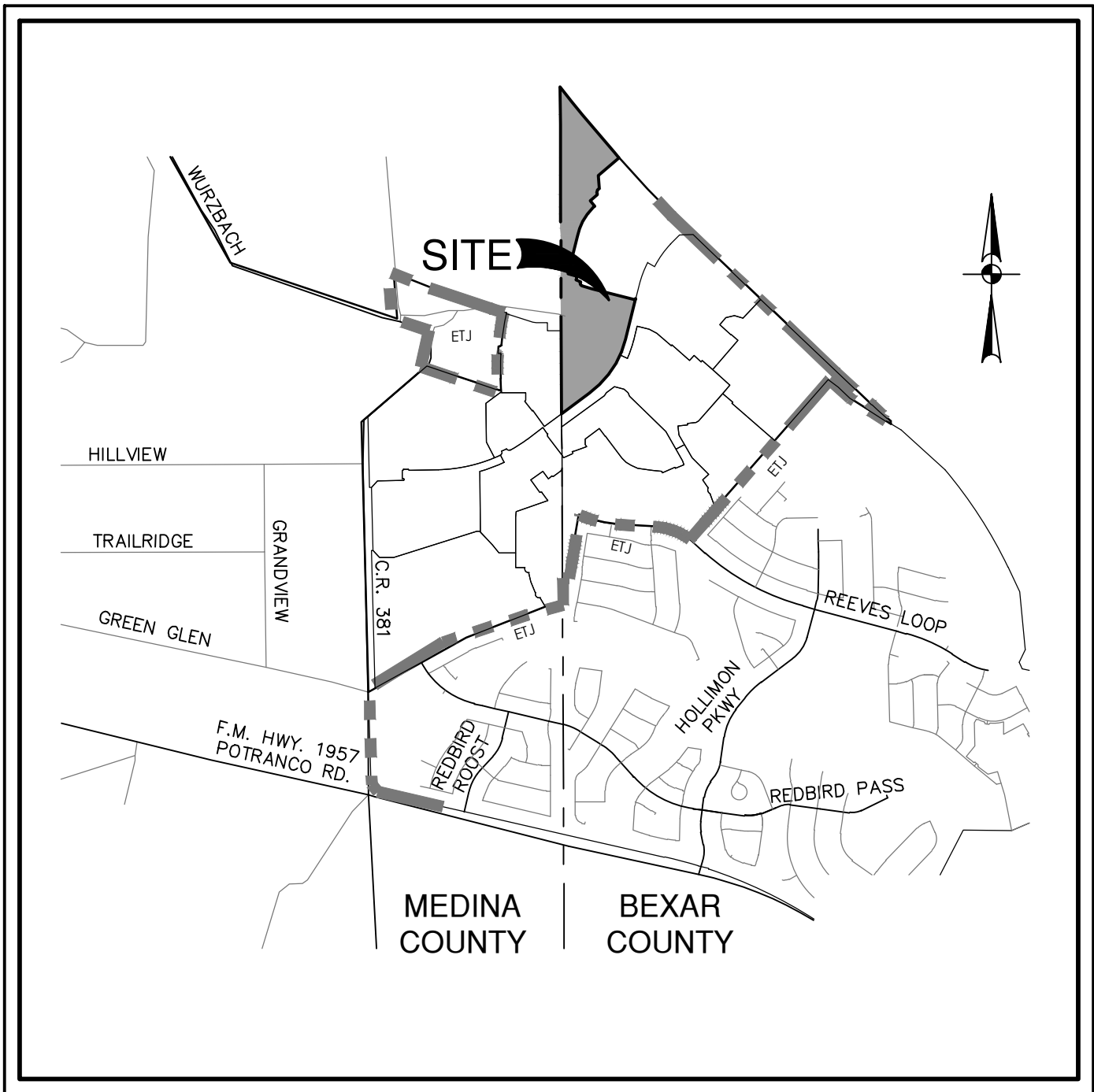


REDBIRD RANCH PHASE 2 UNIT 2M-4

BEXAR COUNTY, TEXAS

CIVIL CONSTRUCTION PLANS

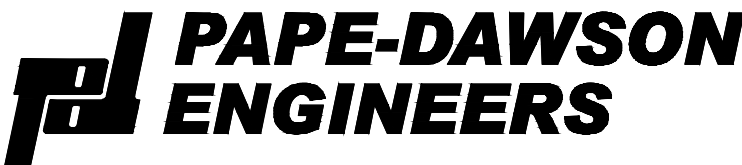


LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

CONTINENTAL HOMES OF TEXAS, L.P.
5419 N. LOOP 1604 E.
SAN ANTONIO, TEXAS 78247

AUGUST 2023



NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



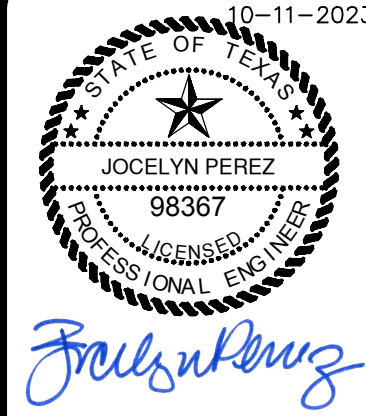
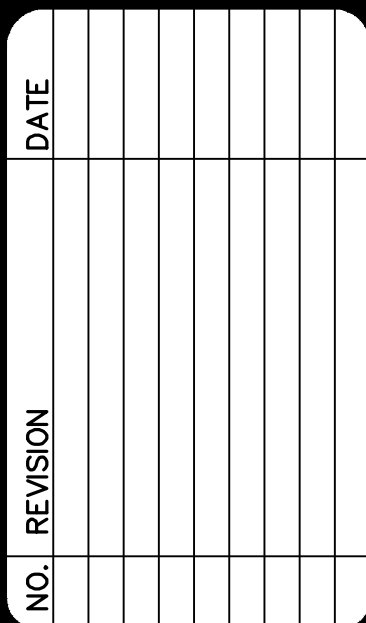
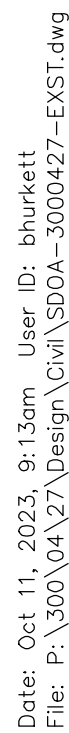
WATER (SAWS PRESSURE ZONE 1170)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N. LOOP 1604 E.			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78247	
PHONE# 210-496-2668	FAX#		
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213			
TOTAL LINEAR FOOTAGE OF PIPE: 12"=1008 L.F. PLAT NO. CP202310			
8"=1,995 L.F.			
NUMBER OF LOTS 36	SAWS JOB NO. 23-1154		

SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N. LOOP 1604 E.			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78247	
PHONE# 210-496-2668	FAX#		
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213			
TOTAL LINEAR FOOTAGE OF PIPE: 12"=1008 L.F. PLAT NO. CP202310			
8"=1,995 L.F.			
NUMBER OF LOTS 36	SAWS JOB NO. 23-1626		

Sheet Index		Sheet No.
Sheet Description		
COVER SHEET		C0.00
MASTER DRAINAGE PLAN - EXISTING CONDITIONS		C1.00
MASTER DRAINAGE PLAN - PROPOSED CONDITIONS		C1.01
MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS		C1.02
DRAIN A - PLAN & PROFILE	STA 1+00.00 TO 10+93.06	C1.03
DRAIN B1 - PLAN & PROFILE	STA 1+00.00 TO 4+20.00	C1.04
DRAIN B1 - PLAN & PROFILE	STA 4+20.00 TO 8+60.00	C1.05
DRAIN B1 - PLAN & PROFILE	STA 8+60.00 TO 13+17.25	C1.06
INTERCEPTOR DRAIN B2 - PLAN & PROFILE	STA 1+00.00 TO 3+05.00	C1.07
DRAIN C (MEDINA COUNTY) - PLAN & PROFILE	STA 0+90.00 TO 7+35.00	C1.08
DETENTION BASIN PLAN		C1.10
DRAINAGE DETAILS		C1.20
DRAINAGE DETAILS		C1.21
DRAINAGE DETAILS		C1.22
HOUSE FINCH DRIVE - PLAN & PROFILE	STA 1+40.46 TO 4+13.05	C2.00
ROYAL ALBATROSS - PLAN & PROFILE	STA 1+50.00 TO 11+45.42	C2.01
ZAZU FLY- PLAN & PROFILE	STA 1+41.31 TO 5+50.84	C2.02
TYPICAL STREET DETAILS		C2.10
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OVERALL SIGNAGE PLAN		C3.00
TxDOT SIGN MOUNTING DETAILS		C3.10
TxDOT SIGN MOUNTING DETAILS		C3.11
TxDOT SIGN MOUNTING DETAILS		C3.12
TxDOT SIGN MOUNTING DETAILS		C3.13
OVERALL WATER DISTRIBUTION PLAN		C4.00
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WATER DISTRIBUTION DETAILS		C4.10
WATER DISTRIBUTION NOTES		C4.20
OVERALL SANITARY SEWER PLAN		C5.00
OVERALL SANITARY SEWER PLAN		C5.01
OVERALL SANITARY SEWER PLAN		C5.02
SANITARY SEWER LINE A - PLAN & PROFILE	STA 1+00.00 TO 10+50.00	C5.03
SANITARY SEWER LINE A - PLAN & PROFILE	STA 10+50.00 TO 20+50.00	C5.04
SANITARY SEWER LINE A - PLAN & PROFILE	STA 20+50.00 TO 30+50.00	C5.05
SANITARY SEWER LINE A - PLAN & PROFILE	STA 30+50.00 TO 40+50.00	C5.06
SANITARY SEWER LINE A - PLAN & PROFILE	STA 40+50.00 TO 50+50.00	C5.07
SANITARY SEWER LINE A - PLAN & PROFILE	STA 50+50.00 TO 57+65.84	C5.08
SANITARY SEWER LINE B - PLAN & PROFILE	STA 1+00.00 TO 10+50.00	C5.09
SANITARY SEWER LINE B - PLAN & PROFILE	STA 10+50.00 TO 17+39.37	C5.10
SANITARY SEWER LINE C - PLAN & PROFILE	STA 1+00.00 TO 6+51.70	C5.11
SANITARY SEWER DETAILS		C5.20
SANITARY SEWER NOTES		C5.30
OVERALL UTILITY PLAN		C6.00
STORMWATER POLLUTION PREVENTION PLAN		C8.00
STORMWATER POLLUTION PREVENTION PLAN		C8.01
STORMWATER POLLUTION PREVENTION PLAN		C8.02
STORMWATER POLLUTION PREVENTION DETAILS		C8.10



PROJECT LIMITS

EXISTING CONTOUR

100 YR FLOODPLAIN

RUNOFF FLOW PATH

DRAINAGE AREA BOUNDARY

FHA LOT GRADING TYPE

PROPOSED DIRECTION OF FLOW

DRAINAGE CALCULATION POINT

DRAINAGE AREA

Ref. Point	Structure / Description	Drainage Areas		Total Flowpath (ft)	Overland/Sheet Flow (TR-55)					Shallow Concentrated Flow - 1**			Channelized Flow**			T _{c-10T}	Rational Method Q=CIA IDF Curve: CoSA_A14_PA3					
		#	Area (Ac)		C	L _o (FT)	n	P ₂	S _o (ft/ft)	T _o ** (MIN)	L _o (FT)	Conduit***	Slope (ft/ft)	V _o (FPS)	T _o ** (MIN)		L _o (FT)	V _o (FPS)	T _o ** (MIN)	Return Year	Intensity (in/hr)	Q (cfs)
1	EXISTING TxDOT STRUCTURE	EA	80.57	0.49	HYDROLOGY PER HEC-HMS															5	-	176
																		25	-	312		
																		100	-	437		
2	EXISTING CULVERT	EB	5.00	0.41	450	300	0.150	3.96	0.0300	18	150	U	0.03	2.8	0.9	-	-	18	5	4.80	10	
																		18	25	6.63	14	
																		100	17	8.24	17	
																		20	5	4.54	10	
3	EXISTING EARTHEN CHANNEL	EC	5.34	0.41	785	300	0.150	3.96	0.0270	18	270	U	0.03	2.8	1.6	215	6.0	0.6	20	25	6.28	14
																		20	100	7.79	17	

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PE ENGINEERS

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

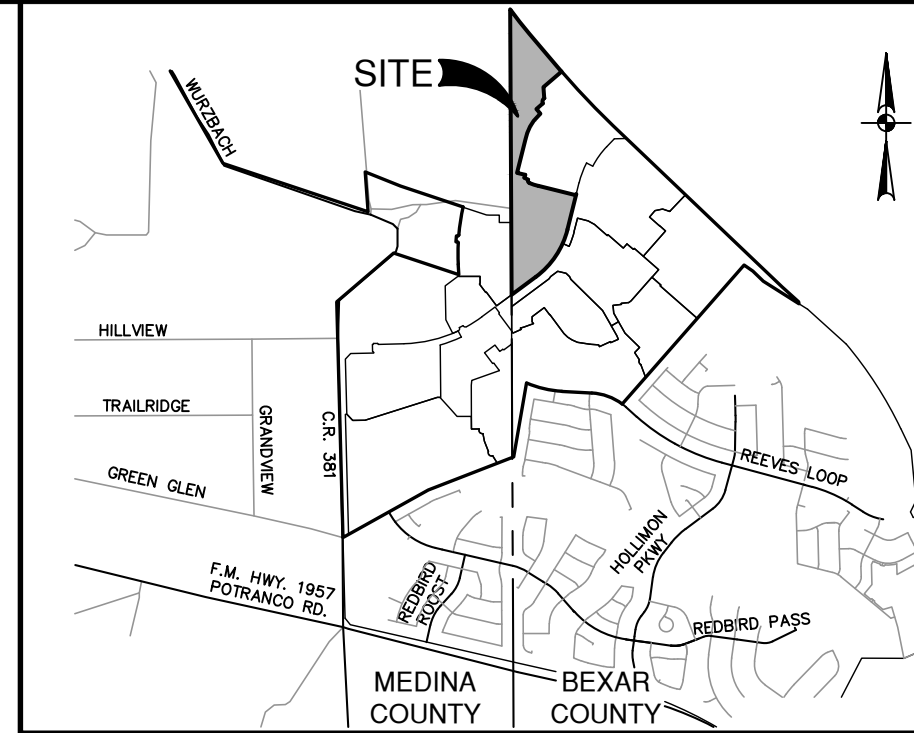
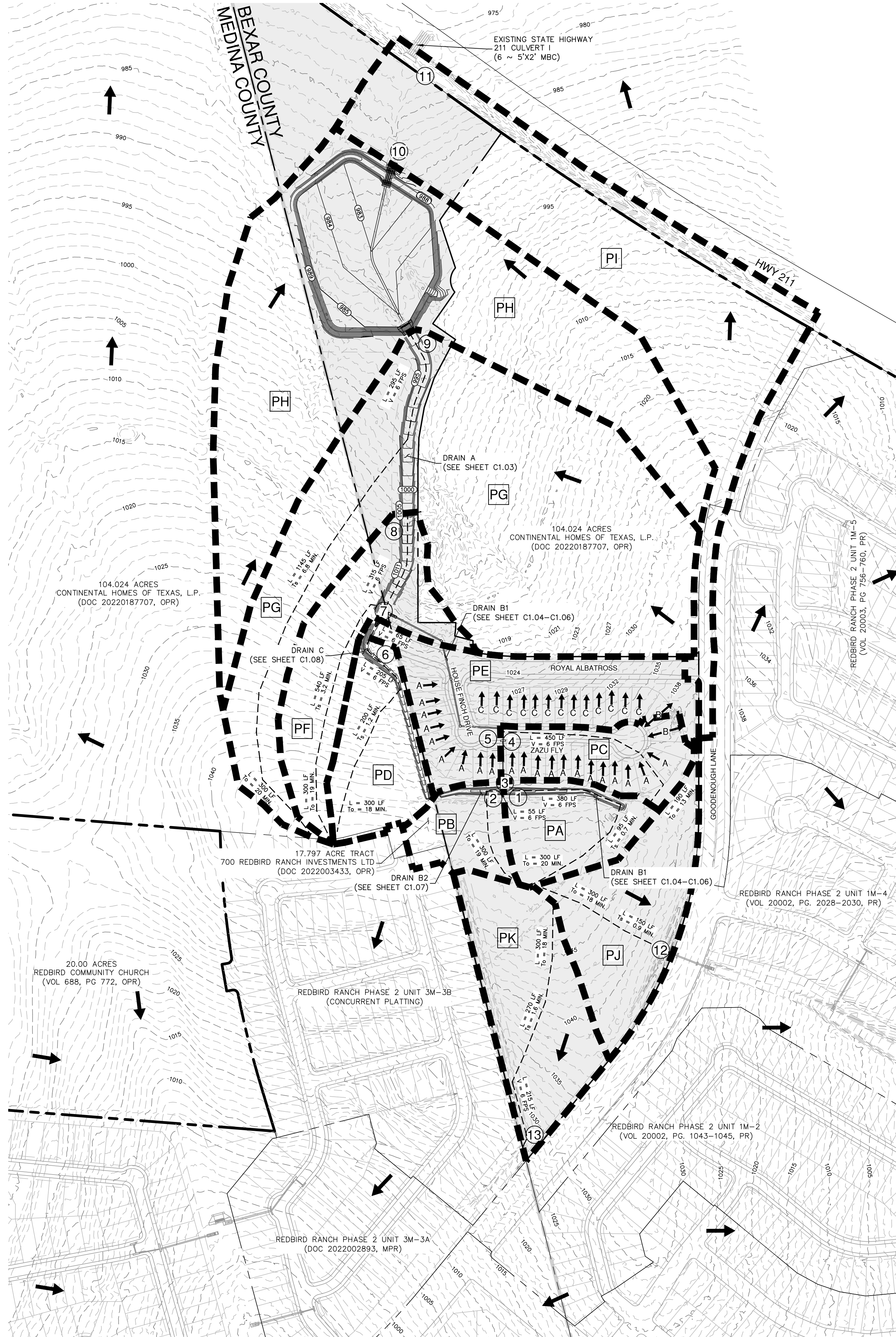
MASTER DRAINAGE PLAN - EXISTING CONDITIONS

PLAT NO. CP202310
 JOB NO. 30004-27
 DATE AUGUST 2023
 DESIGNER CL
 CHECKED HF DRAWN BC
 SHEET C1.00

FOR PERMIT

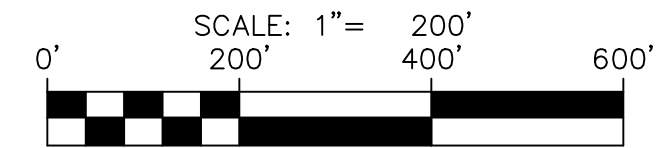
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LOCATION MAP

NOT-TO-SCALE



MASTER DRAINAGE LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	---
100 YR FLOODPLAIN	---
RUNOFF FLOW PATH	---
DRAINAGE AREA BOUNDARY	---
FHA LOT GRADING TYPE	---
PROPOSED DIRECTION OF FLOW	---
DRAINAGE CALCULATION POINT	---
DRAINAGE AREA	---
PROJECT LIMITS	---

Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (TR-55)					Shallow Concentrated Flow - 1**					Channelized Flow**					Rational Method Q=CIA				Curb Inlet	
		#	Area (Ac)	C		L ₀ (FT)	n	P ₂	S ₀ (ft/ft)	T ₀ * (MIN)	L _{SC} (FT)	Condition***	Slope (ft/ft)	V _{SC} (FPS)	T _{SC} ** (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)	T _{C-TOT}	IDF Curve: COSA_A14_PA3		Q cfs	Intercept (cfs)	Q Bypass (cfs)		
																				Return Year	Intensity (in/hr)					
1	DRAIN B1	PA	2.69	0.49	775	300	0.150	3.96	0.0120	20	95	U	0.02	2.3	0.7	380	6.0	1.1	21	5	4.43	6	-	-		
																			21	25	6.12	8	-	-		
																			21	100	7.59	10	-	-		
2	DRAIN B2	PB	1.82	0.51	355	300	0.150	3.96	0.0250	19	-			-	-	55	6.0	0.2	19	5	4.66	4	-	-		
																			19	25	6.45	6	-	-		
																			19	100	8.00	7	-	-		
3	DRAIN B1 4-WAY INLET	PA+PB	4.51	0.50	775	300	0.150	3.96	0.0120	20	95	U	0.02	2.3	0.7	380	6.0	1.1	21	5	4.43	10	-	-		
																			21	25	6.12	14	-	-		
																			21	100	7.59	17	-	-		
4	DRAIN B1 ON-GRADE CURB INLETS	PC	2.75	0.80	640	190	0.150	3.96	0.0190	15	-			-	-	450	6.0	1.3	16	5	5.10	11	10	1		
																			16	25	7.07	16	13	3		
																			16	100	8.79	19	14	5		
5	DRAIN B1	PA+PB+PC (INTERCEPT)	4.51	0.50	925	300	0.150	3.96	0.0120	20	95	U	0.02	2.3	0.7	530	6.0	1.5	22	5	4.33	20	-	-		
																			22	25	5.98	26	-	-		
																			22	100	7.41	31	-	-		
6	CHANNEL C	PD	3.36	0.41	705	300	0.150	3.96	0.0280	18	200	U	0.03	2.7	1.2	205	6.0	0.6	19	5	4.66	6	-	-		
																			19	25	6.45	9	-	-		
																			19	100	8.00	11	-	-		
7	CHANNEL C	PD+PE+PC (BYPASS)	9.44	0.66	770	300	0.150	3.96	0.0280	18	200	U	0.03	2.7	1.2	270	6.0	0.8	19	5	4.66	30	-	-		
																			19	25	6.45	43	-	-		
																			19	100	8.00	55	-	-		
8	CHANNEL A	PA+PB+PC+PD+PE+PF	21.68	0.61	1,155	300	0.150	3.96	0.0240	19	540	U	0.03	2.8	3.2	315	6.0	0.9	23	5	4.23	56	-	-		
																			23	25	5.84	77	-	-		
																			23	100	7.24	96	-	-		
9	CHANNEL A	PA+PB+PC+PD+PE+PF+PG	44.26	0.57	1,740	300	0.150	3.96	0.0170	20	1,145	U	0.03	2.8	6.8	295	6.0	0.8	27	5	3.90	98	-	-		
																			27	25	5.38	136	-	-		
																			27	100	6.66	168	-	-		
10	BASIN	PA+PB+PC+PD+PE+PF+PG+PH	66.39	-		HYDROLOGY PER HEC-HMS													5	-	99	-	-			
						25	-	160	-	-																
						100	-	216	-	-																
11	EXISTING TXDOT CULVERT I	PA+PB+PC+PD+PE+PF+PG+PH+PI	81.75	-		HYDROLOGY PER HEC-HMS													5	-	119	-	-			
						25	-	195	-	-																
						100	-	265	-	-																
12	EXISTING CULVERT	PJ	5.00	0.41	450	300	0.150	3.96	0.0300	18	150	U	0.03	2.8	0.9	-	-	-	18	5	4.80	10	-	-		
																			18	25	6.63	14	-	-		
																			18	100	8.24	17	-	-		
13	EXISTING EARTHEN CHANNEL	PK	5.34	0.41	785	300	0.150	3.96	0.0270	18	270	U	0.03	2.8	1.6	215	6.0	0.6	20	5	4.54	10	-	-		
																			20	25	6.28	14	-	-		
																			20	100	7.79	17	-	-		

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1677 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, NJ 08901
TEXAS BOARD OF PROFESSIONAL ENGINEERS: FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4 SAN ANTONIO, TEXAS

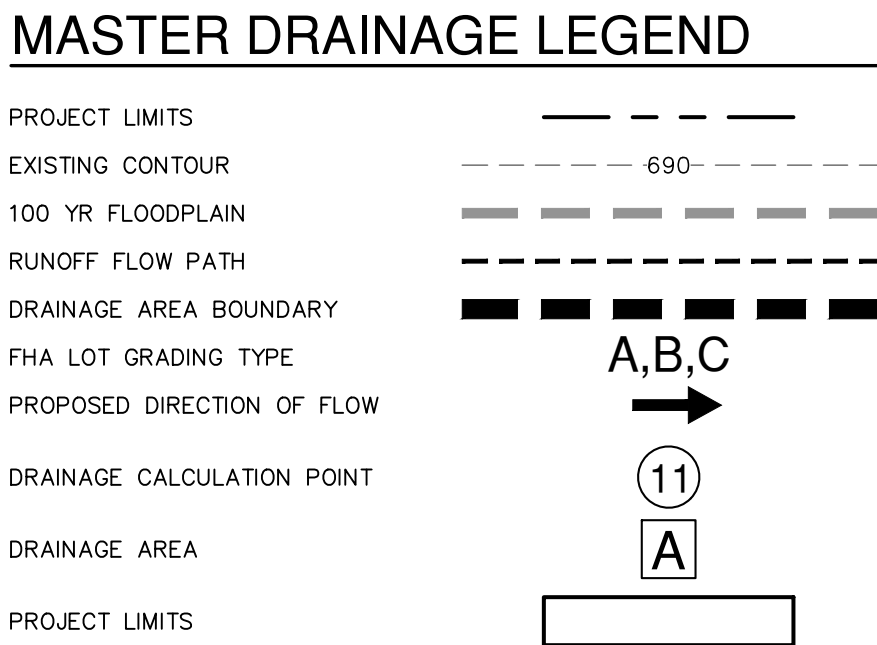
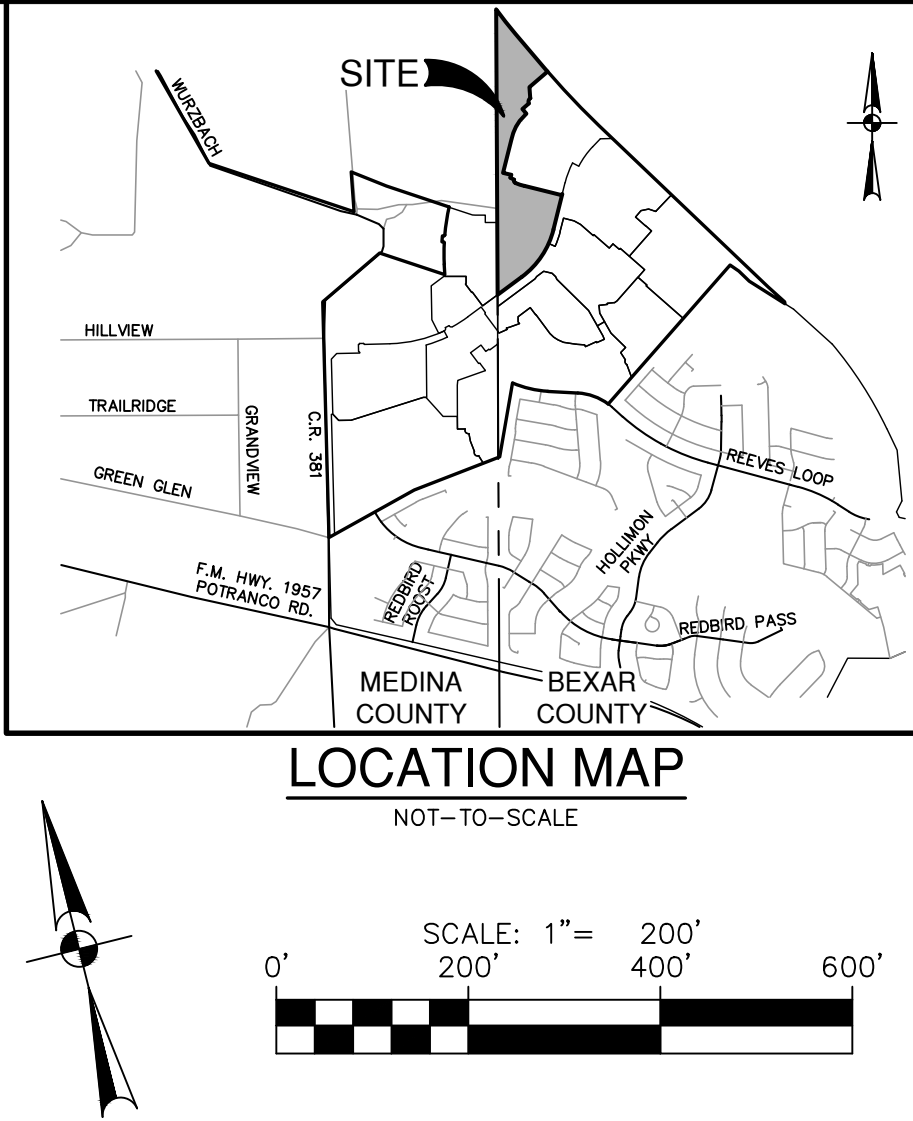
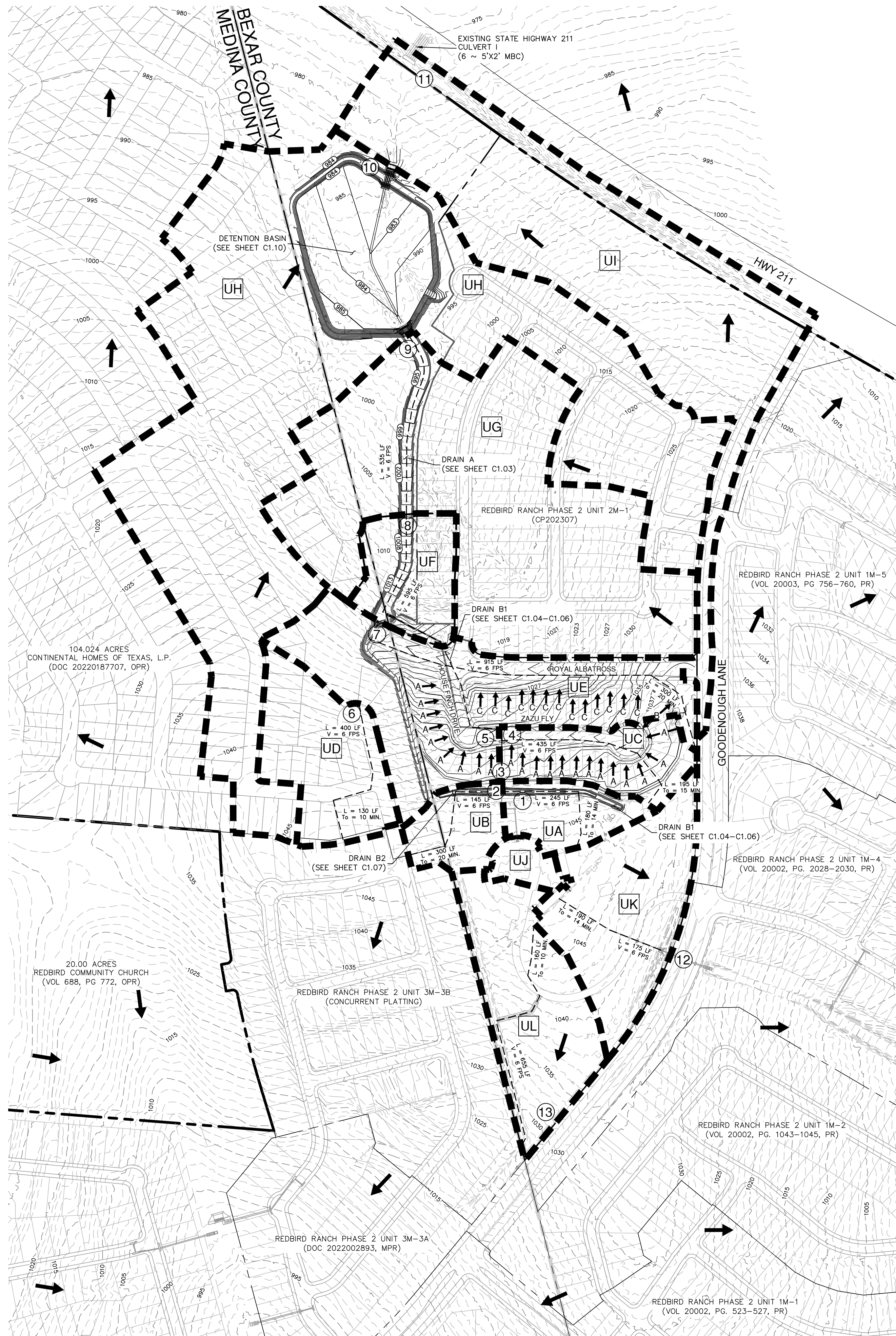
MASTER DRAINAGE PLAN - PROPOSED CONDITIONS

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN BC
SHEET C1.01

FOR PERMIT

Date: Nov 16, 2023, 3:34pm User: jh_bchubb
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Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (TR-55)					Channelized Flow**			T _{c-TOT}	Rational Method Q=CIA IDF Curve: CoSA_A14_PA3			Curb Inlet		
		#	Area (Ac)	C		L _O (FT)	n	P ₂	S ₀ (ft/ft)	T _O * (MIN)	L _{CH} (FT)	V _{CH} (FPS)	T _{CH} ** (MIN)		Return Year	Intensity (in/hr)	Q (cfs)	Q Total (cfs)	Q Intercept (cfs)	Q Bypass (cfs)
1	DRAIN B1	UA	1.77	0.90	425	180	0.150	3.96	0.0200	14	245	6.0	0.7	14	5	5.47	9	9	-	-
2	DRAIN B2	UB	1.62	0.87	445	300	0.150	3.96	0.0200	20	145	6.0	0.4	14	25	7.60	12	12	-	-
														14	100	9.48	15	15	-	-
														20	5	4.54	6	6	-	-
3	DRAIN B1 4-WAY INLET	UA+UB+UJ	4.07	0.89	445	300	0.150	3.96	0.0200	20	145	6.0	0.4	20	25	6.28	9	9	-	-
														20	100	7.79	11	11	-	-
														20	5	4.54	16	16	-	-
4	DRAIN B1 ON-GRADE INLETS	UC	2.78	0.80	630	195	0.150	3.96	0.0200	15	435	6.0	1.2	20	25	6.28	23	23	-	-
														16	25	7.07	16	16	13	3
														16	100	8.79	20	20	15	5
5	DRAIN B1	UA+UB+UJ+UC (INTERCEPT)	4.07	0.89	645	300	0.150	3.96	0.0200	20	345	6.0	1.0	20	5	4.54	16	26	-	-
6	FUTURE CURB INLET	UD	4.09	0.80	530	130	0.150	3.96	0.0200	10	400	6.0	1.1	20	25	6.28	23	36	-	-
														20	100	7.79	28	43	-	-
														11	5	6.08	20	20	-	-
7	FUTURE CURB INLETS	UE+UC (BYPASS)	9.21	0.80	1,215	300	0.150	3.96	0.0220	20	915	6.0	2.5	11	25	8.50	28	28	-	-
														11	100	10.64	35	35	-	-
														22	5	4.33	32	33	-	-
8	DRAIN A	UA+UB+UC+UD+UE+UF+UJ	22.73	0.82	1,810	300	0.150	3.96	0.0200	20	1,510	6.0	4.2	22	25	5.98	44	47	-	-
														22	100	7.41	55	60	-	-
														24	5	4.14	77	77	-	-
9	DRAIN A	UA+UB+UC+UD+UE+UF+UG+UJ	40.73	0.81	2,345	300	0.150	3.96	0.0200	20	2,045	6.0	5.7	24	25	5.72	107	107	-	-
														24	100	7.08	132	132	-	-
														25	5	4.06	134	134	-	-
10	BASIN	UA+UB+UC+UD+UE+UF+UG+UH	74.82	-										25	25	5.60	185	185	-	-
														25	100	6.93	229	229	-	-
														5	-	146	146	-	-	
11	EXISTING TxDOT CULVERT I	UA+UB+UC+UD+UE+UF+UG+UH+UI	90.53	-										25	-	210	210	-	-	
														100	-	268	268	-	-	
														5	-	171	171	-	-	
12	EXISTING CULVERT	UK	5.47	0.80	365	190	0.150	3.96	0.0210	14	175	6.0	0.5	25	-	251	251	-	-	
														100	-	325	325	-	-	
														14	5	5.47	24	24	-	-
13	EXISTING EARTHEN CHANNEL	UL	5.25	0.67	160	160	0.150	3.96	0.0300	10	655	6.0	1.8	14	25	7.60	33	33	-	-
														14	100	9.48	41	41	-	-
														11	5	6.08	21	21	-	-
														11	25	8.50	30	30	-	-
														11	100	10.64	37	37	-	-

