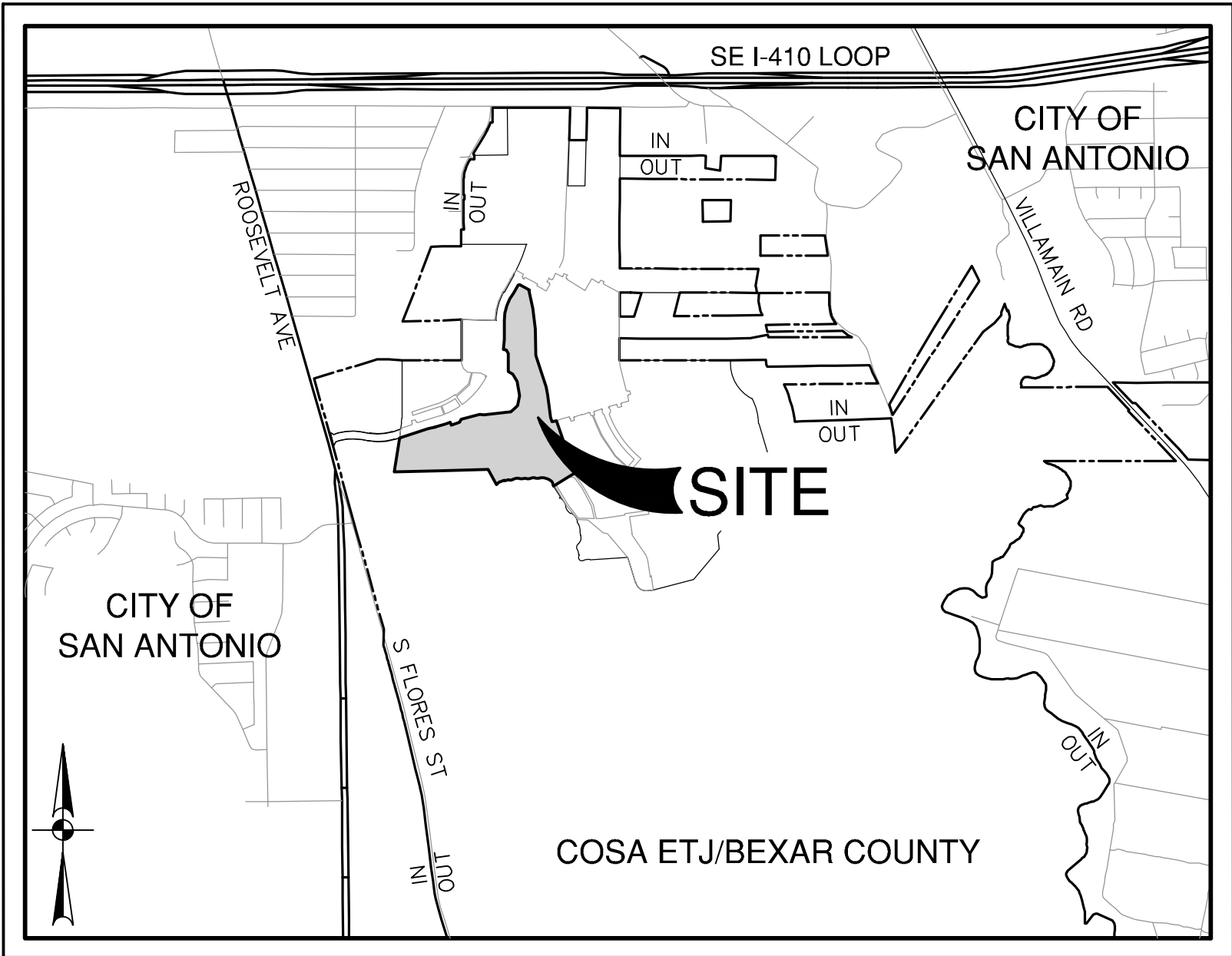


ESPADA TRACT UNIT 2

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS

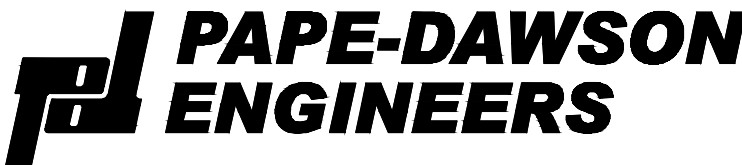


LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

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

JULY 2023



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



Sheet List Table	
Sheet Number	Sheet Title
C0.00	COVER SHEET
C1.00	MASTER DRAINAGE PLAN (ULTIMATE DEVELOPMENT)
C1.00A	MASTER DRAINAGE PLAN (ULTIMATE DEVELOPMENT)
C1.01	DRAIN "C4" PLAN & PROFILE STA. 1+00.00 TO END
C1.02	DRAIN "C2" PLAN & PROFILE STA. 1+00.00 TO END
C1.03	DRAIN "C5" PLAN & PROFILE STA. 1+00.00 TO END
C1.04	DRAINAGE DETAILS
C1.05	DRAINAGE DETAILS
C2.00	FRANCIS FIELD PLAN & PROFILE STA. 2+06.03 TO 7+00.00
C2.01	FRANCIS FIELD PLAN & PROFILE STA. 7+00.00 TO END
C2.02	IGNACIO COVE PLAN & PROFILE STA. 1+15.00 TO 8+00.00
C2.03	IGNACIO COVE PLAN & PROFILE STA. 8+00.00 TO END
C2.04	VARAS HEIGHTS PLAN & PROFILE STA. 1+53.32 TO END
C2.05	CONTACT STATION PLAN & PROFILE STA. 1+69.20 TO END
C2.06	TYPICAL STREET DETAILS
C2.07	TYPICAL STREET DETAILS
C2.08	TYPICAL STREET DETAILS
C3.00	OVERALL SIGNAGE PLAN
C3.01	OVERALL SIGNAGE PLAN
C3.02	SIGNAGE DETAILS
C3.03	SIGNAGE DETAILS
C3.04	SIGNAGE DETAILS
C4.00	OVERALL WATER DISTRIBUTION PLAN
C4.01	OVERALL WATER DISTRIBUTION DETAILS
C4.02	OVERALL WATER DISTRIBUTION NOTES
C5.00	OVERALL SANITARY SEWER PLAN
C5.01	SANITARY SEWER LINE 'C' PLAN & PROFILE STA. 5+40.00 TO 10+50.00
C5.02	SANITARY SEWER LINE 'C' PLAN & PROFILE STA. 10+50.00 TO 21+50.00
C5.03	SANITARY SEWER LINE 'C' & LINE 'M' PLAN & PROFILE LINE 'C' STA. 21+50.00 TO END LINE 'M' STA. 6+00.00 TO END
C5.04	SANITARY SEWER LINE 'W' PLAN & PROFILE STA. 1+00 TO 33+00
C5.05	SANITARY SEWER LINE 'X' PLAN & PROFILE STA. 1+00 TO END
C5.06	SANITARY SEWER DETAILS
C5.07	SANITARY SEWER NOTES
C6.00	OVERALL UTILITY PLAN
C6.01	OVERALL UTILITY PLAN
C6.02	OVERALL UTILITY PLAN
C7.00	OVERALL GRADING PLAN
C7.01	OVERALL GRADING PLAN
C7.02	OVERALL GRADING PLAN
C8.00	STORM WATER POLLUTION PREVENTION PLAN
C8.01	STORM WATER POLLUTION PREVENTION PLAN
C8.02	STORM WATER POLLUTION PREVENTION PLAN
C8.03	STORM WATER POLLUTION PREVENTION DETAILS

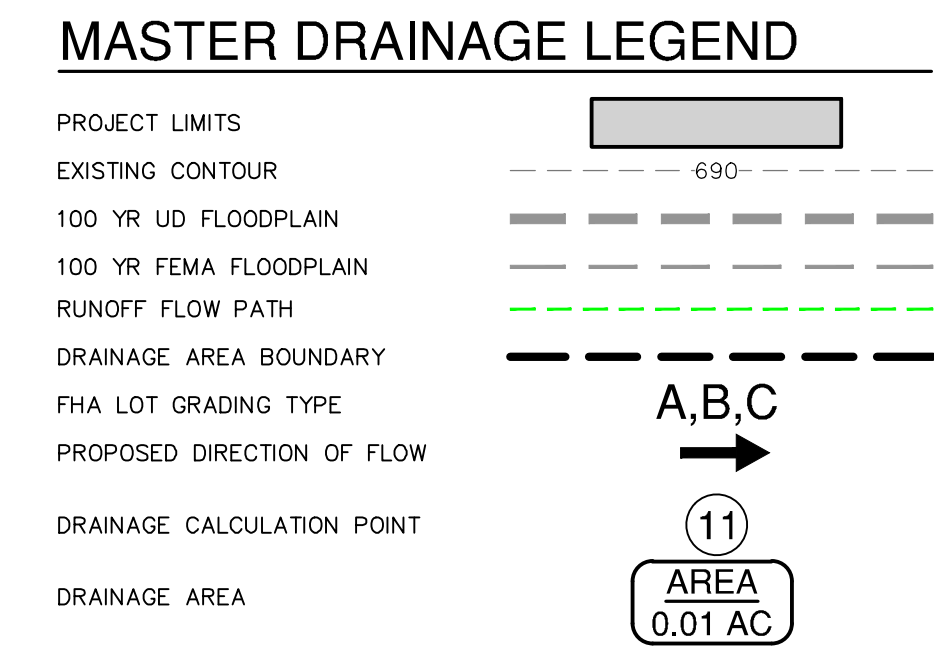
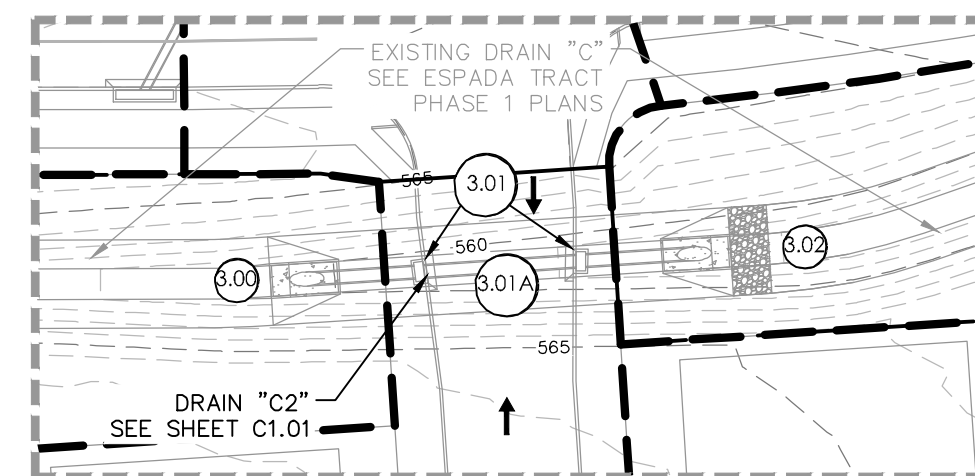
SALADO CREEK - SAN ANTONIO RIVER WATERSHED - DOS RIOS W.R.C.

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS	
ADDRESS: 100 NE LOOP 410, STE. 1155	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200	FAX# N/A
SAWS BLOCK MAP# N/A TOTAL EDU'S 103 TOTAL ACREAGE 55.73	
TOTAL LINEAR FOOTAGE OF PIPE: 1,376 L.F. ~ 8" PVC PLAT NO. 23-11800230	
NUMBER OF LOTS 103	SAWS JOB NO. 23-1607

WATER (SAWS PRESSURE ZONE 750)

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS	
ADDRESS: 100 NE LOOP 410, STE. 1155	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200	FAX# N/A
SAWS BLOCK MAP# 170536 TOTAL EDU'S 108 TOTAL ACREAGE 55.73	
TOTAL LINEAR FOOTAGE OF PIPE: 3,418 L.F. ~ 8" PVC PLAT NO. 23-11800230	
NUMBER OF LOTS 103	SAWS JOB NO. 23-1134

SHEET C0.00



SPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
MASTER DRAINAGE PLAN
(ULTIMATE DEVELOPMENT)

PLAT NO. 23-11800230
 JOB NO. 12632-13
 DATE JULY 2023
 DESIGNER JG
 CHECKED DW DRAWN BR
 SHEET C1.00

Date: Oct 30, 2023 9:45am User ID: janthongruff
File: P:\126\12\13\Design\Chn\00126\213.dwg

Master Drainage Plan Calculations																										
(Ultimate Development)																										
Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (Seelye)			Shallow Concentrated Flow - 1**					Channelized Flow**				Tc-TOT	Rational Method Q=CIA							
		#	Area (Ac)	C		L _O (FT)	S _O (ft/ft)	T _O * (MIN)	L _{SC} (FT)	Condition***	Slope (ft/ft)	V _{SC} (FPS)	T _{SC} ** (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)	Return Year		Intensit y (in/hr)	Q (cfs)	IDF Curv	C _{oSA} A14_P4				
1.00	Existing Drain A1	A1	7.37	0.97	870	100	0.01	15				-	-	770	6.0	2.1	17	5	4.91	35.1						
1.01	Existing Drain A2	A2	1.92	0.97	815												17	25	6.76	48.3						
1.01	Existing Drain A2	A2	1.92	0.97	815							-	-	815	6.0	2.3	5	5	7.85	14.6						
1.01A	Existing Drain A1	A1+A2	9.29	0.97													5	25	10.92	20.3						
1.01A	Existing Drain A1	A1+A2	9.29	0.97		(Reference Accumulated Flow Rate Table)															0	5	-	49.3		
1.02	Existing Drain A1	A1+A2+A3	11.43	0.97													0	25	-	58.1						
1.02	Existing Drain A1	A1+A2+A3	11.43	0.97		(Reference Accumulated Flow Rate Table)															0	5	-	53.8		
1.03	Existing Drain A2	A3	2.14	0.97	530												0	25	-	71.2						
1.03	Existing Drain A2	A3	2.14	0.97	530	100	0.01	15				-	-	430	6.0	1.2	16	5	5.06	10.5						
1.04	Street Capacity Check	A4	3.21	0.97	680												16	100	8.71	18.1						
1.04	Street Capacity Check	A4	3.21	0.97	680	100	0.01	15				-	-	580	6.0	1.6	16	5	5.06	15.8						
1.05	Calculation Point	A5	3.66	0.85	545												16	25	6.99	21.7						
1.05A	Drain A3 & A4	A4+A5	6.87	0.91		(Reference Accumulated Flow Rate Table)															16	100	8.71	27.1		
1.05B	Existing Drain A3	A4+A5	6.87	0.91													0	5	-	15.8						
1.05B	Existing Drain A3	A4+A5	6.87	0.91		(Reference Accumulated Flow Rate Table)															0	25	-	21.8		
1.05C	Existing Drain A1	A1+A2+A3+A4+A5	18.30	0.95													0	100	-	27.1						
1.05C	Existing Drain A1	A1+A2+A3+A4+A5	18.30	0.95		(Reference Accumulated Flow Rate Table)															0	25	-	43.5		
1.06	Calculation Point	A6	0.96	0.97	1,515												5	5	7.85	7.3						
1.06	Calculation Point	A6	0.96	0.97	1,515	-	-	-	-	-	-	-	-	1,515	6.0	4.2	5	25	10.92	10.2						
1.06A	Existing Drain A5	A6	0.96	0.97													5	100	13.65	12.7						
1.06A	Existing Drain A5	A6	0.96	0.97		(Reference Accumulated Flow Rate Table)															0	5	-	10.8		
1.07	Calculation Point	A7	1.40	0.83	470												0	25	-	13.8						
1.07	Calculation Point	A7	1.40	0.83	470	100	0.02	13	50	U	0.02	2.3	0.4	320	6.0	0.9	14	5	5.42	6.3						
1.07A	Existing Drain A6	A7	1.40	0.83													14	25	7.53	8.7						
1.07A	Existing Drain A6	A7	1.40	0.83		(Reference Accumulated Flow Rate Table)															14	100	9.39	10.9		
1.07B	Calculation Point	A1+A2+A3+A4+A5+A6+A7	20.66	0.94													0	5	-	6.2						
1.07B	Calculation Point	A1+A2+A3+A4+A5+A6+A7	20.66	0.94		(Reference Accumulated Flow Rate Table)															0	25	-	8.0		
1.08	Calculation Point	A8	4.33	0.77	755												0	100	-	9.3						
1.08	Calculation Point	A8	4.33	0.77	755	100	0.02	13	145	U	0.02	2.3	1.1	510	6.0	1.4	15	5	5.24	17.5						
1.09	Calculation Point	A9	2.04	0.86	440												15	25	7.24	24.1						
1.09	Calculation Point	A9	2.04	0.86	440	100	0.01	15	50	U	0.01	1.6	0.5	290	6.0	0.8	15	100	9.03	30.1						
1.09A	Calculation Point	A8+A9	6.37	0.80													16	5	5.06	8.9						
1.09A	Calculation Point	A8+A9	6.37	0.80		(Reference Accumulated Flow Rate Table)															16	25	6.99	12.3		
1.09B	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9	27.03	0.91													16	100	8.71	15.3						
1.09B	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9	27.03	0.91		(Reference Accumulated Flow Rate Table)															0	5	-	26.5		
1.10	Calculation Point	A10	0.81	0.97	390												0	25	-	37.1						
1.10	Calculation Point	A10	0.81	0.97	390	-	-	-	-	-	-	-	-	390	6.0	1.1	5	5	7.85	6.2						
1.10A	Calculation Point	A10	0.81	0.97													5	25	10.92	8.6						
1.10A	Calculation Point	A10	0.81	0.97		(Reference Accumulated Flow Rate Table)															5	100	13.65	10.7		
1.10B	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10	27.84	0.91													0	5	-	9.1						
1.10B	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10	27.84	0.91		(Reference Accumulated Flow Rate Table)															0	100	-	15.5		
1.10C	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10+C1+C2+C3+C4	43.48	0.89													0	5	-	137.9						
1.10C	Calculation Point	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10+C1+C2+C3+C4	43.48	0.89		(Reference Accumulated Flow Rate Table)															0	25	-	21.7		
1.11	Calculation Point	A11	3.50	0.77	465												0	100	-	47.0						
1.11	Calculation Point	A11	3.50	0.77	465	100	0.02	13	95	U	0.01	1.6	1.0	270	6.0	0.8	15	5	5.24	14.5						
1.12	Existing Basin C	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10+A11+C1+C2+C3+C4	46.98	0.88	2,735												14	25	7.53	20.3						
1.12	Existing Basin C	A1+A2+A3+A4+A5+A6+A7+A8+A9+A10+A11+C1+C2+C3+C4	46.98	0.88	2,735	100	0.01	15	-	-	-	-	-	2,635	6.0	7.3	22	5	3.62	422.4						
2.00	Calculation Point	B1	129.64	0.90	4,510												22	25	8.12	14.6						
2.00	Calculation Point	B1	129.64	0.90	4,510	100	0.01	15	600	U	0.01	1.6	6.2	3,810	6.0	10.6	31	5	3.62	456.9						
2.01	Existing Drain B2	B2	3.16	0.80	690												31	25	4.96	578.7						
2.01	Existing Drain B2	B2	3.16	0.80	690	100	0.01	15	115	U	0.03	2.8	0.7	475	6.0	1.3	17	5	4.91	12.4						
2.02	Existing Drain B	B1+B2+B5+B6	136.78	0.89	4,510												17	25	6.76	17.1						
2.02	Existing Drain B	B1+B2+B5+B6	136.78	0.89	4,510	100	0.01	15	600	U	0.01	1.6	6.2	3,810	6.0	10.6	17	100	8.42	21.3						

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

$$T_o = \frac{(0.007(n+L)^{0.8})}{(P^{2.5}-S^4)} + 60 \quad v = \frac{k}{n} R^{2/3} S_o^{1/2}$$
$$k = 1.486 \text{ ft}^{1/3}/\text{s}$$

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

Master Drainage Plan Calculations																									
(Ultimate Development)																									
Ref. Point	Structure / Description	Drainage Areas				Total Flowpath (ft)	Overland/Sheet Flow (Seelye)			Shallow Concentrated Flow - 1**					Channelized Flow**					T _{C-TOT}	Rational Method Q=CIA IDF Curv COSA A14 P4				
		#	Area (Ac)	C	L _O (FT)		S _O (ft/ft)	T _O * (MIN)	L _{SC} (FT)	Condition**	Slope (ft/ft)	V _{SC} (FPS)	T _{SC} ** (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)	Return Year	Intensity (in/hr)	Q (cfs)						
3.02	Drain C	C1+C2	9.76	0.92	1,225	100	0.01	15	295	U	0.02	2.3	2.2	830	6.0	2.3	19	5	4.63	41.6	19	25	6.37	57.2	
3.03	Calculation Point	C3	0.58	0.77	415	30	0.10	6	-	-	-	-	385	6.0	1.1	7	5	7.05	3.1	19	100	7.93	71.2		
3.04	Calculation Point	C1+C2+C3+C4	15.64	0.86	1,610	100	0.01	15	295	U	0.02	2.3	2.2	1,215	6.0	3.4	20	5	4.51	60.7	20	25	6.21	83.5	
3.05	Drain C4	C4	5.30	0.77	690	100	0.01	15	155	U	0.01	1.6	1.6	435	6.0	1.2	17	25	6.76	27.6	17	100	8.42	34.4	
3.06	Drain C5	C5	6.95	0.77	1,065	100	0.02	13	160	U	0.02	2.3	1.2	805	6.0	2.2	16	25	6.99	37.4	16	100	8.71	46.6	

*Seelye Chart or TR-55 Egn. 3-3

**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

$$T_o = \frac{\{0.007(n^{1.49})\cdot L^{0.83}}{(P^{2.5}\cdot S_o^{1/2})} + 6$$

$$v = \frac{k}{n} \cdot R^{2/3} \cdot S_o^{1/2}$$
$$k = 1.486 \text{ ft}^{1/2}/s$$

S: For Streets: n = 0.018, R = 0.2
P: For Paved: n = 0.025, R = 0.2
U: For Unpaved: n = 0.05, R = 0.4
U: For Unpaved: n = 0.05, R = 0.4

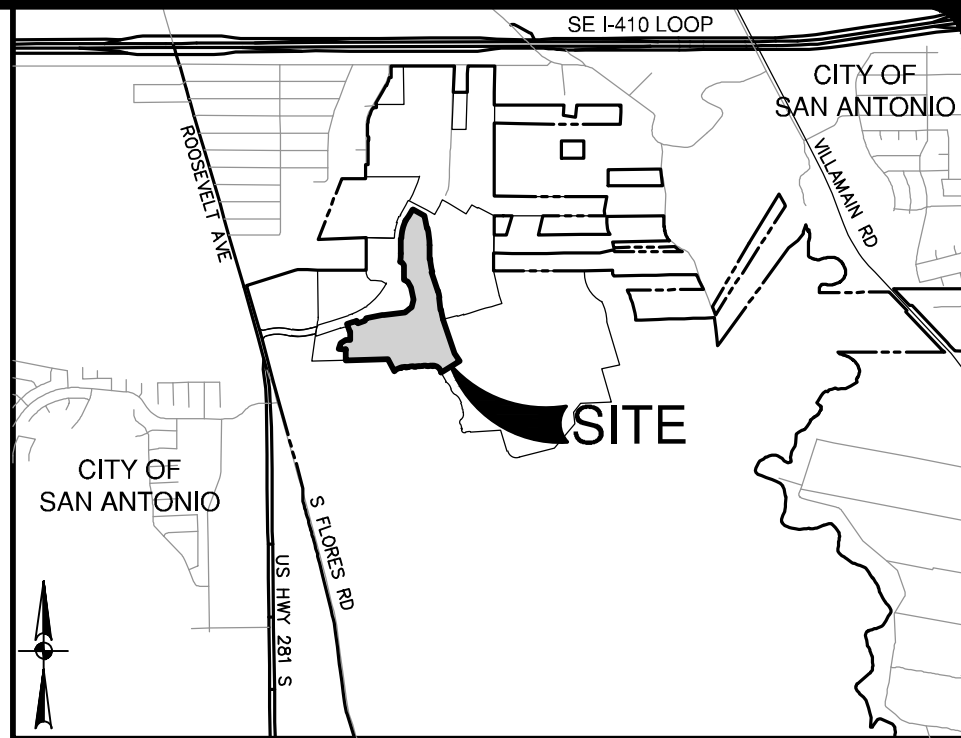
(Adapted from Mannings)

*Seelye Chart or TR-55 Eqn. 3-3

**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

$$T_o = \frac{(0.007(n+L)^{0.8})}{(P^{2.5}-S^4)} + 6 \quad v = \frac{k}{n} R^{2/3} S_o^{1/2}$$
$$k = 1.486 \text{ ft}^{1/3}/\text{s}$$

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

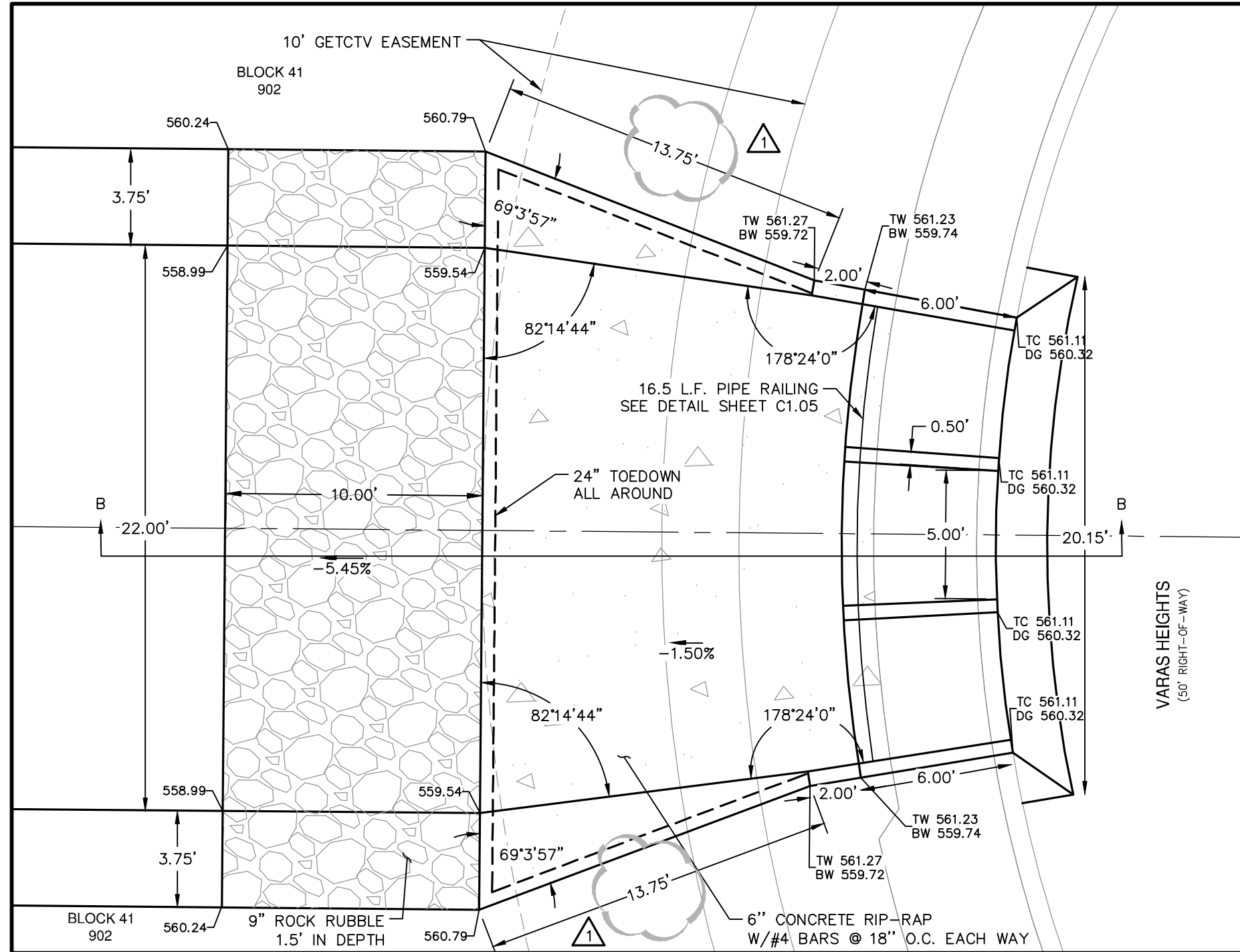


MASTER DRAINAGE LEGEND

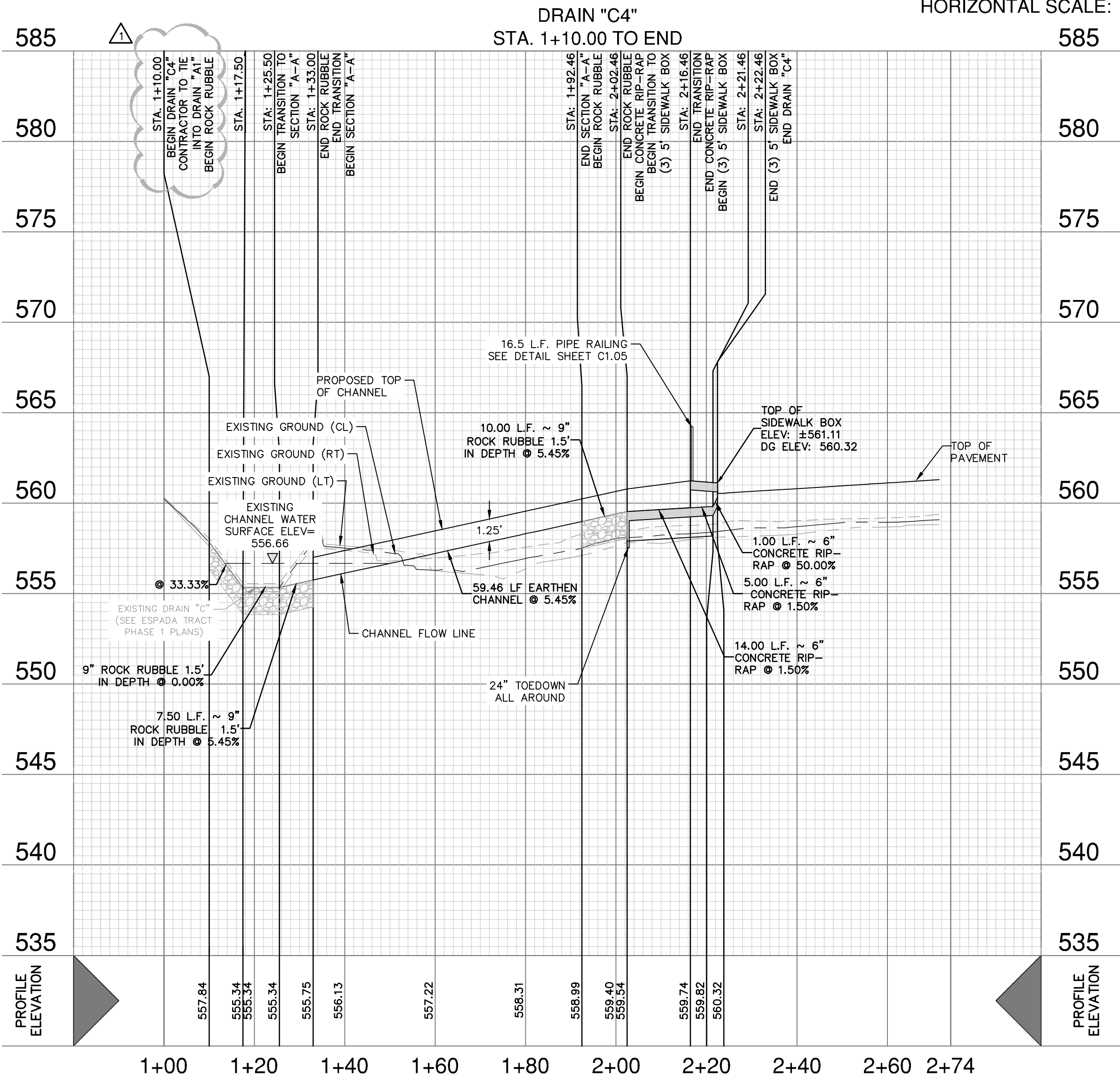
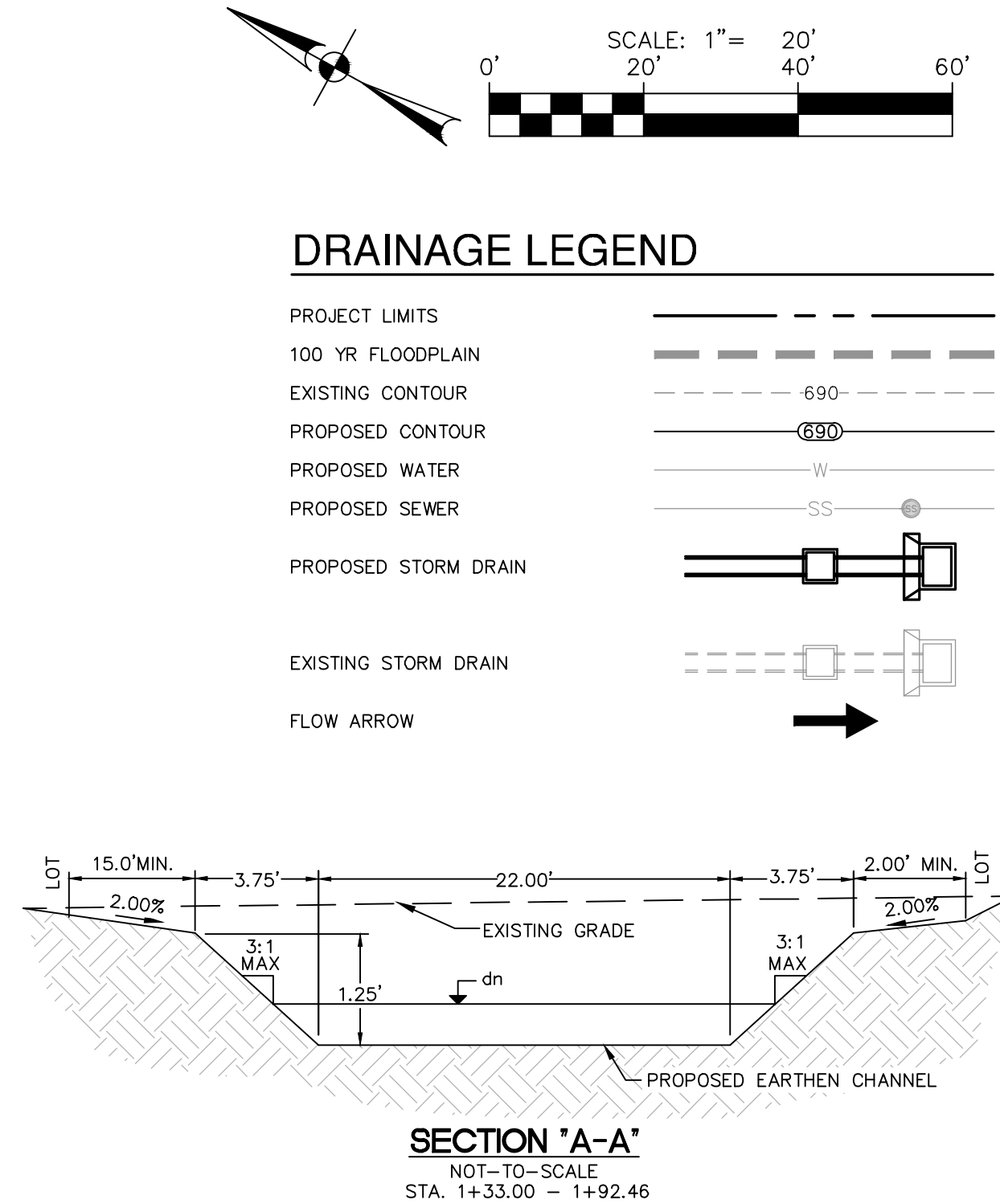
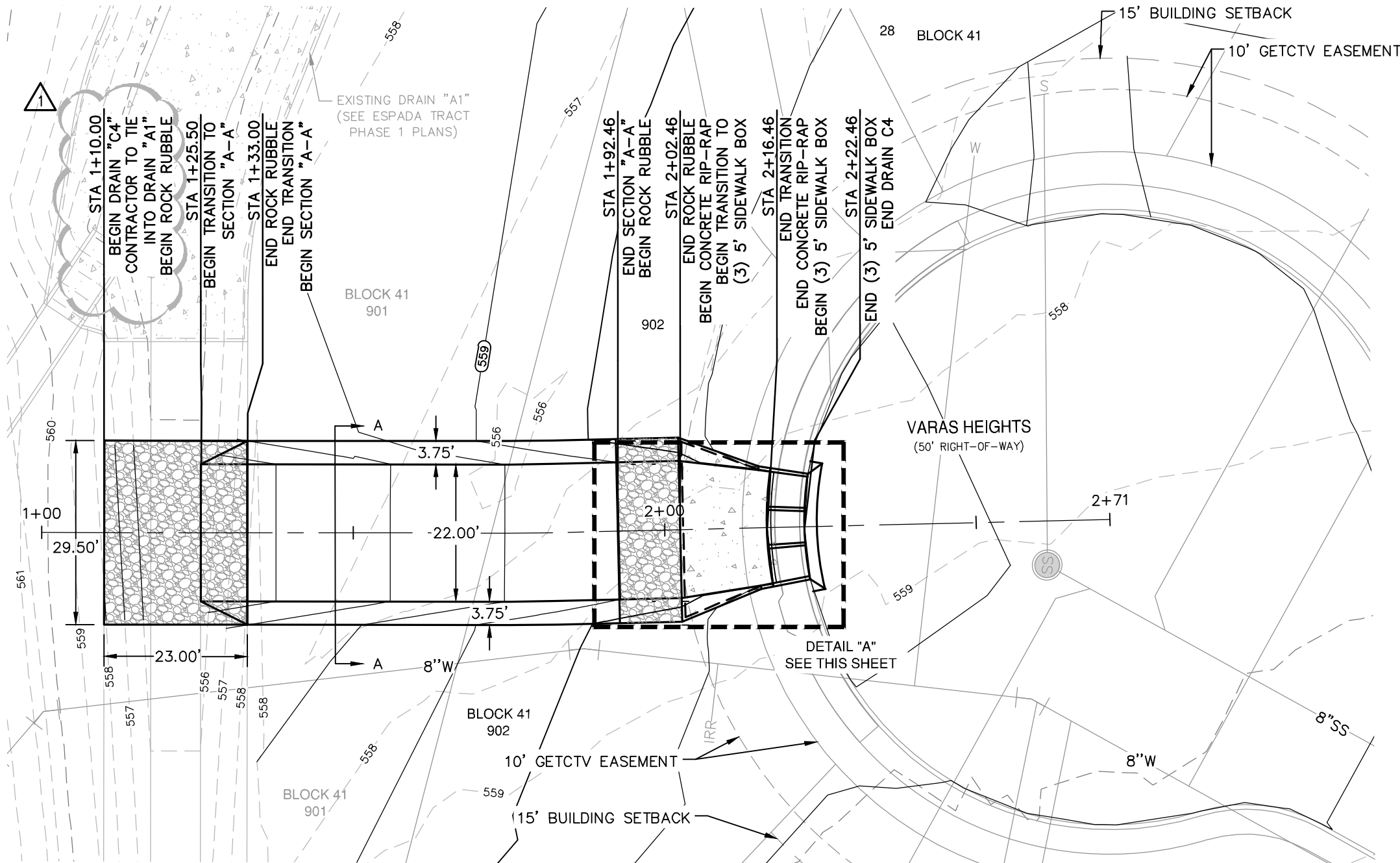
PROJECT LIMITS

Notes: Rev. 26, 2024, 6:34am User: ID: jsmithengr41
File: P:\1263213\13 Espada Tract Unit 2\Drawings\CD\1263213 Drain C4.dwg

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DETAIL "A"
SCALE: 1" = 5'



HYDRAULIC CALCULATIONS ROCK RUBBLE	
STA. 1+25.50 TO 1+33.00	
Q25 = 27.60 CFS	
Bw = 22.00'	
n = 0.038	
S = 5.45%	
D = 1.25'	
dn = 0.31'	
V = 3.88 FPS	
τ = 1.01 LB/FT²	

HYDRAULIC CALCULATIONS EARTHEN CHANNEL	
STA. 1+33.00 TO 1+92.46	
Q25 = 27.60 CFS	
Bw = 22.00'	
n = 0.035	
S = 5.45%	
D = 1.25'	
dn = 0.29'	
V = 4.16 FPS	
τ = 0.95 LB/FT²	

HYDRAULIC CALCULATIONS ROCK RUBBLE	
STA. 1+92.46 TO 2+02.46	
Q25 = 27.60 CFS	
Bw = 22.00'	
n = 0.038	
S = 5.45%	
D = 1.25'	
dn = 0.31	
V = 3.88 FPS	
τ = 1.01 LB/FT²	

HYDRAULIC CALCULATIONS RIP-RAP	
STA. 2+02.46 TO 2+16.46	
Q25 = 27.60 CFS	
Bw = 22.00'	
n = 0.015	
S = 1.50%	
D = 1.25'	
dn = 0.26'	
V = 4.66 FPS	
τ = 0.23 LB/FT²	

HYDRAULIC CALCULATIONS—DRAIN "C4" SIDEWALK BOX

$Q_{25} = 27.60 \text{ CFS}$
 $Q_{25} = CA/2gR \text{ (ORIFICE FLOW EQN.)}$
 $A = L(0.52), h = 0.52, g = 32.2, c = 0.70$
 $L = \frac{27.60 \text{ CFS}}{(0.70)(0.52)/2(32.2)(0.52)}$
 $L = 13.10 \text{ FT}$ USE 3 ~ 5 FT SIDEWALK BOX

CHECK WITH WEIR FORMULA
 $h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{27.60}{(3.087)(15)}\right)^{2/3} = 0.71 \text{ FT.}$
 $h = 0.71 < 0.79$ OK

DRAINAGE & GRADING NOTES:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

CAUTION!!

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

DATE	01/25/24
NO.	1
REVISION	REVISED LABEL INFORMATION
	ADDED DISTANCE AND SLOPE
	TO DETAIL



**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088600

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

DRAIN "C4" PLAN & PROFILE STA. 1+10.00 TO END

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C1.01

HYDRAULIC CALCULATIONS EARTHEN CHANNEL STA. 1+20.00 TO 1+39.91
Q25 = 57.20 CFS
Bw = 8.00'
n = 0.035
S = 0.50%
D = 2.50'
dn = 1.48'
V = 3.11 FPS
$\tau = 0.33 \text{ LB/FT}^2$

HYDRAULIC CALCULATIONS ROCK RUBBLE STA. 1+39.91 TO 1+49.91
Q25 = 57.20 CFS
Bw = 8.00'
n = 0.038
S = 0.50%
D = 2.50'
dn = 1.55'
V = 2.92 FPS
$\tau = 0.34 \text{ LB/FT}^2$

HYDRAULIC CALCULATIONS RIP-RAP STA. 1+49.91 TO 1+54.91
Q25 = 57.20 CFS
Bw = 8.00'
n = 0.015
S = 0.50%
D = 2.50'
dn = 0.94
V = 5.62 FPS
$\tau = 0.23 \text{ LB/FT}^2$

HYDRAULIC CALCULATIONS RIP-RAP STA. 2+64.91 TO 2+69.91
Q25 = 45.40 CFS
Bw = 8.00'
n = 0.015
S = 1.40%
D = 2.50'
dn = 0.62'
V = 7.43 FPS
$\tau = 0.45 \text{ LB/FT}^2$

HYDRAULIC CALCULATIONS EARTHEN CHANNEL STA. 2+69.91 TO 2+79.91
Q25 = 45.40 CFS
Bw = 8.00'
n = 0.035
S = 1.57%
D = 2.50'
dn = 0.96'
V = 4.35 FPS
$\tau = 0.73 \text{ LB/FT}^2$

HYDRAULIC CALCULATIONS—DRAIN "C2" CURB INLETS
TOTAL Q25 FOR THE CURB INLETS IS EQUAL TO 13.00 CFS. TWO INLETS WILL CAPTURE THE TOTAL FLOW. AS A RESULT, TOTAL FLOW HAS BEEN DIVIDED IN HALF TO SIZE EACH INLET. ANALYSIS BELOW SHOWS CALCULATIONS FOR SIZING ONE OF THE TWO INLETS.
 $Q_{25} = 13.00 \text{ CFS (6.50 CFS EACH INLET)}$
 $Q_{25} = CA\sqrt{2gh} \text{ (ORIFICE FLOW EQN.)}$
 $A = L(0.52), h = 0.52, g = 32.2, c = 0.70$
 $L = \frac{6.50 \text{ CFS}}{(0.7)(0.52)\sqrt{2(32.2)}(0.52)}$
 $L = 3.09 \text{ FT}$ USE 1 ~ 5 FT CURB INLET EACH SIDE
CHECK WITH WEIR FORMULA
 $h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{6.50}{(3.087)(5)}\right)^{2/3} = 0.56 \text{ FT.}$
 $h = 0.56 < 0.79 \text{ OK}$

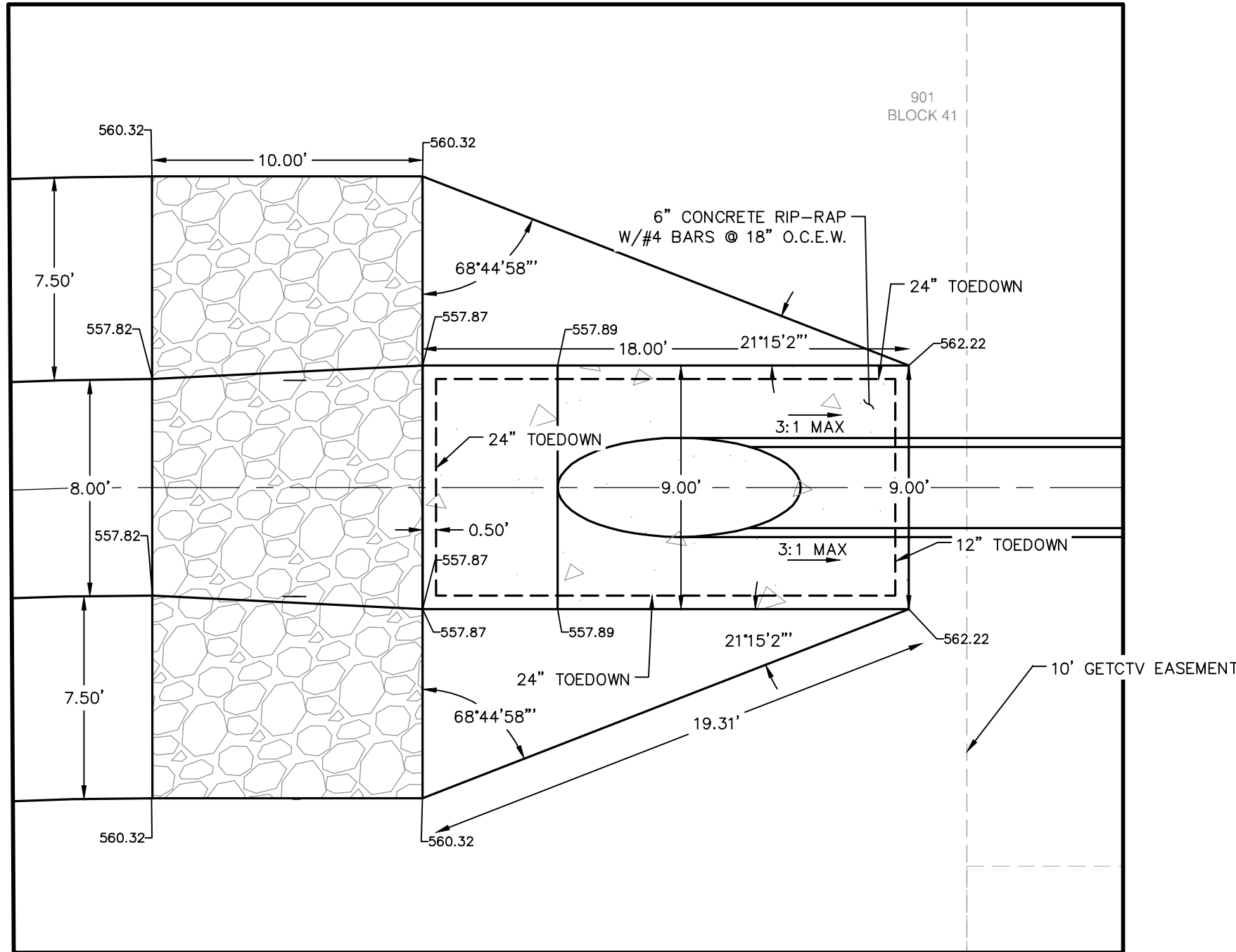
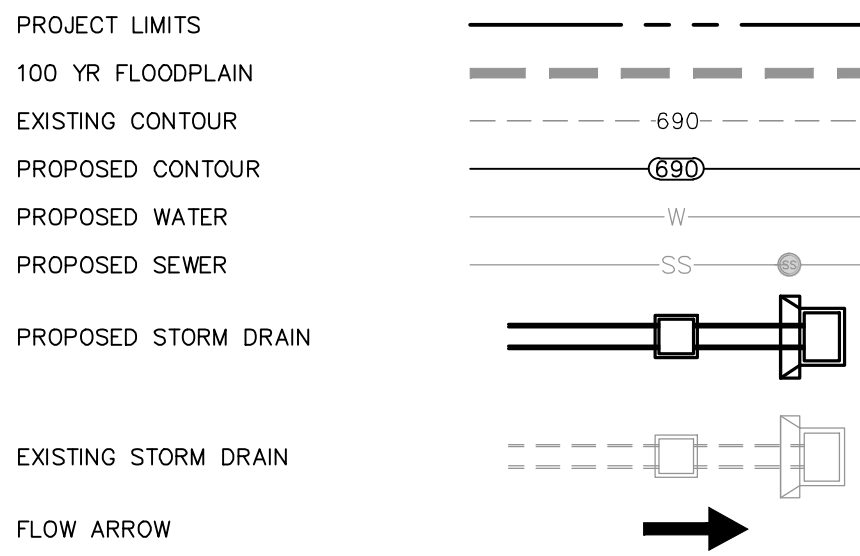
STORM DRAIN CALCULATIONS 36" RCP STA. 1+54.91 - STA. 1+87.83
Q25 = 57.20 CFS
D _N = 3.00'
S _r = 0.736%
V = 8.09 fps
n = 0.013
D = 3.00'

STORM DRAIN CALCULATIONS 36" RCP STA. 1+90.33 - STA. 2+29.78
Q25 = 51.90 CFS
D _N = 3.00'
S _r = 0.605%
V = 7.34 fps
n = 0.013
D = 3.00'

