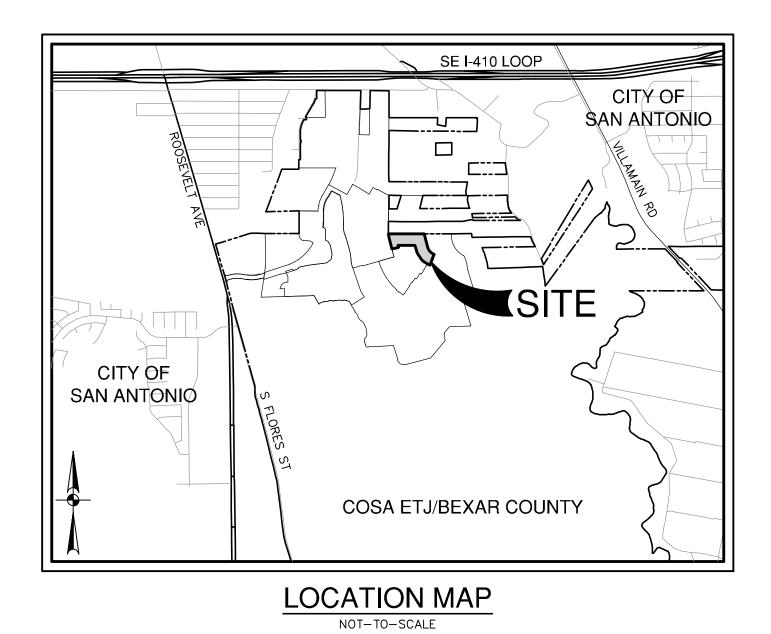
ESPADA TRACT UNIT 12 SAN ANTONIO, TEXAS **CIVIL CONSTRUCTION PLANS**

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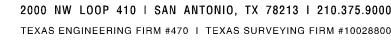


PREPARED FOR:

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

OCTOBER 2023







LOWER - EAST SEWERS DEVELOPER'S NAME: L ADDRESS: 100 NE L CITY: SAN ANTONIO PHONE# <u>(210) 403–6</u> SAWS BLOCK MAP#____ TOTAL LINEAR FOOTAGE NUMBER OF LOTS 77

	Sheet List Table
Sheet Number	Sheet Title
C0.00	COVER SHEET
C1.00	MASTER DRAINAGE PLAN (ULTIMATE DEVELOPMENT)
C1.01	MASTER DRAINAGE PLAN (PROPOSED DEVELOPMENT)
C1.02	DRAIN I4 PLAN & PROFILE (STA. 1+49.00 TO STA. 3+00.00)
C1.03	DRAIN J2 PLAN & PROFILE (STA. 7+36.15 TO 10+80.00)
C1.04	DRAIN J2 PLAN & PROFILE STA. (10+80.00 TO END)
C1.05	DRAIN P5 PLAN & PROFILE (STA. 2+76.00 TO 6+20.00)
C1.06	DRAIN P5 PLAN & PROFILE (STA. 6+20.00 TO 8+43.61)
C1.07	DRAINAGE DETAILS
C1.08	DRAINAGE DETAILS
C2.00	MINITA CREEK PLAN & PROFILE (STA. 1+00.00 TO 3+09.73)
C2.01	ESTANCIA WAY PLAN & PROFILE (STA. 1+00.00 TO END)
C2.02	LAGUNA CREEK PLAN & PROFILE (STA. 1+00.00 TO END)
C2.03	PERDIGUERA PLACE PLAN & PROFILE (STA. 12+25.66 TO END)
C2.04	TYPICAL STREET DETAILS
C2.05	TYPICAL STREET DETAILS
C2.06	TYPICAL STREET DETAILS
C3.00	OVERALL SIGNAGE PLAN
C3.01	TXDOT SIGN MOUNTING DETAILS
C3.02	TXDOT SIGN MOUNTING DETAILS
C3.03	TXDOT SIGN MOUNTING 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 Y PLAN & PROFILE (STA. 17+50.00 TO 22+00.00)
C5.02	SANITARY SEWER LINE Y PLAN & PROFILE (STA. 22+00.00 TO END)
C5.03	OVERALL SANITARY SEWER DETAILS
C5.04	OVERALL SANITARY SEWER NOTES
C6.00	OVERALL UTILITY PLAN
C7.00	OVERALL GRADING PLAN
C8.00	STORM WATER POLLUTION PREVENTION PLAN
C8.01	STORM WATER POLLUTION PREVENTION DETAILS

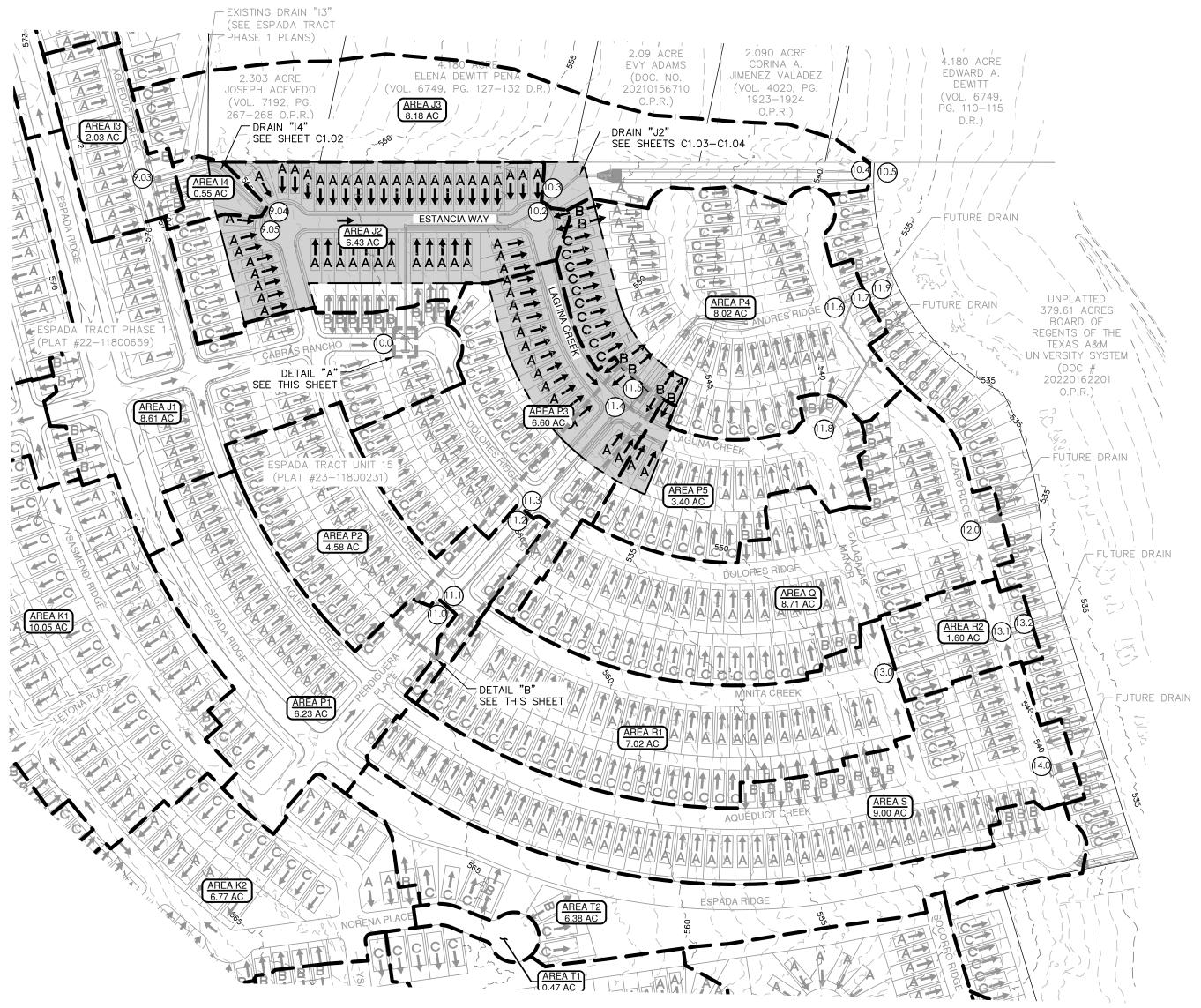
Sheet List Table

INAR HOMES OF TEXAS	DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
P 410, STE. 1155	ADDRESS: 100 NE LOOP 410, STE. 1155
STATE: TEXAS ZIP: 78216	CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
0 FAX#A	PHONE# (210) 403-6200 FAX# N/A
536_TOTAL_EDU'S77 TOTAL_ACREAGE 9.34_	SAWS BLOCK MAP# 172536 TOTAL EDU'S 79 TOTAL ACREAGE 9.34
DF PIPE: <u>1,272.50 L.F.~8" PVC</u> PLAT NO. <u>23-11800380</u>	TOTAL LINEAR FOOTAGE OF PIPE: <u>1,645.94 L.F. ~ 8" PVC</u> PLAT NO. <u>23–11800380</u>
SAWS JOB NO. <u>23-1651</u>	NUMBER OF LOTS 77 SAWS JOB NO. 23-1180

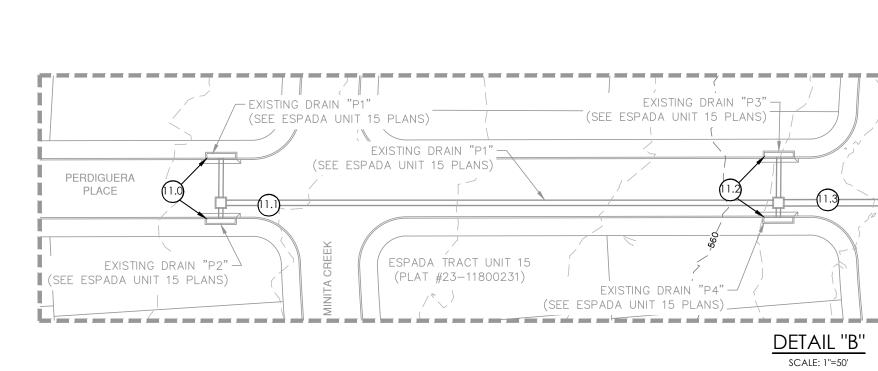
UNIT Ъ PADA 2632-15 JOB NO 800380

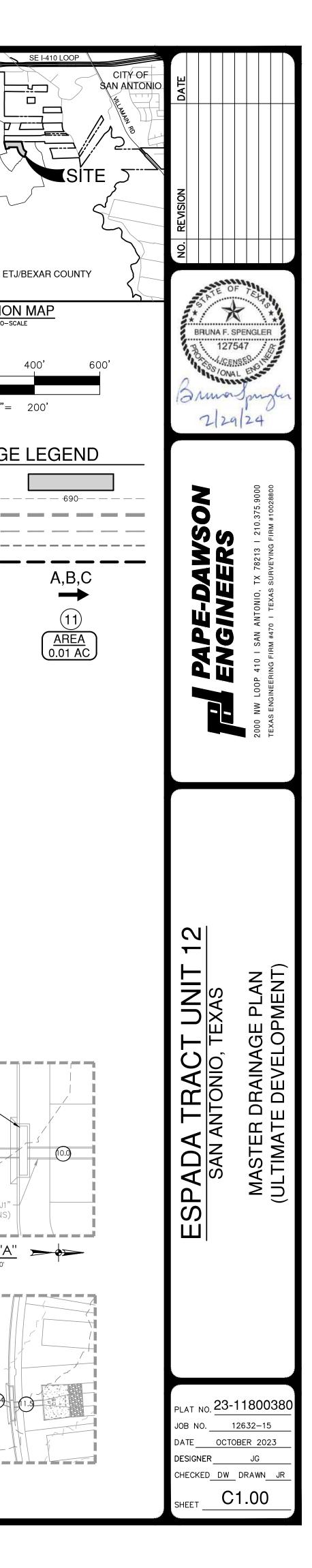
T C0.00

					<u>Accu</u>	mlated Flow	Rates								
				Contributing Flow Reference Sub-point											
Ref.			Upstrea	m Watershed		urface Bypass	Upstream	Pipe Flow	т	С	В	P			
Point	Desc.	Return Year	#	Q _{WATERSHED} (cfs)	Surf Byp. Upstream Ref. Point	Q _{SURF-UP} (cfs)	Pipe Upstream Ref. Point	Q _{PIPE-UP} (cfs)	Q _{INLE T-TOTAL} (cfs)	Q _{CAPTURED} (cfs)	Q _{BYPASS} (cfs)	Q _{PIPE} (cfs)			
		5		2.5		7.9		0.0	10.4	10.4	-	10.4			
9.05	DRAIN 14	25	9.04	3.6	9.03	10.9	N/A	0.0	14.5	14.5	-	14.5			
		100		4.5		13.6		0.0	18.1	18.1	-	18.1			
		5		37.0		0.0		0.0	37.0	18.5	18.5	18.5			
10.1	DRIAN J1	25	10.0	51.1	N/A	0.0	N/A	0.0	51.1	25.6	25.6	25.6			
		100		63.8		0.0		0.0	63.8	31.9	31.9	31.9			
		5		25.9		10.4		37.0	36.3	36.3	-	73.3			
10.3	DRAIN J2	25	10.2	35.8	9.05	14.5	10.0	51.1	50.3	50.3	-	101.4			
		100		44.7		18.1		63.8	62.8	62.8	-	126.6			
		5		28.4		0.0		73.3	28.4	28.4	-	101.7			
10.5	DRAIN J1	25	10.4	39.1	N/A	0.0	10.3	101.4	39.1	39.1	-	140.5			
		100		48.6		0.0		126.6	48.6	48.6	-	175.2			
		5	5 26.8		0.0		0.0	26.8	21.2	5.6	21.2				
11.1	DRAIN P1	25	11.0	37.0	N/A	0.0	N/A	0.0	37.0	25.8	11.2	25.8			
11.1		100		46.1		0.0		0.0	46.1	29.2	16.9	29.2			
		5		17.8		5.6	11.1	21.2	23.4	19.5	3.9	40.7			
11.3	DRAIN P1	25	11.2	24.7	11.1	11.2		25.8	35.9	25.3	10.6	51.1			
		100		30.7]	16.9		29.2	47.6	29.8	17.8	59.0			
		5		26.6		3.9		40.7	30.5	30.5	-	71.2			
11.5	DRIAN P5	25	11.4	36.8	11.3	10.6	11.3	51.1	47.4	47.4	-	98.5			
		100		45.9		17.8		59.0	63.7	63.7	-	122.7			
	FUTURE	5		34.6		0.0		71.2	34.6	34.6	-	105.8			
11.7	FUTURE	25	11.6	48.3	N/A	0.0	11.5	98.5	48.3	48.3	-	146.8			
	DRAIN	100		60.3		0.0		122.7	60.3	60.3	-	183.0			
	FUTURE	5		0.0		0.0		119.5	0.0	-	-	119.5			
11.9	.9 FUTURE	25	N/A	0.0	N/A	0.0	11.7, 11.8	165.8	0.0	-	-	165.8			
	DRAIN	100		0.0		0.0		206.6	0.0	-	-	206.6			
	FUTURE	5		6.2		0.0		27.6	6.2	6.2	-	33.8			
13.2	FUTURE	25	13.1	8.6	N/A	0.0	13.0	38.2	8.6	8.6	-	46.8			
	DRAIN	100		10.7		0.0		47.6	10.7	10.7	-	58.3			

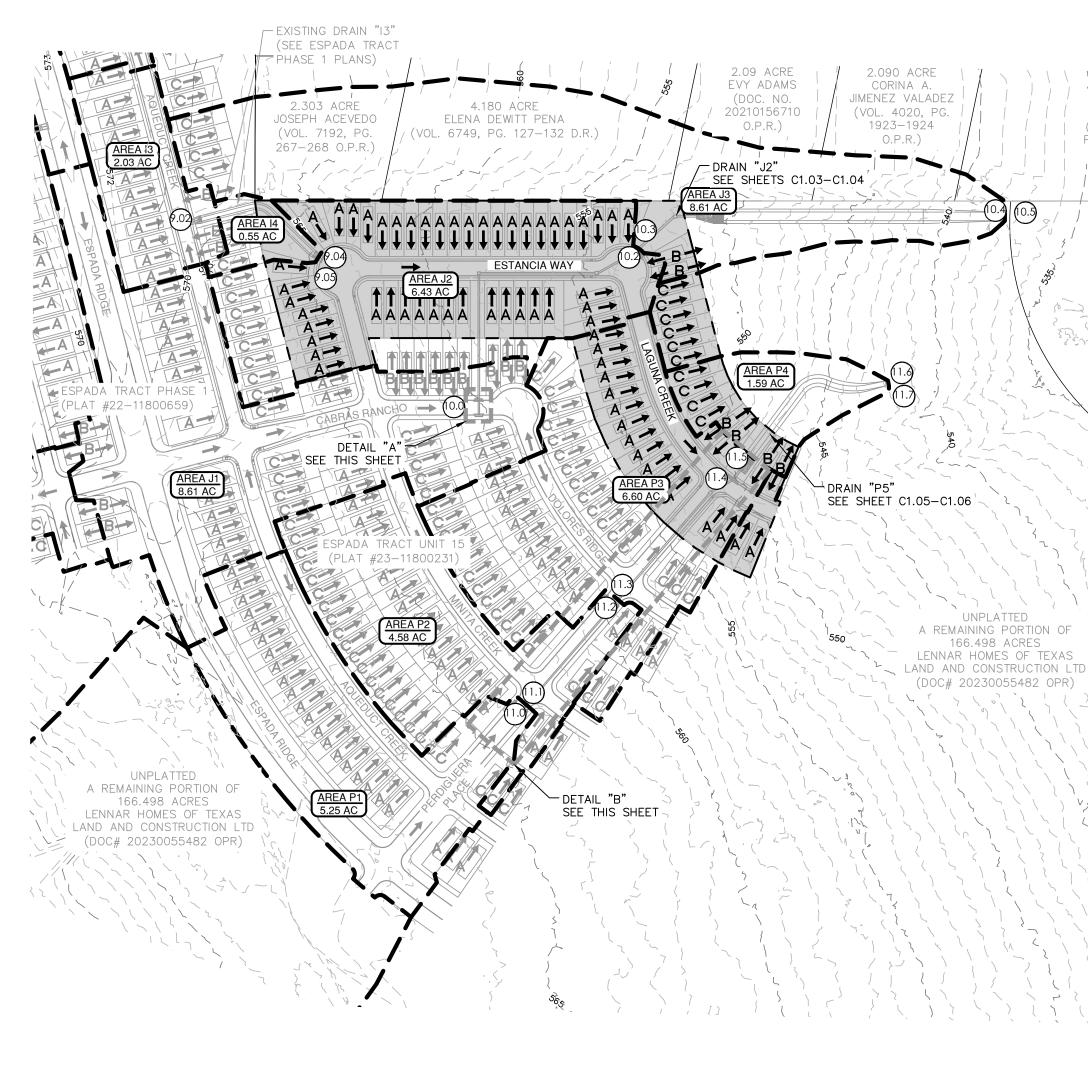


					M	aster		ige Pl		alculat	tions										SE I-410 LOOP
		Drainage /	Areas		ath (ft)		land/Sh w (Seely	neet S		w Conc	entrate I**	ed Flov	^{w -} Char	nnelize	ed Flow	**	Rational Metho		ROOSE	╡┛╴	
Ref. Point	Structure / Description	#	Area (Ac)	С	Total Flowpa	L _O (FT)	S _O (ft/ft)	T _o * (MIN)	L _{SC} (FT)	Condition***	V (II/II)	/ _{SC} T _S PS) (M	с ^{**} L _{CH} IN) (FT,	+ V() (FF	_{сн} Т _{сн} PS) (МІ	тс.то 1)	PT Return Y Year y (in/hr)	Q (cfs)			
9.03	Existing Drain I3	13	2.03	0.77	460	100	0.01	15	30		.01 1	I.6 C).3 33	30 6	i.0 0.	9 <u>16</u> 9 <u>16</u> 16	25 6.99	7.9 10.9 13.6			SITE
9.04	Calculation Point	14	0.55	0.77	130	100	0.03	11	30	U 0.	.01 1	I.6 C).3	-		11 11 11	25 8.43 100 10.54	2.5 3.6 4.5	CITY OF SAN ANTONIO	SFLC	\leq
9.05	Drian I4	13+14	2.58	0.77			1	(Refe	erence	Accum	ulated F	Flow R	ate Table))		0 0 0	25 - 100 -	10.4 14.5 18.1		URES ST	
10.0	Existing Drain J1	J1	8.61	0.82	940	100	0.02	13	20	U 0.	.01 1	.6 0).2 82	20 6	.0 2.	15	25 7.24 100 9.03	· · · · · · · · · · · · · · · · · · ·	Ă		
10.1	Existing Drain J1	J1	8.61	0.82				(Refe	erence	Accum	ulated F	Flow Ra	ate Table))		0 0 0 15	25 - 100 -	18.5 25.6 31.9 25.9	٨	LOCATIO NOT-TO-S	
10.2	Calculation Point	J2	6.43	0.77	720	100	0.02	13	95	U 0.	.02 2	2.3 0).7 52	25 6	.0 1.	*******************	25 7.24 100 9.03	35.8 44.7 73.3		200'	400' 600'
10.3	Drain J2 Calculation	I3+I4+J1+J2	17.62					(Refe	erence	Accum	ulated F	Flow Ra	ate Table))		0 0 20	25 - 100 -	101.4 126.6 28.4		SCALE: 1"=	200'
10.4	Point	J3	8.18		1,790	100	0.02		600				.4 1,09		.0 3.	20 0	100 7.71 5 -	39.1 48.6 101.7	MASTER D	RAINAG	ELEGEND
10.5 11.0	Drain J1 Calculation	I3+I4+J1+J2+J3 	25.80 6.23	0.79	980	100	0.02	(Refe	arence				ate Table)		.0 2.	0 0 15	100 - 5 5.24	140.5 175.2 26.8	PROJECT LIMITS EXISTING CONTOUR	_	690
11.1	Point Existing Drain		6.23		300		0.02						ate Table)			4 <u>15</u> <u>15</u> 0 0	100 9.03	37.0 46.1 21.2 25.8	100 YR UD FLOODPLA 100 YR FEMA FLOODP		
11.2	P1 Calculation Point	P2	4.58		985	100	0.02		145				.5 74	-	.0 2.	0 16 1 16	100 - 5 5.06 25 6.99	29.2 17.8 24.7	RUNOFF FLOW PATH DRAINAGE AREA BOUN FHA LOT GRADING TYF		A,B,C
11.3	Existing Drian P1	P1+P2	10.81	0.80				(Refe	erence	Accum	ulated F	Flow R	ate Table))		16 0 0	5 - 25 -	30.7 40.7 51.1	PROPOSED DIRECTION		(11)
11.4	Calculation Point	P3	6.60	0.77	855	100	0.02	13	145	U 0.	.02 2	2.3 1	.1 61	10 6	5.0 1.	0 15 7 15 15	25 7.24	59.0 26.6 36.8 45.9	DRAINAGE AREA		AREA 0.01 AC
11.5	Drain P5	P1+P2+P3	17.41	0.79				(Refe	erence	Accum	ulated F	Flow R	ate Table))		0 0 0		71.2 98.5 122.7			
11.6	Calculation Point	P4	8.02	0.77	865	100	0.03	11	155	U 0.	.02 2	2.3 1	.1 61	10 6	5.0 1.	13	25 7.82 100 9.76				
11.7	Drain P1	P1+P2+P3+P4	25.43	0.78				(Refe	erence	Accum	ulated F	Flow R	ate Table))		0 0 0 15	5 - 25 - 100 - 5 5.24	105.8 146.8 183.0 13.7			
11.8	Drain P6	P5	3.40	0.77	695	100	0.02	13	145	U 0.	.02 2	2.3 1	.1 45	50 6	5.0 1.		25 7.24 100 9.03	19.0			
11.9	Drain P6	P1+P2+P3+P4+P5		0.78									ate Table)			0 0 16	25 - 100 - 5 5.06	165.8 206.6 33.9			
12.0		Q			1,225				_			2.3 1			.0 2.	16 16	100 8.71 5 5.06	58.4 27.6			
13.0 13.1	Calculation	R1 	7.09		1,255 385		0.02		150 160				.1 1,00		6.0 2. 6.0 0.	16 16	100 8.71 5 5.06	47.6 6.2			
13.2	Point Drain R1	R1+R2	8.69				0.01						ate Table)			0 10 16 0	100 8.71 5 -	10.7 33.8 46.8			
14.0	Drain S	s	8.81	0.77	1,725	100	0.02	13	40	U 0.	.02 2	2.3 0	0.3 1,58	85 6	i.0 4.		100 - 5 4.91 25 6.76	58.3 33.3 45.9			
	/e Chart or TR-{ Calculated using	55 Eqn. 3-3 Mannings or TR-55 Fig	ure 3-1 or	6 ft/s		(0.007	$7(n*L)^{0.8}$		$v = \frac{k}{n}$	$R^{2/_3} S_0^{-1}$ 486 ft ^{1,}	¹ / ₂	P:	For Stree For Pave For Unpa	ed: n =	0.025,	R = 0.2	2 (Adapted from Mar				
					1 ₀ =	(P2	^{.5} *S ^{.4})	*60	$\kappa = 1.$	486 <i>J</i> t - /	/ 5 / 5		For Defa			,					
																				(10.1)	
																				(ISTING DRAIN "J1" A UNIT 15 PLANS)	
																				DETAIL "A	
																				SCALE: 1"=20'	T-
		EXISTING DRAIN "P1" (SEE ESPADA UNIT	" 15 PLANS))			(SEE			G DRAIN									ESPADA TRACT		
)IGUERA LACE	(1.0	(SEE ESP	EXISTING ADA UNIT	DRAIN' 15 PLA	"P1"				2 7		.2			~)				IAGUNA	
								<u> </u>					(1.3)	RIDGE							
EXISTI SPADA U	NG DRAIN "P2" JNIT 15 PLANS)				T UNIT 1 1800231		/ E	XISTING	DRAII	, v "P4"-				LORES RII		< J /		SEE	DRAIN "P5" E SHEETS C1.05-C1.06		

