11:18am User ID: zachary.prescot
File: P:\123\56\21\Design\Civil\DRDT-123521.dwg

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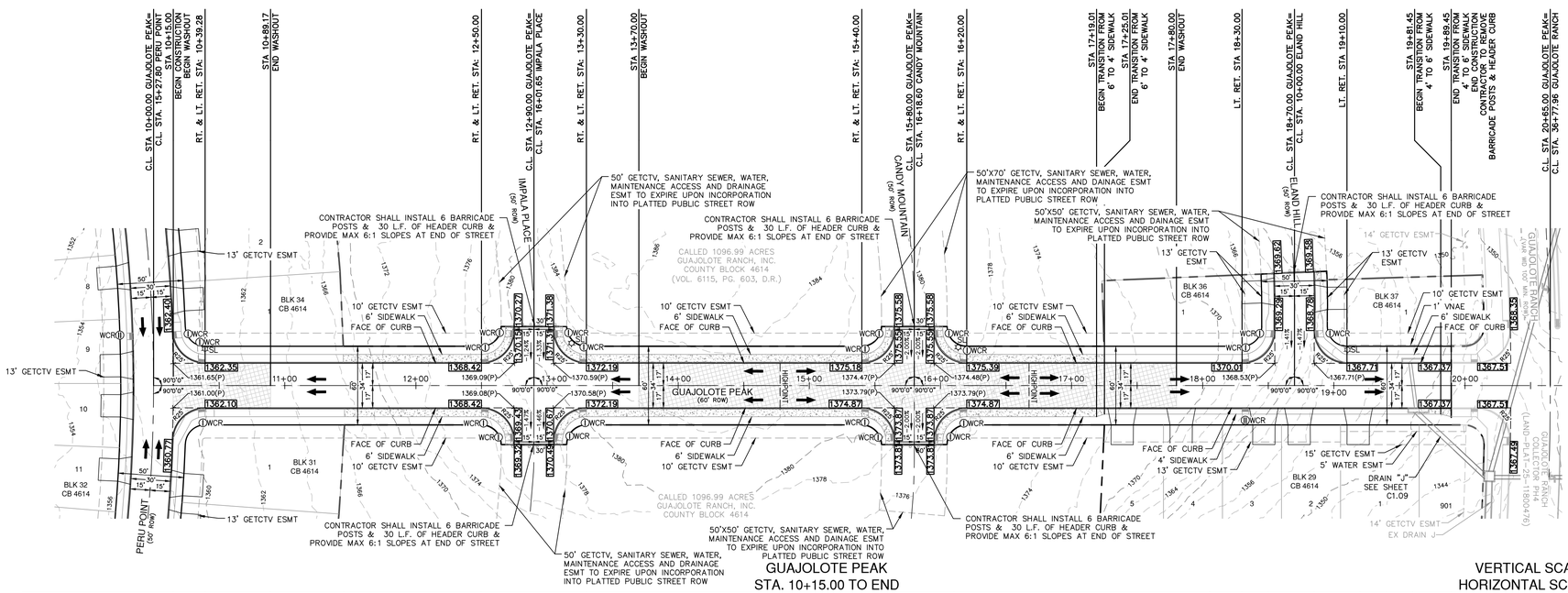


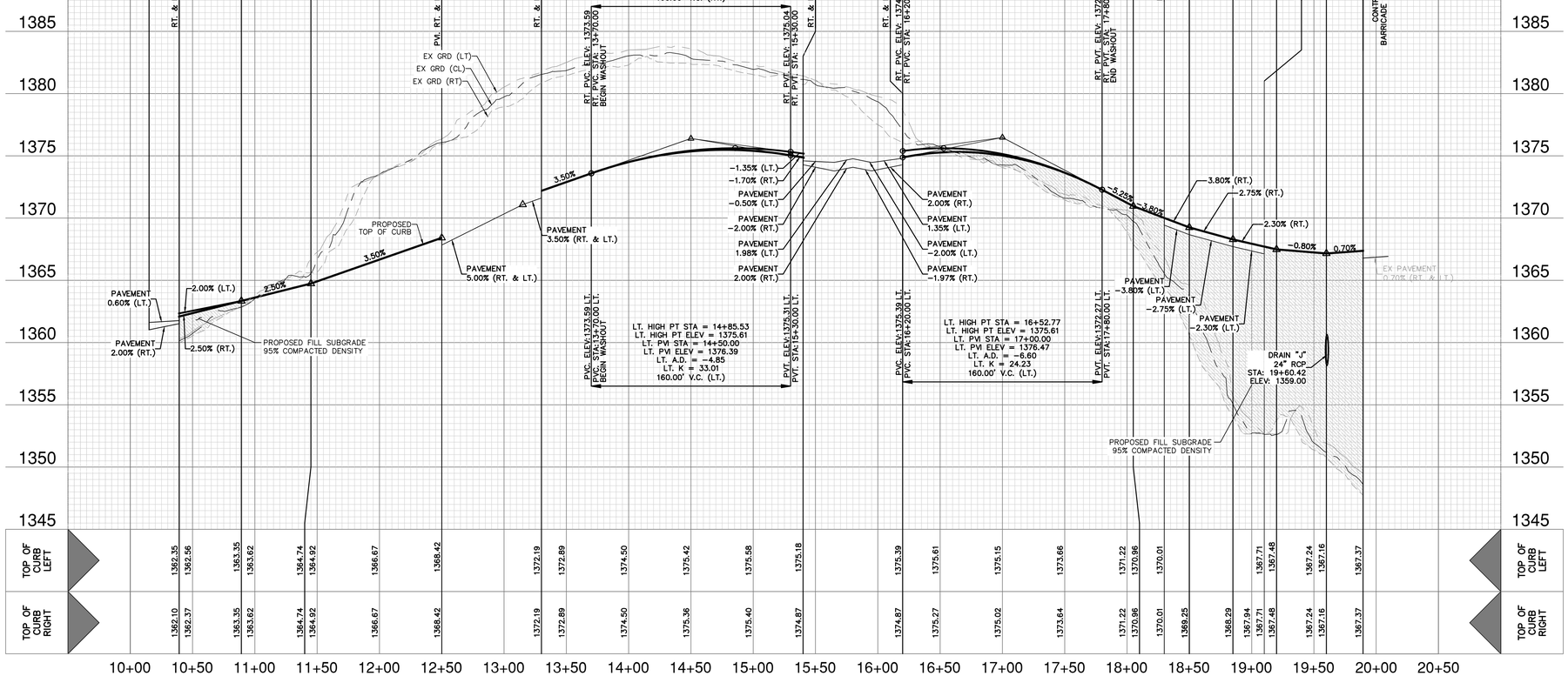
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	

GUAJOLOTE PEAK
STA. 10+15.00 TO END

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



STREET 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. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–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.
4. 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.
5. 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.
6. 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).
7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

GUAJOLOTE PEAK PLAN & PROFILE
STA. 10+15.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.00

Date: Jun 08, 2026, 2:35pm User ID: arodriguez
File: P:\123\56\21\Design\Civil\ST-GUAJOLOTE PEAK 1235621.dwg

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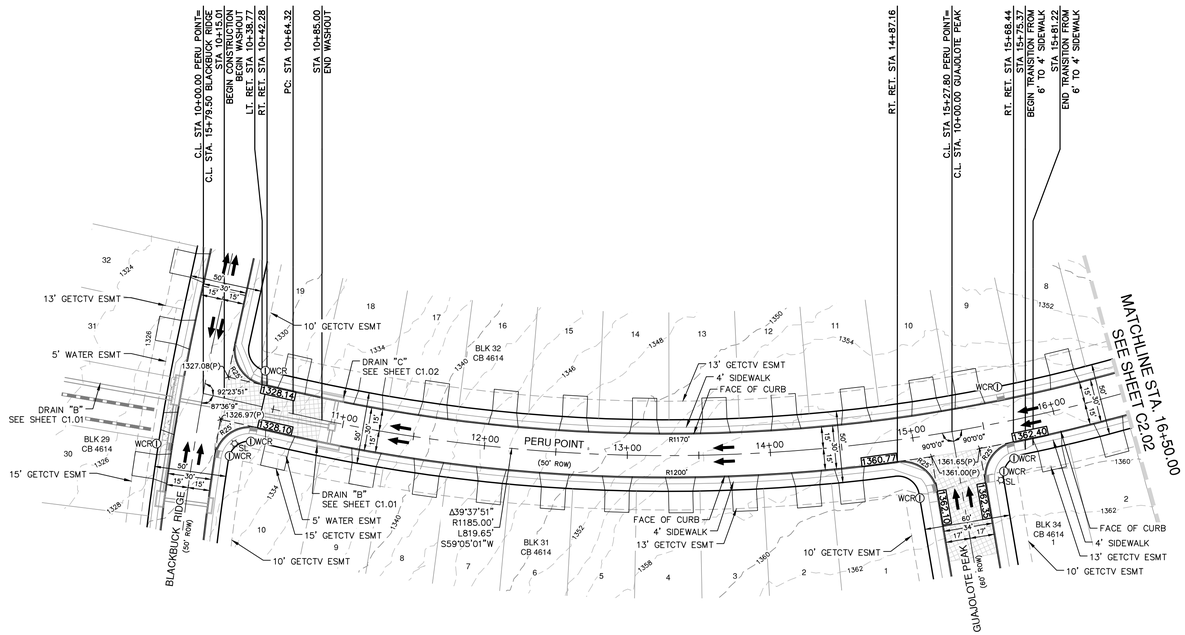
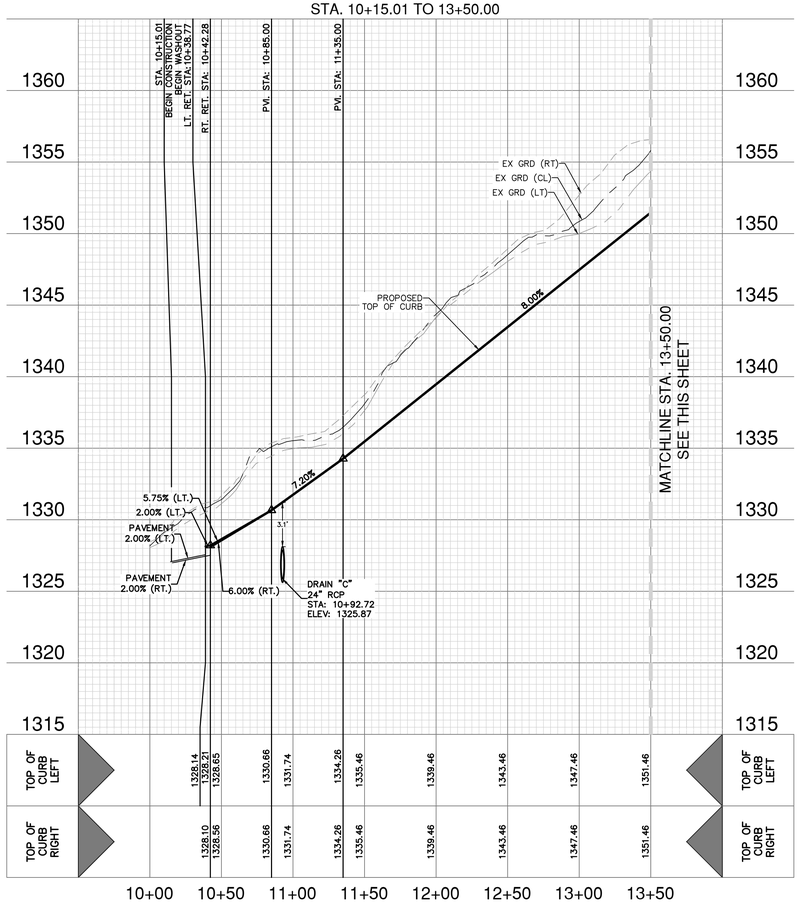


SCALE: 1"= 50'
0' 50' 100' 150'

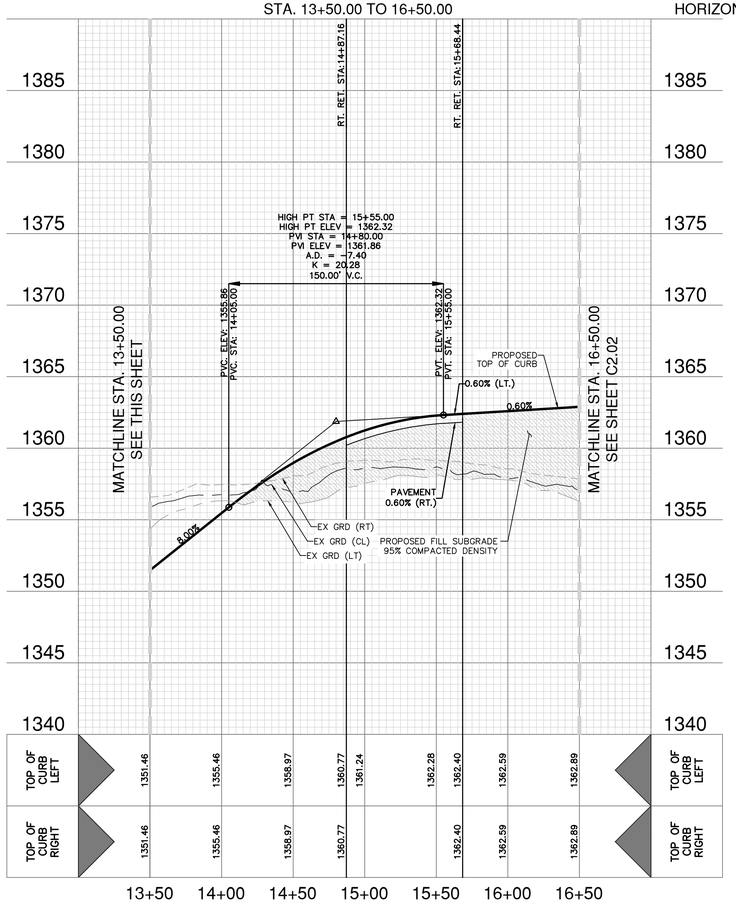
STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	

PERU POINT
STA. 10+15.01 TO 13+50.00



PERU POINT
STA. 13+50.00 TO 16+50.00



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

STREET 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. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–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.
4. 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.
5. 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.
6. 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).
7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

PERU POINT PLAN & PROFILE
STA. 10+15.01 TO 16+50.00

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.01

Date: Jun 05, 2026, 5:36am User ID: arodriguez
File: P:\123\56\21\Design\Civil\ST-PERU POINT 1235621.dwg
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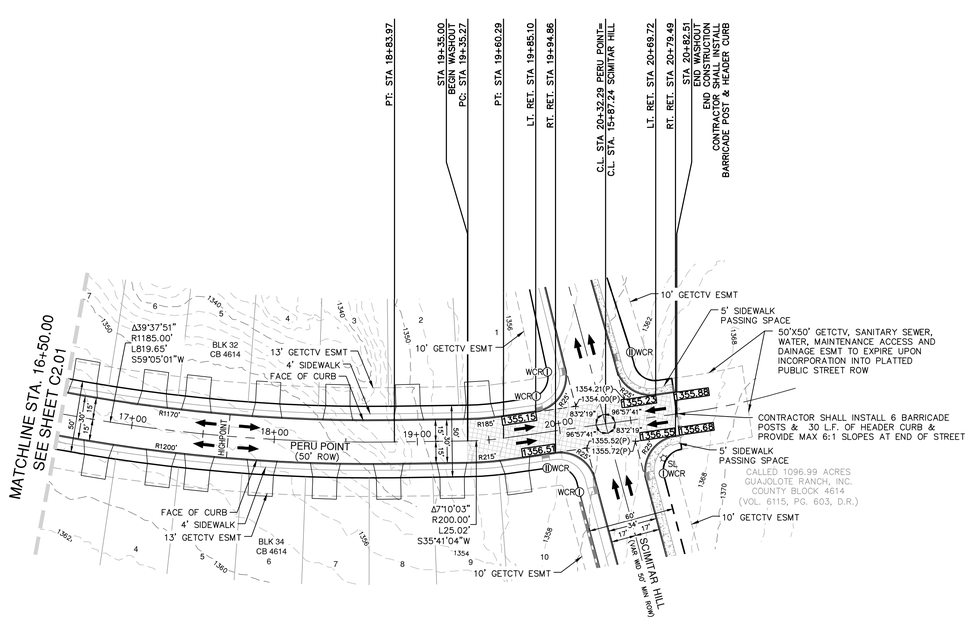


SCALE: 1"= 50'

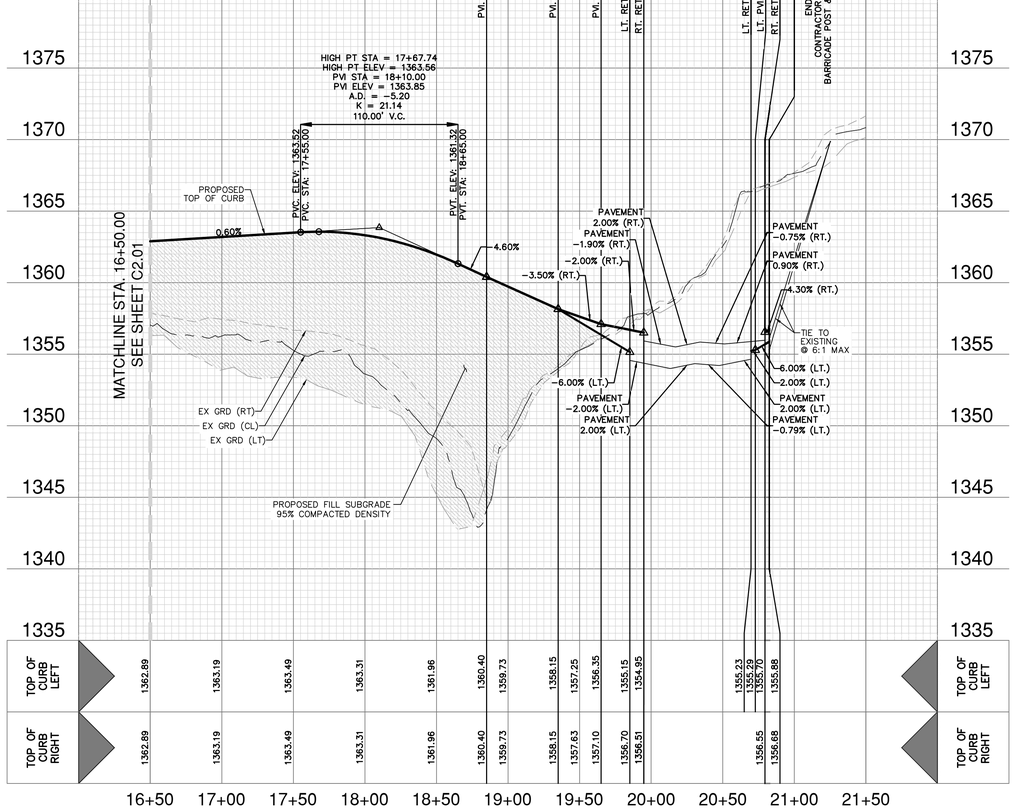
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	

PERU POINT
STA. 16+50.00 TO END

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



STREET NOTES:

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7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

PERU POINT PLAN & PROFILE
STA. 16+50.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.02

Date: Jun 05, 2026, 5:40pm User ID: arodriguez
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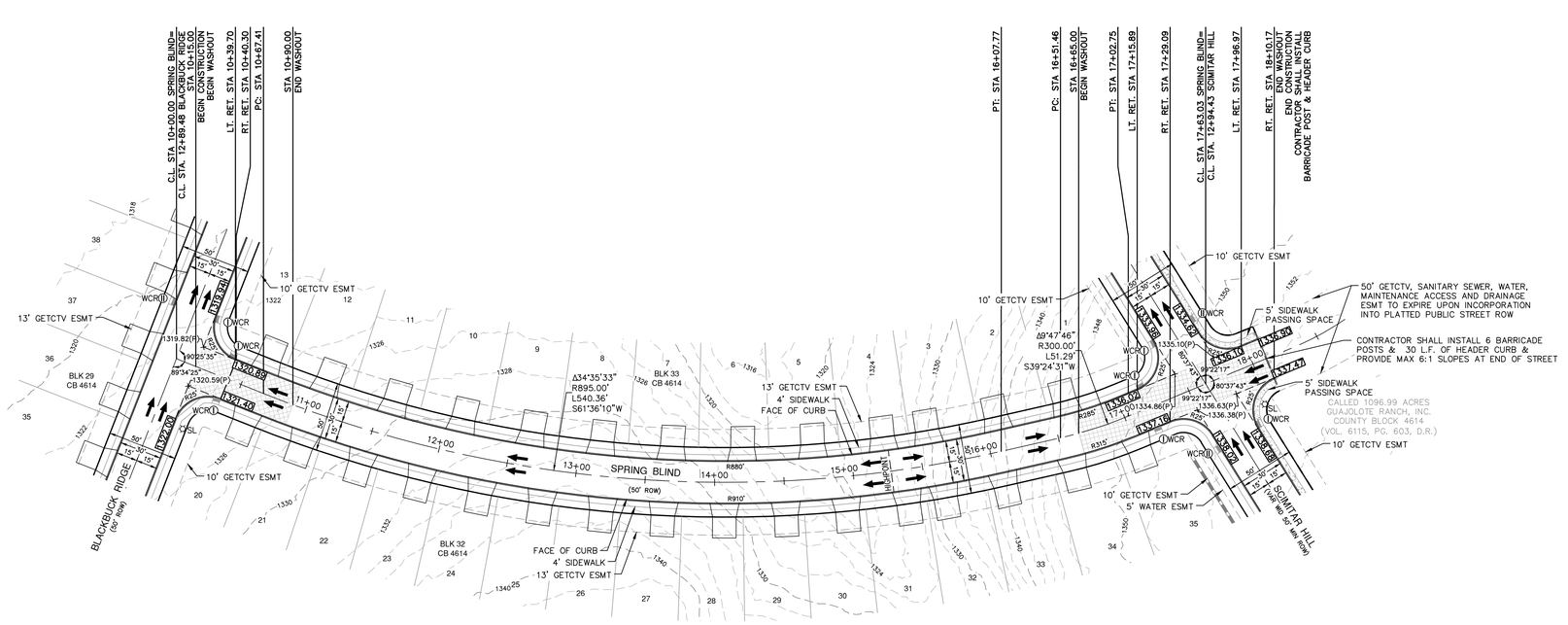


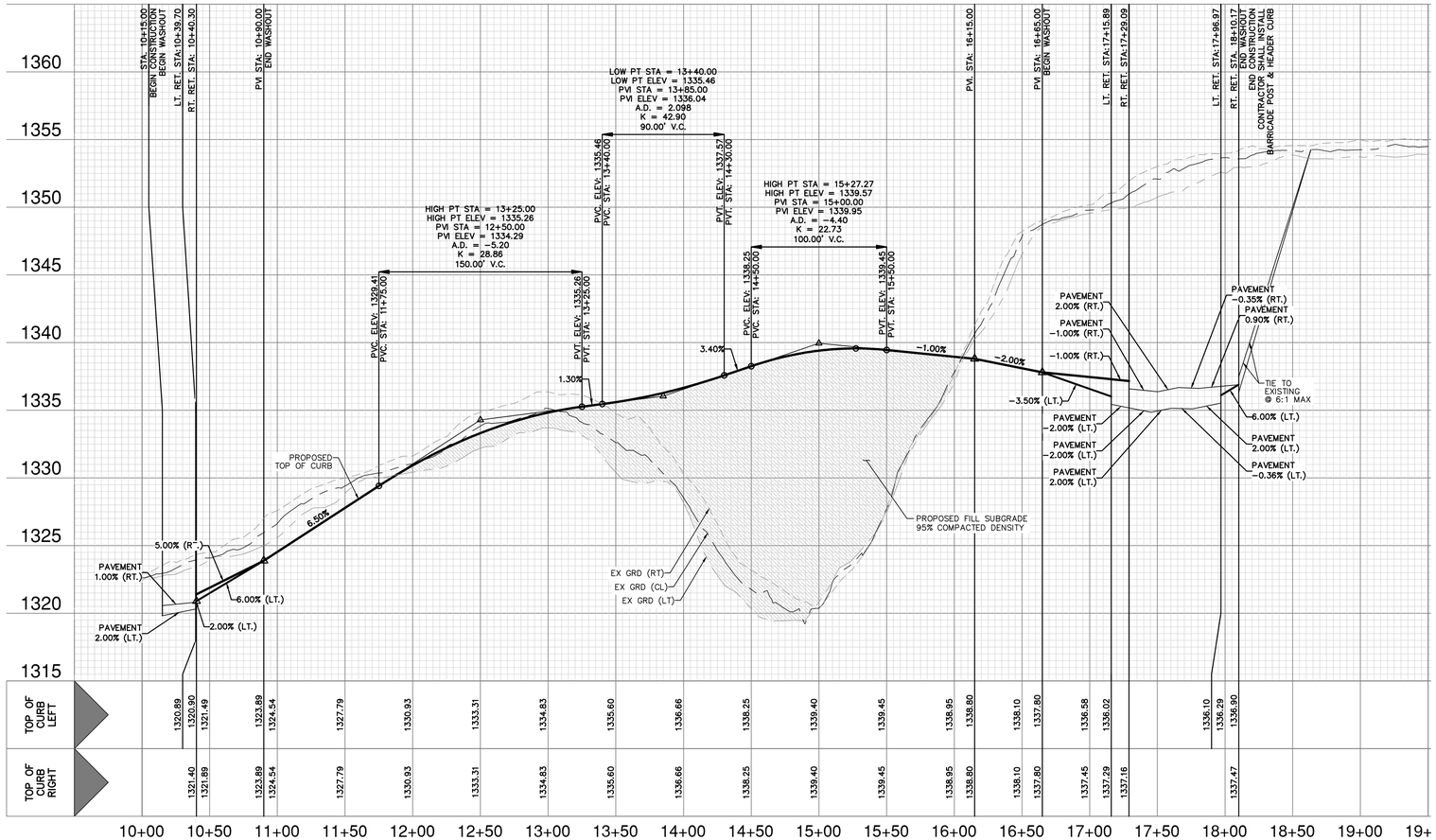
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	

SPRING BLIND
STA. 10+15.00 TO END

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



STREET NOTES:

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4. 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.
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7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SPRING BLIND PLAN & PROFILE
STA. 10+15.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.03

Date: Jun 05, 2026, 7:29am User ID: ordriguez
File: P:\123\56\21\Design\Civil\ST–SPRING BLIND 12356221.dwg

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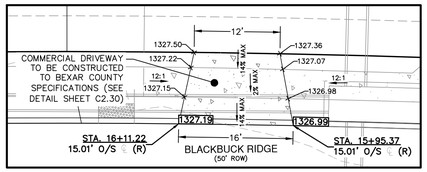
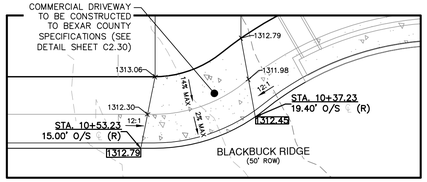
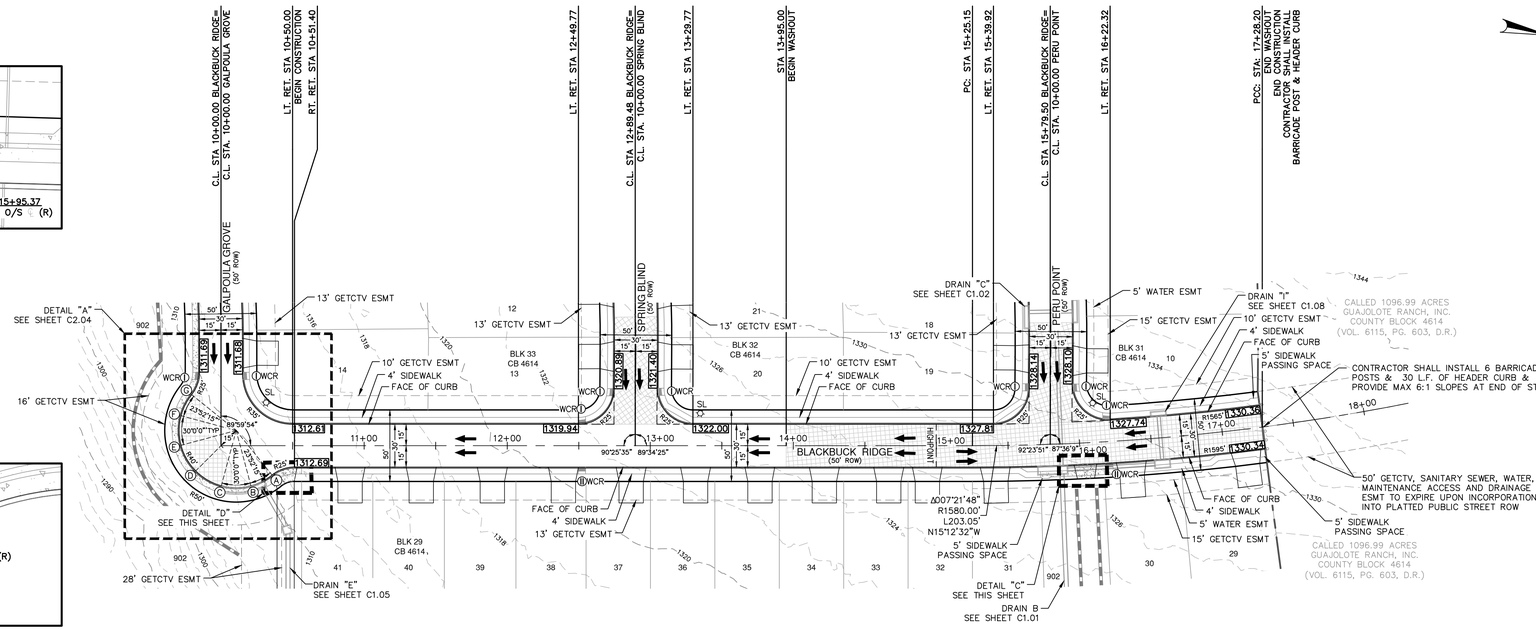


DETAIL "C"
SCALE: 1" = 10'



DETAIL "D"
SCALE: 1" = 10'



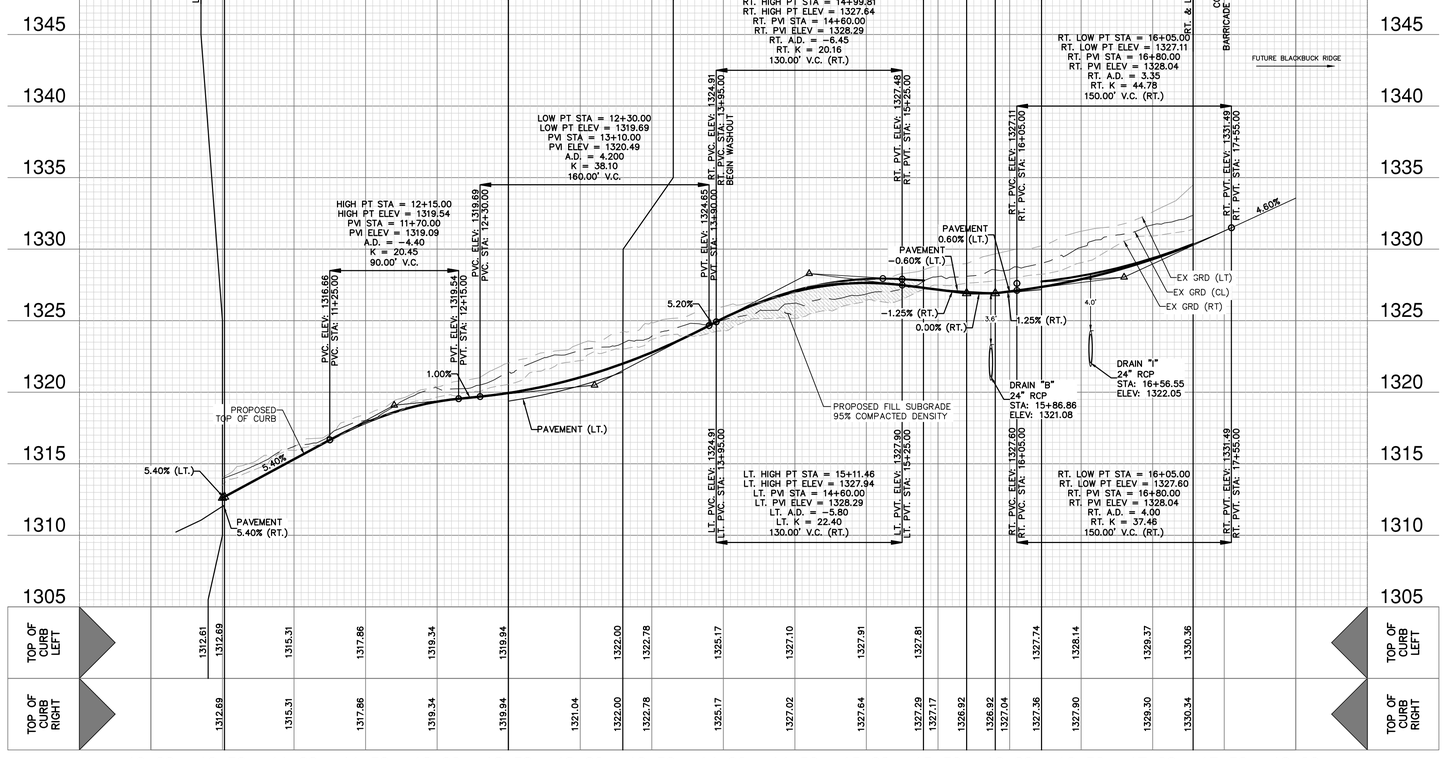
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	
FILL WALL (BY SEPARATE WALL CONTRACTOR)	

BLACKBUCK RIDGE
STA. 10+50.00 TO END

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



STREET 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. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–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.
4. 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.
5. 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.
6. 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).
7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/9/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

BLACKBUCK RIDGE PLAN & PROFILE
STA. 10+50.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.05