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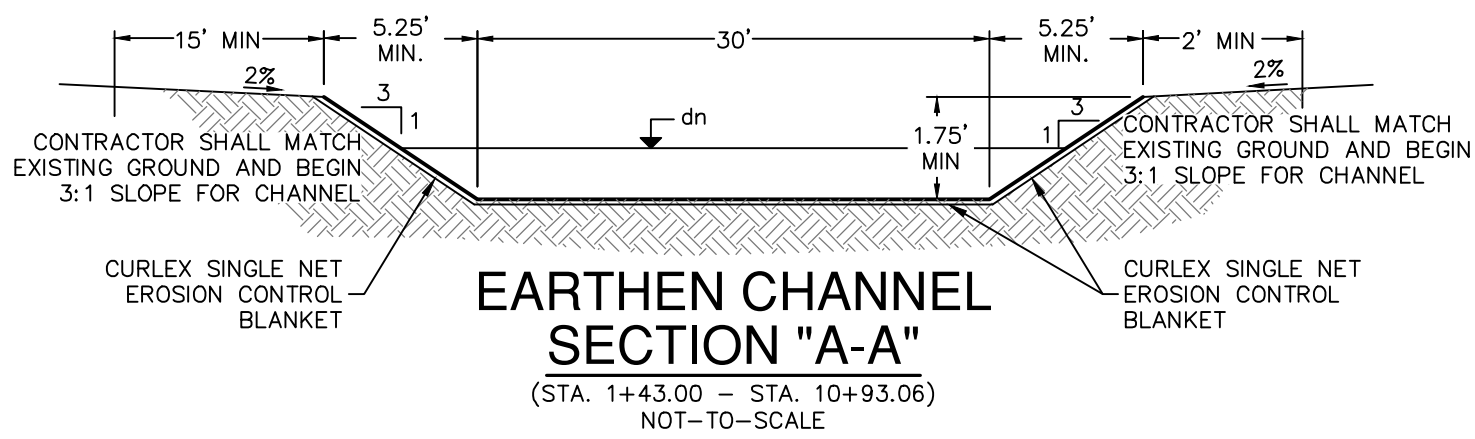
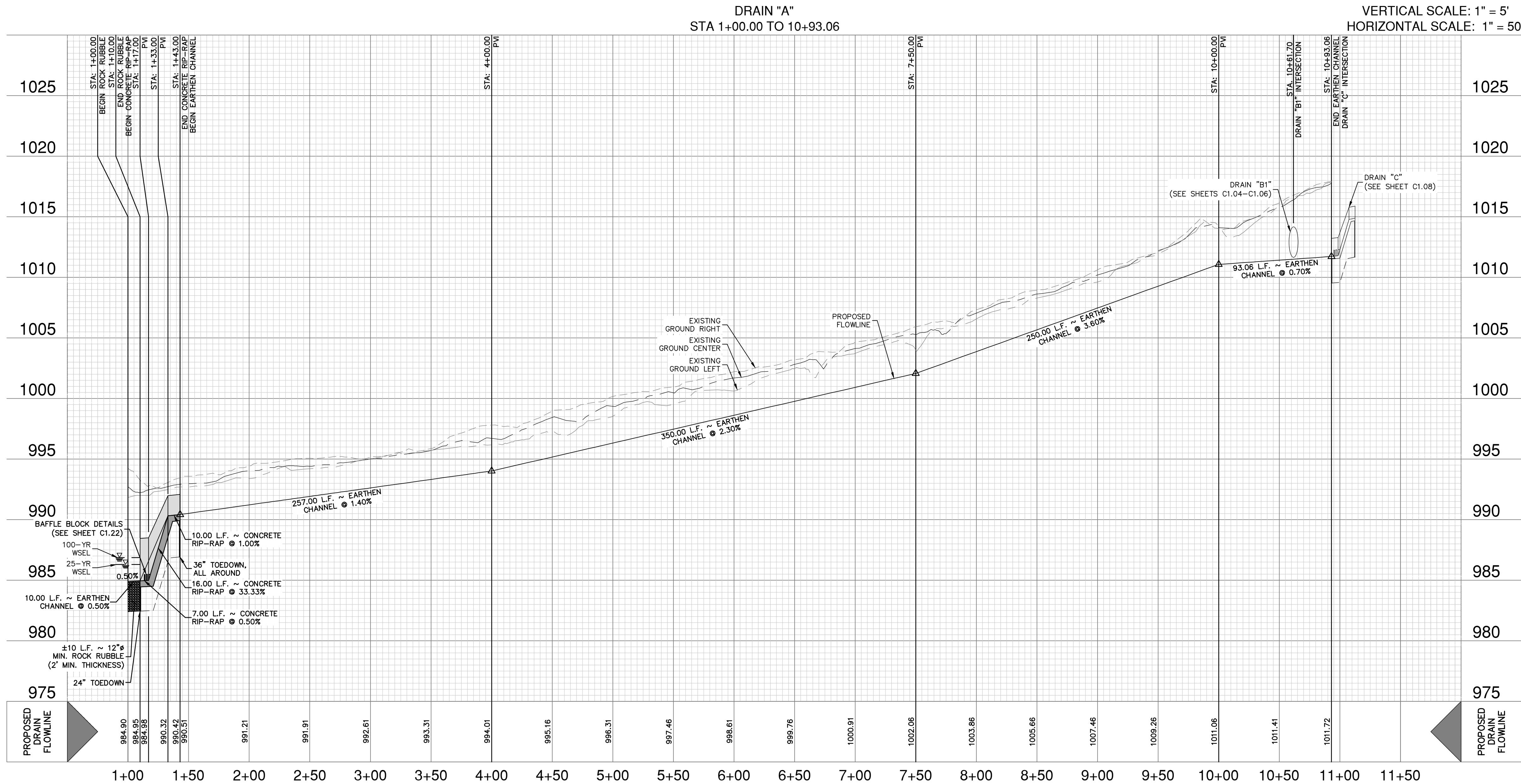
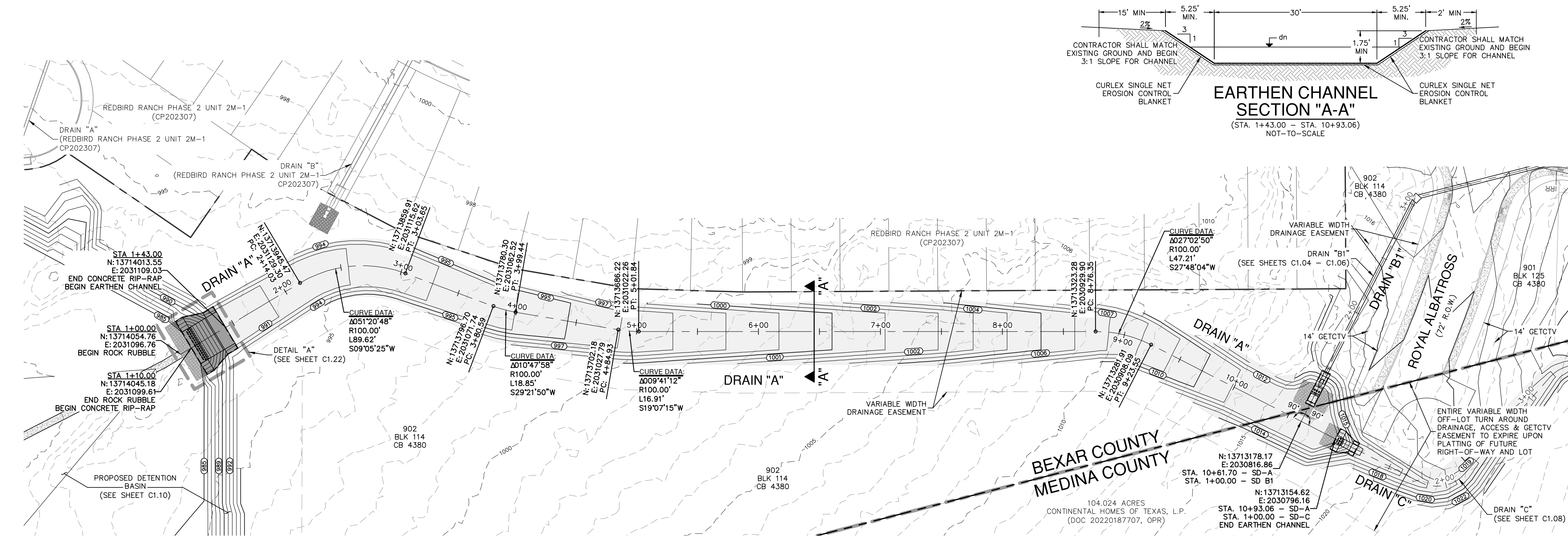
REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN BC
SHEET C1.02

FOR PERMIT

Date: Dec 07, 2023, 12:36pm User: ID: bhwach1
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DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
PROPOSED WATER	---
PROPOSED SEWER	---
FLOW ARROW	→
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	---
CURLEX SINGLE NET EROSION CONTROL BLANKETS	---
LANDLOK 450 EROSION CONTROL MAT	---

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 1+43.00 TO 4+00.00
Q ₂₅ = 185 CFS
B _w = 30 FT
n = 0.035
S = 1.40%
dn = 1.12 FT
VN = 5.01 FPS
dn+FrBd = 1.62 FT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 4+00.00 TO 7+50.00
Q ₂₅ = 185 CFS
B _w = 30 FT
n = 0.035
S = 2.30%
dn = 0.96 FT
VN = 5.89 FPS
dn+FrBd = 1.46 FT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 7+50.00 TO 10+00.00
Q ₂₅ = 107 CFS
B _w = 30 FT
n = 0.035
S = 3.60%
dn = 0.61 FT
VN = 5.54 FPS
dn+FrBd = 1.11 FT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 10+00.00 TO 10+93.06
Q ₂₅ = 107 CFS
B _w = 30 FT
n = 0.035
S = 0.70%
dn = 0.99 FT
VN = 3.30 FPS
dn+FrBd = 1.49 FT

DRAINAGE & GRADING 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.
- 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 MINGWALL 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 BEXAR COUNTY 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 TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

PAPE-DAWSON ENGINEERS

NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE. 102 | NEW BRUNSWICK, NJ 07102
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

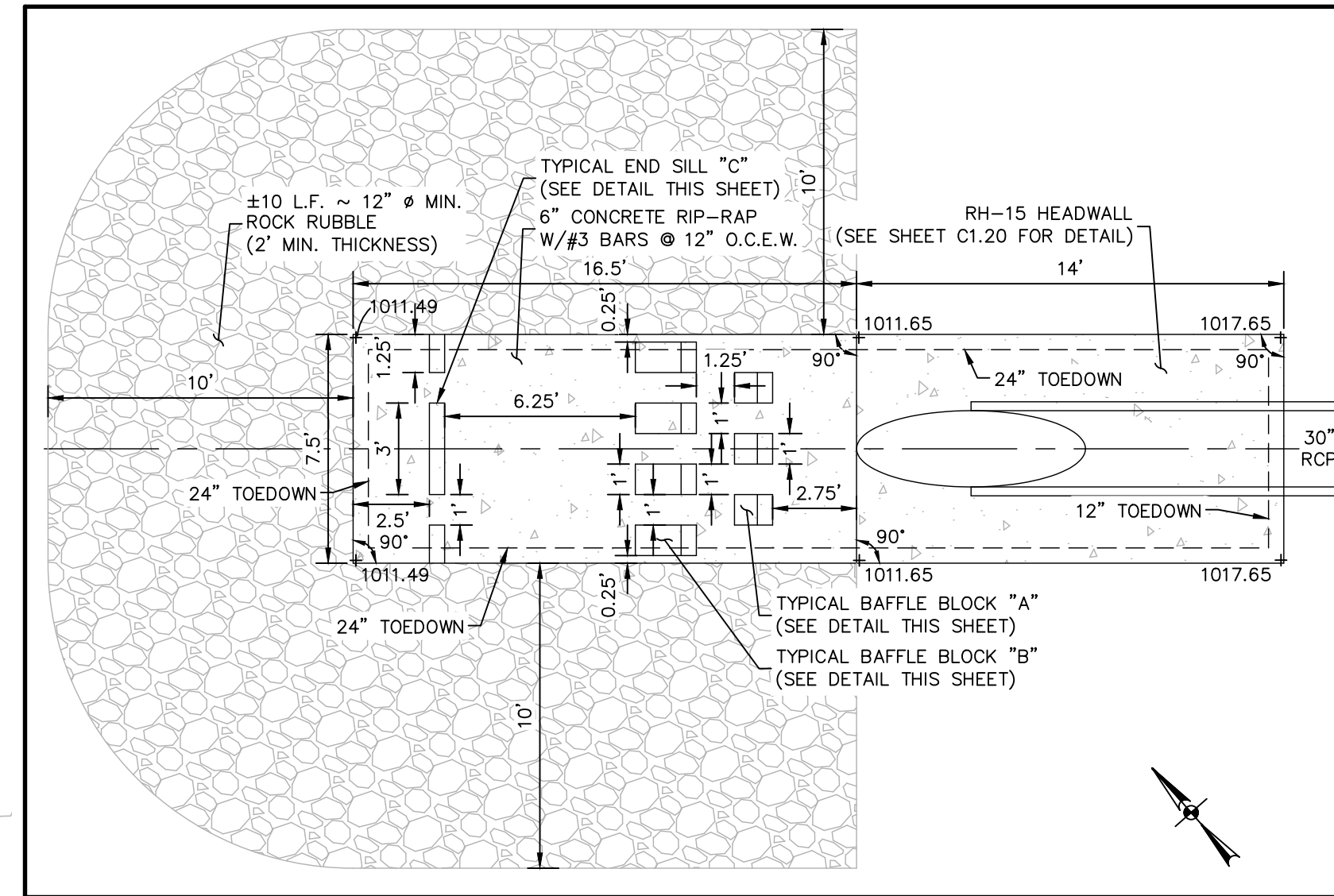
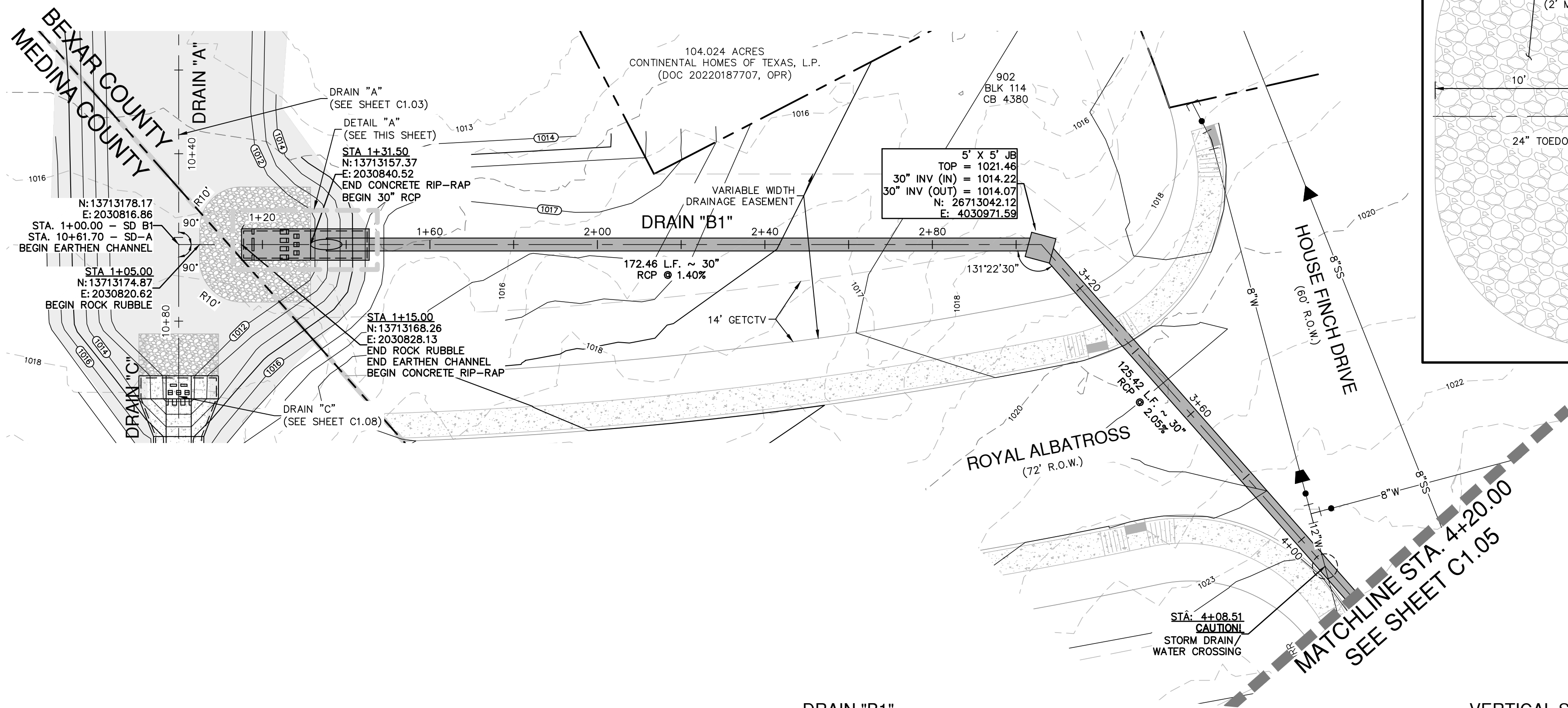
DRAIN A - PLAN & PROFILE
STA 1+00.00 TO 10+93.06

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C1.03

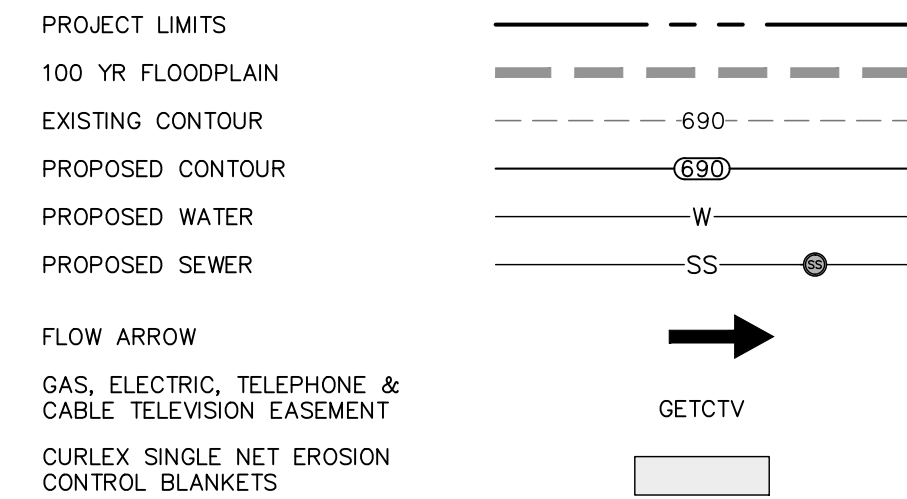
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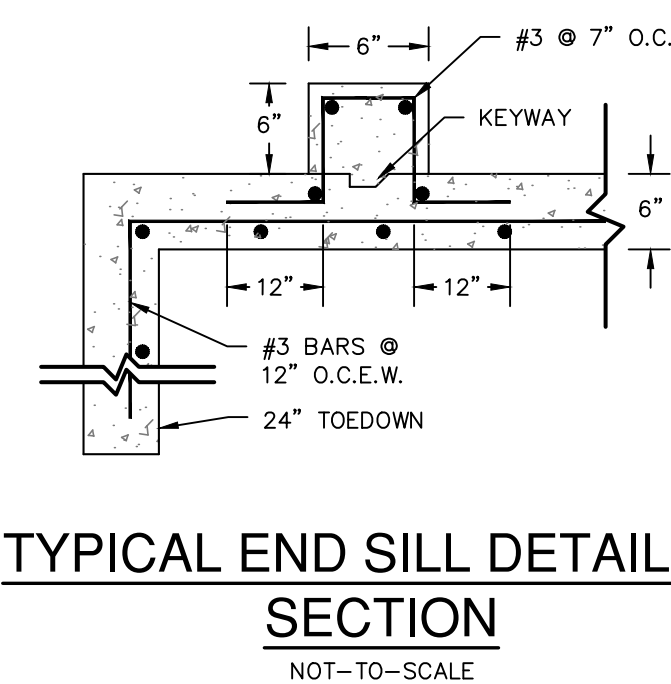
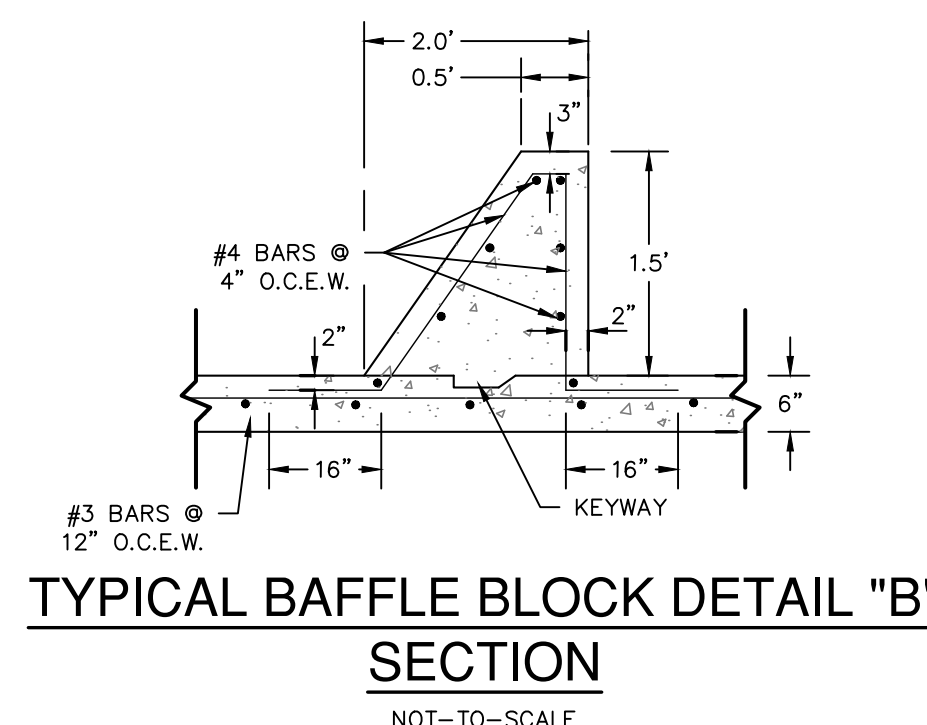
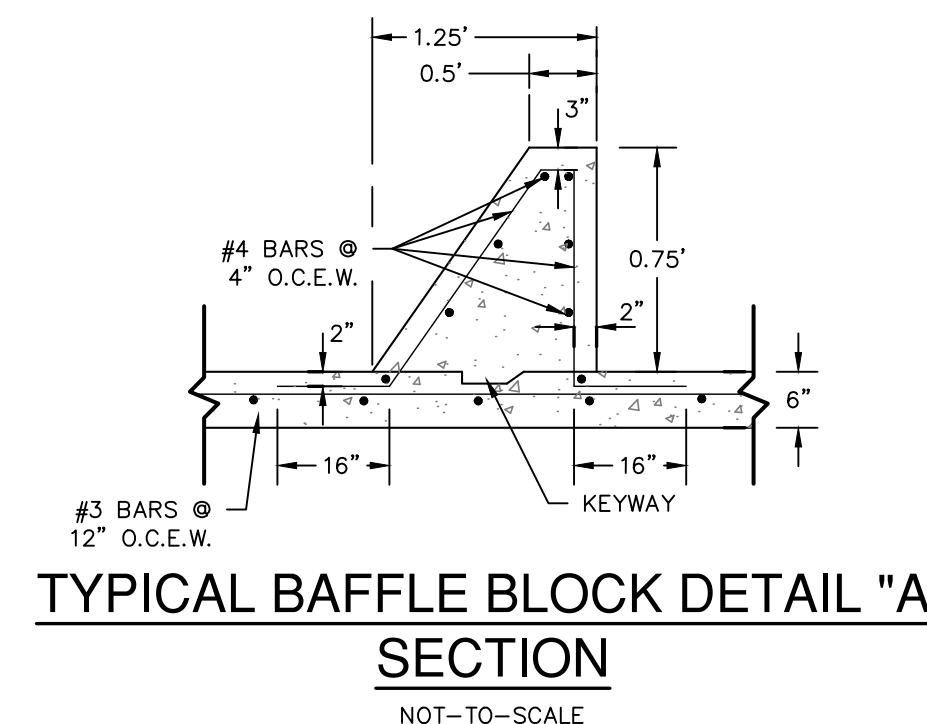
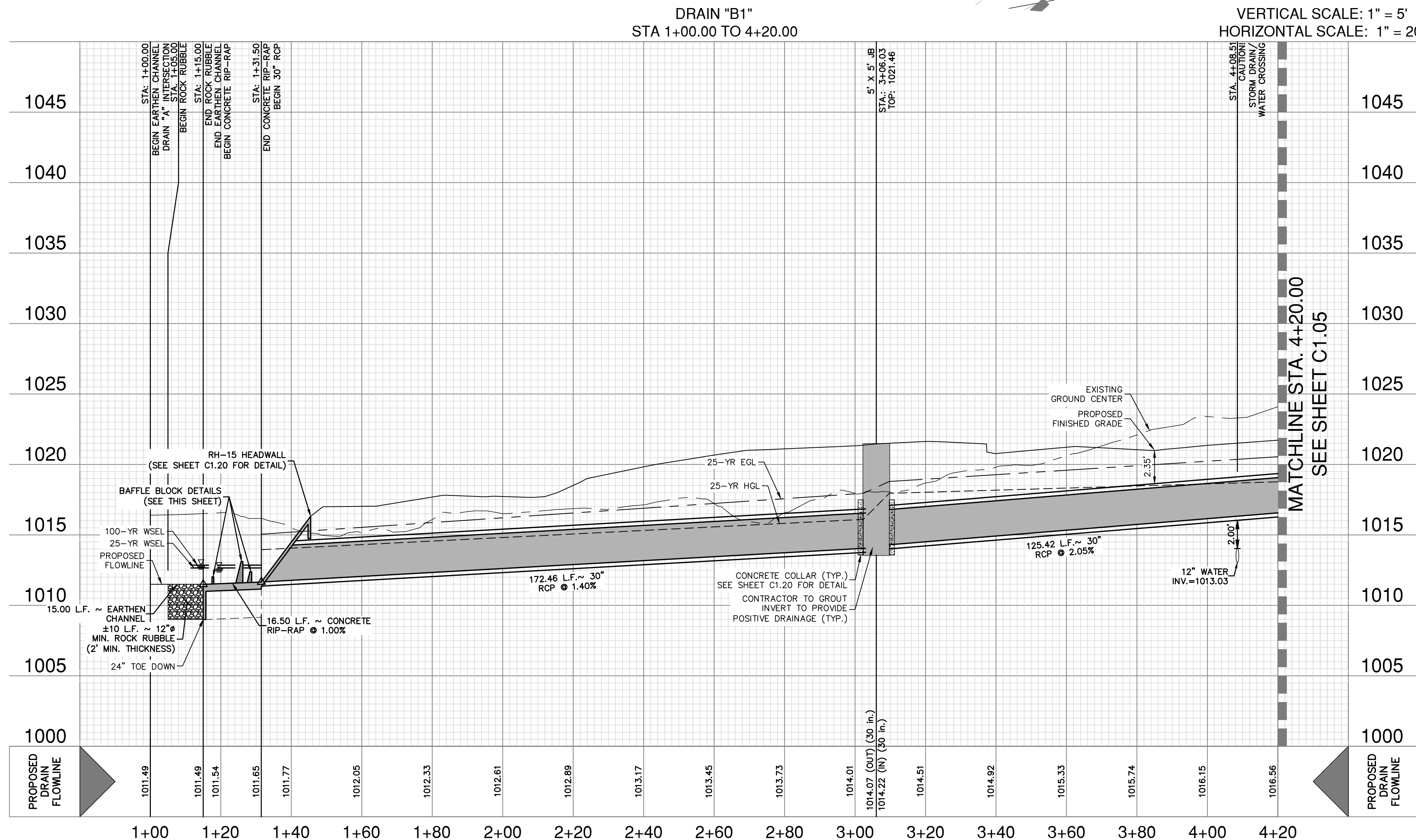


DRAINAGE LEGEND



HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+31.50 TO 3+06.03	
Q25 =	36 CFS
S =	1.40%
Sf =	0.77%
V =	7.64 FPS
n =	0.013
D =	2.5 FT
Dn =	2.29 FT

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 3+06.03 TO 4+31.45	
Q25 =	36 CFS
S =	2.05%
Sf =	0.77%
V =	7.34 FPS
n =	0.013
D =	2.5 FT
Dn =	2.5 FT



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CAUTION!!

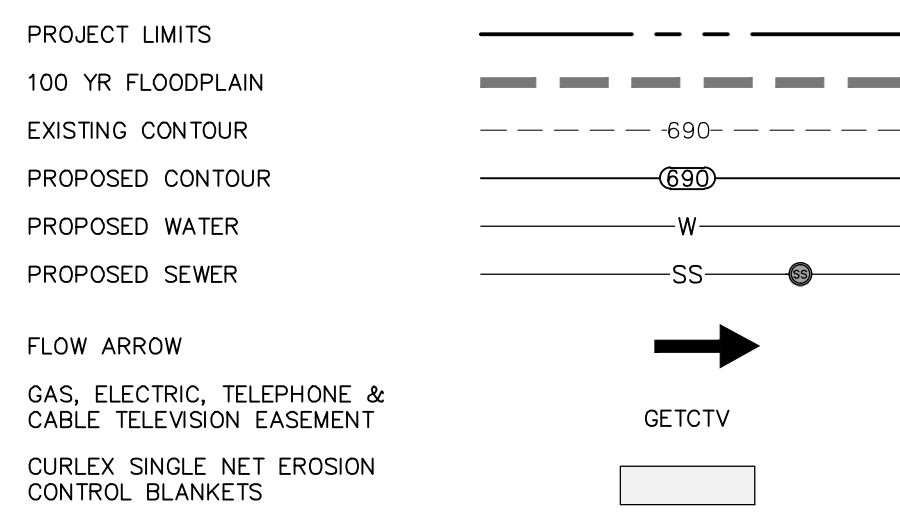
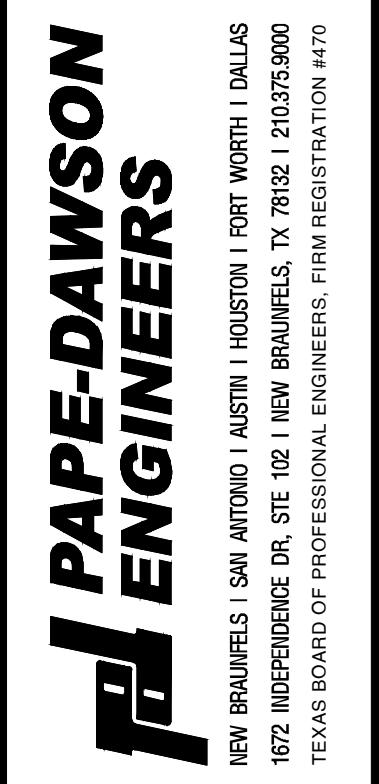
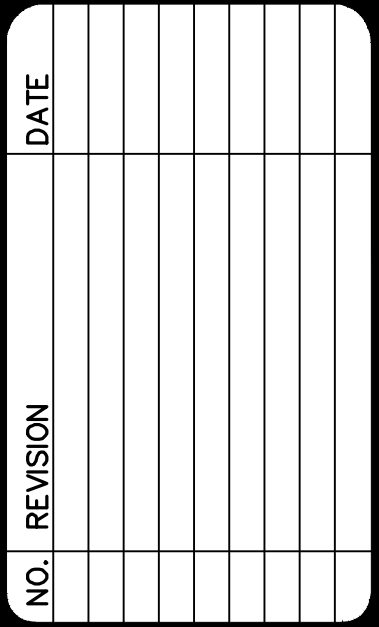
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**PAPE-DAWSON
ENGINEERS**
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS: FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
DRAIN B1 - PLAN & PROFILE
STA 1+00.00 TO 4+20.00

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED **HF** DRAWN BH
SHEET **C1.04**

FOR PERMIT



**HYDRAULIC
CALCULATIONS
STORM DRAIN**

STA. 3+06.03 TO 4+31.45

Q25 = 36 CFS

S = 2.05%

Sf = 0.77%

V = 7.34 FPS

n = 0.013

D = 2.5 FT

Dn = 2.5 FT

**HYDRAULIC
CALCULATIONS
STORM DRAIN**

STA. 4+31.45 TO 5+83.04

Q25 = 36 CFS

S = 3.35%

Sf = 0.77%

V = 7.34 FPS

n = 0.013

D = 2.5 FT

Dn = 2.5 FT

**HYDRAULIC
CALCULATIONS
STORM DRAIN**

STA. 5+83.04 TO 7+18.43

Q25 = 36 CFS

S = 1.48%

Sf = 0.77%

V = 7.34 FPS

n = 0.013

D = 2.5 FT

Dn = 2.5 FT

**HYDRAULIC
CALCULATIONS
STORM DRAIN**

STA. 7+18.43 TO 7+57.95

**HYDRAULIC
CALCULATIONS
STORM DRAIN**

STA. 7+57.95 TO 9+17.28

Q25 = 23 CFS

S = 4.00%

Sf = 1.22%

V = 7.32 FPS

n = 0.013

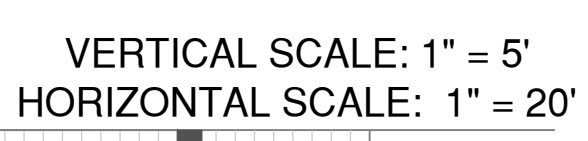
D = 2 FT

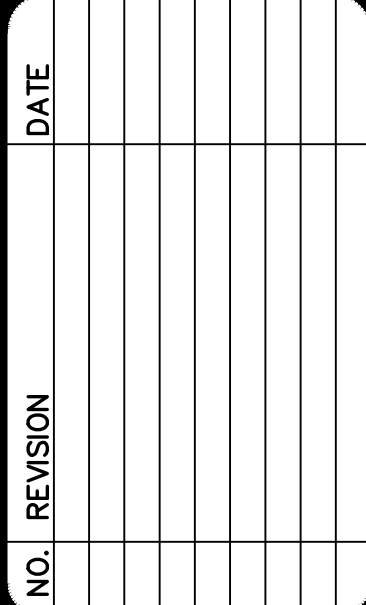
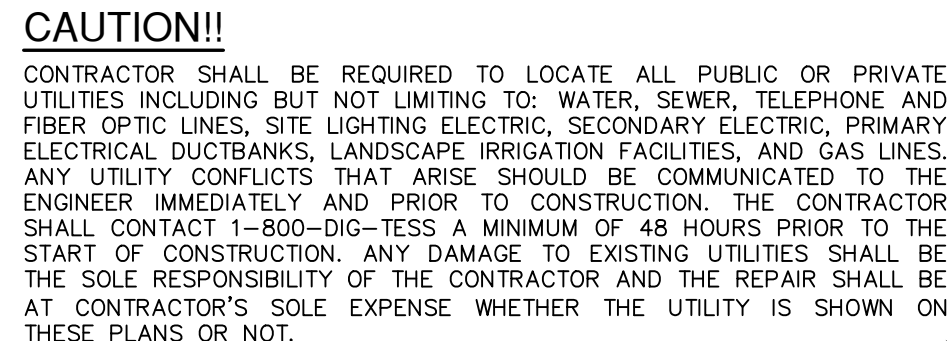
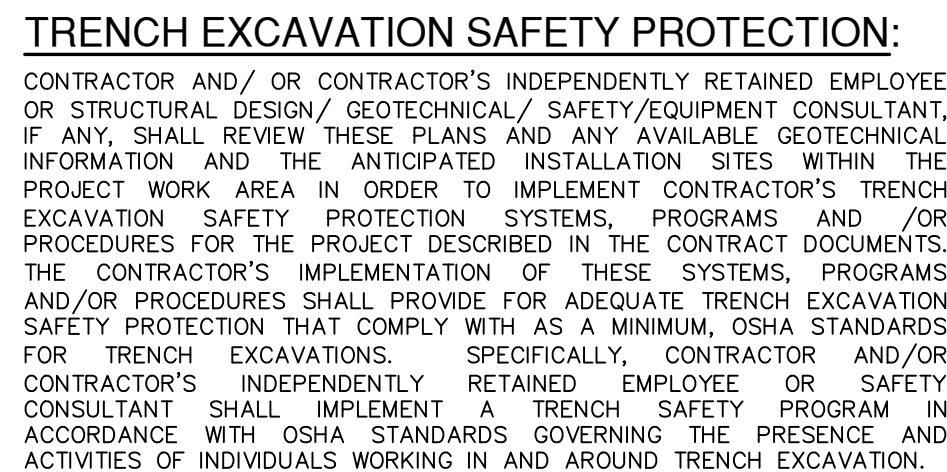
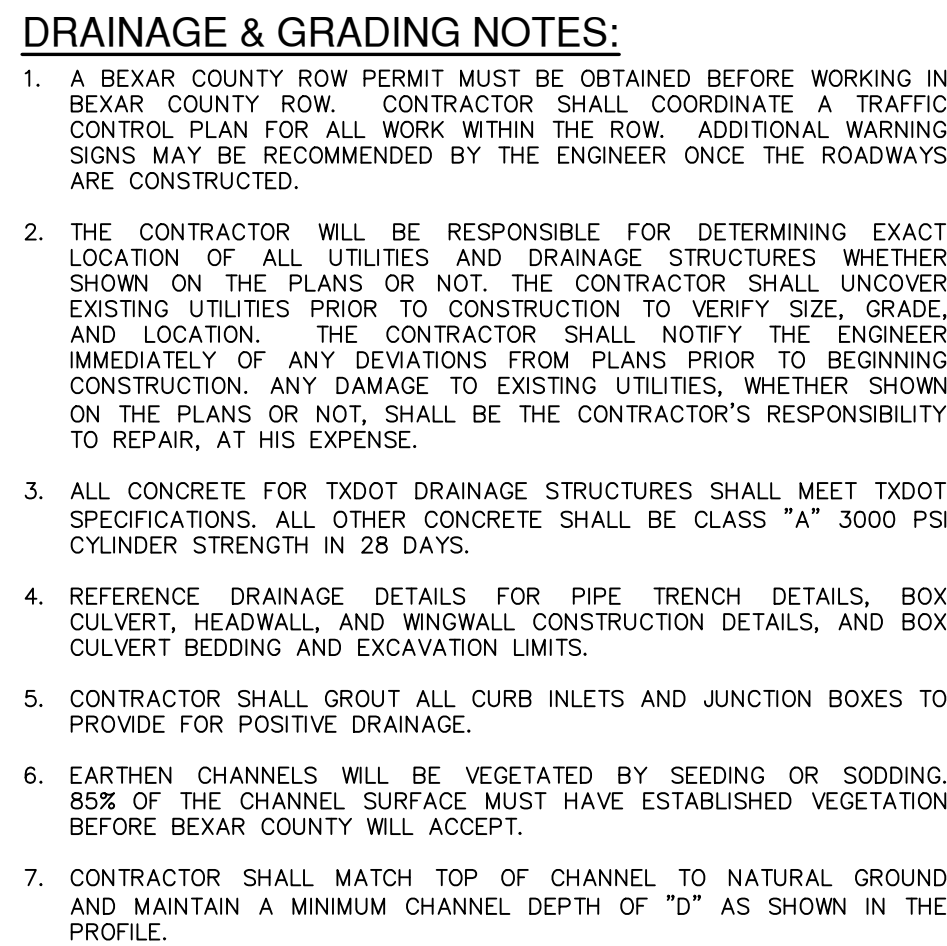
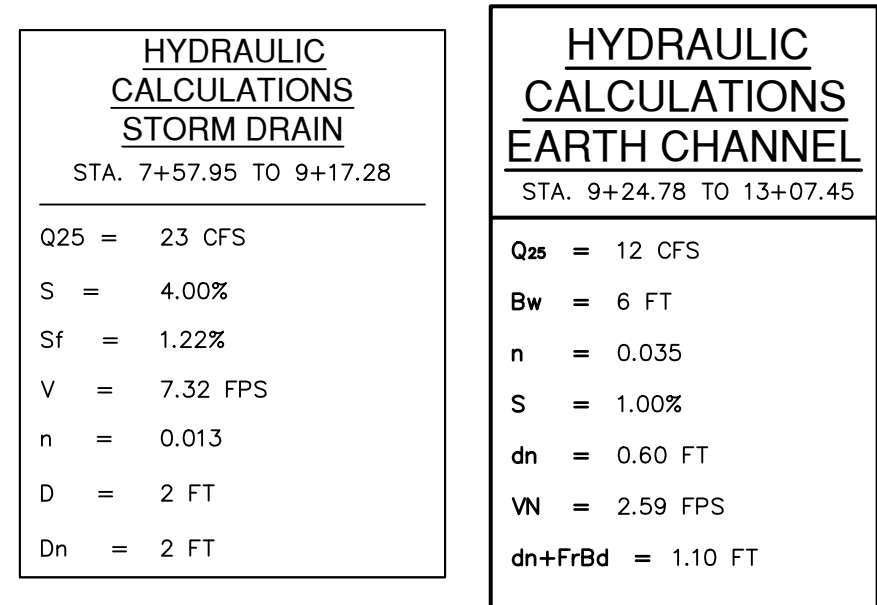
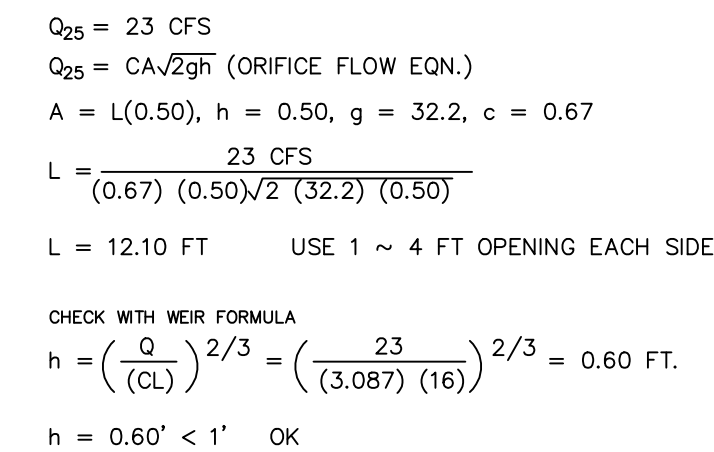
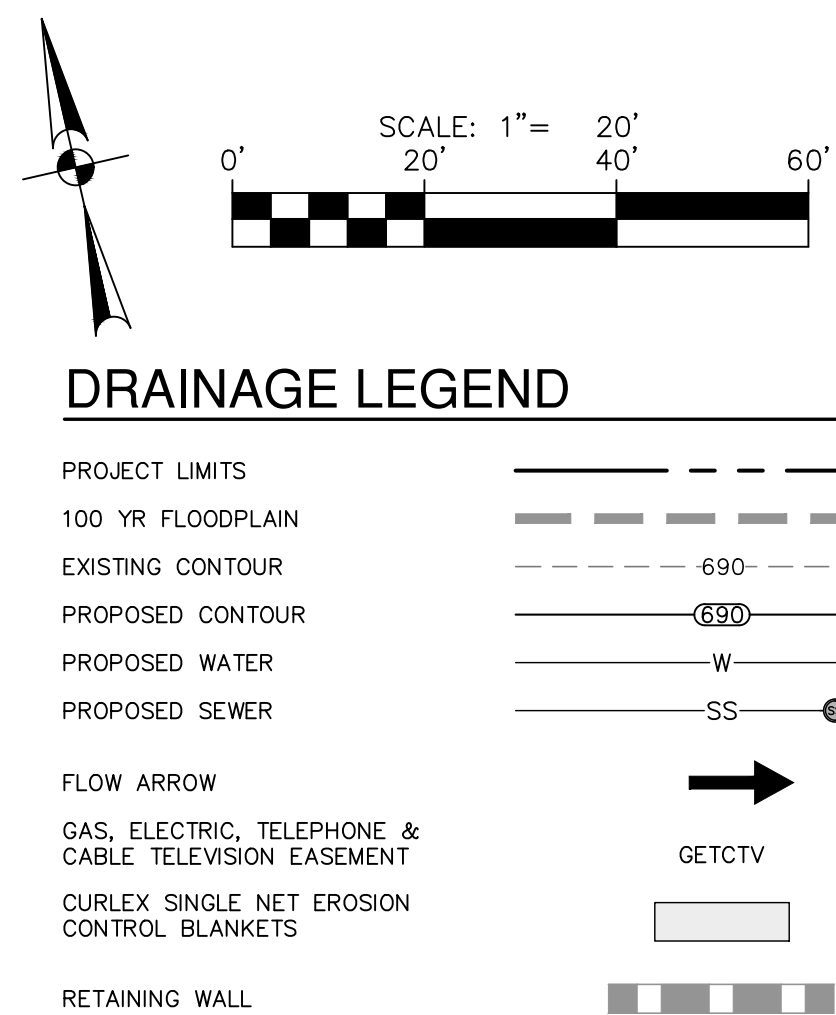
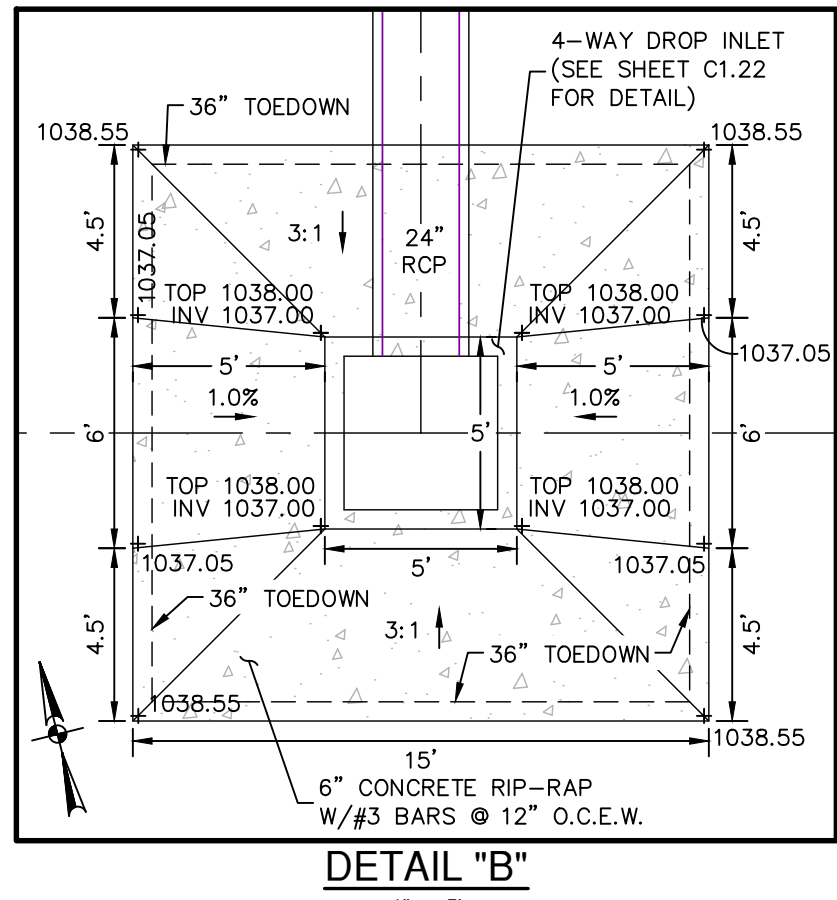
Dn = 2 FT