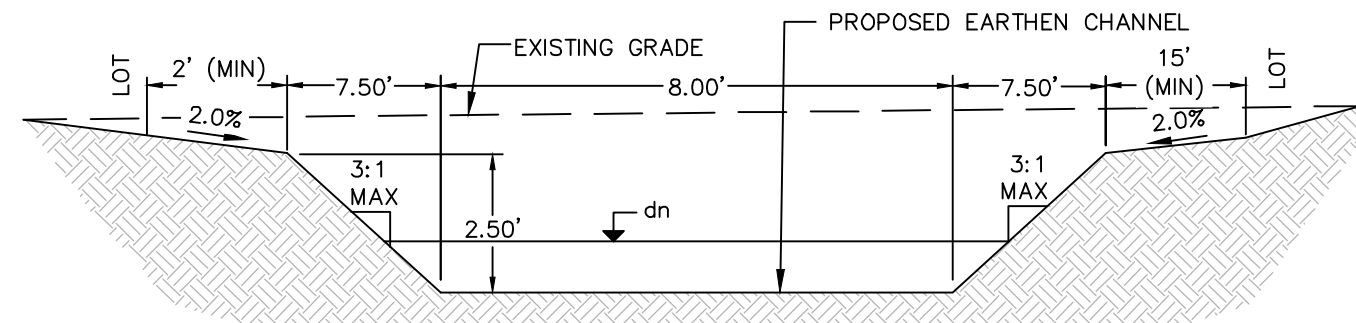
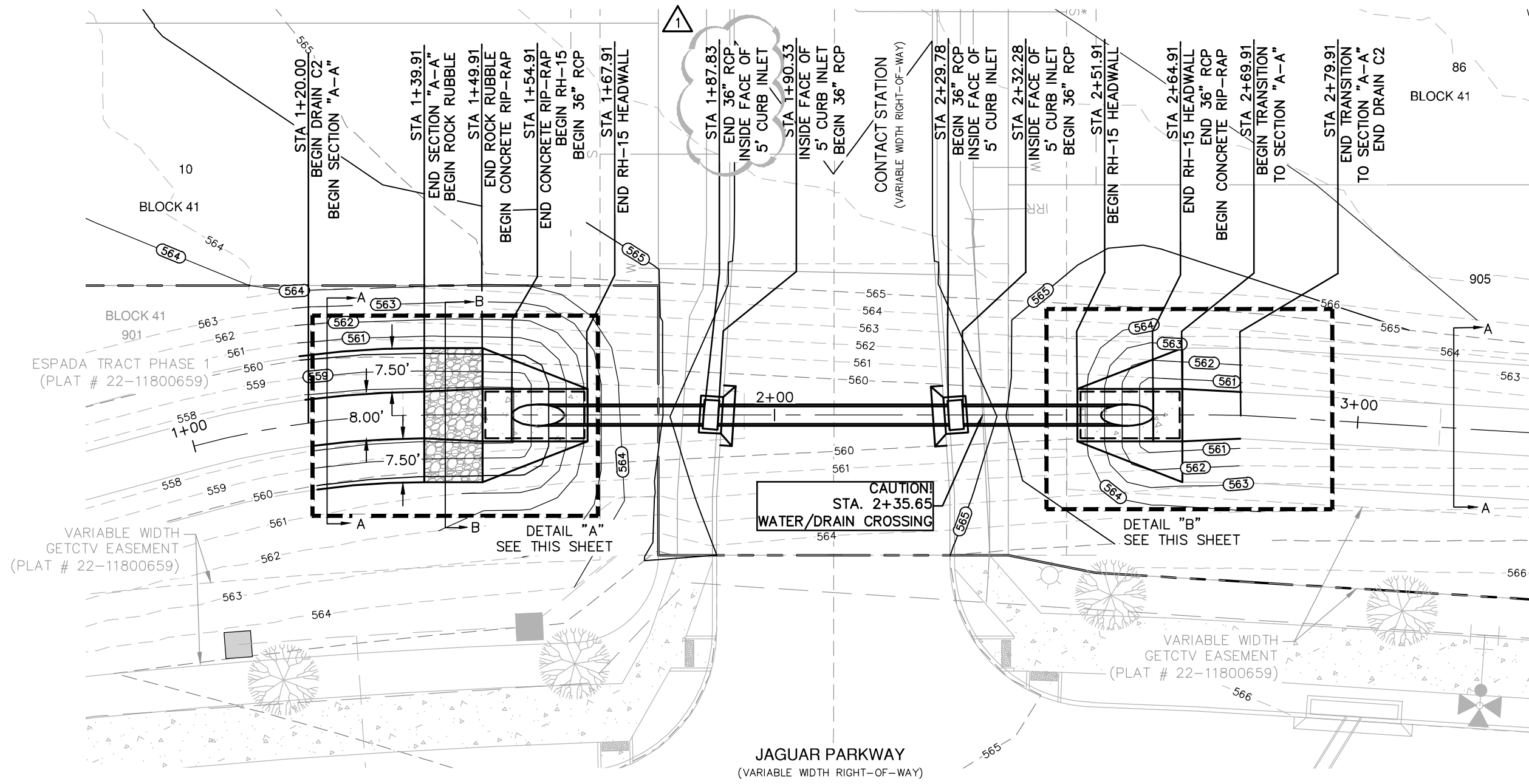
STORM DRAIN CALCULATIONS 36" RCP STA. 2+32.28 - STA. 2+64.91
Q25 = 45.40 CFS
D _N = 2.60'
S _r = 0.463%
V = 6.89 fps
n = 0.013
D = 3.00'



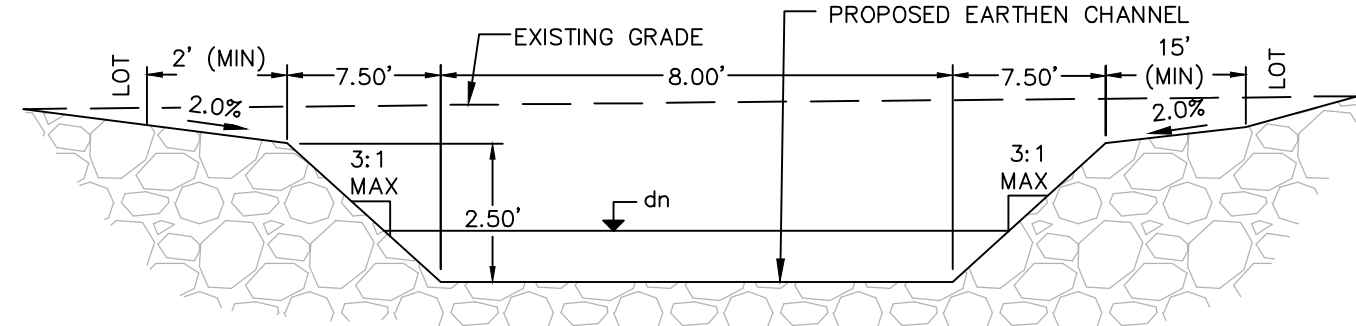
DRAINAGE LEGEND



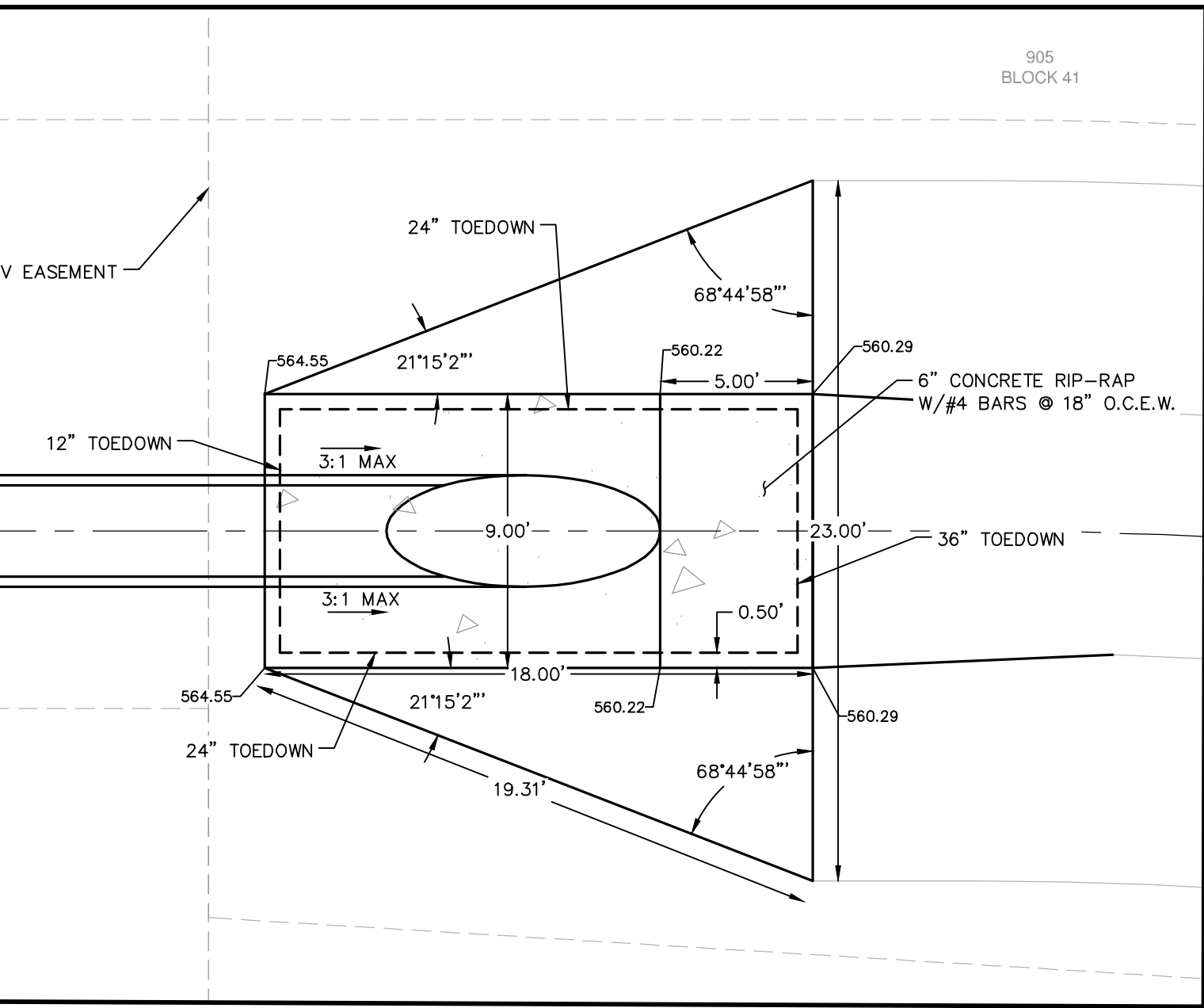
DETAIL "A"
SCALE: 1" = 5'



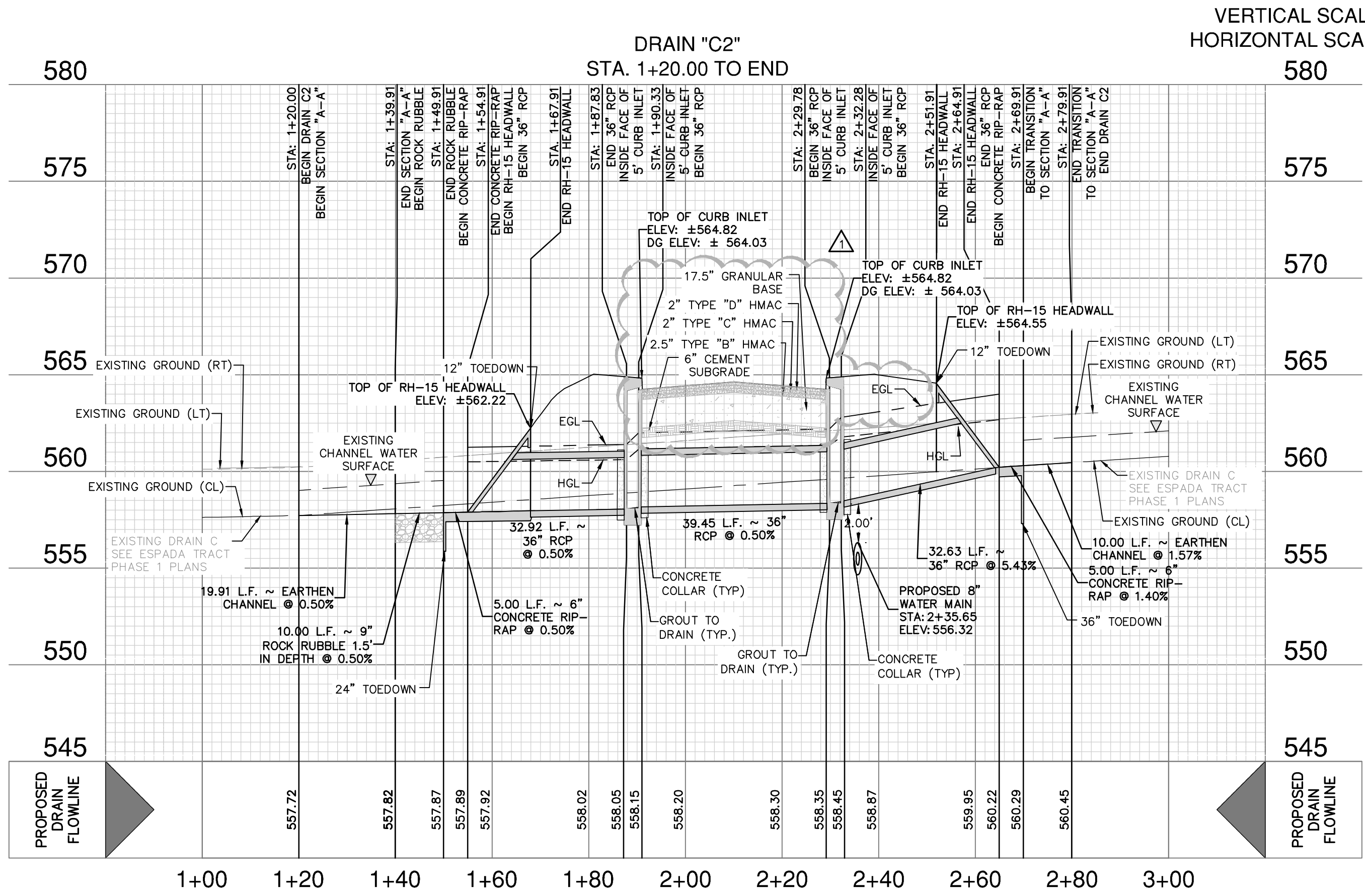
SECTION "A-A"
NOT TO SCALE
STA. 1+20.00 - 1+39.91
STA. 2+79.91 - END



SECTION "B-B"
NOT TO SCALE
STA. 1+39.91 - 1+49.91



DETAIL "B"
SCALE: 1" = 5'



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

DRAINAGE & GRADING NOTES:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

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

DATE	01/25/24
NO.	1
REVISION	VIEW, EQL. LEADER, RCP LABEL, DRAIN CALCS. AND SECTION "A-A" STATIONS



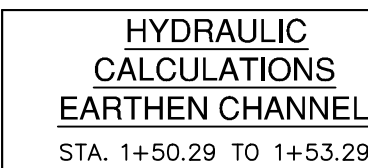
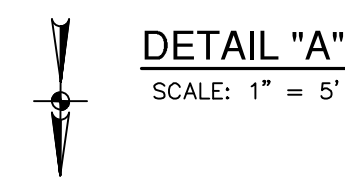
**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #70 | TEXAS SURVEYING FIRM #1008860

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

DRAIN "C2" PLAN & PROFILE STA. 1+20.00 TO 2+79.91

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C1.02



**HYDRAULIC
CALCULATIONS
EARTHEN CHANNEL**
STA. 1+53.29 TO 2+48.31

HYDRAULIC
CALCULATIONS
ROCK RUBBLE
STA. 2+48.37 TO 2+58.33

HYDRAULIC
CALCULATIONS
RIP-RAP
STA. 2+58.37 TO 2+72.4

$$Q_{25} = 37.40 \text{ CFS}$$

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

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

$$L = \frac{37.40 \text{ CFS}}{(0.70)(0.52)/2(32.2)(0.52)}$$

$$L = 17.76 \text{ FT} \quad \text{USE } 4 \sim 5 \text{ FT SIDEWALK}$$

CHECK WITH WEIR FORMULA

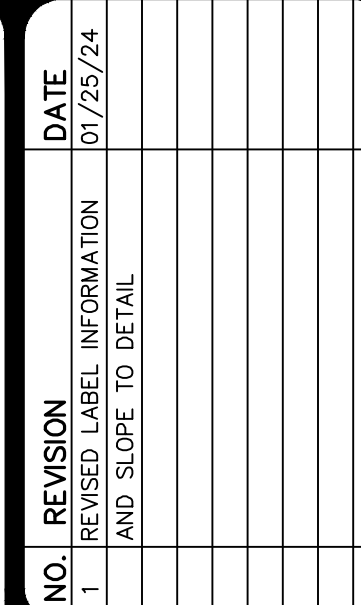
$$h = \left(\frac{Q}{(CL)} \right)^{2/3} = \left(\frac{37.40}{(3.087)(20)} \right)^{2/3} = 0.72 \text{ FT}$$

$h = 0.72 < 0.79$ OK

1. A BEARX COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEARX COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS SHALL 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.
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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.

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CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO WATER, SEWER, TELEPHONE AND GAS LINES, AND ALL LIGHTING, ELECTRICAL, SECONDARY ELECTRICAL, 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 REPAIRED AT THE RESPONSIBILITY OF THE CONTRACTOR AND THE DAMAGE SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



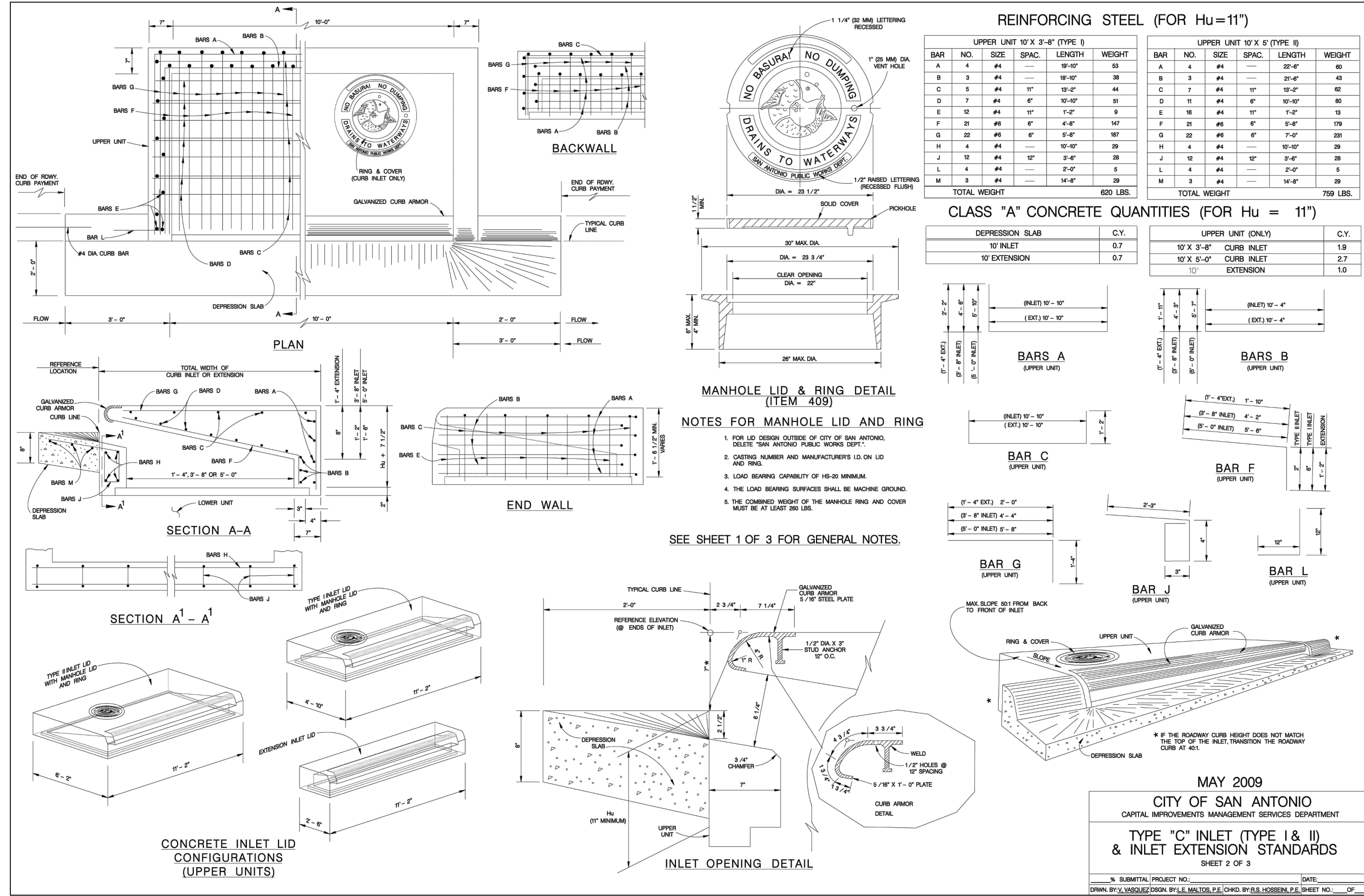
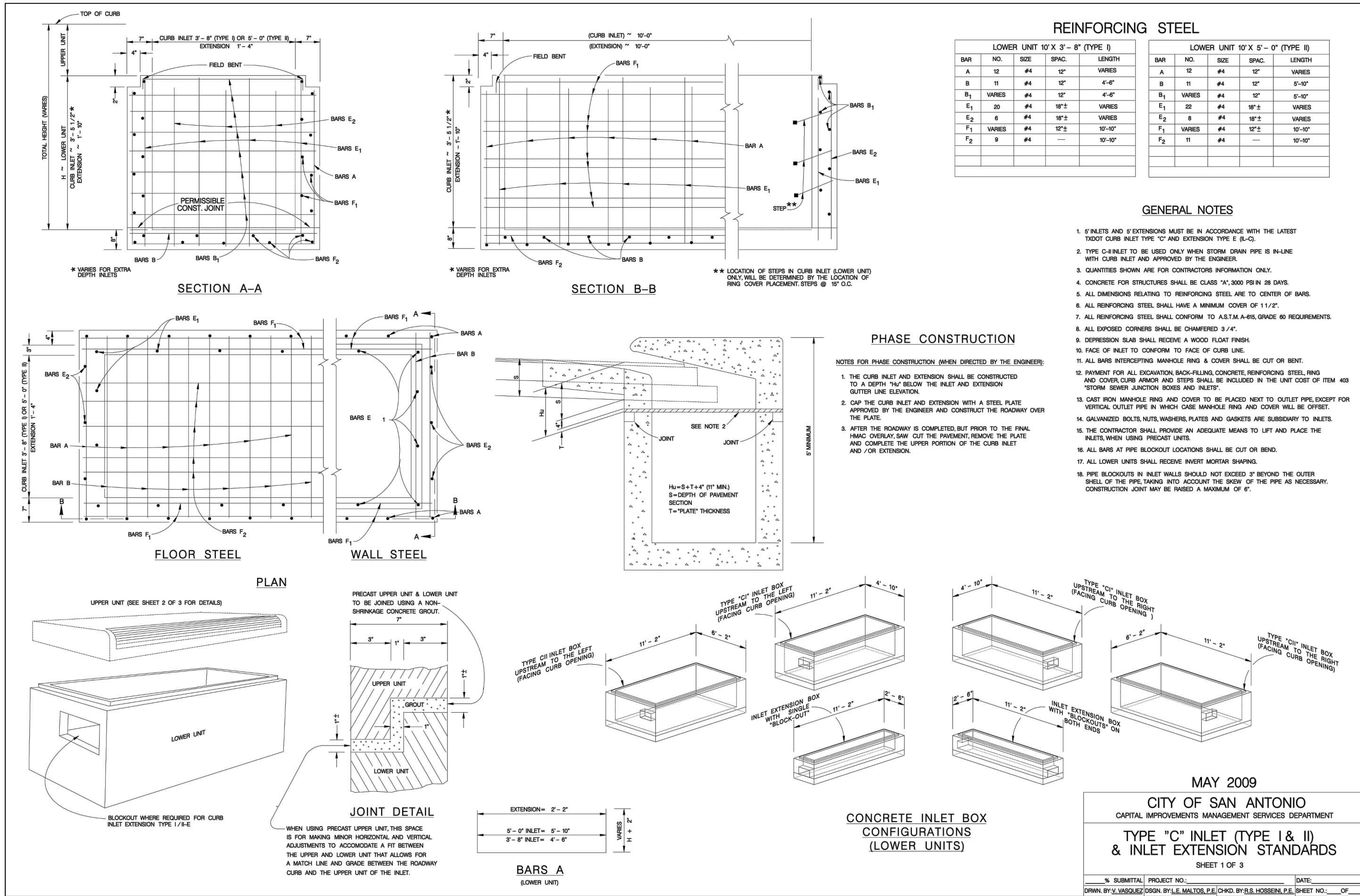
**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

DRAIN "C5" PLAN & PROFILE STA. 1+50.29 TO END

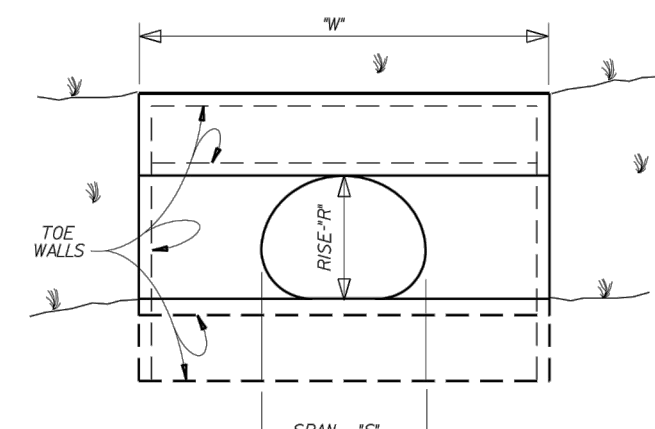
PLAT NO. 23-11800230
 JOB NO. 12632-13
 DATE JULY 2023
 DESIGNER JG
 CHECKED DW DRAWN BR
 SHEET C1.03



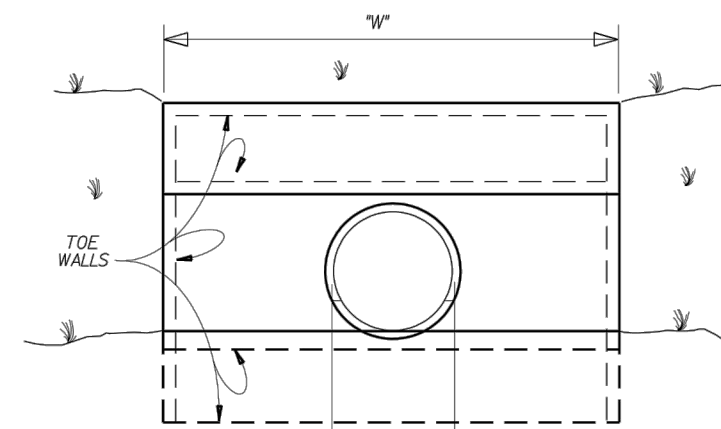


INSIDE DIA. OF PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		"W"					
		CGM	RCF				
10"	2'-0"	1'-8"	0'-9"	4'-8"	7'-2"	9'-10"	12'-6"
12"	2'-0"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-8"	0'-11"	6'-5"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-3"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-11"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	21'-10"	27'-3"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-0"	31'-3"
54"	8'-0"	2'-7"	1'-11"	13'-6"	20'-10"	26'-2"	35'-6"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-0"	39'-6"

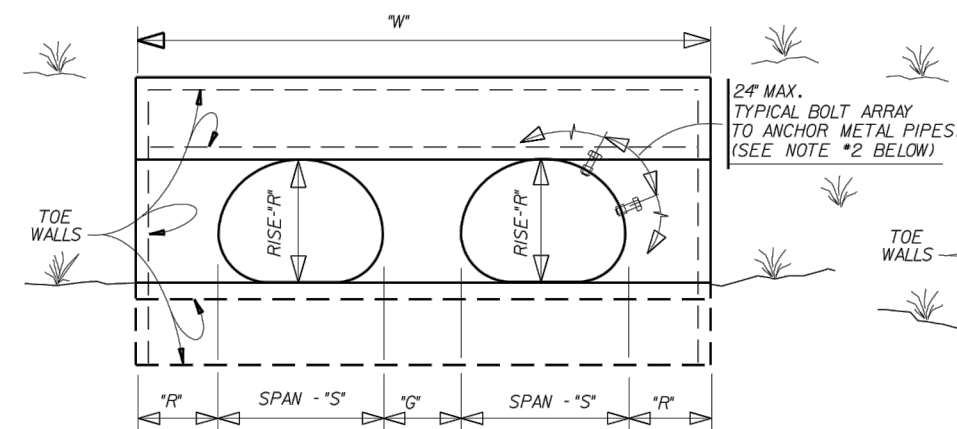
*G IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.



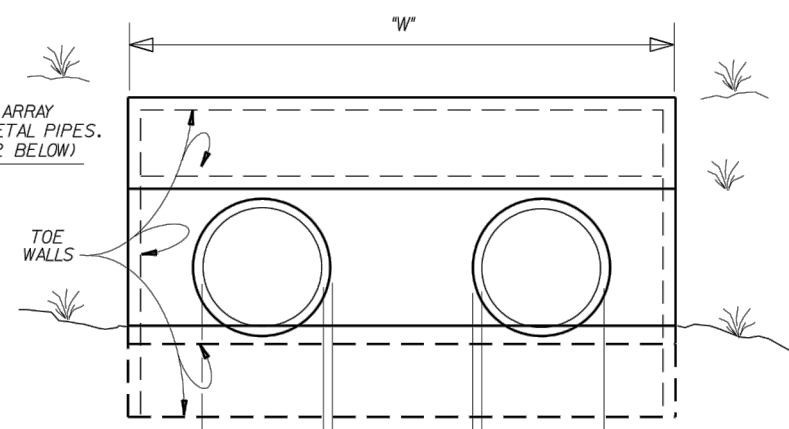
SINGLE C.M.P. ARCH PIPE CULVERT



SINGLE CIRCULAR PIPE CULVERT
(CMP or RCP)



MULTIPLE C.M.P. ARCH PIPE CULVERT



MULTIPLE CIRCULAR PIPE CULVERT
(CMP or RCP)


DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH. DIM.		'L'	'G'	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	"SPAN" "RISE"	"RISE" "SPAN"						
2	21"	15"	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-6"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-8"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-0"	31'-11"	40'-0"

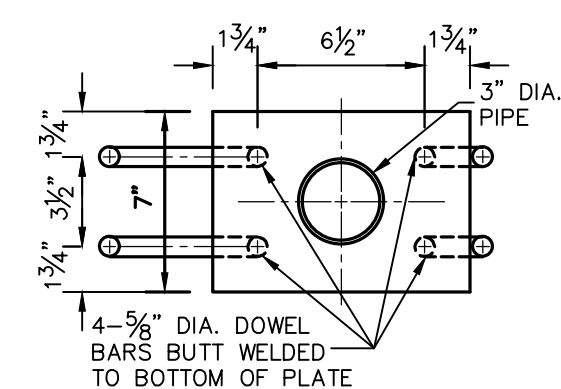
*G IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.

NOTES:

1. FOR RIPPAP QUANTITIES AND SLOPES, SEE CULVERT UNLOAD SHEET.
CONCRETE SHALL BE CLASS B UNLESS OTHERWISE SHOWN IN THE PLANS.
2. ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" x 6 GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WORK WILL BE SUBSIDIARY TO THE HEADWALL.
3. FOR CONCRETE ARCH PIPES, THE CMP ARCH PIPE CURVATURE DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.
4. FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN ITEMS 460 AND/OR 464.
5. IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPPAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY CROWN, THE RIPPAP QUANTITIES FOR THE SIDE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

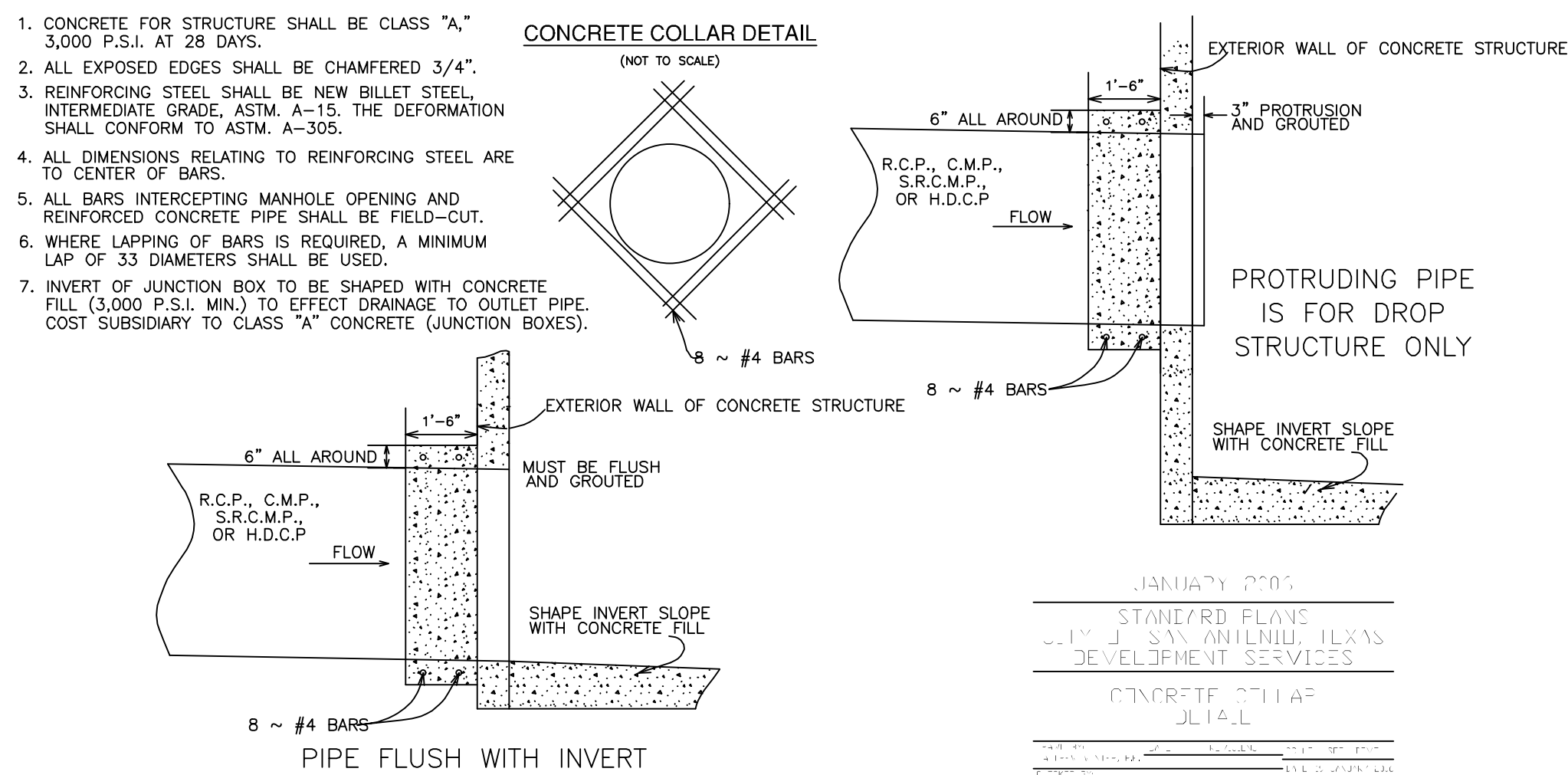

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FED. AID. DIS. AID.		PROJECT NO.		SHEET NO.	
6					
STATE	STATE DISTRICT	COUNTY			
TEXAS	SAT				
COUNT.	SECT.	JOB	HIGHWAY NO.		

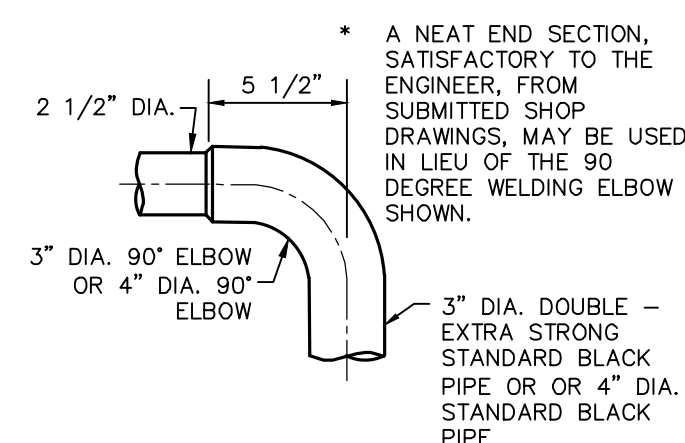


PIPE ANCHORAGE DETAIL

NOT-TO-SCALE



90° WELDING ELBOWS
DETAIL
NOT-TO-SCALE



8'-0" MAX.

8'-0" MAX.

90° WELDING ELBOWS

2 1/2" DIA. STANDARD BLACK PIPE

ALL JOINTS WELDED & GROUNDED SMOOTH

3" DIA. DOUBLE - EXTRA STRONG POST OR 4" DIA. STANDARD PIPE

2 1/2" DIA. STANDARD BLACK PIPE

SEE PIPE ANCHORAGE DETAIL

SIDEWALK OR HEADWALL

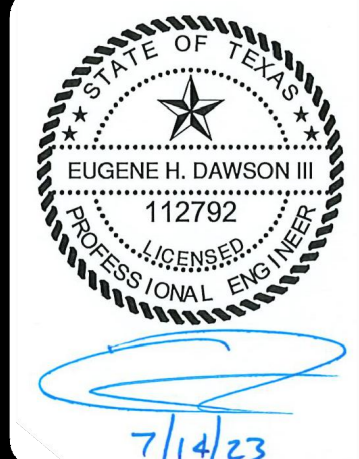
3'-1 1/2"

1'-5 1/2"

1'-6"

PIPE RAILING DETAIL

- NOTES:
1. FOR CONSTRUCTION WITHIN THE CITY OF SAN ANTONIO ETJ AND/OR BEXAR COUNTY, PIPE SHALL BE STANDARD BLACK PIPE PAINTED WITH 1 COAT OF READ PRIMER AND 2 COATS OF ALUMINUM PAINT

[illegible]

PAPE-DAWSON
PE ENGINEERS

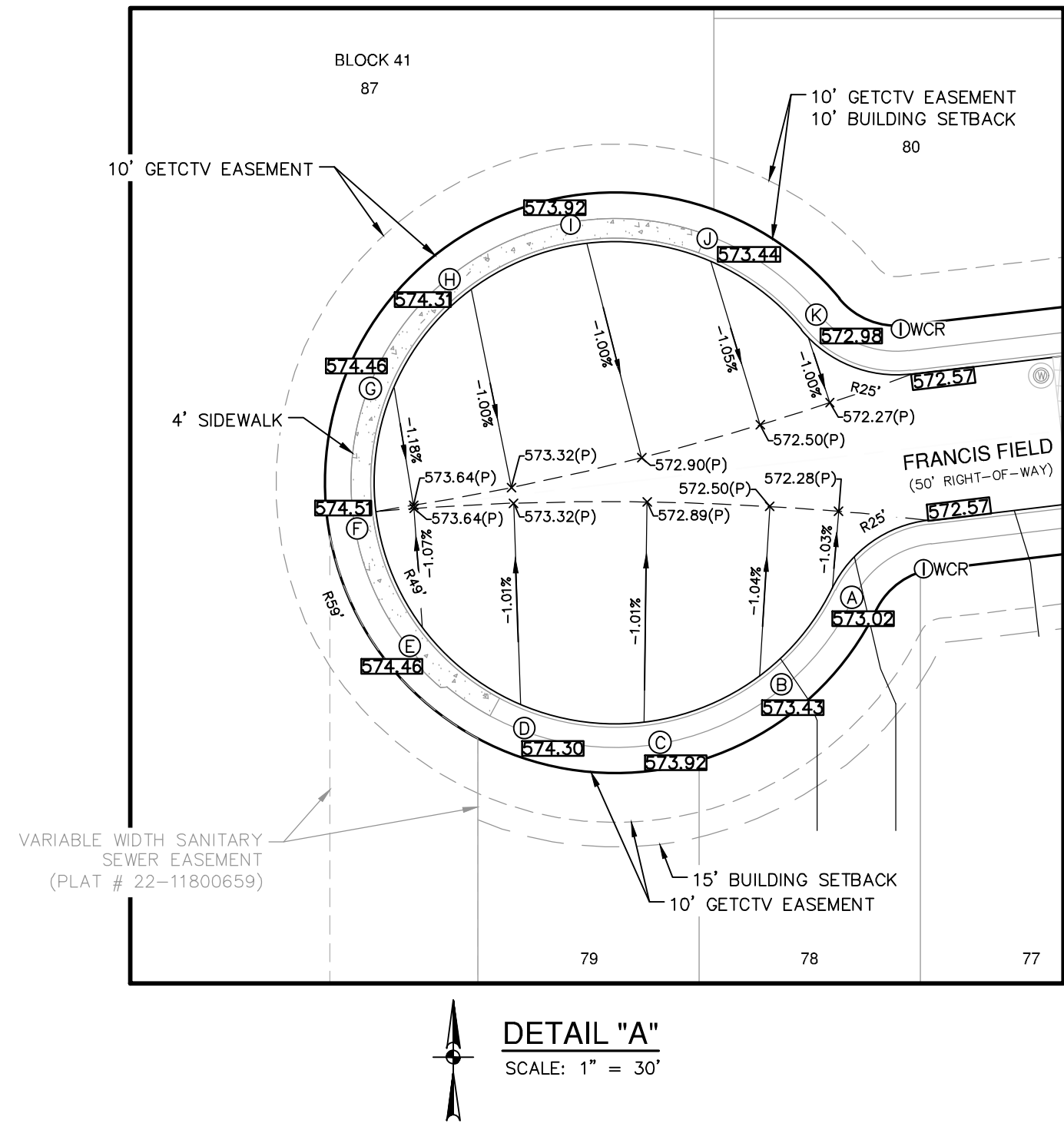
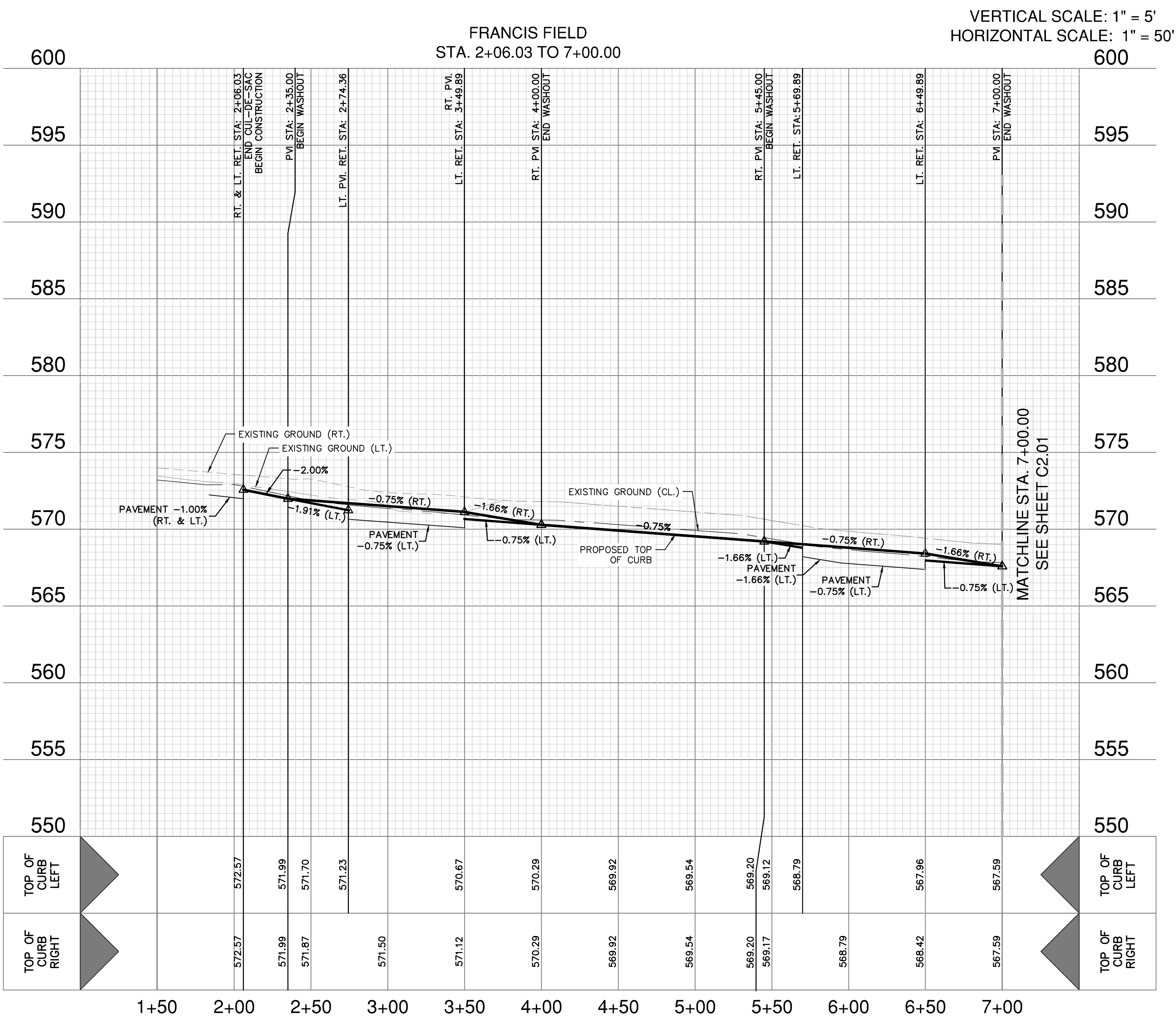
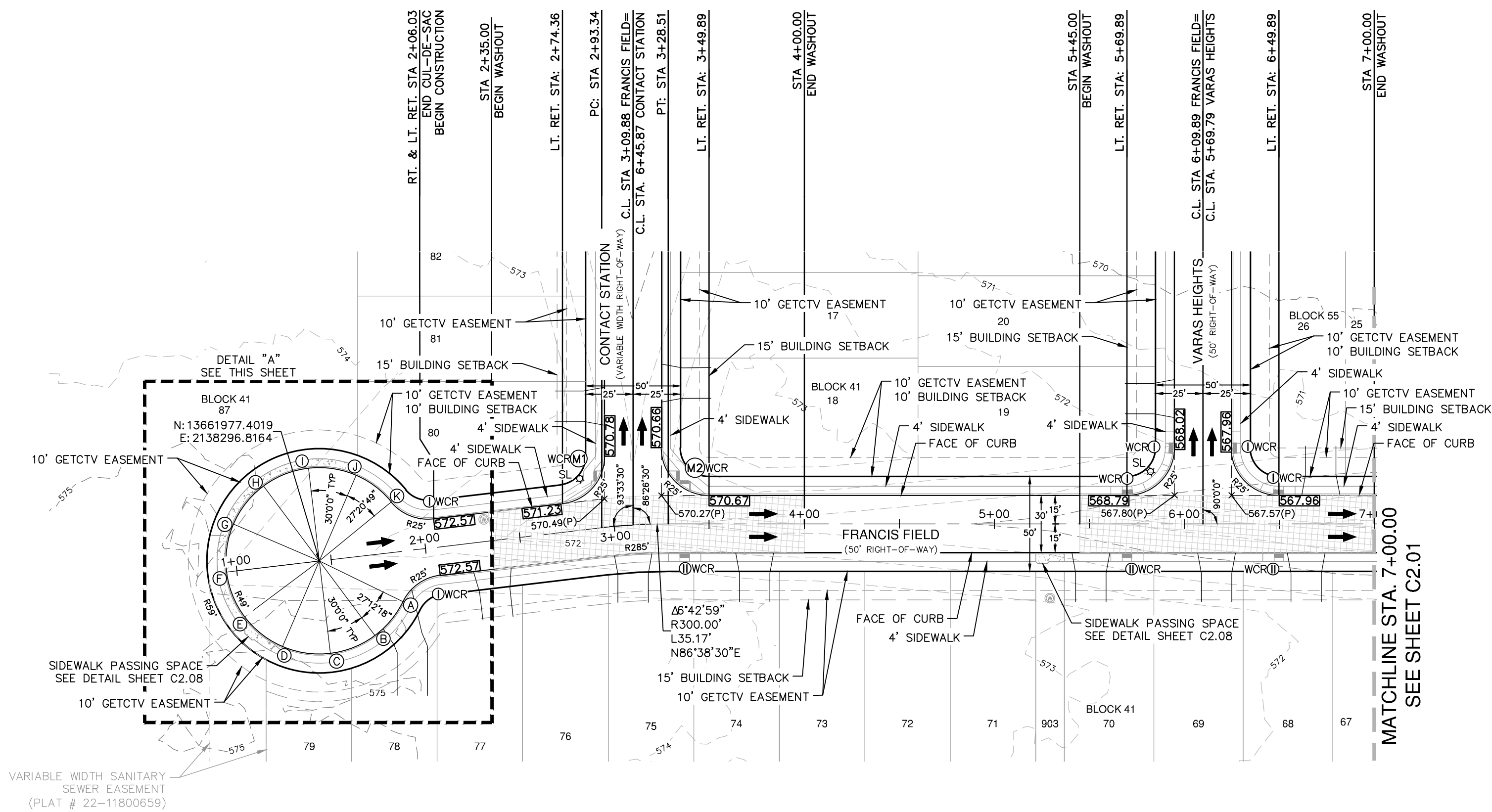
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
DRAINAGE DETAILS

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C1.05

Date: Rec: 06-2023, 9:00am User: R: kcmach2
File: P:\162632\13\Espada\CD\ST1253213 - FRANCIS.dwg

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- STREET NOTES:**
- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
 - CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT THE IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
 - 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.
 - NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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 - 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 (D)(6).
 - THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 800 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

STREET LEGEND

PROJECT LIMITS
MAINTAIN GUTTER
EXISTING CONTOUR
WHEELCHAIR RAMP
CENTERLINE
RADIUS POINT
POINT OF CURVATURE
POINT OF TANGENCY
RETURN
VEHICULAR NON ACCESS EASEMENT
DRAINAGE FLOW ARROW
TOP OF CURB SPOT ELEVATION
PAVEMENT ELEVATION
WASHOUT CROWN SECTION
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
SIDEWALK (DEVELOPER'S RESPONSIBILITY)
DRIVEWAY
EXISTING WELL

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

857.30
857.00(P) x

DATE
NO. REVISION

STATE OF TEXAS
EUGENE H. DAWSON III
112792
LICENSED PROFESSIONAL ENGINEER
12/2/23

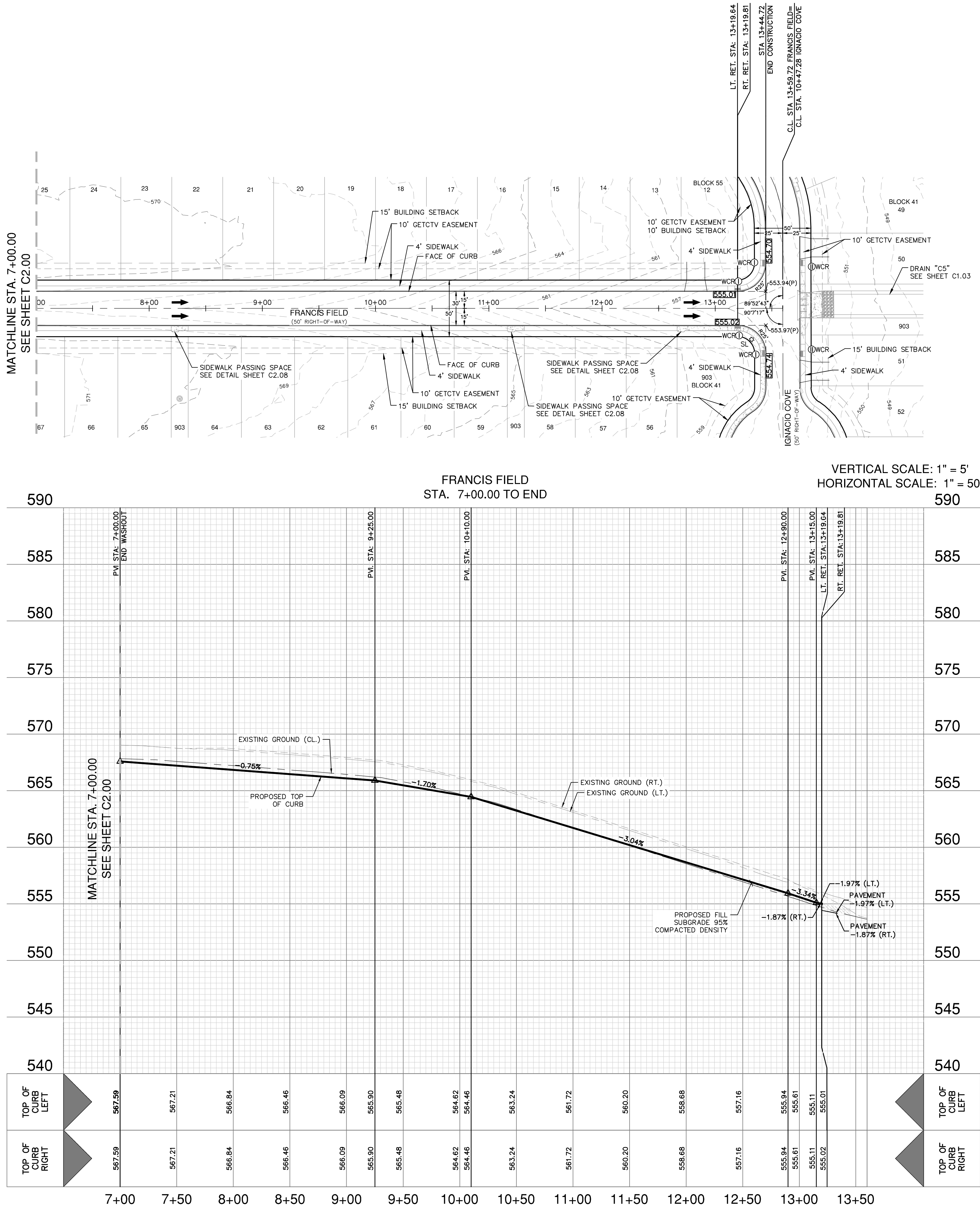
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
FRANCIS FIELD PLAN & PROFILE
STA. 2+06.03 TO 7+00.00