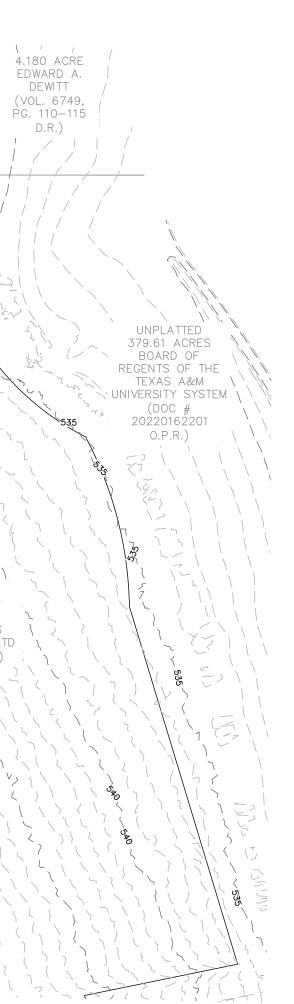


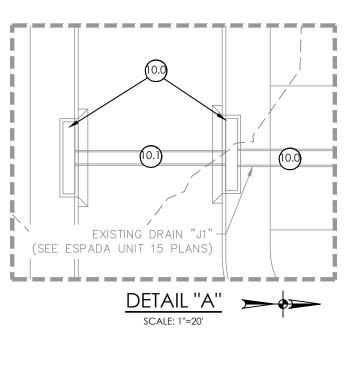


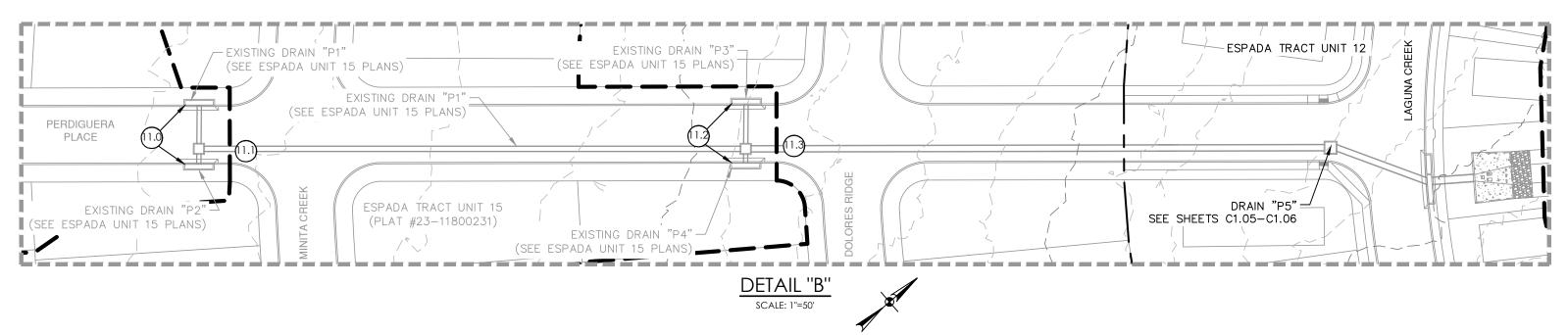
					<u>Accu</u>	mlated Flow	Rates					
					Contrik	Reference Sub-point						
Ref.	Desc.		Upstream	n Watershed	Upstream S	urface Bypass	Upstream	Pipe Flow	т	С	В	Р
Point		Return Year	#	Q _{WATERSHED} (CfS)	Surf Byp. Upstream Ref. Point	Q _{SURF-UP} (cfs)	Pipe Upstream Ref. Point	Q _{PIPE-UP} (cfs)	Q _{INLET-TOTAL} (cfs)	Q _{CAPTURED} (cfs)	Q _{BYPASS} (cfs)	Q _{PIPE} (cfs)
		5		2.5		7.9		0.0	10.4	10.4	Е	10.4
9.05	DRAIN 14	25	9.04	3.6	9.03	10.9	N/A	0.0	14.5	14.5	-	14.5
		100		4.5		13.6		0.0	18.1	18.1	-	18.1
		5		37.0		0.0		0.0	37.0	18.5	18.5	18.5
10.1	DRIAN J1	25	10.0	51.1	N/A	0.0	N/A	0.0	51.1	25.6	25.6	25.6
		100		63.8		0.0		0.0	63.8	31.9	31.9	31.9
		5		25.9		10.4		37.0	36.3	36.3	Ξ.	73.3
10.3	DRIAN J1	25	10.2	35.8	9.05	14.5	10.0	51.1	50.3	50.3	-	101.4
		100		44.7		18.1		63.8	62.8	62.8	-	126.6
		5		22.5		0.0		73.3	22.5	22.5	-	95.8
10.5	DRIAN J1	25	10.4	31.0	N/A	0.0	10.3	101.4	31.0	31.0	-	132.4
		100		38.5		0.0		126.6	38.5	38.5	-	165.1
		5		22.8		0.0		0.0	22.8	19.2	3.6	19.2
11.1	DRAIN P1	25	11.0	31.5	N/A	0.0	N/A	0.0	31.5	23.4	8.1	23.4
		100		39.3		0.0		0.0	39.3	26.7	12.6	26.7
		5		17.8		3.6		19.2	21.4	18.3	3.1	37.5
11.3	DRAIN P1	25	11.2	24.7	11.1	8.1	11.1	23.4	32.8	24.1	<mark>8.7</mark>	47.5
		100		30.7		12.6		26.7	43.3	28.2	15.1	<mark>54.9</mark>
		5		26.6		3.1		37.5	29.7	29.7	-	67.2
11.5	DRAIN P1	25	11.4	36.8	11.3	8.7	11.3	47.5	45.5	45.5	-	93.0
		100		45.9		15.1		54.9	61.0	61.0	-	115.9
		5		67.2		0.0		5.9				73.1
11.7	DRAIN P1	25	11.5	93.0	N/A	0.0	11.6	8.3				101.3
		100		115.9		0.0		10.3				126.2

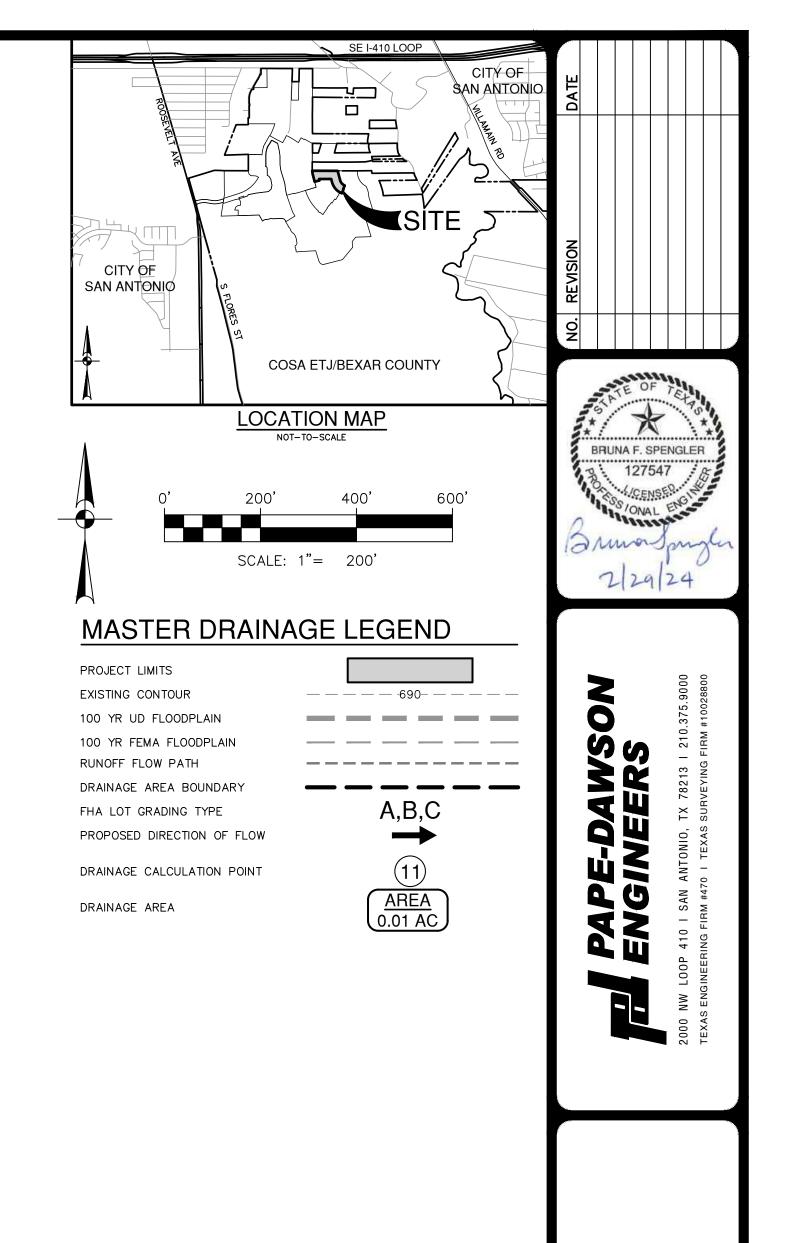


					Ē	Propo	osed (Cond	itions	Cal	culatio	ons								
		Drainage	Areas		ath (ft)		rland/S w (See		Shall	ow C	oncent 1**	rated I	low -	Channe	elized	Flow**		Ration IDF Curv	al Metho CoSA_/	d Q=CIA A14_PA4
Ref. Point	Structure / Description	#	Area (Ac)	С	Total Flowpath	L _O (FT)	S _O (ft/ft)	T _O * (MIN)	L _{SC} (FT)	Condition***	Slope (ft/ft)	V _{SC} (FPS)	T _{SC} ** (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)	Т _{с-тот}	Return Year	Intensit y (in/hr)	Q (cfs)
9.03	Existing	13	2.03	0.77	460	100	0.01	15	30	U	0.01	1.6	0.3	330	6.0	0.9	16 16	5 25	5.06 6.99	7.9 10.9
	Drain 13																16 11	100 5	8.71 6.02	13.6 2.5
9.04	Drain J1	14	0.55	0.77	130	100	0.03	11	30	U	0.01	1.6	0.3	-	-	-	11	25	8.43	3.6
																	11 0	100 5	10.54 -	4.5 10.4
9.05	Drain J1	13+14	2.58	0.77				(Re	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	25	-	14.5
																	0 15	100 5	- 5.24	18.1 37.0
10.0	Drain J1	J1	8.61	0.82	940	100	0.02	13	20	U	0.01	1.6	0.2	820	6.0	2.3	15	25	7.24	51.1
																	15 0	100 5	9.03	63.8 18.5
10.1	Drain J1	J1	<mark>8.61</mark>	0.82				(R	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	25	_	25.6
																	0 15	100 5	- 5.24	31.9 25.9
10.2	Drain J1	J2	6.43	0.77	720	100	0.02	13	95	U	0.02	2.3	0.7	525	<mark>6.0</mark>	1.5	15	25	7.24	35.8
																	15 0	100 5	9.03 -	44.7 73.3
10.3	Drain J1	3+ 4+J1+J2	17.62	0.79			(Reference Accumulated Flow Rate Table)								0	25	-	101.4		
																	0 20	100 5	- 4.51	126.6 22.5
10.4	Drain J1	J3	8.61	0.58	1,790	100	0.02	13	600	U	0.02	2.3	4.4	1,090	6.0	3.0	20	25	6.21	31.0
																	20 0	100 5	7.71	38.5 95.8
10.5	Drain J1	I3+I4+J1+J2+J3	26.23	0.72				(R	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	25	-	132.4
																	0 15	100 5	- 5.24	165.1 22.8
11.0	Calculation Point	P1	5.25	0.83	985	100	0.02	13	30	U	0.02	2.3	0.2	855	6.0	2.4	15	25	7.24	31.5
																	15 0	100 5	9.03	39.3 19.2
11.1	Drain P1	P1	5.25	0.83				(R	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	25	-	23.4
																	0 16	100 5	- 5.06	26.7 17.8
11.2	Calculation Point	P2	4.58	0.77	985	100	0.02	13	145	U	0.01	1.6	1.5	740	<mark>6.0</mark>	2.1	16	25	6.99	24.7
																	16 0	100 5	8.71	30.7 37.5
11.3	Drian P1	P1+P2	<mark>9.8</mark> 3	0.80				(Re	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	25	-	47.5
																	0 15	100 5	- 5.24	54.9 26.6
11.4	Calculation Point	P3	<mark>6.60</mark>	0.77	855	100	0.02	13	145	U	0.02	2.3	1.1	610	6.0	1.7	15	25	7.24	36.8
	, on it																15 0	100 5	9.03	45.9 67.2
11.5	Drain P1	P1+P2+P3	16.43	0.79			(Reference Accumulated Flow Rate Table)							0	25	-	93.0			
													0 12	100 5	- 5.81	115.9 5.9				
11.6	Calculation Point	P4	1.59	0.64	470	100	0.03	11	200	U	0.03	2.8	1.2	170	6.0	0.5	12	5 25	5.81 8.12	5.9 8.3
	Font																12	100	10.14	10.3
11.7	Drain P1	P1+P2+P3+P4	18.02	0.78				(Re	eferenc	ce Ac	cumulat	ed Flov	w Rate	Table)			0	5 25	-	73.1 101.3
																	0	100	-	126.2





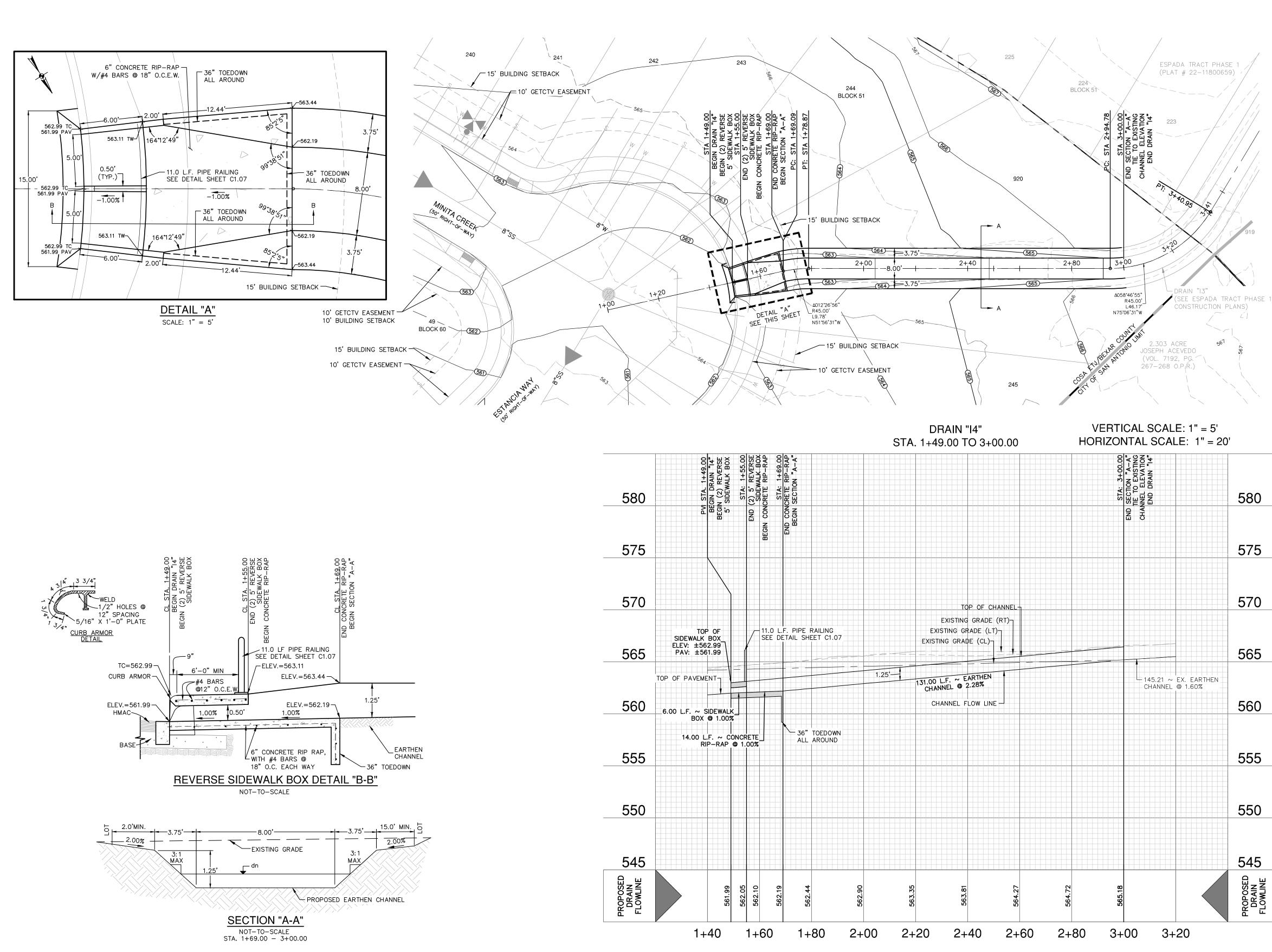


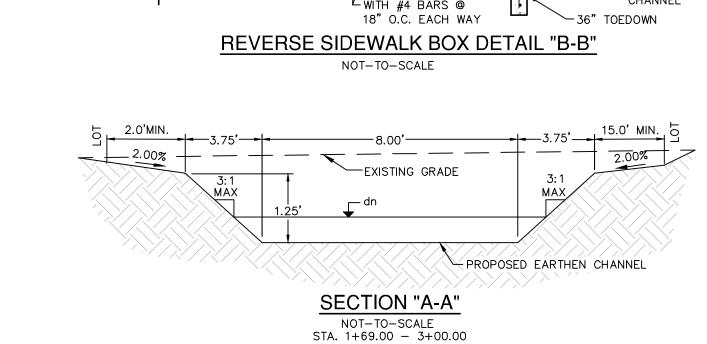


MASTER DRAINAGE PLAN (PROPOSED DEVELOPMENT) ESPADA TRACT UNIT SAN ANTONIO, TEXAS

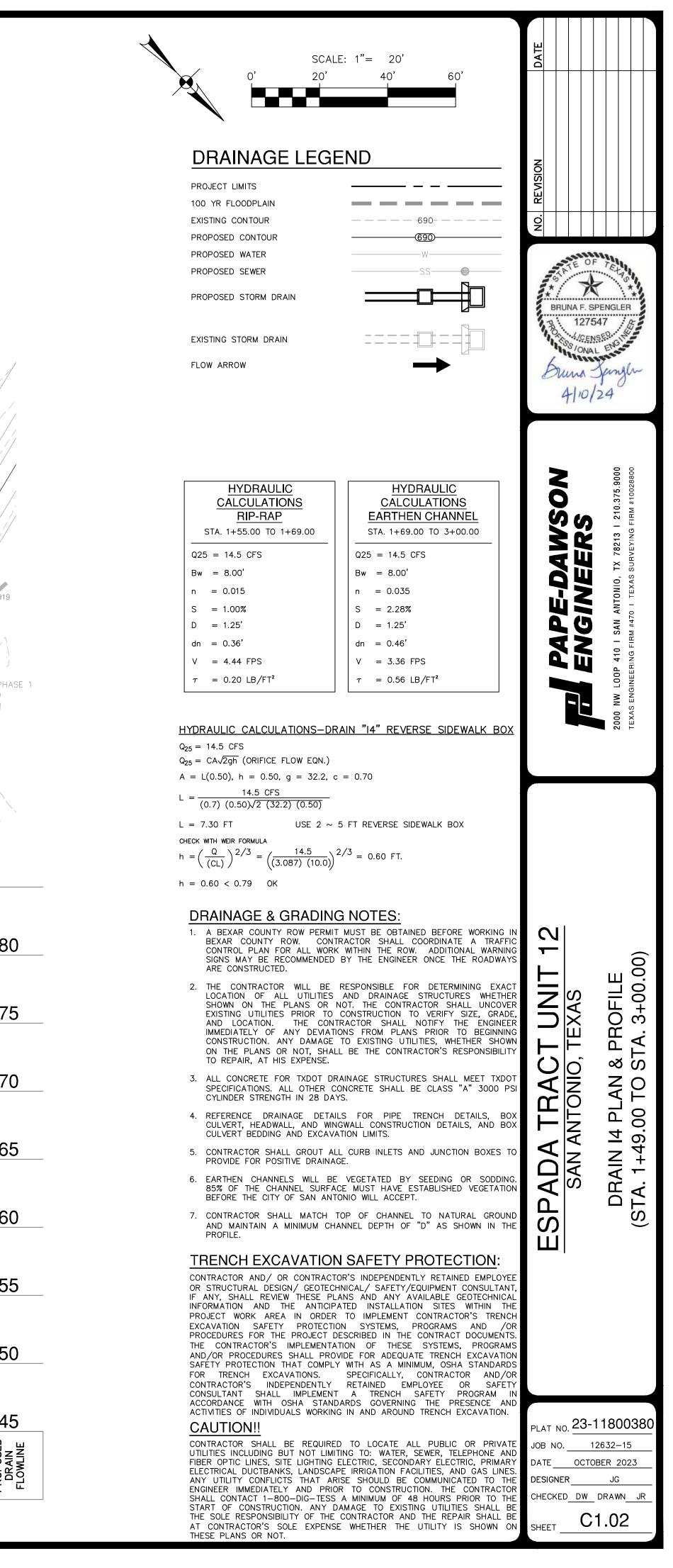
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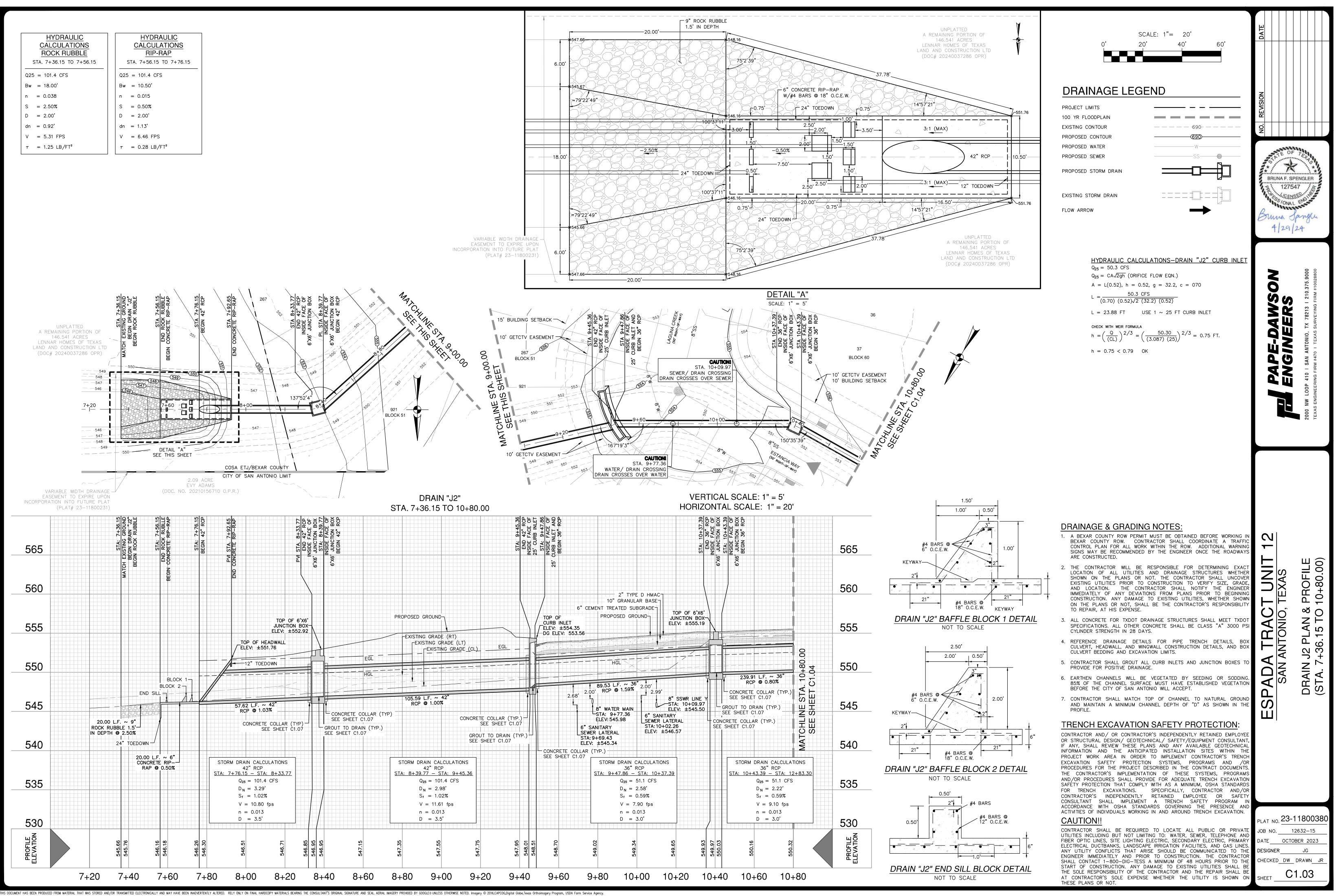