1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN WITH THE BEAR COUNTY ROAD DEPARTMENT. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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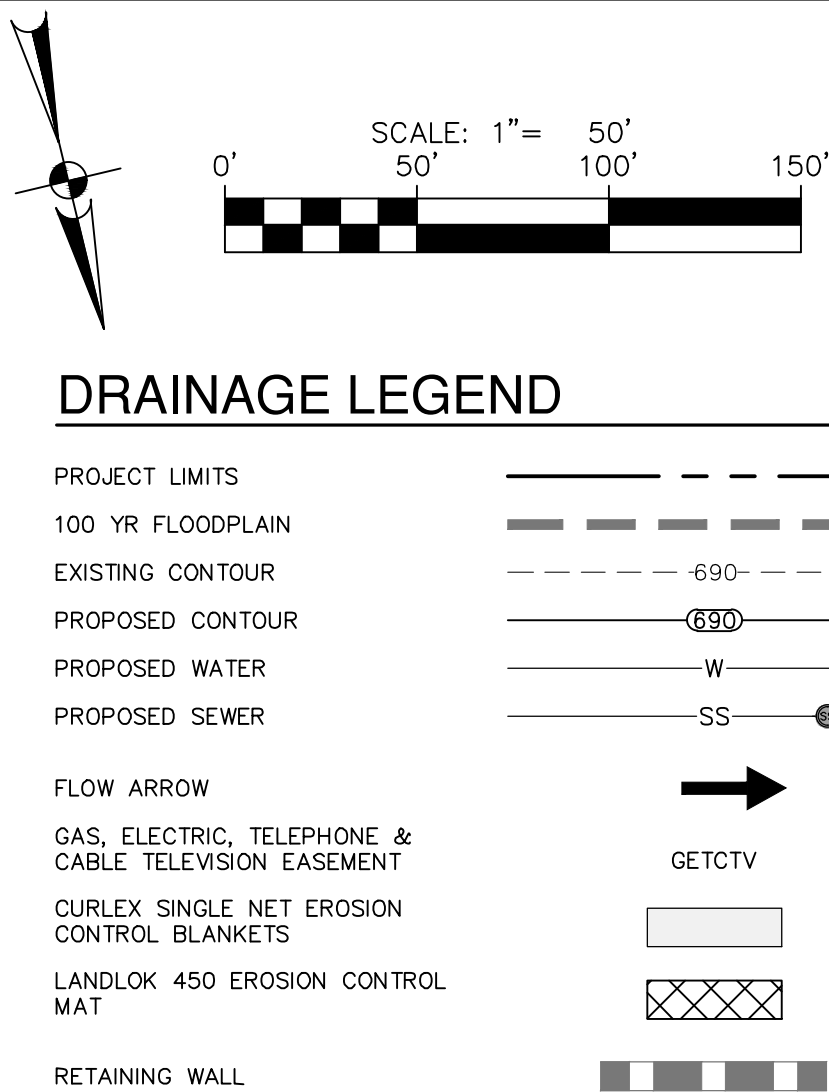
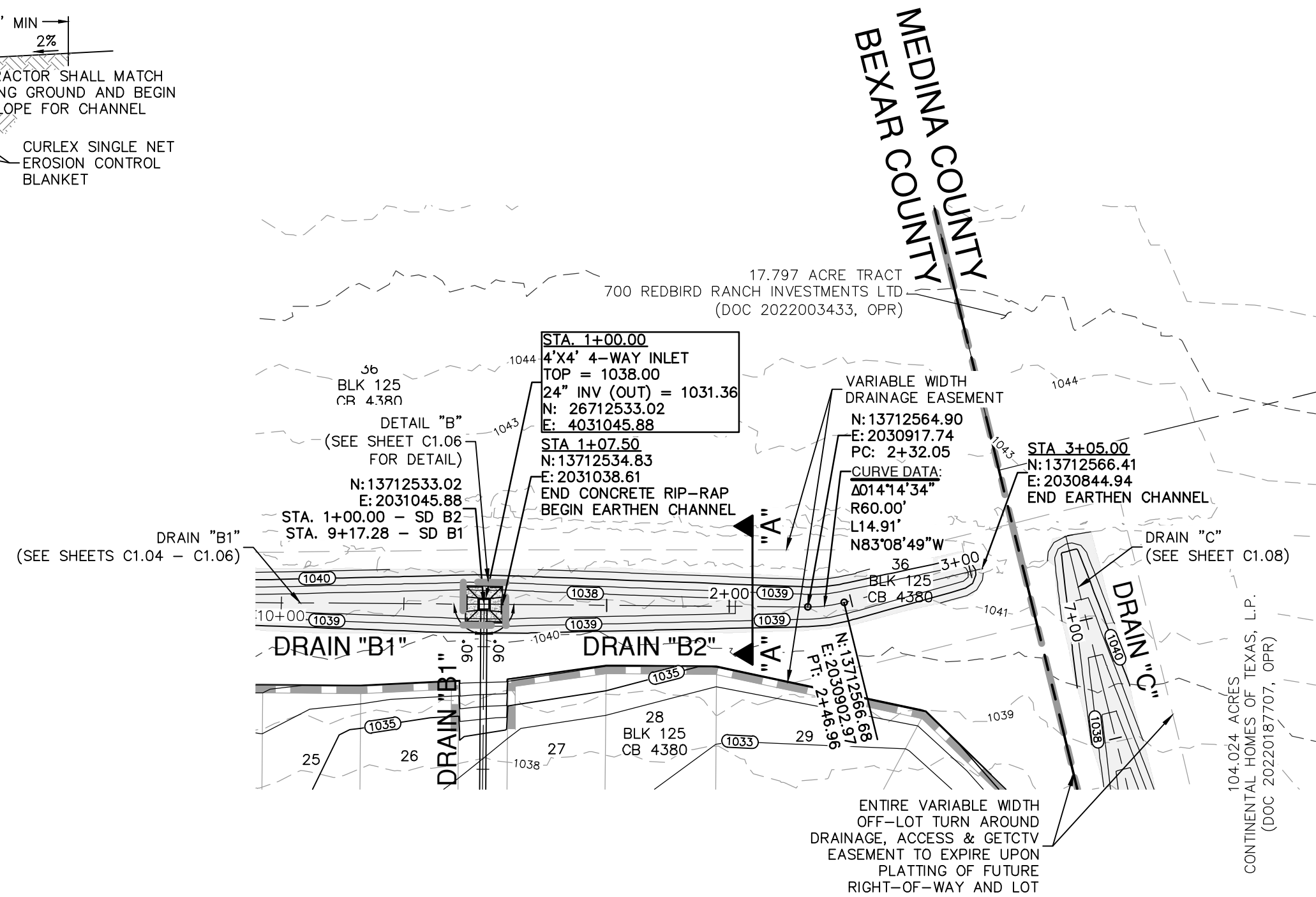


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PE ENGINEERS

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RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
DRAIN B1 - PLAN & PROFILE
STA 8+60.00 TO 13+17.25

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C1.06



**HYDRAULIC
CALCULATIONS
EARTH CHANNEL**

STA. 1+00.00 TO 3+05.00

Q₂₅ = 9 CFS

B_w = 6 FT

n = 0.035

S = 1.00%

dn = 0.51 FT

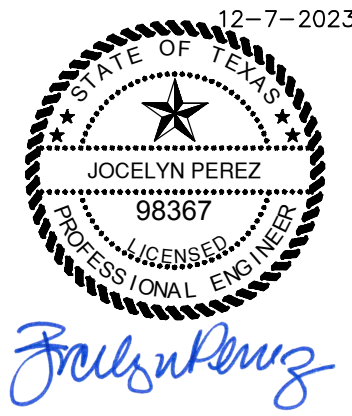
VN = 2.36 FPS

dn+FrBd = 1.01 FT

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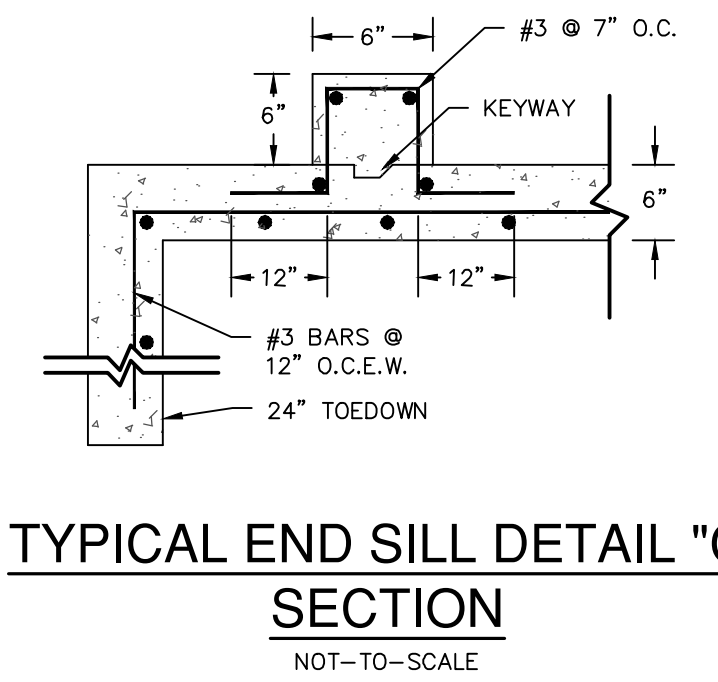
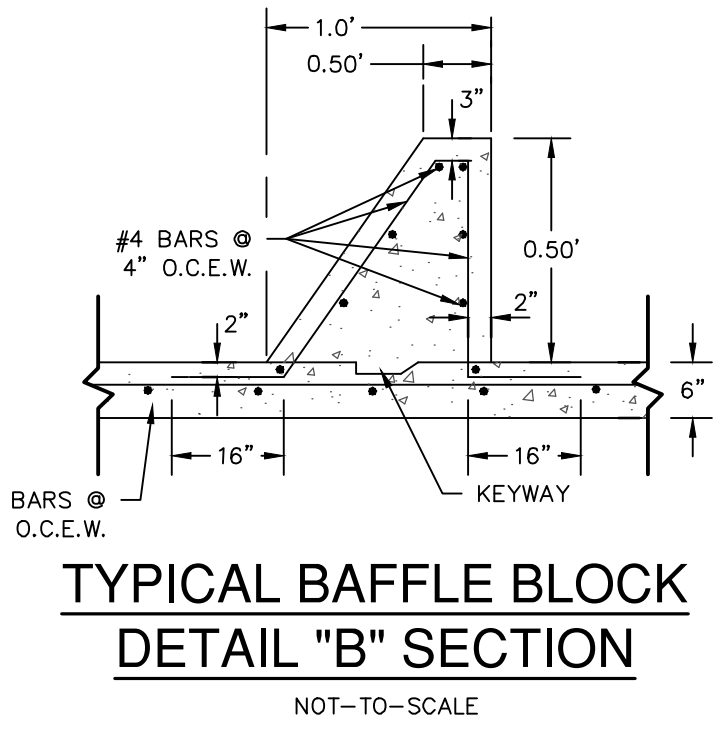
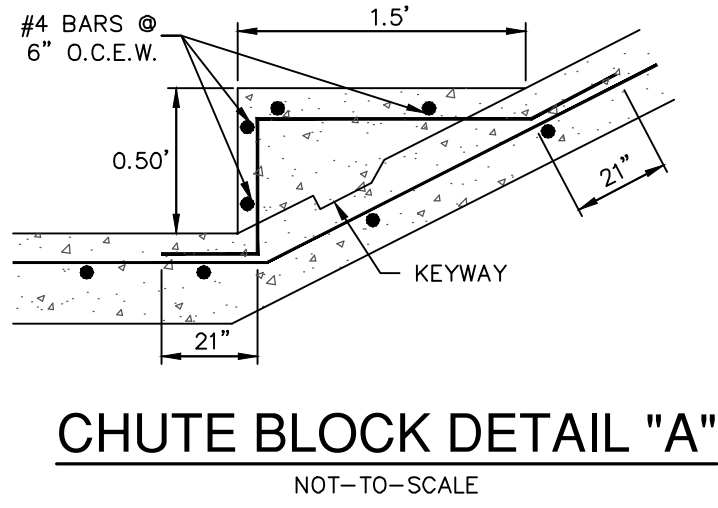
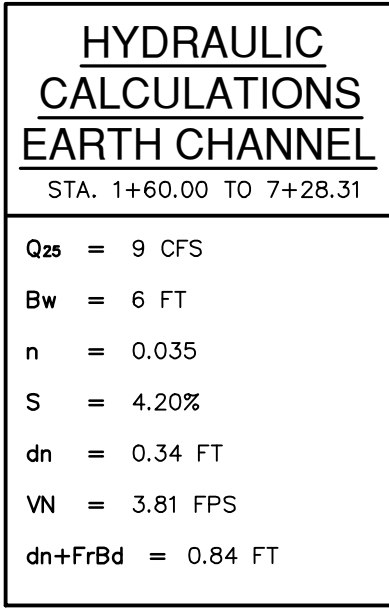
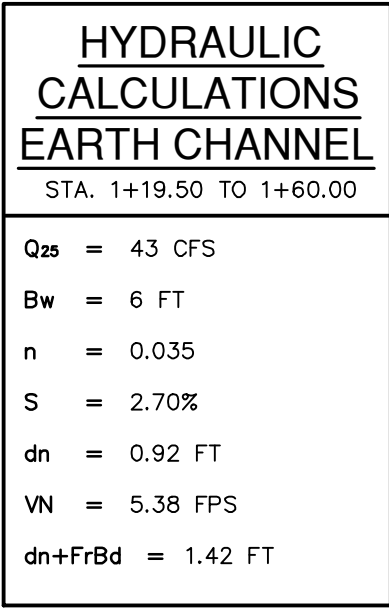
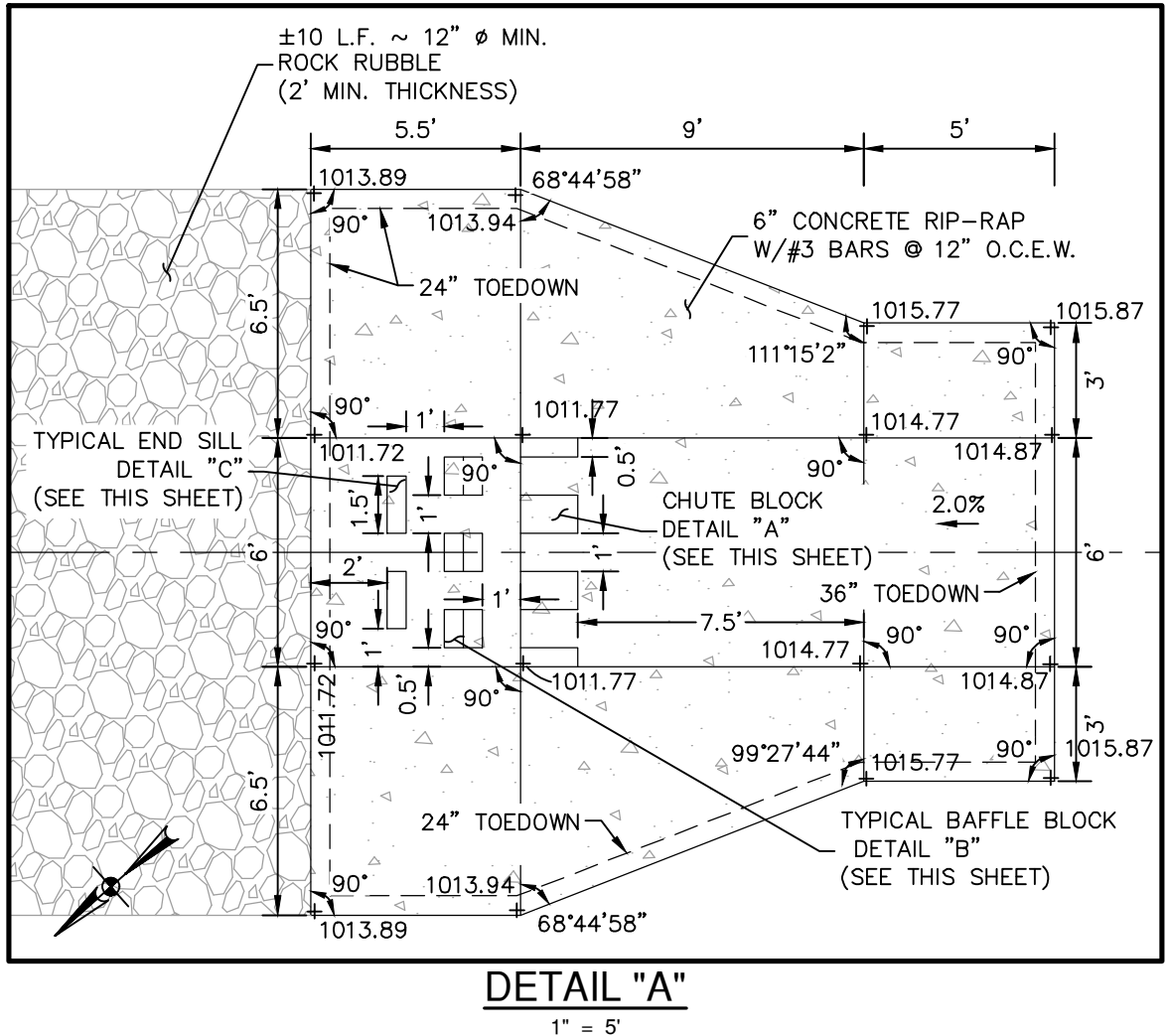
PAPE-DAWSON
PE ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE. 102 | NEW BRAUNFELS, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS: FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

INTERCEPTOR DRAIN B2 - PLAN & PROFILE
STA 1+00.00 TO 3+05.00

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED *HF* DRAWN BH
SHEET C1.07



- ## **DRAINAGE & GRADING NOTES:**
1. A MEDINA COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN MEDINA 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. 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 DETAILS SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
 4. REFERENCE DRAINAGE DETAILS FOR PIPE RENCH DETAILS, BOX CULVERTS, HEADWALLS AND GULLWALL CONSTRUCTION DETAILS, AND BOX CULVERT BENTHS 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 MEDINA COUNTY 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, SHALL PREPARE THE PRESENCE AND/ OR SAFETY PROTECTION SYSTEMS, INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND AND/OR PROCEDURES. THE PRESENCE DESCRIBED IN THE CONTRACT DOCUMENTS SHALL BE 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 PREPARE THE PRESENCE AND/ OR SAFETY PROTECTION 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 ELECTRIC, DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. PRIOR TO THE COMMENCEMENT OF THE CONTRACTOR AND THE REPAIR SHALL BE 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 RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

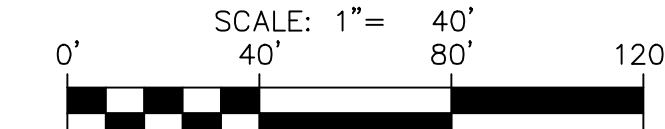
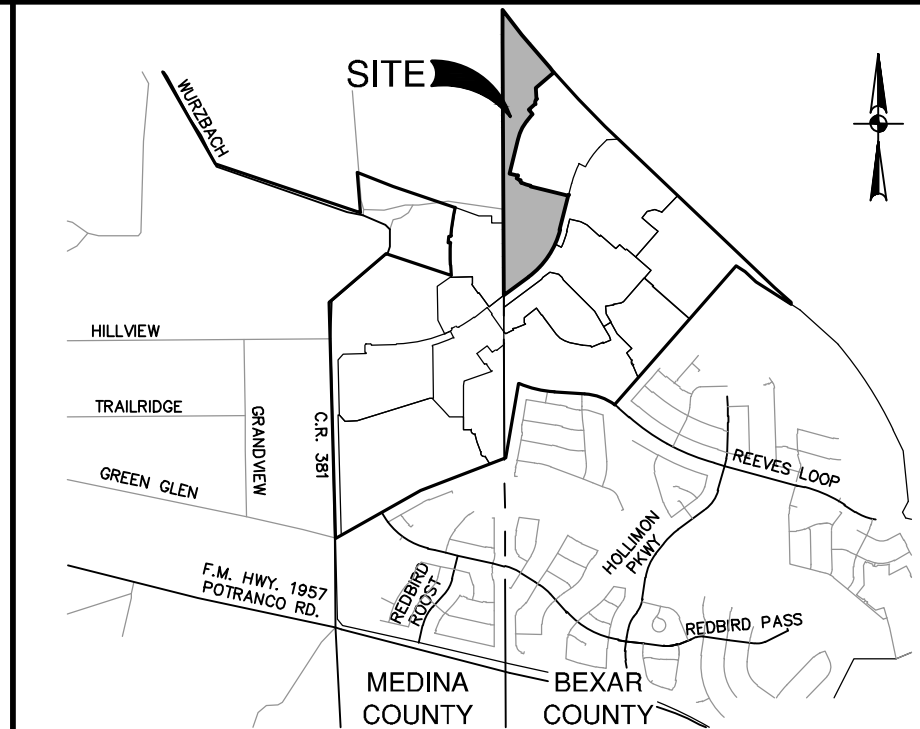
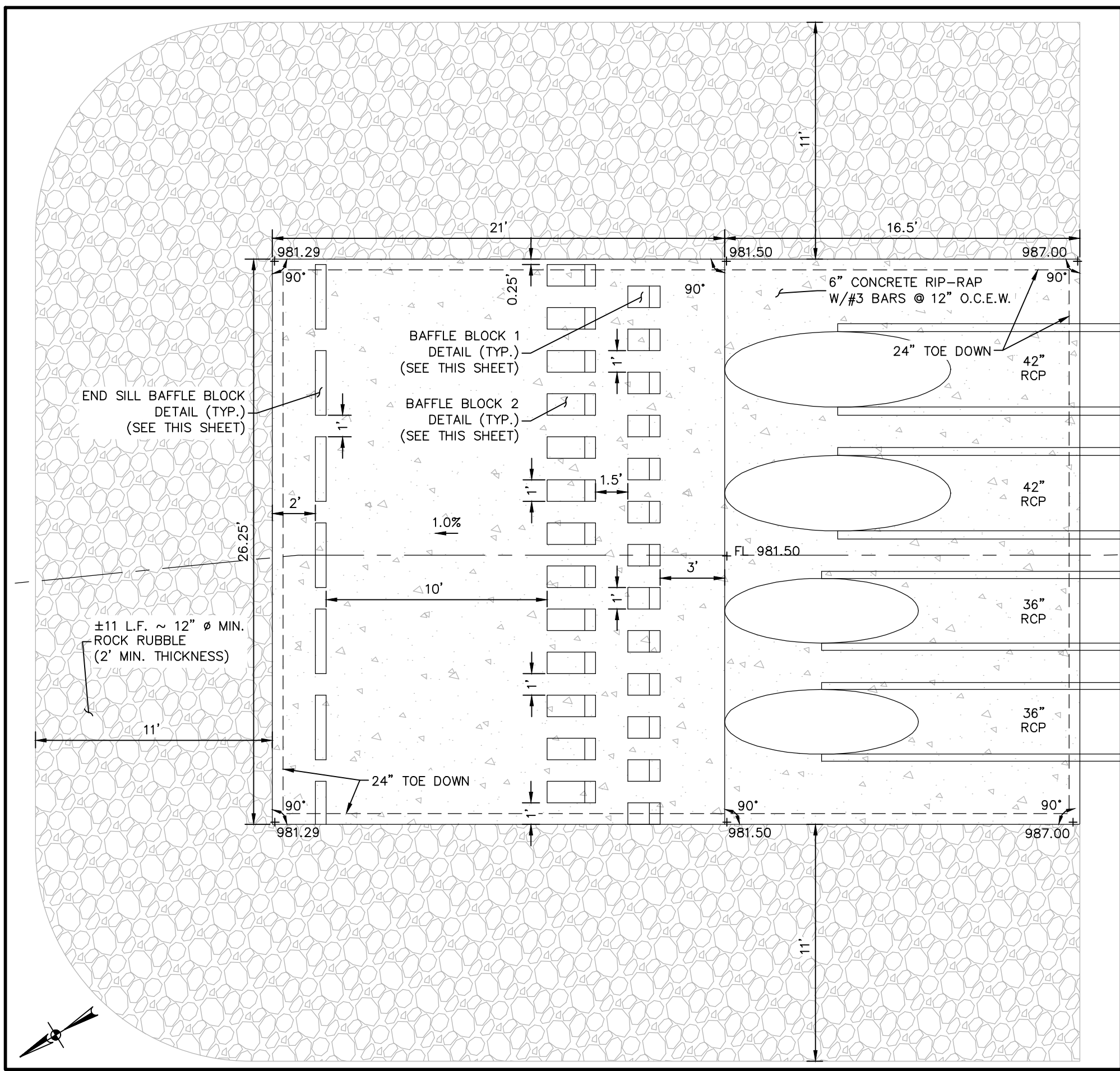
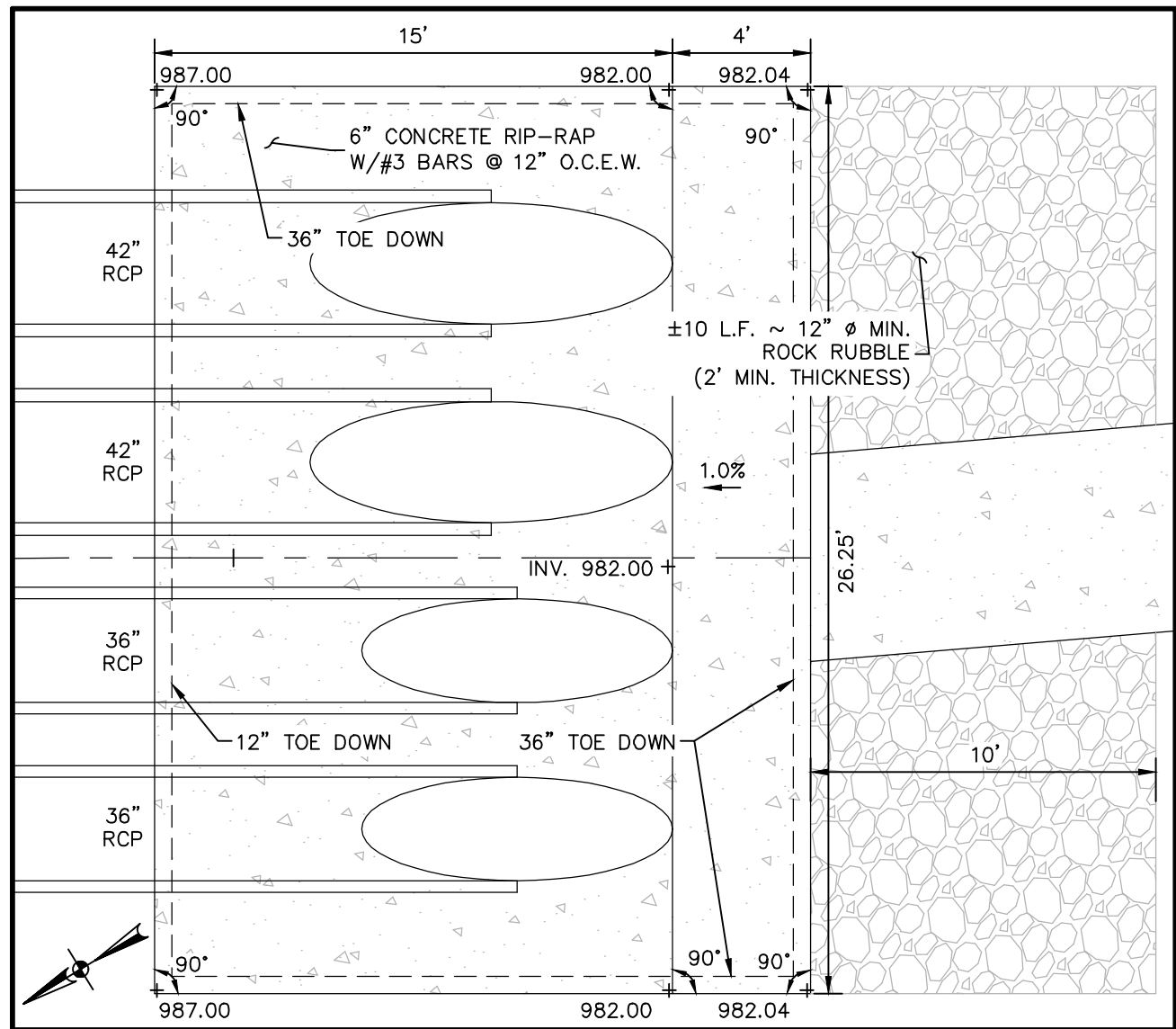
TRENCH EXCAVATION SAFETY PROTECTION:

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

NOTE:
ALL DISTURBED AREA WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT CHANNEL. CONTRACTOR SHALL INCLUDE ALL COST TO REVEGETATE CHANNEL IN BASE BID, NO SEPERATE PAY ITEM.