Date: Jun 09, 2026, 8:28am User ID: arodriguez
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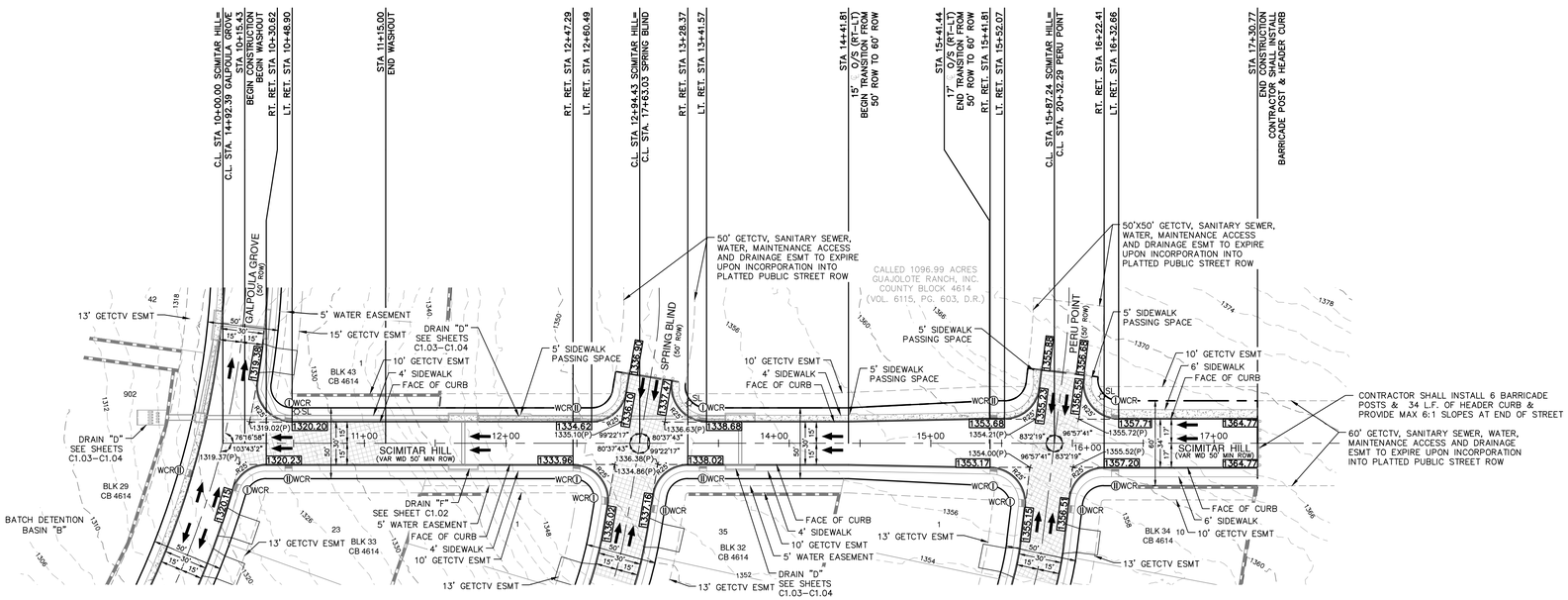
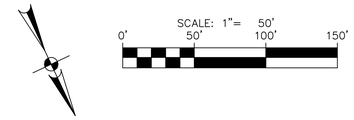
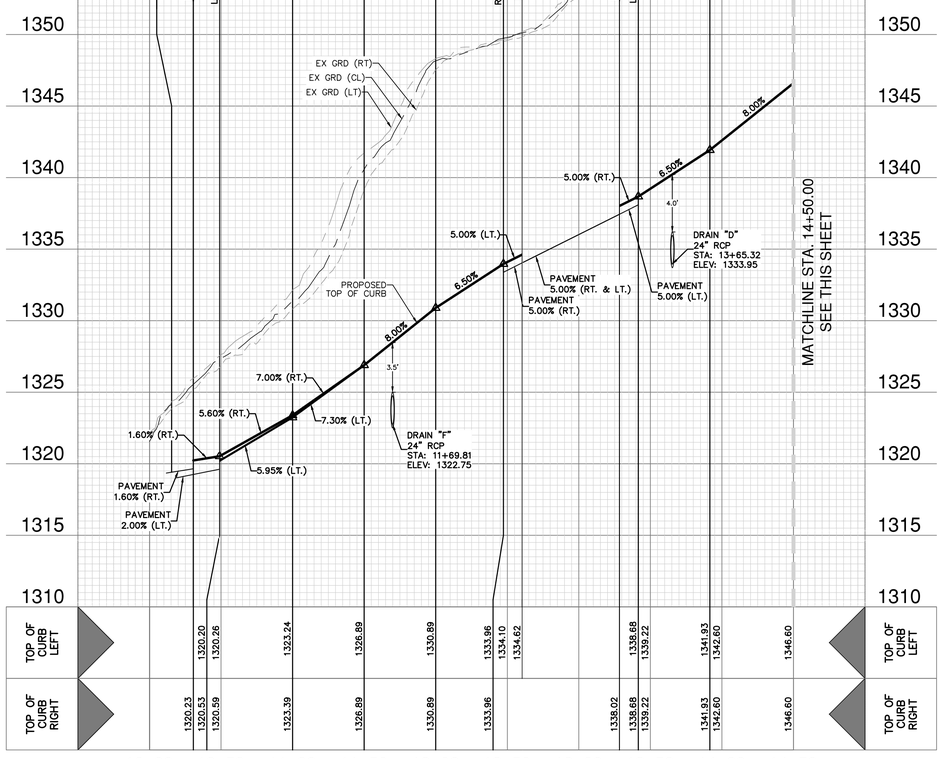




STREET LEGEND

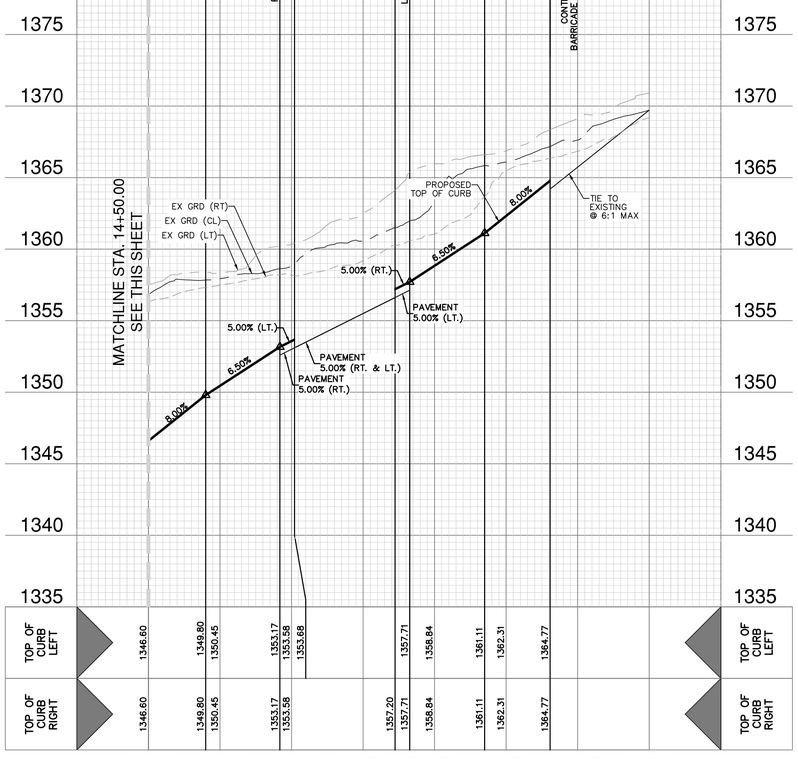
PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	
PROPOSED WALL	

SCIMITAR HILL
STA. 10+15.43 TO 14+50.00



SCIMITAR HILL
STA. 14+50.00 TO END

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



STREET 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. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–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.
4. 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.
5. 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.
6. 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).
7. 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

STATE OF TEXAS
BRUNA F. SPENGLER
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LICENSED
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SCIMITAR HILL PLAN & PROFILE
STA. 10+15.43 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
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SHEET C2.06

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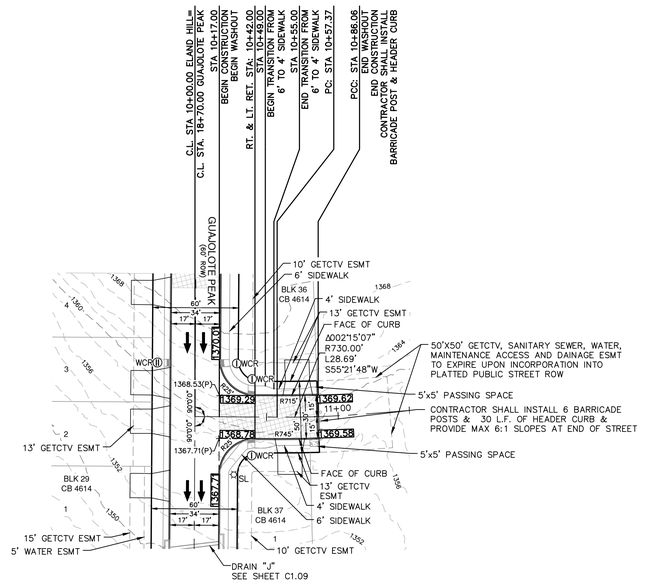

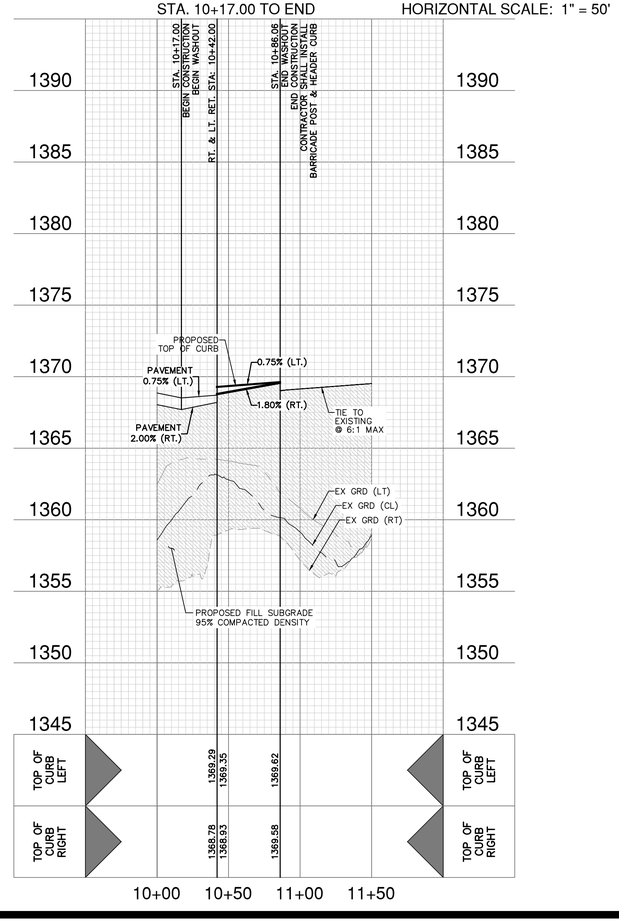

SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

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NO.	REVISION	DATE

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GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

ELAND HILL PLAN & PROFILE
STA. 10+17.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.07

Date: Jun 08, 2026, 3:11pm User ID: arodriguez
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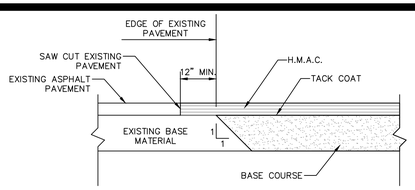
PAVEMENT SECTION DETAIL

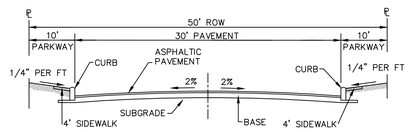
STREET NAME	STATION	TYPE "D" HMAC	CRUSHED LIMESTONE BASE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL NUMBER	
GAUJOLOTE PEAK (LOCAL B)	10+15.00 TO END	3.0"	17.0"	NO	5.0	3(.44) = 1.32 17(.14) = 2.38	3.70
PERU POINT (LOCAL A)	10+15.01 TO 20+82.51	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07
SPRING BLIND (LOCAL A)	10+15.00 TO 18+10.17	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07
GALPOULA GROVE (LOCAL A)	10+50.00 TO 16+92.22	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07
BLACKBUCK RIDGE (LOCAL A)	10+50.00 TO 17+28.20	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07
SCIMITAR HILL (LOCAL A)	10+15.43 TO 14+41.81	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07
SCIMITAR HILL (LOCAL B)	14+41.81 TO 17+30.77	3.0"	17.0"	NO	5.0	3(.44) = 1.32 17(.14) = 2.38	3.70
ELAND HILL (LOCAL A)	10+17.00 TO 10+86.06	2.0"	8.5"	NO	5.0	2(.44) = 0.88 8.5(.14) = 1.19	2.07

*CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT PREPARED BY **INTEC, L.P. (PROJECT No.s261012-R1)** DATED **MAY 18, 2026**



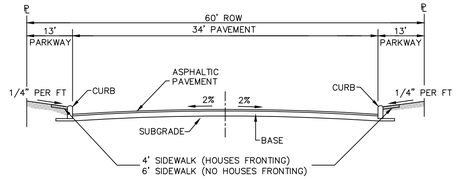
ASPHALT/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE



LOCAL A STREET SECTION

NOT-TO-SCALE



LOCAL B STREET SECTION

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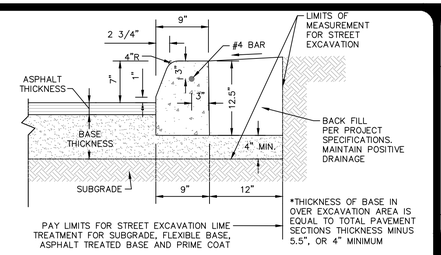
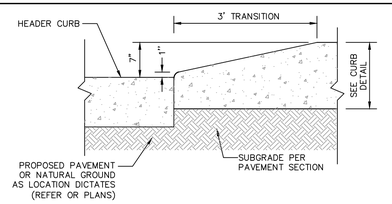


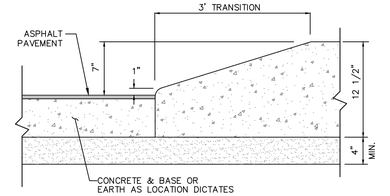
CONCRETE CURB DETAIL

NOT-TO-SCALE



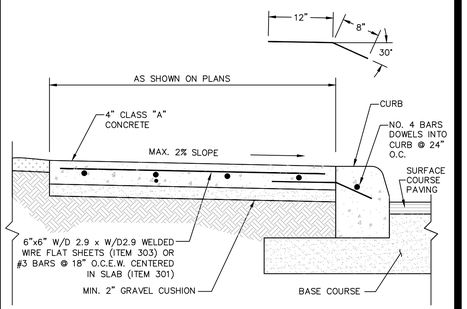
CURB TRANSITION DETAIL (FROM HEADER CURB TO STANDARD CURB)

NOT-TO-SCALE



CURB TRANSITION DETAIL (FROM PAVEMENT TO STANDARD CURB)

NOT-TO-SCALE



SIDEWALK DETAIL

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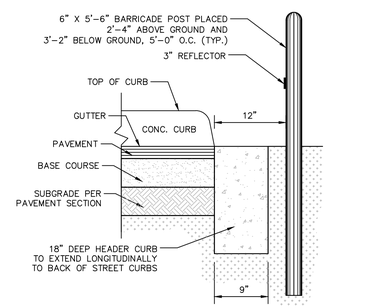

HEADER CURB & BARRICADE POST DETAIL

NOT-TO-SCALE

NO.	REVISION	DATE

STATE OF TEXAS
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GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

STREET DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
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DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.10

- Long-term pavement performance will depend heavily on:
  - Proper drainage
  - Moisture management
  - Utility trench backfill quality
  - Construction practices
  - Ongoing maintenance

This summary is intended for general planning and design guidance only. Detailed descriptions, assumptions, analyses, and recommendations are provided in the full report and should be reviewed in their entirety. Any significant changes in site conditions, grading, or subsurface exposure should be evaluated by the geotechnical engineer.

Summary Table A – Input Parameters used in Asphalt Pavement Section Calculation

	Local Type A (no bus traffic)	Local Type A (with bus traffic)	Local B	Collector
ESAL	100,000	1,000,000	2,000,000	2,000,000
Reliability Level	R-70	R-70	R-90	R-90
Initial and Terminal Serviceability	4.2 and 2.0	4.2 and 2.0	4.2 and 2.0	4.2 and 2.5
Standard Deviation	0.45	0.45	0.45	0.45
Service Life	20 years	20 years	20 years	20 years
If heavy truck traffic is anticipated, please contact InTEC with anticipated traffic data for revised recommendations.				

Summary Table B – Minimum Flexible Pavement Recommendations – CBR = 5.0

Classification	Asphaltic Concrete			Aggregate Base, inches	Geogrid	Subgrade, inches	Structural Number
	Type D, inches	Type C, inches	Type B, inches				
Local Type A (no bus traffic)	2.00	-	-	8.50	No	*	2.07
	2.00	-	6.00	-	No	*	2.92
Local Type A (with bus traffic)	3.00	-	-	12.00	No	*	3.00
	3.00		6.00	-	No	*	3.36
Local Type B	3.00	-	-	17.00	No	*	3.70
	3.00	-	7.00	-	No	*	3.70
Collector	-	4.00	-	15.50	No	*	3.93
	2.00	2.00	-	15.50	No	*	3.93
	3.00	-	8.00	-	No	*	4.04

Design Notes:

- Pavement design follows the *City of San Antonio Pavement Design Guidelines*.
- Input parameters are summarized in **Table No. 3 (Summary Table A)**.
- Design California Bearing Ratio (CBR) = **5.0**
- Recommendations are provided for **Local Type A and Type B streets**.
- Laboratory testing and engineering evaluation indicate **highly plastic clays** at shallow depths. Estimated **Potential Vertical Rise (PVR)** at existing grade is **1 to 1 ½ inches**.
- For **repetitive or heavy truck traffic**, contact InTEC for revised pavement design recommendations using appropriate traffic inputs.

Subgrade Notes (*):

- Subgrade soils are anticipated to consist of **Marl to Limestone.**
- **Cut and fill information** is not available at this time.
- Fill used to raise the grade:
  - Existing clays should be removed to marl / limestone stratum prior to placement of fill.
  - approved fill material free should have a minimum CBR value of 5.0 and a maximum Plasticity Index value of 20.
  - **Proof-roll** subgrade prior to fill placement to identify and recompact weak zones.

Subgrade Treatment:

- **Marl to Limestone subgrades are anticipated.**
- **However, if the subgrade Plasticity Index values are greater than 20, the following option is recommended:**

  - Stratum I clays removed to expose limestone stratum and replaced with on-site milled fill material (Plasticity Index value 20 or less).

Pavement and Drainage Notes:

- Pavement design is based on **CBR = 5.0** and parameters in Table No. 3 (Summary Table A).
- **Moisture control** beneath pavement is critical:
  - Prevent rain or irrigation water from infiltrating beneath the asphalt and base.
  - Consider **curbs extending ≥ 6 inches into subgrade** or backfilling with **compacted clay** against curb edges.
  - Ensure **lot grading and home construction** prevent trapped water near pavements.

Aggregate Base:

- Use TxDOT Item 247 A1-2 aggregate base
- Place in uniform lifts and compact to specified density and moisture content per city / county guidelines.

Asphalt:

- Provide asphalt materials and placement in accordance with City of San Antonio / TxDOT guidelines.

Verification:

- During construction, **InTEC personnel should verify subgrade** prior to base placement.

Summary Table C – Summary of Pavement Materials

Pavement Section	Material	Stabilization or Treatment	Thickness
Subgrade	Marl to Limestone (Plasticity Index <= 20)	Moisture conditioned clays	-
Base	TxDOT Item 247 A1-2	-	As recommended in pavement options (maximum of 6 inches per lift)
Asphalt	Type B, D	-	As recommended in pavement options

See report for more details

Summary Table D – Applicable procedures and minimum density and moisture percentages

All applicable City of San Antonio Standard Specifications for Construction, June 2008, should be followed. Some of the relevant procedures are shown below.

Pavement Material	Procedure *	Density and Moisture Control
Subgrade fill (maximum 6 inch thick lifts)	Item 107	As per construction specifications
Aggregate Base TxDOT Item 247 A1-2 (maximum 6 inch thick lift)	Item 200	As per construction specifications
Asphalt HMAC Type B, D	Item 205, 206	As per construction specifications

(*) City of San Antonio Standard Specifications for Construction, June 2008

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DATE:
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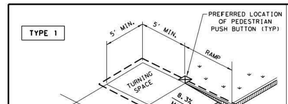
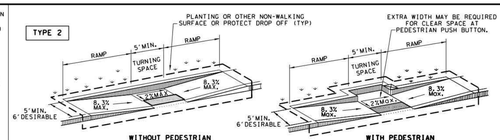
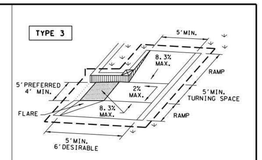
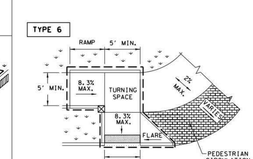


PERPENDICULAR CURB RAMP

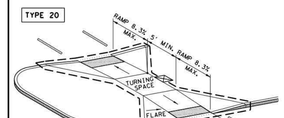


PARALLEL CURB RAMP

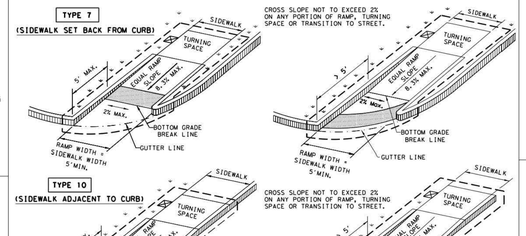




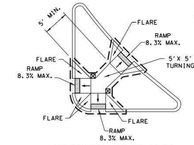
COMBINATION CURB RAMPS



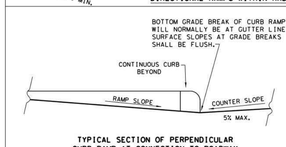
CURB RAMPS AT MEDIAN ISLANDS



DIRECTIONAL RAMPS WITHIN RADIUS



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK:	CK:
© TxDOT: MARCH, 2002	CONT:	SECT:	JOB:
REVISIONS	DIST:	COUNTY:	SHEET NO.:
REVISED 08.2005			
REVISED 05.2012			
REVISED 01.2014			

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

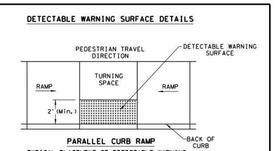
DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

SIDEWALKS

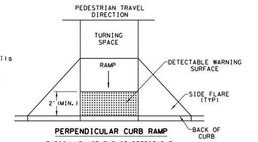
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

DETECTABLE WARNING SURFACE DETAILS



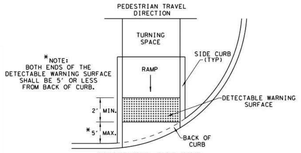
PARALLEL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SHEET 2 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK:	CK:
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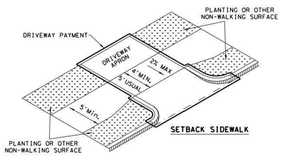
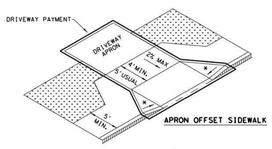
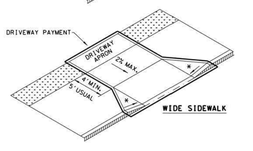
SIDEWALK TREATMENT AT DRIVEWAYS



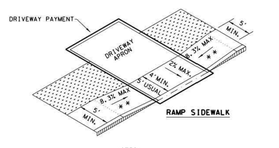
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



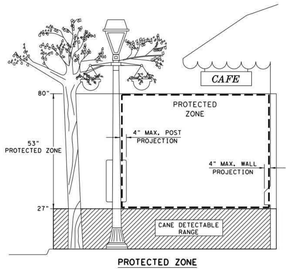
WIDE SIDEWALK



RAMP SIDEWALK

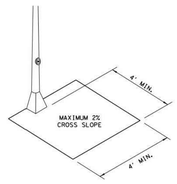
NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

** IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%, HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

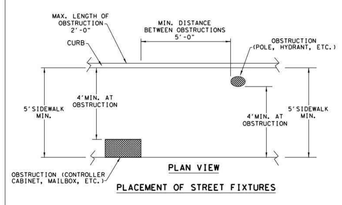


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



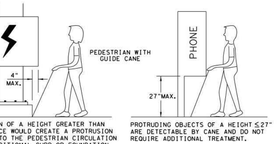
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW

PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE, MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK:	CK:
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DATE:
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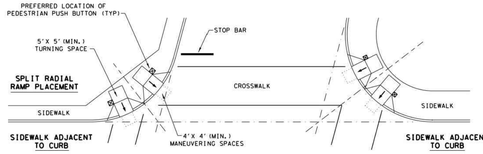
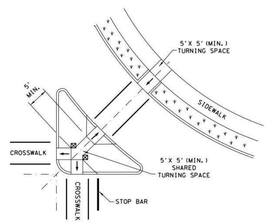
TYPICAL CROSSING LAYOUTS

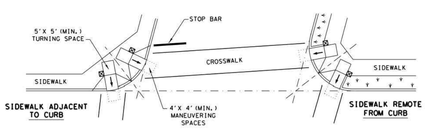
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



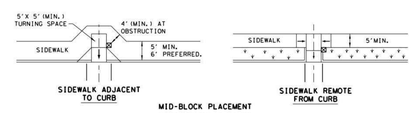
SKEWED INTERSECTION WITH "LARGE" RADIUS



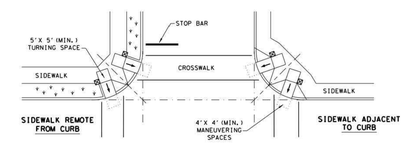
AT INTERSECTION W/FREE RIGHT TURN & ISLAND



SKEWED INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

SHOWS DOWNWARD SLOPE.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

SHEET 4 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	CK:	CK:
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REVISED 01.2014			

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

STREET DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.20

Date: Apr 01, 2026, 11:40am User ID: zacharyprevost
File: P:\123\56\21\Design\Civil\STD\ 1235621.dwg

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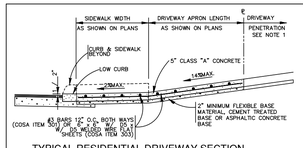
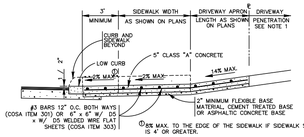


TYPICAL RESIDENTIAL DRIVEWAY SECTION

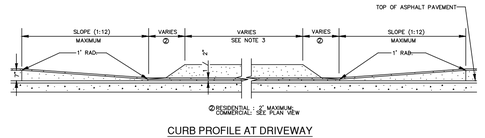
WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.1

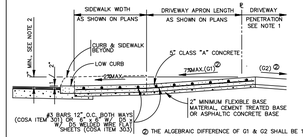
② 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.



② RESIDENTIAL - 2" MAXIMUM
COMMERCIAL - SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

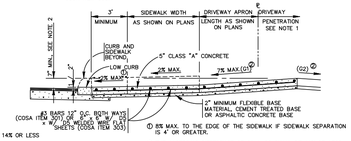
WITH SIDEWALK ABUTTING CURB



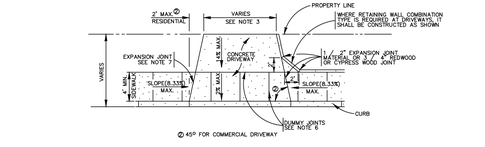
② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
COSA ITEM 503.1



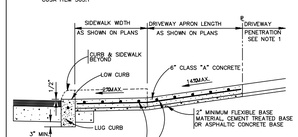
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.
② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS



② 45° FOR COMMERCIAL DRIVEWAY

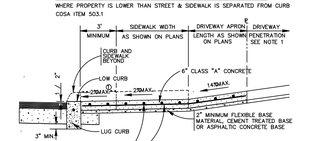
TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



TYPICAL COMMERCIAL DRIVEWAY SECTION

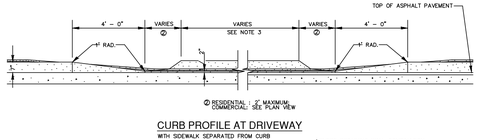
WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.2



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL COMMERCIAL DRIVEWAY SECTION

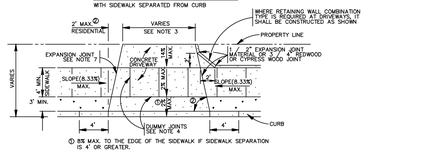
WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.2



② RESIDENTIAL - 2" MAXIMUM
COMMERCIAL - SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.
② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

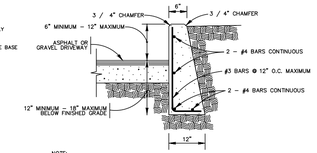
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
   B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER COSA ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
   C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE COUNTY ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MAXIMUM
RESIDENTIAL (UP TO 2 CAR GARAGE)	20'
RESIDENTIAL (MORE THAN 2 CAR GARAGE)	28'
COMMERCIAL	40'
INDUSTRIAL	40'

4. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
5. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
7. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.

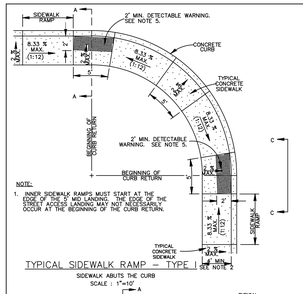


NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF COSA ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY - CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
COSA ITEM 307.1

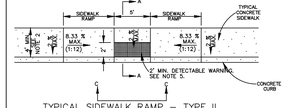
BEXAR COUNTY
CONCRETE DRIVEWAY STANDARDS
DATE: FEBRUARY 2024



NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

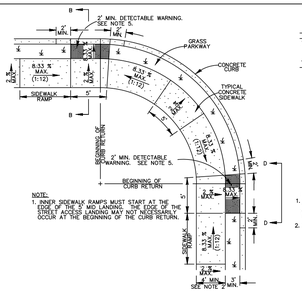
TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB
SCALE : 1"=10'



TYPICAL SIDEWALK RAMP – TYPE II

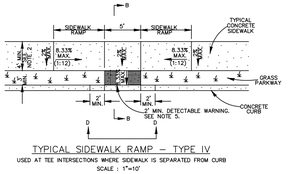
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE : 1"=10'



NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

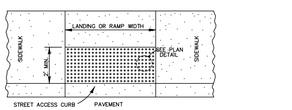
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1"=10'



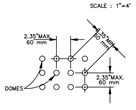
TYPICAL SIDEWALK RAMP – TYPE IV

USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1"=10'

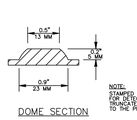


DETECTABLE WARNING SURFACE

SCALE : 1"=4'



PLAN DETAIL



DOME SECTION

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE DETECTABLE WARNING SURFACE FROM THE LISTED DOME MATERIAL FOR TESTING AND APPROVAL BY THE WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

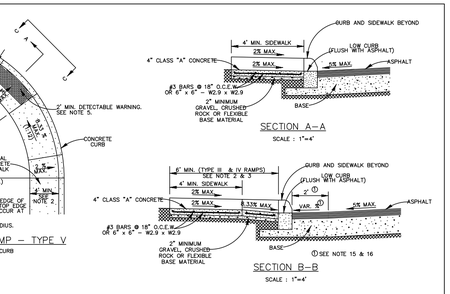
GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND 4' SEPARATED FROM THE CURB. THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 7' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 5' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN A 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN, WITH A NOMINAL DOME DIAMETER OF 0.9 INCHES (23 MM) AND A NOMINAL SPACING OF 2.35 INCHES (60 MM) BETWEEN DOMES (CENTER-TO-CENTER SPACING OF 1.85 INCHES (47 MM) MIN.). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-18, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK THAT EXCEEDS 5% SHALL BE CONSIDERED A RAMP AND SHALL COMPLY WITH ALL RAMP REQUIREMENTS. WHERE SLEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11% A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE

NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 18' MIN. RADIUS.

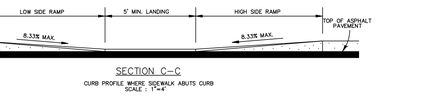
TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB
SCALE : 1"=10'



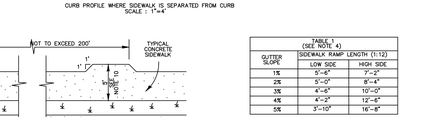
SECTION A–A

SCALE : 1"=4'



SECTION B–B

SCALE : 1"=4'



SECTION C–C

CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE : 1"=4'

SECTION D–D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1"=4'

SIDEWALK PASSING SPACE

SCALE : 1"=10'

TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'–6"	7'–2"
2%	5'–0"	8'–4"
3%	4'–8"	10'–0"
4%	4'–2"	12'–6"
5%	3'–10"	16'–8"

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS
PROJECT NO.: DATE:
DSGN BY: CHKD. BY: R.S.HOSSEINI, P.E. SHEET NO.: OF

NO.	REVISION	DATE
1:	REVISED DETAIL	

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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
STREET DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C2.30

Date: Jun 04, 2026, 5:15pm User ID: aaaucedo
File: P:\123\56\21\Design\Civil\STD1 1235621.dwg

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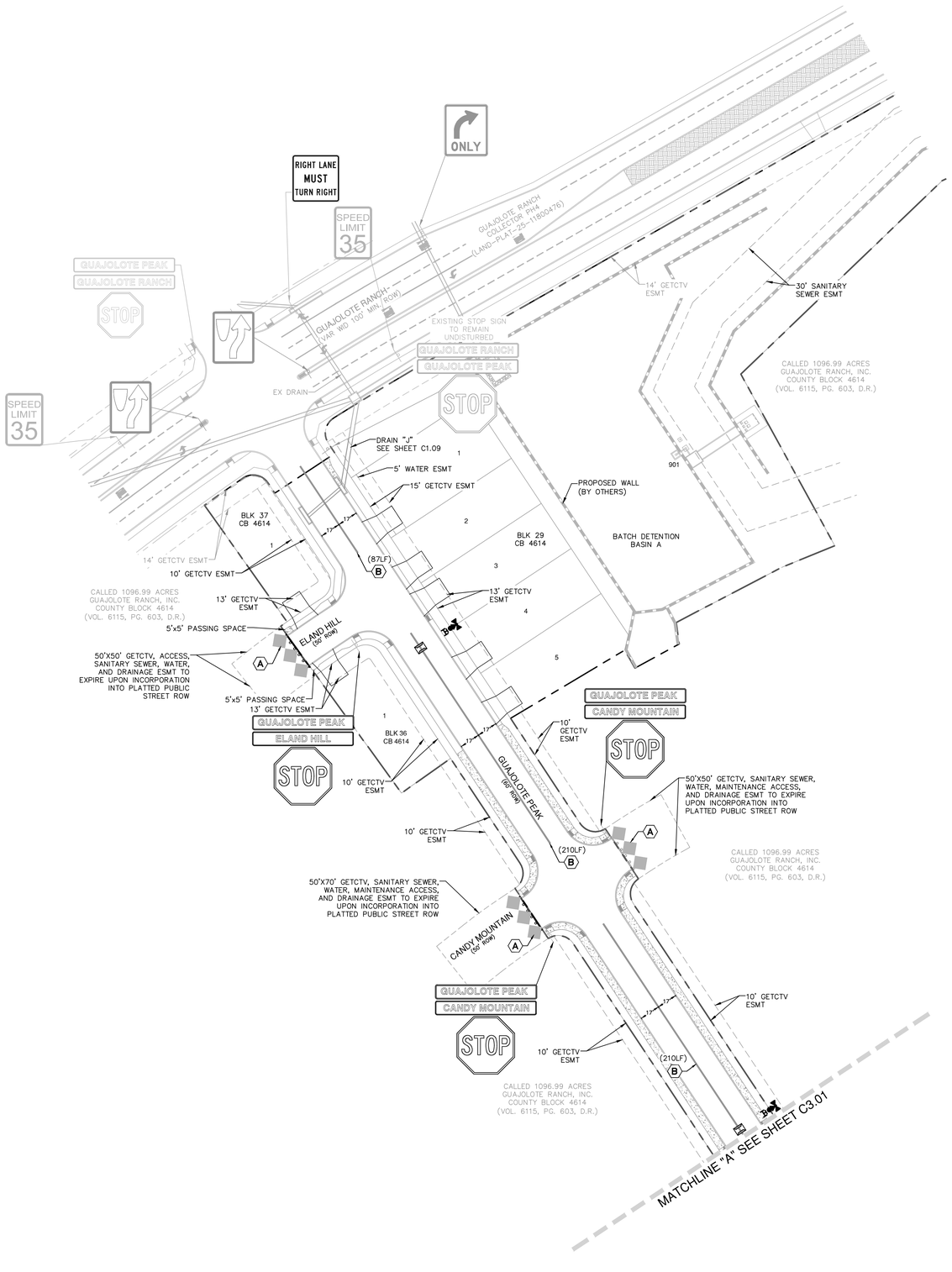
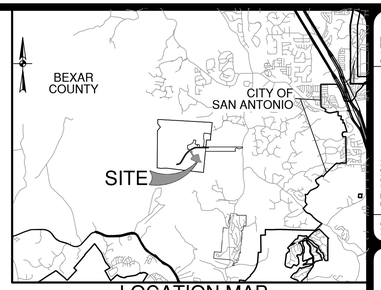
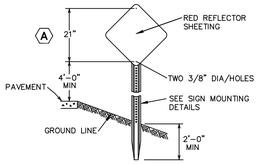




LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

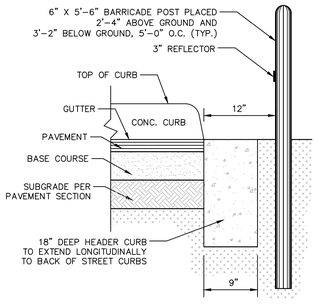
SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
	TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)	
	END OF ROAD MARKER OM4-3	
	HEADER CURB W/ BARRICADE POSTS	
(B)	YELLOW DOUBLE 6" SOLID – THERMOPLASTIC WITH TYPE II A-A @ 20' O.C. (REFL) PAVEMENT MARKERS	535.4
Street Name	STREET SIGN	531.57
STOP	R1-1 30"X30"	531.3



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

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 /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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C3.00

Date: Jun 08, 2026, 3:19pm User ID: arodriguez
File: P:\123\56\21\Design\Civil\SG 123621.dwg
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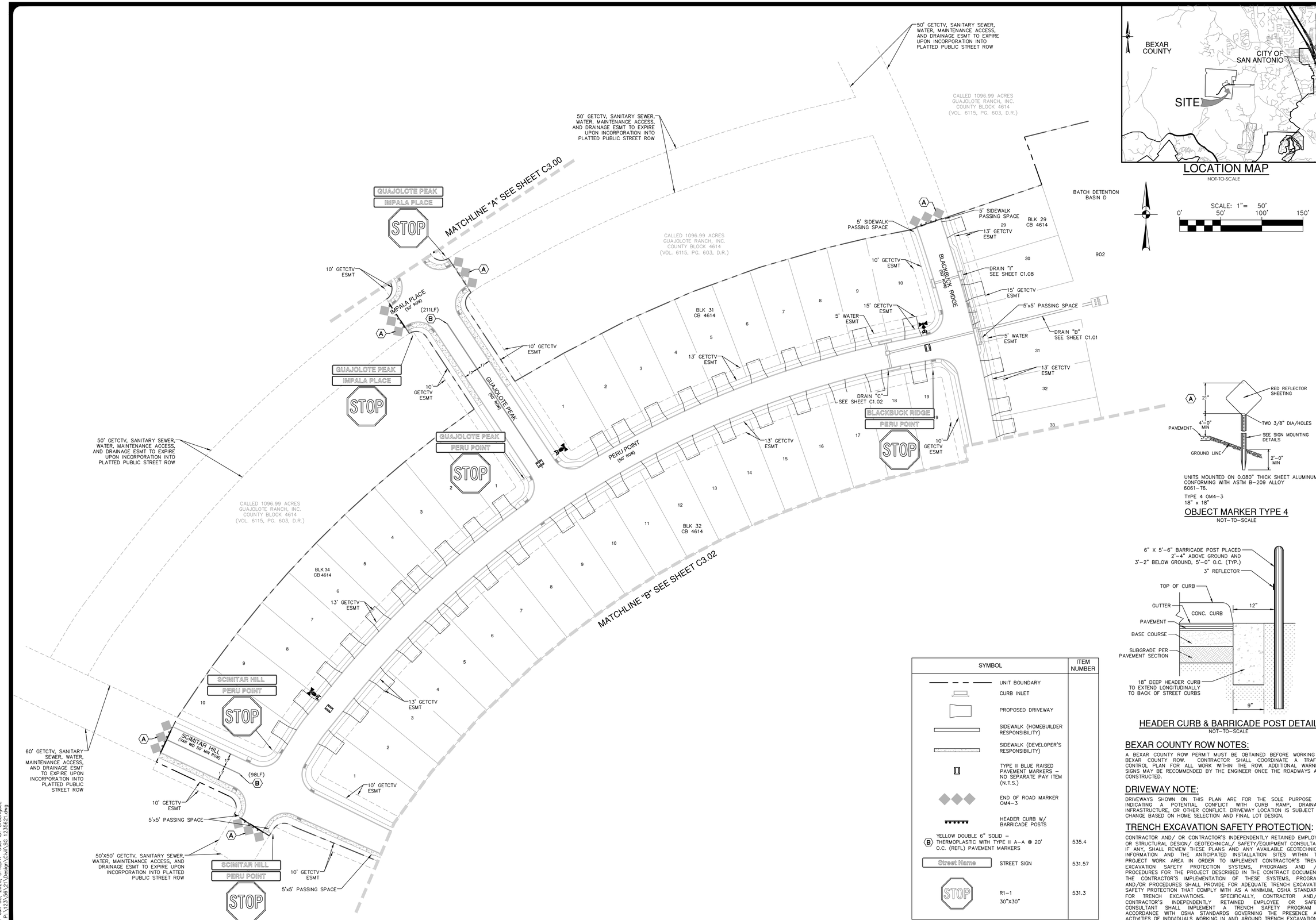

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

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

SYMBOL	ITEM NUMBER
UNIT BOUNDARY	
CURB INLET	
PROPOSED DRIVEWAY	
SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S 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	
(B) YELLOW DOUBLE 6" SOLID – THERMOPLASTIC WITH TYPE II A-A @ 20' O.C. (REFL) PAVEMENT MARKERS	535.4
Street Name STREET SIGN	531.57
STOP R1-1 30"X30"	531.3

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NO.	REVISION	DATE

STATE OF TEXAS
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LICENSED PROFESSIONAL ENGINEER
6/8/26

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2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
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GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

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SHEET C3.01

Date: Jun 08, 2026, 3:18pm User ID: arodriguez
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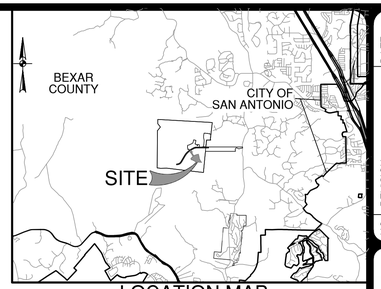
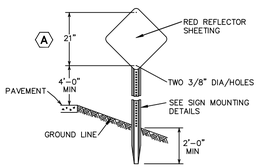


LOCATION MAP
NOT-TO-SCALE

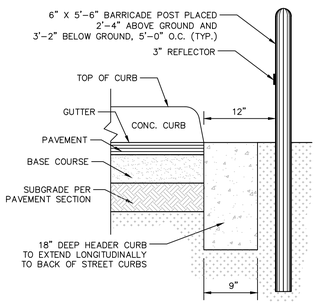
SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
	TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)	
	END OF ROAD MARKER OM4–3	
	HEADER CURB W/ BARRICADE POSTS	
(B)	YELLOW DOUBLE 6" SOLID – THERMOPLASTIC WITH TYPE II A–A @ 20' O.C. (REFL) PAVEMENT MARKERS	535.4
Street Name	STREET SIGN	531.57
STOP	R1–1 30"X30"	531.3



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

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 /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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C3.02

Date: Jun 08, 2026, 3:16pm User ID: orodriguez
File: P:\123\56\21\Design\Civil\SS 123621.dwg

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
SR0 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

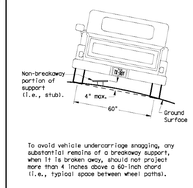
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

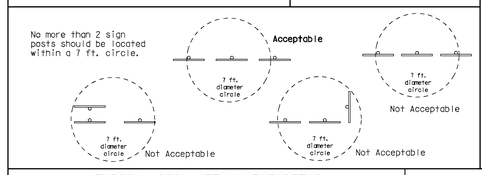
Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED:
TEXT or (EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BW = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = L 1-1/2 X=Y Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

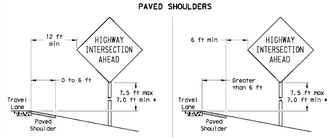


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



SIGN LOCATION

PAVED SHOULDERS



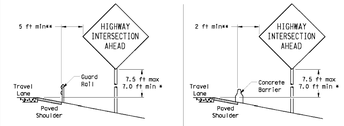
LESS THAN 6 FT. WIDE

When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.

GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER

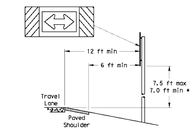


BEHIND GUARDRAIL

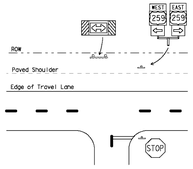
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

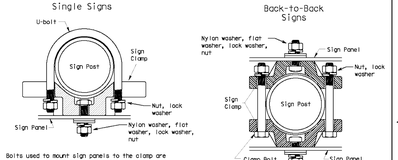
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffix Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffix.htm

TYPICAL SIGN ATTACHMENT DETAIL



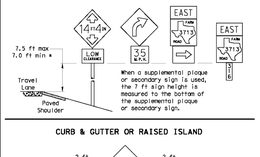
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

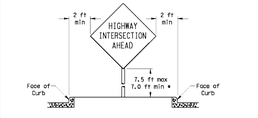
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



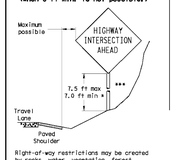
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffix Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS SMD(GEN)-08

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		DIST	COUNTY		SHEET No.

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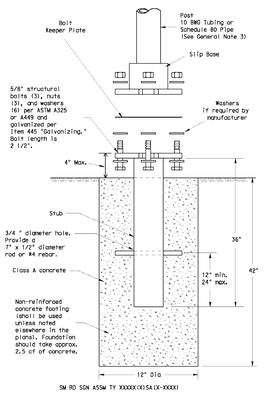
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

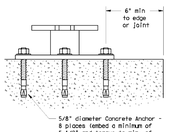
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffix Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS CF 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the followings
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the followings
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffix Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is:
   http://www.txdot.gov/publications/traffix.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the traveley (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the traveleyp. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffix Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD(SLIP-1)-08

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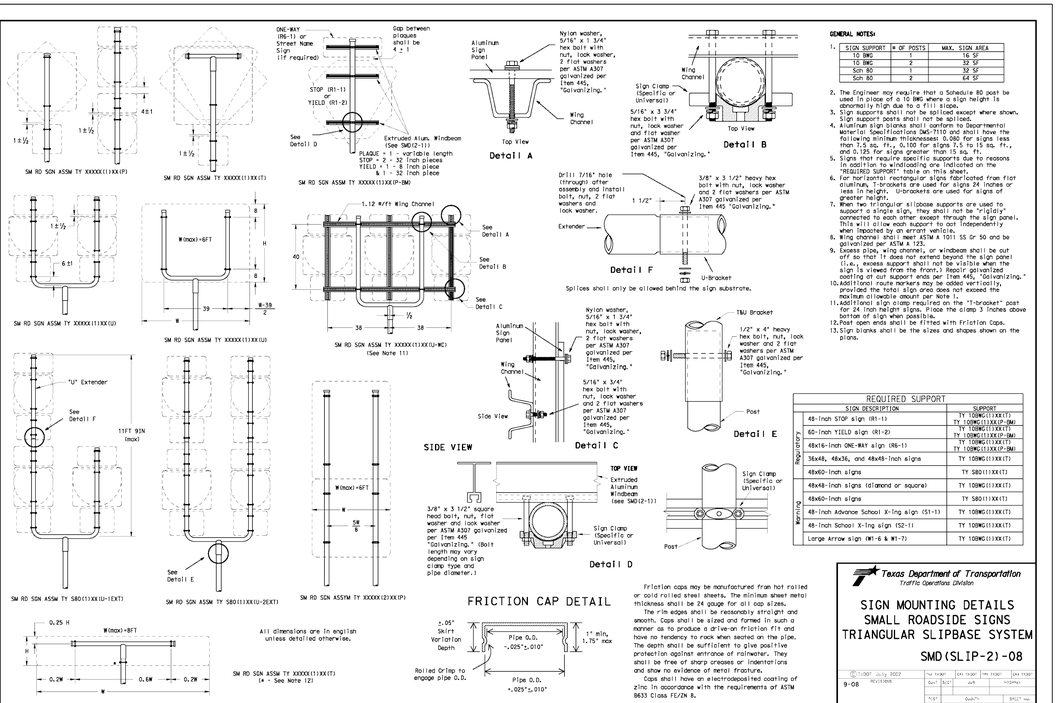

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL

Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. Aluminum signs fabricated from fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional sign clamps may be added vertically. Additional sign clamps may not exceed the maximum allowable amount per Note 11.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffix Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD(SLIP-2)-08

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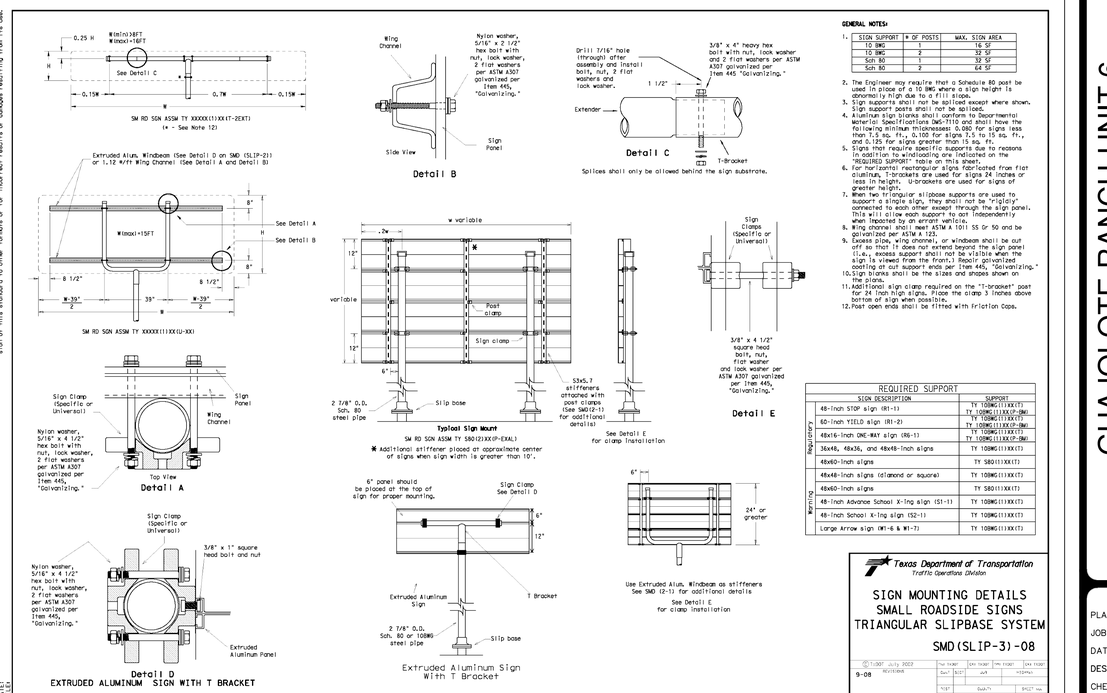

GENERAL NOTES:

1. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
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7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with friction Caps.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffix Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD(SLIP-3)-08

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		DIST	COUNTY		SHEET No.

265

NO.	REVISION	DATE

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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

SIGNAGE DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C3.10

Date: Apr 01, 2026, 11:42am User ID: zachary.preast
File: P:\123\56\21\Design\Civil\SGD1 123521.dwg

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DATE:
FILE:

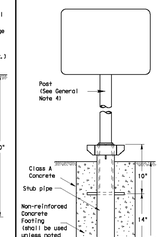
Wedge Anchor Steel System

SM RD SGN ASSM TY TWT(X)WS(X)

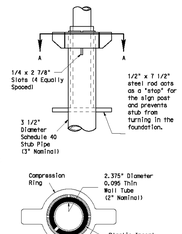
Wedge Anchor High Density Polyethylene (HDPE) System

SMD RD SGN ASSM TY TWT(X)WP(X)

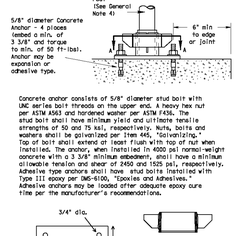
Universal Anchor System with Thin-Walled Tubing Post



SM RD SGN ASSM TY TWT(X)UA(P)



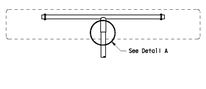
Plastic Insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The Insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The Insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.



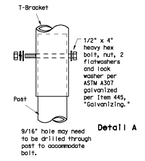
SM RD SGN ASSM TY TWT(X)UB(P)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 pst, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post



SM RD SGN ASSM TY TWT(X)XX(T)
(+ - See General Note 6)



Detail A

NOTE
The devices shall be installed per manufacturer's recommendations.
Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:
1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: https://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the followings:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic Insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

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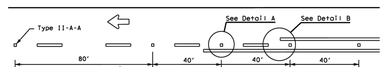
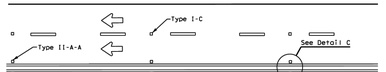
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

266

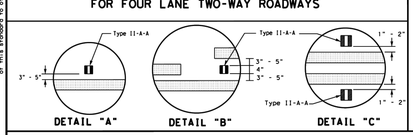
Reflective Raised Pavement Markers for Vehicle Positioning Guidance

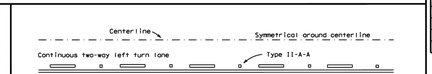


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

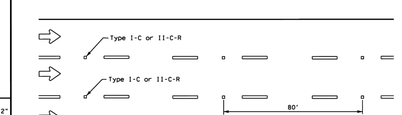


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





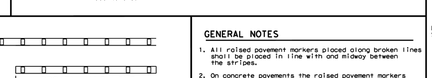
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

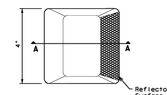
See Note 3.



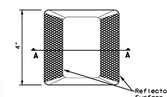
REFLECTORIZED PROFILE PATTERN DETAIL
USING REFLECTIVE PROFILE PAVEMENT MARKINGS

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

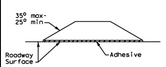
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

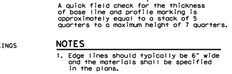
RAISED PAVEMENT MARKERS

GENERAL NOTES

1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

NOTES

1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

Texas Department of Transportation | Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-22

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4-92 3-13 12-22				
8-00 7-13				

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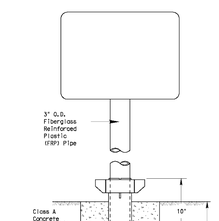
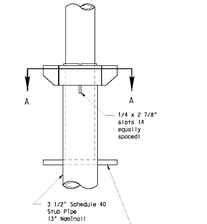
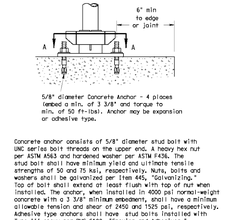
DATE:
FILE:

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



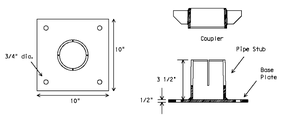
SM RD SGN ASSM TY FRP(X)UA(P)





Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 pst, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

BOLT-DOWN DETAILS



SM RD SGN ASSM TY FRP(X)UB(P)

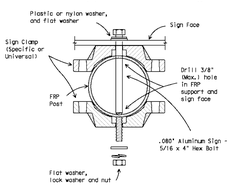
GENERAL NOTES:
1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: https://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS
1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or grey color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

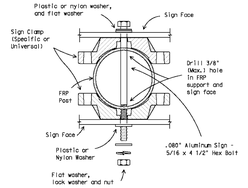
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

BOLT DOWN SIGN SUPPORT
1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

SMD(FRP)-08

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

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
SIGNAGE DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C3.20

Date: Apr 01, 2026, 11:42am User ID: zachary.prescot
File: P:\23\56\21\Design\Civil\SGD1 123521.dwg

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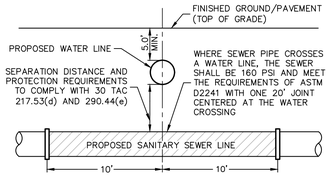
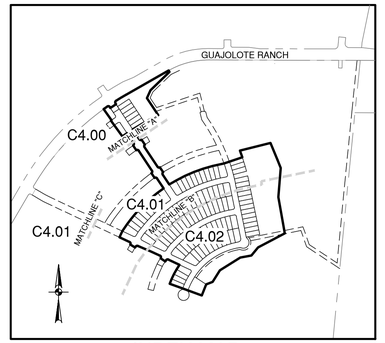


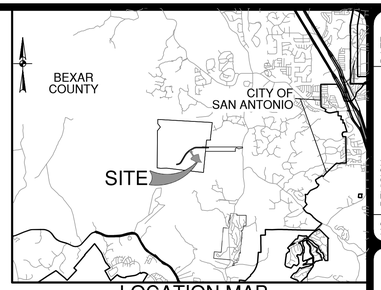
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



INDEX MAP

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

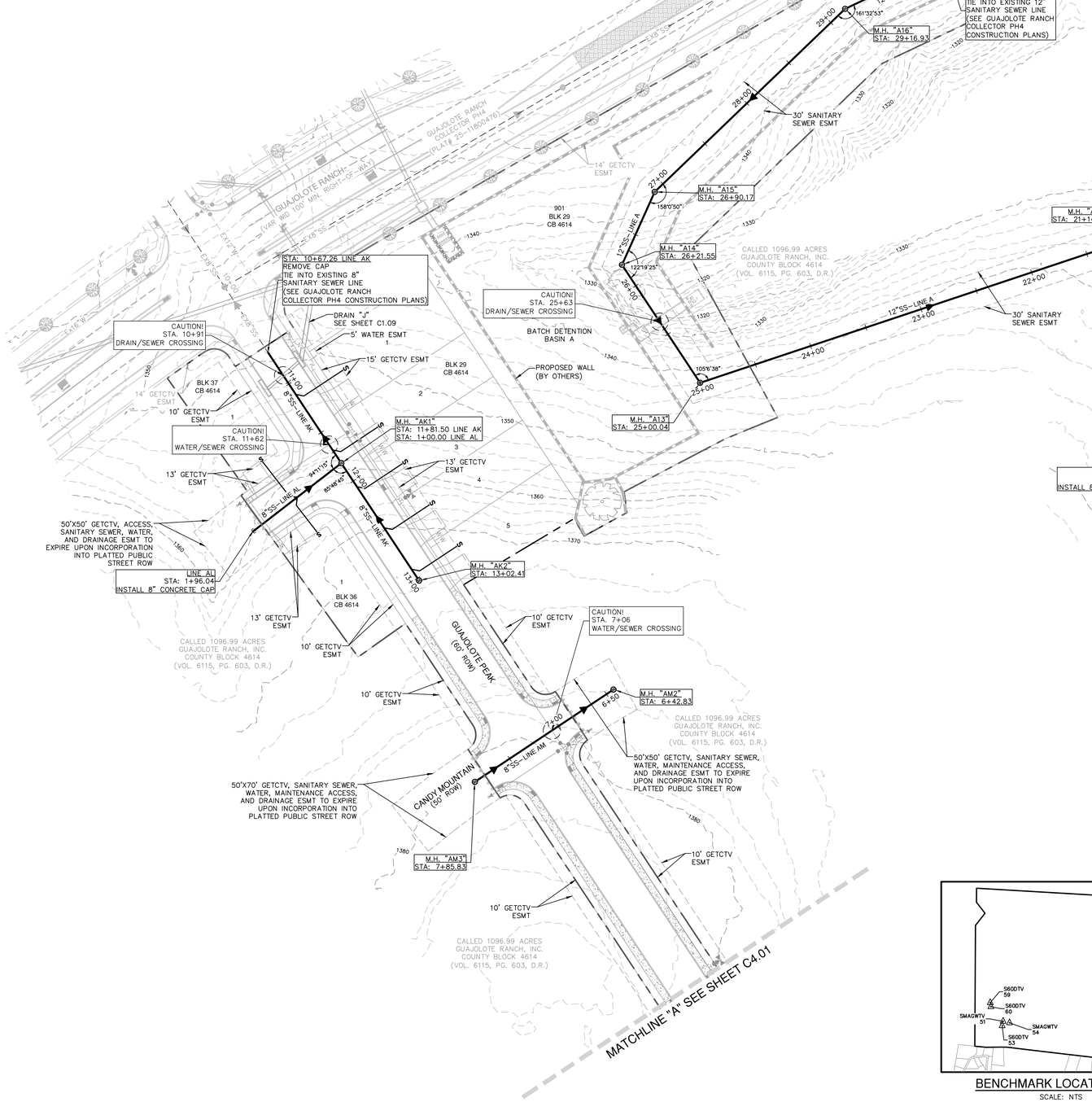
NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/19/26

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

SEWER LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS
PROPOSED WATER	FIRE HYDRANT, W
PROPOSED SEWER LATERAL	S
FINISHED FLOOR ELEVATION FOR SEWER	FF = XXXX.XX
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV ESMT
VARIABLE WIDTH	VAR WID
PROPOSED OVERHEAD UTILITY LINE	POWER POLE, OHU
PROPOSED WALL (BY OTHERS)	
FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS)	FM



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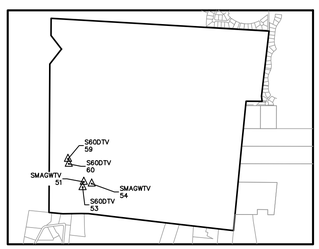

BENCHMARK LOCATION MAP

SCALE: NTS

BENCHMARKS

Point #	Northing	Easting	Full Description
51	13,783,096.27	2,060,148.90	SET MAG NAIL & WASHER (TRAV)
53	13,782,909.82	2,060,105.11	SET 60D NAIL (FLY -TRAV)
54	13,783,032.68	2,060,424.11	SET MAG NAIL & WASHER (TRAV)
59	13,783,896.73	2,059,594.60	SET 60D NAIL (FLY -TRAV)
60	13,783,728.85	2,059,622.74	SET 60D NAIL (FLY -TRAV)

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.00

Date: May 19, 2026, 8:07am User ID: asaucedo
File: P:\123\56\21\Design\Civil\OS 12356[21.dwg

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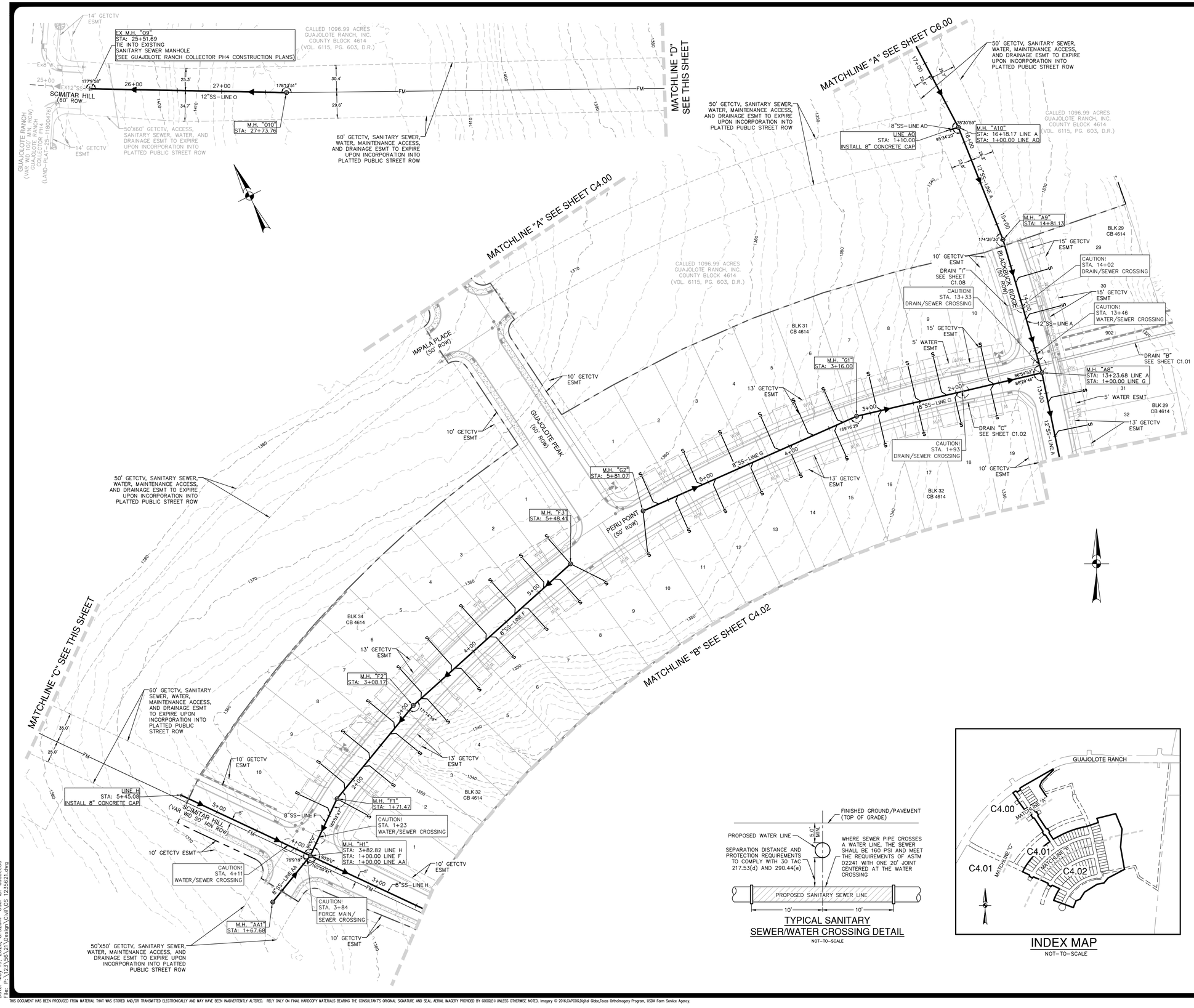

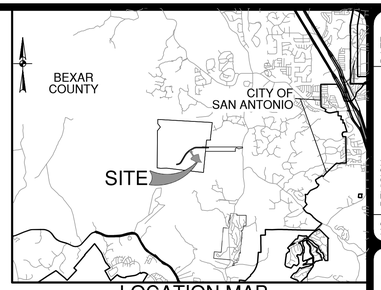

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS, MANHOLE
PROPOSED WATER	FIRE HYDRANT, W
PROPOSED SEWER LATERAL	
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VARIABLE WIDTH	VAR WID
PROPOSED OVERHEAD UTILITY LINE	POWER POLE, OHU
PROPOSED WALL (BY OTHERS)	
FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS)	FM

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

INDEX MAP
NOT-TO-SCALE

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
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5/19/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.01

Date: May 19, 2026, 8:32am User ID: eraucedo
File: P:\123\56\21\Design\Civil\OS 12356121.dwg

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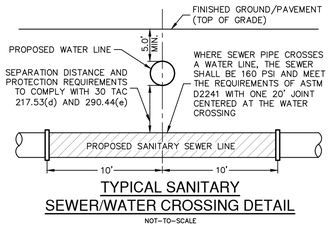
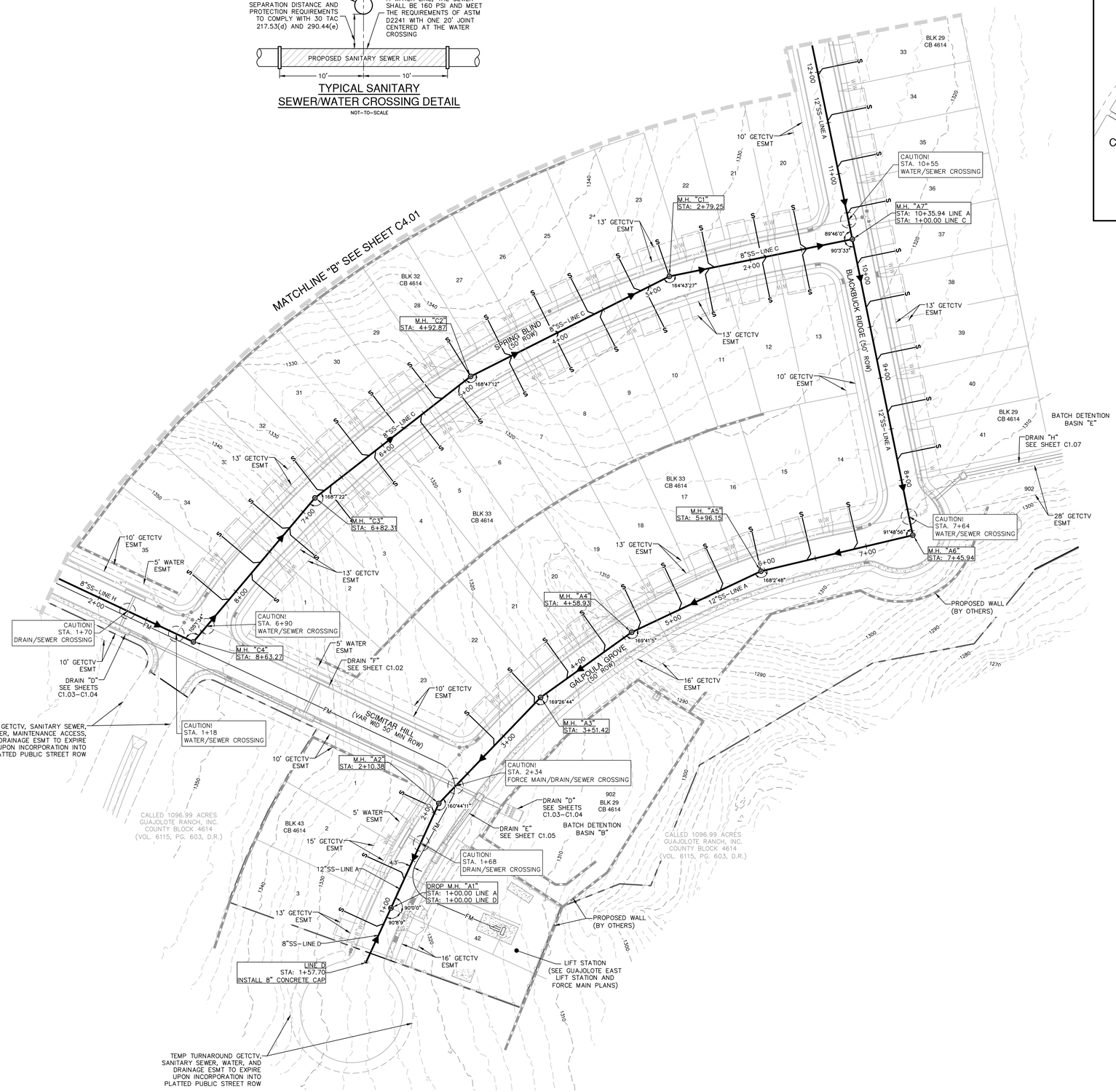
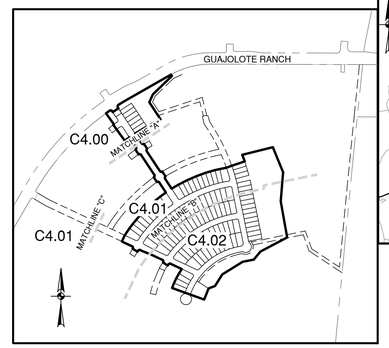


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE





INDEX MAP

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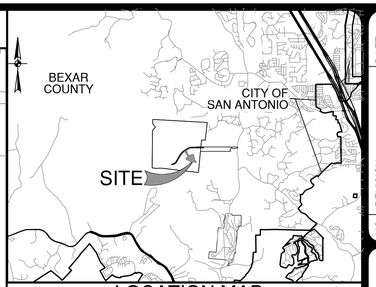

LOCATION MAP

NOT-TO-SCALE

SEWER LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS
PROPOSED WATER	FIRE HYDRANT, W
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FINISHED FLOOR ELEVATION FOR SEWER	FF = XXXX.XX
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STATE OF TEXAS
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2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
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GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.02

Date: May 18, 2026, 5:13pm User ID: eaucedo
File: P:\123\56\21\Design\Civil\OS 1235621.dwg