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C2.00

Date: Oct 13, 2023, 3:03pm User: R. Acrambach
File: P:\126\12613\12613\Espada Tract Unit 2\12613213 - FRANCIS.dwg

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STREET LEGEND

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

STREET NOTES:

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

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

FRANCIS FIELD PLAN & PROFILE
STA. 7+00.00 TO END

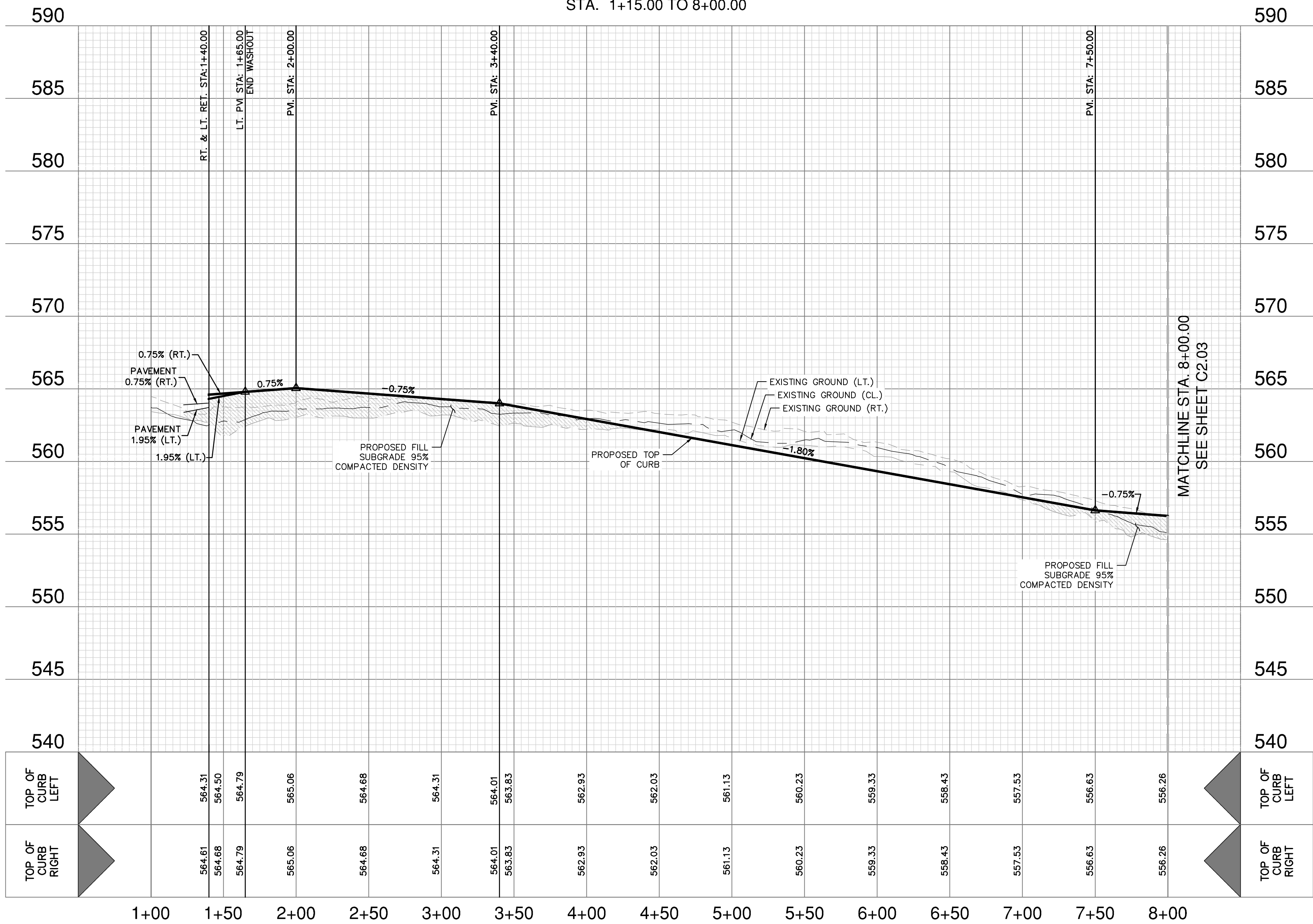
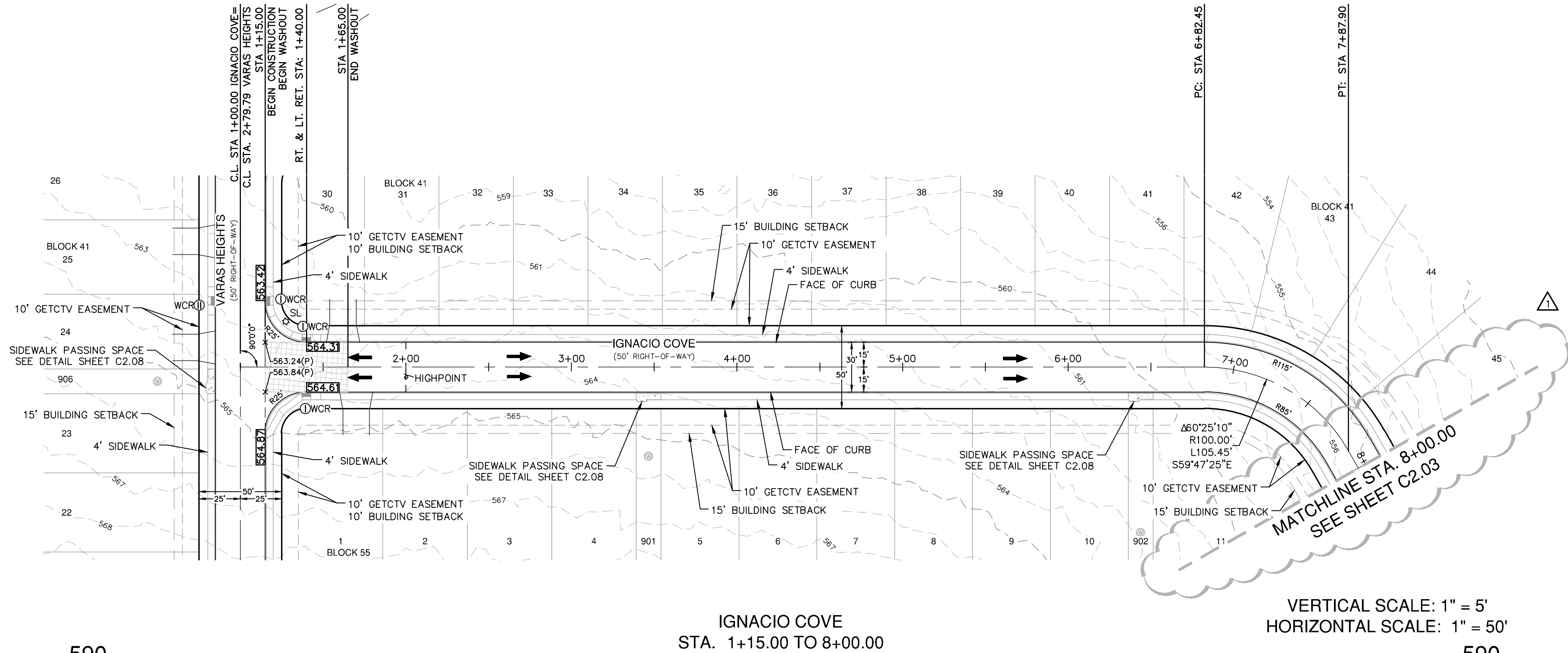
PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C2.01



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Date: Jan 26, 2024 8:41am User: jbrathongrati
File: P:\126323\13 Espada Curb STA 126323 - 80440.dwg

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STREET LEGEND

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

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PAPE-DAWSON
ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

IGNACIO COVE PLAN & PROFILE
STA. 1+15.00 TO 8+00.00

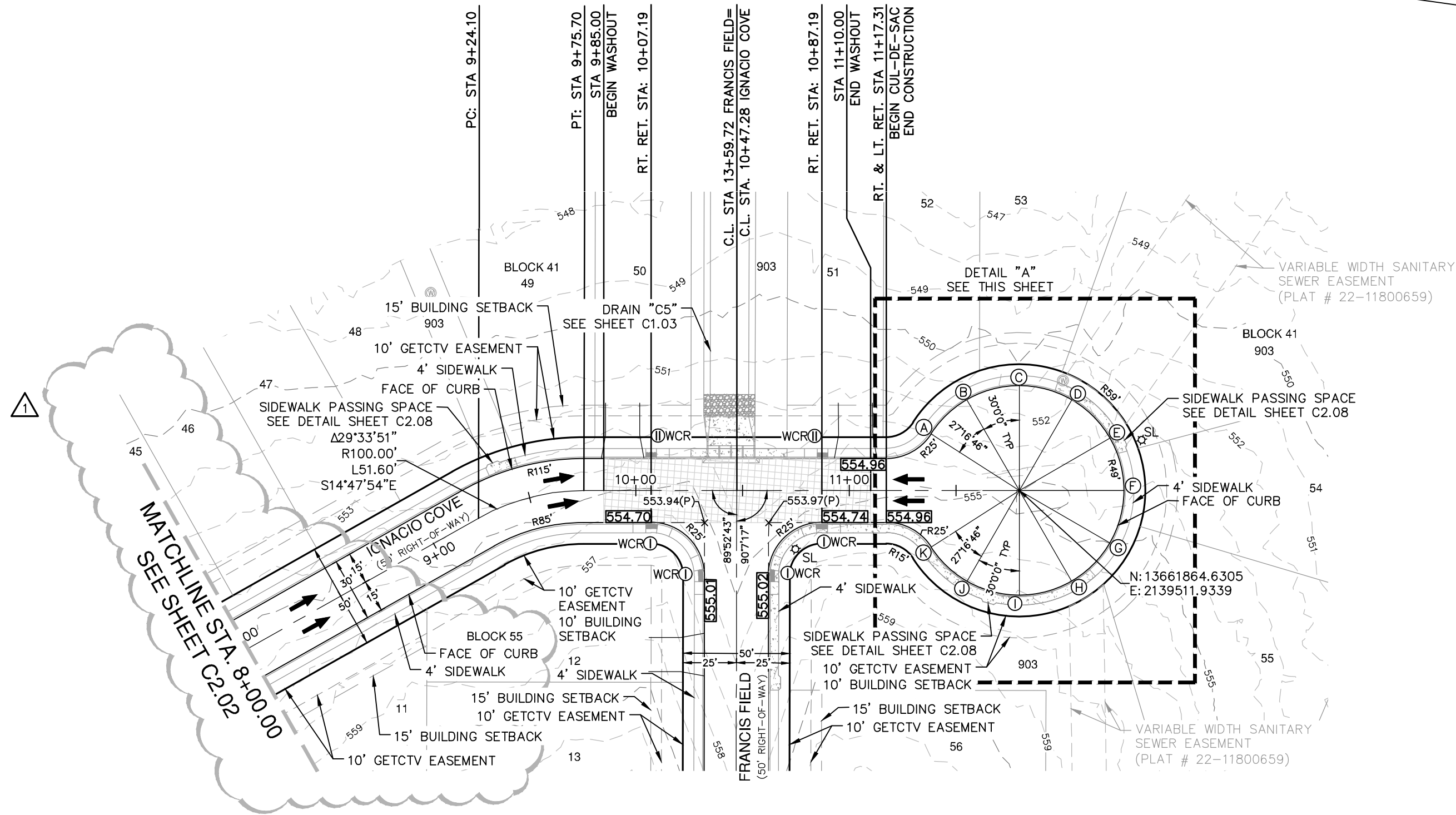
PLAT NO. **23-11800230**
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET **C2.02**

NO.	REVISION	DATE
1	REVISED VIEWPORT	01/25/24



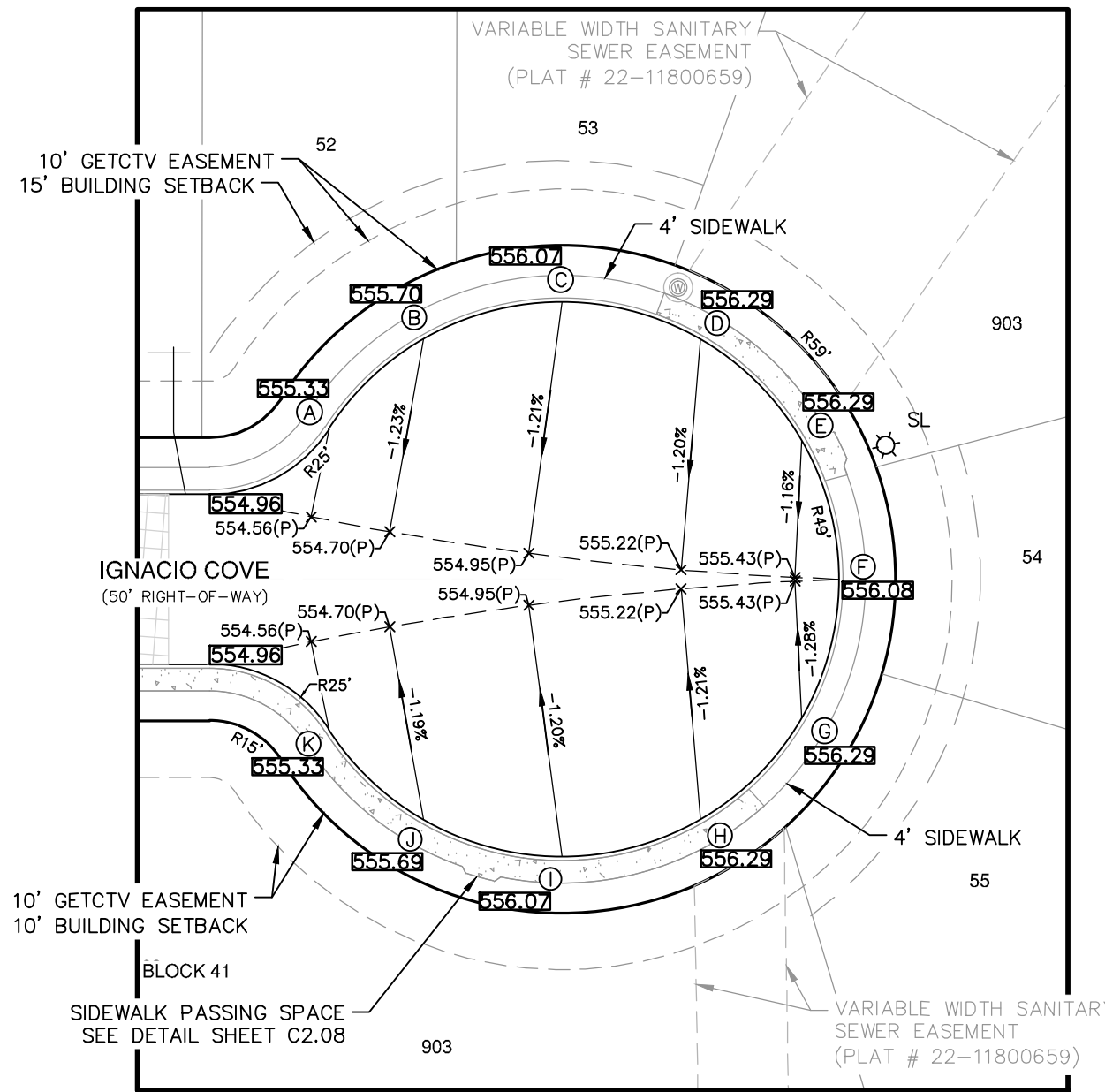
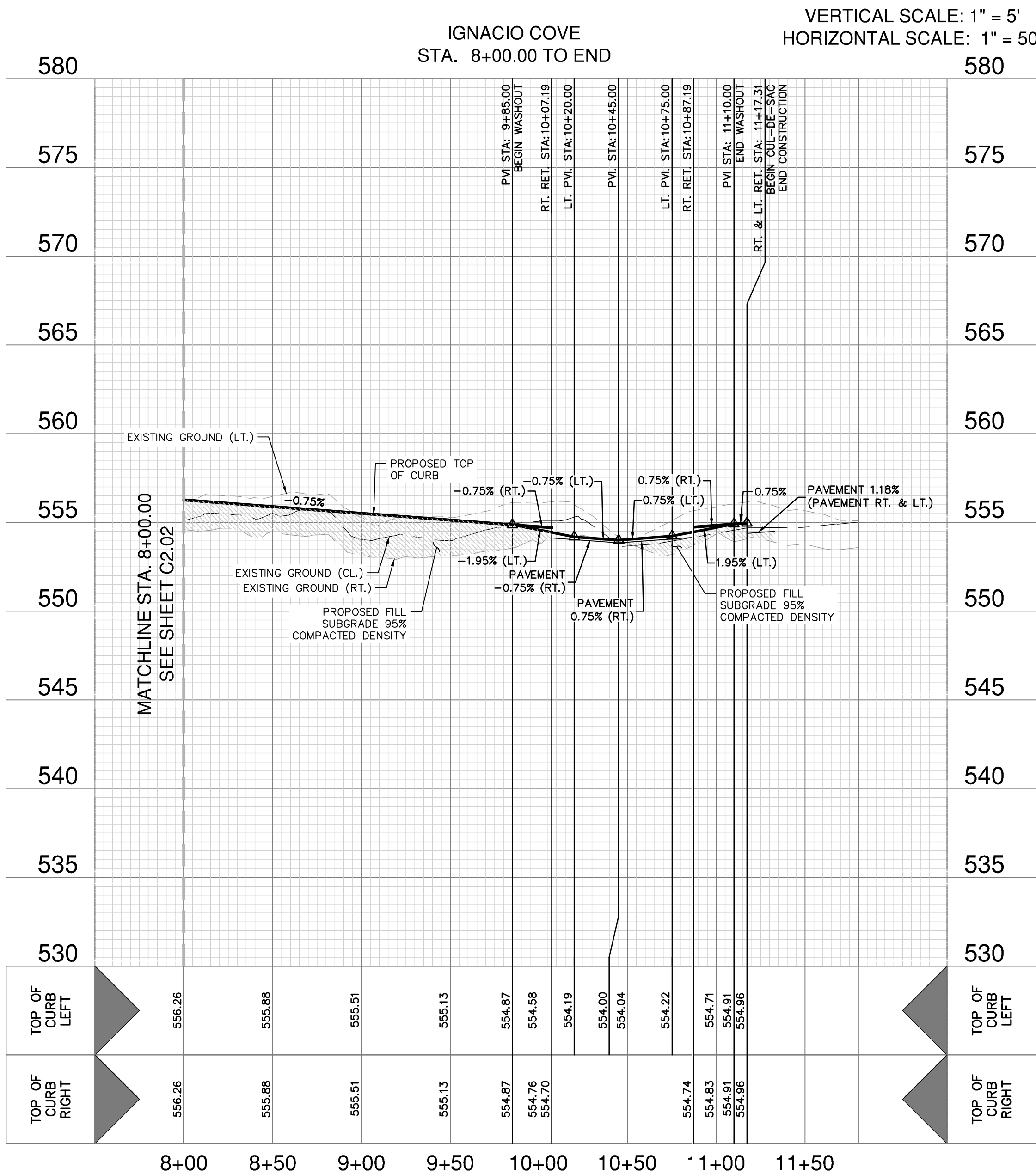
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STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	→
EXISTING CONTOUR	- - - 970
WHEELCHAIR RAMP	⊕
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
VEHICULAR NON ACCESS EASEMENT	WNAE
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	857.00(P) x
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	857.00(P) x
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	857.00(P) x
DRIVEWAY	---
EXISTING WELL	⊙



DETAIL "A"
SCALE: 1" = 30'

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PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

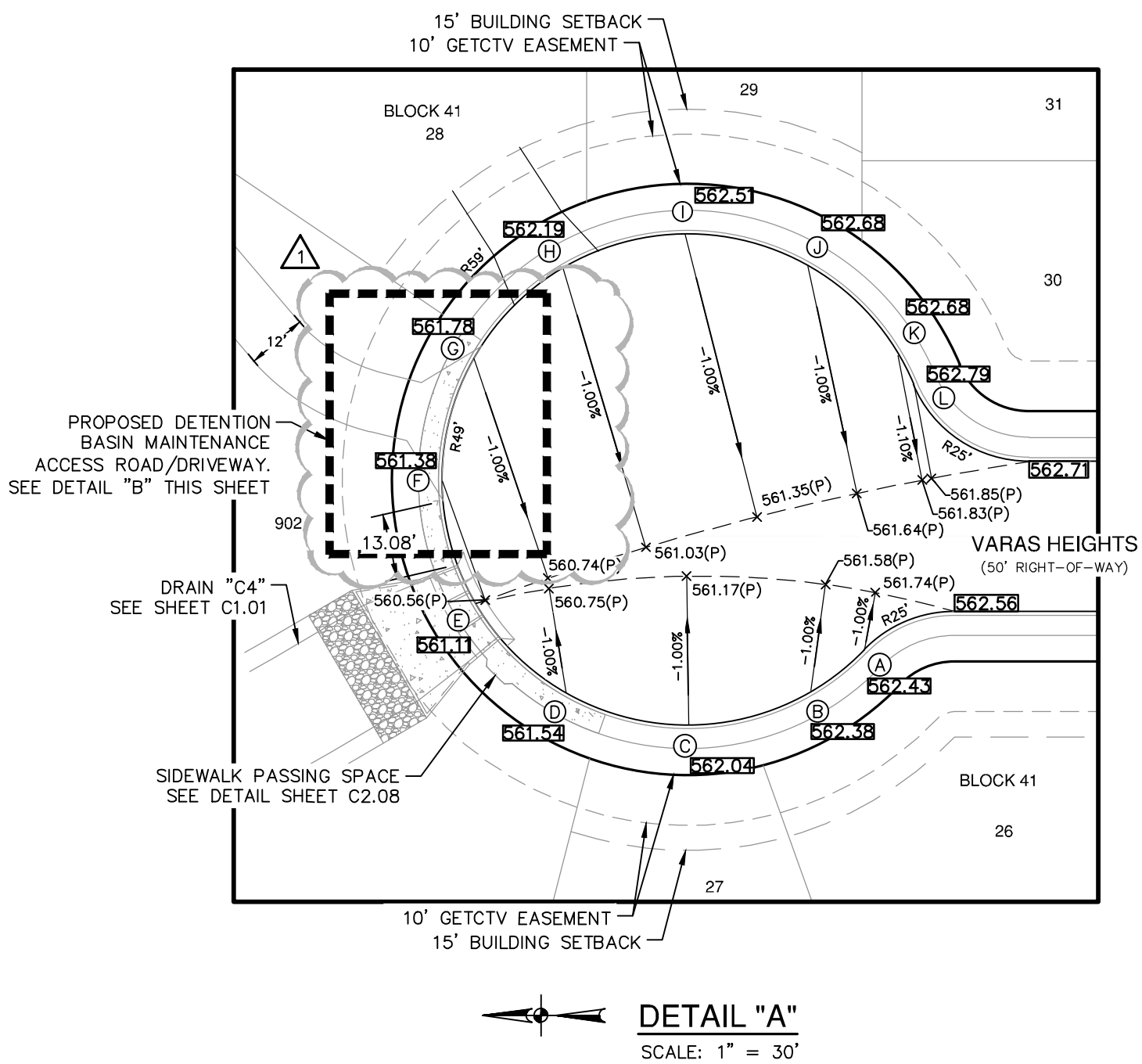
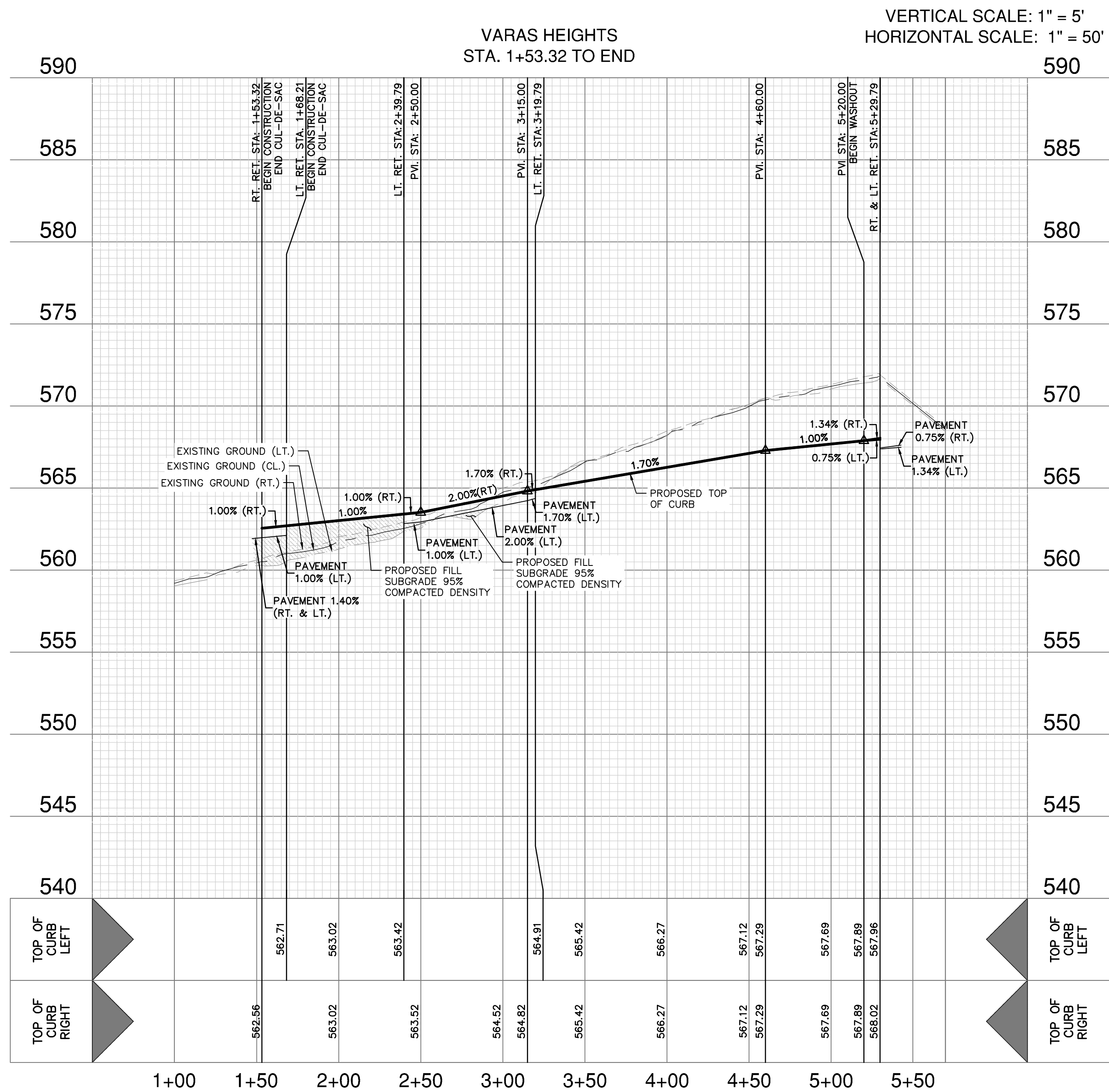
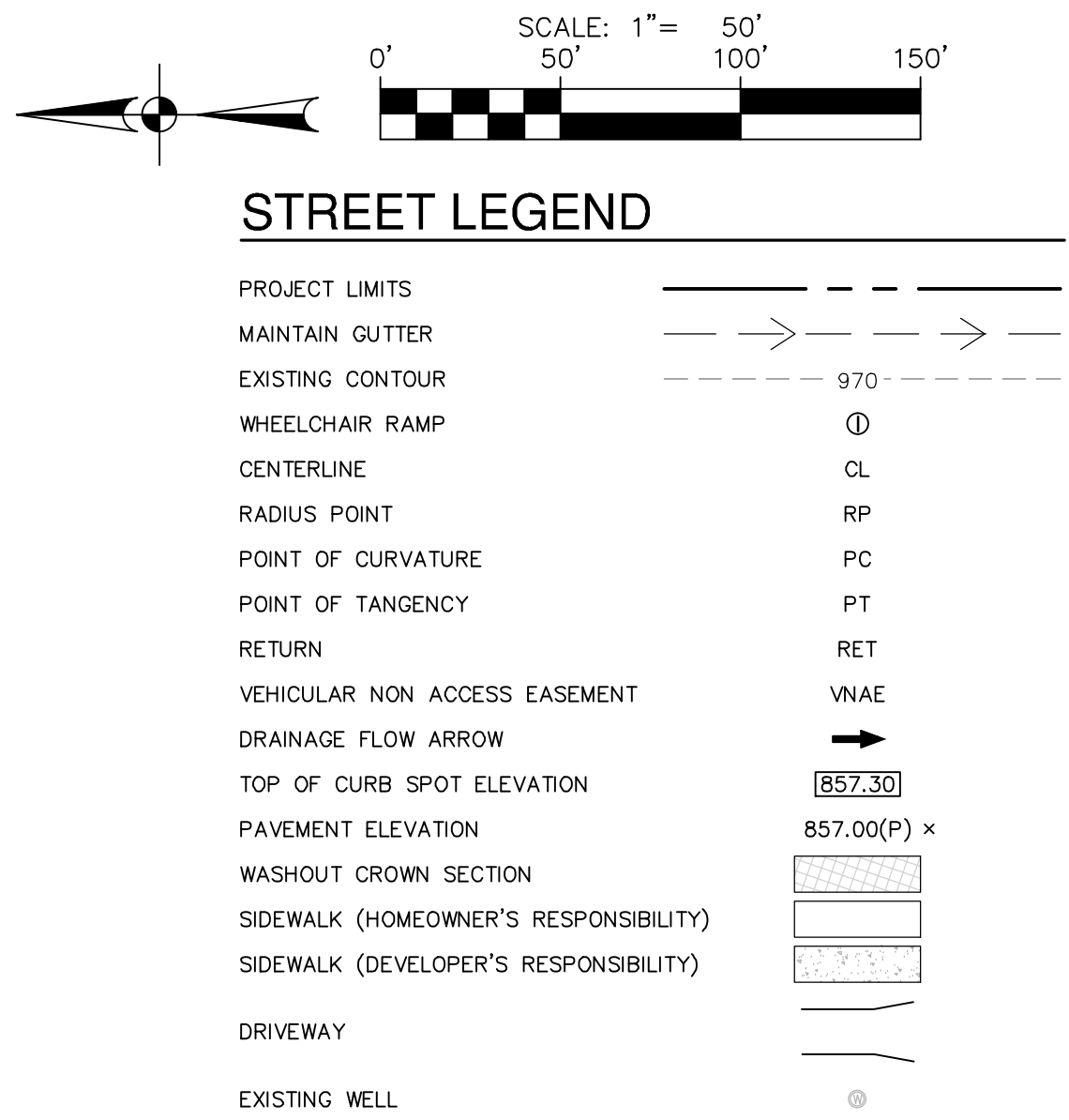
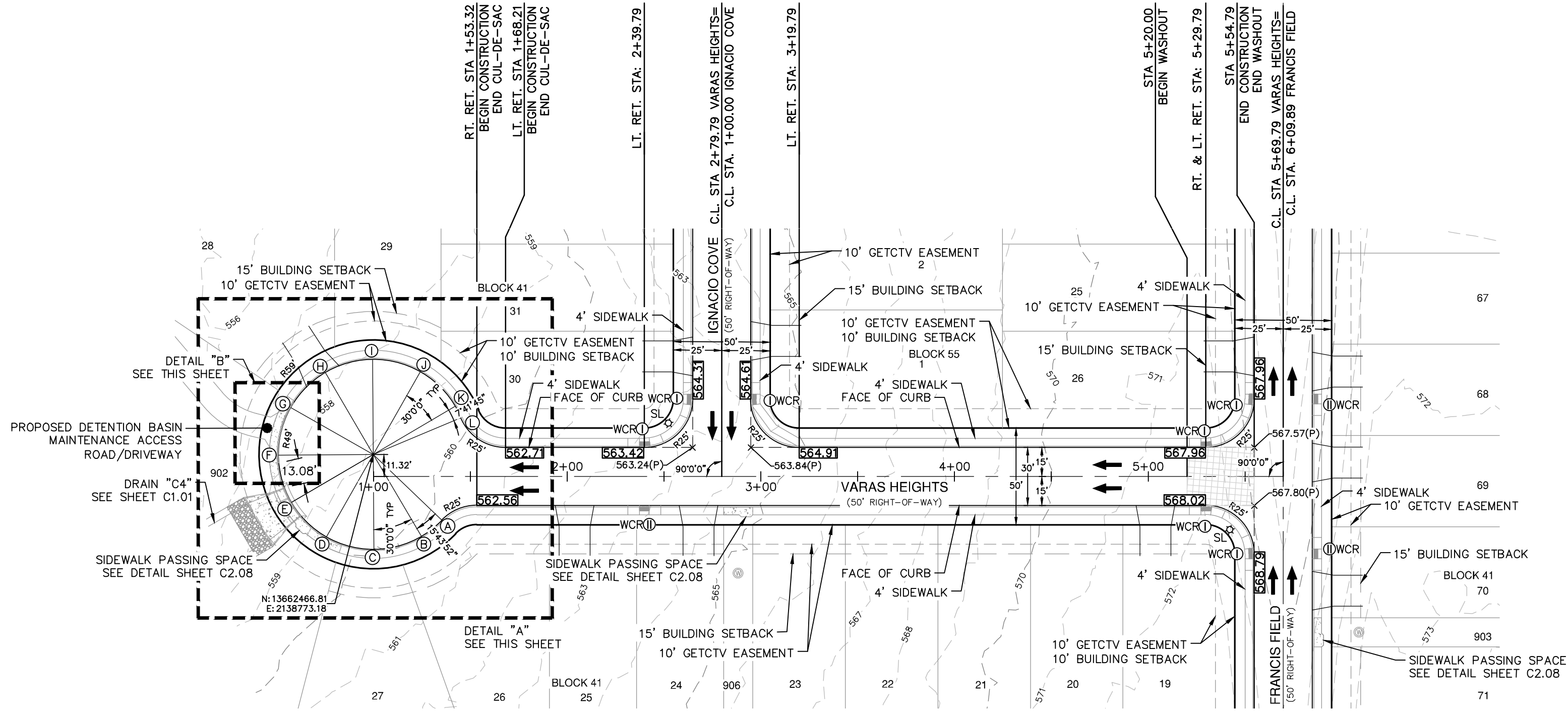
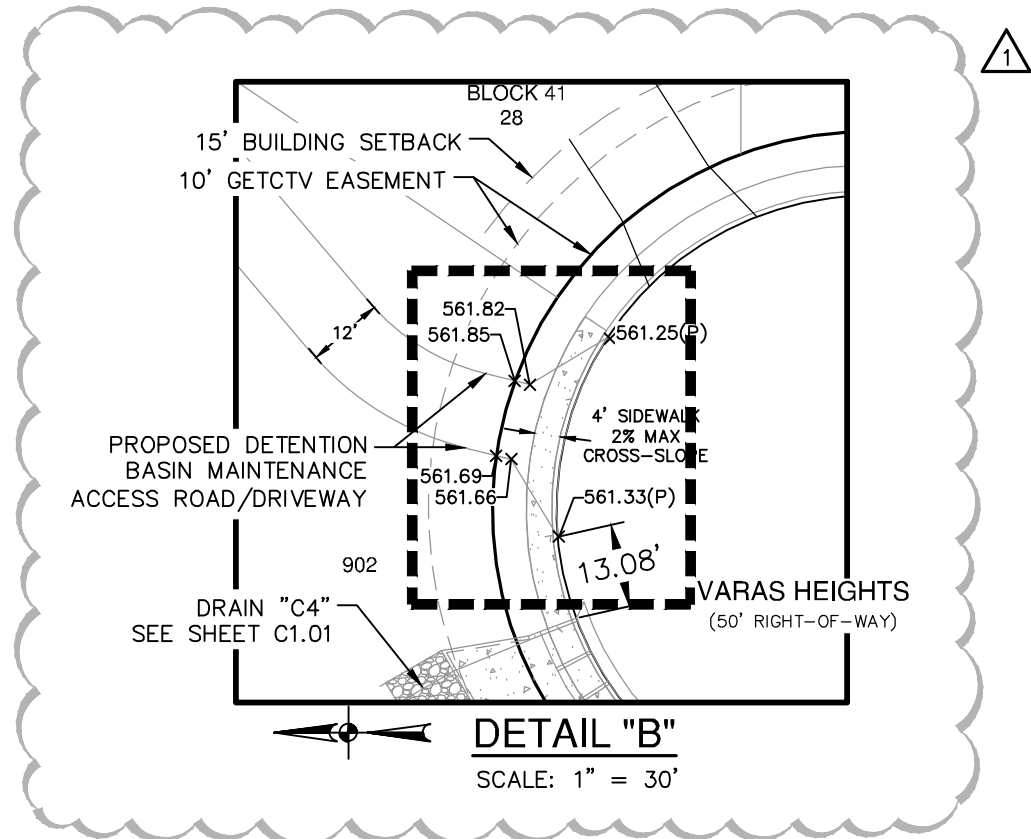
ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
IGNACIO COVE PLAN & PROFILE
STA. 8+00.00 TO END

PLAT NO. **23-11800230**
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET **C2.03**

NO.	REVISION	DATE
1	REVISED VIEWPORT BLK #	01/25/24
	ADDED LOT NUMBER	

Date: Jan 26, 2024 9:26am User: jbrathongratt
File: P:\12632\13 Espada Chd\ST1263213 - Varas.swg

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**PAPE-DAWSON
ENGINEERS**

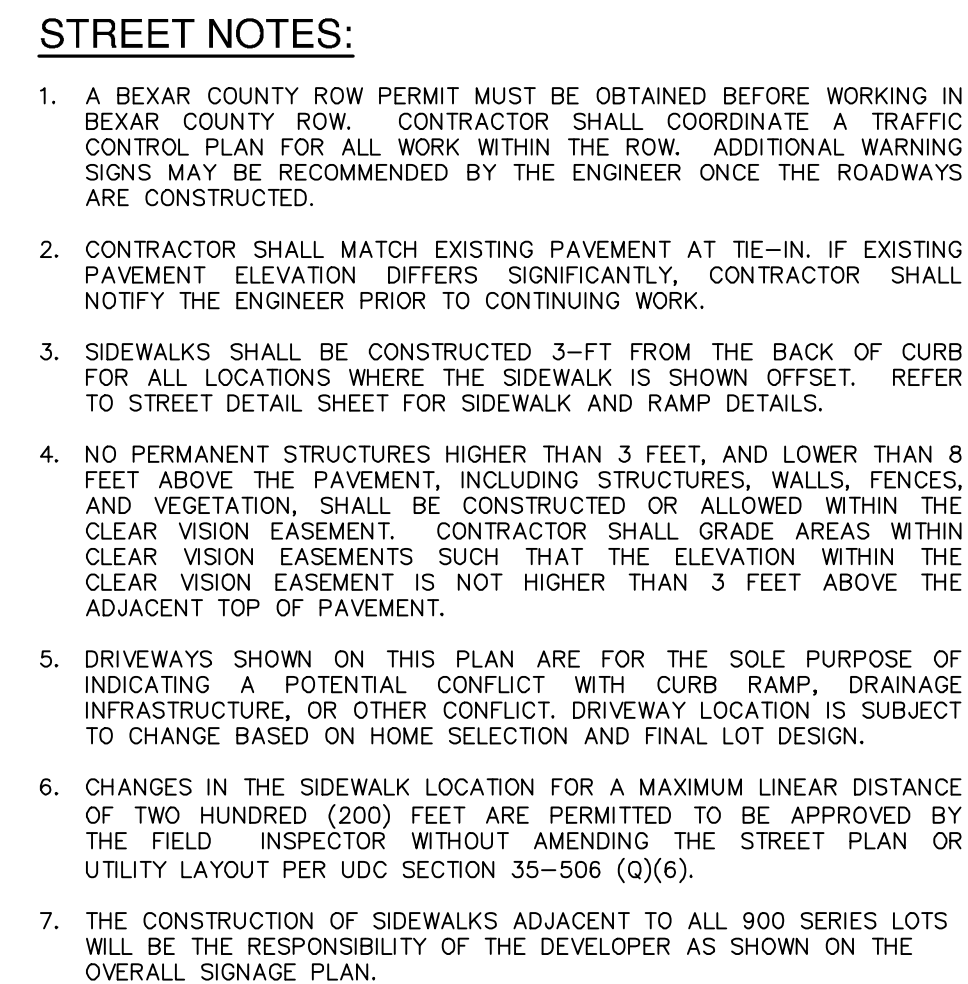
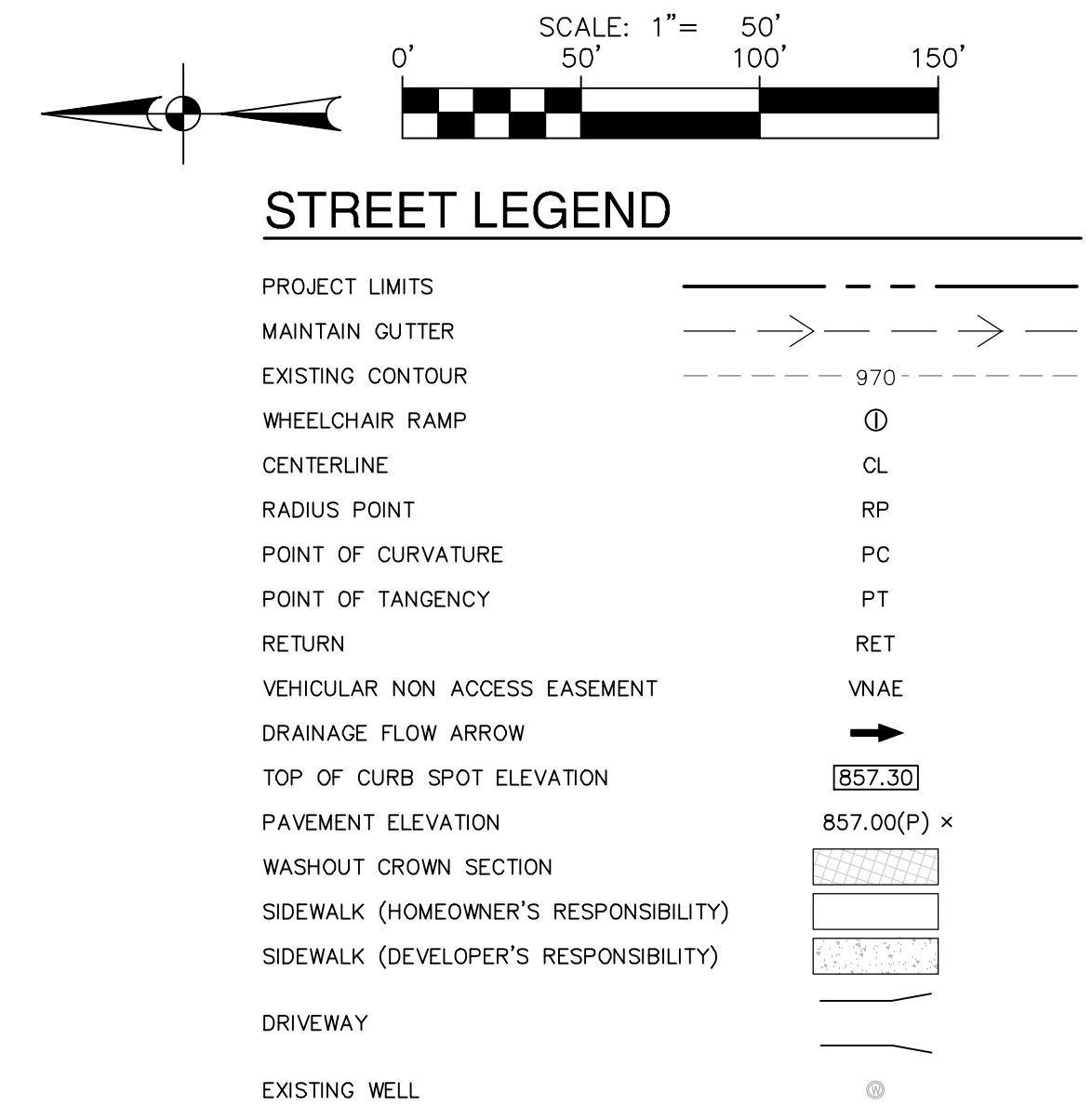
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
**VARAS HEIGHTS PLAN &
PROFILE STA. 1+53.32 TO END**

PLAT NO. **23-11800230**
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET **C2.04**

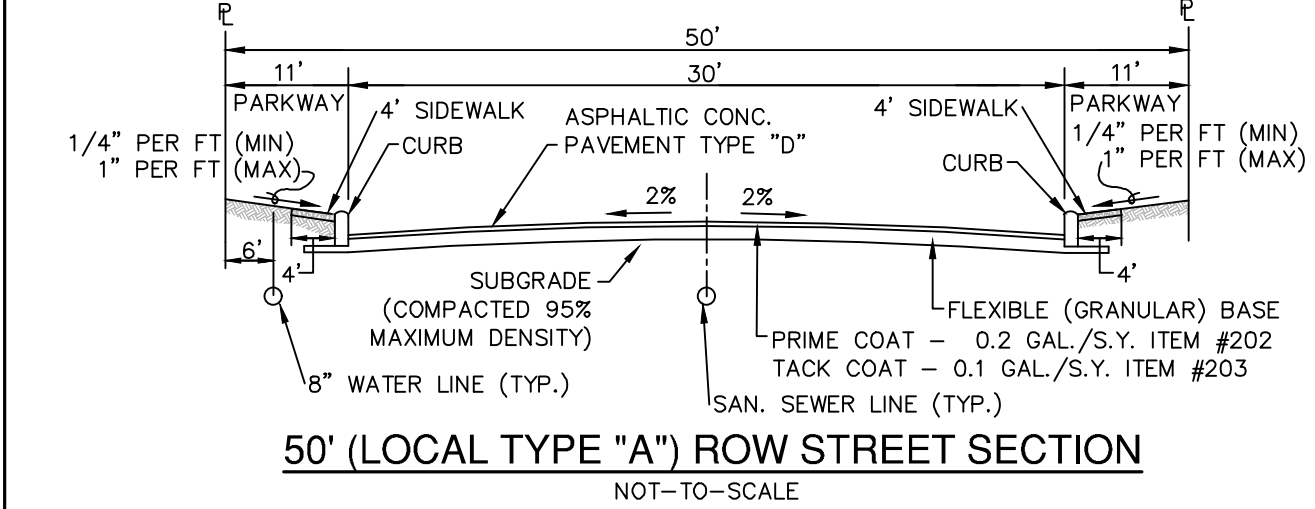
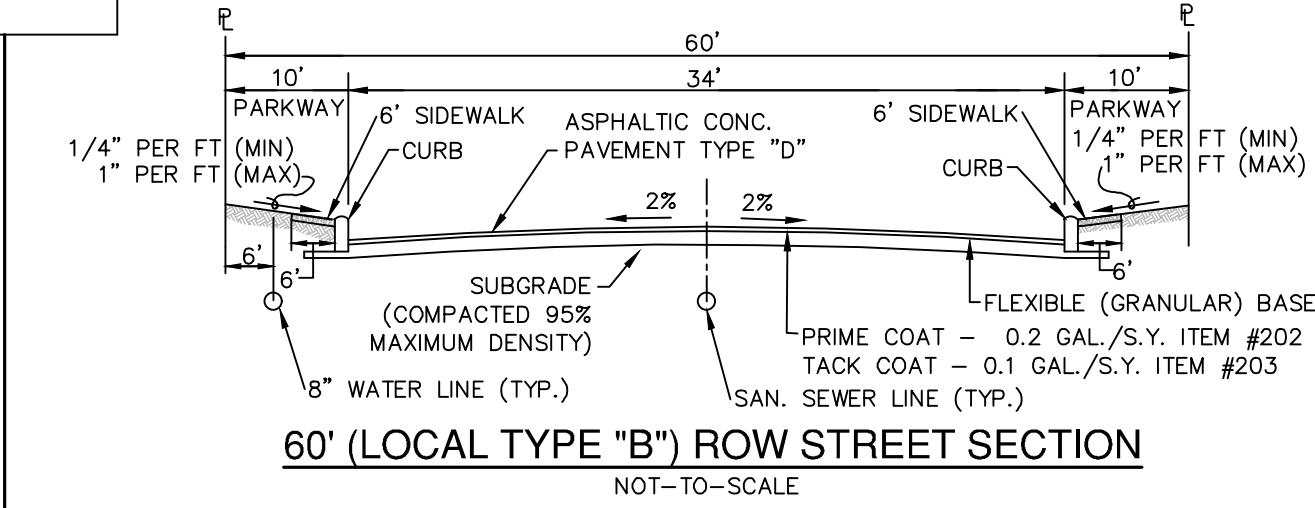
NO.	REVISION	DATE
1	REVISED DETAIL BOX	01/25/24





Date: Nov 03, 2023, 11:50am User: ID: kcmachmo
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Plot: P:\12632\12632.ctb

PAVEMENT SECTION DETAIL									
STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	TYPE "B" HMAC	GRANULAR BASE COURSE	CEMENT TREATED SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL NUMBER
CONTACT STATION (LOCAL B)	1+69.20 TO 4+21.64	2"	2"	2.5"	17.5"	6"	NO	1.8	2(.44) = .88 2(.44) = .88 2.5(.38) = .95 17.5(.14) = 2.45
CONTACT STATION (LOCAL A)	4+21.64 TO END	3"	-	-	12"	6"	NO	1.8	3(.44) = 1.32 12(.14) = 1.68
FRANCIS FIELD	2+06.03 TO END	3"	-	-	12"	6"	NO	1.8	3(.44) = 1.32 12(.14) = 1.68
IGNACIO COVE	1+15.00 TO END	3"	-	-	12"	6"	NO	1.8	3(.44) = 1.32 12(.14) = 1.68
VARAS HEIGHTS	1+53.32 TO END	3"	-	-	12"	6"	NO	1.8	3(.44) = 1.32 12(.14) = 1.68

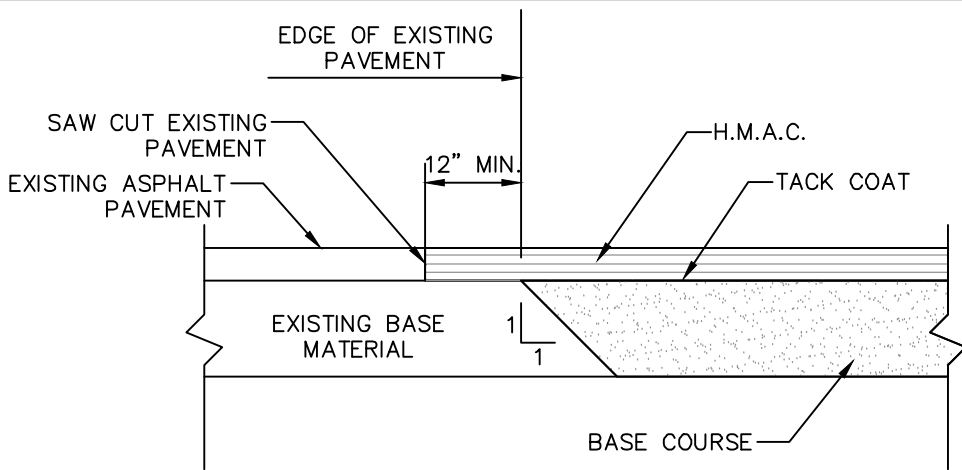


GENERAL NOTES:

- CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT PREPARED BY TTL DATED **NOVEMBER 2, 2023**.
- 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 CEMENT STABILIZATION IS REQUIRED.
- GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
- THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- EACH LIFT OF SOIL SHALL BE MOISTURE CONDITIONED BETWEEN MINUS TWO (-2) AND PLUS THREE (+3) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY.
- 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.
- UNDERCUT SOFT, WEAK, AND UNSTABLE SOILS BY EXCAVATING BELOW SUBGRADE LEVEL TO EXPOSE STABLE SOILS. THE EXCAVATED SOIL CAN BE USED TO RESTORE THE EXCAVATION SUBGRADE, PROVIDED THAT THE SOILS ARE RELATIVELY FREE AND CLEAN OF DELETERIOUS MATERIAL OR MATERIALS EXCEEDING 3 INCHES IN MAXIMUM DIMENSION. THE EXCAVATED SOIL, OR IMPORTED FILL SOIL, SHALL BE PLACED IN MAXIMUM 6-INCH COMPACTED LIFTS. EACH LIFT OF SOIL SHALL BE MOISTURE CONDITIONED BETWEEN PLUS OR MINUS TWO (±2) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH THE STANDARD COMPACTION EFFORT (ASTM D 698). IF UNDERCUTTING DEEPER THAN ABOUT 3 FEET IS NEEDED, CONTACT TTL.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.
- SOIL SUBGRADE AREAS REQUIRING FILL PLACEMENT SHOULD BE SCARIFIED TO A DEPTH OF ABOUT EIGHT (8) INCHES AND MOISTURE CONDITIONED BETWEEN PLUS OF MINUS TWO (±2) POINTS OF THE OPTIMUM MOISTURE CONTENT. THE MOISTURE-CONDITIONED SUBGRADE SHOULD THEN BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D 698. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED JUST PRIOR TO FILL PLACEMENT SO THE SUBGRADE MAINTAINS ITS COMPACTION MOISTURE LEVELS AND DOES NOT DRY OUT.
- A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN THE BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

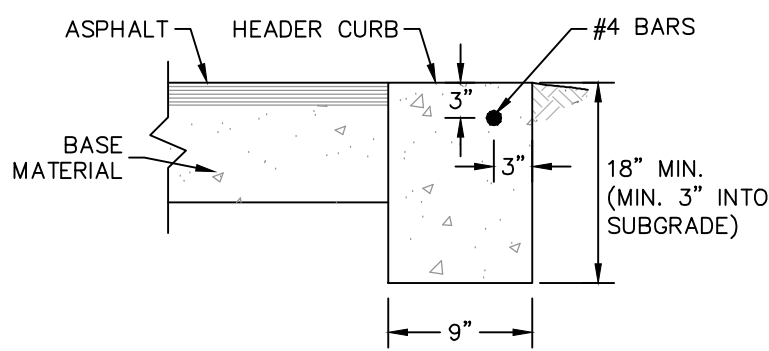
STREET SUBGRADE NOTES:

- IF THE STREET SUBGRADE PLASTICITY INDEX VALUE IS GREATER THAN 20, SUBGRADE TREATMENT IS NEEDED AS PER CITY OF SAN ANTONIO REQUIREMENTS.
- IF THE SUBGRADE PLASTICITY INDEX VALUE IS 20 OR LESS, SUBGRADE TREATMENT IS NOT NEEDED. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED (COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MINIMUM MOISTURE CONTENT OF OPTIMUM PLUS 2 PERCENT (TEX114E)).
- THE SUBGRADE SHOULD BE TREATED USING A MINIMUM OF 5% PORTLAND CEMENT, BY DRY WEIGHT TO A DEPTH OF 6 INCHES.
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO TREATMENT. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE / RECOMMENDATION WILL BE NEEDED.
- CEMENT APPLICATION RATE OF 28 LBS PER SQ YARD OF SOIL IS RECOMMENDED.
- APPROVED FILL MATERIAL SHOULD BE USED TO RAISE THE GRADE. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH THE MINIMUM CBR VALUE OF 1.8 AND PI NOT MORE THAN 35. CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
- THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE TREATMENT.