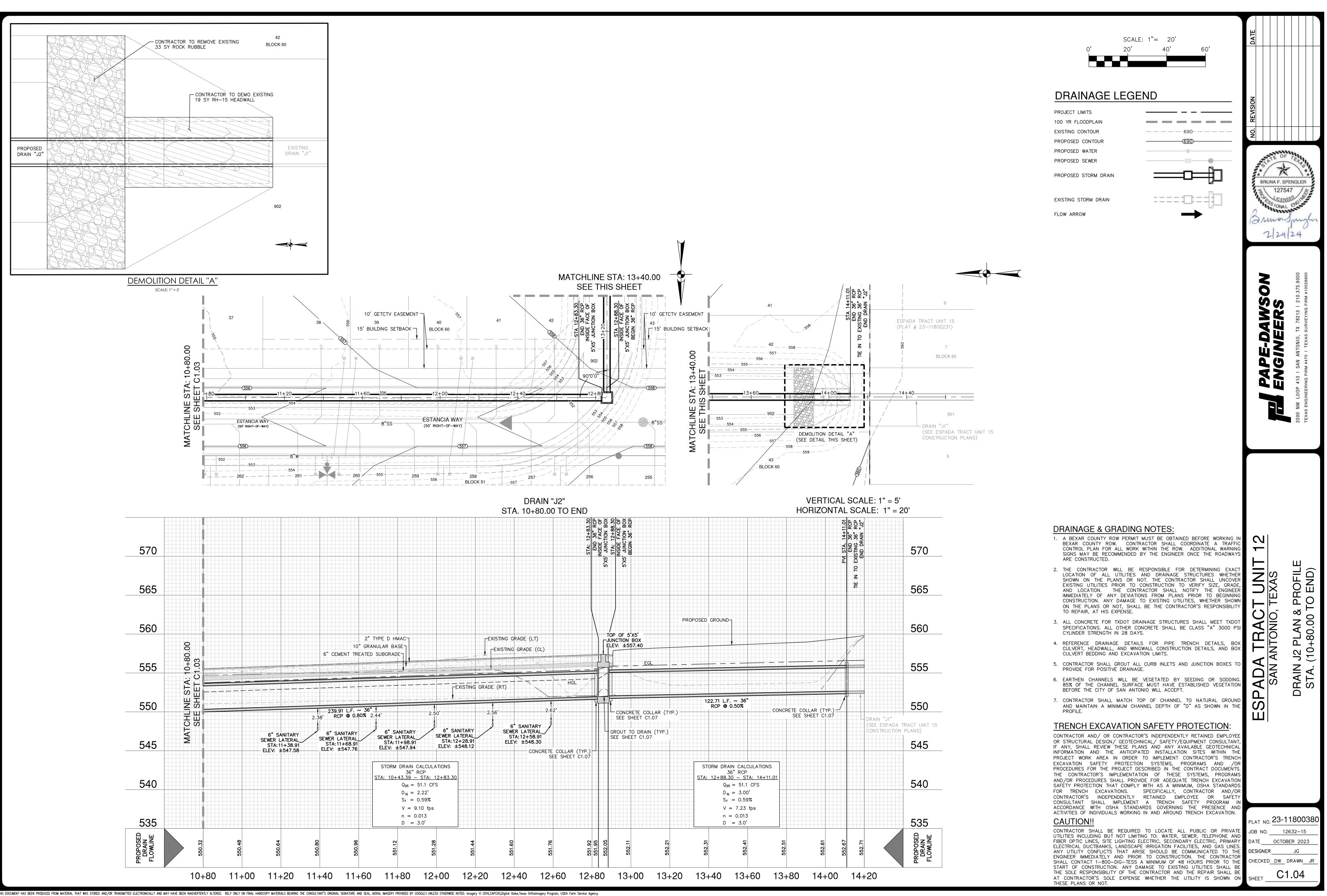
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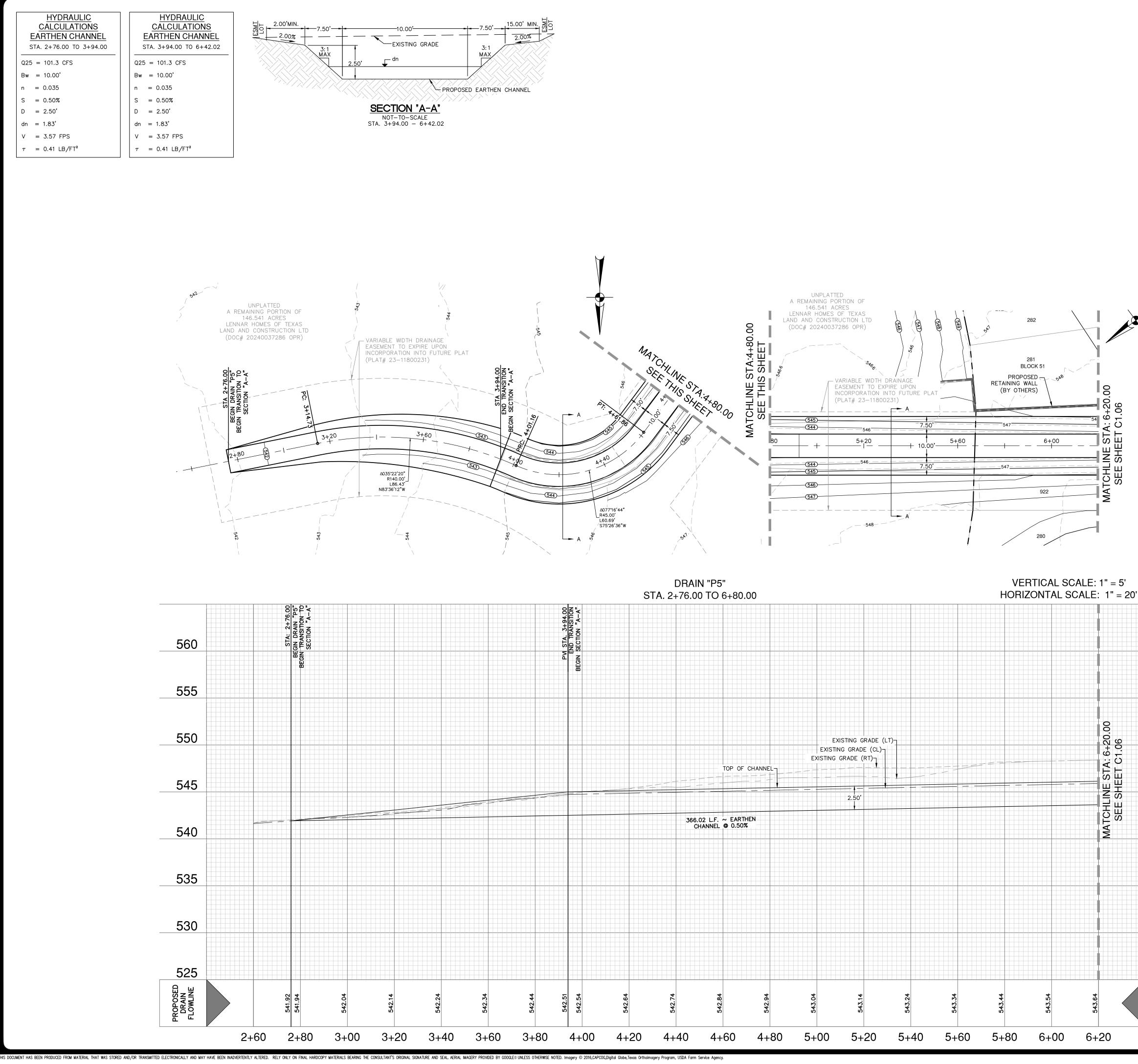


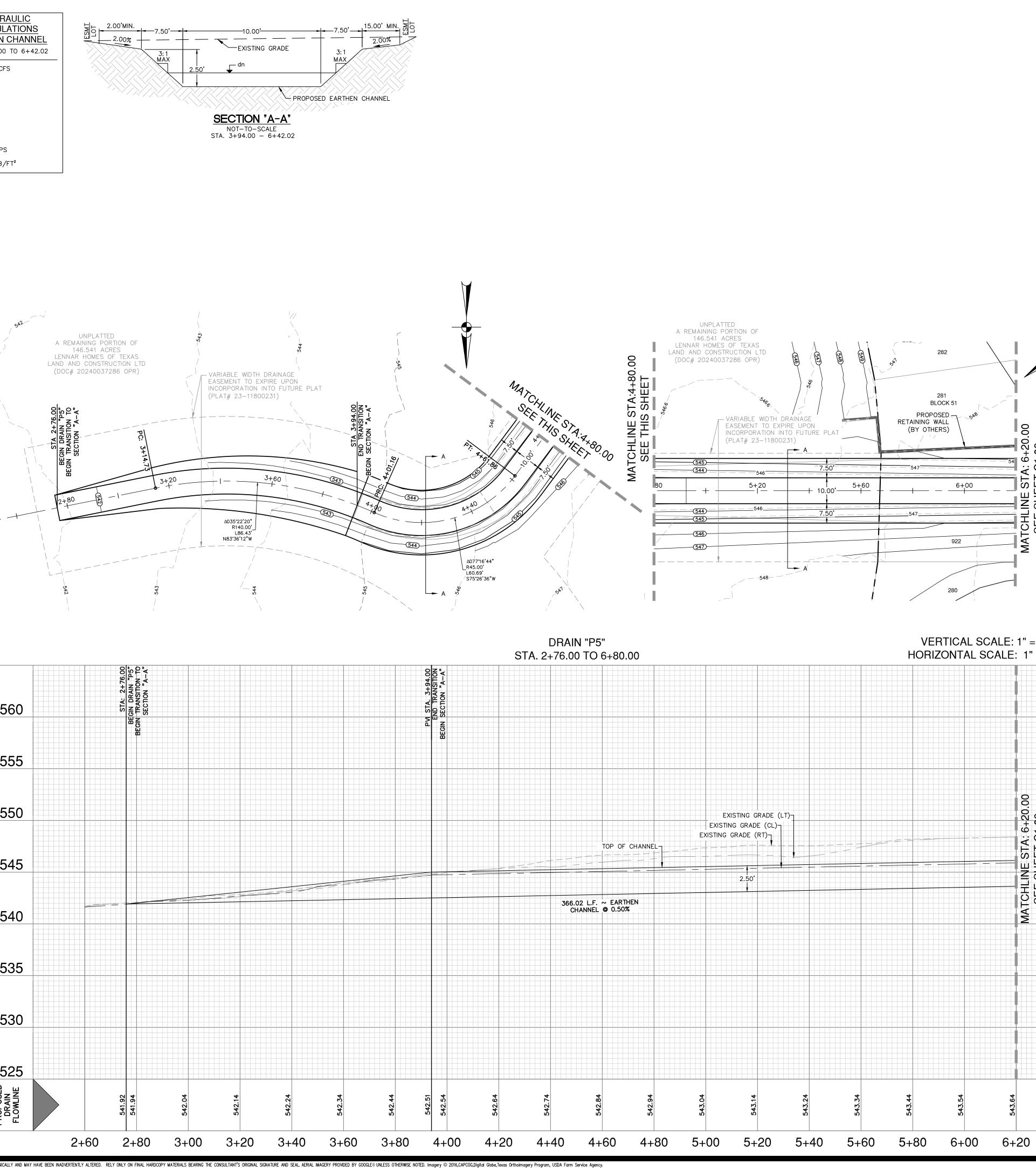
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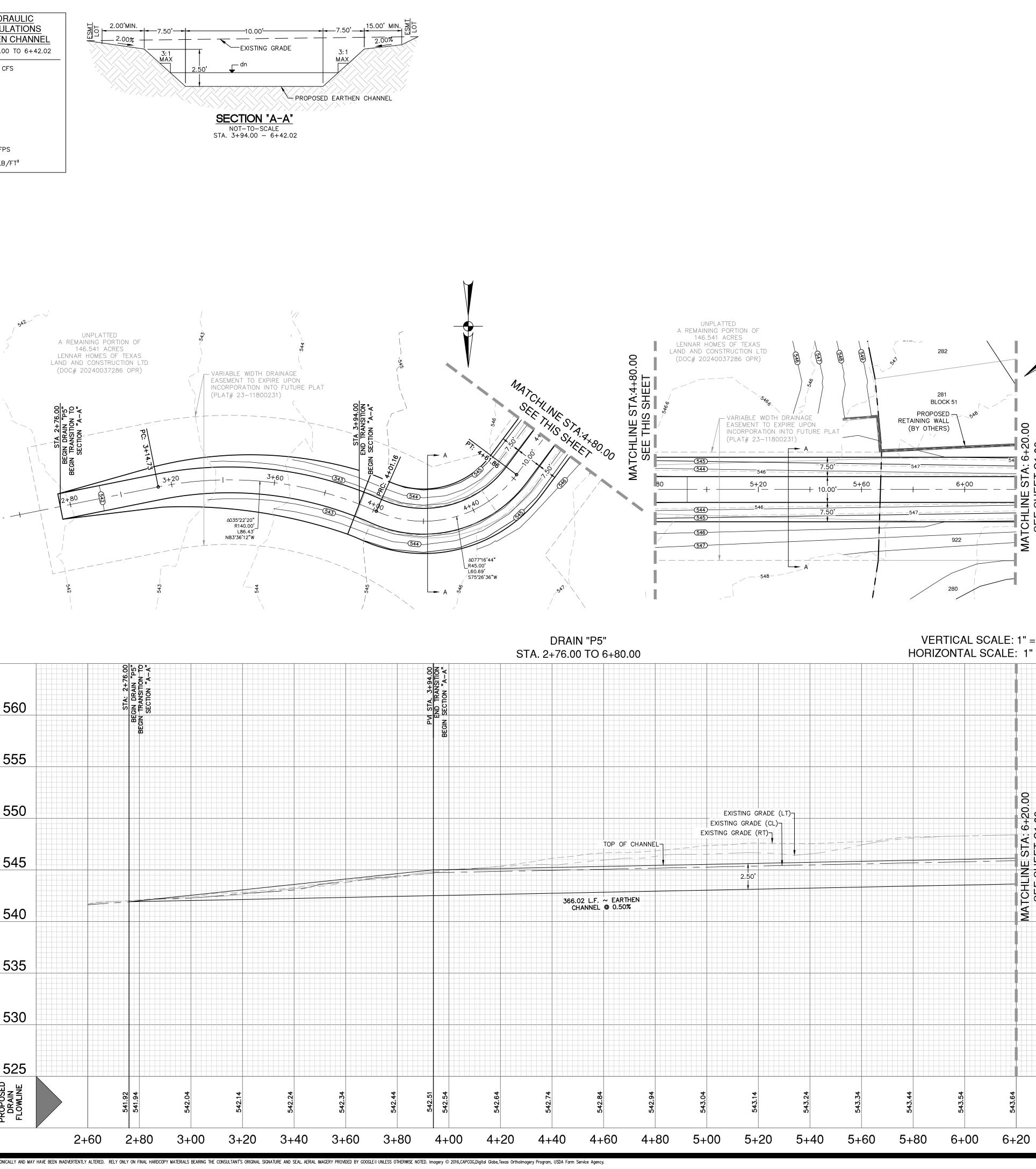


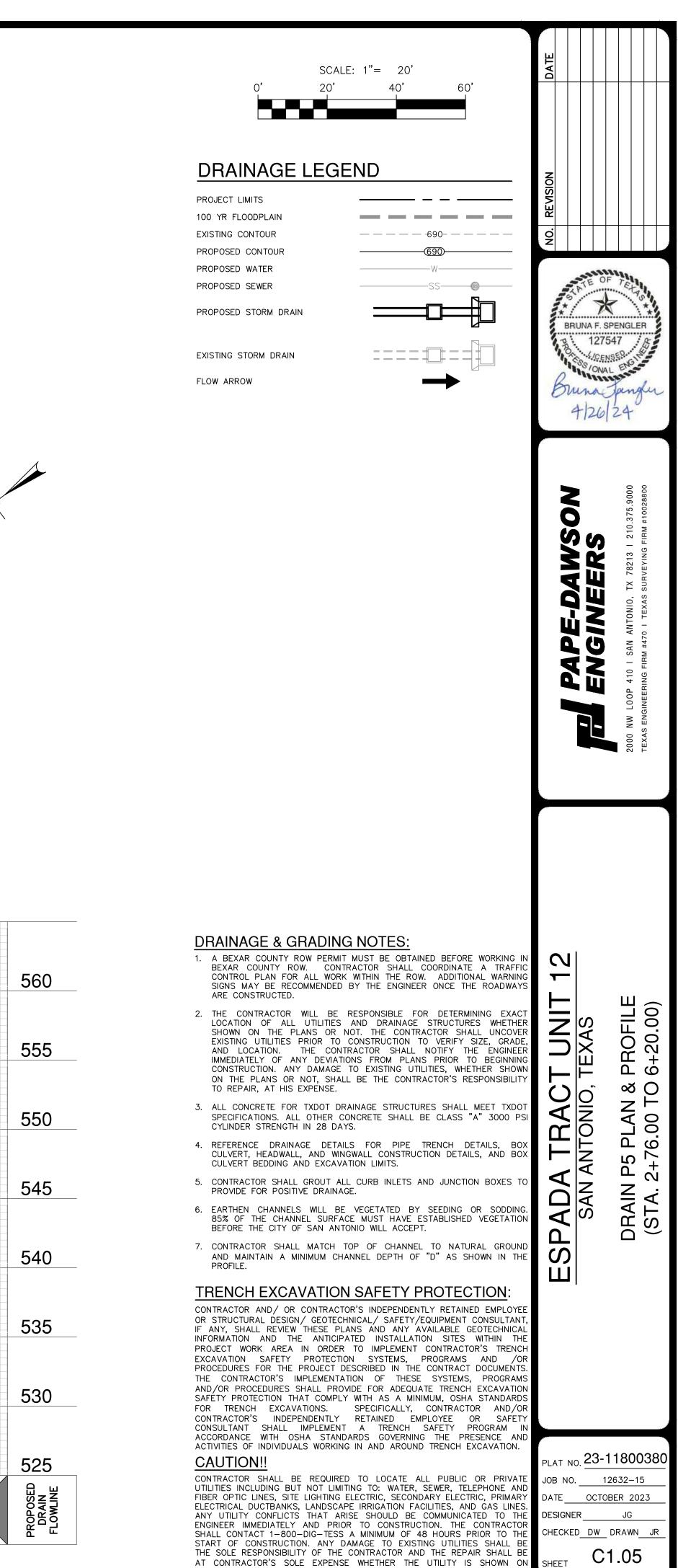
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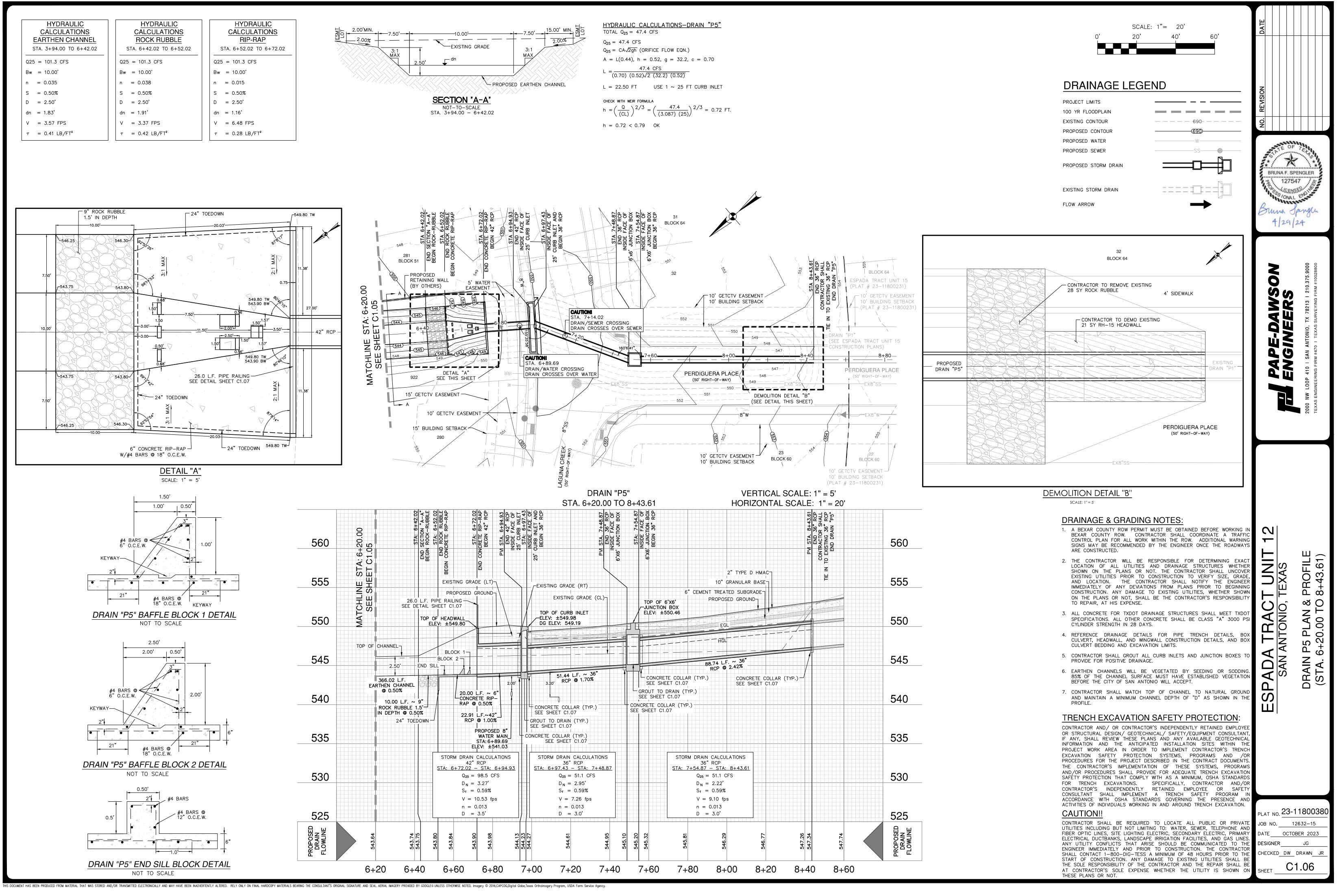


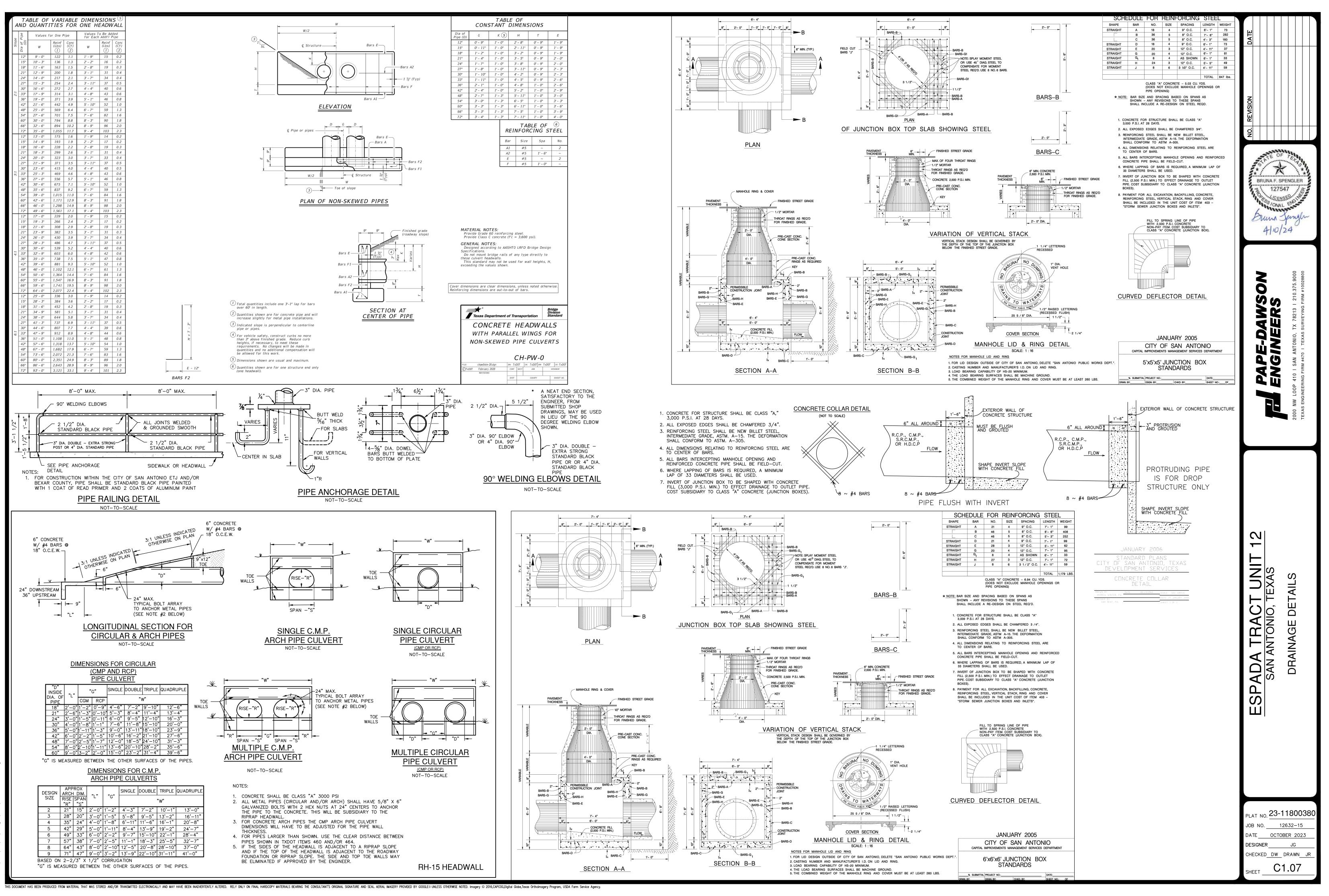




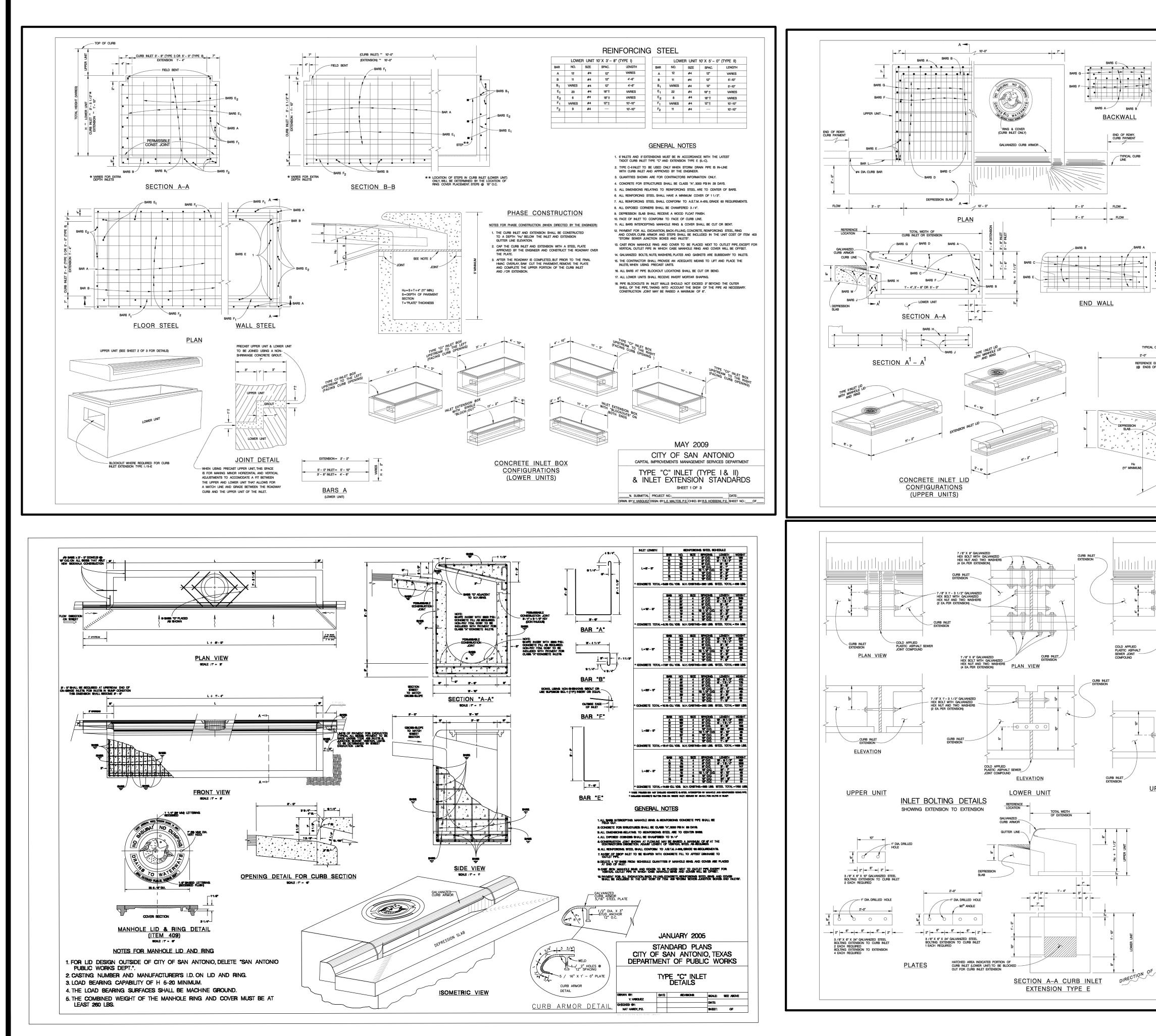


THESE PLANS OR NOT.