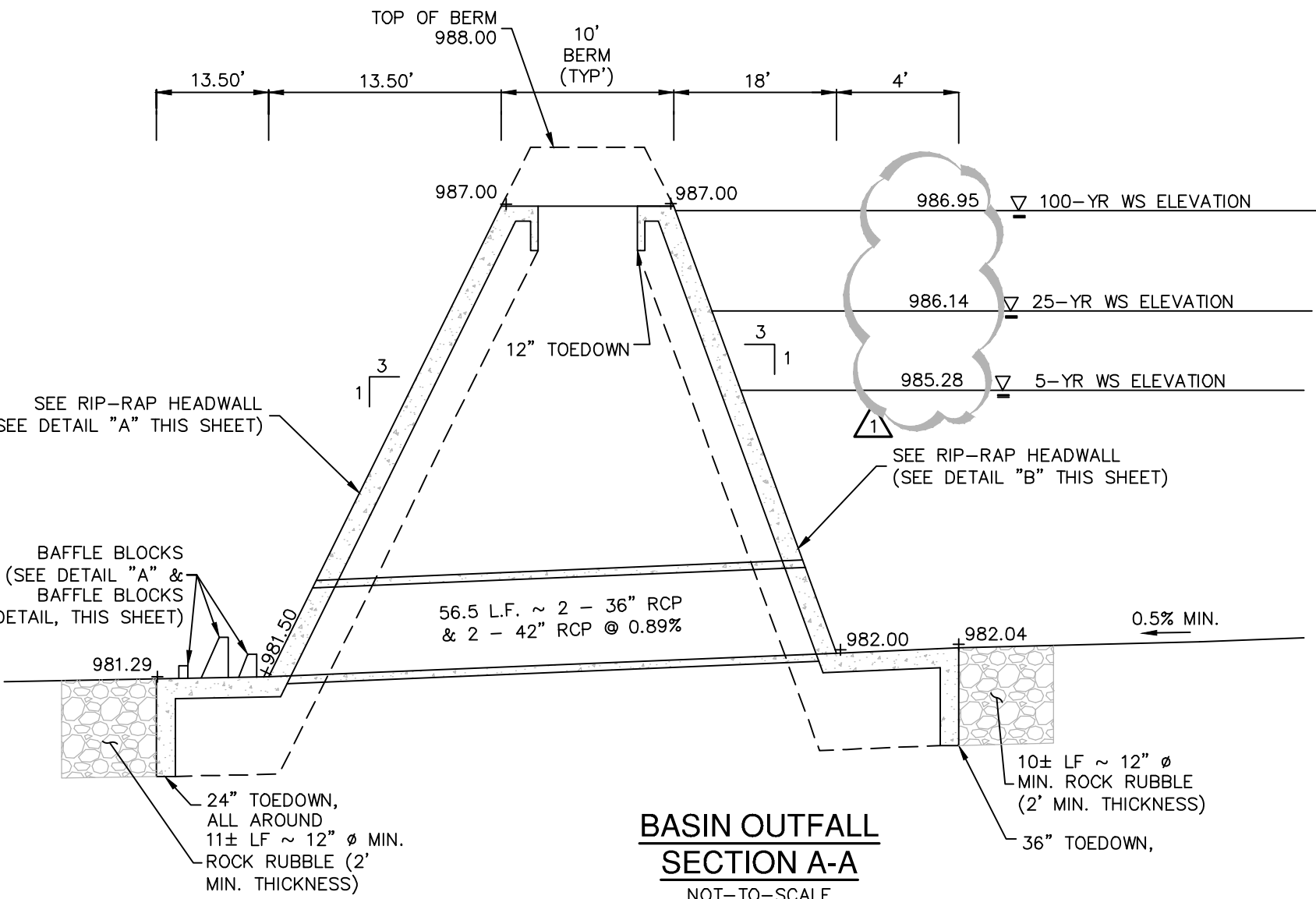
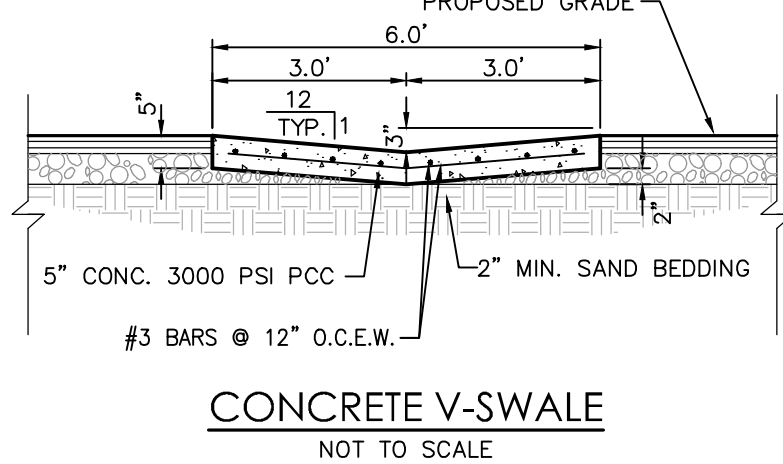
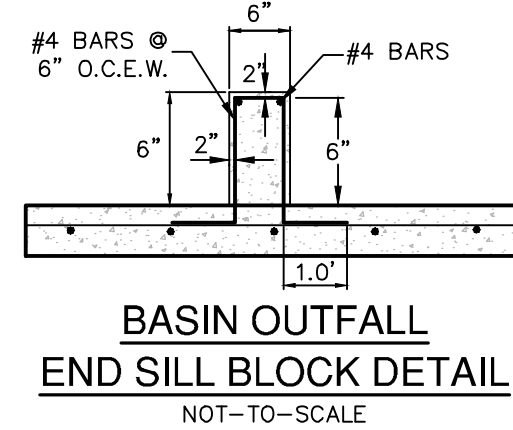
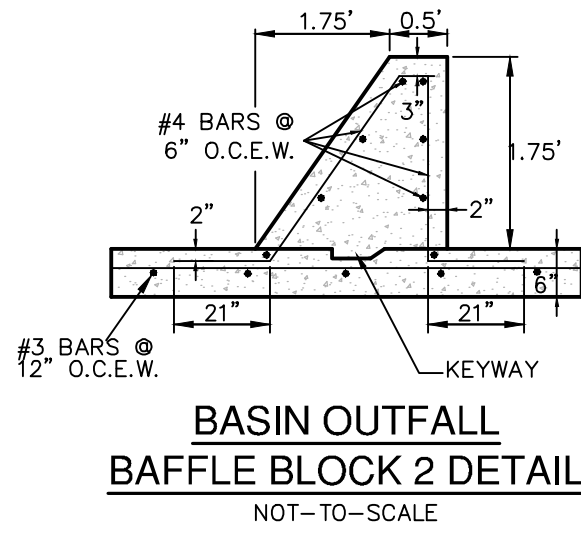
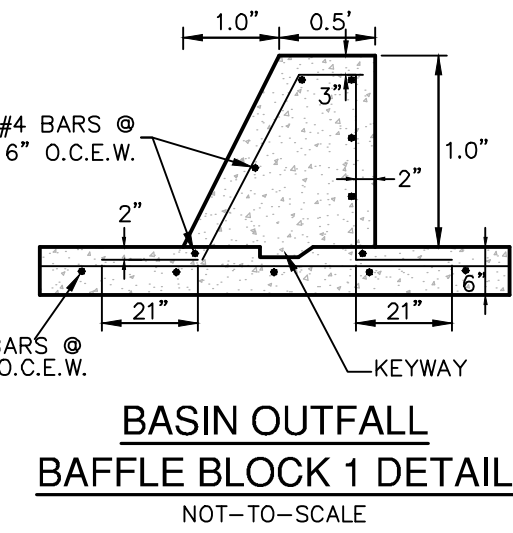
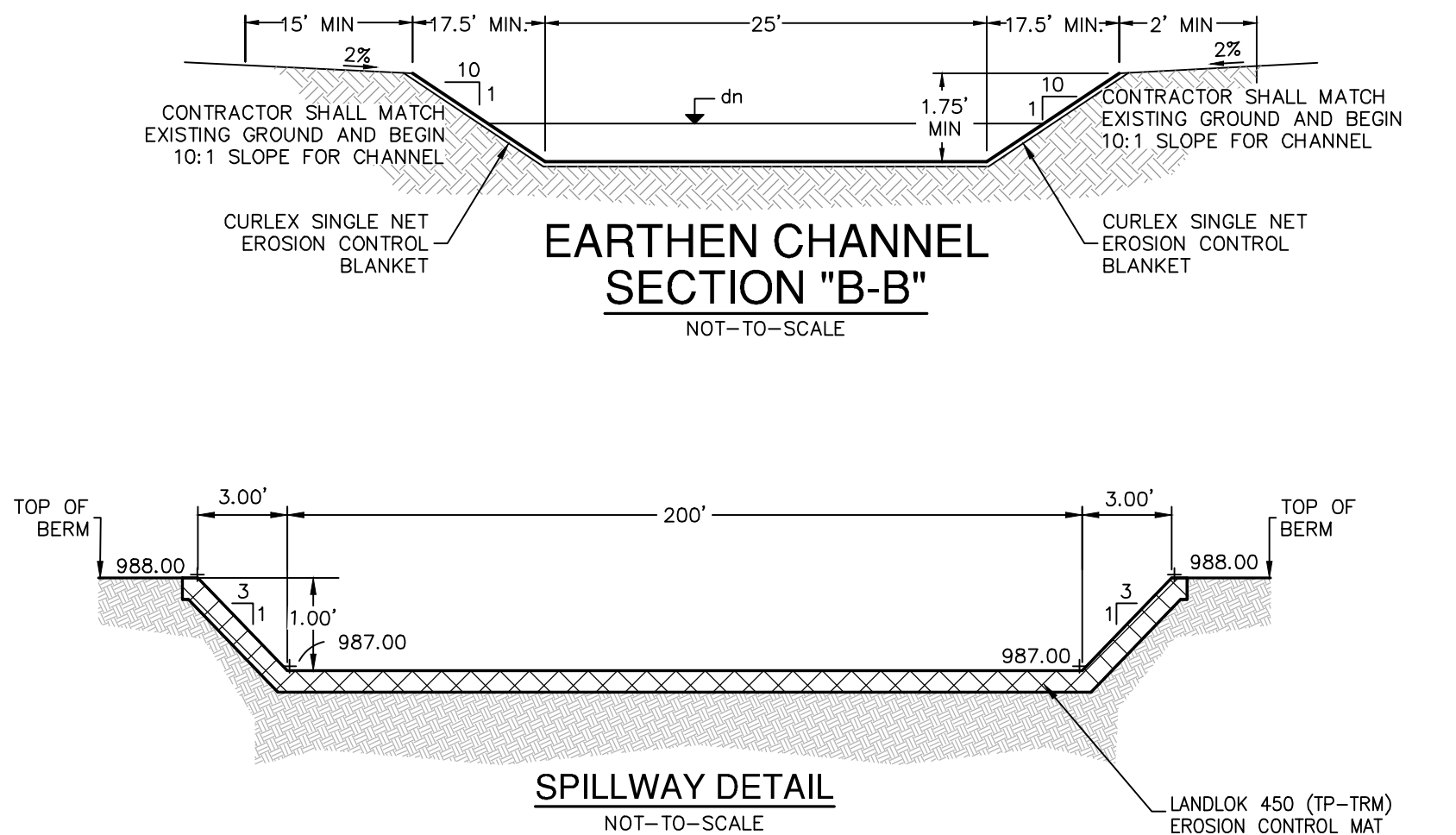
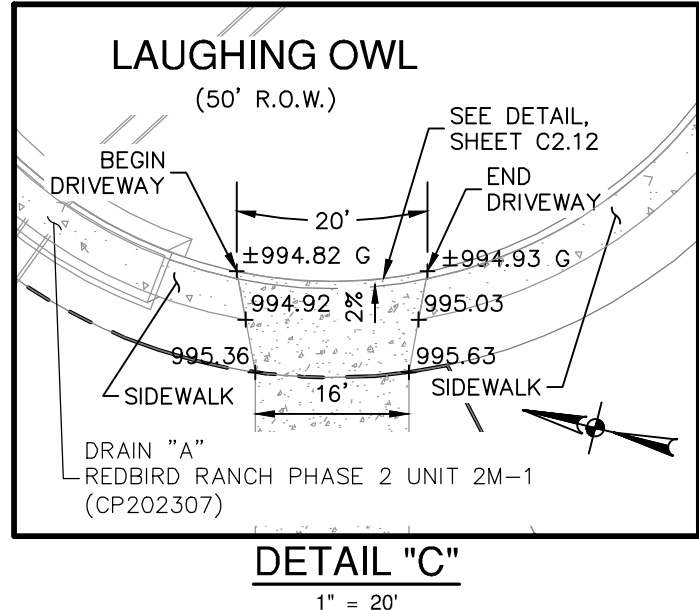
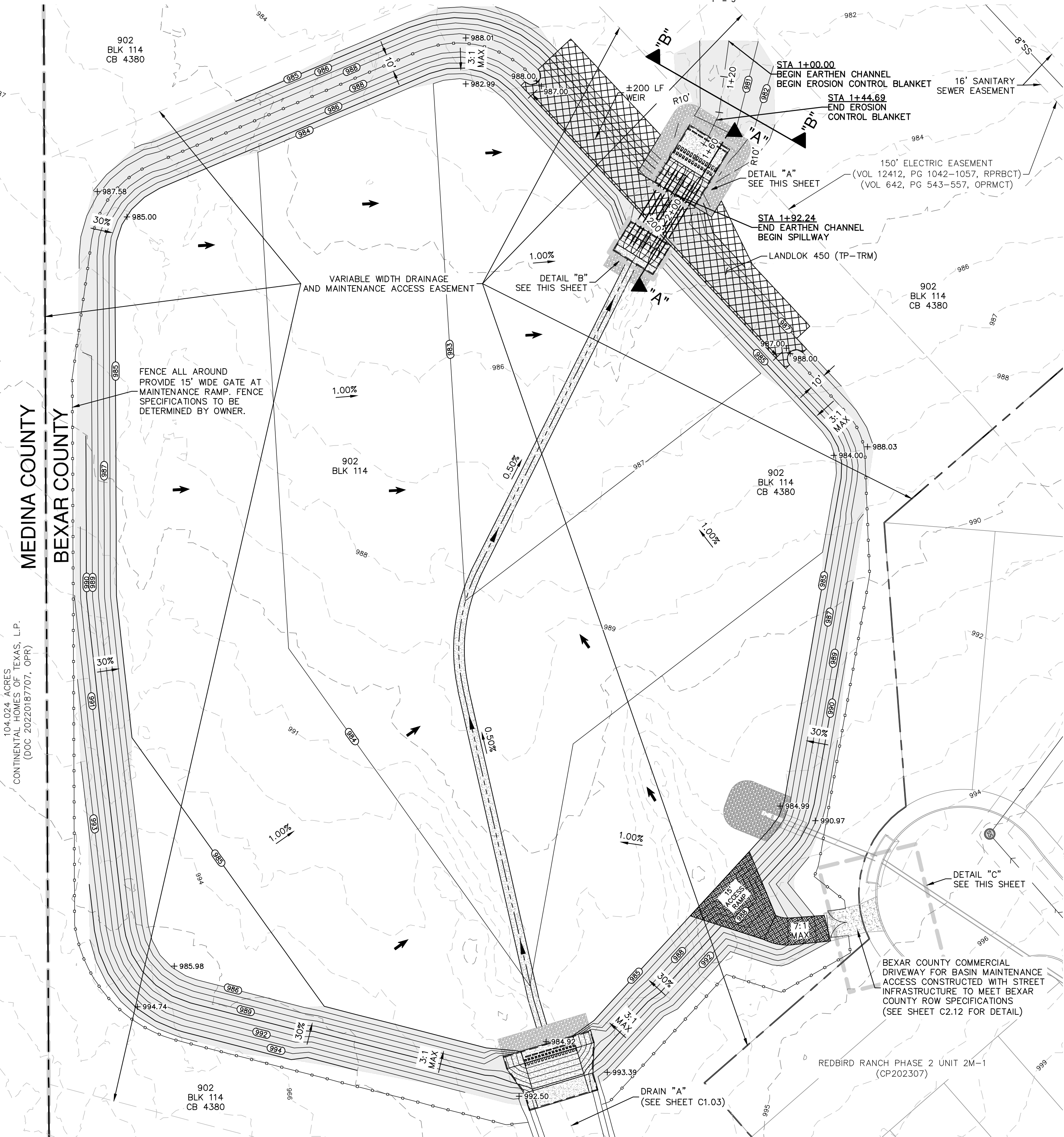
OVERFLOW WEIR
CALCULATIONS

$$Q_{100} = (C_w)(L)(h)^{3/2}$$
$$Q_{100} = 490.9$$
$$C = 3.087$$
$$L = 200 \text{ ft}$$
$$490.9 = (3.087)(200)(h)^{3/2}$$
$$h = 0.858 \text{ ft}$$



LEGEND

- UNIT BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
- FLOW ARROW
- LANDLOK 450 (HP-TRM) EROSION CONTROL MAT
- CURLX SINGLE NET EROSION CONTROL BLANKETS
- PROPOSED FENCE (SPECIFICATIONS BY OWNER)

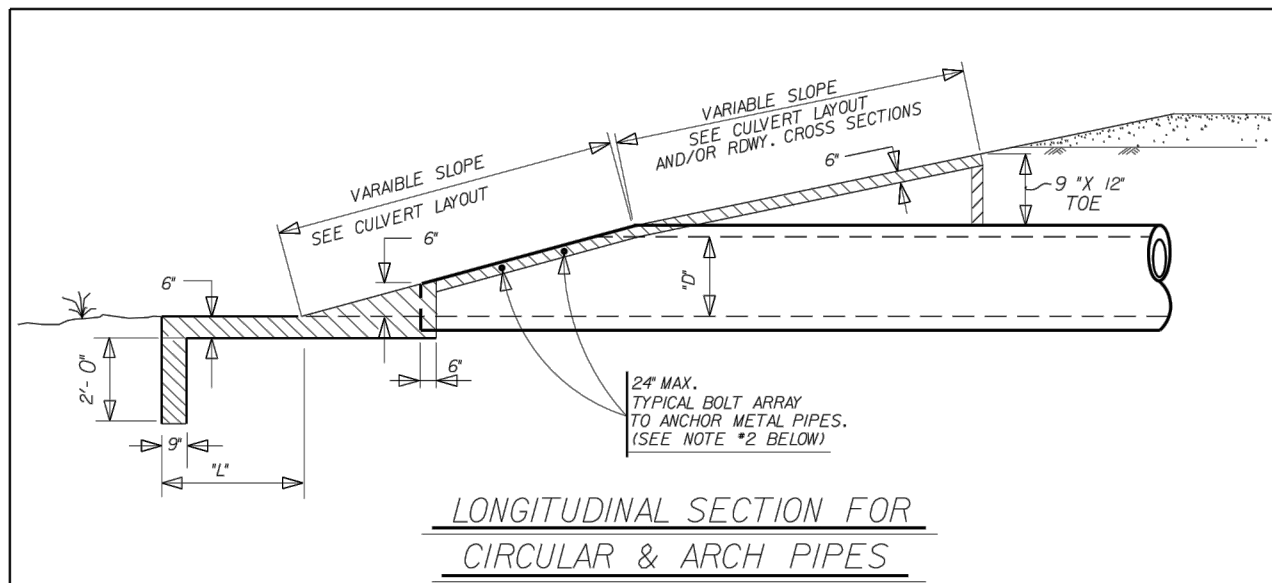


PAPE-DAWSON
ENGINEERS

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
DETENTION BASIN PLAN

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HJ DRAWN KM
SHEET C1.10

FOR PERMIT



DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

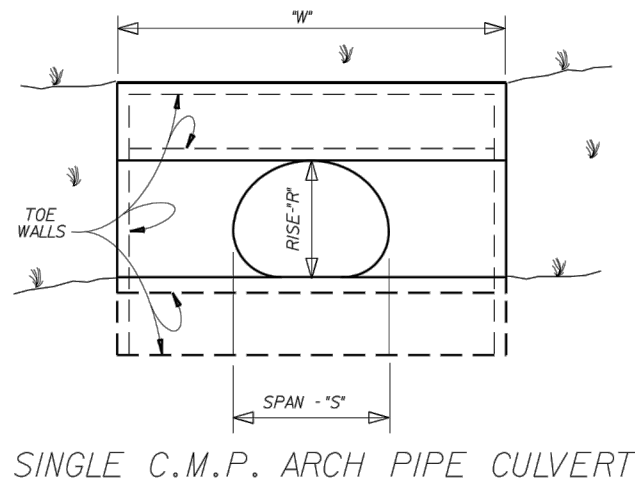
12" INSIDE DIA. # PIPE	12"		SINGLE				DOUBLE		TRIPLE		QUADRUPLE	
	C.M.P.	R.C.P.	4'-6"	7'-2"	9'-10"	12'-6"	8'-4"	11'-4"	13'-4"	15'-4"	18'-0"	20'-0"
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"	8'-4"	11'-4"	13'-4"	15'-4"	18'-0"
24"	3'-0"	1'-9"	0'-4"	6'-0"	9'-5"	12'-10"	16'-3"	10'-4"	13'-4"	15'-4"	18'-0"	20'-0"
30"	4'-0"	1'-8"	1'-1"	7'-6"	10'-8"	13'-10"	17'-0"	11'-4"	14'-4"	16'-4"	19'-0"	21'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-10"	16'-10"	20'-9"	12'-4"	15'-4"	17'-4"	20'-0"	22'-0"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	20'-10"	24'-6"	13'-4"	16'-4"	18'-4"	21'-0"	23'-0"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	28'-3"	14'-4"	17'-4"	19'-4"	22'-0"	24'-0"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	32'-6"	15'-4"	18'-4"	20'-4"	23'-0"	25'-0"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	35'-6"	16'-4"	19'-4"	21'-4"	24'-0"	26'-0"

12" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.

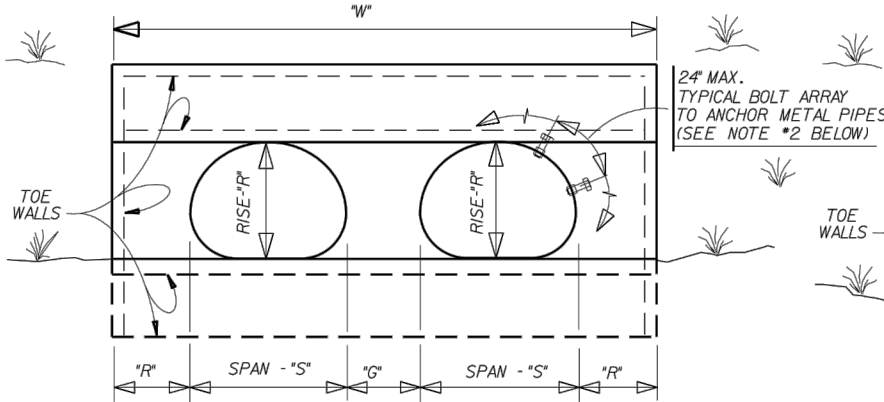
DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH DIA. SPAN	12"	18"	24"	30"	36"	42"	48"	54"	60"
2'	18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"	15'-4"	18'-0"
3'	24"	3'-0"	1'-9"	0'-4"	6'-0"	9'-5"	12'-10"	16'-3"	19'-0"	21'-0"
4'	30"	4'-0"	1'-8"	1'-1"	7'-6"	10'-8"	13'-10"	17'-0"	20'-0"	22'-0"
5'	36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-10"	16'-10"	20'-9"	23'-2"	25'-0"
6'	42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	20'-10"	24'-6"	27'-6"	29'-0"
7'	48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	28'-3"	31'-3"	33'-0"
8'	54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	32'-6"	35'-6"	37'-0"
9'	60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	35'-6"	38'-6"	40'-0"

BASED ON 2-2/3" X 1/2" CORRUGATION
12" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.



SINGLE CIRCULAR PIPE CULVERT (CMP or RCP)

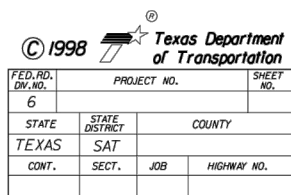


MULTIPLE CIRCULAR PIPE CULVERT (CMP or RCP)

NOTES:

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

SAN ANTONIO DISTRICT STANDARD RIPRAP HEADWALL



CURLEX® EROSION CONTROL BLANKETS INSTALLATION GUIDELINES

Before installing Curlex blankets, the seedbed shall be inspected by the Owner's Representative to ensure it has been properly compacted and fine graded to remove any existing rills. It shall be free of obstructions, such as tree roots, projections such as stones, and other foreign objects. The contractor shall proceed when satisfactory conditions are present. After the area has been properly shaped, seeded, fertilized, and compacted, remove the Curlex protective cover. Next, locate the start of the roll, making sure the roll is facing toward the area to be covered, and then roll out the product. The product shall be rolled out flat, even, and smooth without stretching the material then anchored to the subgrade.

Slopes: It is recommended the blankets be installed vertically on the slope; however, on short slopes it may be more practical to install horizontally across the width of the application when agreed upon by the Engineer prior to installation. If more than one width is required, simply abut the edges of the vertically installed blankets together and secure them with a common row of staples. Overlapping adjacent sides of Curlex blankets is not required when installed vertically on slopes. Curlex blankets shall be trashed at the head of the slope if the blanket cannot be extended three feet over the slope crest or if overland flow is anticipated from upslope areas.

Channels: Curlex blankets shall be centered to offset a seam in the middle of the waterway. They shall be installed in the same direction as the water flow. The adjoining blankets shall be installed away from the center of channel and overlapped. Curlex blanket installation should continue up the side slopes three feet above the anticipated high water elevation. Flanks exposed to runoff, or sheet flow, must be protected by a check slot or trench. Curlex blankets shall be trashed at the start of the channel. Curlex blankets shall be anchored using a staggered staple pattern at end of roll overlaps and end of roll terminations.

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

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

W0315R1116



MATERIAL SPECIFICATIONS CURLEX® I

Materials:

Great Lakes Aspen (naturally seed free)
Polypropylene Netting
Stitching Thread
QuickGRASS® (green excelsior - optional)

Typical Roll Sizes:

Width:	4.0 ft (1.2 m)	8.0 ft (2.4 m)	16.0 ft (4.9 m)
Length:	112.5 ft (34.29 m)	112.5 ft (34.29 m)	112.5 ft (34.29 m)
Area:	50.0 yd ² (41.8 m ²)	100.0 yd ² (83.6 m ²)	200.0 yd ² (167.2 m ²)
Weight:	36.5 lb (16.6 kg)	73.0 lb (33.1 kg)	146.0 lb (66.2 kg)

Description:

Curlex I erosion control blanket (ECB) is a natural, stitched excelsior blanket that provides a temporary organic cover to reduce erosion, protect seeds, enhance germination, and hasten re-vegetation. Curlex I is furnished in rolls with polyethylene wrapping to protect against the elements prior to installation, and may be ordered in Master-Paks of fifteen rolls banded together to minimize material handling requirements. Curlex I is also available as QuickGRASS (green pigment). Curlex I shall be manufactured in the U.S.A.

Curlex I has a design soil loss ratio (event-based RUSLE C factor) of .018 and is typically suitable for slopes up to 2H:1V. Curlex I is rated for channel flows up to 7.0 ft/s (2.1 m/s) and 1.75 lb/ft² (84 Pa) shear stress.

Physical Properties:

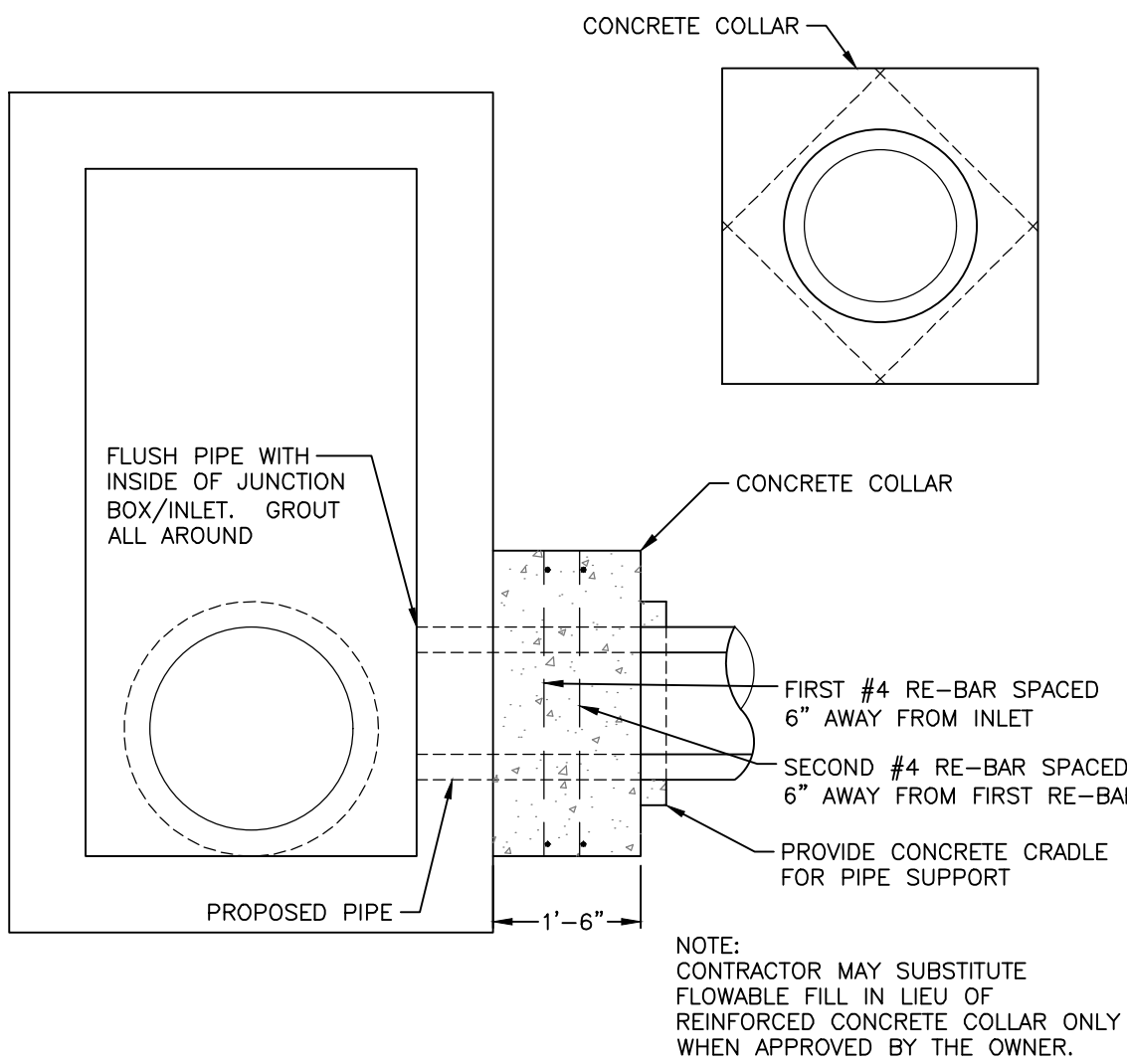
Fiber: Great Lakes Aspen (naturally seed free)
Curled, interlocking fibers with barbed edges
Fiber Size: 80% of fibers a minimum of 6 in (15.2 cm) long
0.038 in ± 0.008 in wide x 0.018 in ± 0.003 in thick
(0.97 mm ± 0.20 mm wide x 0.46 mm ± 0.08 mm thick)
Weight: 0.73 lb/yd² (0.40 kg/m²) ± 10% @ 22% Moisture
Thread Pattern: No more than 4.0 in (10.2 cm) transverse stitch spacing
Net Material: Polypropylene (green with eco-biodegradable and UV degrader additives or white with UV degrader additive)
Net Openings: 1.0 in wide x 2.0 in long (25.4 mm wide x 50.8 mm long)
Net Configuration: Top side only

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

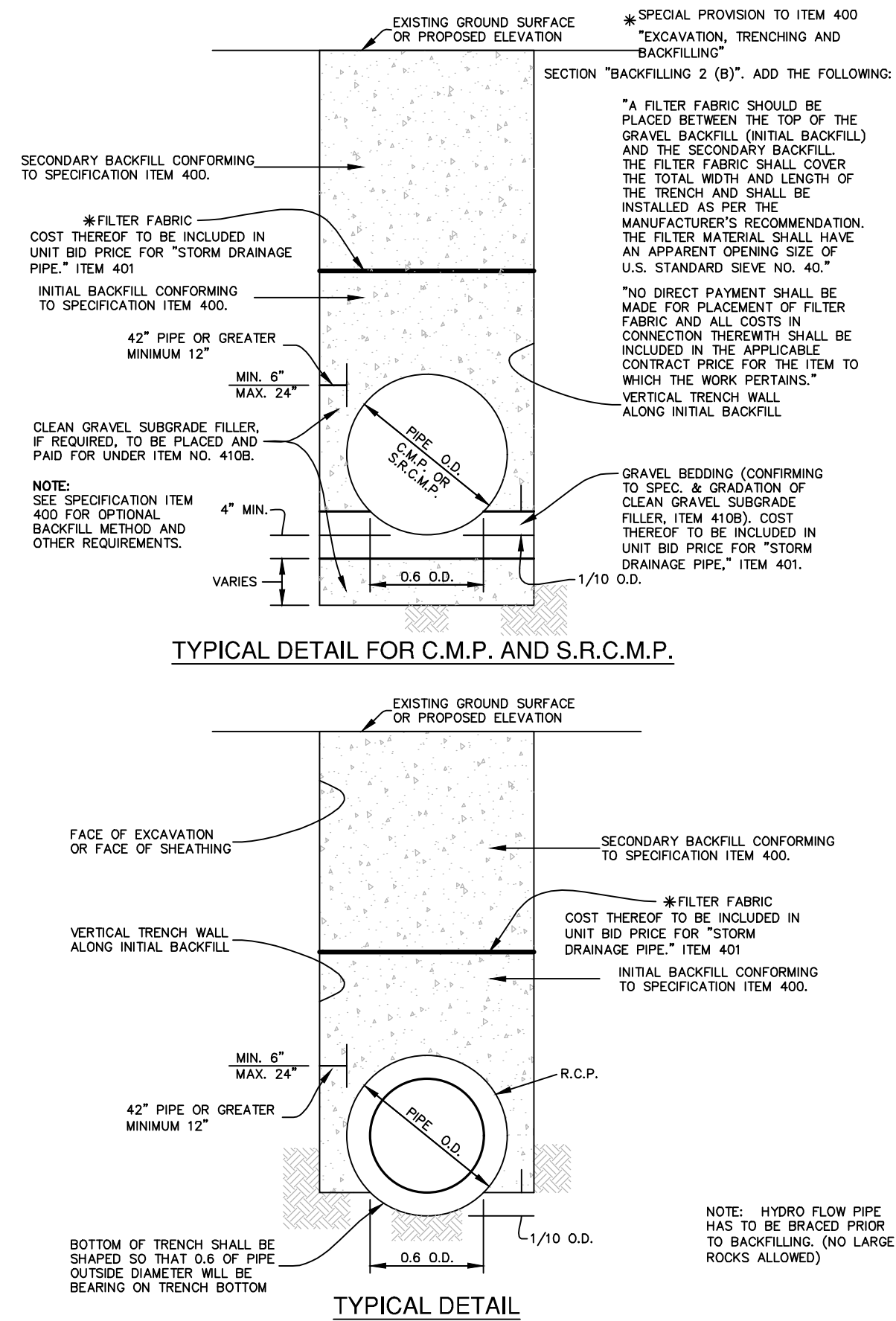


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Phone 1-800-777-SOIL | Fax 817-385-3585 | www.Curlex.com

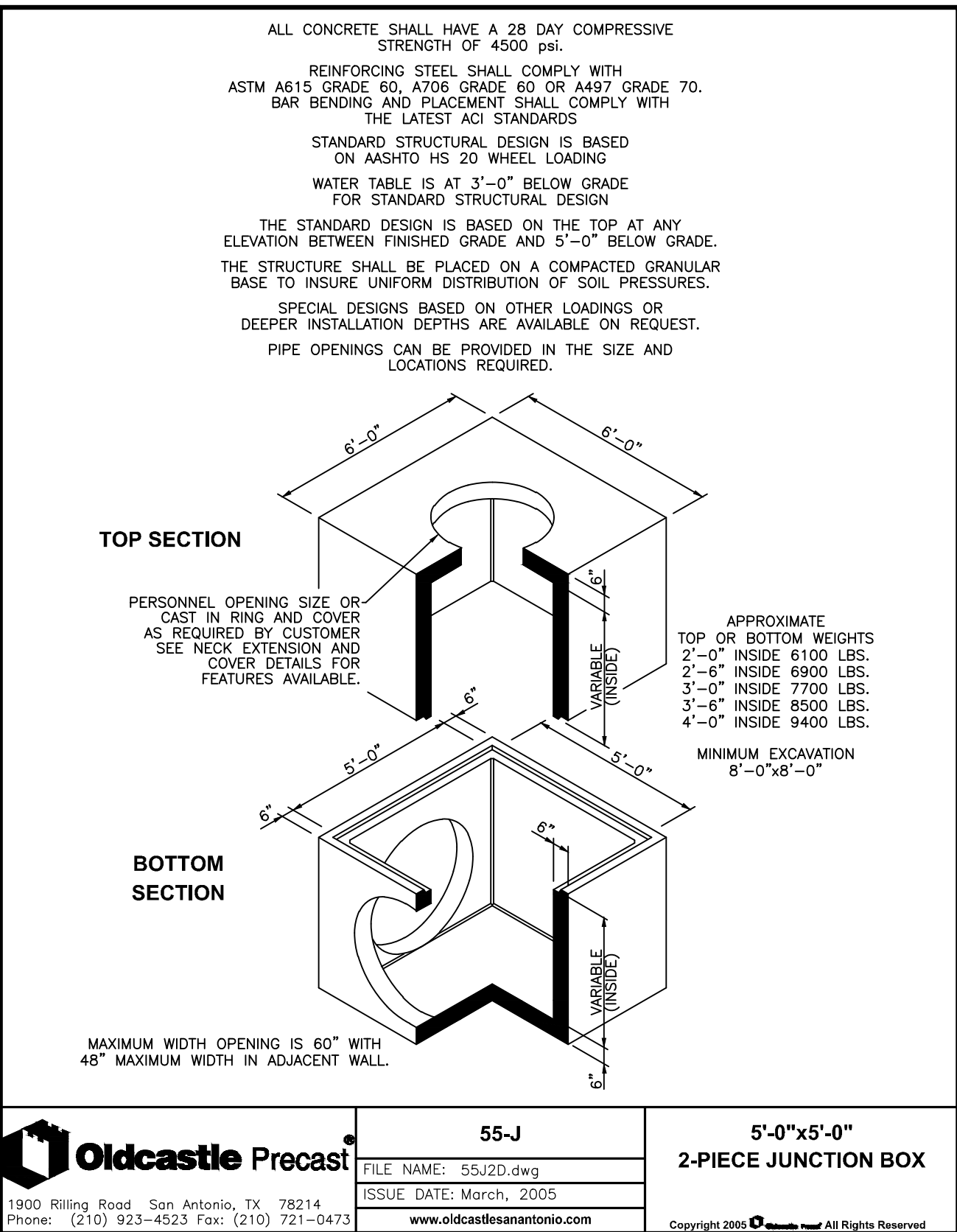
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NOT-TO-SCALE



NOT-TO-SCALE

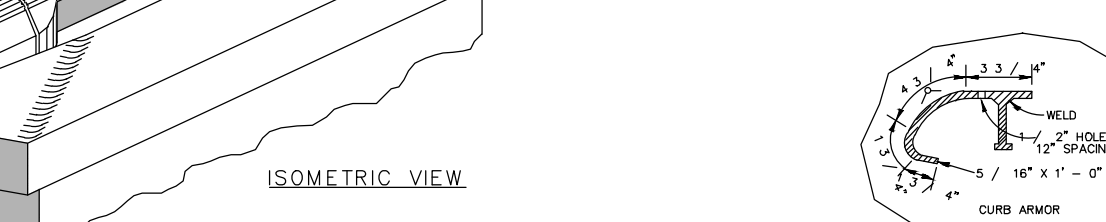
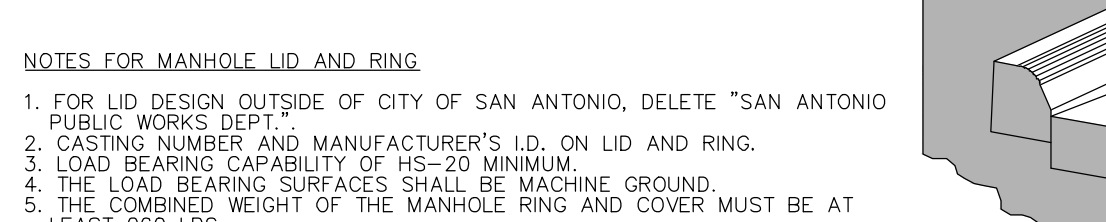
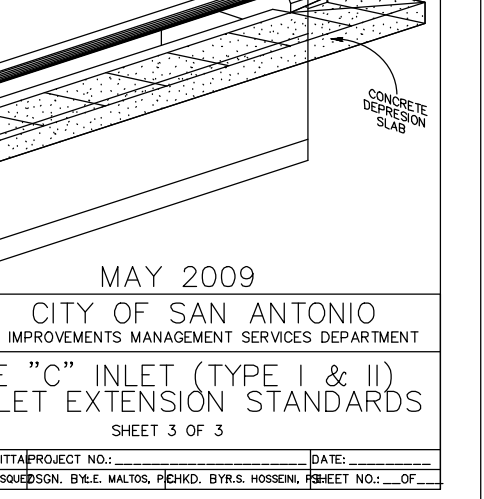
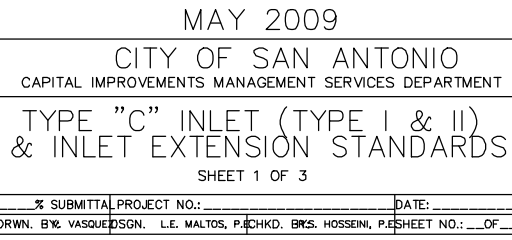


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FILE NAME: 55J2D.dwg
ISSUE DATE: March, 2005
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REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
DRAINAGE DETAILS

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C1.20

FOR PERMIT





LANDLOK® 450 conforms to the property values listed below¹ and is manufactured at a Propex facility having achieved ISO 9001:2008 certification. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/Unit Area ²	ASTM D-6566	10.0 oz/yd ²	339 g/m ²
Thickness	ASTM D-6525	0.50 in	12.7 mm
Light Penetration (% Passing) ²	ASTM D-6567	20%	20%
Color	Visual	Green or Tan	
MECHANICAL			
Tensile Strength ²	ASTM D-6818	425 x 350 lbs/ft ²	6.2 x 5.1 kN/m
Elongation ²	ASTM D-6818	50	50%
Resiliency ²	ASTM D-6574	90	90%
Flexibility ²	ASTM D-6525	0.026 in-lb	30,000 mg-cm
ENDURANCE			
UV Resistance % Retained at 1,000 hrs ²	ASTM D-4355	80%	80%
PERFORMANCE			
Velocity (Vegetated) ^{2,3}	Large Scale	18 ft/sec	5.5 m/sec
Shear Stress (Vegetated) ^{2,3}	Large Scale	10 lb/ft ²	479 Pa
Manning's n (Unvegetated) ^{2,4}	Calculated	0.025	0.025
Seedling Emergence	ASTM D-7322	40%	40%
ROLL SIZES		8 ft x 140 ft	2.45 m x 42.7 m
		16 ft x 140 ft	4.88 m x 42.7 m
		16 ft x 348.75 ft	4.88 m x 106.3 m

- NOTES:**
1. The property values listed above are effective 01/22/2020 and are subject to change without notice.
 2. Values represent testing at time of manufacture and are shown as typical values.
 3. Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact Proplex for further information.
 4. Calculated as typical values from large-scale flexible channel lining test coarings with a flow depth of 6 to 12 inches.