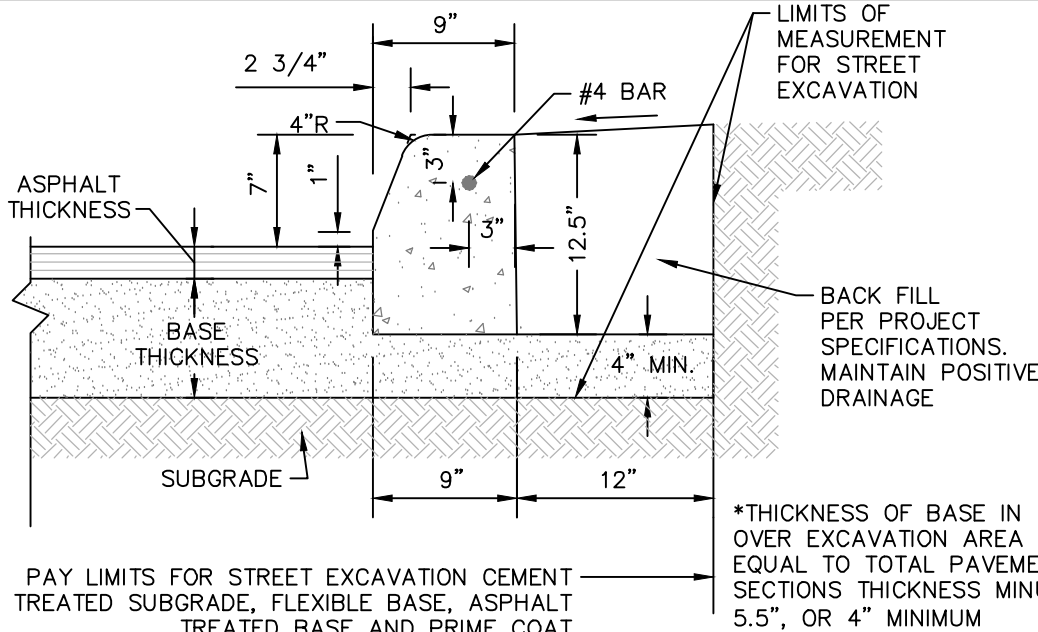
ASPHALT/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE



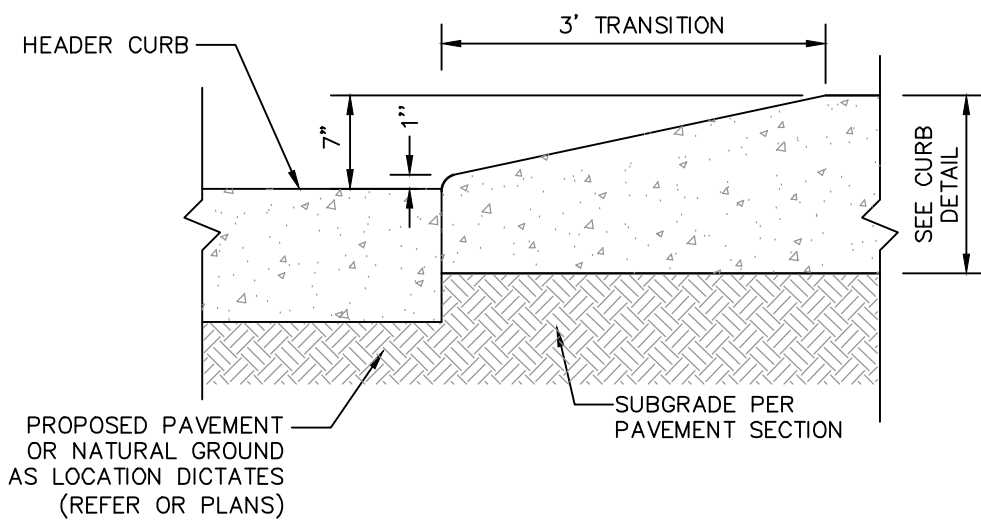
HEADER CURB DETAIL

NOT-TO-SCALE



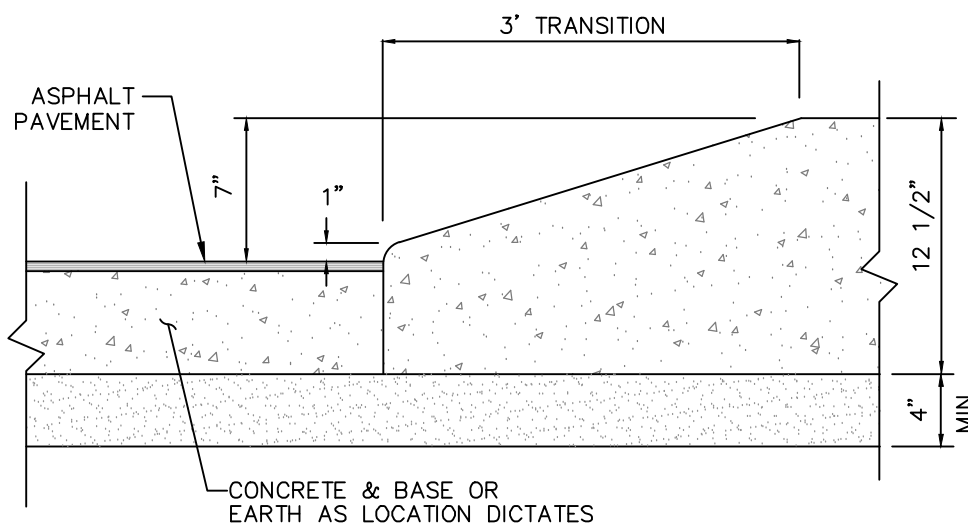
CONCRETE CURB DETAIL

NOT-TO-SCALE



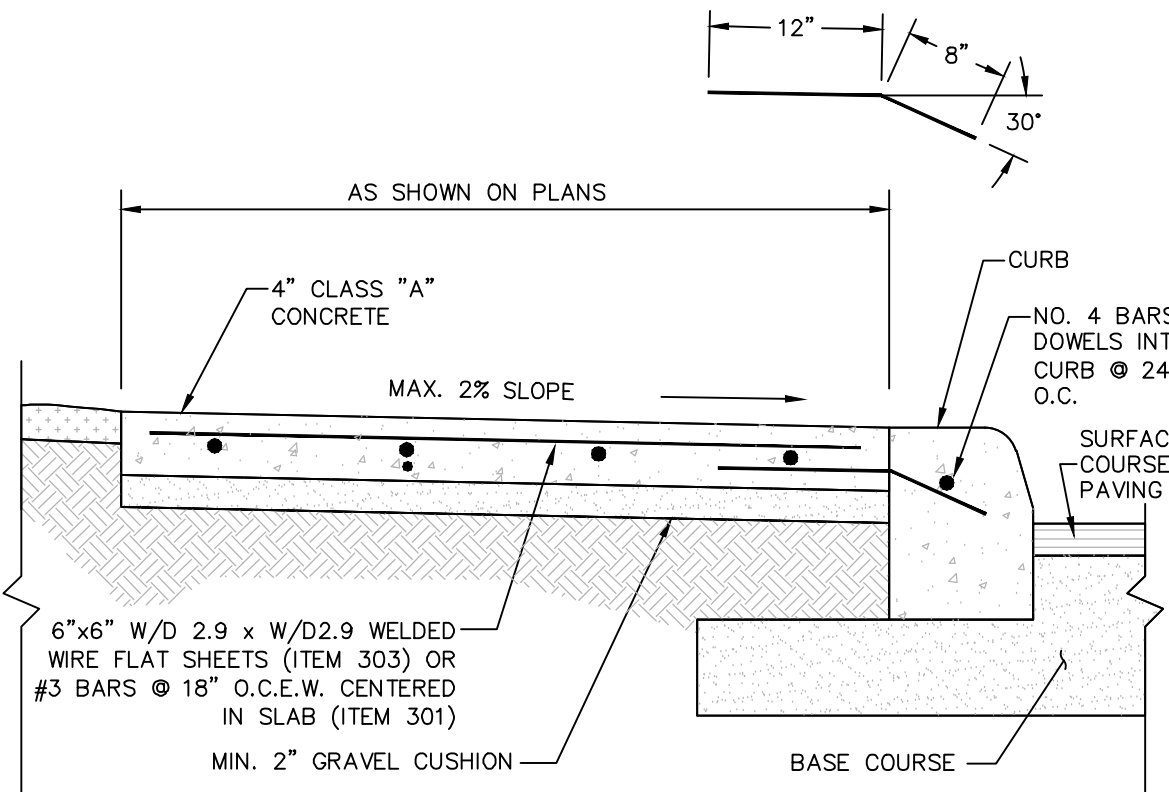
CURB TRANSITION DETAIL (FROM HEADER CURB TO STANDARD CURB)

NOT-TO-SCALE



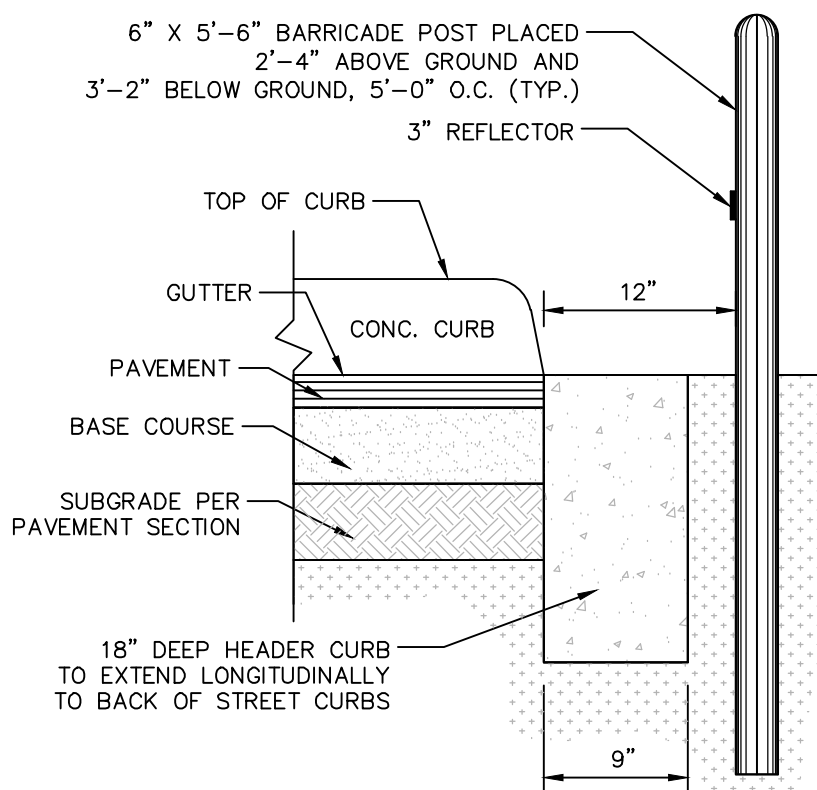
CURB TRANSITION DETAIL (FROM PAVEMENT TO STANDARD CURB)

NOT-TO-SCALE



SIDEWALK DETAIL

NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL

NOT-TO-SCALE

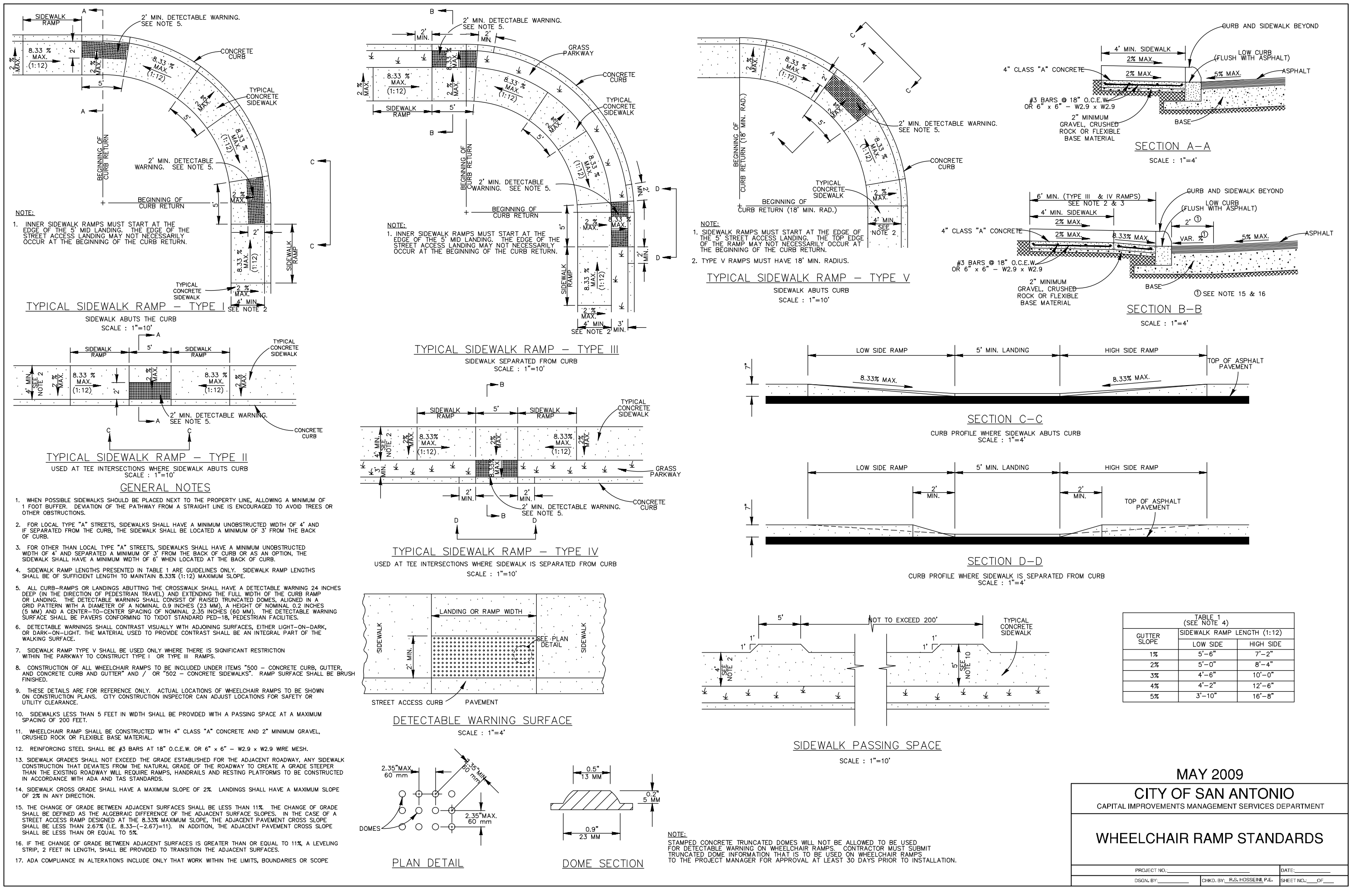
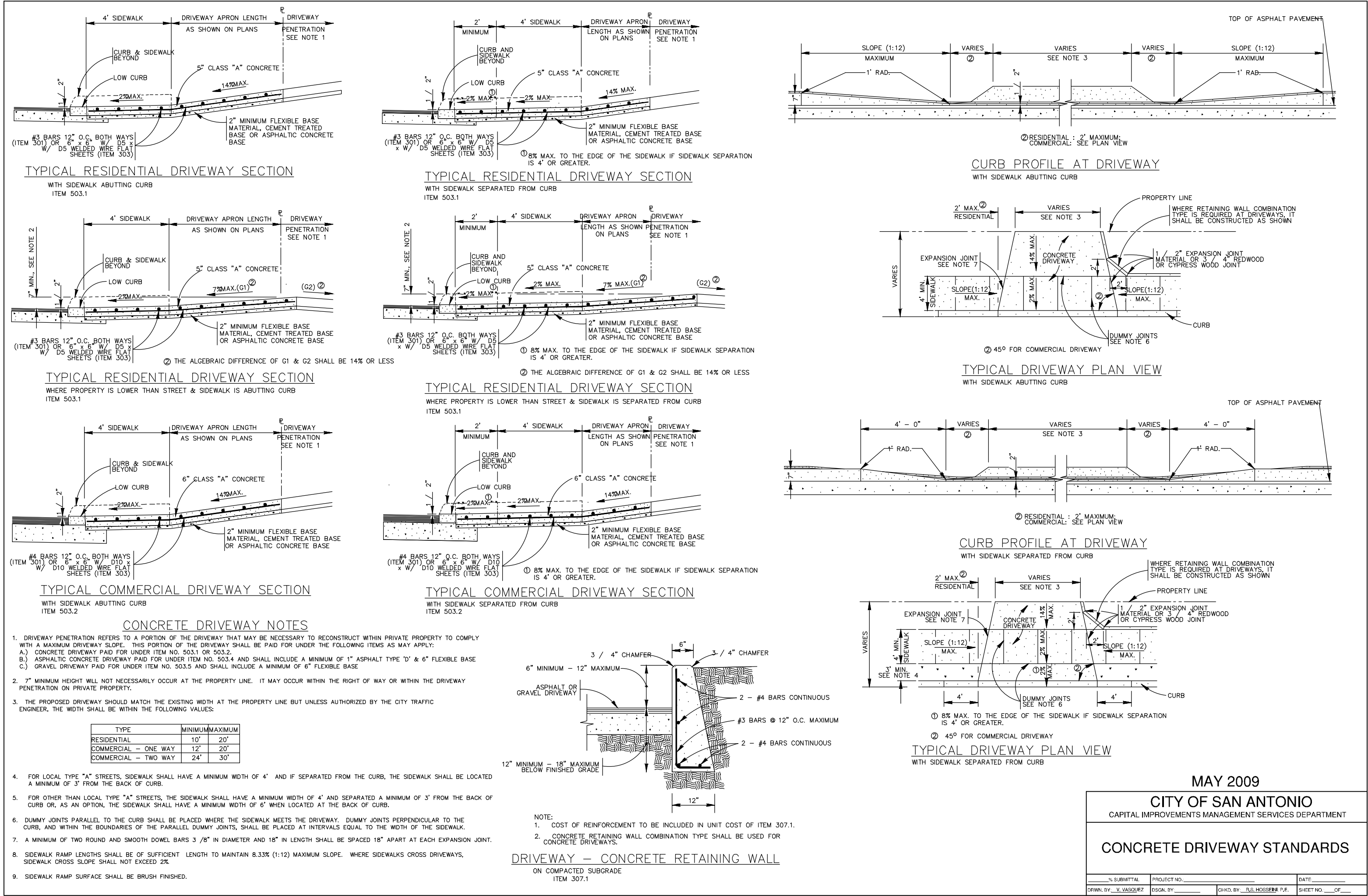
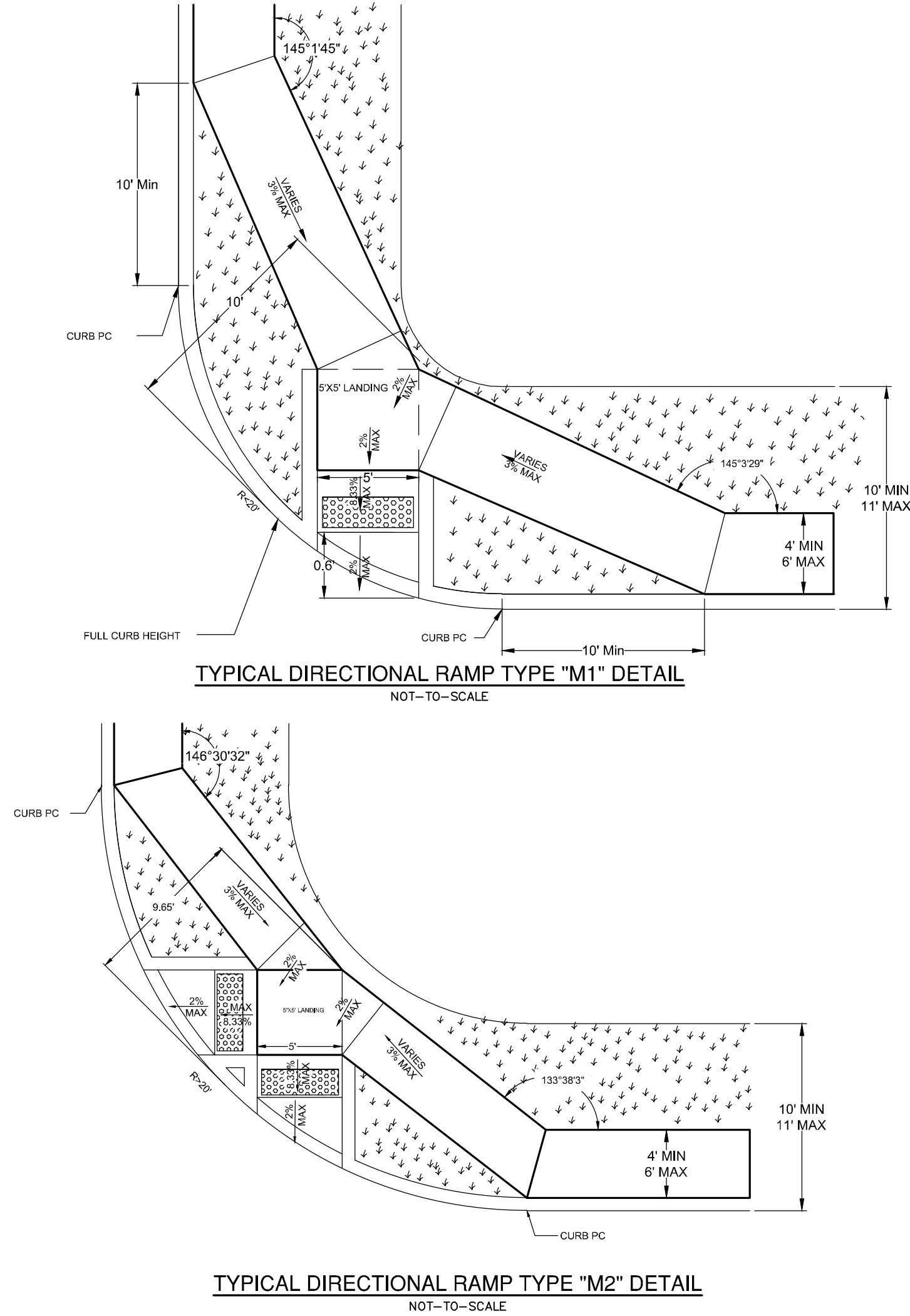
DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

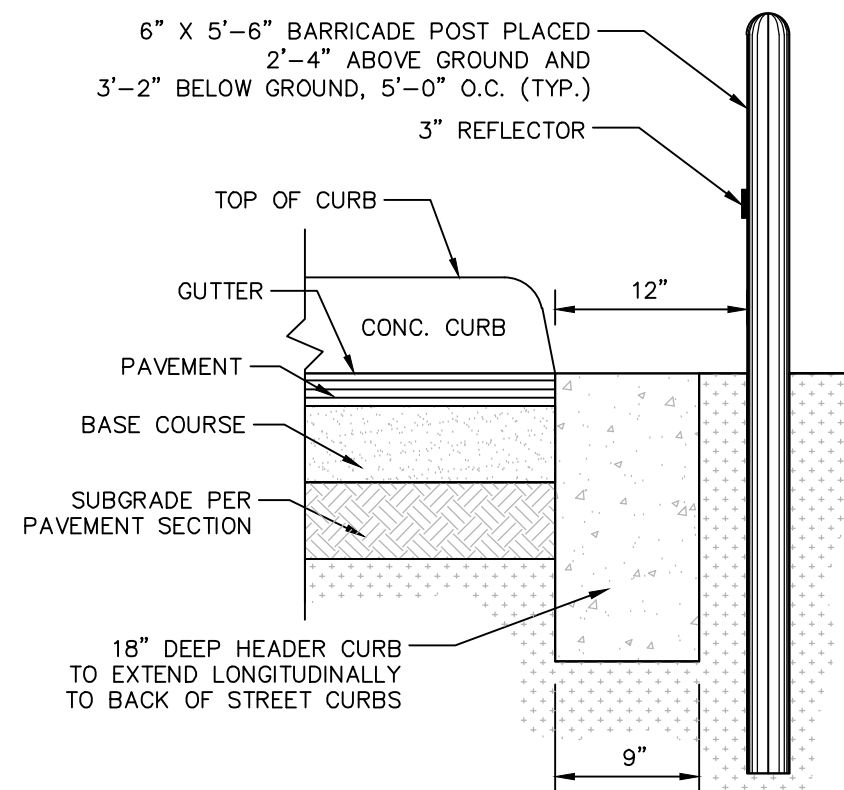
ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
TYPICAL STREET DETAILS

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C2.06

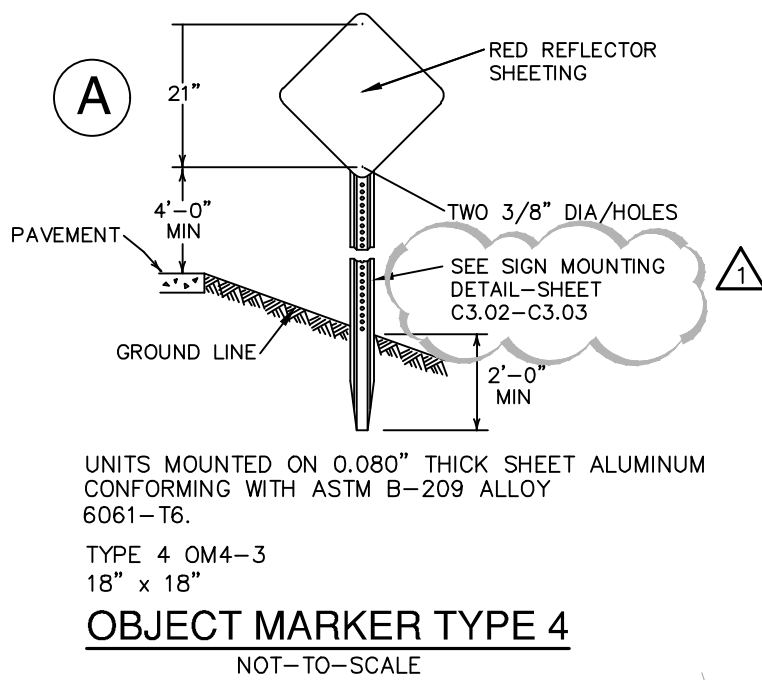


Date: Jan 26, 2024, 6:47am User: JB - jbrathangroff
File: P:\12613\13 Espada Civil\12613.dwg

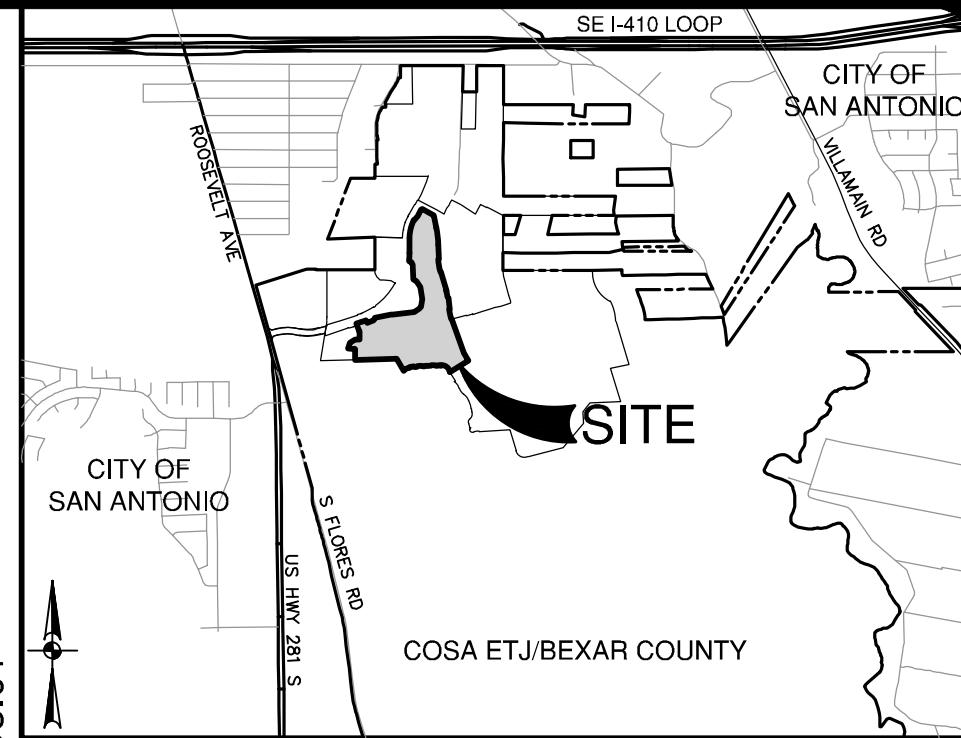
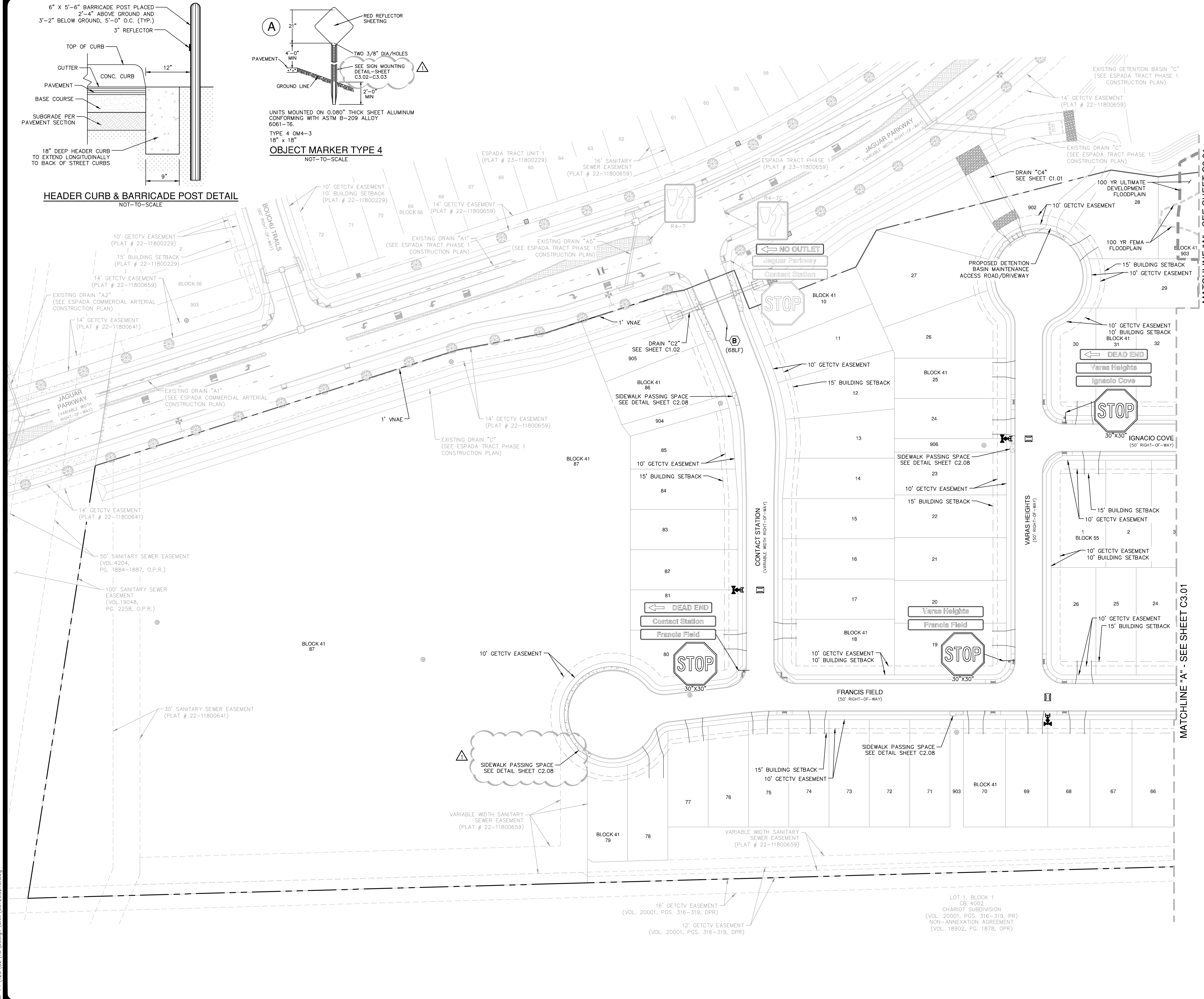
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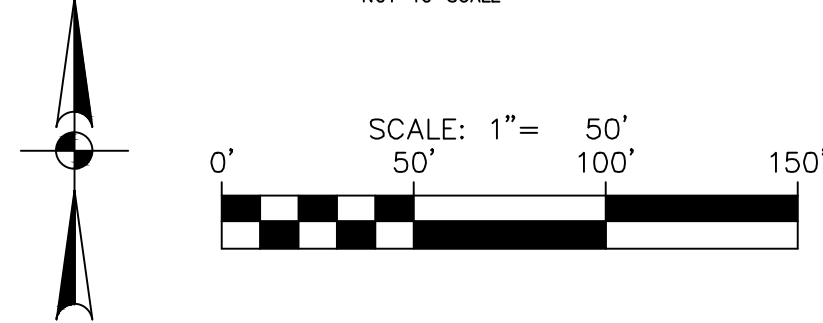
HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE



OBJECT MARKER TYPE 4
NOT-TO-SCALE



LOCATION MAP
NOT-TO-SCALE



SYMBOL	ITEM NUMBER
	UNIT BOUNDARY
	CURB INLET
	PROPOSED DRIVEWAY
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
	EXISTING WELL
	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)
	VEHICULAR NON ACCESS EASEMENT
	STREET SIGN
	STOP
	R1-1 30"X30"
	W14-2A 36"X8"
	W14-1A 36"X8"
	YELLOW DOUBLE 6" SOLID - THERMOPLASTIC WITH TYPE II A-A @ 20' (REFL) PAVEMENT MARKERS

BEXAR COUNTY ROW NOTES:
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.

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

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

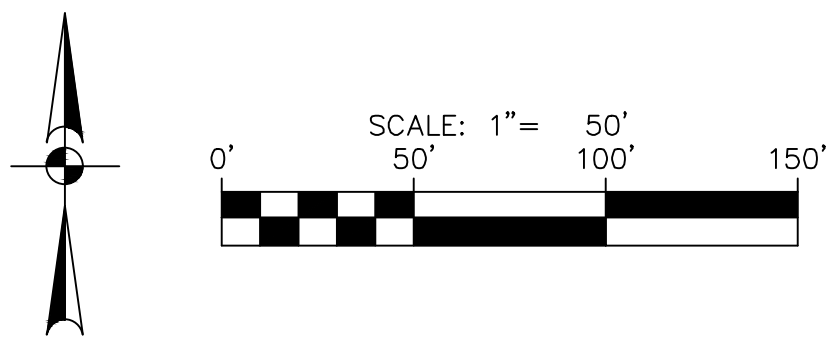
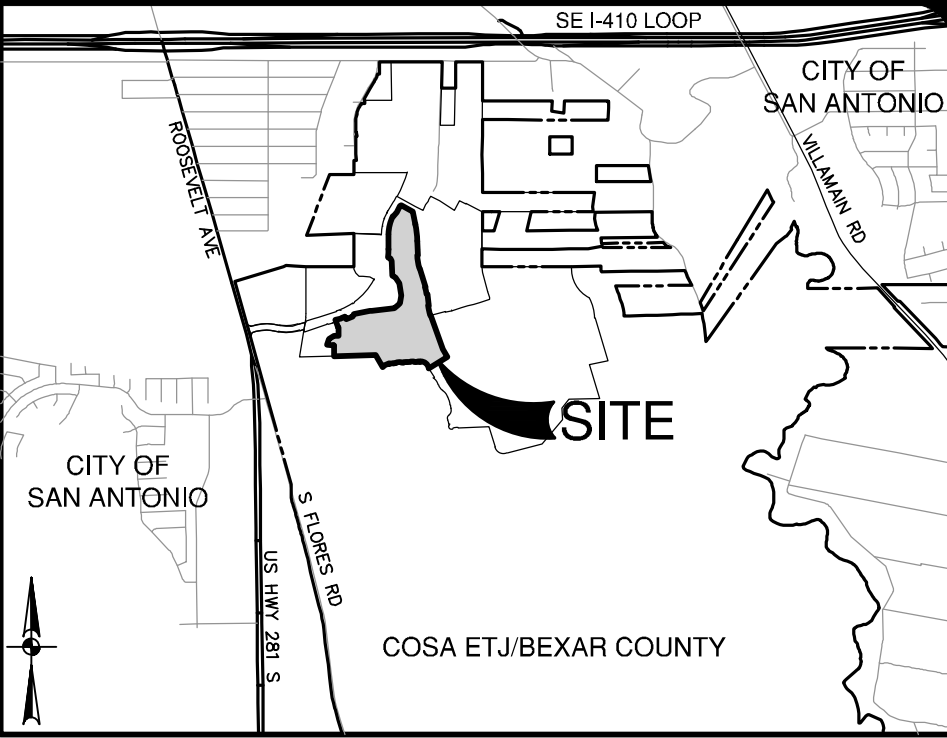
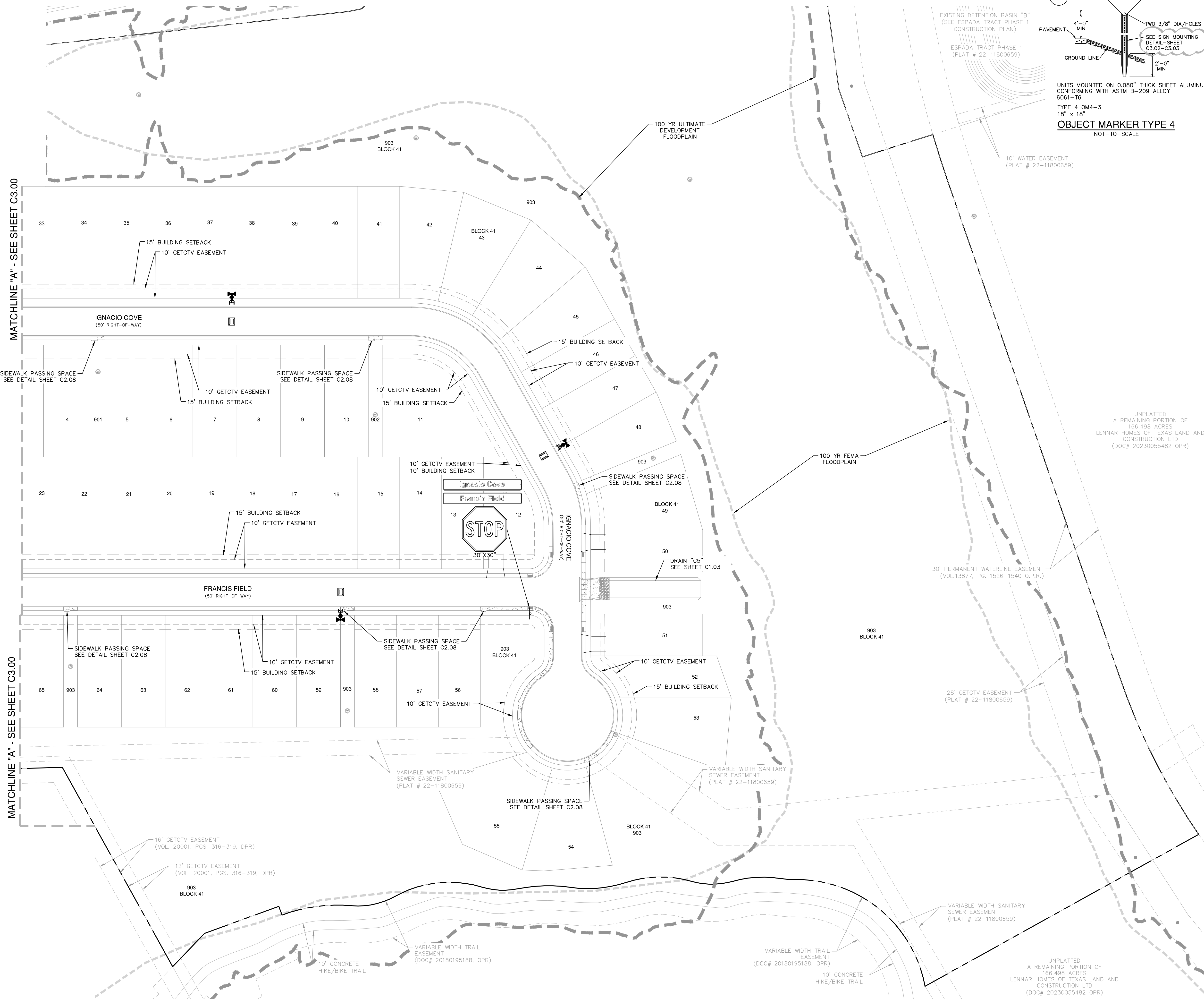
PAPE-DAWSON ENGINEERS
BRUNA F. SPENGLER
127547
PROFESSIONAL ENGINEER
1/25/24

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL SIGNAGE PLAN

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C3.00

Dates: Jan 26, 2024, 6:48am User: JB - JonathanGroff
File: P:\12532\12532113\Design\Civil\25012532113.dwg

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SYMBOL	ITEM NUMBER
	UNIT BOUNDARY
	CURB INLET
	PROPOSED DRIVEWAY
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
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	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)
	VEHICULAR NON ACCESS EASEMENT
	STREET SIGN
	STOP
	NO OUTLET
	DEAD END
	YELLOW DOUBLE 6" SOLID - THERMOPLASTIC WITH TYPE II A-A @ 20' (REFL) PAVEMENT MARKERS

