BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS

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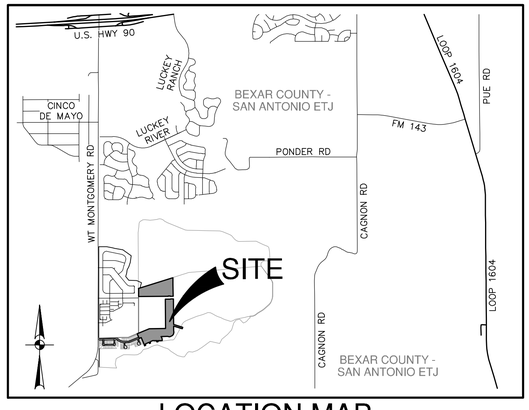

LOCATION MAP

NOT-TO-SCALE

PREPARED FOR:

LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TEXAS 78216

JULY 2025

PAPE-DAWSON ENGINEERS

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

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER

Jon Adame
7-31-25

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SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 214 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF 15" 20 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 224.5 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1,491 LF 2" 1,897 LF 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

SHEET C0.00

PLAT NO. 24-11800449 PD JOB NO. 13055-21 BLOSSOM RANCH UNIT 1B

Date: Jul 31, 2025, 8:05pm User ID: odavila
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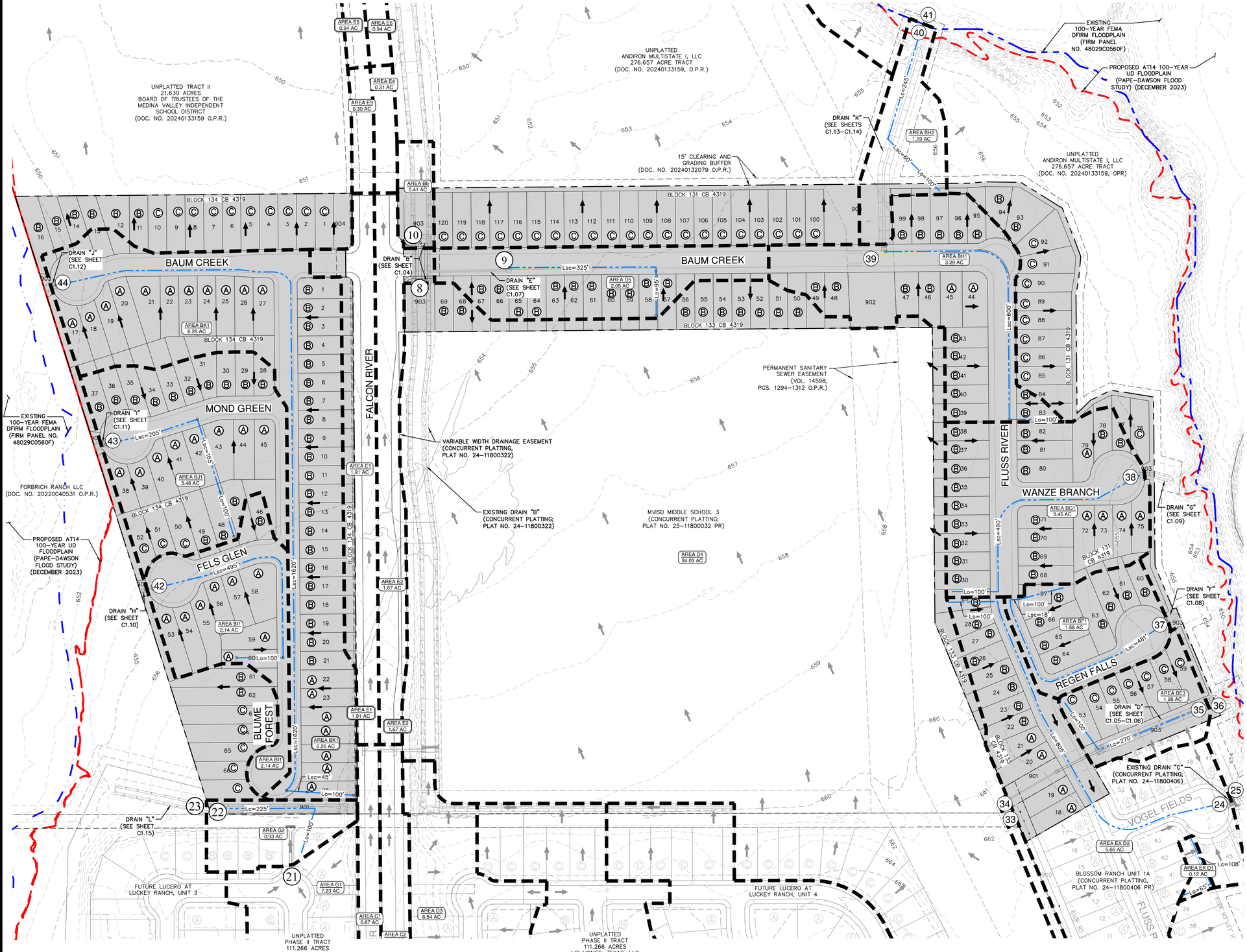

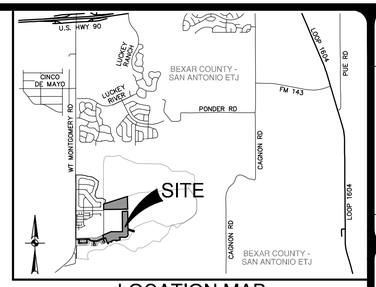

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 100'

0' 100' 200' 300'

DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR (690)
- PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)
- EXISTING 100-YEAR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 48029C0530F)
- RUNOFF FLOW PATH
- DRAINAGE AREA BOUNDARY
- DIRECTION OF FLOW
- DRAINAGE CALCULATION POINT (11)
- DRAINAGE AREA (AREA B 1.00 AC)
- FHA LOT GRADING TYPE (A)

CAUTION !!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH OF PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

DRAINAGE & GRADING NOTES:

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

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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL DRAINAGE PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.00

Date: Jul 31, 2025, 7:52pm User ID: adavila
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Proposed Conditions Calculations

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (Seelye) L_O (FT)	S_O (ft/ft)	T_O* (MN)	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)	$T_{C\text{-}TOT}$	Rational Method Q=CIA IDF Curve: CoSA_A14_PA4 Return Year	Intensity (in/hr)	Q (cfs)
32	Sidewalk Box	BE1	7.63	0.65	1,720	65	0.01	12	1,655	P	0.01	1.8	15.2	-	-	-	-	-	-	-	-	27	5	3.88	19.2
																						27	25	5.32	26.4
																						27	100	6.60	32.7
33	Channel	BE2	2.78	0.65	1,024	100	0.01	14	405	U	0.01	1.1	5.9	-	-	-	-	-	519	6.0	1.4	21	5	4.40	8.0
																						21	25	6.05	10.9
																						21	100	7.52	13.6
34	Channel	BE1+BE2	10.41	0.65		(REFERENCE ACCUMULATED FLOW RATE TABLE)																0	5	-	27.2
																						0	25	-	37.3
																						0	100	-	46.3
35	Channel	BE3	1.26	0.77	370	100	0.01	15				-	-	-	-	-	-	-	270	5.4	0.8	15	5	5.24	5.1
																						15	25	7.24	7.0
																						15	100	9.03	8.8
36	Channel	BE1+BE2+BE3	11.67	0.66		(REFERENCE ACCUMULATED FLOW RATE TABLE)																0	5	-	32.3
																						0	25	-	44.3
																						0	100	-	55.1
37	Sidewalk Box	BF1	1.58	0.77	599	100	0.01	15	18	U	0.01	1.6	0.2	481	P	0.01	1.8	4.4	-	-	-	19	5	4.63	5.6
																						19	25	6.37	7.7
																						19	100	7.93	9.6
38	Sidewalk Box	BG1	3.45	0.77	590	100	0.01	15	490	P	0.01	2.1	3.8	-	-	-	-	-	-	-	-	18	5	4.76	12.6
																						18	25	6.56	17.4
																						18	100	8.16	21.7
39	Sidewalk Box	BH1	3.29	0.77	700	100	0.01	15	600	P	0.01	1.8	5.7	-	-	-	-	-	-	-	-	20	5	4.51	11.4
																						20	25	6.21	15.7
																						20	100	7.71	19.5
40	Channel	BH2	1.19	0.77	405	100	0.01	17	60	U	0.01	1.1	0.9	-	-	-	-	-	245	2.3	1.8	19	5	4.63	4.2
																						19	25	6.37	5.8
																						19	100	7.93	7.3
41	Channel	BH1+BH2	4.48	0.77		(REFERENCE ACCUMULATED FLOW RATE TABLE)																0	5	-	15.6
																						0	25	-	21.5
																						0	100	-	26.8
42	Sidewalk Box	BI1	2.14	0.77	595	100	0.01	15	495	P	0.01	1.6	5.2	-	-	-	-	-	-	-	-	20	5	4.51	7.4
																						20	25	6.21	10.2
																						20	100	7.71	12.7
43	Sidewalk Box	BJ1	3.46	0.77	470	100	0.02	13	165	U	0.01	1.6	1.7	205	P	0.01	1.6	2.2	-	-	-	16	5	5.06	13.5
																						16	25	6.99	18.6
																						16	100	8.71	23.2
44	Sidewalk Box	BK1	6.26	0.77	1,765	100	0.02	13	45	U	0.02	2.0	0.4	1,620	P	0.01	1.4	18.8	-	-	-	32	5	3.56	17.2
																						32	25	4.87	23.5
																						32	100	6.04	29.1
8	Channel	A1+A2+B1+B2+B3+C1(ACCEPT)+C2(ACCEPT)+D1+D2+D3+D4	REFERENCE STRAUS TRACT - SECONDARY ARTERIAL (PLAT NO. 24-11800322) STORM WATER MANAGEMENT REPORT FOR HYDRAULIC CALCULATIONS																			5	-	216.1
																						25	-	296.2
																						100	-	367.3
9	Curb Inlet	D5	2.05	0.77	420	95	0.02	13	325	P	0.01	1.6	3.4	-	-	-	-	-	-	-	-	16	5	5.06	8.0
																						16	25	6.99	11.0
																						16	100	8.71	13.7
10	Channel	A1+A2+B1+B2+B3+C1(ACCEPT)+C2(ACCEPT)+D1+D2+D3+D4+D5	-	-		(REFERENCE ACCUMULATED FLOW RATE TABLE)																0	5	-	224.1
																						0	25	-	307.2
																						0	100	-	381.0
21	Sidewalk Box	G1	7.23	0.67	1,350	100	0.01	14	1,250	P	0.01	1.6	13.2	-	-	-	-	-	-	-	-	27	5	3.88	18.8
																						27	25	5.32	25.8
																						27	100	6.60	32.0
22	Channel	G2	0.93	0.67	325	100	0.01	14				-	-	-	-	-	-	-	225	2.4	1.6	15	5	5.24	3.3
																						15	25	7.24	4.5
																						15	100	9.03	5.6
23	Channel	G1+G2	8.16	0.67		(REFERENCE ACCUMULATED FLOW RATE TABLE)																0	5	-	22.1
																						0	25	-	30.3
																						0	100	-	37.6
24	Sidewalk Box	EX D2	5.66	0.77	905	100	0.02	13	805	P	0.01	1.8	7.4	-	-	-	-	-	-	-	-	20	5	4.51	19.7
																						20	25	6.21	27.1
																						20	100	7.71	33.6
25	Sidewalk Box	EX D1+EX D2	REFERENCE BLOSSOM RANCH UNIT 1A (PLAT NO. 24-11800406) STORM WATER MANAGEMENT REPORT FOR HYDRAULIC CALCULATIONS																			5	4.51	20.1
																						25	6.21	27.6
																						100	7.71	34.3

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*

$$T_o = \frac{(0.007(nL)^{0.8})}{(P2^{0.5}*S^{0.4})} * 60$$

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

Accumulated Flow Rates
Proposed Conditions Calculations

Ref. Point	Return Year	Contributing Flow: Upstream Watershed #	$Q_{WATERSHED}$ (cfs)	Upstream Surface Bypass: Surf Byp. Upstream Ref. Point	$Q_{SURF\text{-}UP}$ (cfs)	Upstream Pipe Flow: Pipe Upstream Ref. Point	$Q_{PIPE\text{-}UP}$ (cfs)	Reference Sub-point T: $Q_{INLET\text{-}TOTAL}$ (cfs)	C: $Q_{CAPTURED}$ (cfs)	B: Q_{BYPASS} (cfs)	P: Q_{PIPE} (cfs)
34	5	33	8.0	32	19.2	N/A	0.0	**27.2**	27.2	-	27.2
	25		10.9		26.4		0.0	**37.3**	37.3	-	37.3
	100		13.6		32.7		0.0	**46.3**	46.3	-	46.3
36	5	35	5.1	34	27.2	N/A	0.0	**32.3**	32.3	-	32.3
	25		7.0		37.3		0.0	**44.3**	44.3	-	44.3
	100		8.8		46.3		0.0	**55.1**	55.1	-	55.1
41	5	40	4.2	39	11.4	N/A	0.0	**15.6**	15.6	-	15.6
	25		5.8		15.7		0.0	**21.5**	21.5	-	21.5
	100		7.3		19.5		0.0	**26.8**	26.8	-	26.8
10	5	9	8.0	8	216.1	N/A	0.0	**224.1**	224.1	-	224.1
	25		11.0		296.2		0.0	**307.2**	307.2	-	307.2
	100		13.7		367.3		0.0	**381.0**	381.0	-	381.0
23	5	22	3.3	21	18.8	N/A	0.0	**22.1**	22.1	-	22.1
	25		4.5		25.8		0.0	**30.3**	30.3	-	30.3
	100		5.6		32.0		0.0	**37.6**	37.6	-	37.6

DATE
NO. REVISION

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL DRAINAGE PLAN CALCULATIONS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.01

Date: Jul 31, 2025, 3:02pm User ID: anthony.olvarado
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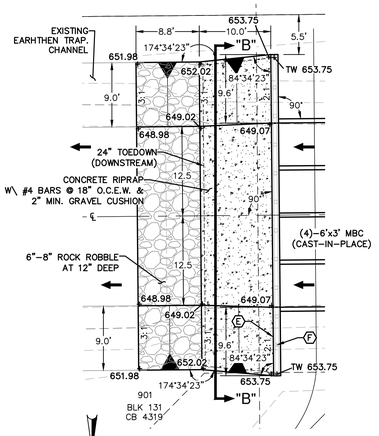
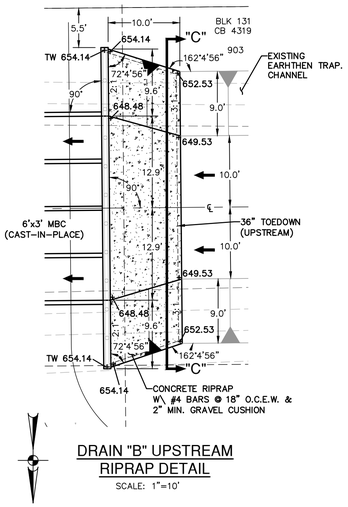


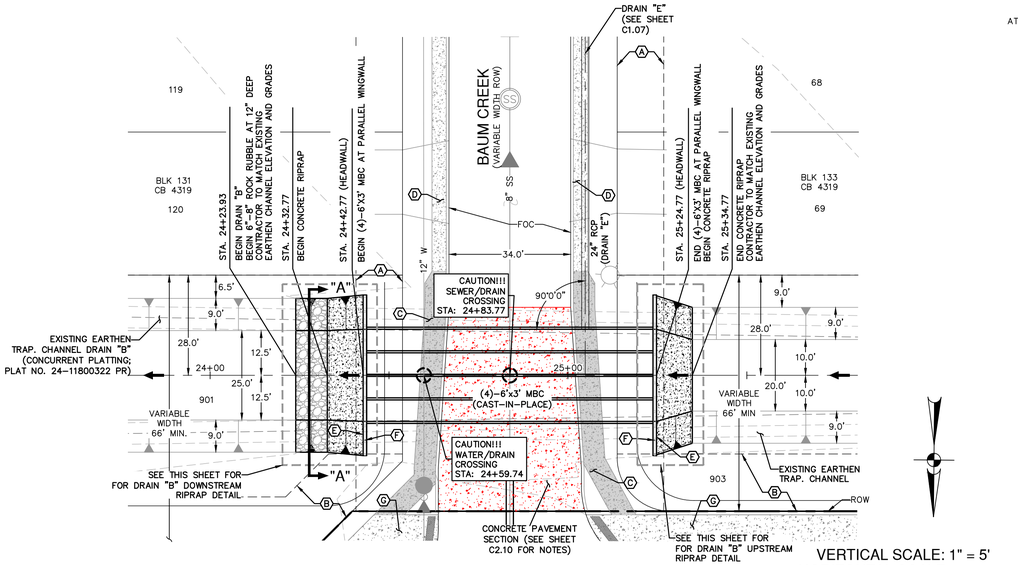
DRAIN "B" DOWNSTREAM RIPRAP DETAIL

SCALE: 1"=10'



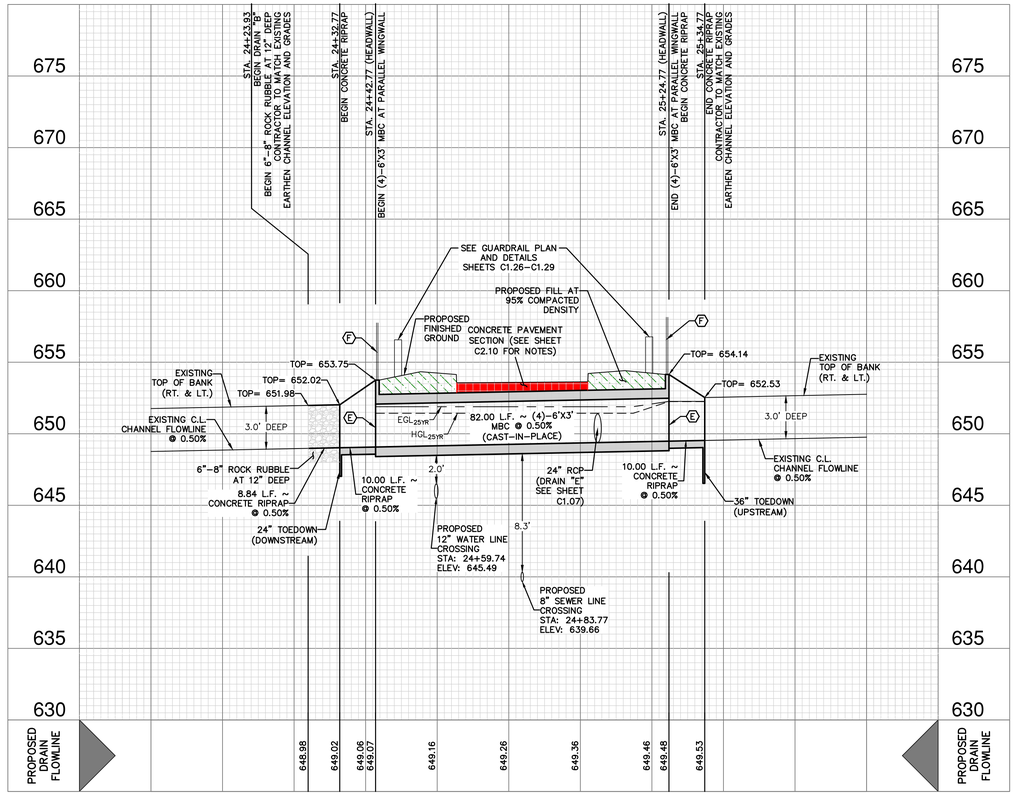
DRAIN "B" UPSTREAM RIPRAP DETAIL

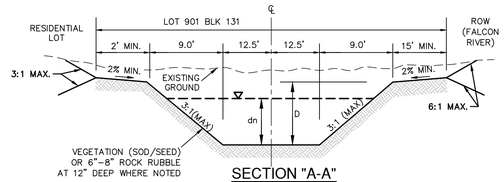
SCALE: 1"=10'



DRAIN "B" ~ STA. 24+23.93 TO STA. 25+34.77

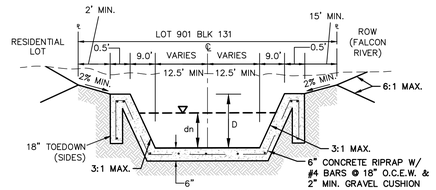
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'





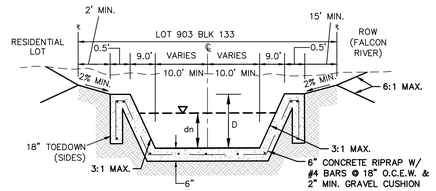
SECTION "A-A"
EARTHEN TRAP. CHANNEL

NOT-TO-SCALE



SECTION "B-B"
CONCRETE TRAP. CHANNEL

NOT-TO-SCALE



SECTION "C-C"
CONCRETE TRAP. CHANNEL

NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 24+23.93 TO 24+32.77	
Q25	= 307.2 CFS
Bw	= 25'
n	= 0.038
S	= 0.50%
D	= 3.00'
dn	= 2.31'
V	= 4.16 fps
τ_d	= 0.58 LB/FT^2 RC= B,C,D RC= ROCK, D50=6IN 2.5 LB/FT^2

HYDRAULIC CALCULATIONS CONC. TRAP. CHANNEL (SECTION B-B) STA. 24+32.77 TO 24+42.77	
Q25	= 307.2 CFS
Bw	= 25'
n	= 0.015
S	= 0.50%
D	= 3.00'
dn	= 1.36'
V	= 7.77 fps

HYDRAULIC CALCULATIONS CONC. TRAP. CHANNEL (SECTION C-C) STA. 25+24.77 TO 25+34.77	
Q25	= 296.2 CFS
Bw	= 20'
n	= 0.015
S	= 0.50%
D	= 3.00'
dn	= 1.50'
V	= 8.06 fps

SCALE: 1"= 20'

0' 20' 40' 60'

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322)
- (C) 6' DEVELOPER SIDEWALK
- (D) 4' SIDEWALK
- (E) PARALLEL WINGWALL (SEE SHEET C1.23 & C1.24 FOR DETAIL)
- (F) 44 LF ~ PIPE RAILING (SEE SHEET C2.10 FOR DETAIL)
- (G) 15' MULTI-USE PATH (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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.

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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "B" ~ STA. 24+23.93 TO STA. 25+34.77
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.04

Date: Jul 31, 2025, 3:04pm User ID: anthony.alvarado
File: P:\130\65\21\Design\Civil\SDA1-13055121.dwg

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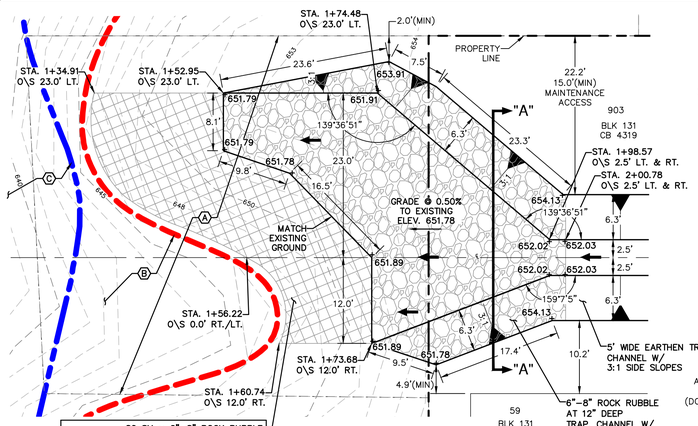
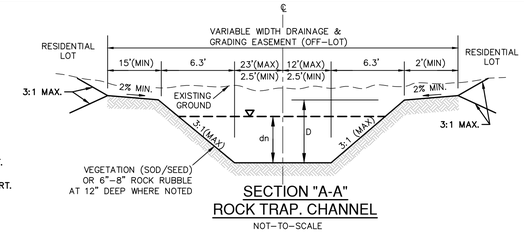


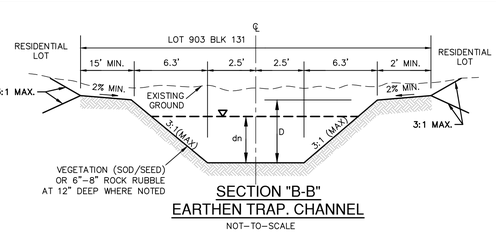
DRAIN "D" OUTFALL DETAIL

SCALE: 1"=10'



SECTION "A-A"
ROCK TRAP. CHANNEL

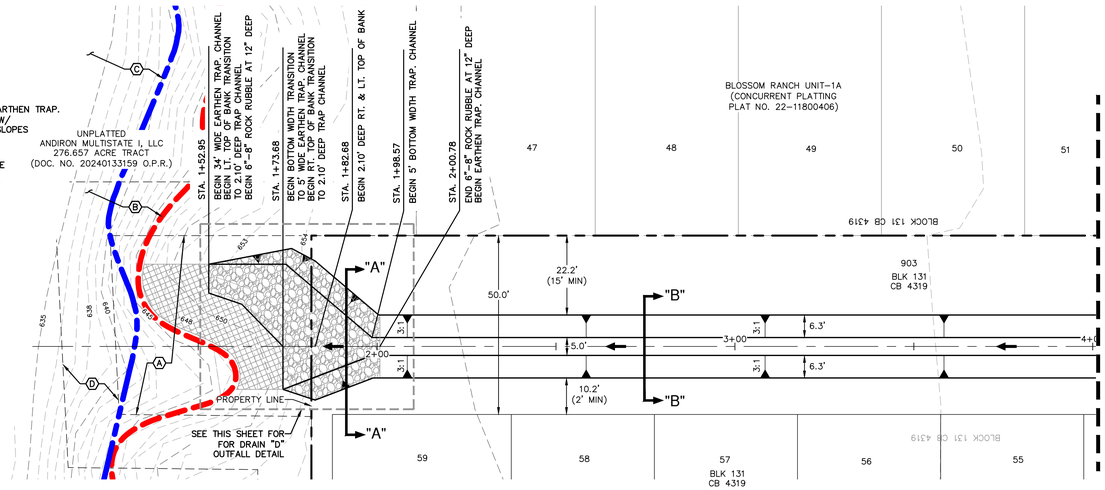
NOT-TO-SCALE



SECTION "B-B"
EARTHEN TRAP. CHANNEL

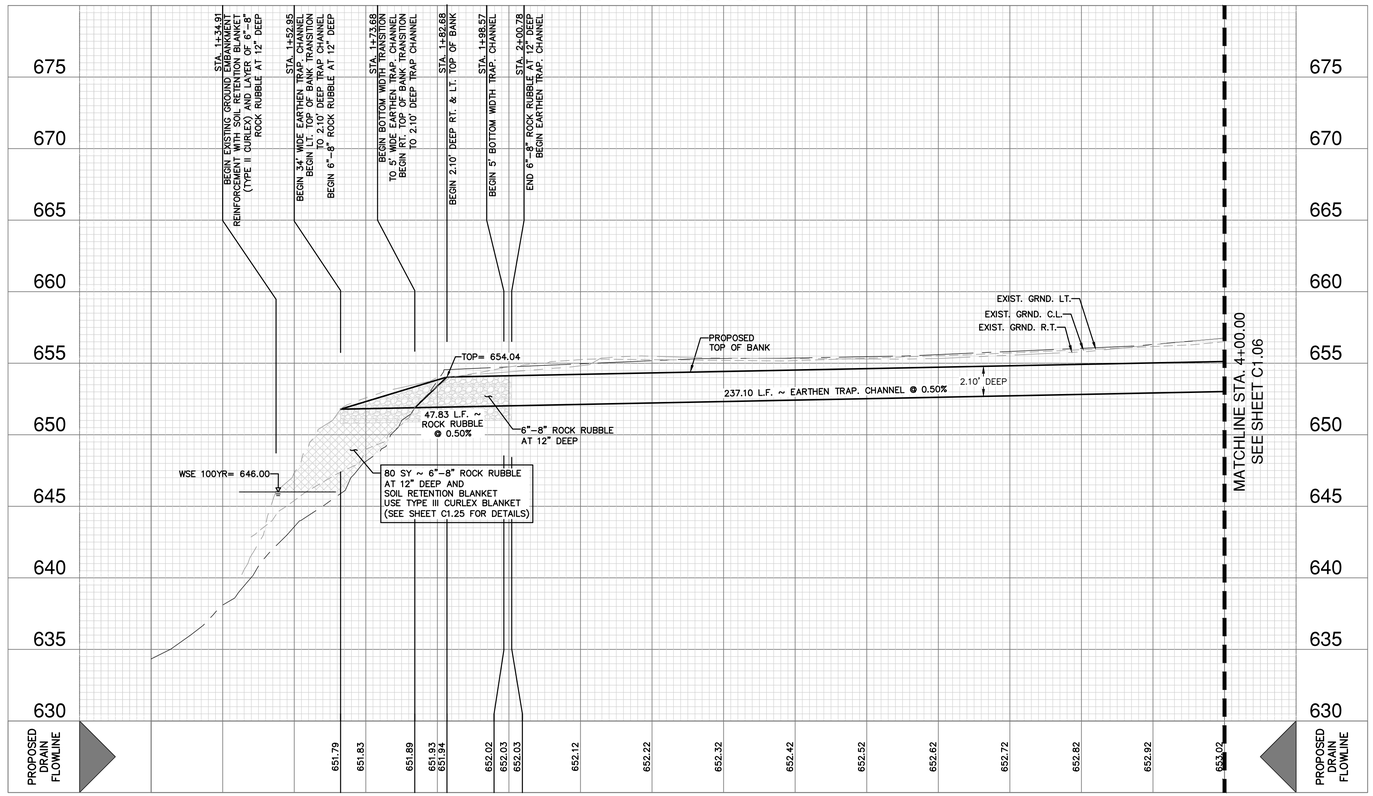
NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+52.95 TO 1+73.68	HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+73.68 TO 2+00.78	HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION B-B) STA. 2+00.78 TO 4+37.88
Q25 = 44.3 CFS	Q25 = 44.3 CFS	Q25 = 44.3 CFS
Bw = 35'	Bw = 5'	Bw = 5'
n = 0.038	n = 0.038	n = 0.035
S = 0.50%	S = 0.50%	S = 0.50%
D = 2.10'	D = 2.10'	D = 2.10'
dn = 0.62'	dn = 1.60'	dn = 1.54'
V = 1.94 fps	V = 2.83 fps	V = 2.99 fps
τ_d = 0.18 LB/FT^2 RC= ROCK, D50=6IN 2.5 LB/FT^2	τ_d = 0.32 LB/FT^2 RC= ROCK, D50=6IN 2.5 LB/FT^2	τ_d = 0.31 LB/FT^2 RC= B,C,D,E



DRAIN "D" ~ STA. 1+34.91 TO STA. 4+00.00

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



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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (B) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)
- (C) EXISTING 100-YEAR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 48029C0530F)
- (D) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO. 20240132079 OPR)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

DRAINAGE & GRADING NOTES:

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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.

CAUTION!!

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TRENCH EXCAVATION SAFETY PROTECTION:

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "D" ~ STA. 1+34.91 TO STA. 4+00.00
DRAIN PLAN & PROFILE

PLAT NO.	24-11800449
JOB NO.	13055-21
DATE	JULY 2025
DESIGNER	CB
CHECKED AS	DRAWN CB
SHEET	C1.05

Date: Jul 31, 2025, 3:04pm User ID: gantonio.olvarado
File: P:\13055\21\Design\Civil\SIA1-13055121.dwg

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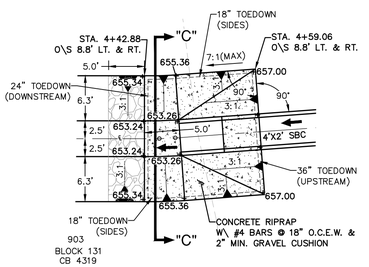
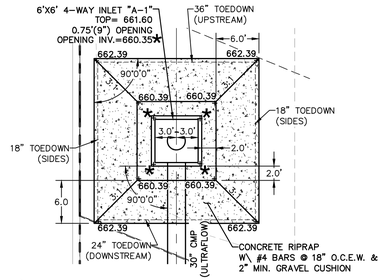


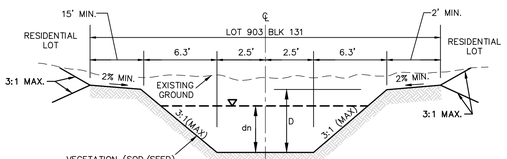
DRAIN "D" DOWNSTREAM RIPRAP DETAIL

SCALE: 1"=10'



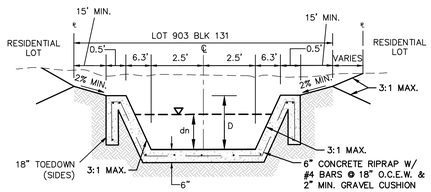
DRAIN "D" 4-WAY INLET "D-3" DETAIL

SCALE: 1"=10'



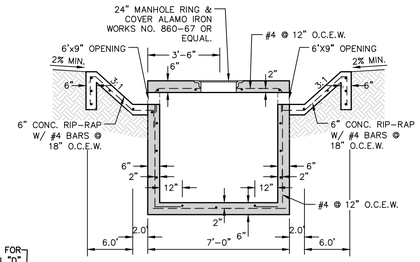
SECTION "B-B" EARTHEN TRAP. CHANNEL

NOT-TO-SCALE

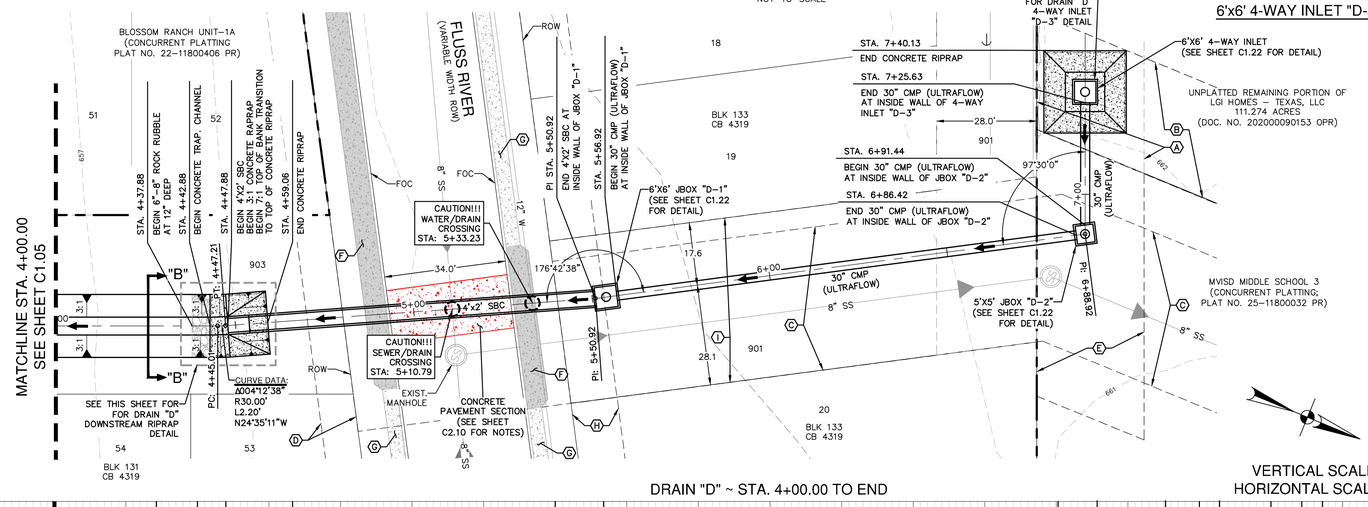


SECTION "C-C" CONCRETE TRAP. CHANNEL

NOT-TO-SCALE

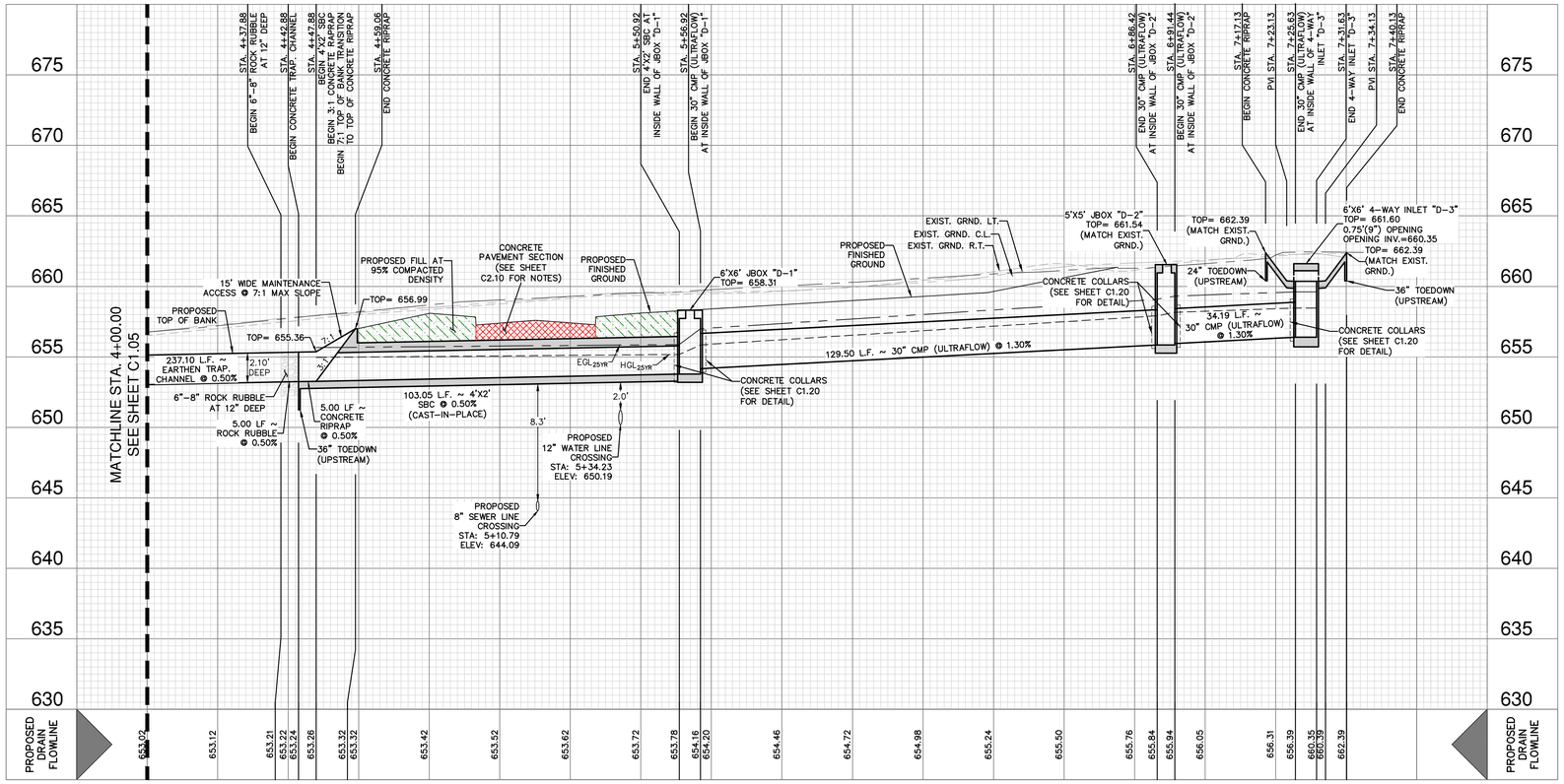


6'x6' 4-WAY INLET "D-3"



DRAIN "D" ~ STA. 4+00.00 TO END

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



HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL

(SECTION B-B)
STA. 2+00.78 TO 4+37.88

Q25	=	44.3 CFS
Bw	=	5'
n	=	0.035
S	=	0.50%
D	=	2.10'
dn	=	1.54'
V	=	2.99 fps
τ_d	=	0.31 LB/FT^2 RC= B,C,D,E

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL

(SECTION B-B)
STA. 4+37.88 TO 4+42.88

Q25	=	44.3 CFS
Bw	=	5'
n	=	0.038
S	=	0.50%
D	=	2.10'
dn	=	1.60'
V	=	2.83 fps
τ_d	=	0.32 LB/FT^2 RC= ROCK, D50=6IN 2.5 LB/FT^2

HYDRAULIC CALCULATIONS CONC. TRAP. CHANNEL

(SECTION C-C)
STA. 4+42.88 TO 4+59.06

Q25	=	44.3 CFS
Bw	=	5'
n	=	0.015
S	=	0.50%
D	=	2.10'
dn	=	1.00'
V	=	5.54 fps

HYDRAULIC CALCULATIONS 4- WAY ILNET "D-1" CURB OPENING

(DRAIN "D")

Q25	=	37.3 CFS
Bw	=	C X L X h^(3/2) (WIER EQ.)
C	=	3.087
h	=	0.75 FT (9")
C	=	$\frac{Q}{C \times h^{(3/2)}}$
Lcal	=	$\frac{37.3\ CFS}{(3.087)(0.75\ FT)^{(3/2)}}$
Lcal	=	18.6 FT
L	=	24' OPENING (6'X6' 4-WAY INLET)

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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 30' DRAINAGE EASEMENT (CONCURRENT PLATTING, PLAT NO. 20240132079 OPR)
- (B) ELECTRIC EASEMENT ACCESS EASEMENT (DOC NO 20140045268, VOL 16948, PG 595 OPR)
- (C) 40' SANITARY SEWER EASEMENT (CONCURRENT PLATTING, PLAT NO. 20240132079 OPR)
- (D) 10' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (E) 30' DRAINAGE EASEMENT (DOC NO 20240132079 OPR)
- (F) 6' DEVELOPER SIDEWALK
- (G) 4' SIDEWALK
- (H) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (I) VARIABLE WIDTH ACCESS EASEMENT

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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.

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
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "D" ~ STA. 4+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.06

Date: Jul 31, 2025, 5:47pm User ID: adavila
File: P:\1300\55\21\Design\Civil\SDA1-13055521.dwg

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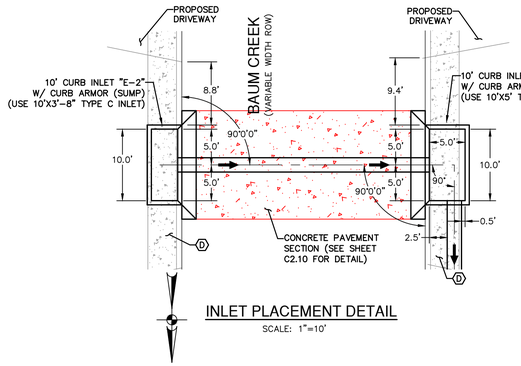
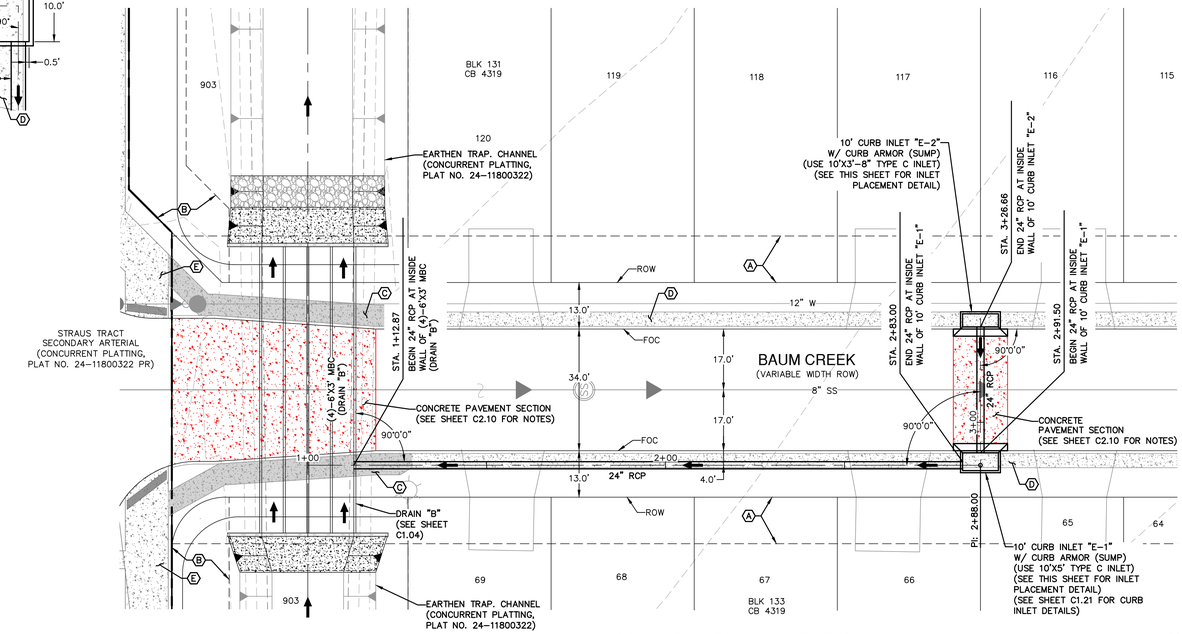


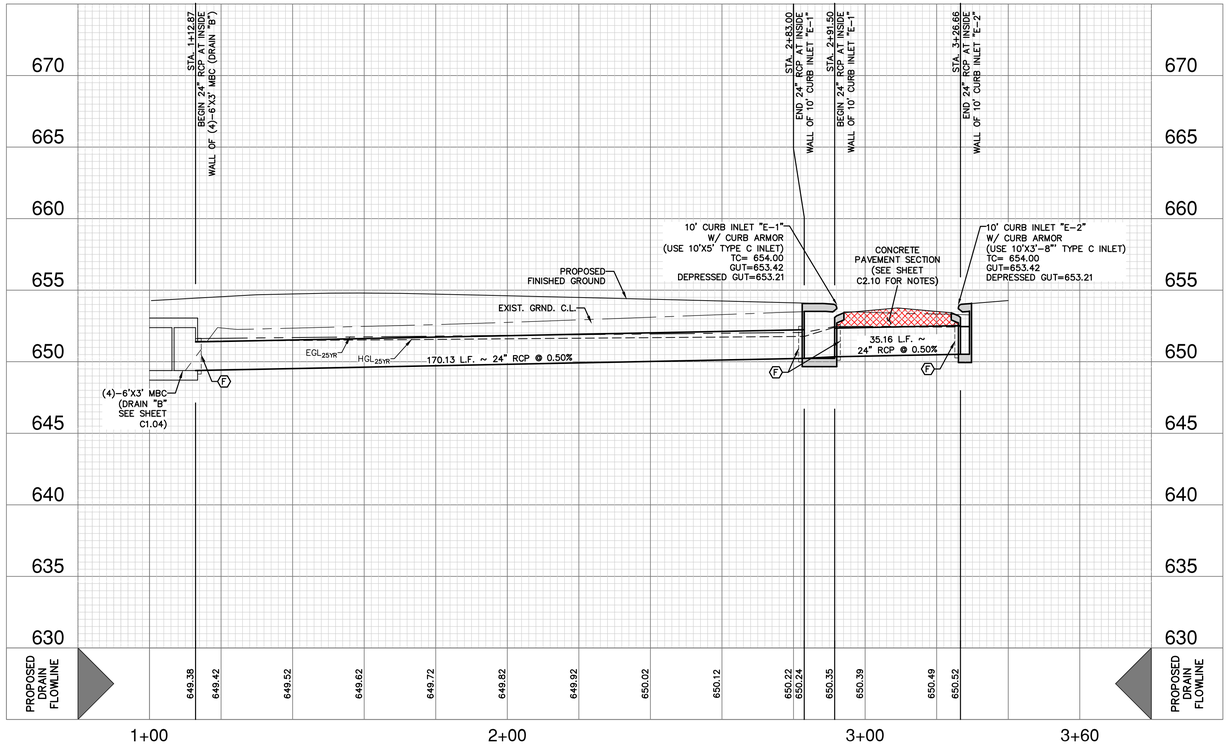
INLET PLACEMENT DETAIL

SCALE: 1"=10'



DRAIN "E" ~ STA. 1+00.00 TO END

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



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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322)
- (C) 6' DEVELOPER SIDEWALK
- (D) 4' SIDEWALK
- (E) 15' MULTI-USE PATH (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)
- (F) CONCRETE COLLARS (SEE SHEET C1.20 FOR DETAIL)

HYDRAULIC CALCULATIONS
CURB ILNET "E-1" & "E-2"
CURB OPENING (DRAIN "E")

Q25 = 11.0 CFS (5.5 CFS EACH SIDE)
Bw = C X L X h^(3/2) (WIER EQ.)
C = 3.087
h = 0.79 FT
$C = \frac{Q}{C \times h^{(3/2)}}$
$Lcal = \frac{5.5\ CFS}{(3.087)(0.79\ FT)^{(3/2)}}$
Lcal = 2.54 FT
L = USE 10' OPENING (EACH INLET)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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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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.

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.