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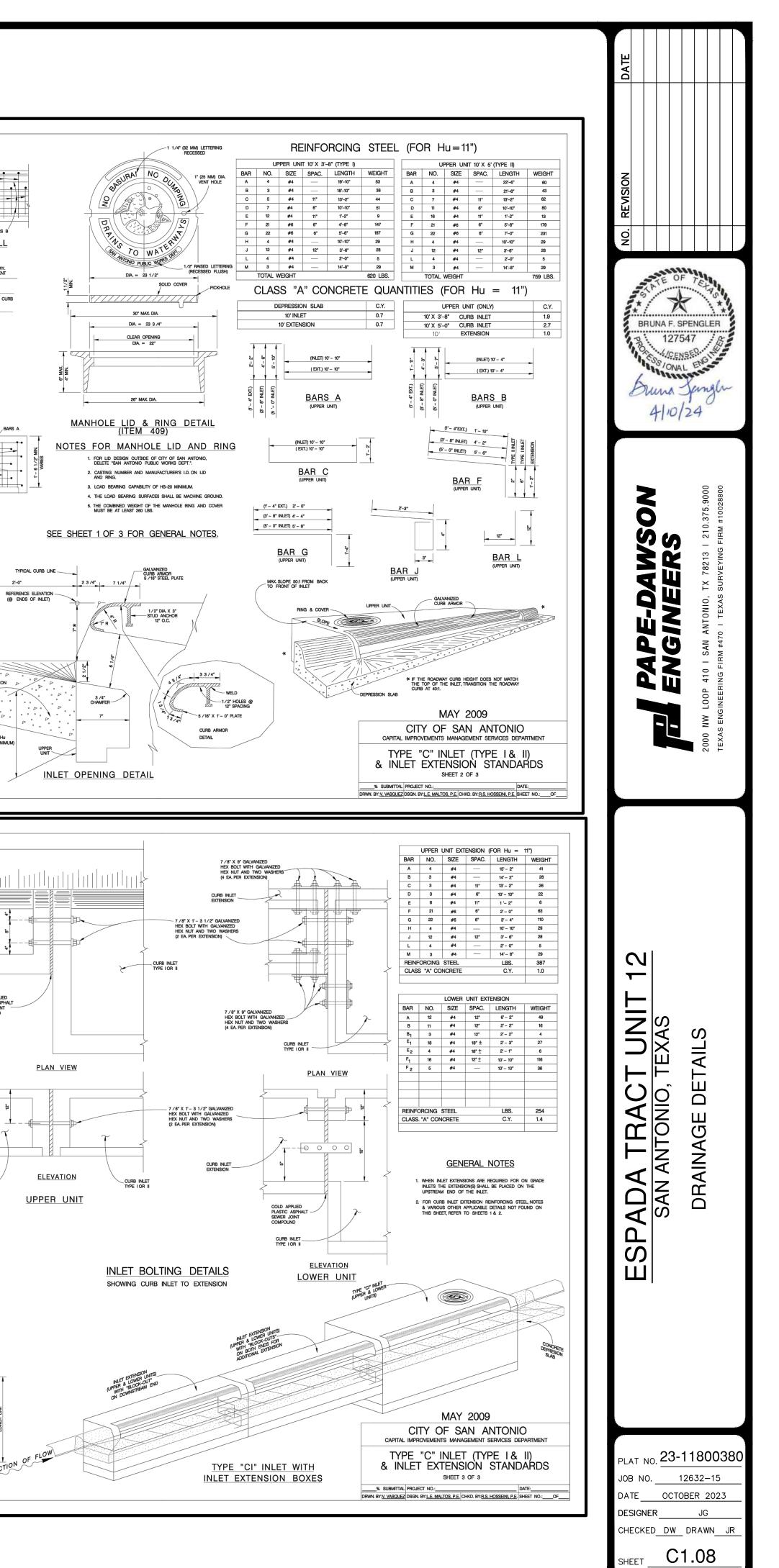


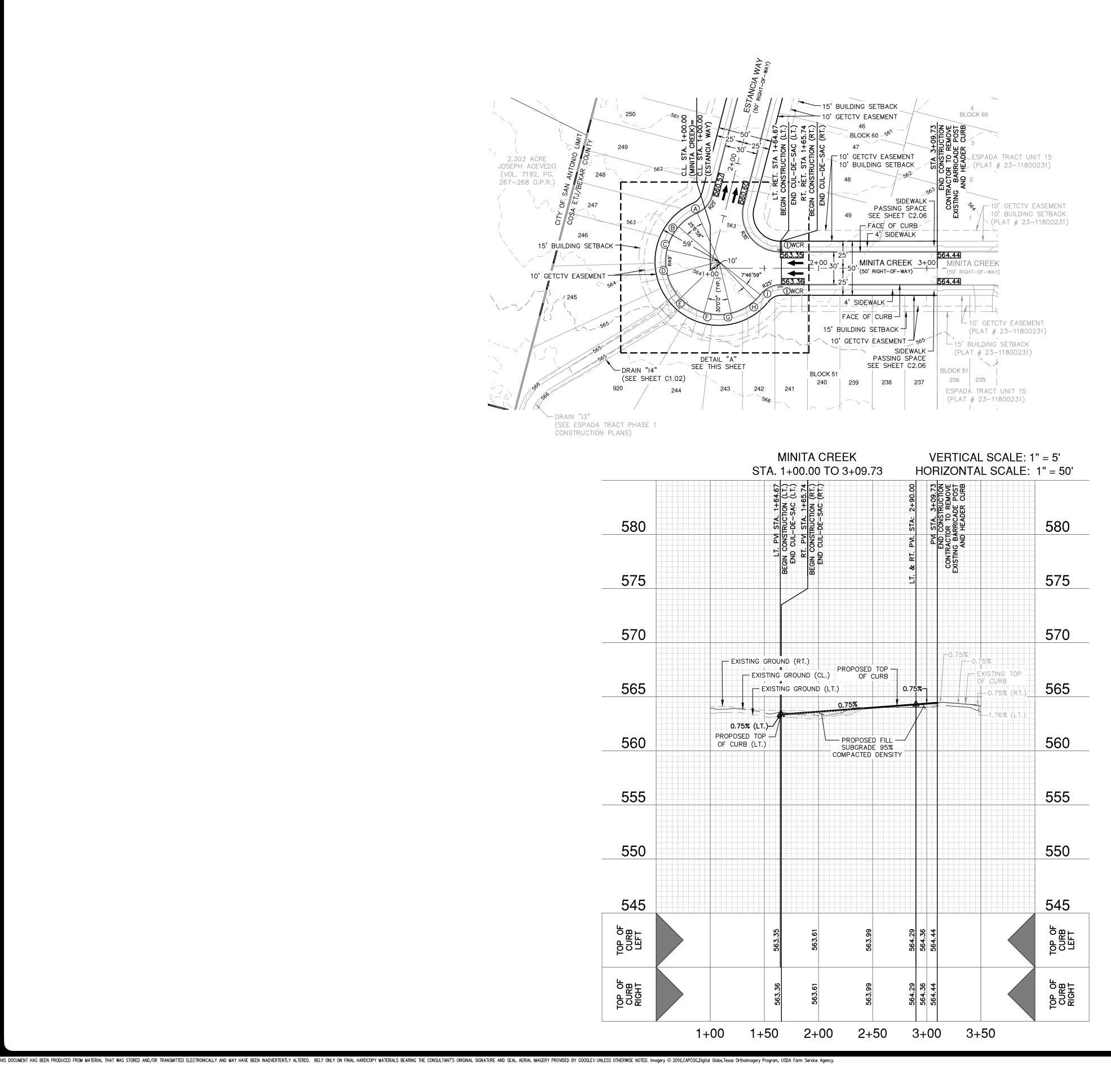
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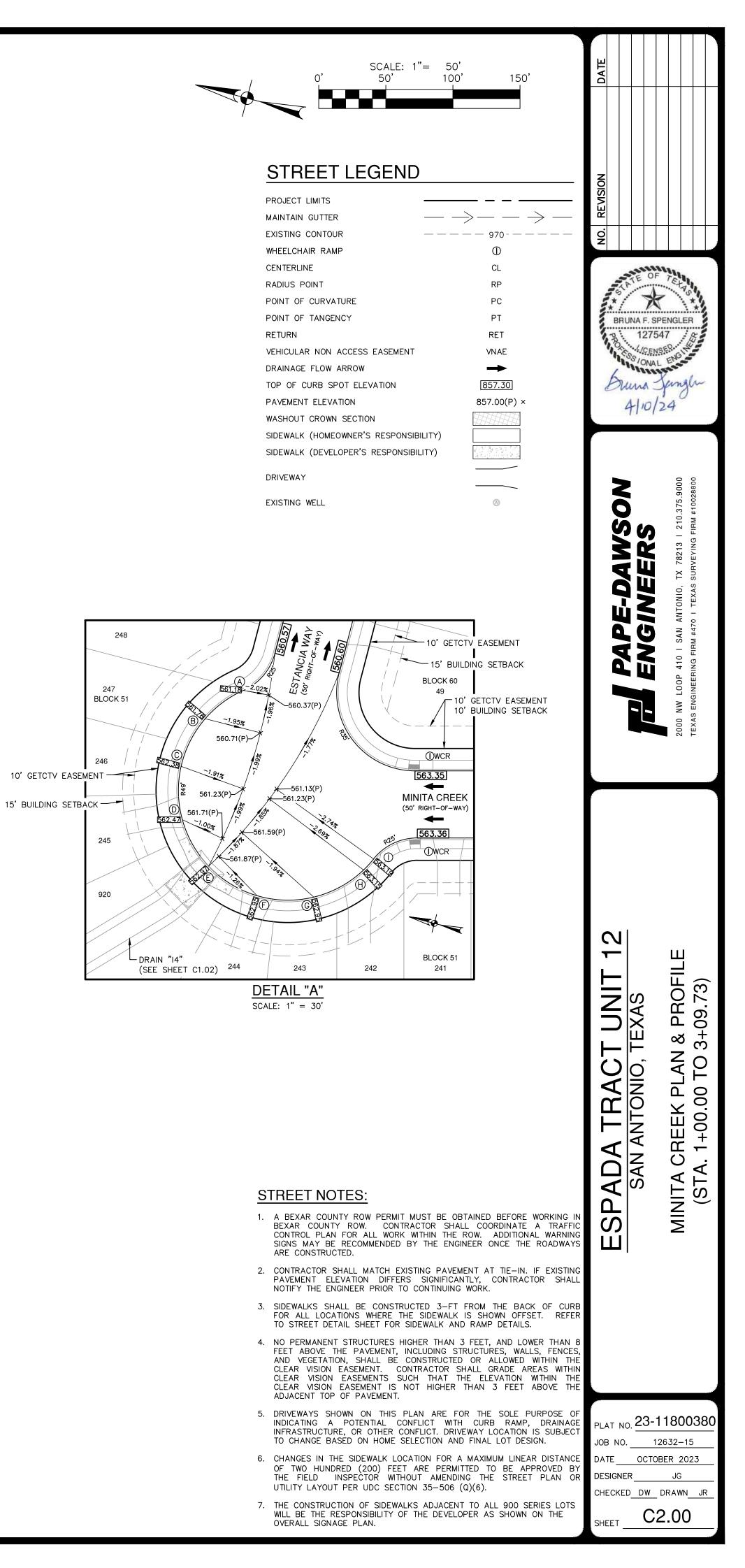
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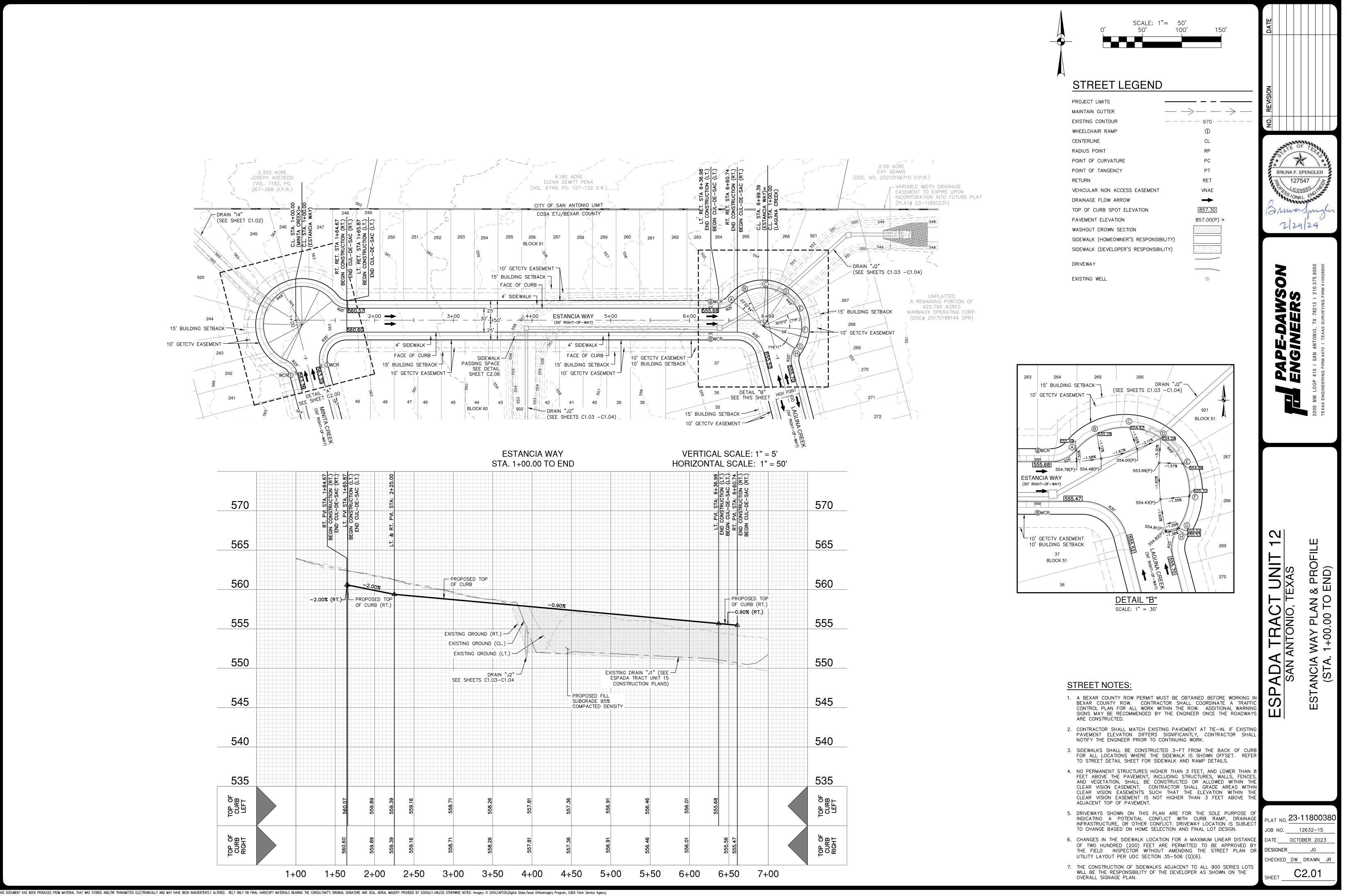
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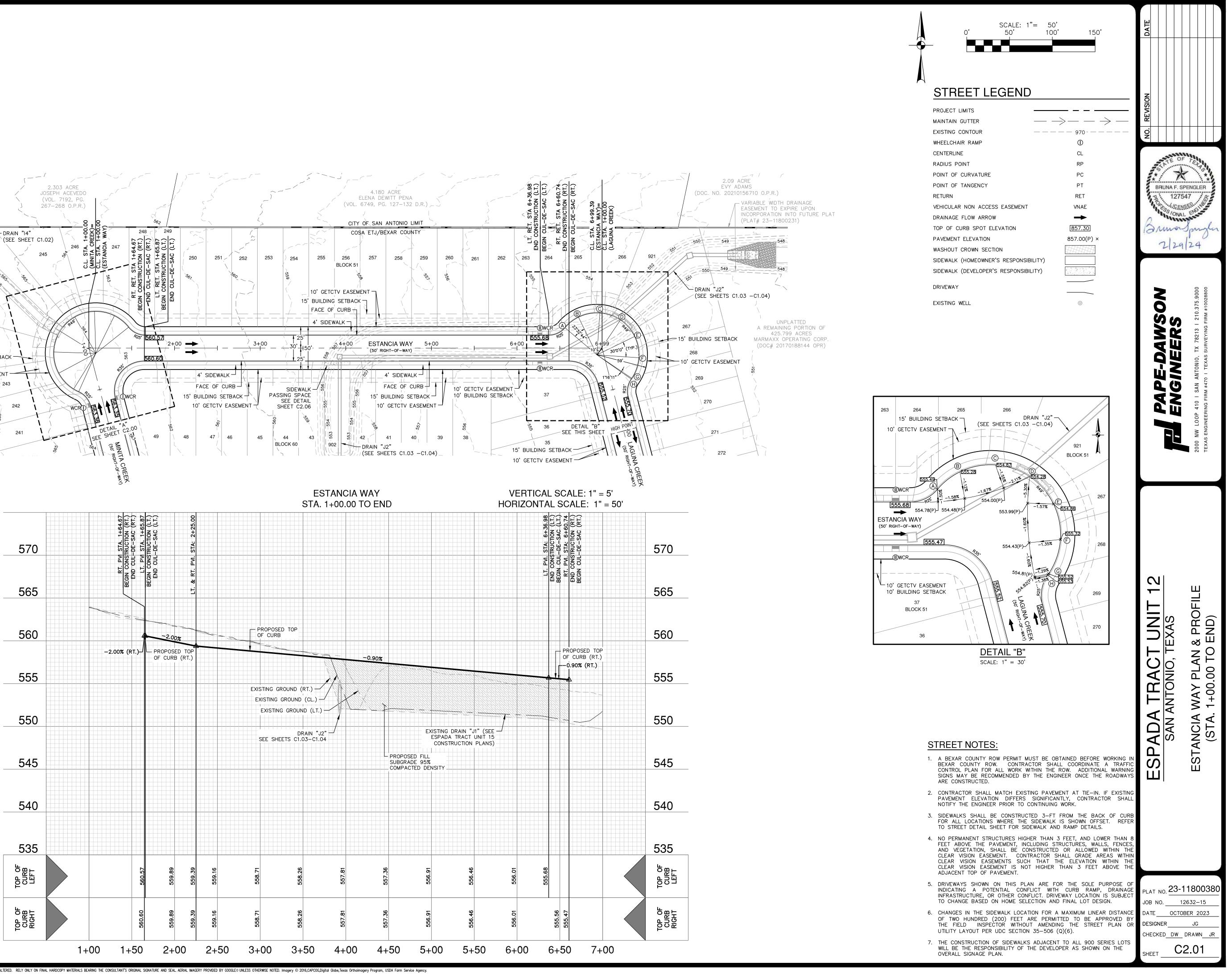
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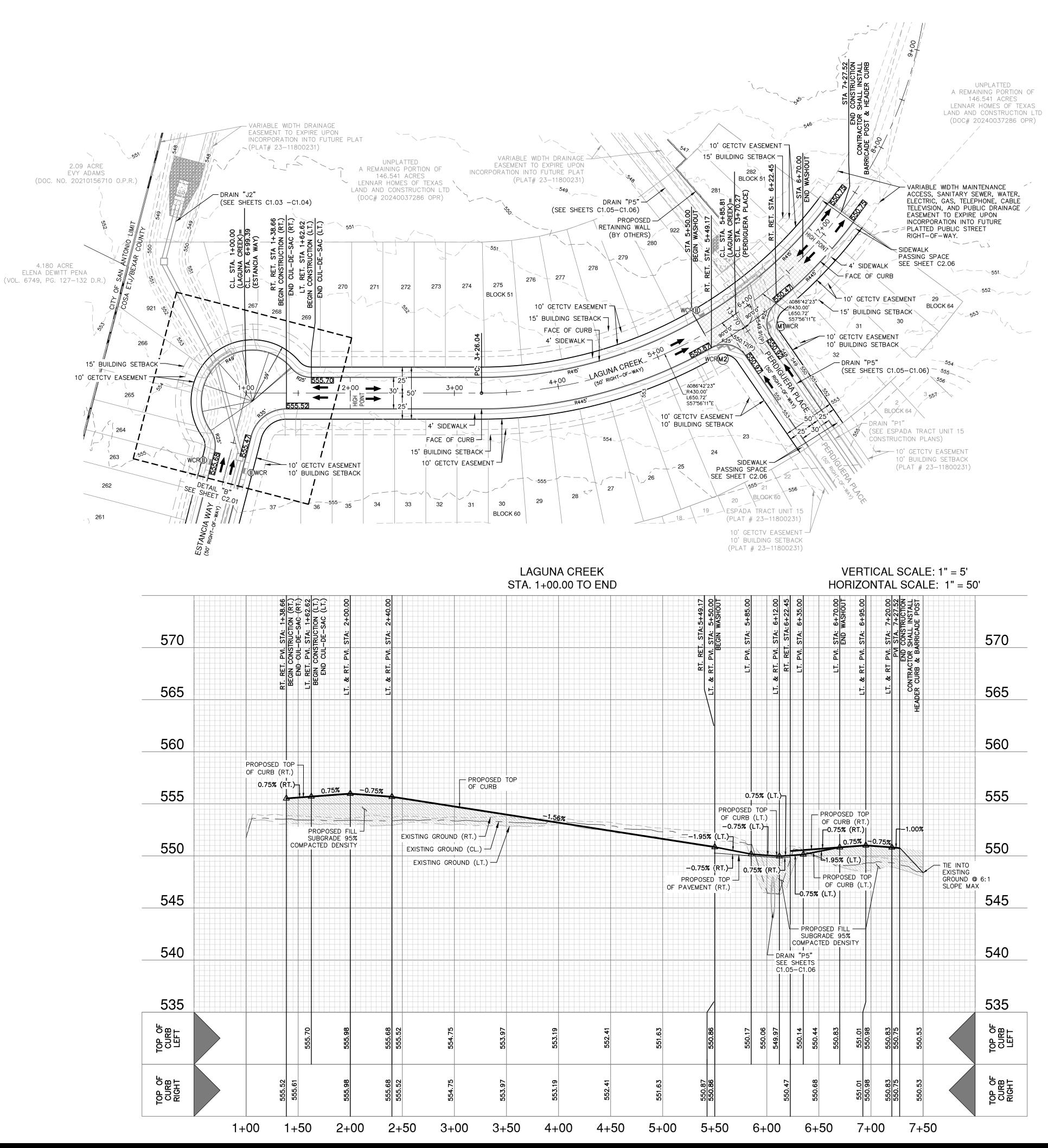