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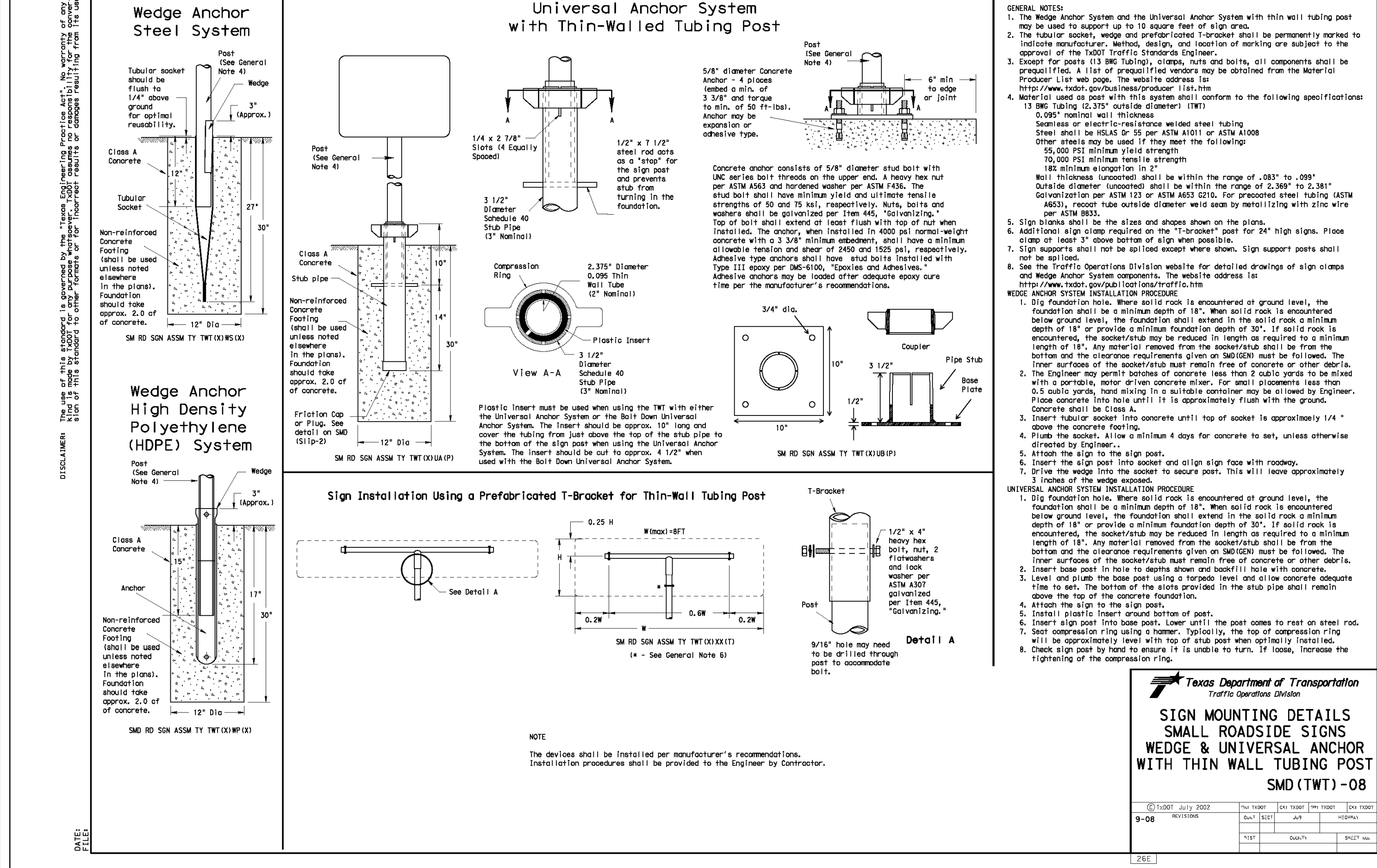
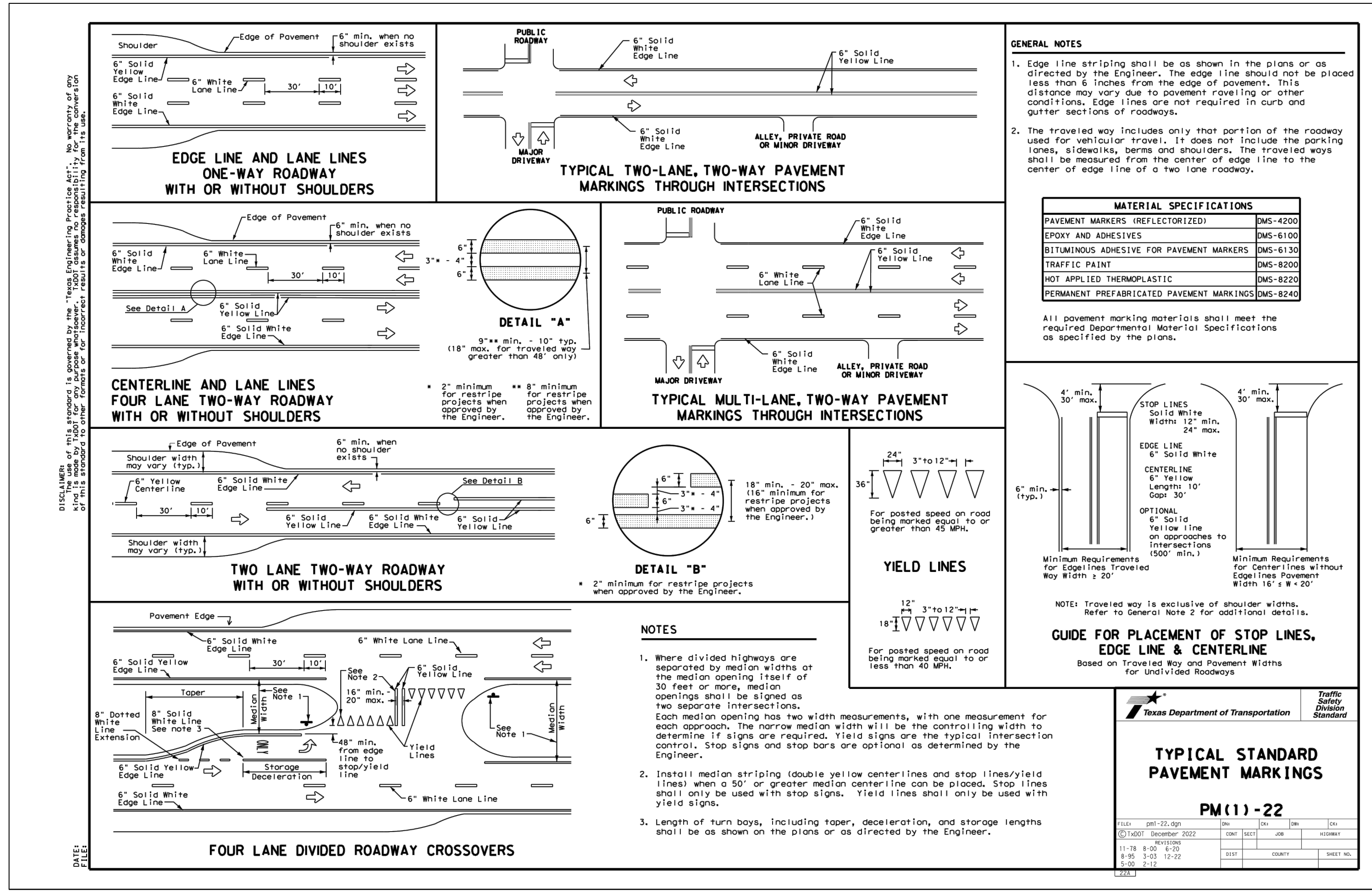
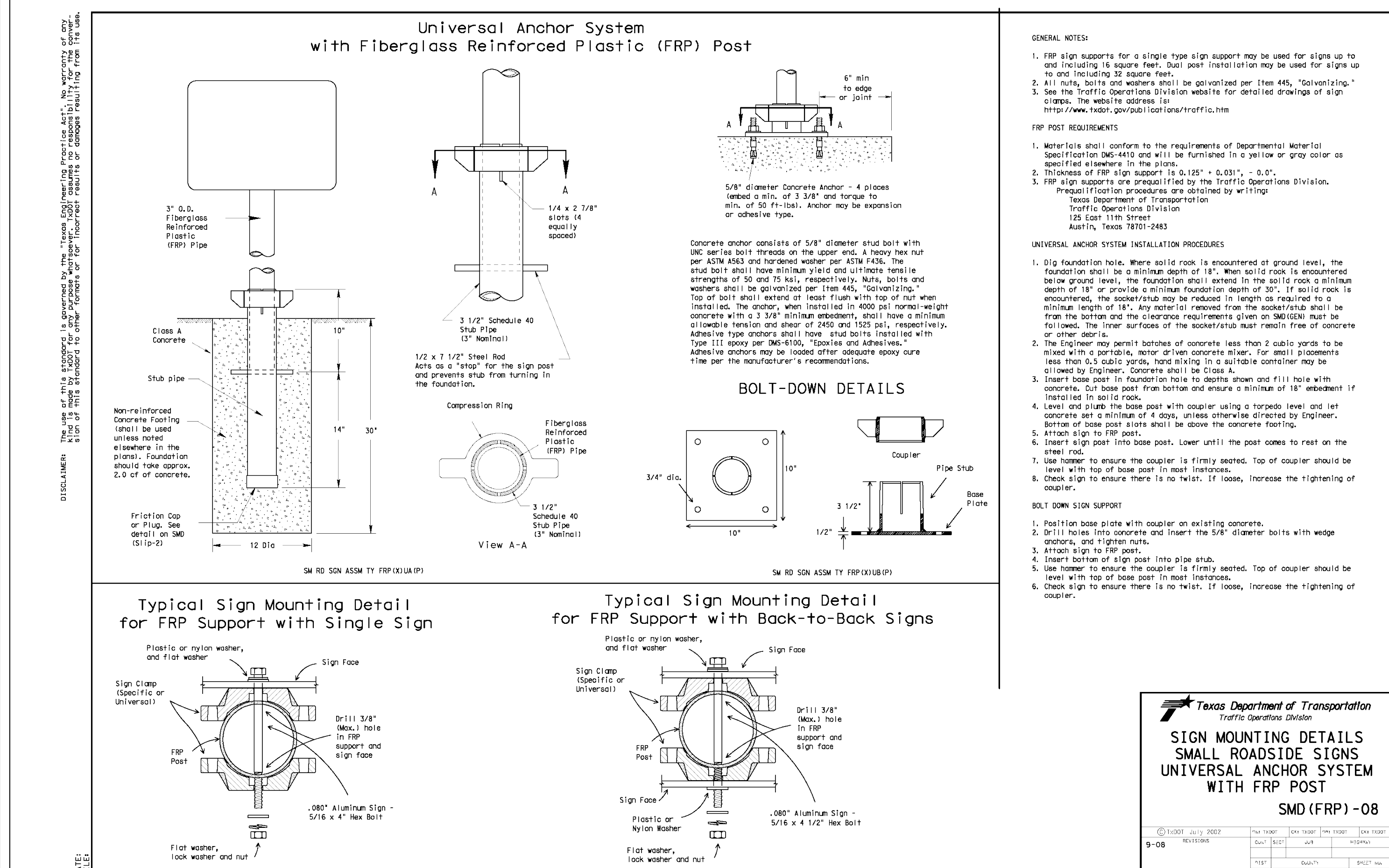
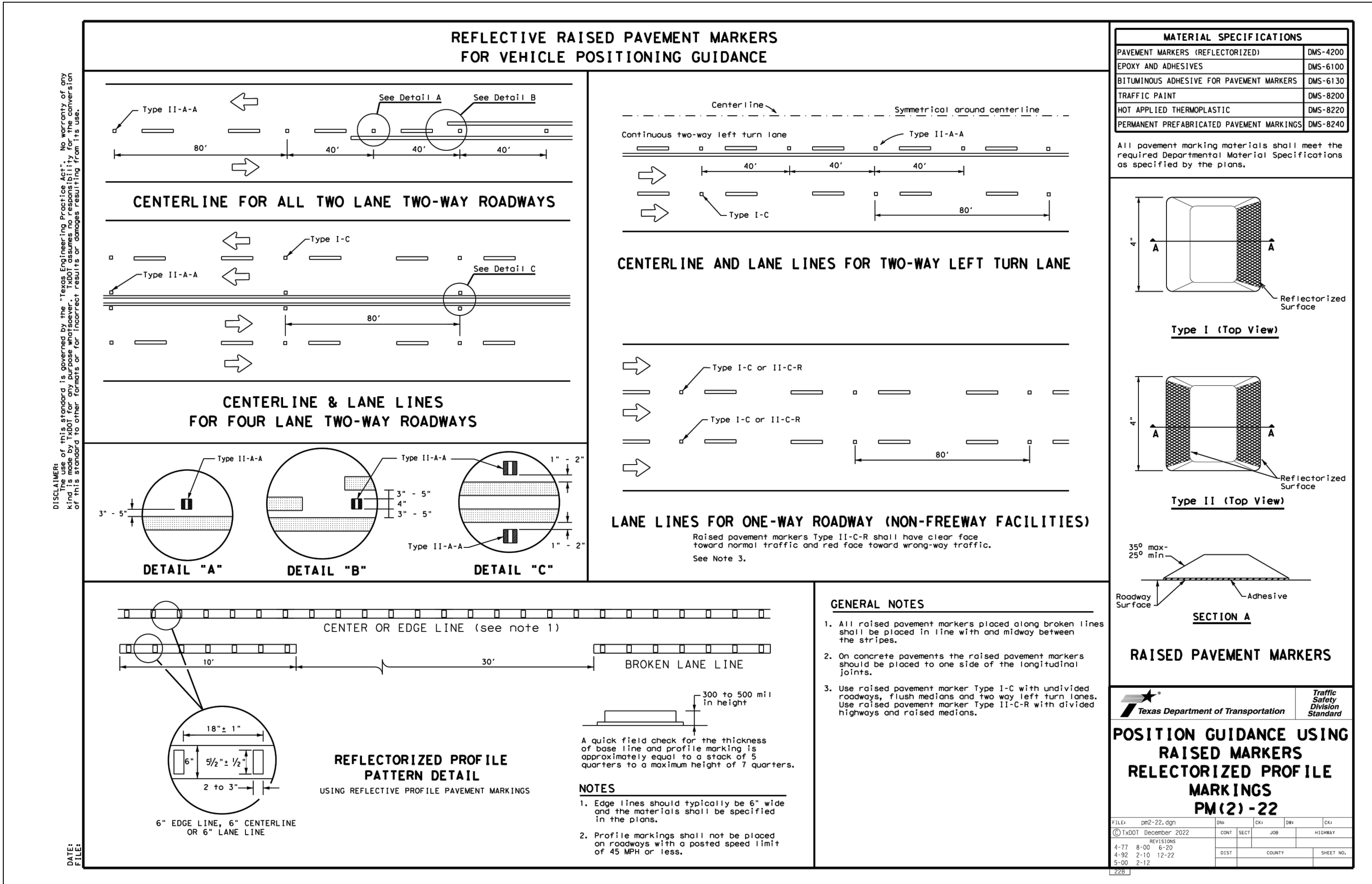
NO.	REVISION	DATE
1	REVISED SHEET # IN DETAIL REMOVED STOP SIGN SIZE	01/25/24



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028860

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL SIGNAGE PLAN

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C3.01



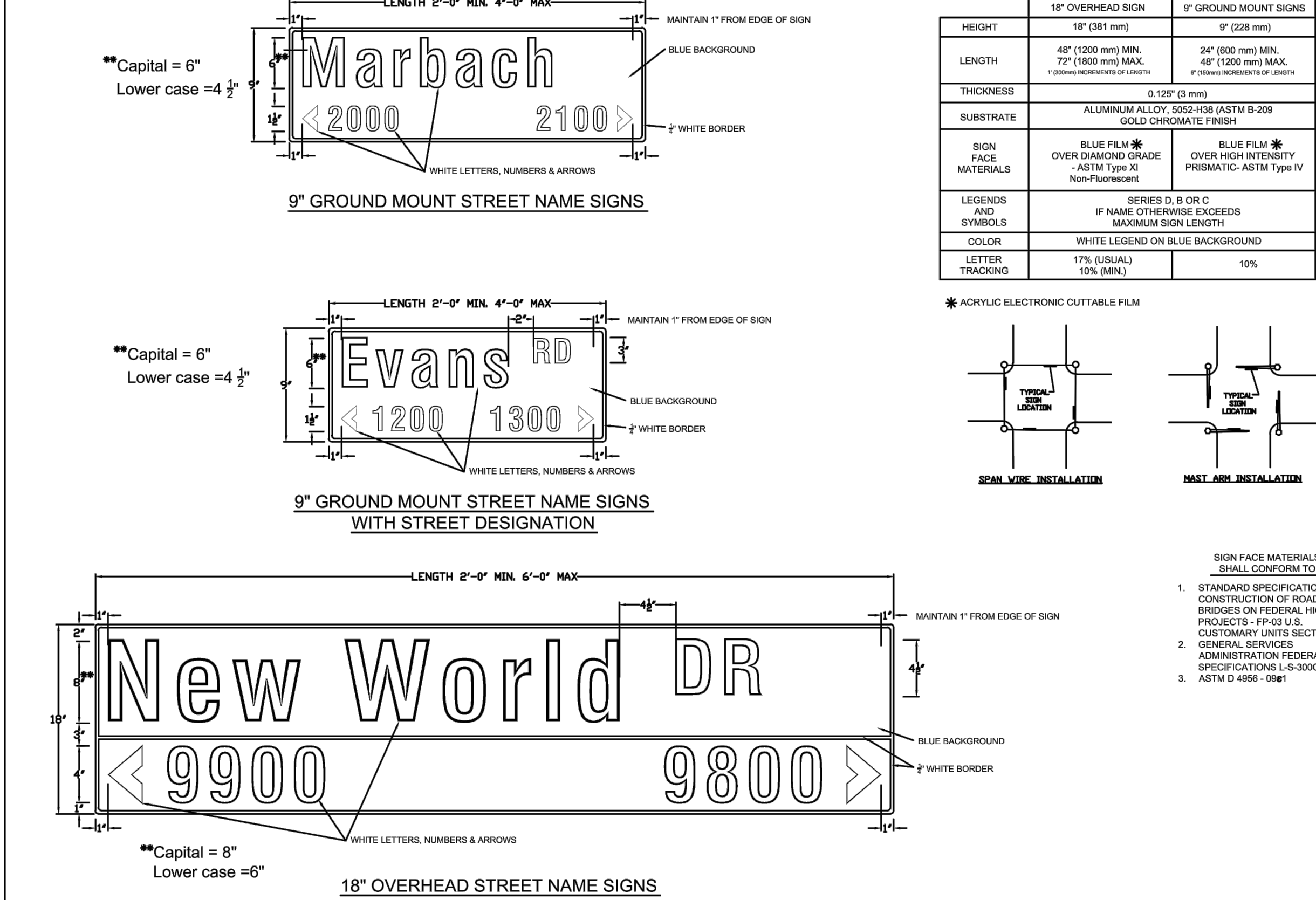
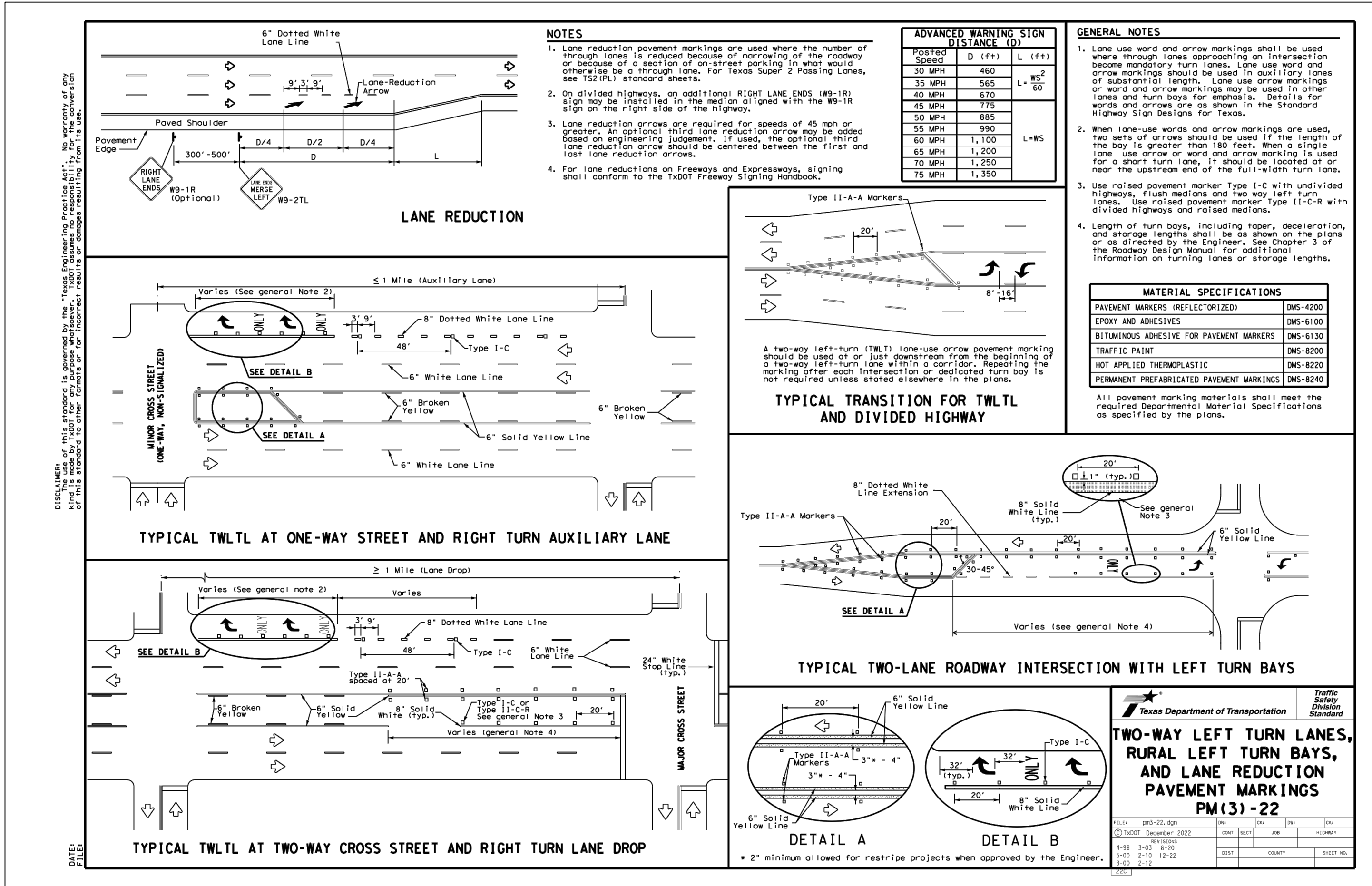
ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

PAPE-DAWSON
ENGINEERS



DATE	NO.	REVISION

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C3.03



Bexar County Public Works

Street Name Sign Details

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

SIGNAGE DETAILS

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C3.04

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



WATER (SAWS PRESSURE ZONE 750)

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS: 100 NE LOOP 410, STE. 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200 FAX# N/A
SAWS BLOCK MAP# 170536 TOTAL EDU'S 108 TOTAL ACREAGE 55.73
TOTAL LINEAR FOOTAGE OF PIPE: 3,419 LF C-900 PVC PLAT NO. 23-11800230
NUMBER OF LOTS 103 SAWS JOB NO. 23-1134

FIRE FLOW NOTE:

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

ROW PERMIT NOTE:

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

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 3 FT. OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

TRENCH EXCAVATION SAFETY PROTECTION:

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

PRESSURE REDUCING VALVE NOTE:

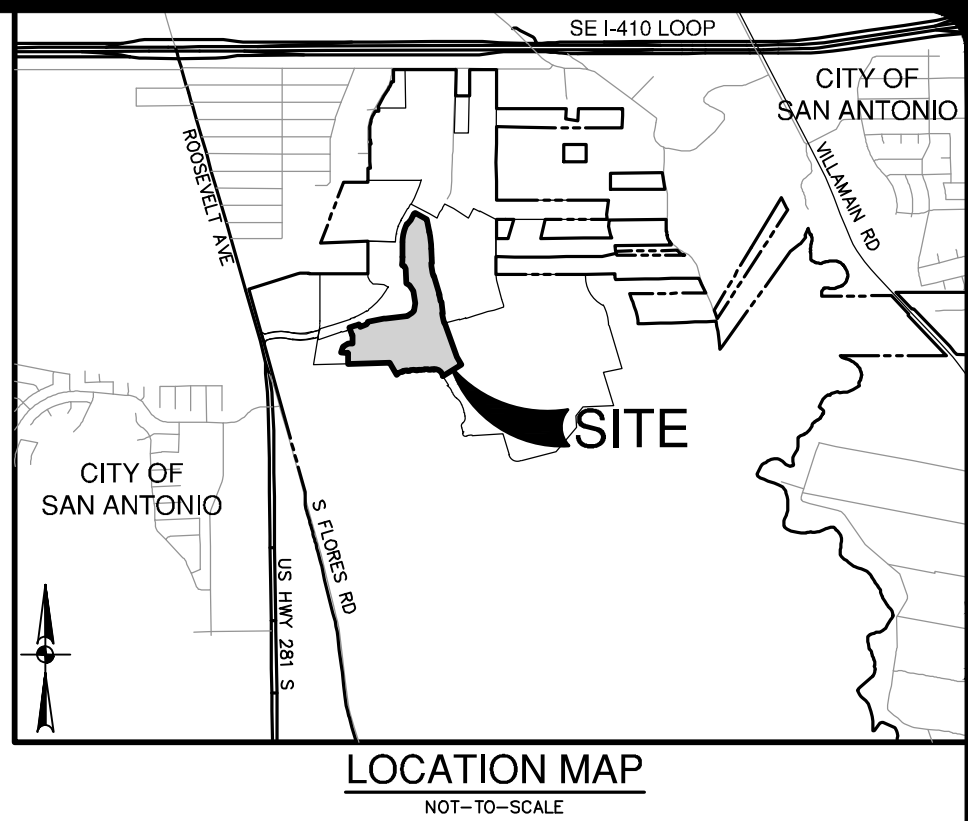
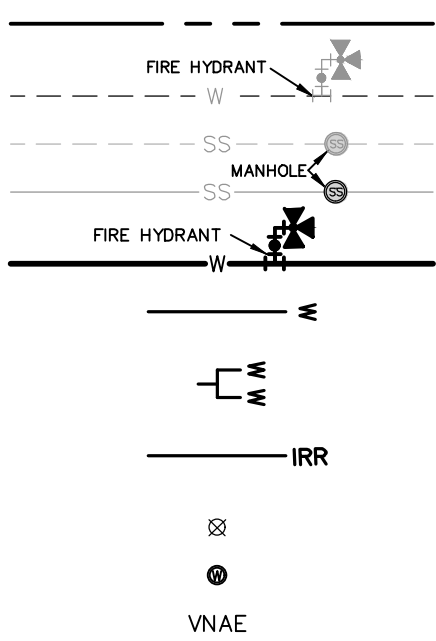
PRESSURE REDUCING VALVE TO BE INSTALLED ON CUSTOMER'S SIDE OF METER BY HOMEBUILDER.

PRESSURE NOTE:

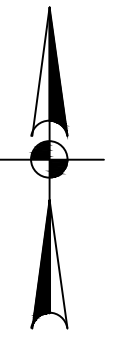
CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 565 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 565 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF CITY 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 LEGEND

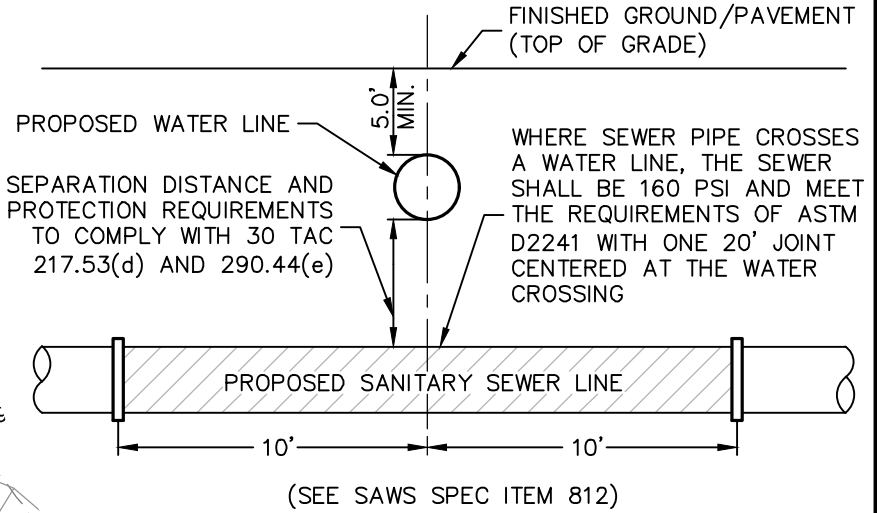
- PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER
PROPOSED 1" DUAL SERVICE WITH 5/8" METER
SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE)
JOINT RESTRAINT
EXISTING WELL
VEHICULAR NON ACCESS EASEMENT



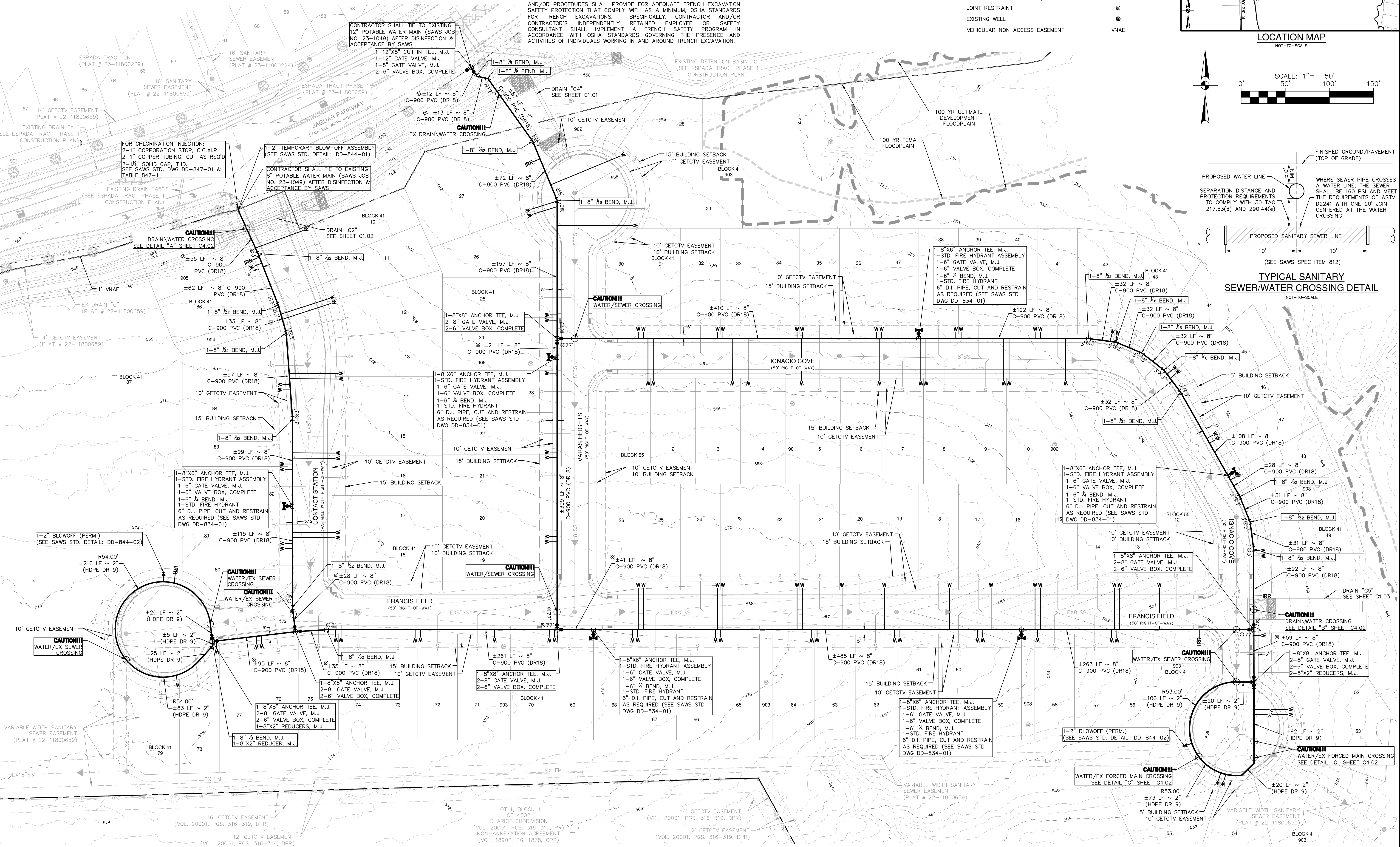
LOCATION MAP
NOT-TO-SCALE



SCALE: 1" = 50' 100' 150'



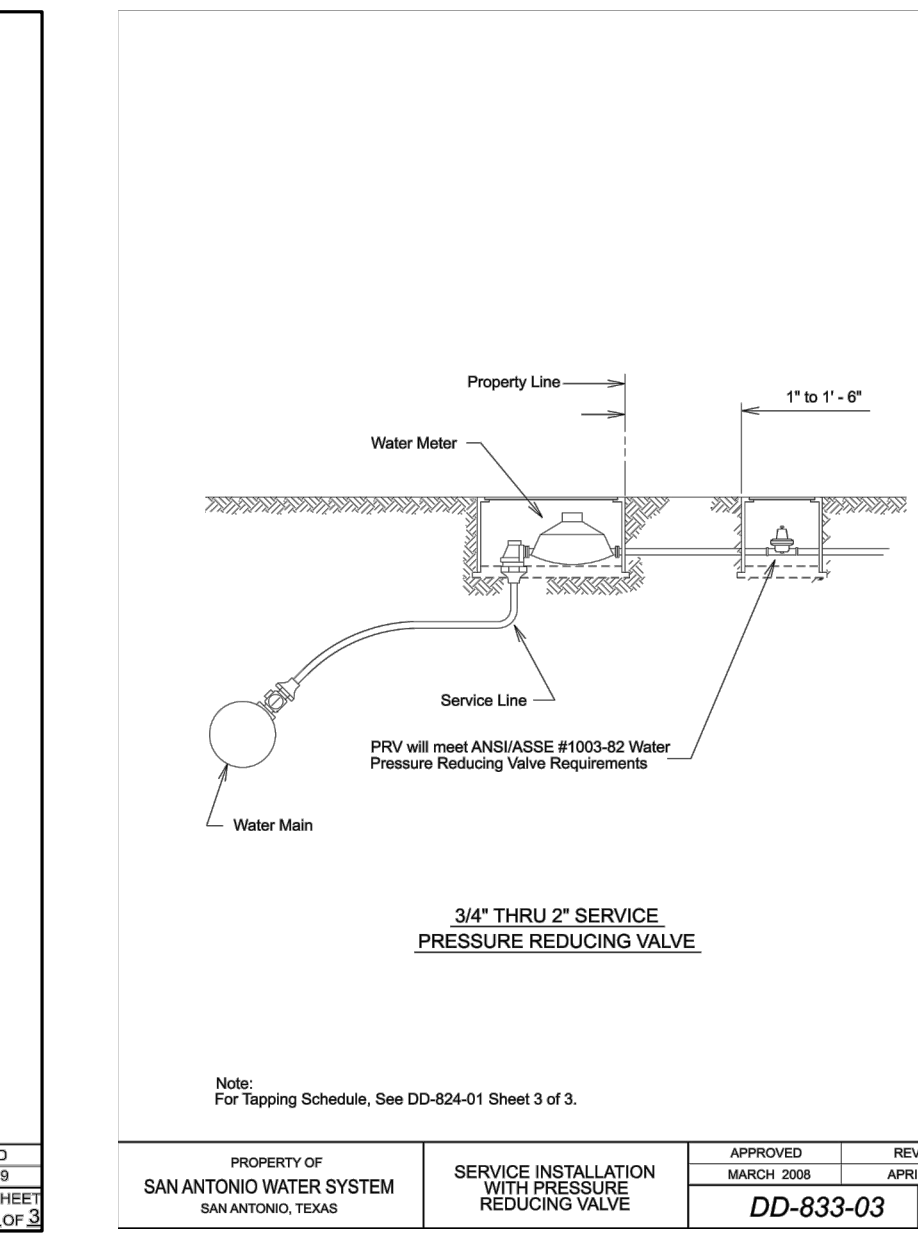
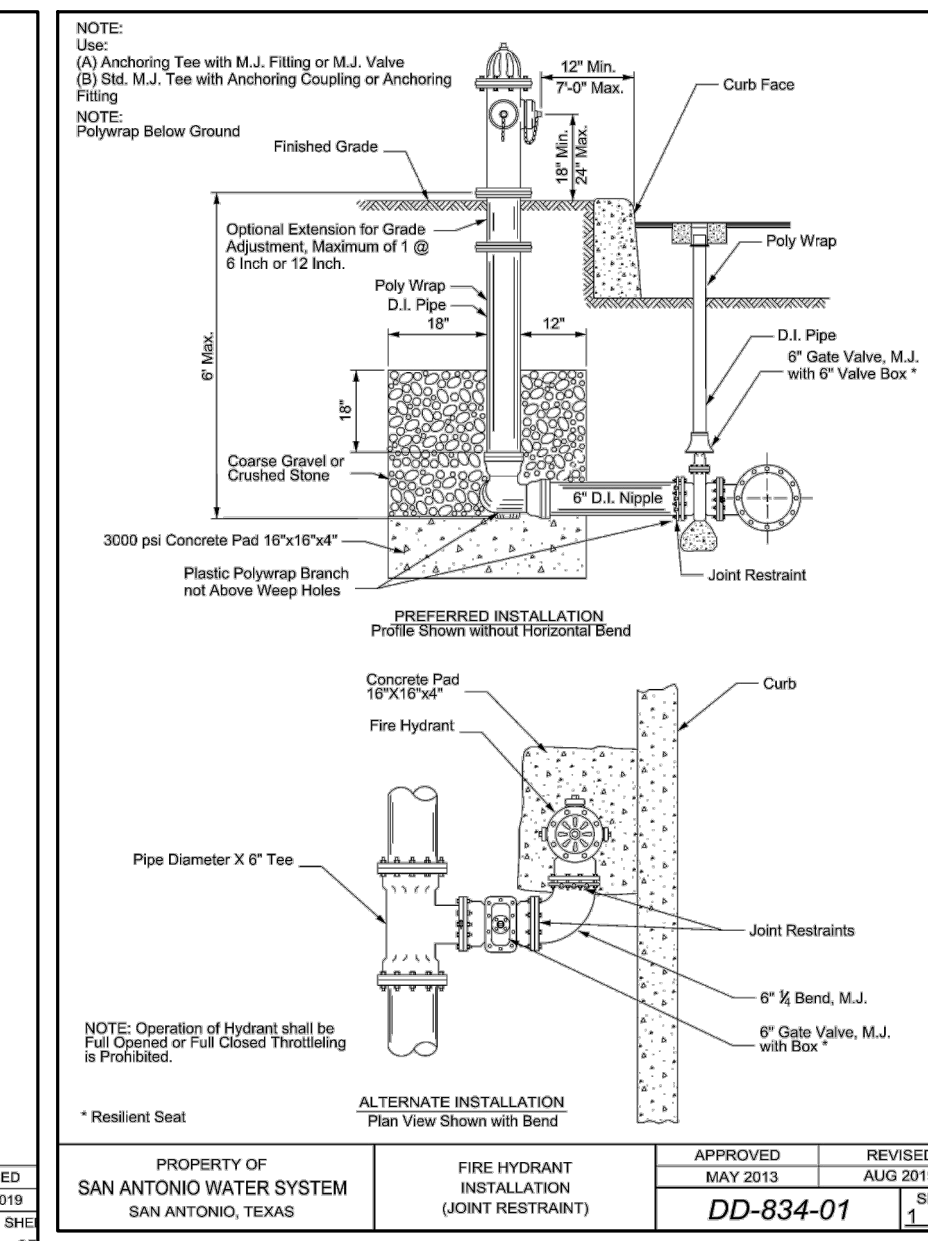
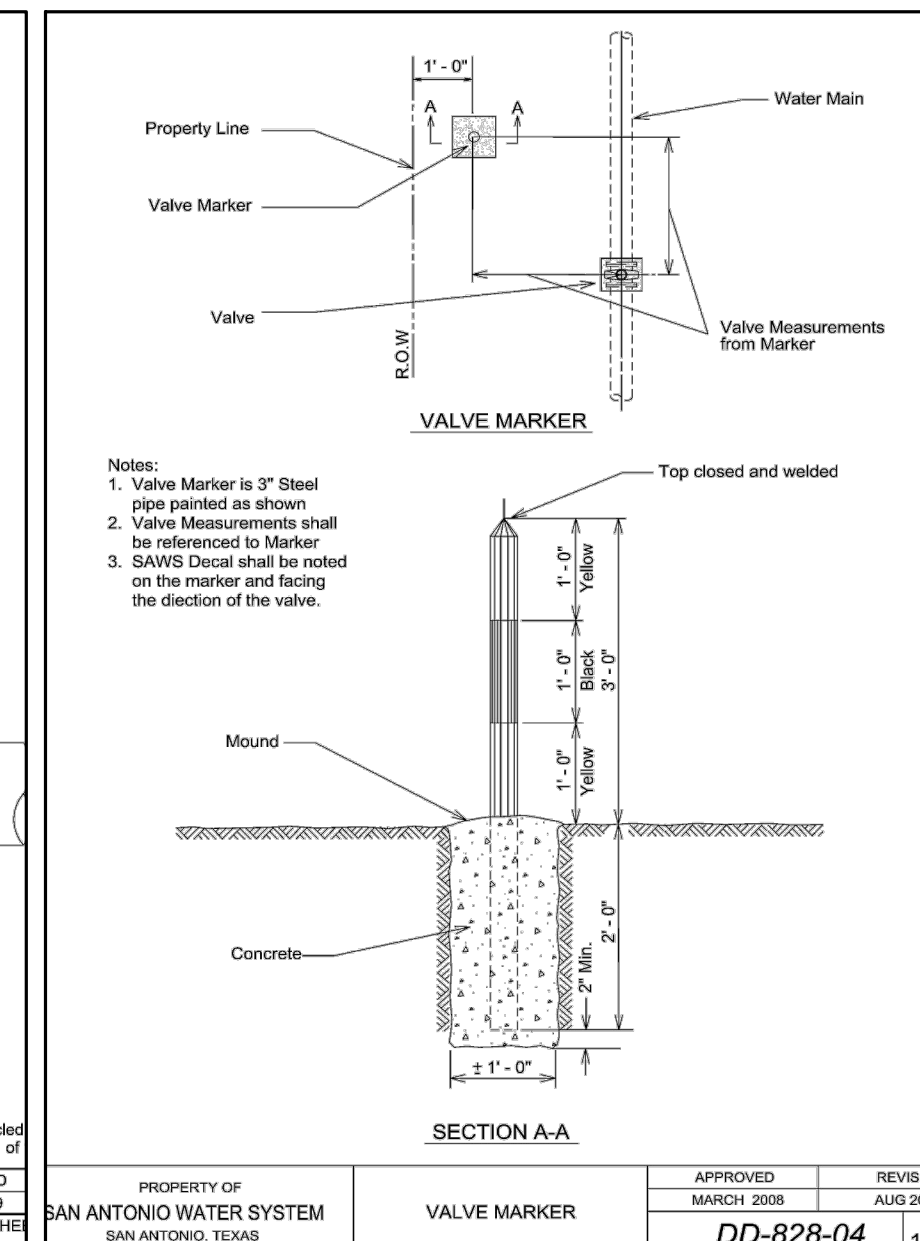
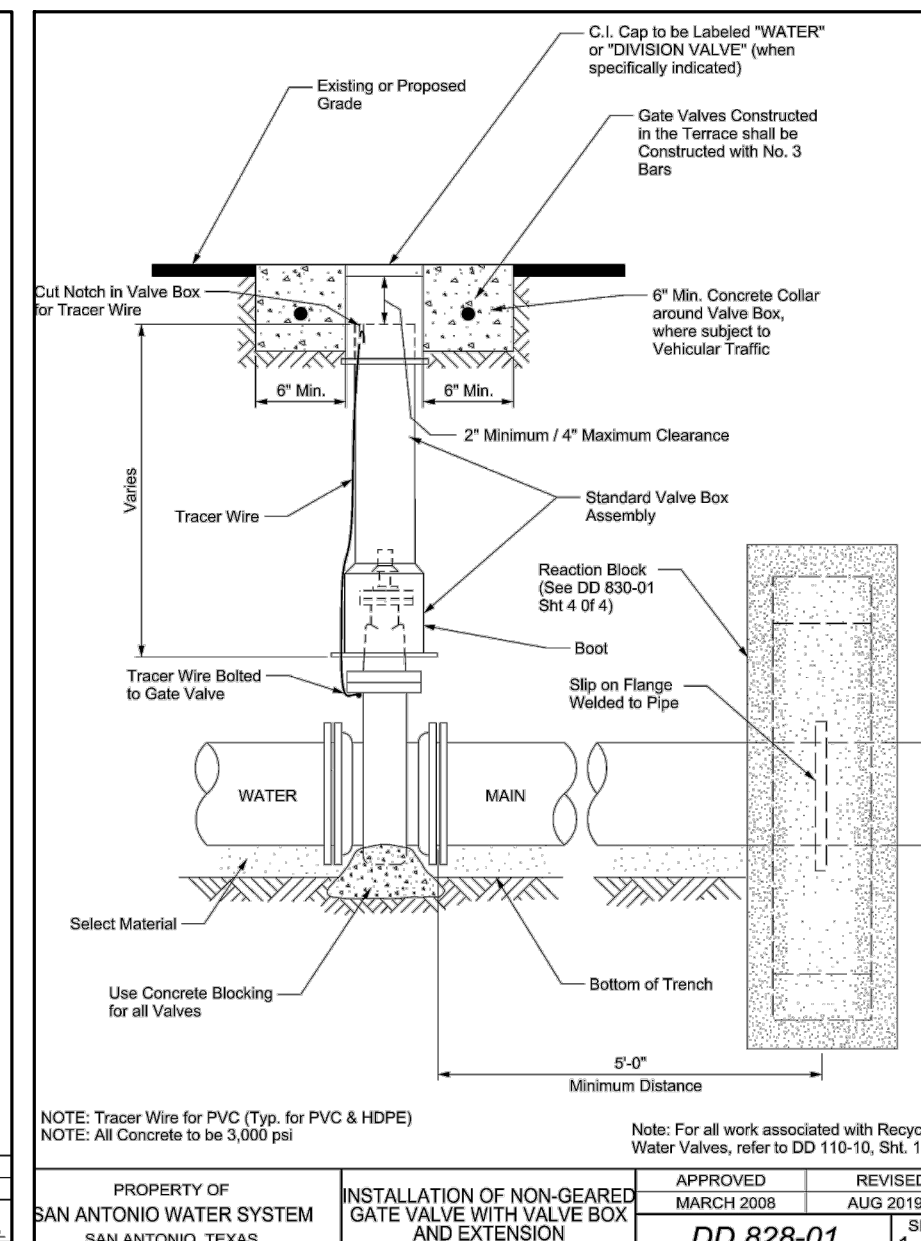
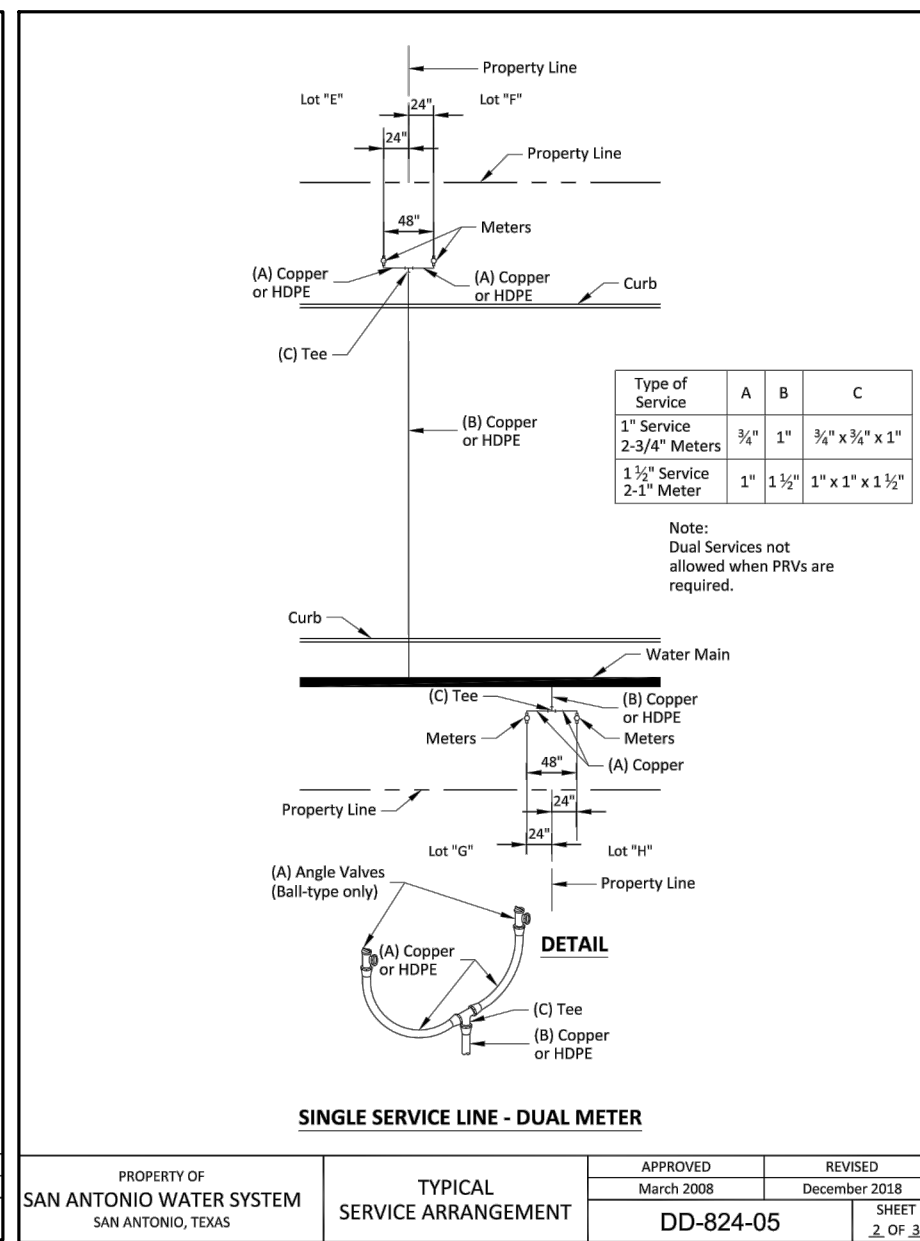
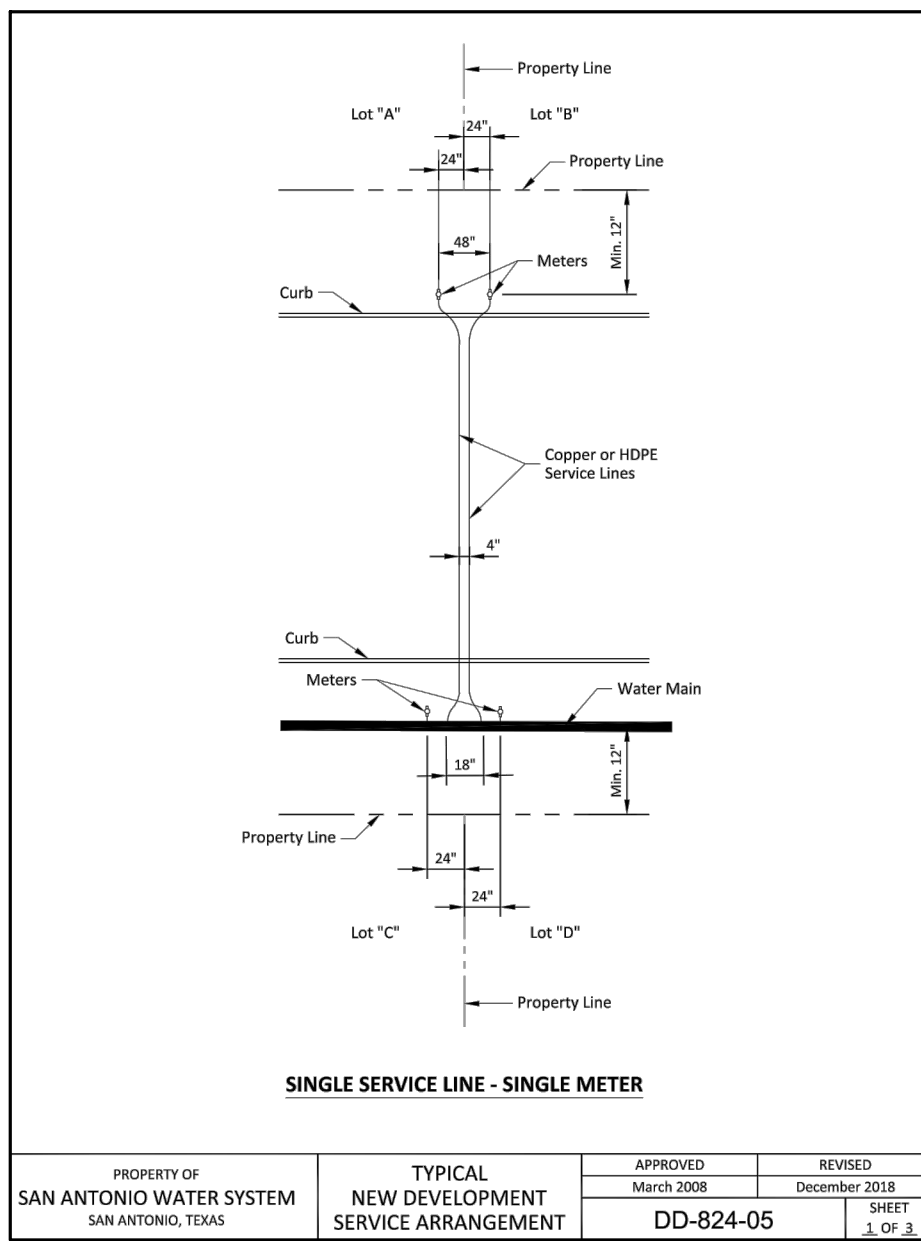
TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL WATER DISTRIBUTION PLAN