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "E" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.07

Date: Jul 31, 2025, 3:06pm User ID: anthonyalvarado
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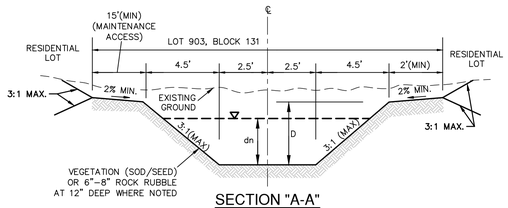
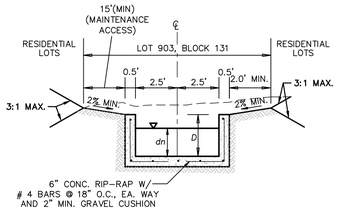


SECTION "A-A"
ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



SECTION "B-B" DETAIL
CONCRETE U-CHANNEL

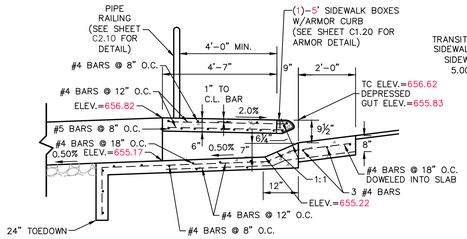
NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+63.49 TO 1+68.26 STA. 1+82.54 TO 1+87.54	
Q25	= 7.7 CFS
Bw	= 5'
n	= 0.038
S	= 0.50%
D	= 1.50'
dn	= 0.65'
V	= 1.70 fps
τ_d	= 0.15 LB/FT^2
STA. 1+63.49 TO STA. 1+68.26 STA. 1+82.54 TO STA. 1+87.54 RC= ROCK, D50=6IN 2.5 LB/FT^2	

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION A-A) STA. 1+68.26 TO 1+82.54	
Q25	= 7.7 CFS
Bw	= 5'
n	= 0.035
S	= 0.50%
D	= 1.50'
dn	= 0.62'
V	= 1.81 fps
τ_d	= 0.15 LB/FT^2
STA. 1+68.26 TO 1+82.54 RC = B,C,D,E	

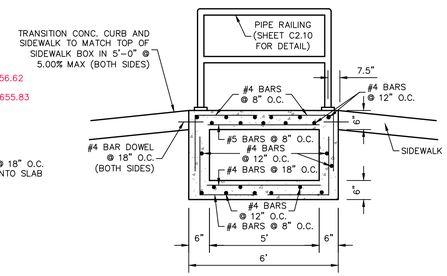
HYDRAULIC CALCULATIONS CONC. U-CHANNEL (SECTION B-B) STA. 1+87.54 TO 1+92.71	
Q25	= 7.7 CFS
Bw	= 5'
n	= 0.015
S	= 0.50%
D	= 1.50'
dn	= 0.43'
V	= 3.58 fps

HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING (DRAIN "F")	
Q25	= 7.7 CFS
Bw	= C X L X h^(3/2) (WIER EQ.)
C	= 3.087
h	= 0.79 FT
C	= Q / (C X h^(3/2))
Lcal	= 7.7 / (3.087)(0.79 FT)^(3/2)
Lcal	= 3.55 FT
L	= USE (1)-5' SIDEWALK BOX



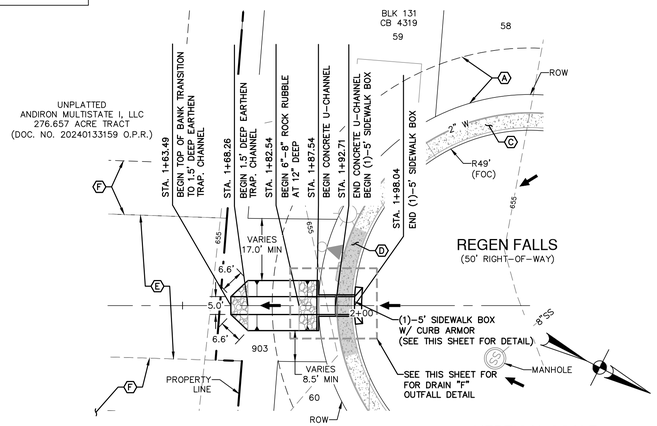
SECTION "C-C"
SIDEWALK BOX DETAIL

NOT-TO-SCALE



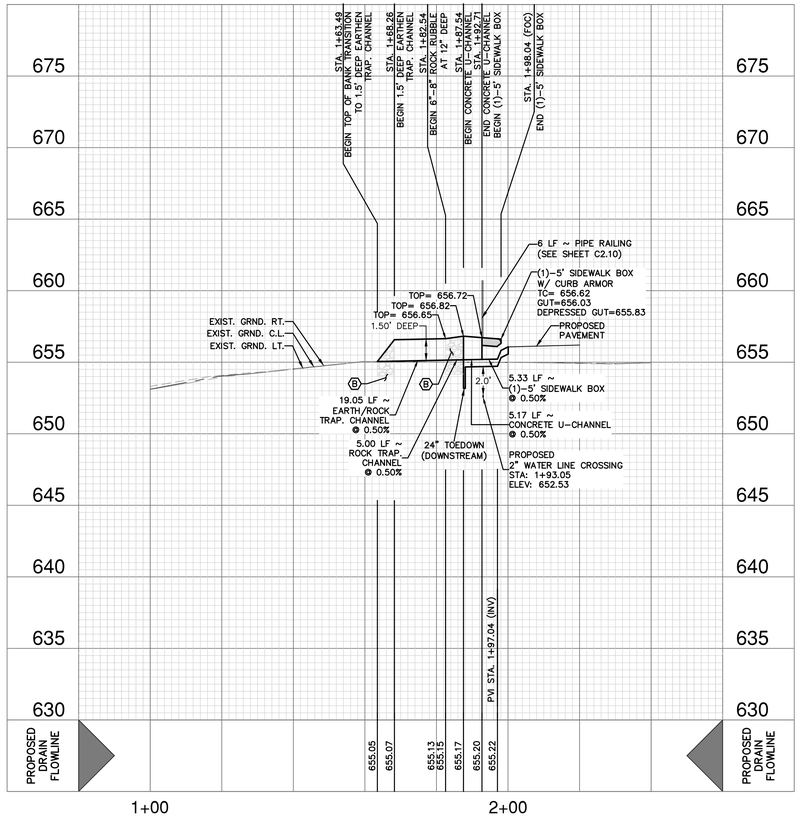
SIDEWALK BOX DETAIL

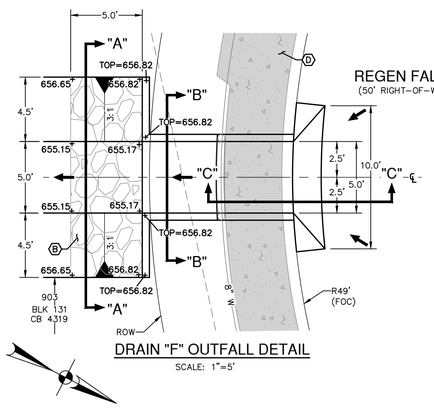
NOT-TO-SCALE



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

DRAIN "F" ~ STA. 1+63.49 TO END





DRAIN "F" OUTFALL DETAIL

SCALE: 1"=5'

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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (F) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC. NO. 20240132079 OPR)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

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DRAINAGE & GRADING NOTES:

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CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "F" ~ STA. 1+63.49 TO END
DRAIN PLAN & PROFILE

PLAT NO.	24-11800449
JOB NO.	13055-21
DATE	JULY 2025
DESIGNER	CB
CHECKED	AS
DRAWN	CB
SHEET	C1.08

Date: Jul 31, 2025, 3:06pm User ID: anthony.alvarado
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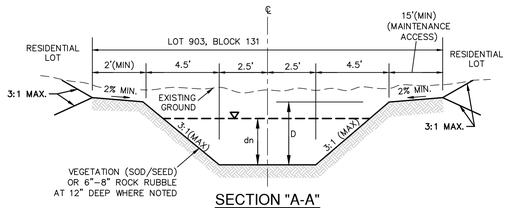
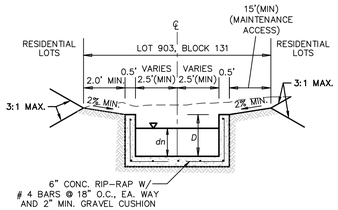


SECTION "A-A" ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



SECTION "B-B" DETAIL CONCRETE U-CHANNEL

NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL

(SECTION A-A)
STA. 1+17.16 TO 1+21.73
STA. 1+62.24 TO 1+67.99

Q25 = 17.4 CFS
Bw = 5'
n = 0.038
S = 0.50%
D = 1.50'
dn = 1.00'
V = 2.18 fps
τ_d = 0.22 LB/FT^2

STA. 1+17.16 TO 1+21.73
RC= ROCK, D50=6IN
2.5 LB/FT^2

STA. 1+62.24 TO 1+67.99
RC = ROCK, D50=6IN
2.5 LB/FT^2

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL

(SECTION A-A)
STA. 1+21.73 TO 1+62.24

Q25 = 17.4 CFS
Bw = 5'
n = 0.035
S = 0.50%
D = 1.50'
dn = 0.96'
V = 2.30 fps
τ_d = 0.21 LB/FT^2

STA. 1+21.73 TO 1+62.24
RC = B,C,D,E

HYDRAULIC CALCULATIONS CONC. U-CHANNEL

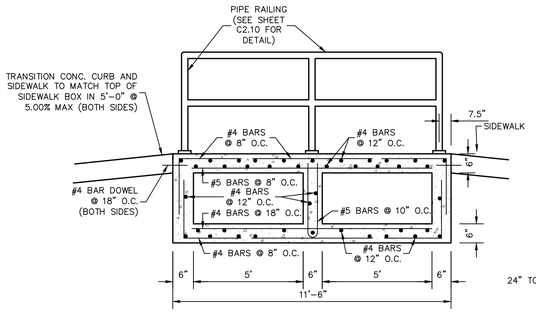
(SECTION B-B)
STA. 1+67.99 TO 1+83.25

Q25 = 17.4 CFS
Bw = 5'
n = 0.015
S = 0.50%
D = 1.50'
dn = 0.73'
V = 4.77 fps

HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING

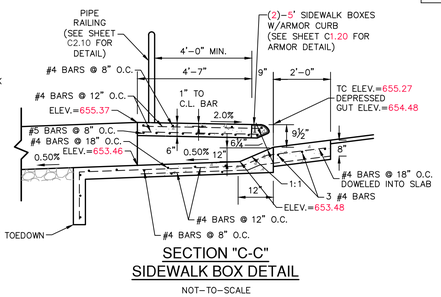
(DRAIN "G")

Q25 = 17.4 CFS
Bw = C X L X h^(3/2) (WIER EQ.)
C = 3.087
h = 0.79 FT
C = $\frac{Q}{C \times h^{(3/2)}}$
Lcal = $\frac{17.4 \text{ CFS}}{(3.087)(0.79 \text{ FT})^{(3/2)}}$
Lcal = 8.03 FT
L = USE (2)-5' SIDEWALK BOX



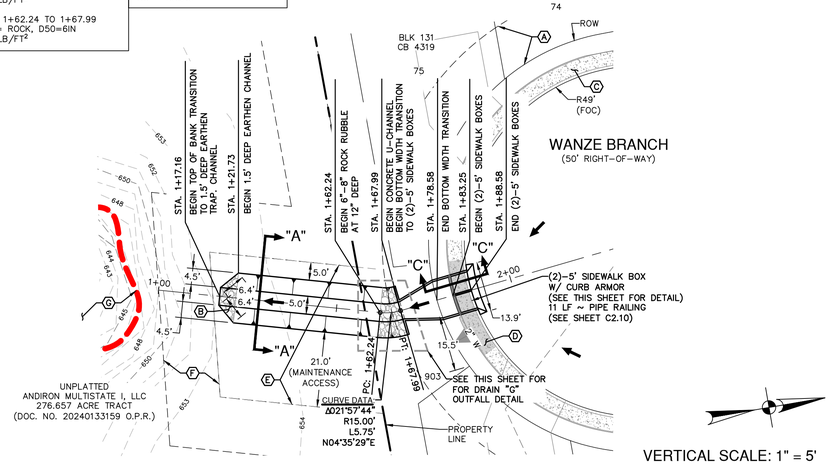
SIDEWALK BOX DETAIL

NOT-TO-SCALE



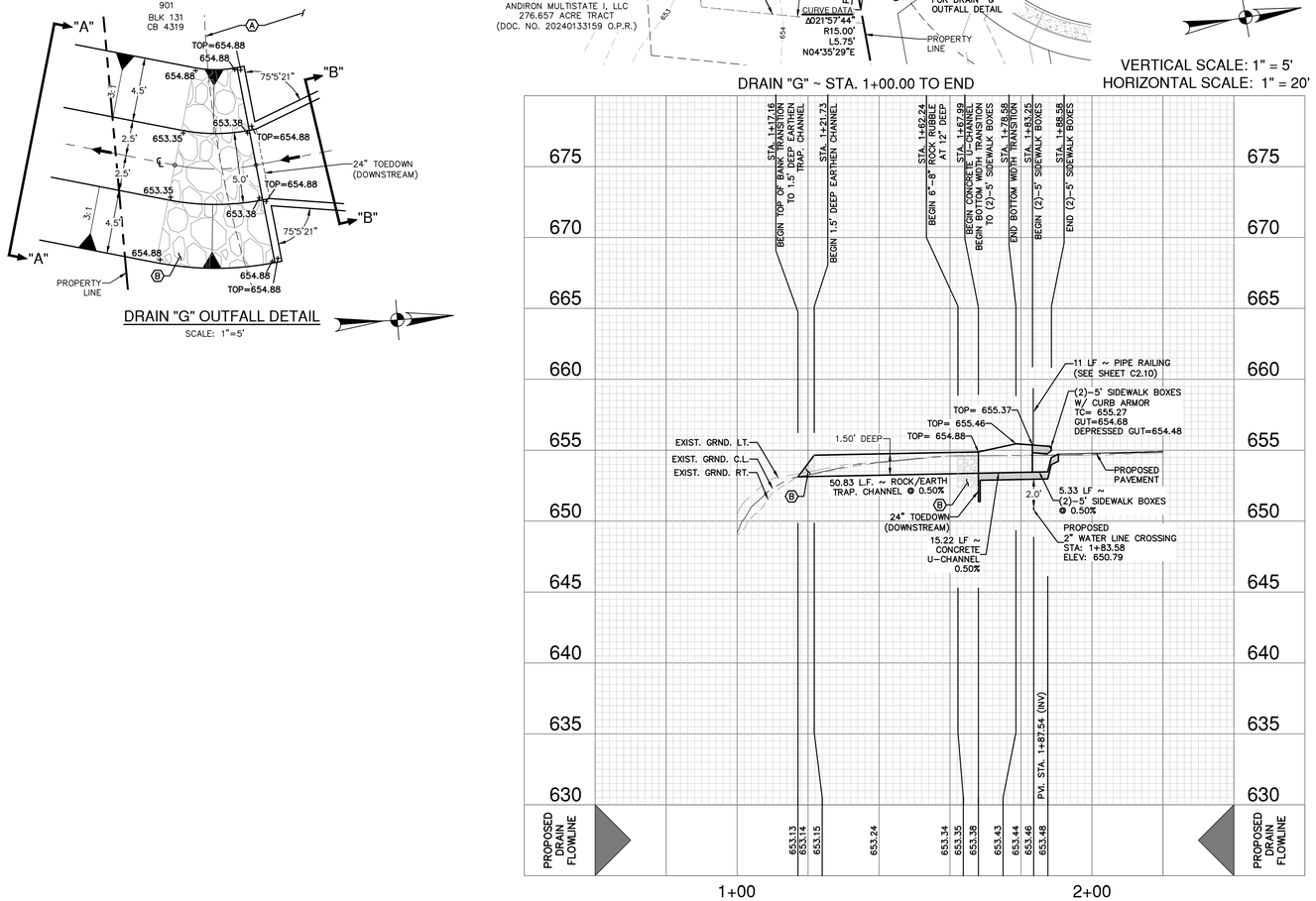
SECTION "C-C" SIDEWALK BOX DETAIL

NOT-TO-SCALE



DRAIN "G" ~ STA. 1+00.00 TO END

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



DRAIN "G" OUTFALL DETAIL

SCALE: 1"=5'

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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (F) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC. NO. 20240132079 OPR)
- (G) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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.

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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

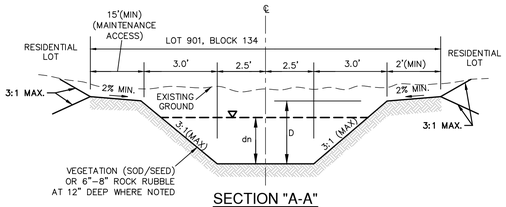
BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "G" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.09

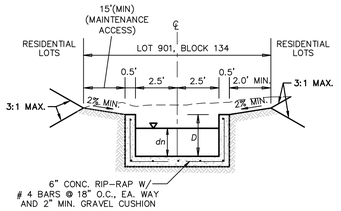
Date: Jul 31, 2025, 3:07pm User ID: anthonyalvarado
File: P:\13055\21\Design\Civil\SSA1-130521.dwg

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"
ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



SECTION "B-B" DETAIL
CONCRETE U-CHANNEL

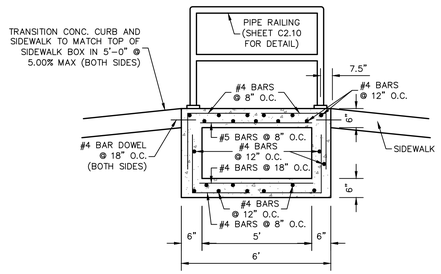
NOT-TO-SCALE

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION A-A) STA. 1+10.67 TO 1+15.00	
Q25	= 10.2 CFS
Bw	= 5'
n	= 0.035
S	= 0.50%
D	= 1.50'
dn	= 0.72'
V	= 1.98 fps
τ_d	= 0.17 LB/FT^2
STA. 1+10.67 TO 1+15.00 RC = B,C,D,E	

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+15.00 TO 1+20.00	
Q25	= 10.2 CFS
Bw	= 5'
n	= 0.038
S	= 0.50%
D	= 1.50'
dn	= 0.76'
V	= 1.84 fps
τ_d	= 0.18 LB/FT^2
STA. 1+15.00 TO 1+20.00 RC = ROCK, D50=6IN 2.5 LB/FT^2	

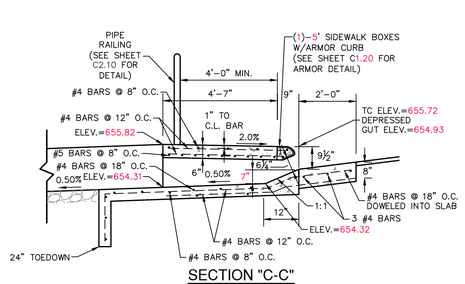
HYDRAULIC CALCULATIONS CONC. U-CHANNEL (SECTION B-B) STA. 1+20.00 TO 1+30.28	
Q25	= 10.2 CFS
Bw	= 5'
n	= 0.015
S	= 0.50%
D	= 1.50'
dn	= 0.52'
V	= 3.92 fps

HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING (DRAIN "H")	
Q25	= 10.2 CFS
Bw	= C X L X h^(3/2) (WIER EQ.)
C	= 3.087
h	= 0.79 FT
C	= Q / (C X h^(3/2))
Lcal	= 10.2 CFS / (3.087)(0.79 FT)^(3/2)
Lcal	= 4.71 FT
L	= USE (1)-5' SIDEWALK BOX



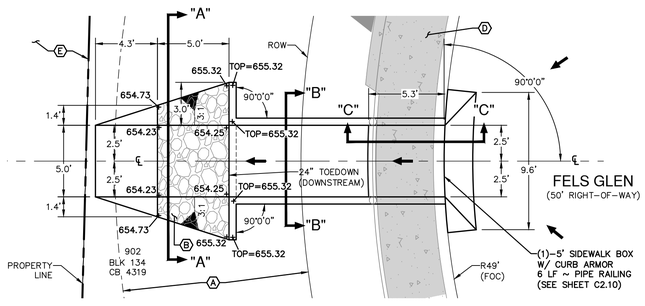
SIDEWALK BOX DETAIL

NOT-TO-SCALE



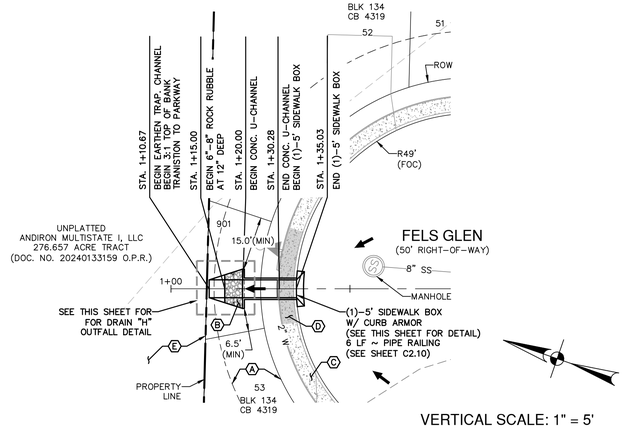
SECTION "C-C"
SIDEWALK BOX DETAIL

NOT-TO-SCALE



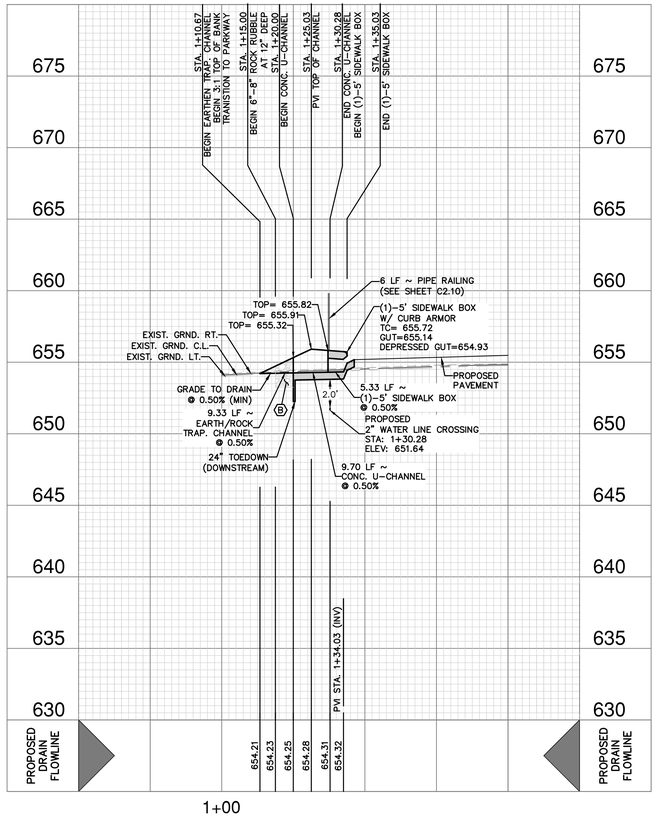
DRAIN "H" OUTFALL DETAIL

SCALE: 1"=5'



DRAIN "H" ~ STA. 1+00.00 TO END

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



1+00

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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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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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.

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 DUCTBANK(S), 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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "H" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.10

Date: Jul 31, 2025, 3:08pm User ID: anthony.alvarado
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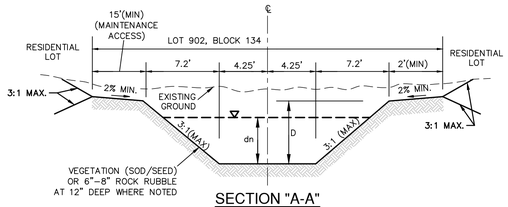
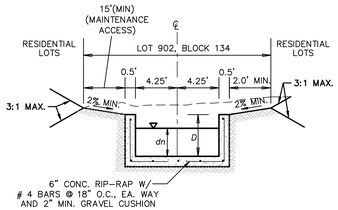


SECTION "A-A"
ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



SECTION "B-B" DETAIL
CONCRETE U-CHANNEL

NOT-TO-SCALE

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION A-A) STA. 1+10.00 TO 1+20.00	
Q25	= 18.6 CFS
Bw	= 8.50'
n	= 0.035
S	= 0.50%
D	= 1.50'
dn	= 0.78'
V	= 2.20 fps
τ_d	= 0.20 LB/FT²

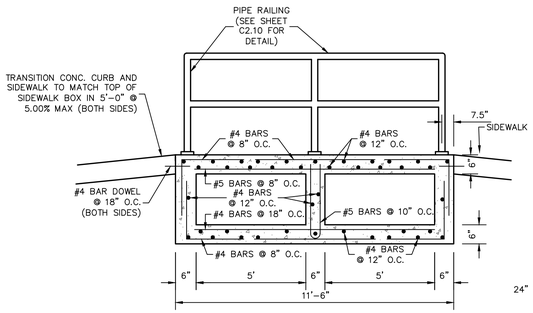
STA. 1+10.00 TO 1+20.00
RC = B,C,D,E

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+20.00 TO 1+25.00	
Q25	= 18.6 CFS
Bw	= 8.50'
n	= 0.038
S	= 0.50%
D	= 1.50'
dn	= 0.82'
V	= 2.07 fps
τ_d	= 0.20 LB/FT²

STA. 1+20.00 TO 1+25.00
RC = ROCK, D50=6IN
2.5 LB/FT²

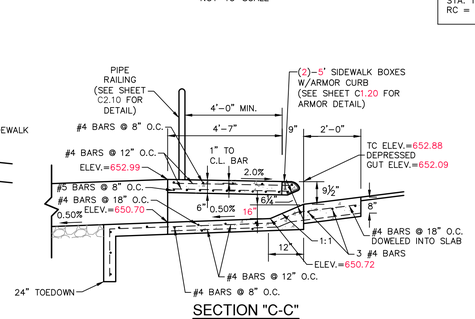
HYDRAULIC CALCULATIONS CONC. U-CHANNEL (SECTION B-B) STA. 1+25.00 TO 1+29.67	
Q25	= 18.6 CFS
Bw	= 8.50'
n	= 0.015
S	= 0.50%
D	= 1.50'
dn	= 0.53'
V	= 4.13 fps

HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING (DRAIN "I")	
Q25	= 18.6 CFS
Bw	= C X L X h^(3/2) (WIER EQ.)
C	= 3.087
h	= 0.79 FT
C	= Q / C X h^(3/2)
Lcal	= 18.6 CFS / (3.087)(0.79 FT)^(3/2)
Lcal	= 8.58 FT
L	= USE (2)-5' SIDEWALK BOX



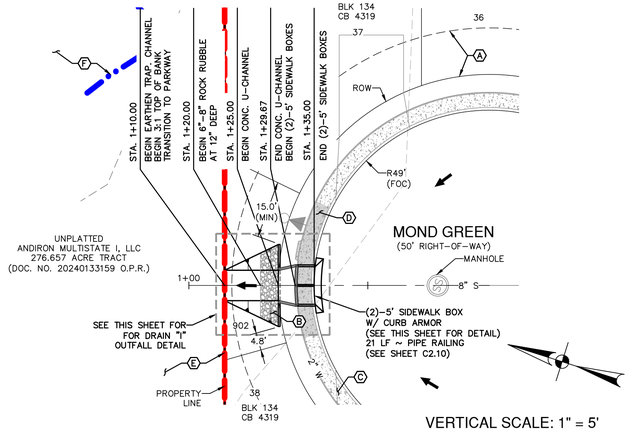
SIDEWALK BOX DETAIL

NOT-TO-SCALE



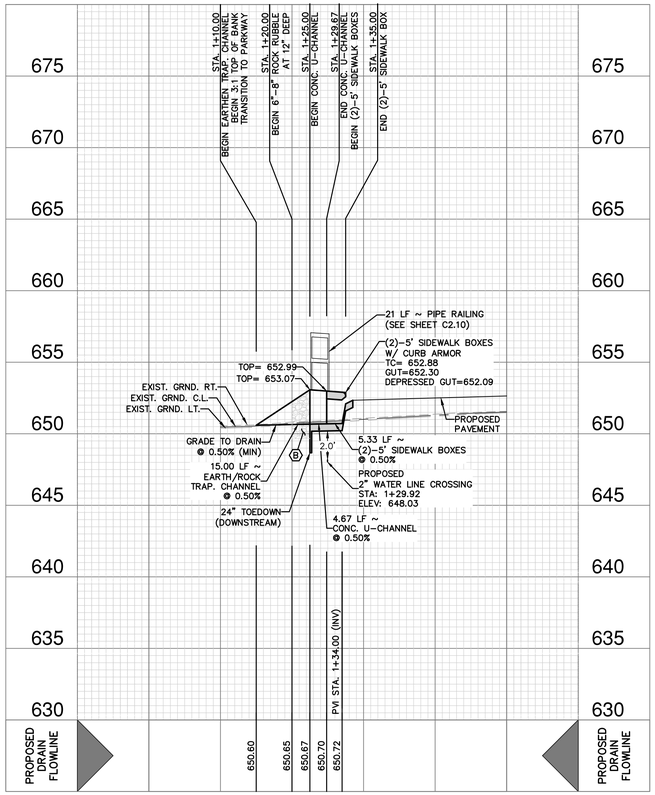
SECTION "C-C"
SIDEWALK BOX DETAIL

NOT-TO-SCALE



DRAIN "I" ~ STA. 1+00.00 TO END

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



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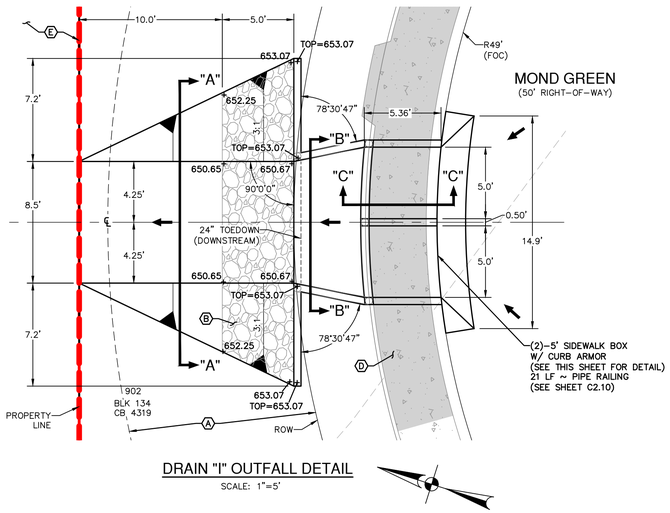

DRAIN "I" OUTFALL DETAIL

SCALE: 1"=5'

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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)
- (F) EXISTING 100-YR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 48029C0530F)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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.

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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "I" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.11

Date: Jul 31, 2025, 3:08pm User ID: anthony.alvarado
File: P:\13055\65\21\Design\Civil\SDA1-13055121.dwg

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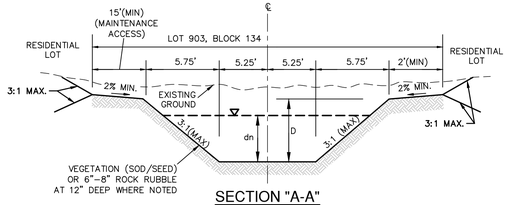
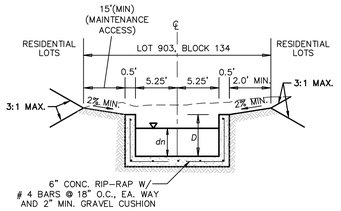


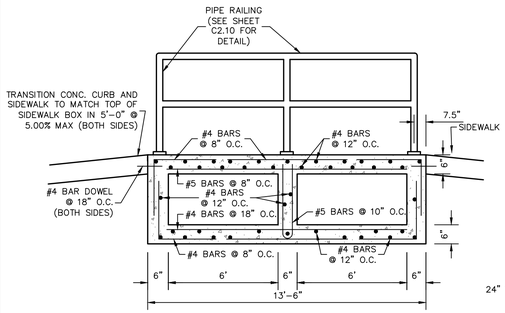
SECTION "A-A"
ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



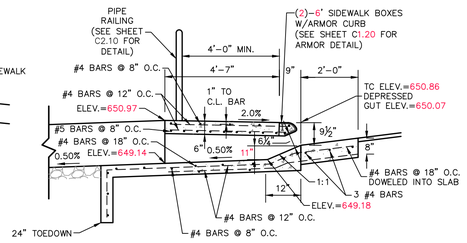
SECTION "B-B" DETAIL
CONCRETE U-CHANNEL

NOT-TO-SCALE



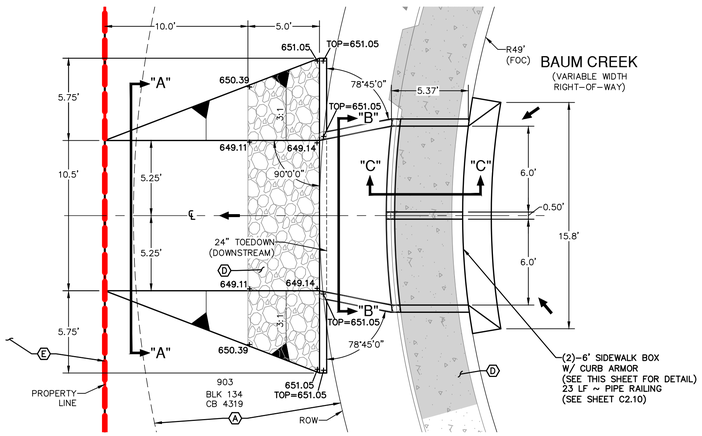
SIDEWALK BOX DETAIL

NOT-TO-SCALE



SECTION "C-C"
SIDEWALK BOX DETAIL

NOT-TO-SCALE



DRAIN "J" OUTFALL DETAIL

SCALE: 1"=5'

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL
(SECTION A-A)
STA. 1+10.00 TO 1+20.00

Q25	=	23.5 CFS
Bw	=	10.50'
n	=	0.035
S	=	0.50%
D	=	1.50'
dn	=	0.80'
V	=	2.28 fps
τ_d	=	0.21 LB/FT^2

STA. 1+10.00 TO 1+20.00
RC = B,C,D,E

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL
(SECTION A-A)
STA. 1+20.00 TO 1+25.00

Q25	=	23.5 CFS
Bw	=	10.50'
n	=	0.038
S	=	0.50%
D	=	1.50'
dn	=	0.84'
V	=	2.15 fps
τ_d	=	0.22 LB/FT^2

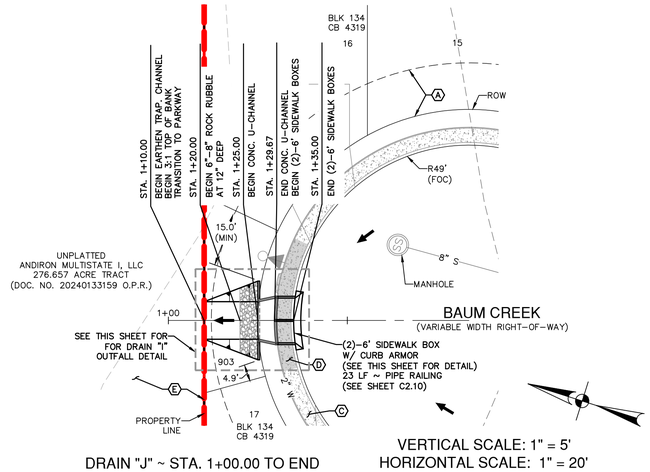
STA. 1+20.00 TO 1+25.00
RC = ROCK, D50=6IN
2.5 LB/FT^2

HYDRAULIC CALCULATIONS CONC. U-CHANNEL
(SECTION B-B)
STA. 1+25.00 TO 1+29.67

Q25	=	23.5 CFS
Bw	=	10.50'
n	=	0.015
S	=	0.50%
D	=	1.50'
dn	=	0.53'
V	=	4.22 fps

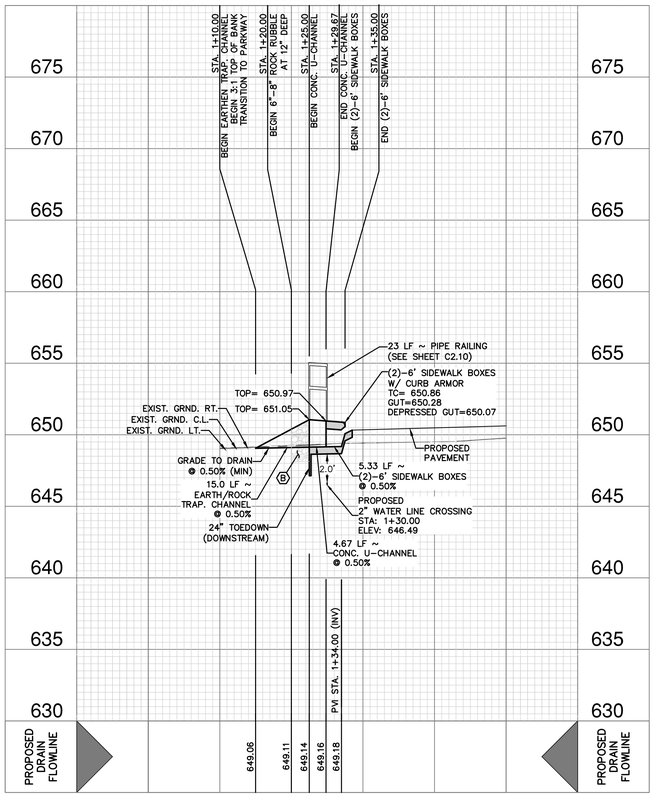
HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING
(DRAIN "J")

Q25	=	23.5 CFS
Bw	=	C X L X h^(3/2) (WIER EQ.)
C	=	3.087
h	=	0.79 FT
C	=	$\frac{Q}{C \times h^{(3/2)}}$
Lcal	=	$\frac{23.5 \text{ CFS}}{(3.087)(0.79 \text{ FT})^{(3/2)}}$
Lcal	=	10.84 FT
L	=	USE (2)-6' SIDEWALK BOX



DRAIN "J" ~ STA. 1+00.00 TO END

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



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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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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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.

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:

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "J" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.12

Date: Jul 31, 2025, 3:09pm User ID: anthony.alvarado
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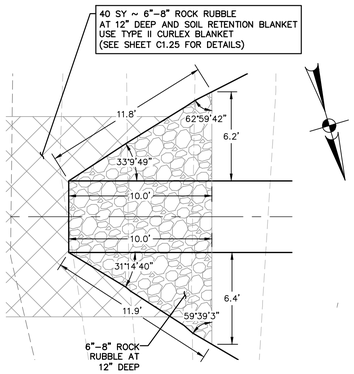
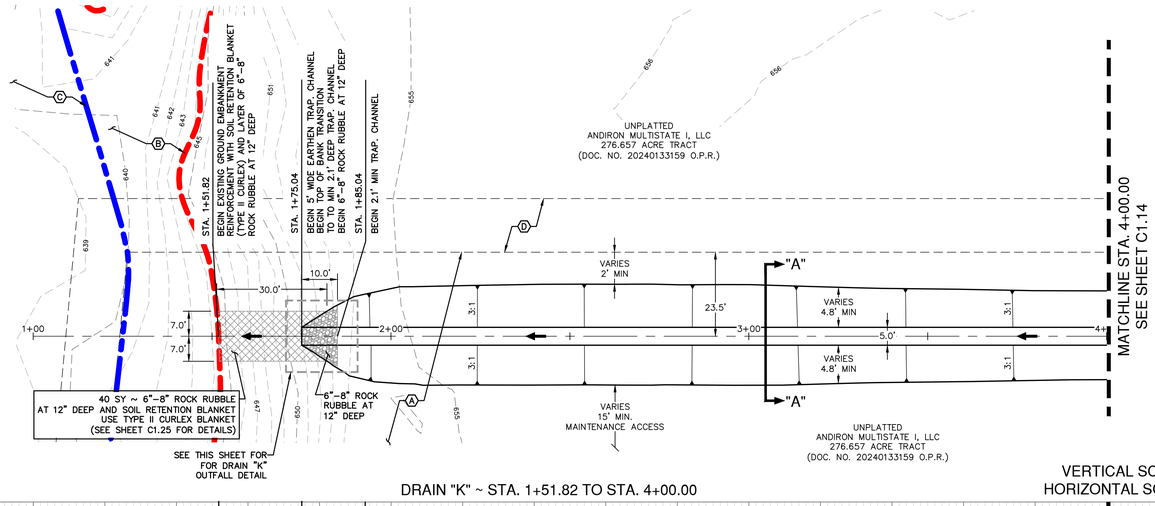


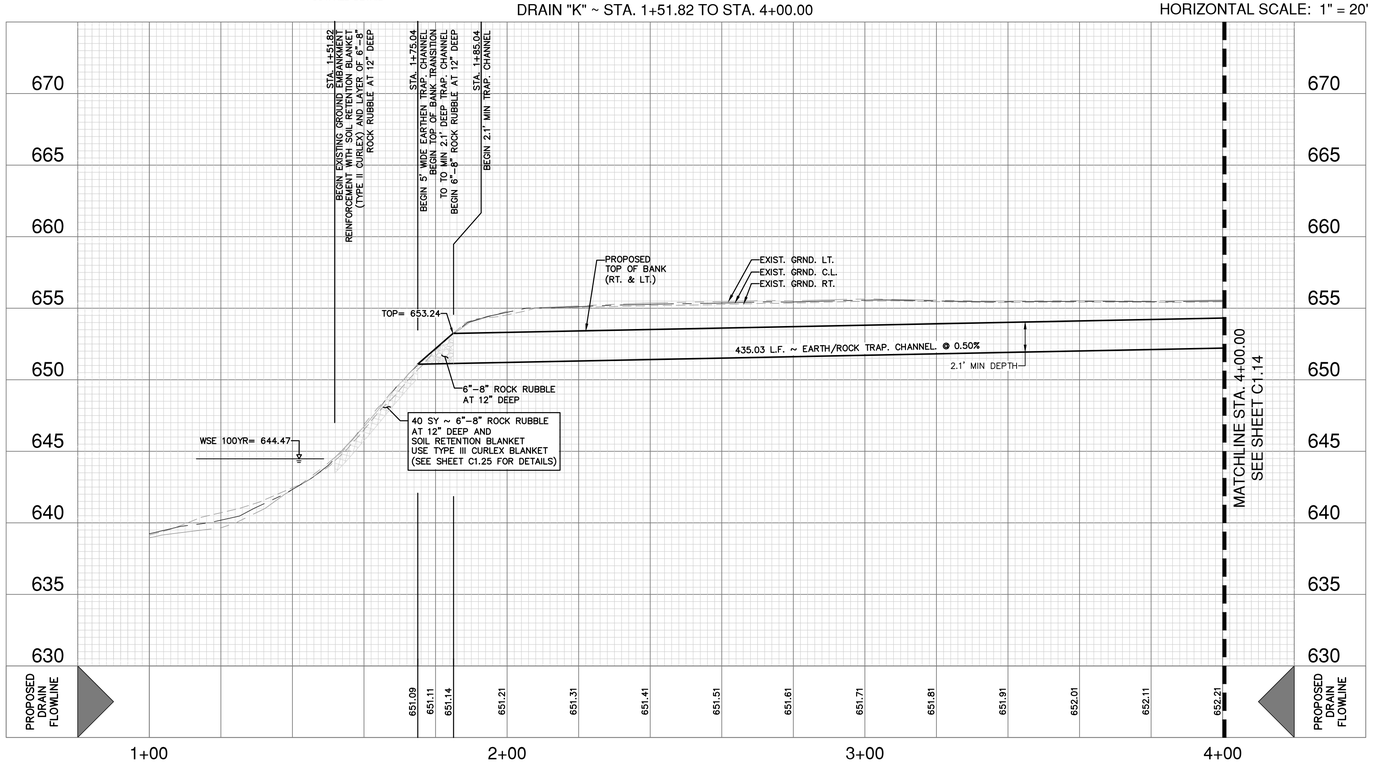
DRAIN "K" OUTFALL DETAIL

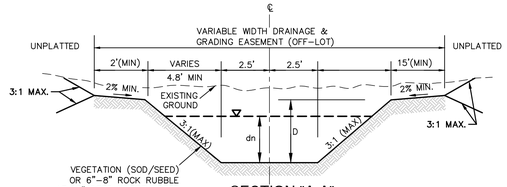
SCALE: 1"=5'



DRAIN "K" ~ STA. 1+51.82 TO STA. 4+00.00

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





SECTION "A-A"
ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A–A) STA. 1+75.04 TO 1+85.04 STA. 6+05.07 TO 6+10.07	
Q25	= 21.5 CFS
Bw	= 5.00'
n	= 0.038
S	= 0.50%
D	= 2.10'
dn	= 1.12'
V	= 2.30 fps
τ_d	= 0.24 LB/FT^2
STA. 1+75.04 TO 1+85.04 RC = ROCK, D50=6IN 2.5 LB/FT^2	
STA. 6+05.07 TO 6+10.07 RC = ROCK, D50=6IN 2.5 LB/FT^2	

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION A–A) STA. 1+85.04 TO 6+05.07	
Q25	= 21.5 CFS
Bw	= 5.00'
n	= 0.035
S	= 0.50%
D	= 2.10'
dn	= 1.07'
V	= 2.45 fps
τ_d	= 0.23 LB/FT^2
STA. 1+85.04 TO 6+05.07 RC = B,C,D,E	

SCALE: 1"= 20'

0' 20' 40' 60'

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (B) PROPOSED AT14 100-YEAR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)
- (C) EXISTING 100-YEAR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 48029C0530F)
- (D) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO. 20240132079 OPR)

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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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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.

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:

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "K" ~ STA. 1+51.82 TO STA. 4+00.00
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.13

Date: Jul 31, 2025, 3:09pm User ID: gethonyshorado
File: P:\130\55\21\Design\Civil\SDA1-130552I.dwg

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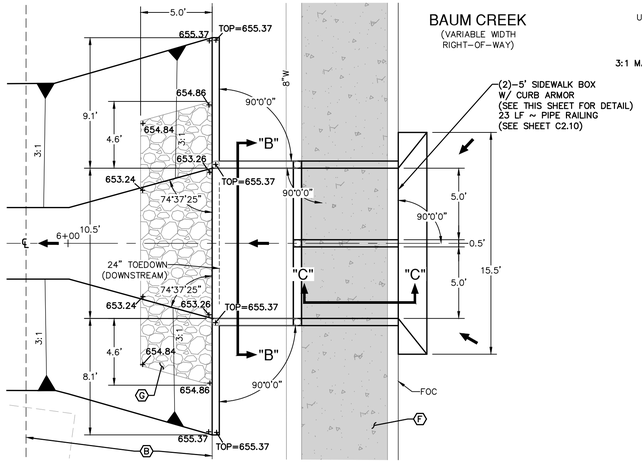
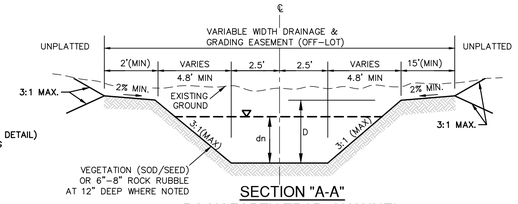


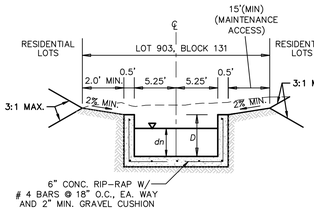
DRAIN "K" SIDEWALK BOX OUTFALL DETAIL

SCALE: 1"=5'



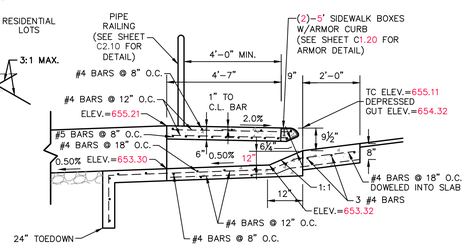
SECTION "A-A" ROCK/EARTH TRAP. CHANNEL

NOT-TO-SCALE



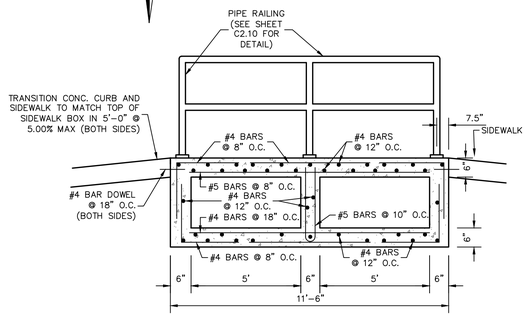
SECTION "B-B" DETAIL CONCRETE U-CHANNEL

NOT-TO-SCALE



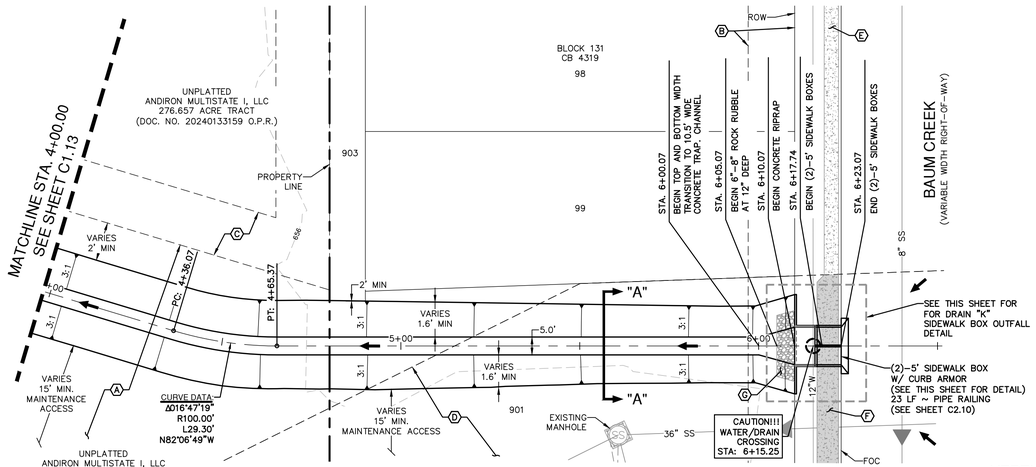
SECTION "C-C" SIDEWALK BOX DETAIL

NOT-TO-SCALE



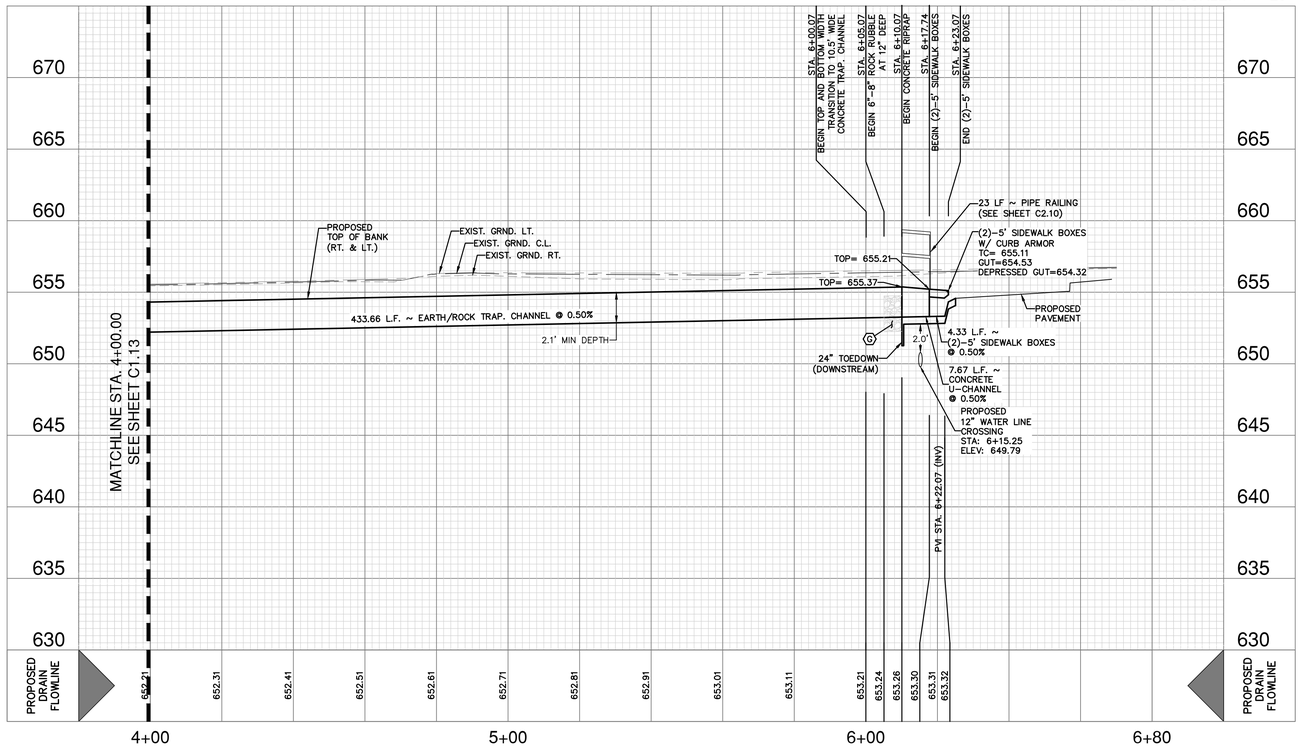
SIDEWALK BOX DETAIL

NOT-TO-SCALE



DRAIN "K" ~ STA. 4+00.00 TO END

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



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

DRAINAGE LEGEND

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

KEY LEGEND:

- (A) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (B) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (C) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO. 20240132079 OPR)
- (D) VARIABLE WIDTH PERMANENT SANITARY SEWER EASEMENT (VOL. 14598, PGS 1294-1312 OPR)
- (E) 4' SIDEWALK
- (F) 6' DEVELOPER SIDEWALK
- (G) 6"-8" ROCK RUBBLE AT 12" DEEP

OPEN CHANNEL NOTE:

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

DRAINAGE CONSTRUCTION NOTES:

1. ALL SINGLE BOX CULVERTS (SBC) AND ALL MULTIPLE BOX CULVERTS (MBC) SHALL BE CAST-IN-PLACE. (SEE SHEETS C1.23 & C1.24 FOR CAST-IN-PLACE CONSTRUCTION DETAILS.)

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.

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:

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HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL
(SECTION A-A)
STA. 1+85.04 TO 6+05.07

Q25 = 21.5 CFS
Bw = 5.00'
n = 0.035
S = 0.50%
D = 2.10'
dn = 1.07'
V = 2.45 fps
τ_d = 0.23 LB/FT^2
STA. 1+85.04 TO 6+05.07
RC = B,C,D,E

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL
(SECTION A-A)
STA. 1+75.04 TO 1+85.04
STA. 6+05.07 TO 6+10.07

Q25 = 21.5 CFS
Bw = 5.00'
n = 0.038
S = 0.50%
D = 2.10'
dn = 1.12'
V = 2.30 fps
τ_d = 0.24 LB/FT^2
STA. 1+75.04 TO 1+85.04
RC = ROCK, D50=6IN
2.5 LB/FT^2
STA. 6+05.07 TO 6+10.07
RC = ROCK, D50=6IN
2.5 LB/FT^2

HYDRAULIC CALCULATIONS CONC. U-CHANNEL
(SECTION B-B)
STA. 6+10.07 TO 6+17.74

Q25 = 21.5 CFS
Bw = 10.50'
n = 0.015
S = 0.50%
D = 2.10'
dn = 0.50'
V = 4.10 fps

HYDRAULIC CALCULATIONS SIDEWALK BOX CURB OPENING
(DRAIN "K")

Q25 = 15.7 CFS
Bw = C X L X h^(3/2) (WIER EQ.)
C = 3.087
h = 0.79 FT
C = Q / (C X h^(3/2))
Lcal = 15.7 CFS / (3.087)(0.79 FT)^(3/2)
Lcal = 7.24 FT
L = USE (2)-5' SIDEWALK BOX

DATE
NO. REVISION

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "K" ~ STA. 4+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.14

Date: Jul 31, 2025, 3:10pm User ID: anthony.olvarado
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OPEN CHANNEL NOTE:

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DRAINAGE CONSTRUCTION NOTES:

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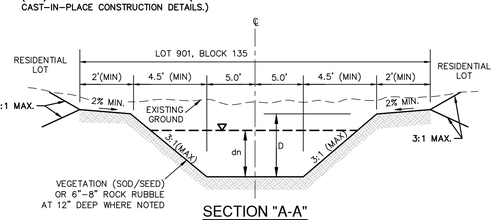


SECTION "A-A"
ROCK/EARTH TRAP. CHANNEL
NOT-TO-SCALE

HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL (SECTION A-A) STA. 1+22.32 TO 1+31.89	
Q25	= 30.3 CFS
Bw	= 10.00'
n	= 0.038
S	= 0.50%
D	= 1.50'
dn	= 0.99'
V	= 2.36 fps
τ_d	= 0.25 LB/FT²
STA. 1+22.32 TO 1+31.89 RC = ROCK, D50=6IN 2.5 LB/FT²	

HYDRAULIC CALCULATIONS EARTHEN TRAP. CHANNEL (SECTION A-A) STA. 1+31.89 TO 6+22.83	
Q25	= 30.3 CFS
Bw	= 10.00'
n	= 0.035
S	= 0.50%
D	= 1.50'
dn	= 0.99'
V	= 2.48 fps
τ_d	= 0.24 LB/FT²
STA. 1+31.89 TO 6+22.83 RC = B,C,D,E	

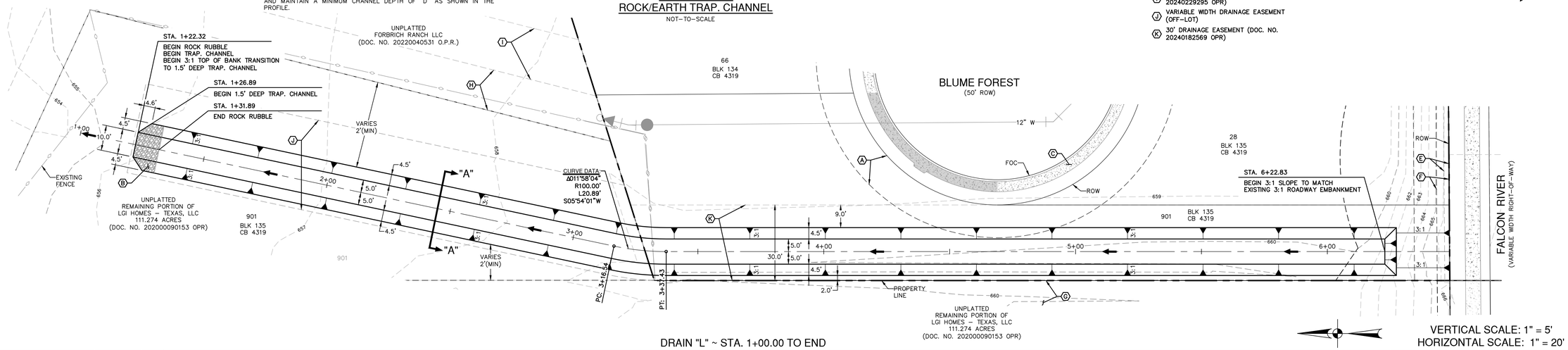
SCALE: 1"= 20'
0' 20' 40' 60'

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 6"-8" ROCK RUBBLE AT 12" DEEP
- (C) 4' SIDEWALK
- (D) 4' DEVELOPER SIDEWALK
- (E) 1' VEHICULAR NON-ACCESS EASEMENT (NOT-TO-SCALE)
- (F) 5' LANDSCAPE EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800279 PR)
- (G) ELECTRICAL EASEMENT ACCESS EASEMENT (DOC NO 20140045268, VOL 16948, PG 595 OPR)
- (H) VARIABLE WIDTH PERMANENT WATER EASEMENT (DOC. NO. 20240132081 OPR)
- (I) 16' PERMANENT WATER EASEMENT (DOC. NO. 20240229295 OPR)
- (J) VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)
- (K) 30' DRAINAGE EASEMENT (DOC. NO. 20240182569 OPR)

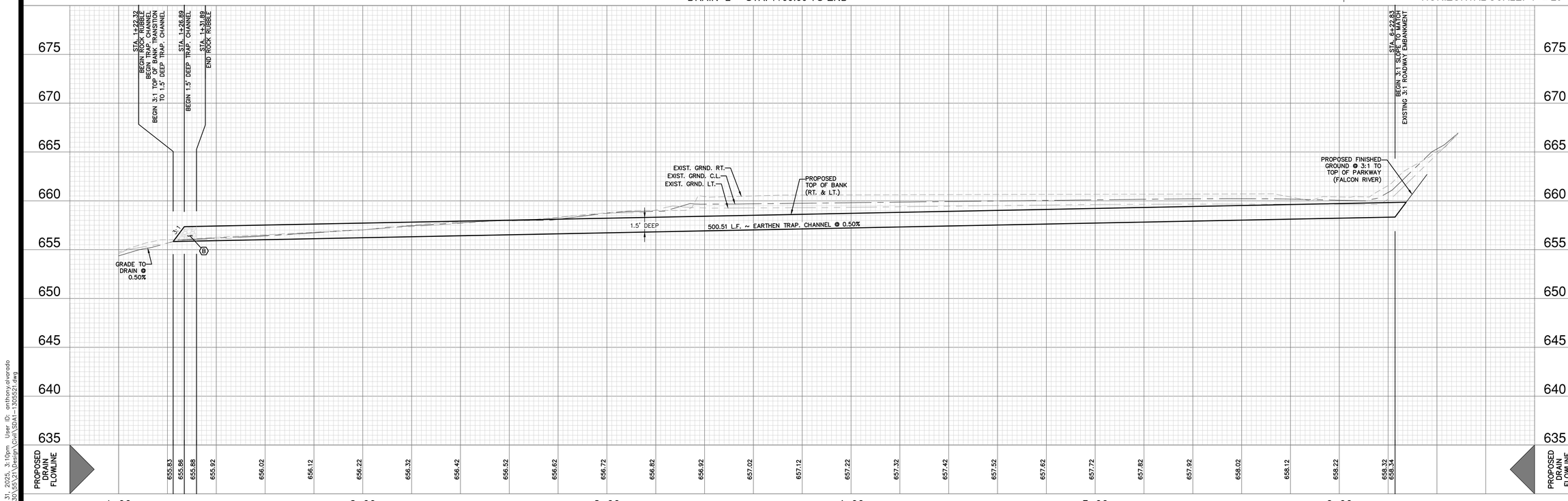
DRAINAGE LEGEND

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



DRAIN "L" ~ STA. 1+00.00 TO END

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



NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
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BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN "L" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C1.15

Date: Jul 31, 2025, 3:10pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\SDA1-130552I.dwg

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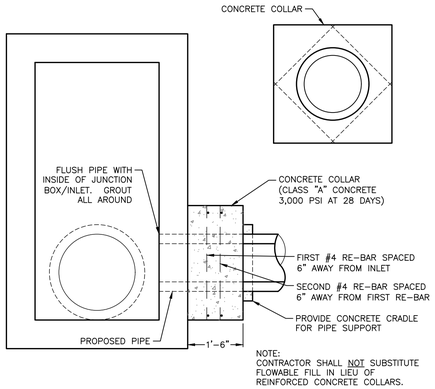
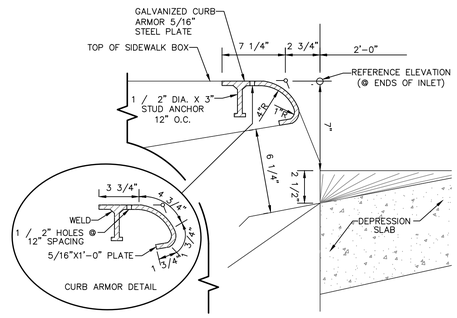


NOTE:
CONTRACTOR SHALL NOT SUBSTITUTE FLOWABLE FILL IN LIEU OF REINFORCED CONCRETE COLLARS.