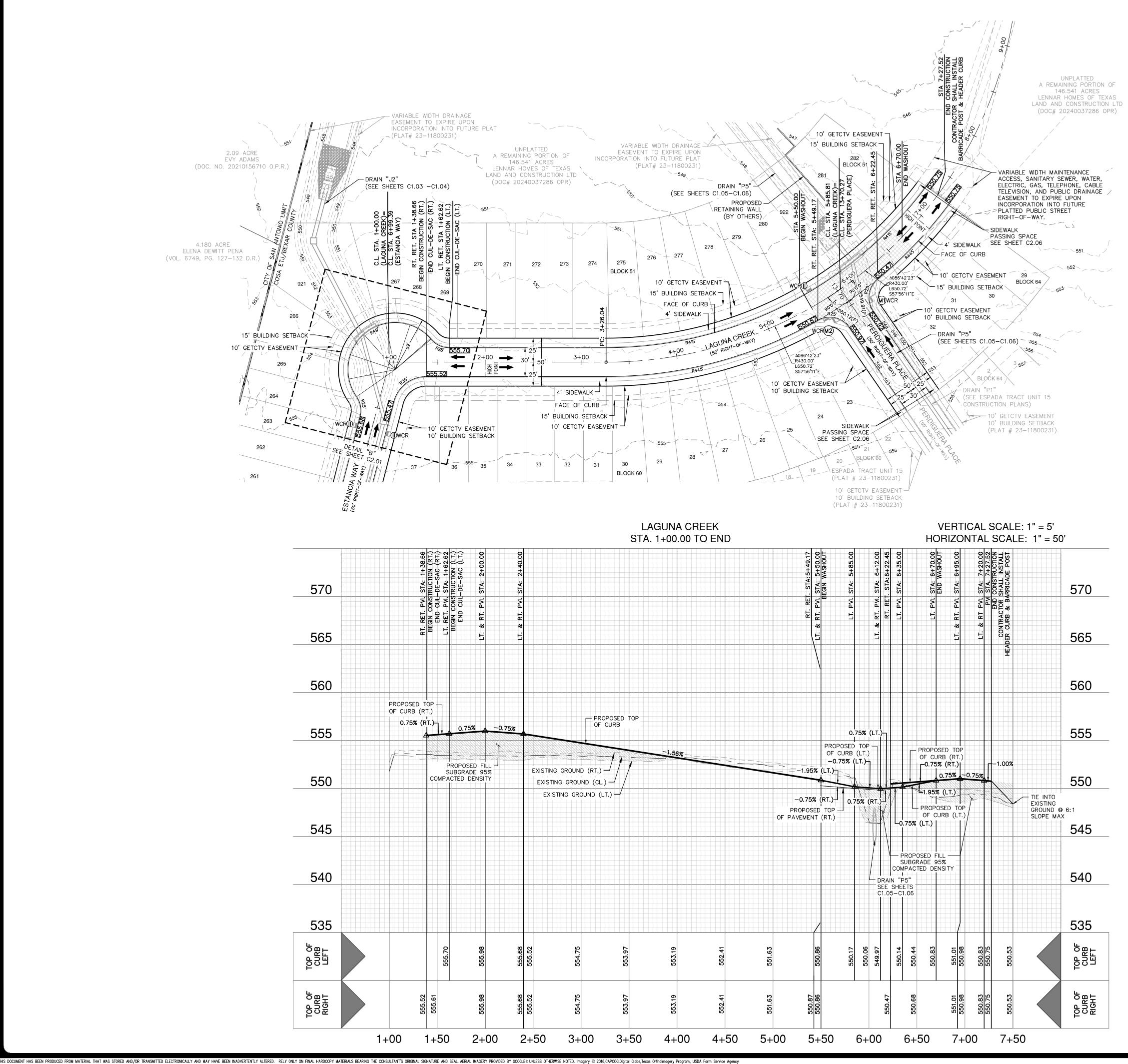


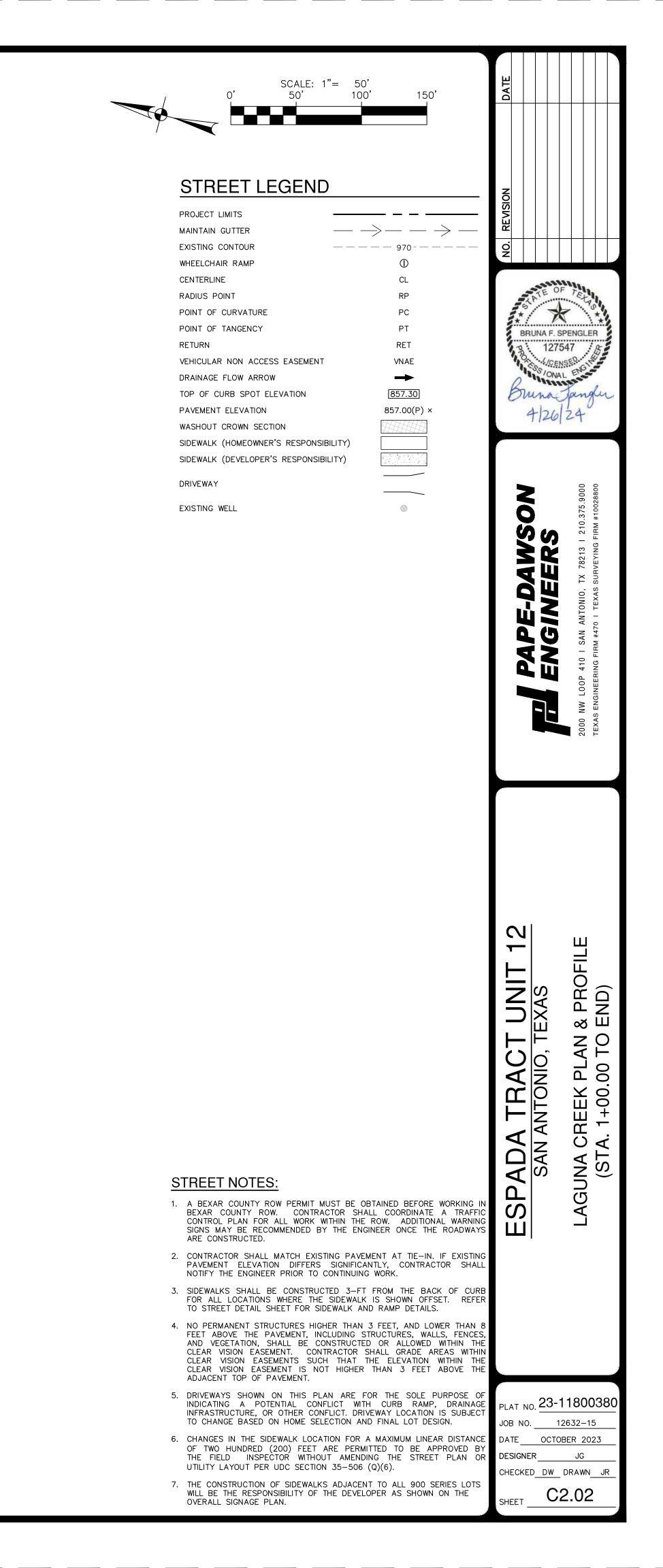








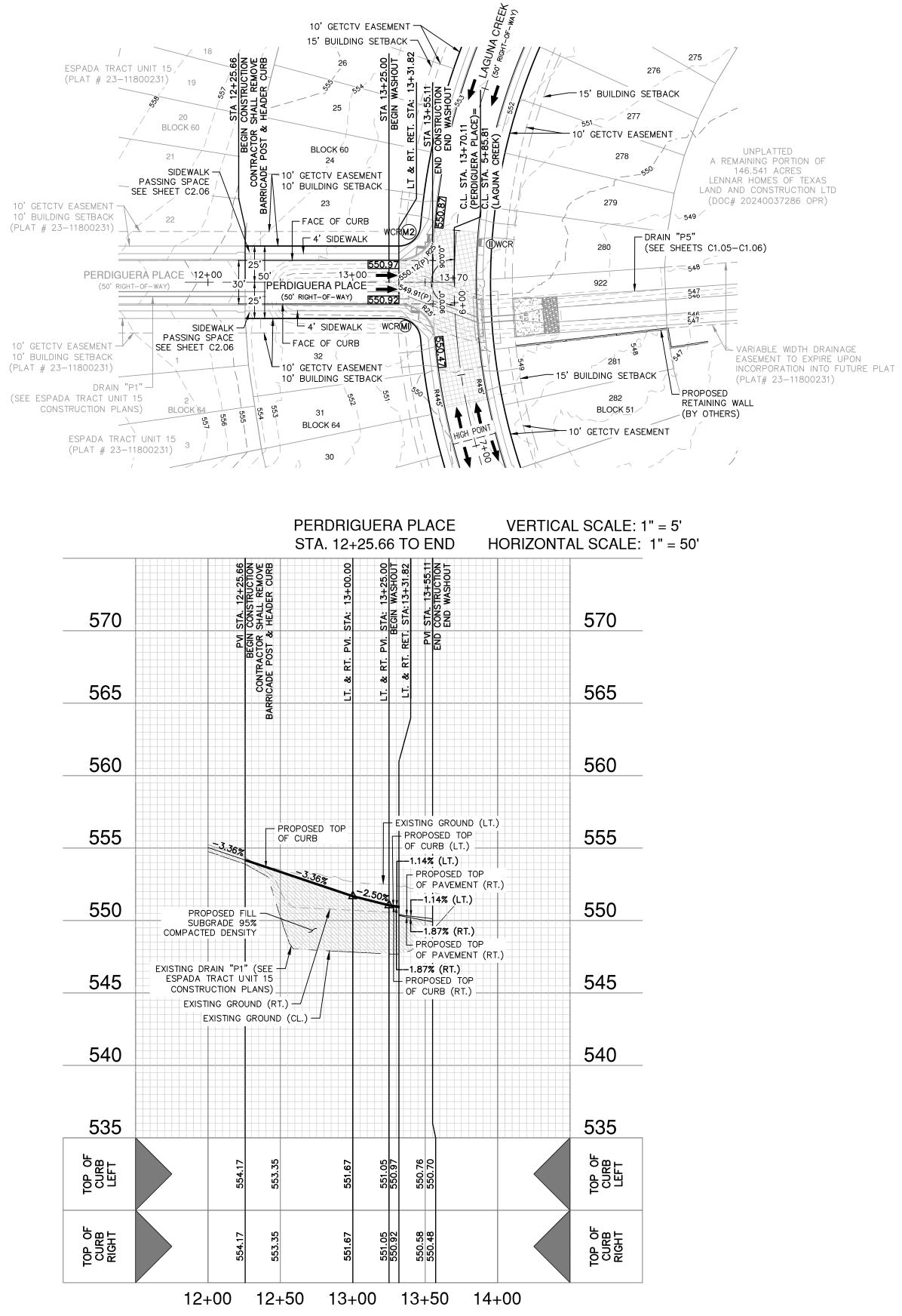




10' BUILDING SETBACK

10' BUILDING SETBACK (PLAT # 23-11800231) (SEE ESPADA TRACT UNIT 15

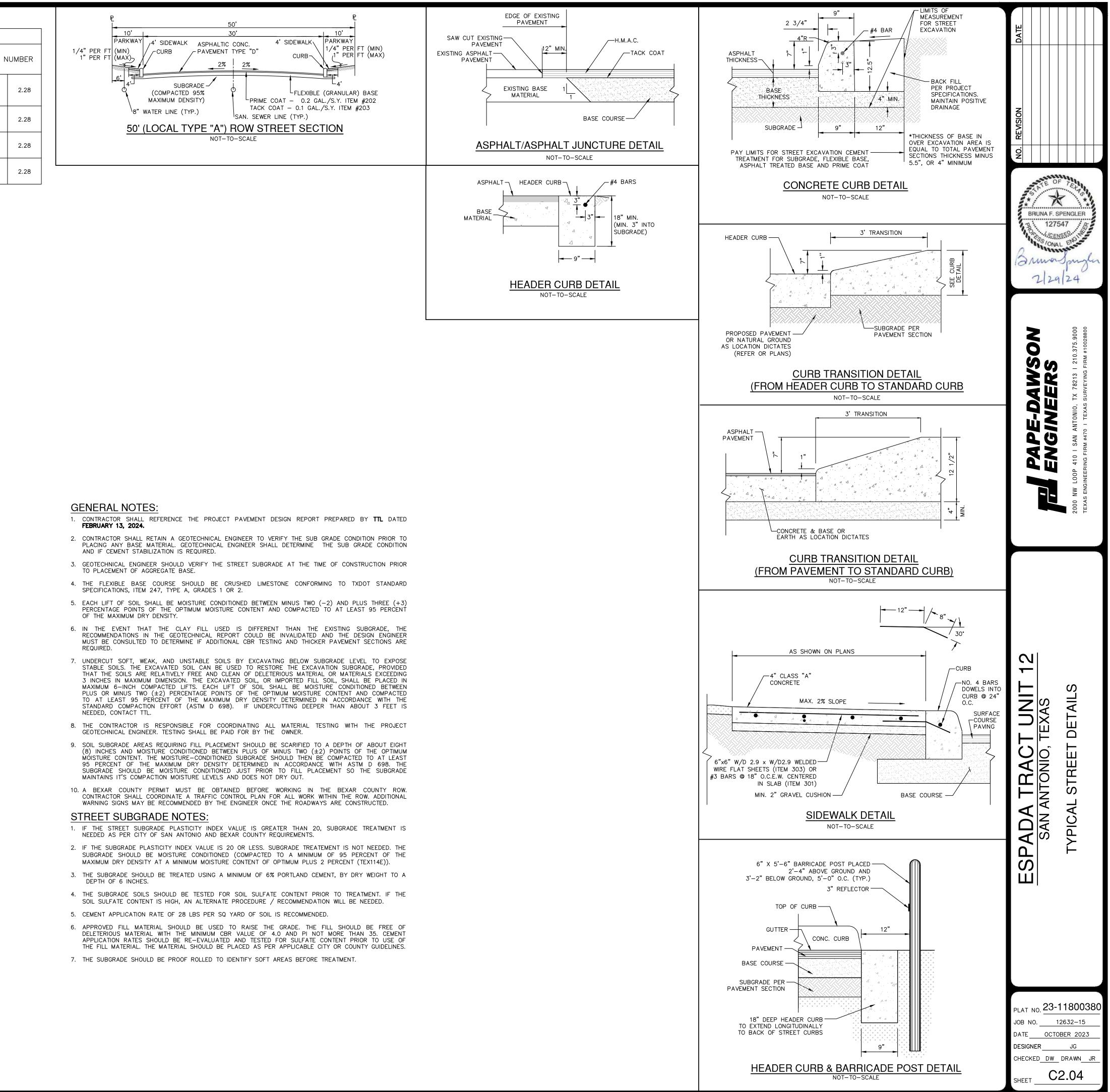
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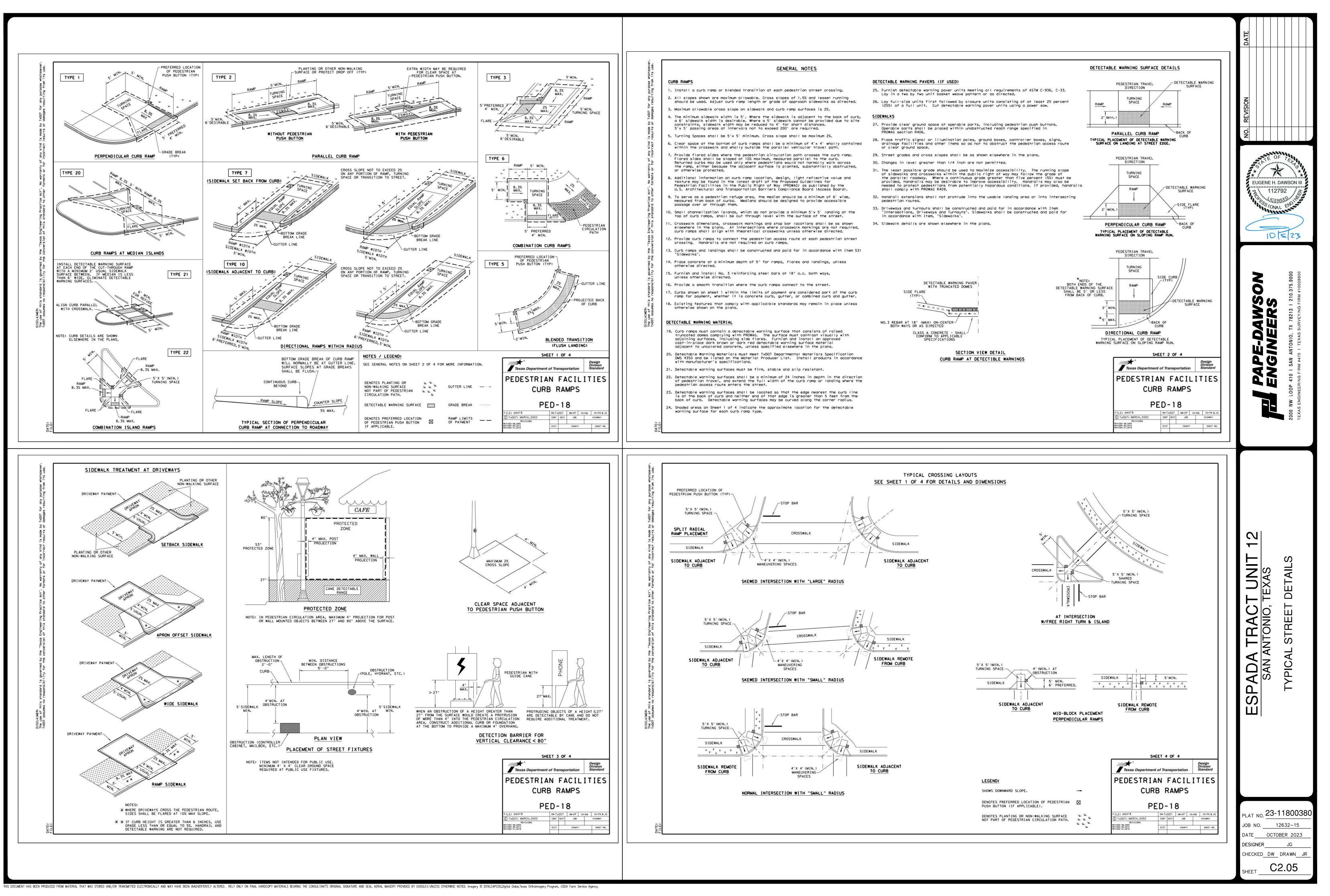


	O' SCALE: 1"= 50' 100' 150' D DO' 150' 100' 150' D D D 150' 100' 150' D D D D 150' 100' 150' D D D D D 150' 100' 150' PROJECT LIMITS D <t< th=""><th>BRUNA F. SPENGLER 127547 BRUNA F. SPENGLER BRUNA F. SPENGLER <</th></t<>	BRUNA F. SPENGLER 127547 BRUNA F. SPENGLER BRUNA F. SPENGLER <
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY) SIDEWALK (DEVELOPER'S RESPONSIBILITY) SIDEWALK (DEVELOPER'S RESPONSIBILITY) SIDEWALY SISTING WELL ()	THE PAPE-DAWSON ENGLISHED AND AND AND AND AND AND AND AND AND AN
- 1. 2. 3.	STREET NOTES: A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK AND RAMP DETAILS. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8	ESPADA TRACT UNIT 12 SAN ANTONIO, TEXAS PERDIGUERA PLACE PLAN & PROFILE (STA. 12+25.66 TO END)
6.	 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6). THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN. 	PLAT NO. 23-11800380 JOB NO. 12632-15 DATE OCTOBER 2023 DESIGNER JG CHECKED DW DRAWN JR SHEET C2.03

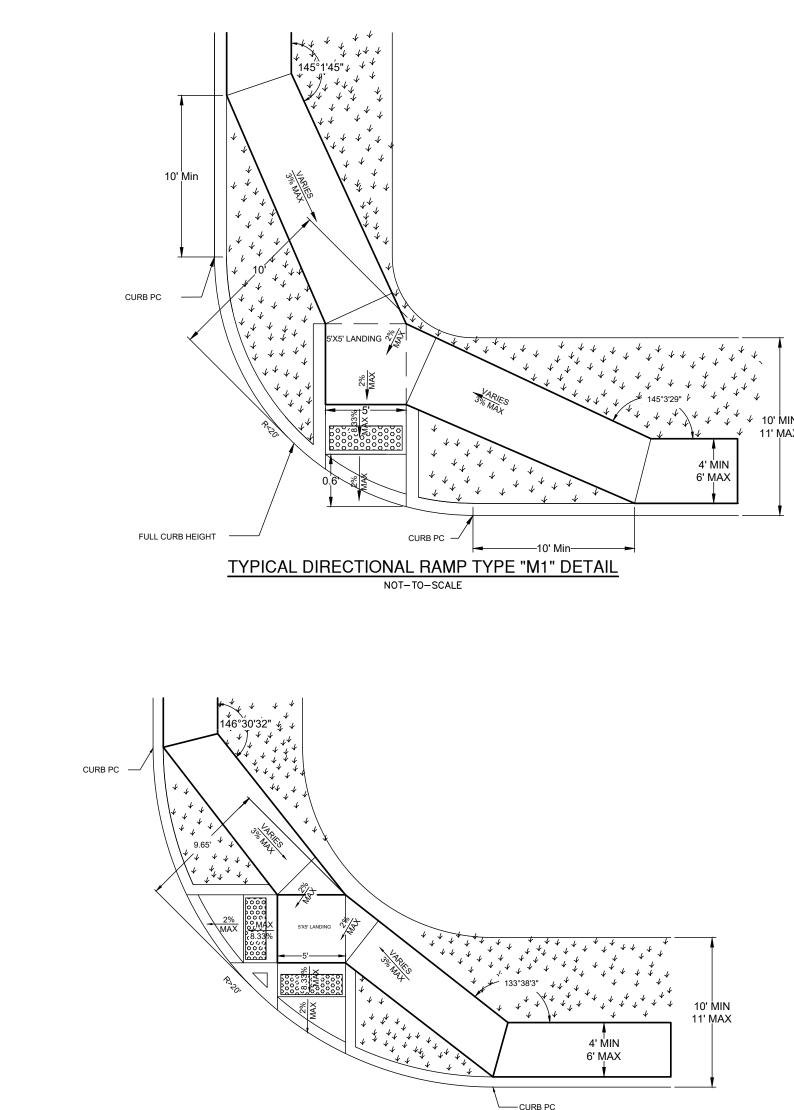
		F	PAVEME	NT SECT	TION DETA	NL.			
STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	TYPE "B" HMAC	GRANULAR BASE COURSE	CEMENT TREATED SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL N
MINITA CREEK	1+00.00 TO 3+09.73	2"	-	-	10"	6"	NO	4.0	2(.44) = .88 10(.14) = 1.4
ESTANCIA WAY	1+00.00 TO END	2"	_	_	10"	6"	NO	4.0	2(.44) = .88 10(.14) = 1.4
LAGUNA CREEK	1+00.00 TO END	2"	-	-	10"	6"	NO	4.0	2(.44) = .88 10(.14) = 1.4
PERDIGUERA PLACE	12+25.66 TO END	2"	_	-	10"	6"	NO	4.0	2(.44) = .88 10(.14) = 1.4

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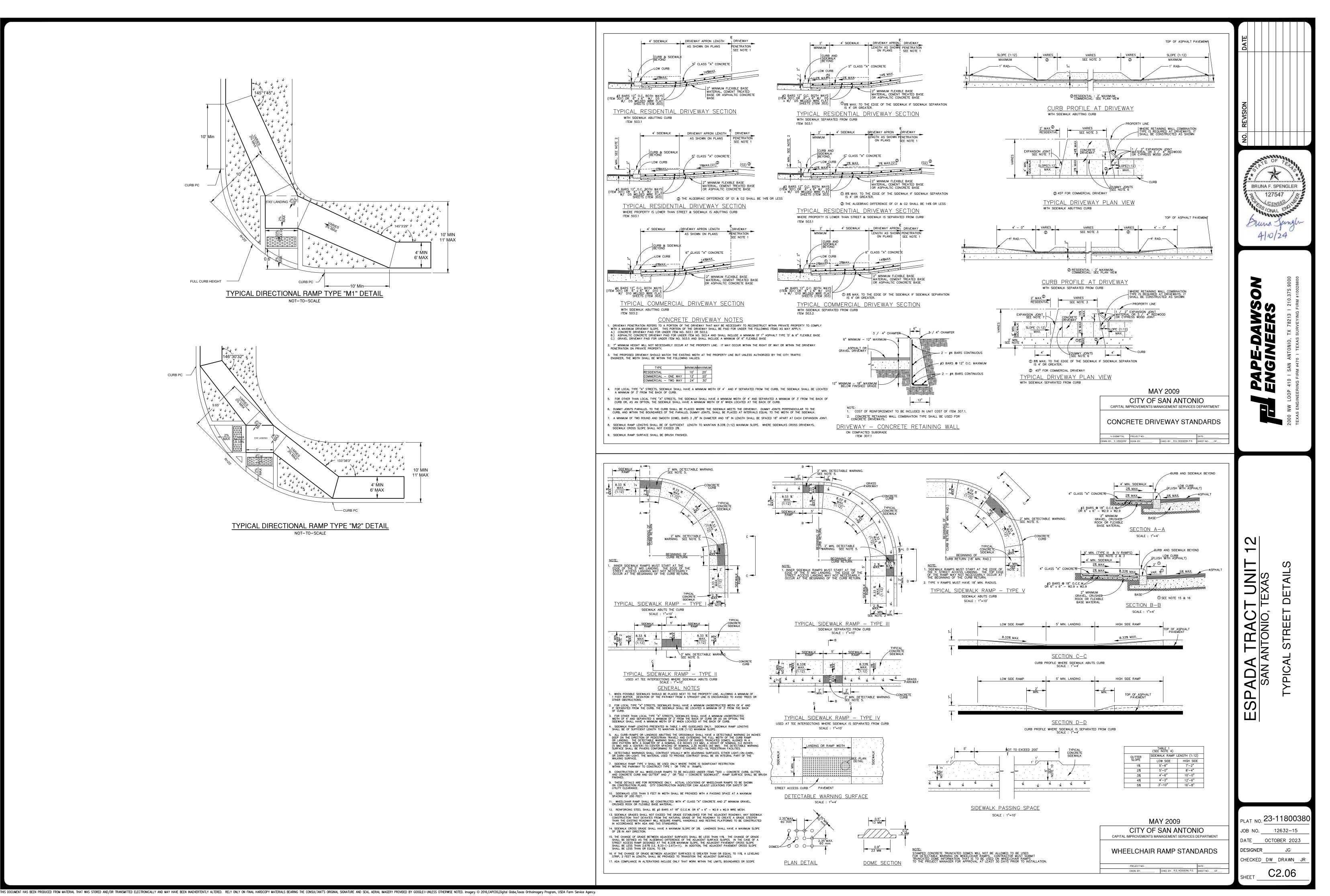


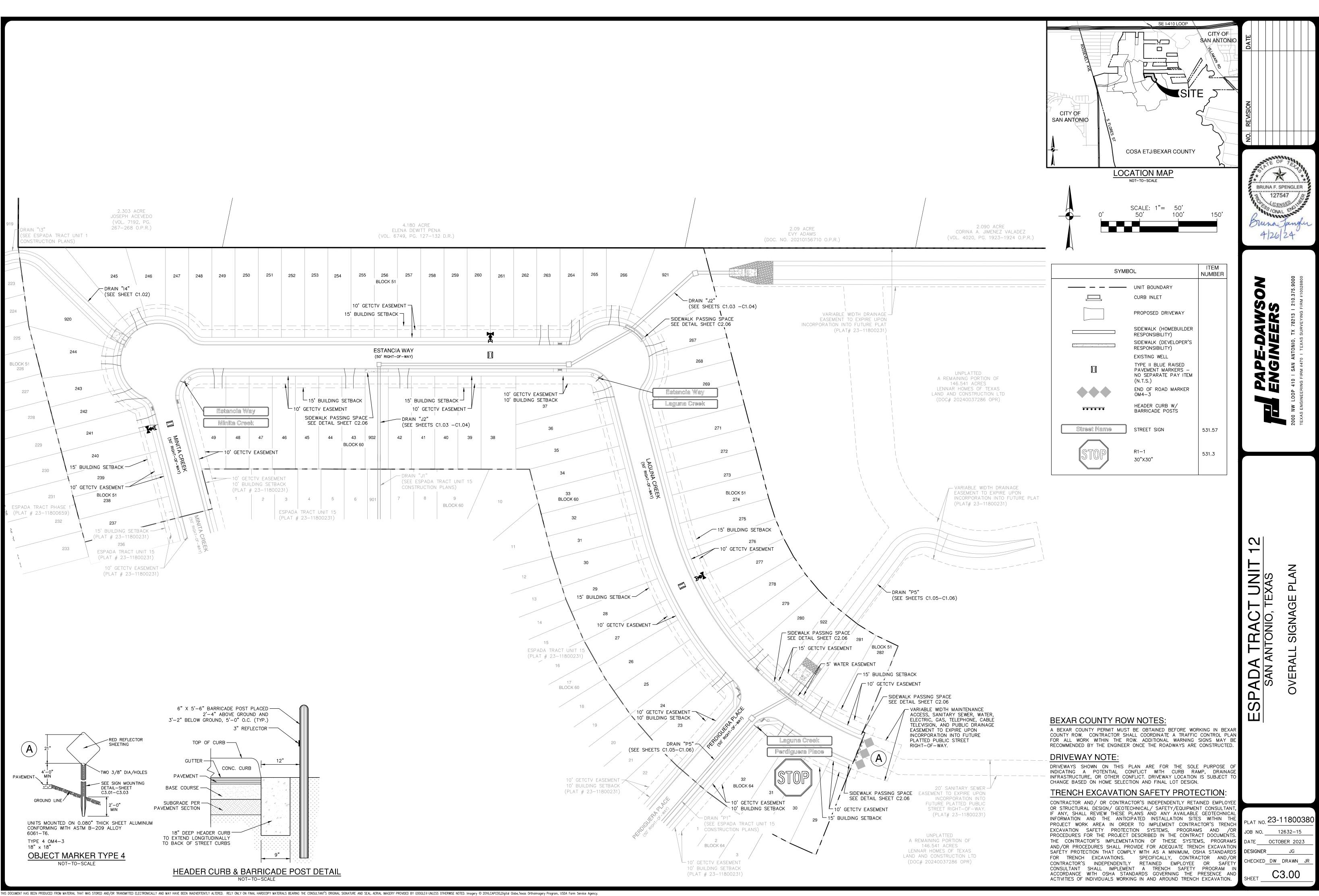


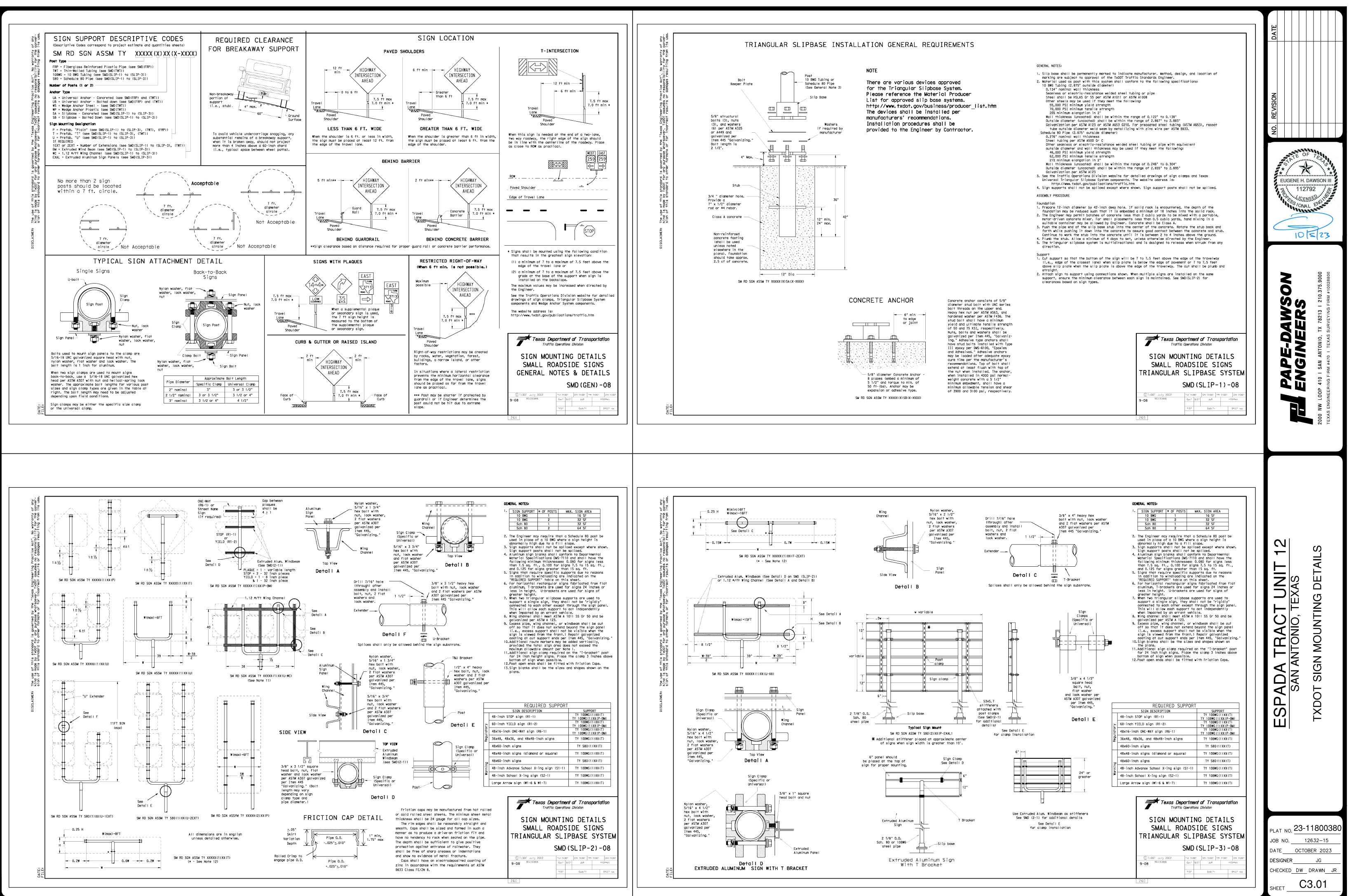
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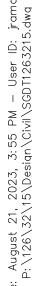