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C4.00



PIPE SIZE (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	42	31
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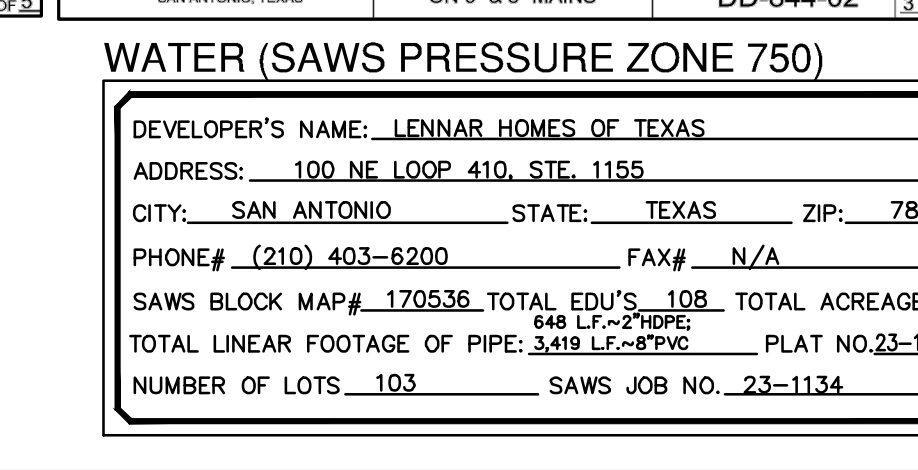
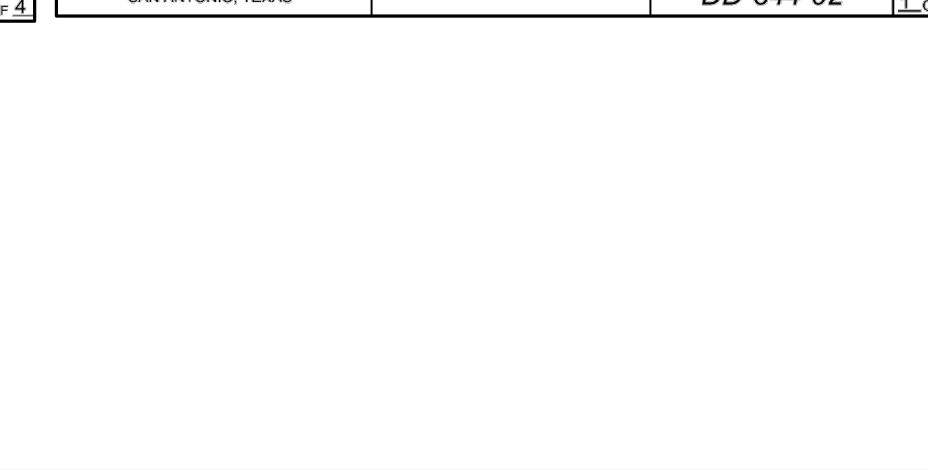
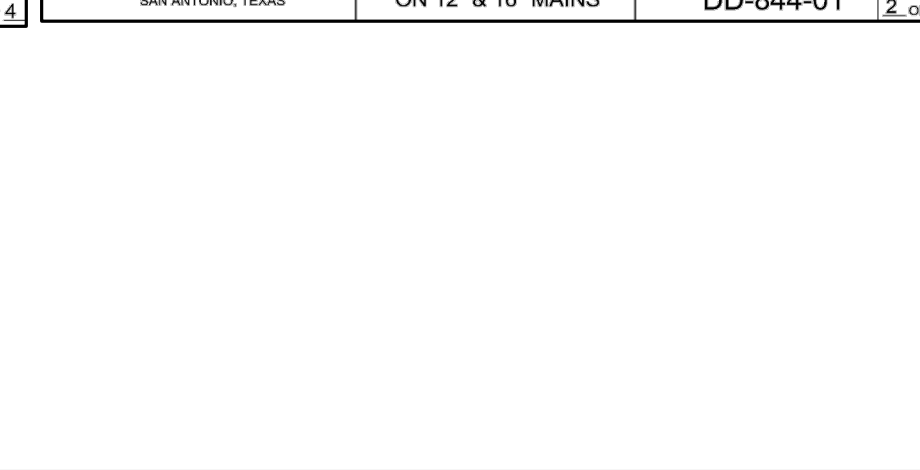
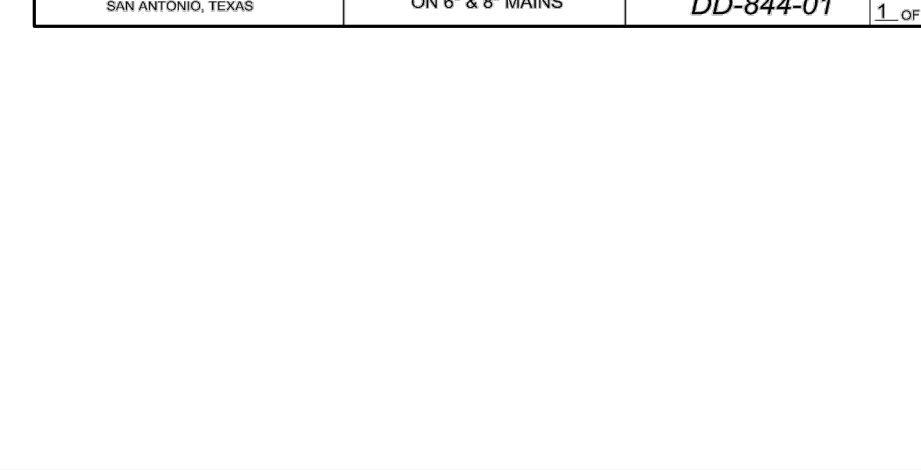
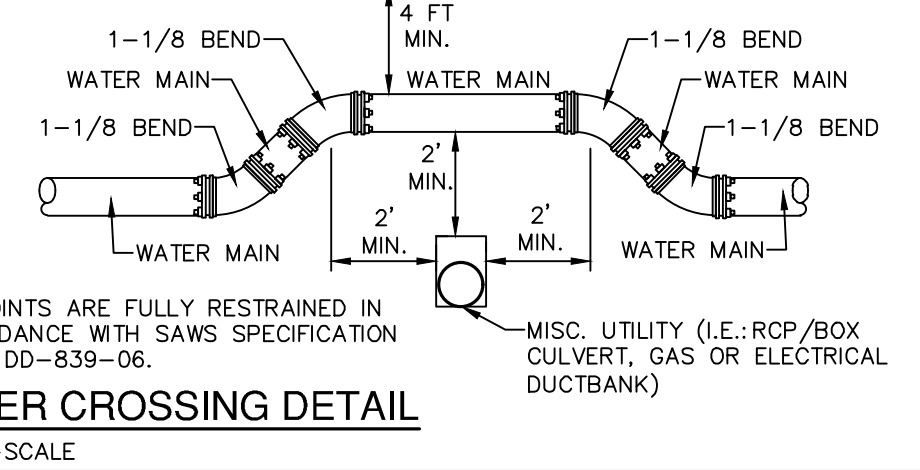
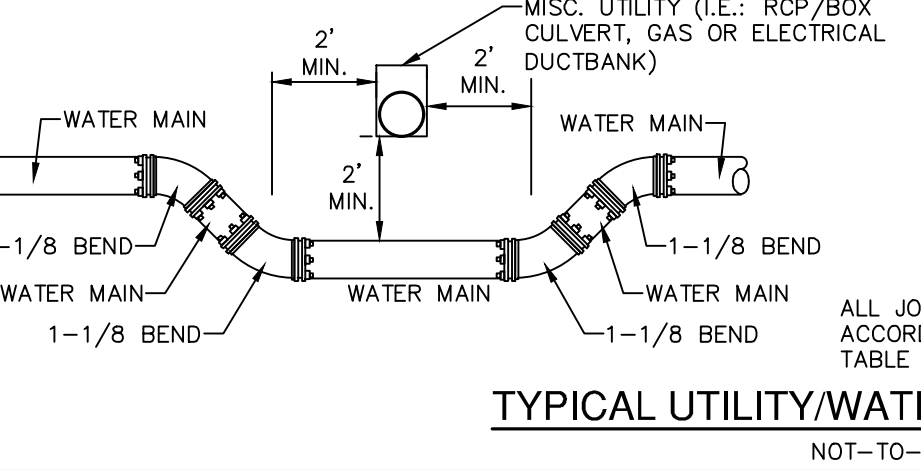
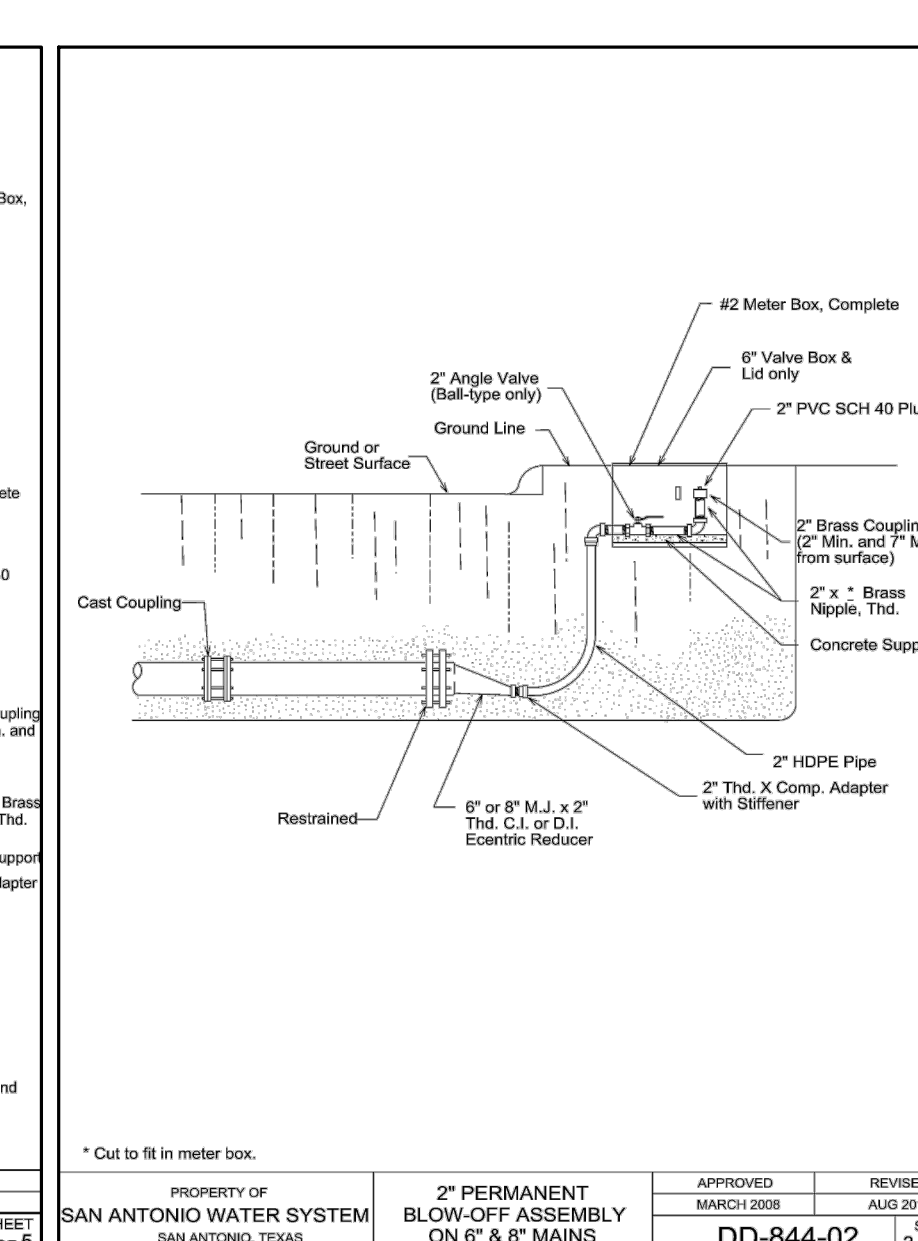
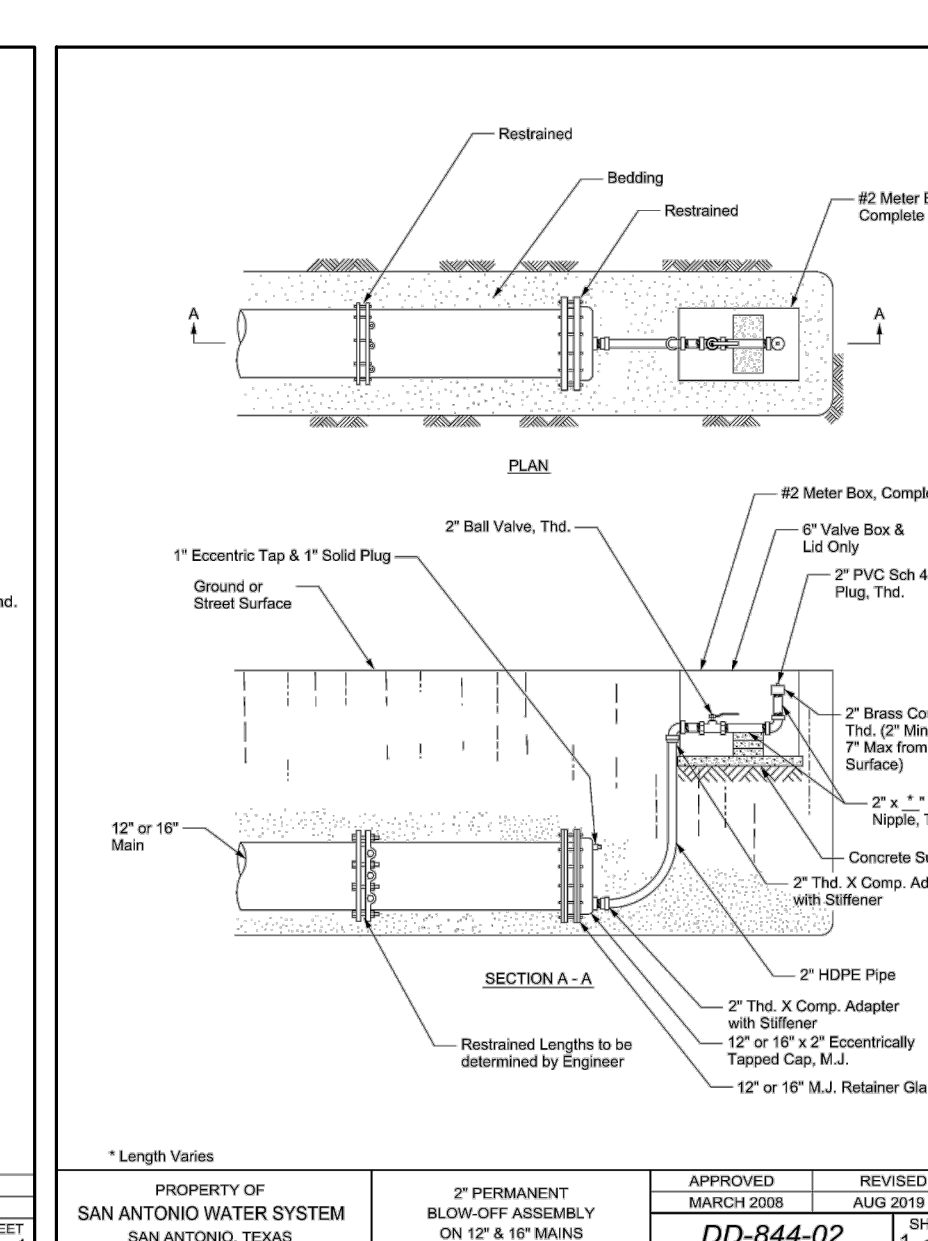
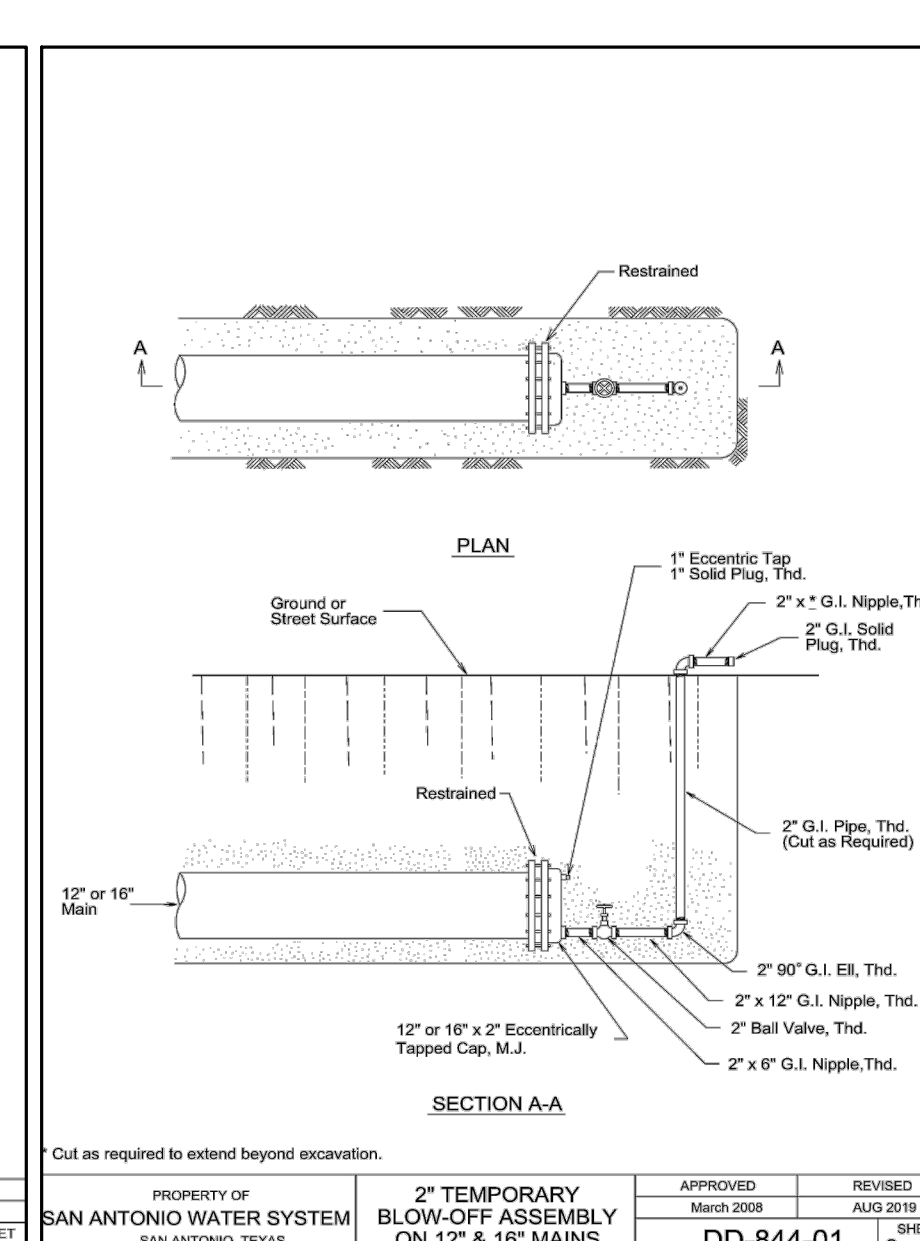
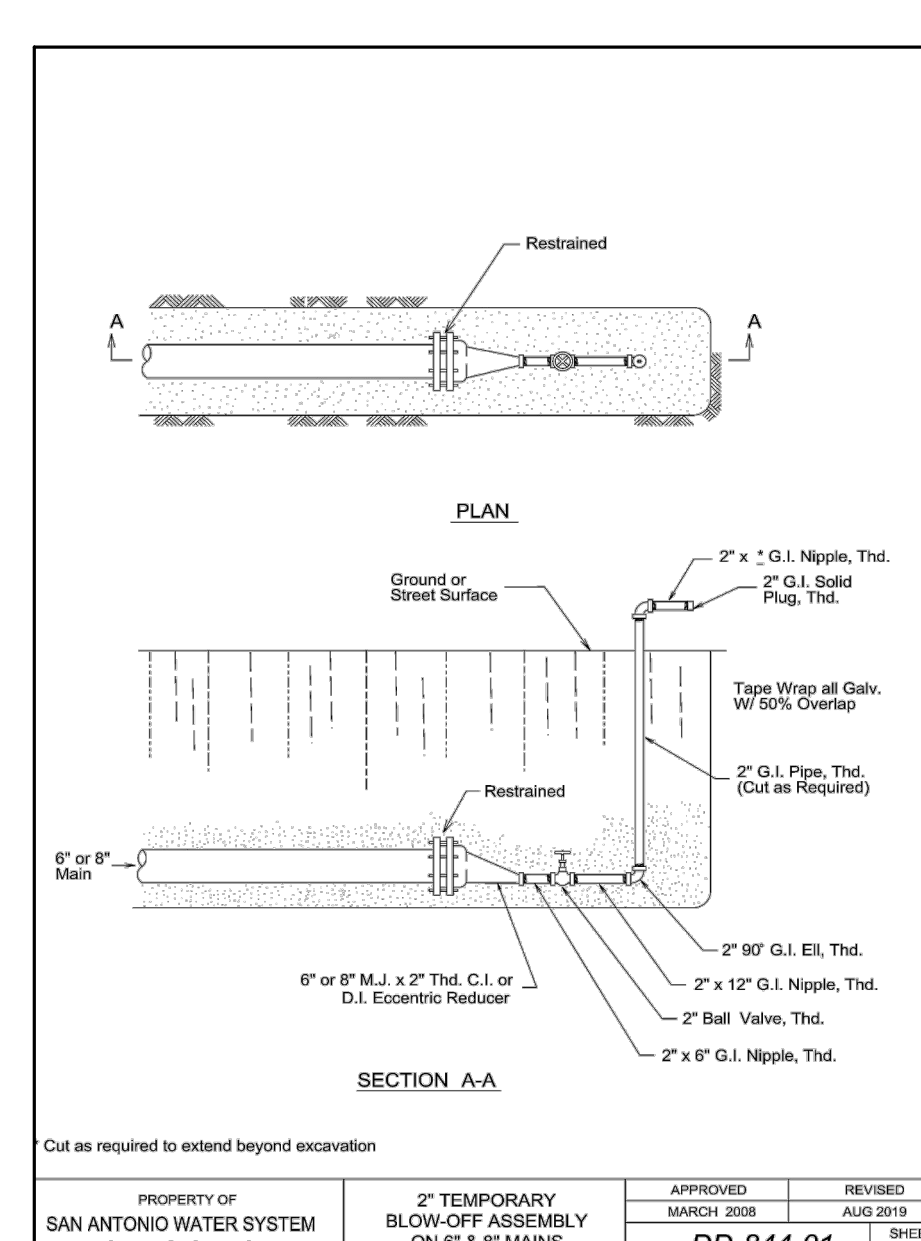
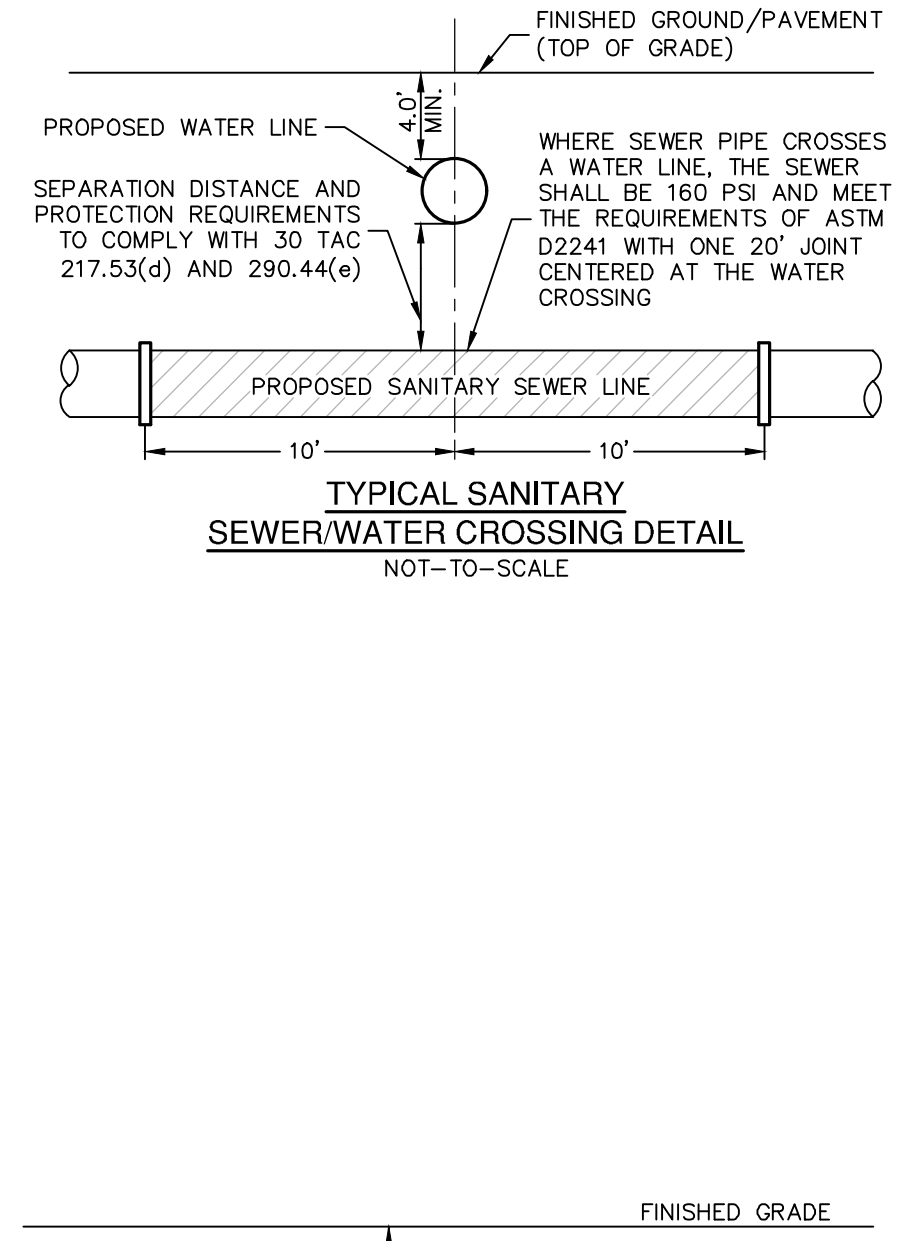
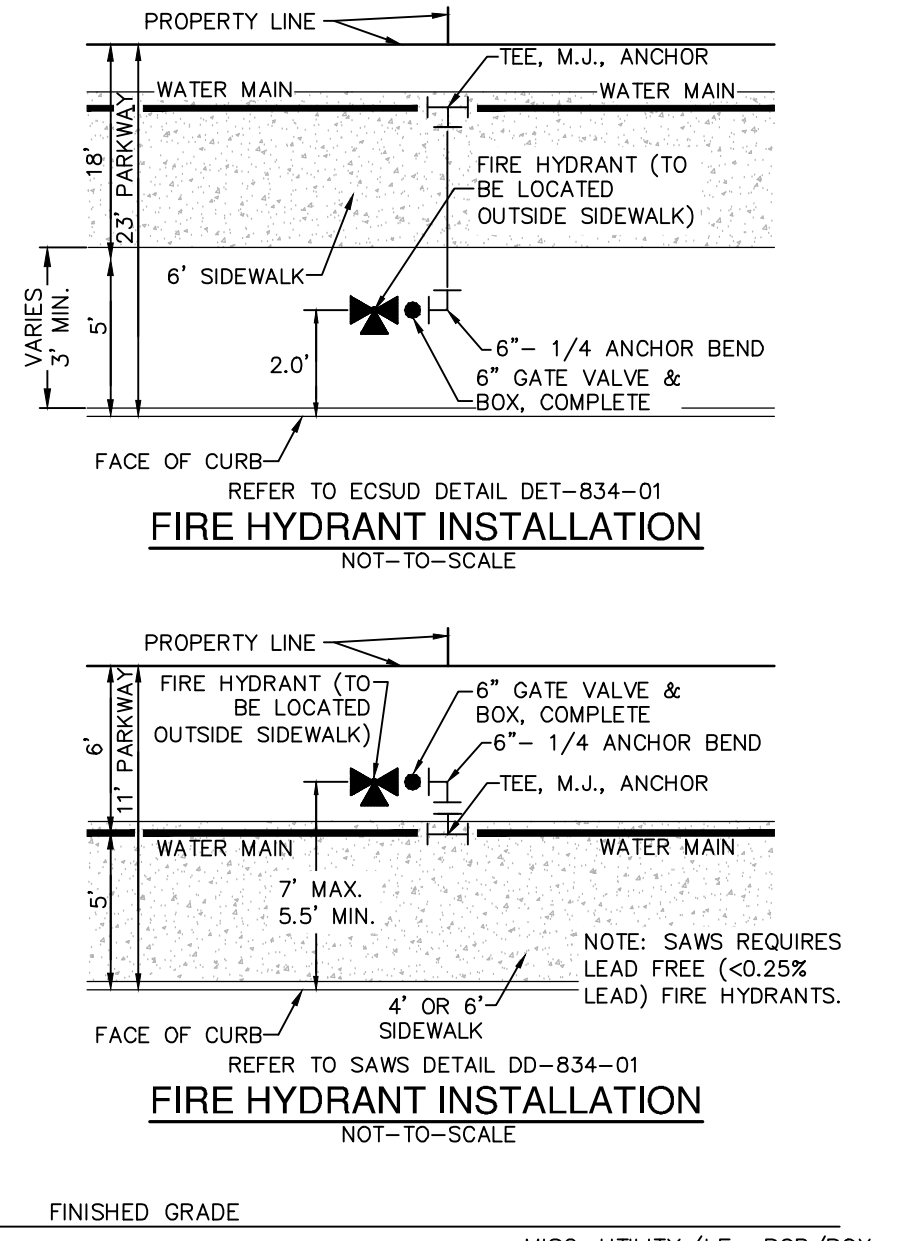
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Pape-Dawson Engineers

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION DETAILS

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C4.01



(LAST REVISED JANUARY 2022)

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

TO 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 SCAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND THE PROJECT COORDINATOR. THE CONTRACTOR SHALL BE REQUIRED TO 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. DIVISION VALVES SHALL BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF ONLY. DIVISION VALVES CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF. NO MEMBER NOT THE INSPECTOR OR THE CONTRACTOR OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SCAWS DIRECTOR OF PRODUCTION AND OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE VALVE. IN THE EVENT OF A 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, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION 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 KEY WILL BE KEPT BY THE SCAWS DIRECTOR OF PRODUCTION AND OPERATIONS. IT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

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

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS: 100 NE LOOP 410, STE. 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403-8200 FAX# N/A
SAWS BLOCK MAP# 170536 TOTAL EDU# 108 TOTAL ACREAGE 55.73
648 LF-270DPE
TOTAL LINEAR FOOTAGE OF PIPE: 3,419 LF-87VC PLAT NO. 23-11800230
NUMBER OF LOTS 103 SABS COW NO. 23-1134

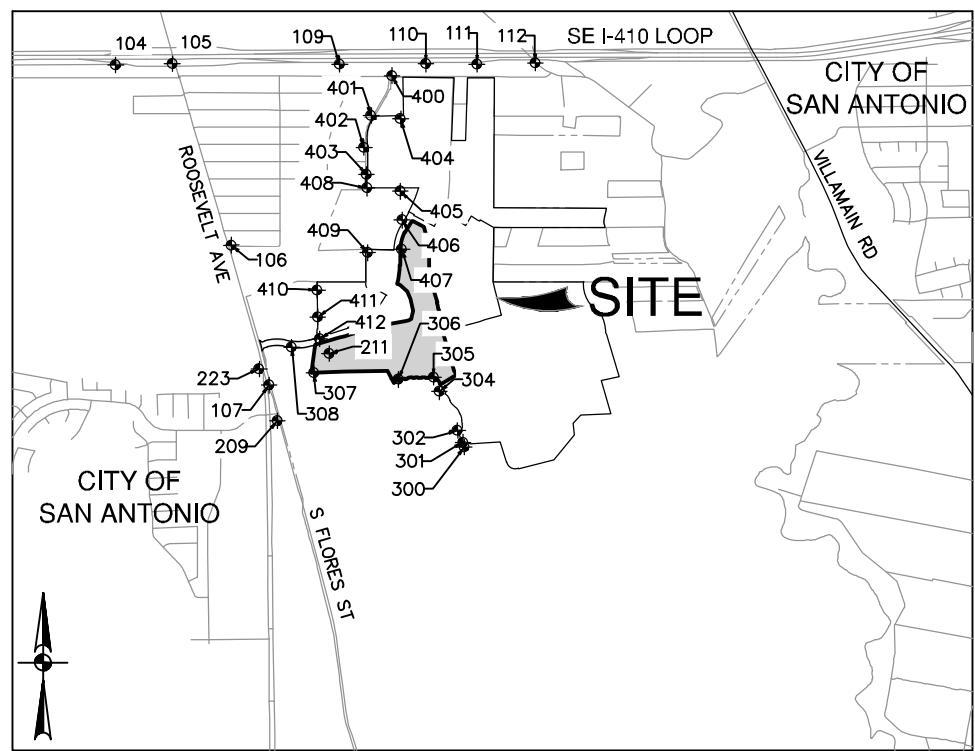
PAPE-DAWSON
ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION NOTES

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C4.02



BENCHMARK LOCATION MAP

BENCHMARKS

NUMBER	NORTHING/EASTING	ELEVATION	DESCRIPTION
104	2134239.64	13667131.27	SIGTV
105	2135226.14	13667152.88	SIGTV
106	2136253.51	13663994.19	SIGTV
107	2136910.77	13661555.14	SIGTV
109	2138141.40	13667147.99	SIGTV
110	2139641.31	13667151.22	SIGTV
111	2140529.66	13667147.55	SIGTV
112	2141547.03	13667170.87	SIGTV
209	2137056.40	1366031.88	583.16
211	2137959.03	13662102.8	573.79
223	2136739.20	13661836.78	580.77
300	2140313.48	13660477.95	545.31
301	2140289.02	13660558.62	545.17
302	2140195.36	13660766.07	541.92
304	2139877.28	13661442.05	538.56
305	2139775.87	13661689.85	540.28
306	2139161.43	13661654.29	552.08
307	2137696.58	13661770.81	576.06
308	2137306.70	13662217.96	575.45
400	2139049.73	13666948.91	578.74
401	2138689.77	13666250.38	579.62
402	2138565.79	13665696.4	577.16
403	2138610.70	13665224.03	574.46
404	2139202.41	13666191.18	576.42
405	2139197.12	13664932.25	575.39
406	2139228.36	13664429.15	568.28
407	2139224.11	13663926.62	556.61
408	2138615.57	13664987.14	572.67
409	2138628.71	13663860.6	572.89
410	2137752.56	13663213.55	568.33
411	2137759.32	13662745.14	575.58
412	2137791.62	13662363.23	568.83

ROW PERMIT NOTE:

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

TRENCH EXCAVATION SAFETY PROTECTION:

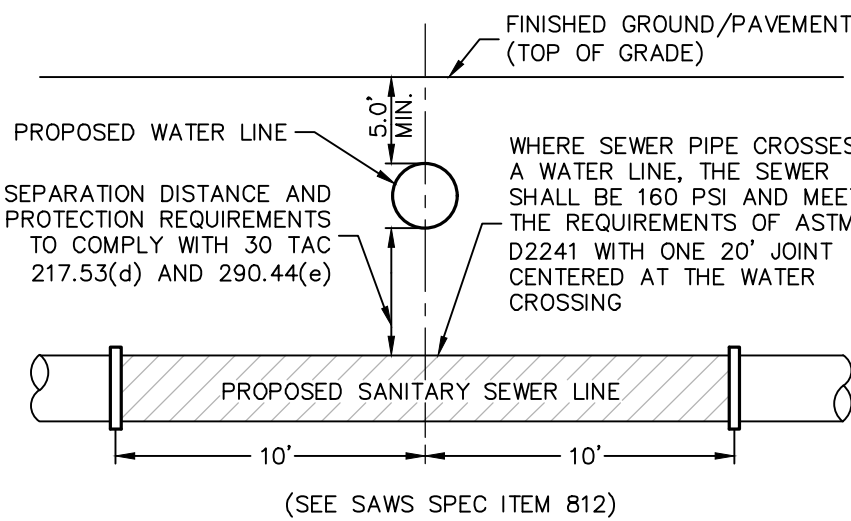
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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.

FINISHED FLOOR NOTES:

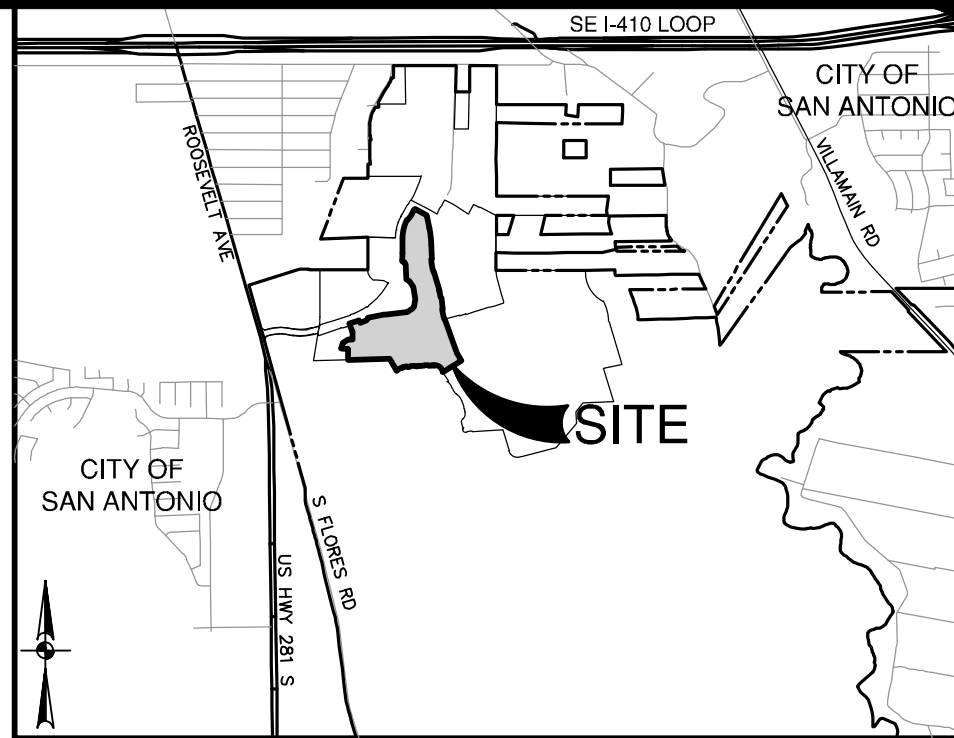
- THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
- THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.



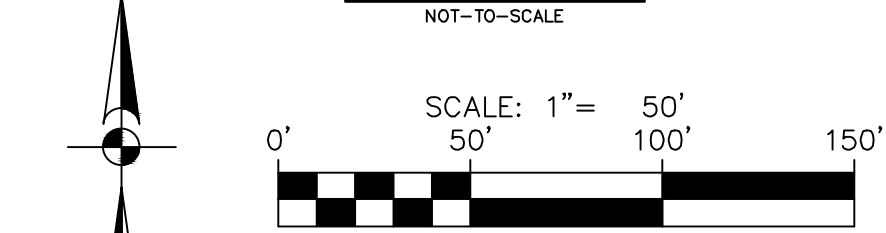
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

SEWER LEGEND

- PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED SEWER LATERAL
PROPOSED SEWER LATERAL TO TIE INTO EXISTING SEWER MAIN
FINISHED FLOOR ELEVATION FOR SEWER
EXISTING WELL



LOCATION MAP



SALADO CREEK - SAN ANTONIO RIVER WATERSHED - DOS RIOS W.R.C.

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS: 100 NE LOOP 410, STE. 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200 FAX# N/A
SAWS BLOCK MAP# N/A TOTAL EDU'S 103 TOTAL ACREAGE 55.73
TOTAL LINEAR FOOTAGE OF PIPE 1,376 L.F. ~ 8" PVC PLAT NO. 23-11800230
NUMBER OF LOTS 103 SAWS JOB NO. 23-1607

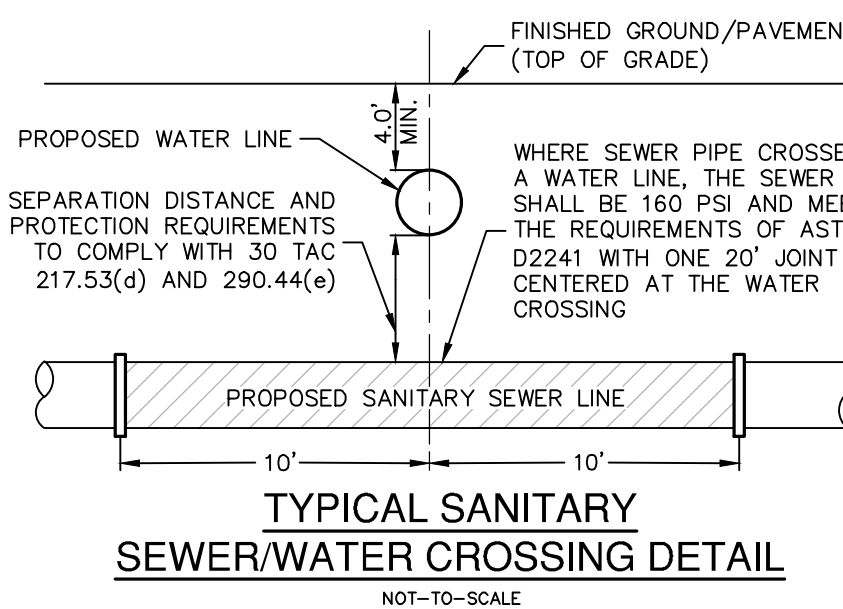
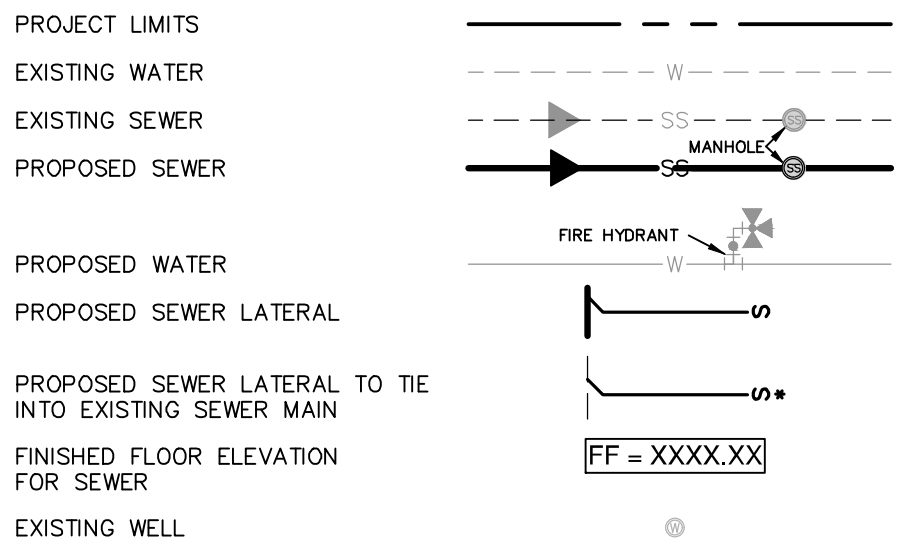
PAPE-DAWSON
ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #1028860

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C5.00



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 ELECTRIC, GAS, CABLE, AND ALL OTHER UTILITIES. ANY AND ALL UTILITIES ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMISSION OF ALL UTILITIES TO THE CONTRACTOR TO CONTACT ANY DAMAGE TO ANY UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY DAMAGE TO ANY UTILITIES SHALL BE THE 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:

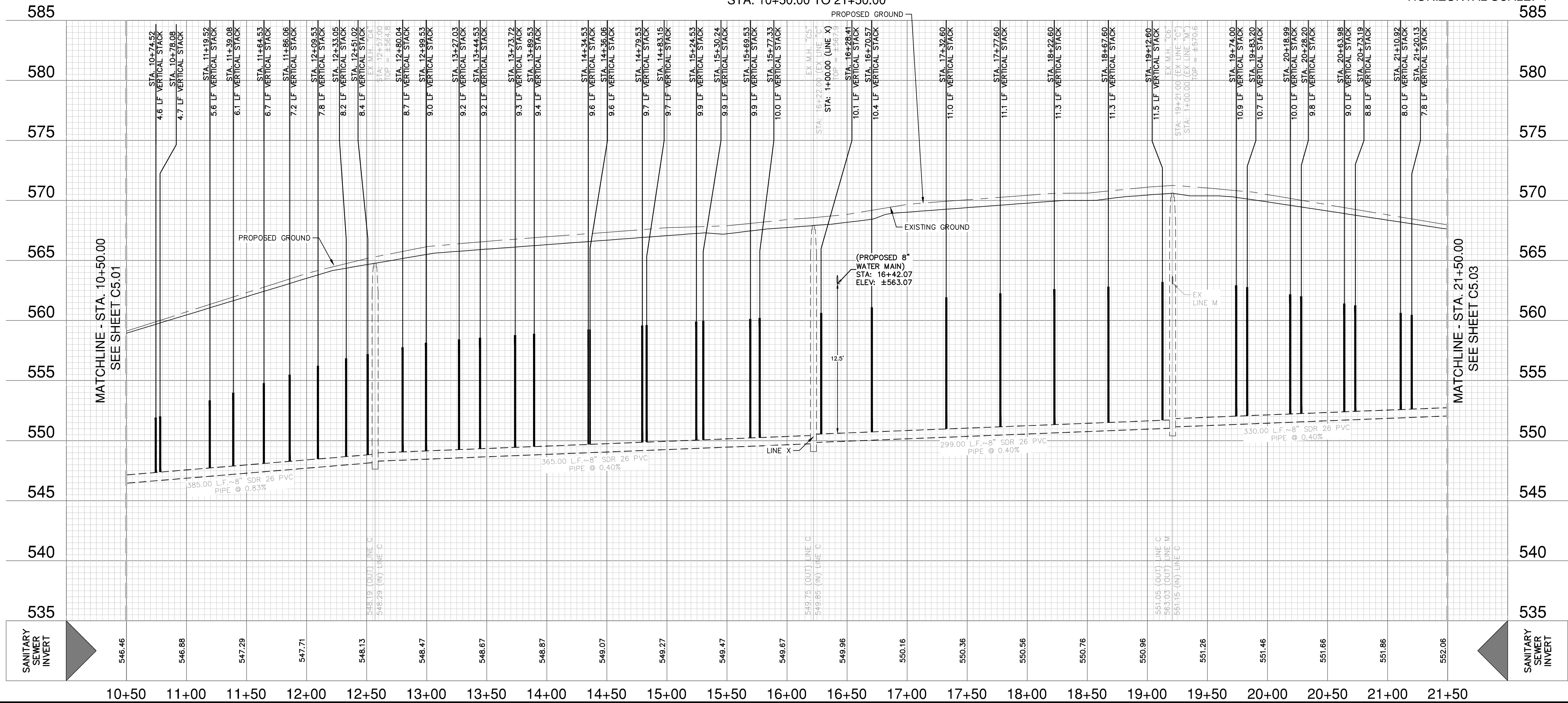
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT SHALL BE RESPONSIBLE FOR PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTRACT DOCUMENTS AND THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH ALL MINIMUM OSHA-STD-1926 TRENCH EXCAVATION SAFETY PROTECTION SPECIFICATIONS. CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM THAT COMPLY WITH ALL MINIMUM OSHA-STD-1926 TRENCH EXCAVATION SAFETY PROTECTION SPECIFICATIONS AND AROUND TRENCH EXCAVATION.

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS: 100 NE LOOP 410, STE. 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200 FAX# N/A
SAWS BLOCK MAP# N/A TOTAL UDS. 103 TOTAL ACREAGE 55.73
TOTAL LINEAR FOOTAGE OF PIPE: 1,376 LF. ~8" PVC PLAT NO 23-11800230
NUMBER OF LOTS 103 SAWS JOB NO. 23-1607

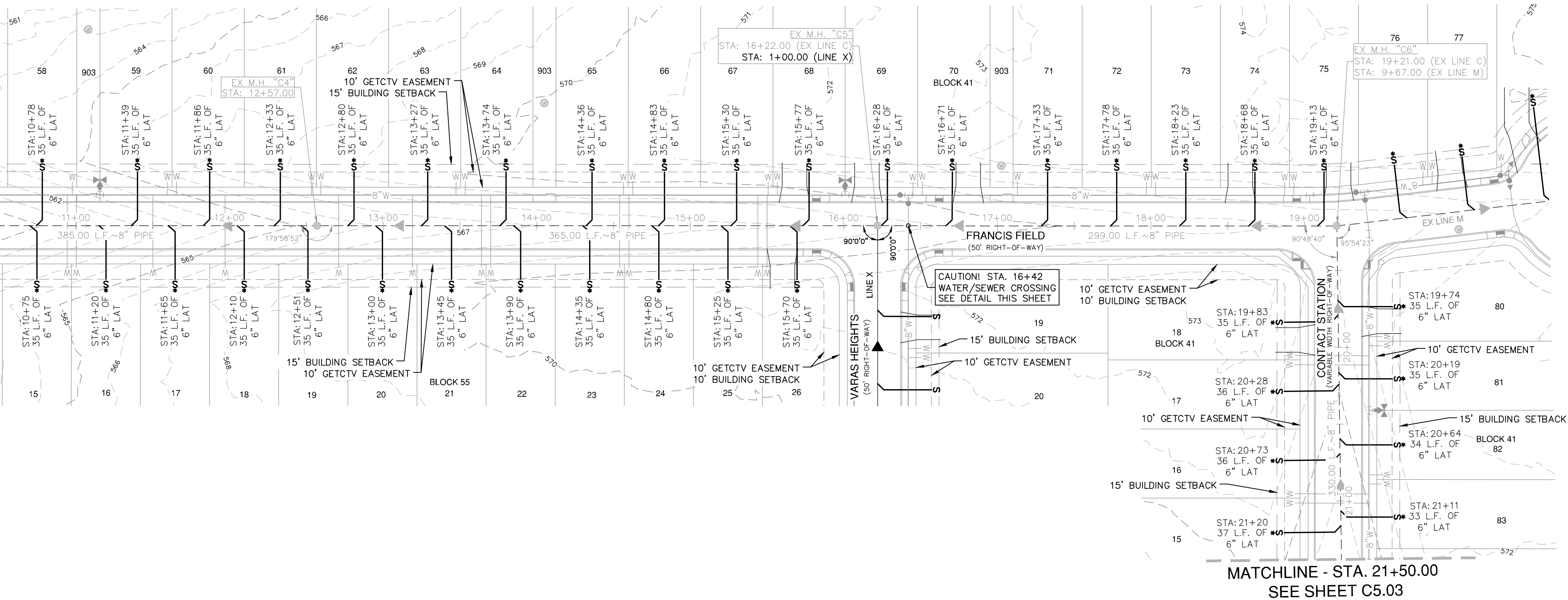
PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C5.01

Date: Oct 30, 2023 10:47 am User: ID: tcomacho
File: E:\1023\23-113 Espada Tract\DWG\23-113023-113.dwg

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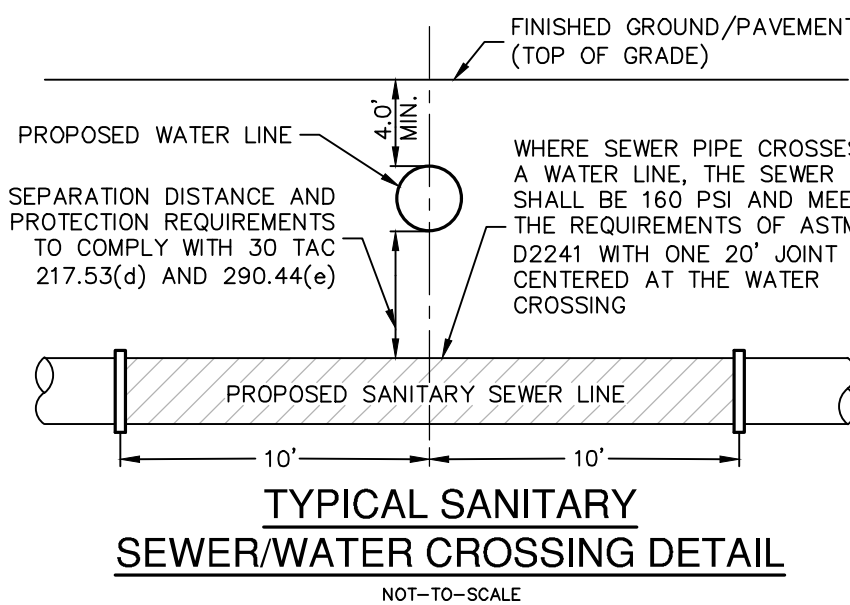
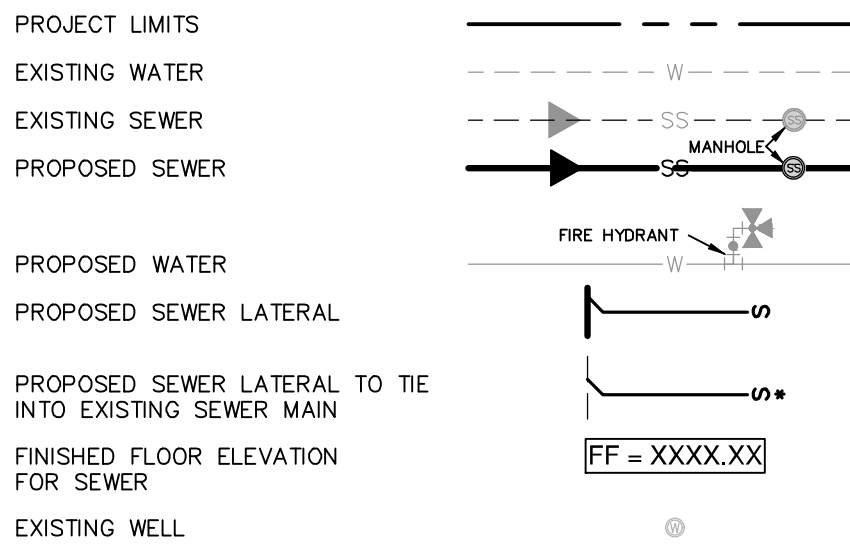


MATCHLINE - STA. 10+50.00
SEE SHEET C5.01



SANITARY SEWER LINE "C"
STA. 10+50.00 TO 21+50.00

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



CAUTION!!
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TRENCH EXCAVATION SAFETY PROTECTION:
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SALADO CREEK - SAN ANTONIO RIVER WATERSHED - DOS RIOS W.R.C.