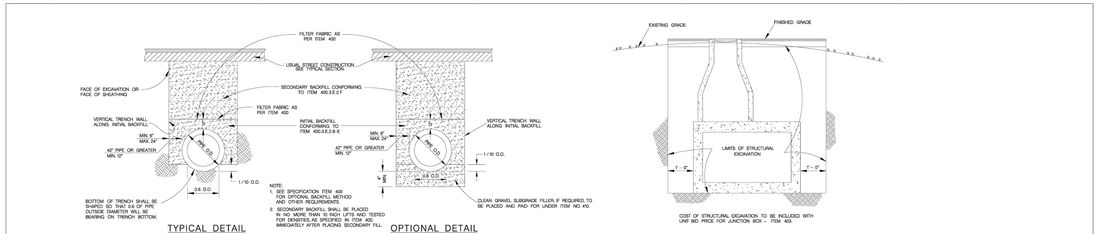
CONCRETE COLLAR DETAIL

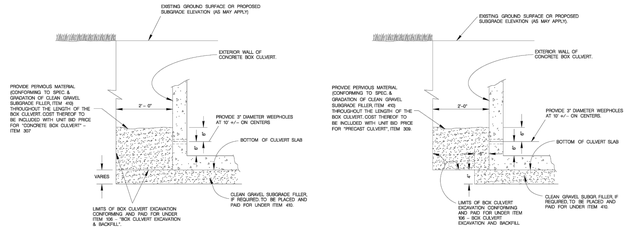
NOT-TO-SCALE

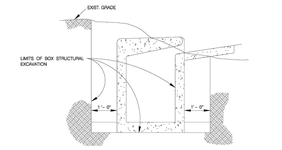


CURB ARMOR DETAIL

NOT-TO-SCALE







MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS

% SUBMITTAL PROJECT NO.: _____ DATE: _____

DRAWN BY: _____ DESIGN BY: _____ CHKD BY: _____ SHEET NO.: ____OF____

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)
C	1.0	Crabgrass	Fair stand, uncut (10-to-48 in. or 55-to-1220 mm)
		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

NO. | REVISION | DATE

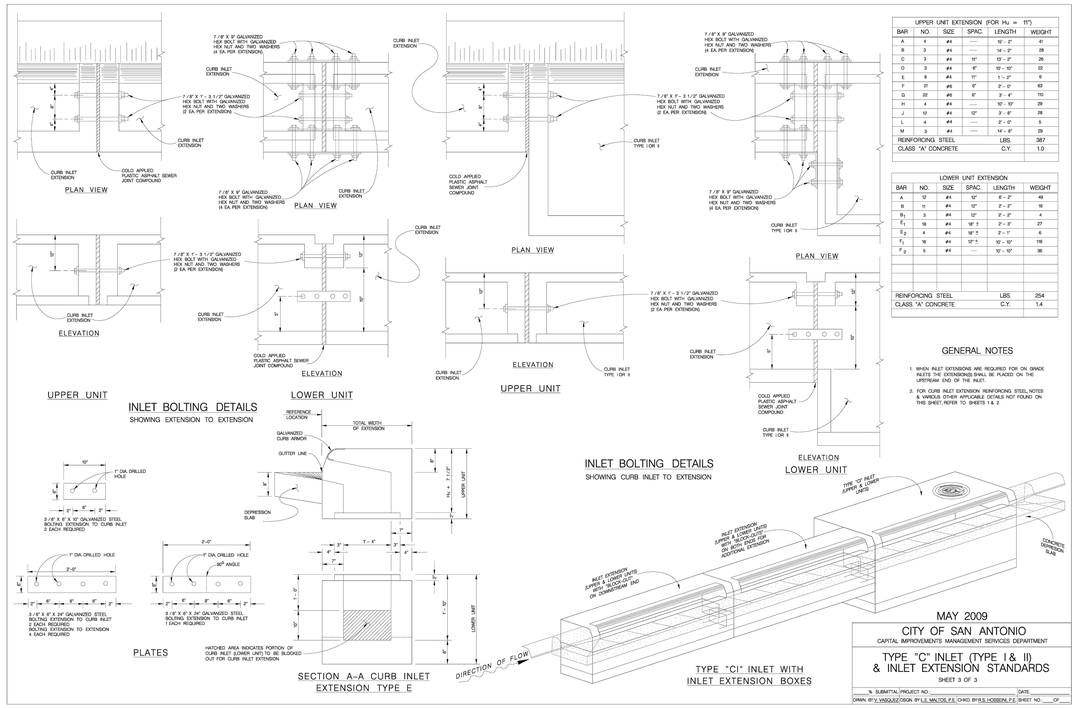
PAPE-DAWSON
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
DRAIN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C1.20

Date: Jul 31, 2025, 3:11pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\SDDT-130521.dwg
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.



UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	5' - 2"	7
B	3	#4	----	14' - 2"	28
C	3	#4	11"	12' - 2"	26
D	3	#4	6"	10' - 10"	22
E	5	#4	11"	1 - 2"	6
F	21	#6	6"	2' - 2"	63
G	22	#6	6"	2' - 2"	63
H	4	#4	----	9' - 4"	110
I	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	10	#4	12"	5' - 2"	43
B	11	#4	12"	2' - 2"	16
B_1	3	#4	12"	2' - 2"	4
E_1	16	#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 THE 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 & 3.

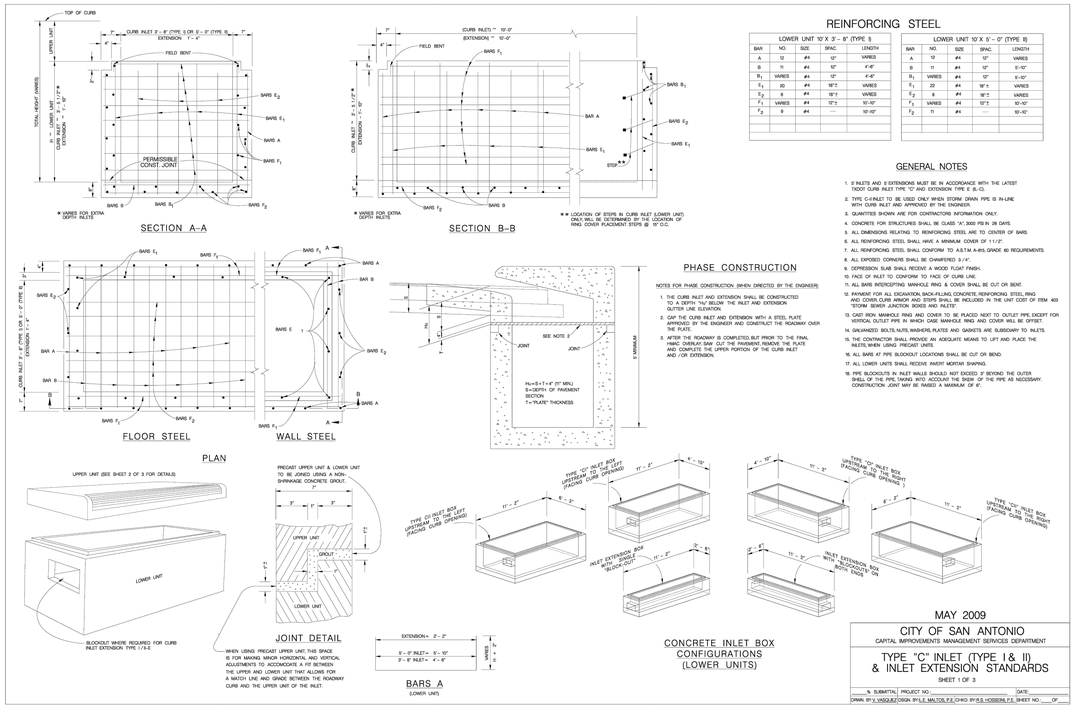
MAY 2009

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 DSGN BY L.E. MALTOS, P.E. CHKD BY B.S. HOSSEINI, P.E. SHEET NO. ___ OF ___



REINFORCING STEEL

LOWER UNIT 10' X 3'-- 8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	
A	12	#4	12"	VARIES	
B	11	#4	12"	5'-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	5	#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"	5'-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. S' INLETS AND S' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (L-S).
2. TYPE C-I 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 TO 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, CURB ARMOR AND STEPS 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 BARE 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 PIPE. WHERE NEED ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE PARIED A MAXIMUM OF 6".

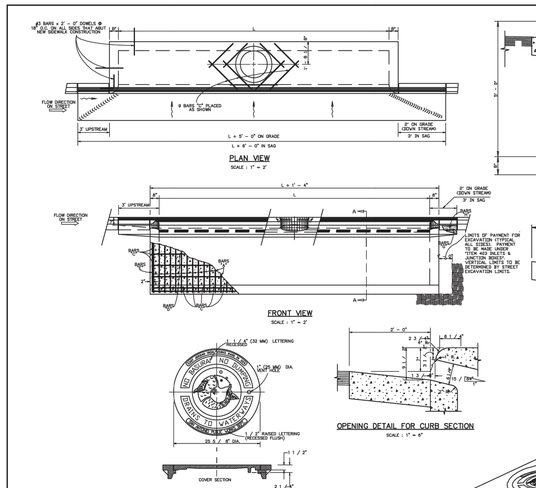
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 1 OF 3

% SUBMITTAL	PROJECT NO.	DATE

DRAWN BY V. VASQUEZ DSGN BY L.E. MALTOS, P.E. CHKD BY B.S. HOSSEINI, P.E. SHEET NO. ___ OF ___



INLET LENGTH	REINFORCING STEEL SCHEDULE							
	BAR	SIZE	SHAPE	NUMBER	LENGTH	WEIGHT
L=6' - 0"	A	#4	STRAIGHT	4	6' - 0"	16
	B	#4	STRAIGHT	4	2' - 0"	5
	C	#4	STRAIGHT	4	2' - 0"	5
	D	#4	STRAIGHT	4	2' - 0"	5
	E	#4	STRAIGHT	4	2' - 0"	5
	F	#4	STRAIGHT	4	2' - 0"	5
	G	#4	STRAIGHT	4	2' - 0"	5
	H	#4	STRAIGHT	4	2' - 0"	5
	I	#4	STRAIGHT	4	2' - 0"	5
	J	#4	STRAIGHT	4	2' - 0"	5
	K	#4	STRAIGHT	4	2' - 0"	5
	L	#4	STRAIGHT	4	2' - 0"	5
	M	#4	STRAIGHT	4	2' - 0"	5
	N	#4	STRAIGHT	4	2' - 0"	5
	O	#4	STRAIGHT	4	2' - 0"	5
	P	#4	STRAIGHT	4	2' - 0"	5
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	Y	#4	STRAIGHT	4	2' - 0"	5
	Z	#4	STRAIGHT	4	2' - 0"	5
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	CC	#4	STRAIGHT	4	2' - 0"	5
	DD	#4	STRAIGHT	4	2' - 0"	5
	EE	#4	STRAIGHT	4	2' - 0"	5
	FF	#4	STRAIGHT	4	2' - 0"	5
	GG	#4	STRAIGHT	4	2' - 0"	5
	HH	#4	STRAIGHT	4	2' - 0"	5
	II	#4	STRAIGHT	4	2' - 0"	5
	JJ	#4	STRAIGHT	4	2' - 0"	5
	KK	#4	STRAIGHT	4	2' - 0"	5
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	UU	#4	STRAIGHT	4	2' - 0"	5
	VV	#4	STRAIGHT	4	2' - 0"	5
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	NNN	#4	STRAIGHT	4	2' - 0"	5
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	VVVVVVVV	#4	STRAIGHT	4	2' - 0"	5
	WWWWWWWW	#4	STRAIGHT	4	2' - 0"	5
	XXXXXXXX	#4	STRAIGHT	4	2' - 0"	5
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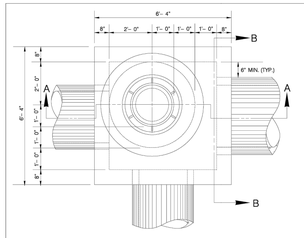
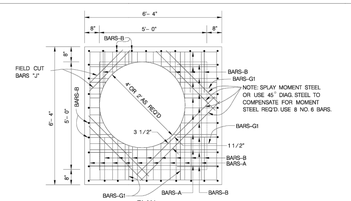
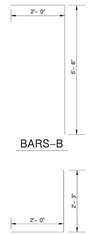


PLAN



PLAN

OF JUNCTION BOX TOP SLAB SHOWING STEEL



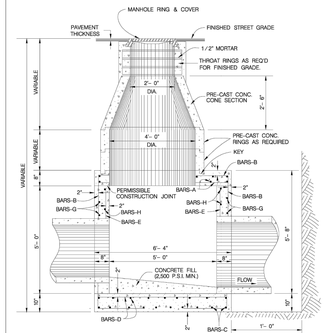
SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	18	4	9" O.C.	6'– 1"	73
	B	36	5	8" O.C.	7'– 6"	282
	C	36	5	8" O.C.	4'– 3"	160
STRAIGHT	D	18	4	9" O.C.	6'– 1"	73
STRAIGHT	E	20	3	12" O.C.	4'– 11"	37
STRAIGHT	G	20	4	12" O.C.	6'– 1"	81
STRAIGHT	G_1	8	4	AS SHOWN	6'– 1"	33
STRAIGHT	H	24	3	12" O.C.	5'– 5"	49
STRAIGHT	J	8	6	3 1/2" O.C.	4'– 11"	59
					TOTAL	847 lbs.

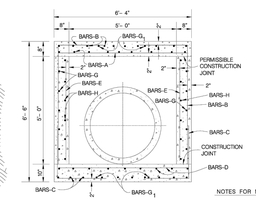
CLASS "A" CONCRETE – 5.03 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.

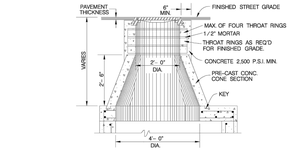
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM A-15. THE DEFORMATION SHALL CONFORM TO ASTM A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER 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 (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 – "STORM SEWER JUNCTION BOXES AND INLETS".



SECTION A–A

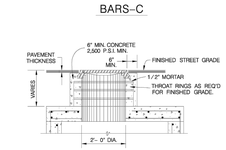


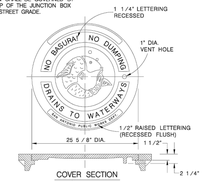
SECTION B–B



VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.





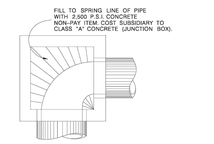
COVER SECTION

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

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.



CURVED DEFLECTOR DETAIL

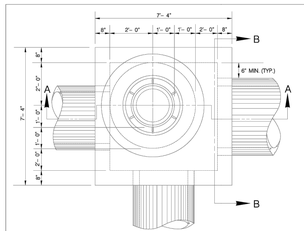
JANUARY 2005

CITY OF SAN ANTONIO

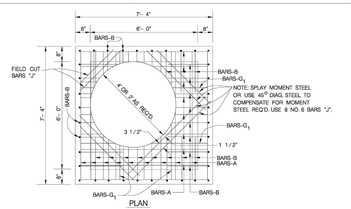
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

5'x5'x5' JUNCTION BOX STANDARDS

% SUBMITTAL	PROJECT NO.:		DATE:
DRAWN BY:	DSGN BY:	D'WD BY:	SHEET NO.: OF



PLAN



PLAN

JUNCTION BOX TOP SLAB SHOWING STEEL

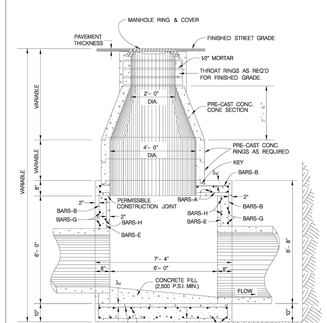
SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	21	4	9" O.C.	7'– 1"	99
	B	46	5	8" O.C.	8'– 6"	408
	C	46	5	8" O.C.	5'– 3"	252
STRAIGHT	D	21	4	9" O.C.	7'– 1"	99
STRAIGHT	E	28	3	12" O.C.	5'– 11"	62
STRAIGHT	G	20	4	12" O.C.	7'– 1"	95
STRAIGHT	G_1	8	4	AS SHOWN	6'– 1"	33
STRAIGHT	H	27	3	12" O.C.	7'– 1"	72
STRAIGHT	J	8	6	3 1/2" O.C.	4'– 11"	59
					TOTAL	1,179 LBS.

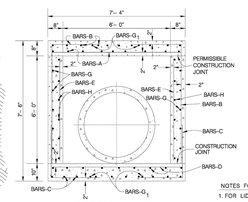
CLASS "A" CONCRETE – 6.94 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

★ NOTE BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQ'D.

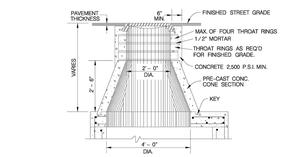
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3 /4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM A-15. THE DEFORMATION SHALL CONFORM TO ASTM A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER 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 (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 – "STORM SEWER JUNCTION BOXES AND INLETS".



SECTION A–A

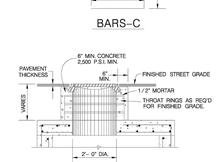


SECTION B–B



VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.



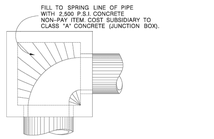
COVER SECTION

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

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.



CURVED DEFLECTOR DETAIL

JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

6'x6'x6' JUNCTION BOX STANDARDS

% SUBMITTAL	PROJECT NO.:		DATE:
DRAWN BY:	DSGN BY:	D'WD BY:	SHEET NO.: OF

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER

Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
DRAIN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C1.22

Date: Jul 31, 2025, 3:11pm User ID: anthony.alvarado
File: P:\13055\21\Design\Civil\SDD1-130521.dwg

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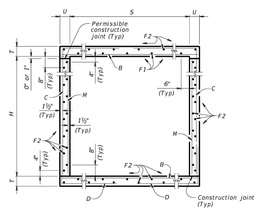
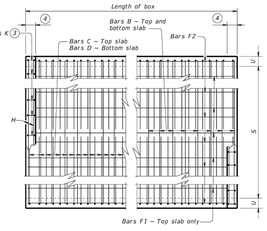
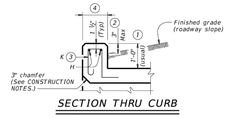


TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

(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 1'-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, tilt 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.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
- culverts with overlay,
- culverts with 1-to-2 course surface treatment, or
- culverts with the top slab as the final riding surface.

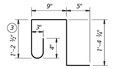
Provide bar laps, where required, as follows:
- Uncoated or galvanized – #4 = 1'-8" Min
- Uncoated or galvanized – #5 = 2'-1" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Single Box Culverts Cast-In-Place Miscellaneous Detail (SCC-MD) 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.

BARS C

BARS D



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

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL
SCC-3 & 4

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SECTION DIMENSIONS

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

QUANTITIES

FILL HEIGHT (5)	S	H	T	U	Bars B No.	Bars B Size	Bars B Spa	Bars B Length	Bars B Weight	Bars C No.	Bars C Size	Bars C Spa	Bars C Length	Bars C Weight	Bars C " X "	Bars C " Y "	Bars D No.	Bars D Size	Bars D Spa	Bars D Length	Bars D Weight	Bars D " Y "	Bars D " Z "	Bars M – #4 No.	Bars M – #4 Spa	Bars M – #4 Length	Bars M – #4 Weight	Bars F1 – #4 at 18" Spa No.	Bars F1 – #4 at 18" Spa Length	Bars F1 – #4 at 18" Spa Wt	Bars F2 – #4 at 18" Spa No.	Bars F2 – #4 at 18" Spa Length	Bars F2 – #4 at 18" Spa Weight	Bars H 4 – #4 Length	Bars H 4 – #4 Wt	Bars K No.	Bars K Wt	Per Foot of Barrel Conc (CY)	Per Foot of Barrel Reinf (Lb)	Curb Conc (CY)	Curb Reinf (Lb)	Total Conc (CY)	Total Reinf (Lb)
3'-0"	2'-0"	8"	7"	30	108	#5	9"	3'-11"	441	108	#4	9"	5'-4"	385	2'-6"	2'-10"	108	#4	9"	5'-1"	367	2'-10"	2'-3"	108	9"	2'-0"	144	3	39'-9"	80	19	39'-9"	505	3'-11"	10	10	28	0.292	48.1	0.3	38	12.0	1,960
3'-0"	2'-0"	8"	7"	30	108	#5	9"	3'-11"	441	108	#4	9"	6'-4"	457	3'-6"	2'-10"	108	#4	9"	5'-1"	367	2'-10"	2'-3"	108	9"	3'-0"	216	3	39'-9"	80	23	39'-9"	611	3'-11"	10	10	28	0.335	54.3	0.3	38	13.7	2,210
4'-0"	2'-0"	8"	7"	30	108	#5	9"	4'-11"	554	162	#4	6"	5'-8"	613	3'-6"	3'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	2'-0"	144	3	39'-9"	80	21	39'-9"	558	4'-11"	13	12	33	0.342	63.4	0.4	46	14.1	2,581
4'-0"	3'-0"	8"	7"	30	108	#5	9"	4'-11"	554	162	#4	6"	6'-8"	721	3'-6"	3'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	3'-0"	216	3	39'-9"	80	25	39'-9"	664	4'-11"	13	12	33	0.385	70.5	0.4	46	15.8	2,867
4'-0"	4'-0"	8"	7"	30	108	#5	9"	4'-11"	554	162	#4	6"	7'-8"	830	4'-6"	3'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	4'-0"	289	3	39'-9"	80	25	39'-9"	664	4'-11"	13	12	33	0.428	75.1	0.4	46	17.5	3,049

(5) For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL
SCC-3 & 4

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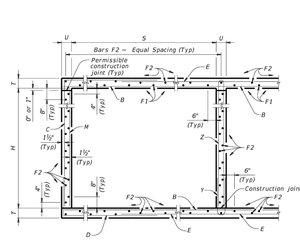
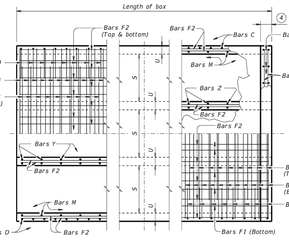


TYPICAL SECTION



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 1'-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, tilt 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 (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
- culverts with overlay,
- culverts with 1-to-2 course surface treatment, or
- culverts with the top slab as the final riding surface.

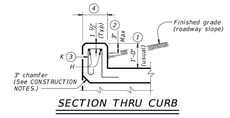
Provide bar laps, where required, as follows:
- Uncoated or galvanized – #4 = 1'-8" Min
- Uncoated or galvanized – #5 = 2'-1" Min
- Uncoated or galvanized – #6 = 2'-6" Min

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-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

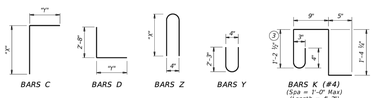
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

TABLE OF BAR DIMENSIONS

H	"X"	"Y"
2'-0"	2'-7 ½"	4'-1"
3'-0"	3'-7 ½"	4'-1"
4'-0"	4'-7 ½"	4'-1"
5'-0"	5'-7 ½"	4'-1"
6'-0"	6'-7 ½"	4'-1"



SECTION THRU CURB



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
6'-0" SPAN
0' TO 16' FILL
MC-6-16

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SECTION DIMENSIONS

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

QUANTITIES

NUMBER OF SPANS	S	H	T	U	Bars B No.	Bars B Size	Bars B Spa	Bars B Length	Bars B Wt	Bars C & D Bars C Length	Bars C & D Bars C Wt	Bars C & D Bars C Spa	Bars C & D Bars D Length	Bars C & D Bars D Wt	Bars E No.	Bars E Size	Bars E Spa	Bars E Length	Bars E Wt	Bars F1 – #4 No.	Bars F1 – #4 Spa	Bars F1 – #4 Length	Bars F1 – #4 Wt	Bars F2 – #4 No.	Bars F2 – #4 Spa	Bars F2 – #4 Length	Bars F2 – #4 Wt	Bars M – #4 No.	Bars M – #4 Size	Bars M – #4 Spa	Bars M – #4 Length	Bars M – #4 Wt	Bars Y & Z – #4 No.	Bars Y & Z – #4 Size	Bars Y & Z – #4 Spa	Bars Y Length	Bars Y Wt	Bars Z Length	Bars Z Wt	Bars H 4 – #4 Length	Bars H 4 – #4 Wt	Bars K No.	Bars K Wt	Per Foot of Barrel Conc (CY)	Per Foot of Barrel Reinf (Lb)	Curb Conc (CY)	Curb Reinf (Lb)	Total Conc (CY)	Total Reinf (Lb)
2	6'-0"	2'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	44	18"	39'-9"	1,168	108	9"	2'-0"	144	54	9"	4'-9"	171	5'-5"	195	13'-6"	36	30	84	0.894	182.4	1.0	120	36.8	7,414
3	6'-0"	2'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	63	18"	39'-9"	1,673	108	9"	2'-0"	144	108	9"	4'-9"	343	5'-5"	391	20'-1"	54	44	122	1.302	260.9	1.5	176	53.6	10,611
4	6'-0"	2'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	82	18"	39'-9"	2,177	108	9"	2'-0"	144	162	9"	4'-9"	514	5'-5"	586	26'-8"	71	56	156	1.711	339.4	2.0	227	70.4	13,801
5	6'-0"	2'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	101	18"	39'-9"	2,682	108	9"	2'-0"	144	216	9"	4'-9"	685	5'-5"	782	33'-3"	89	70	195	2.120	417.9	2.5	284	87.3	16,999
6	6'-0"	2'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	120	18"	39'-9"	3,186	108	9"	2'-0"	144	270	9"	4'-9"	857	5'-5"	977	39'-10"	106	82	228	2.529	496.4	3.0	334	104.1	20,189
2	6'-0"	3'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	3'-0"	216	54	9"	4'-9"	171	7'-5"	268	13'-6"	36	30	84	0.958	192.8	1.0	120	39.3	7,832
3	6'-0"	3'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	3'-0"	216	108	9"	4'-9"	343	7'-5"	535	20'-1"	54	44	122	1.389	274.4	1.5	176	57.1	11,152
4	6'-0"	3'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	3'-0"	216	162	9"	4'-9"	514	7'-5"	803	26'-8"	71	56	156	1.819	356.1	2.0	227	74.7	14,469
5	6'-0"	3'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	3'-0"	216	216	9"	4'-9"	685	7'-5"	1,070	33'-3"	89	70	195	2.250	437.7	2.5	284	92.5	17,790
6	6'-0"	3'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	3'-0"	216	270	9"	4'-9"	857	7'-5"	1,338	39'-10"	106	82	228	2.681	519.3	3.0	334	110.2	21,107
2	6'-0"	4'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	4'-0"	289	54	9"	4'-9"	171	9'-5"	340	13'-6"	36	30	84	1.023	199.2	1.0	120	41.9	8,089
3	6'-0"	4'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	4'-0"	289	108	9"	4'-9"	343	9'-5"	679	20'-1"	54	44	122	1.475	282.6	1.5	176	60.5	11,481
4	6'-0"	4'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	4'-0"	289	162	9"	4'-9"	514	9'-5"	1,019	26'-8"	71	56	156	1.927	366.1	2.0	227	79.1	14,870
5	6'-0"	4'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	4'-0"	289	216	9"	4'-9"	685	9'-5"	1,359	33'-3"	89	70	195	2.380	449.5	2.5	284	97.7	18,264
6	6'-0"	4'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	4'-0"	289	270	9"	4'-9"	857	9'-5"	1,698	39'-10"	106	82	228	2.832	533.0	3.0	334	116.2	21,652
2	6'-0"	5'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	56	18"	39'-9"	1,487	108	9"	5'-0"	361	54	9"	4'-9"	171	11'-5"	412	13'-6"	36	30	84	1.088	209.6	1.0	120	44.5	8,505
3	6'-0"	5'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	79	18"	39'-9"	2,098	108	9"	5'-0"	361	108	9"	4'-9"	343	11'-5"	824	20'-1"	54	44	122	1.562	296.2	1.5	176	64.0	12,024
4	6'-0"	5'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	102	18"	39'-9"	2,708	108	9"	5'-0"	361	162	9"	4'-9"	514	11'-5"	1,235	26'-8"	71	56	156	2.035	382.7	2.0	227	83.4	15,536
5	6'-0"	5'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	125	18"	39'-9"	3,319	108	9"	5'-0"	361	216	9"	4'-9"	685	11'-5"	1,647	33'-3"	89	70	195	2.509	469.3	2.5	284	102.8	19,056
6	6'-0"	5'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	148	18"	39'-9"	3,930	108	9"	5'-0"	361	270	9"	4'-9"	857	11'-5"	2,059	39'-10"	106	82	228	2.983	555.9	3.0	334	122.3	22,570
2	6'-0"	6'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	62	18"	39'-9"	1,646	108	9"	6'-0"	433	54	9"	4'-9"	171	13'-5"	484	13'-6"	36	30	84	1.153	220.0	1.0	120	47.1	8,921
3	6'-0"	6'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	87	18"	39'-9"	2,310	108	9"	6'-0"	433	108	9"	4'-9"	343	13'-5"	968	20'-1"	54	44	122	1.648	309.7	1.5	176	67.4	12,565
4	6'-0"	6'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	112	18"	39'-9"	2,974	108	9"	6'-0"	433	162	9"	4'-9"	514	13'-5"	1,452	26'-8"	71	56	156	2.144	399.4	2.0	227	87.7	16,204
5	6'-0"	6'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	137	18"	39'-9"	3,638	108	9"	6'-0"	433	216	9"	4'-9"	685	13'-5"	1,936	33'-3"	89	70	195	2.639	489.1	2.5	284	108.0	19,849
6	6'-0"	6'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	162	18"	39'-9"	4,302	108	9"	6'-0"	433	270	9"	4'-9"	857	13'-5"	2,420	39'-10"	106	82	228	3.134	578.9	3.0	334	128.3	23,488

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL
MC-6-16

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C1.23

Date: Jul 31, 2025, 3:11pm User ID: anthony.olverado
File: P:\130\55\21\Design\Civil\SDD1-130552I.dwg

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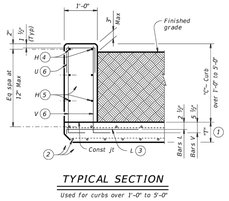
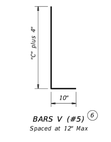
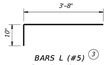


TYPICAL SECTION

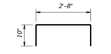
Used for curbs over 1'-0" to 5'-0"



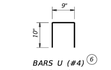
BARS V (#5) 6
Spaced at 12" Max



BARS L (#5) 3
Spaced at 12" Max



OPTIONAL BARS L (#5) 2 7
Spaced at 12" Max



BARS U (#4) 6
Spaced at 12" Max

TABLE OF ESTIMATED CURB QUANTITIES 8

Curb Height "C"	Conc (CY/LF)	Reinf Steel (Lb/LF)
1'-0"	0.037	10.4
1'-6"	0.056	14.5
2'-0"	0.074	15.6
2'-6"	0.093	18.0
3'-0"	0.111	19.0
3'-6"	0.130	21.3
4'-0"	0.148	22.4
4'-6"	0.167	24.8
5'-0"	0.185	25.9

1. "T" is equal to the culvert top slab thickness. For precast boxes with slabs less than 8" thick, see SCP-MD standard for additional details.
2. Adjust normal culvert slab bars as necessary to clear obstructions.
3. Place bars L as shown. Tilt hook as necessary to maintain cover.
4. Place normal culvert curb bars H(#4) as shown. Adjust as necessary to clear obstructions.
5. Additional bars H(#4) as required to maintain 12" Max spacing.
6. Replace normal culvert curb bars K with one bar U and two bars V as shown spaced at 12" Max. Adjust length of bars V as necessary to maintain clear cover.
7. Optional bars L are to be used only for precast box culverts with 3'-0" Closure pour.
8. Quantities shown are for Contractor's information only. Quantities are per linear foot of curb length. The value in table can be interpolated for intermediate values of curb height, "C". Quantity includes bars K (when applicable).

CONSTRUCTION NOTES:
Adjust reinforcing steel as necessary to provide 1 ½" cover. For vehicle safety, top of the curb must not project more than 3" above the finished grade.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class "C" concrete (f'c = 3,600 psi) minimum for curbs.
Provide bar laps, where required, as follows:
- Uncoated or galvanized – #4 = 1'-0" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
These extended curb details have sufficient strength to allow for future retrofit of Type T631 or T631LS railing. These details are suitable for use with PR11, PR22 and PR3 type rails. These details are not suitable for the mounting of other rail types. For new construction using T631 or T631LS railing, use the T631-CM standard.
This Curb is considered as part of the Box Culvert for payment.

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

Texas Department of Transportation — Bridge Division Standard

EXTENDED CURB DETAILS FOR BOX CULVERTS WITH CURBS OVER 1'-0" TO 5'-0" TALL

ECD

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TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

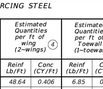
Maximum Wingwall Height Hw	Dimensions W	X	Y	Z	Variable Reinforcing Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of Culvert (2-wings) 4 Reinf Lb/FT	Reinf Conc (CY/FT)	Estimated Quantities per ft of Culvert (1-toewall) Reinf Lb/FT	Reinf Conc (CY/FT)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-0"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING (2-wings)

Bar	Size	No.	Spa
D1	#6	–	1'-0"
D2	#6	–	1'-0"
E1	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	–	8"
M1	#4	4	–
P	#4	–	1'-0"
V	#4	–	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	–	1'-0"
M2	#4	2	–
E2	#4	–	1'-0"



BARS D1

BARS D2

WING DIMENSION FORMULAS:
(All values are in feet.)

Hw = H + T + C
Lw = (Hw) (SL) + cosine (θ) for Type PW-1
= (Hw – T) (SL) + cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw – 0.5) (SL) + cosine (θ) for Type PW-2 and Hw < 4'

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] + cosine (θ)

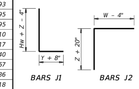
For precast culverts:
Ltw = [(N) (2 U + S) + (N – 1) (0.5)] + cosine (θ)
Total Wingwall Area (two wings = SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) – 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) – 1.5 SF for Type PW-2 and Hw < 4'

Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
SL:1 = Channel slope ratio (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

See applicable box culvert standard sheet for S, H, T, and U values.

1. Skew = 0°
2. At discharge end, chamfer may be ¾" minimum.
3. For 15° skew = 1"
   For 30° skew = 2"
   For 45° skew = 3"
4. Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
5. Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
6. Extend Bars E2 1'-6" minimum into the wingwall footing.
7. Lap Bars M1 1'-6" minimum with Bars M2.
8. Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
9. 0° Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-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 Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
10. 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.
11. 1'-0" typical, 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
12. 3'-0" for Hw < 4'.
13. 0" for Hw < 4'.

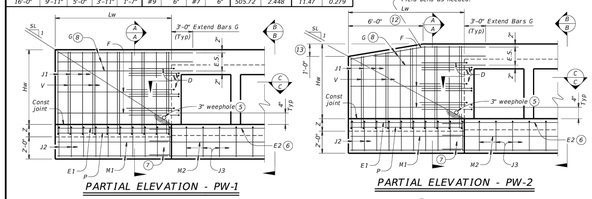


BARS J1

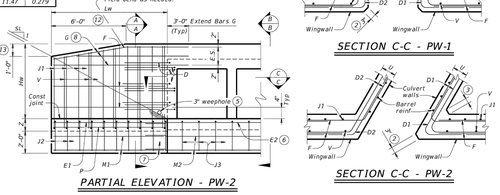
BARS J2

BARS J3

BARS V



PARTIAL ELEVATION - PW-1



PARTIAL ELEVATION - PW-2

SECTION C-C - PW-1

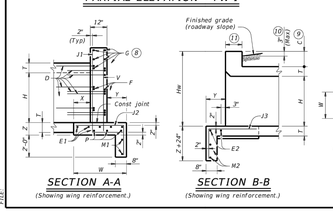
SECTION C-C - PW-2

DESIGNER NOTES:
Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.

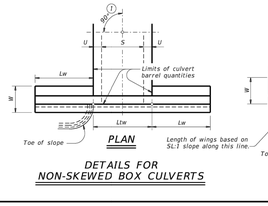
GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

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



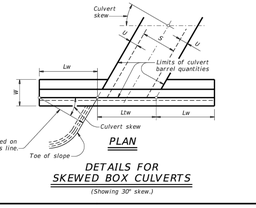
SECTION A-A
(Showing wing reinforcement.)

SECTION B-B
(Showing wing reinforcement.)



PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS



PLAN

DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° skew.)

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2

PW

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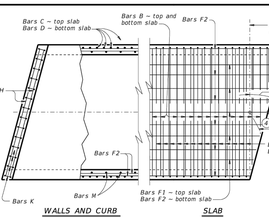
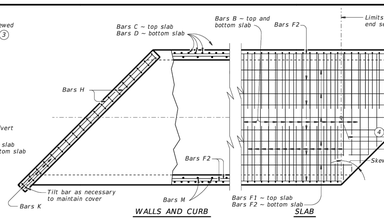


PLAN OF SKEWED ENDS ~ FROM 0° TO 15° 7



PLAN OF SKEWED ENDS ~ OVER 30° TO 45°

1. For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
   For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, C, D , E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-8" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
   Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.
2. When the spacing between Bars B becomes less than half of the normal spacing, cut bars to avoid conflict.
3. The length of Bars B vary in the skewed end sections.
4. [One half of overall width] x [tangent of the skew angle]
5. Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
6. When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
7. At the Contractor's option, for skews of 15° or less, place Bars B, C, and D parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B shown on the Single Box Culverts Cast-in-Place (SCC) standards sheets to accommodate the skew.

CONSTRUCTION NOTES:
Do not use permanent forms.
When required, lap Bars H 1'-8" for uncoated or galvanized bars.
Provide a minimum of 1 ½" clear cover.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel, if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) with these exceptions:
provide Class S concrete (f'c = 4,000 psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for details of straight sections of culvert.
For skewed sections and angle sections, refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the culvert Single Box Culverts Cast-in-Place (SCC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

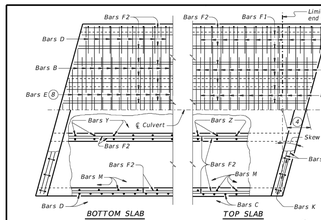
SINGLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS

SCC-MD

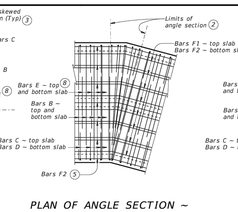
FILE: CD-SCC-MD-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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

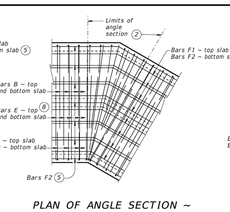
DATE:
FILE:



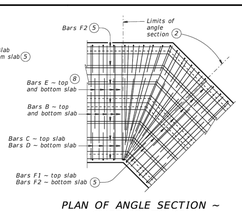
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° 7



PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

1. For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
   For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, Class C, D, E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-8" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
   Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.
2. When the spacing between Bars B or Bars E becomes less than half of the normal spacing, cut bars to avoid conflict.
3. The length of Bars B and Bars E will vary in the skewed end sections.
4. [One half of overall width] x [tangent of the skew angle]
5. Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
6. When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
7. At the Contractor's option, for skews of 15° or less, place Bars B, C, D, and E parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B and Bars E shown on the Multiple Box Culverts Cast-in-Place (MC) standard sheets to accommodate the skew.
8. Extend Bars E as shown on the MC standard sheet for direct traffic culverts.

CONSTRUCTION NOTES:
Do not use permanent forms.
When required, lap Bars H 1'-8" for uncoated or galvanized bars.
Provide a minimum of 1 ½" clear cover.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel, if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) with these exceptions:
provide Class S concrete (f'c = 4,000 psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for details of straight sections of culvert.
For skewed sections and angle sections, refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the Multiple Box Culverts Cast-in-Place (MC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS

MC-MD

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

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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

DRAIN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C1.24

Date: Jul 31, 2025, 3:11pm User ID: anthony.alvarado
File: P:\13055\21\Design\Civil\SDD1-130552121.dwg

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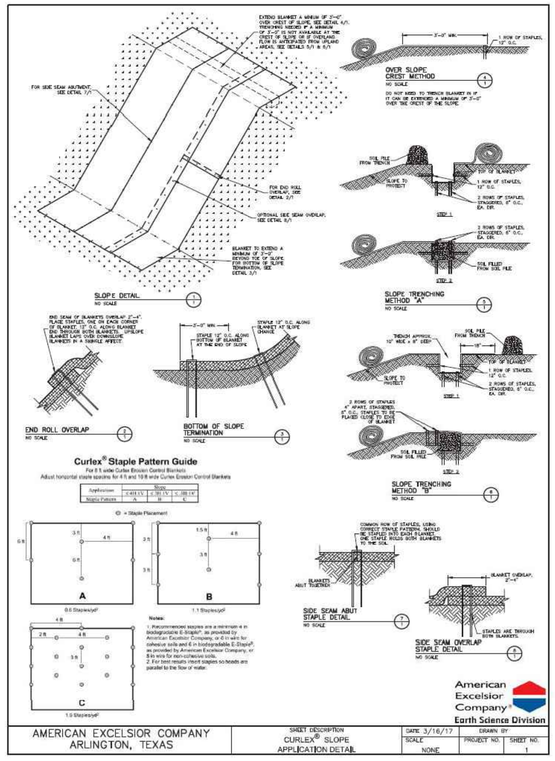

American Excelsior Company®
Earth Science Division

Proud Participant in NTPEP and Proud Member of: ASTM International MEMBER, Erosion Control Technology Council, IECA Member

Product Participant of: QDOR Performance Verified

PRODUCT DATA SHEET
CURLEX® ENFORCER®

DESCRIPTION

Curlex Enforcer a biocomposite Turf Reinforcement Mat (TRM) that consists of a specific cut of naturally seed free Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It is of consistent thickness with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket is covered with extra heavy duty black net. Curlex Enforcer is also available as QuickGRASS® (green pigment). Curlex Enforcer shall be manufactured in the U.S.A.

Curlex Enforcer has a design soil loss ratio (event-based RUSLE C factor) of .022 and is typically suitable for slopes up to .5H:1V. Curlex Enforcer is rated for channel flows up to 11 ft/s (3.4 m/s); 3.25 lb/ft² (156 Pa) shear stress unvegetated or 17 ft/s (5.2 m/s); 10.0 lb/ft² (480 Pa) shear stress vegetated.

PHYSICAL PROPERTIES

Curlex Enforcer measurements at time of manufacturing:

Width	8.0 ft (2.4 m)
Length	67.5 ft (20.6 m)
Area	60.0 yd² (50.2 m²)
Weight*	75.0 lb (34.1 kg)
Fiber Count	≈12,000 per yd² (≈14,400 per m²)
Fiber Length (80% min.)	≥6.0 in (≥15.2 cm)
Mass per Unit Area (± 10%)	1.25 lb/yd² (0.68 kg/m²)
Net Openings	0.75 in x 1.0 in (19.1 mm x 25.4 mm)

TYPICAL INDEX VALUES

Index Property	Test Method	Value
Thickness	ASTM D 6525	0.419 in (10.64 mm)
Light Penetration	ASTM D 6567	12.7%
Resiliency	ASTM D 1777/ECTC	55%
Mass per Unit Area	ASTM D 6475	0.98 lb/yd² (0.532 kg/m²)
MD-Tensile Strength Max.	ASTM D 6818	612.0 lb/ft (8.93 kN/m)
TD-Tensile Strength Max.	ASTM D 6818	460.8 lb/ft (6.72 kN/m)
MD-Elongation	ASTM D 6818	19.5%
TD-Elongation	ASTM D 6818	27.3%
Swell	ECTC Procedure	33%
Water Absorption	ASTM D 1117/ECTC	170%
UV Stability	ASTM D 4355 (1,000 hr)	90% minimum
Bench-Scale Rain Splash	ASTM D 7101	SLR = 10.24 @ 2 in/hr [b,c]
Bench-Scale Rain Splash	ASTM D 7101	SLR = 10.51 @ 4 in/hr [b,c]
Bench-Scale Rain Splash	ASTM D 7101	SLR = 10.86 @ 6 in/hr [b,c]
Bench-Scale Shear	ASTM D 7207	3.55 lb/ft² @ 0.5 in soil loss [c]
Germination Improvement	ASTM D 7322	486%

* Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior is 22%.

[b] SLR is the Soil Loss Ratio, as reported by NTPEP/AASHTO. [c] Bench-scale index values should not be used for design purposes.

MADE IN THE U.S.A.

850 Avenue H East | Arlington, Texas 76011
Phone 1-800-777-SOIL | Fax 817-385-3585 | www.Curlex.com

W0516R1116

American Excelsior Company®
Earth Science Division

Curlex® Blankets
Heavy Duty Excelsior Erosion Control Blankets

SUGGESTED SPECIFICATIONS

Choosing the Right Heavy Duty Curlex Product

Heavy Duty Excelsior Blankets are available in various fiber weights and netting combinations to match the appropriate job site requirements. Eighty percent of the Curlex fibers are six-inches or longer with consistent thickness and are evenly distributed over its entire area. Both the top and bottom side of the blankets are covered with black, extruded plastic mesh designed to provide strength beyond the service life of standard blankets. Curlex Excelsior blankets are naturally seed free and do not contain any chemical additives or foreign matter.

Curlex III Specifications

Recommended Use:	Slopes to 1H:1V, channel bottom applications, Shear stress 120 Pa (2.5 lb/ft²) (unvegetated)
Roll Sizes:	40 yd² (4'x90'), 80 yd² (8'x90'), 160 yd² (16'x90')
Weight*:	0.98 lb/yd²
Netting:	Black or FibreNet™, top and bottom
Color:	Natural Aspen or QuickGRASS Green

Curlex Enforcer Specifications

Recommended Use:	Slopes to .5H:1V, channel bottom applications, Shear stress 156 Pa (3.25 lb/ft²) (unvegetated), 480 Pa (10.0 lb/ft²) (vegetated)
Roll Sizes:	60 yd² (8'x67.5')
Weight*:	1.25 lb/yd²
Netting:	Extra Heavy Duty Black, top and bottom
Color:	Natural Aspen or QuickGRASS Green

Curlex HV Specifications

Recommended Use:	Slopes to .75H:1V, channel bottom applications, Shear stress 156 Pa (3.25 lb/ft²) (unvegetated),
Roll Sizes:	44.4 yd² (8'x50')
Weight*:	1.62 lb/yd²
Netting	Heavy Duty Black or FibreNet™, top and bottom

*Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen Excelsior is 22%.

Installation

Before installing Curlex blankets, the seedbed shall be inspected by the Owner's Representative to ensure it has been properly compacted and fine graded to remove any existing rills. It shall be free of obstructions, such as tree roots, projections such as stones, and other foreign objects. Grass seed shall match soil conditions to allow for maximum germination, dense vegetation, and a structural root system. Contractor shall proceed when satisfactory conditions are present. After the area has been properly shaped, seeded, fertilized, and compacted, locate the start of the roll, making sure the roll is facing toward the area to be covered, and then roll out the blanket. Blankets shall be rolled out flat, even, and smooth without stretching the material then anchored to the subgrade.

Slopes: It is recommended that the blankets be installed in the same direction as the water flow; however, on short slopes it may be more practical to install horizontally across the width of the application. If more than one width is required, simply abut the edges together and secure the blankets with a common row of biodegradable staples, steel staples, or stakes. Overlapping of Curlex excelsior blankets is not required or recommended. An exception is waterway slopes.

Channels: Curlex blankets shall be centered to offset a seam in the middle of the waterway. They shall be installed in the same direction as the water flow. The adjoining blankets shall be installed away from the center of channel and concentrated water flow. They shall be secured by a common row of staples. It is usually not necessary to overlap Curlex blankets; however, a 2' shingle type installation shall be used in waterway slopes applications. Curlex blanket installation should continue up the side slopes 3' above the anticipated high water elevation. Flanks exposed to runoff, or sheet flow, must be protected by a check slot or trenched. Curlex blankets shall be trenched at the start of the channel and anchored using a staggered staple pattern at end of roll overlaps and end of roll terminations.

Disclaimer: Curlex III, Curlex Enforcer, and Curlex HV is a system for erosion control and re-vegetation on slopes and channels. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion control and re-vegetation applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using Curlex, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing by AEC. These specifications are subject to change without notice.

If you would like to receive more information or consult with one of our Customer Care Center Specialists, please call us toll free at (888-352-9582)
PDF download specifications available in the Technical Support Library at www.curlex.com

MADE IN THE U.S.A.

American Excelsior Company®
Earth Science Division

Curlex® Blankets
Heavy Duty Excelsior Erosion Control Blankets

Product Description

Heavy Duty Curlex Blankets, for long-term protection against wind and water erosion, are a natural choice in place of stone or riprap in swales, ditch bottoms, and on long, steep slopes.

Material Characteristics

Curlex III

0.98 lb/yd² of Great Lakes Aspen Excelsior Wood Fibers and two layers of netting designed to provide protection for grass seed and topsoil from wind and water erosion for up to 36 months, while simultaneously promoting ideal growing conditions.

Curlex Enforcer

1.25 lb/yd² of Great Lakes Aspen Excelsior Wood Fibers and two layers of extra heavy duty UV stabilized netting designed to provide permanent service life and reinforcement between established vegetation and root systems on slopes and in channel bottoms. Curlex Enforcer is a biocomposite turf reinforcement mat (TRM).

Curlex High Velocity

1.62 lb/yd² of Great Lakes Aspen Excelsior Wood Fibers and two layers of heavy duty netting designed to provide extended protection for grass seed and topsoil from wind and water erosion for approximately 36+ months, while simultaneously promoting ideal growing conditions on steep, long slopes and/or in channel applications.

Curlex heavy duty excelsior blankets are available individually wrapped or in master packs to allow for mechanical unloading and stacking.

Performance Capabilities

Curlex heavy duty blankets can handle wind and water shear even on steep slopes. These heavy duty blankets provide long-term protection in critical areas where vegetation requires additional time and protection to develop.

Curlex III

Channels	Shear Stress:	120 Pa (2.5 lb/ft²) (unvegetated)
Slopes	Grade:	up to 1H:1V

Curlex Enforcer

Channels	Shear Stress:	156 Pa (3.25 lb/ft²) (unvegetated)
		480 Pa (10.0 lb/ft²) (vegetated)
Slopes	Grade:	up to .50H:1V

Curlex HV

Channels	Shear Stress:	156 Pa (3.25 lb/ft²) (unvegetated)
Slopes	Grade:	up to .75H:1V

Typical Applications

Channel bottoms, swales, steep slopes, let down structures, drop structures, and other areas associated with concentrated water flow exceeding the performance capability and service life of a standard biodegradable blanket.

American Excelsior Company®
Earth Science Division
Arlington, Texas (800) 777-SOIL • www.curlex.com

MADE IN THE U.S.A.

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
DRAIN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C1.25

Date: Jul 31, 2025, 3:11pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\SD01-130552.dwg

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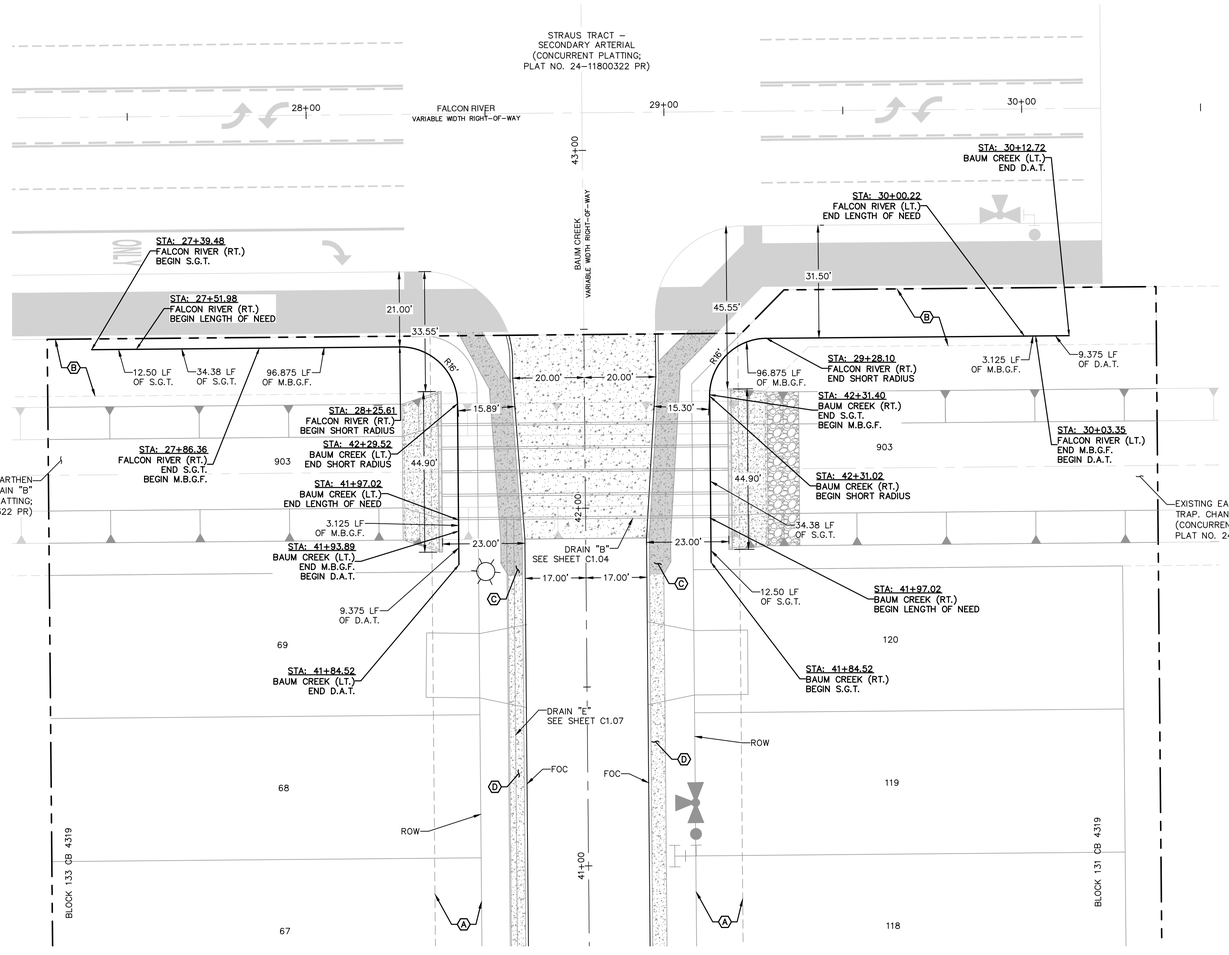


NOTES:

STEEL POSTS TO BE USED ON ALL METAL BEAM GUARD FENCE.

BARRIER LENGTH OF NEED BAUM CREEK RIGHT

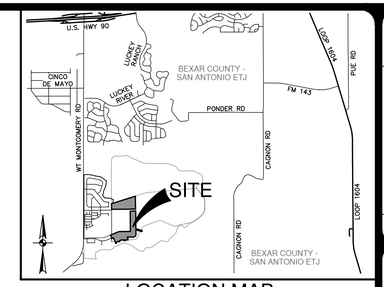
ADT > 750

C_z = 30'	G_d = 31.50'
G_u = 15.30'	D_d = 45.50'
D_u = 23'	D_u = 23' < C_z = 23'
L_u = 83.70'	D_d = 45.55' > C_z = 0'
L_p = 44.90'	
L_d = 0'	TOTAL LENGTH OF NEED = 131.26'

BARRIER LENGTH OF NEED BAUM CREEK LEFT

ADT > 750

C_z = 30'	G_d = 15.89'
G_u = 21'	D_d = 23'
D_u = 30'	D_u = 33.55' > C_z = 0'
L_u = 0'	D_d = 23' < C_z = 23'
L_p = 44.90'	
L_d = 77.28'	TOTAL LENGTH OF NEED = 131.26'



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

KEY LEGEND:

- (A) 13' GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT
- (B) 16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322)
- (C) 6' DEVELOPER SIDEWALK
- (D) 4' SIDEWALK

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. ANY AND ALL BARRIER AND END TREATMENTS SHALL BE INSTALLED PER TXDOT STANDARDS.
6. BARRIER LENGTH OF NEED BASED ON TXDOT ROADWAY DESIGN MANUAL APPENDIX A.