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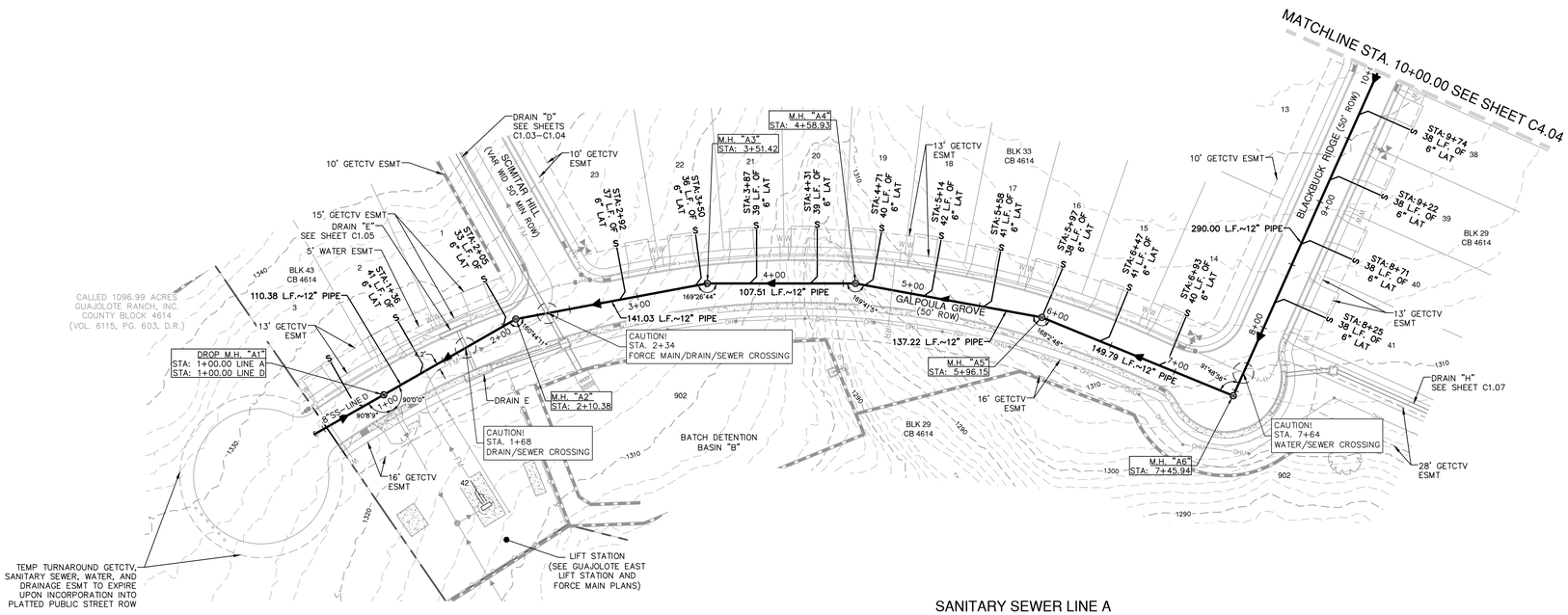

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS MANHOLE
PROPOSED SEWER	SS
PROPOSED WATER	FIRE HYDRANT W
PROPOSED SEWER LATERAL	S
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VARIABLE WIDTH	VAR WID
PROPOSED WALL (BY OTHERS)	

SANITARY SEWER LINE A
STA. 1+00.00 TO 10+00.00

VERTICAL SCALE: 1" = 5'
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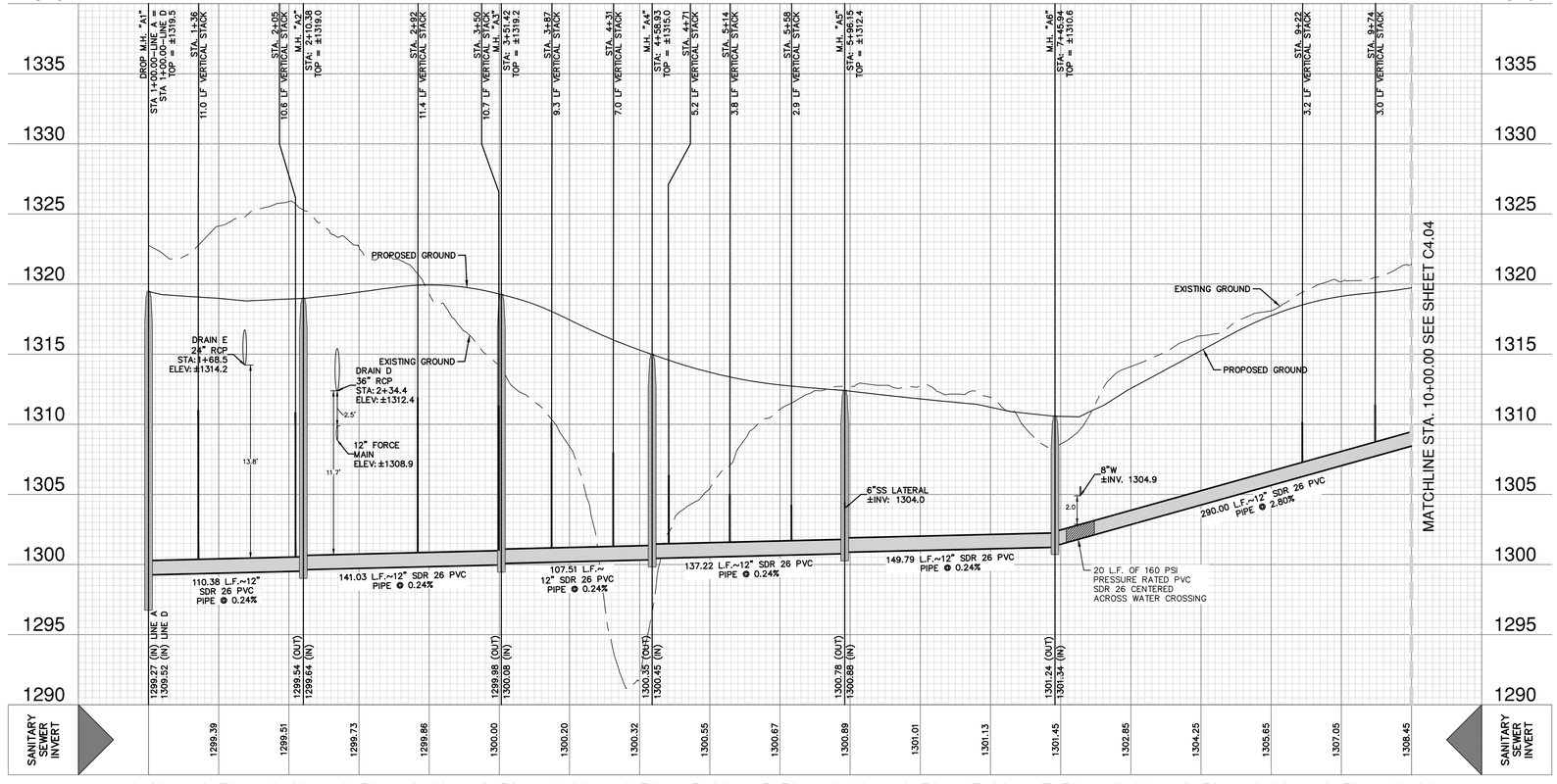

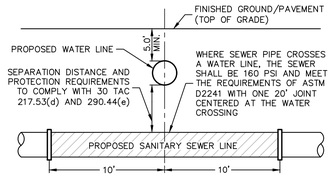

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SANITARY SEWER LINE A PLAN & PROFILE
STA. 1+00.00 TO 10+00.00

PLAT NO. 25-11800485
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DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.03

Date: May 18, 2026, 4:53pm User ID: aaacuedo
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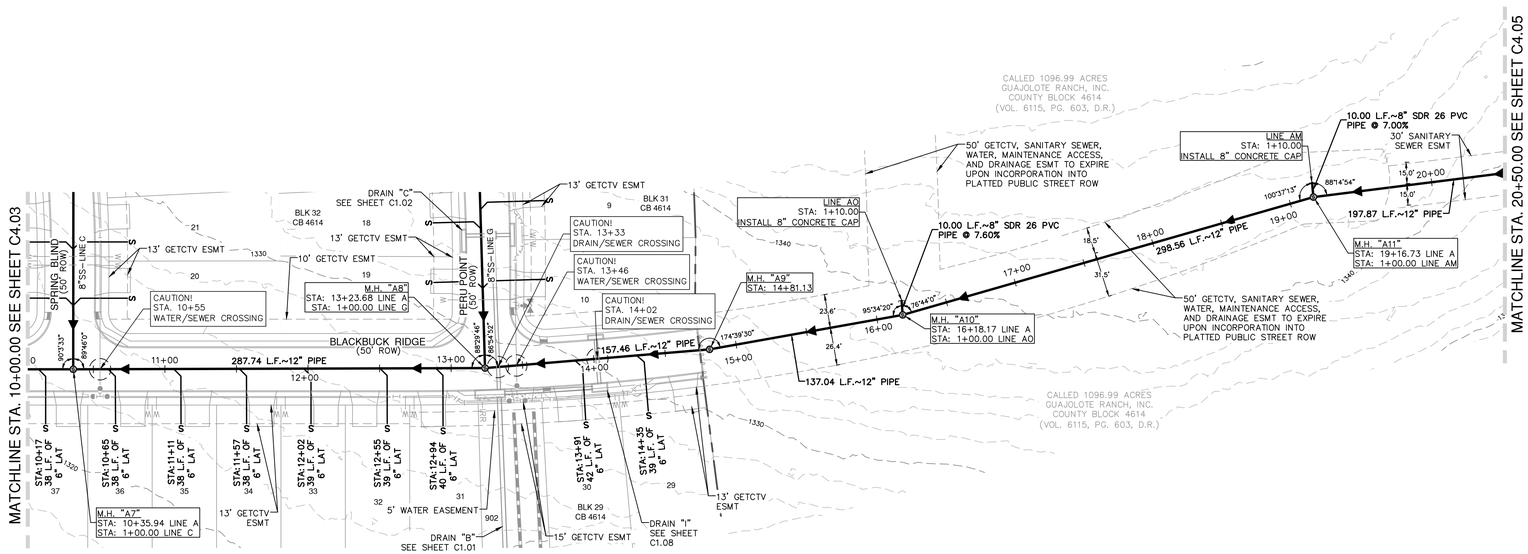

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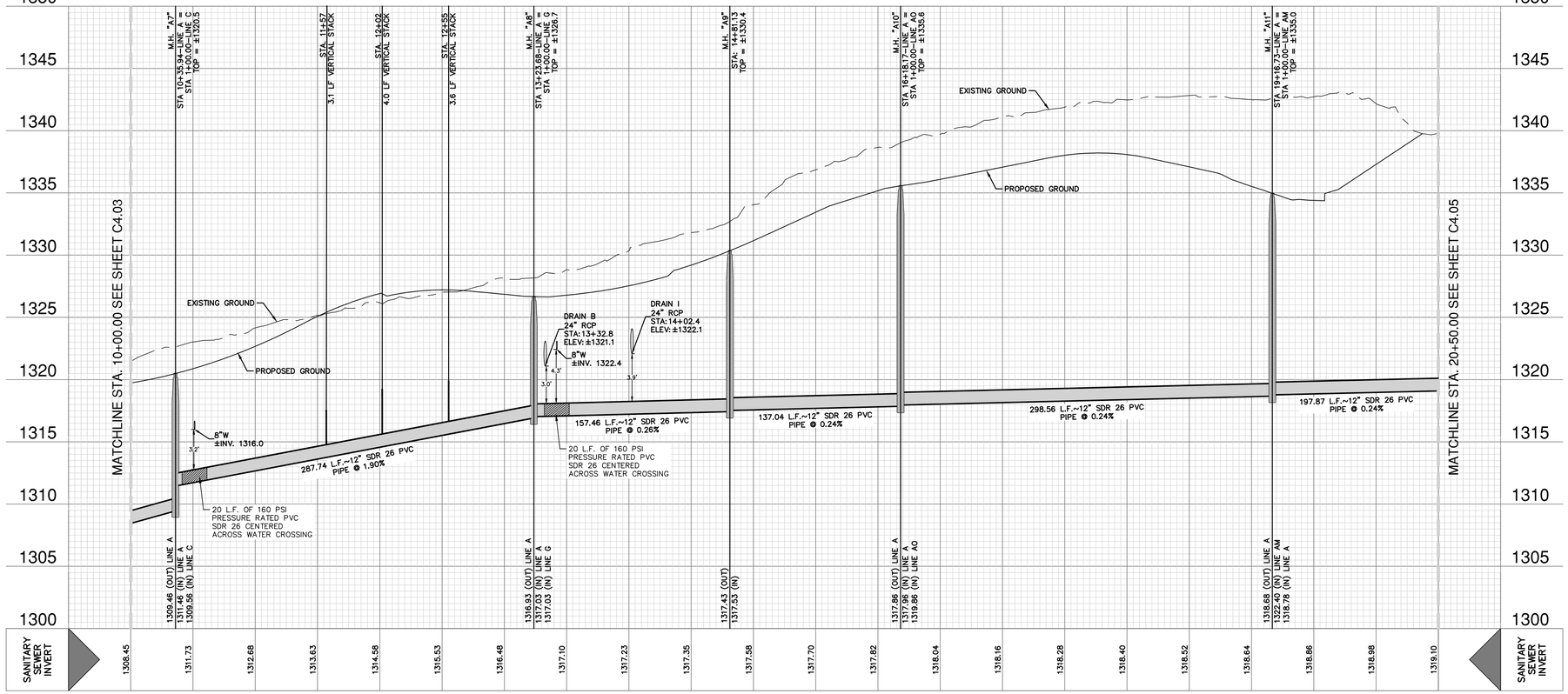

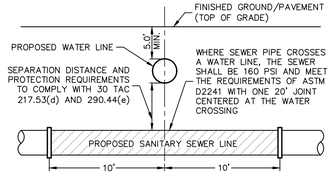

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NOT-TO-SCALE

CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/18/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A PLAN & PROFILE
STA. 10+00.00 TO 20+50.00

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.04

Date: May 18, 2026, 11:46am User ID: asaucedo
File: P:\123\56\21\Design\Civil\SS LINE A 123621.dwg

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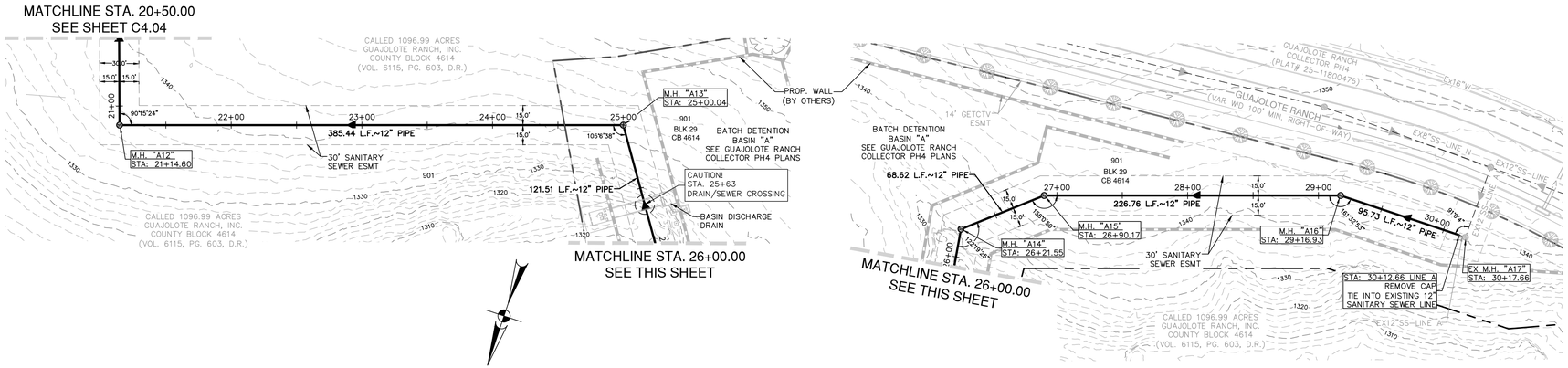


SCALE: 1"= 50'

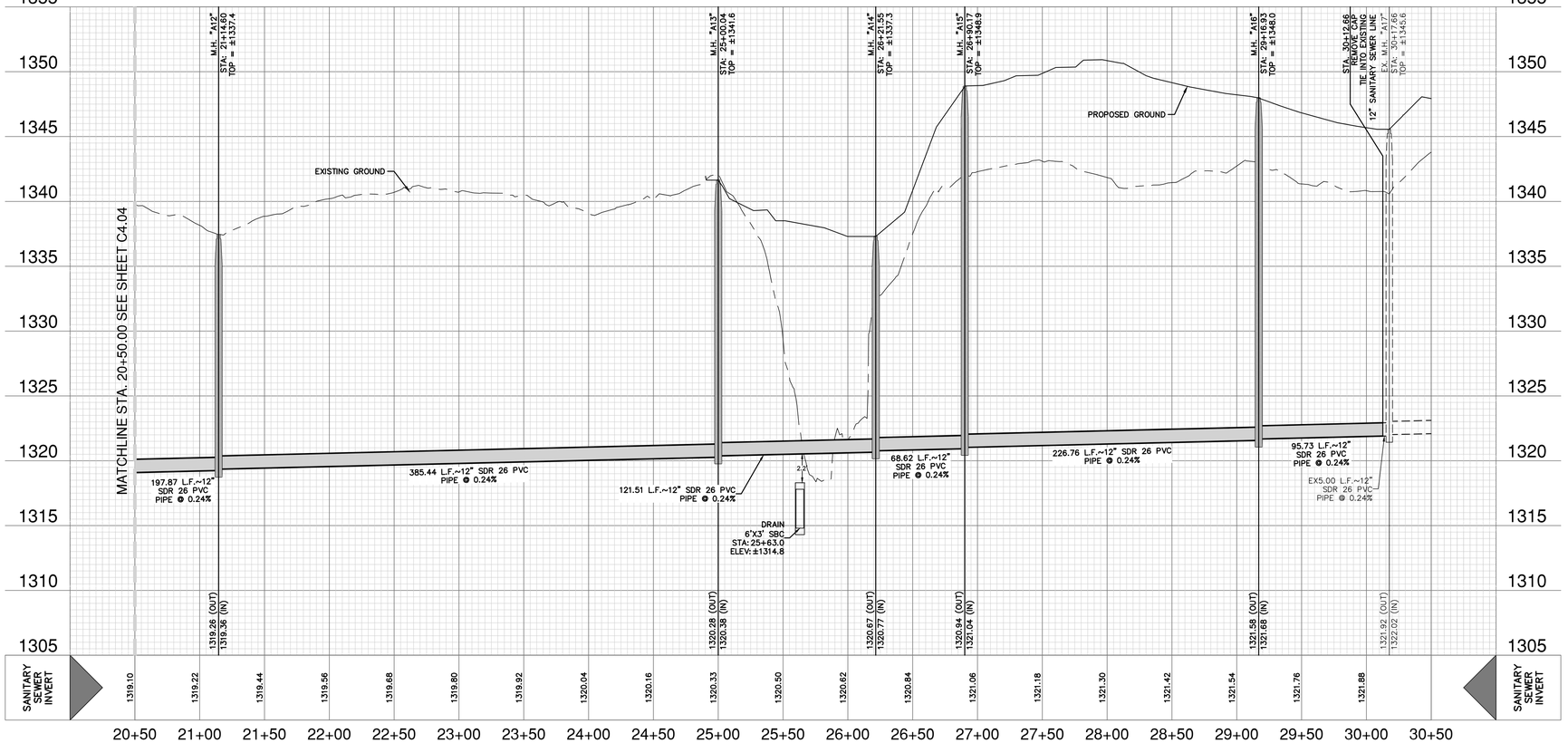
0' 50' 100' 150'

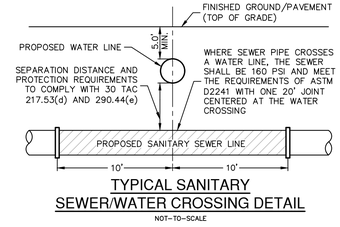
SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER — W —
- EXISTING SEWER — SS —
- PROPOSED SEWER — SS — MANHOLE
- PROPOSED WATER — W — FIRE HYDRANT
- PROPOSED SEWER LATERAL — S
- FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV ESMT
- VARIABLE WIDTH — VAR WID
- PROPOSED WALL (BY OTHERS)

SANITARY SEWER LINE A
STA. 20+50.00 TO END

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





TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A PLAN & PROFILE
STA. 20+50.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.05

Date: May 18, 2026, 1:47pm User ID: asaucedo
File: P:\123\56\21\Design\Civil\SS LINE A 12356221.dwg

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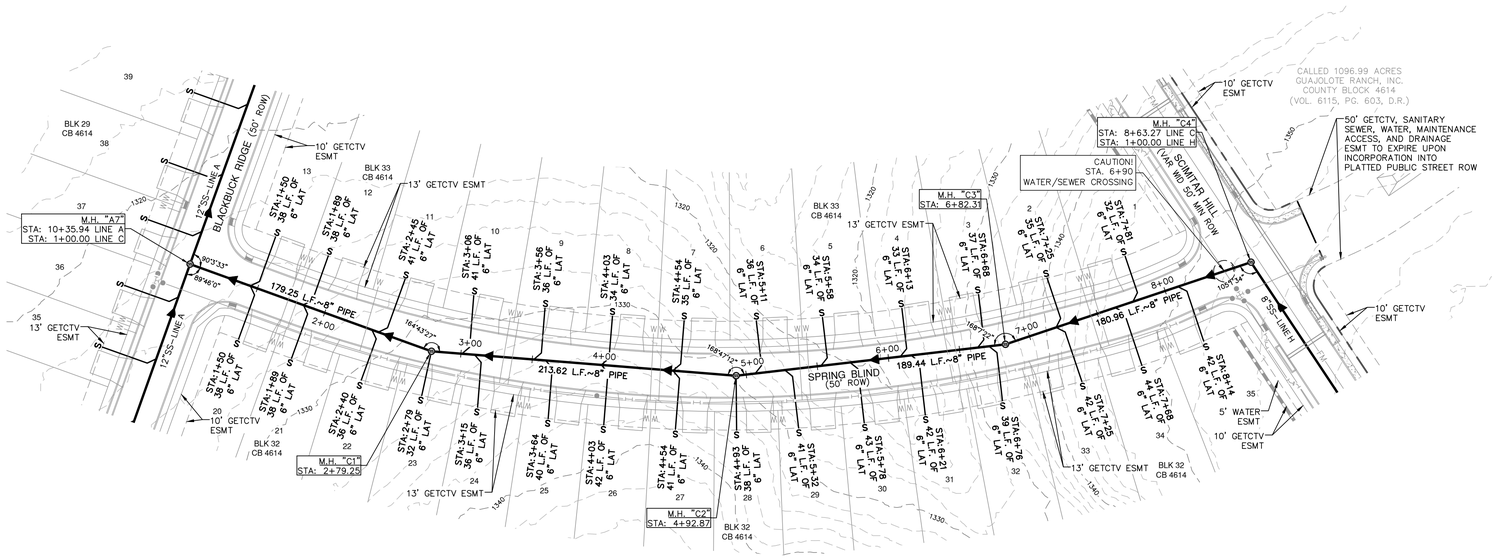


SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT
- PROPOSED WALL (BY OTHERS)
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS)

MANHOLE

FIRE HYDRANT

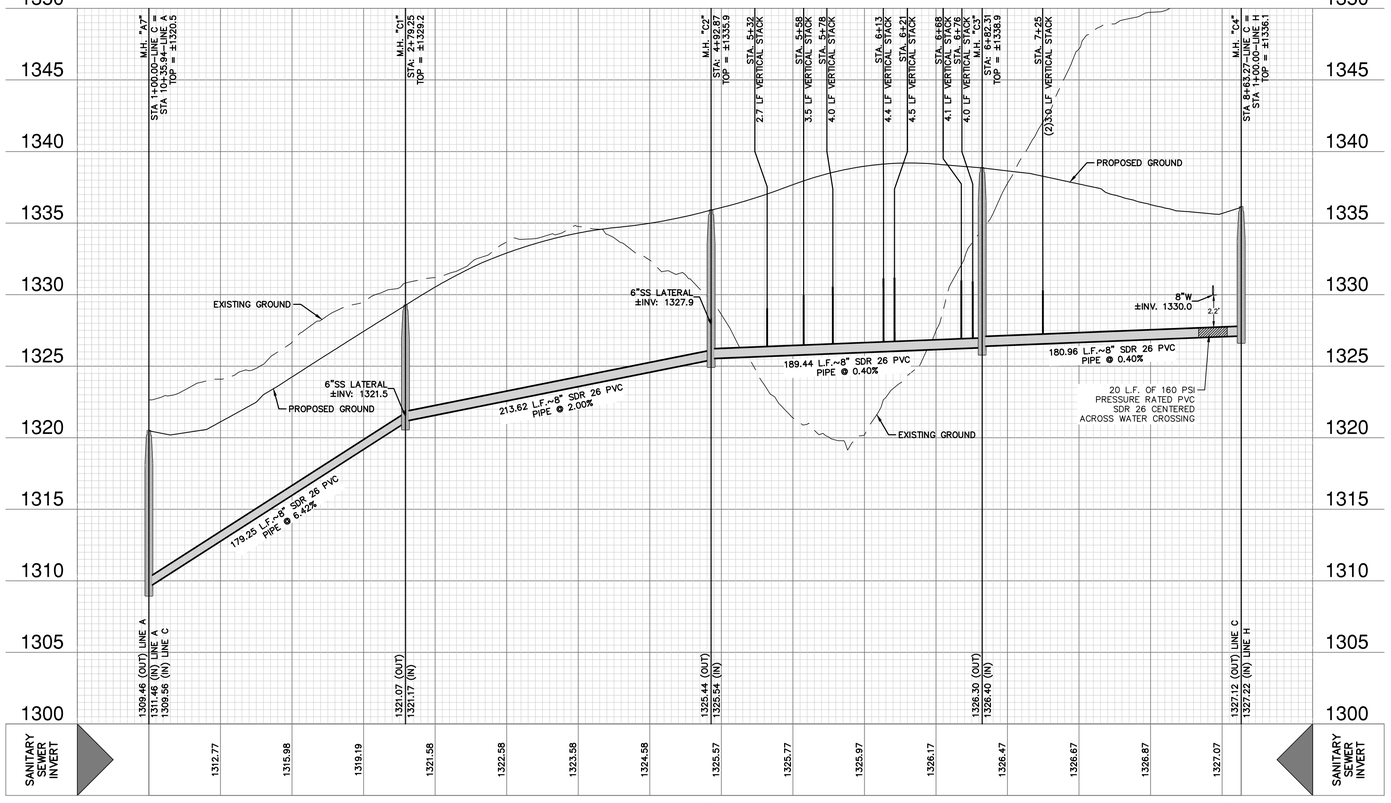
FF = XXXX.XX

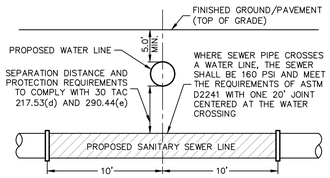
GETCTV ESMT

FM

SANITARY SEWER LINE C
STA. 1+00.00 TO END

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





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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5/18/26

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE C PLAN & PROFILE
STA. 1+00.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.06

Date: May 18, 2026, 1:53pm User ID: asaucedo
File: P:\123\56\21\Design\Civil\SS LINE C 12356221.dwg

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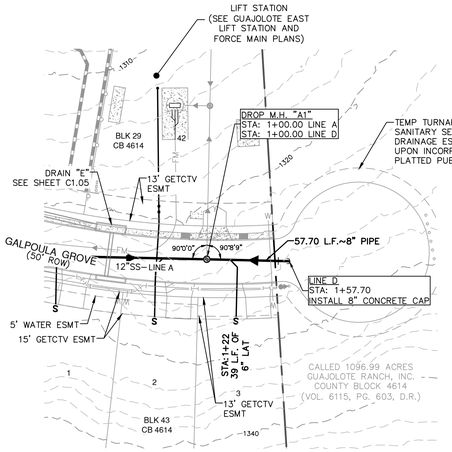
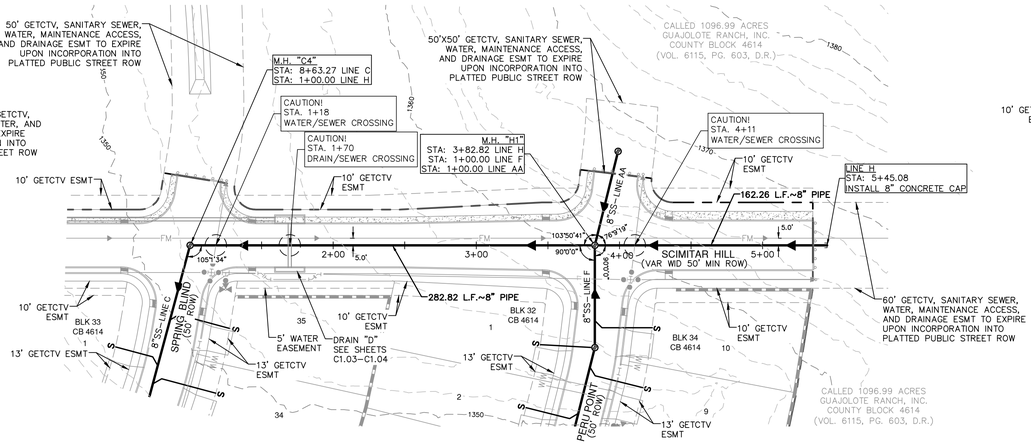
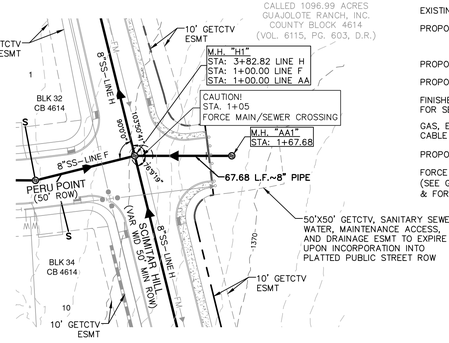






SCALE: 1"= 50'

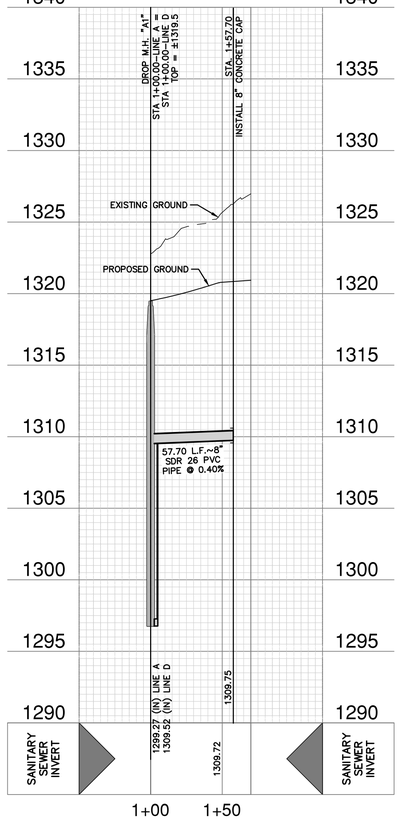
0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER — W —
- EXISTING SEWER — SS — MANHOLE
- PROPOSED SEWER — SS —
- PROPOSED WATER — W —
- PROPOSED SEWER LATERAL — S —
- FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV ESMT
- PROPOSED WALL (BY OTHERS) — FM
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS)
- FIRE HYDRANT

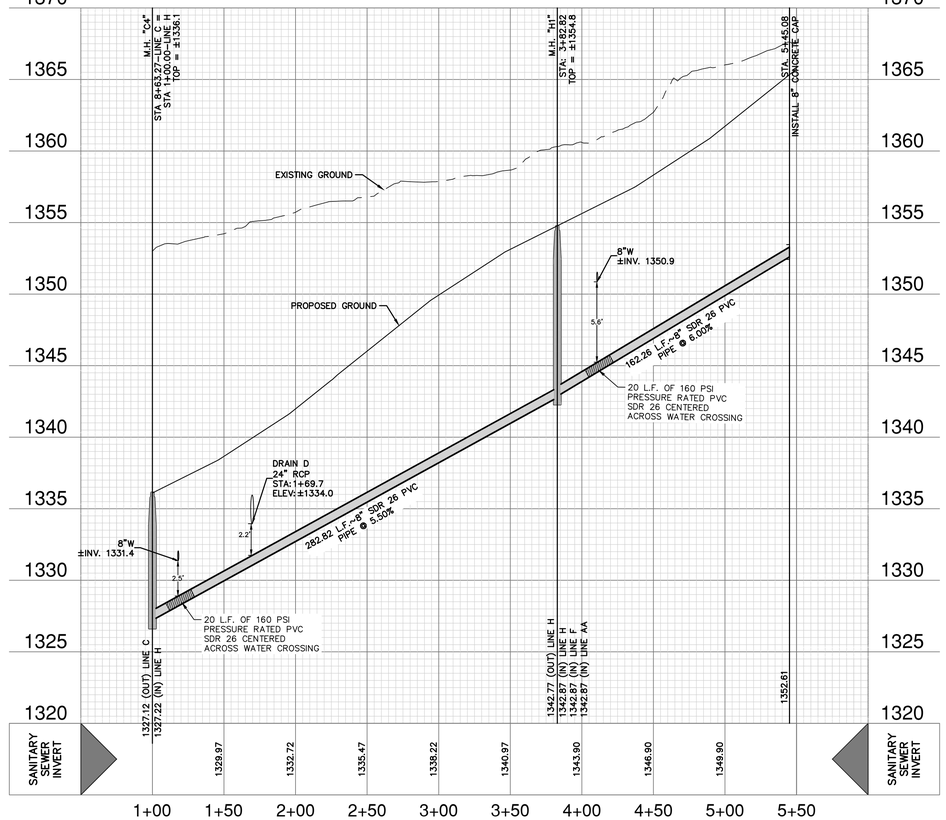
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

SANITARY SEWER LINE D
STA. 1+00.00 TO END



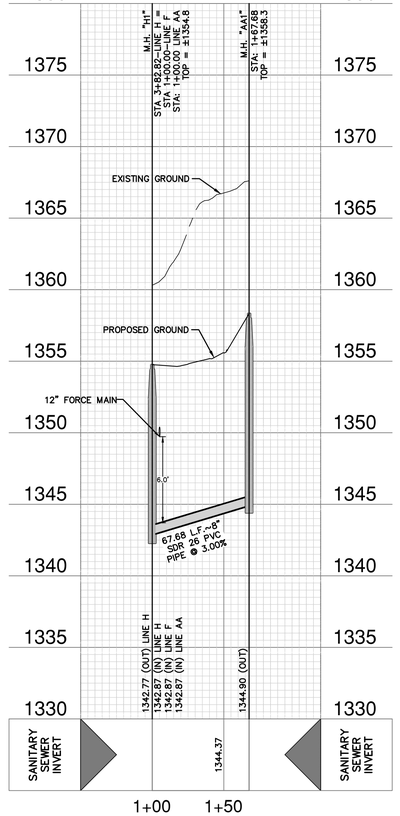
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

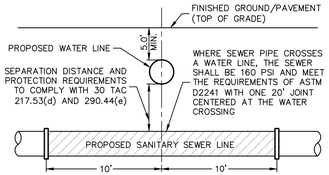
SANITARY SEWER LINE H
STA. 1+00.00 TO END



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

SANITARY SEWER LINE AA
STA. 1+00.00 TO END





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STATE OF TEXAS
BRUNA F. SPENGLER
127547
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Bruna Spengler
5/19/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE D, LINE H & LINE AA PLAN & PROFILE
LINE D, LINE H, LINE AA STA. 1+00.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.07