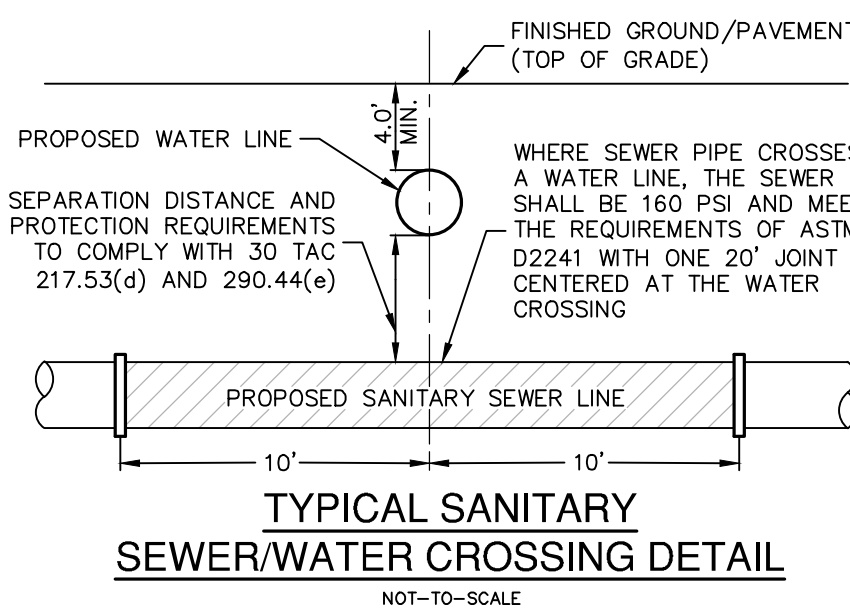
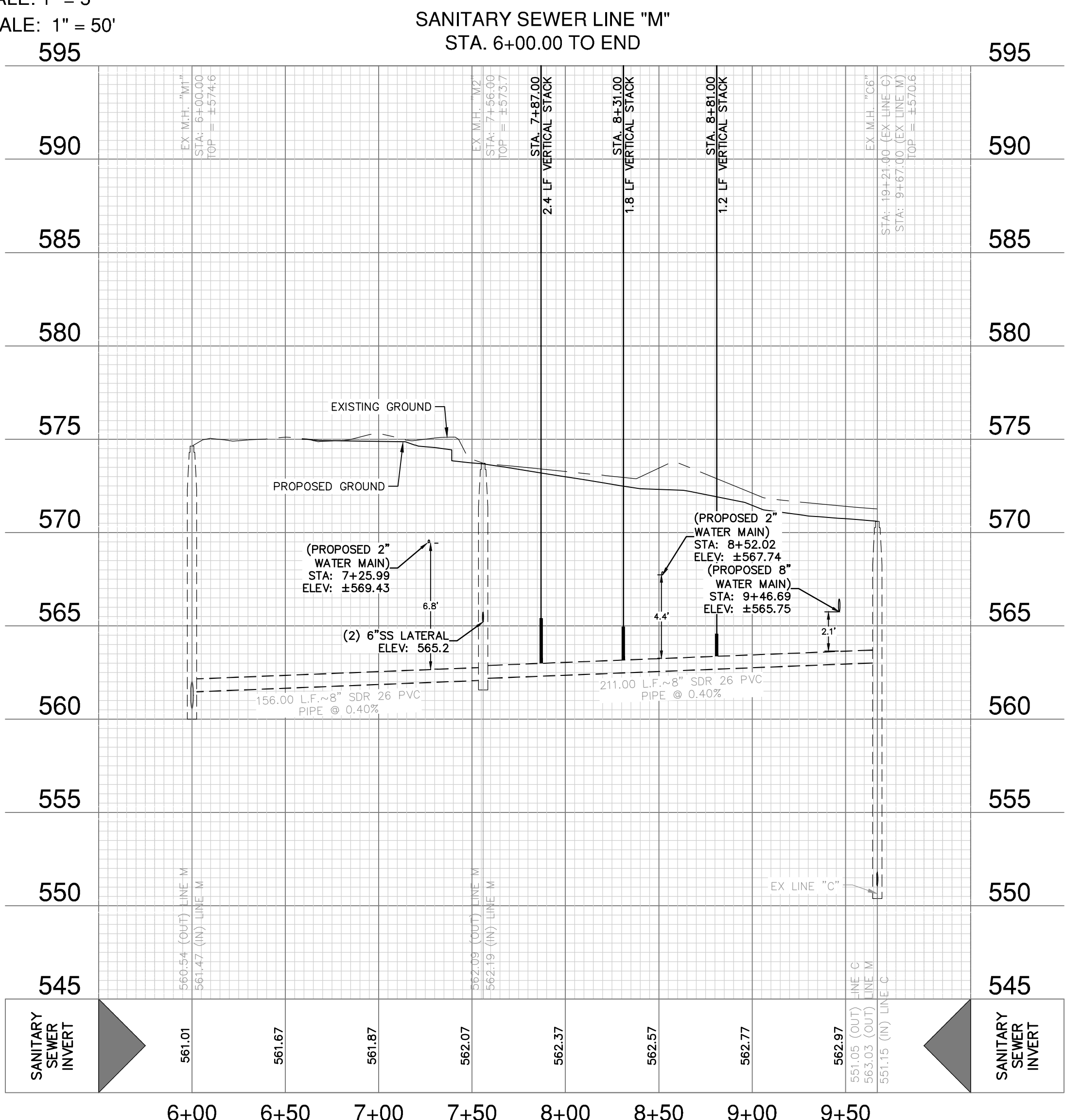
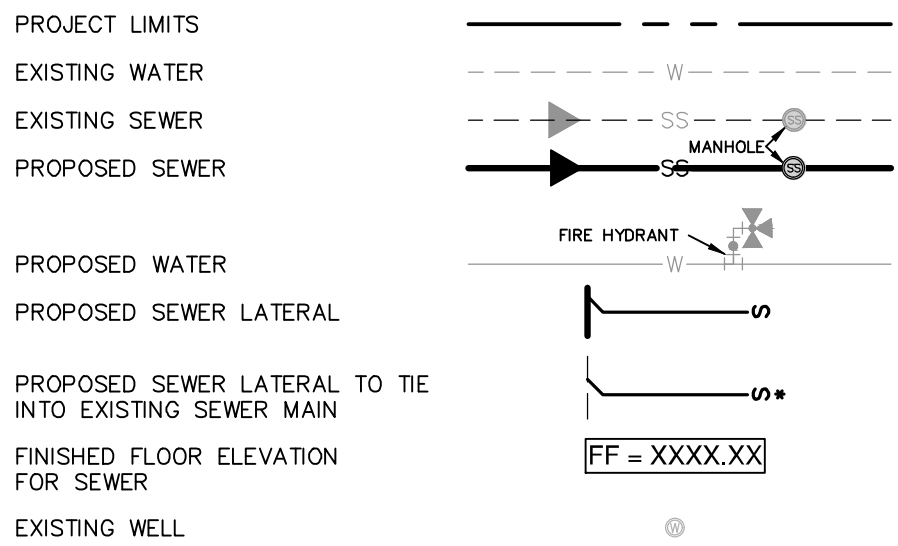
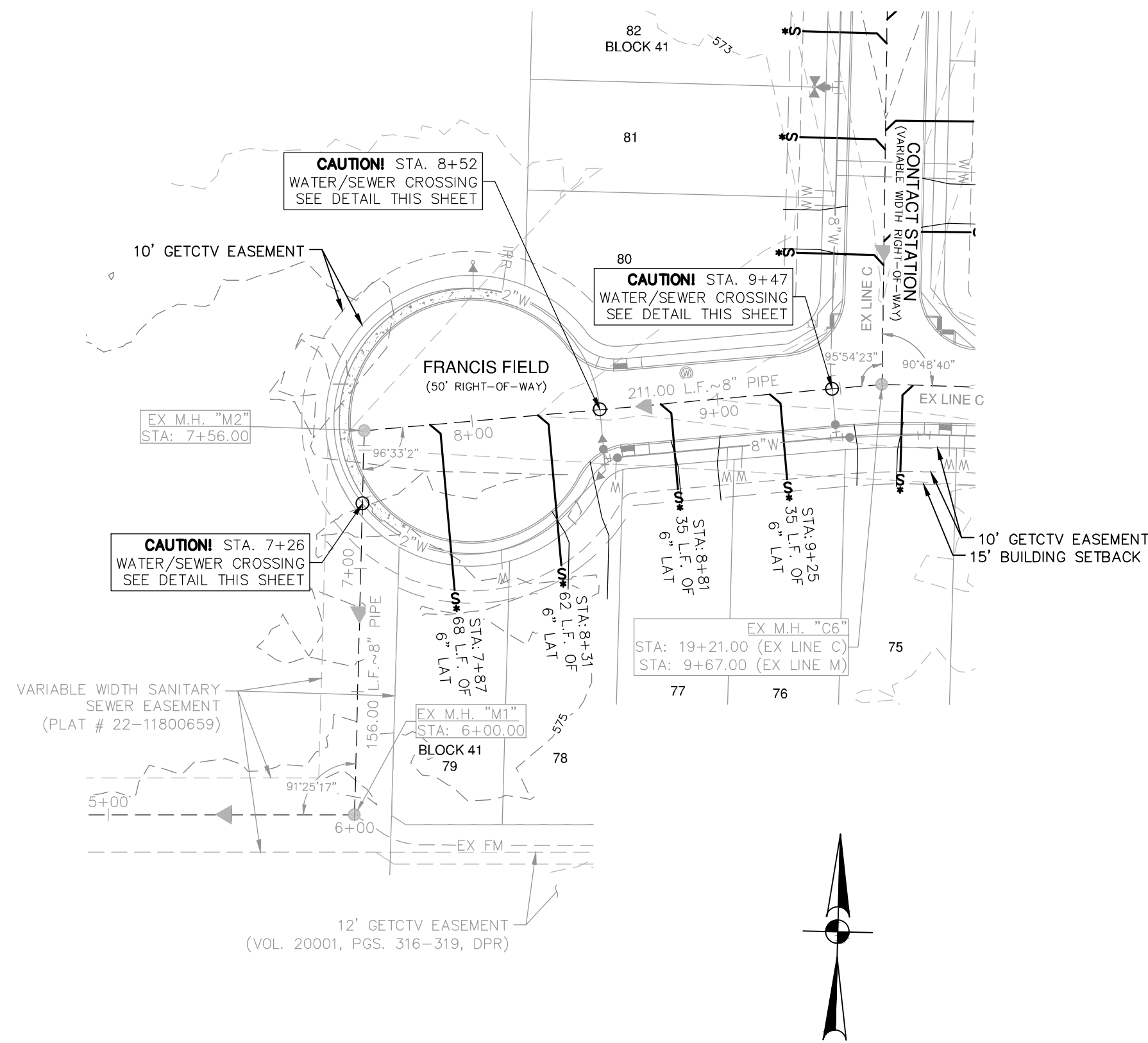
DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS: 100 NE LOOP 410, STE. 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403-6200 FAX# N/A
SAWS BLOCK MAP# N/A TOTAL EDU'S 103 TOTAL ACREAGE 55.73
TOTAL LINEAR FOOTAGE OF PIPE: 1,376 L.F. ~8" PVC PLAT NO 23-11800230
NUMBER OF LOTS 103 SAWS JOB NO. 23-1607

DATE
NO. REVISION
STATE OF TEXAS
EUGENE H. DAWSON III
112792
LICENSED PROFESSIONAL ENGINEER
10/23/23

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #70 TEXAS SURVEYING FIRM #1008800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
SANITARY SEWER LINE 'C' PLAN & PROFILE
STA. 10+50.00 TO 21+50.00

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C5.02



CAUTION!!

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LA LAGO CREEK - SAN ANTONIO RIVER WATERSHED - DOS RIOS W.R.C.

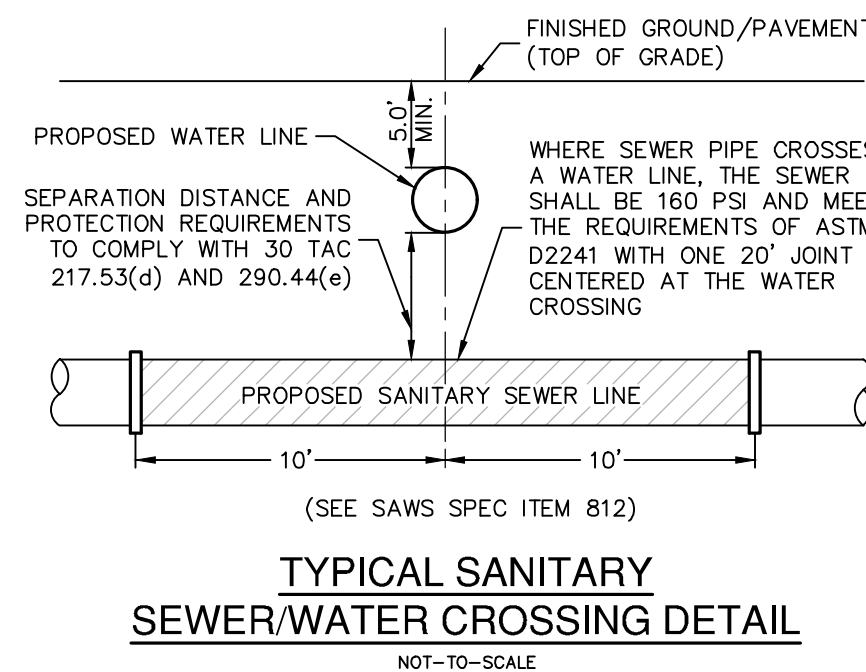
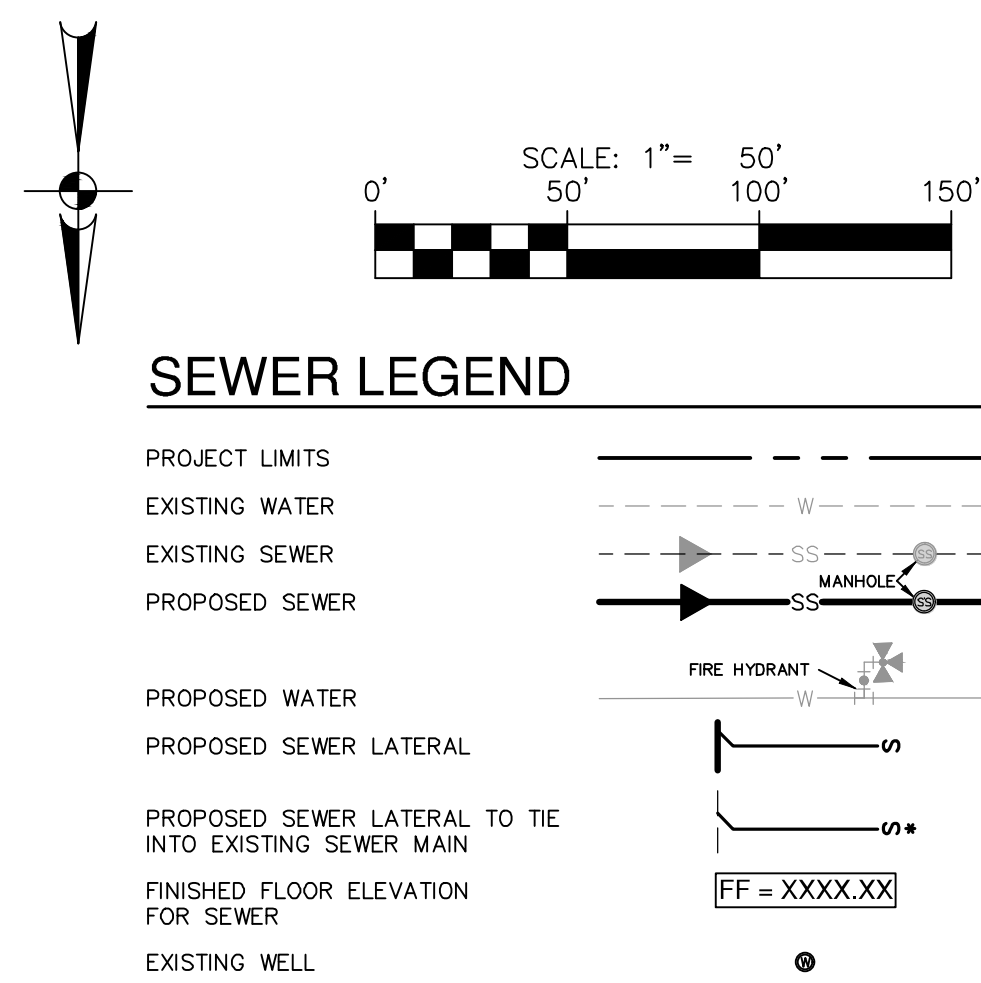
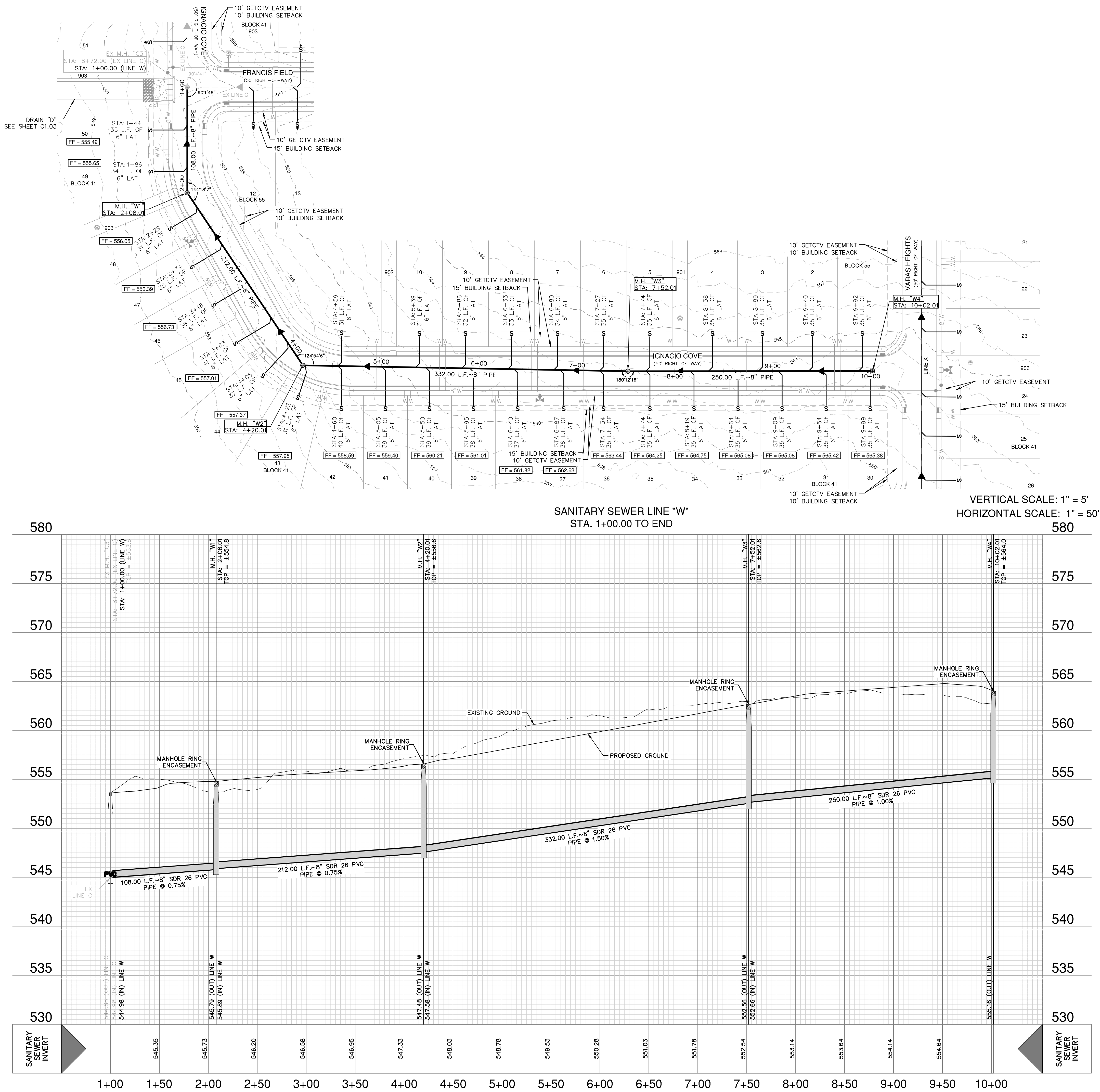
DEVELOPER'S NAME: LENNAR HOMES OF TEXAS		
ADDRESS: 100 NE LOOP 410, STE. 1155		
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78216
PHONE# (210) 403-6200	FAX# N/A	
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TOTAL LINEAR FOOTAGE OF PIPE: 1,376 LF. ~8" PVC PLAT NO 23-11800230		
NUMBER OF LOTS 103	SAWS JOB NO. 23-1607	

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
SANITARY SEWER LINE 'C' & LINE 'M' PLAN & PROFILE
LINE 'C' STA. 21+50.00 TO END
LINE 'M' STA. 6+00.00 TO END

PLAT NO. 23-1180023
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C5.03

Date: Oct 30, 2023, 2:59pm User: B: tccmshs
File: P:\126132\13\Design\DWG\23-1180023-15 LINE W.dwg

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SALADO CREEK - SAN ANTONIO RIVER WATERSHED - DOS RIOS W.R.C.

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ADDRESS: 100 NE LOOP 410, STE. 1155			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78216	
PHONE# (210) 403-6200	FAX# N/A		
SAWS BLOCK MAP# N/A TOTAL EDU'S 103 TOTAL ACREAGE 55.73			
TOTAL LINEAR FOOTAGE OF PIPE: 1,376 L.F. ~8" PVC PLAT NO. 23-11800230			
NUMBER OF LOTS 103 SAWS JOB NO. 23-1607			

DATE	NO.	REVISION

10/23/23

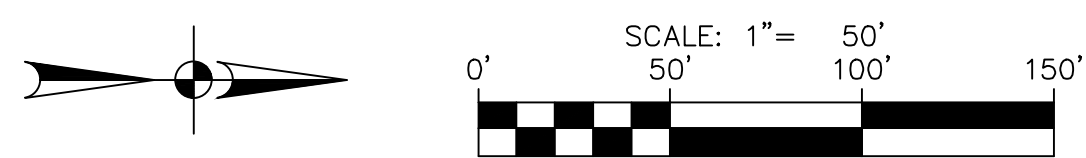
PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088600

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

SANITARY SEWER LINE "W" PLAN & PROFILE
STA. 1+00 TO 33+00

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW DRAWN BR
SHEET	C5.04



PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

PROPOSED SEWER LATERAL TO TIE INTO EXISTING SEWER MAIN

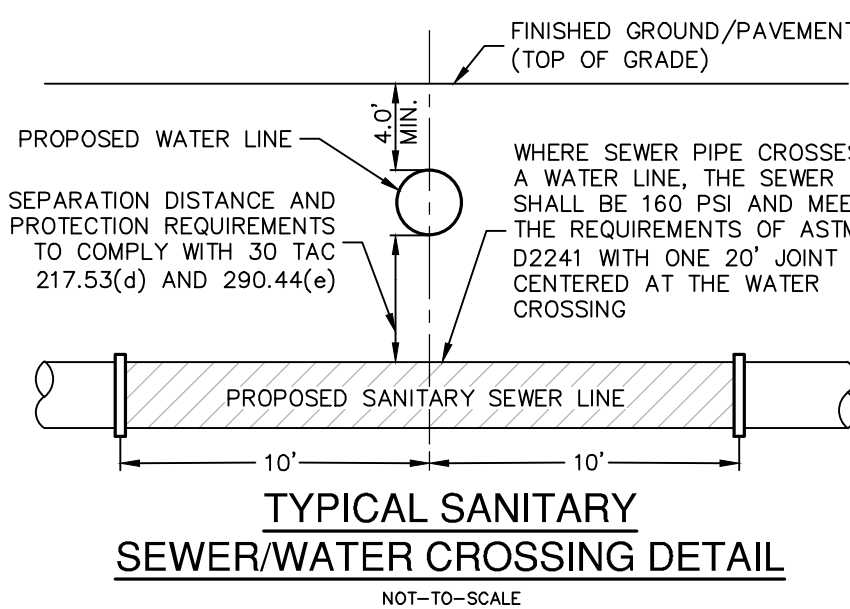
FINISHED FLOOR ELEVATION FOR SEWER

EXISTING WELL

MANHOLE

FIRE HYDRANT

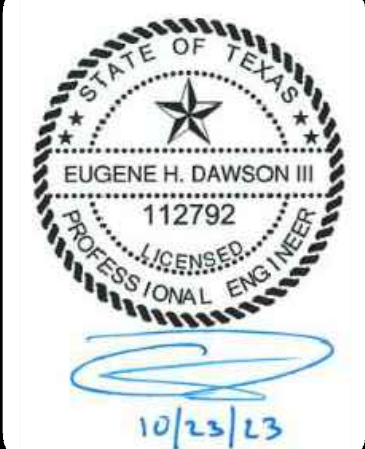
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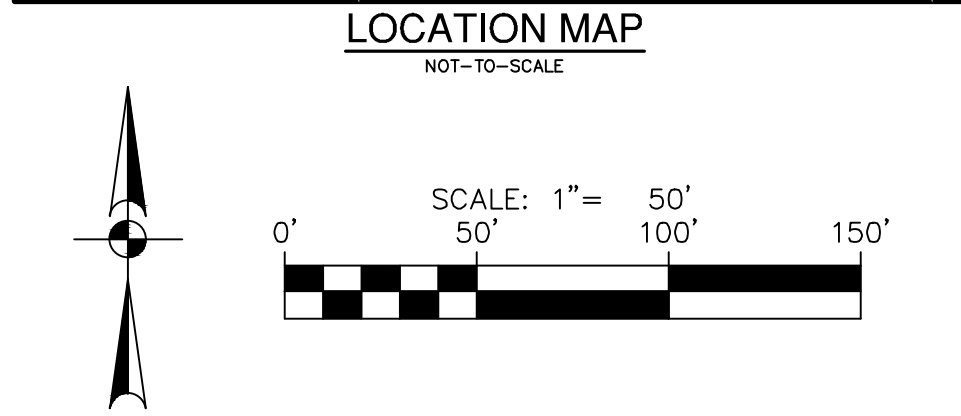
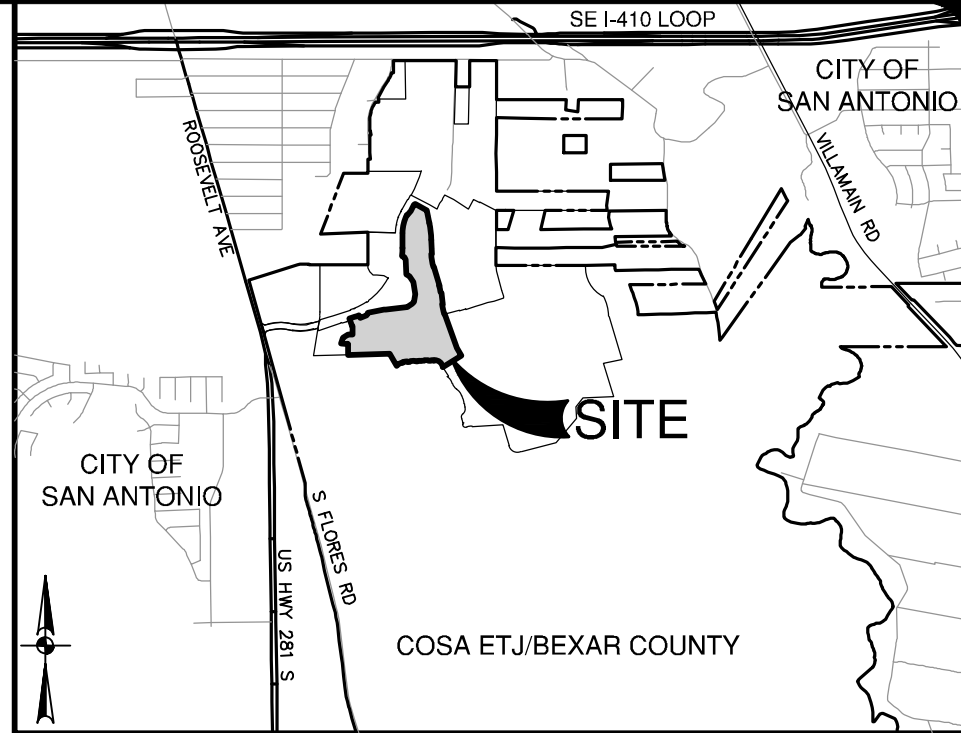
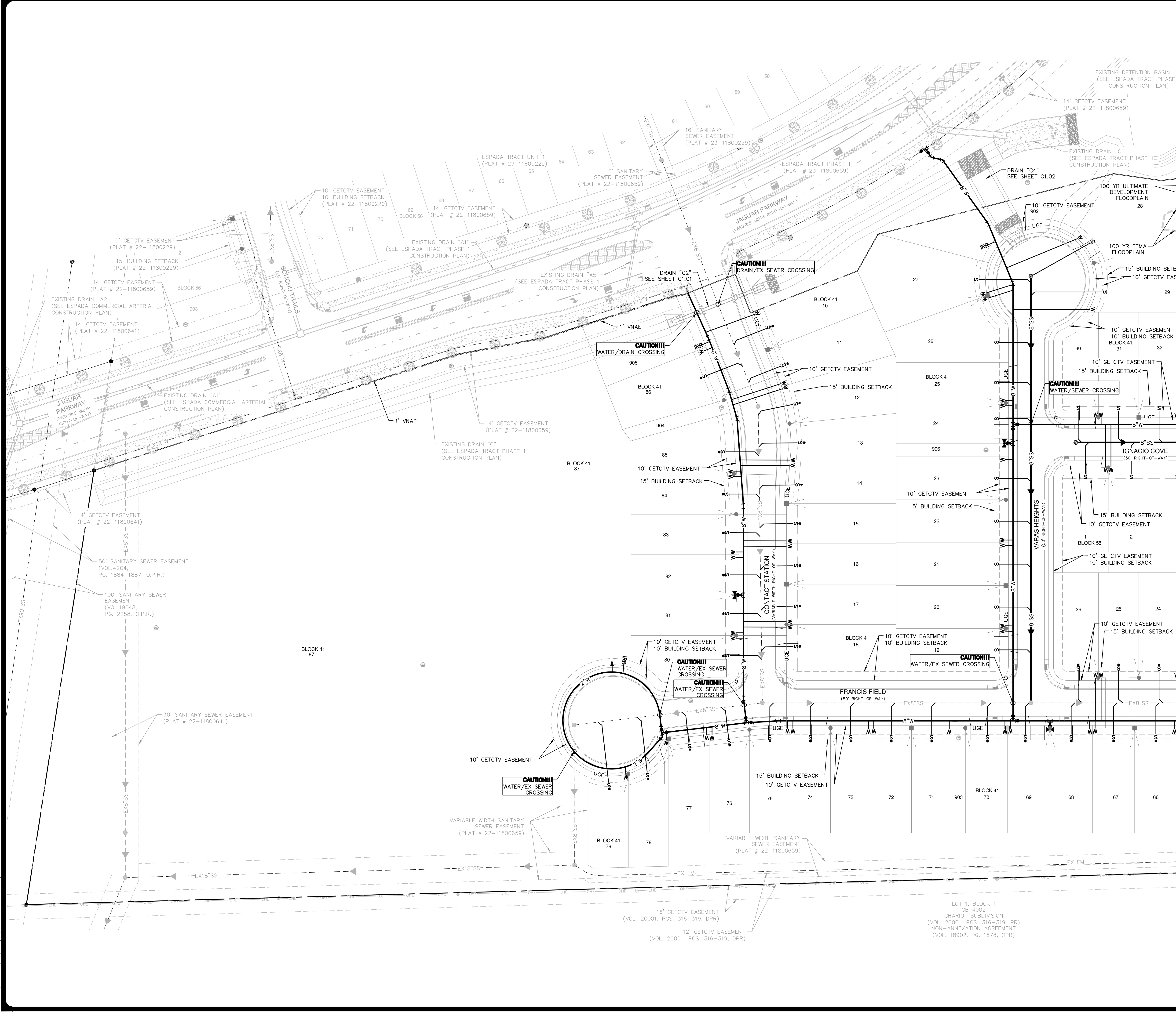
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**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10328600

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

PLAT NO. 23-11800230
 JOB NO. 12632-13
 DATE JULY 2023
 DESIGNER JG
 CHECKED DW DRAWN BR
 SHEET C5.05

Date: Rec: 06-2023, 9:42am, User: JB, Location: C:\Users\JB\Documents\23-1180023.dwg
File: P:\23-1180023.dwg, Plot: 23-1180023.dwg



UTILITY LEGEND	
PROJECT LIMITS	---
EXISTING WATER	---
EXISTING SEWER	---
PROPOSED SEWER	---
PROPOSED WATER	---
PROPOSED WYE & LATERAL	---
PROPOSED SEWER LATERAL TO TIE INTO EXISTING SEWER MAIN	---
SINGLE WATER SERVICE	---
DUAL WATER SERVICE	---
STREET LIGHTS	---
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	---
EXISTING WELL	---
SECONDARY PEDESTAL	---
TRANSFORMER	---
PULL BOX	---
TREES TO REMAIN	---
VEHICULAR NON ACCESS EASEMENT	---

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

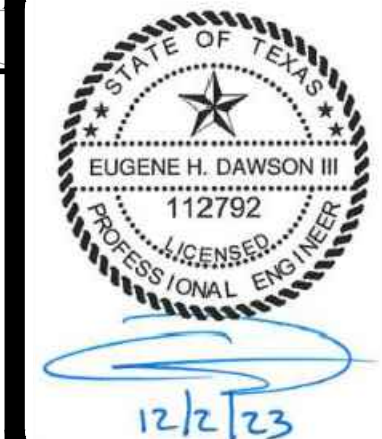
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NO.	REVISION	DATE

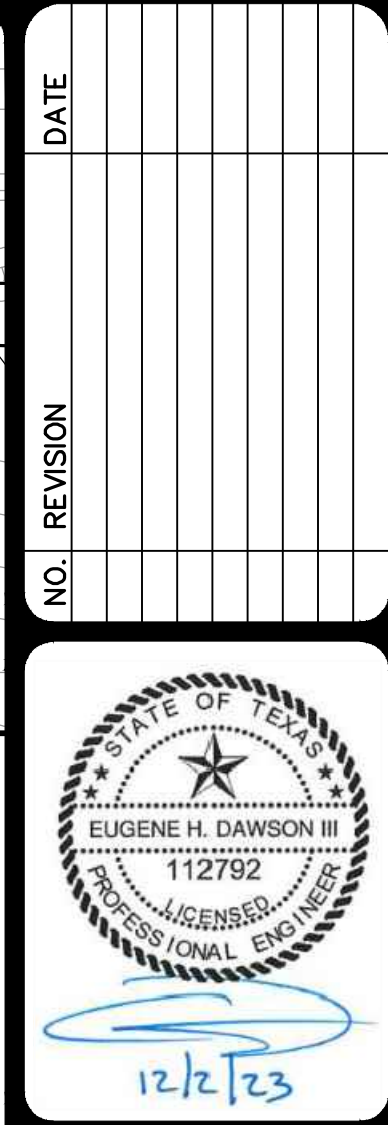
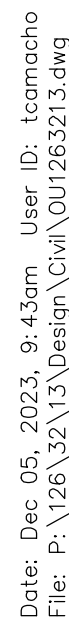


PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL UTILITY PLAN

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C6.00



**PAPE-DAWSON
ENGINEERS**

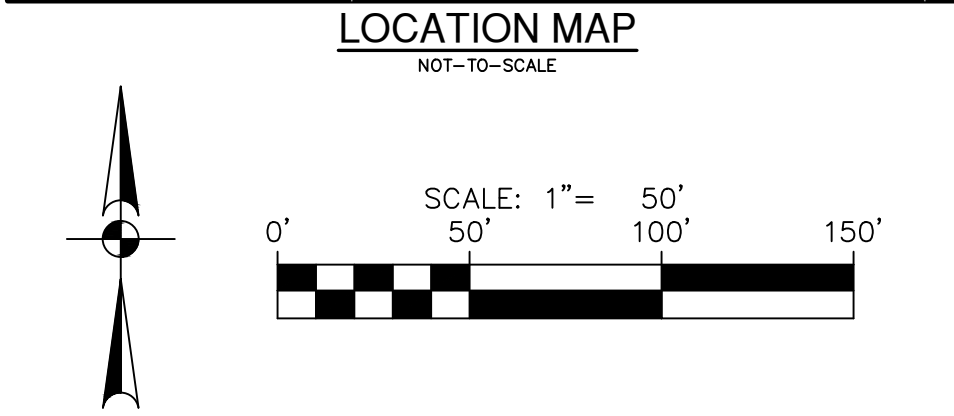
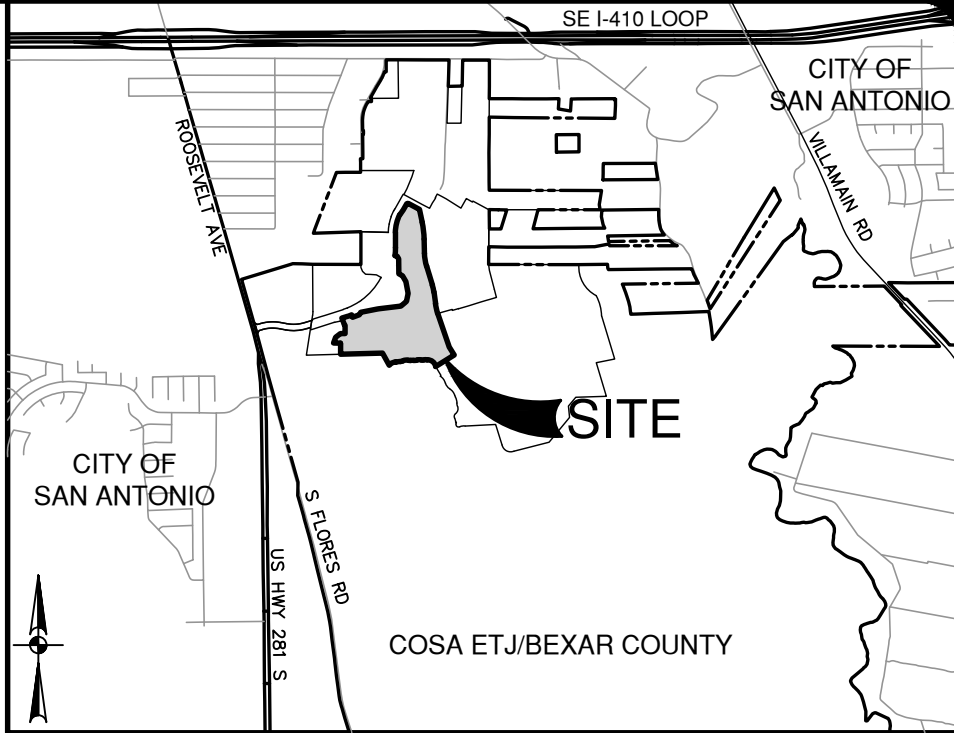
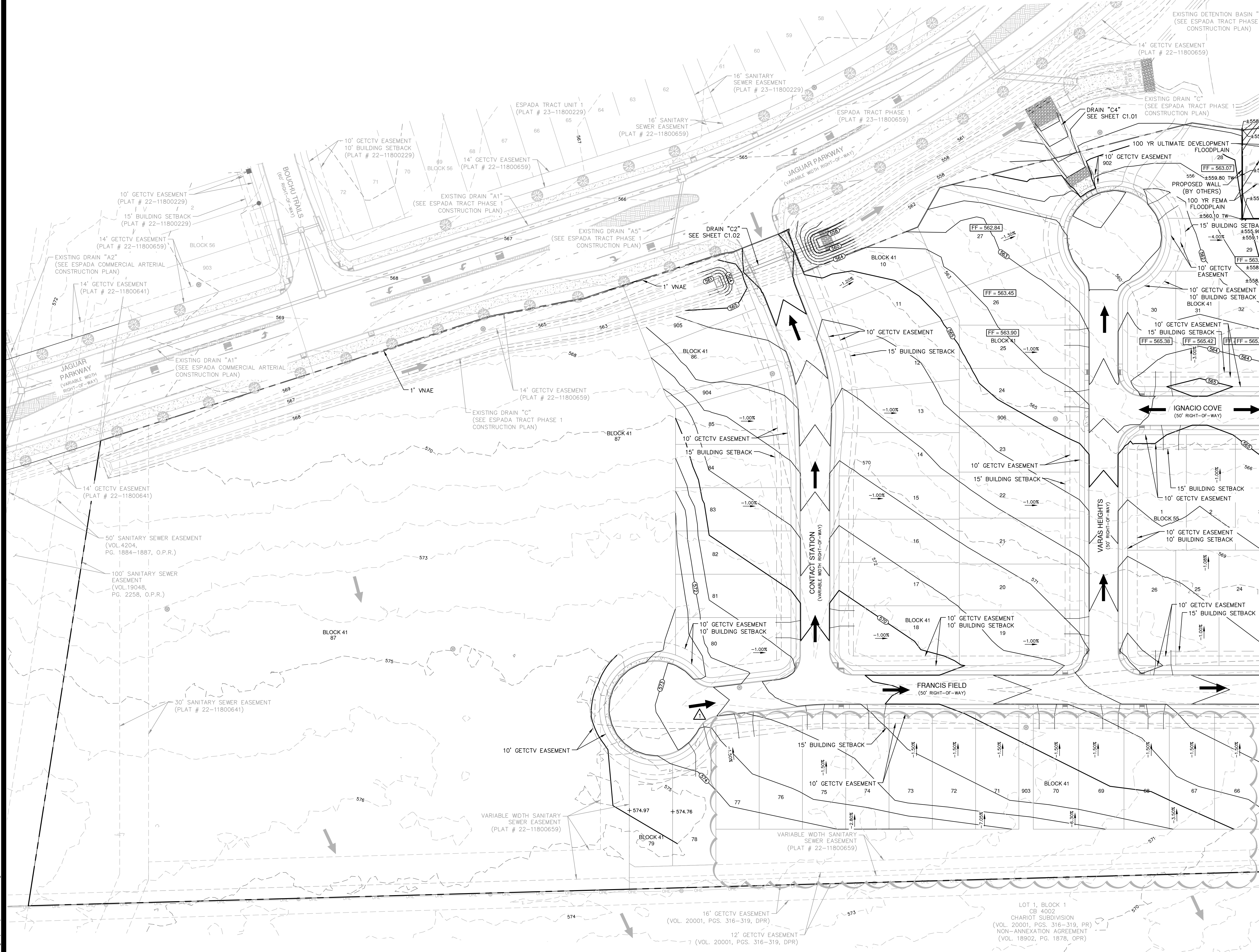
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL UTILITY PLAN

PLAT NO. 23-11800230
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET C6.02

Date: Jan 17, 2024, 11:20am User ID: jbrahangroff
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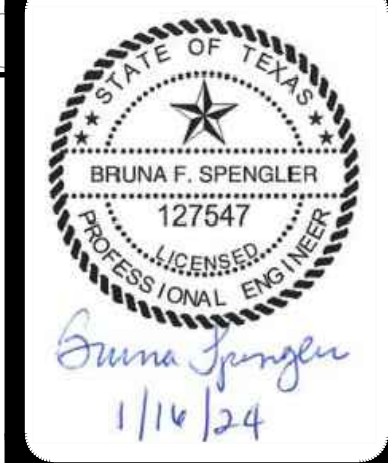
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GRADING NOTES:

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.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL, CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION, ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

NO.	REVISION	DATE
1	REVISED GRADING	1/16/24



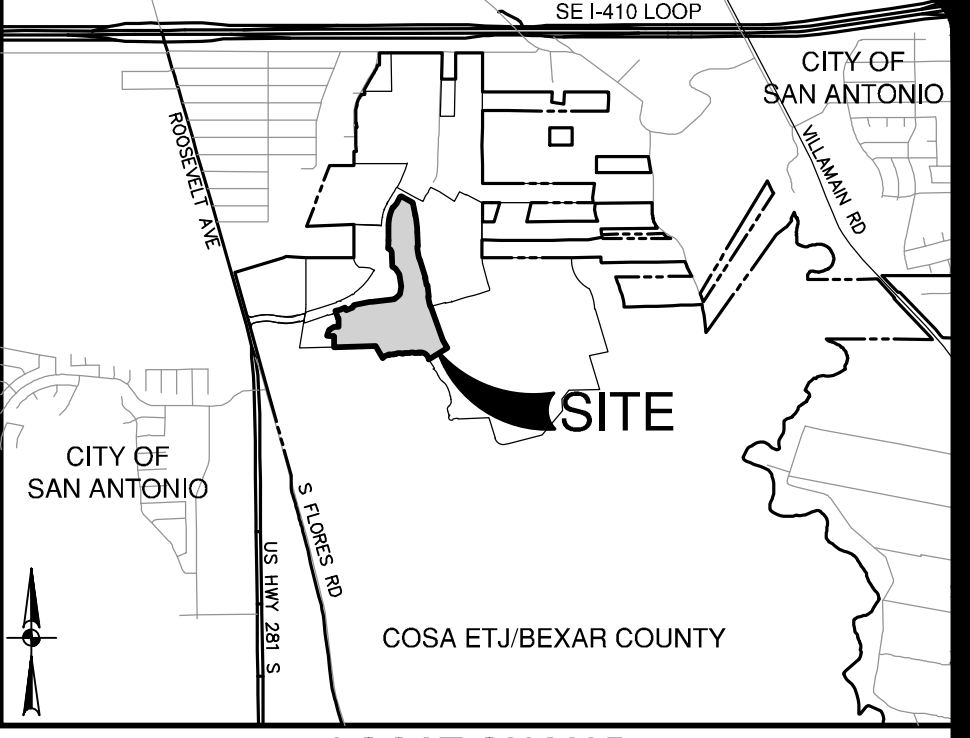
PAPE-DAWSON ENGINEERS
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2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL GRADING PLAN

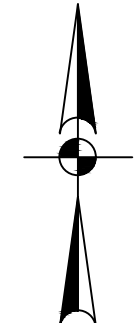
PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW DRAWN BR
SHEET	C7.00

MATCHLINE "A" - SEE SHEET C7.00

MATCHLINE "A" - SEE SHEET C7.00



NOT-TO-SCALE



SCALE: 1" = 50'

A horizontal scale bar with alternating black and white segments. The segments are labeled 0, 50, 100, and 150, representing feet. The bar is divided into three equal parts, each representing 50 feet.

The diagram illustrates the relationship between various project limits and floodplain elevations. It includes the following elements:

- PROJECT LIMITS:** Represented by a solid horizontal line at the top.
- 100 YR FLOODPLAIN:** Represented by a dashed horizontal line below the project limits.
- EXISTING CONTOUR:** Represented by a dashed horizontal line with a value of -976.
- PROPOSED CONTOUR:** Represented by a solid horizontal line with a value of -970.
- FLOW ARROW (EXISTING):** Represented by a grey arrow pointing right.
- FLOW ARROW (PROPOSED):** Represented by a black arrow pointing right.
- MINIMUM FINISHED FLOOR ELEVATION:** Represented by a box containing the text "FF = XXXX.XX".