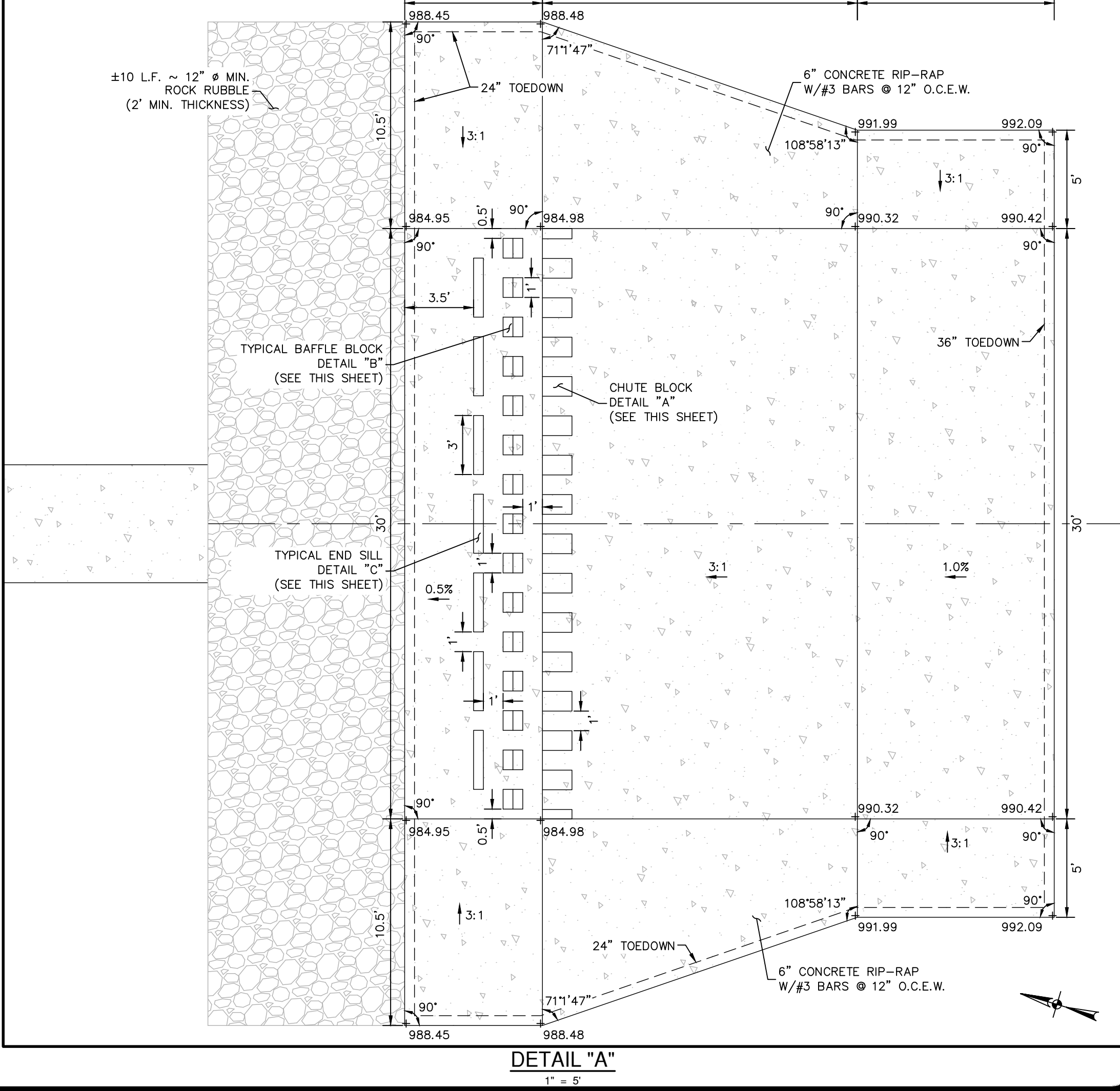
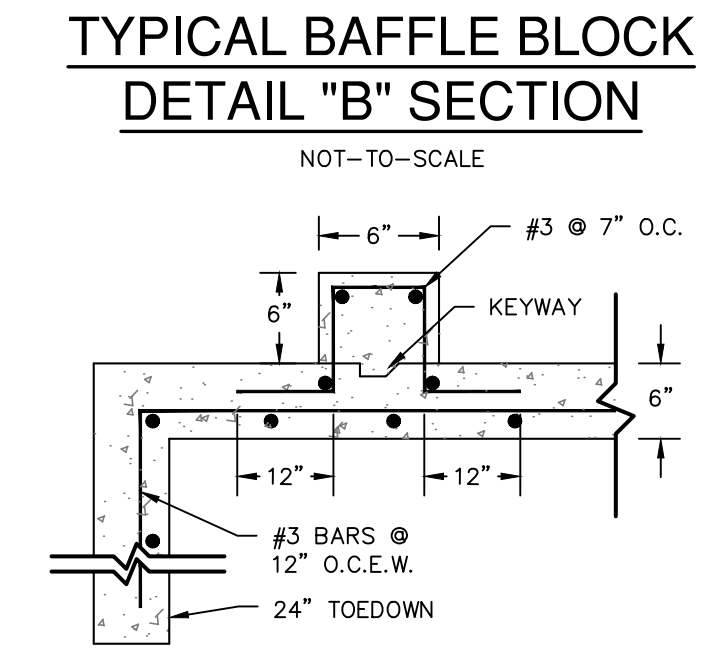
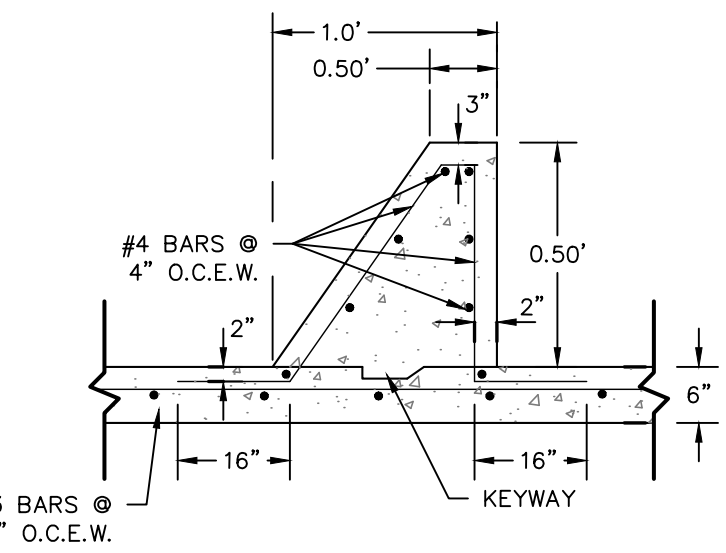
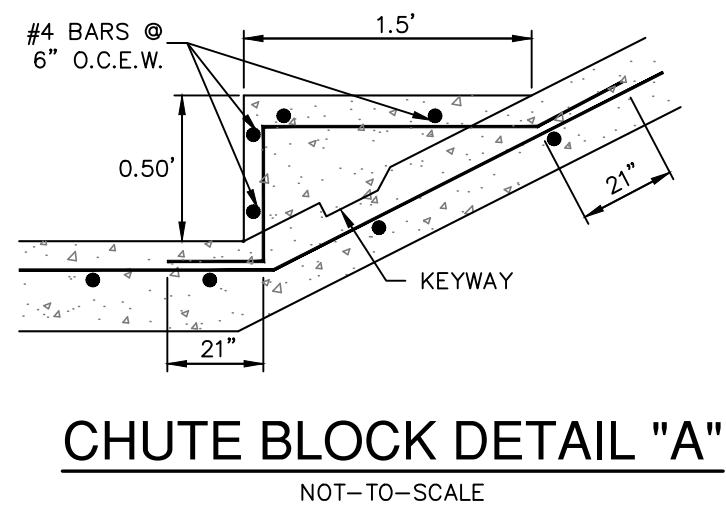
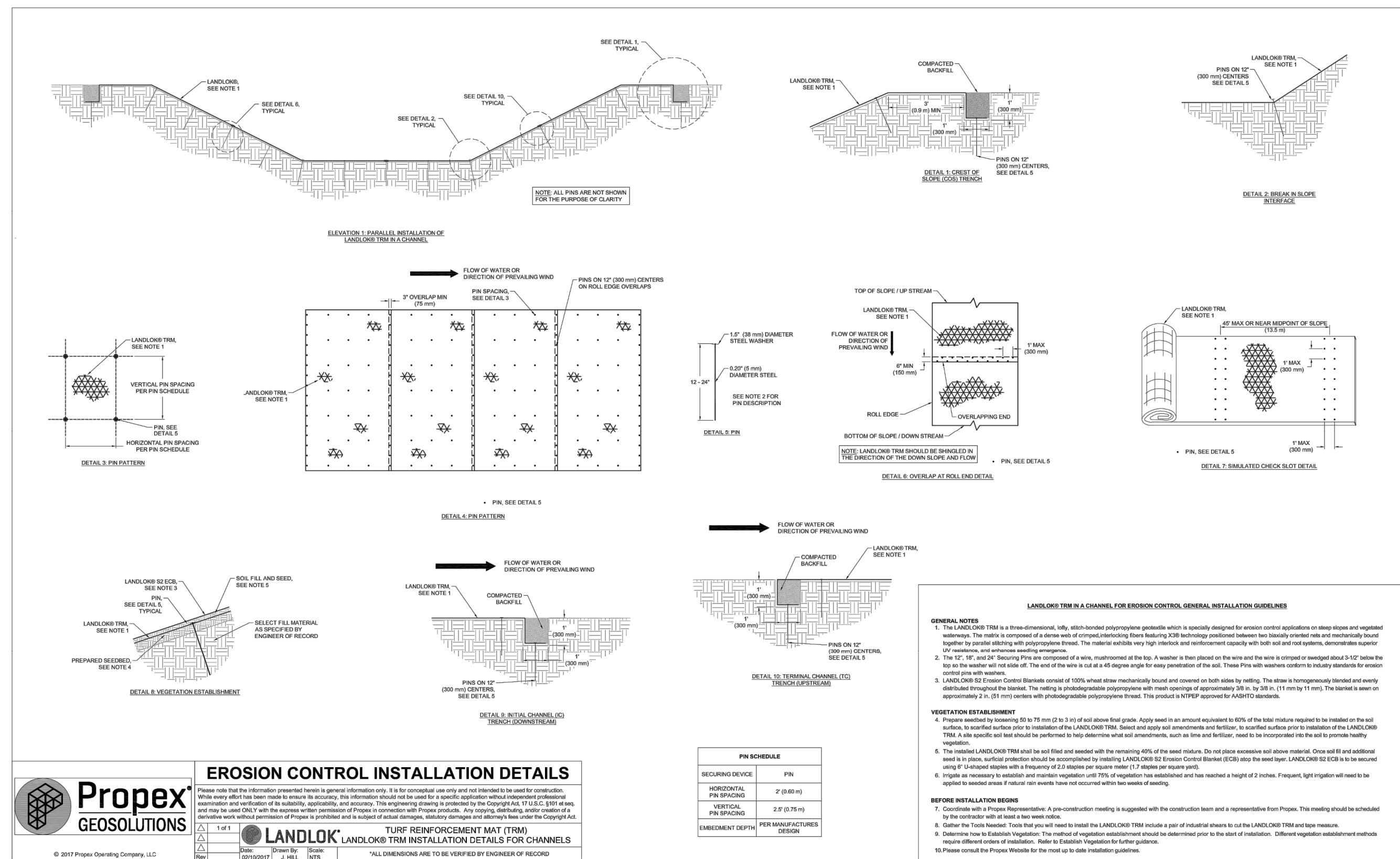
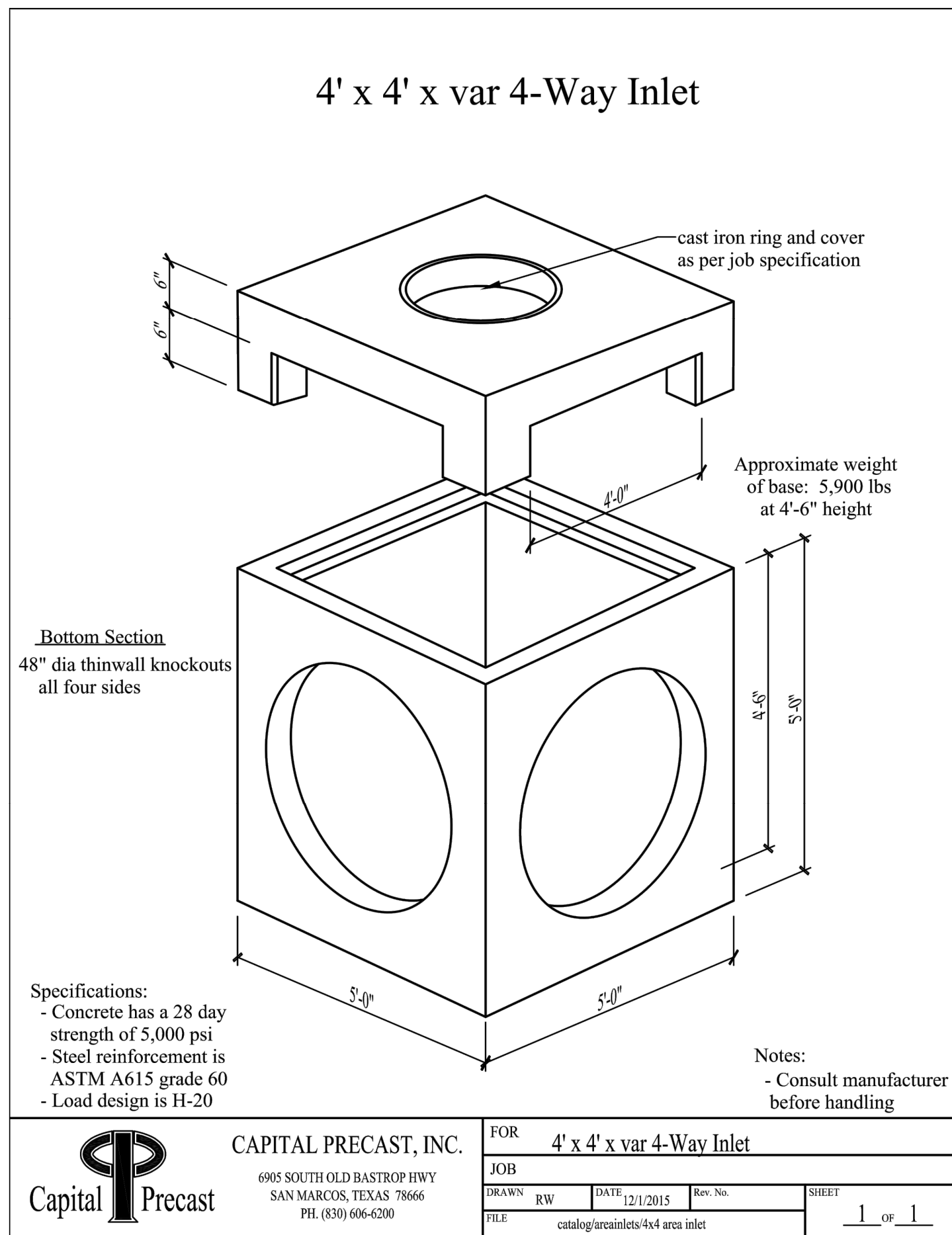
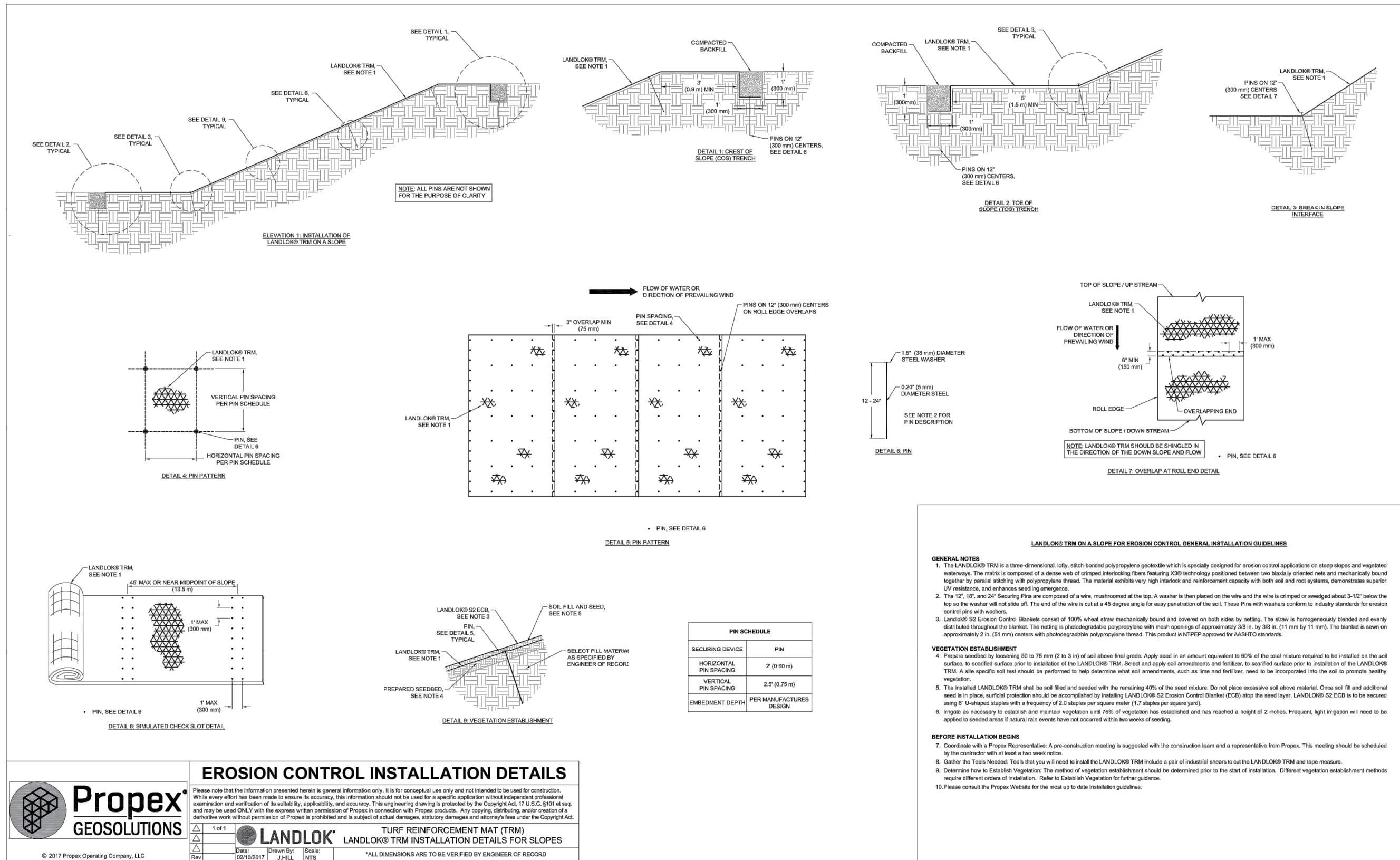
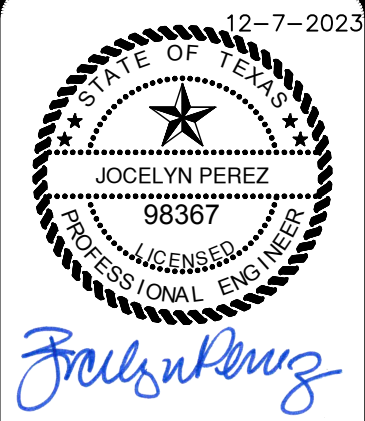
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4

SAN ANTONIO, TEXAS

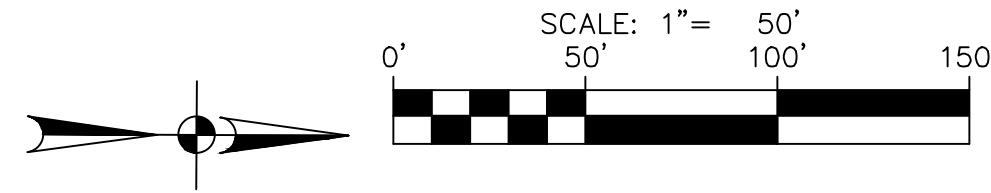
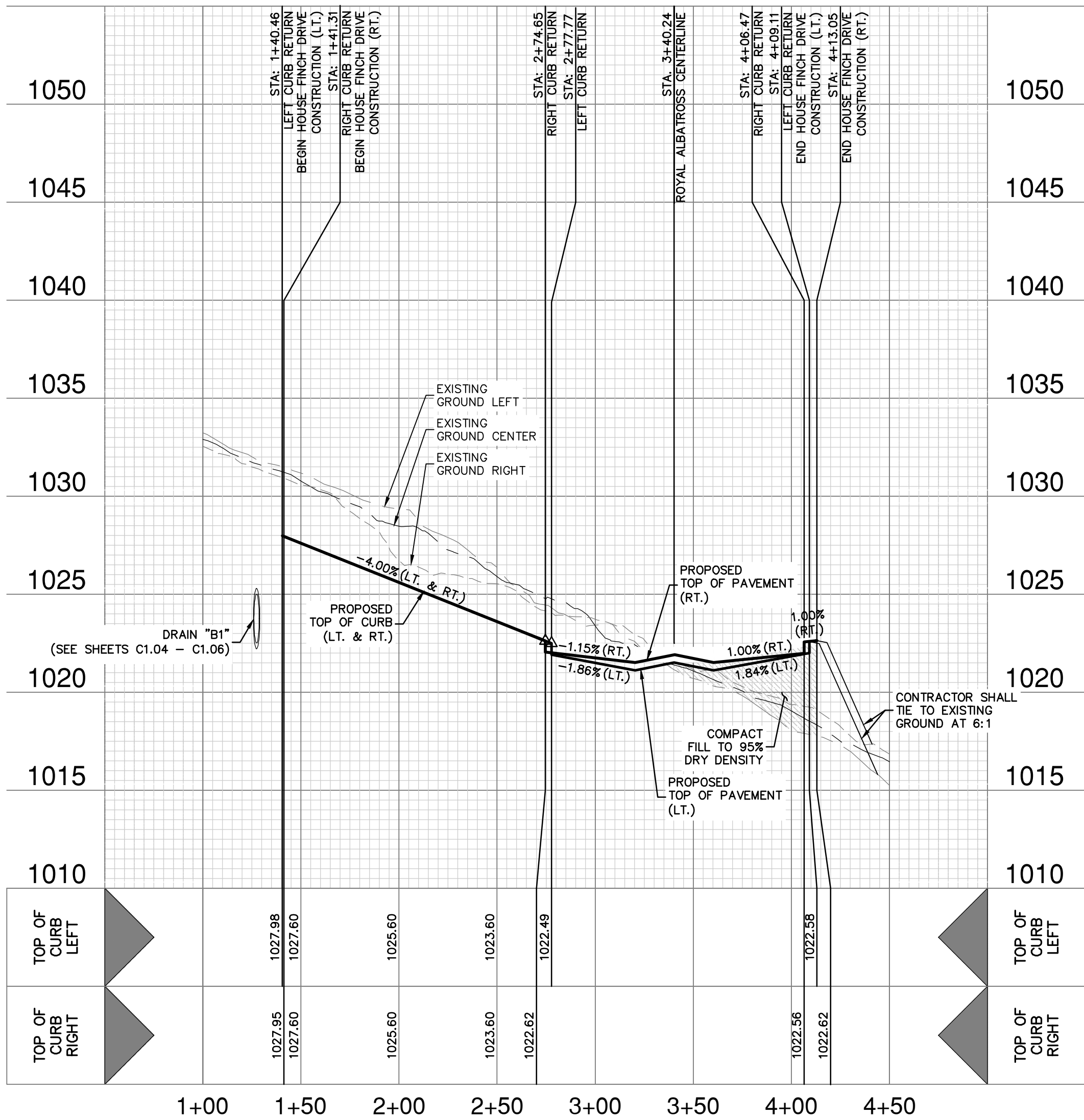
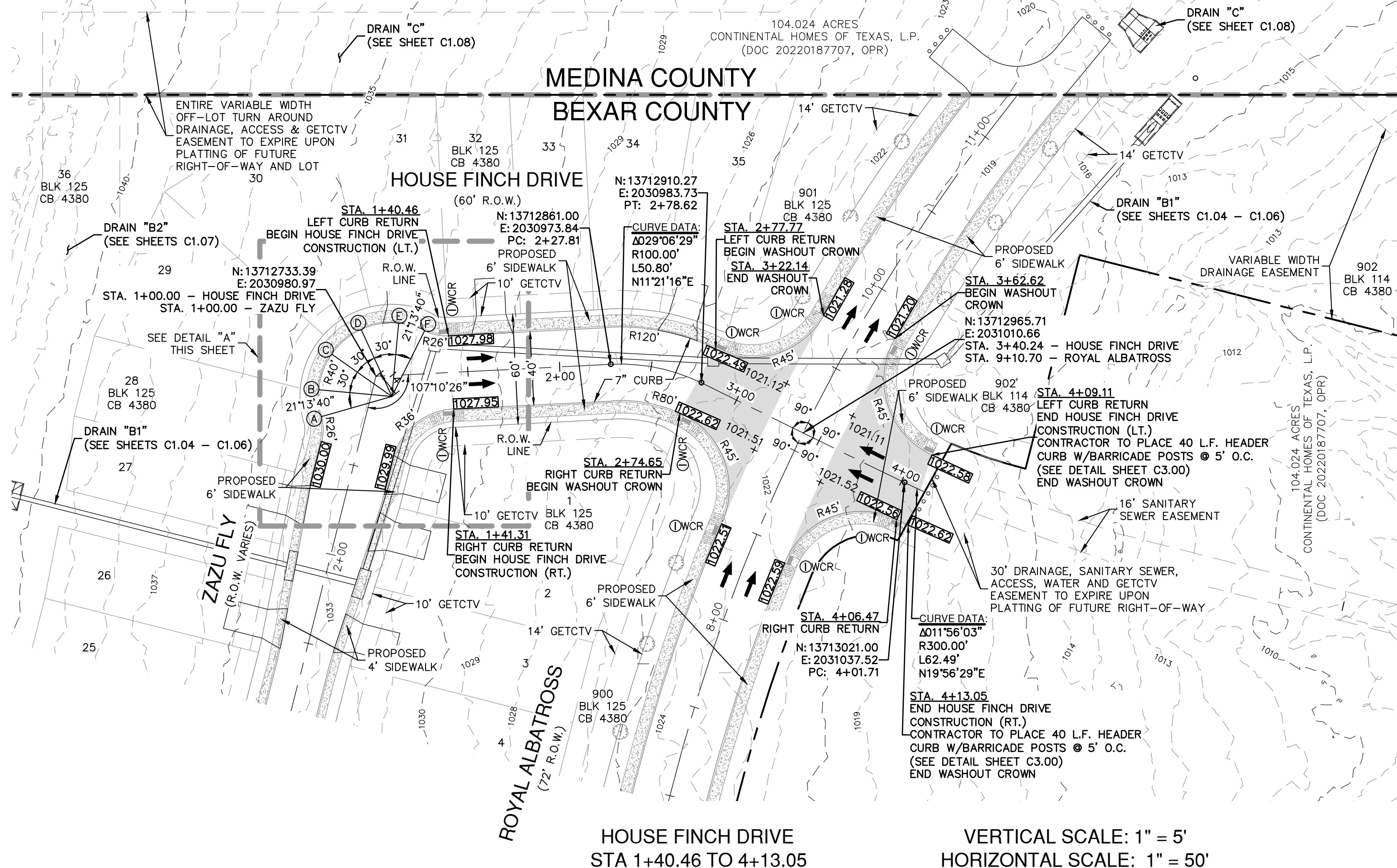
DRAINAGE DETAILS

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JF
SHEET C1.22

FOR PERMIT

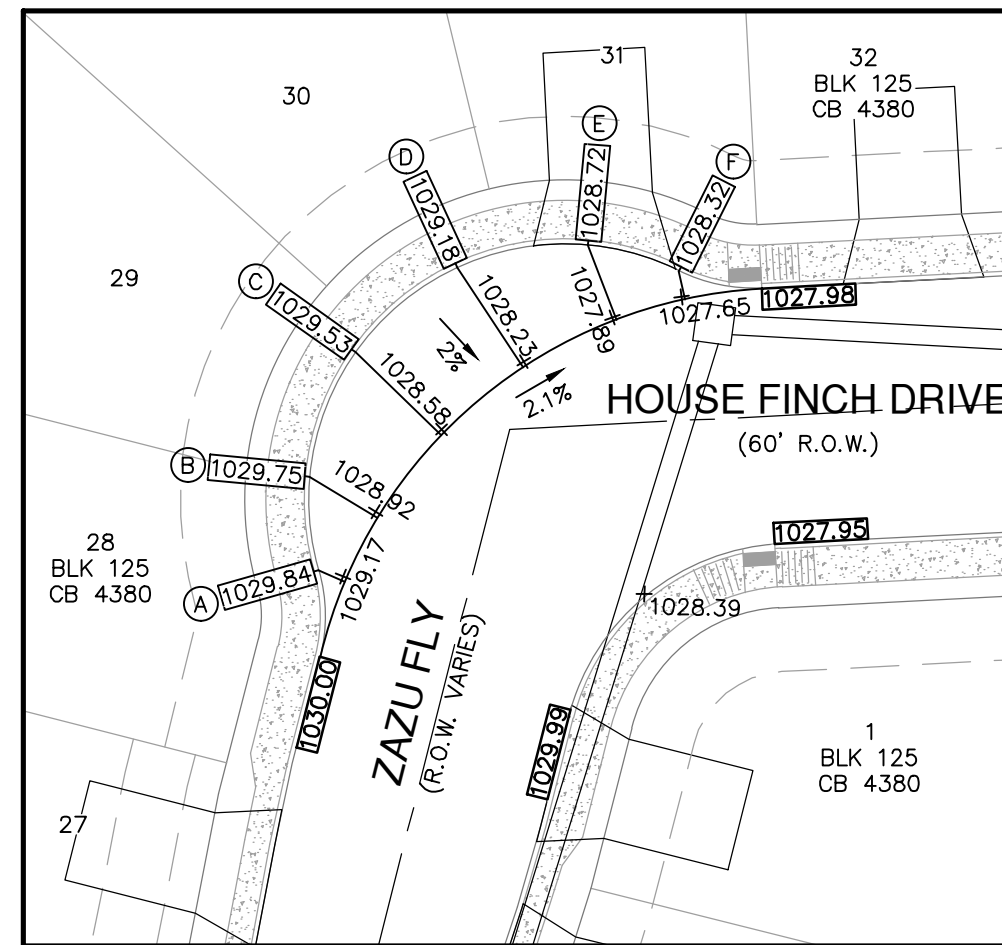
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STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	→
EXISTING CONTOUR	970
WHEELCHAIR RAMP	WCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEET C3.00 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV



DETAIL "A"
SCALE: 1" = 30'

STREET NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE 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 IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
- CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (O)(6).

PAPE-DAWSON
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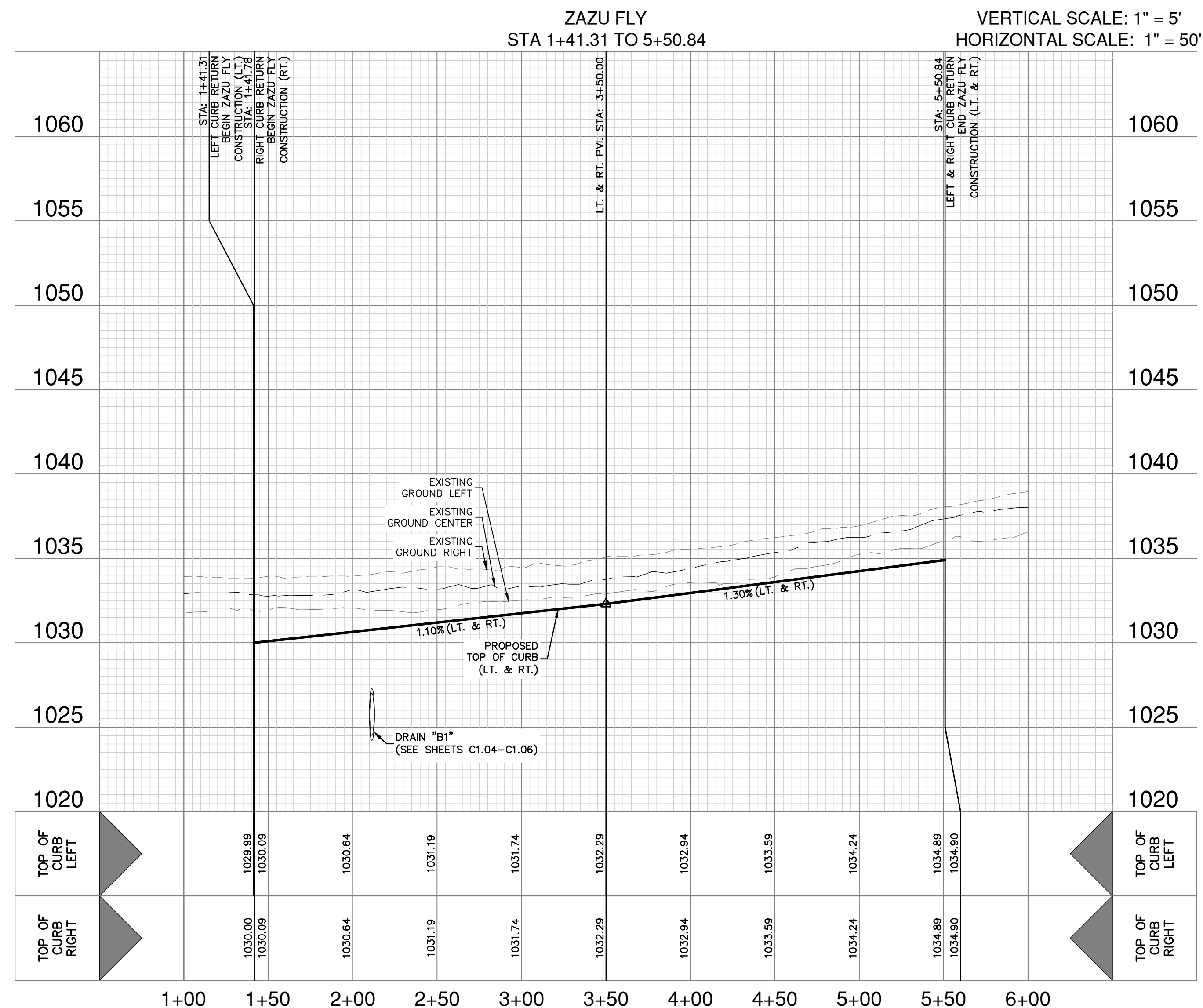
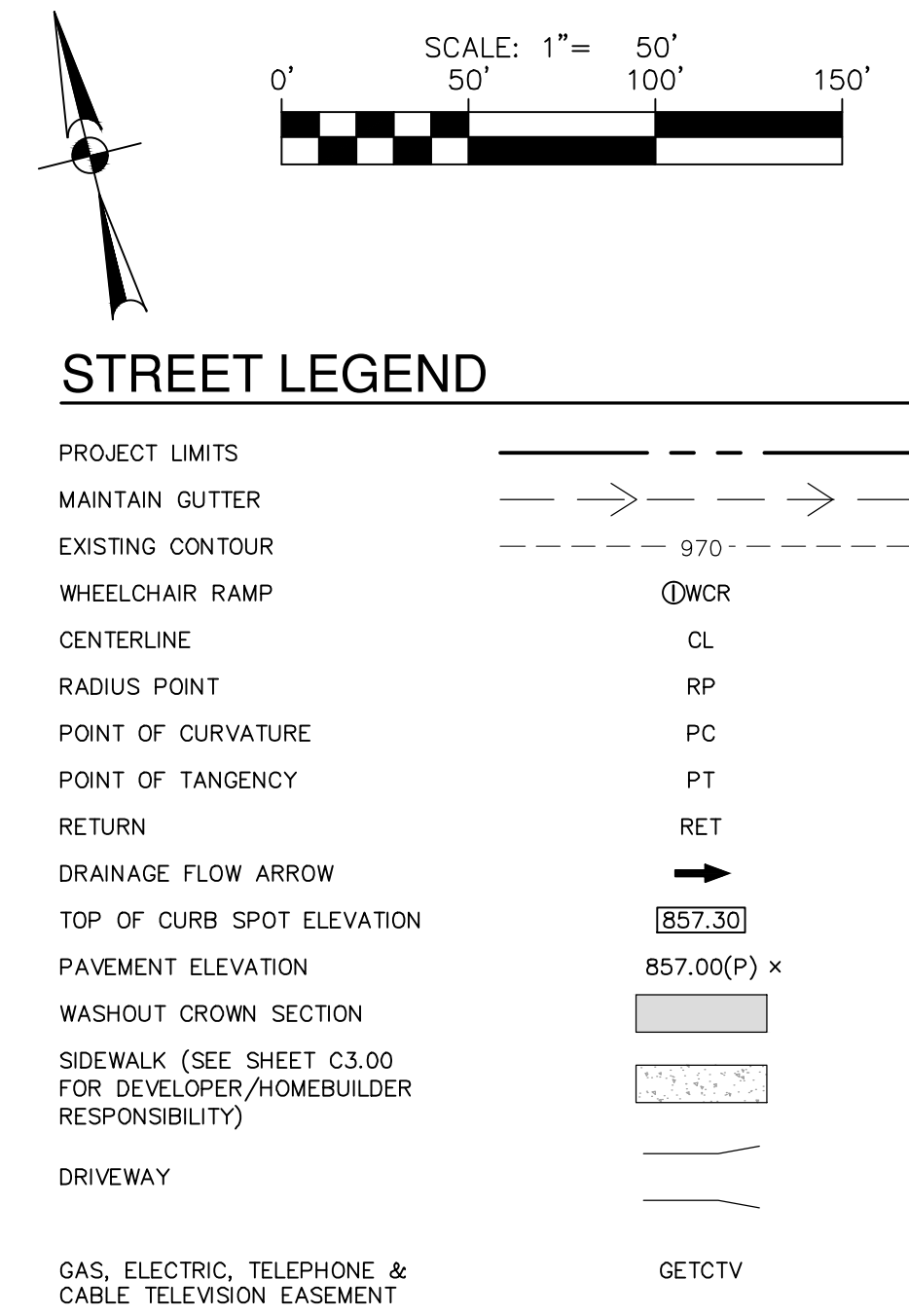
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REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

HOUSE FINCH DRIVE - PLAN & PROFILE
STA 1+40.46 TO 4+13.05

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED **HF** DRAWN **BH**
SHEET **C2.00**

FOR PERMIT



1. A BEYAR CROWD ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROAD. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MUST BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND ELEVATION, SHALL BE ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT SHALL NOT BE HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR FOR THE STREET PLAN. THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).

RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
ZAZU FLY- PLAN & PROFILE
STA 1+41.31 TO 5+50.84

LAT NO. CP202310
 DB NO. 30004-27
 DATE AUGUST 2023
 DESIGNER CL
 CHECKED HF DRAWN BH
 SHEET C2.02

FOR PERMIT

PAVEMENT SECTION DETAIL										
STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	AGGREGATE BASE	STABILIZED SUBGRADE	GEOGRID (TENSAR TRIAX TXS)	CBR	STRUCTURAL NUMBER		
ROYAL ALBATROSS	1+50.00 TO 11+45.42	2"	2"	16"	8*	NO	2.5	2(.44) = 0.88 2(.44) = 0.88 16(.14) = 2.24 8(.08) = 0.64	4.64	
HOUSE FINCH DRIVE	1+00.00 TO 4+09.71	2"	2"	16"	8*	NO	2.5	2(.44) = 0.88 2(.44) = 0.88 16(.14) = 2.24 8(.08) = 0.64	4.64	
ZAZU FLY	1+00.00 TO 2+64.11	2"	2"	16"	8*	NO	2.5	2(.44) = 0.88 2(.44) = 0.88 16(.14) = 2.24 8(.08) = 0.64	4.64	
ZAZU FLY	2+64.11 TO 6+13.10	2"	—	10"	6*	NO	2.5	2(.44) = 0.88 10(.14) = 1.40 6(.08) = 0.48	2.76	
*SEE SUBGRADE NOTES										

GENERAL NOTES:

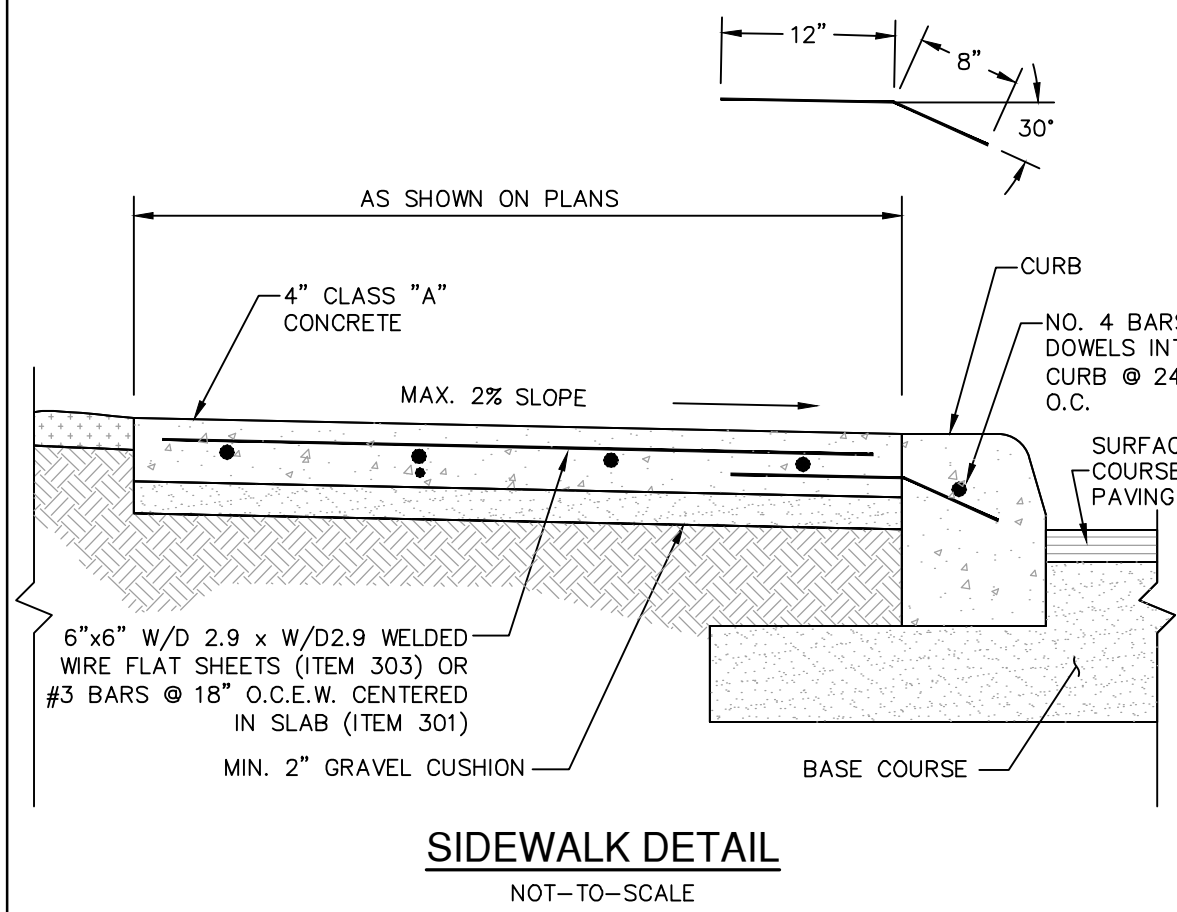
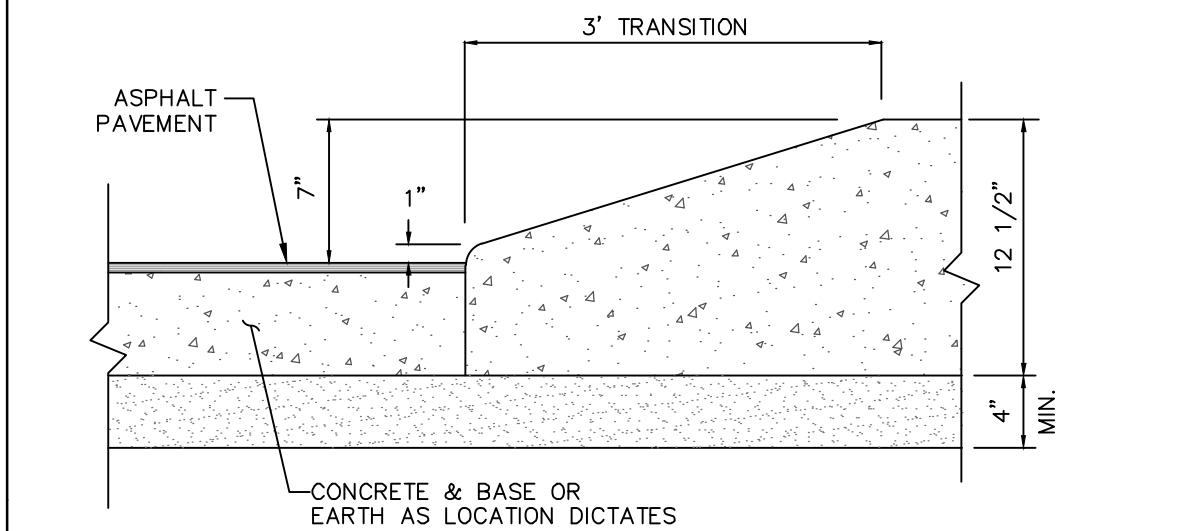
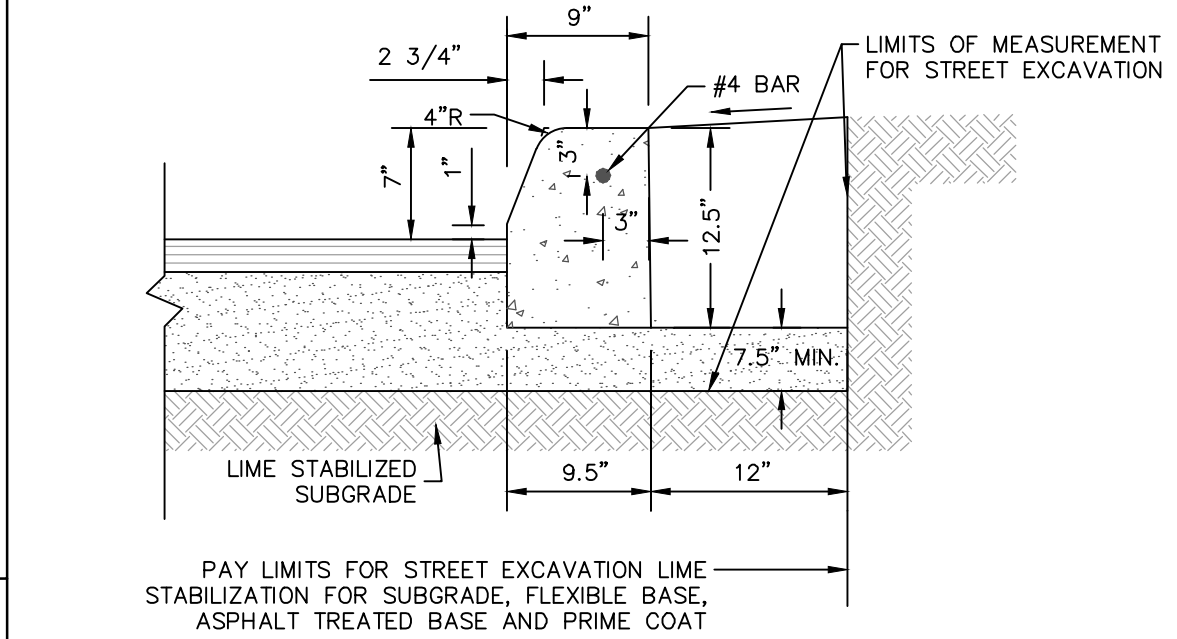
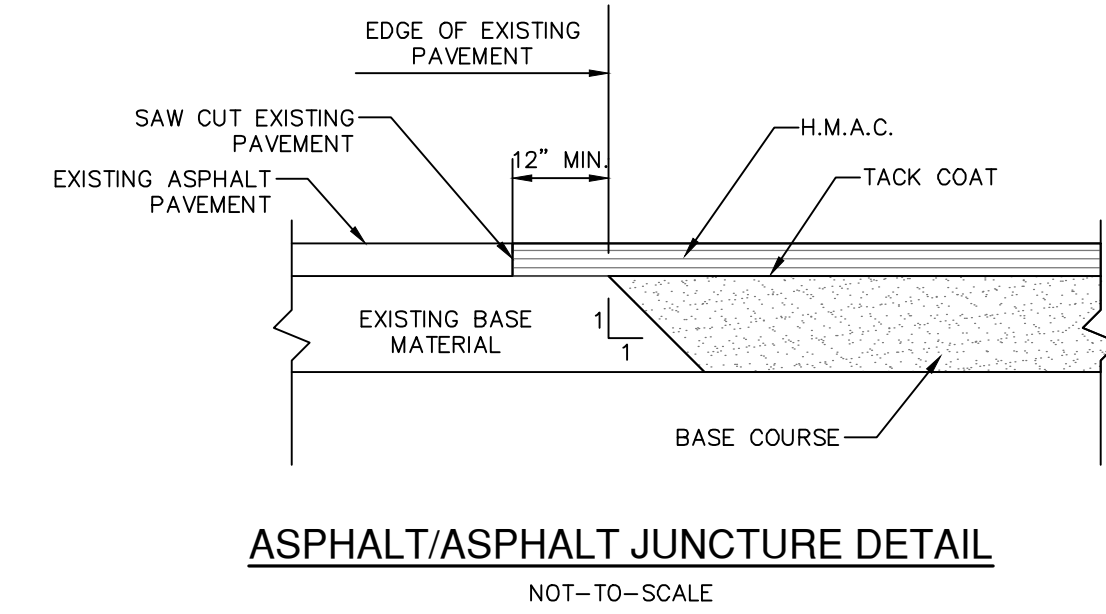
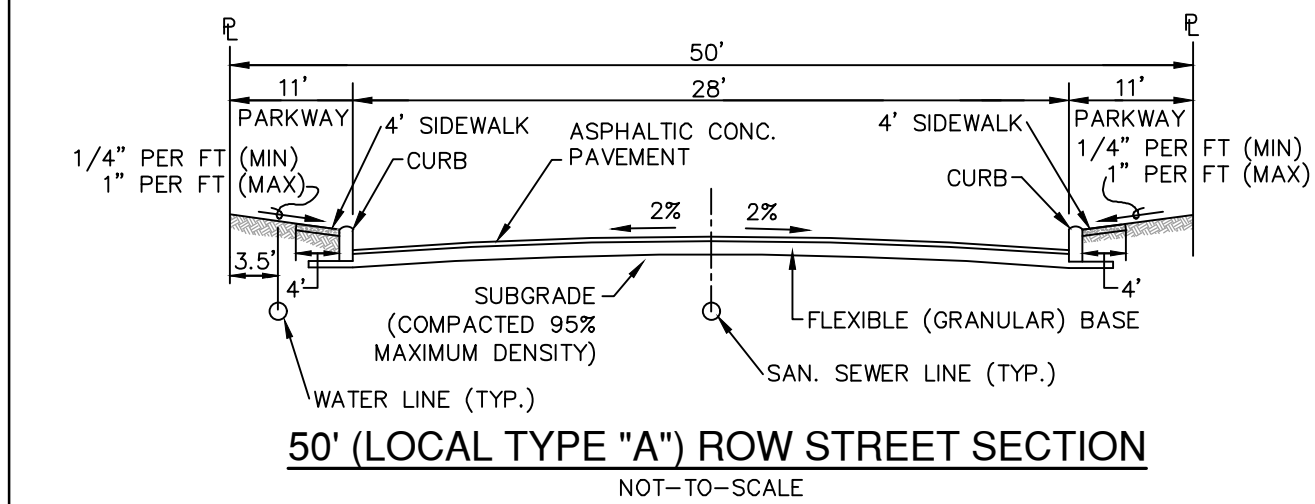
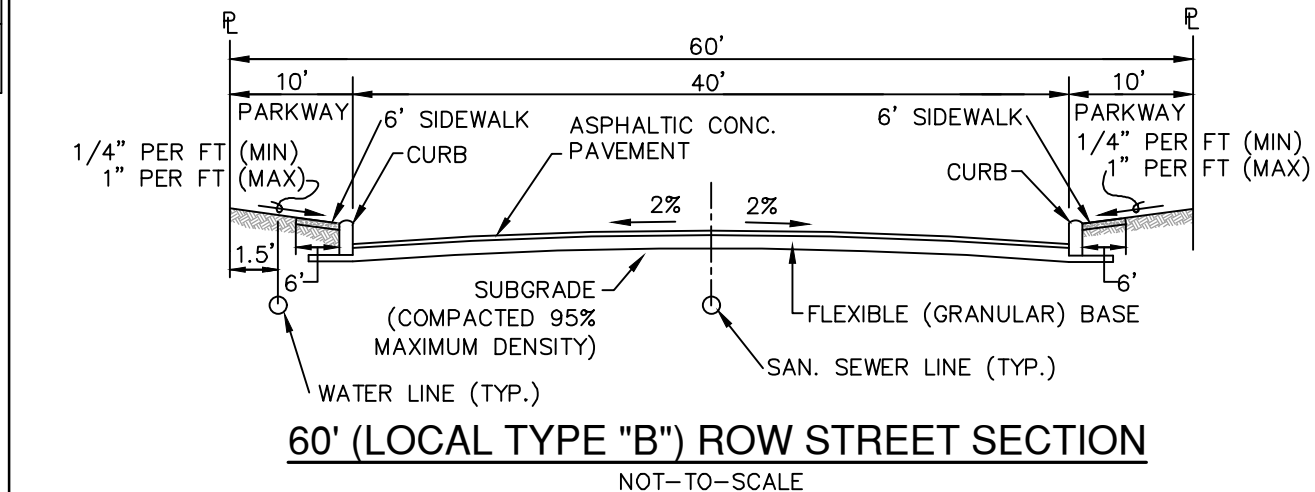
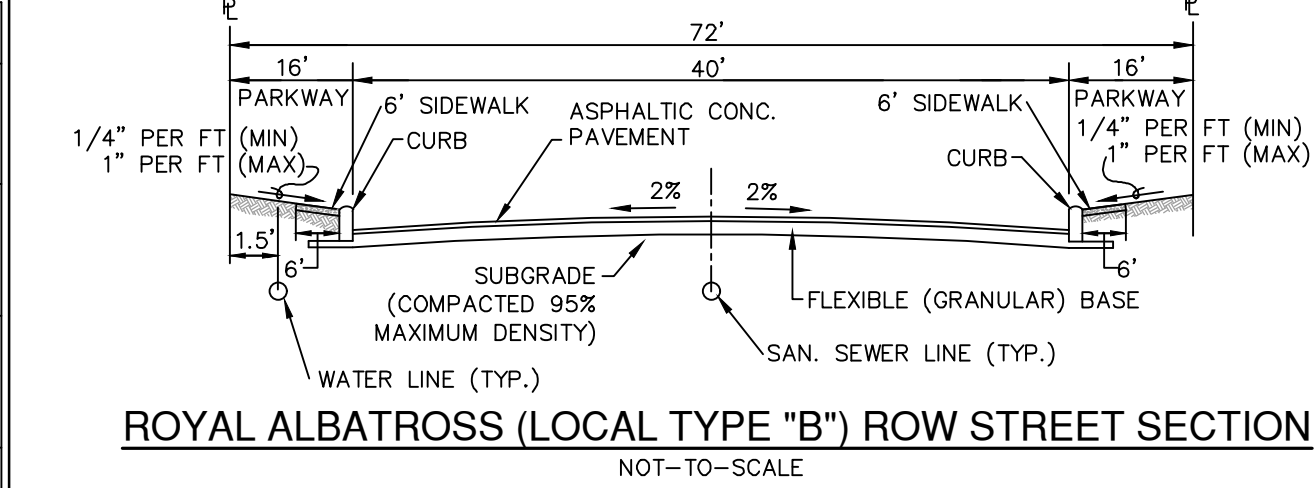
- CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT NO. S221470-R1 PREPARED BY INTEC OF SAN ANTONIO, LP DATED JULY 13, 2023.
- CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
- GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE. THE FINAL PAVEMENT SUBGRADE SHOULD BE VERIFIED AND DELINEATED AS NEEDED FOR DIFFERENT SUBGRADE CONDITIONS BY INTEC.
- THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
- IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
- SIGNIFICANT PAVEMENT DISTRESS HAS BEEN OBSERVED DURING CONSTRUCTION PHASE WITH THE COMBINATION OF CONSTRUCTION TRAFFIC AND IRRIGATION WATER/RAIN WATER GETTING UNDERNEATH THE ASPHALT.
- IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT/CONCRETE OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRAITON UNDERNEATH THE ASPHALT PAVEMENT SURFACE SHOULD BE REDUCED. ONE OF THE FOLLOWING METHODS SHOULD BE USED:
 - DEEPER CURBS, SUCH AS CURBS EXTENDING A MINIMUM OF 3 INCHES INTO SUBGRADE.
 - COMPACTED CLAYS BACKFILLED AGAINST THE CURBS.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.

STREET SUBGRADE NOTES:

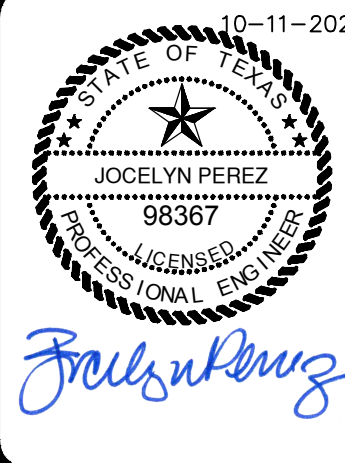
- CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME
- FILL USED TO RAISE THE GRADE:
 - APPROVED FILL MATERIAL SHOULD HAVE A MINIMUM CBR VALUE OF 2.5 AND A MAXIMUM PLASTICITY INDEX OF 45 (ON SITE MATERIAL). LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL.
 - THE FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER, FREE OF DELETERIOUS MATERIAL, AND THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN SIZE. THE MATERIAL SHOULD BE PLACED AND COMPACTED AS PER APPLICABLE CITY/COUNTY GUIDELINES.
- BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE TEST PITS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE EITHER LESS THAN OR EQUAL TO 20 OR GREATER THAN 20.
- IF THE SUBGRADE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20, AS PER CITY OF SAN ANTONIO OR BEXAR COUNTY REQUIREMENTS, SUBGRADE STABILIZATION IS NOT NEEDED.
- IF THE FINAL STREET SUBGRADE PLASTICITY INDEX VALUES ARE GREATER THAN 20, THEN THE SUBGRADE SHOULD BE STABILIZED.
- SUBGRADE SHOULD BE STABILIZED USING LIME OR CEMENT.
- LIME APPLICATION RATES:
 - STABILIZED TO A DEPTH OF 6 OR 8 INCHES USING LIME 7 PERCENT LIME CONTENT.
 - THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGHER THAN 3000 PPM, AN ALTERNATE PROCEDURE WILL BE NEEDED.
 - LIME APPLICATION RATE OF 33 LBS PER SQ YARD FOR 6-INCH DEPTH OF STABILIZATION IS RECOMMENDED.
 - LIME APPLICATION RATE OF 44 LBS PER SQ YARD FOR 8-INCH DEPTH OF STABILIZATION IS RECOMMENDED.
 - CEMENT MAY BE USED IN LIEU OF LIME. CEMENT APPLICATION RATE SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION.

LIME NOTES:

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



DATE	
NO.	
REVISION	



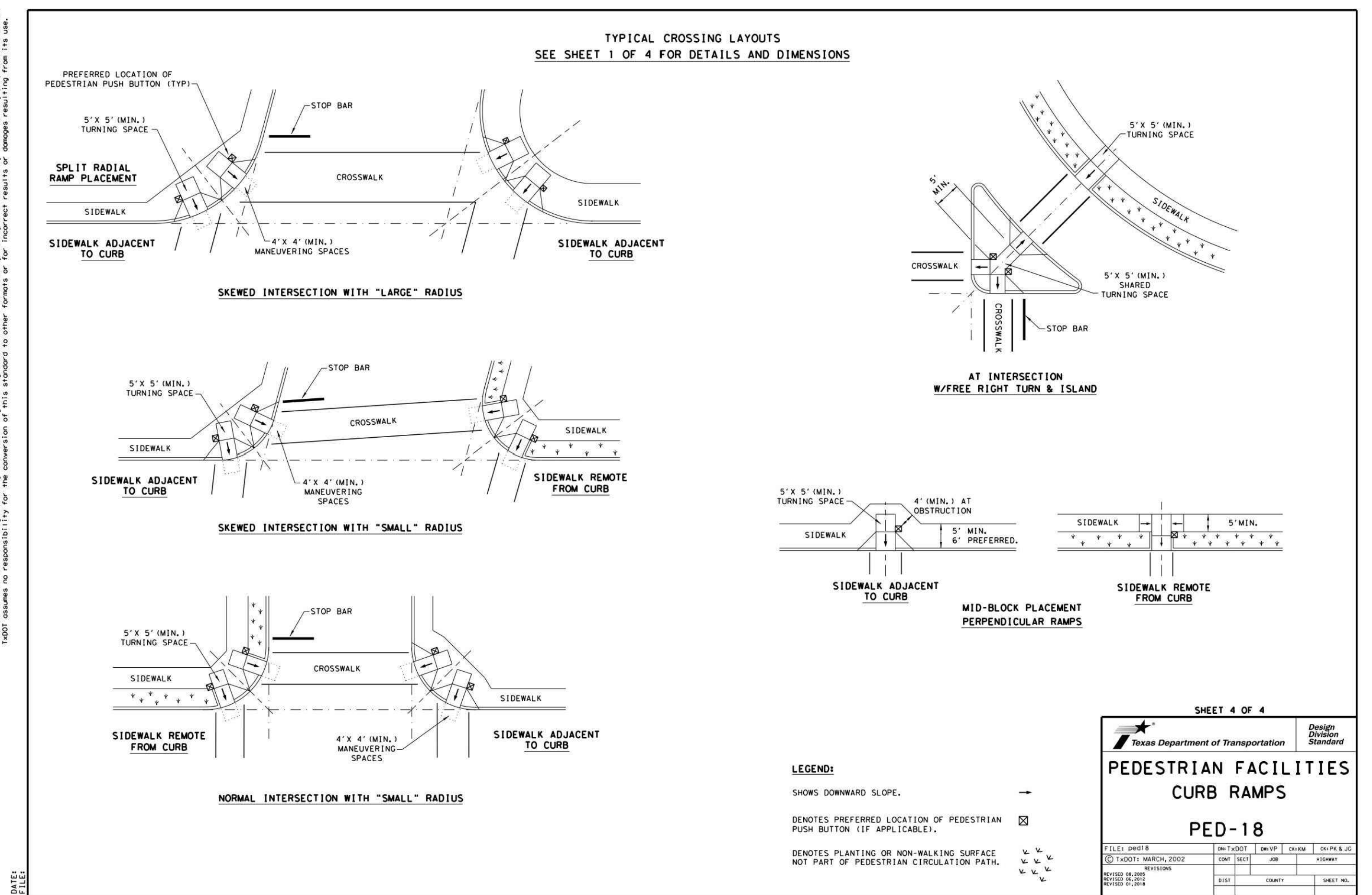
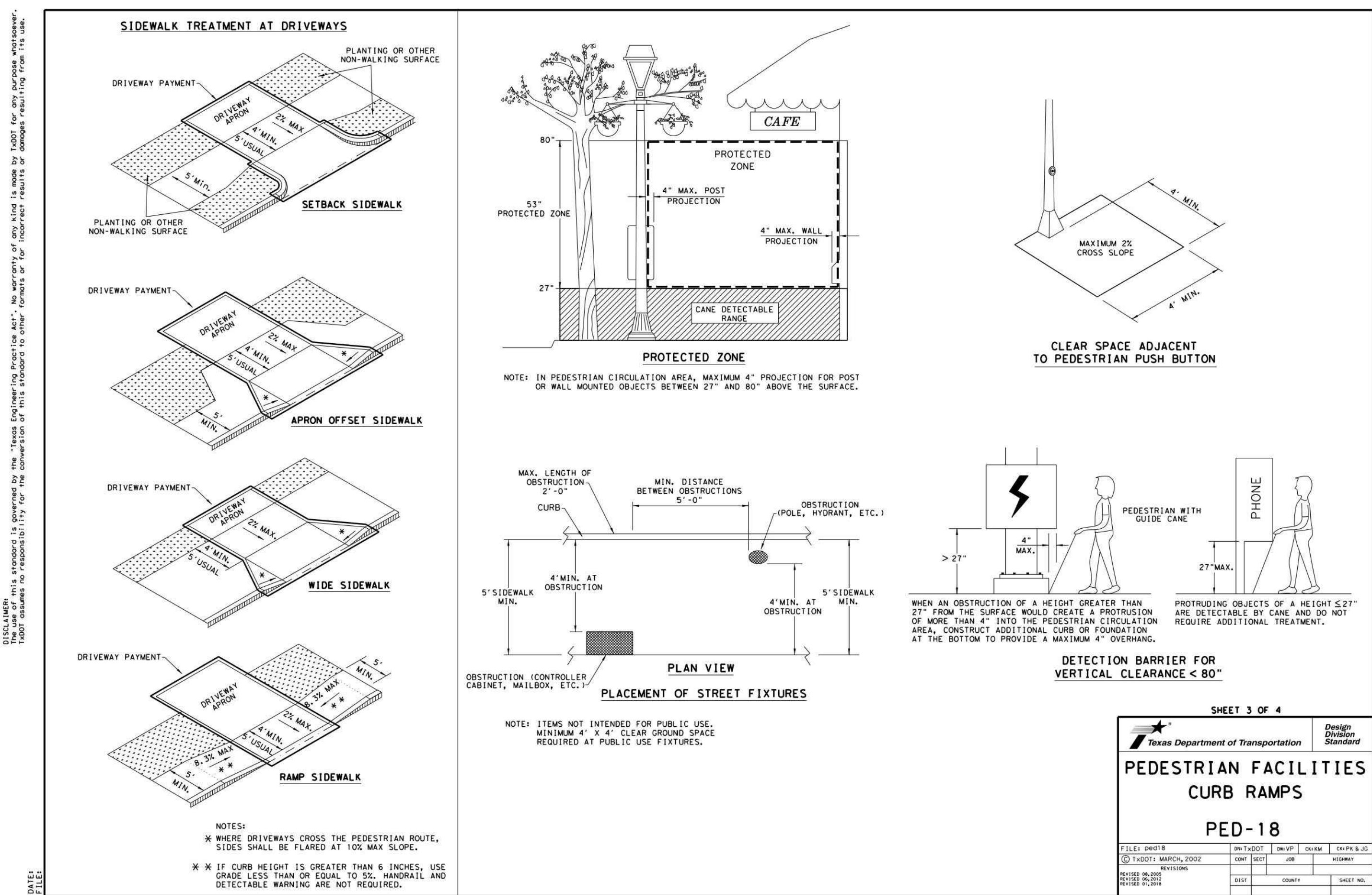
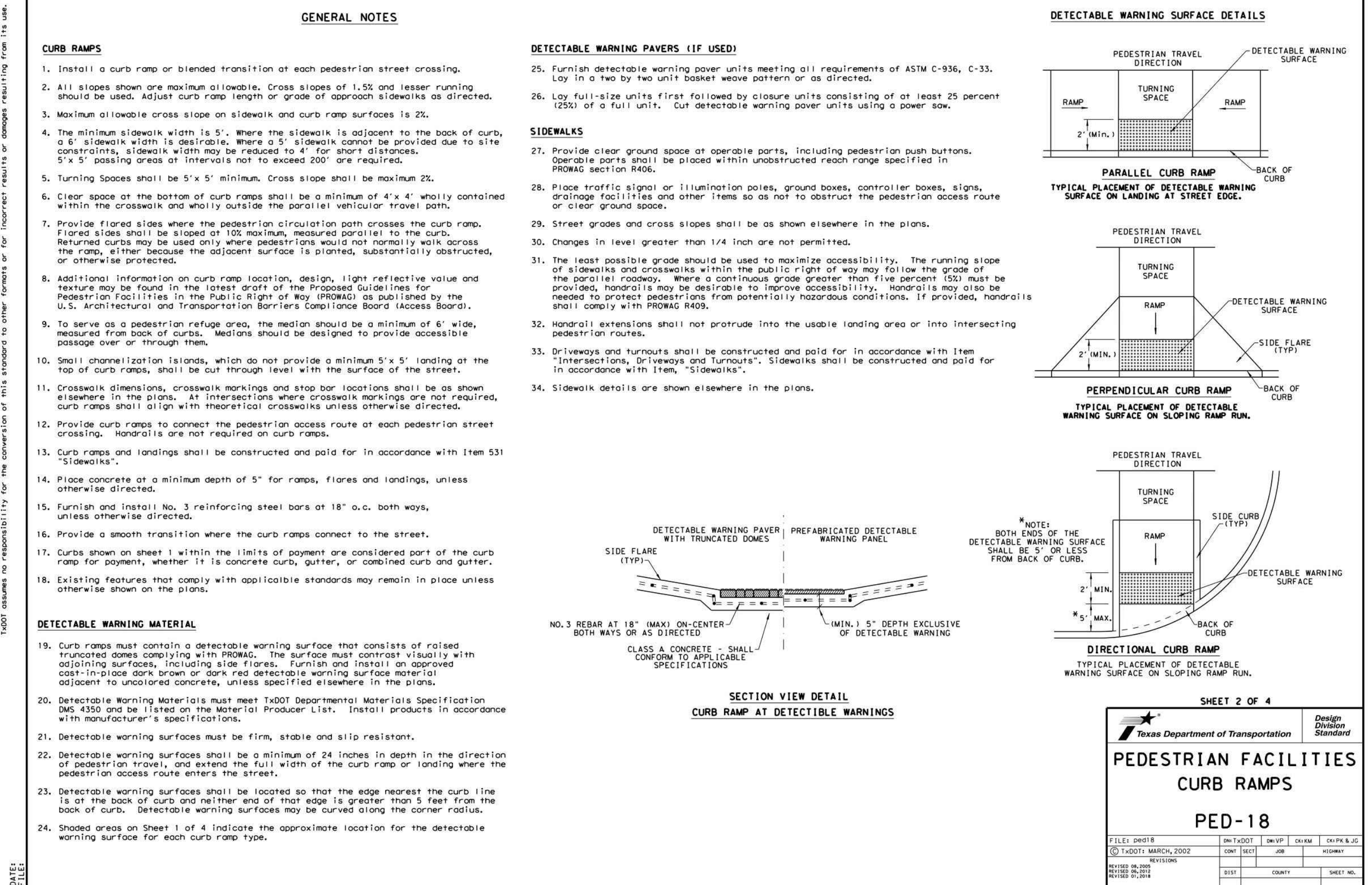
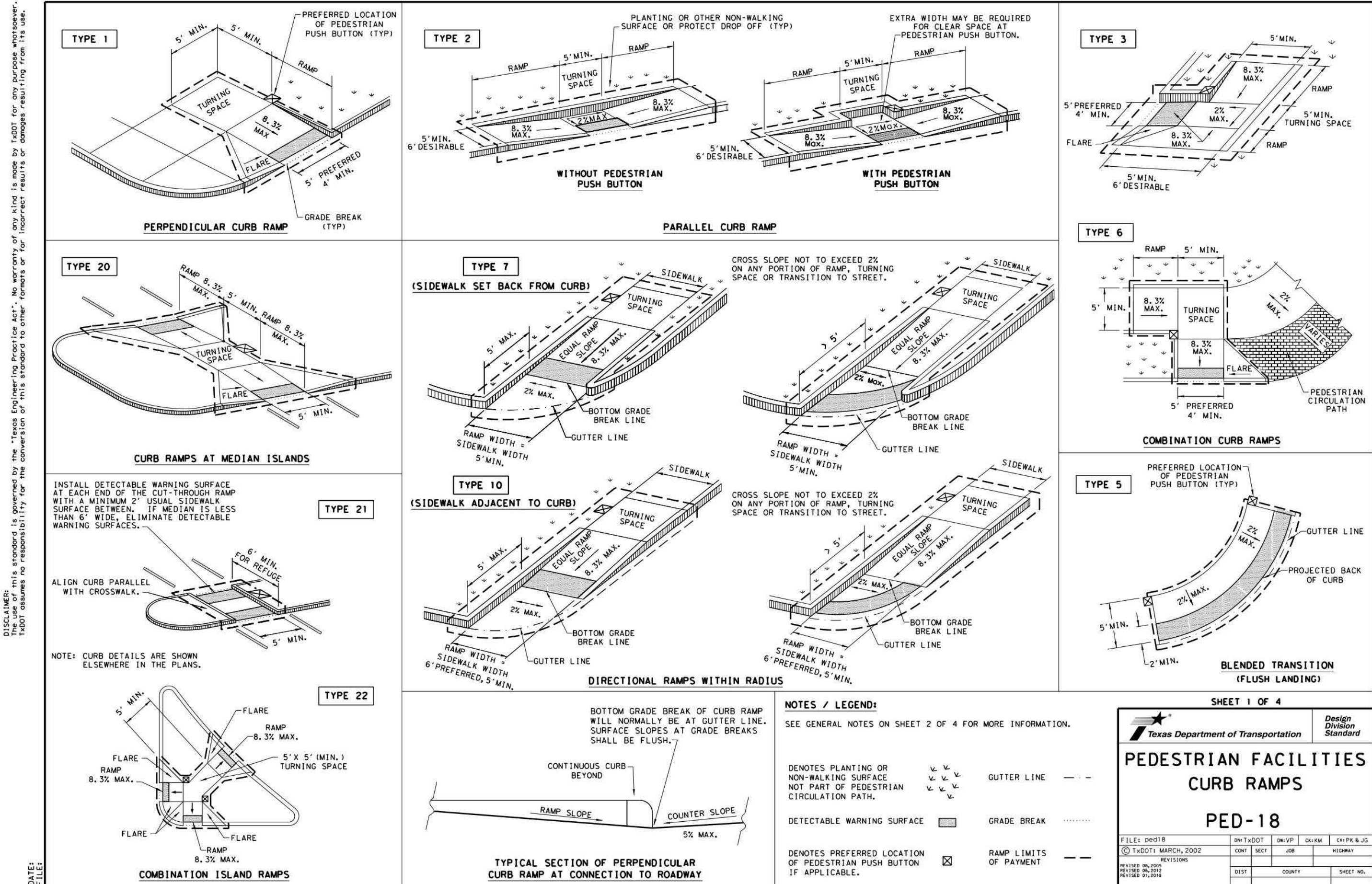
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REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

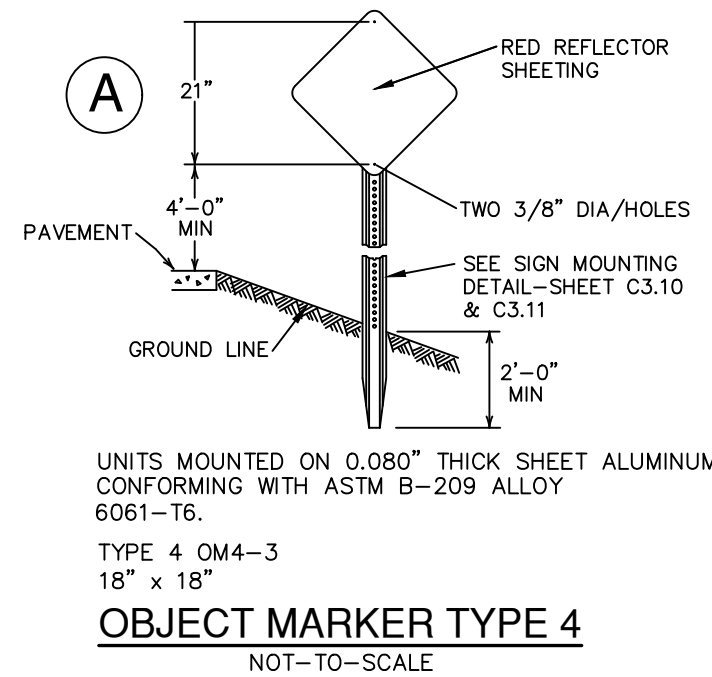
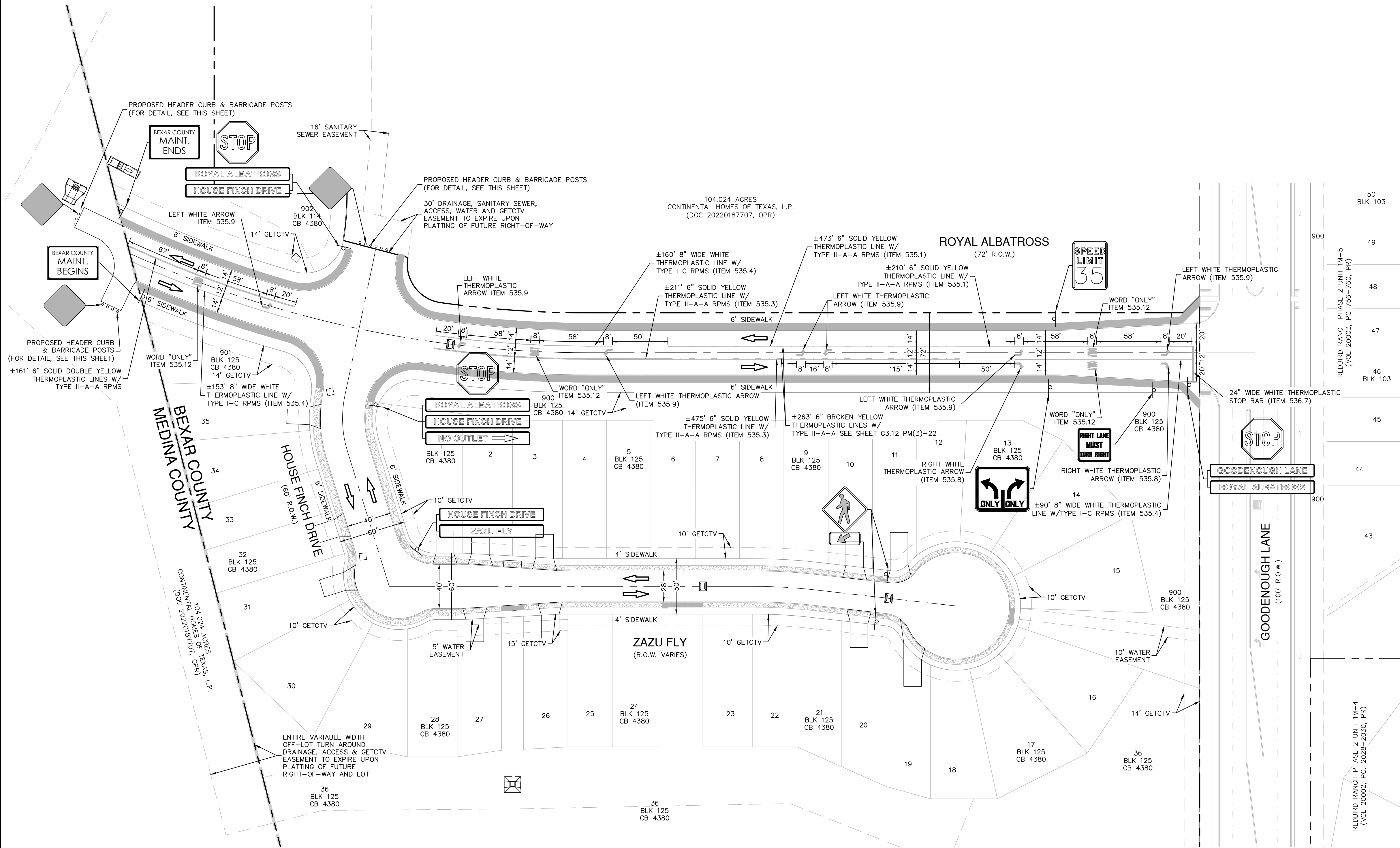
TYPICAL STREET DETAILS

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C2.10

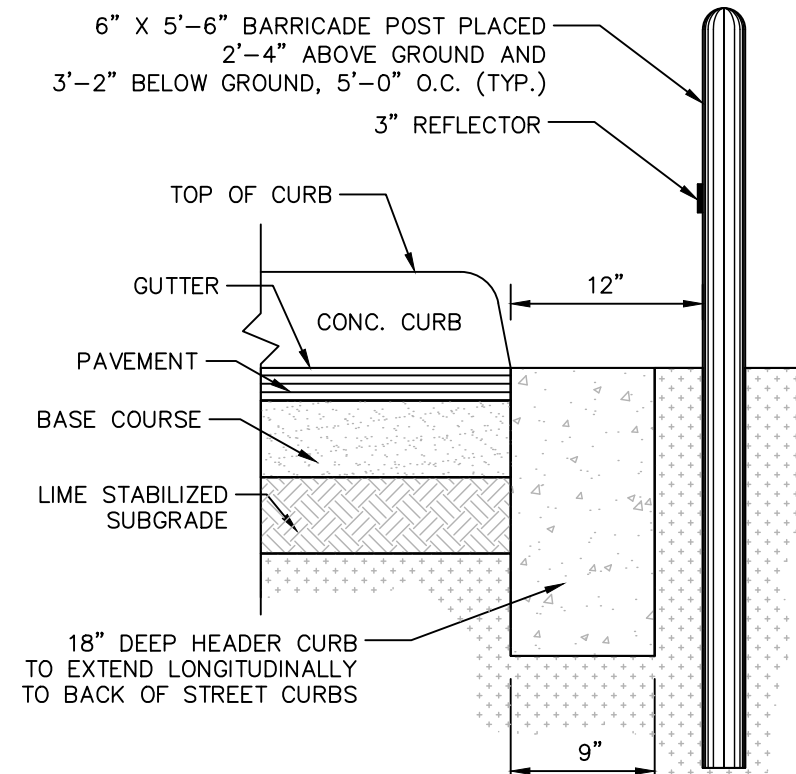


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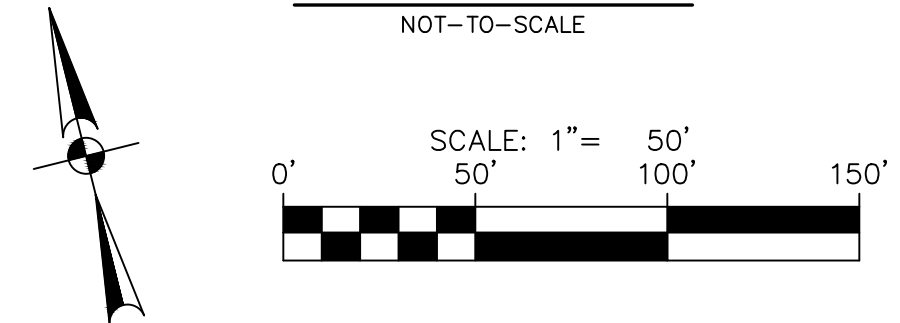
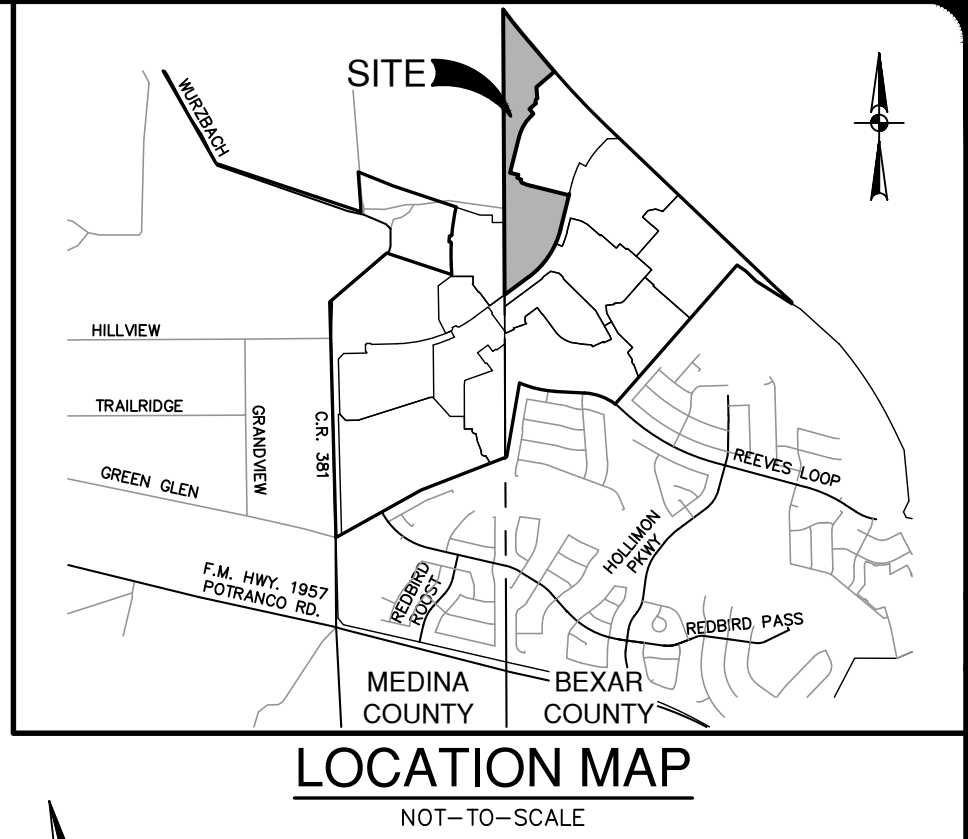
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OBJECT MARKER TYPE 4
NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE



SYMBOL	ITEM NUMBER
	UNIT BOUNDARY
	CURB INLET
	PROPOSED DRIVEWAY
	TRAFFIC FLOW ARROW
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)
	SIDEWALK (SITEWORK CONTRACTOR/DEVELOPER RESPONSIBILITY)
	STREET SIGN
	R1-1 30"x30"
	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)
	OM4-3 (531.56) END OF ROAD MARKER
	R2-1 24"x30"
	W14-2A
	W11-2 30"x30"
	W16-7P 24"x12"
	R3-30AA 36"x30"
	R3-7R

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.