Date: May 18, 2026, 4:57pm User ID: asaucedo
File: P:\123\56\21\Design\Civil\SS LINE D-H 1235621.dwg
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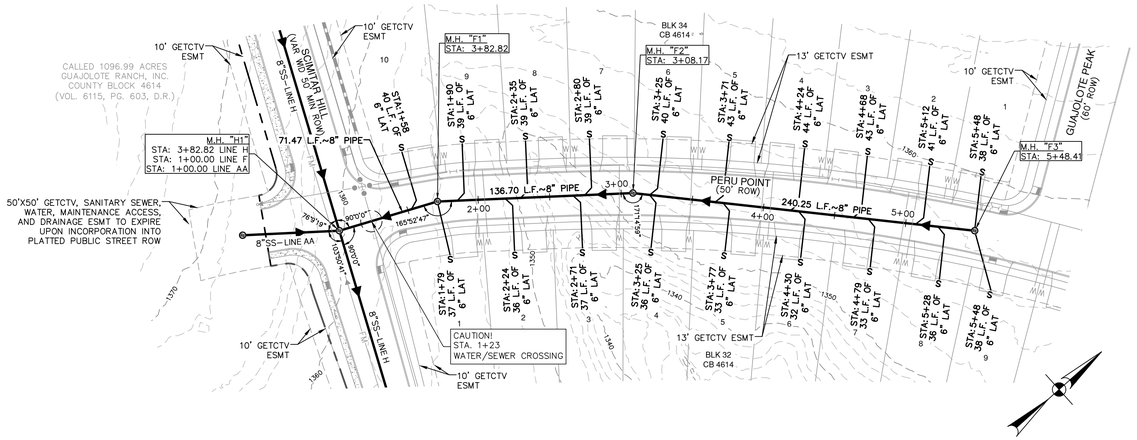
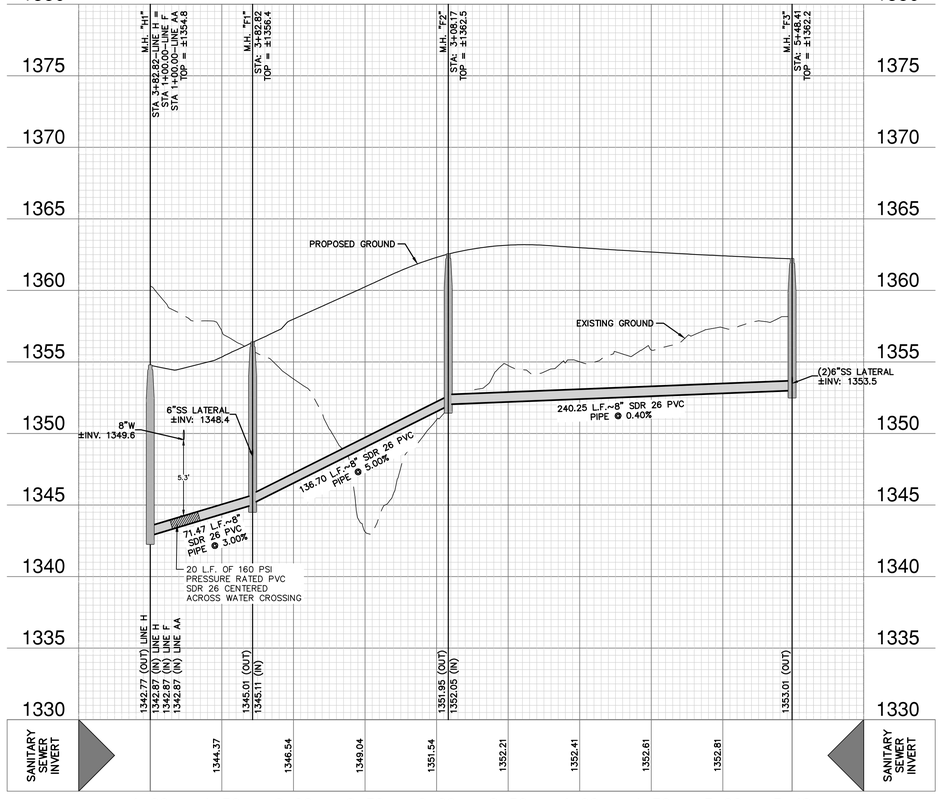


VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

SANITARY SEWER LINE F
STA. 1+00.00 TO END



SCALE: 1"= 50'

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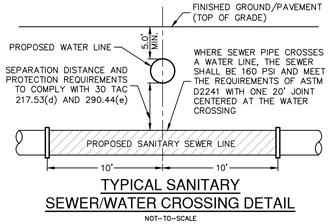
SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- MANHOLE
- PROPOSED WATER
- FIRE HYDRANT
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (GETCTV ESMT)
- PROPOSED WALL (BY OTHERS)
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS) (FM)



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File: P:\123\56\21\Design\Civil\SS LINE F 12356221.dwg

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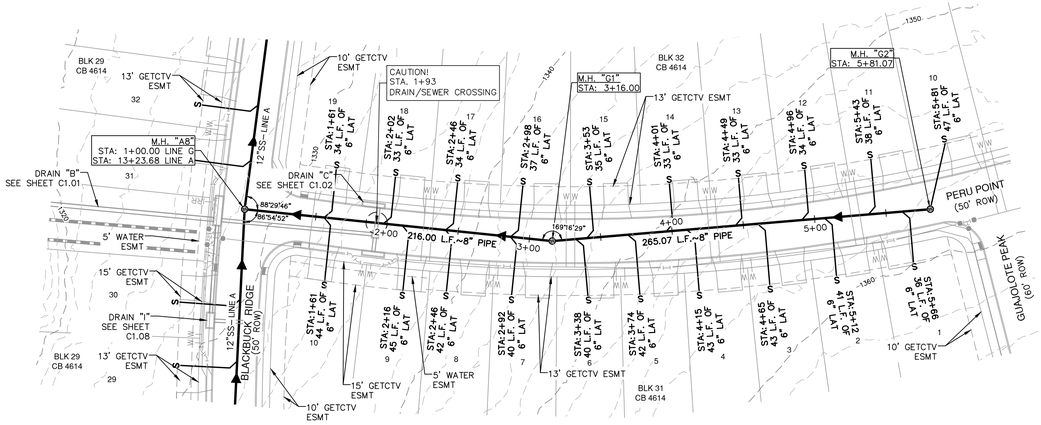


SCALE: 1"= 50'

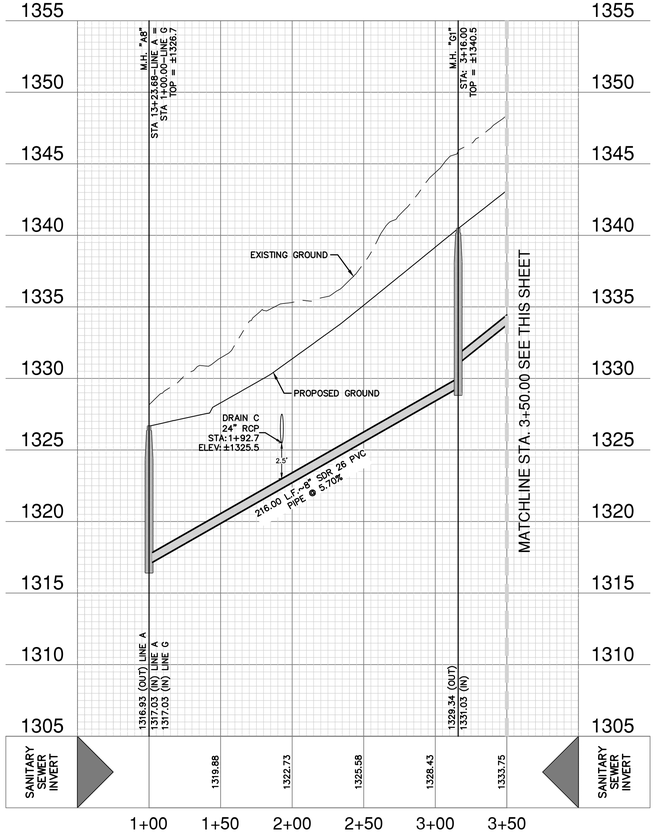
0' 50' 100' 150'

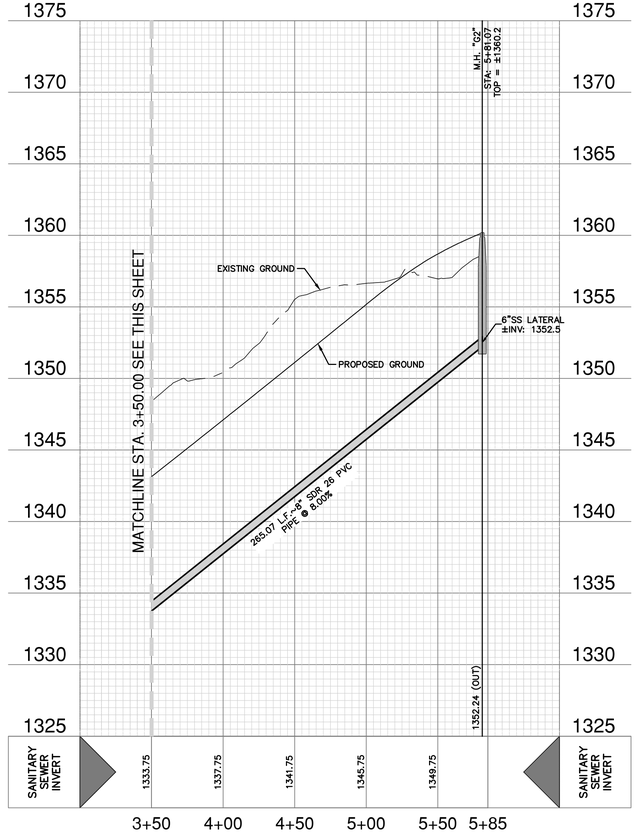
SEWER LEGEND

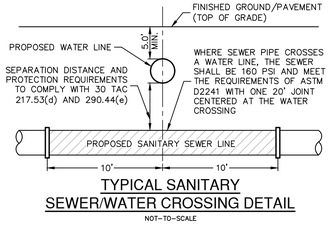
- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- MANHOLE
- PROPOSED WATER
- FIRE HYDRANT
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (GETCTV ESMT)
- PROPOSED WALL (BY OTHERS)
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS) (FM)

SANITARY SEWER LINE G
STA. 1+00.00 TO END

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







TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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.

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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
5/18/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE G PLAN AND PROFILE
STA. 1+00.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.09

Date: May 18, 2026, 2:05pm User ID: osaucedo
File: P:\123\36\21\Design\Civil\SS LINE G 12356521.dwg

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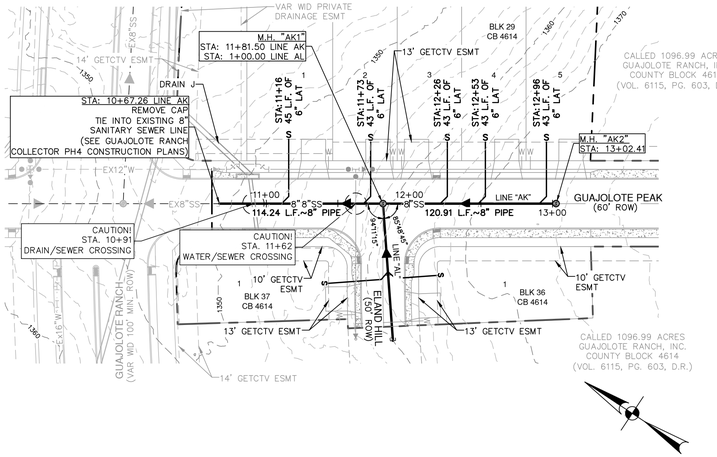
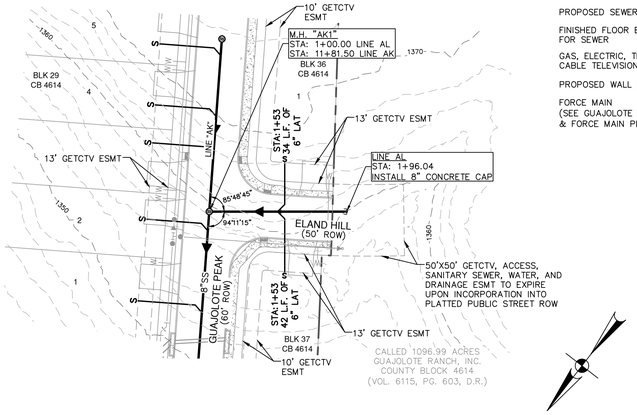
SCALE: 1"= 50'

0' 50' 100' 150'



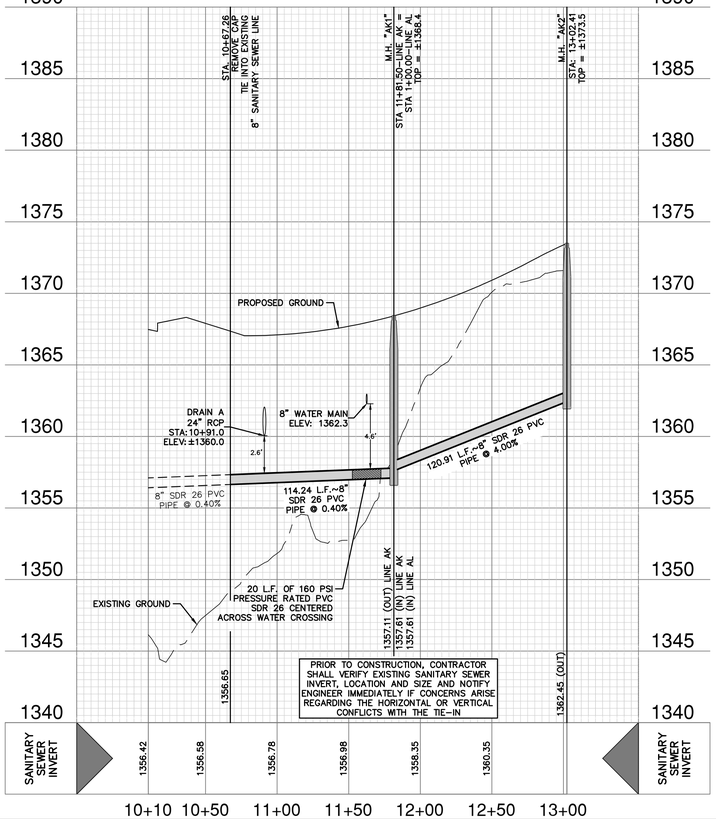


SEWER LEGEND

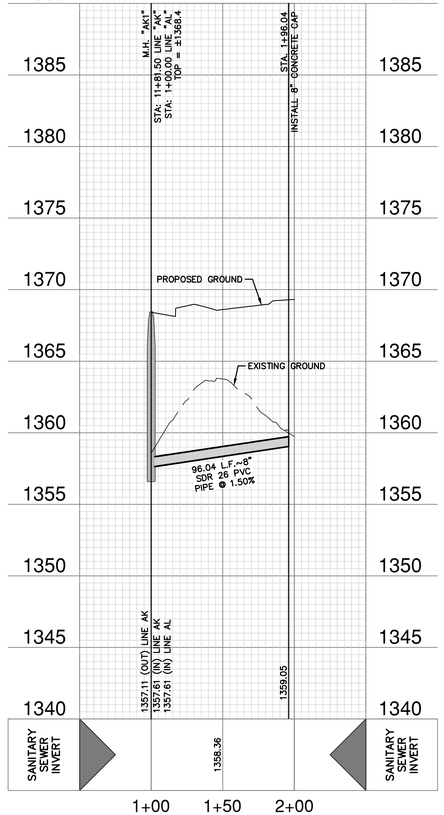
- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- MANHOLE
- PROPOSED WATER
- FIRE HYDRANT
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (GETCTV ESMT)
- PROPOSED WALL (BY OTHERS)
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS) (FM)

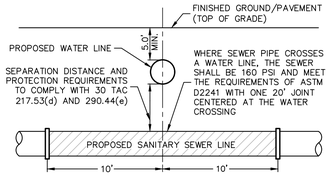
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

SANITARY SEWER LINE AK
STA. 10+67.26 TO END



SANITARY SEWER LINE AL
STA. 1+00.00 TO END





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

CAUTION!!

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NO.	REVISION	DATE

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE AK AND LINE AL PLAN & PROFILE
LINE AK AND LINE AL STA. 1+00.00 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.10

Date: Jun 04, 2026, 8:34am User ID: arodriguez
File: P:\123\56\21\Design\Civil\SS LINE AK-AL 1235621.dwg

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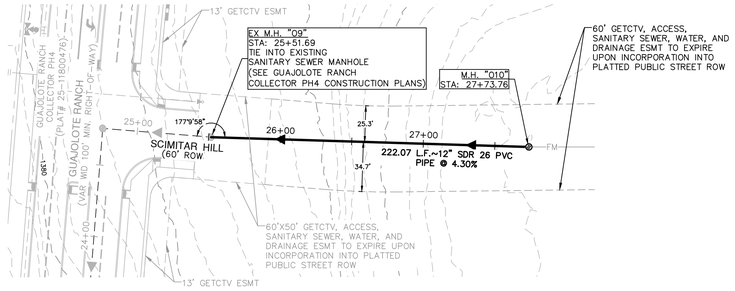
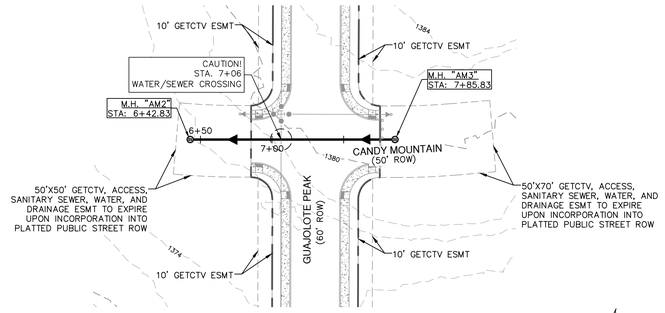
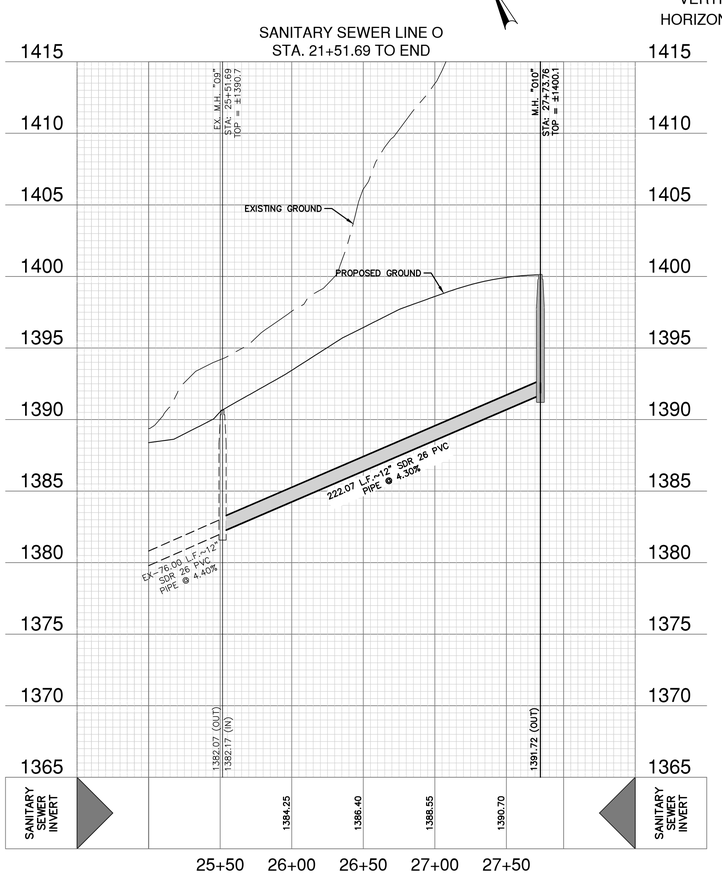
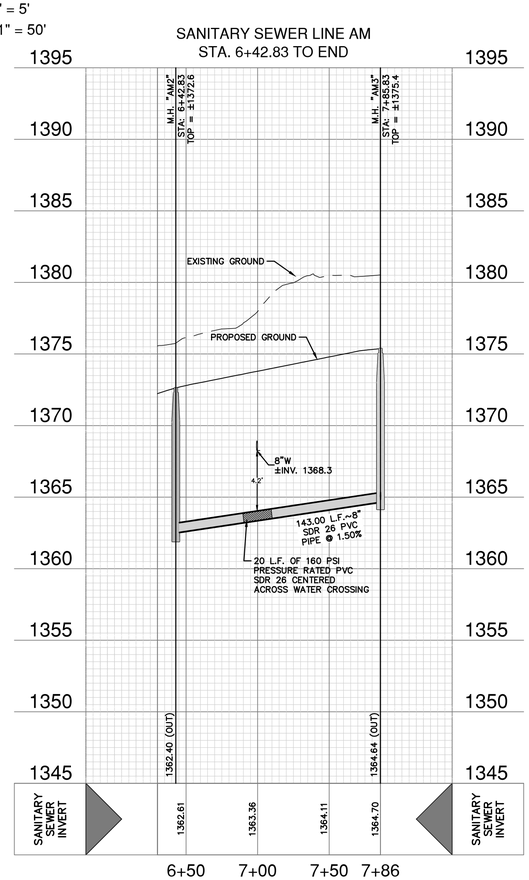




VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



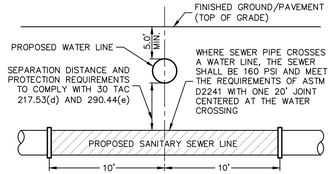


SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER (W)
- EXISTING SEWER (SS), MANHOLE
- PROPOSED SEWER (SS), MANHOLE
- PROPOSED WATER, FIRE HYDRANT (W)
- PROPOSED SEWER LATERAL (S)
- FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV ESMT
- PROPOSED WALL (BY OTHERS)
- FORCE MAIN (SEE GUAJOLOTE LIFT STATION & FORCE MAIN PLANS) — FM



TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
5/18/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE O & LINE AM PLAN & PROFILE
LINE O STA. 21+51.69 LINE AM 6+42.83 TO END

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.11

Date: May 18, 2026, 2:30pm User ID: asaucedo
File: P:\123\56\21\Design\Civil\SS LINE O 1235621.dwg

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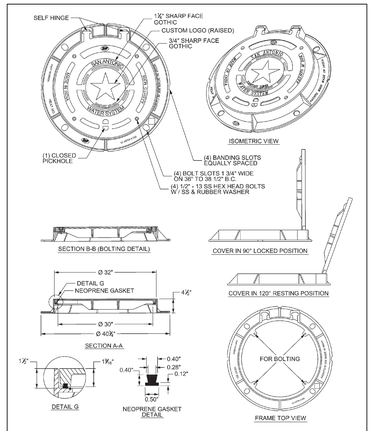
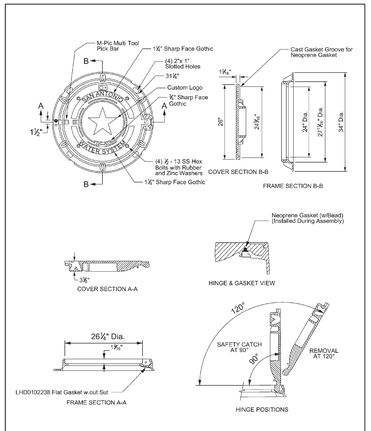


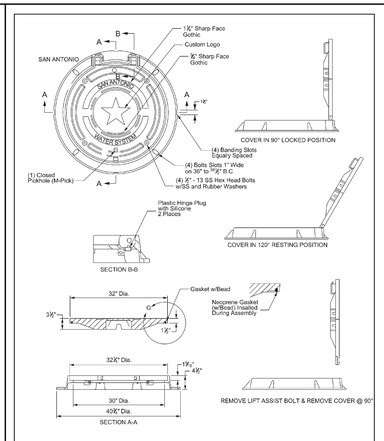
SIP Industries

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	30" MANHOLE RING AND COVER DETAIL		AUG 2019
		DD 852-07	SHEET 1 OF 5



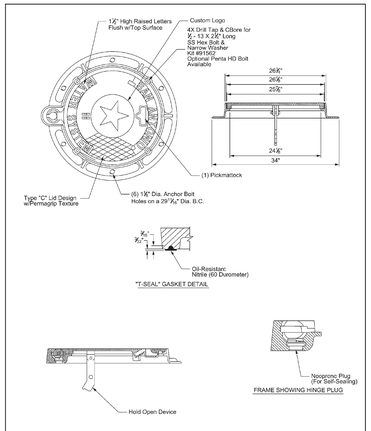
ERGO Assembly

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
		DD 852-07	SHEET 2 OF 5



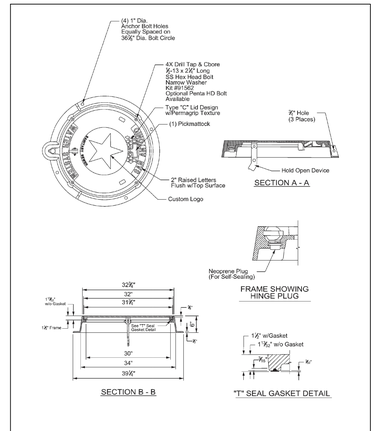
ERGO XL Assembly

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
		DD 852-07	SHEET 3 OF 5



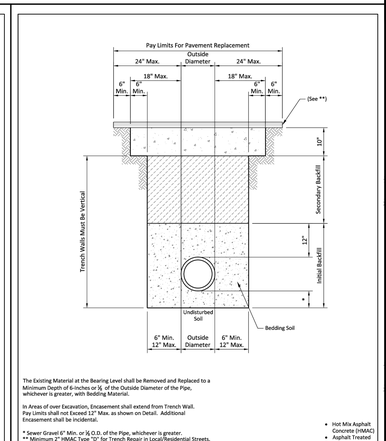
NEENAH FOUNDRY

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
		DD 852-07	SHEET 4 OF 5



NEENAH FOUNDRY

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
		DD 852-07	SHEET 5 OF 5



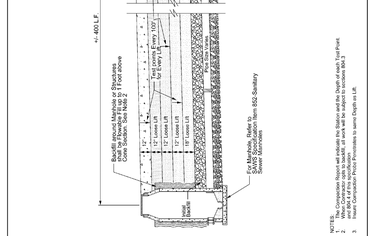
The Existing Material at the Bearing Level shall be Removed and Replaced to a Minimum Depth of 6-inches or ¼ of the Outside Diameter of the Pipe, whichever is greater, with Bedding Material.

In Areas of over Excavation, Encasement shall extend from Trench Wall. Pay Limits shall not Exceed 12" Max. as shown on Detail. Additional Encasement shall be incidental.

* Sewer Gravel 6" Min. or ¼ O.D. of the Pipe, whichever is greater.
** Minimum 2" HMAC Type "D" for Trench Repair in Local/Residential Streets.
** Minimum 3" HMAC Type "C" for Trench Repair in Collector/Arterial Streets.

- Hot Mix Asphalt Concrete (HMAC)
- Asphalt Treated Base (A.T.B.)

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	MARCH 2008	AUG 2019
		DD-804-01	SHEET 1 OF 1


Backfill around Manhole or Structure with Flowable Fill Per Detail Sheet "Manhole Ring and Cover"
Backfill around Manhole or Structure with Flowable Fill Per Detail Sheet "Manhole Ring and Cover"
Test Only when Necessary
Pay Limits
Trench Width
Pay Limits
Trench Width
+/- 600 L.F.
12" Lowest Lift
12" Lowest Lift
12" Lowest Lift
12" Lowest Lift
Backfill Around Manhole to prevent Close Quarter Soil Hole 2
Fill Manhole, Refer to SAWS Specification Item 550 Sanitary Sewer Manhole
Backfill Around Manhole to prevent Close Quarter Soil Hole 2
Trench Width
Pay Limits
Trench Width
Pay Limits
Trench Width
Pay Limits

SEWER CONSTRUCTION NOTES

GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL 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.

2. 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.

3. 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 PIPE LOCATION MARKERS ON 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) 206-8480
   - 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. COMPACTION NOTE: 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 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 WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

12. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE ENGINEER OF RECORD.

SEWER NOTES

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE.

1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44(E)(4)(B). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.

2. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)

3. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE INSPECTOR.

4. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE.

5. ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

PROJECT SEWER NOTES

1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 10' PAST THE PROPERTY LINE AND CAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2" X 4" STAKE, FOUR (4) FEET LONG, TWO (2) FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICE. NO SEPARATE PAY ITEM.

2. CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C4.10

3. NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

4. ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO THE PROPERTY LINE.

5. WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 160 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.

6. CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATIONS 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASEMENT.

7. ALL SEWER PIPES SHALL BE 8" PVC (SDR 26), UNLESS OTHERWISE NOTED.

8. CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.

9. CONTRACTOR SHALL PROTECT ALL EXISTING FENCES. ANY FENCE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

10. 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.

11. CONCRETE RING ENCASEMENT TO BE INSTALLED ON ALL MANHOLES AND, WITHIN LIMITS OF PAVEMENT, BE INSTALLED TO THE TOP OF THE BASE LAYER WITH A MINIMUM OF 2" OF ASPHALT ON TOP OF THE RING ENCASEMENT.

12. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.

13. ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.

14. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISH PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATIONS SUCH THAT THE TOP OF MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/1/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

SANITARY SEWER NOTES

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C4.13

Date: Apr 01, 2026, 3:38pm User ID: brojas
File: P:\123\56\21\Design\Civil\SS-DT 1235621.dwg

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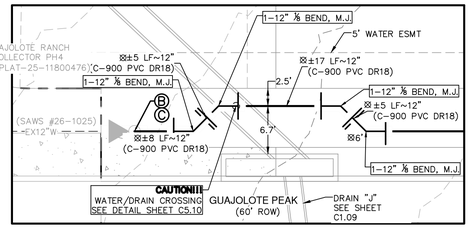
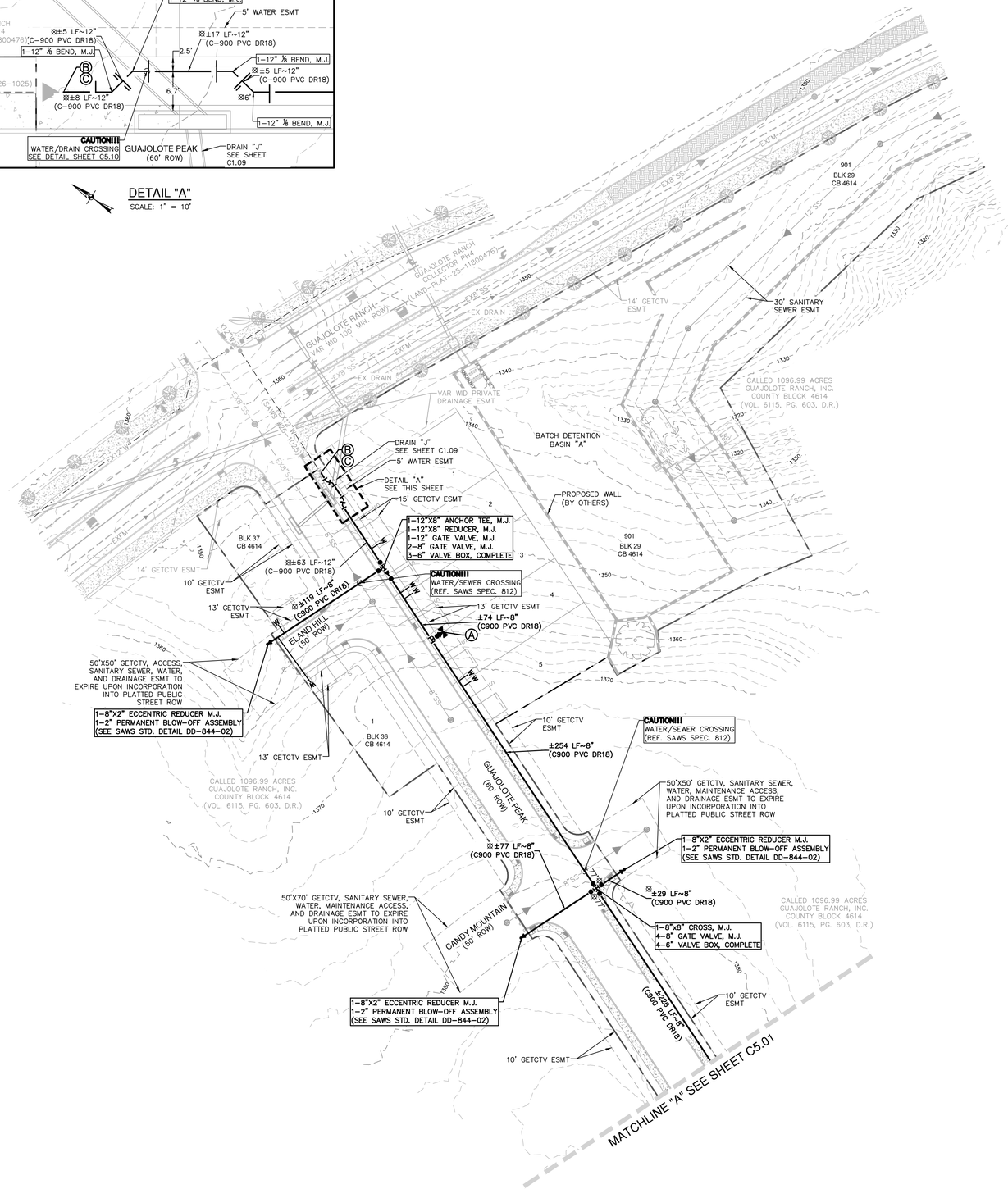
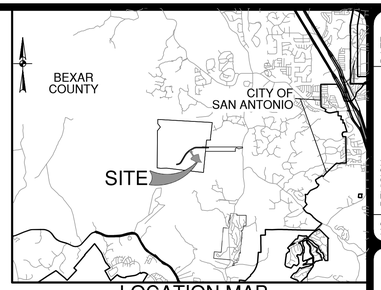


DETAIL "A"
SCALE: 1" = 10'



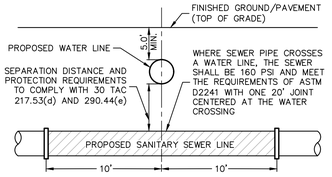


LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	FIRE HYDRANT, W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS
PROPOSED WATER	FIRE HYDRANT, W
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER	W
SINGLE IRRIGATION SERVICE (3/4" WITH 5/8" METER)	IRR
JOINT RESTRAINT	⊠
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV ESMT
VARIABLE WIDTH	VAR WID



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

Ⓐ 1-8"X6" ANCHOR TEE, M.J.
1-STD. FIRE HYDRANT ASSEMBLY
1-6" GATE VALVE, M.J.
1-6" VALVE BOX, COMPLETE
1-6" ¾ BEND, M.J.
1-STD. FIRE HYDRANT
6" D.I. PIPE, CUT AND RESTRAIN AS REQUIRED (SEE SAWS STD DWG DD-834-01)

Ⓑ FOR CHLORINATION INJECTION:
2-1" CORPORATION STOP, C.C.XI.P.
2-1" COPPER TUBING, CUT AS REQ'D
2-1¼" THD. SOLID CAP, THR.
2-1" COMP. X 1 ¼" COUPLING, CURB STOP CONTRACTOR SHALL PROVIDE 2" JUMPER CONNECTION TO LOAD NEW MAIN.
1-2" TEMP. BLOWOFF ASSEMBLY
(SEE SAWS STD DWG DD-844-01)

Ⓒ CONTRACTOR SHALL TIE TO EXISTING POTABLE WATER MAIN AFTER DISINFECTION & ACCEPTANCE BY SAWS
1-12" SOLID SLEEVE, M.J.

FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

ROW PERMIT NOTE:

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

PRESSURE REDUCING VALVE NOTE:

PRESSURE REDUCING VALVE TO BE INSTALLED ON CUSTOMER'S SIDE OF METER BY HOMEBUILDER.

PRESSURE NOTE:

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 1,425 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 1,425 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).

JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

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.

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 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,419LF-8" PVC, 9LF-12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
5/22/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

WATER DISTRIBUTION PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C5.00

Date: May 22, 2026, 10:59am User ID: osaucedo
File: P:\12356\21\Design\Civil\GW 12356211.dwg

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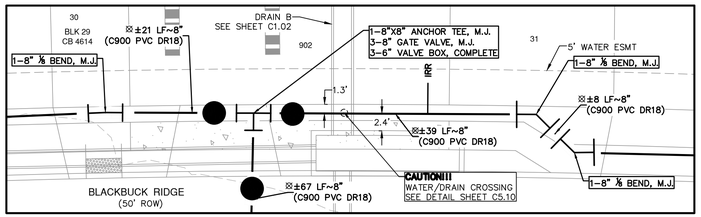
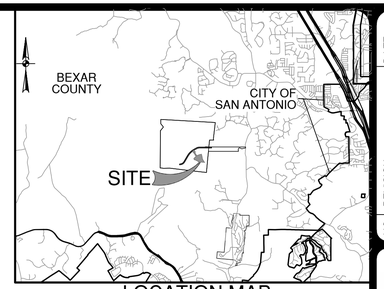


DETAIL "B"
SCALE: 1" = 10'



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

MATCHLINE "A" SEE SHEET C5.00

MATCHLINE "B" SEE SHEET C5.02

50' GETCTV, SANITARY SEWER, WATER, MAINTENANCE ACCESS, AND DRAINAGE ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET ROW

CALLED 1096.99 ACRES GUAJOLOTE RANCH, INC. COUNTY BLOCK 4614 (VOL. 6115, PG. 603, D.R.)