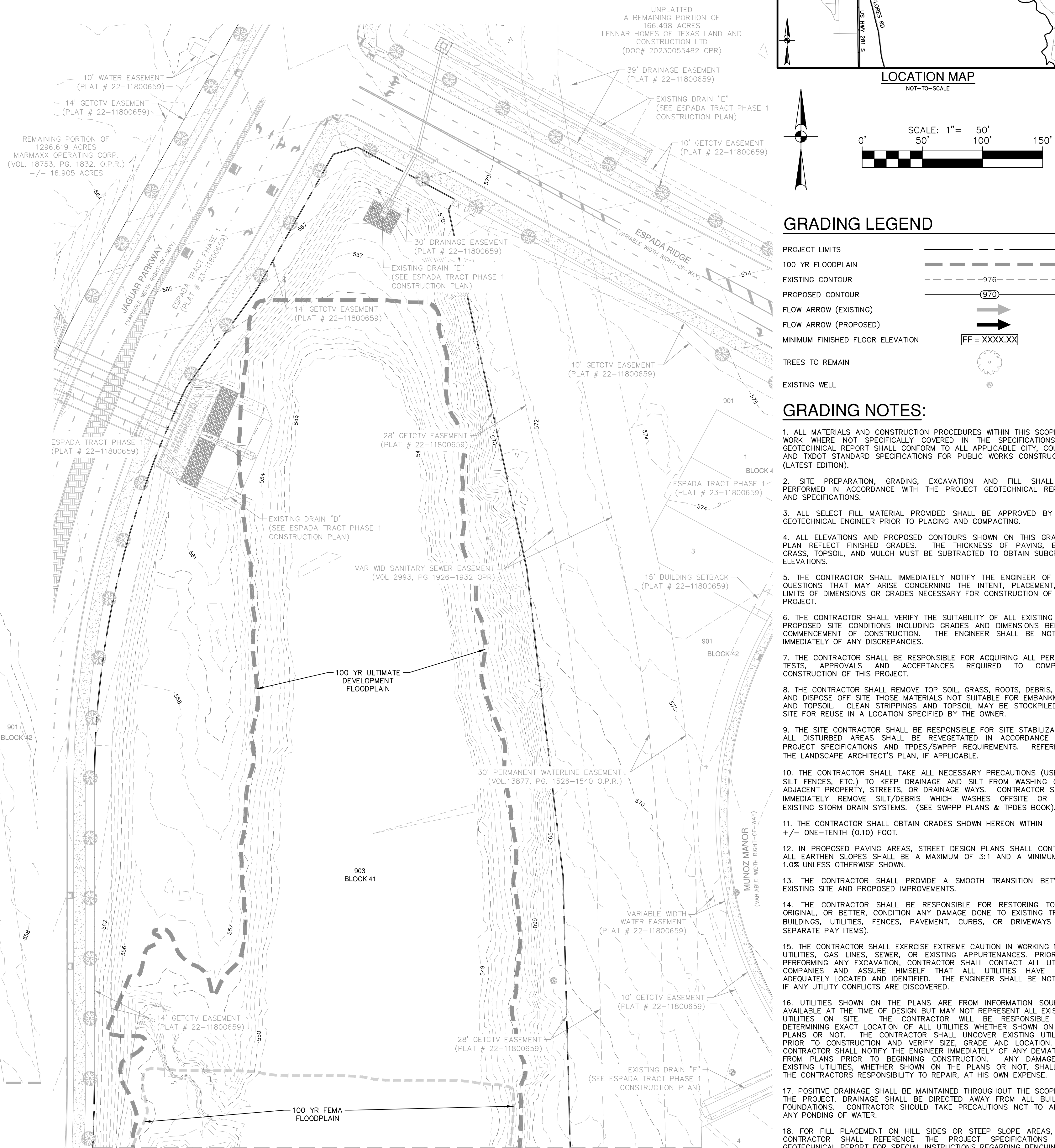
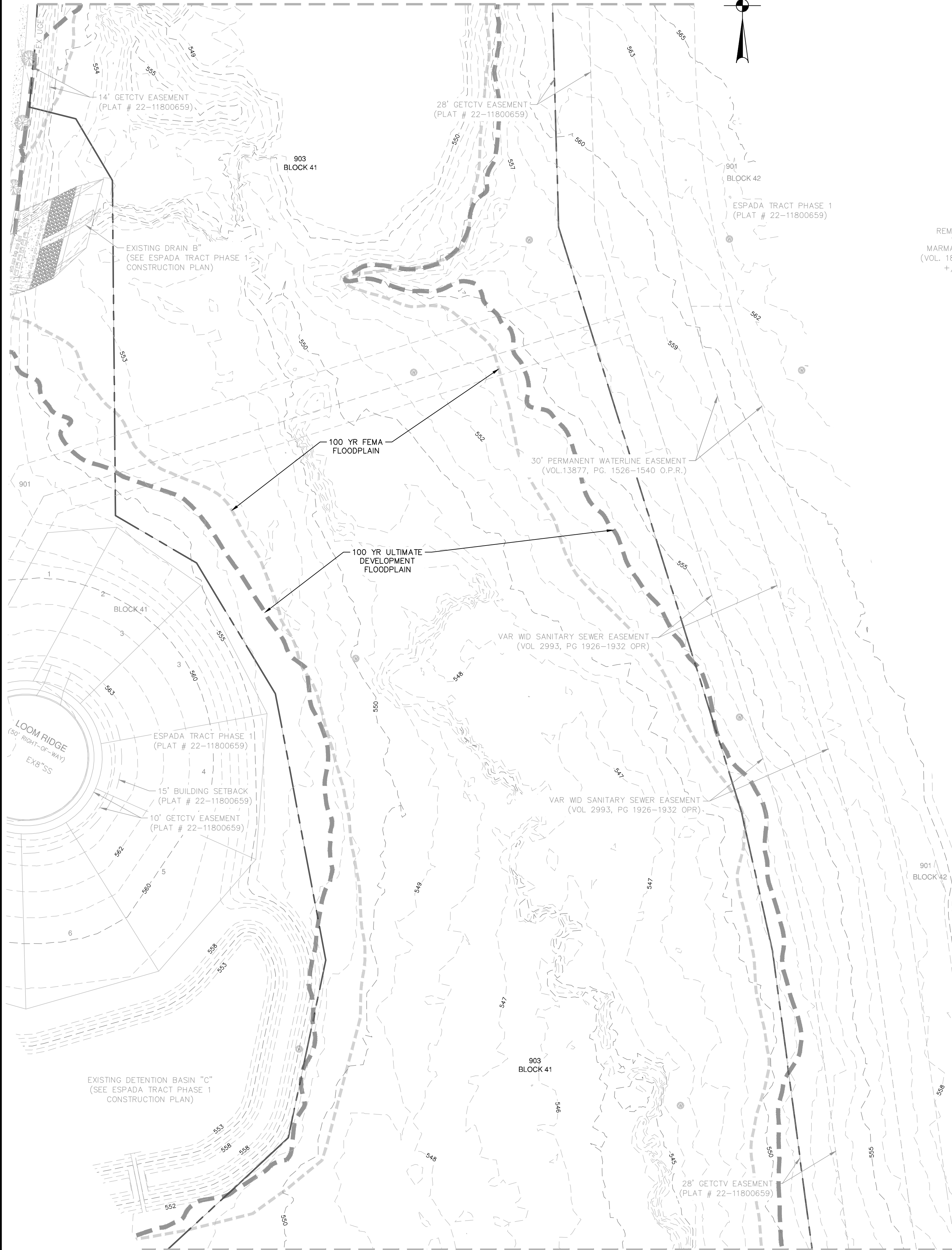
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR STANDARD SPECIFICATIONS SHALL CONFORM TO ALL APPLICABLE CITY CODES AND TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR QUESTIONS CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADATIONS AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. CONTRACTOR SHALL CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION, ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGEWAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHWORKS SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1:0.5 UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
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19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.



**PAPE-DAWSON
ENGINEERS**

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL GRADING PLAN

PLAT NO. 23-1180023
JOB NO. 12632-13
DATE JULY 2023
DESIGNER JG
CHECKED DW DRAWN BR
SHEET **C7.01**

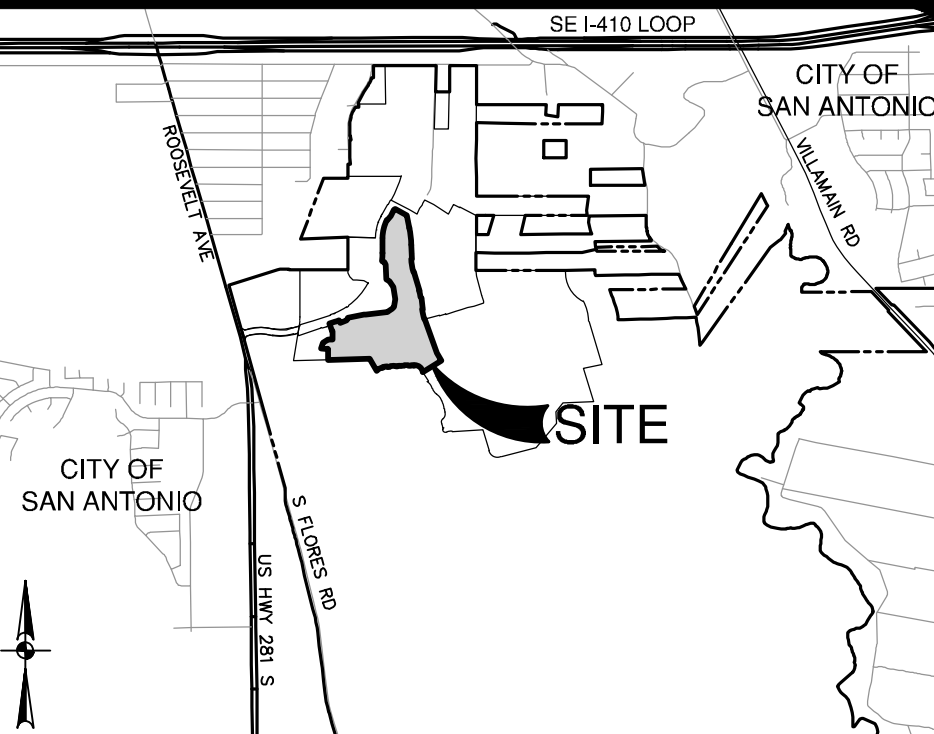


GRADING LEGEND

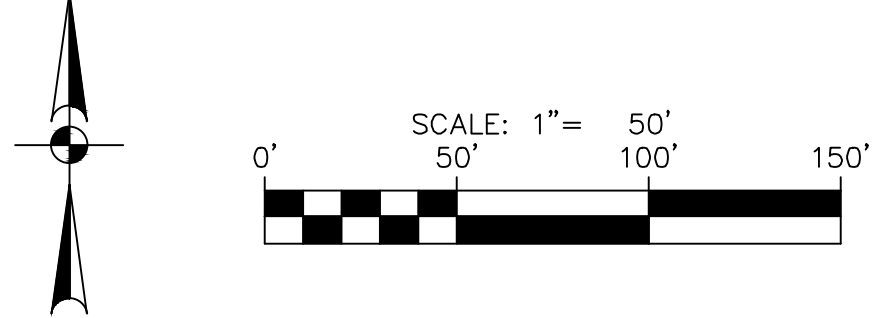
GRADING LEGEND

GRADING NOTES:

- GRADING NOTES:



LOCATION MAP
NOT-TO-SCALE

[illegible]

**PAPE-DAWSON
ENGINEERS**

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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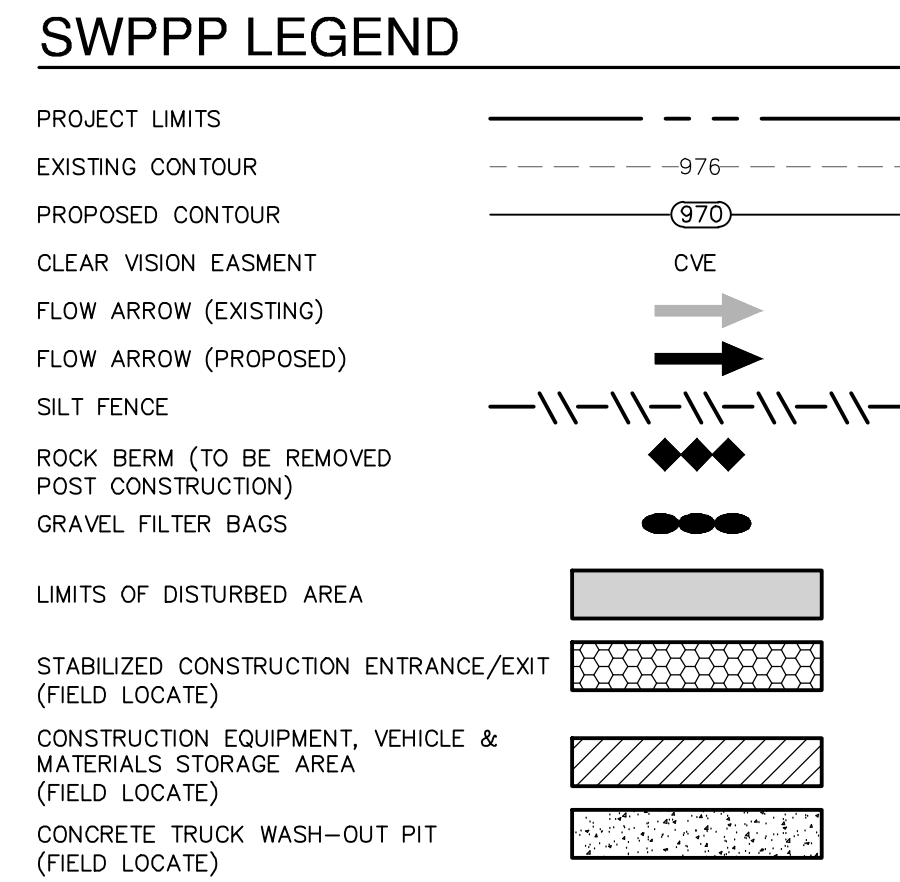
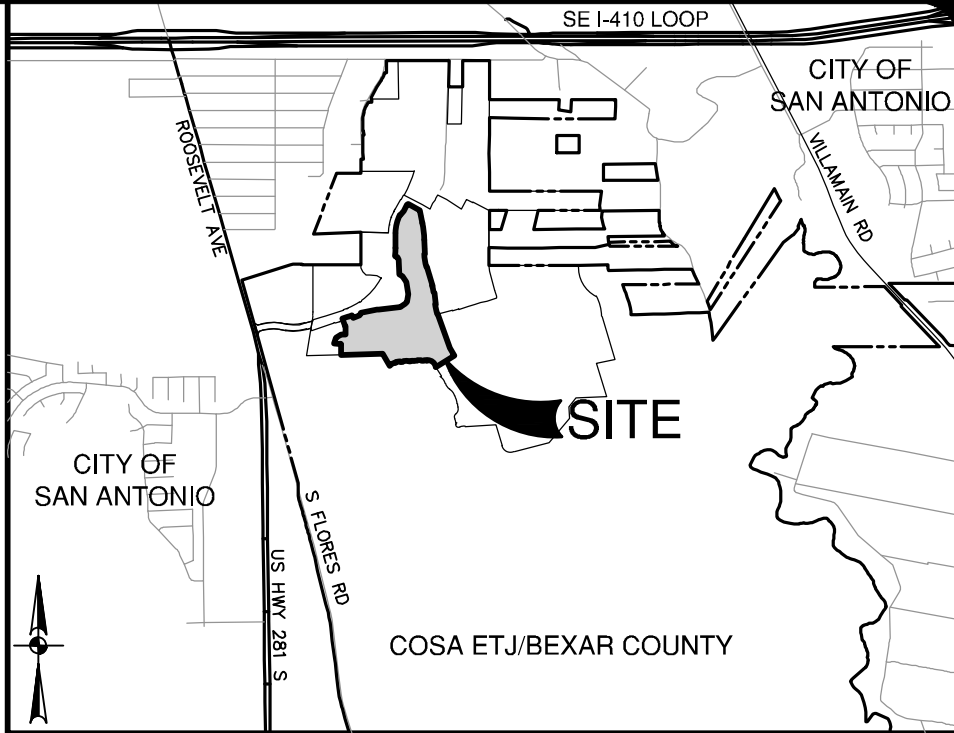
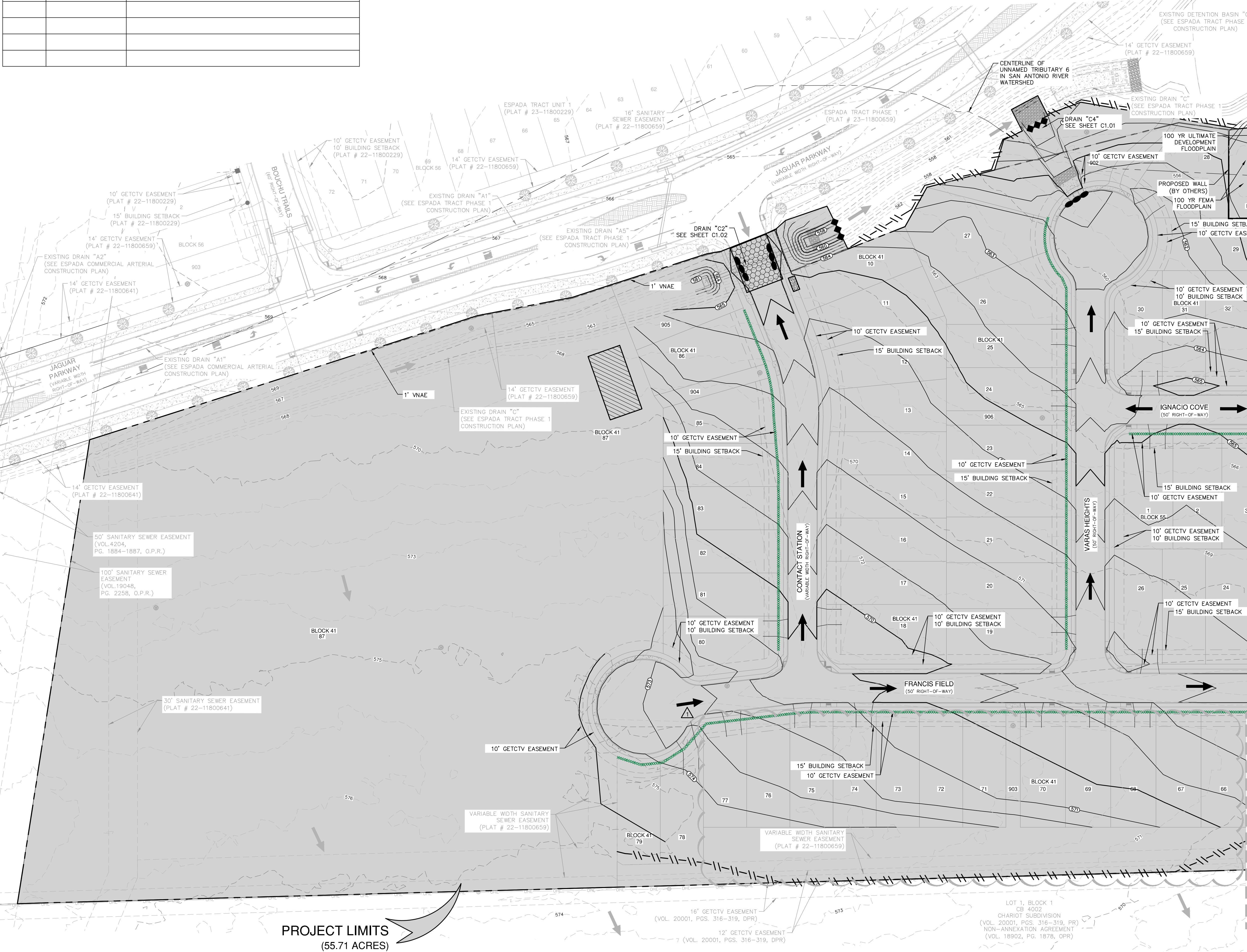
ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS
OVERALL GRADING PLAN

PLAT NO. 23-11800230
 JOB NO. 12632-13
 DATE JULY 2023
 DESIGNER JG
 CHECKED DW DRAWN BR
 SHEET C7.02

Date: Jan 17, 2024, 11:54am, User: JB, jbrathengruff
File: P:\126\12613\13 Design\GIS\SWPPP\26263.dwg

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SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



- GENERAL NOTES**
- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
 - CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
 - STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
 - RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
 - ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
 - FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
 - STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
 - AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
 - BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADEMENT AREAS.
 - BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
 - UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
 - WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
 - SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
 - PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TxDOT RIGHT-OF-WAY WITH TxDOT.
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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
(1 OF 3)

DATE: 1/16/24

NO. 1

REVISION 1

REVISED GRADING

STATE OF TEXAS
BRUNA F. SPENGLER
127547
LICENSED PROFESSIONAL ENGINEER
Bruna Spengler
1/16/24

PAPE-DAWSON ENGINEERS

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ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

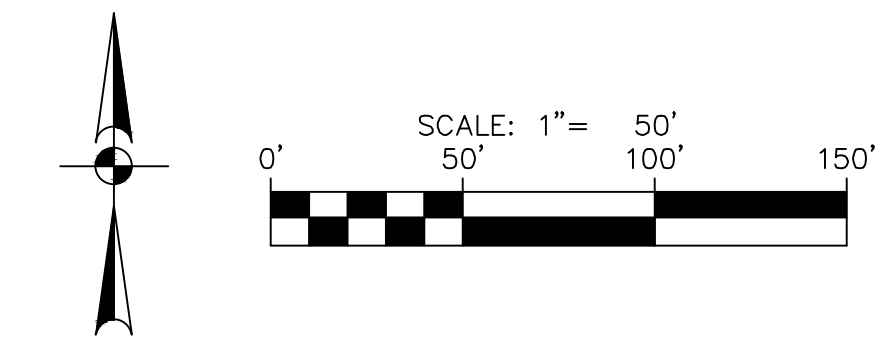
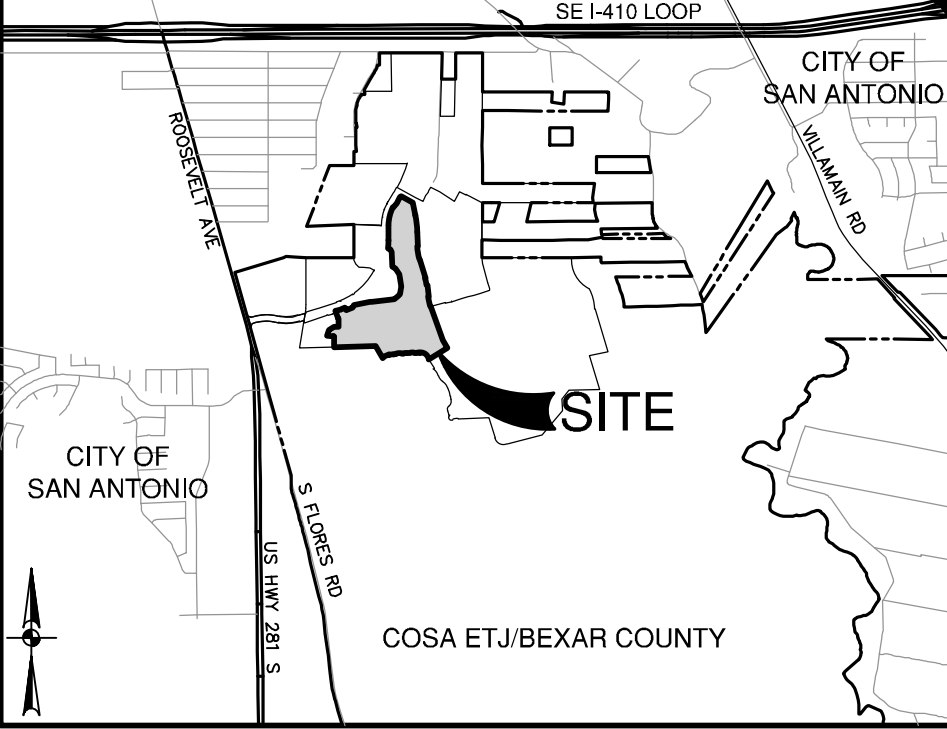
PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C8.00

Date: Jan 21, 2024, 9:58am, User: B. Hernandez
File: P:\23-11800230\13 Design\Civil\SWPPP\23-11800230.dwg

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SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



- ### GENERAL NOTES
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 - SHADED AREA [Symbol] 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.
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EXHIBIT 2
(2 OF 3)

NO.	REVISION	DATE
1	REVISED GRADING	1/16/24
2	ADDED ROCK BERM IN FLOODPLAIN	1/18/24



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2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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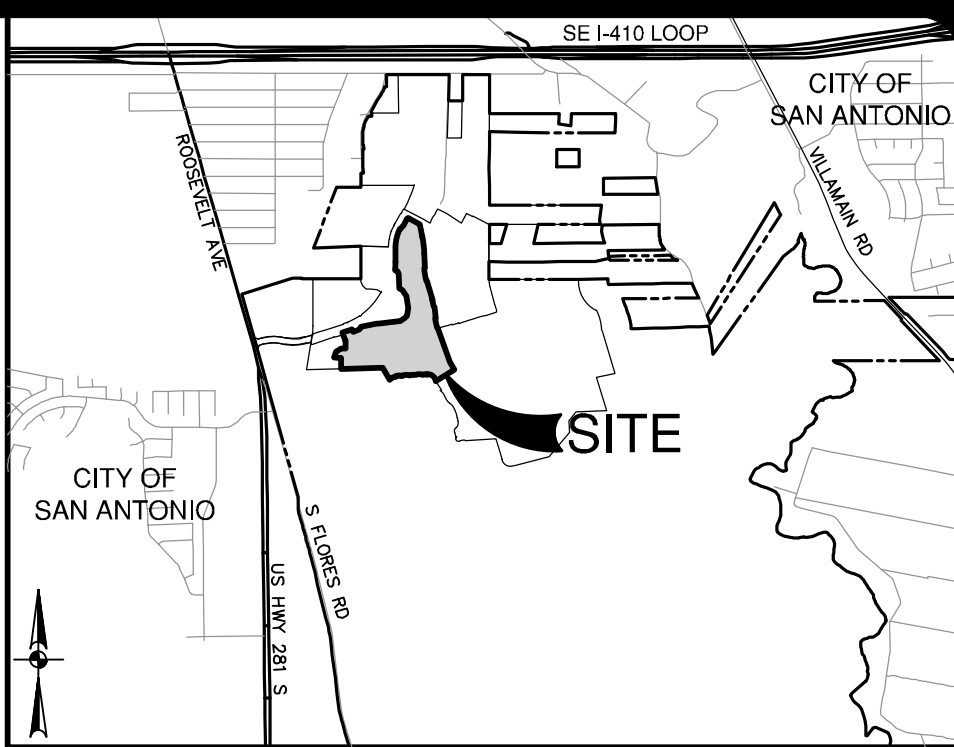
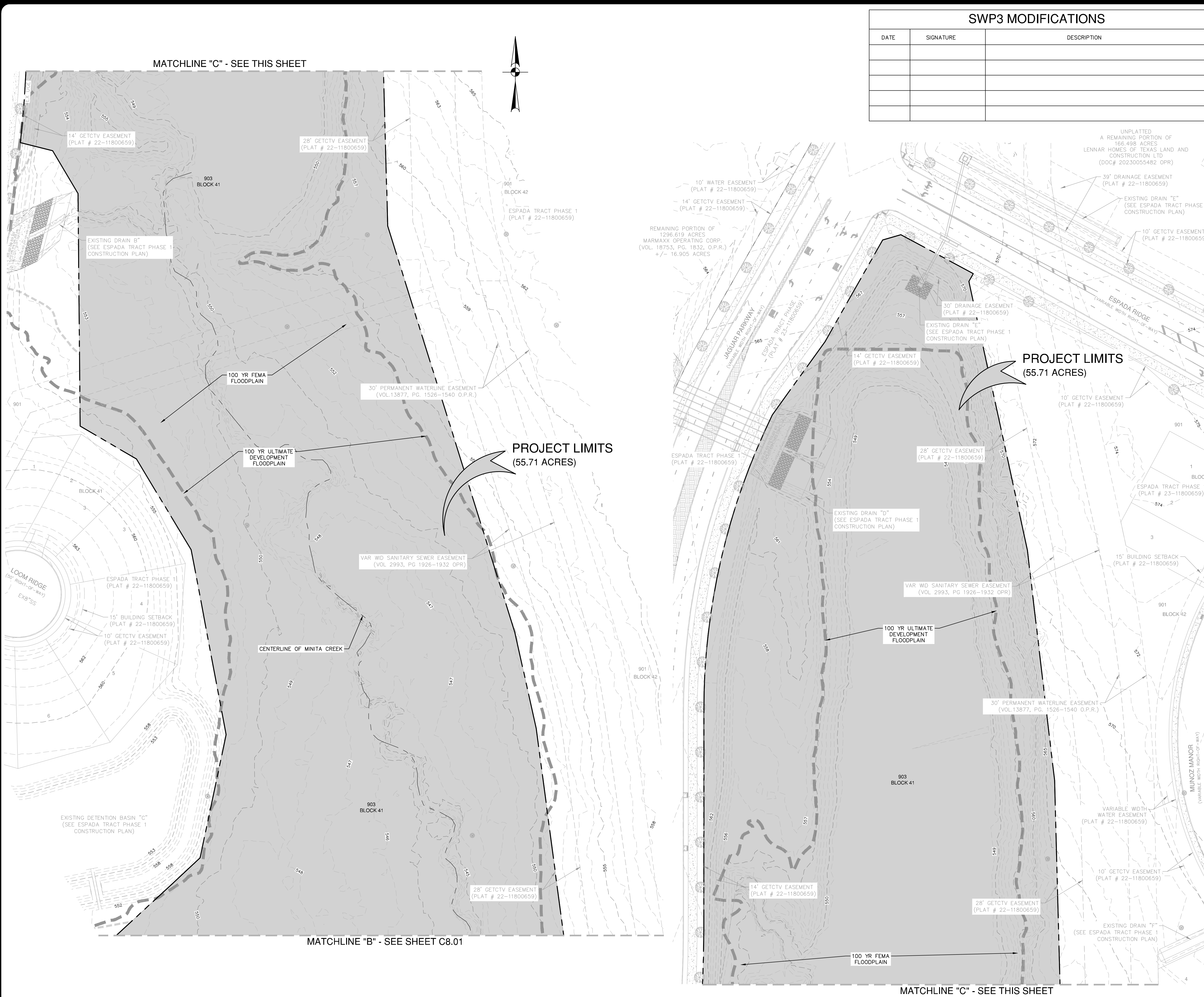
ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DESIGNER	JG
CHECKED	DW
DRAWN	BR
SHEET	C8.01

Date: Oct 13, 2023, 3:10pm, User: JB, Location: C:\Users\JB\OneDrive\Documents\SWPPP\23-11800230.dwg

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DATE	
NO.	
REVISION	



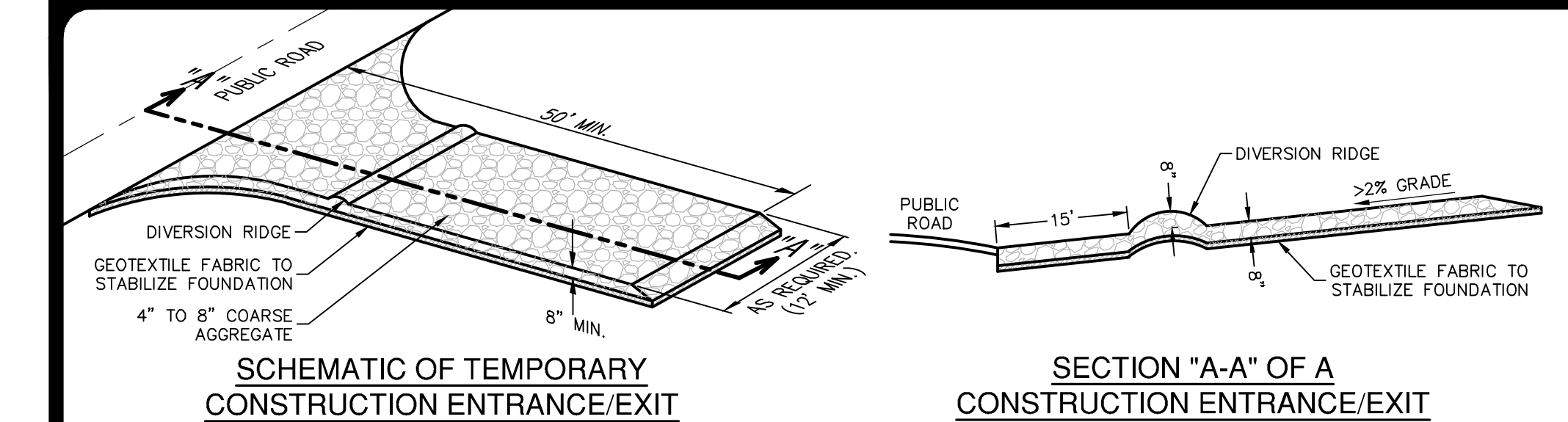
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DRAWN	JG
CHECKED	DW
DRAWN	BR
SHEET	C8.02

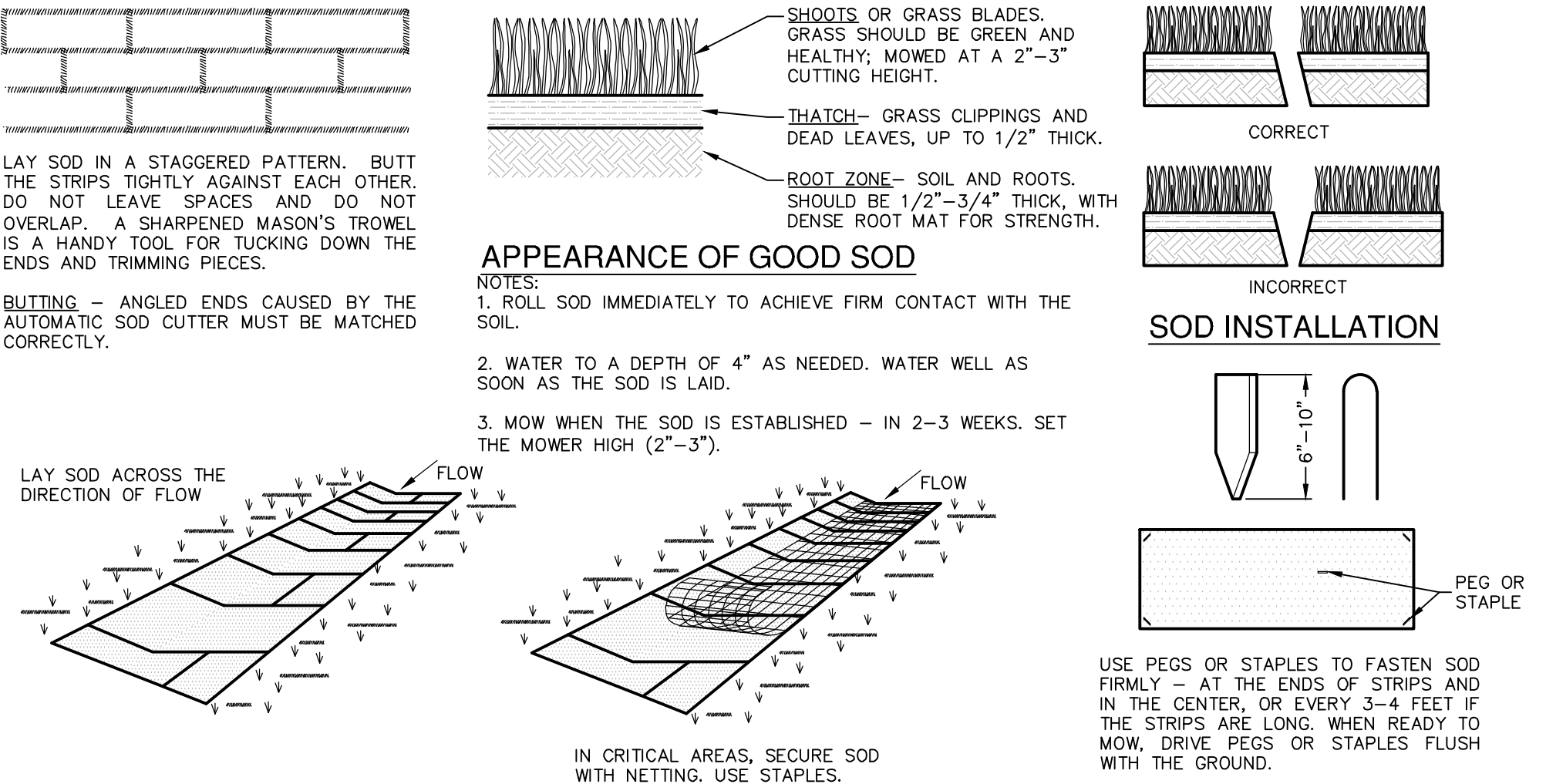


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², 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' 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.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



- 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 SOD 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.

SOD INSTALLATION DETAIL

NOT-TO-SCALE

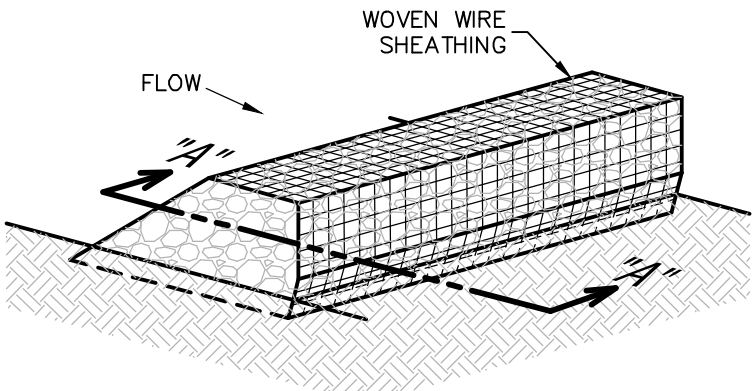
COMMON TROUBLE POINTS

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.

ISOMETRIC PLAN VIEW



ROCK BERMS

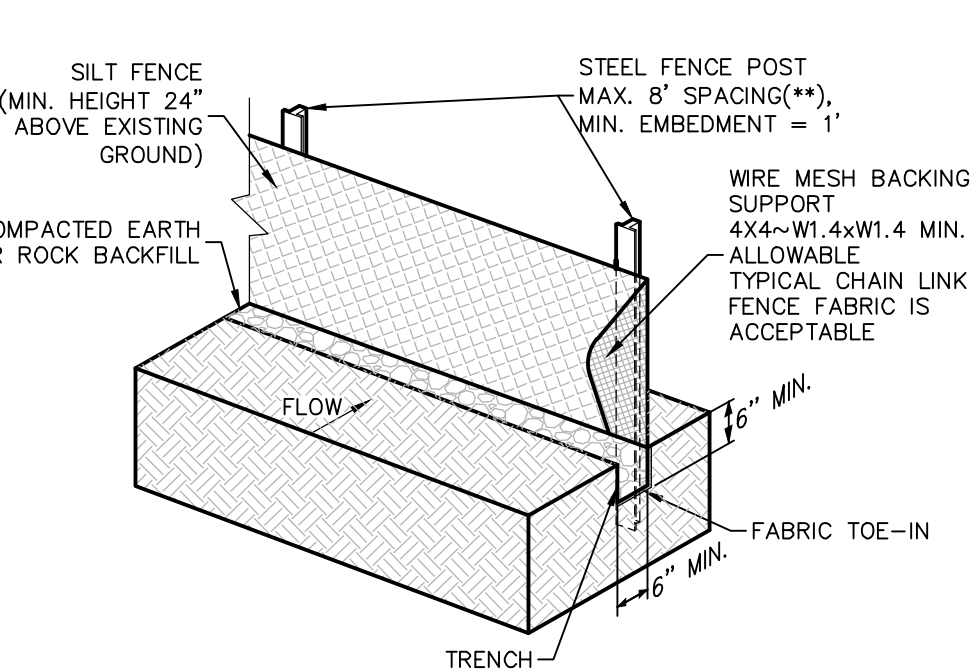
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE 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.

ROCK BERM DETAIL

NOT-TO-SCALE



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 BRINDLE HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2' X 4' WELDED WIRE, 12 GAUGE MINIMUM.

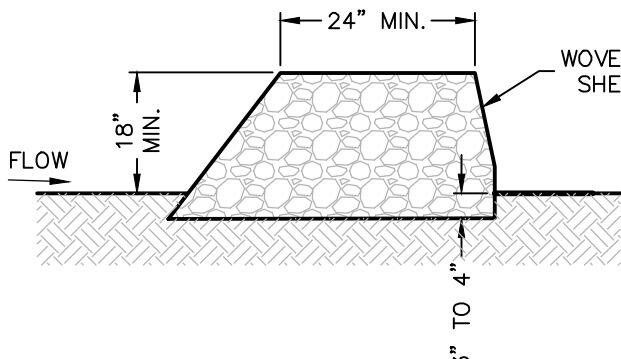
INSTALLATION

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.

SILT FENCE DETAIL

NOT-TO-SCALE

SECTION "A-A"



MATERIALS

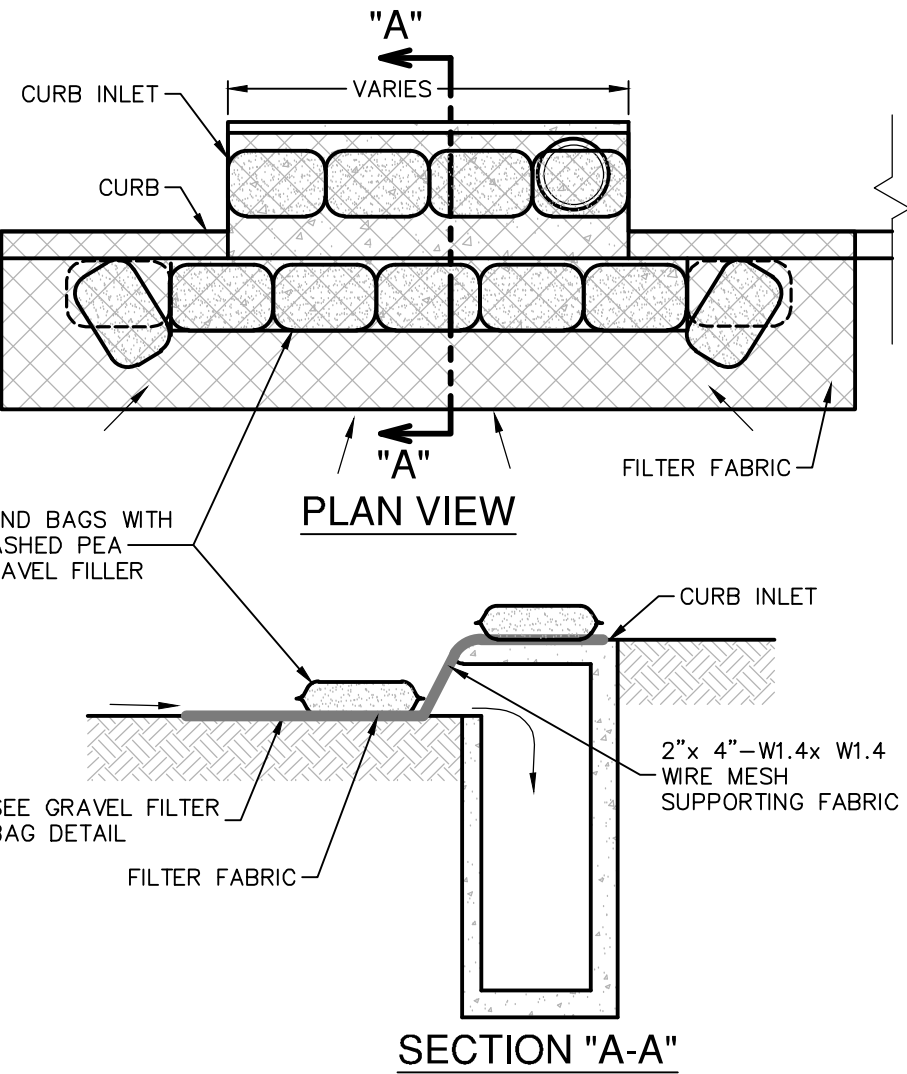
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOOT RINGS.
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR 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).



GENERAL NOTES

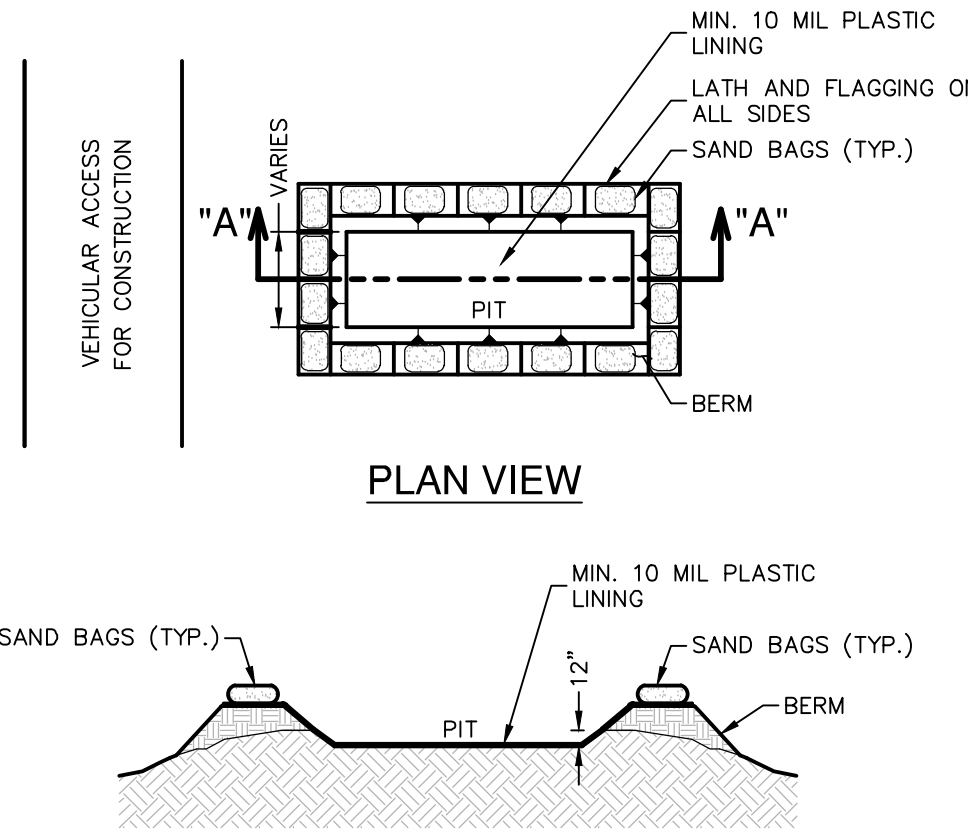
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL 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 INLETS.
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



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

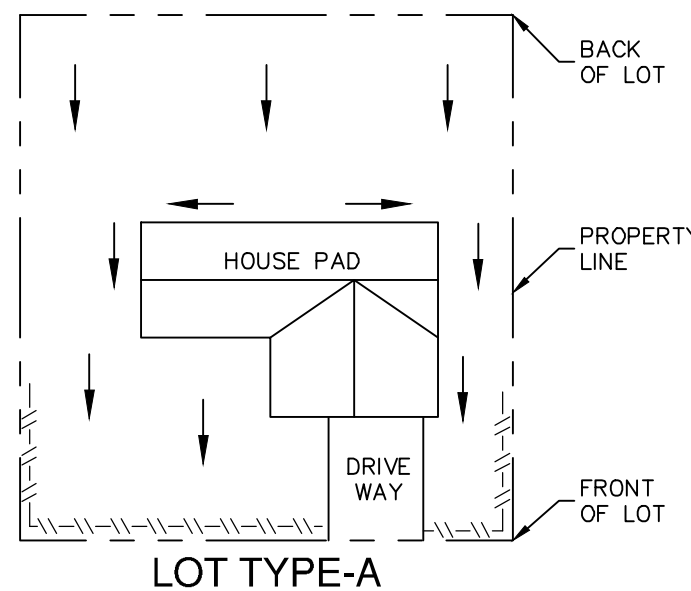
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

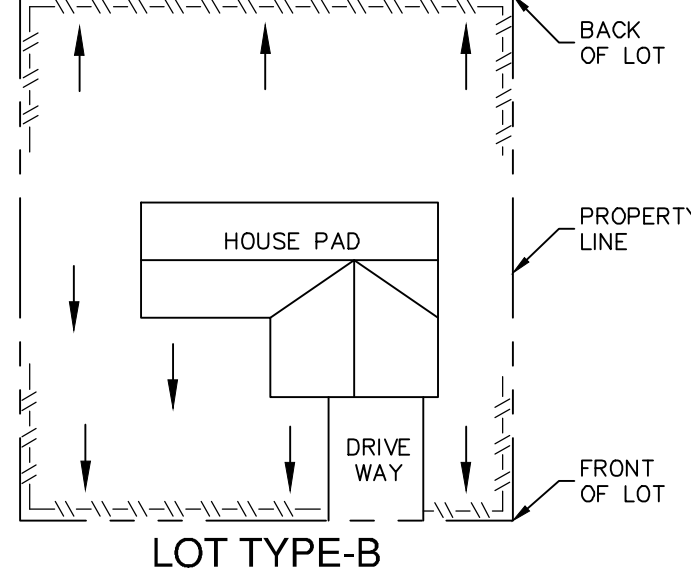
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

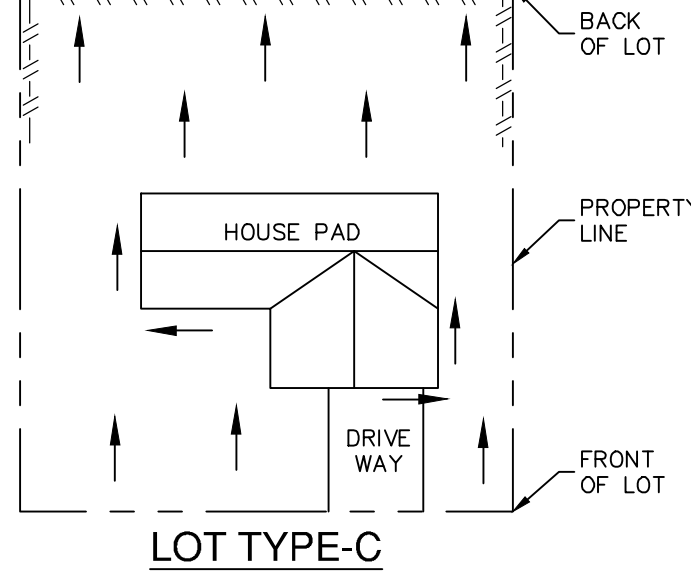
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LOT TYPE-A



LOT TYPE-B



LOT TYPE-C

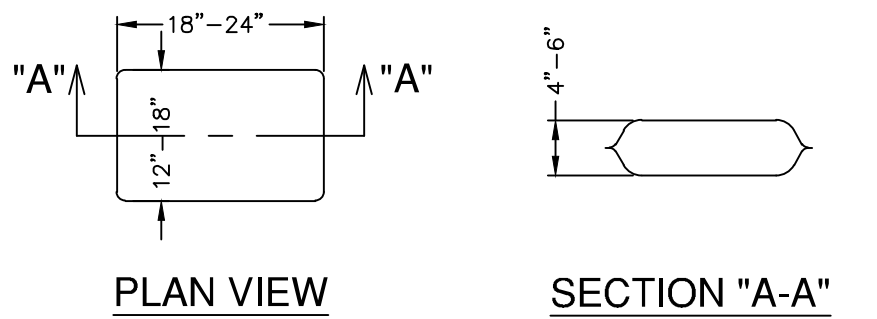
NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNGRADIENT SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

LEGEND

--- SILT FENCE DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE



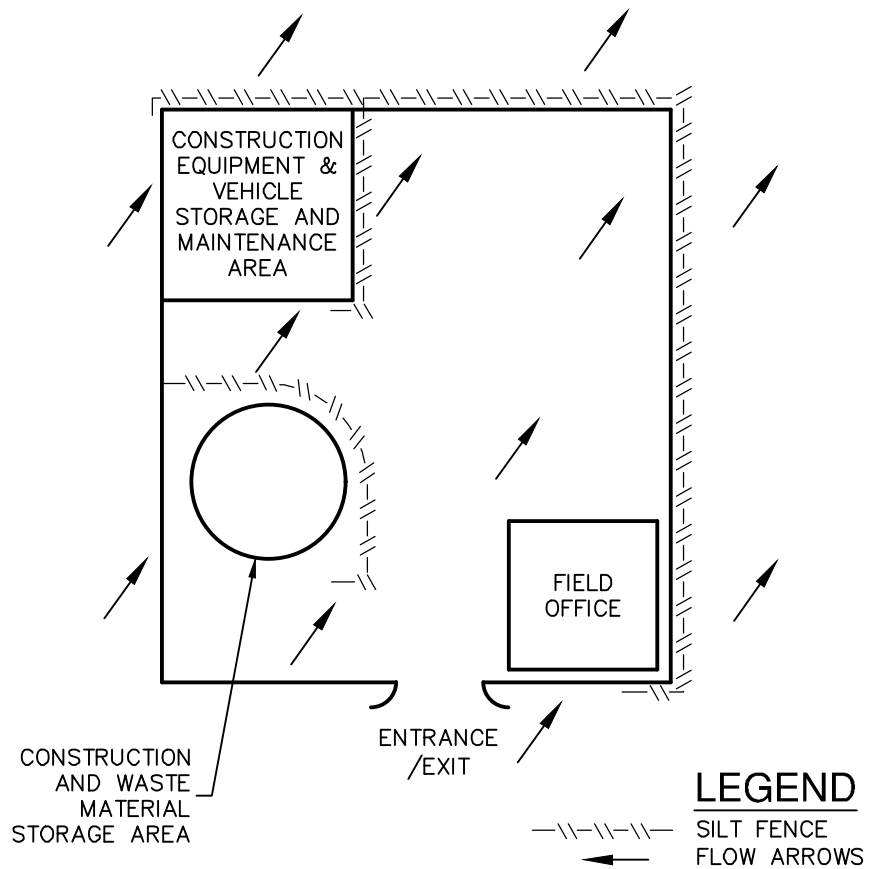
PLAN VIEW

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

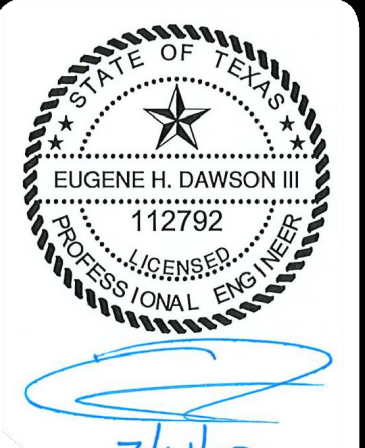
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THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

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

EXHIBIT 3

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

ESPADA TRACT UNIT 2
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION DETAILS

PLAT NO.	23-11800230
JOB NO.	12632-13
DATE	JULY 2023
DRAWN	JG
CHECKED	DW
DRAWN	BR
SHEET	C8.03