TYPICAL DIRECTIONAL RAMP TYPE "M2" DETAIL NOT-TO-SCALE

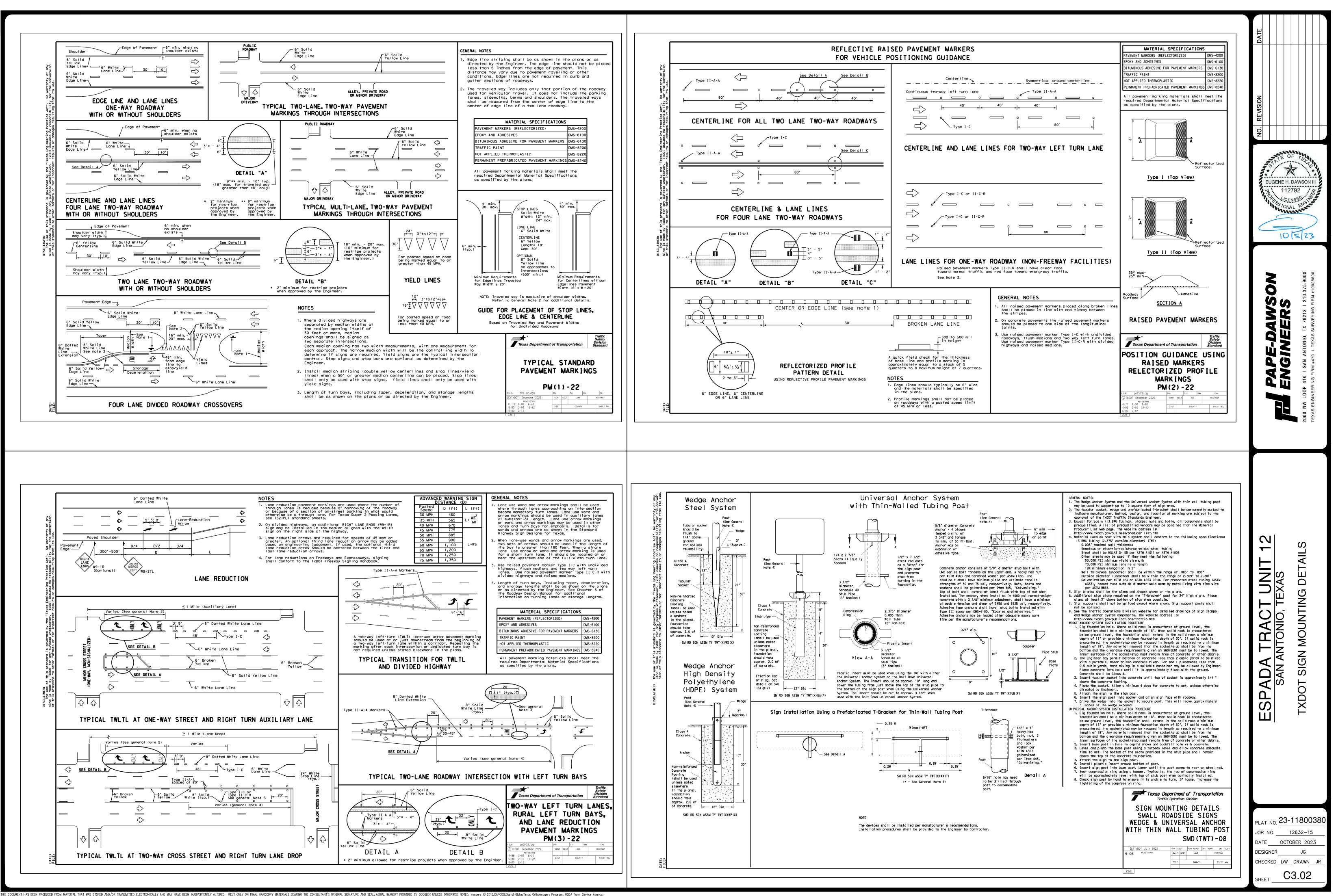




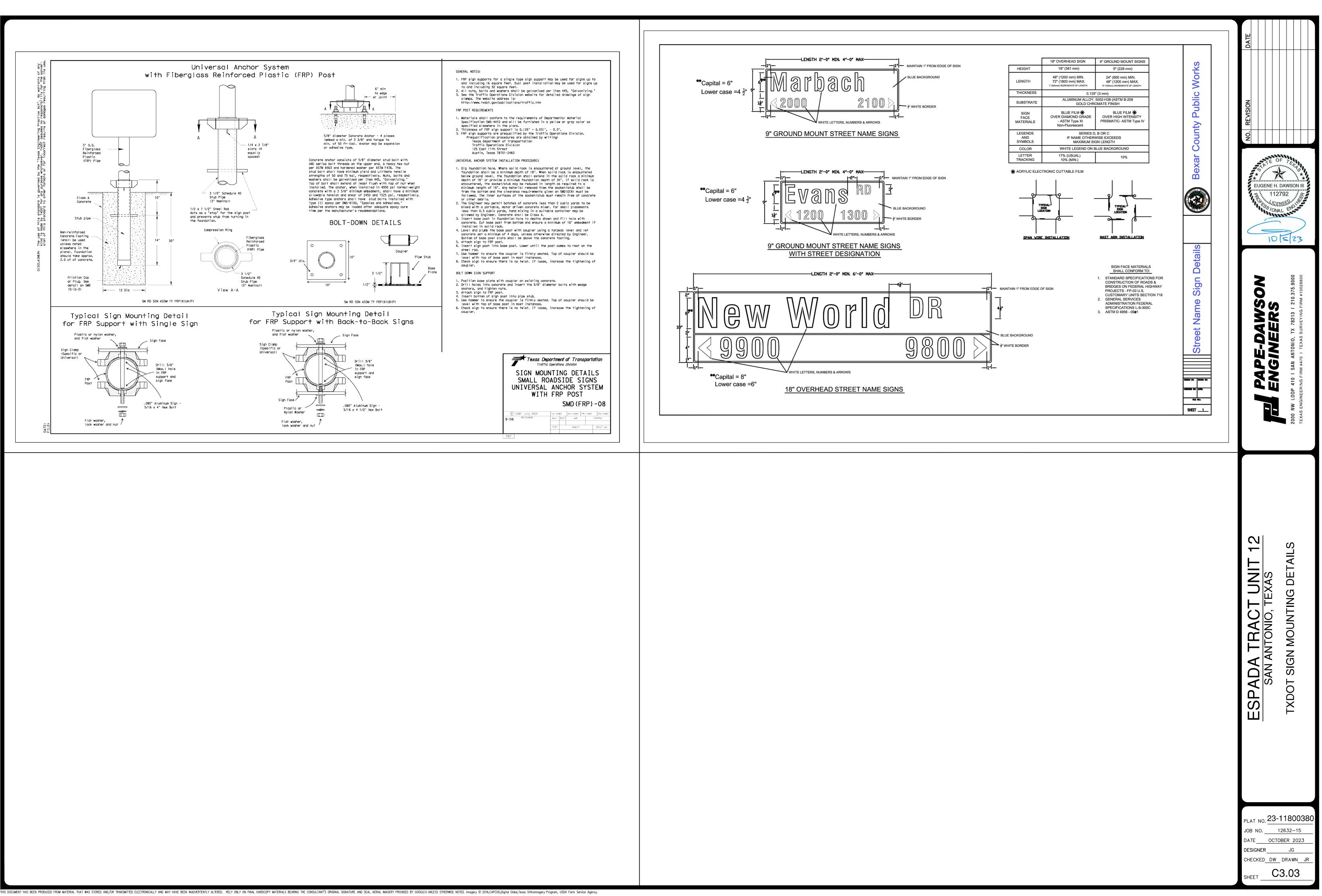


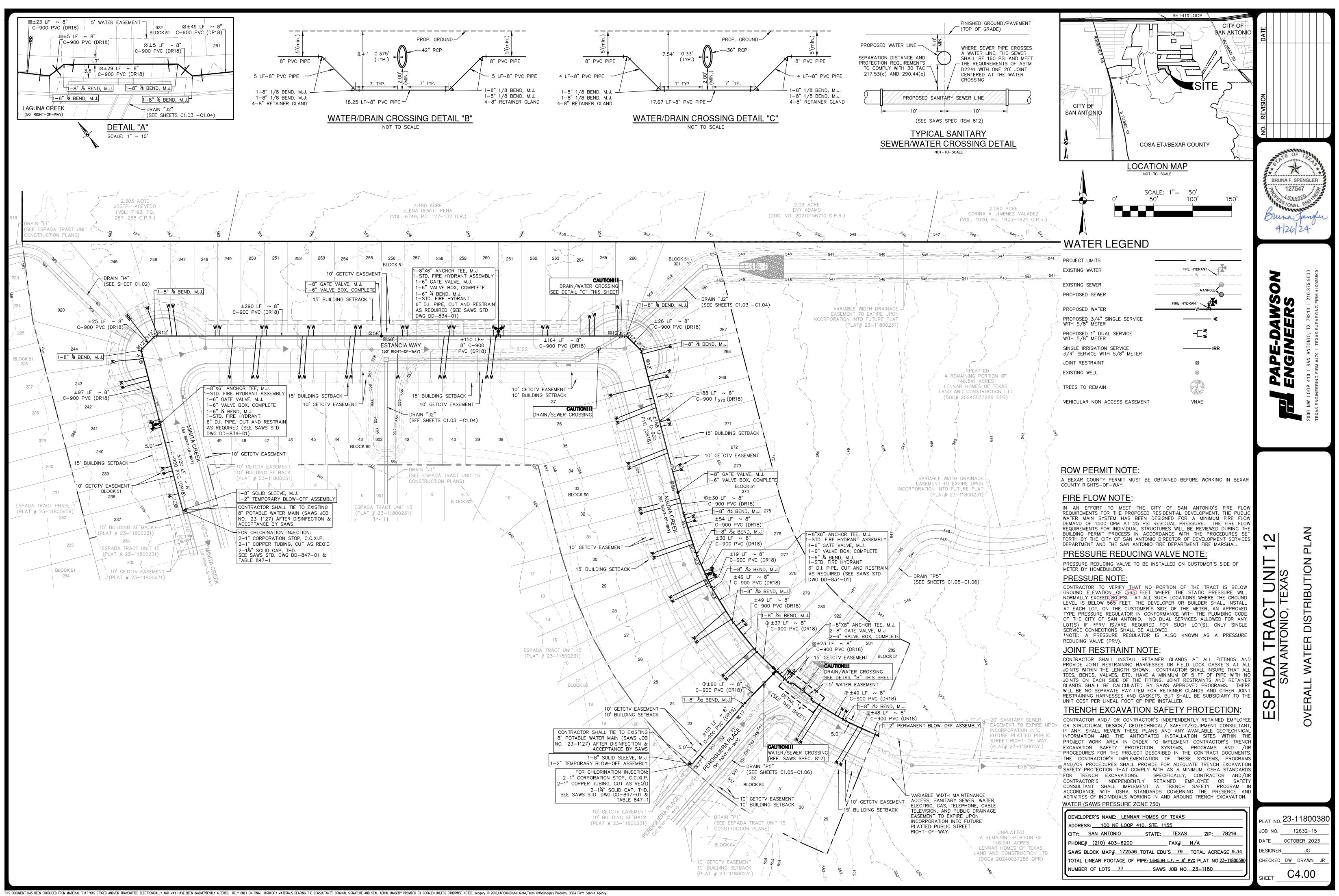


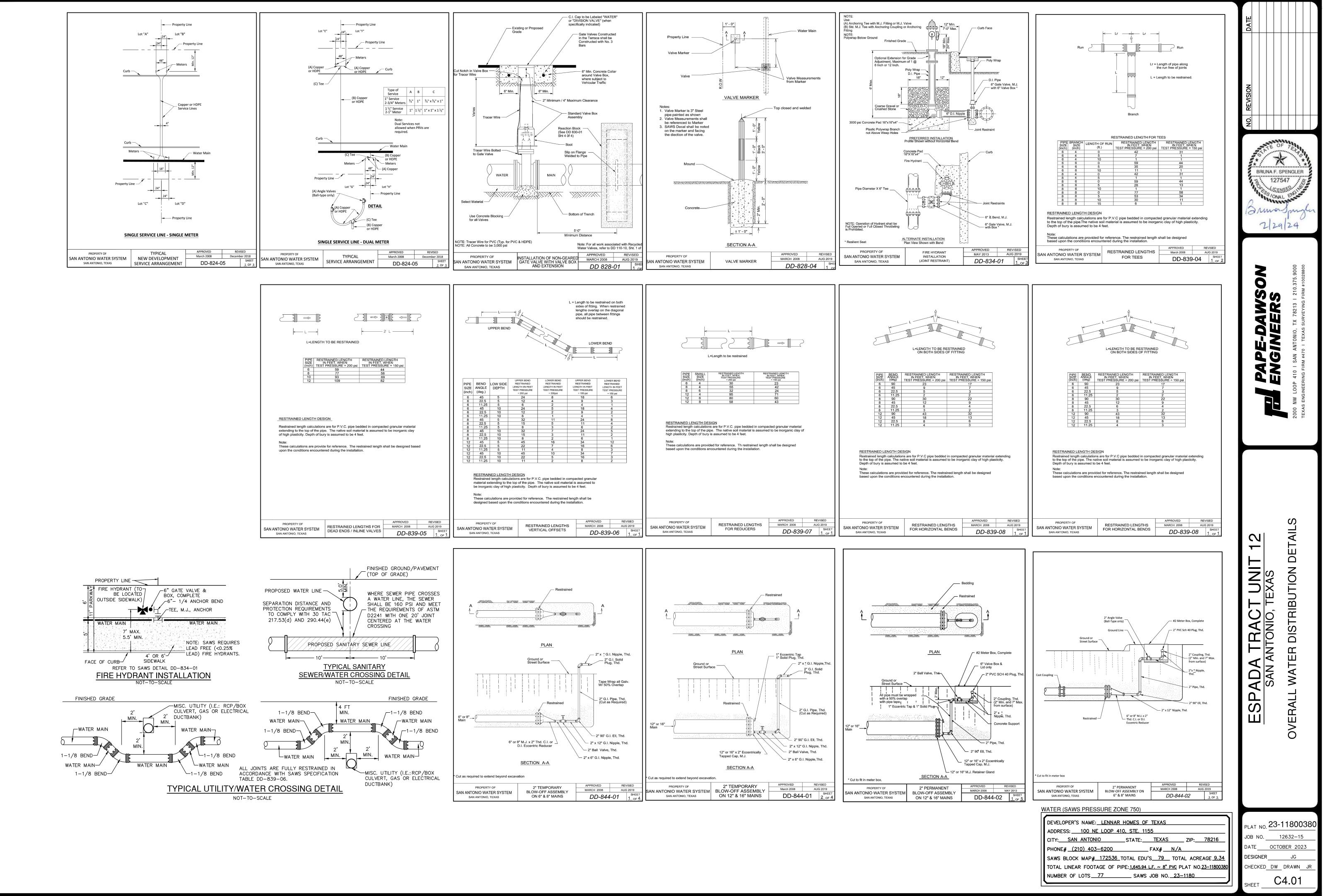
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SAWS CONSTRUCTION NOTES

(LAST REVISED JANUARY 2022) SAWS GENERAL SECTION ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE: A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE ACCORDINGLY. CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290. B.CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE' C.CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION" D.CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".

E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

- THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
- THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.
- THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
- LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
 - SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
- COSA DRAINAGE (210) 207-0724 OR (210) 207-6026 COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
- COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951 TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
- . ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
- 9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
- 10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
- . HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
- 12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
- 13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SAWS WATER NOTES

- CENTER (210) 233-2014
- SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
- REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)
- STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ALL VALVES SHALL READ "OPEN RIGHT".
- (PRV)
- PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.
- 8. BACKFLOW PREVENTION DEVICES:
- HAVE BACKFLOW PREVENTION DEVICES. BY SAWS PRIOR TO INSTALLATION.
- SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.
- BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO
- LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST | 1. MACHINE CHLORINATION BY THE S.A.W.S. BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK 3

FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS

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

VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN. THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE

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

6. PRVS REQUIRED: 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 *PRV IS/ARE REQUIRED FOR SUCH LOT(S) ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE

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

• ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED

UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND

10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIA

SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE

PROJECT WATER NOTES

- ALL 8", 12" AND 16" PIPE SHALL BE P.V.C. C-900 CLASS 235 DR 18.
- 3. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR, PROVIDED FOR IN THE SPECIAL CONDITIONS.
- THE WATER LINES WILL BE SET FROM THE STREET HUBS BEFORE TI CONTRACT BEGINS. STREET CUT SHEETS WILL BE SUPPLIED TO CONTRACTOR. THERE SHOULD BE NO ADDITIONAL STAKES REQUIRED, AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE A VERIFY THAT ALL STAKES REQUIRED FOR HIS WORK ARE IN PLACE AT TIME THE CONSTRUCTION BEGINS. IF ANY STAKES ARE MISSING ENGINEER SHOULD BE NOTIFIED IMMEDIATELY. AFTER CONSTRUCTION BEGINS ALL CONSTRUCTION STAKES, MARKS, ETC., SHALL BE CAREFULLY PRESERVE BY THE CONTRACTOR, AND IN CASE OF DESTRUCTION OR REMOVAL BY TI CONTRACTOR, HIS EMPLOYEE OR ANY OTHER MEANS, SUCH STAKES, MARKS ETC., SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL THE FINAL MEASUREMENTS, TAPS AND LENGTH OF SERVICE CONNECTIONS.
- THE LOT CORNERS WILL BE SET BY THE ENGINEER FOR INSTALLATION OF AL WATER SERVICES. THESE LOT CORNERS SHALL BE CAREFULLY PRESERVED F THE CONTRACTOR SO THE METER BOXES CAN BE SET IN PHASE II. ANY LO CORNER DESTROYED OR REMOVED BY THE CONTRACTOR, HIS EMPLOYEES, BY ANY OTHER MEANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE
- STREETS WILL HAVE BEEN EXCAVATED DOWN TO SUBGRADE AND TH PARKWAY WILL BE CUT DOWN TO TOP OF CURB BY THE STREET CONTRACTOR PRIOR TO CONSTRUCTION OF THE WATER MAINS. IT WILL BE THE UTILIT CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT.
- WATER METER BOXES IF APPLICABLE SHALL BE INSTALLED NINE FEET FRO FACE OF CURB TO CENTER OF THE METER BOX.
- . ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVEI FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.
- 10. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTI WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE S.A.W.S RELEASES THE MAIN FOR TIE-IN AND USE.
- . UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUD FIRE HYDRANT, 6-INCH GATE VALVE AND 6-INCH VALVE BOX COMPLET ANCHOR BEND, AND ALL 6-INCH DI PIPE REQUIRED (DI PIPE REQUIRED SHAL INCLUDE ALL PIPE FROM THE TEE ON THE MAIN LINE TO THE FIRE HYDRANT)
- 2. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUC INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURA RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO).
- 13. A CLEAR SPACE SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. THIS AREA SHOULD HAVE A MINIMUM DIAMETER OF 3.0' AND BE CLEAN VERTICAL OBSTRUCTIONS, VALVES, AND METER BOXES.
- FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE 14. SAWS REQUIRES LEAD FREE (< 0.25%) FIRE HYDRANTS.
 - 15. UNLESS OTHERWISE NOTED ALL SERVICES SHALL BE 3/4" WITH 5/8" METER

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DILS PELL FLC SF	FI PAPE-DAWSON	2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000 Texas engineering firm #470 I texas surveying firm #10028800
	ESPADA TRACT UNIT 12 SAN ANTONIO, TEXAS	OVERALL WATER DISTRIBUTION NOTES
	PLAT NO. 23- JOB NO DATE DESIGNER	

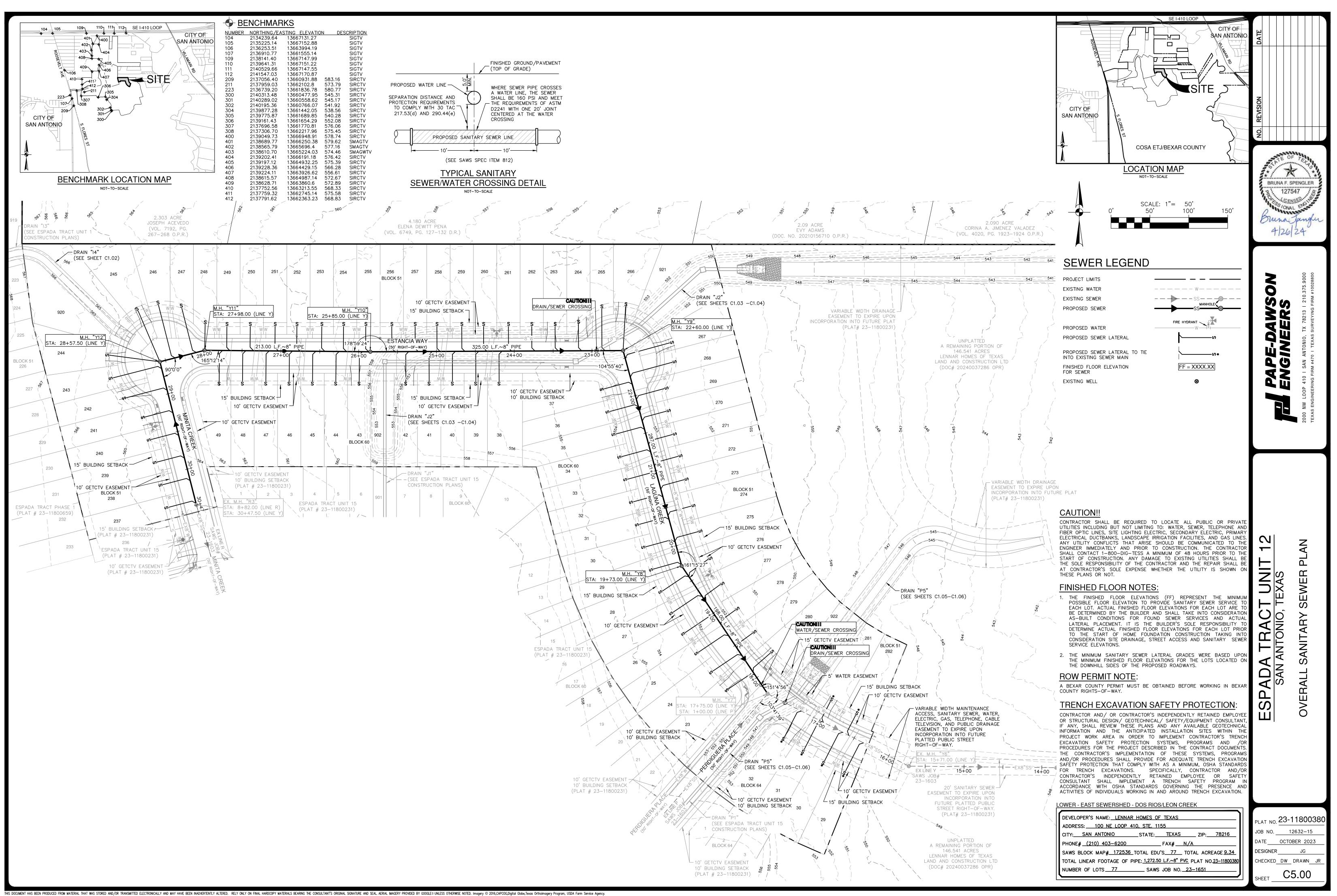
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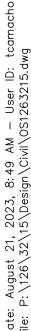
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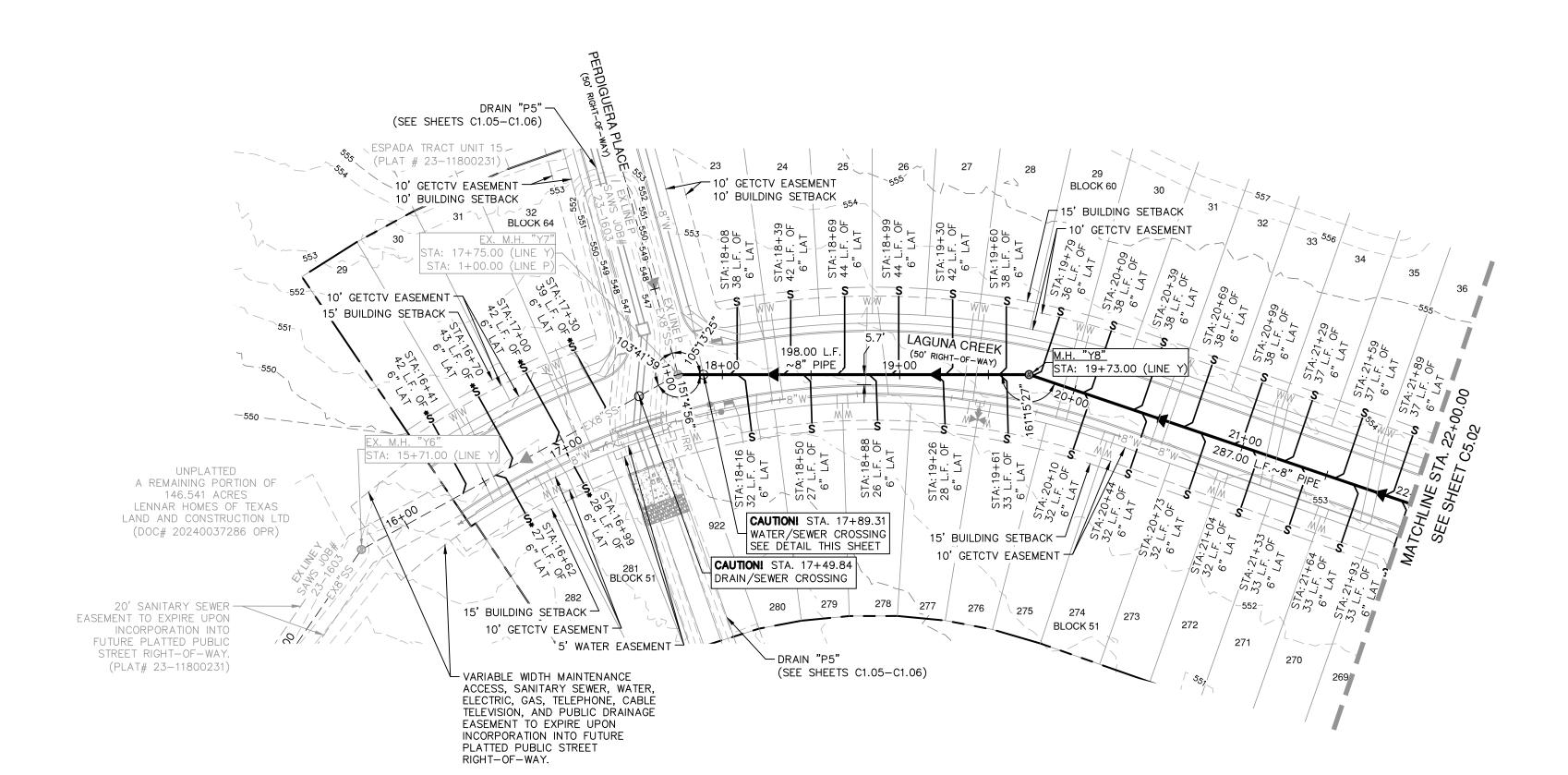
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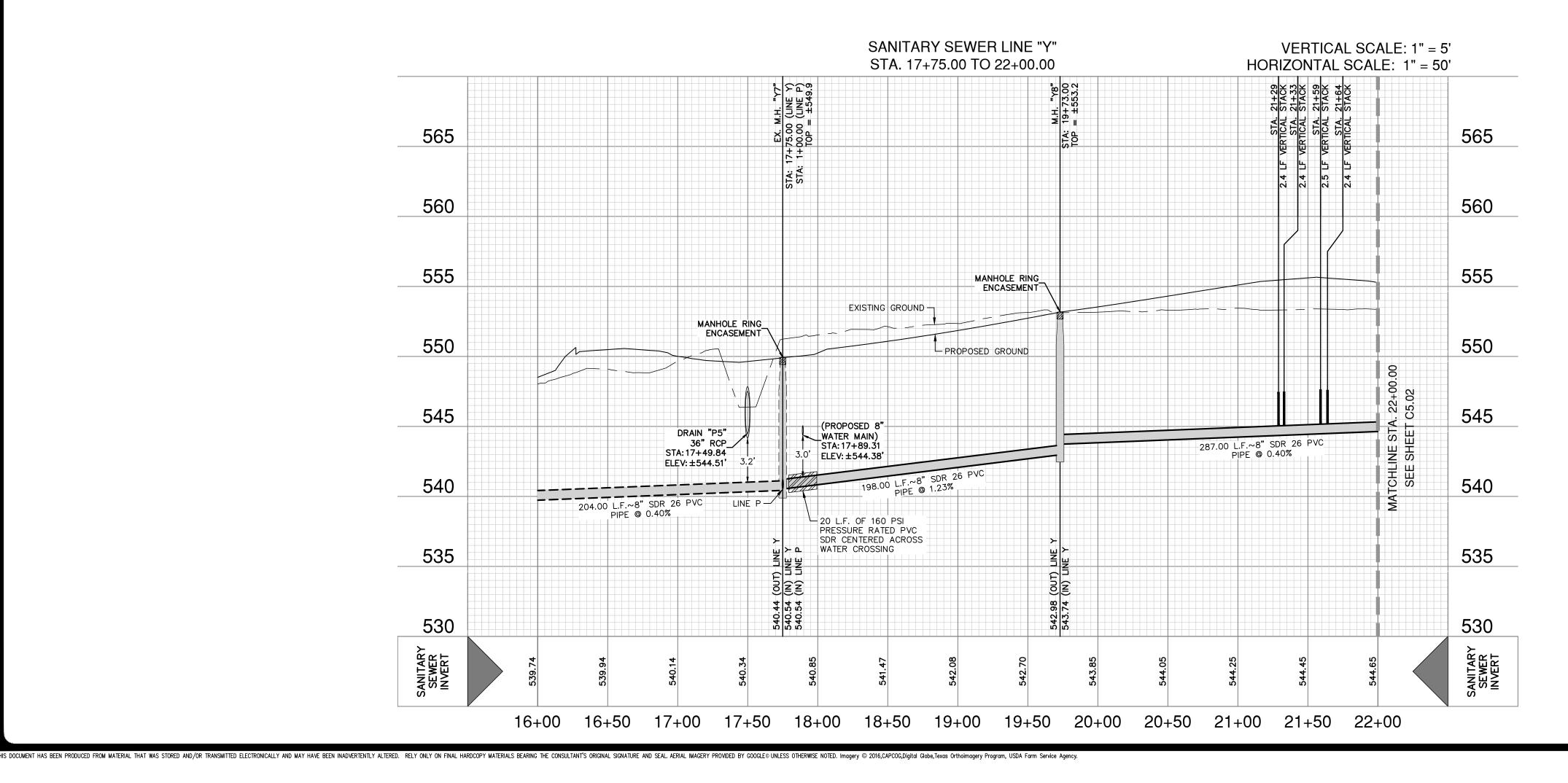
VATER (SAWS PRESSURE ZONE 750)