CALLED 1096.99 ACRES GUAJOLOTE RANCH, INC. COUNTY BLOCK 4614 (VOL. 6115, PG. 603, D.R.)

CALLED 1096.99 ACRES GUAJOLOTE RANCH, INC. COUNTY BLOCK 4614 (VOL. 6115, PG. 603, D.R.)

IMPALA PLACE (50' ROW)

GUAJOLOTE PEAK (60' ROW)

PERU POINT (50' ROW)

SCIMITAR HILL (VAR WID 50' MIN ROW)

BLACKBUCK RIDGE (50' ROW)

BATCH DETENTION BASIN D

DRAIN "A" SEE SHEET C1.08

DRAIN "B" SEE SHEET C1.01

DRAIN "C" SEE SHEET C1.02

DETAIL "B" SEE THIS SHEET

BLK 34 CB 4614

BLK 31 CB 4614

BLK 32 CB 4614

BLK 29 CB 4614

10' GETCTV ESMT

13' GETCTV ESMT

15' GETCTV ESMT

5' WATER ESMT

±226 LF~8" (C900 PVC DR18)

⊠±27 LF~8" (C900 PVC DR18)

±64 LF~8" (C900 PVC DR18)

1-8"X2" ECCENTRIC REDUCER M.J.
1-2" PERMANENT BLOW-OFF ASSEMBLY
(SEE SAWS STD. DETAIL DD-844-02)

1-8"x8" CROSS, M.J.
4-8" GATE VALVE, M.J.
4-6" VALVE BOX, COMPLETE

⊠±77 LF~8" (C900 PVC DR18)

±226 LF~8" (C900 PVC DR18)

1-8" ½ BEND, M.J.

±112 LF~8" (C900 PVC DR18)

⊠ ±7 LF~8" (C900 PVC DR18)

±158 LF~8" (C900 PVC DR18)

⊠±55 LF~8" (C900 PVC DR18)

⊠ ±27 LF~8" (C900 PVC DR18)

⊠±69 LF~8" (C900 PVC DR18)

±114 LF~8" (C900 PVC DR18)

1-8"X8" ANCHOR TEE, M.J.
3-8" GATE VALVE, M.J.
3-6" VALVE BOX, COMPLETE

±144 LF~8" (C900 PVC DR18)

±86 LF~8" (C900 PVC DR18)

⊠ ±38 LF~8" (C900 PVC DR18)

⊠±129 LF~8" (C900 PVC DR18)

⊠±65 LF~8" (C900 PVC DR18)

CAUTION!!!
WATER/SEWER CROSSING
(REF. SAWS SPEC. 812)

CAUTION!!!
WATER/FORCE MAIN CROSSING
(REF. SAWS SPEC. 812)

±219 LF~8" (C900 PVC DR18)

⊠±71 LF~8" (C900 PVC DR18)

1-8"X2" ECCENTRIC REDUCER M.J.
1-2" PERMANENT BLOW-OFF ASSEMBLY
(SEE SAWS STD. DETAIL DD-844-02)

50'X50' GETCTV, SANITARY SEWER, WATER, MAINTENANCE ACCESS, AND DRAINAGE ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET ROW

60' GETCTV, SANITARY SEWER, WATER, MAINTENANCE ACCESS, AND DRAINAGE ESMT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET ROW

CAUTION!!!
WATER/SEWER CROSSING
(REF. SAWS SPEC. 812)

⊠±49 LF~8" (C900 PVC DR18)

⊠±6 LF~8" (C900 PVC DR18)

⊠±59 LF~8" (C900 PVC DR18)

⊠±39 LF~8" (C900 PVC DR18)

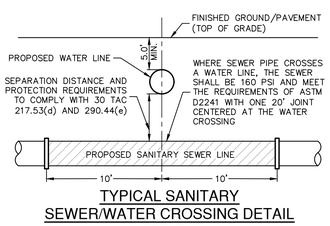
⊠±34 LF~8" (C900 PVC DR18)

⊠ ±67 LF~8" (C900 PVC DR18)

⊠±7 LF~8" (C900 PVC DR18)

±79 LF~8" (C900 PVC DR18)

1-8"X2" ECCENTRIC REDUCER M.J.
1-2" PERMANENT BLOW-OFF ASSEMBLY
(SEE SAWS STD. DETAIL DD-844-02)



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

Ⓐ 1-8"X6" ANCHOR TEE, M.J.
1-STD. FIRE HYDRANT ASSEMBLY
1-6" GATE VALVE, M.J.
1-6" VALVE BOX, COMPLETE
1-6" ¾ BEND, M.J.
1-STD. FIRE HYDRANT
6" D.I. PIPE, CUT AND RESTRAIN AS REQUIRED (SEE SAWS STD DWG DD-834-01)

Ⓑ FOR CHLORINATION INJECTION:
2-1" CORPORATION STOP, C.C.XI.P.
2-1" COPPER TUBING, CUT AS REQ'D
2-1¼" THD. SOLID CAP, THR.
2-1" COMP. X 1 J" COUPLING, CURB STOP CONTRACTOR SHALL PROVIDE 2" JUMPER CONNECTION TO LOAD NEW MAIN.
1-2" TEMP. BLOWOFF ASSEMBLY
(SEE SAWS STD DWG DD-844-01)

Ⓒ CONTRACTOR SHALL TIE TO EXISTING POTABLE WATER MAIN AFTER DISINFECTION & ACCEPTANCE BY SAWS
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ROW PERMIT NOTE:

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WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	FIRE HYDRANT, W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS, MANHOLE
PROPOSED WATER	FIRE HYDRANT, W
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER	
SINGLE IRRIGATION SERVICE (3/4" WITH 5/8" METER)	IRR
JOINT RESTRAINT	⊠
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV ESMT
VARIABLE WIDTH	VAR WID

PRESSURE REDUCING VALVE NOTE:

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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 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,419LF-8" PVC 8"LF-12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
5/22/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
WATER DISTRIBUTION PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C5.01

Date: May 22, 2026, 8:23am User ID: esaucedo
File: P:\12356\21\Design\Civil\GW 12356210.dwg

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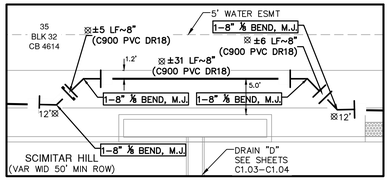
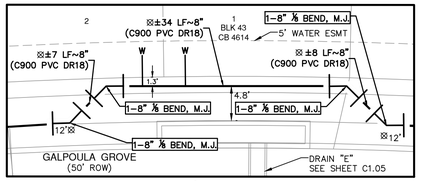
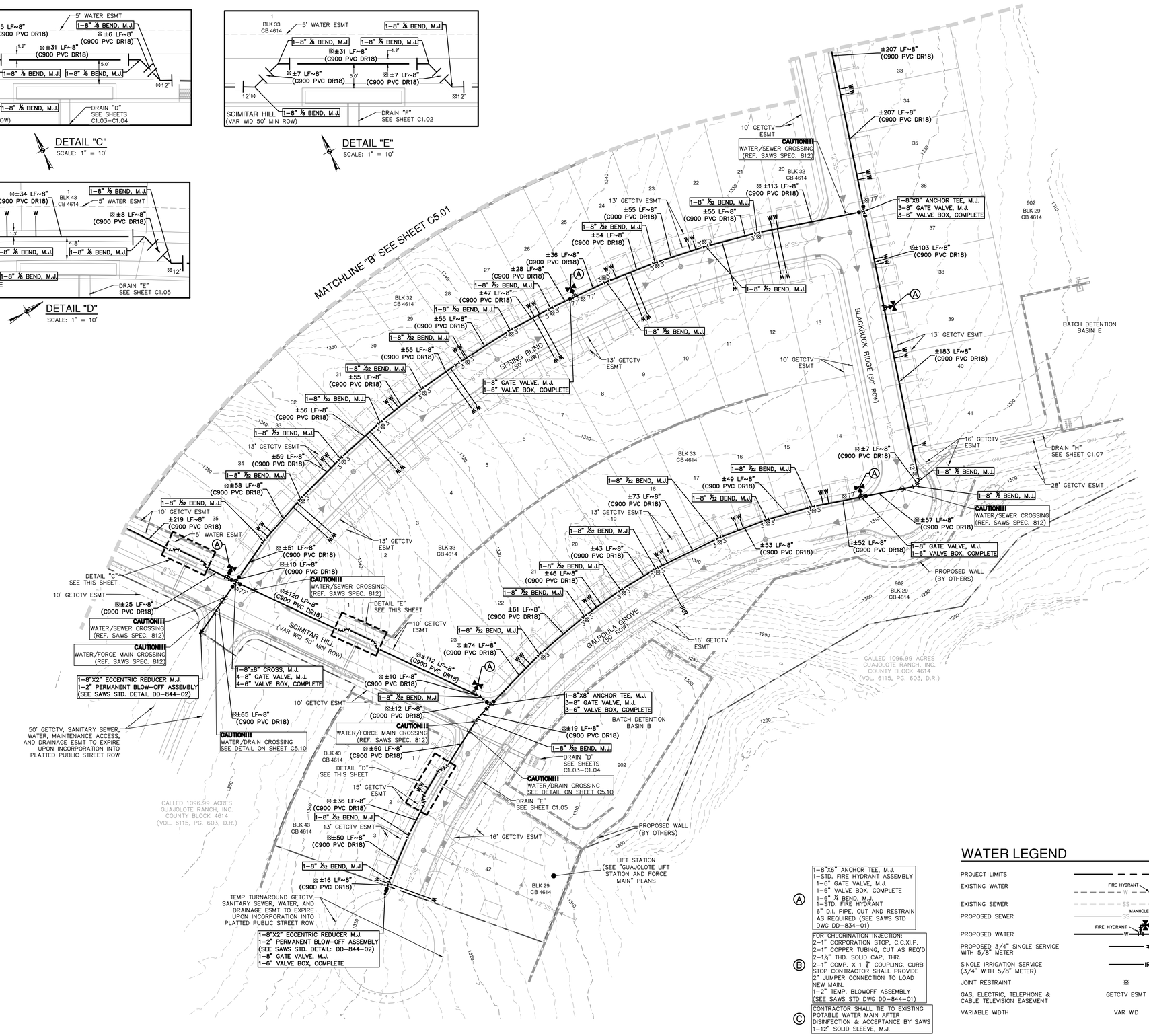


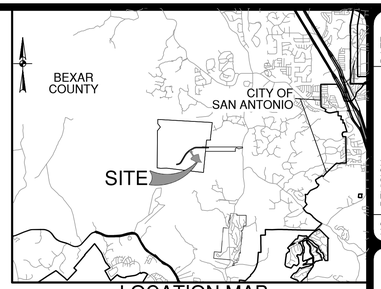
DETAIL "C"
SCALE: 1" = 10'

DETAIL "E"
SCALE: 1" = 10'



DETAIL "D"
SCALE: 1" = 10'





LOCATION MAP
NOT-TO-SCALE

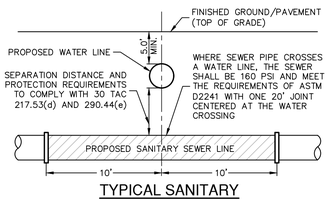
SCALE: 1"= 50'
0' 50' 100' 150'

FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

ROW PERMIT NOTE:

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

PRESSURE REDUCING VALVE NOTE:

PRESSURE REDUCING VALVE TO BE INSTALLED ON CUSTOMER'S SIDE OF METER BY HOMEBUILDER.

PRESSURE NOTE:

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 1,425 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 1,425 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).

JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

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.

WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	FIRE HYDRANT, W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS
PROPOSED WATER	FIRE HYDRANT, W
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER	
SINGLE IRRIGATION SERVICE (3/4" WITH 5/8" METER)	IRR
JOINT RESTRAINT	⊠
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV ESMT
VARIABLE WIDTH	VAR WID

Ⓐ 1-8"X6" ANCHOR TEE, M.J.
1-STD. FIRE HYDRANT ASSEMBLY
1-6" GATE VALVE, M.J.
1-6" VALVE BOX, COMPLETE
1-6" ¾ BEND, M.J.
1-STD. FIRE HYDRANT
6" DI. PIPE, CUT AND RESTRAIN AS REQUIRED (SEE SAWS STD DWG DD-834-01)

Ⓑ FOR CHLORINATION INJECTION:
2-1" CORPORATION STOP, C.C.XI.P.
2-1" COPPER TUBING, CUT AS REQ'D
2-1¼" THD. SOLID CAP, THR.
2-1" COMP. X 1 ¼" COUPLING, CURB STOP CONTRACTOR SHALL PROVIDE 2" JUMPER CONNECTION TO LOAD NEW MAIN.
1-2" TEMP. BLOWOFF ASSEMBLY (SEE SAWS STD DWG DD-844-01)

Ⓒ CONTRACTOR SHALL TIE TO EXISTING POTABLE WATER MAIN AFTER DISINFECTION & ACCEPTANCE BY SAWS
1-12" SOLID SLEEVE, M.J.

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 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,416' 8" PVC, 957' 12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
5/22/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

WATER DISTRIBUTION PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
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Date: May 22, 2026, 8:33am User ID: asaucedo
File: P:\123\56\21\Design\Civil\DW 1235621.dwg

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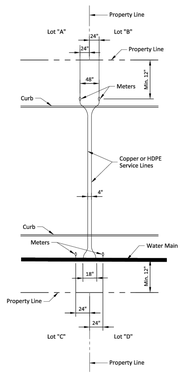
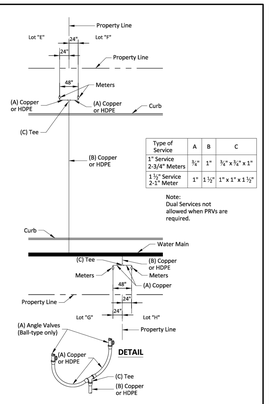


SINGLE SERVICE LINE - SINGLE METER

PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	NEW DEVELOPMENT SERVICE ARRANGEMENT	March 2008	December 2018
		DD-824-05	SHEET 1 OF 3



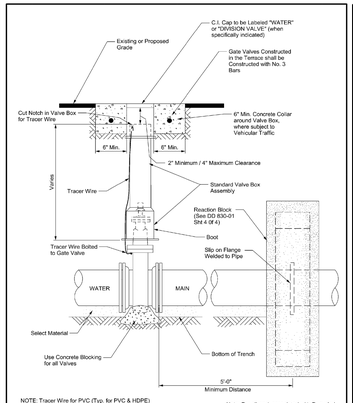
Type of Service	A	B	C
1" Service 2-3/4" Meters	¾"	1"	¾" x ¾" x 1"
1 ½" Service 2-1" Meter	1"	1 ½"	1" x 1" x 1 ½"

Note:
Dual Services not allowed when PRVs are required.

DETAIL

SINGLE SERVICE LINE - DUAL METER

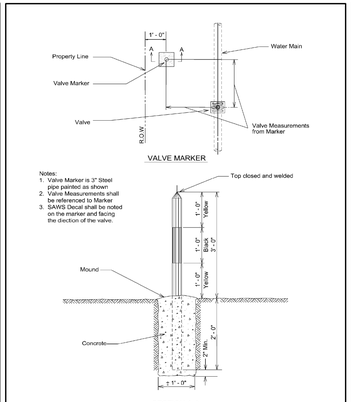
PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	March 2008	December 2018
		DD-824-05	SHEET 2 OF 3



NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

Note: For all work associated with Recycled Water Valves, refer to DD 110-10, Sht. 1 of 1

PROPERTY OF	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD 828-01	SHEET 1 OF 3



VALVE MARKER

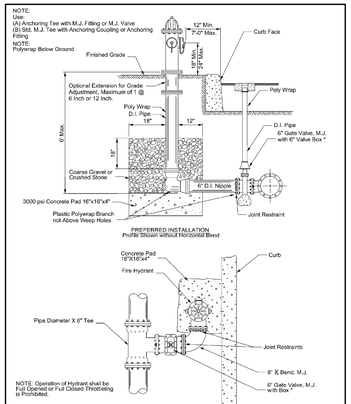
Notes:
1. Valve Marker is 3" Steel pipe painted as shown
2. Valve Measurements shall be referenced to Marker
3. SAWS Decal shall be noted on the marker and facing the direction of the valve.

SECTION A-A

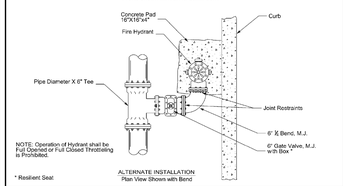
PROPERTY OF	VALVE MARKER	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-828-04	SHEET 1 OF 3

NOTE:
Use:
(A) Anchoring Tee with M.J. Fitting or M.J. Valve
(B) Std. M.J. Tee with Anchoring Coupling or Anchoring Fitting

NOTE:
Polywrap Below Ground



PREFERRED INSTALLATION
Profile Shown without Horizontal Bend

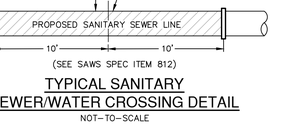


NOTE: Operation of Hydrant shall be Full Opened or Full Closed Throttleing is Prohibited.

* Resilient Seat

ALTERNATE INSTALLATION
Plan View Shown with Bend

PROPERTY OF	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MAY 2013	AUG 2019
		DD-834-01	SHEET 1 OF 3



RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	7	1
8	6	0	59	44
8	6	5	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe.The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		March 2008	AUG 2019
		DD-839-04	SHEET 1 OF 2

L=LENGTH TO BE RESTRAINED

PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provide for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-839-05	SHEET 1 OF 1

PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
8	45	10	24	5	18	4
8	22.5	10	12	2	9	2
8	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	16	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	5
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF	RESTRAINED LENGTHS VERTICAL OFFSETS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-839-06	SHEET 1 OF 1

PIPE SIZE (inch)	SMALL L SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	56	43
6	6	32	24
8	6	56	43
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. Th restrained length shall be designed based upon the conditions encountered during the installation.

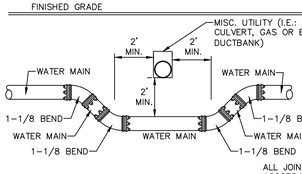
PROPERTY OF	RESTRAINED LENGTHS FOR REDUCERS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-839-07	SHEET 1 OF 1

PIPE SIZE (inch)	BEND ANGLE (deg.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	3	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

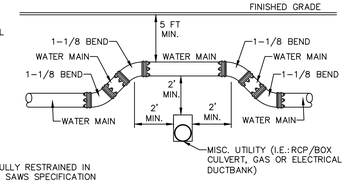
RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

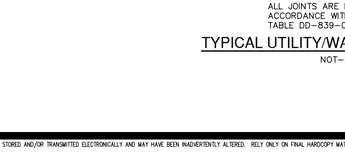
PROPERTY OF	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-839-08	SHEET 1 OF 1

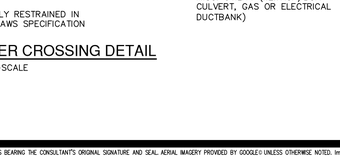


FIRE HYDRANT INSTALLATION
NOT-TO-SCALE

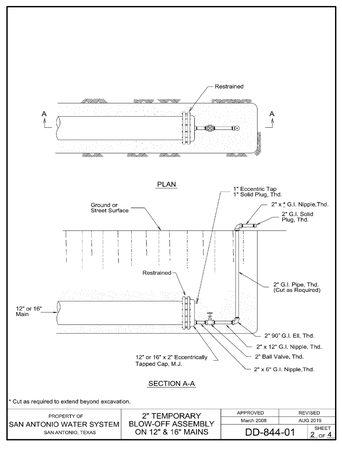


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE



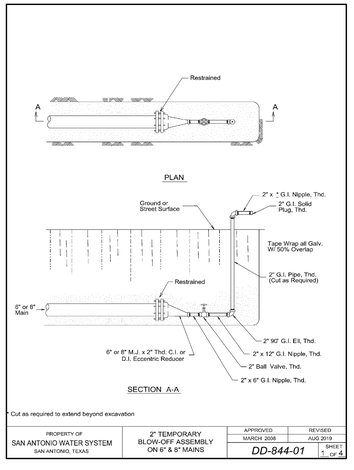


TYPICAL UTILITY/WATER CROSSING DETAIL
NOT-TO-SCALE



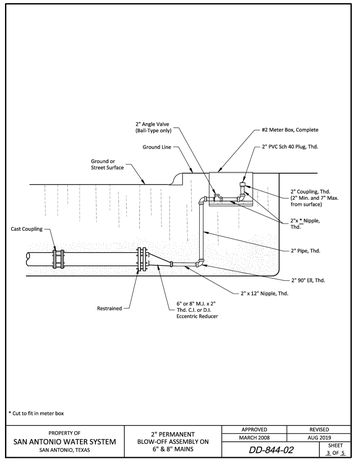
* Cut as required to extend beyond excavation.

PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" & 16" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		March 2008	AUG 2019
		DD-844-01	SHEET 2 OF 4



* Cut as required to extend beyond excavation

PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-844-01	SHEET 1 OF 4



* Cut to fit in meter box

PROPERTY OF	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS		MARCH 2008	AUG 2019
		DD-844-02	SHEET 3 OF 3

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# 1705&36 TOTAL EDU'S 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,419LF-8" PVC 885LF-12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
5/22/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
WATER DISTRIBUTION DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C5.10

Date: May 22, 2026, 9:37am User ID: aaguedes
File: P:\123\56\21\Design\Civil\WTDT 12356021.dwg

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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 INSPECTION DIVISION AT
   (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 PIPE 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) 206-8480
   - 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. (NSPI)

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: 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 THIS 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 104 TOTAL ACREAGE 34.667
TOTAL LINEAR FOOTAGE OF PIPE: 5,419LF-8" PVC, 98LF-12" PVC PLAT NO. 25-11800485
NUMBER OF LOTS 101 SAWS JOB NO. 26-1027

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/22/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

WATER DISTRIBUTION NOTES

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C5.20

Date: May 21, 2026, 9:14am User ID: asaucedo
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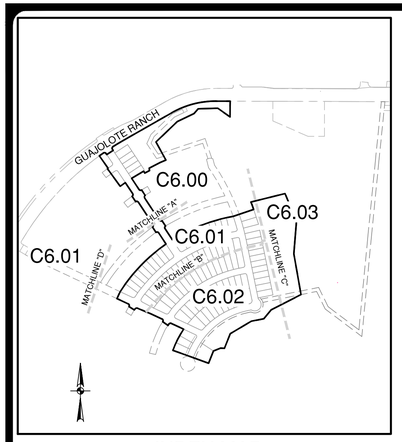
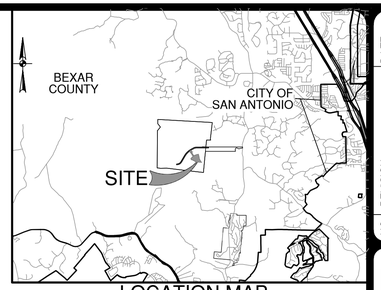


INDEX MAP
NOT-TO-SCALE



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

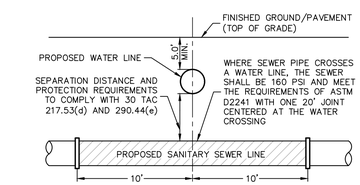
NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED
PROFESSIONAL ENGINEER
Bruna Spengler
4/30/26

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

UTILITY LEGEND

- PROJECT LIMITS
- EXISTING WATER (W)
- EXISTING SEWER (SS)
- PROPOSED SEWER (SS, MANHOLE)
- PROPOSED WATER (W, FIRE HYDRANT)
- PROPOSED WYE & LATERAL
- SINGLE WATER SERVICE
- STREET LIGHTS (SL)
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (GETCTV ESMT)
- VARIABLE WIDTH DRAINAGE EASEMENT (VAR WID DRN ESMT)
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- TREE, SEE TREE PRESERVATION PLANS
- 100 UD FLOODPLAIN
- RETAINING WALL



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

CONDUIT NOTES:

1. CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
2. 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.
3. ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.
4. 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 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.

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C6.00

Date: Apr 29, 2026, 2:48pm User ID: CGarza
File: P:\23\56\21\Design\Civil\OU 12356210.dwg

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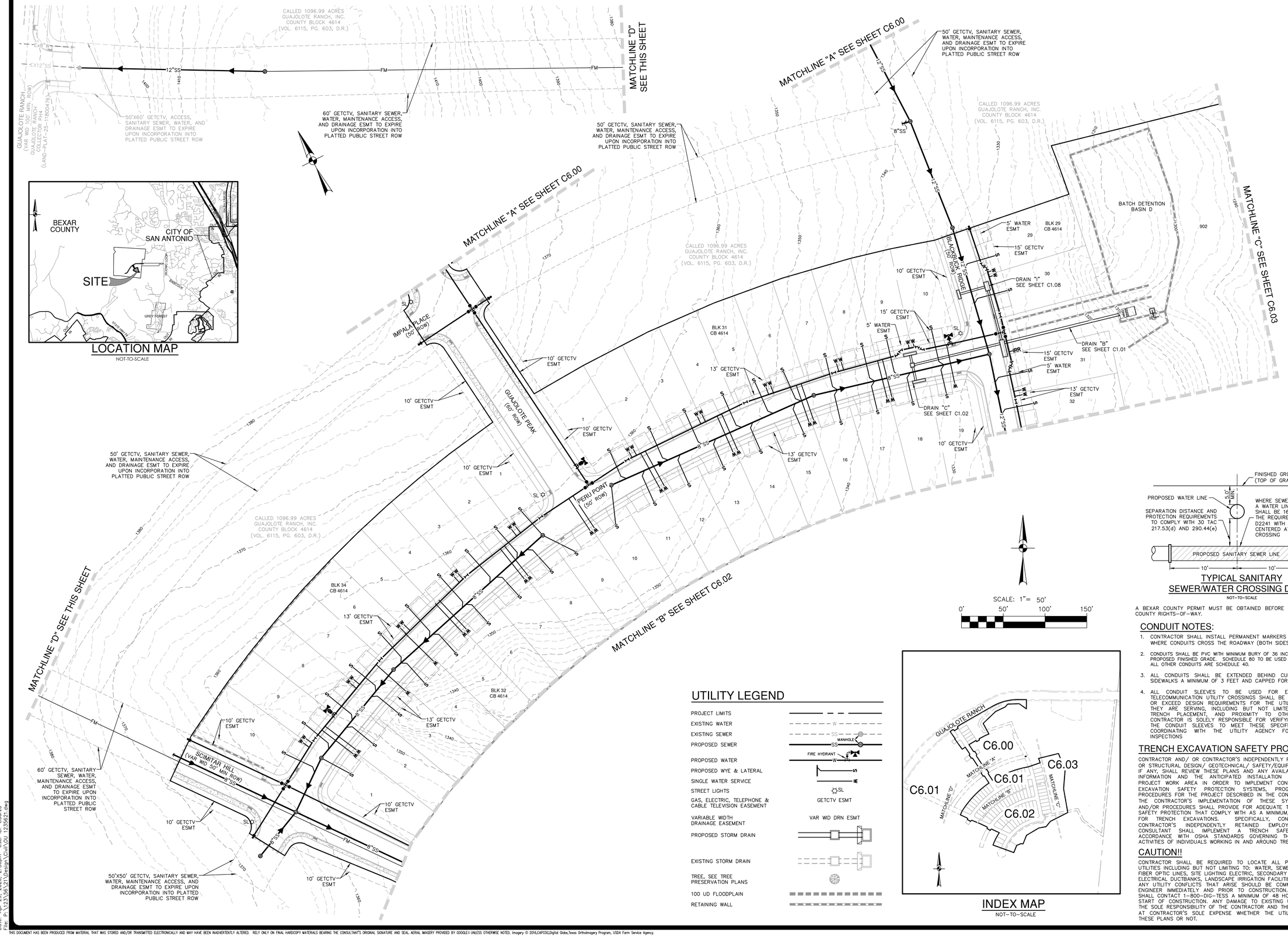

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

INDEX MAP
NOT-TO-SCALE

UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS
PROPOSED SEWER	SS, MANHOLE
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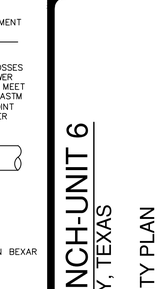

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

CONDUIT NOTES:

1. CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
2. 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.
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4. 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 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.

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
4/30/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
OVERALL UTILITY PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C6.01

Date: Apr 29, 2026, 2:56pm User ID: CCarro
File: P:\123\56\21\Design\Civil\OU 1235621.dwg

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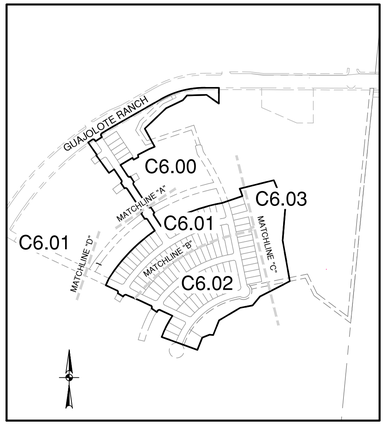

INDEX MAP

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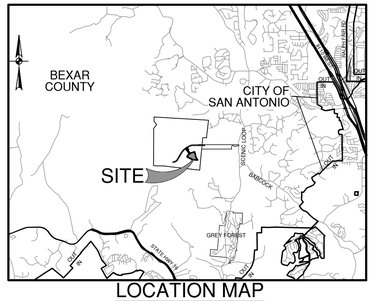
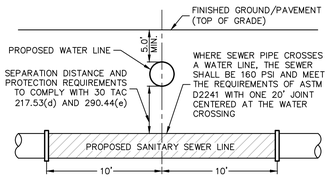


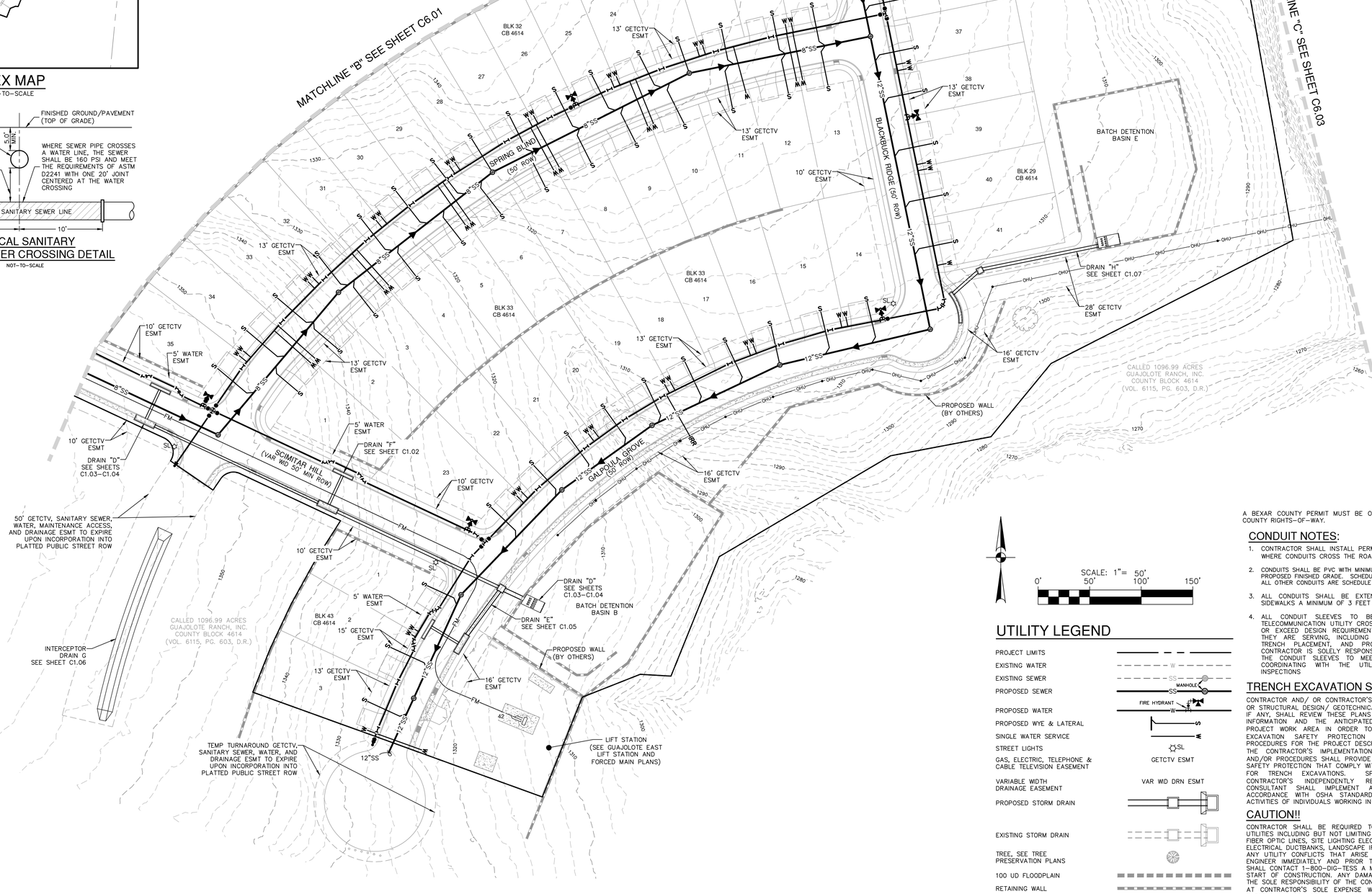
LOCATION MAP

NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



SCALE: 1"= 50'

0' 50' 100' 150'

UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS
PROPOSED SEWER	SS MANHOLE
PROPOSED WATER	FIRE HYDRANT W
PROPOSED WYE & LATERAL	S
SINGLE WATER SERVICE	W
STREET LIGHTS	SL
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV ESMT
VARIABLE WIDTH DRAINAGE EASEMENT	VAR WID DRN ESMT
PROPOSED STORM DRAIN	
EXISTING STORM DRAIN	
TREE, SEE TREE PRESERVATION PLANS	
100 UD FLOODPLAIN	
RETAINING WALL	

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS–OF–WAY.