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
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SHEET TITLE - LINE 1

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED DW DRAWN AD
SHEET C1.26

Date: Jul 31, 2025, 3:13pm User ID: anthony.alvarado
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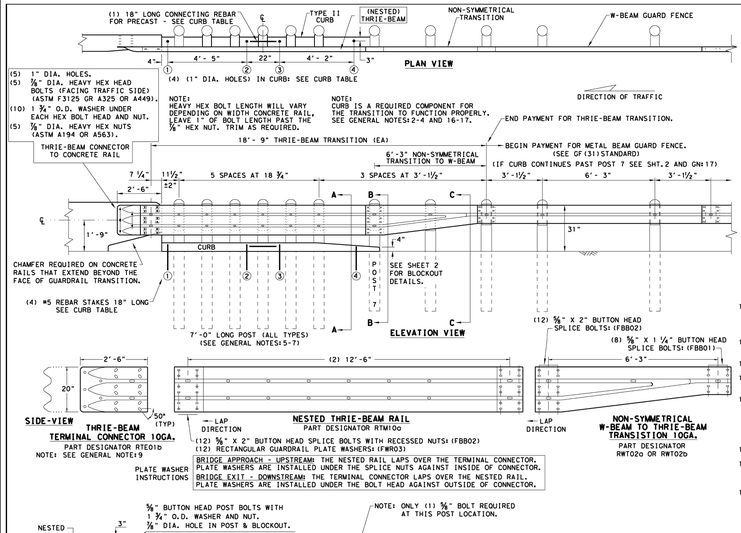
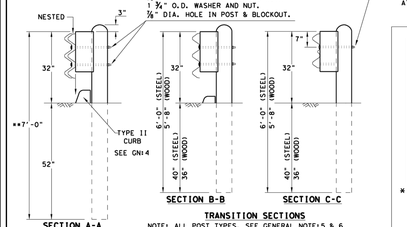
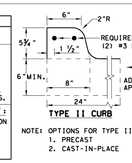




THRIE-BEAM TERMINAL - CURB TABLE
PRECAST CURB FULL LENGTH EQUALS 12'- 2" THE PRECAST CURB MAY BE FORMED INTO TWO SECTIONS.
CURB (1) LENGTH 5'- 8"
CURB (2) LENGTH 6'- 6"
TAPER CURB (2) TO A HEIGHT OF 4" AT POST 7
CONNECTING PRECAST CURB SECTIONS (1) & (2): FORM OR CORE 1" DIA. HOLE 9" LONG INTO EACH CURB END. USE (1) #5 GR. 60 REBAR 18" LONG TO CONNECT BOTH CURBS.
SECURING PRECAST OR CAST-IN-PLACE TO FINISHED GRADE *: FORM OR CORE (4) 1" DIA. HOLES, SEE PLAN AND ELEVATION VIEWS FOR HOLE LOCATIONS. DRIVE (4) #5 GR. 60 REBAR STAKES 18" LONG INTO THE GROUND AND ½" BELOW TOP OF CURB. FILL HOLES WITH APPROVED GROUT MIXTURE.

* NOTES: NOT NEEDED FOR CAST-IN-PLACE. SEE TYPE II CURB DETAIL FOR REBAR AND COVER REQUIREMENTS. PERCUSSION DRILLING IS NOT PERMITTED WITH TYPE II CURB, BRIDGE RAIL OR CONCRETE TRAFFIC RAIL.



TYPE II CURB DETAILS

GENERAL NOTES

1. CONTACT THE DESIGN DIVISION FOR DRAINAGE CUT OUT OPTIONS NEEDED WITHIN THE CURB SECTION OF THE THRIE-BEAM TRANSITION. (512) 416-2678
2. CONCRETE CURB MAY BE CAST-IN-PLACE OR PRECAST AS SHOWN ON THIS SHEET. WHEN USED IN CONJUNCTION WITH THE THRIE-BEAM TRANSITIONS, CURB SHALL BE TYPE II (5- ⅝" HEIGHT). SEE CURRENT CCCG STANDARD SHEET FOR FURTHER DETAILS. IF OTHER CURB HEIGHTS ARE SHOWN IN THE PLANS IN CONJUNCTION WITH THE TRANSITION, THE CURB HEIGHT MAY BE FROM 4" TO 8" WITH A RELATIVELY VERTICAL FACE. CONCRETE CURB SHALL BE CONTINUOUS TO THE SEVENTH POST UNLESS OTHERWISE SHOWN IN THE PLANS. SEE GENERAL NOTE: 17 FOR CIRCUMSTANCES WHERE CURB CONTINUES PAST POST 7.
3. CONCRETE CURB TYPE II SUBSIDIARY TO "METAL BEAM GUARD FENCE TRANSITION". IF NO ADDITIONAL CURB IS INDICATED BEYOND THE TRANSITION, THEN ANY CURB HEIGHT GREATER THAN 4" WILL BE TAPERED DOWN BEGINNING AT THE LAST 7' FT. POST TO A MAXIMUM HEIGHT OF 4" AT POST 7. IF SHOWN ELSEWHERE IN THE PLANS, ADDITIONAL CURB UNDERNEATH GUARDRAIL WILL BE PAID FOR BY THE LINEAR FOOT.
4. UNLESS OTHERWISE SHOWN IN THE PLANS, TRANSITIONS SHALL BE PLACED WITH THE BLOCKOUT FACE IN FRONT OF OR DIRECTLY ABOVE THE CURB FACE. SEE SECTION A-A.
5. FOR ROUND WOOD POST SYSTEMS, ALL ROUND WOOD POSTS SHALL BE 7 ½" DIA. MINIMUM THROUGHOUT THE THRIE-BEAM TRANSITION.
6. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST OR STEEL POST) WILL BE AS SHOWN IN THE PLANS.
7. THE POST LENGTH SHALL BE MARKED ON ALL 7'- 0" LONG POSTS BY THE MANUFACTURER. THE MARK SHALL BE LOCATED WITHIN THE TOP 1 FT. REGION OF THE POST. AT LEAST ⅜" IN HEIGHT, AND VISIBLE AFTER INSTALLATION. WOODEN POSTS SHALL BE MARKED WITH A BRAND, AND STEEL POSTS WITH A STENCIL BEFORE GALVANIZING.
8. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
9. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED ON THE PLANS. THE THRIE-BEAM TERMINAL CONNECTOR AND THE THRIE-BEAM TRANSITION TO W-BEAM SHALL BE OF THE SAME MATERIAL, BUT SHALL NOT BE LESS THAN 10 GAUGE. CONTRACTOR SHALL VERIFY THAT THE LOCATIONS OF BOLT HOLES MATCH THOSE IN THE THRIE-BEAM TERMINAL CONNECTOR PRIOR TO ORDERING MATERIALS.
10. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND ⅝" WASHER (FWC16G) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
11. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
12. CROWN SHALL BE WIDENED TO ACCOMMODATE TRANSITIONS.
13. WHERE SOLID ROCK IS ENCOUNTERED, CONTACT THE DESIGN DIVISION FOR ADDITIONAL GUIDANCE. (512) 416-2678
14. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. TXDOT'S MATERIALS AND TESTS DIVISION MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210. ONLY PRODUCERS ON THE MPL CAN FURNISH COMPOSITE MATERIAL BLOCKS.
15. REFER TO GF(31)STANDARD SHEET & BRIDGE RAILING DETAILS FOR ADDITIONAL DETAILS.
16. THE INSTALLATION OF THE TYPE II CURB IS CRITICAL FOR THE PERFORMANCE OF THE THRIE-BEAM TRANSITION SYSTEM. THE CURB PREVENTS (VEHICLE WHEEL SNAGGING) AT THE CONCRETE RAIL AND IS REQUIRED TO MEET MASH CRASH TEST CRITERIA.
17. IF CURB EXTENDS BEYOND POST 7, 25' OF NESTED W-BEAM GUARDRAIL SHALL BE INSTALLED BEYOND THE PAY LIMITS OF THRIE-BEAM TRANSITION SECTION, (SEE SHT.2). PAYMENT FOR THIS 25' SECTION WILL BE BY LINEAR FOOT, PAY ITEM "0540 6XXX MTL W-BEAM GD FEN (NESTED) (TIM POST)" OR "540 6XXX MTL W-BEAM GD FEN (NESTED) (STEEL POST)" AS APPLICABLE FOR POST TYPE. SEE SHT. 2 FOR ADDITIONAL INFORMATION.

HIGH-SPEED TRANSITION
SHEET 1 OF 2

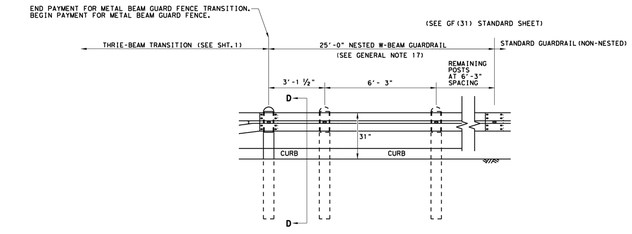
Texas Department of Transportation | Design Division Standard

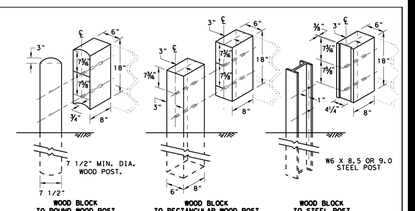
METAL BEAM GUARD FENCE THRIE-BEAM TRANSITION TL-3 MASH COMPLIANT

GF(31)TR TL3-20

FILE: gf31tr11320.dgn	DW: TxDOT	CK: KM	DW: VP	CK: CGL/AG
©TxDOT: NOVEMBER 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

REQUIRED ALTERNATIVE FOR CONTINUOUS CURB EXTENDING PAST POST 7 (SEE SHT. 1 GENERAL NOTE 17)





THRIE BEAM TRANSITION BLOCKOUT DETAILS

HIGH-SPEED TRANSITION
SHEET 2 OF 2

Texas Department of Transportation | Design Division Standard

METAL BEAM GUARD FENCE THRIE-BEAM TRANSITION TL-3 MASH COMPLIANT

GF(31)TR TL3-20

FILE: gf31tr11320.dgn	DW: TxDOT	CK: KM	DW: VP	CK: CGL/AG
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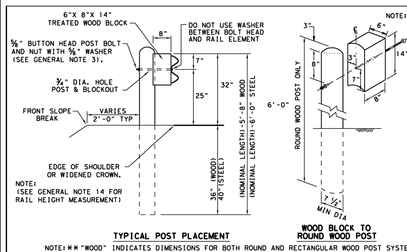
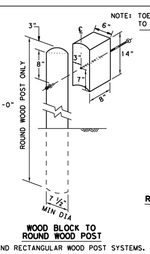
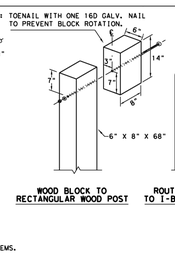
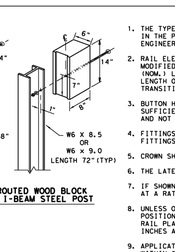


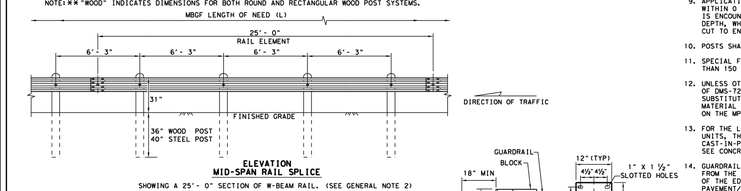


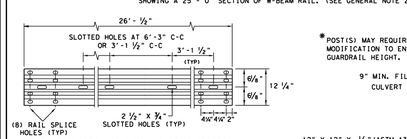


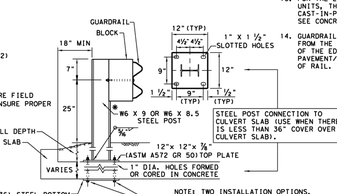


GENERAL NOTES

1. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
2. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'- 0", OR 12'- 6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 ½" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND ⅝" WASHER (FWC16G) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
4. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
5. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
6. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
7. IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
8. UNLESS OTHERWISE SHOWN IN THE PLANS, GUARD FENCE PLACED IN THE VICINITY OF CURBS SHALL BE POSITIONED SO THAT THE FACE OF CURB IS LOCATED DIRECTLY BELOW OR BEHIND THE FACE OF THE RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
9. APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
10. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
11. SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
12. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TXDOT MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210 ONLY PRODUCERS ON THE MPL MAY FURNISH COMPOSITE MATERIAL BLOCKS.
13. FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MO.
14. GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.

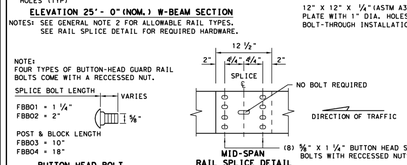






* POST(S) MAY REQUIRE FIELD MODIFICATION TO ENSURE PROPER GUARDRAIL HEIGHT.

NOTE: TRANSISTIONS TO BRIDGE RAILS OR TRAFFIC BARRIERS. SEE GF(31)TL3 TR STANDARD FOR HIGH-SPEED TL-3 TRANSITIONS. SEE GF(31)TL2 TR STANDARD FOR LOW-SPEED TL-2 TRANSITIONS.



NOTE: TWO INSTALLATION OPTIONS.

1. BOLT-THROUGH OPTION: REQUIRES A 6" MIN. SLAB THICKNESS. ⅝" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS. NOTE: BOLT LENGTH = SLAB PLUS 2 ¼" MIN.
2. EPOXY ANCHOR OPTION: THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE ⅝" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS ¼" MIN. BEYOND NUT.

NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF(31)LS STANDARD FOR "LONG SPAN" OPTION.

Texas Department of Transportation | Design Division Standard

METAL BEAM GUARD FENCE TL-3 MASH COMPLIANT

GF(31)-19

FILE: gf3119.dgn	DW: TxDOT	CK: KM	DW: VP	CK: CGL/AG
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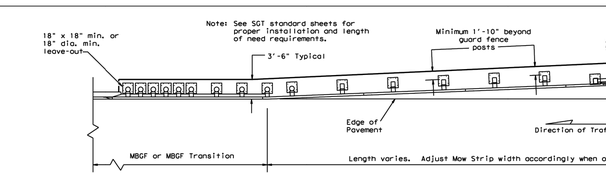

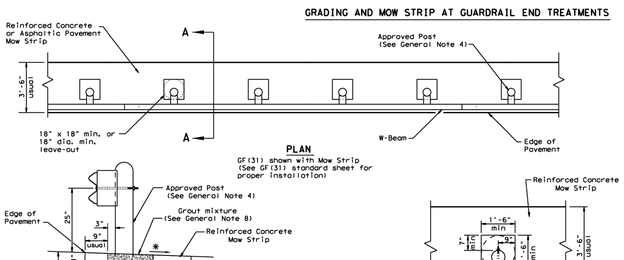

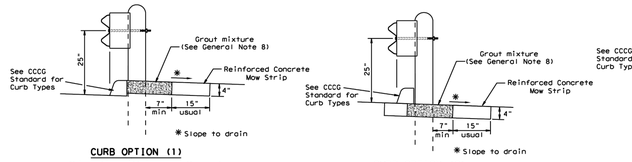

Note: Site Condition(s)

Site conditions may exist where grading is required for the proper installation of metal guard fence and end treatments.

Approach grading or mow strip may be decreased or eliminated, as directed by the Engineer.

GENERAL NOTES

1. This mow strip design is for use with metal beam guard fence, guard fence transitions, and guard fence end treatments. See applicable GF(31) MBGF or GF(31) Transition Standard sheet for additional information.
2. Mow strips shall be reinforced concrete with (wire mesh or synthetic fiber), as shown on the plans and will be paid for under the pertinent bid item. Reinforced concrete shall be placed in accordance with Item 432, "Riprap." The use of the synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Material Producer List (MPL), maintained by TxDOT, Construction Division.
3. The leave-out behind the post shall be a minimum of 7".
4. Only steel (W6 x 8.5 or W6 x 9.0), or 7 ½" Dia. round wood posts are acceptable for use in the mow strip. See GF(31) Standard for additional details.
5. Other curb placement options may be used. Curbs are not considered part of the mow strip and will be paid for under other pertinent bid item.
6. Thickness of the mow strip will be 4".
7. The limits of payment for reinforced concrete will include leave-outs for the posts.
8. The leave-outs shall be filled with a Grout mixture consisting of: 2719 pounds sand, 188 pounds Type I or II cement, and 550 pounds of water per cubic yard, with a 28-day compressive strength of approximately 230 psi or less. Provide grout with a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (Suggested Maximum leave-out of 20"). Payment for furnishing and placing the grout mixture will be subsidiary to the pay item of riprap mow strip.

Texas Department of Transportation | Design Division Standard

METAL BEAM GUARD FENCE (MOW STRIP) TL-3 MASH COMPLIANT

GF(31)MS-19

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REVISIONS	DIST	COUNTY		SHEET NO.

NO.	REVISION	DATE

STATE OF TEXAS — JON D. ADAME — 82567 — LICENSED PROFESSIONAL ENGINEER
7-31-25

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

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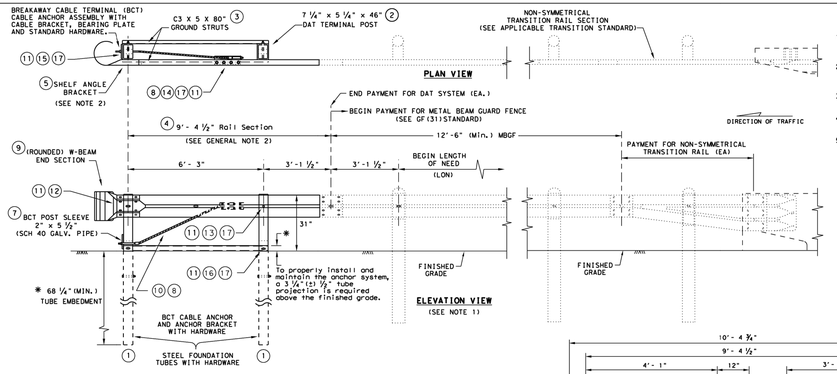


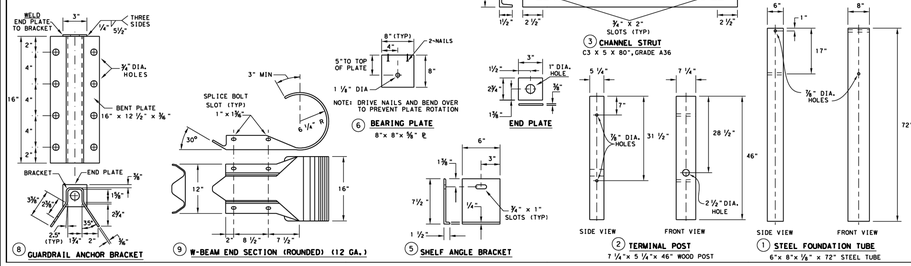
GENERAL NOTES

1. THE DETAIL SHOWN IS THE MINIMUM LENGTH OF NEED (LON) FOR A DOWNSTREAM ANCHOR TERMINAL (DAT) CONNECTED TO A CONCRETE RAIL.
2. THE RAIL SECTION AT THE END POST IS SUPPORTED BY THE SHELF ANGLE BRACKET. THE RAIL ELEMENT IS NOT ATTACHED TO THE END POST.
3. THE FOUNDATION TUBES SHALL NOT PROJECT MORE THAN 3 3/4" ABOVE THE FINISHED GRADE.
4. ALL HARDWARE FOR DAT SHALL BE ASTM A307 UNLESS OTHERWISE SHOWN.
5. REFER TO GF(31) SHEET FOR TERMINAL CONNECTION DETAILS.

MOW STRIP INSTALLATION

IF A MOW STRIP IS REQUIRED WITH THE DAT INSTALLATION THE LEAVE-OUT AREA AROUND THE STEEL FOUNDATION TUBES AND THE TWO CHANNEL STRUTS MAY BE OMITTED. THIS WILL REQUIRE A FULL POUR AT THE FOUNDATION TUBES.

#	(DAT) PARTS LIST	QTY
1	STEEL FOUNDATION TUBE	2
2	DAT TERMINAL POST	2
3	CHANNEL STRUT	2
4	TERMINAL RAIL ELEMENT	1
5	SHELF ANGLE BRACKET	1
6	BCT BEARING PLATE	1
7	BCT POST SLEEVE	1
8	GUARDRAIL ANCHOR BRACKET	1
9	(ROUNDED)W-BEAM END SECTION	1
10	BCT CABLE ANCHOR	1
11	RECESSED NUT, GUARDRAIL	20
12	1 1/4" BUTTON HEAD BOLT	4
13	10" BUTTON HEAD BOLT	2
14	5/8" X 2" HEX HEAD BOLT	8
15	5/8" X 8" HEX HEAD BOLT	4
16	5/8" X 10" HEX HEAD BOLT	2
17	5/8" FLAT WASHER	18

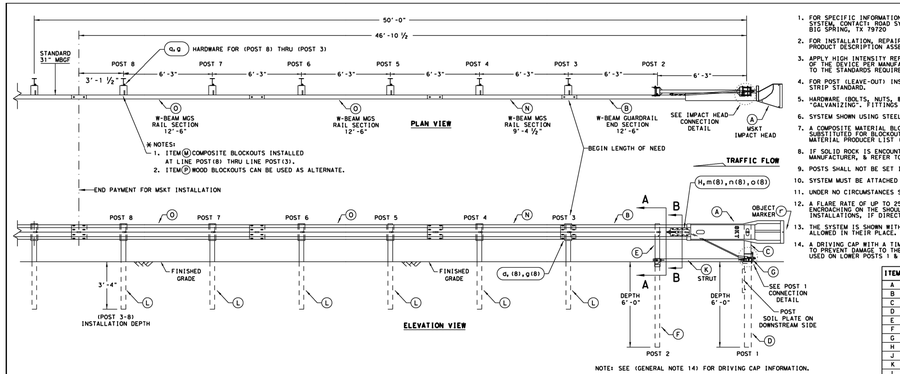


Texas Department of Transportation — Design Division Standard

METAL BEAM GUARD FENCE (DOWNSTREAM ANCHOR TERMINAL) TL-3 MASH COMPLIANT

GF(31)DAT-19

FILE:	gf31dat19.dgn	DN:TxDOT	CK: KM	DW: VP	CK: CGL/AG
©TxDOT:	NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.



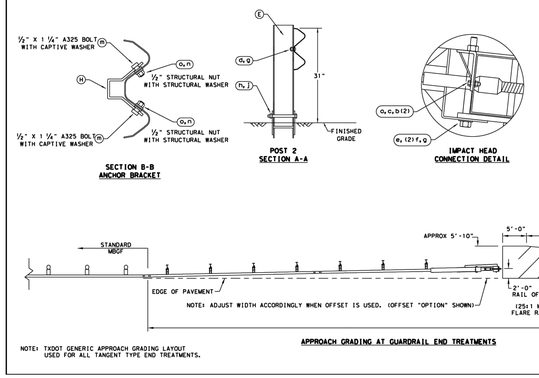
NOTE: SEE (GENERAL NOTE 14) FOR DRIVING CAP INFORMATION.

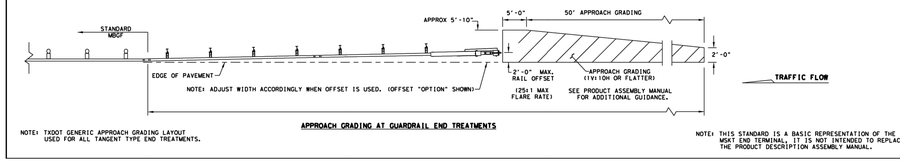
GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: ROAD SYSTEMS, INC. (432)263-2435, 3616 OLD HOWARD COUNTY AIRPORT, BIG SPRING, TX 79720
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THIS MSKT END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL. (PUBLICATION-062711).
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
6. SYSTEM SHOWN USING STEEL WIDE FLANGE POSTS WITH COMPOSITE BLOCKOUTS.
7. A COMPOSITE MATERIAL BLOCKOUTS THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
8. IF SOLID ROCK IS ENCOUNTERED IN THE AREA OF (POST 1) AND / OR (POST 2) CONTACT THE MANUFACTURER, & REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
9. POSTS SHALL NOT BE SET IN CONCRETE.
10. SYSTEM MUST BE ATTACHED TO STANDARD 31" MBGF.
11. UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE MSKT SYSTEM BE CURVED.
12. A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM PENETRATING THE SLOPE. THE FLARE RATE MAY ALSO BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.
13. THE SYSTEM IS SHOWN WITH TWO 12'-6" MBGF PANELS, ONE 25'-0" MBGF PANEL IS ALSO ALLOWED IN THEIR PLACE.
14. A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POSTS 3-8 TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST. SPECIAL DRIVING CAP TO BE USED ON LOWER POSTS 1 & 2 TO PREVENT DAMAGE TO THE WELDED PLATES.

ITEM	QTY	MAIN SYSTEM COMPONENTS	ITEM NUMBERS
A	1	MSKT IMPACT HEAD	MSK3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	POST 1 - TOP (6" x 6" x 1/4" TUBE)	MTP49P1A
D	1	POST 1 - BOTTOM (6" W8X15)	MTP49P1B
E	1	POST 2 - ASSEMBLY TOP	UHP2A
F	1	POST 2 - ASSEMBLY BOTTOM (6" W8X9)	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	GROUND STRUT	MS785
L	6	W6x9 OR W6x8.5 STEEL INSERT	P621
M	6	COMPOSITE BLOCKOUTS	CBSP-14
N	1	W-BEAM MGS RAIL SECTION (9'-4 1/2")	G12025
O	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
P	6	WOOD BLOCKOUT 6" X 8" X 14"	P675
Q	1	W-BEAM MGS RAIL SECTION (25'-0")	G1209
		SMALL HARDWARE	
a	2	5/8" x 1" HEX BOLT (GRD 5)	B5160104A
b	4	5/8" WASHER	M0516
c	2	5/8" HEX NUT	N0516
d	25	5/8" DIA. x 1 1/4" SPLICE BOLT (POST 2)	B5801212
e	2	5/8" DIA. x 9" HEX BOLT (GRD A449)	B5809004A
f	3	5/8" WASHER	M050
g	33	5/8" DIA. H.G.R NUT	N050
h	1	3/4" DIA. x 8 1/2" HEX BOLT (GRD A449)	B3408054A
j	1	3/4" DIA. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	1/2" x 1 1/4" A325 BOLT WITH CAPTIVE WASHER	SB124
n	8	1/2" STRUCTURAL NUTS	N012A
o	8	1 1/4" O.D. x 3/4" I.D. STRUCTURAL WASHERS	W012A
p	1	BEARING PLATE RETAINER TIE	CT-100ST
q	6	5/8" x 10" H.G.R. BOLT	B581002
r	1	OBJECT MARKER 18" X 18"	E3151

ALTERNATIVE ITEMS NOT SHOWN. ✻✻ ✻ ITEM(P) 8" WOOD-BLOCKOUT ✻✻ ITEM(Q) 25'GUARD FENCE PANEL





NOTE: TXDOT GENERIC APPROACH GRADING LAYOUT USED FOR ALL TANGENT TYPE END TREATMENTS.

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE MSKT END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Texas Department of Transportation — Design Division Standard

SINGLE GUARDRAIL TERMINAL MSKT-MASH-TL-3

SGT(12S)31-18

FILE:	sgt12s31tl8.dgn	DN:TxDOT	CK: KM	DW: VP	CK: CL
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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame 7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SHEET TITLE - LINE 1

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED DW DRAWN AD
SHEET C1.28

Date: Jul 31, 2025, 3:13pm User ID: anthony.alvarado
File: P:\13055\21\Design\Civil\SGGR-130521.dwg

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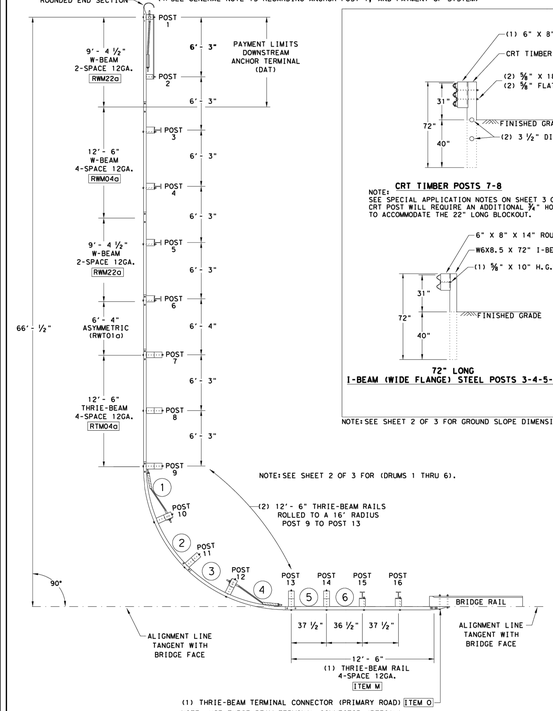
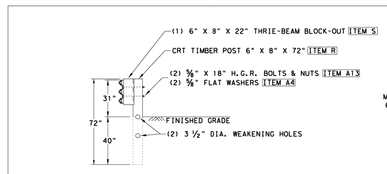
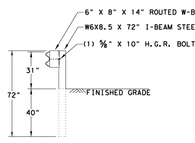


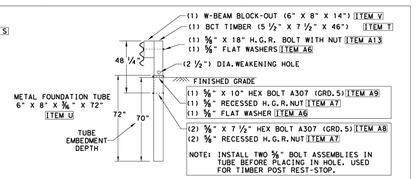


CRT TIMBER POSTS 7-8

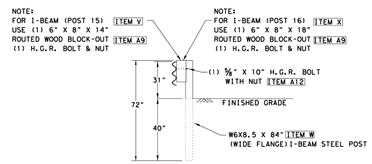
NOTE:
SEE SPECIAL APPLICATION NOTES ON SHEET 3 OF 3.
CRT POST WILL REQUIRE AN ADDITIONAL 3/4" HOLE TO ACCOMMODATE THE 22" LONG BLOCKOUT.



72" LONG
I-BEAM (WIDE FLANGE) STEEL POSTS 3-4-5-6

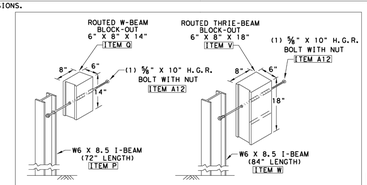


BCT TIMBER POSTS WITH METAL FOUNDATION TUBES
9-10-11-12-13-14



84" LONG
I-BEAM WIDE FLANGE STEEL POSTS 15-16

NOTE: SEE SHEET 2 OF 3 FOR GROUND SLOPE DIMENSIONS.



POST 3-4-5-6-15 **POST 16**

INSTALLATION DETAIL
ROUTED WOOD BLOCK-OUT WITH WIDE FLANGE STEEL POST

NOTE:
POST SYSTEM USES TWO TYPES OF 14" WOOD BLOCK-OUTS.
FOR CRT & BCT WOOD POSTS USE: (PDB01a)
FOR I-BEAM STEEL POSTS USE: (PDB01b)

POST (3-4-5-6) USE: 14" BLOCK-OUT (PDB01b)
POST (7-8) USE: 22" BLOCK-OUT (PDB02)
POST (9 THRU 14) USE: 14" BLOCK-OUT (PDB01a)
POST (15) USE: 14" BLOCK-OUT (PDB01b)
POST (16) USE: 18" BLOCK-OUT (PDB01)

(MASH TL-2 COMPLIANT)
TESTED TO MASH TL-2 WITH A 3:1 SLOPE

SHEET 1 OF 3

Texas Department of Transportation | Design Division Standard

TL-2
SHORT RADIUS GUARDRAIL
MASH COMPLIANT
SRG(TL-2)-21

FILE: srg121	TxDOT	CK: KM	DN: VP	CK: CGL
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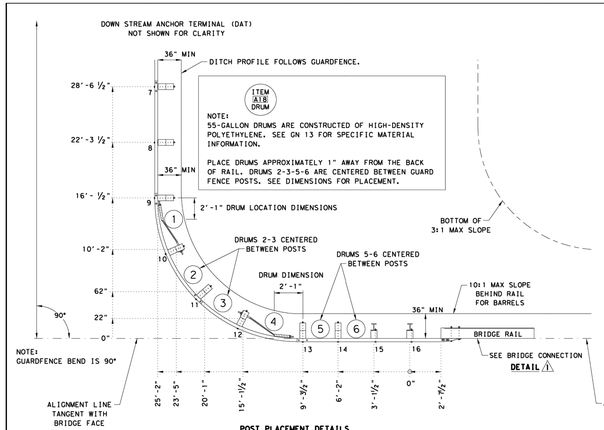
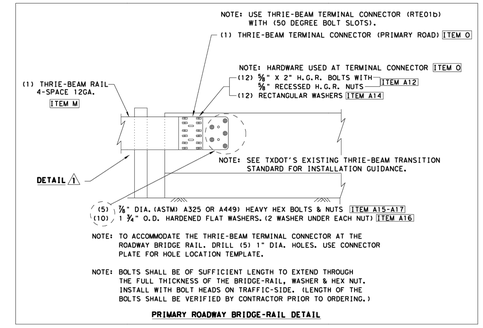
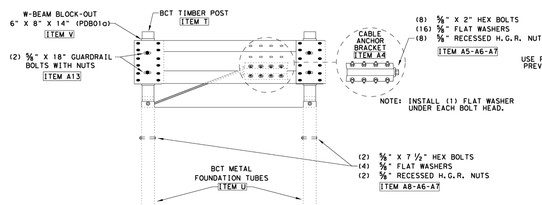
REVISIONS				
	DIST	COUNTY		SHEET NO.



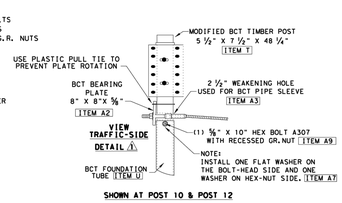
POST PLACEMENT DETAILS



PRIMARY ROADWAY BRIDGE-RAIL DETAIL



SHOWN AT POST 10 & POST 12 **SHOWN AT POST 9 & POST 13**



SHOWN AT POST 10 & POST 12
BCT TIMBER POST WITH METAL FOUNDATION TUBE

(MASH TL-2 COMPLIANT)
TESTED TO MASH TL-2 WITH A 3:1 SLOPE

SHEET 2 OF 3

Texas Department of Transportation | Design Division Standard

TL-2
SHORT RADIUS GUARDRAIL
MASH COMPLIANT
SRG(TL-2)-21

FILE: srg121	TxDOT	CK: KM	DN: VP	CK: CGL
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ITEM	ALL LARGE & SMALL COMPONENT DESCRIPTIONS	TL-2 DOWNSTREAM ANCHOR TERMINAL (DAT) (PAYABLE BY EA.) ITEM	QTY	TL-2 SHORT RADIUS GUARDRAIL COMPLETE SYSTEM (INCL DAT) (ALL PAY ITEMS) ITEM	TOTAL QTY
A	POST 1 & 2 BCT TIMBER (5 1/2" X 7 1/2" X 48 1/4") (PDF01)	A	2	A	2
B	POST 1 & 2 BCT TUBE (6" X 8" X 3/8" X 72" LENGTH) (PTE05)	B	2	B	2
C	POST 1 & 2 CHANNEL STRUTS (C3 X 5 X 80") A36	C	2	C	2
D	POST 1 SHELF ANGLE BRACKET (6" X 7 1/2" X 1/4") SEE DAT DETAIL	D	1	D	1
E	POST 1 BCT POST SLEEVE (FWM02a)	E	1	E	1
F	POST 1 BCT CABLE BEARING PLATE (5/8" X 8" X 8") (FPB01)	F	1	F	1
G	BCT CABLE ANCHOR ASSEMBLIES (3/4" X 6'-6 3/4" LENGTH) (FCA01)	G	1	G	1
H	W-BEAM RAIL (ROUNDED END ANCHOR-TYPE) 12GA. (RWE03a)	H	1	H	1
I	W-BEAM RAIL (LENGTH 9'-4 1/2") 12GA. (RWM22a)	I	2	I	2
J	W-BEAM RAIL (LENGTH 12'-6") 12GA. (4 SPACE) (RWM04a)			J	1
K	W-BEAM RAIL (LENGTH 9'-4 1/2") 12GA. (RWM22a)			K	1
L	W-BEAM TO THRIE-BEAM ASYMMETRIC RAIL (RWT01a). (LENGTH 6'-4")			L	1
M	THRIE-BEAM RAIL (LENGTH 12'-6") 12GA. (4 SPACE) (RTM04a)			M	1
N	THRIE-BEAM RAIL (LENGTH 12'-6") 12GA. (16" RADIUS) (RTM02a)			N	2
O	THRIE BEAM RAIL (TERMINAL CONNECTOR) (BRIDGE-RAIL) (RTE01b)			O	1
P	POSTS 3,4,5,6 (I-BEAM POSTS (LENGTH W6X8.5 X 72") (PME01)			P	4
Q	POSTS 3,4,5,6,15 ROUTED W-BEAM BLOCK-OUTS (6" X 8" X 14") (PDB01b)			Q	5
R	POSTS 7,8 CRT TIMBER POSTS (LENGTH 6" X 8" X 72") (PDE09)			R	2
S	POSTS 7,8 THRIE-BEAM BLOCK-OUTS (6" X 8" X 22") (PDB02a)			S	2
T	POSTS 9,10,11,12,13,14 BCT TIMBER (5 1/2" X 7 1/2" X 46") (PDF04)			T	6
U	POSTS 9,10,11,12,13,14 BCT TUBE (6" X 8" X 3/8" X 72") (PTE05)			U	6
V	POSTS 9,10,11,12,13,14, W-BEAM BLOCK-OUTS (6" X 8" X 14") (PDB01a)			V	6
W	POSTS 15,16 I-BEAM POSTS (LENGTH W6X8.5 X 84") (PME07)			W	2
X	POSTS 16 ROUTED THRIE-BEAM BLOCK-OUT (6" X 8" X 18") (PDB01)			X	1
A1	MODIFIED BCT CABLE ANCHOR ASSEMBLIES (3/4" X LENGTH 5'-5")			A1	2
A2	BCT CABLE BEARING PLATE (5/8" X 8" X 8") (POST 10 & POST 12) (FPB01)			A2	2
A3	BCT CABLE POST SLEEVE (POST 10 & POST 12) (FWM02)			A3	2
A4	BCT CABLE ANCHOR BRACKET (AT POST 9 & POST 13) (FPA01)			A4	2
A5	5/8" X 2" HEX BOLTS A307 GRD.5 (FOR CABLE ANCHOR BRACKETS)	A5	8	A5	24
A6	5/8" FLAT WASHER A307 GRD.5 (1 WASHER UNDER BOLT & 1 WASHER UNDER NUT)	A6	18	A6	48
A7	5/8" RECESSED H.G.R. NUTS (FOR ALL 5/8" BOLTS)	A7	20	A7	152
A8	3/4" X 7 1/2" HEX BOLTS A307 GRD.5 BCT POSTS (9-10-11-12-13-14)	A8	4	A8	12
A9	5/8" X 10" HEX BOLTS A307 GRD.5 BCT POSTS (9-10-11-12-13-14)	A9	2	A9	6
A10	5/8" X 1 1/4" H.G.R. BOLTS SPLICES AT POST (2-3-4-5-6-7-9-11-13) (FBB01)	A10	4	A10	72
A11	5/8" X 2" H.G.R. BOLTS (ROUND TERM-POST 10-END SPLICE) (FBB02)			A11	18
A12	5/8" X 10" H.G.R. BOLTS (I-BEAM POSTS RAIL & BLOCKOUT) (FBB03)	A12	2	A12	10
A13	5/8" X 18" H.G.R. BOLTS (POSTS 9,10,11,12,13,14) (FBB04)			A13	10
A14	RECTANGULAR WASHERS (FWR03) (FOR TERMINAL CONNECTOR RTE01b)			A14	12
A15	1/8" X (LENGTH VARIES) HEX BOLTS A325 OR A449 GR.5			A15	5
A16	1 3/4" O.D. HARDENED FLAT WASHER A325			A16	10
A17	1/8" HEX NUT GR.5 A325			A17	5
A18	55 GALLON DRUM - FILLED WITH SAND 700-715lbs.			A18	6

SPECIAL APPLICATION NOTES.

1. THIS IS A MASH COMPLIANT TL-2 SHORT RADIUS GUARDRAIL SYSTEM 31 INCHES TALL. THE SYSTEM REQUIRES A MINIMUM PLACEMENT FOOTPRINT OF 35' ALONG THE PRIMARY ROAD AND 30' ALONG THE SECONDARY DRIVEWAY.

2. THE SYSTEM ALSO REQUIRES A MINIMUM 3' WIDE (WORK ZONE) DIRECTLY BEHIND THE GUARDRAIL SYSTEM, WITH A SLOPE AT 1V:10H, FROM THERE A 3:1 SLOPE IS RECOMMENDED. SEE SHEET 2 OF 3 FOR SLOPE DETAILS.

3. NOTE FOR INSTALLER: THE TWO (2) CRT POSTS ITEM (R), AT POST LOCATIONS 7 & 8.); WILL REQUIRE THE FOLLOWING FIELD ADJUSTMENT. USING A 3/4" X 10" LONG SPADE BIT DRILL ONE (1) ADDITIONAL HOLE 7-7/8" DIRECTLY BELOW THE EXISTING TOP HOLE TO ACCOMMODATE THE HARDWARE FOR THE 22" LONG BLOCKOUT.

   OPTION FOR ADDITIONAL 3/4" HOLE. THE 22" LONG BLOCKOUT (PDB01a) IS MANUFACTURED WITH TWO 3/4" DRILLED HOLES FOR THE POST HARDWARE, THEREFORE THE BLOCKOUT CAN BE USED AS A TEMPLATE GUIDE FOR THE BOTTOM 3/4" HOLE. AFTER INSTALLING THE CRT POST USE THE TOP HOLE TO MOUNT THE 22" LONG BLOCKOUT TO POST, USE THE BLOCKOUT'S PRE-DRILLED HOLE AS A GUIDE FOR THE BOTTOM 3/4" HOLE.

GENERAL NOTES

1. FOR ADDITIONAL INSTALLATION INFORMATION AND GUIDANCE CONTACT: TEXAS DEPARTMENT OF TRANSPORTATION, (TXDOT'S DESIGN DIVISION). (512) 416-2678. THE EXACT POSITION OF MBGF SHALL BE SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE SIGHT DISTANCE OF THE INSTALLATION WILL NEED TO BE VERIFIED WITH RESPECT TO THE SPECIFIC SITE PLACEMENT.

2. STEEL POSTS ARE NOT PERMITTED AT CRT OR BCT POST POSITIONS.

3. RAIL ELEMENT SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED ON THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 12 1/2" OR 25 FOOT NOMINAL LENGTHS.

4. BUTTON HEAD "POST" BOLTS (ASTM A307) SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT (ASTM A563) AND TYPE A (1 3/4" O.D.) WASHER AND NOT MORE THAN 1" BEYOND IT. BUTTON HEAD "SPLICE" BOLTS (ASTM A307) ARE 5/8" X 1 1/4" OR 2" LONG AT TRIPLE RAIL SPLICES WITH A DOUBLE RECESSED NUT (ASTM A563).

5. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.

6. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.

7. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A SLOPE RATE OF NOT MORE THAN 1V:10H.

8. IT IS NOT RECOMMENDED THAT GUARD FENCE BE PLACED IN THE VICINITY OF CURBS.

9. GUARDRAIL POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.

10. SPECIAL RAIL FABRICATION WILL BE REQUIRED FOR THRIE BEAM RAIL RADIUS (ITEM J).

11. ALL MATERIAL AND WORK INVOLVED IS SUBSIDIARY TO SHORT RADIUS BID ITEM, INCLUDING, BUT NOT LIMITED TO FOUNDATIONS, GRADING, THRIE BEAM RAIL, SAND DRUMS, AND OTHER PARTS.

12. ALL CABLE ASSEMBLIES SHOULD BE TAUT AFTER INSTALLATION. WHEN CABLES ARE MANIPULATED BY HAND THE CABLES SHOULD NOT MOVE MORE THAN 1" IN ANY DIRECTION PERPENDICULAR TO THE CABLE.

13. THE DRUMS ARE EAGLE MODEL 1656 FILLED WITH 715 LB (+/-15) SAND WITH THE PLASTIC LEVER-LOCK; OR AN APPROVED EQUIVALENT. THE APPROXIMATE HEIGHT OF THE DRUM IS 37" (+/-).

14. WHEN THE SHORT RADIUS SYSTEM IS TERMINATED BY A DAT, REFER TO THE LATEST DAT STANDARD FOR INSTALLATION OF THE DAT SYSTEM. IF THE SYSTEM IS TERMINATED BY ANOTHER END TERMINAL SYSTEM, REFER TO THE CORRESPONDING END TERMINAL STANDARD.

W 15. WHEN THE PLANNED LOCATION OF POST (1) IS WITHIN THE RIGHT-OF-WAY AND WITHIN THE CLEAR ZONE OF THE DIRECTION OF THE OPPOSING TRAFFIC, AN APPROPRIATE CRASHWORTHY END TERMINAL SHALL BE INSTALLED IN PLACE OF THE DOWNSTREAM ANCHOR TERMINAL (DAT). THE PAYMENT OF THE COMPLETE SHORT RADIUS SYSTEM WITH A DAT AT THE TERMINUS WILL BE WITH BID ITEMS: 540 6016 DOWNSTREAM ANCHOR TERMINAL SECTION, AND 540 6046 TL-2 31" SHORT RADIUS (W/O DAT). THE PAYMENT OF THE SYSTEM TERMINATED BY A CRASHWORTHY END TERMINAL (IN LIEU OF THE DAT) WILL BE WITH BID ITEMS: 540 6046 TL-2 31" SHORT RADIUS (W/O DAT), AND 544 6001 GUARDRAIL END TREATMENT (INSTALL).

16. TESTED TO MASH WITH A 3:1 SLOPE OR SHALLOWER IS PREFERABLE IN THE LIMITS OF THE TOP AND BOTTOM OF THE SLOPE AS SHOWN IN THE PLAN VIEW. IF FIELD CONDITIONS REQUIRE A STEEPER SLOPE, THIS MAY BE ALLOWABLE UP TO A 2:1 SLOPE. CONTACT THE DESIGN DIVISION FOR ADDITIONAL GUIDANCE.

NOTE: SEE SHEET 1 OF 3.

(MASH TL-2 COMPLIANT)
TESTED TO MASH TL-2 WITH A 3:1 SLOPE

SHEET 3 OF 3

Texas Department of Transportation | Design Division Standard

TL-2
SHORT RADIUS GUARDRAIL
MASH COMPLIANT
SRG(TL-2)-21

FILE: srg121	TxDOT	CK: KM	DN: VP	CK: CGL
© TxDOT: FEBRUARY 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
SHEET TITLE - LINE 1

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED DW DRAWN AD
SHEET C1.29

Date: Jul 31, 2025, 3:13pm User ID: anthony.alvarado
File: P:\13055\21\Design\Civil\SRGR-130552.dwg

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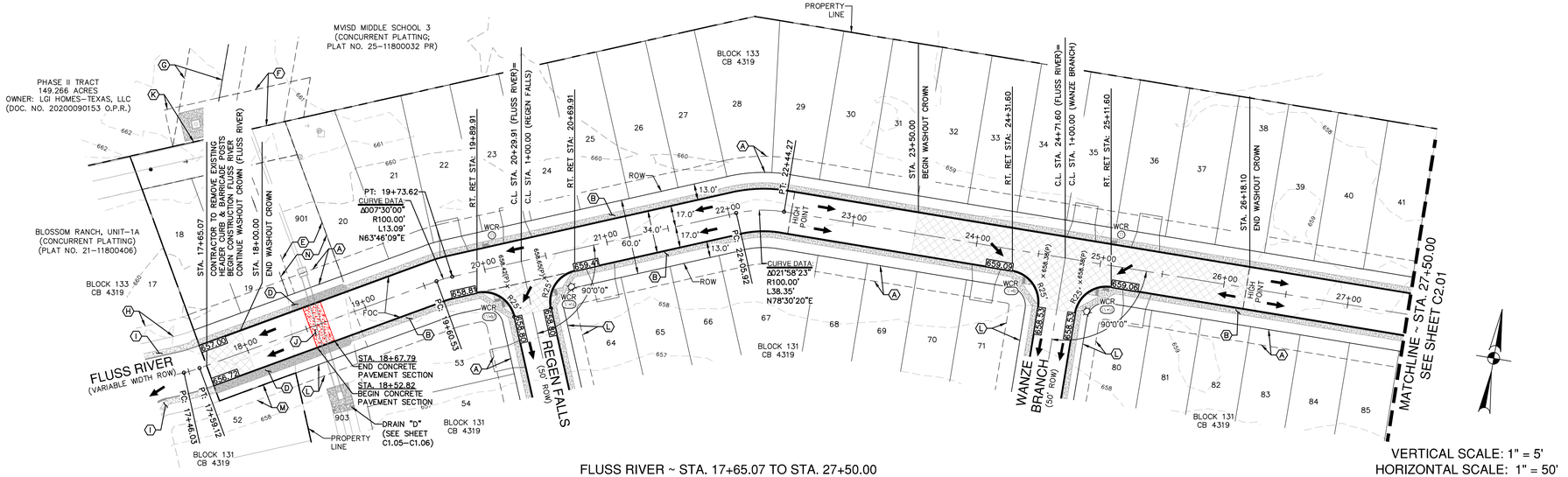
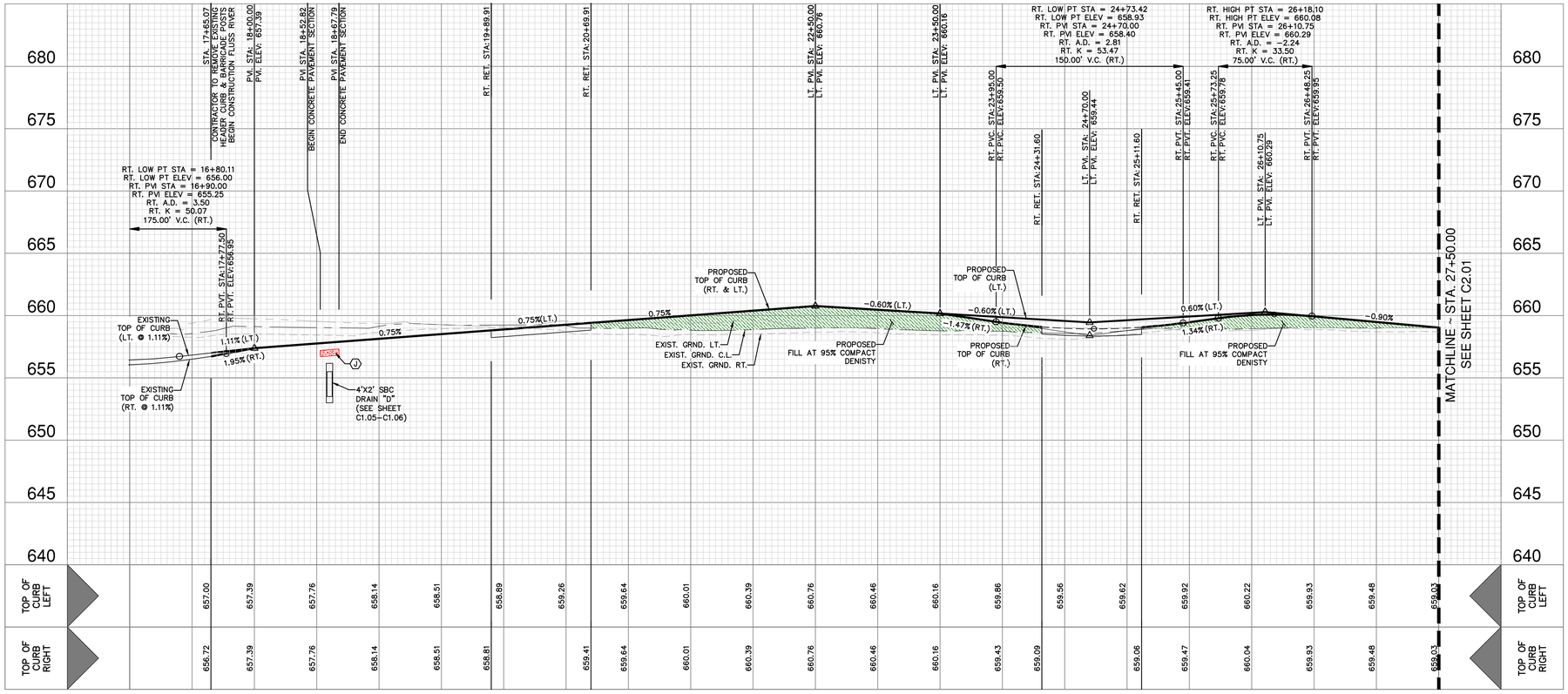


FLUSS RIVER ~ STA. 17+65.07 TO STA. 27+50.00

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



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

KEY LEGEND:

- (A) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (B) 4' SIDEWALK
- (C) 4' DEVELOPER SIDEWALK
- (D) 6' DEVELOPER SIDEWALK
- (E) 40' SEWER EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800406)
- (F) VARIABLE WIDTH DRAINAGE EASEMENT (DOC. NO. 20240182574 OPR)
- (G) ELECTRICAL EASEMENT ACCESS EASEMENT (DOC. NO. 20140045268, VOL. 16948, PG 595 OPR)
- (H) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800406)
- (I) EXISTING 4' SIDEWALK
- (J) CONCRETE PAVEMENT SECTION (SEE SHEET C2.10)
- (K) VARIABLE WIDTH DRAINAGE EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800406)
- (L) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (M) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800406)
- (N) VARIABLE WIDTH ACCESS EASEMENT

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00-C3.01). REFER TO SHEET C3.00-C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

STREET SELECT FILL NOTE:

FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.5 AND A PI MAXIMUM OF 40. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME APPLICATION RATE SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

WHEEL CHAIR NOTE:

WHEEL CHAIR RAMPS (WCR) TO BE CENTERED ON STATION NOTED BELOW. ELEVATION SHOWN ARE TOP OF CURB AND NOT GUTTER

STREET NOTES:

1. A BEXAR COUNTY 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).

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

FLUSS RIVER ~ STA. 17+65.07 TO STA. 27+50.00
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.00

Date: Jul 31, 2025, 6:16pm User ID: adavila
File: P:\13055\21\Design\Civil\STA1-1305521.dwg

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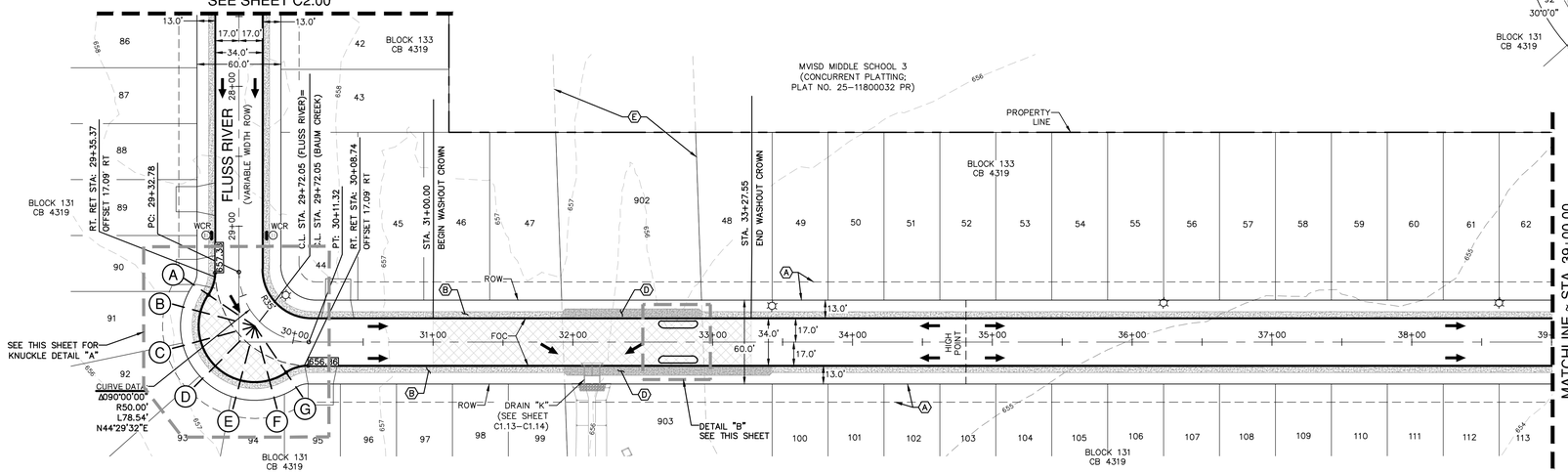
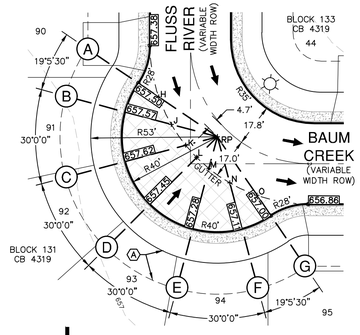




KNUCKLE DETAIL "A"
SCALE: 1" = 30'

PAVEMENT ELEVATIONS

H	656.66
J	656.60
K	656.55
L	656.52
M	656.49
N	656.44
O	656.39
RP	656.76

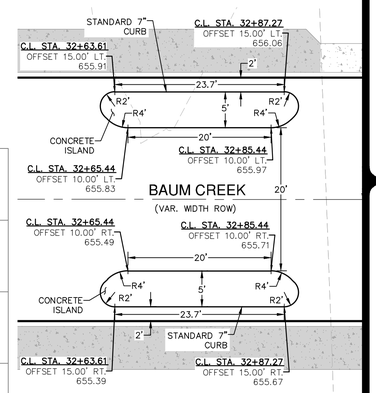
SCALE: 1"= 50' (0' 50' 100' 150')

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

KEY LEGEND:

- (A) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (B) 4' SIDEWALK
- (D) 6' DEVELOPER SIDEWALK
- (E) VARIABLE WIDTH PERMANENT SANITARY SEWER EASEMENT (VOL 14598, PGS 1294-1312 OPR)

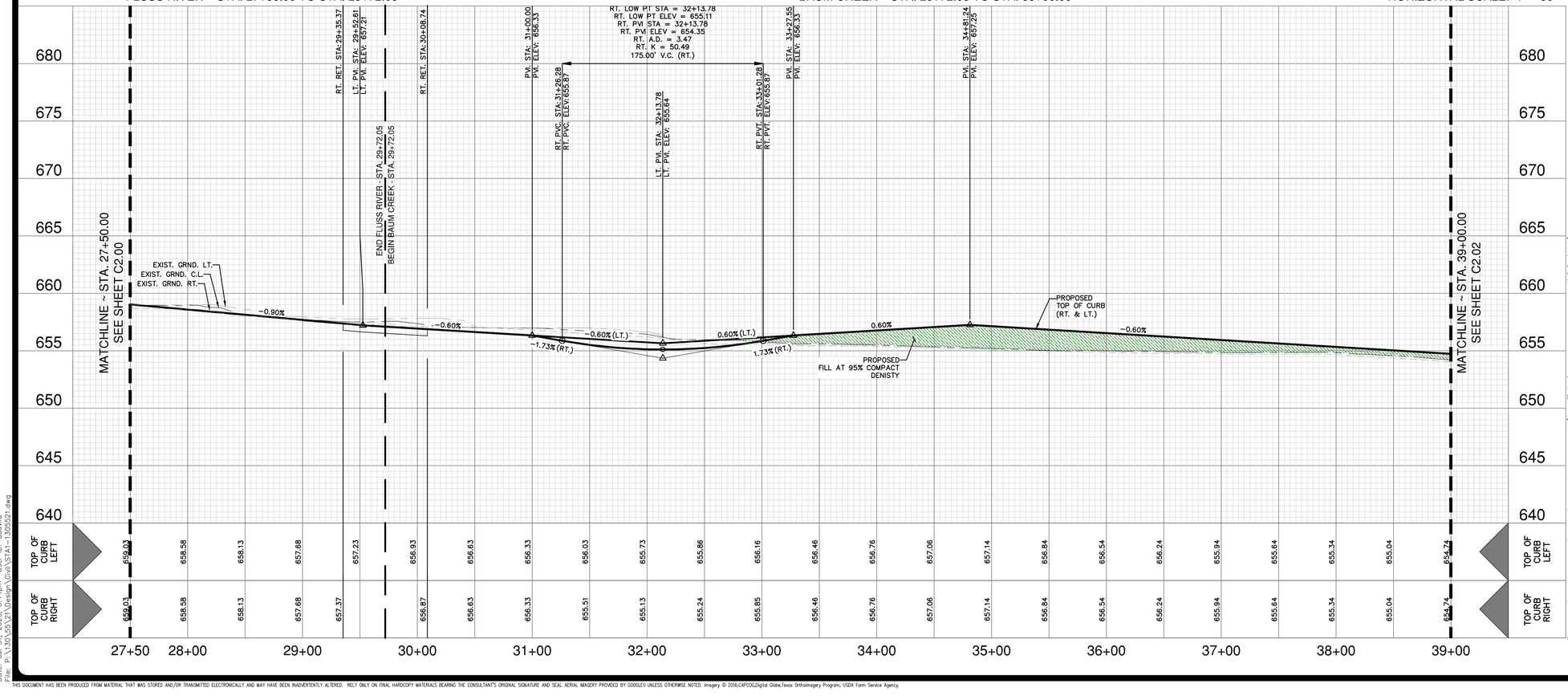


DETAIL "A"
SCALE: 1"=10'

FLUSS RIVER ~ STA. 27+50.00 TO STA. 29+72.05

BAUM CREEK ~ STA. 29+72.05 TO STA. 39+00.00

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



SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00-C3.01). REFER TO SHEET C3.00-C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

STREET SELECT FILL NOTE:

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WHEEL CHAIR NOTE:

WHEEL CHAIR RAMPS (WCR) TO BE CENTERED ON STATION NOTED BELOW. ELEVATION SHOWN ARE TOP OF CURB AND NOT GUTTER

STREET NOTES:

1. A BEXAR COUNTY 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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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).