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS
ADDRESS:
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE# (210) 403–6200 FAX# N/A
SAWS BLOCK MAP # 172536 TOTAL EDU'S 79 TOTAL ACREAGE 9.34
TOTAL LINEAR FOOTAGE OF PIPE: 1,645.94 L.F. ~ 8" PVC PLAT NO.23-118003
NUMBER OF LOTS 77 SAWS JOB NO. 23-1180
NONDER OF 2013 SAWS 000 NO25 1100

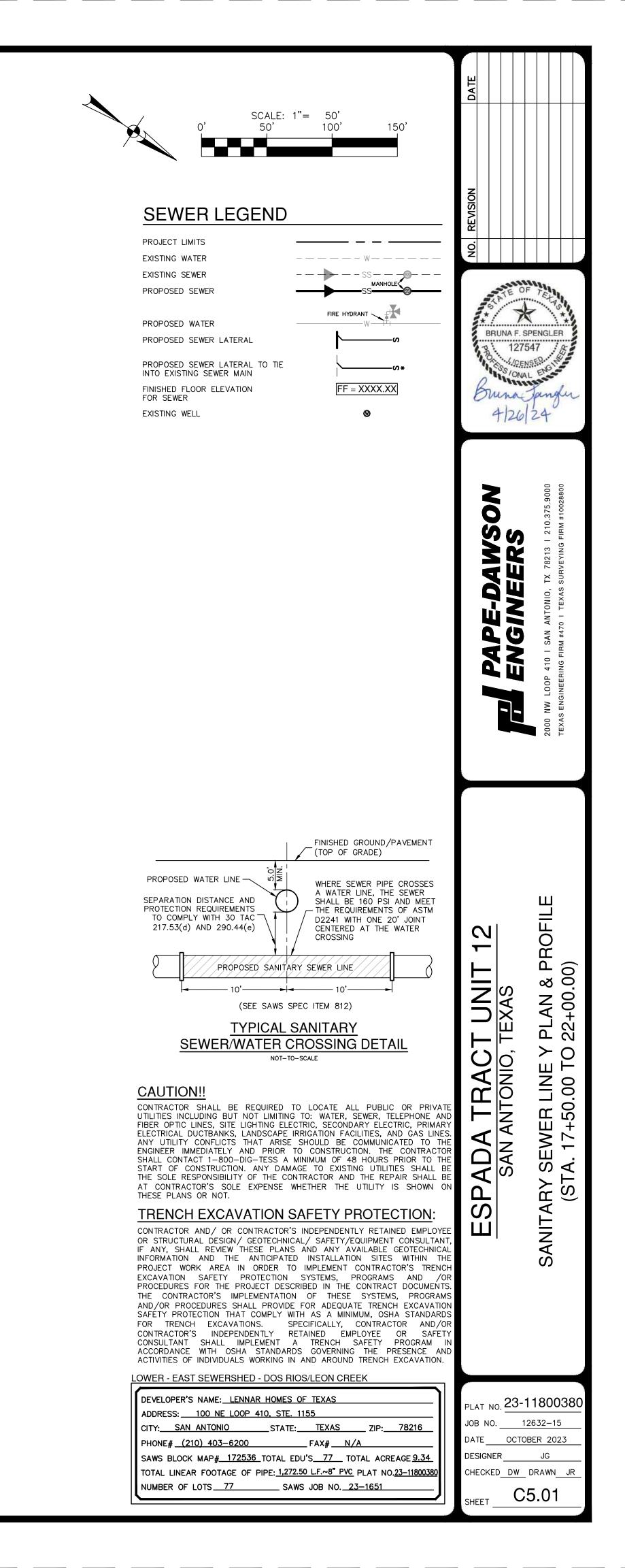


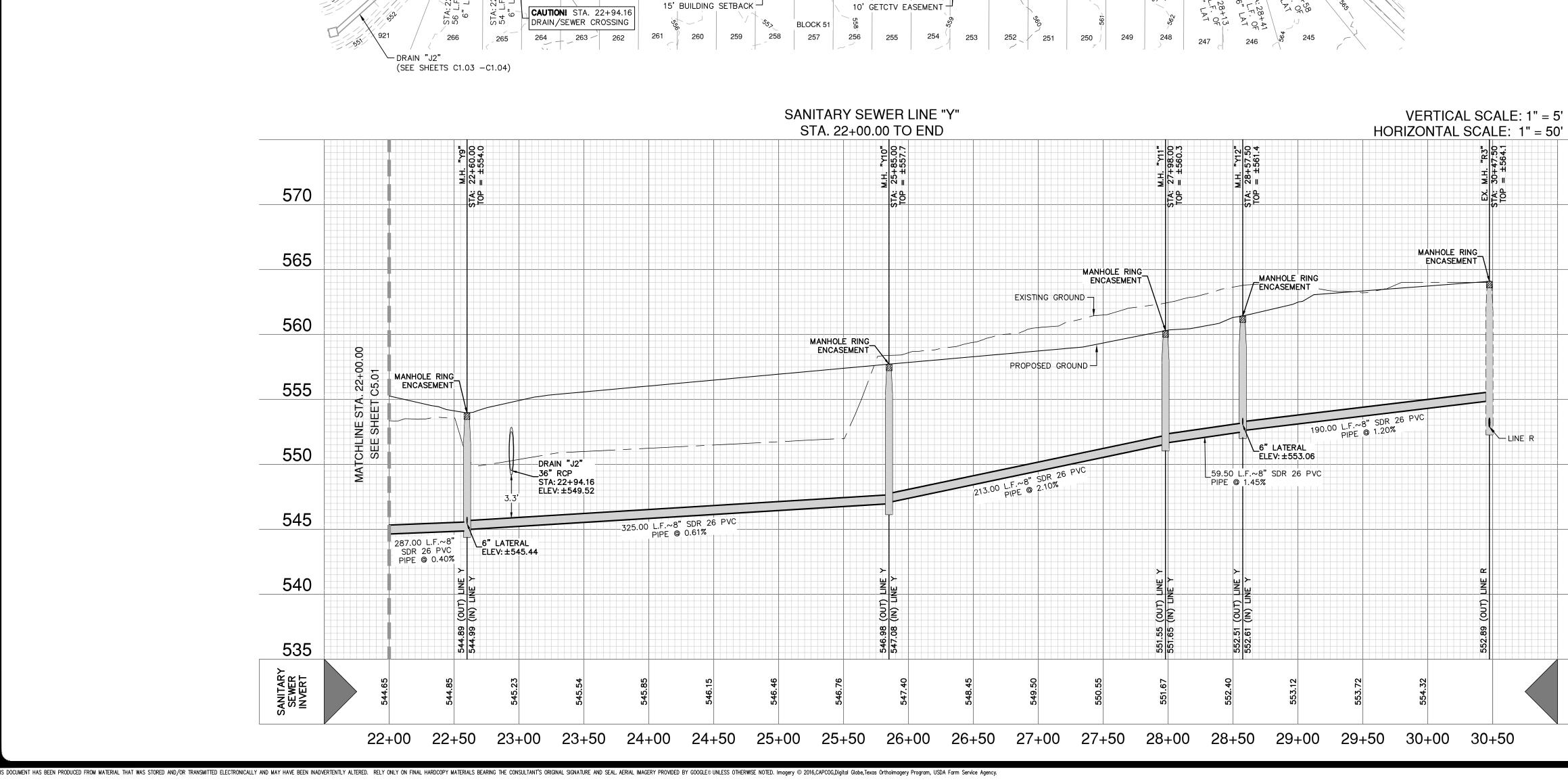


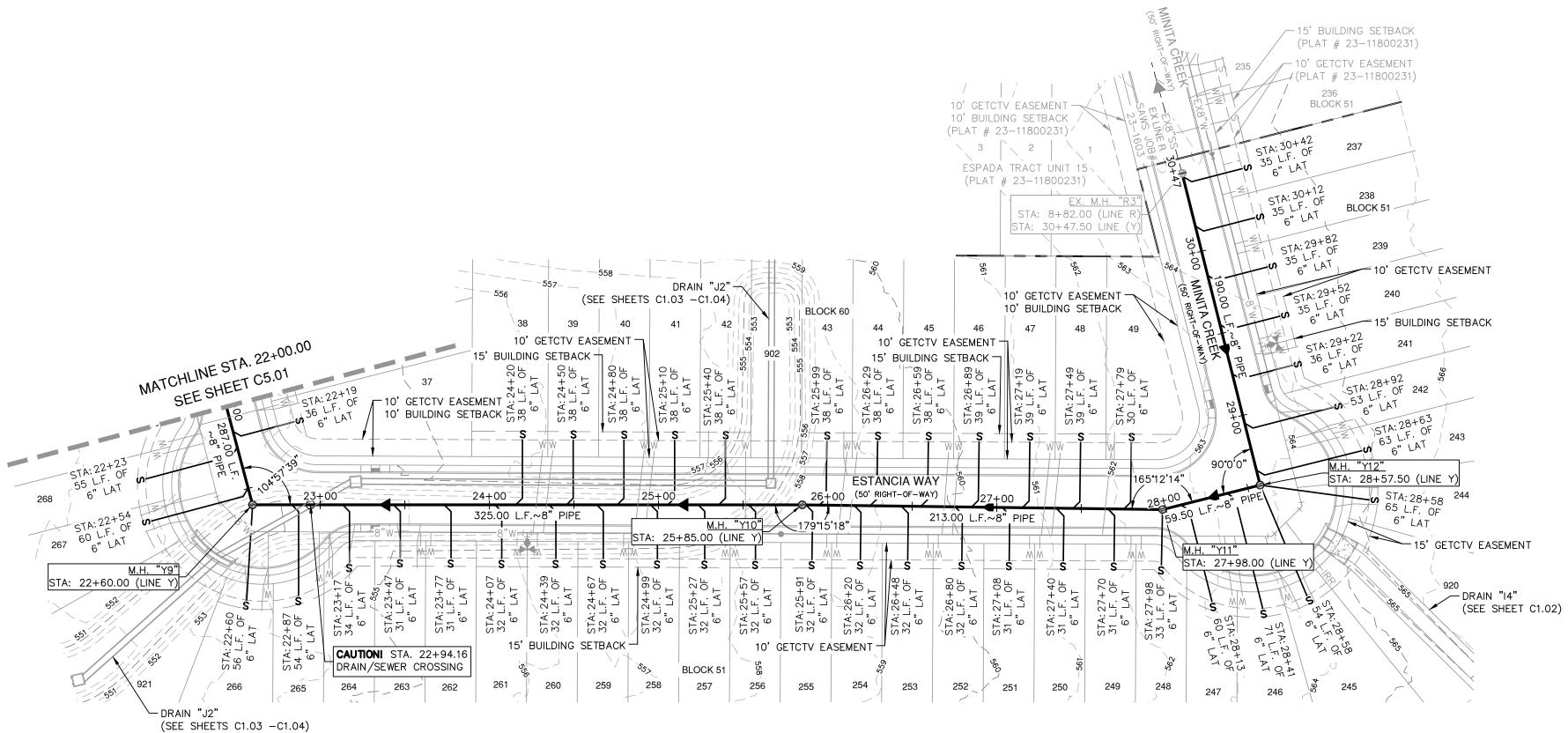


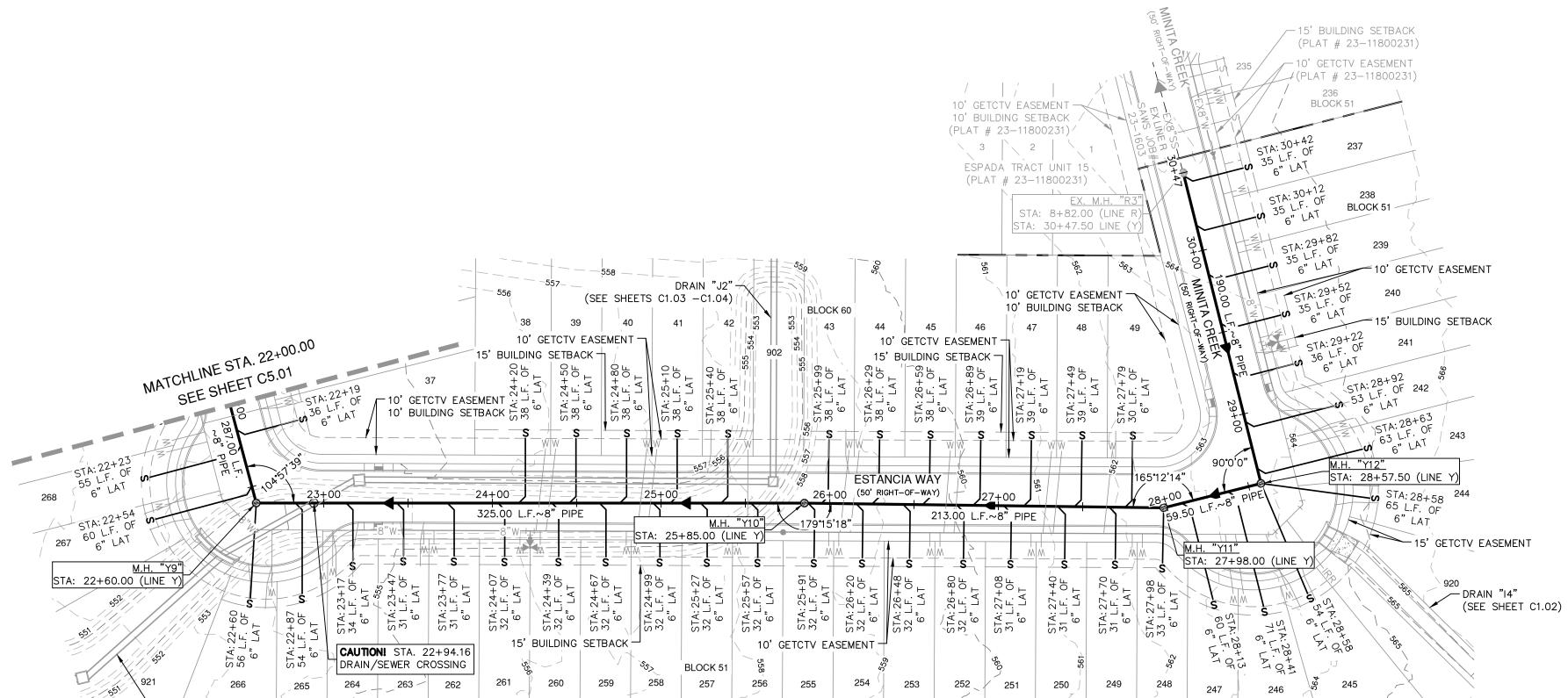


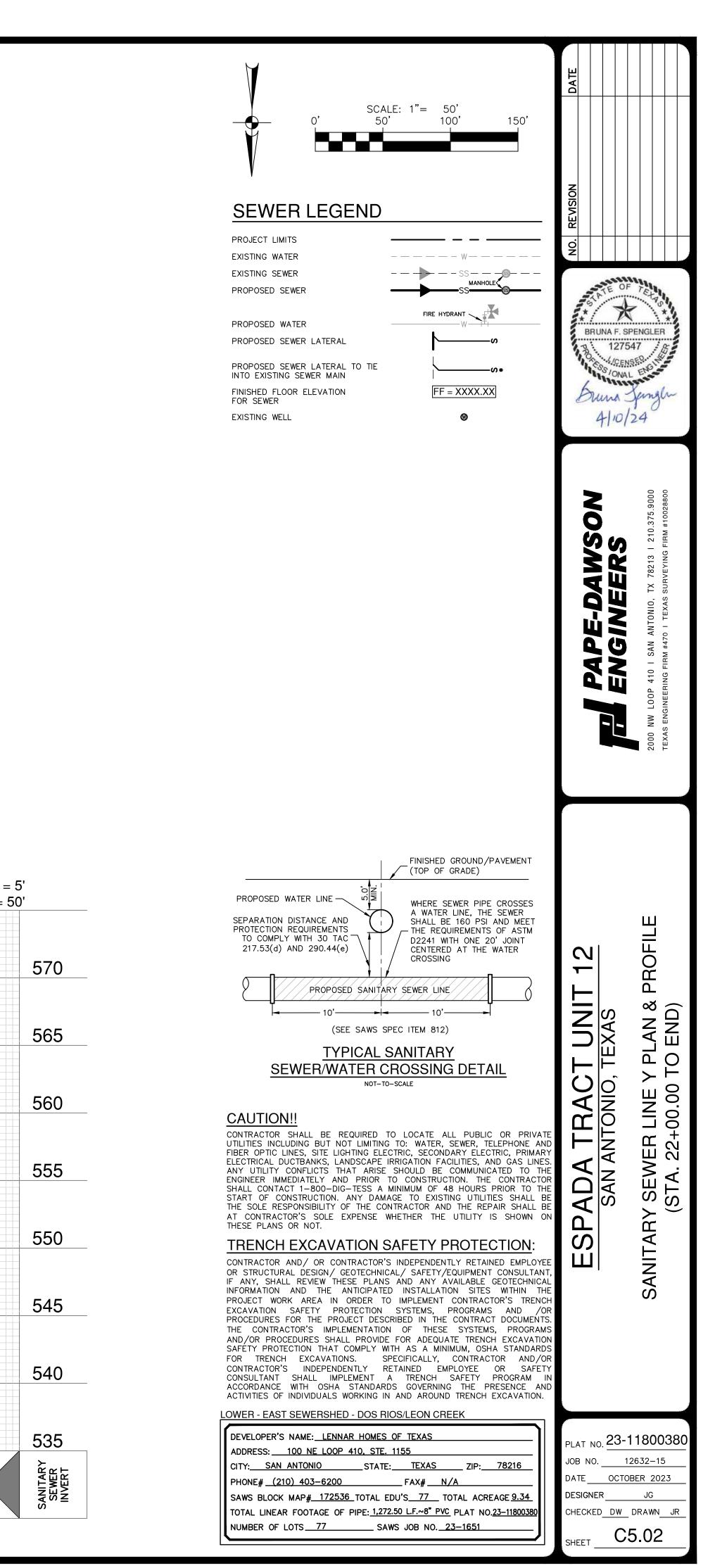
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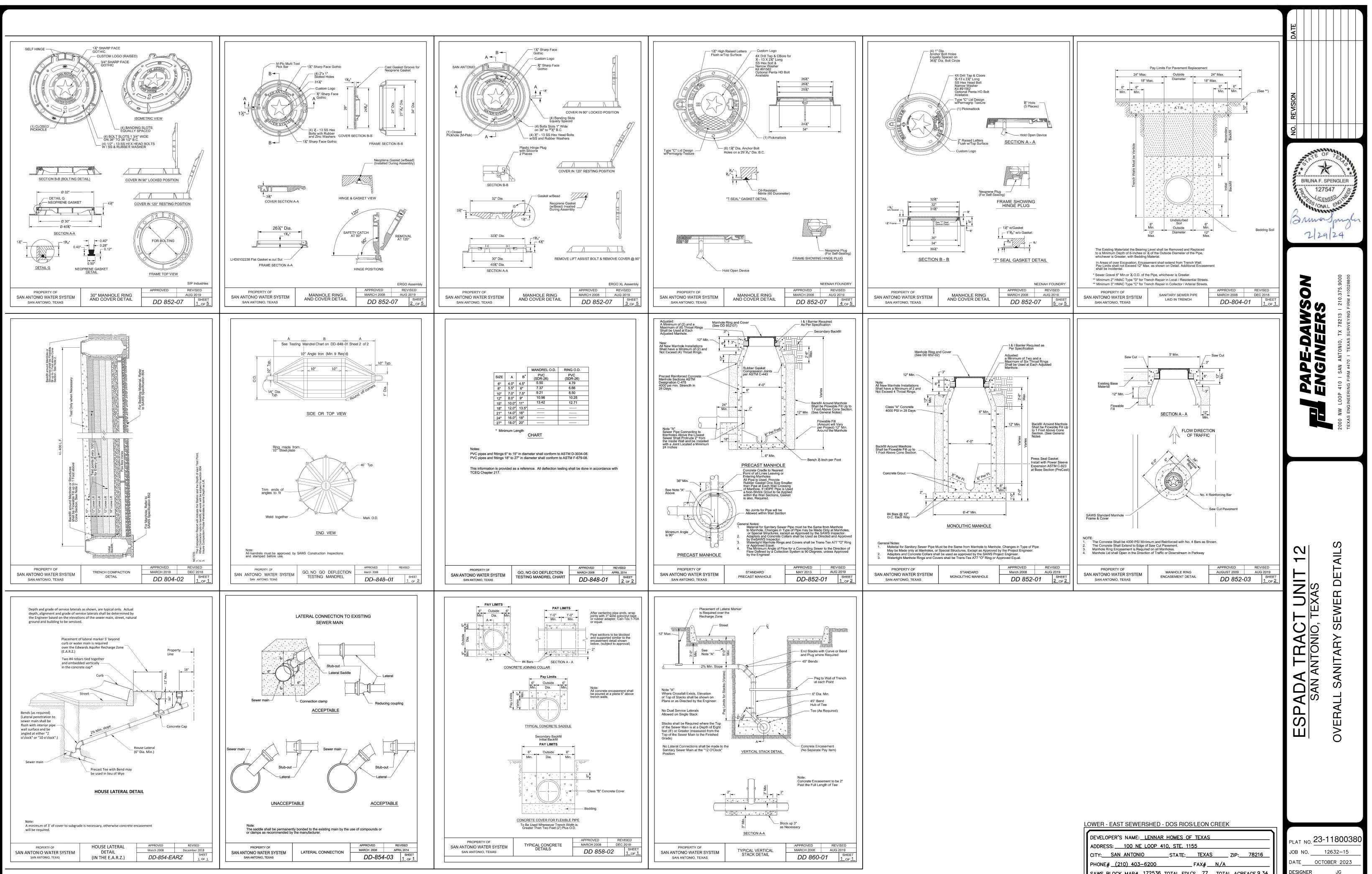






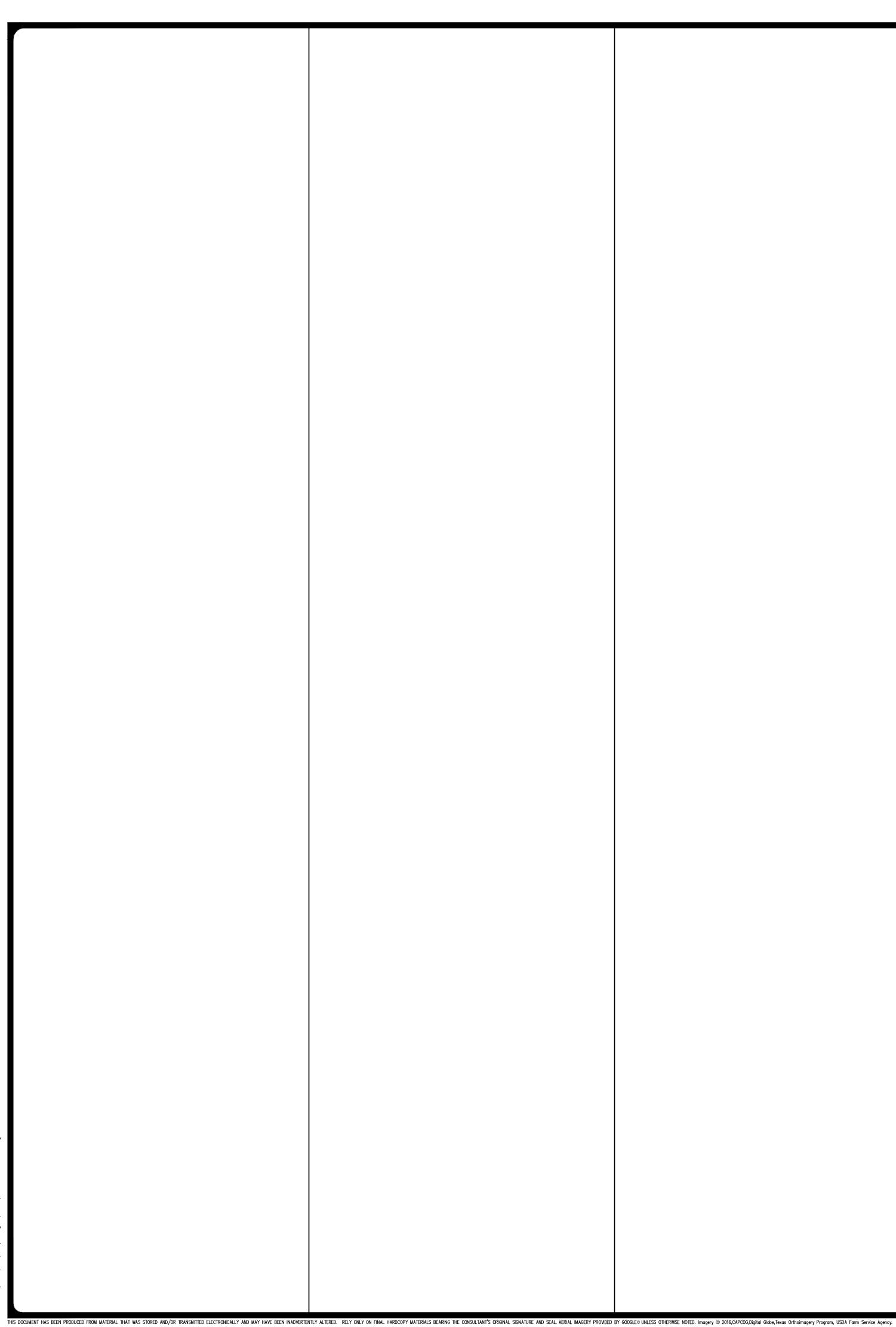






SAWS BLOCK MAP# 172536 TOTAL EDU'S 77 TOTAL ACREAGE 9.34 TOTAL LINEAR FOOTAGE OF PIPE: <u>1,272.50 L.F.~8" PVC</u> PLAT NO.<u>23–11800380</u> NUMBER OF LOTS 77 SAWS JOB NO. 23-1651

DESIGNER CHECKED DW DRAWN JR C5.03 SHEET



SAWS CONSTRUCTION NOTES (LAST REVISED JANUARY 2022)

SAWS GENERAL SECTION

- FOLLOWING AS APPLICABLE:
- WATER", TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- WATER AND SANITARY SEWER CONSTRUCTION'
- WORKS CONSTRUCTION". (UECM).
- NOTED WITHIN THE DESIGN PLANS.
- INSPECTION DIVISION AT BEGINNING ANY WORK.
- DURING CONSTRUCTION AT NO COST TO SAWS.
- SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES COSA DRAINAGE (210) 207–0724 OR (210) 207–6026 COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480 COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
- TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- PROJECT'S CONSTRUCTION.
- CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
- 9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER
- 10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR
- SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
- PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
- INSPECTION DIVISION.