CONDUIT NOTES:

1. CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
2. 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.
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CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
4/30/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C6.02

Date: Apr 29, 2026, 3:57pm User ID: CGarza
File: P:\123\06\21\Design\Civil\OU 1235621.dwg

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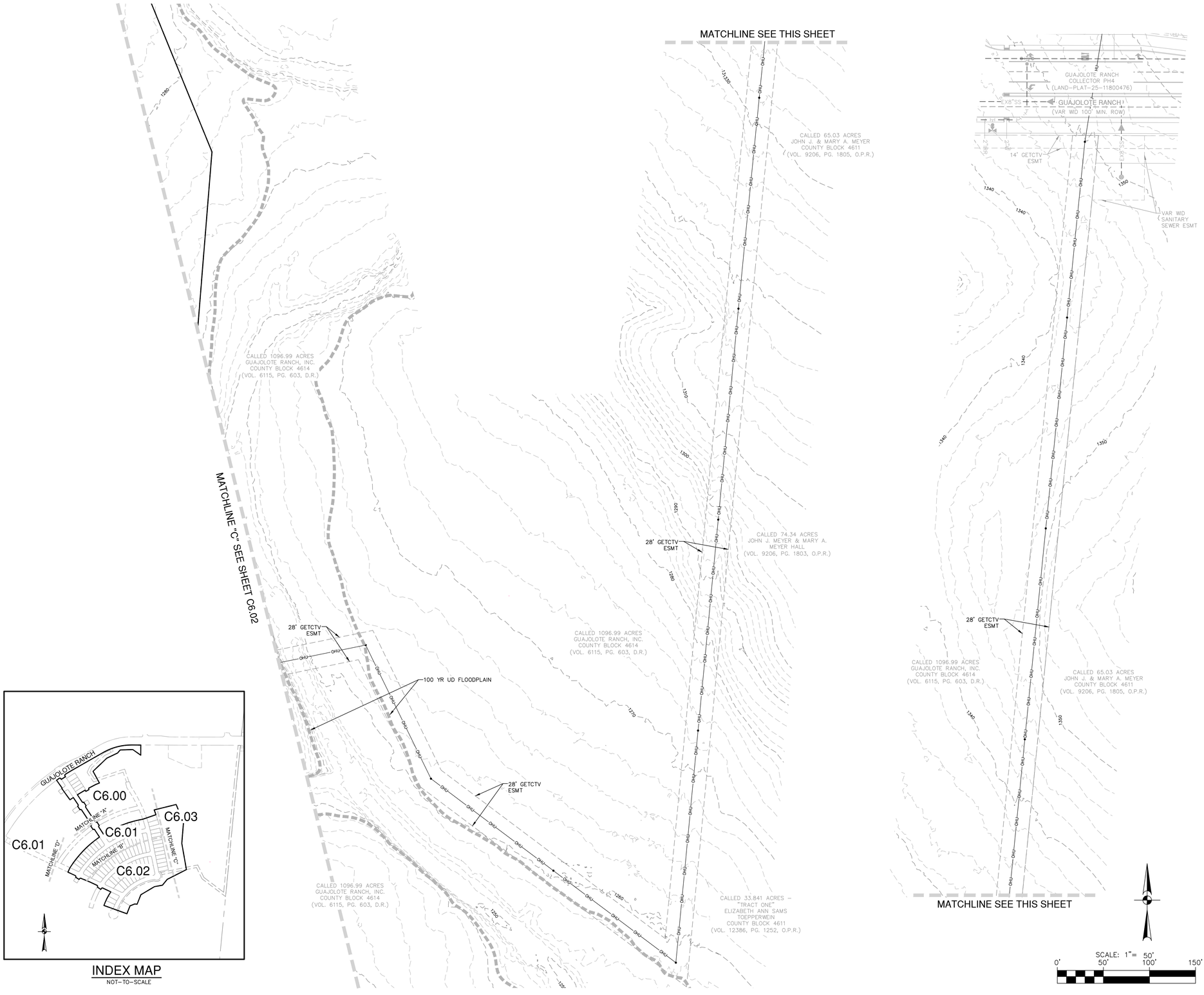

INDEX MAP
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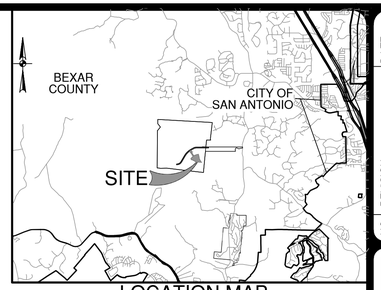

LOCATION MAP
NOT-TO-SCALE

UTILITY LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED WYE & LATERAL
- SINGLE WATER SERVICE
- STREET LIGHTS
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT
- VARIABLE WIDTH DRAINAGE EASEMENT
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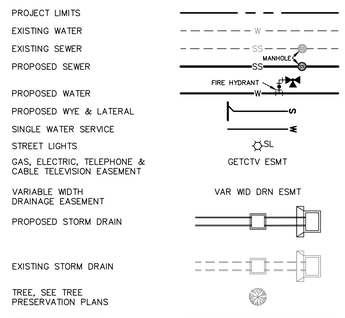

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

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SCALE: 1" = 50'
0' 50' 100' 150'

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
4/30/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C6.03

Date: Apr 29, 2026, 3:00pm User ID: CGarza
File: P:\123\36\21\Design\Civil\OU 123621.dwg

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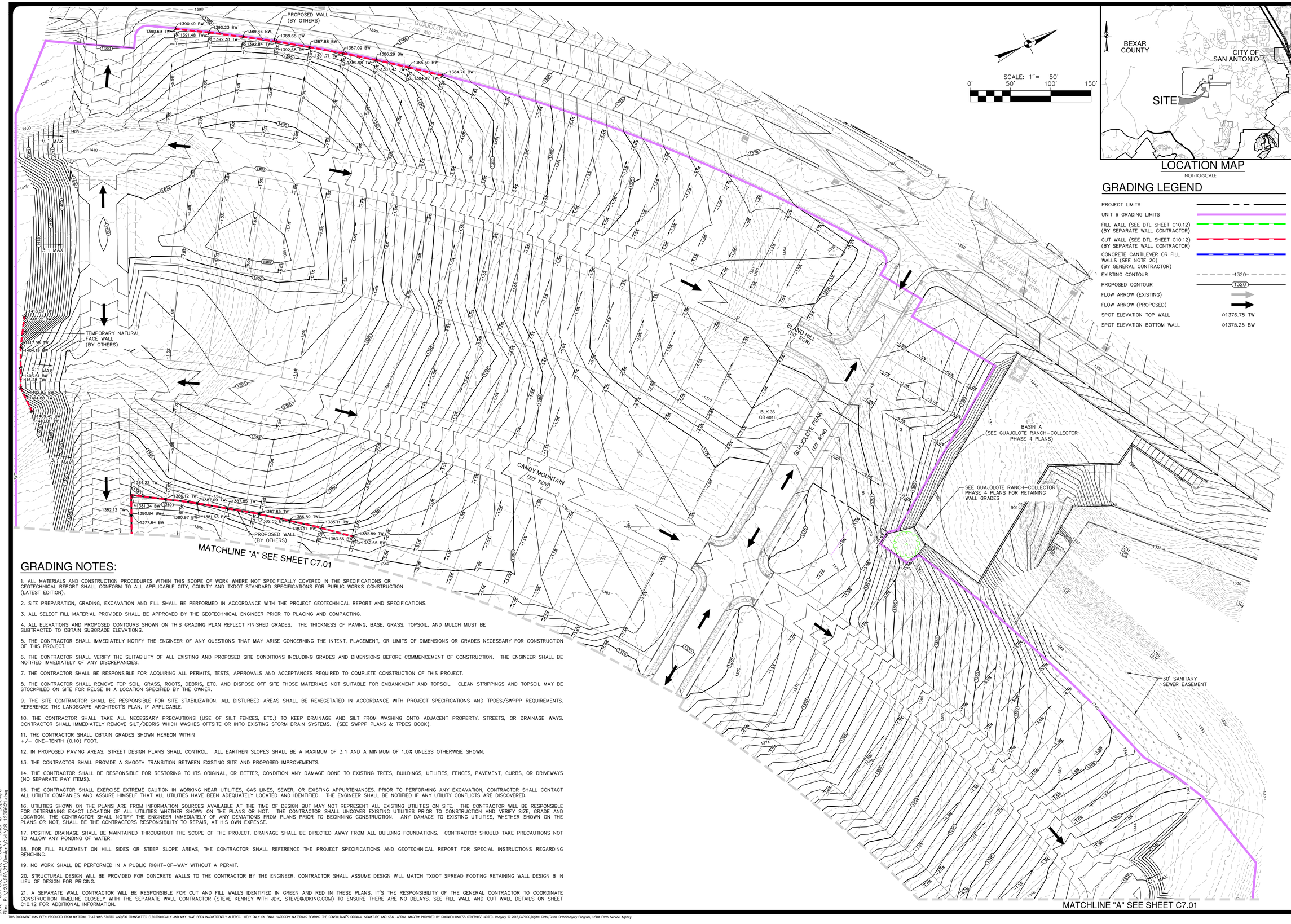

LOCATION MAP
NOT-TO-SCALE

GRADING LEGEND

PROJECT LIMITS	
UNIT 6 GRADING 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	1320
FLOW ARROW (EXISTING)	
FLOW ARROW (PROPOSED)	
SPOT ELEVATION TOP WALL	1376.75 TW
SPOT ELEVATION BOTTOM WALL	1375.25 BW

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT 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 GRADES 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 1.0% 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 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.

21. A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND RED IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEY WITH JDK, 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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN
(1 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C7.00

Date: Jun 08, 2026, 3:00pm User ID: BSpengler
File: P:\123\56\21\Design\Civil\GR 1235621.dwg

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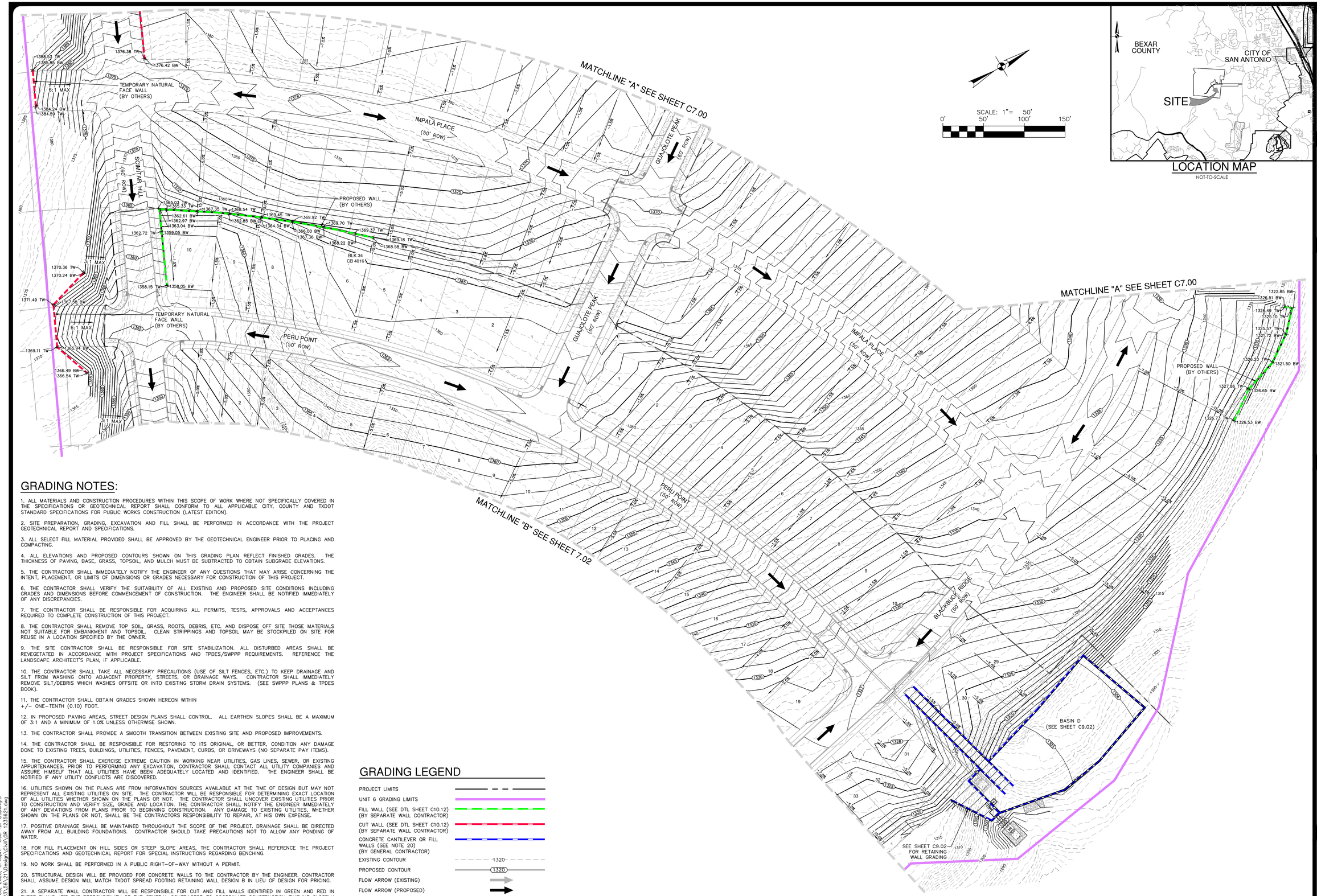

LOCATION MAP
NOT-TO-SCALE

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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 GRADES 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 1.0% 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 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.

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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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GRADING LEGEND

- PROJECT LIMITS
- UNIT 6 GRADING 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 1320
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SPOT ELEVATION TOP WALL 1376.75 TW
- SPOT ELEVATION BOTTOM WALL 1375.25 BW

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN
(2 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C7.01

Date: Jun 08, 2026, 3:46pm User ID: BSpengler
File: P:\123\56\21\Design\Civil\GR 1235621.dwg

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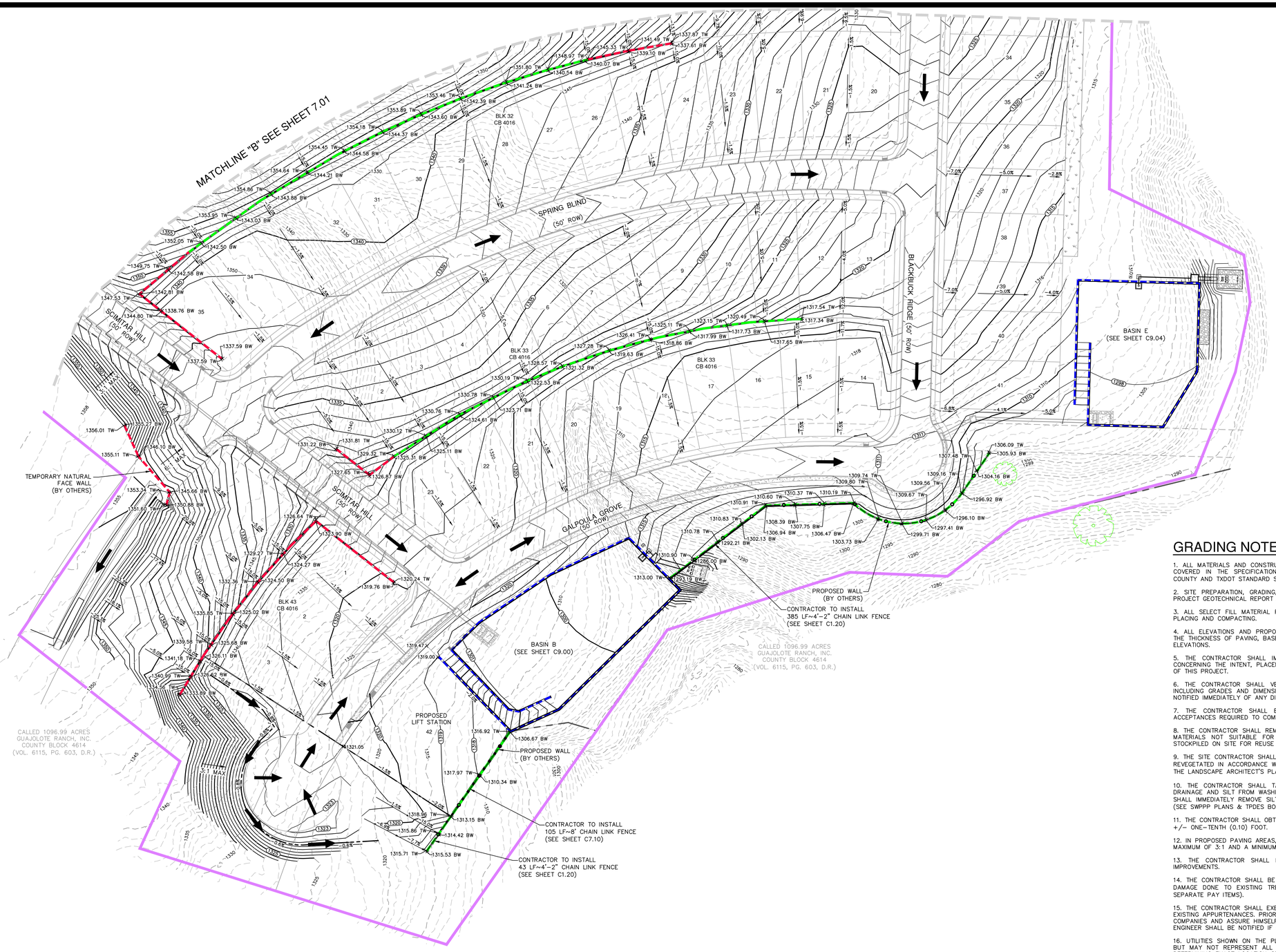

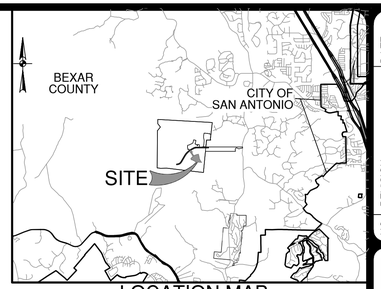

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

GRADING LEGEND

- PROJECT LIMITS
- UNIT 6 GRADING LIMITS
- FILL WALL (SEE DTL SHEET C10.12) (BY SEPARATE WALL CONTRACTOR)
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STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN (3 OF 3)

PLAT NO. 25-11800485
JOB NO. 12356–21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C7.02

Date: Jun 08, 2026, 3:50pm User ID: BSpengler
File: P:\123\36\21\Design\Civil\GR 1235621.dwg

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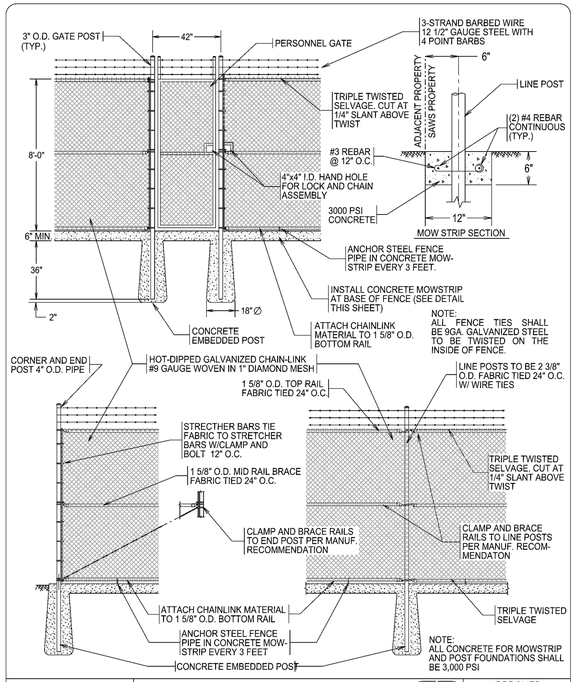
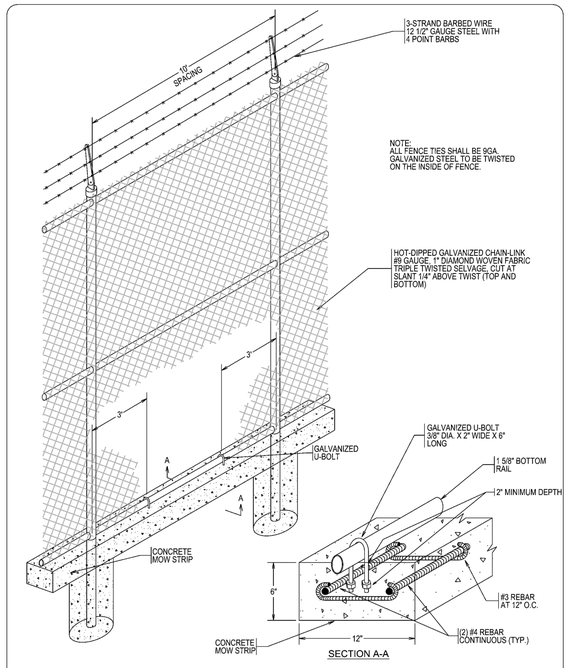


DD-903-17	SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	APPROVED: MARCH 2011
SHEET 1 OF 2	FENCE DETAILS	REVISED: FEB 2017



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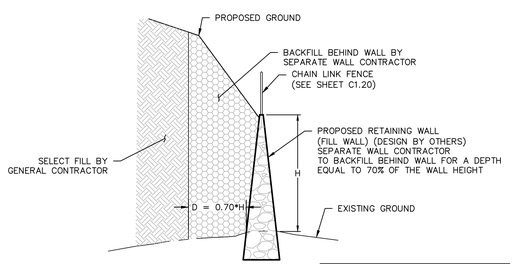

FILL WALL DETAIL

NOT-TO-SCALE

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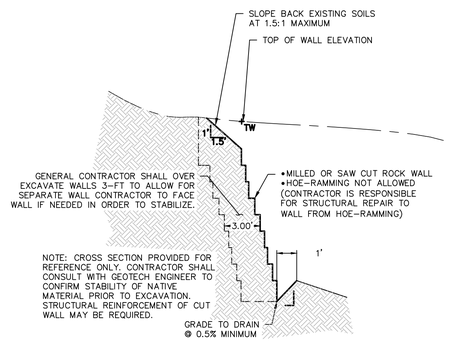

CUT WALL DETAIL

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NO.	REVISION	DATE

STATE OF TEXAS
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GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS
GRADING PLAN NOTES AND DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE APRIL 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C7.10

Date: Apr 09, 2026, 5:14pm User ID: SSepulveda
File: P:\123\56\21\Design\Civil\GROT 1235621.dwg

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NOTES

1. CONTRACTOR SHALL ENGAGE A TEXAS LICENSED STRUCTURAL ENGINEER TO PROVIDE A SIGNED AND SEALED SET OF STRUCTURAL PLANS, DETAILS AND SPECIFICATION FOR THE STRUCTURAL COMPONENTS OF THE POLLUTION ABATEMENT BASIN INCLUDING INLET DISCHARGE AND BYPASS COMPONENTS. CONTRACTOR SHALL ALSO PROVIDE FOR STRUCTURAL ENGINEER'S INSPECTION DURING BASIN CONSTRUCTION AND STRUCTURAL ENGINEER'S CONSTRUCTION CERTIFICATION UPON COMPLETION OF BASIN.

2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

4. BASIN HAS BEEN DESIGNED USING TSS REMOVAL AND BMP SIZING CALCULATIONS AS PER THE TCEQ TGM RG-348 (2005).

5. BASIN PLAN DEPICTS MINIMUM INTERIOR DIMENSIONS (LENGTH, WIDTH & HEIGHT FOR TCEQ REVIEW & APPROVAL. ACTUAL STRUCTURAL PLANS FOR CONSTRUCTION TO BE DESIGNED BY STRUCTURAL ENGINEER AT A LATER DATE.

6. BASIN DRAWDOWN IS CONTROLLED BY THE 6" PVC PIPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 15 HOURS.

7. CONTRACTOR TO SET THE VALVE POSITION TO FULLY CLOSED.

8. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

9. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 15 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

WATER QUALITY BASIN DESIGN DATA

BASIN WATERSHED AREA	=	787,129 SF (18.07 AC.)
RUN OFF DEPTH	=	1.80 INCHES
REQUIRED CAPTURE VOLUME	=	59,655 CF (1.37 AC-FT)
BASIN STORM WATER DEPTH	=	4.10 FT (AVG.)
BASIN CAPTURE VOLUME	=	61,242 CF (1.41 AC-FT)

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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 GRADES 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 1.0% 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 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.

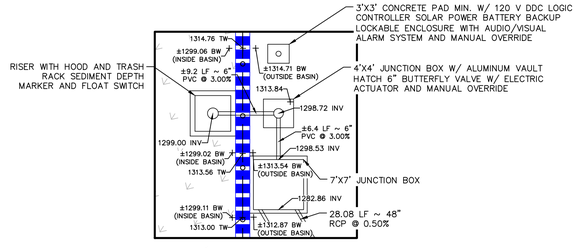
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.

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.

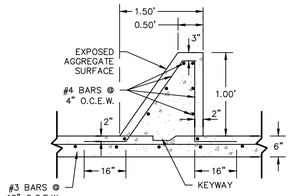
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

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.

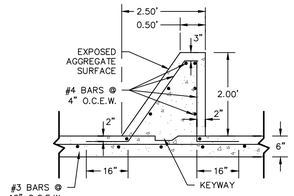
21. A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND RED IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEY WITH JDK, STEVE@JDKINC.COM) TO ENSURE THERE ARE NO DELAYS. SEE FILL WALL AND CUT WALL DETAILS ON SHEET C7.02 FOR ADDITIONAL INFORMATION.



DETAIL "A"
SCALE: 1" = 10'



BAFFLE BLOCK DETAIL 1
SECTION
NOT-TO-SCALE



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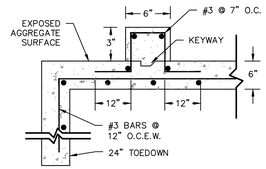
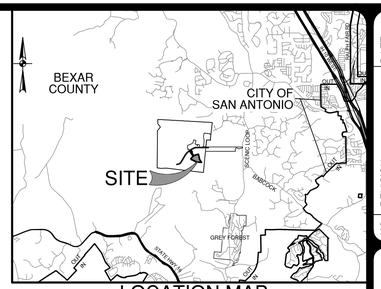


TYPICAL END SILL DETAIL
SECTION
NOT-TO-SCALE

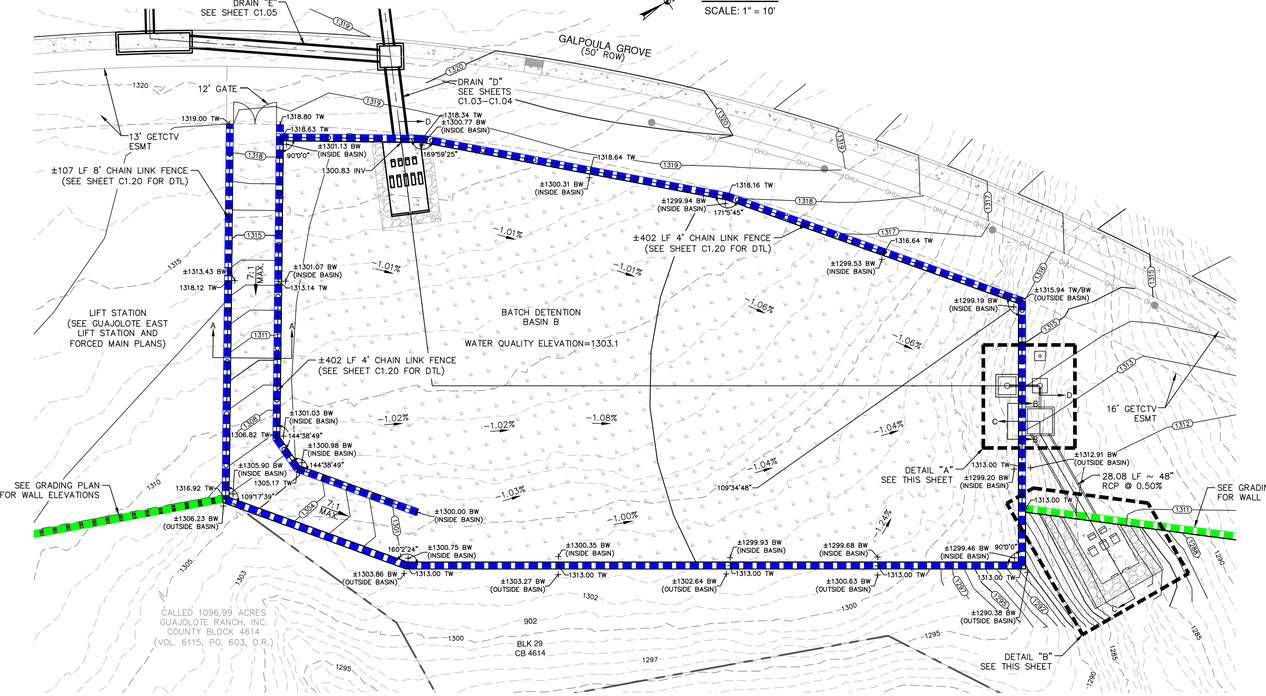
DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR UD FLOODPLAIN
- EXISTING CONTOUR — 1290
- PROPOSED CONTOUR — 1300
- TOP OF WALL — TW
- BOTTOM OF WALL — BW
- FILL WALL (BY SEPARATE WALL CONTRACTOR)
- CUT WALL (BY SEPARATE WALL CONTRACTOR)
- CONCRETE CANTILEVER OR FILL WALLS (BY GENERAL CONTRACTOR)(SEE NOTE 20)
- AREA TO BE PERMANENTLY STABILIZED/VEGETATED
- PROPOSED CONCRETE
- PROPOSED ROCK RUBBLE
- PROPOSED STORM DRAIN

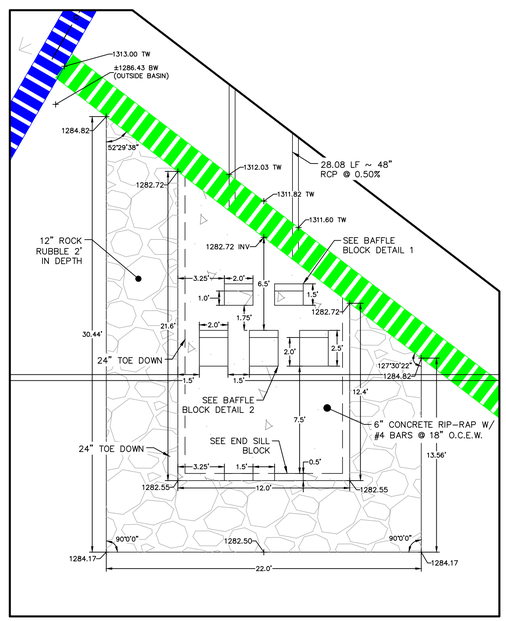


LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'



DETAIL "B"
SCALE: 1" = 5'



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. 48029C0090F EFFECTIVE DATE 9/29/2010.

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.

NOTES

1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.

2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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.

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 1

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

BASIN B PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.00

Date: Jun 08, 2026, 4:35pm User ID: BSpengler
File: P:\123\56\21\Design\Civil\BA-B-123621.dwg

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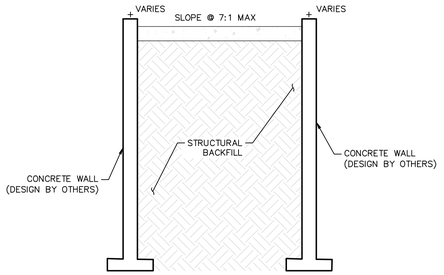
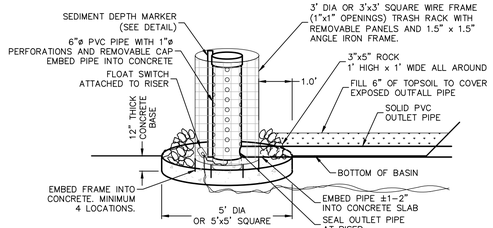


SECTION A-A

NOT TO SCALE



OUTLET STRUCTURE DETAIL WITH SURFACE OUTFALL PIPE

NOT-TO-SCALE

OVERFLOW WEIR CALCULATIONS

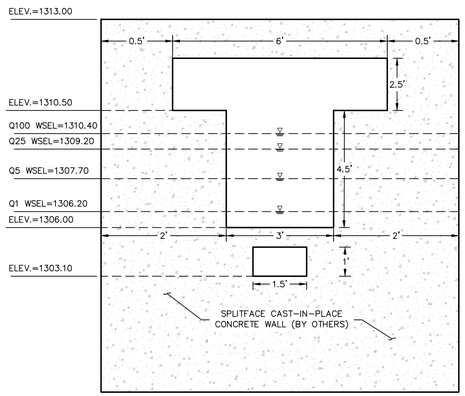
LOWER WEIR ELEV= 1306.0, UPPER WEIR ELEV=1310.5

$Q_{100} = (Cw)(L)(h)^{3/2}$

$Q_{100\ TOTAL} =$ 157.3 cfs

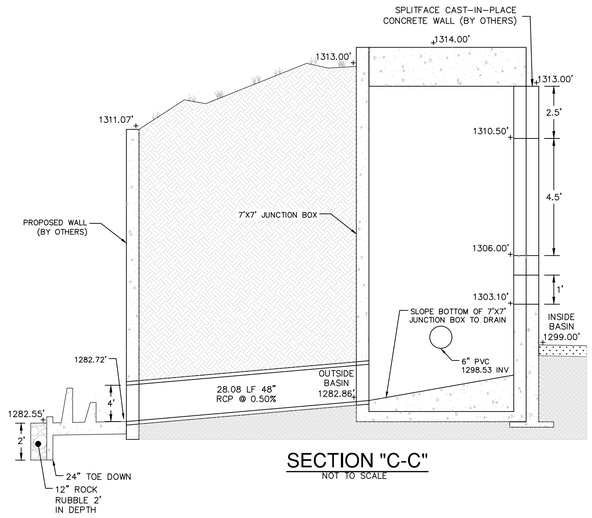
LOWER WEIR FLOW CALCULATION:		UPPER WEIR FLOW CALCULATION:	
C	= 3.087	$Q_{100\ UPPER} =$	157.30 − 88.40 = 68.9 cfs
L	= 3 ft	C	= 3.087
h	= 1306.0 − 1310.5 = 4.5 ft	L	= 6 ft
$Q_{25\ LOWER} =$	$(3.087)(3)(4.5)^{3/2} = 88.40$ cfs	68.9 =	$(3.087)(6)(h)^{3/2}$
		h_{UPPER}	= 2.09 ft

h = 4.50 + 2.09 = 6.59 ft --> 1306.0 + 6.59 = 1312.59 ft



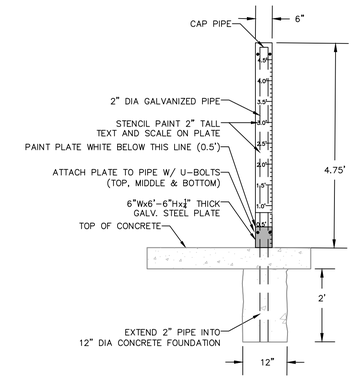
SECTION "B-B"

(NOT TO SCALE)



SECTION "C-C"

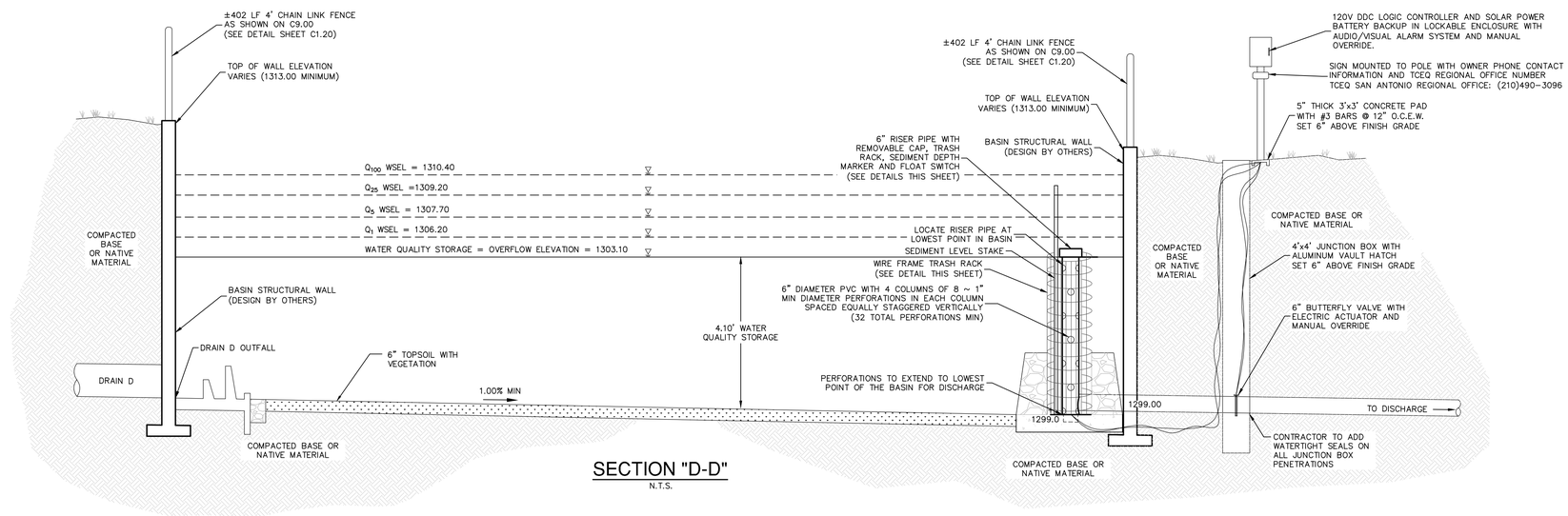
NOT TO SCALE



SEDIMENT DEPTH MARKER

NOT TO SCALE

NOTE: ONCE SEDIMENT IS ABOVE THE 6" DESIGNATION, THE BASIN MUST BE CLEANED OUT TO DESIGN ELEVATIONS AND VOLUMES PER PLAN.