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

FLUSS RIVER ~ STA. 27+50.00 TO STA. 29+72.05
BAUM CREEK ~ STA. 29+72.05 TO STA. 39+00.00
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.01

Date: Jul 31, 2025, 6:14pm User ID: adavila
File: P:\130\53\21\Design\Civil\ST41-130521.dwg

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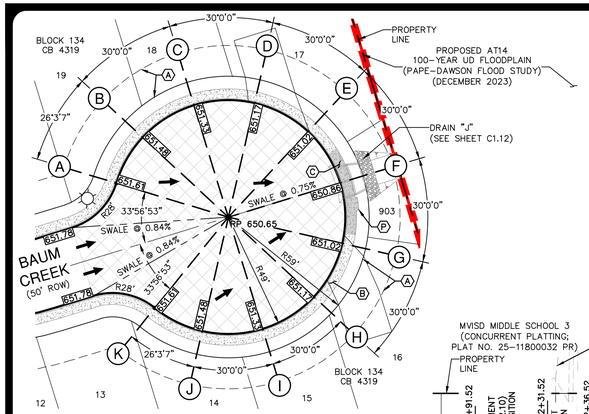
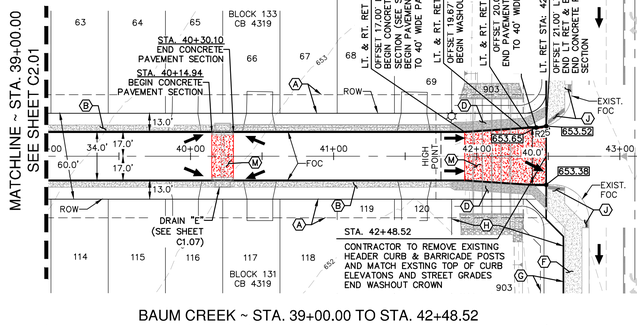
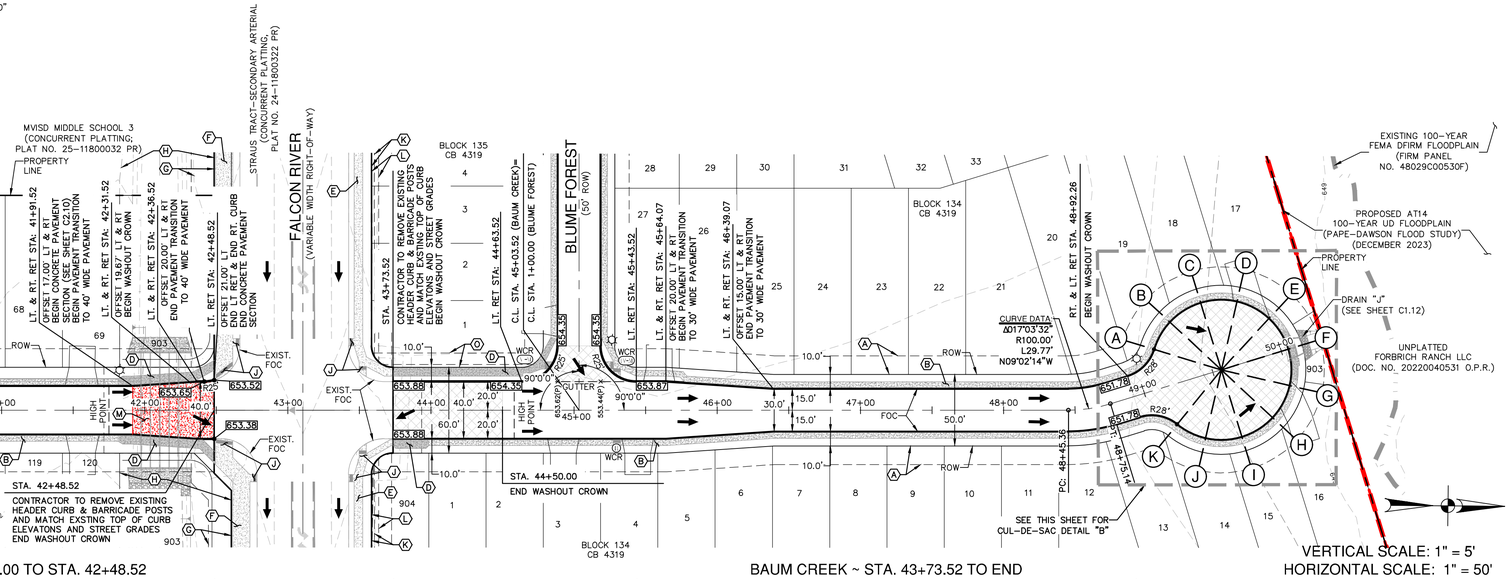


CUL-DE-SAC DETAIL "B"

SCALE: 1" = 30'



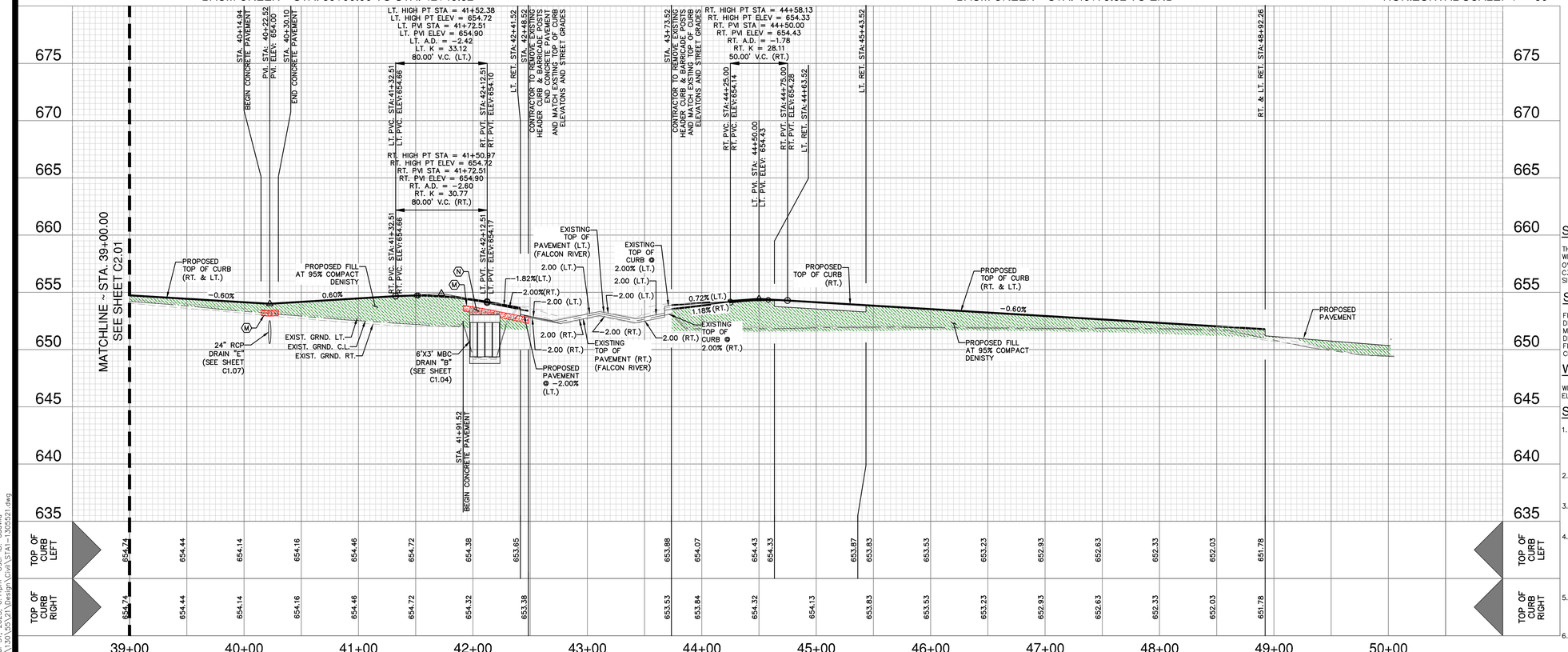


BAUM CREEK ~ STA. 39+00.00 TO STA. 42+48.52

BAUM CREEK ~ STA. 43+73.52 TO END

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'



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	

KEY LEGEND:

- (A) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (B) 4' SIDEWALK
- (C) 4' DEVELOPER SIDEWALK
- (D) 6' DEVELOPER SIDEWALK
- (E) EXISTING 6' SIDEWALK
- (F) EXISTING 12' MULTI-USE PATH
- (G) 16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)
- (H) VARIABLE WIDTH DRAINAGE EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)
- (I) 1' VEHICULAR NON-ACCESS EASEMENT (VNAE)
- (J) EXISTING WCR
- (K) 1' VEHICULAR NON-ACCESS EASEMENT (NOT-TO-SCALE)
- (L) 5' LANDSCAPE EASEMENT (CONCURRENT PLATTING PLAT NO. 24-11800279 PR)
- (M) CONCRETE PAVEMENT SECTION (SEE SHEET C2.10)
- (N) CAST-IN-PLACE DIRECT DRIVE MBC TOP TO MATCH PAVEMENT DESIGN ELEVATIONS AND SLOPE
- (O) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (P) 5'X5' ADA PASSING SPACE

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00-C3.01). REFER TO SHEET C3.00-C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

BAUM CREEK ~ STA. 39+00.00 TO STA. 42+48.52

BAUM CREEK ~ STA. 43+73.52 TO END

STREET PLAN & PROFILE

PLAT NO. 24-11800449

JOB NO. 13055-21

DATE JULY 2025

DESIGNER CB

CHECKED AS DRAWN CB

SHEET C2.02

Date: Jul 31, 2025, 6:11pm User ID: adavila
File: P:\130\55\21\Design\Civil\STA1-13055521.dwg

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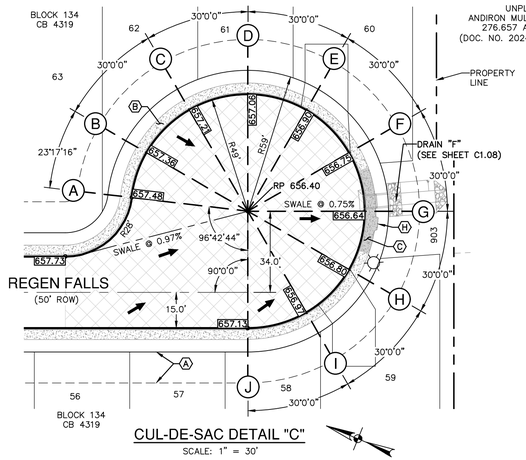

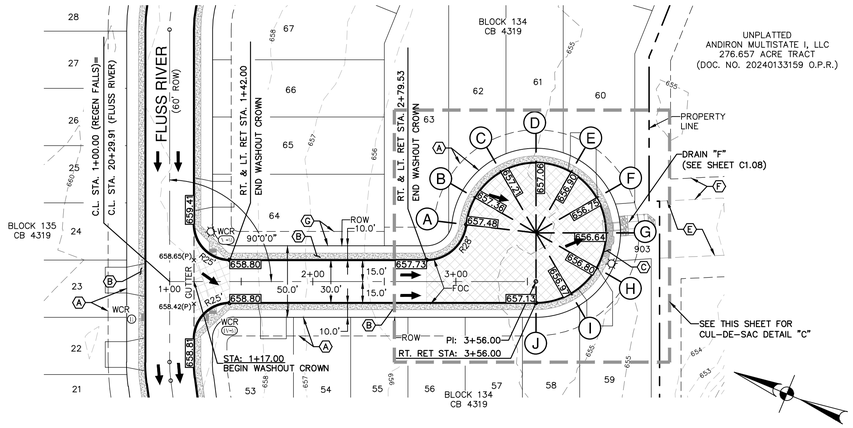

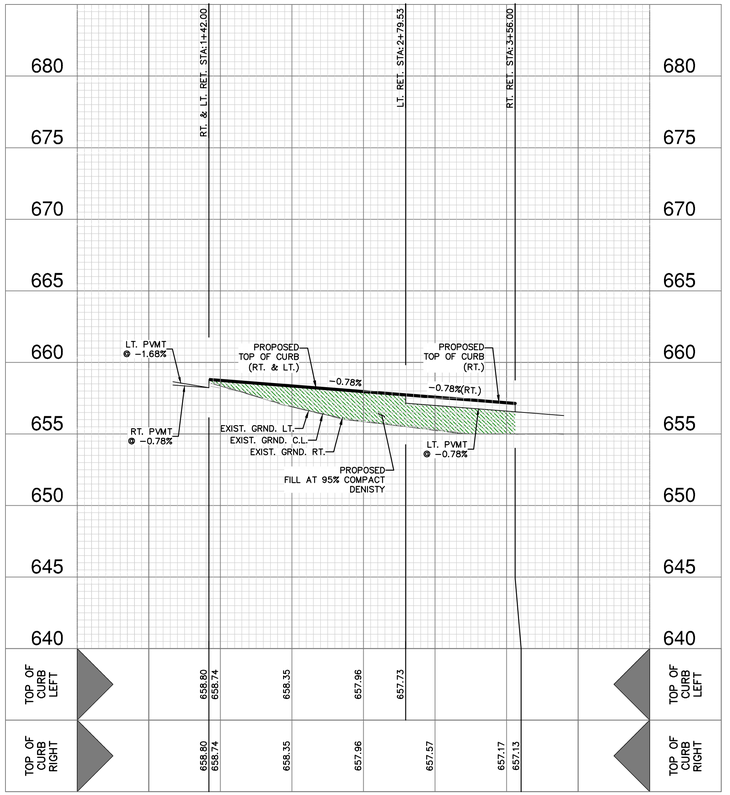

SCALE: 1"= 50'
0' 50' 100' 150'

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	

KEY LEGEND:

- (A) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (B) 4' SIDEWALK
- (C) 4' DEVELOPER SIDEWALK
- (D) 6' DEVELOPER SIDEWALK
- (E) VARIABLE WIDTH DRAINAGE EASEMENT
- (F) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO 20240132079 OPR)
- (G) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (H) 5'X5' ADA PASSING SPACE

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00–C3.01). REFER TO SHEET C3.00–C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

STREET SELECT FILL NOTE:

FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.5 AND A PI MAXIMUM OF 40. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME APPLICATION RATE SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

WHEEL CHAIR NOTE:

WHEEL CHAIR RAMPS (WCR) TO BE CENTERED ON STATION NOTED BELOW. ELEVATION SHOWN ARE TOP OF CURB AND NOT GUTTER

STREET NOTES:

1. A BEXAR COUNTY 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).

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

REGEN FALLS ~ STA. 1+00.00 TO END
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.03

Date: Jul 31, 2025, 6:18pm User ID: adavila
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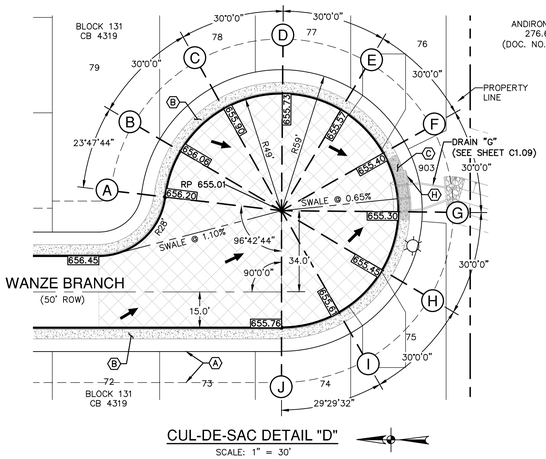
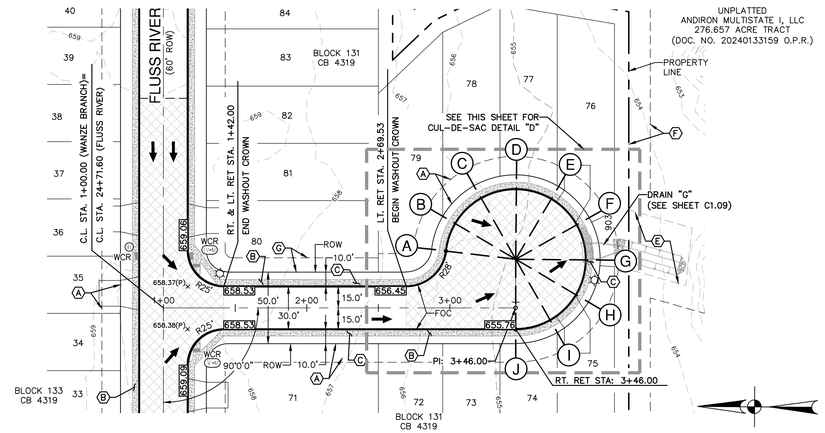


CUL-DE-SAC DETAIL "D"

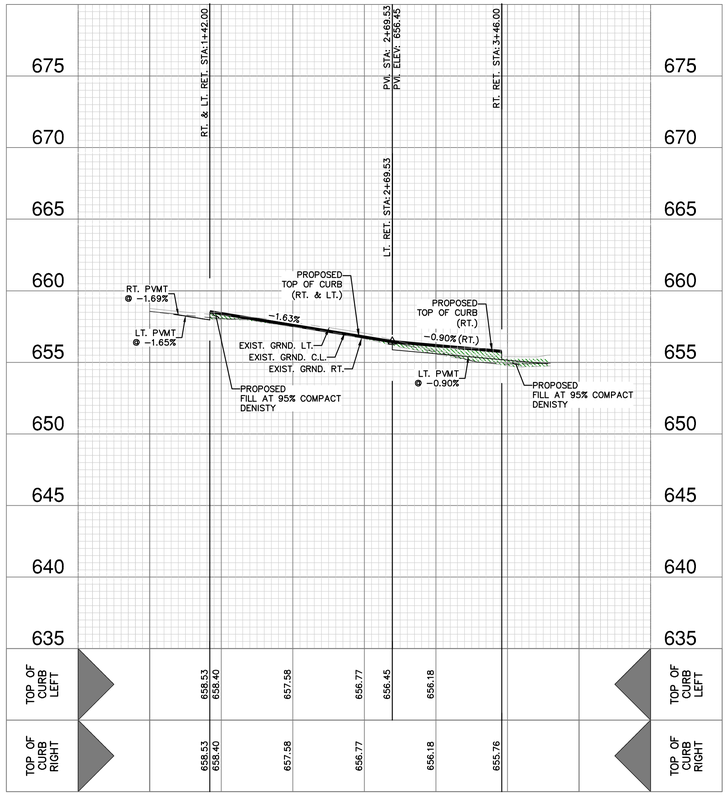
SCALE: 1" = 30'



VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'

WANZE BRANCH ~ STA. 1+00.00 TO END



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	

KEY LEGEND:

- (A) 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (B) 4' SIDEWALK
- (C) 4' DEVELOPER SIDEWALK
- (D) 6' DEVELOPER SIDEWALK
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- (F) 15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO 20240132079 OPR)
- (G) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (H) 5'X5' ADA PASSING SPACE

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00–C3.01). REFER TO SHEET C3.00–C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

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WHEEL CHAIR NOTE:

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STREET NOTES:

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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

WANZE BRANCH ~ STA. 1+00.00 TO END
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.04

Date: Jul 31, 2025, 6:20pm User ID: adonis
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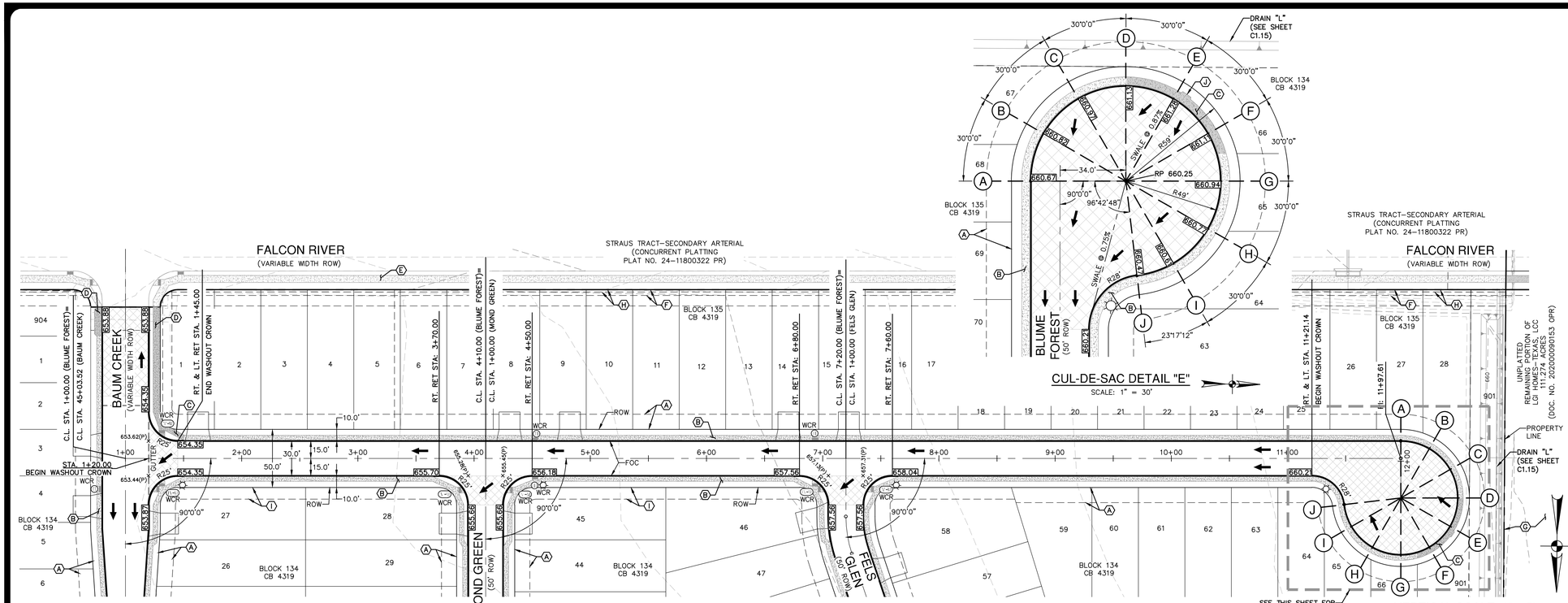
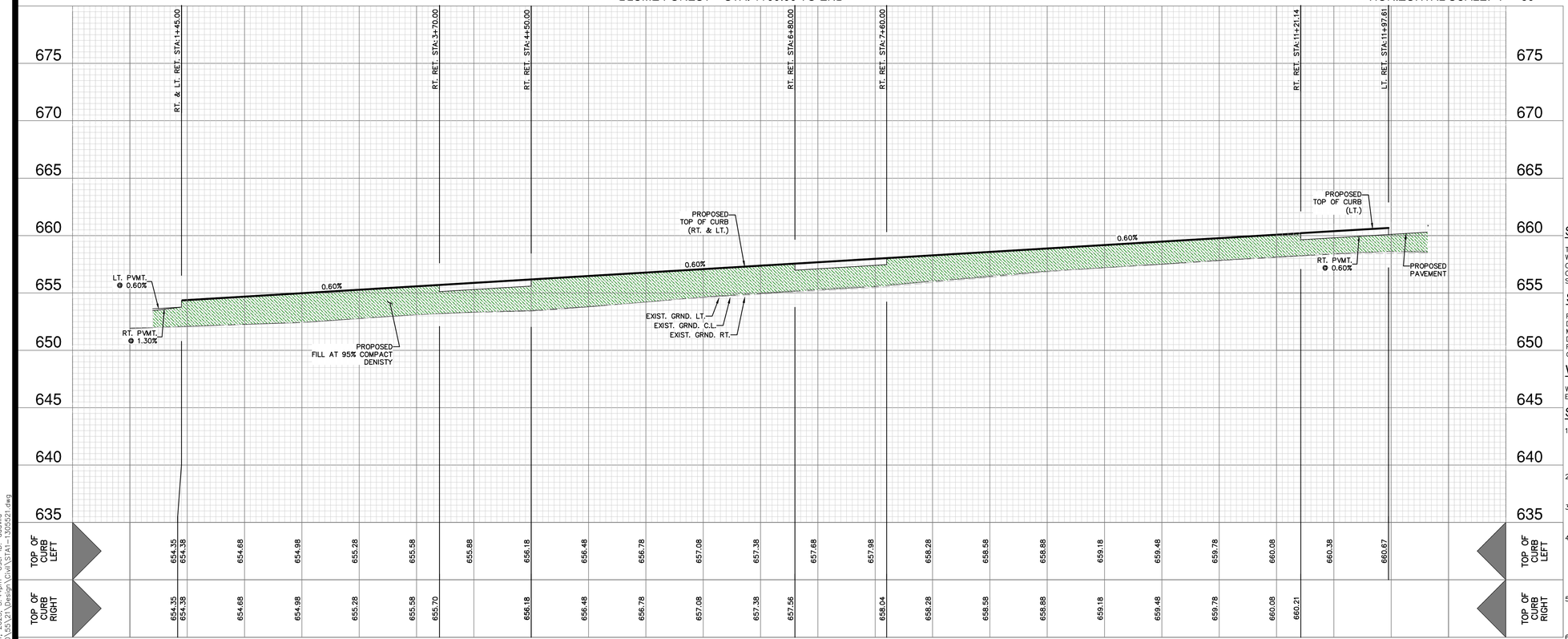


BLUME FOREST ~ STA. 1+00.00 TO END



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	

KEY LEGEND:

- Ⓐ 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- Ⓑ 4' SIDEWALK
- Ⓒ 4' DEVELOPER SIDEWALK
- Ⓓ 6' DEVELOPER SIDEWALK
- Ⓔ EXISTING 6' DEVELOPER SIDEWALK
- Ⓕ 5' LANDSCAPE EASEMENT (CONCURRENT PLATTING PLAT NO. 24–11800279 PR)
- Ⓖ ELECTRICAL EASEMENT ACCESS EASEMENT (DOC NO 20140045268, VOL 16948, PG 595 OPR)
- Ⓗ 1' VEHICULAR NON–ACCESS EASEMENT (NOT–TO–SCALE)
- Ⓘ 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- Ⓙ 5'X5' ADA PASSING SPACE

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00–C3.01). REFER TO SHEET C3.00–C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

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DATE
NO. REVISION

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

BLUME FOREST ~ STA. 1+00.00 TO END
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.05

Date: Jul 31, 2025, 5:44pm User ID: edavila
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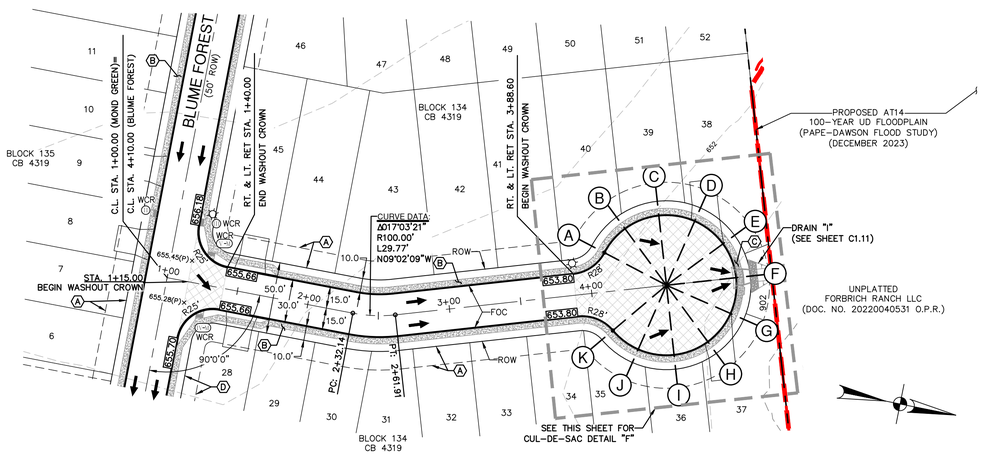
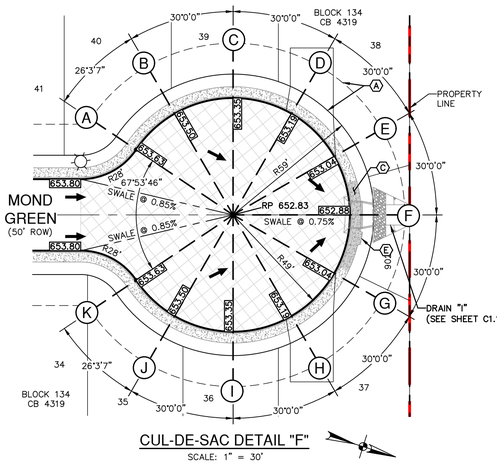




CUL-DE-SAC DETAIL "F"
SCALE: 1" = 30'

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

STREET LEGEND

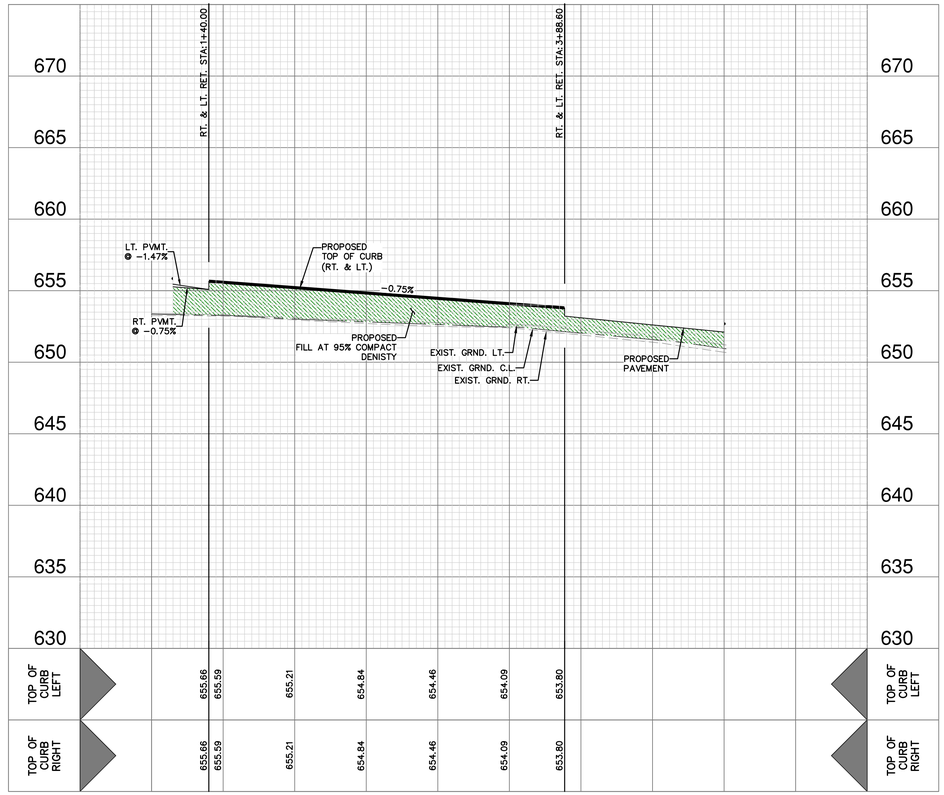
PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	Ⓘ
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)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

KEY LEGEND:

- Ⓐ 13' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- Ⓑ 4' SIDEWALK
- Ⓒ 4' DEVELOPER SIDEWALK
- Ⓓ 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- Ⓔ 5'X5' ADA PASSING SPACE

MOND GREEN ~ STA. 1+00.00 TO END

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



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NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

MOND GREEN ~ STA. 1+00.00 TO END
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.06

Date: Jul 31, 2025, 3:18pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\STA1-13055121.dwg

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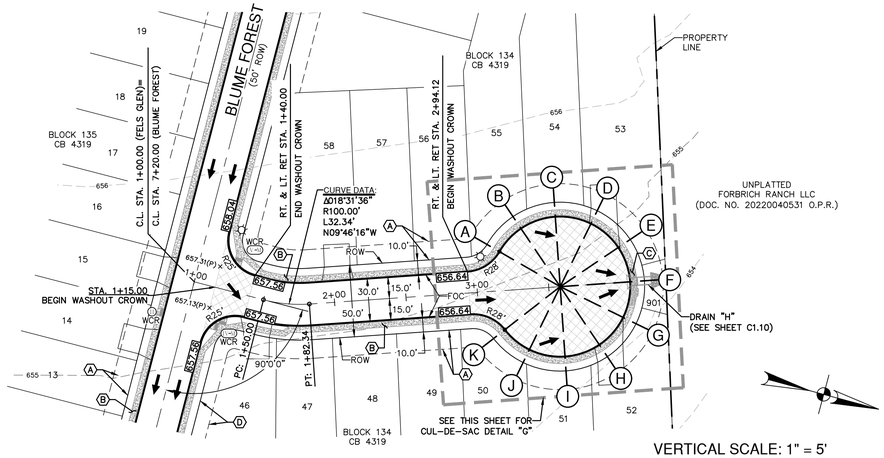
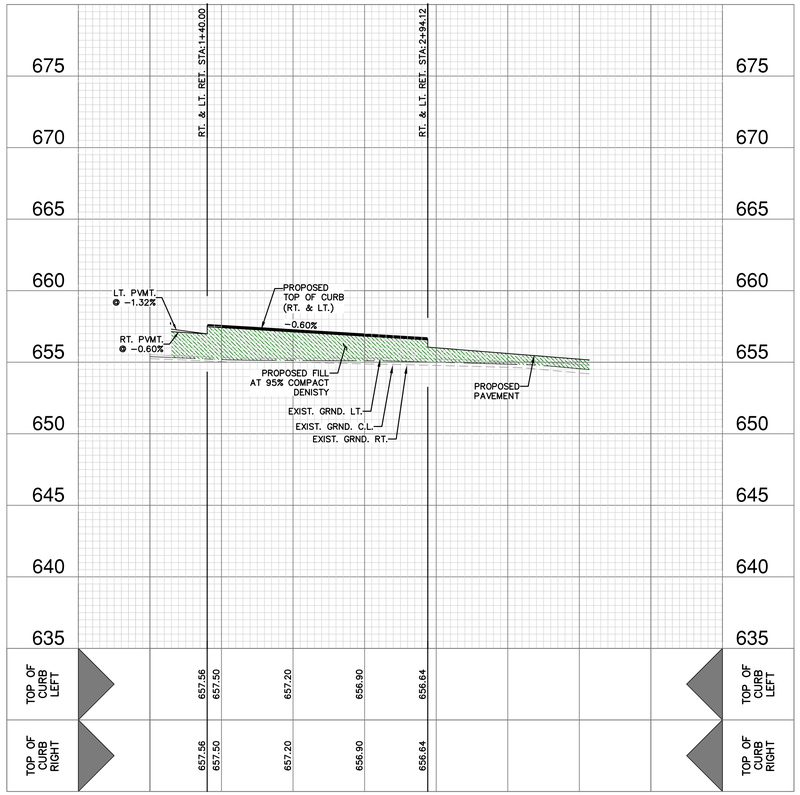
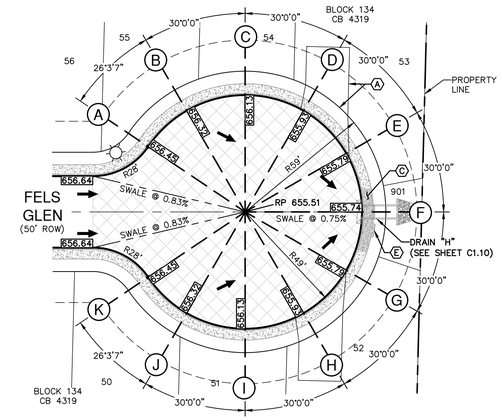


FELS GLEN ~ STA. 1+00.00 TO END

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





CUL-DE-SAC DETAIL "G"
SCALE: 1" = 30'

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	

KEY LEGEND:

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- (B) 4' SIDEWALK
- (C) 4' DEVELOPER SIDEWALK
- (D) 10' ELEC., GAS, TELE, & CA. T.V. EASEMENT
- (E) 5'X5' ADA PASSING SPACE

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00–C3.01). REFER TO SHEET C3.00–C3.01 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

STREET SELECT FILL NOTE:

FILL MATERIAL SHOULD BE NATIVE ON–SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.5 AND A PI MAXIMUM OF 40. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME APPLICATION RATE SHOULD BE RE–EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

WHEEL CHAIR NOTE:

WHEEL CHAIR RAMPS (WCR) TO BE CENTERED ON STATION NOTED BELOW. ELEVATION SHOWN ARE TOP OF CURB AND NOT GUTTER

STREET NOTES:

1. A BEXAR COUNTY 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).

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

FELS GLEN ~ STA. 1+00.00 TO END
STREET PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.07

Date: Jul 31, 2025, 3:18pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\STA1-13055121.dwg

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PAVEMENT SECTION DETAIL

STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	CONCRETE PAVEMENT	AGGREGATE BASE	LIME TREATED SUBGRADE	GEOGRID	STREET TYPE	CBR	STRUCTURAL NUMBER
FLUSS RIVER	17+65.07 TO 18+52.82	2.00"	2.00"	–	20.50"	6"	NO	LOCAL B	2.5	4.63
FLUSS RIVER	18+52.82 TO 18+67.79	–	–	10.00"	N/A	–	NO	LOCAL B	N/A	N/A
FLUSS RIVER	18+67.79 TO 29+72.05	2.00"	2.00"	–	20.50"	6"	NO	LOCAL B	2.5	4.63
BAUM CREEK	29+72.05 TO 40+14.94	2.00"	2.00"	–	20.50"	6"	NO	LOCAL B	2.5	4.63
BAUM CREEK	40+14.94 TO 40+30.10	–	–	10.00"	N/A	–	NO	LOCAL B	N/A	N/A
BAUM CREEK	40+30.10 TO 41+91.52	2.00"	2.00"	–	20.50"	6"	NO	LOCAL B	2.5	4.63
BAUM CREEK	41+91.52 TO 42+48.52	–	–	10.00"	N/A	–	NO	LOCAL B	N/A	N/A
BAUM CREEK	43+73.52 TO 46+39.07	2.00"	2.00"	–	20.50"	6"	NO	LOCAL B	2.5	4.63
BAUM CREEK	46+39.07 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70
REGEN FALLS	1+00.00 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70
WANZE BRANCH	1+00.00 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70
BLUME FOREST	1+00.00 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70
MOND GREEN	1+00.00 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70
FELS GLEN	1+00.00 TO END	2.00"	–	–	13.00"	6"	NO	LOCAL A	2.5	2.70

*STREET TRANSITIONS FROM STREET CLASSIFICATIONS OF DIFFERING PAVEMENT WIDTHS SHALL BE CONSTRUCTED WITH PAVEMENT SECTION OF STREET CLASSIFICATION WITH WIDER PAVEMENT SECTION

**REFERENCE TABLE NO. 4 – "CONCRETE PAVEMENT REINFORCEMENT" IN GEOTECH REPORT.

SUBGRADE NOTES (*):

1. CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME
2. FILL USED TO RAISE THE GRADE
   - APPROVED FILL MATERIAL FREE SHOULD HAVE A MINIMUM CBR VALUE OF 2.5 AND A MAXIMUM PLASTICITY INDEX VALUE OF 40 (ON SITE MATERIAL). LIME APPLICATION RATE SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL
   - THE FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER, FREE OF DELETERIOUS MATERIAL, AND THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN SIZE. THE MATERIAL SHOULD BE PLACED AND COMPACTED AS PER APPLICABLE CITY/COUNCIL GUIDELINES.
3. BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE BORINGS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE GREATER THAN 20.
4. IF THE SUBGRADE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20, AS PER CITY OF SAN ANTONIO OR BEXAR COUNTY REQUIREMENTS, SUBGRADE TREATMENT IS NOT NEEDED.
5. SUBGRADE SHOULD BE TREATED USING LIME OR CEMENT. LIME APPLICATION RATES ARE PRESENTED HERE. PLEASE CONTACT INTEC FOR CEMENT APPLICATION RATES:
   - TREATED TO A DEPTH OF 6 OR 8 INCHES USING 6 PERCENT LIME CONTENT.
   - THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO TREATMENT. IF THE SOIL SULFATE CONTENT IS HIGHER THAN 3000 PPM, AN ALTERNATE PROCEDURE WILL BE NEEDED.
   - LIME APPLICATION RATE OF 27 LBS PER SQ YARD FOR 6-INCH DEPTH OF TREATMENT IS RECOMMENDED.
   - CEMENT MAY BE USED IN LIEU OF LIME. CEMENT APPLICATION RATE SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION.

CONCRETE PAVEMENT NOTES (**):

1. REINFORCED CONCRETE
   - CONCRETE PAVEMENT, MATERIAL, AND INSTALLATION, SHOULD CONFORM TO ITEM 209 OF THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION, JUNE 2008. MINIMUM 28-DAY COMPRESSIVE STRENGTH VALUE OF 4,400 PSI RECOMMENDED
2. CONCRETE PAVEMENT
   - CONCRETE PAVEMENT SLABS SHOULD BE PROVIDED WITH ADEQUATE STEEL REINFORCEMENT. PROPER FINISHING OF CONCRETE PAVEMENTS REQUIRES THE USE OF SAWED AND SEALED JOINTS WHICH SHOULD BE DESIGNED IN ACCORDANCE WITH CURRENT PORTLAND CEMENT ASSOCIATION GUIDELINES. DOWEL BARS SHOULD BE USED TO TRANSFER LOADS AT TRANSVERSE JOINTS. RELATED CIVIL DESIGN FACTORS SUCH AS DRAINAGE, CROSS-SECTIONAL CONFIGURATIONS, SURFACE ELEVATIONS AND ENVIRONMENTAL FACTORS WHICH WILL SIGNIFICANTLY AFFECT THE SERVICE LIFE MUST BE INCLUDED IN THE PREPARATION OF THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS. NORMAL PERIODIC MAINTENANCE WILL BE REQUIRED, ESPECIALLY FOR OPEN JOINTED AREAS WHICH MAY ALLOW SURFACE WATER INFILTRATION INTO THE SUBGRADE.

TABLE NO. 5 – CONCRETE PAVEMENT REINFORCEMENT	
REINFORCEMENT	#3 REINFORCING STEEL BARS (GRADE 60) AT 18 INCHES ON CENTER EACH WAY (AT 12 INCHES ON CENTER EACH WAY FOR 8 INCH THICK CONCRETE AND 10 INCHES ON CENTER EACH WAY FOR 10 INCH THICK CONCRETE)
CONTRACTION JOINT SPACING	12 FEET EACH WAY FOR 6 INCH THICK CONCRETE 15 FEET EACH WAY FOR 8 INCH THICK CONCRETE 20 FEET EACH WAY FOR 10 INCH THICK CONCRETE THE SAW CUTS SHOULD BE PLANNED BASED ON FEATURES SUCH AS INLETS, MANHOLES, VALVES, ETC. THE SAW CUTS ARE RECOMMENDED TO BE MADE THE SAME DAY (BEFORE THE CONCRETE STARTS TO SET)
CONTRACTION JOINT DEPTH	AT LEAST ONE-FOURTH (¼) OF PAVEMENT THICKNESS
CONTRACTION JOINT WIDTH	ONE-FOURTH (¼) INCH OR AS REQUIRED BY JOINT SEALANT MANUFACTURER
EXPANSION JOINT	EXPANSION JOINTS ARE NOT RECOMMENDED; MAY BE PLACED AT END OF CONCRETE POURS
ISOLATION JOINT	FEATURES SUCH AS CONCRETE INLET STRUCTURES, MAN-HOLES, AND VALVE COVERS SHOULD BE ISOLATED USING ISOLATION JOINTS.

3. PERIMETER DRAINAGE
   - IT IS IMPORTANT THAT PROPER PERIMETER DRAINAGE BE PROVIDED SO THAT INFILTRATION OF SURFACE WATER FROM COMPACTED AREAS SURROUNDING THE PAVEMENT IS MINIMIZED, OR IF THIS IS NOT POSSIBLE, CURBS SHOULD EXTEND THROUGH THE BASE AND INTO THE SUBGRADE. A CRACK SEALANT COMPATIBLE TO BOTH ASPHALT AND CONCRETE SHOULD BE INSTALLED AT THE CONCRETE-ASPHALT INTERFACES.
   - WHEREVER THERE ARE DRASTIC GRADE CHANGES IN THE PAVEMENT AREA (SUCH AS FROM 3 TO 4 PERCENT GRADE TO 1 TO 2 PERCENT GRADE) 3 X 5 INCH GRAVEL SUBGRADE WITH A SUBSURFACE DRAIN SYSTEM (SUCH AS AKWADRAIN ON THE SIDES OF THE PAVEMENT) AND OUTLET SHOULD BE CONSIDERED. THIS ASPECT WILL PROVIDE FOR A BETTER DRAINAGE SYSTEM IN THIS AREA. PLEASE CONTACT INTEC FOR DRAINAGE RECOMMENDATIONS.

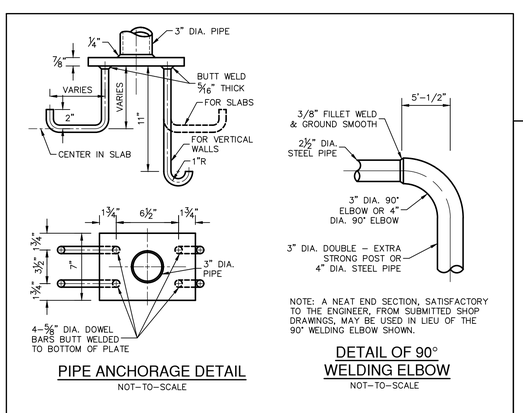
GENERAL NOTES:

1. CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT NO. **S251076** PREPARED BY **INTEC** DATED **04/10/2025**
2. PAVEMENT SECTION RECOMMENDATION ARE BASED ON A SUBGRADE CBR VALUE OF 2.5. THE PAVEMENT RECOMMENDATIONS ARE NOT BASED ON THE SHRINK/SWELL CHARACTERISTICS OF THE UNDERLYING SOILS. THE PAVEMENT CAN EXPERIENCE CRACKING AND DEFORMATION DUE TO SHRINKAGE AND SWELLING CHARACTERISTICS OF THE SOILS AS DESCRIBED IN THE VERTICAL MOVEMENTS SECTION OF THIS REPORT. USE OF GEOGRID HELPS REDUCE SHRINK/SWELL RELATED PAVEMENT DISTRESS.
3. SIGNIFICANT PAVEMENT DISTRESS HAS BEEN OBSERVED DURING CONSTRUCTION PHASE WITH THE COMBINATION OF CONSTRUCTION TRAFFIC AND IRRIGATION WATER/RAIN WATER GETTING UNDERNEATH THE ASPHALT.
4. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT/CONCRETE OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE SHOULD BE REDUCED. ONE OF THE FOLLOWING METHODS SHOULD BE USED:
   - DEEPER CURBS: SUCH AS CURBS EXTENDING A MINIMUM OF 3 INCHES INTO SUBGRADE.
   - COMPACTED CLAYS BACKFILLED AGAINST THE CURBS.
5. IN ADDITION, WATER SHOULD NOT BE ALLOWED TO GET UNDERNEATH THE PAVEMENT SECTION AT THE TIME OF HOME CONSTRUCTION.
6. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
7. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
8. THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
9. THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
10. IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
11. WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2-FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.

LIME NOTES:

FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:

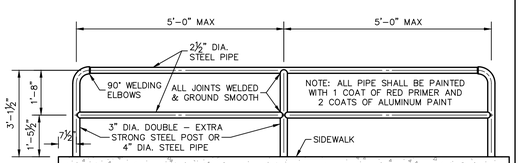
1. AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
2. AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ¾ INCH SIEVE FROM THE SAMPLE):
   - MINIMUM PASSING 1¾" SIEVE 100
   - MINIMUM PASSING ¾" SIEVE 85
   - MINIMUM PASSING NO. 4 SIEVE 60
3. SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE BEXAR COUNTY FLEXIBLE PAVEMENT DESIGN CRITERIA GUIDE FOR MIXTURE DESIGN.
4. COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
5. CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
6. VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.



PIPE ANCHORAGE DETAIL
NOT-TO-SCALE

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

DETAIL OF 90° WELDING ELBOW
NOT-TO-SCALE



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

PIPE RAILING DETAIL
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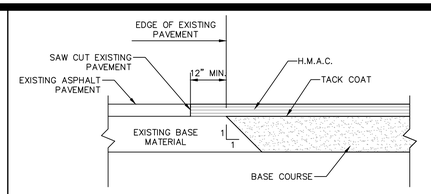

ASPHALT/ASPHALT JUNCTURE DETAIL
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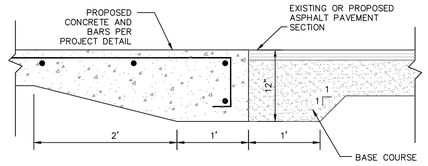

CONCRETE/ASPHALT JUNCTURE DETAIL
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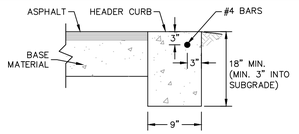

HEADER CURB DETAIL
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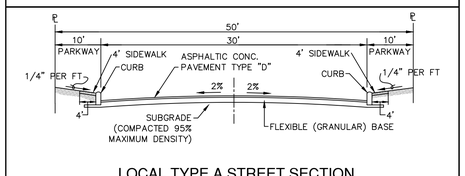

LOCAL TYPE A STREET SECTION
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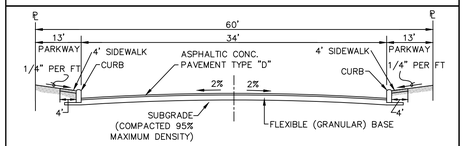

LOCAL TYPE B STREET SECTION (HOUSES FRONTING)
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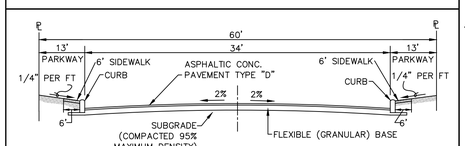

LOCAL TYPE B STREET SECTION (NO HOUSES FRONTING)
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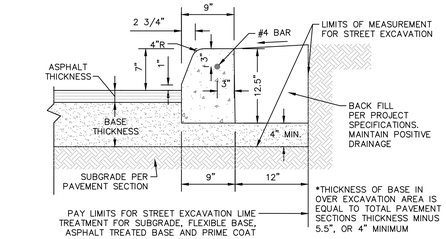

CONCRETE CURB DETAIL
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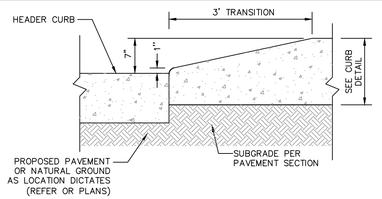
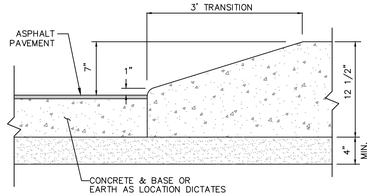


CURB TRANSITION DETAIL
(FROM HEADER CURB TO STANDARD CURB)
NOT-TO-SCALE



CURB TRANSITION DETAIL
(FROM PAVEMENT TO STANDARD CURB)
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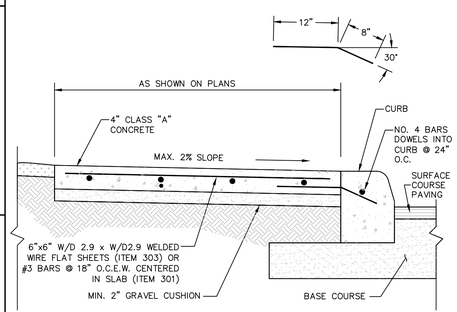

SIDEWALK DETAIL
NOT-TO-SCALE

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame 7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
STREET DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C2.10

Date: Jul 31, 2025, 3:19pm User ID: anthony.alvarado
File: P:\130\65\21\Design\Civil\STDT-130552l.dwg

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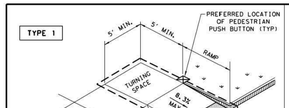
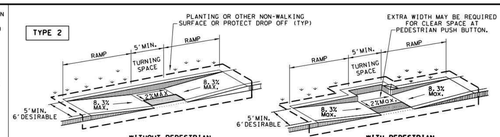
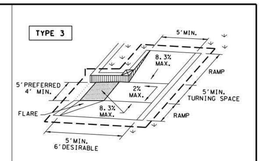
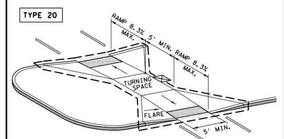


PERPENDICULAR CURB RAMP

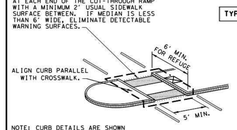


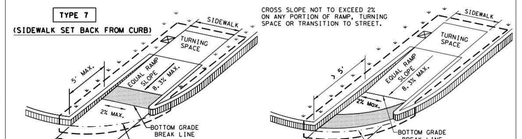
PARALLEL CURB RAMP

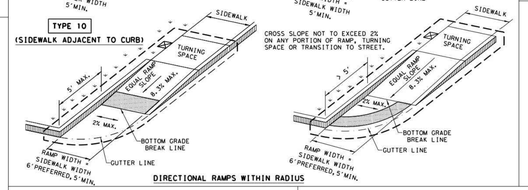




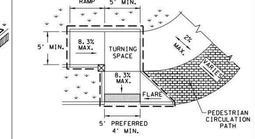
CURB RAMPS AT MEDIAN ISLANDS



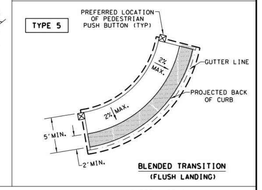




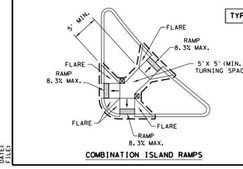
DIRECTIONAL RAMPS WITHIN RADIUS



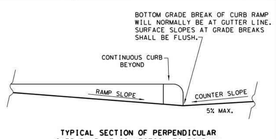
COMBINATION CURB RAMPS



BLENDED TRANSITION (FLUSH LANDING)



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:	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS	DIST		COUNTY		SHEET NO.