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

A.CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND 'PUBLIC DRINKING

C.CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR D.CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC

E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL"

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

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

(210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO

LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM

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

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

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

GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON PROJECT SEWER NOTES

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK.

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND

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

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

SAWS SEWER NOTES

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

- A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-2014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW. B.ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
- C.CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS. D.CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE
- COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
- E.CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS. F.MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.

NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

- THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION 2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".
 - PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS: THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
 - SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44(E)(4)(B). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.
 - ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)
 - 6. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE RÉGARDLESS OF SIZE.
 - MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
 - ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

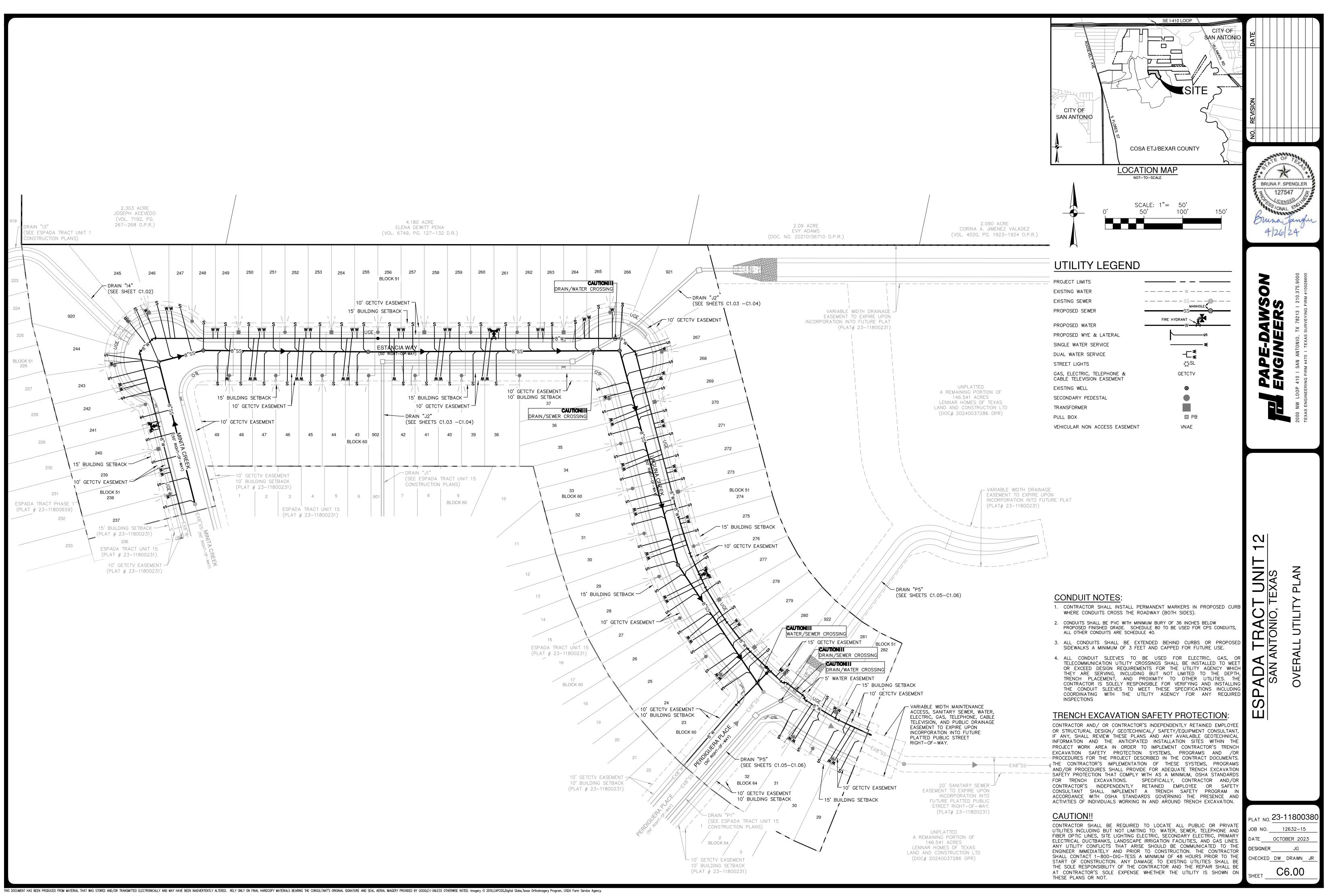
VICINITY OF WATER MAINS.

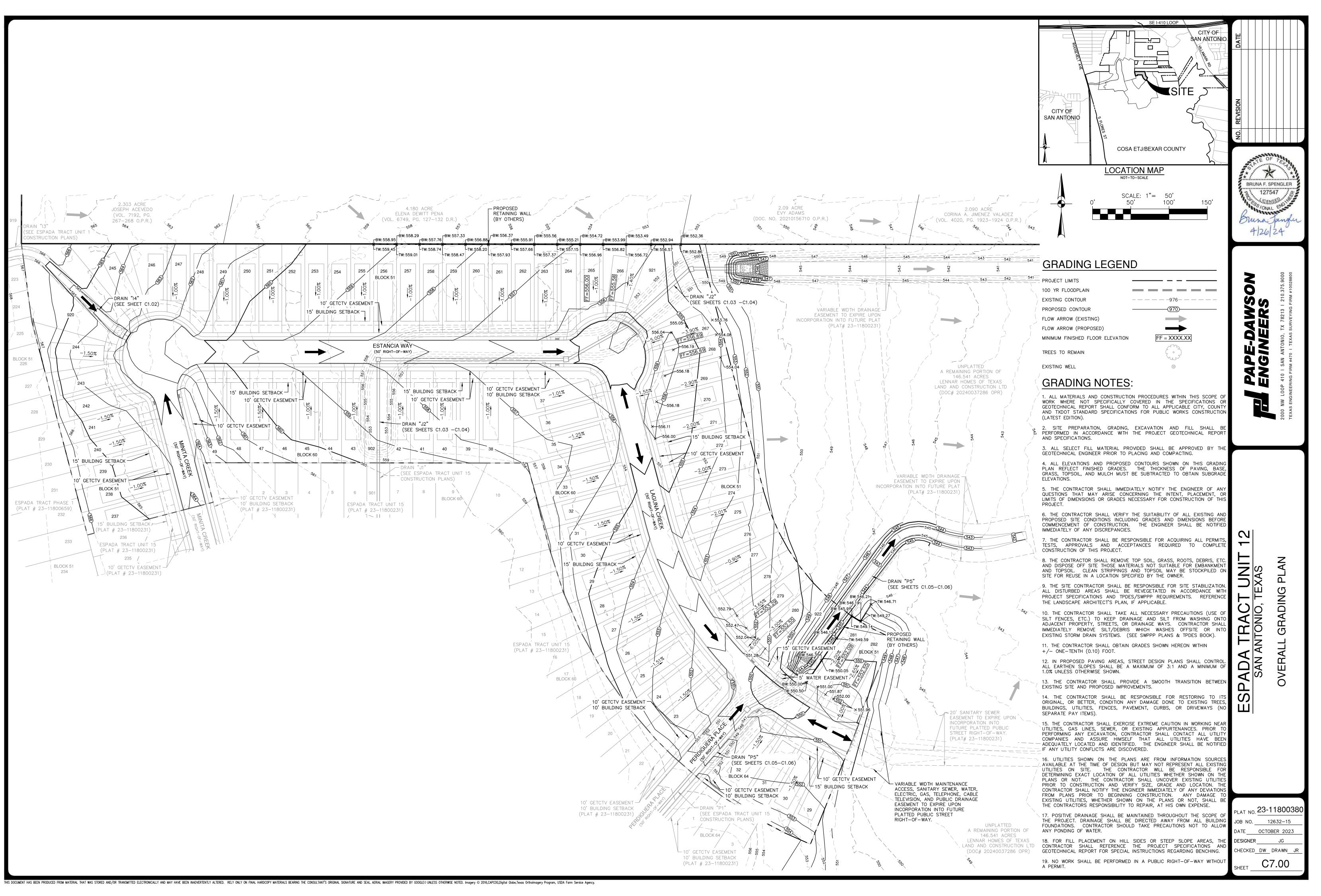
- ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 10' PAST THE PROPERTY LINE AND CAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2" X 4" STAKE, FOUR (4) FEET LONG, TWO 2) FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICE. NO SEPARATE PAY ITEM.
- CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C5.03 . NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE
- SPECIFIED BY THE ENGINEER. . ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO
- THE PROPERTY LINE. WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 150 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE
- . CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATIONS 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASEMENT.
- 7. ALL SEWER PIPES SHALL BE 8" PVC (SDR 26), UNLESS OTHERWISE NOTED.
- 3. CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
- 9. CONTRACTOR SHALL PROTECT ALL EXISTING FENCES. ANY FENCE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- 10. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 1. CONCRETE RING ENCASEMENT TO BE INSTALLED ON ALL MANHOLES AND, WITHIN LIMITS OF PAVEMENT, BE INSTALLED TO THE TOP OF THE BASE LAYER WITH A MINIMUM OF 2" OF ASPHALT ON TOP OF THE RING ENCASEMENT.
- 12. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.
- 13. ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.
- 14. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISH PAVEMENT, THE CONTRACTOR SHALL ADJUST FIFVATIONS SUCH THAT THE TOP OF MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.
- 15. ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

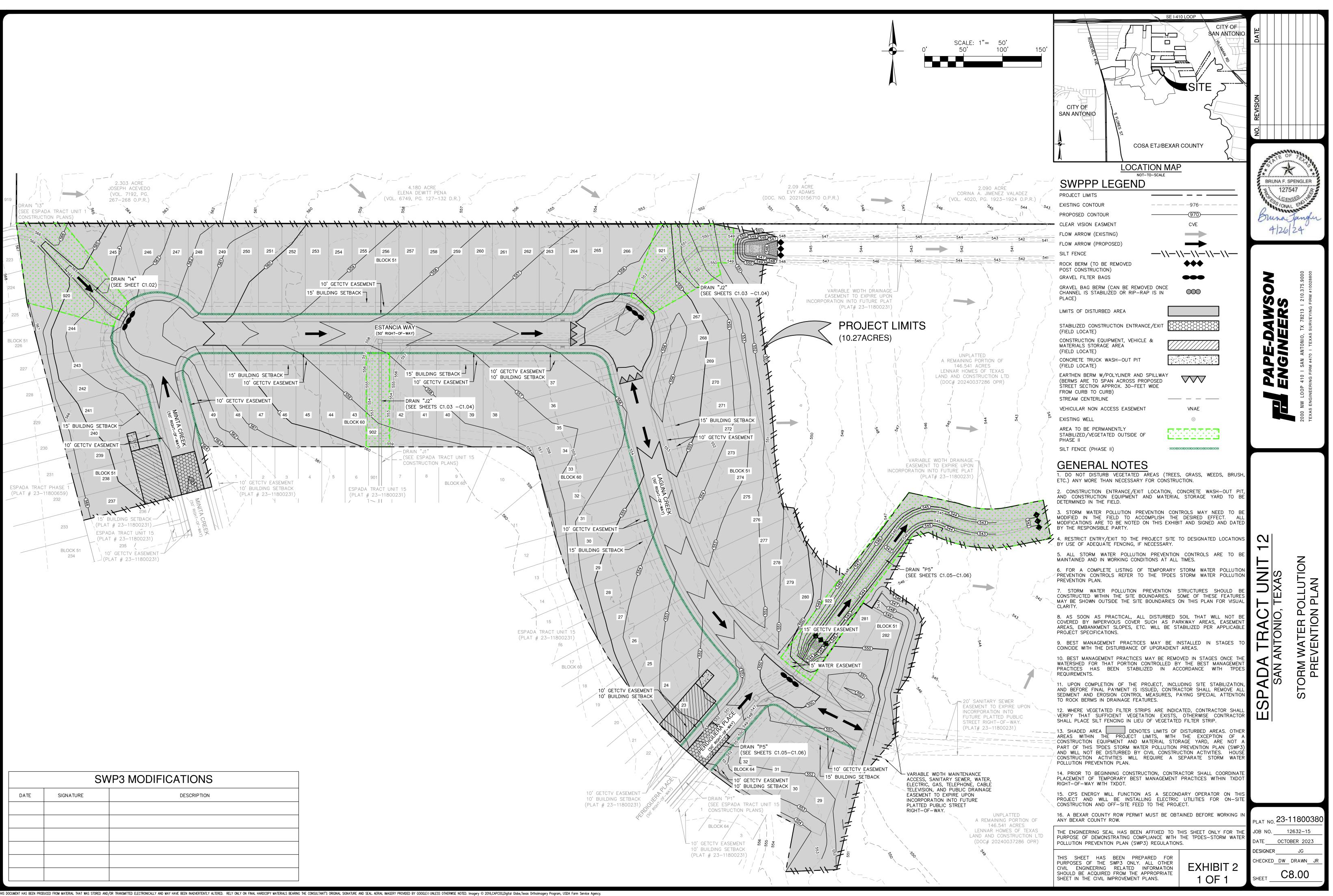
_OWER - EAST SEWERSHED - DOS RIOS/LEON CREEK

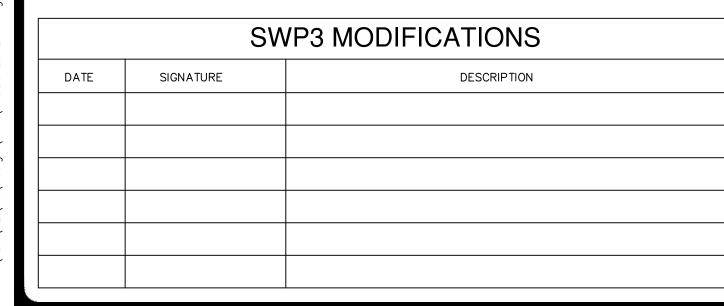
DEVELOPER'S NAME: LENNAR HOMES OF TEXAS							
ADDRESS: 100 NE LOOP 410, STE. 1155							
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216							
PHONE# <u>(210) 403–6200</u> FAX# <u>N/A</u>							
SAWS BLOCK MAP# 172536 TOTAL EDU'S 77 TOTAL ACREAGE 9.34							
NUMBER OF LOTS 77 SAWS JOB NO. 23-1651							

BRUNA F. SPENGLER 127547 BRUNA F. SPENGLER					
THE PAPERBABANON FRE ENGLISHERS 200 NV LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000 TEXAS ENGINEERING FIRM #470 I TEXAS SURVEVING FIRM #10028800					
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DIVERSION RIDGE >2% GRADE ROAD DIVERSION RIDGE -GEOTEXTILE FABRIC GEOTEXTILE FABRIC TO STABILIZE FOUNDATION STABILIZE FOUNDATION 4" TO 8" COARSE AGGREGATE SCHEMATIC OF TEMPORARY SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT CONSTRUCTION ENTRANCE/EXIT MATERIALS COMMON TROUBLE POINTS 1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL. 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS THE MINIMUM 50-FOOT LENGTH AS NECESSARY. A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD2, A 4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD. GREATER THAN A NUMBER 50 SIEVE 5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR 4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF IMPROVE FOUNDATION DRAINAGE. 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OF **INSPECTION AND MAINTENANCE GUIDELINES** BASIN. . THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION. WHICH WILL INSTALLATION PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. 1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE. USED TO TRAP SEDIMENT 2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC . THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR. FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER. 3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT 3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG. PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. 4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 4. WHEN WASHING IS REQUIRED. IT SHOULD BE DONE ON AN AREA STABILIZED 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. RUNOFF AWAY FROM THE PUBLIC ROAD. 5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, DITCH OR WATER COURSE BY USING APPROVED METHODS. 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 SHOOTS OR GRASS BLADES. GRASS SHOULD BE GREEN AND HEALTHY: MOWED AT A 2"-3" CUTTING HEIGHT -THATCH- GRASS CLIPPINGS AND CORRECT DEAD LEAVES, UP TO 1/2" THICK. LAY SOD IN A STAGGERED PATTERN. BUTT <u>ROOT ZONE</u>- SOIL AND ROOTS. THE STRIPS TIGHTLY AGAINST EACH OTHER. SHOULD BE 1/2"-3/4" THICK, WITH DO NOT LEAVE SPACES AND DO NOT DENSE ROOT MAT FOR STRENGTH. OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE APPEARANCE OF GOOD SOD ENDS AND TRIMMING PIECES. INCORRECT - ANGLED ENDS CAUSED BY THE 1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE AUTOMATIC SOD CUTTER MUST BE MATCHED SOIL. SOD INSTALLATION CORRECTLY. 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID. 3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET THE MOWER HIGH $(2^{\circ}-3^{\circ})$. LAY SOD ACROSS THE DIRECTION OF FLOW PEG OR STAPLE USE PEGS OR STAPLES TO FASTEN SOD FIRMLY - AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH IN CRITICAL AREAS, SECURE SOD WITH THE GROUND. WITH NETTING. USE STAPLES. MATERIALS GENERAL INSTALLATION (VA. DEPT. OF 1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH CONSERVATION, 1992 (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SHOOT GROWTH AND THATCH. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN. . PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND 2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE. REDUCE ROOT BURNING AND DIEBACK. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION. OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD 4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT OF 36 HOURS. IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE). 4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SITE PREPARATION SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT PERPENDICULAR TO THE SLOPE (ON CONTOUR). TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL 5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL. INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS. . AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS THOROUGHLY WET CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZE UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE 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 ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR. INCHES.

INSTALLATION IN CHANNELS

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).

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.

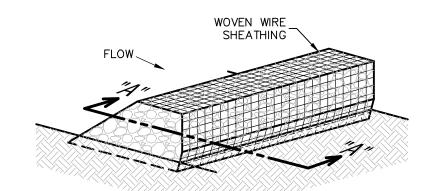
NSPECTION AND MAINTENANCE GUIDELINES SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

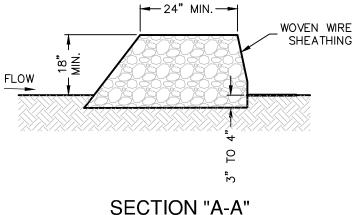
. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS

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NOT-TO-SCALE



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

. 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

. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS

THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

NSTALLATION

. 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

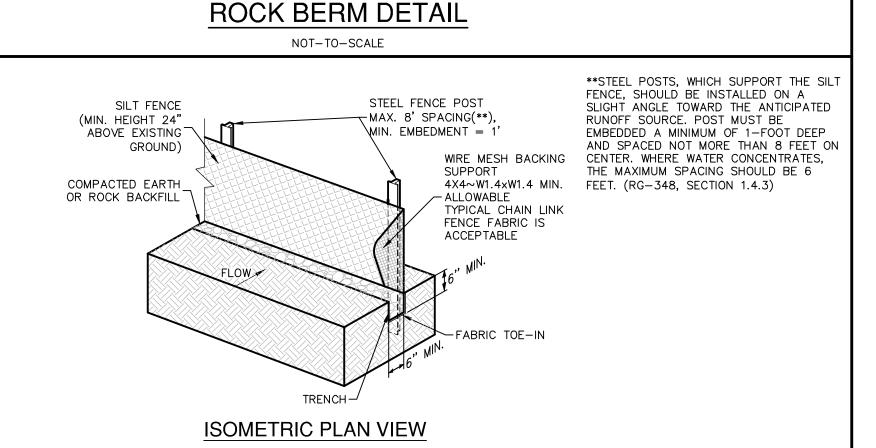
OR AS NEAR AS POSSIBLE

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

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)



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

. 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.

. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

. 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 1/4 ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO

1. INSPECT ALL FENCING WEEKLY.

CONCENTRATE AND FLOW OVER THE FENCE. 2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER

FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES)

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

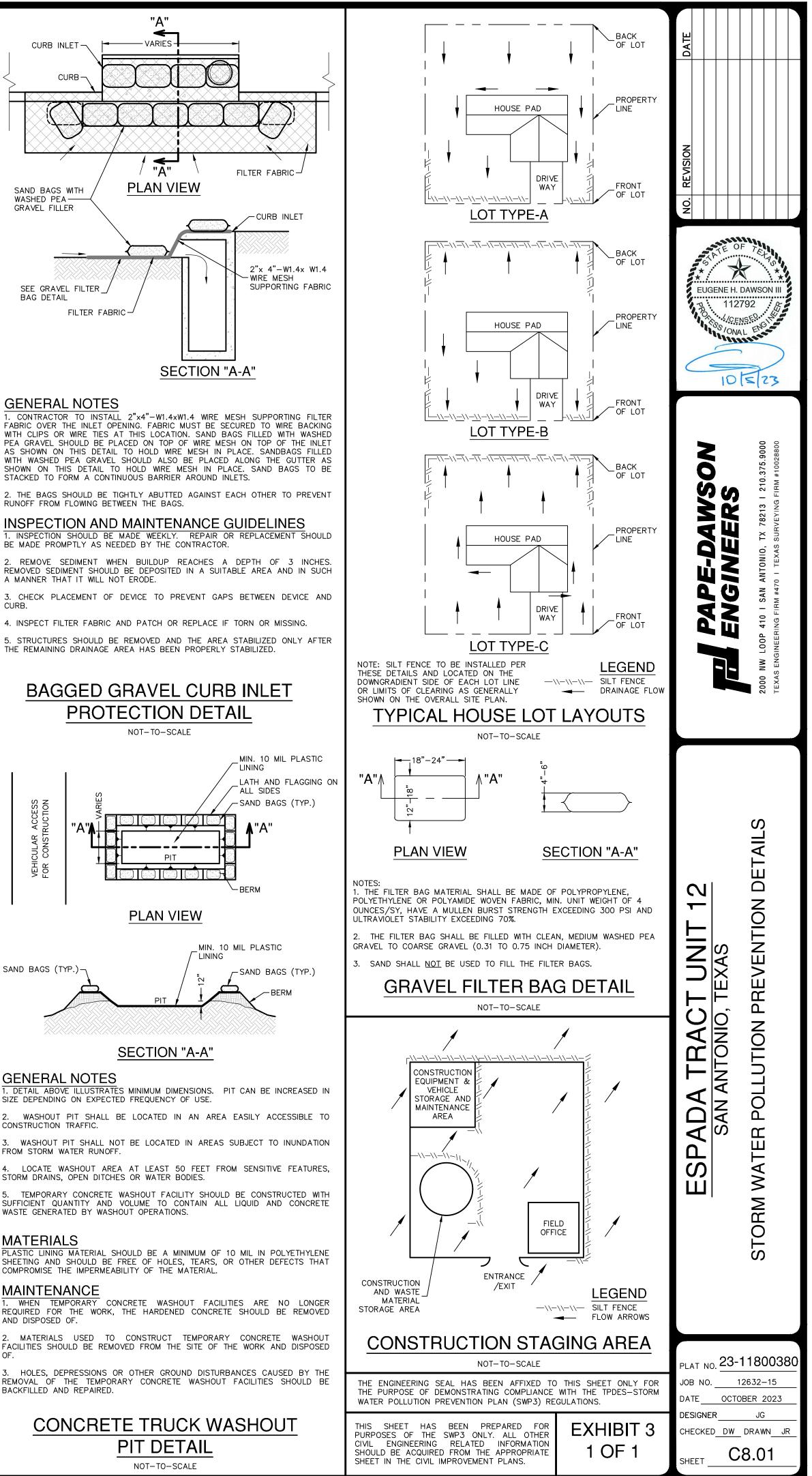
INSPECTION AND MAINTENANCE GUIDELINES

REMOVE SEDIMENT WHEN BUILDUP APPROACHES 6 INCHES, BUT NOT TO EXCEED 50% OF HEIGHT.

3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.



CURB

SAND BAGS (TYP.)

CONSTRUCTION TRAFFIC.

MATERIALS

MAINTENANCE

BACKFILLED AND REPAIRED.

SILT FENCE DETAIL