DATE

NO. REVISION

12-7-2023

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4

SAN ANTONIO, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. CP202310

JOB NO. 30004-27

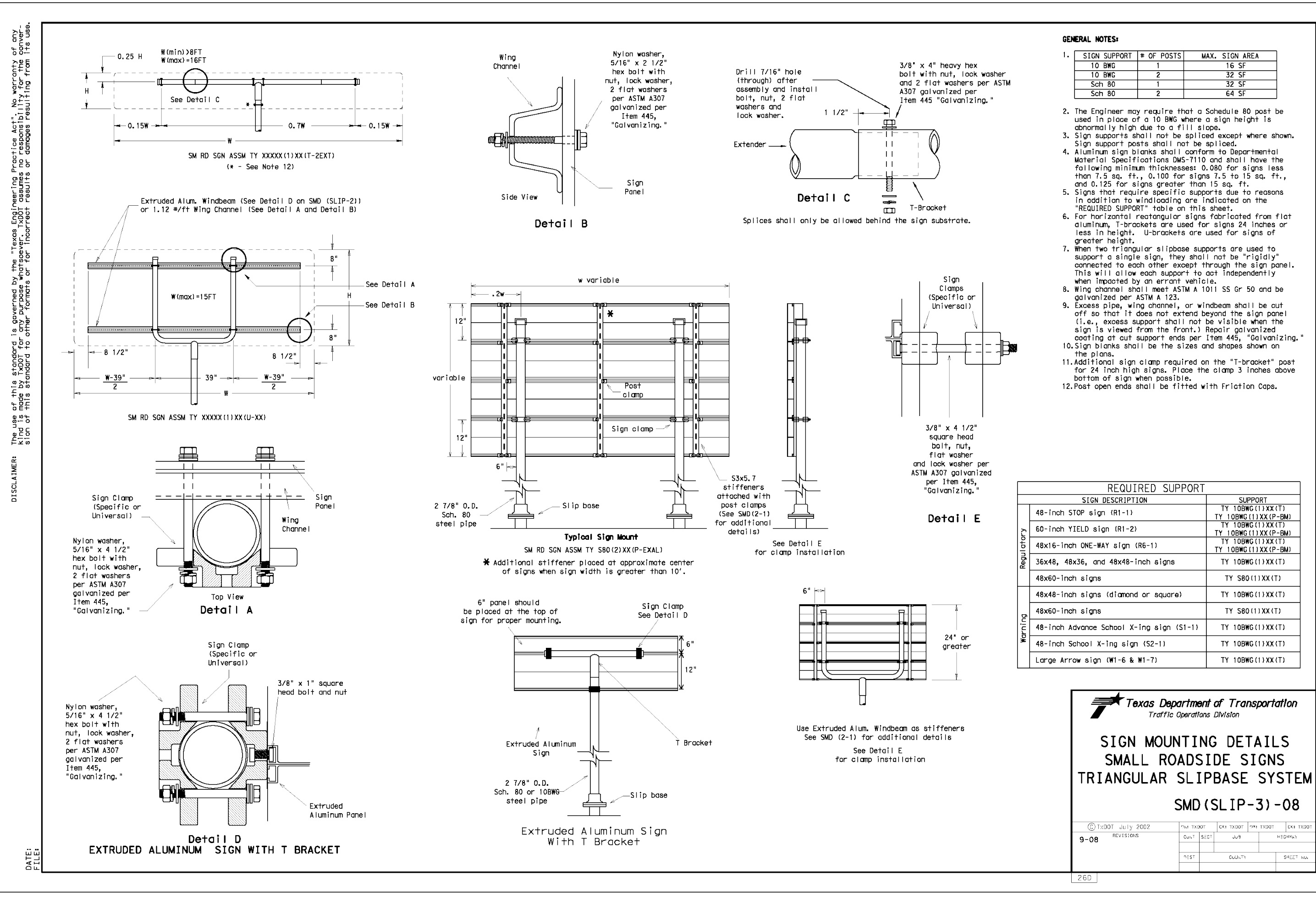
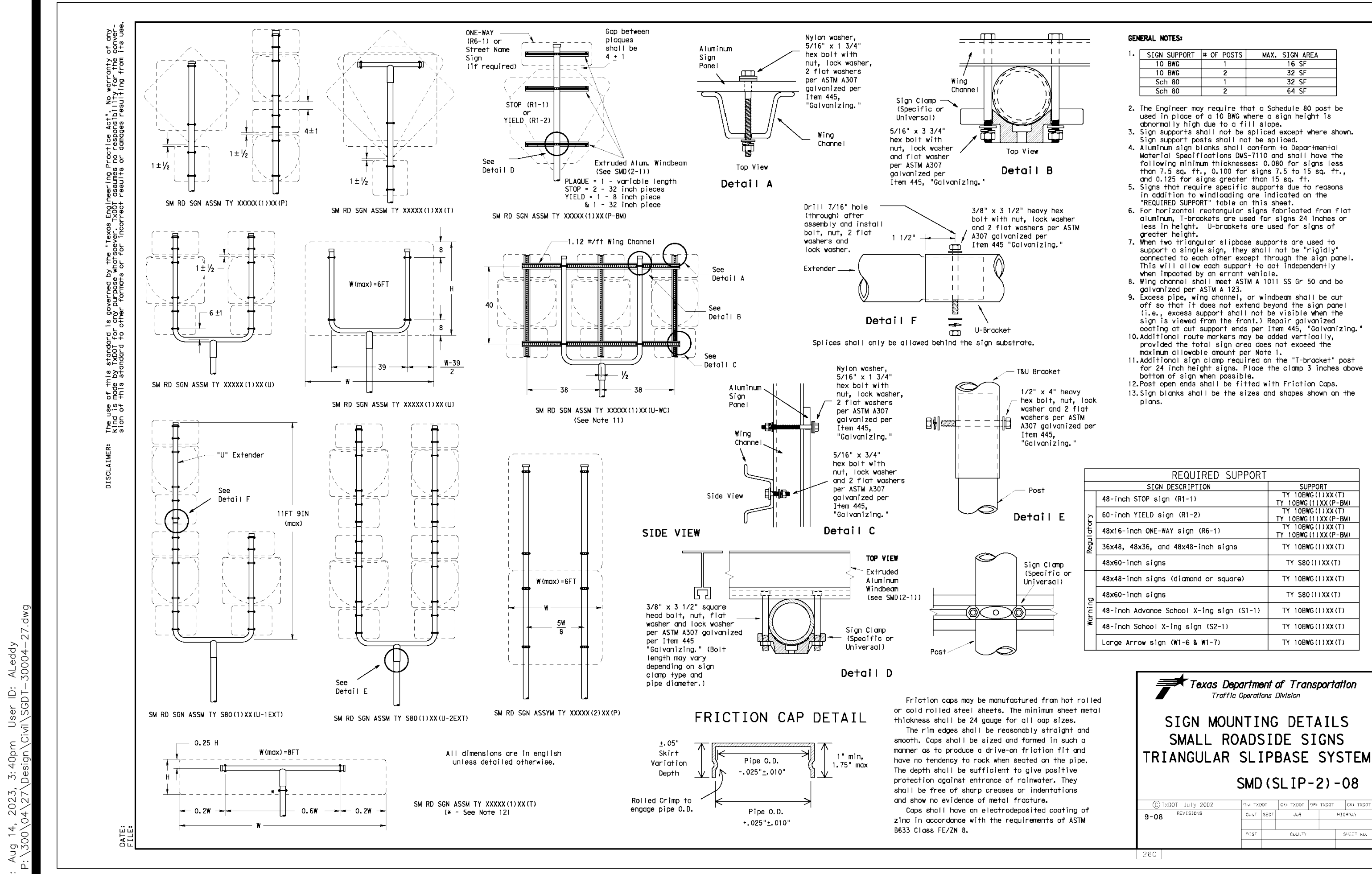
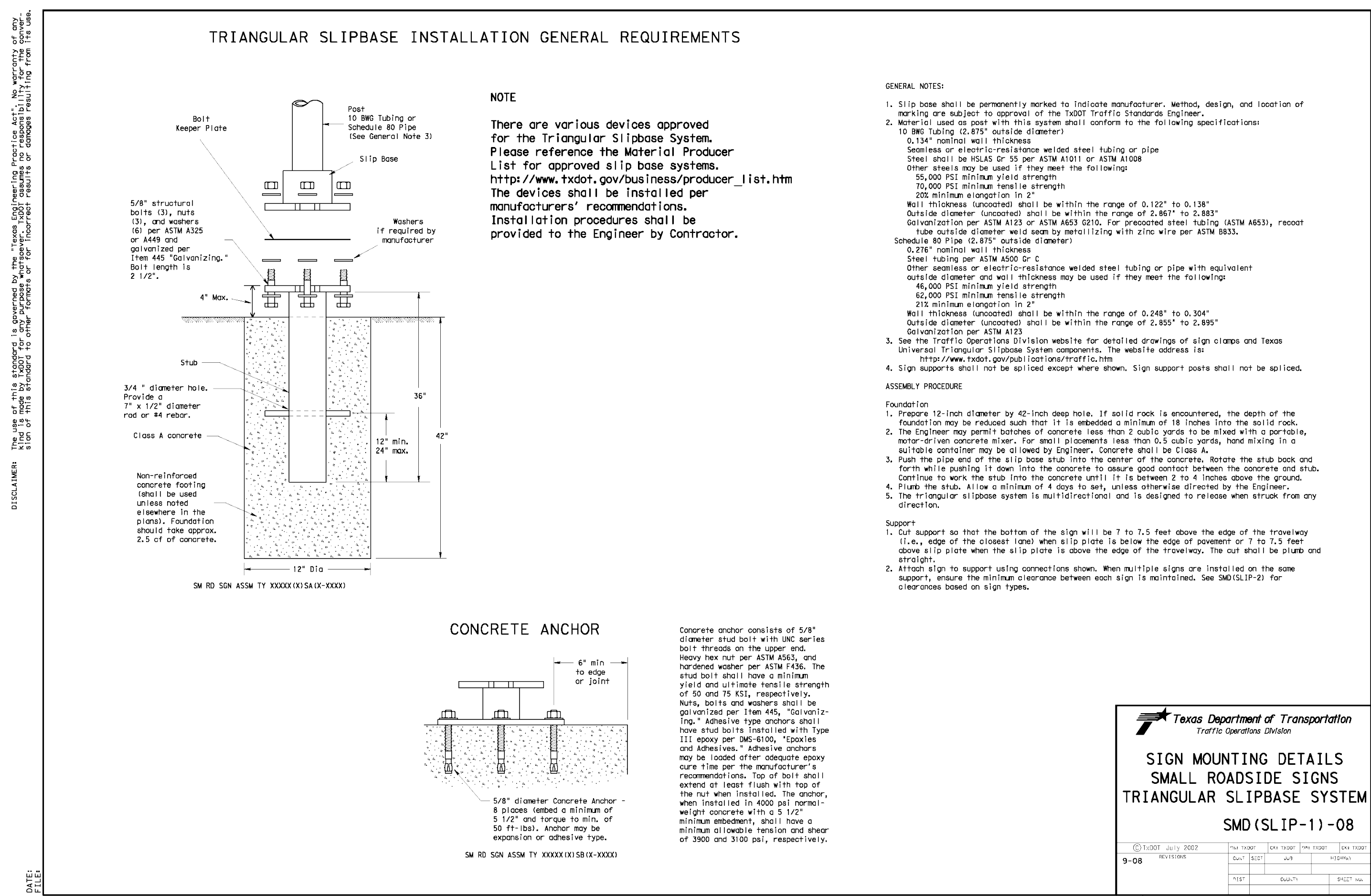
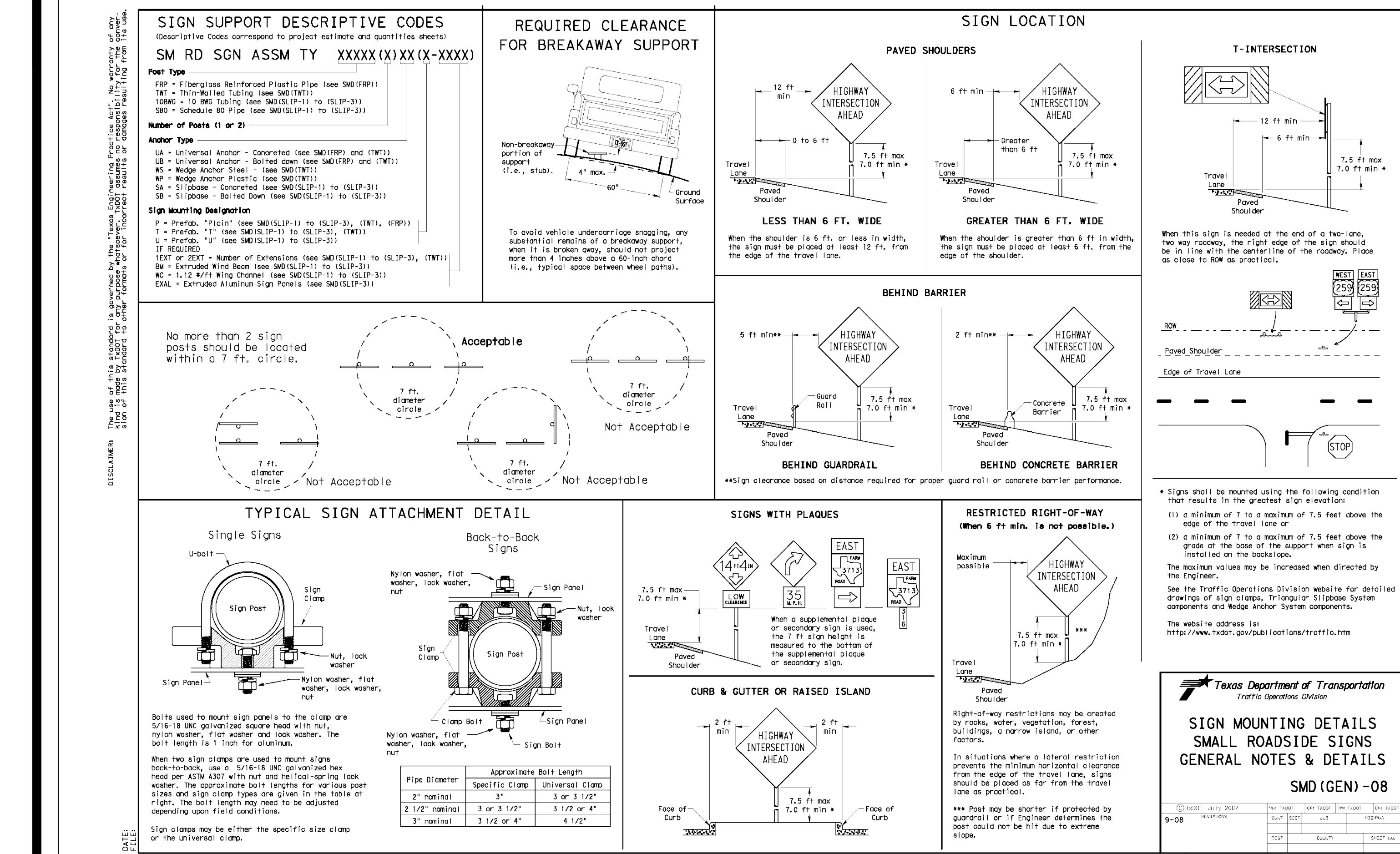
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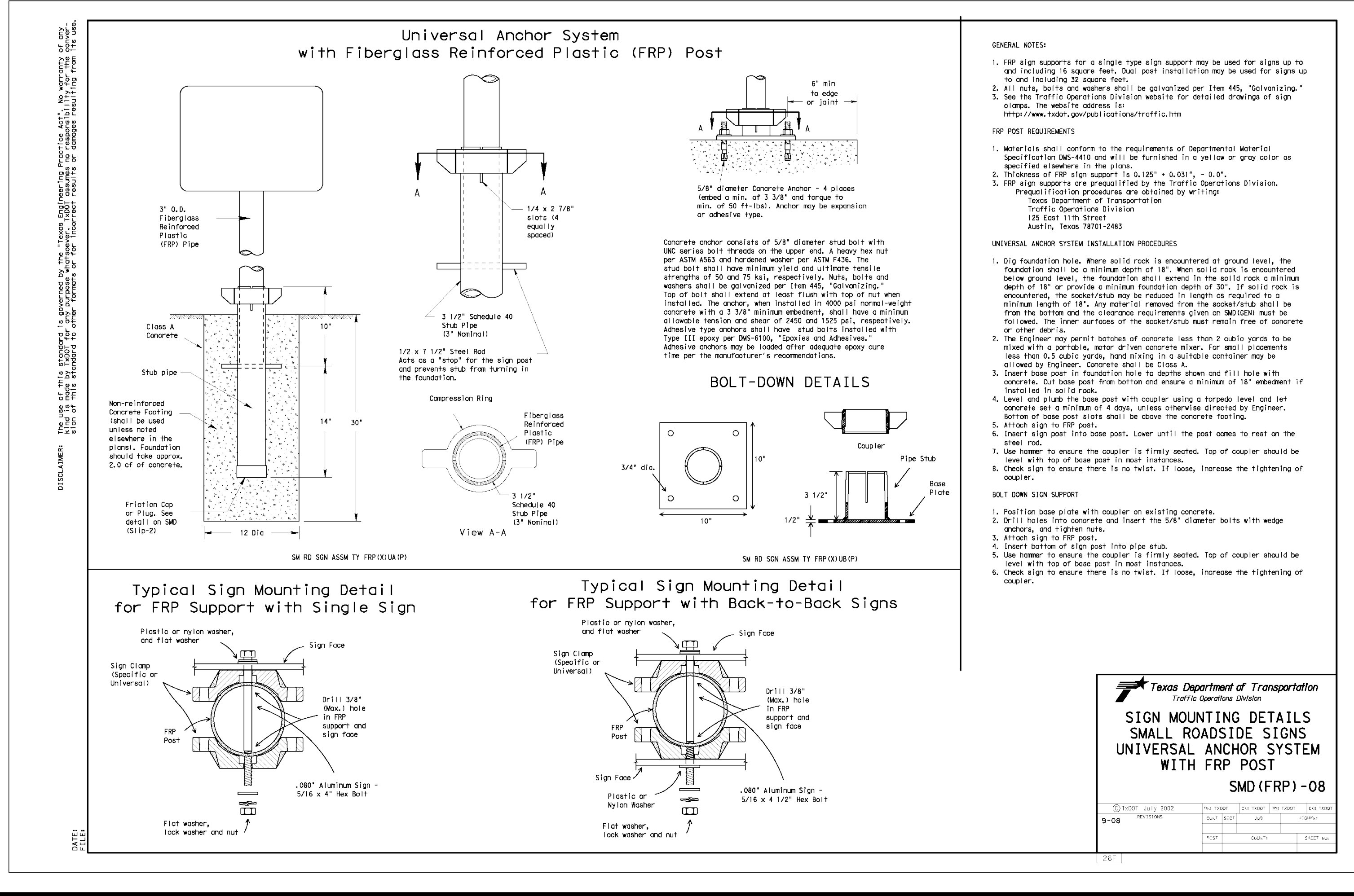
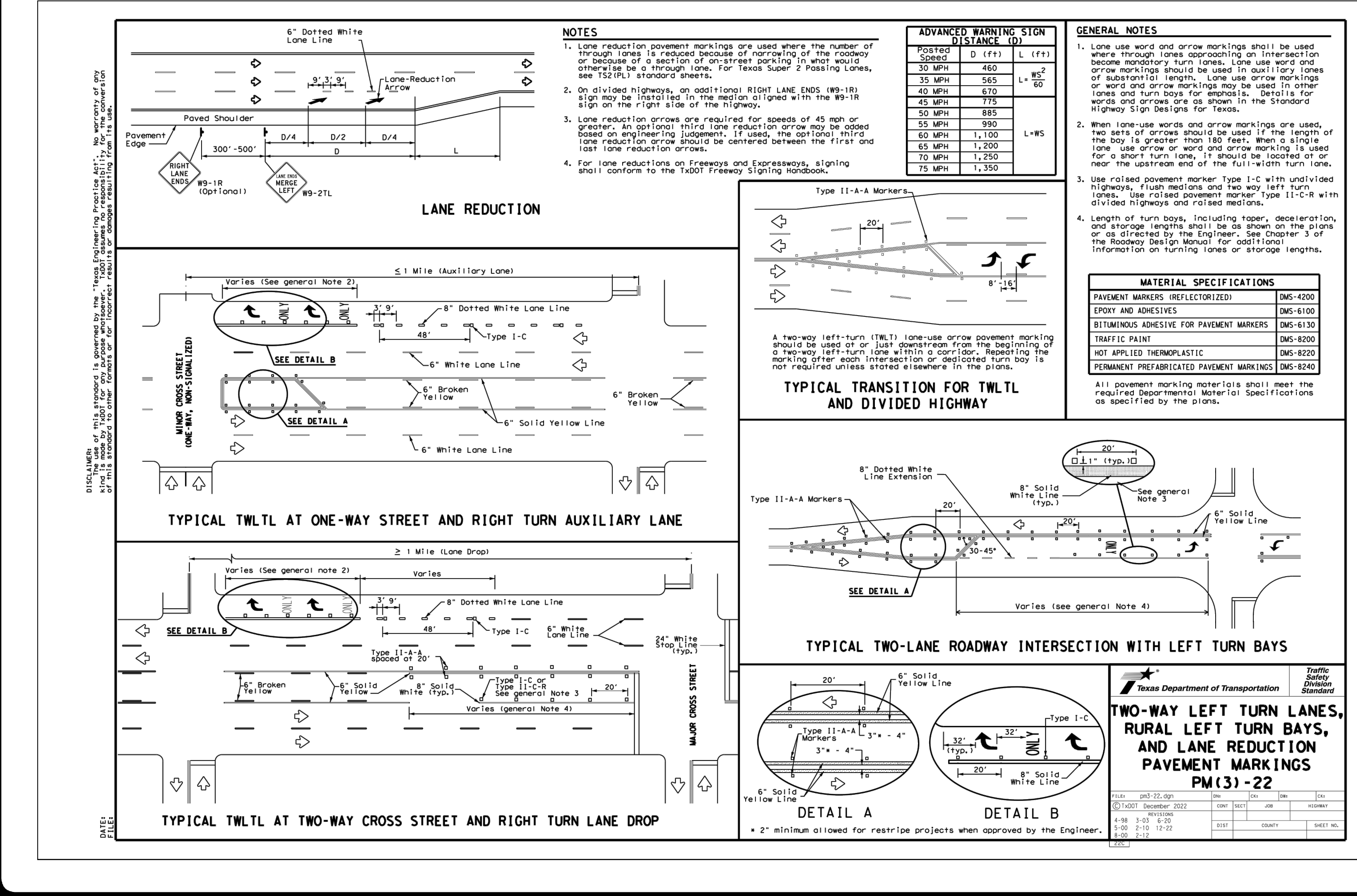
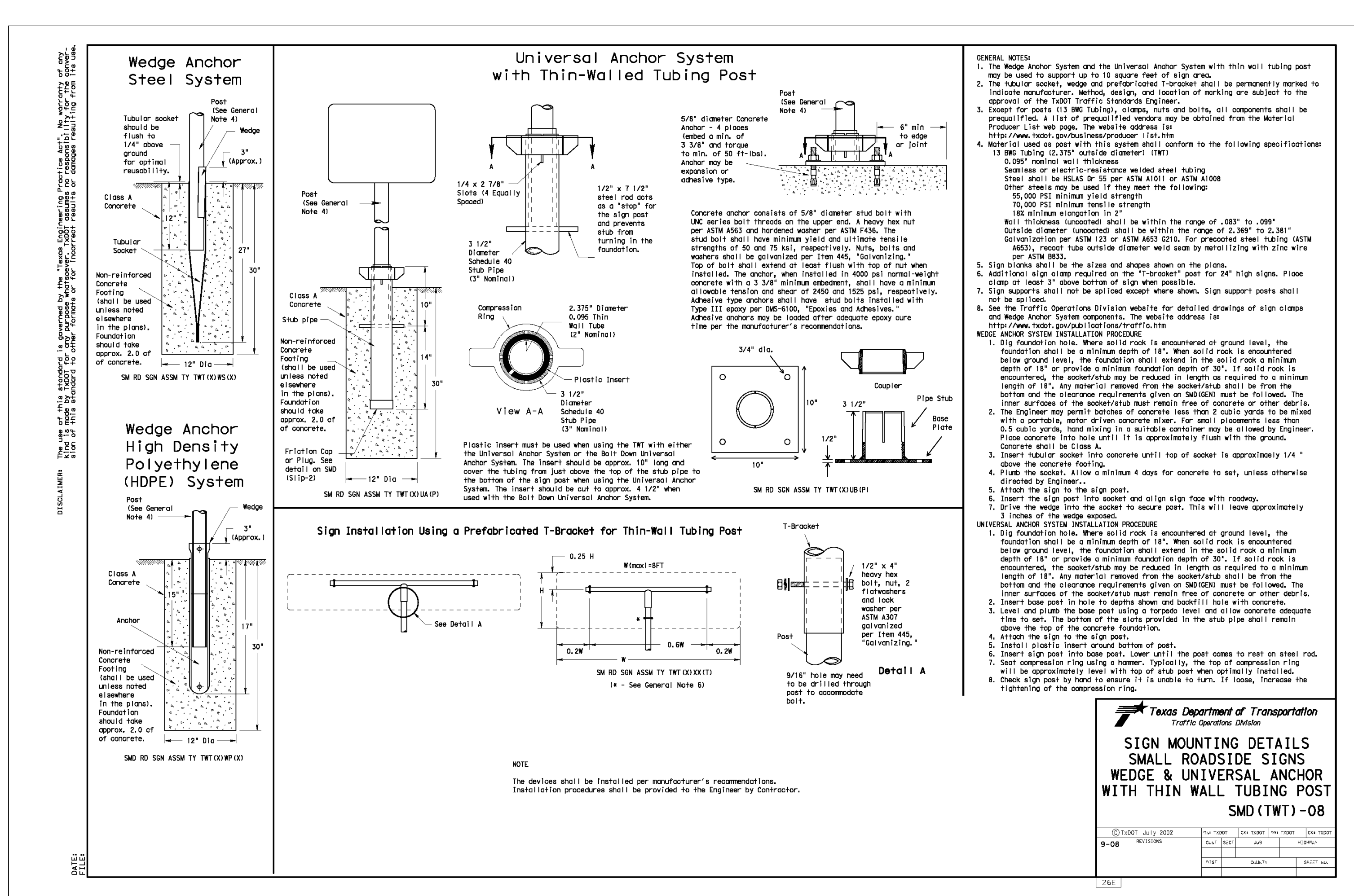
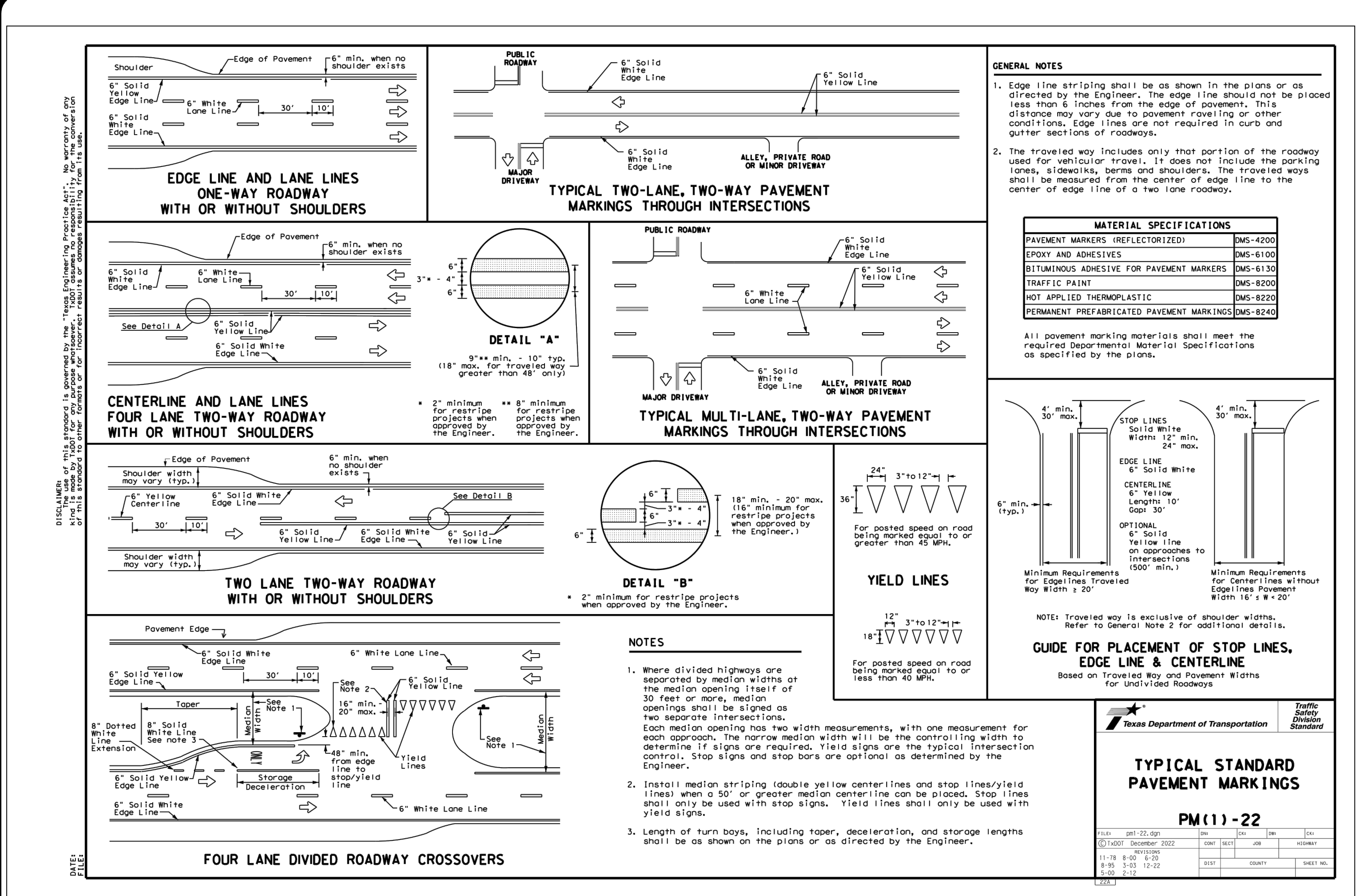
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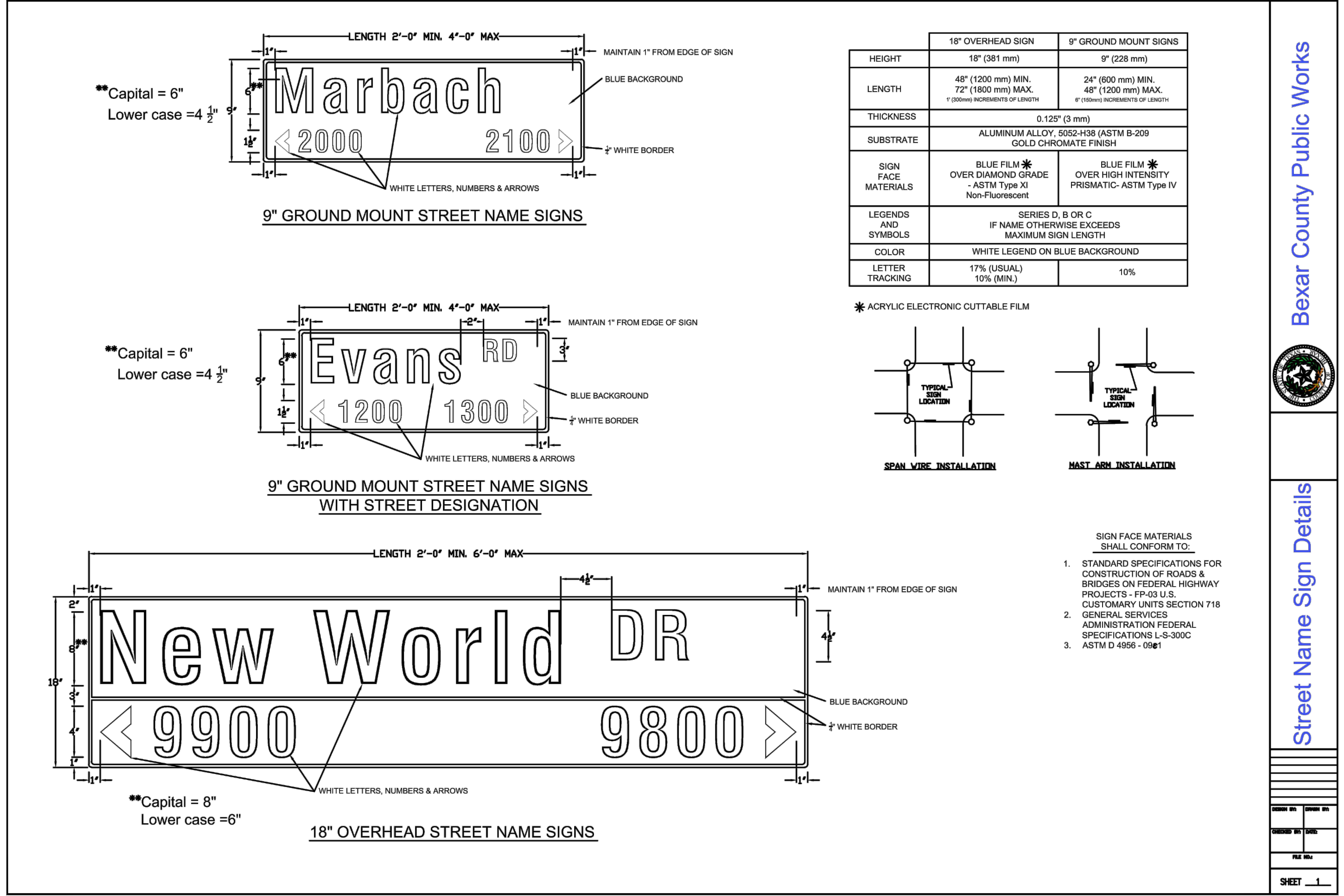
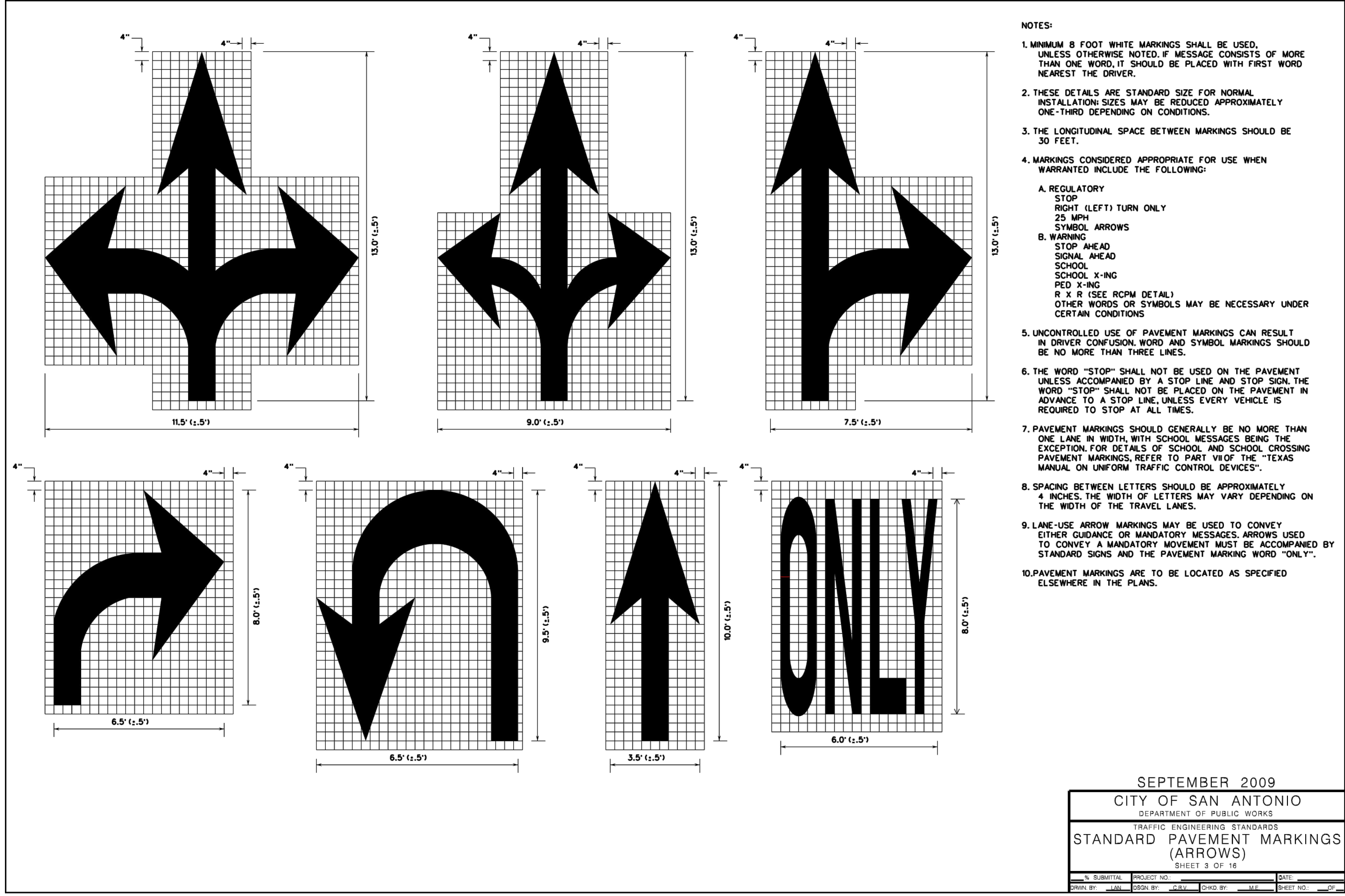
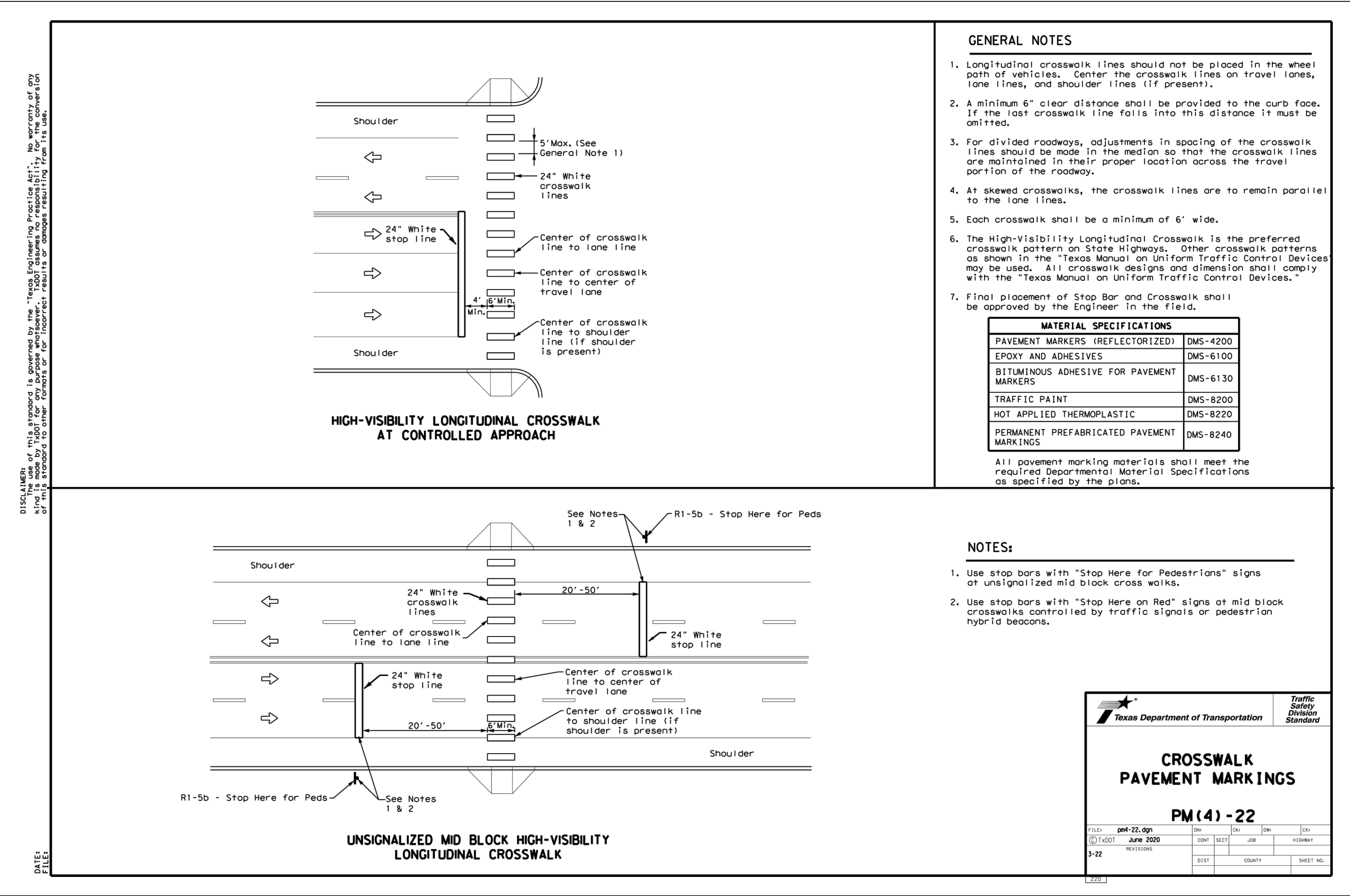
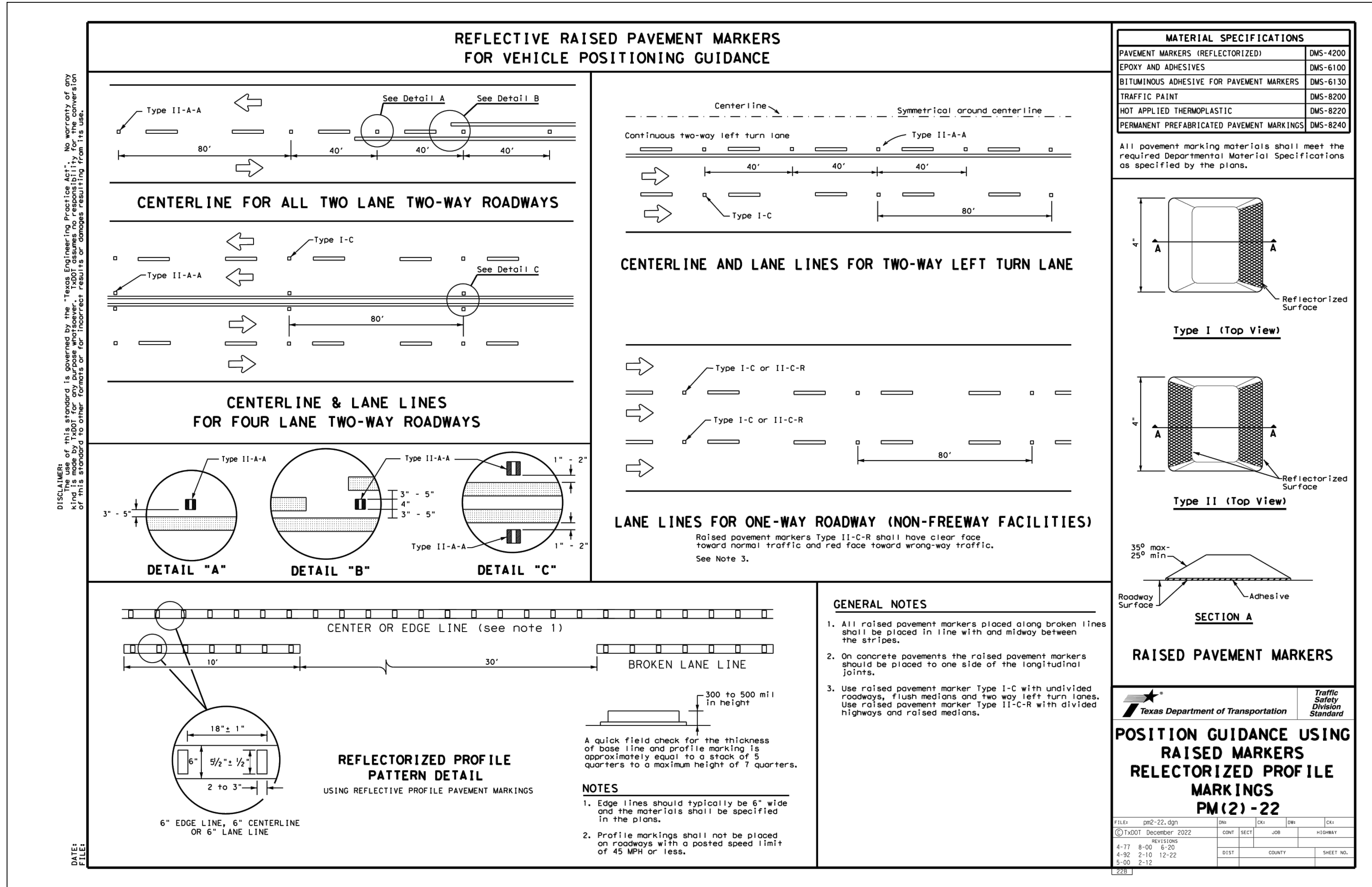
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PAPE-DAWSON ENGINEERS logo and contact information. Includes address: 1675 INDEPENDENCE DR. STE. 102 | NEW BRUNSWICK, NJ 08901. Phone: 732.246.8000. Website: www.pape-dawson.com. Also includes a circular seal with the text "STATE OF NEW JERSEY" and "JOCYLINE PEREZ 98367 PROFESSIONAL ENGINEER".