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.

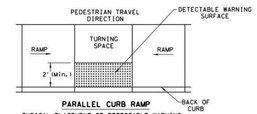
DETECTABLE WARNING PAVERS (IF USED)

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

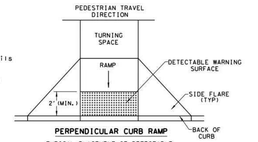
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items 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



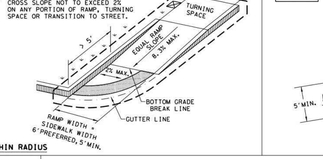
PARALLEL CURB RAMP

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

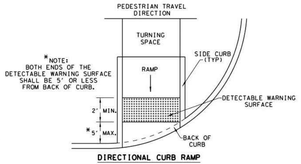


PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS



*NOTE: BOTH ENDS OF THE DETECTABLE WARNING SURFACE SHALL BE 5' OR LESS FROM BACK OF CURB.

DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SHEET 2 OF 4

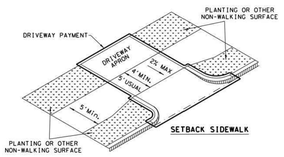
Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

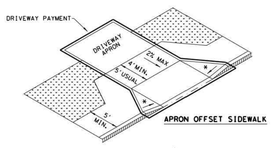
PED-18

FILE: ped18	DW: TxDOT	CK:	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS	DIST		COUNTY		SHEET NO.

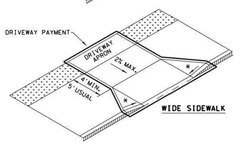
SIDEWALK TREATMENT AT DRIVEWAYS



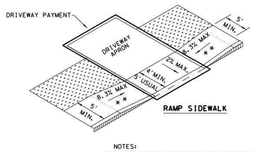
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



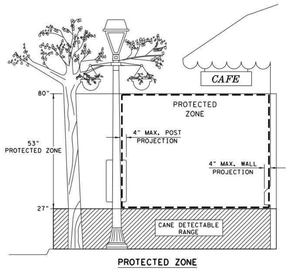
WIDE SIDEWALK



RAMP SIDEWALK

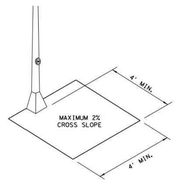
NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

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

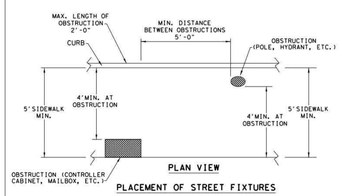


PROTECTED ZONE

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



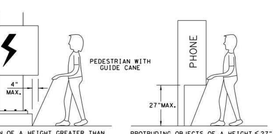
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



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:	DW: VP	CK: KM	CK: PK & JG
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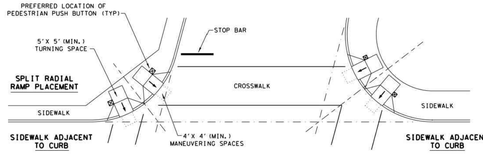
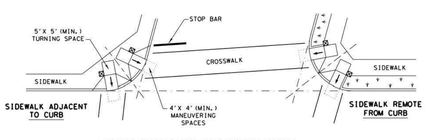
REVISIONS	DIST		COUNTY		SHEET NO.

TYPICAL CROSSING LAYOUTS

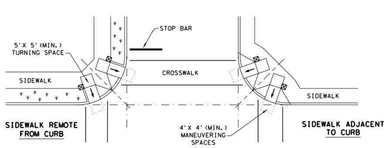
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



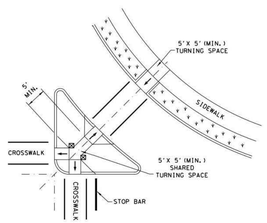
SKEWED INTERSECTION WITH "LARGE" RADIUS



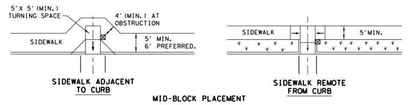
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

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

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REVISIONS	DIST		COUNTY		SHEET NO.

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

STREET DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C2.11

Date: Jul 31, 2025, 3:19pm User ID: anthony.olverado
File: P:\13055\21\Design\Civil\STD-13055121.dwg

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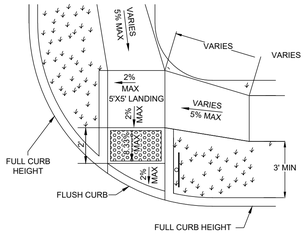
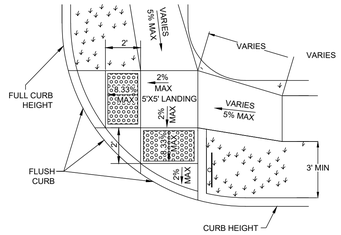
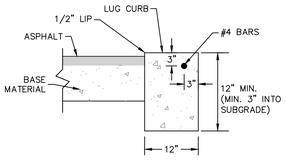


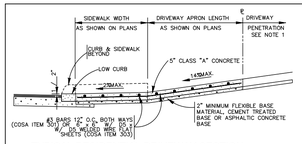
MODIFIED TYPE (V-M) SIDEWALK RAMP
N.T.S.



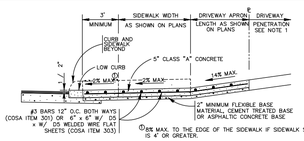
MODIFIED TYPE (IV-M) SIDEWALK RAMP
N.T.S.



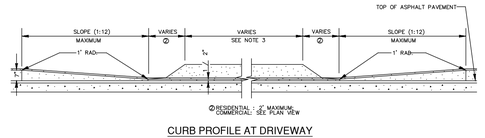
LUG CURB DETAIL
NOT-TO-SCALE



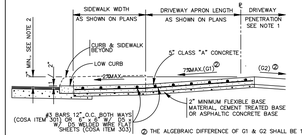
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.1



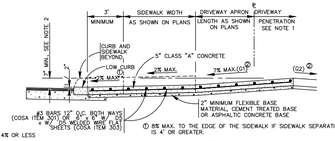
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.1

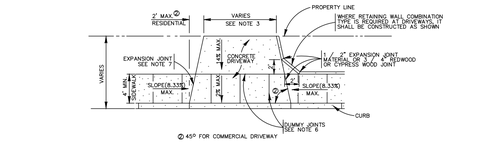


CURB PROFILE AT DRIVEWAY
WITH SIDEWALK ABUTTING CURB

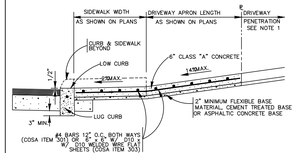


TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.1

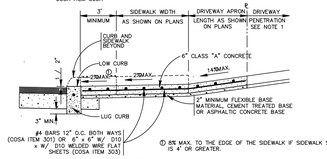




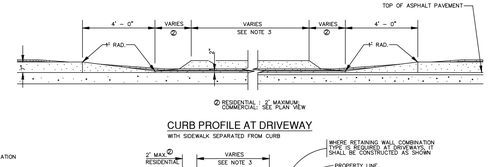
TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK ABUTTING CURB



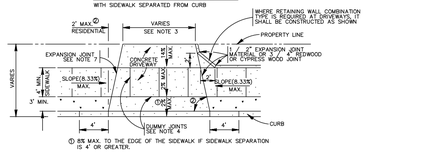
TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.2



TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.2



CURB PROFILE AT DRIVEWAY
WITH SIDEWALK SEPARATED FROM CURB



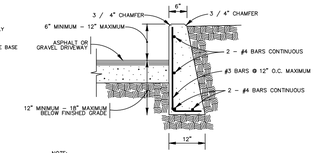
TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK SEPARATED FROM CURB

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.



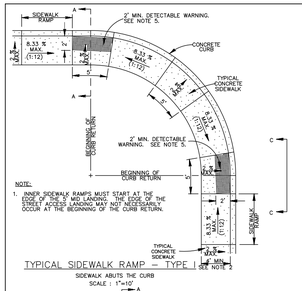
NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF COSA ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY - CONCRETE RETAINING WALL
ON COMPACTED SUBGRADE
COSA ITEM 307.1

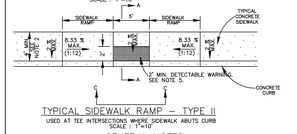
BEXAR COUNTY

CONCRETE DRIVEWAY STANDARDS

DATE: FEBRUARY 2024



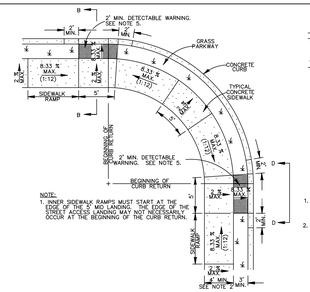
TYPICAL SIDEWALK RAMP – TYPE I



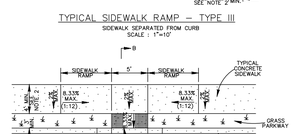
TYPICAL SIDEWALK RAMP – TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE : 1"=10'

GENERAL NOTES

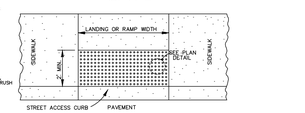
1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND 4' SEPARATED FROM THE CURB. THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' 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 3' 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, HAVING A BASE DIAMETER OF 0.9 INCHES (23 MM) AND A HEIGHT OF 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINALLY 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-05, 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 WITH A GRADE THAT EXCEEDS 5% AND RISES MORE THAN 6" BETWEEN LEVEL AREAS OR IS LONGER 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



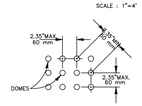
TYPICAL SIDEWALK RAMP – TYPE III



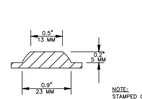
TYPICAL SIDEWALK RAMP – TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1"=10'



DETECTABLE WARNING SURFACE
SCALE : 1"=4'

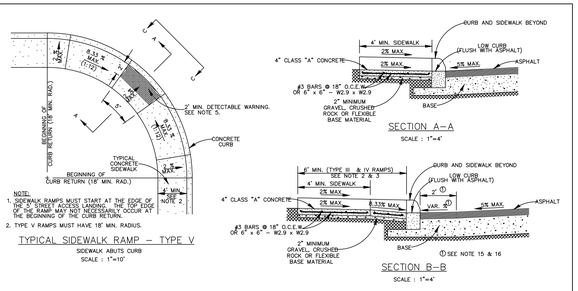


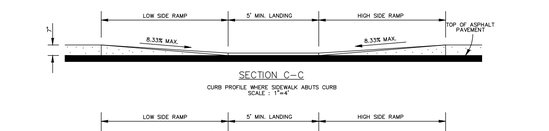
PLAN DETAIL



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 THAT IS TO BE INSTALLED ON THE PROJECT TO THE CITY INSPECTOR FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.





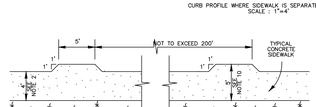


TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'–6"	7'–2"
2%	5'–0"	8'–4"
3%	4'–8"	10'–0"
4%	4'–2"	12'–6"
5%	3'–10"	16'–8"

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

PROJECT NO.: DATE:
DSGN BY: CHKD. BY: R.S. HOSSERE, P.E. SHEET NO.: OF

NO. REVISION DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

STREET DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C2.12

Date: Jul 31, 2025, 3:19pm User ID: anthonyalvarado
File: P:\130\55\21\Design\Civil\STD1-130552I.dwg

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BEXAR COUNTY ROW NOTES:

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DRIVEWAY NOTE:

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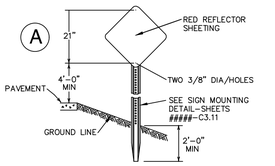
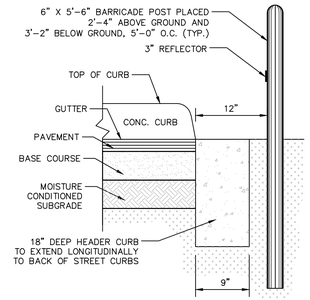
SYMBOL		ITEM NUMBER	SYMBOL		ITEM NUMBER
	UNIT BOUNDARY		STOP	R1-1 30"X30"	531.3
	CURB INLET		Street Name	STREET SIGN	531.57
	TRAFFIC FLOW ARROW		DEAD END	W14-1P DEAD END 36"X9"	531.58
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)			R4-7 24X30	531.17
	SIDEWALK (DEVELOPER RESPONSIBILITY)			R4-8 24X30	531.17
	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)				
	END OF ROAD MARKER OM4-3				
	HEADER CURB W/ BARRICADE POSTS				



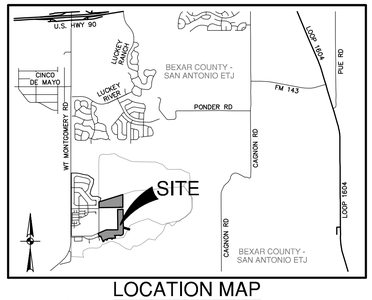
UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.

TYPE 4 OM4-3
18" x 18"

OBJECT MARKER TYPE 4
NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 60'
0' 60' 120' 180'

MATCHLINE ~ SEE SHEET C3.01

PERMANENT SANITARY SEWER EASEMENT (VOL. 14598, PGS. 1294-1312 O.P.R.)

MVISD MIDDLE SCHOOL 3 (CONCURRENT PLATTING; PLAT NO. 25-11800032 PR)

BLOCK 133 CB 4319

4' SIDEWALK

6' DEVELOPER SIDEWALK

BAUM CREEK (VARIABLE WIDTH R.O.W.)

13' GETCTV EASEMENT

VARIABLE WIDTH DRAINAGE EASEMENT (OFF-LOT)

15' CLEARING AND GRADING BUFFER (DOC. NO. 20240132079 O.P.R.)

TYPE II BLUE RAISED PAVEMENT MARKER AT FIRE HYDRANT (NO SEPARATE PAY ITEM)

FLUSS RIVER (VARIABLE WIDTH R.O.W.)

40' SANITARY SEWER EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800406 PR)

18' VAR. WIDTH ACCESS EASEMENT

10' GETCTV EASEMENT

REGEN FALLS (50' R.O.W.)

WANZE BRANCH (50' R.O.W.)

BLOCK 131 CB 4319

UNPLATTED ANDIRON MULTISTATE I, LLC 276.657 ACRE TRACT (DOC. NO. 20240133159, O.P.R.)

VOGEL FIELDS (50' R.O.W.)

BLOSSUM RANCH, UNIT 1A (CONCURRENT PLATTING, PLAT NO. 24-11800406)

PROPOSED AT14 100-YR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)

EXISTING 100-YEAR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 58029C0056OF)

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
OVERALL SIGNAGE PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C3.00

Date: Jul 31, 2025, 6:02pm User ID: odeife
File: P:\130\55\21\Design\Civil\SG04-130552l.dwg

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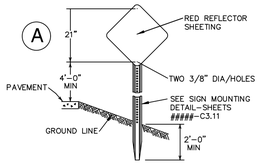
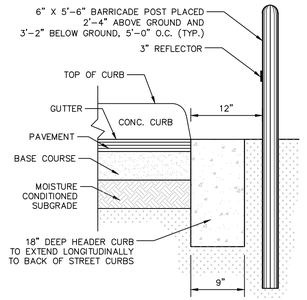


UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.

TYPE 4 OM4-3
18" x 18"

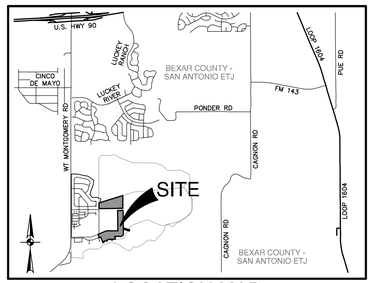
OBJECT MARKER TYPE 4

NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 60'
0' 60' 120' 180'

MVISD MIDDLE SCHOOL 3 (CONCURRENT PLATTING; PLAT NO. 25-11800032 PR)

MATCHLINE ~ SEE THIS SHEET

MATCHLINE ~ SEE SHEET C3.00

BAUM CREEK (VARIABLE WIDTH R.O.W.)

FELS GLEN (50' R.O.W.)

MOND GREEN (50' R.O.W.)

BLUME FOREST (50' R.O.W.)

FALCON RIVER (VARIABLE WIDTH R.O.W.)

STRAUS TRACT SECONDARY ARTERIAL (CONCURRENT PLATTING, PLAT NO. 24-11800322)

UNPLATTED ANDIRON MULTISTATE I, LLC 276.657 ACRE TRACT (DOC. NO. 20240133159, O.P.R.)

UNPLATTED REMAINING PORTION OF LOS HORNOS TDS, LLC 111.274 ACRES (DOC. NO. 20200090153 O.P.R.)

FORBRICH RANCH LLC (DOC. NO. 20220040551 O.P.R.)

UNPLATTED TRACT I 31.630 ACRES BOARD OF TRUSTEES OF THE MEDINA VALLEY INDEPENDENT SCHOOL DISTRICT (DOC. NO. 20240133159 O.P.R.)

PROPOSED AT14 100-YR UD FLOODPLAIN (PAPE-DAWSON FLOOD STUDY) (DECEMBER 2023)

EXISTING 100-YEAR FEMA DFIRM FLOODPLAIN (FIRM PANEL NO. 58029C0056OF)

PROPERTY LINE

13' GETCTV EASEMENT

4' SIDEWALK

4' DEVELOPER SIDEWALK

4' DEVELOER SIDEWALK

6' DEVELOPER SIDEWALK

10' GETCTV EASEMENT

TYPE II BLUE RAISED PAVEMENT MARKER AT FIRE HYDRANT (NO SEPARATE PAY ITEM)

5' LANDSCAPE EASEMENT (CONCURRENT PLATTING, PLAT NO. 11800322)

1' VEHICULAR NON-ACCESS (VNAE) EASEMENT

15' CLEARING AND GRADING BUFFER (DOC. NO. 20240132079 O.P.R.)

16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322

VARIABLE WIDTH DRAINAGE EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322)

98' ACCESS, SANITARY SEWER, WATER, DRAIN, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED STREET RIGHT-OF-WAY (CONCURRENT PLATTING, PLAT NO. 24-11800322)

16' LANDSCAPE, GAS, ELECTRIC, TELEPHONE AND CABLE TV EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322

RIGHT LANE MUST TURN RIGHT

ROAD ENDS 200 FT

ONLY

SPEED LIMIT 35

STOP

DEAD END

NO OUTLET

BLUME FOREST

FELS GLEN

MOND GREEN

BAUM CREEK

FALCON RIVER

SYMBOL	ITEM NUMBER
UNIT BOUNDARY	
CURB INLET	
TRAFFIC FLOW ARROW	
SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
SIDEWALK (DEVELOPER 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	

SYMBOL		ITEM NUMBER
STOP	R1-1 30"X30"	531.3
Street Name	STREET SIGN	531.57
DEAD END	W14-1P DEAD END 36"X9"	531.58
NO OUTLET	W14-2P NO OUTLET 36"X9"	531.60

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

DATE
NO. REVISION

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C3.01

Date: Jul 31, 2025, 6:09pm User ID: adavila
File: P:\130\55\21\Design\Civil\SIGN-13055021.dwg

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DATE: 7/1/25

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))
SRO = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

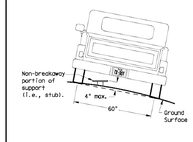
Anchor Type

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))

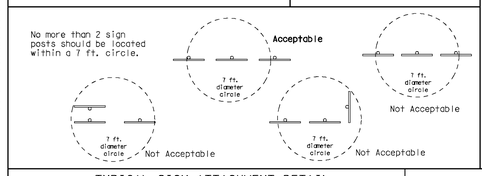
Sign Mounting Designation

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 = 1.12 M/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

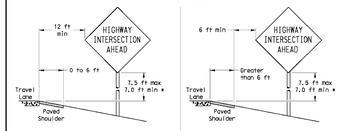


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



SIGN LOCATION

PAVED SHOULDERS



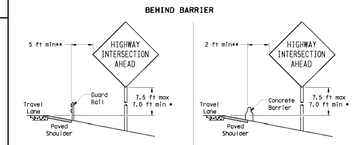
LESS THAN 6 FT. WIDE

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

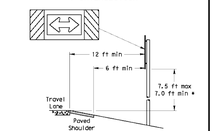


BEHIND GUARDRAIL

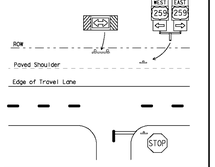
BEHIND CONCRETE BARRIER

**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 ft to a maximum of 7.5 feet above the edge of the travel lane or

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

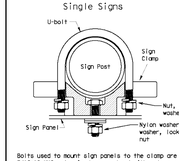
The maximum values may be increased when directed by the Engineer.

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

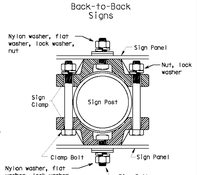
The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



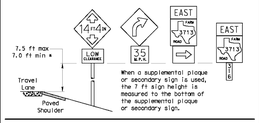
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

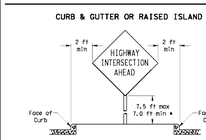
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



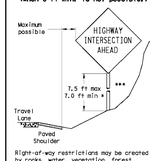
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

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, forests, 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
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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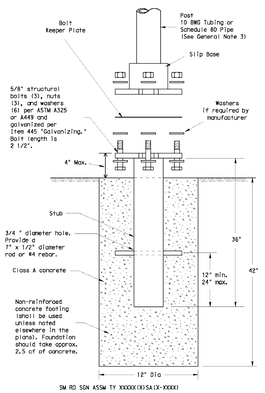
9-08	REVISIONS	CONT.	SECT.	JOB	HIGHWAY
		DIST.	COUNTY		SHEET No.

264

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:

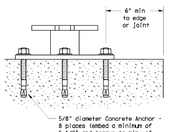
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS GF 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 retrail1ZNg 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 Traffic 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/traffic.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 traveiway (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 traveiway. 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 SMG-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
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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

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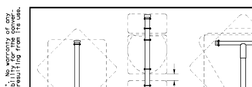
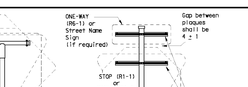
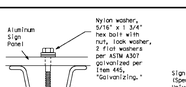
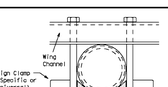




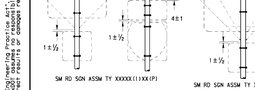
SM RD SGN ASSM TY XXXXX(1)XX(P-BW)

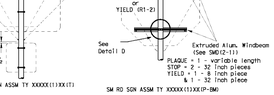


Detail A



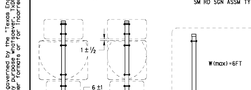
Detail B

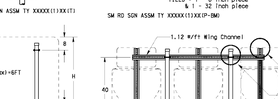


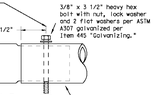


Detail F

Splices shall only be allowed behind the sign substrate.



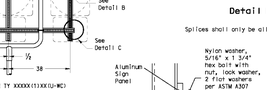




Detail C

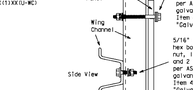
SIDE VIEW

Detail E



Detail D

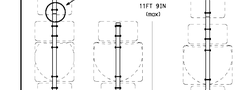
FRICTION CAP DETAIL



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.



All dimensions are in english unless detailed otherwise.

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 thicknessess: 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. Triangular slipbase supports are 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 shake reinforcing may be added vertically. Additional shake reinforcing may not exceed the maximum allowable amount per Note 9.
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.

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
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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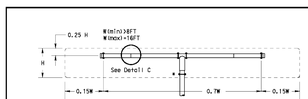
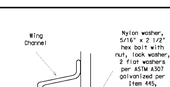
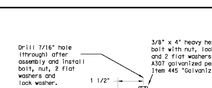
		DIST.	COUNTY		SHEET No.

262



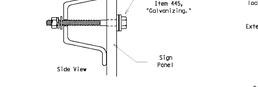


Detail B



Detail C

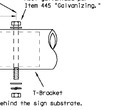
Splices shall only be allowed behind the sign substrate.



Typical Sign Mount

SM RD SGN ASSM TY SB0(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

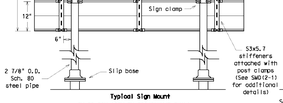


Detail E

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)

Detail D

EXTRUDED ALUMINUM SIGN WITH T BRACKET



Extruded Aluminum Sign With T Bracket

Use Extruded Alum. Windbeam as stifferers See SMD (2-11) for additional details

See Detail E for clamp installation

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
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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NO.	REVISION	DATE

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame
7-31-25

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
SIGNAGE DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C3.10

Date: Jul 31, 2025, 3:20pm User ID: anthonyalarcon
File: P:\130\55\21\Design\Civil\SGD1-130552l.dwg
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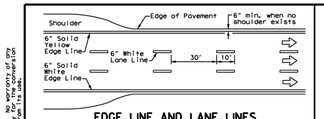
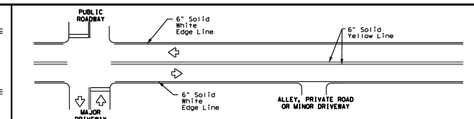
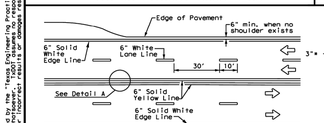


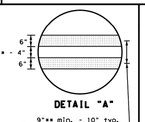
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

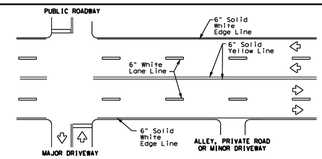


CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

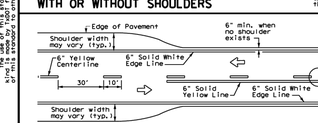


DETAIL "A"

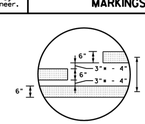
* 2" minimum for restripe projects when approved by the Engineer.
** 8" minimum for restripe projects when approved by the Engineer.



TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

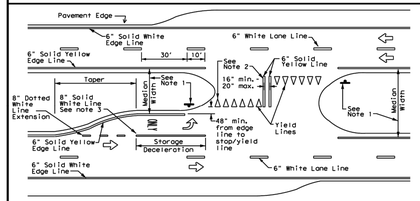


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



DETAIL "B"

* 2" minimum for restripe projects when approved by the Engineer.



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

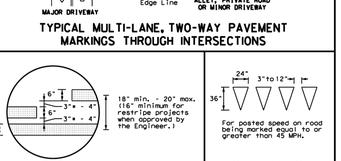
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections.
   Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

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

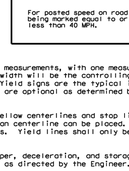
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways



YIELD LINES

Texas Department of Transportation — Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

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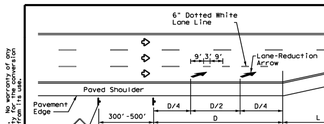


LANE REDUCTION

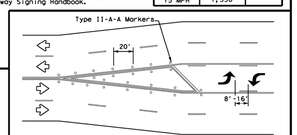
NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL)- standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,290	
75 MPH	1,350	

GENERAL NOTES

1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and one-way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

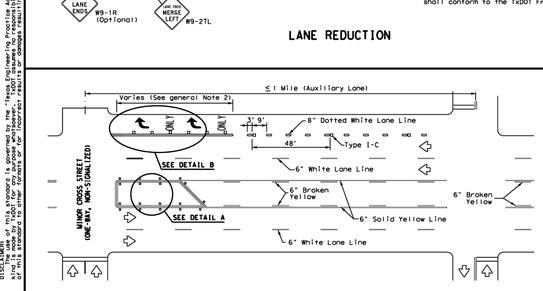


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

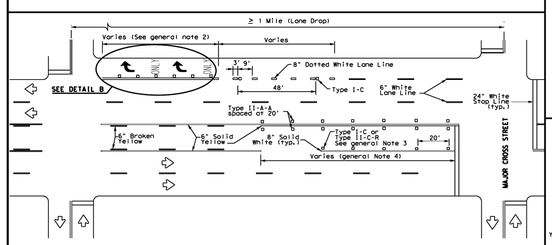
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

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

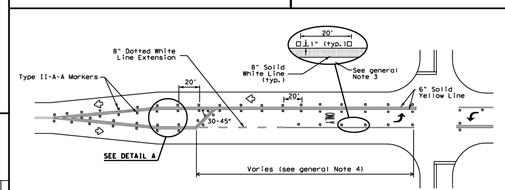
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



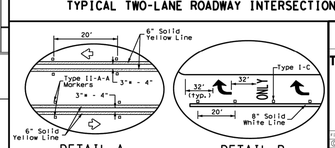
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation — Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-22

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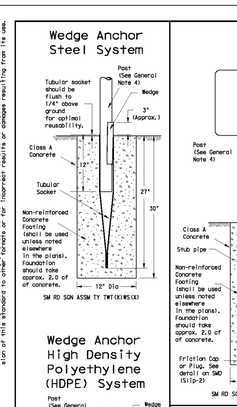
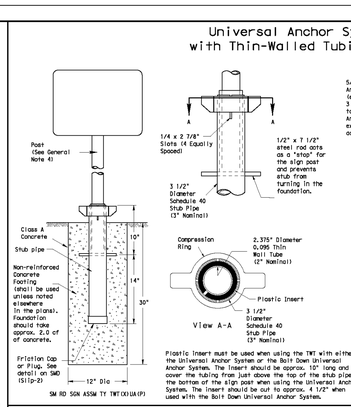
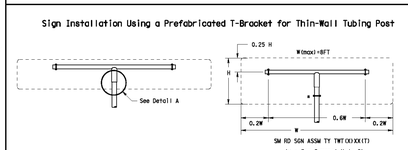




Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized 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 pal, 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.

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.

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



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 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 following:
   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 preacched 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 clamps 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 free from the bottom and the clearance requirements given on SMD(SIGN) 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 free from the bottom and the clearance requirements given on SMD(SIGN) 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

©TxDOT July 2022	TWT TXDOT	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS	DIST	COUNTY		HIGHWAY	
9-08					
	"ES"		DistCTY		SHEET No.

2EE

DATE:
FILE:

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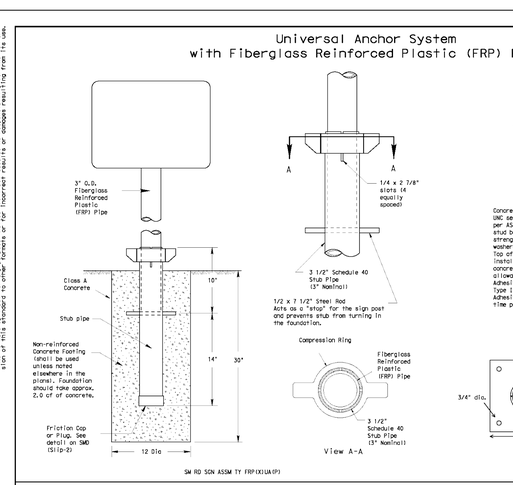


Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized 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 pal, 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.

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 gray 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

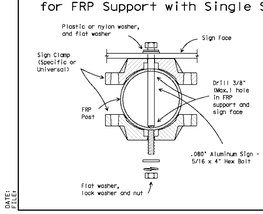
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

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 free from the bottom and the clearance requirements given on SMD(SIGN) 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. 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.
4. Attach sign to FRP post.
5. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
6. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
7. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

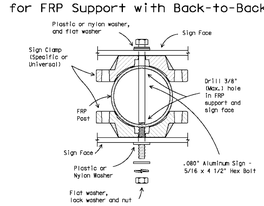
BOLT DOWN SIGN SUPPORT

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

©TxDOT July 2022	TWT TXDOT	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS	DIST	COUNTY		HIGHWAY	
9-08					
	"ES"		DistCTY		SHEET No.

2EE

NO.	REVISION	DATE

STATE OF TEXAS — JON D. ADAME — 82567 — LICENSED PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SIGNAGE DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C3.11

Date: Jul 31, 2025, 3:20pm User ID: anthony.alvarado
File: P:\130\55\21\Design\Civil\SGD1-130552I.dwg

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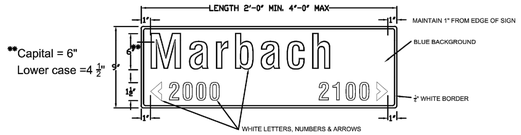
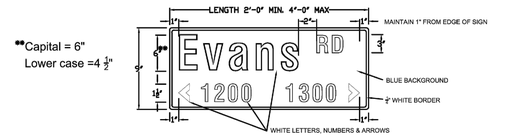
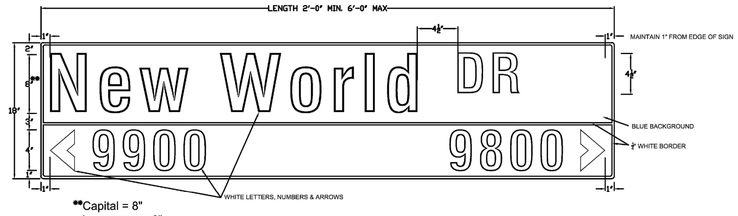


9" GROUND MOUNT STREET NAME SIGNS



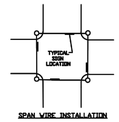
9" GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION



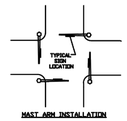
18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	48" (1200 mm) MIN. 72" (1800 mm) MAX. 1' (305mm) INCREMENTS OF LENGTH	24" (600 mm) MIN. 48" (1200 mm) MAX. 6" (150mm) INCREMENTS OF LENGTH
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY 5052-H38 (ASTM B-209 GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM ✱ OVER DIAMOND GRADE - ASTM Type XI Non-Fluorescent	BLUE FILM ✱ OVER HIGH INTENSITY PRISMATIC- ASTM Type IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%

✱ ACRYLIC ELECTRONIC CUTTABLE FILM



SPAN WIRE INSTALLATION



MAST ARM INSTALLATION

SIGN FACE MATERIALS
SHALL CONFORM TO:

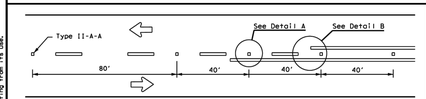
1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-93 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 09e1

Bexar County Public Works

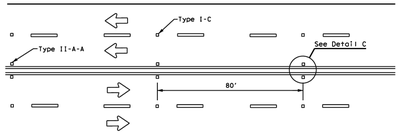
Street Name Sign Details

SHEET 1

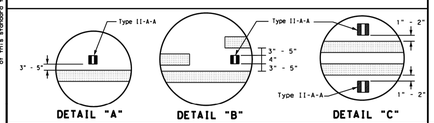
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



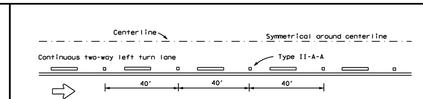
CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



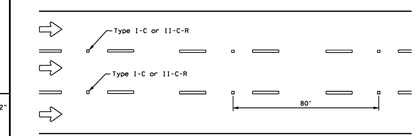
CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY ROADWAYS



DETAIL "A" DETAIL "B" DETAIL "C"



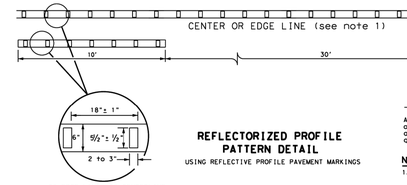
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



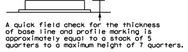
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.
See Note 3.

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation shall not be responsible for incorrect results or damages resulting from its use.



REFLECTORIZED PROFILE
PATTERN DETAIL
USING REFLECTIVE PROFILE PAVEMENT MARKINGS



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.

NOTES

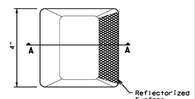
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

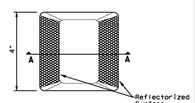
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements, the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians,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

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

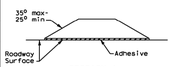
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation — Traffic Safety Division Standard

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

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-17 8-00 5-20	DIST	COUNTY		SHEET NO.
4-92 2-10 12-22				
5-00 2-12				
8-95 8-12				

DATE:
FILE:

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

SIGNAGE DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C3.12

Date: Jul 31, 2025, 3:20pm User ID: anthonyalvarado
File: P:\13055\21\Design\Civil\SGDT-130521.dwg

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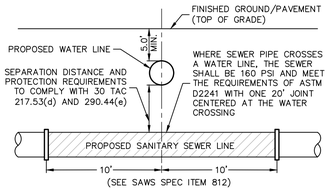
TRENCH EXCAVATION SAFETY PROTECTION:

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.

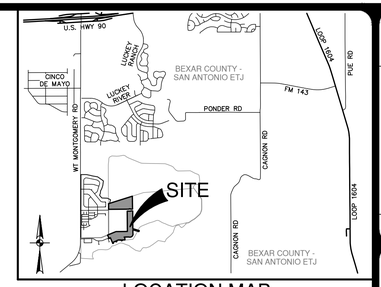
JOINT RESTRAINT NOTE:

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.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



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

PROPOSED 1" DUAL SERVICE WITH 5/8" METER

SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) — IRR

JOINT RESTRAINT ⊠

(A) 1 ~ 8" X 6" ANCHOR TEE M.J.
1 ~ 6" GATE VALVE, M.J.
1 ≈ 6" 1/4 ANCHOR BEND, M.J.
1 ≈ 6" VALVE BOX, COMPLETE
1 ~ STD FIRE HYDRANT ASSEMBLY
6" D.I. PIPE CUT AS REQUIRED

(B) 1 ~ 12" X 6" ANCHOR TEE M.J.
1 ~ 6" GATE VALVE, M.J.
1 ≈ 6" 1/4 ANCHOR BEND, M.J.
1 ≈ 6" VALVE BOX, COMPLETE
1 ~ STD FIRE HYDRANT ASSEMBLY
6" D.I. PIPE CUT AS REQUIRED

(C) CONTRACTOR TO REMOVE EXISTING 12" CAP AND TIE INTO 12" PVC WATER MAIN (SAWS JOB NO. 24-1161) AFTER DISINFECTION AND ACCEPTANCE BY SAWS

FOR CHLORINATION INJECTION:
2~1" CORPORATION STOP, C.C.x I.P.
2~1" COPPER TUBING, CUT AS REQ'D
2~1" COMP. x 1 1/4" COUPLING, CURB STOP
2~1 1/4" THD SOLID CAPS
1~2" BLOWOFF ASSEMBLY (TEMPORARY)
12" X 2" ECC. TAPPED CAP, M.J. THD D.I.
1~12" SOLID SLEEVE, MJ
SEE SAWS STD. DWG. DD-844-01
SEE SHEET C4.10 FOR DETAIL

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:

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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 745 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 745 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).

WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 224.5 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1,897 LF, 8" 1,401 LF, 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame 7-10-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C4.00

Date: Jul 10, 2025, 5:59pm User ID: adavila
File: P:\13055\21\Design\Civil\WTOA-13055021.dwg
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TRENCH EXCAVATION SAFETY PROTECTION:

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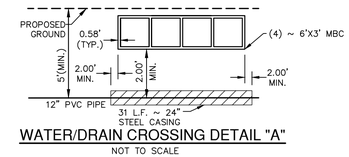
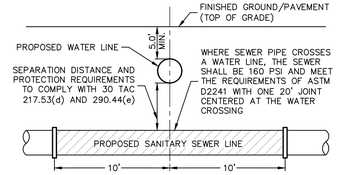


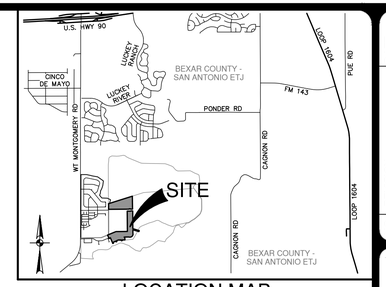
WATER/DRAIN CROSSING DETAIL "A"

NOT TO SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

UNPLATTED TRACT 2 28.630 ACRES BOARD OF TRUSTEES OF THE MEDINA VALLEY INDEPENDENT SCHOOL DISTRICT (DOC. NO. 20240133159 OPR)

UNPLATTED FORBRICH RANCH, LLC 178.6434 ACRES (DOC. NO. 20220040531 OPR)

UNPLATTED REMAINING PORTION OF 246.657 ACRES ANDIRON MULTISTATE I, LLC (DOC. NO. 20240217198 O.P.R.)

BLOCK 134 CB 4319

BLOCK 135 CB 4319

BLOCK 131 CB 4319

BLOCK 133 CB 4319

BAUM CREEK (VARIABLE WIDTH ROW)

BLUME FOREST (50' ROW)

FALCON RIVER (VARIABLE WIDTH RIGHT-OF-WAY)

STRAUS TRACT SECONDARY ARTERIAL (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)

5' LANDSCAPE EASEMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)

1' VEHICULAR NON-ACCESS EASEMENT (NOT-TO-SCALE) CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)

14' GETCTV EASMENT

16' LANDSCAPE & GETCTV EASMENT (CONCURRENT PLATTING, PLAT NO. 24-11800322 PR)

13' GETCTV EASEMENT

1 ~ 8" X 8" TEE, M.J.
1 ~ 8" GATE VALVE, M.J.
2 ~ 8" X 2" REDUCER, M.J.
1 ~ 6" VALVE BOX, COMPLETE

±47 LF ~ 8" PVC

±14 LF ~ 8" PVC

±252 LF ~ 8" PVC

2 ~ 8" 1/32 BEND, M.J.

1 ~ 12" X 12" TEE, M.J.
2 ~ 12" GATE VALVE, M.J.
1 ~ 8" GATE VALVE, M.J.
1 ~ 12" X 8" REDUCER, M.J.
3 ~ 6" VALVE BOX, COMPLETE

1 ~ 12" GATE VALVE, M.J.
1 ~ 6" VALVE BOX, COMPLETE

3/4" IRR SERVICE W/ 3/4" METER

±25 LF ~ 12" PVC

±98 LF ~ 8" PVC

±85 LF ~ 12" PVC

±24 LF ~ 8" PVC

1 ~ 8" 1/16 BEND, M.J.

±398 LF ~ 2" HDPE

2" BLOWOFF ASSEMBLY (PERM) SEE SAWS STD. DWG. DD-844-02 SEE SHEET C4.10

CAUTION!! WATER/SEWER CROSSING SEE THIS SHEET FOR DETAILS REF. SAWS SPEC ITEM 812

CAUTION!! WATER/DRAIN CROSSING SEE SHEET C4.10 FOR DETAIL

CAUTION!! WATER/DRAIN CROSSING SEE THIS SHEET FOR WATER/DRAIN CROSSING DETAIL "A"

31 L.F. ~ 24" STEEL CASING

±143 LF ~ 12" PVC

MATCHLINE "B" - SEE THIS SHEET

MATCHLINE "C" - SEE SHEET C4.02

MATCHLINE "C" - SEE SHEET C4.02

MATCHLINE "A" - SEE SHEET C4.00

WATER LEGEND

PROJECT LIMITS

EXISTING WATER — W

EXISTING SEWER — SS

PROPOSED SEWER — SS

PROPOSED WATER — W

PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER

PROPOSED 1" DUAL SERVICE WITH 5/8" METER

SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) — IRR

JOINT RESTRAINT ⊠

FIRE HYDRANT

MANHOLE

(A) 1 ~ 8" X 6" ANCHOR TEE M.J.
1 ~ 6" GATE VALVE, M.J.
1 ~ 6" 1/4 ANCHOR BEND, M.J.
1 ~ 6" VALVE BOX, COMPLETE
1 ~ STD FIRE HYDRANT ASSEMBLY
6" D.I. PIPE CUT AS REQUIRED

(B) 1 ~ 12" X 6" ANCHOR TEE M.J.
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1 ~ 6" VALVE BOX, COMPLETE
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(C) CONTRACTOR TO REMOVE EXISTING 12" CAP AND TIE INTO 12" PVC WATER MAIN (SAWS JOB NO. 24-11132) AFTER DISINFECTION AND ACCEPTANCE BY SAWS

FOR CHLORINATION INJECTION:
2-1" CORPORATION STOP, C.C.x I.P.
2-1" COPPER TUBING, CUT AS REQ'D
2-1" COMP. x 1 1/4" COUPLING, CURB STOP
2-1 1/4" THD SOLID CAPS
1-2" BLOWOFF ASSEMBLY (TEMPORARY)
12" X 2" ECC. TAPPED CAP, M.J. THD D.I.
1-12" SOLID SLEEVE, MJ
SEE SAWS STD. DWG. DD-844-01
SEE SHEET C4.10 FOR DETAIL

15' CLEARING AND GRADING BUFFER EASEMENT (DOC NO. 20240132079 OPR)

1 ~ 12" GATE VALVE, M.J.
1 ~ 6" VALVE BOX, COMPLETE

±320 LF ~ 12" PVC

±440 LF ~ 12" PVC

±379 LF ~ 12" PVC

±33 LF ~ 12" PVC

±120 LF ~ 12" PVC

2 ~ 12" 1/8 BEND, M.J.

UNPLATTED TRACT 1 28.284 ACRES BOARD OF TRUSTEES OF THE MEDINA VALLEY INDEPENDENT SCHOOL DISTRICT (DOC. NO. 20240133159 OPR)

VARIABLE WIDTH PERMANENT SANITARY SEWER EASEMENT (VOL. 14598, PGS 1294-1312 OPR)

EX 36" SS

FLUSS RIVER (VARIABLE WIDTH ROW)

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 1,897 LF, 2" 1,401 LF, 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame 7-10-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C4.01

Date: Jul 10, 2025, 5:50pm User ID: odevila
File: P:\13055\21\Design\Civil\WT04-13055121.dwg

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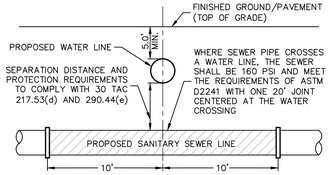
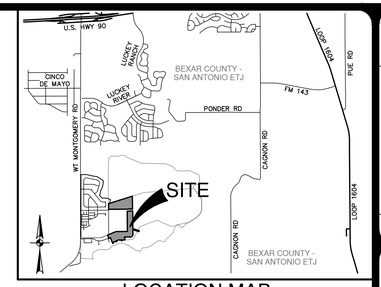


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

WATER LEGEND

PROJECT LIMITS

EXISTING WATER — FIRE HYDRANT

EXISTING SEWER — MANHOLE

PROPOSED SEWER

PROPOSED WATER — FIRE HYDRANT

PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER

PROPOSED 1" DUAL SERVICE WITH 5/8" METER

SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) — IRR

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1 ~ 6" GATE VALVE, M.J.
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SEE SAWS STD. DWG. DD-844-01
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WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 224.5 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1,401 LF 8" 1,897 LF 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame 7-10-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C4.02

Date: Jul 10, 2025, 5:51pm User ID: adavila
File: P:\13055\21\Design\Civil\WTOA-130552l.dwg

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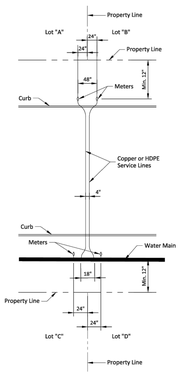
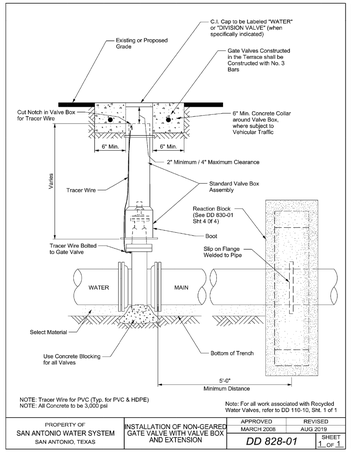


SINGLE SERVICE LINE - SINGLE METER

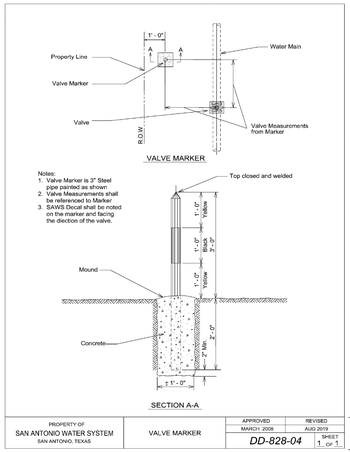
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT	APPROVED	REVISED
		March 2008	December 2018
	DD-824-05	SHEET 1 OF 1	



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

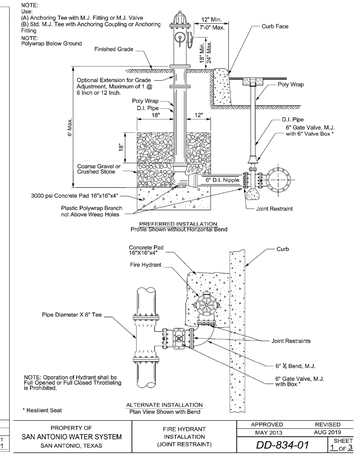
Note: For all work associated with Recycled Water Valves, refer to DD 110-10, Sht. 1 of 1

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

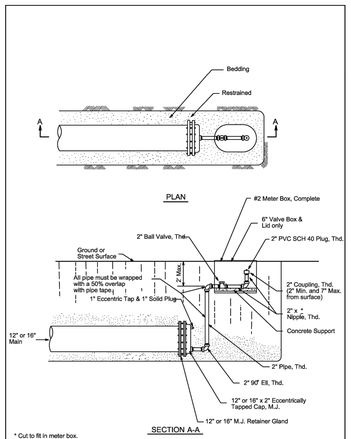


Notes:
1. Valve Marker is 3" Steel pipe painted as shown
2. Valve Measurements shall be referenced to Marker
3. SAWS Decal shall be noted on the marker and facing the diection of the valve.

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

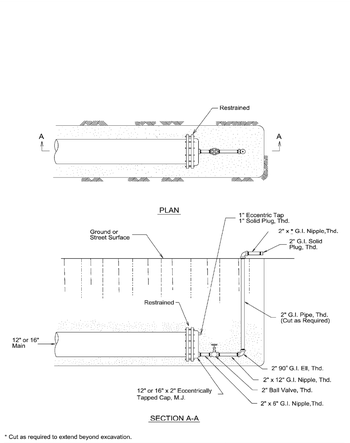


PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	APPROVED	REVISED
		MAY 2013	AUG 2019
	DD-834-01	SHEET 1 OF 2	



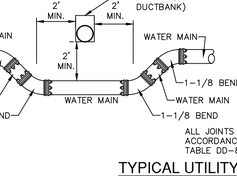
* Cut to fit in meter box.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" PERMANENT BLOW-OFF ASSEMBLY ON 12" & 16" MAINS	APPROVED	REVISED
		MARCH 2008	MAY 2013
	DD-844-02	SHEET 1 OF 2	



* Cut as required to extend beyond excavation.

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



RESTRAINED LENGTH FOR TEES

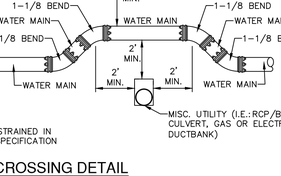
PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	7	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	7	1
8	6	0	59	44
8	6	5	28	13
8	8	10	1	1
8	8	0	77	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 SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
		March 2008	AUG 2019
	DD-839-04	SHEET 1 OF 2	



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 provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED	REVISED
		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 = 200 psi	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
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	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	6
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 SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS VERTICAL OFFSETS	APPROVED	REVISED
		MARCH 2008	AUG 2019
	DD-839-06	SHEET 1 OF 1	

PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
6	6	55	42
6	6	32	24
12	4	85	65
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 SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	APPROVED	REVISED
		MARCH 2008	AUG 2019
	DD-839-07	SHEET 1 OF 1	

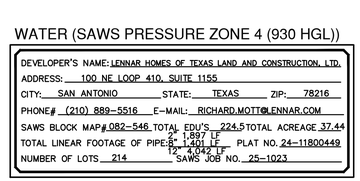
PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	63	50
12	45	18	13
12	22.5	8	6
12	11.25	4	3

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.

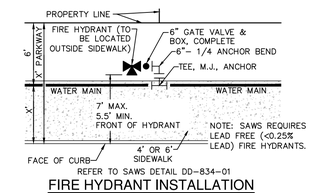
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

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

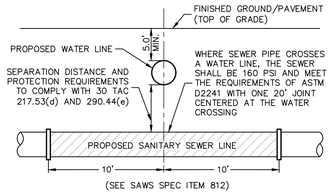


* Cut to fit in meter box

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

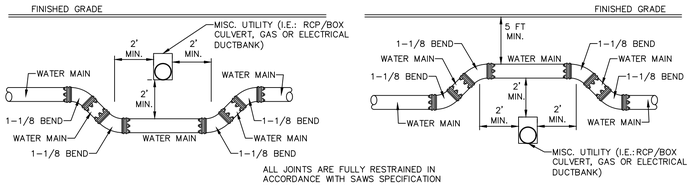


FIRE HYDRANT INSTALLATION
NOT-TO-SCALE



(SEE SAWS SPEC ITEM 812)

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



TYPICAL UTILITY/WATER CROSSING DETAIL
NOT-TO-SCALE

WATER (SAWS PRESSURE ZONE 4 (930 HGL))

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 224.5 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 2" 1,897 LF, 8" 1,401 LF, 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

NO. REVISION DATE

PAPE-DAWSON ENGINEERS
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
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-10-25

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
WATER DISTRIBUTION PLAN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C4.10

Date: Jul 10, 2025, 5:51pm User ID: adavila
File: P:\13\55\21\Design\Civil\WTD1-130552I.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.

    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.