SECTION "D-D"

N.T.S.

NOTES TO CONTRACTOR

FOR EACH PHASE OF BASIN CONSTRUCTION

1. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:

   a.) 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.

   b.) BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3. 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.

4. 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

5. 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.

6. THE MAXIMUM 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 MAXIMUM 48 HOUR DRAW-DOWN TIME.

NOTES:

1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

2. 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.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

NOTES

1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.

2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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 2

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/12/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

BASIN B DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.01

Date: May 12, 2026, 9:27am User ID: JonathanGroff
File: P:\12\356\21\Design\Civil\BA-B-123621.dwg

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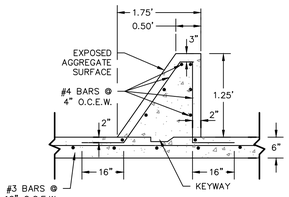

BAFFLE BLOCK DETAIL 1 SECTION

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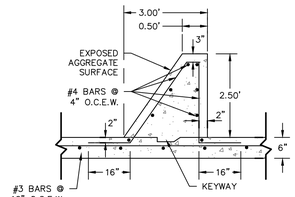

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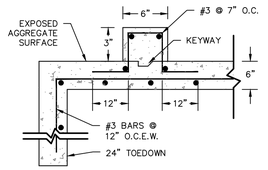

TYPICAL END SILL DETAIL SECTION

NOT-TO-SCALE

WATER QUALITY BASIN DESIGN DATA

BASIN WATERSHED AREA	=	475,240 SF (10.91 AC.)
RUN OFF DEPTH	=	2.80 INCHES
REQUIRED CAPTURE VOLUME	=	56,862 CF (1.31 AC-FT)
BASIN STORM WATER DEPTH	=	4.40 FT (AVG.)
BASIN CAPTURE VOLUME	=	58,273 CF (1.34 AC-FT)

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT 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.

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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 GRADES 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 1.0% 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 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.

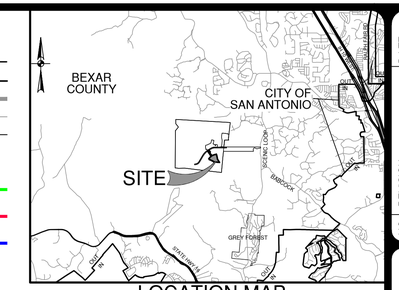
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

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.

21. A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND RED IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEY WITH JDK, STEVE@JDKINC.COM) TO ENSURE THERE ARE NO DELAYS. SEE FILL WALL AND CUT WALL DETAILS ON SHEET C7.02 FOR ADDITIONAL INFORMATION.

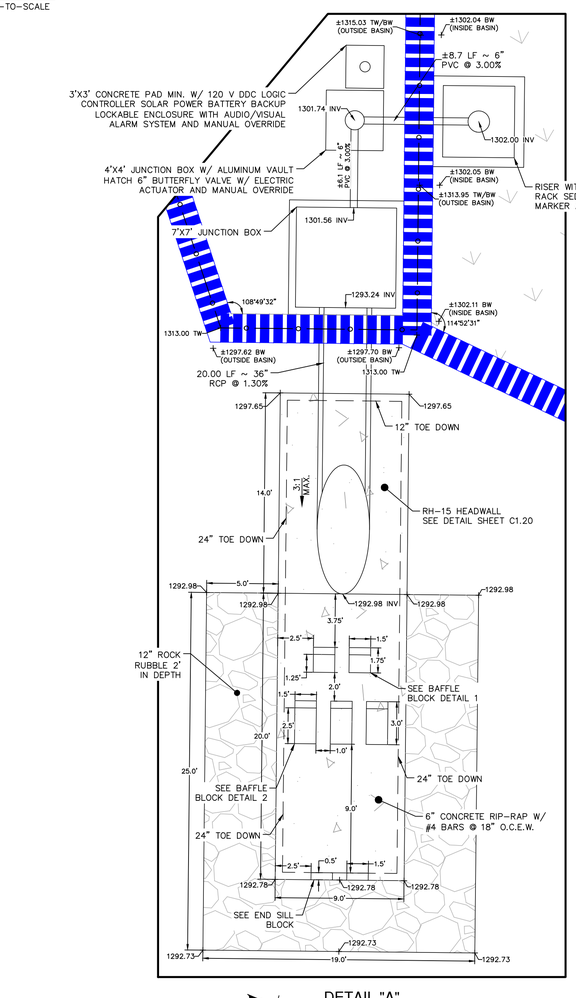
DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR UD FLOODPLAIN
- EXISTING CONTOUR (1290)
- PROPOSED CONTOUR (1301)
- TOP OF WALL (TW)
- BOTTOM OF WALL (BW)
- FILL WALL (BY SEPARATE WALL CONTRACTOR)
- CUT WALL (BY SEPARATE WALL CONTRACTOR)
- CONCRETE CANTILEVER OR FILL WALLS (BY GENERAL CONTRACTOR)(SEE NOTE 20)
- AREA TO BE PERMANENTLY STABILIZED/VEGETATED
- PROPOSED CONCRETE
- PROPOSED ROCK RUBBLE
- PROPOSED STORM DRAIN



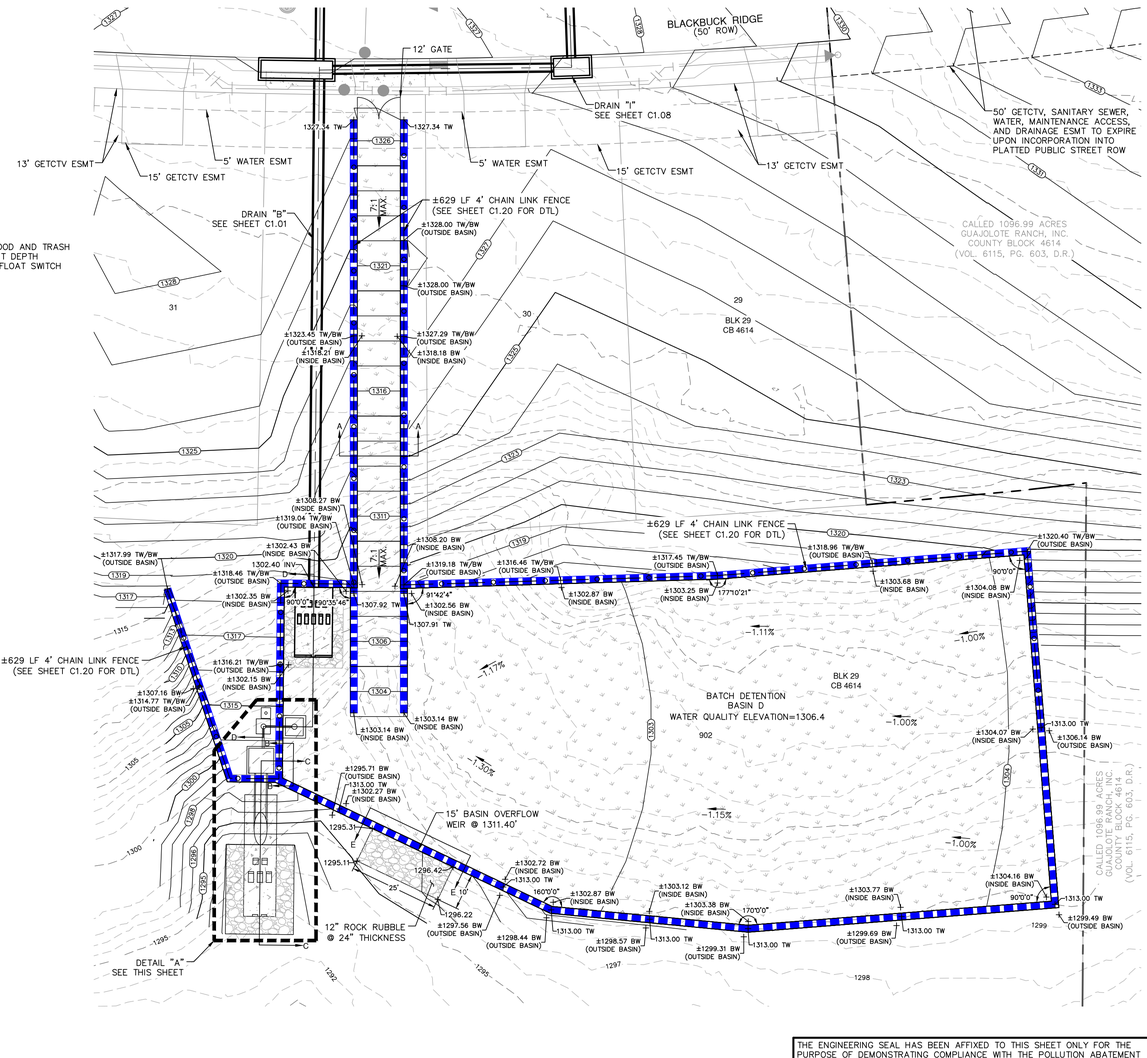
LOCATION MAP

NOT-TO-SCALE



DETAIL "A"

SCALE: 1" = 5'



NOTES

1. CONTRACTOR SHALL ENGAGE A TEXAS LICENSED STRUCTURAL ENGINEER TO PROVIDE A SIGNED AND SEALED SET OF STRUCTURAL PLANS, DETAILS AND SPECIFICATION FOR THE STRUCTURAL COMPONENTS OF THE POLLUTION ABATEMENT BASIN INCLUDING INLET DISCHARGE AND BYPASS COMPONENTS CONTRACTOR SHALL ALSO PROVIDE FOR STRUCTURAL ENGINEER'S INSPECTION DURING BASIN CONSTRUCTION AND STRUCTURAL ENGINEER'S CONSTRUCTION CERTIFICATION UPON COMPLETION OF BASIN.

2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

4. BASIN HAS BEEN DESIGNED USING TSS REMOVAL AND BMP SIZING CALCULATIONS AS PER THE TCEQ TGM RG-348 (2005).

5. BASIN PLAN DEPICTS MINIMUM INTERIOR DIMENSIONS (LENGTH, WIDTH & HEIGHT FOR TCEQ REVIEW & APPROVAL. ACTUAL STRUCTURAL PLANS FOR CONSTRUCTION TO BE DESIGNED BY STRUCTURAL ENGINEER AT A LATER DATE.

6. BASIN DRAWDOWN IS CONTROLLED BY THE 6" PVC PIPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 14 HOURS.

7. CONTRACTOR TO SET THE VALVE POSITION TO FULLY CLOSED.

8. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

9. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 14 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

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. 48029C0090F EFFECTIVE DATE 9/29/2010.

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.

NOTES

1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.

2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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.

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 3

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
6/8/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

BASIN D PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.02

Date: Jun 08, 2026, 4:15pm User ID: BSpengler
File: P:\123\56\21\Design\Civil\BA-D-123562I.dwg

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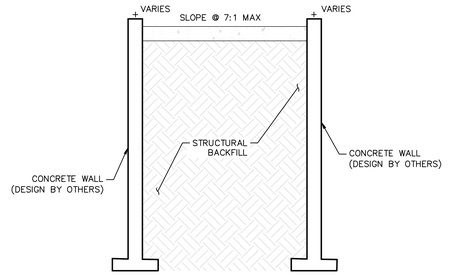
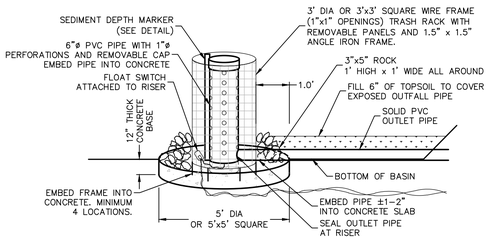


SECTION A-A

NOT TO SCALE



OUTLET STRUCTURE DETAIL WITH SURFACE OUTFALL PIPE

NOT-TO-SCALE

OVERFLOW WEIR CALCULATIONS

WEIR ELEV= 1311.40 ft

$Q_{100} = (Cw)(L)(h)^{3/2}$

$Q_{100\ TOTAL}$= 101.2 cfs

WEIR FLOW CALCULATION:

C = 3.087

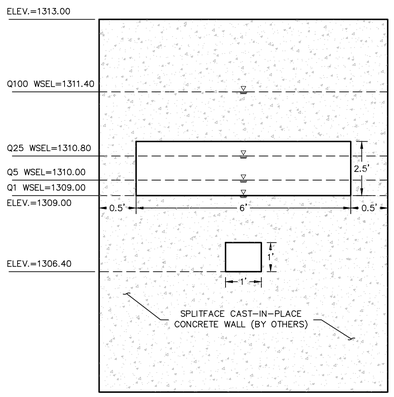
L = 15.0 ft

$101.2 = (3.087)(25.0)(h)^{3/2}$

h = 1.20

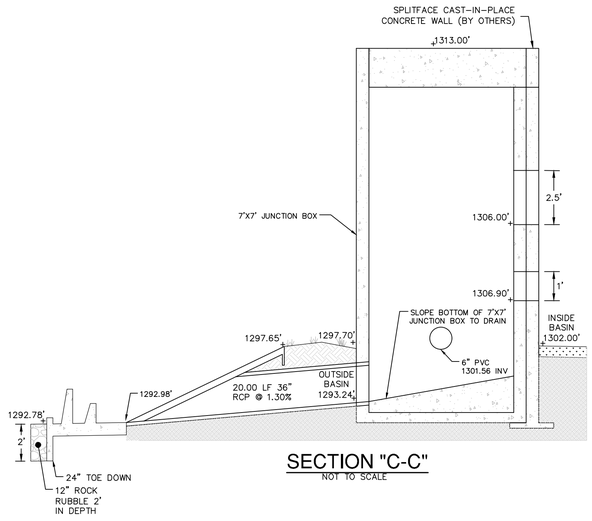
WEIR + h = 1311.40 ft + 1.20 ft = 1312.60 ft

1312.60 ft + < 1313 ft = TOP OF BASIN



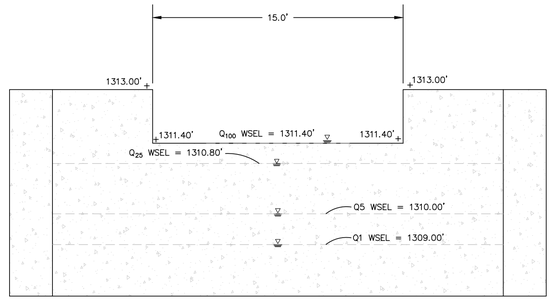
SECTION "B-B"

(NOT TO SCALE)



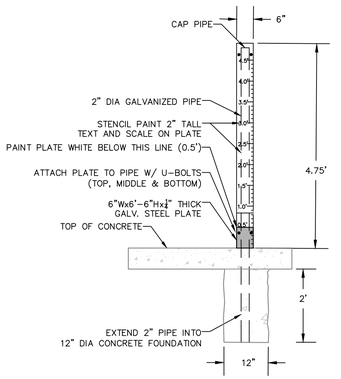
SECTION "C-C"

NOT TO SCALE



SECTION E-E

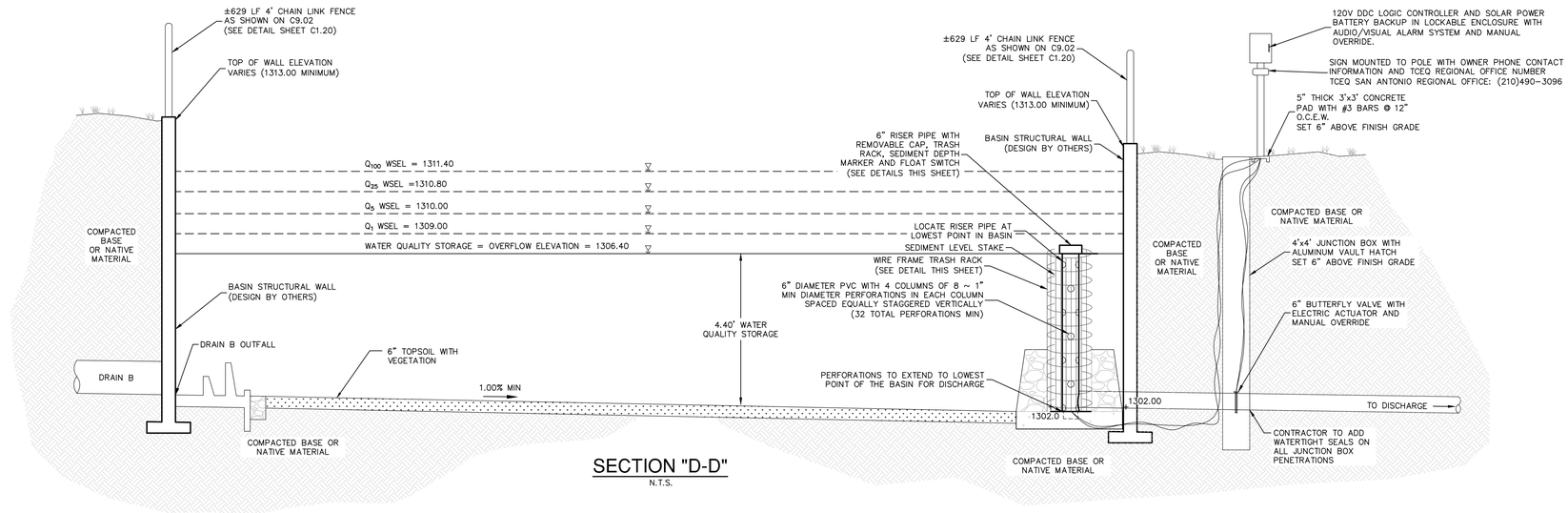
NOT TO SCALE



SEDIMENT DEPTH MARKER

NOT TO SCALE

NOTE: ONCE SEDIMENT IS ABOVE THE 6" DESIGNATION, THE BASIN MUST BE CLEANED OUT TO DESIGN ELEVATIONS AND VOLUMES PER PLAN.



SECTION "D-D"

N.T.S.

NOTES TO CONTRACTOR

FOR EACH PHASE OF BASIN CONSTRUCTION

1. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:

   a.) 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.

   b.) BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3. 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.

4. 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

5. 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.

6. THE MAXIMUM 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 MAXIMUM 48 HOUR DRAW-DOWN TIME.

NOTES:

1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

2. 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.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

NOTES

1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.

2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/12/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

BASIN D DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.03

Date: May 12, 2026, 9:27am User ID: JonathanGroff
File: P:\12\35\21\Design\Civil\BA-D-123521.dwg

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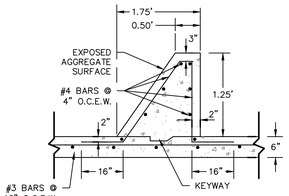
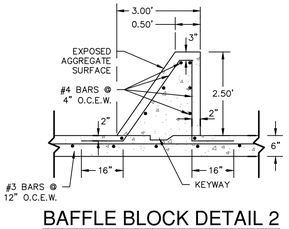
WATER QUALITY BASIN DESIGN DATA

BASIN WATERSHED AREA	=	352,836 SF (8.10 AC.)
RUN OFF DEPTH	=	3.33 INCHES
REQUIRED CAPTURE VOLUME	=	48,355 CF (1.11 AC-FT)
BASIN STORM WATER DEPTH	=	3.90 FT (AVG.)
BASIN CAPTURE VOLUME	=	48,629CF (1.12 AC-FT)



BAFFLE BLOCK DETAIL 1 SECTION

NOT-TO-SCALE



BAFFLE BLOCK DETAIL 2 SECTION

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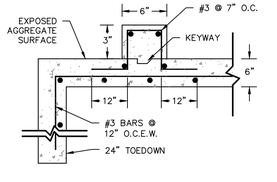


TYPICAL END SILL DETAIL SECTION

NOT-TO-SCALE

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT 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 GRADES 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 1.0% 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 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.

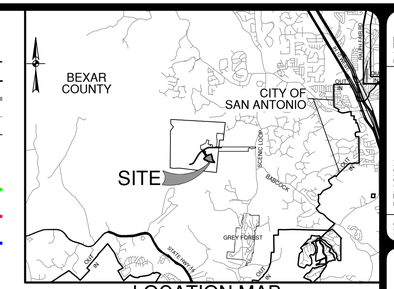
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

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.

21. A SEPARATE WALL CONTRACTOR WILL BE RESPONSIBLE FOR CUT AND FILL WALLS IDENTIFIED IN GREEN AND RED IN THESE PLANS. IT'S THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE CONSTRUCTION TIMELINE CLOSELY WITH THE SEPARATE WALL CONTRACTOR (STEVE KENNEY WITH JDK, STEVE@JDKINC.COM) TO ENSURE THERE ARE NO DELAYS. SEE FILL WALL AND CUT WALL DETAILS ON SHEET C7.02 FOR ADDITIONAL INFORMATION.

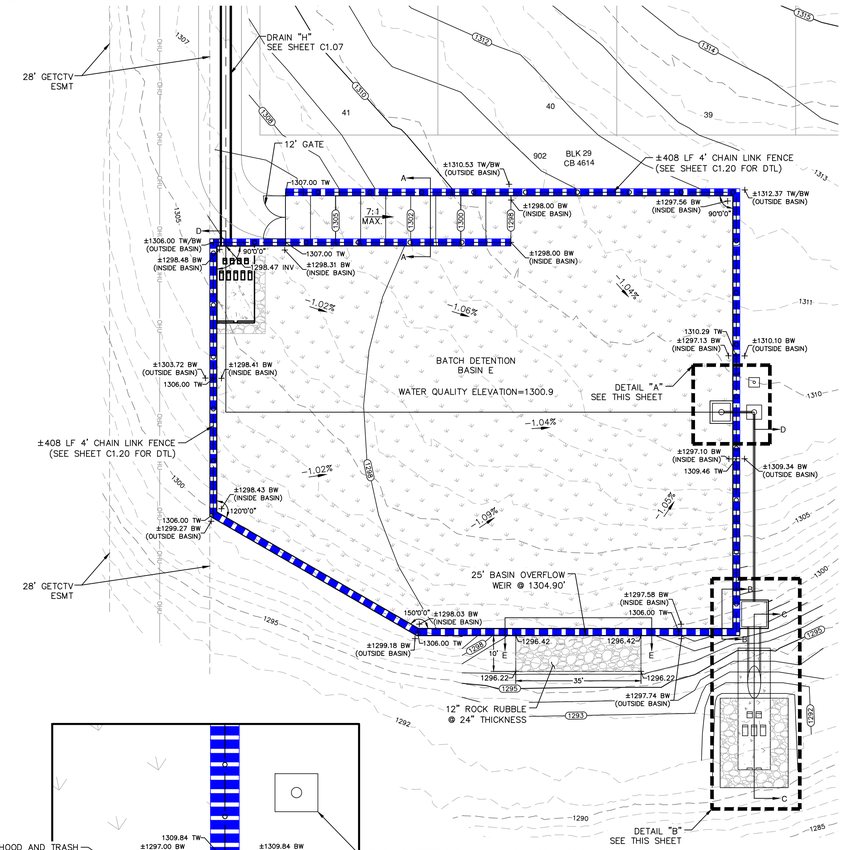
DRAINAGE LEGEND

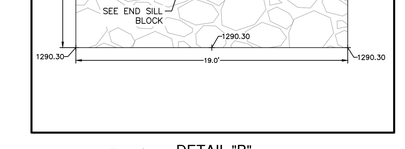
- PROJECT LIMITS
- 100 YR UD FLOODPLAIN
- EXISTING CONTOUR — 1290
- PROPOSED CONTOUR — 1301
- TOP OF WALL — TW
- BOTTOM OF WALL — BW
- FILL WALL (BY SEPARATE WALL CONTRACTOR)
- CUT WALL (BY SEPARATE WALL CONTRACTOR)
- CONCRETE CANTILEVER OR FILL WALLS (BY GENERAL CONTRACTOR)(SEE NOTE 20)
- AREA TO BE PERMANENTLY STABILIZED/VEGETATED
- PROPOSED CONCRETE
- PROPOSED ROCK RUBBLE
- PROPOSED STORM DRAIN



LOCATION MAP

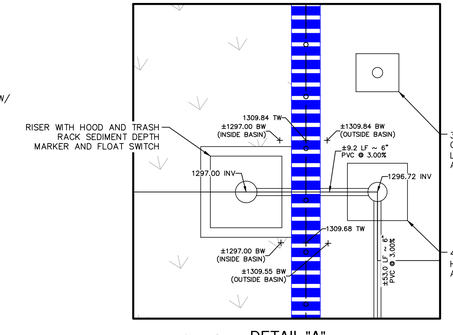
NOT-TO-SCALE





DETAIL "B"

SCALE: 1" = 5'



DETAIL "A"

SCALE: 1" = 5'

NOTES

1. CONTRACTOR SHALL ENGAGE A TEXAS LICENSED STRUCTURAL ENGINEER TO PROVIDE A SIGNED AND SEALED SET OF STRUCTURAL PLANS, DETAILS AND SPECIFICATION FOR THE STRUCTURAL COMPONENTS OF THE POLLUTION ABATEMENT BASIN INCLUDING INLET DISCHARGE AND BYPASS COMPONENTS. CONTRACTOR SHALL ALSO PROVIDE FOR STRUCTURAL ENGINEER'S INSPECTION DURING BASIN CONSTRUCTION AND STRUCTURAL ENGINEER'S CONSTRUCTION CERTIFICATION UPON COMPLETION OF BASIN.

2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

4. BASIN HAS BEEN DESIGNED USING TSS REMOVAL AND BMP SIZING CALCULATIONS AS PER THE TCEQ TGM RG-348 (2005).

5. BASIN PLAN DEPICTS MINIMUM INTERIOR DIMENSIONS (LENGTH, WIDTH & HEIGHT FOR TCEQ REVIEW & APPROVAL. ACTUAL STRUCTURAL PLANS FOR CONSTRUCTION TO BE DESIGNED BY STRUCTURAL ENGINEER AT A LATER DATE.

6. BASIN DRAWDOWN IS CONTROLLED BY THE 6" PVC PIPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 12 HOURS.

7. CONTRACTOR TO SET THE VALVE POSITION TO FULLY CLOSED.

8. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

9. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

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. 48029C0090F EFFECTIVE DATE 9/29/2010.

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.

NOTES

1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.

2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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.

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

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
6/8/26

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

GUAJOLOTE RANCH-UNIT 6

BEXAR COUNTY, TEXAS

BASIN E PLAN

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE JUNE 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.04

Date: Jun 08, 2026, 4:51pm User ID: BSpengler
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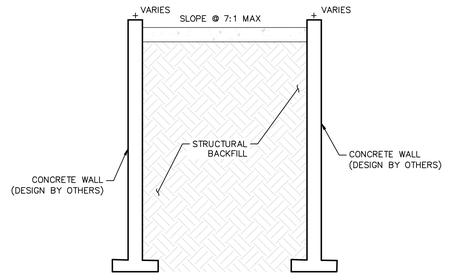
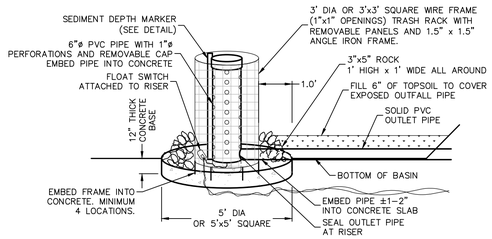
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE© UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.



SECTION A-A
NOT TO SCALE



OUTLET STRUCTURE DETAIL WITH SURFACE OUTFALL PIPE
NOT-TO-SCALE

OVERFLOW WEIR CALCULATIONS

WEIR ELEV= 1304.90 ft

$Q_{100} = (Cw)(L)(h)^{3/2}$

$Q_{100\ TOTAL}$= 76.6 cfs

WEIR FLOW CALCULATION:

C = 3.087

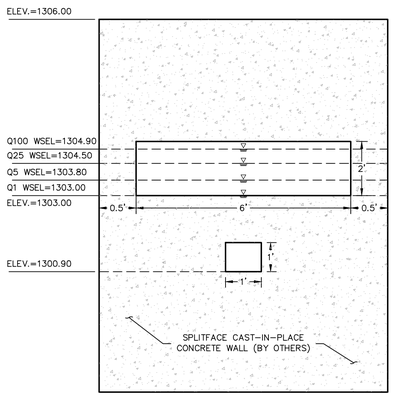
L = 25.0 ft

$76.6 = (3.087)(25.0)(h)^{3/2}$

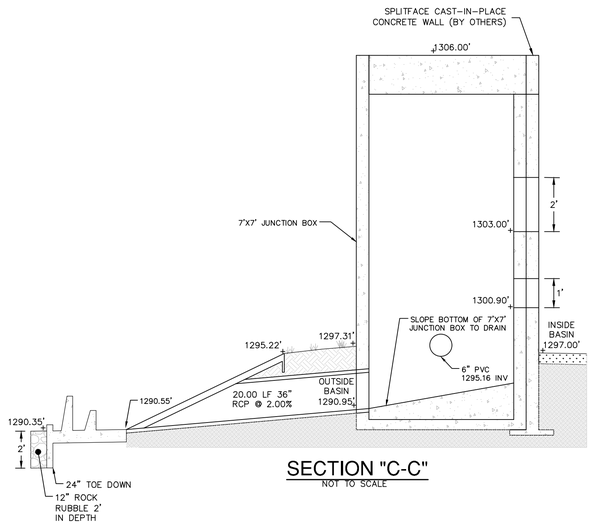
h = 1.00

WEIR + h = 1304.90 ft + 1.00 ft = 1305.90 ft

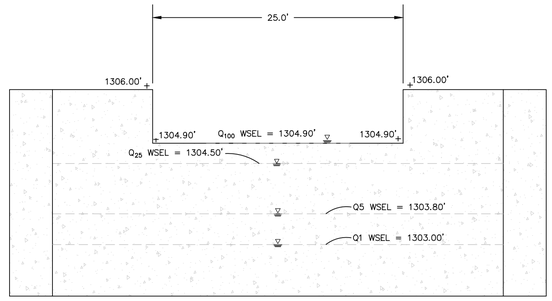
1305.90 ft + < 1306 ft = TOP OF BASIN



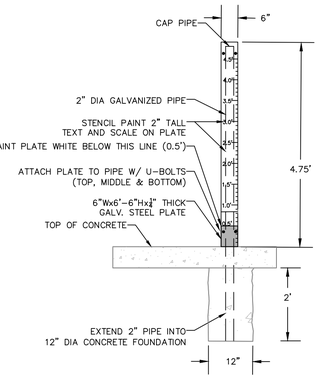
SECTION "B-B"
(NOT TO SCALE)



SECTION "C-C"
NOT TO SCALE

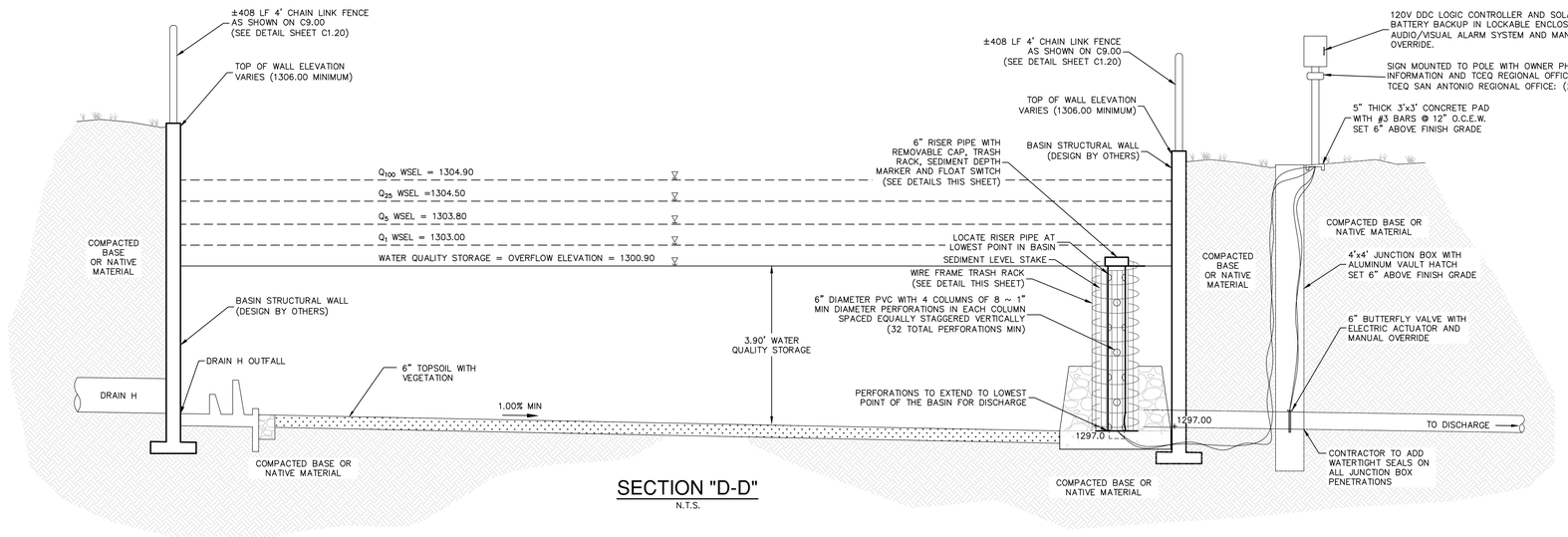


SECTION E-E
NOT TO SCALE



SEDIMENT DEPTH MARKER
NOT TO SCALE

NOTE: ONCE SEDIMENT IS ABOVE THE 6" DESIGNATION, THE BASIN MUST BE CLEANED OUT TO DESIGN ELEVATIONS AND VOLUMES PER PLAN.



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

NOTES TO CONTRACTOR
FOR EACH PHASE OF BASIN CONSTRUCTION

1. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:

   a.) 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.

   b.) BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3. 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.

4. 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

5. 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.

6. THE MAXIMUM 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 MAXIMUM 48 HOUR DRAW-DOWN TIME.

NOTES:

1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASIN PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

2. 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.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

NOTES
1. CONTRACTOR SHALL PHASE CONSTRUCTION AND/OR PROVIDE NECESSARY BMPS TO MITIGATE INTERIM CONDITIONS RUNOFF DURING CONSTRUCTION DUE TO CLEARING, GRADING, SUBGRADE PREPARATION, PAVING, BUILDINGS, ETC., AND TO PREVENT ADVERSE IMPACTS TO OTHER PROPERTY, STRUCTURES, AND INFRASTRUCTURE DURING CONSTRUCTION.
2. DETENTION POND EXCAVATION AND/OR EMBANKMENT NECESSARY FOR PROVIDING STORAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO CITY INSPECTION OF STREET SUBGRADE, CURB, FLEX BASE, AND PAVEMENT WITHIN THE WATERSHED DRAINING TO THE DETENTION POND.

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EXHIBIT 6

NO.	REVISION	DATE

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
5/12/26

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

GUAJOLOTE RANCH-UNIT 6
BEXAR COUNTY, TEXAS

BASIN E DETAILS

PLAT NO. 25-11800485
JOB NO. 12356-21
DATE MAY 2026
DESIGNER SS
CHECKED BS DRAWN BR
SHEET C9.05

Date: May 12, 2026, 9:28am User ID: JonathanGroff
File: P:\12\35\21\Design\Civil\BA-E-123521.dwg

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