11. 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 745 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 745 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF *PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

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

8. BACKFLOW PREVENTION DEVICES:

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

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

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

PROJECT WATER NOTES

1. MACHINE CHLORINATION BY THE S.A.W.S.
2. ALL 8", 12" AND 16" PIPE SHALL BE P.V.C. C-900 CLASS 235 DR 18.
3. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR, AS PROVIDED FOR IN THE SPECIAL CONDITIONS.
4. THE WATER LINES WILL BE SET FROM THE STREET HUBS BEFORE 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 4 (930 HGL))

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 224.5 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1,897 LF, 8" 1,461 LF, 12" 4,042 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1023

NO.	REVISION	DATE

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

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame 7-10-25

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

WATER DISTRIBUTION PLAN NOTES

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C4.11

Date: Jul 10, 2025, 5:51pm User ID: adavila
File: P:\130\55\21\Design\Civil\WTD1-1305521.dwg

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TRENCH EXCAVATION SAFETY PROTECTION:

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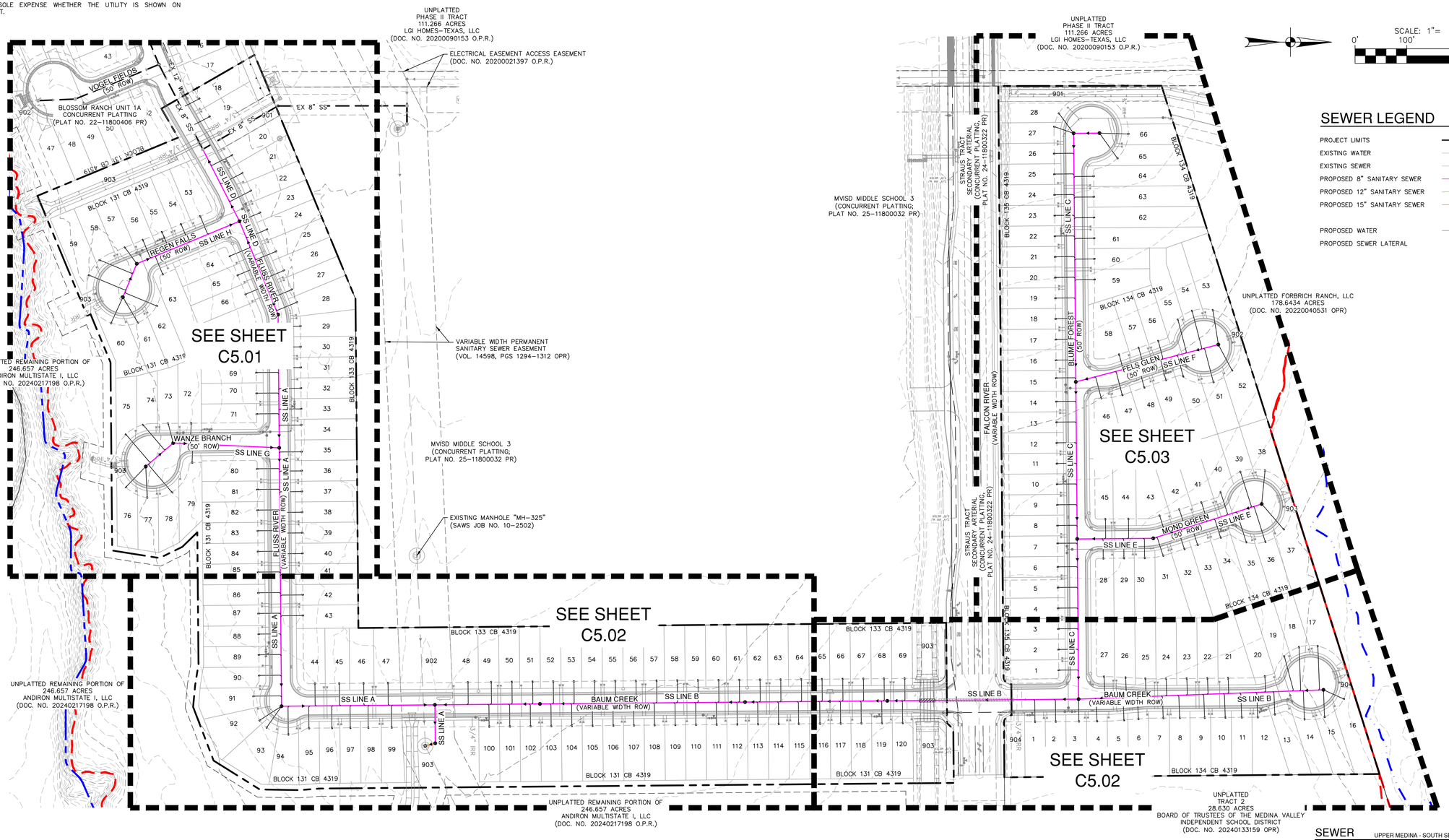

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED 8" SANITARY SEWER
- PROPOSED 12" SANITARY SEWER
- PROPOSED 15" SANITARY SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- MANHOLE
- FIRE HYDRANT

SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF 15" 20 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

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JON D. ADAME
82567
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PROFESSIONAL ENGINEER
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7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER INDEX

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.00

Date: Jul 31, 2025, 8:07pm User ID: adeolfo
File: P:\130\55\21\Design\Civil\13-130521.dwg

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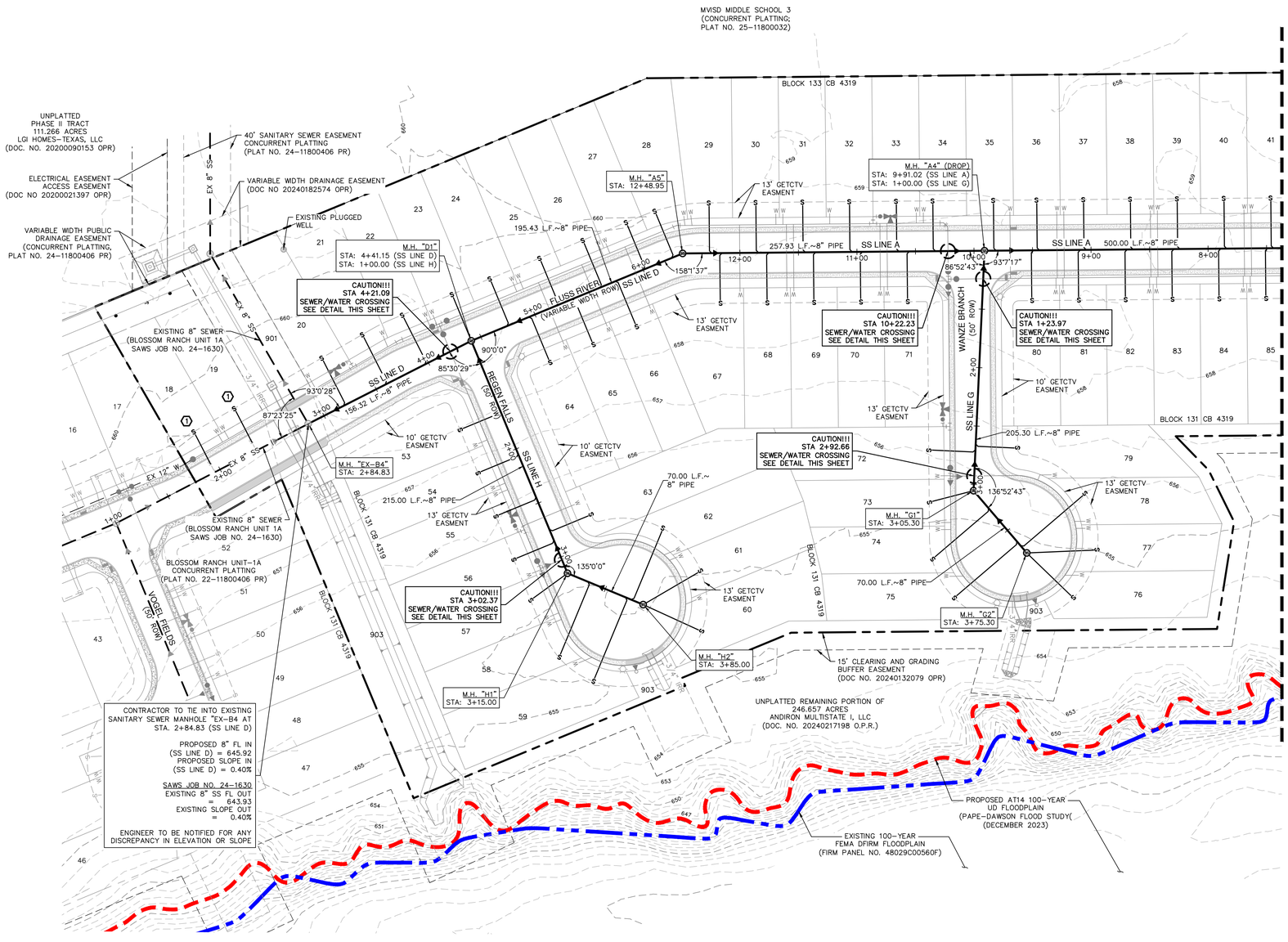
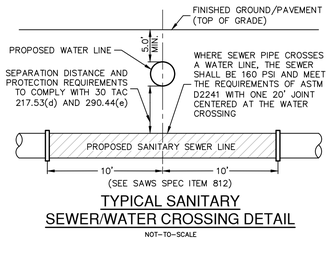
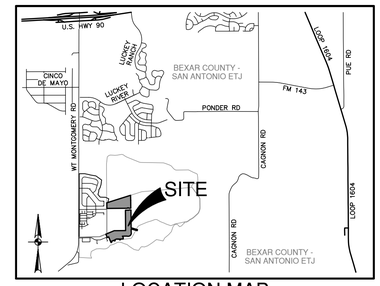




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

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

1 CONTRACTOR TO MAKE 6" LATERAL CONNECTION TO EXISTING SEWER MAIN WHERE NO EXISTING WYE OR STUB-OUT IS AVAILABLE. THE SADDLE SHALL BE PERMANENTLY BONDED TO THE EXISTING MAIN BY THE USE OF COMPOUNDS AND CLAMPS AS RECOMMENDED BY THE MANUFACTURE AND APPROVED BY SAWS. REFERENCE SAN ANTONIO WATER SYSTEM UTILITY SERVICE REGULATIONS SECTION 18.131.22

CAUTION!!

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SEWER

UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF 15" 20 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
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7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.01

Date: Jul 31, 2025, 8:08am User ID: adavila
File: P:\13055\21\Design\Civil\SSOA-13055521.dwg

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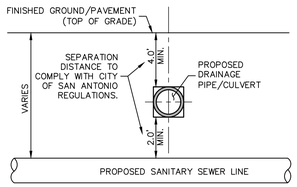
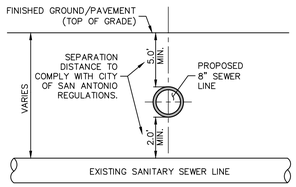


TYPICAL SANITARY SEWER/DRAIN CROSSING DETAIL

NOT-TO-SCALE



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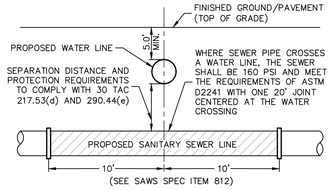
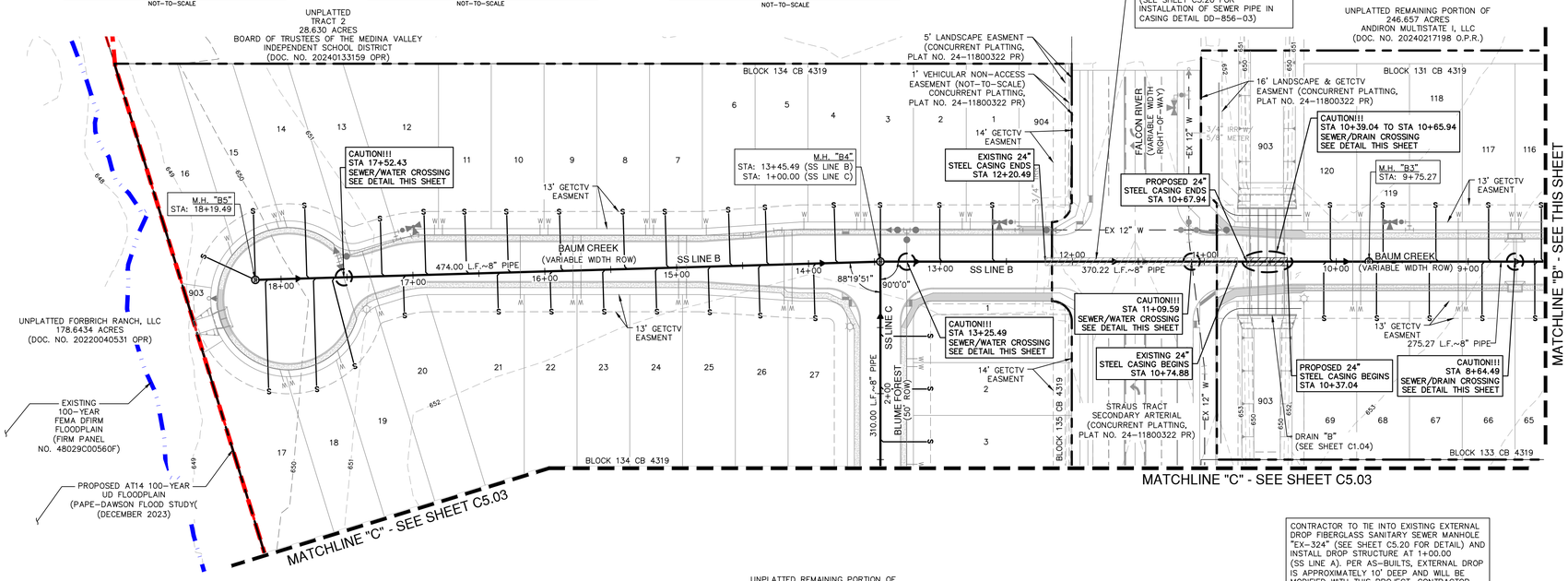
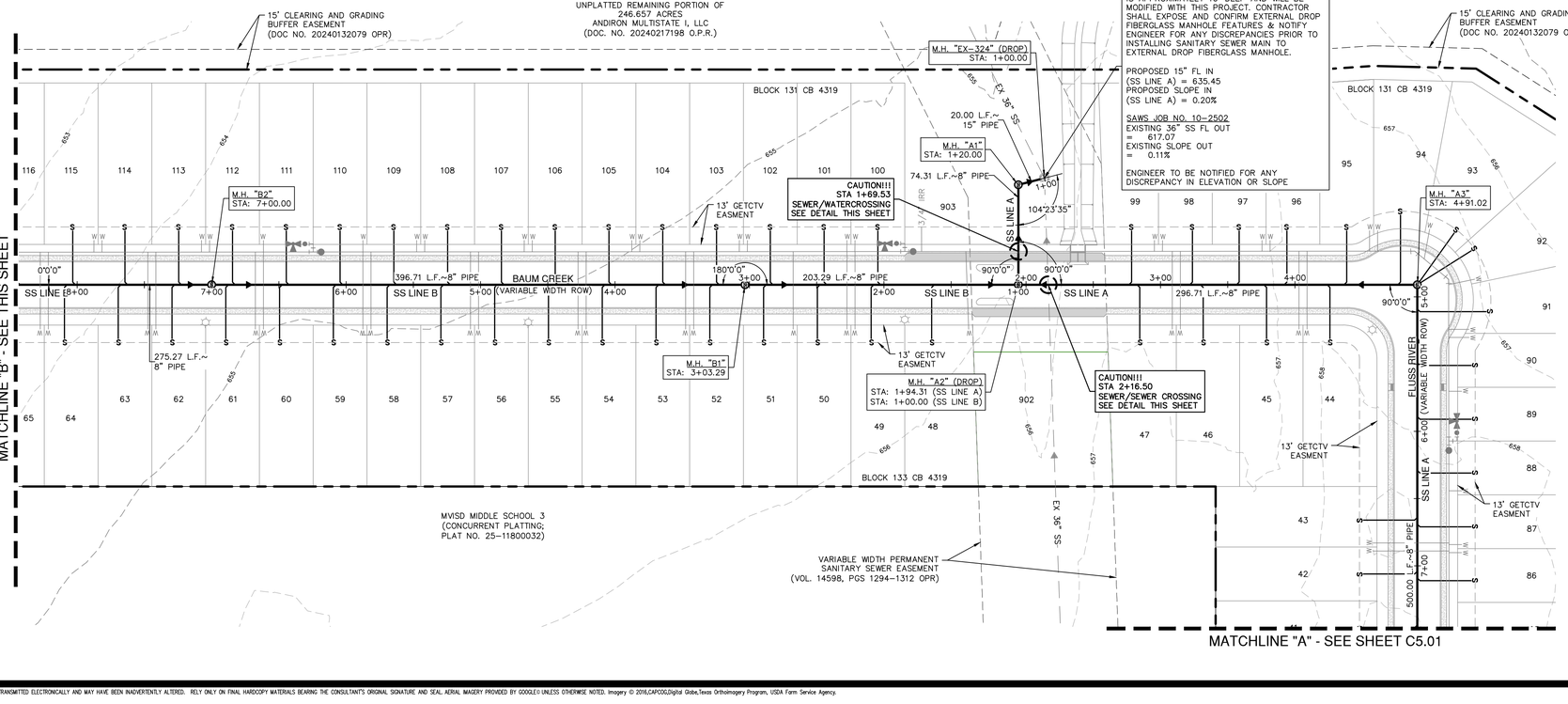
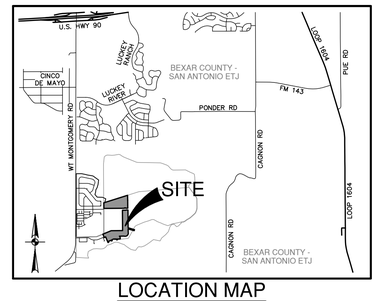


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE







LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL

MANHOLE

FIRE HYDRANT

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BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.02

Date: Jul 31, 2025, 8:09pm User ID: adavila
File: P:\130\05\21\Design\Civil\SS0A-1305521.dwg

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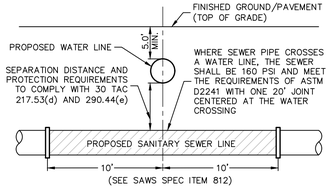
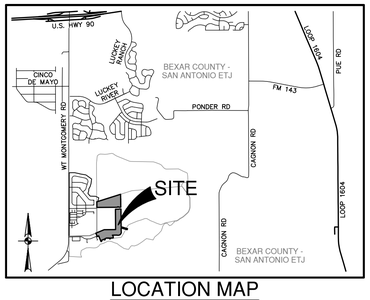


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

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SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

MANHOLE

PROPOSED WATER

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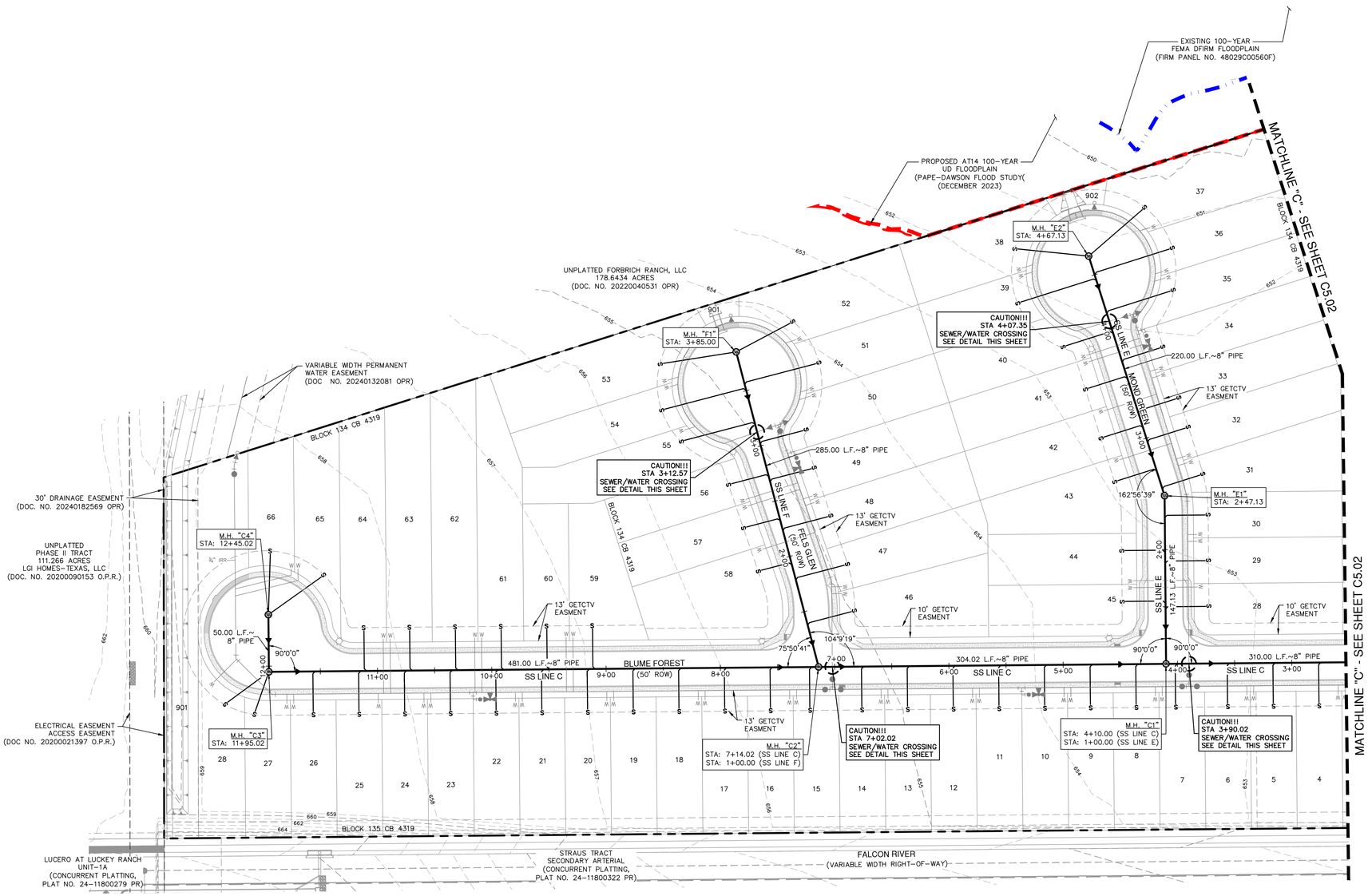

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CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP#.082-546 TOTAL EDU'S 214 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" & 5,558 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED PROFESSIONAL ENGINEER
Jon Adame 7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.03

Date: Jul 31, 2025, 8:09pm User ID: adavila
File: P:\13055\53\21\Design\Civil\SSOA-13055521.dwg

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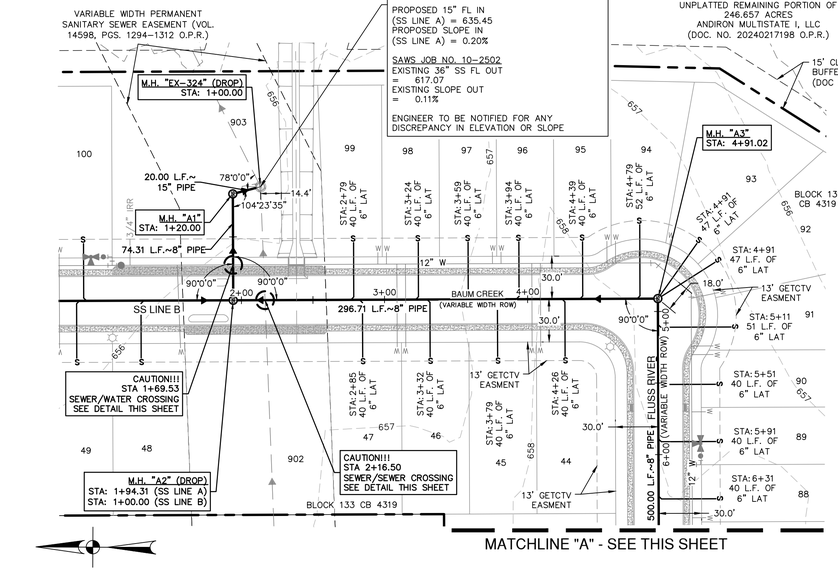
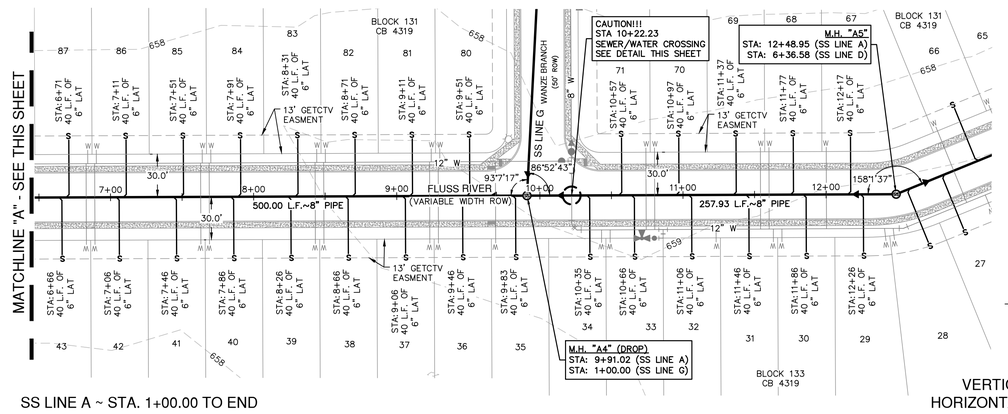
CONTRACTOR TO TIE INTO EXISTING EXTERNAL DROP FIBERGLASS SANITARY SEWER MANHOLE "EX-324" (SEE SHEET C5.20 FOR DETAIL) AND INSTALL DROP STRUCTURE AT 1+00.00 (SS LINE A). PER AS-BUILTS, EXTERNAL DROP IS APPROXIMATELY 10' DEEP AND WILL BE MODIFIED WITH THIS PROJECT. CONTRACTOR SHALL EXPOSE AND CONFIRM EXTERNAL DROP FIBERGLASS MANHOLE FEATURES & NOTIFY ENGINEER FOR ANY DISCREPANCIES PRIOR TO INSTALLING SANITARY SEWER MAIN TO EXTERNAL DROP FIBERGLASS MANHOLE.

PROPOSED 15" FL IN (SS LINE A) = 635.45
PROPOSED SLOPE IN (SS LINE A) = 0.20%

SAWS JOB NO. 10-2502
EXISTING 36" SS FL OUT = 617.07
EXISTING SLOPE OUT = 0.11%

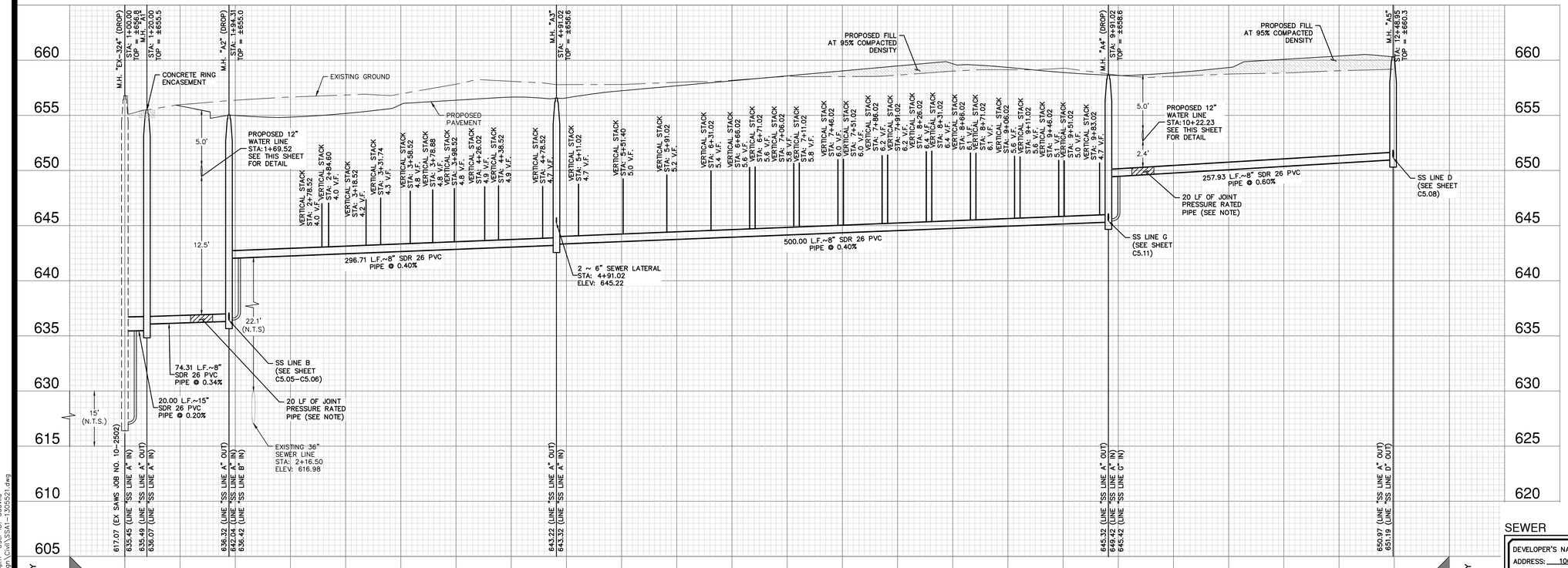
ENGINEER TO BE NOTIFIED FOR ANY DISCREPANCY IN ELEVATION OR SLOPE

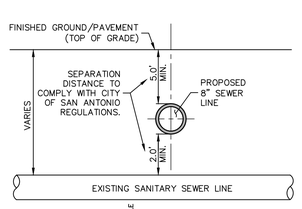




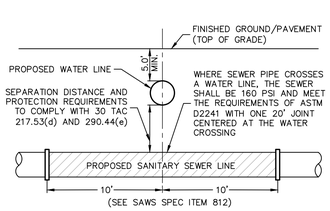
SS LINE A ~ STA. 1+00.00 TO END

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

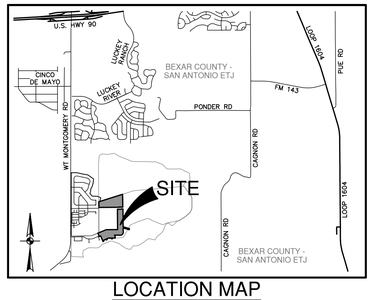




TYPICAL SANITARY SEWER/SEWER CROSSING DETAIL



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL



LOCATION MAP
NOT-TO-SCALE

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

SEWER LEGEND

PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED SEWER LATERAL
MANHOLE
FIRE HYDRANT

SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
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CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

SS LINE A ~ STA. 1+00.00 TO END
SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.04

Date: Jul 31, 2025, 8:10pm User ID: adavila
File: P:\13055\65\21\Design\Civil\SSA1-13055521.dwg

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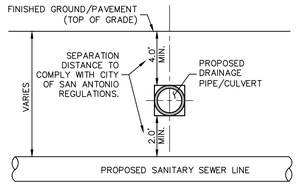
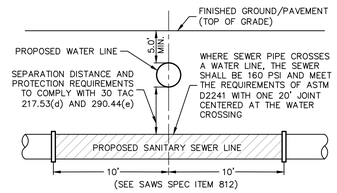


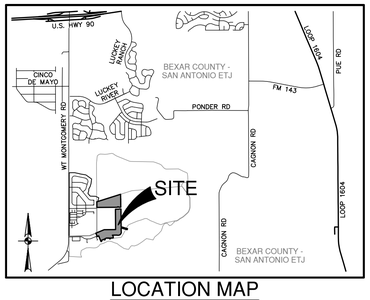
TYPICAL SANITARY SEWER/DRAIN CROSSING DETAIL

NOT-TO-SCALE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

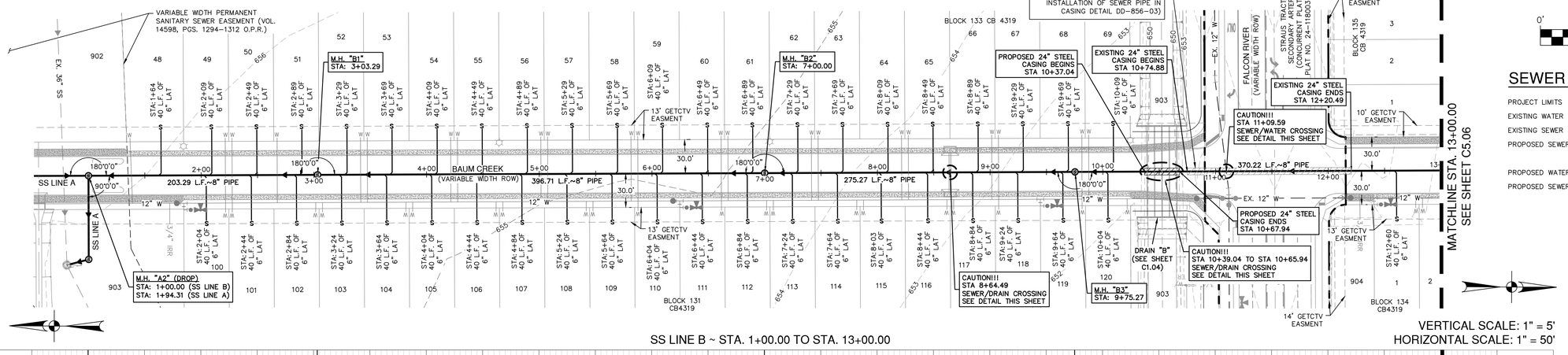
NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

EXISTING 24" STEEL CASING INSTALLED WITH STRAUS TRACT – SECONDARY ARTERIAL PLAT NO. 24-11800322

CONTRACTOR TO REMOVE EXISTING CAP/PLUG AND INSTALL 8" PIPE WITH CASING INSULATORS IN ACCORDANCE WITH SAWS STANDARD MATERIAL SPECIFICATION 05-31 (SEE SHEET C5.20 FOR INSTALLATION OF SEWER PIPE IN CASING DETAIL DD-856-03)



SS LINE B ~ STA. 1+00.00 TO STA. 13+00.00

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

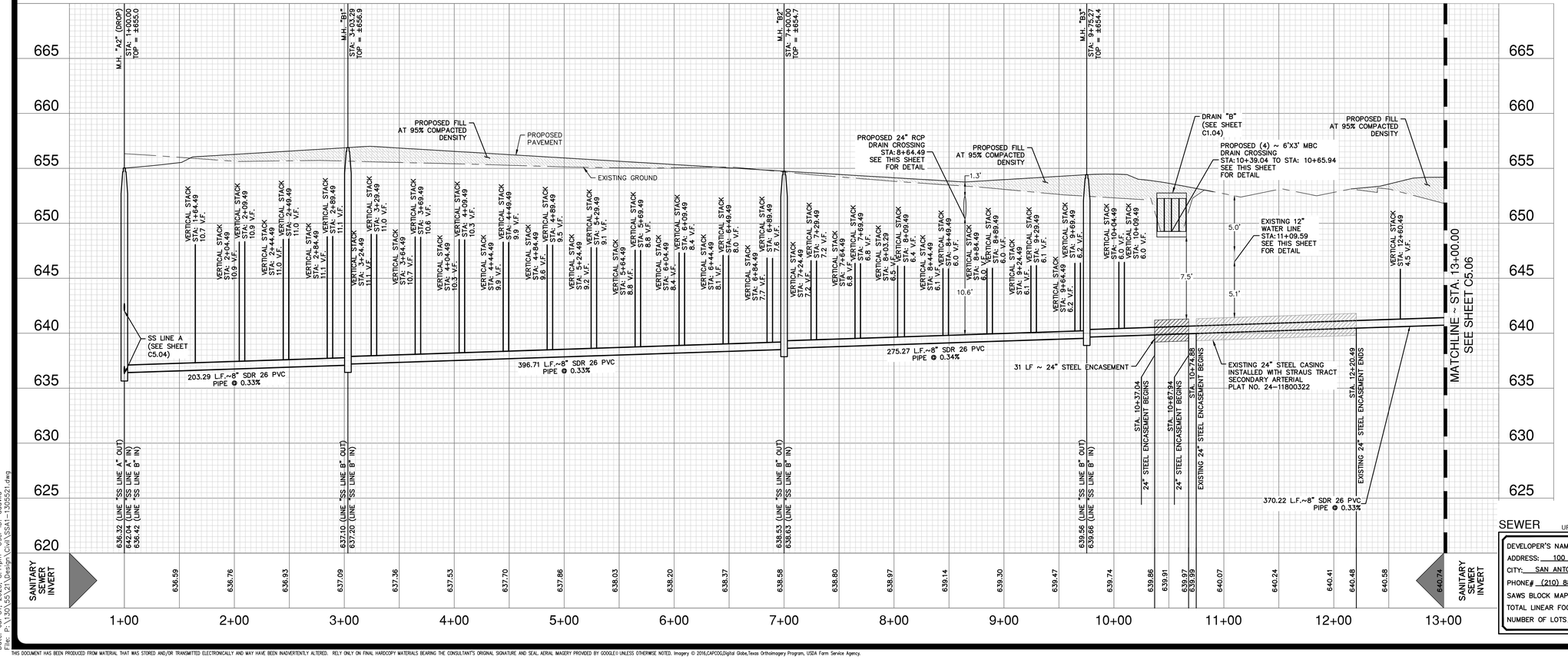
PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

MANHOLE

FIRE HYDRANT



SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.

ADDRESS: 100 NE LOOP 410, SUITE 1155

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216

PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM

SAWS BLOCK MAP# 082-546 TOTAL EDU'S 214 TOTAL ACREAGE 37.44

TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF PLAT NO. 24-11800449

NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS — JON D. ADAME — 82567 — LICENSED PROFESSIONAL ENGINEER

Jon Adame 7-31-25

PAPE-DAWSON

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

TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SS LINE B ~ STA. 1+00.00 TO STA. 13+00.00

SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449

JOB NO. 13055-21

DATE JULY 2025

DESIGNER CB

CHECKED AS DRAWN CB

SHEET C5.05

Date: Jul 31, 2025, 8:11pm User ID: gdavila
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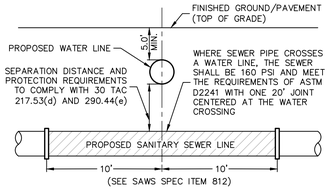
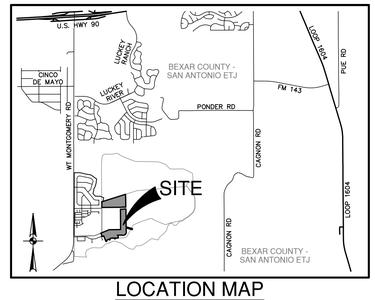


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

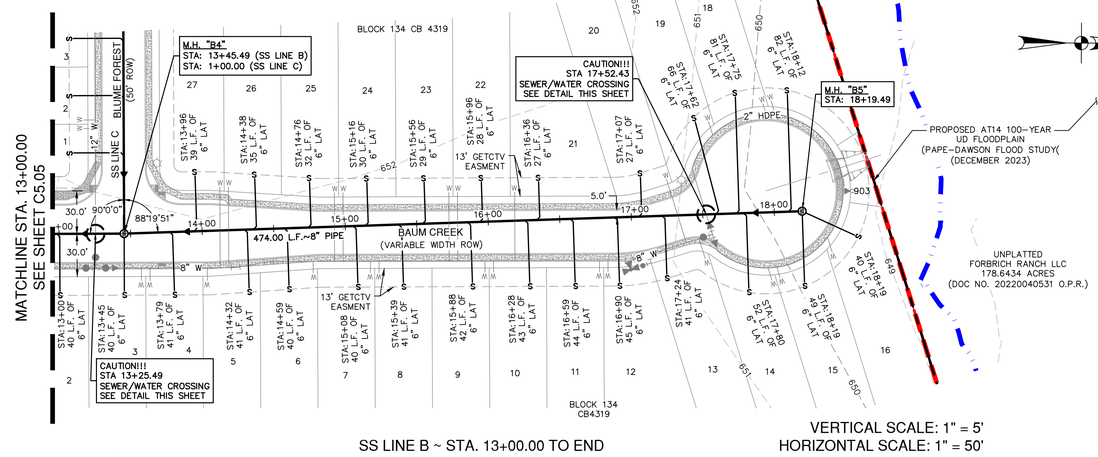


LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

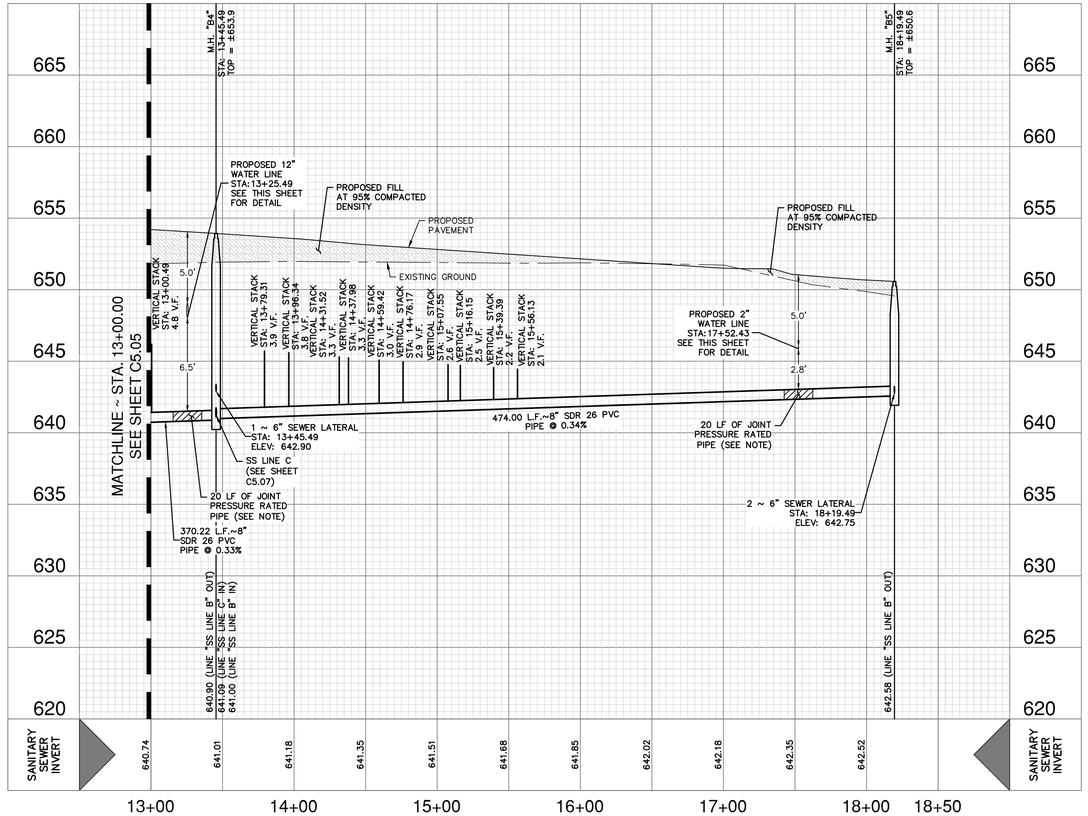
0' 50' 100' 150'



SS LINE B ~ STA. 13+00.00 TO END

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'



SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- MANHOLE
- FIRE HYDRANT

SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

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NO.	REVISION	DATE

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7-31-25

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SS LINE B ~ STA. 13+00.00 TO END
SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.06

Date: Jul 31, 2025, 8:11pm User ID: gdavila
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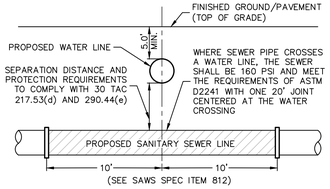
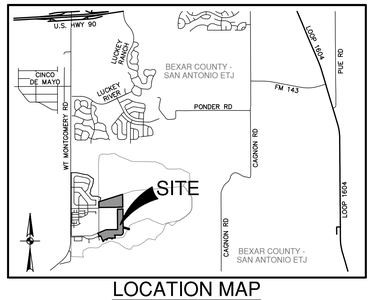


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



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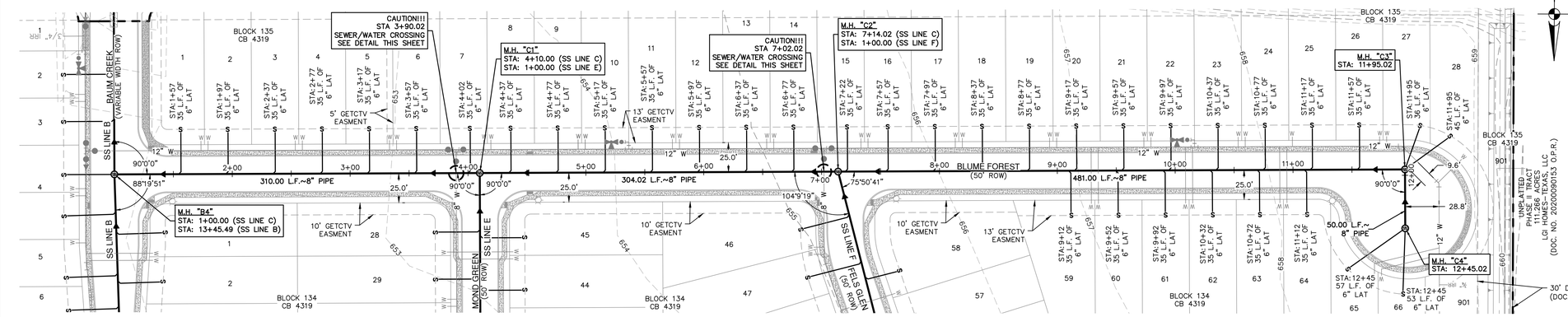
NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'



SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

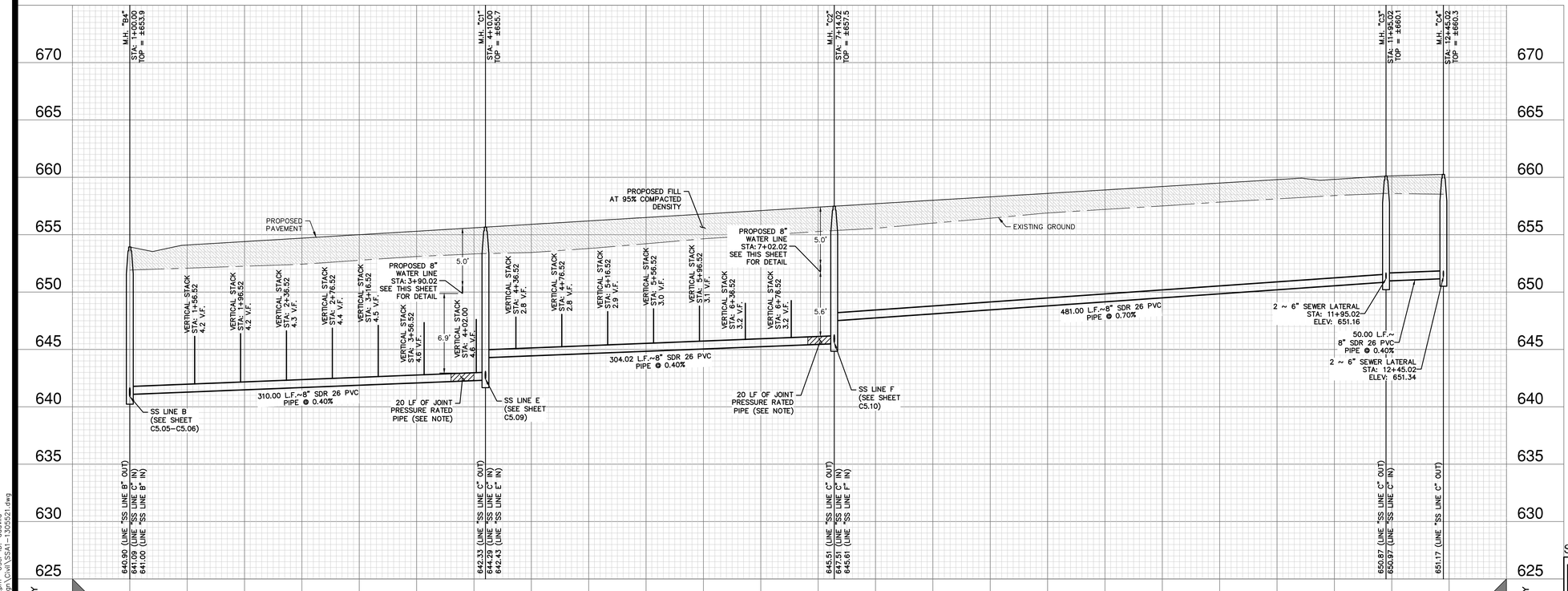
MANHOLE

FIRE HYDRANT

SS LINE C ~ STA. 1+00.00 TO END

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'



SEWER UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 214 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF 15" 20 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

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

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.07

Date: Jul 31, 2025, 8:12pm User ID: adonis
File: P:\130\55\21\Design\Civil\SSA1-13055521.dwg

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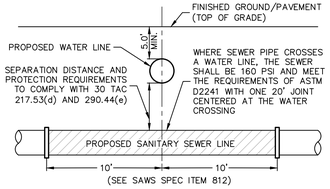
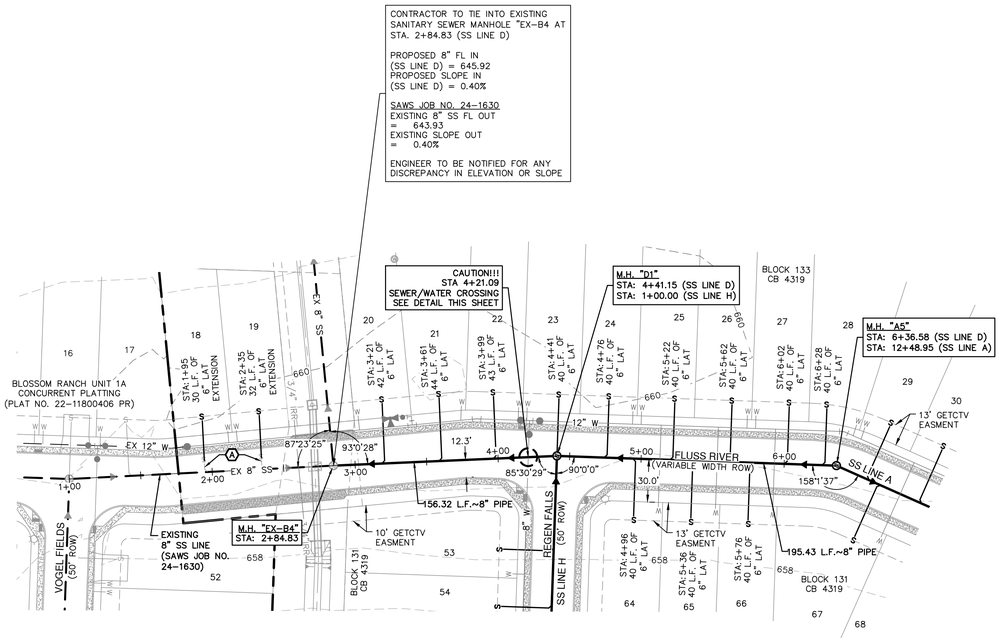


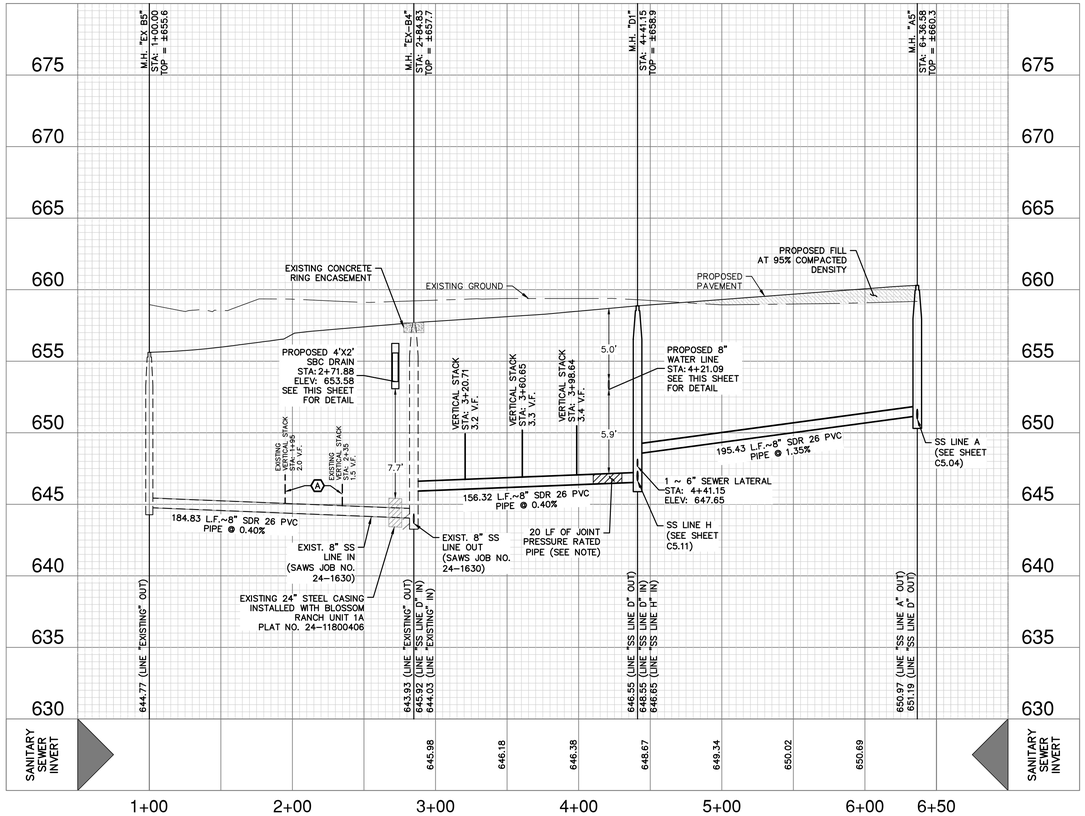
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

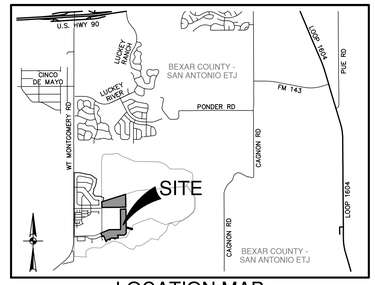
NOT-TO-SCALE



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

SS LINE D ~ STA. 1+00.00 TO END





LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL

MANHOLE

FIRE HYDRANT

Ⓐ CONTRACTOR TO REMOVE EXISTING 6" CAP AND INSTALL 6" LATERAL EXTENSION

SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

BLOSSOM RANCH UNIT 1B
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SS LINE D ~ STA. 1+00.00 TO END
SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.08

Date: Jul 31, 2025, 8:12pm User ID: odavila
File: P:\13055\21\Design\Civil\SSA1-13055521.dwg

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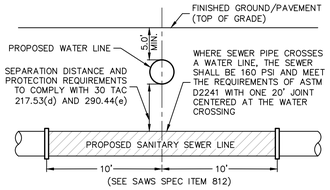
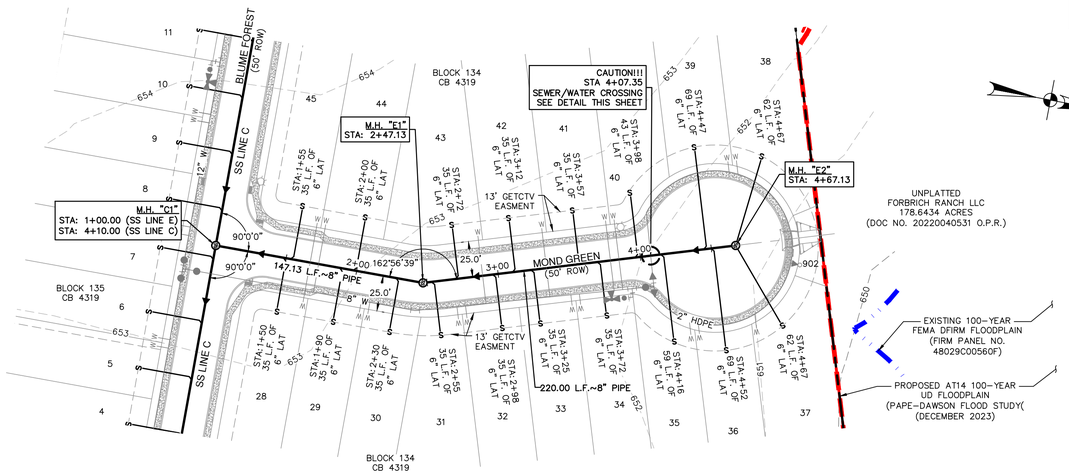
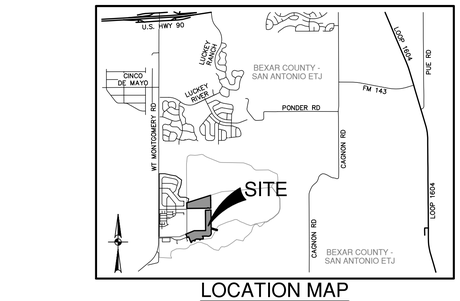


TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE





LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- MANHOLE
- FIRE HYDRANT

SS LINE E ~ STA. 1+00.00 TO END

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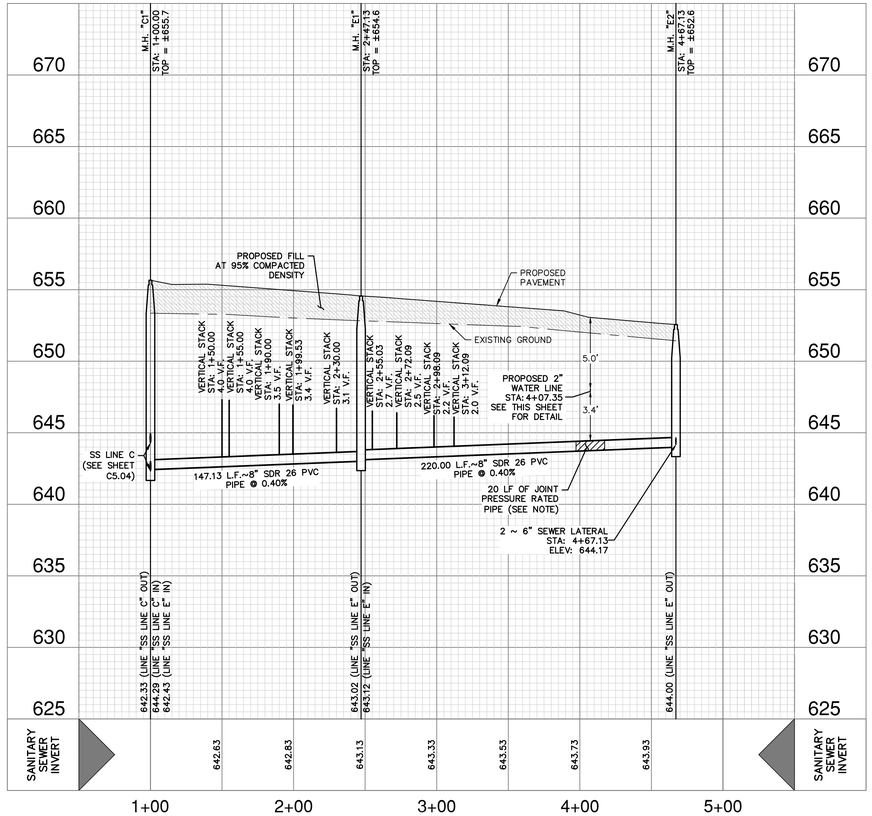
HORIZONTAL SCALE: 1" = 50'



SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

SS LINE E ~ STA. 1+00.00 TO END
SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.09

Date: Jul 31, 2025, 8:13am User ID: adavila
File: P:\13055\21\Design\Civil\SSA1-13055521.dwg

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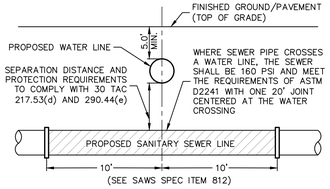
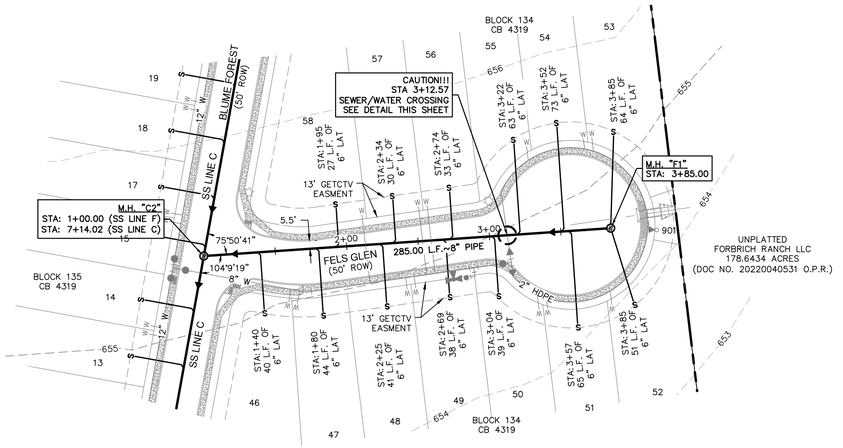
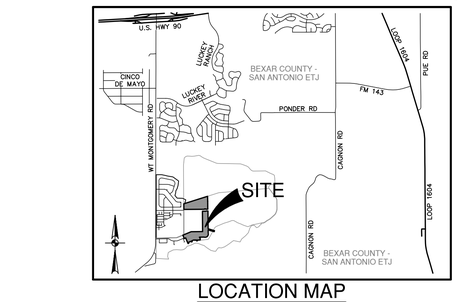


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE





LOCATION MAP

NOT-TO-SCALE

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

SS LINE F ~ STA. 1+00.00 TO END

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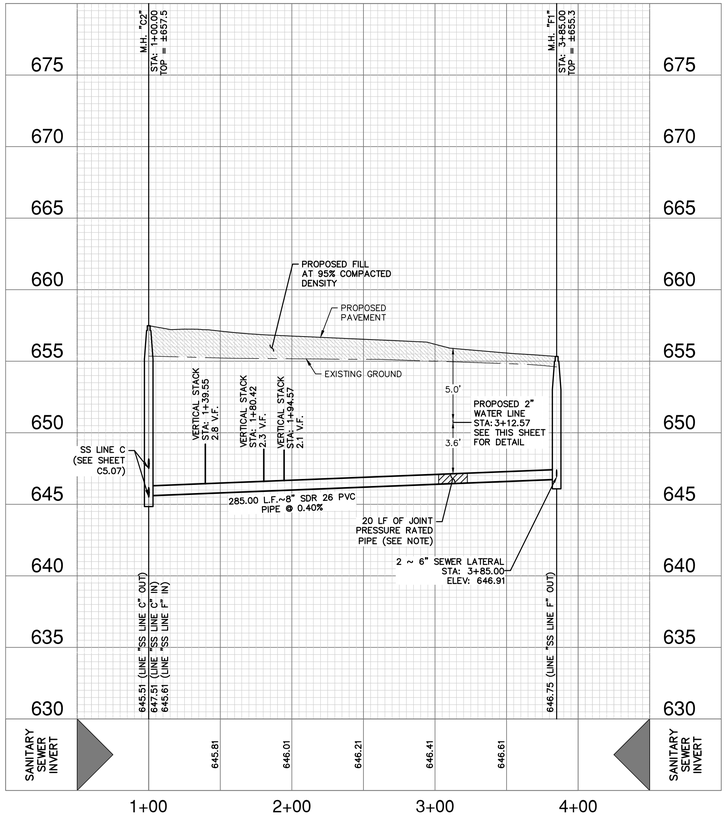

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NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS — JON D. ADAME — 82567 — LICENSED PROFESSIONAL ENGINEER

Jon Adame 7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

SS LINE F ~ STA. 1+00.00 TO END
SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.10

Date: Jul 31, 2025, 8:13am User ID: edevila
File: P:\13055\21\Design\Civil\SSA1-13055521.dwg

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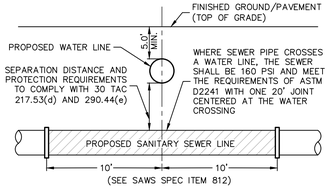

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

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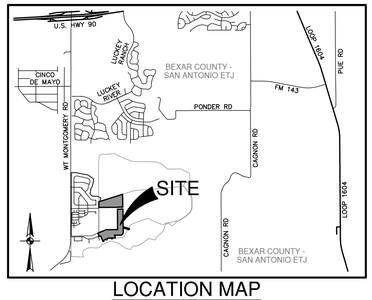
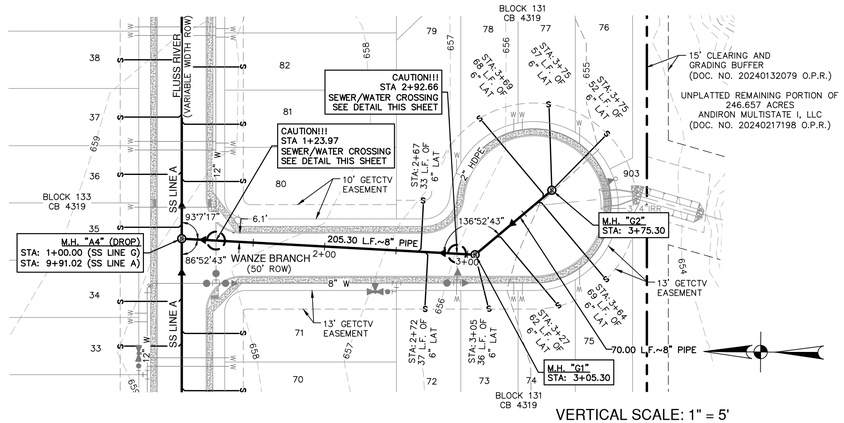


LOCATION MAP

NOT-TO-SCALE

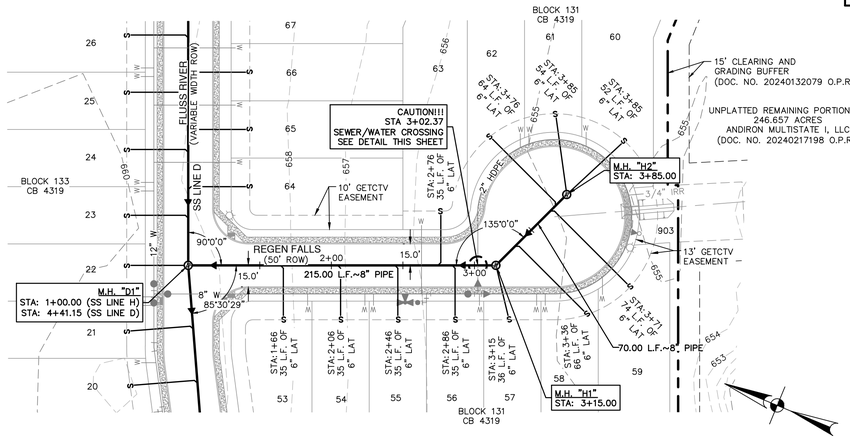
SCALE: 1"= 50'

0' 50' 100' 150'



VERTICAL SCALE: 1" = 5'

SS LINE G ~ STA. 1+00.00 TO END — HORIZONTAL SCALE: 1" = 50'



VERTICAL SCALE: 1" = 5'

SS LINE H ~ STA. 1+00.00 TO END — HORIZONTAL SCALE: 1" = 50'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

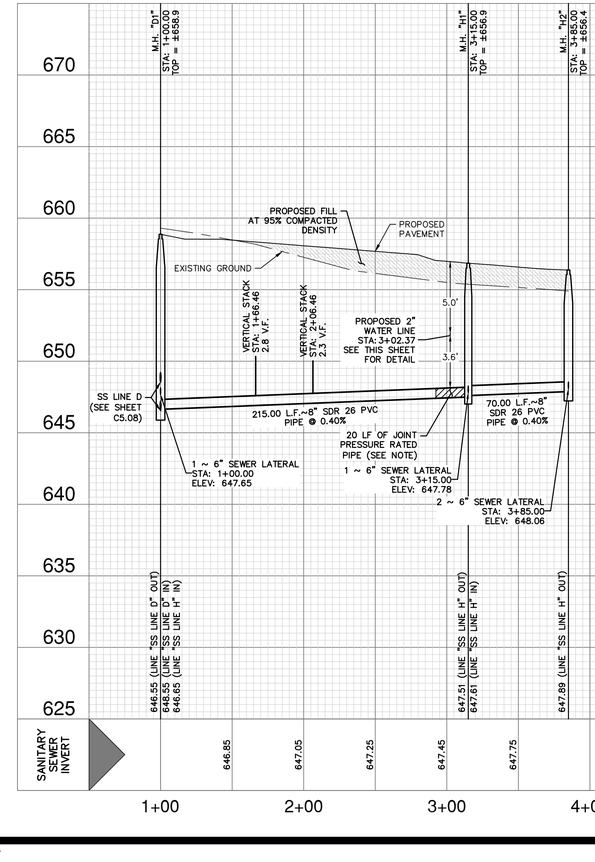
PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

MANHOLE

FIRE HYDRANT



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BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

SS LINE G ~ STA. 1+00.00 TO END

SS LINE H ~ STA. 1+00.00 TO END

SANITARY SEWER PLAN & PROFILE

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED AS DRAWN CB
SHEET C5.11

Date: Jul 31, 2025, 8:14pm User ID: adonis
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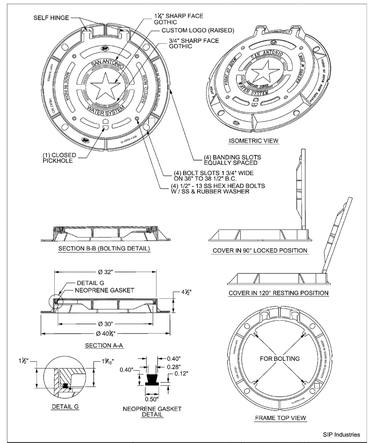
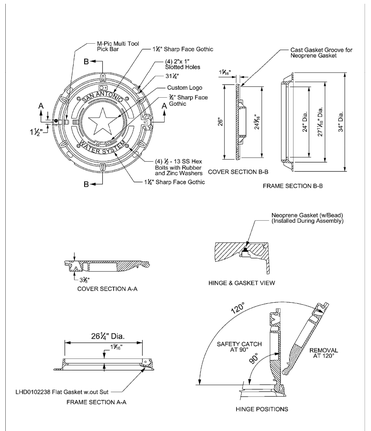


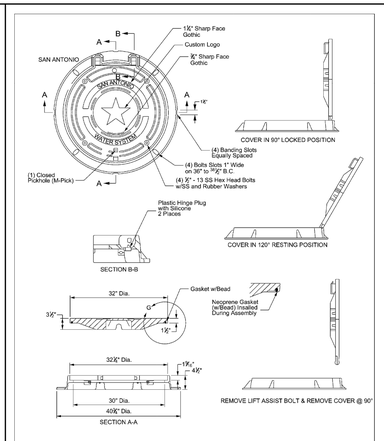
S/P Industries

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



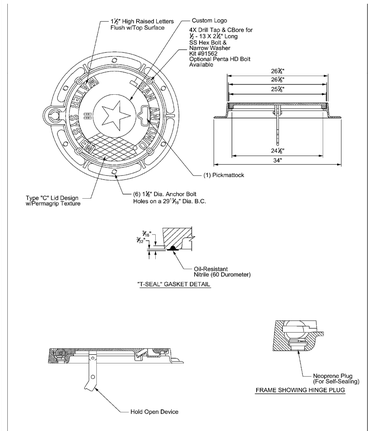
ERGO Assembly

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



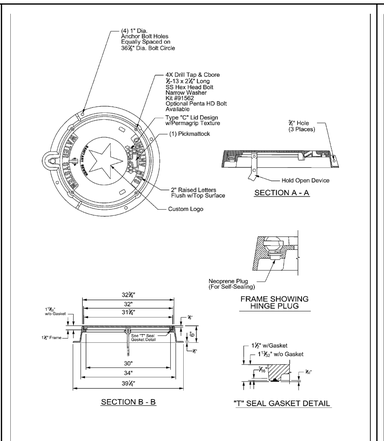
ERGO XL Assembly

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



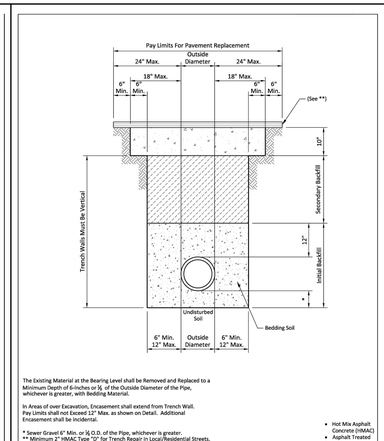
NEENAH FOUNDRY

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



NEENAH FOUNDRY

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



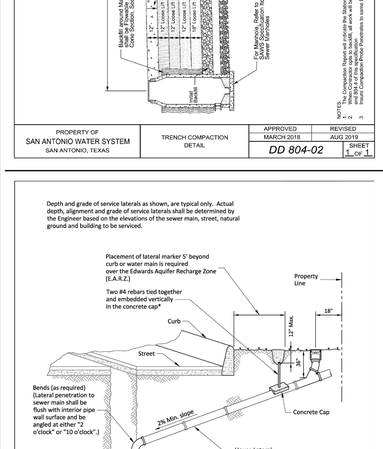
The Existing Material at the Bearing Level shall be Removed and Replaced to a Minimum Depth of 6-inches or ½ of the Outside Diameter of the Pipe, whichever is greater, with Bedding Material.

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 ½ 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	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD-804-01	SHEET 1 OF 1


Backfill around Manhole or Structure with Flowable Fill or Cohesive Soil. See Note 2
Test Only when Necessary
+/- 600 L.F.
12" Lines LT
12" Lines LT
12" Lines LT
60" Lines LT
Backfill around Manhole or Structure with Flowable Fill or Cohesive Soil. See Note 2
Trench Width per SAWS Standard Specification for Excavation, Trenching and Backfill
For Manhole, Refer to SAWS Specification Item 850 Sanitary Sewer Manholes
Invert Elevation Shall Be Set Per Plans
Invert Elevation Shall Be Set Per Plans
Invert Elevation Shall Be Set Per Plans

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 SEWER NOTES

1. 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. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:

   A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-2014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
   B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
   C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
   D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
   E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
   F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

   SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.

   NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".

3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 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.

4. 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.

5. 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)

6. 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 SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.

7. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.

8. 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 C5.20.
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 SAWS 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.
15. ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

SEWER — UPPER MEDINA - SOUTH SEWERSHED - DOS RIOS/LEON CREEK

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD.
ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 889-5516 E-MAIL: RICHARD.MOTT@LENNAR.COM
SAWS BLOCK MAP# 082-546 TOTAL EDU'S 214 TOTAL ACREAGE 37.44
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5,558 LF 15" 20 LF PLAT NO. 24-11800449
NUMBER OF LOTS 214 SAWS JOB NO. 25-1513

NO.	REVISION	DATE

STATE OF TEXAS — JON D. ADAME — 82567 — PROFESSIONAL ENGINEER

Jon Adame 7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
SANITARY SEWER GENERAL NOTES

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER –
CHECKED – DRAWN –
SHEET C5.21

Date: Jul 31, 2025, 8:15pm User ID: adavila
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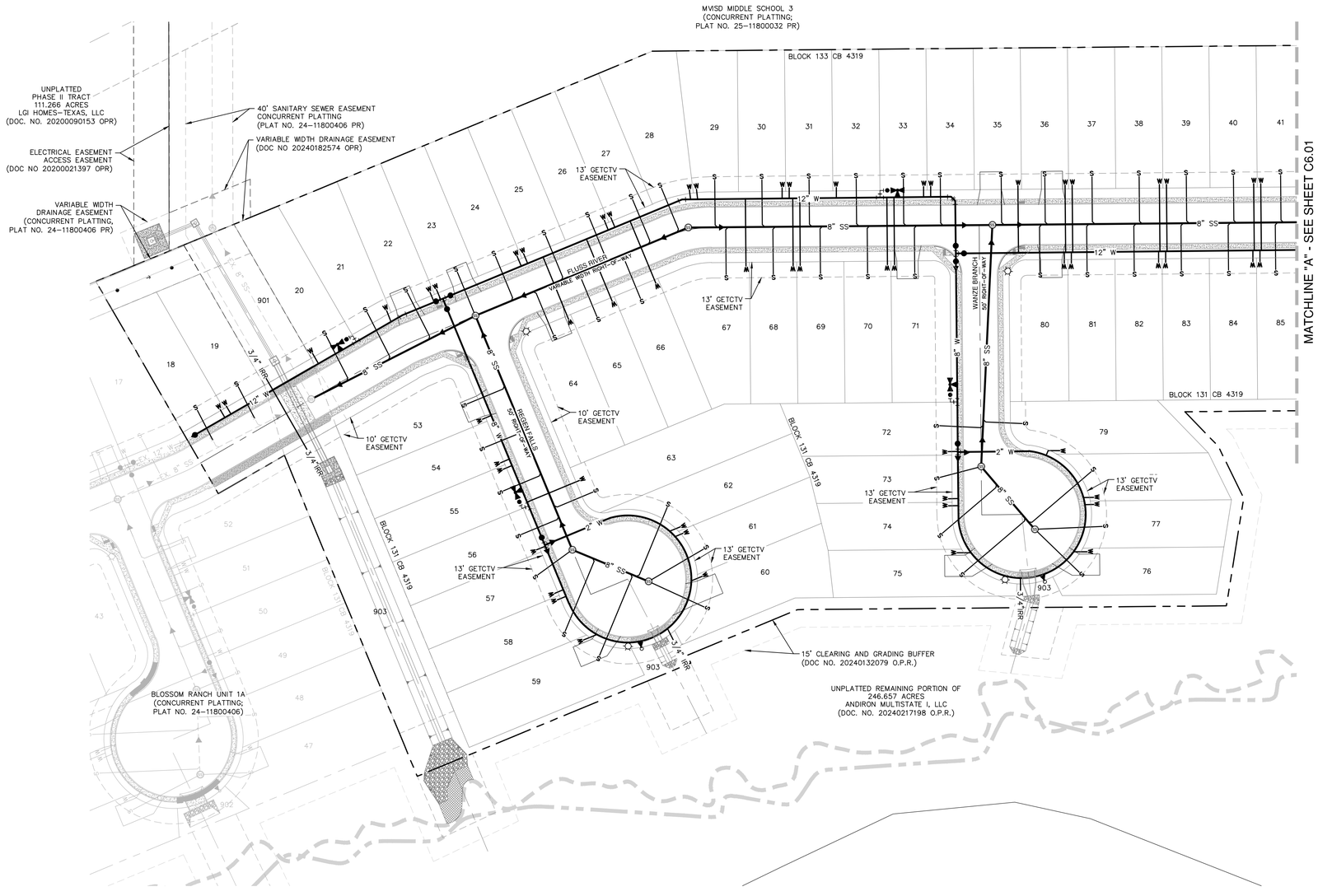

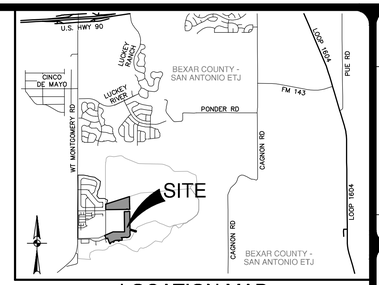

LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

0' 50' 100' 150'

UTILITY LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED WYE & LATERAL
- SINGLE WATER SERVICE
- DUAL WATER SERVICE
- STREET LIGHTS
- MANHOLE
- FIRE HYDRANT

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.

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.

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

BLOSSOM RANCH UNIT 1B

SAN ANTONIO, TEXAS

OVERALL UTILITY PLAN

PLAT NO.	24-11800449
JOB NO.	13055-21
DATE	JULY 2025
DESIGNER	AD
CHECKED	AS DRAWN AD
SHEET	C6.00

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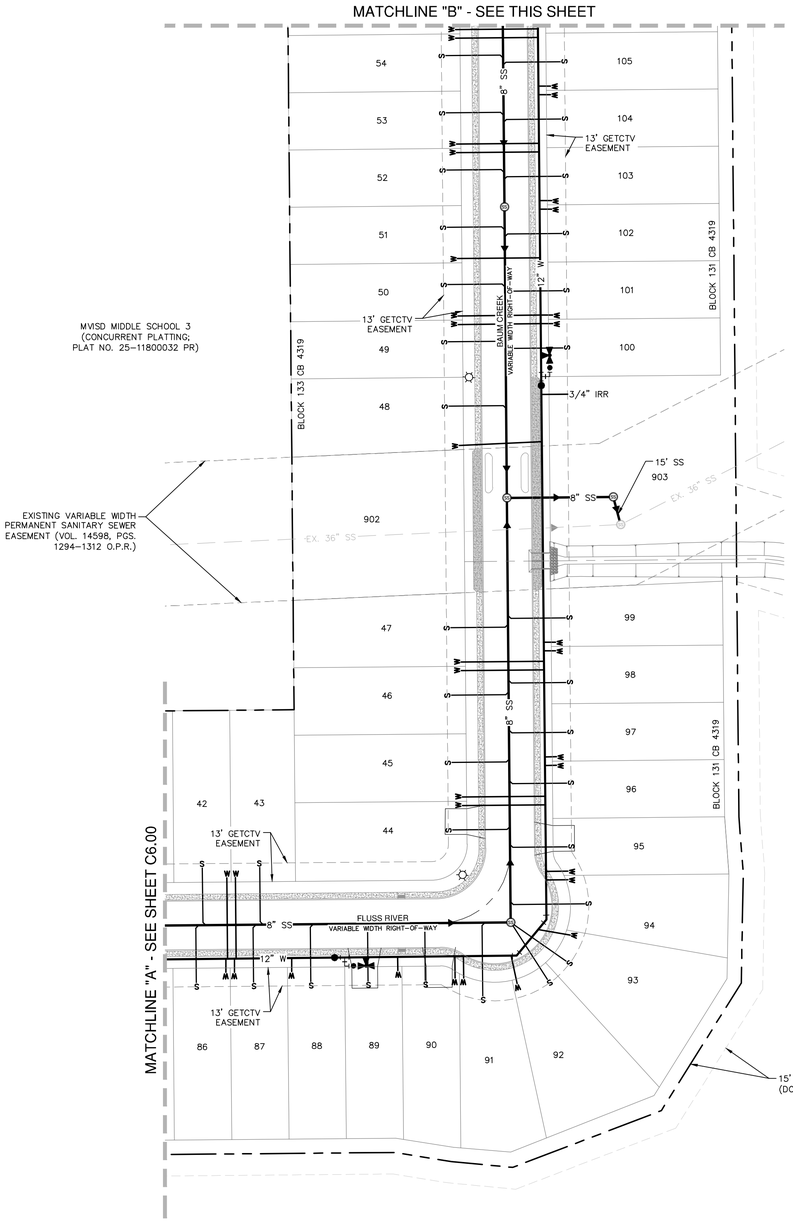

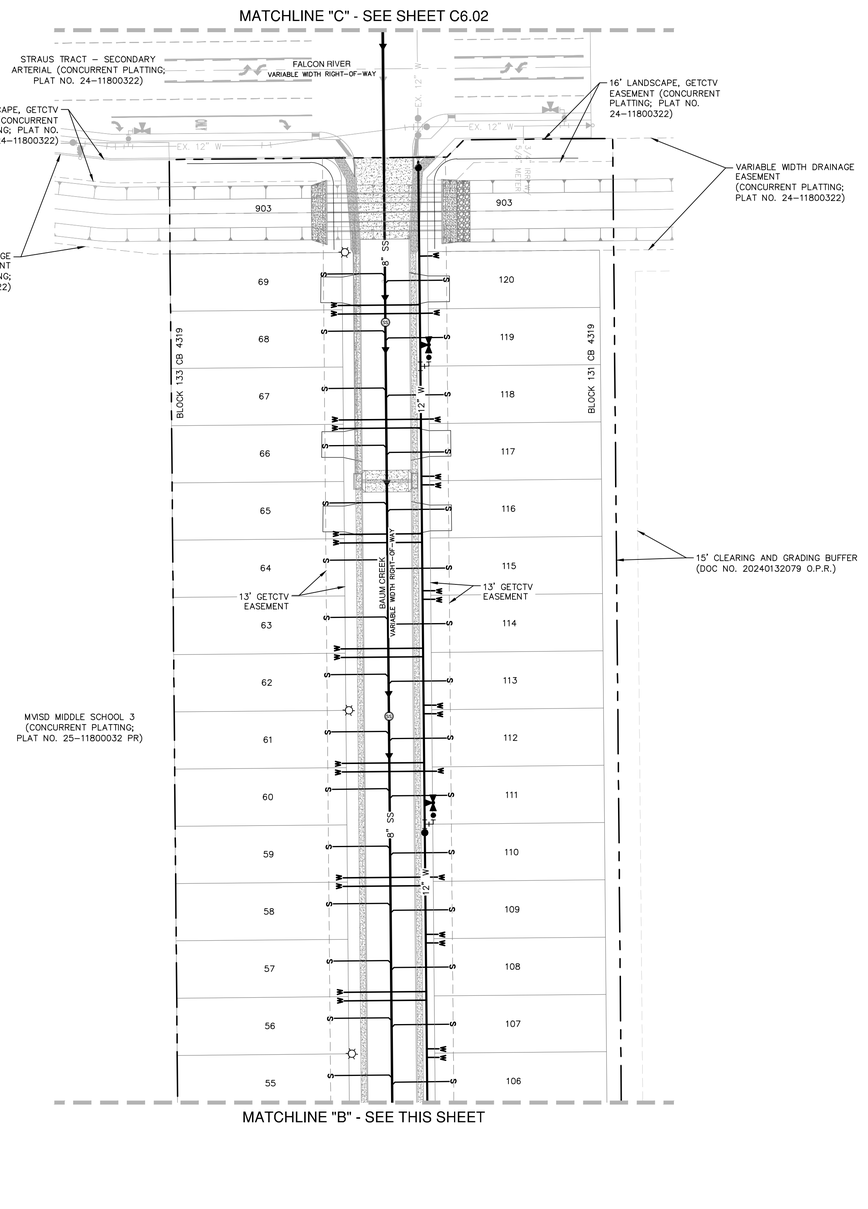

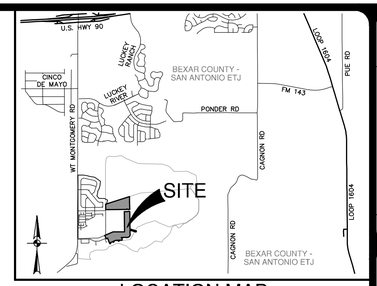

LOCATION MAP
NOT-TO-SCALE

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

UTILITY LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED WYE & LATERAL
- SINGLE WATER SERVICE
- DUAL WATER SERVICE
- STREET LIGHTS
- MANHOLE
- FIRE HYDRANT

BEXAR COUNTY ROW NOTES:

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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:

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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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED AS DRAWN AD
SHEET C6.01

Date: Jul 31, 2025, 6:39pm User ID: adavila
File: P:\130\55\21\Design\Civil\UTOA-13055021.dwg

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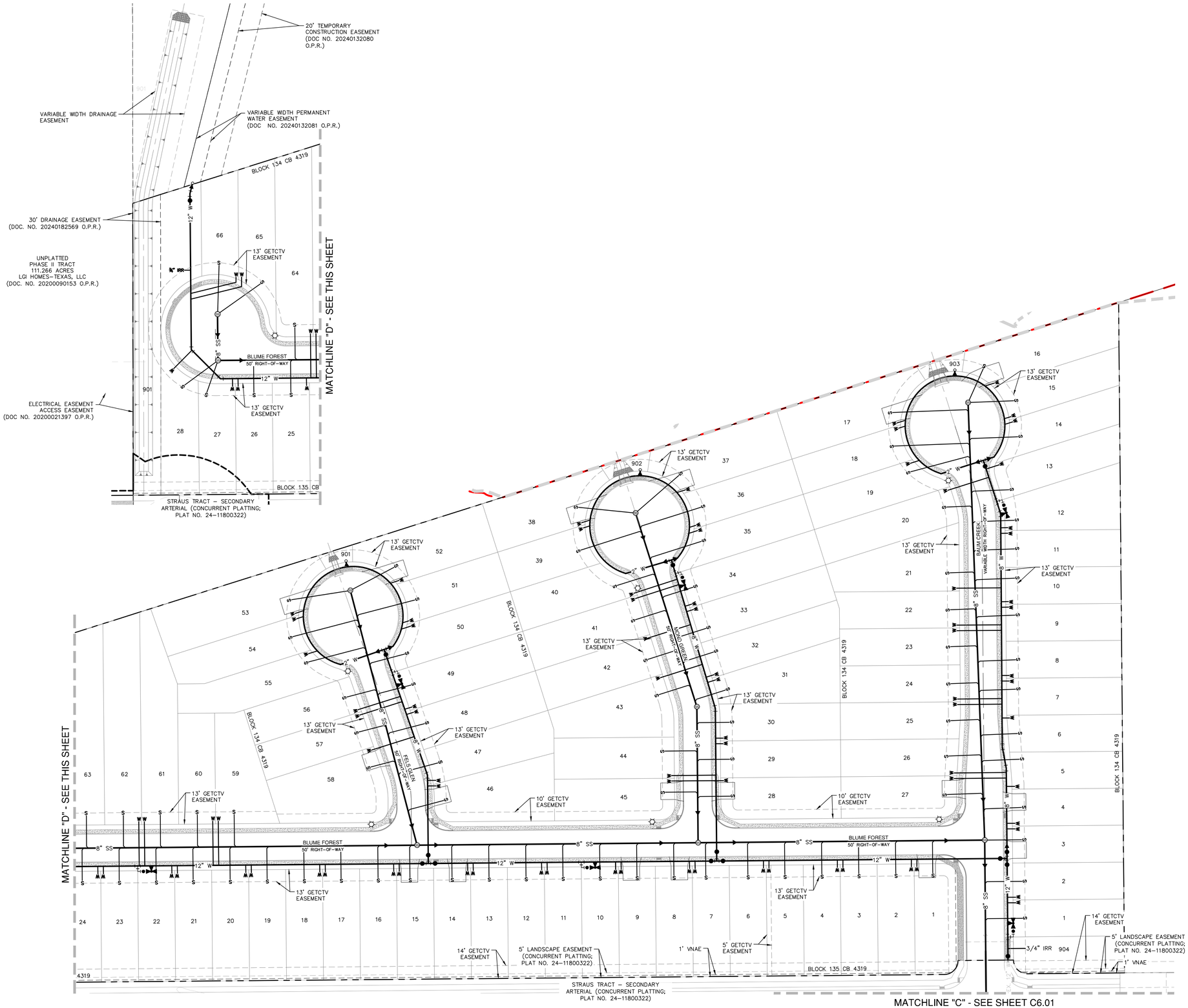

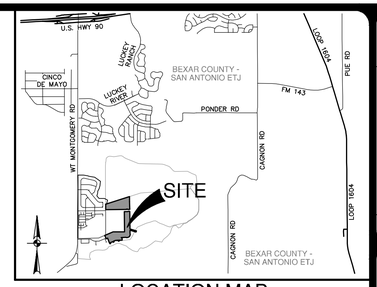

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TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS

OVERALL UTILITY PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED AS DRAWN AD
SHEET C6.02

Date: Jul 31, 2025, 6:43pm User ID: adavila
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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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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.

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

GRADING LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 976
- PROPOSED CONTOUR — 970
- 100 YR FLOODPLAIN
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- MINIMUM FINISHED FLOOR ELEVATION — FF = XXXX.XX
- TREES TO REMAIN

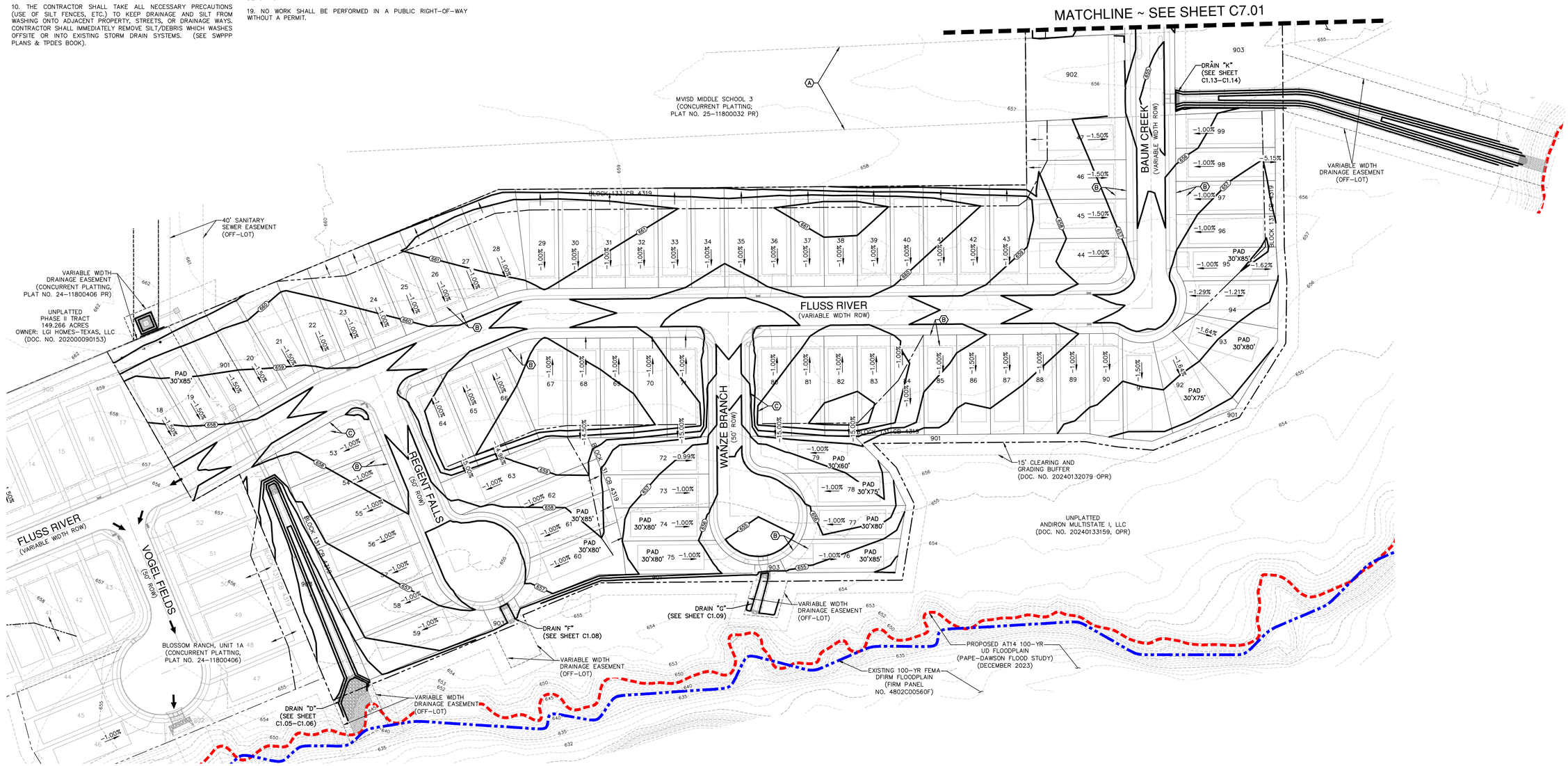
KEY LEGEND:

(A) VARIABLE WIDTH PERMANENT SANITARY SEWER EASEMENT (VOL. 14598, PGS. 1294-1312 O.P.R.)

(B) 13' GAS, ELECTRIC, TELEPHONE, AND CABLE TV EASEMENT

(C) 10' GAS, ELECTRIC, TELEPHONE, AND CABLE TV EASEMENT

SCALE: 1"= 60'
0' 60' 120' 180'



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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
OVERALL GRADING PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED JA DRAWN CB
SHEET C7.00

Date: Jul 31, 2025, 6:50pm User ID: adeville
File: P:\13055\21\Design\Civil\GR0A-13055210.dwg

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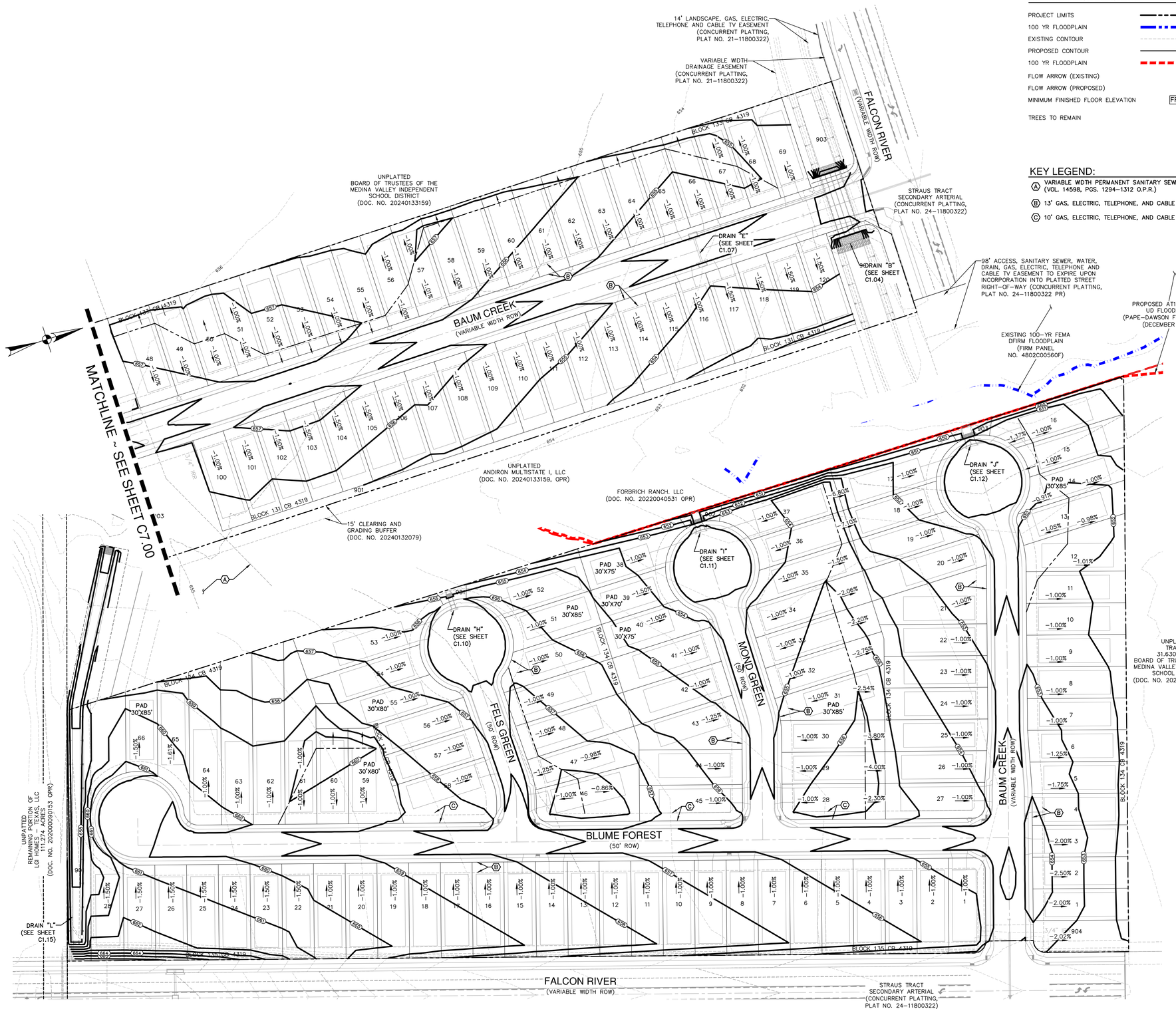

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SAN ANTONIO, TEXAS

OVERALL GRADING PLAN

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER CB
CHECKED JA DRAWN CB
SHEET C7.01

Date: Jul 31, 2025, 6:51pm User ID: odovle
File: P:\13055\21\Design\Civil\GR0A-13055211.dwg
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SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

GENERAL NOTES

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

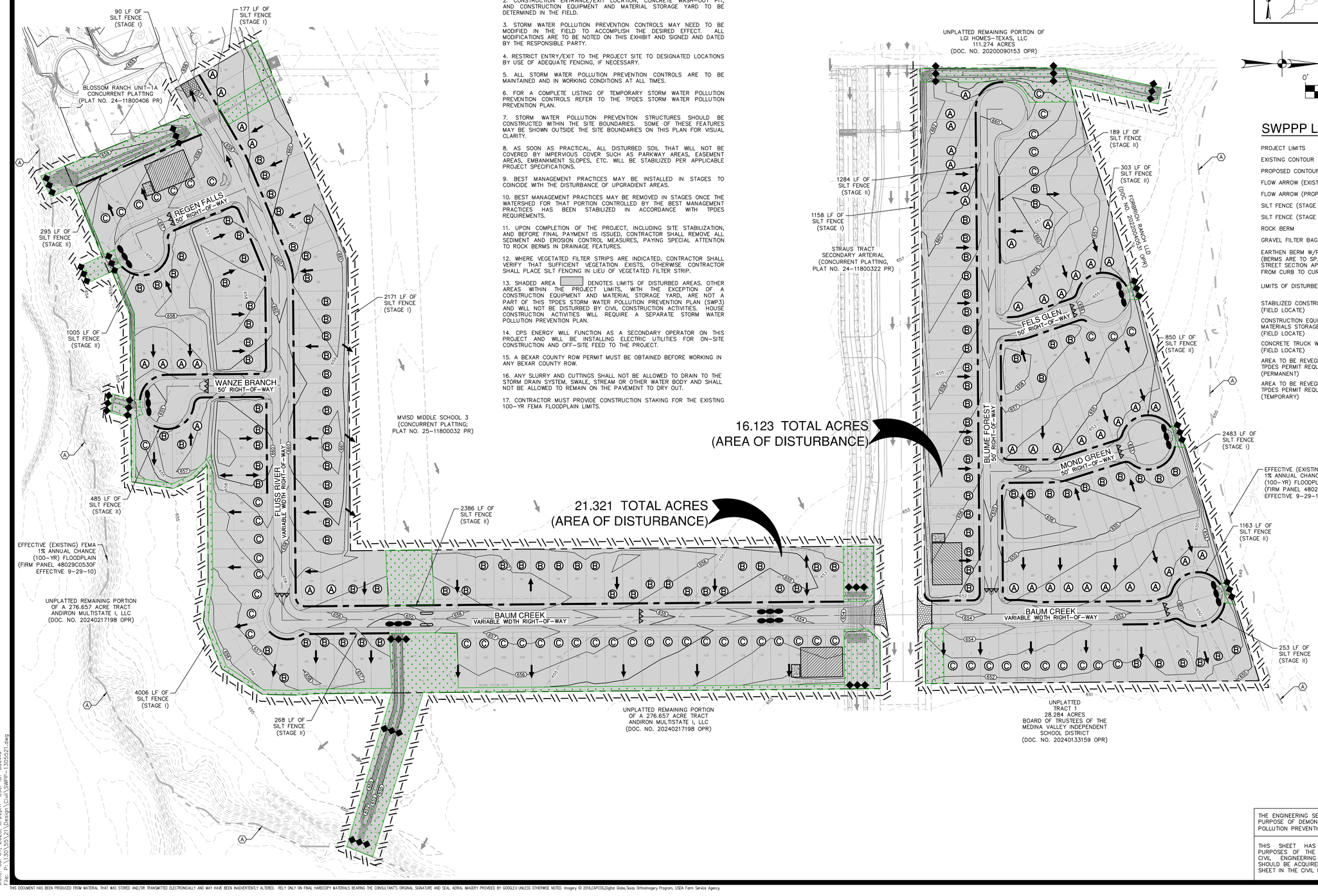
13. SHADED AREA [ ] DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.

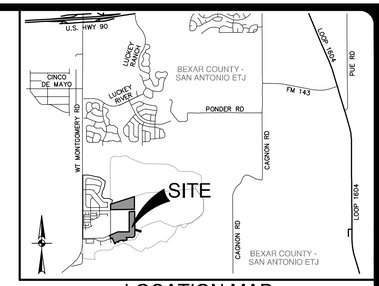
14. CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

15. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN ANY BEXAR COUNTY ROW.

16. ANY SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO DRAIN TO THE STORM DRAIN SYSTEM, SWALE, STREAM OR OTHER WATER BODY AND SHALL NOT BE ALLOWED TO REMAIN ON THE PAVEMENT TO DRY OUT.

17. CONTRACTOR MUST PROVIDE CONSTRUCTION STAKING FOR THE EXISTING 100-YR FEMA FLOODPLAIN LIMITS.





LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 100'

0' 100' 200' 300'

SWPPP LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 976
- PROPOSED CONTOUR — 970
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SILT FENCE (STAGE I)
- SILT FENCE (STAGE II)
- ROCK BERM
- GRAVEL FILTER BAGS
- EARTHEN BERM W/POLYLINER AND SPILLWAY (BERMS ARE TO SPAN ACROSS PROPOSED STREET SECTION APPROX. 30 FEET WIDE FROM CURB TO CURB)
- LIMITS OF DISTURBED AREA
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)
- AREA TO BE REVEGETATED PER TPDES PERMIT REQUIREMENTS (PERMANENT)
- AREA TO BE REVEGETATED PER TPDES PERMIT REQUIREMENTS (TEMPORARY)

KEY LEGEND

Ⓐ CONTRACTOR MUST PROVIDE CONSTRUCTION STAKING FOR THE EXISTING 100-YR FEMA FLOODPLAIN LIMITS.

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

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

EXHIBIT 2

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
7-31-25

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

BLOSSOM RANCH UNIT 1B

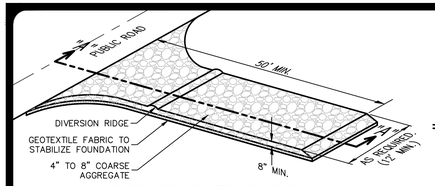
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

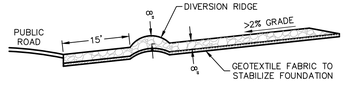
PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED AS DRAWN GP
SHEET C8.00

Date: Jul 31, 2025, 8:22pm User ID: adavila
File: P:\13055\21\Design\Civil\SWPP-13055211.dwg

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.



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4–INCH TO 8–INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8–INCHES.

3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD^2, A MULLEN BURST RATING OF 140 LB/IN^2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.

4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4–INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.

2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.

3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.

4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6–INCHES TO 8–INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.

5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.

7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL–SEDIMENT WASHES ONTO PUBLIC ROAD.

2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC–EXTEND PAD BEYOND THE MINIMUM 50–FOOT LENGTH AS NECESSARY.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

5. UNSTABLE FOUNDATION – USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.

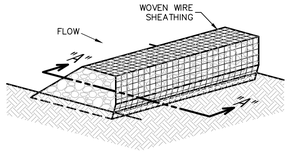
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.

4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

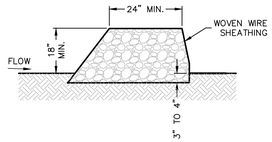
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT–TO–SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT–LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3–INCH TO 5–INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5–INCH TO 8–INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

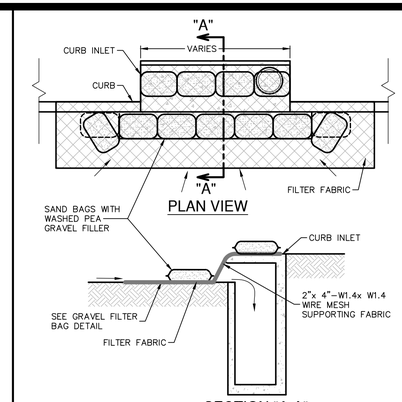
COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL

NOT–TO–SCALE



PLAN VIEW

SECTION "A-A"

GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"–W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLET.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

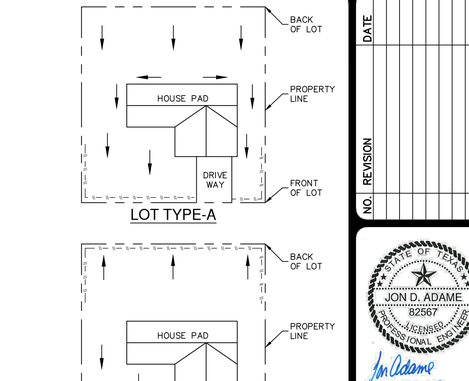
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

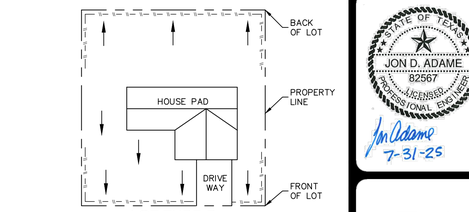
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

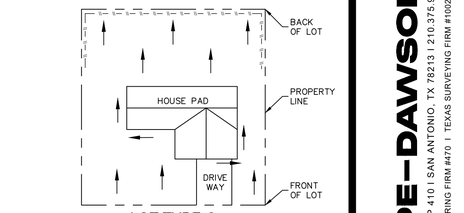
NOT–TO–SCALE



LOT TYPE-A



LOT TYPE-B



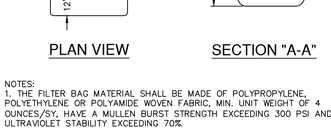
LOT TYPE-C

NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNGRADIENT SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

LEGEND
SILT FENCE
DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT–TO–SCALE



PLAN VIEW

SECTION "A-A"

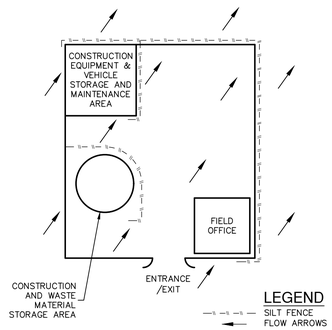
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT–TO–SCALE



CONSTRUCTION STAGING AREA

NOT–TO–SCALE

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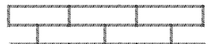
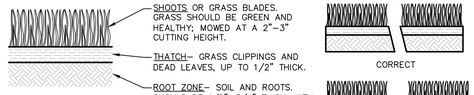


LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

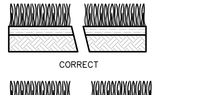


APPEARANCE OF GOOD SOD

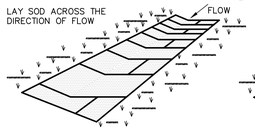
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

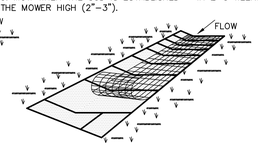
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

3. MOW WHEN THE SOD IS ESTABLISHED – IN 2–3 WEEKS. SET THE MOWER HIGH (2"–3").

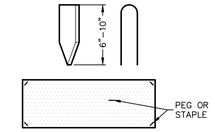


SOD INSTALLATION





IN CRITICAL AREAS, SECURE SOD WITH NETTING. USE STAPLES.



USE PEGS OR STAPLES TO FASTEN SOD FIRMLY – AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3–4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.

3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.

7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2–3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

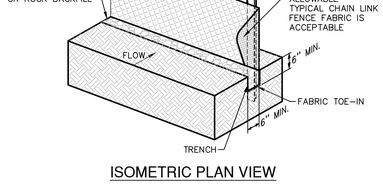
INSPECTION AND MAINTENANCE GUIDELINES

1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT–TO–SCALE



**STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1–FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET. (RG–348, SECTION 1.4.3)

ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER–BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y–BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1–FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN–SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN–SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3–FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECT ALL FENCING WEEKLY.

2. REMOVE SEDIMENT WHEN BUILDUP APPROACHES 6 INCHES, BUT NOT TO EXCEED 50% OF HEIGHT.

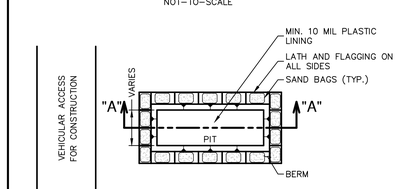
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

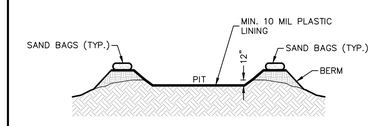
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE DETAIL

NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT–TO–SCALE

NO.	REVISION	DATE

STATE OF TEXAS
JON D. ADAME
82567
LICENSED
PROFESSIONAL ENGINEER
Jon Adame
7-31-25

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

BLOSSOM RANCH UNIT 1B
SAN ANTONIO, TEXAS
STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO. 24-11800449
JOB NO. 13055-21
DATE JULY 2025
DESIGNER AD
CHECKED AS DRAWN GP
SHEET C8.10

EXHIBIT 3
1 OF 2

Date: Jul 31, 2025, 3:42pm User ID: anthony.alvarado
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