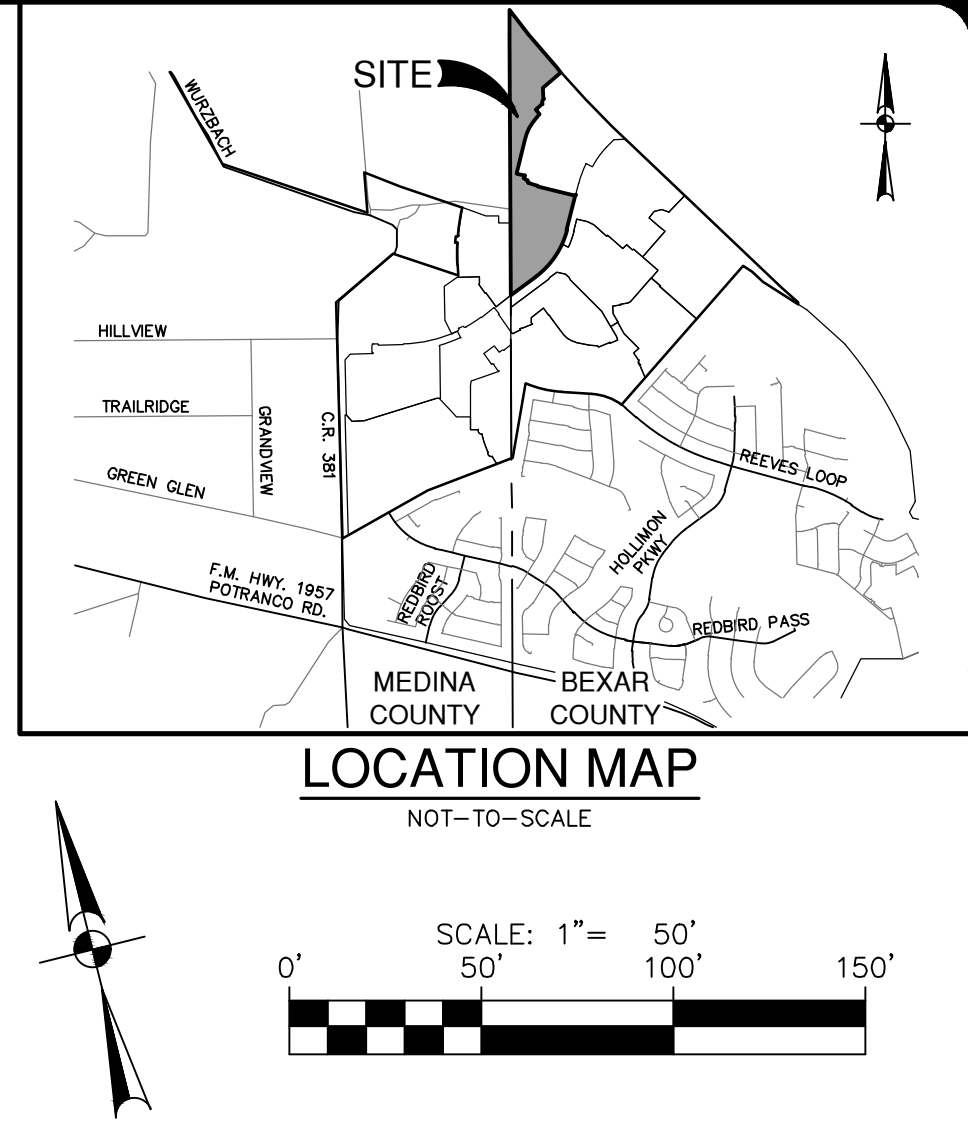
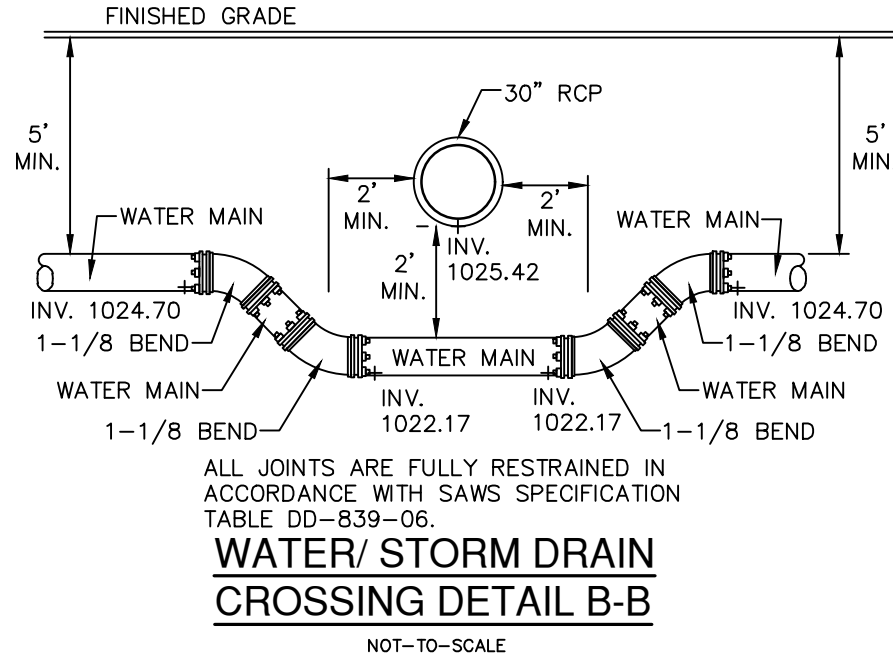
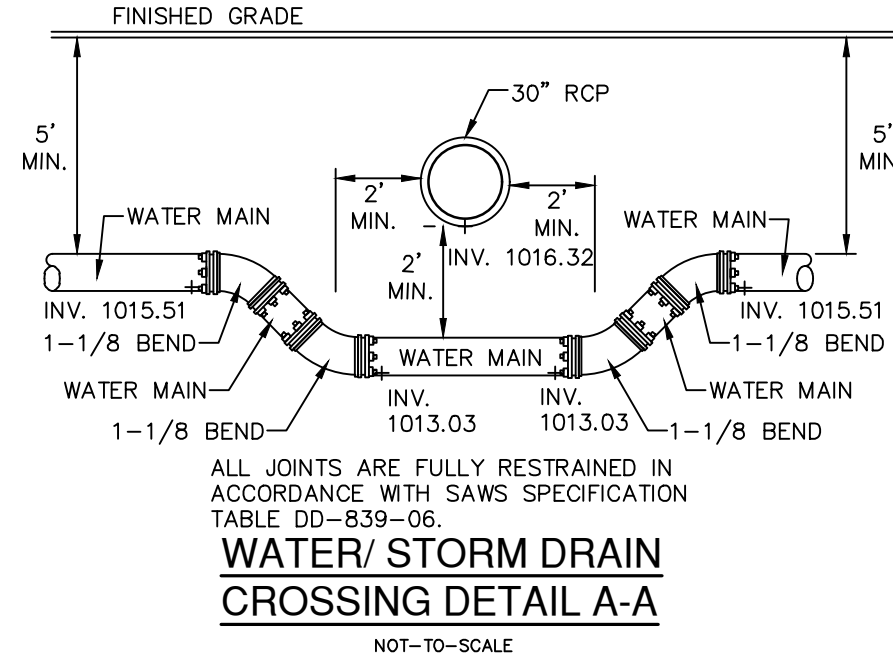
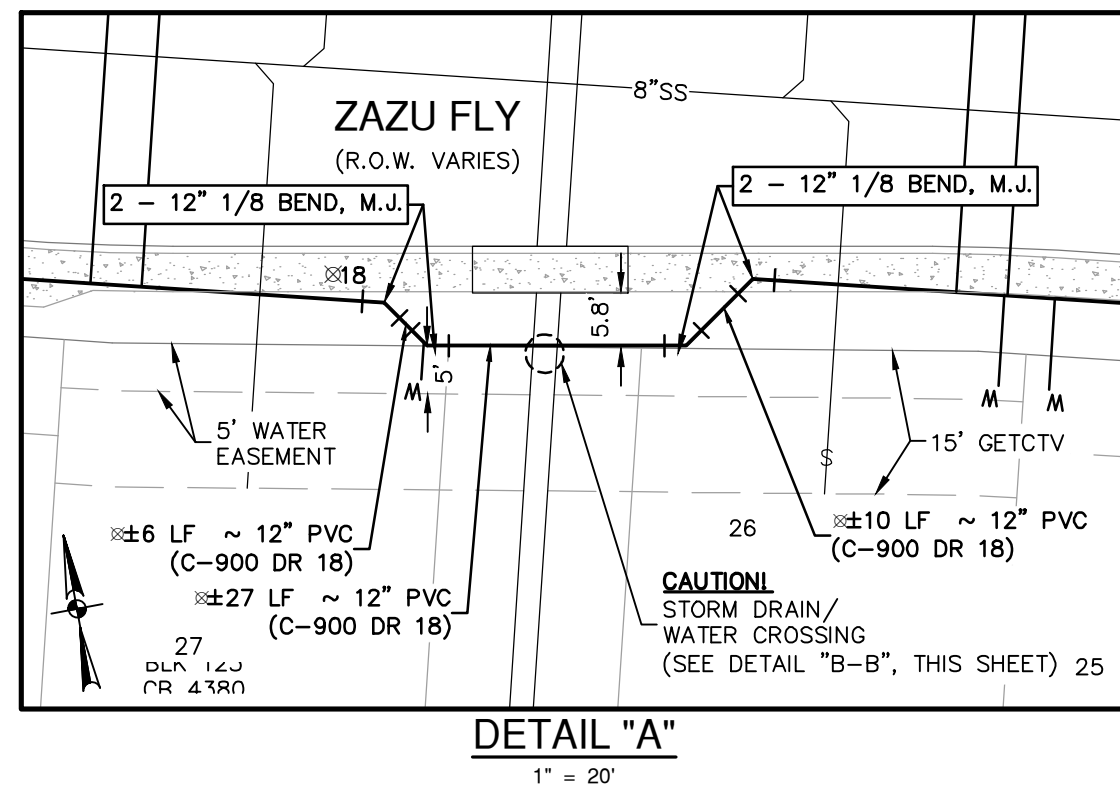
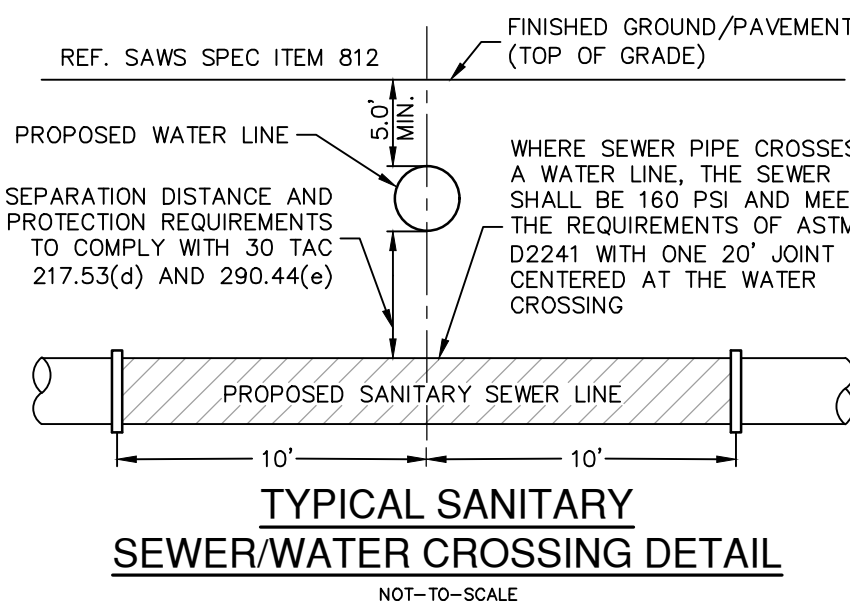
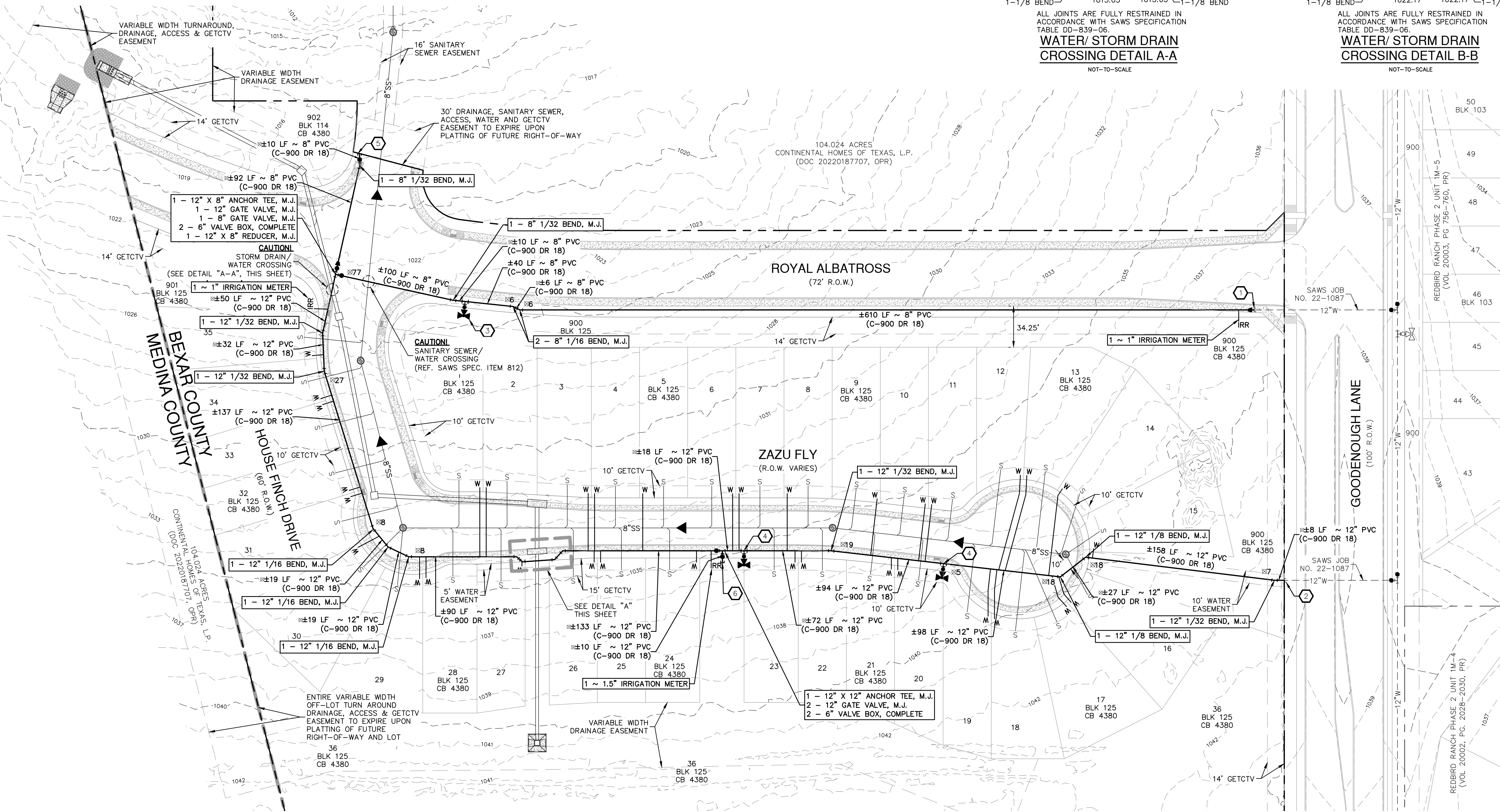
REDBIRD RANCH PHASE 2 UNIT 2M-4 SAN ANTONIO, TEXAS. TXDOT SIGN MOUNTING DETAILS. Includes a table for SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM.



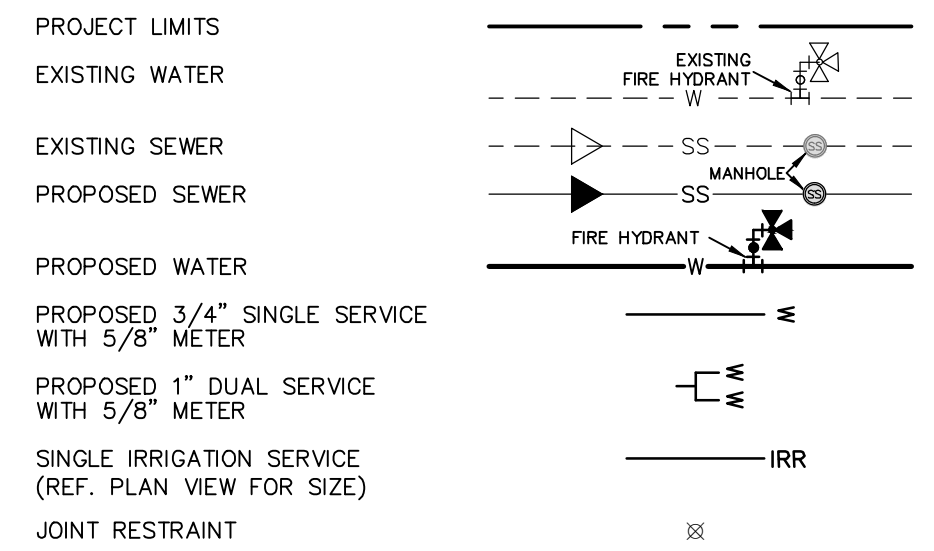


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WATER LEGEND



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 1000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

ROW PERMIT NOTE:

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

PRESSURE REDUCING VALVE NOTE:

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

PRESSURE NOTE:

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 985 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF *PRV IS/ARE REQUIRED FOR SUCH LOT(S). ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

JOINT RESTRAINT NOTE:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

WATER (SAWS PRESSURE ZONE 1170)

DEVELOPER'S NAME:	CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS:	5419 N. LOOP 1604 E.
CITY:	SAN ANTONIO
STATE:	TEXAS
ZIP:	78247
PHONE#	210-496-2668
FAX#	
SAWS BLOCK MAP#	064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213
TOTAL LINEAR FOOTAGE OF PIPE:	12"-1008 LF, PLAT NO. CP202310
NUMBER OF LOTS	36
SAWS JOB NO.	23-1154

- FOR CHLORINATION INJECTION
- 2 - 1" CORPORATION STOP, C.C.X.I.P
 - 1 - 1" COPPER TUBING, CUT AS REQUIRED
 - 2 - 1" COMP. 1 1/4 COUPLING, CORP. STOP
 - 2 - 1 1/4" THD. SOLID CAPS, THR.

- CONTRACTOR SHALL TIE TO EXISTING 12" MAIN (SAWS JOB NO. 22-1087) AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY SAWS
- 2" TEMPORARY BLOWOFF ASSEMBLY SEE SAWS DWG DD-844-01 SHEET 2 OF 4
- 1 - 12" SOLID SLEEVE, M.J.
 - 1 - 12" X 8" REDUCER, M.J.

- FOR CHLORINATION INJECTION
- 2 - 1" CORPORATION STOP, C.C.X.I.P
 - 1 - 1" COPPER TUBING, CUT AS REQUIRED
 - 2 - 1" COMP. 1 1/4 COUPLING, CORP. STOP
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- CONTRACTOR SHALL TIE TO EXISTING 12" MAIN (SAWS JOB NO. 22-1087) AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY SAWS
- 2" TEMPORARY BLOWOFF ASSEMBLY SEE SAWS DWG DD-844-01 SHEET 2 OF 4
- 1 - 12" SOLID SLEEVE, M.J.

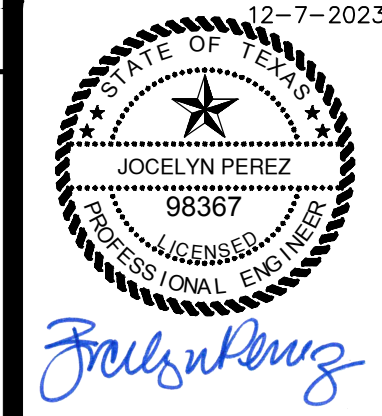
- 1 - STANDARD FIRE HYDRANT
- 1 - 8" X 6" ANCHOR TEE, M.J.
- 6" D.I. PIPE, CUT AS REQ'D
- 1 - 6" 1/4 ANCHOR BEND, M.J.
- 1 - 6" GATE VALVE, M.J.
- 1 - 6" VALVE BOX, COMPLETE (SEE SAWS DETAIL DD-834-01 SHEET 2 OF 2)

- 1 - STANDARD FIRE HYDRANT
- 1 - 12" X 8" ANCHOR TEE, M.J.
- 6" D.I. PIPE, CUT AS REQ'D
- 1 - 6" 1/4 ANCHOR BEND, M.J.
- 1 - 6" GATE VALVE, M.J.
- 1 - 6" VALVE BOX, COMPLETE (SEE SAWS DETAIL DD-834-01 SHEET 2 OF 2)

- 1 - 8" GATE VALVE, M.J.
- 1 - 6" VALVE BOX, COMPLETE (SEE SAWS DETAIL DD-844-02 SHEET 3 OF 5)

- 2" PERMANENT BLOWOFF VALVE (SEE SAWS DETAIL DD-844-02 SHEET 3 OF 5)

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS

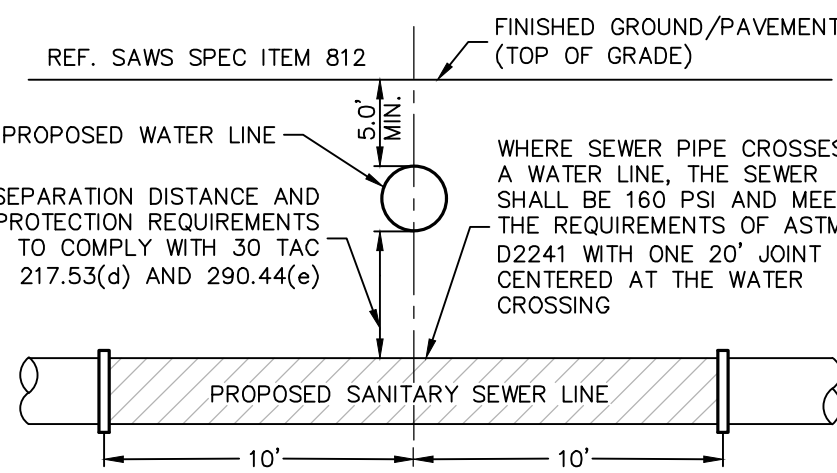
NEW BRUNSWICK, SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1072 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, TX 78132 | 210.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4 SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

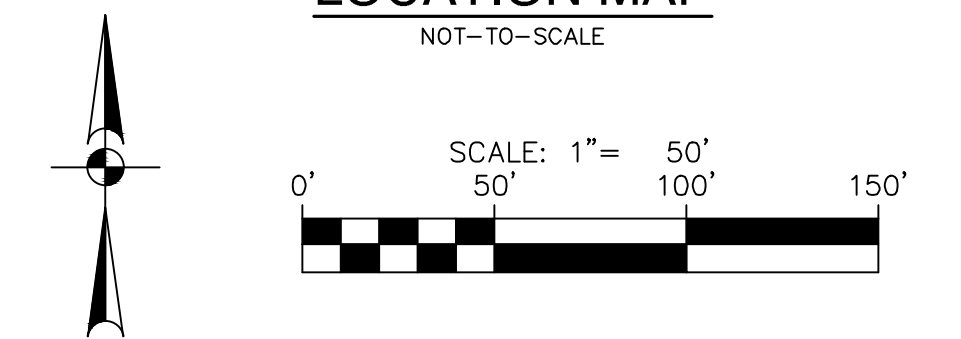
PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C4.00

FOR PERMIT



TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

[illegible]

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 1000 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.

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

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

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW
GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE WILL
NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND
LEVEL IS BELOW 985 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
CONNECTIONS ARE REQUIRED FOR SUCH LOT(S). ONLY SINGLE SERVICE
*NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE
REDUCING VALVE (PRV)

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

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DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 41.540
TOTAL LINEAR FOOTAGE OF PIPE 12"=1008 LF. PLAT NO. QP202310
8"=1,595 LF.
NUMBER OF LOTS 36 SAWS JOB NO. 23-1154

OVERALL WATER DISTRIBUTION PLAN

LAT NO. CP202310
 DB NO. 30004-27
 DATE AUGUST 2023
 DESIGNER CL
 CHECKED **HF** DRAWN BH
 SHEET C4.01

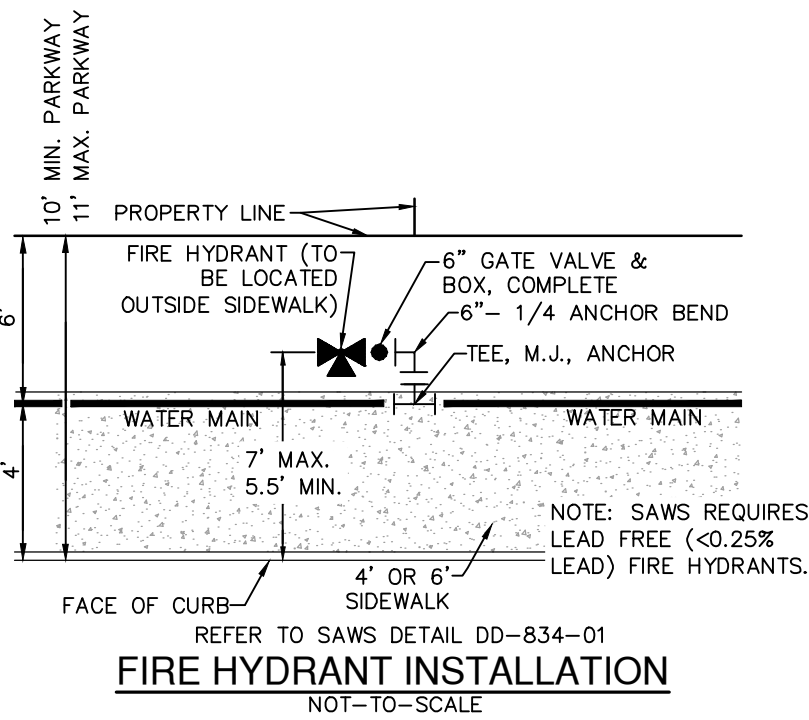
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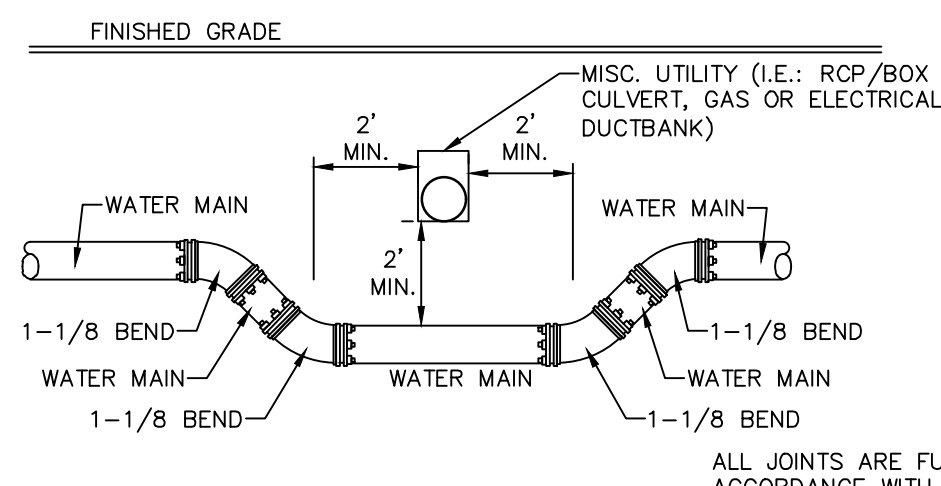
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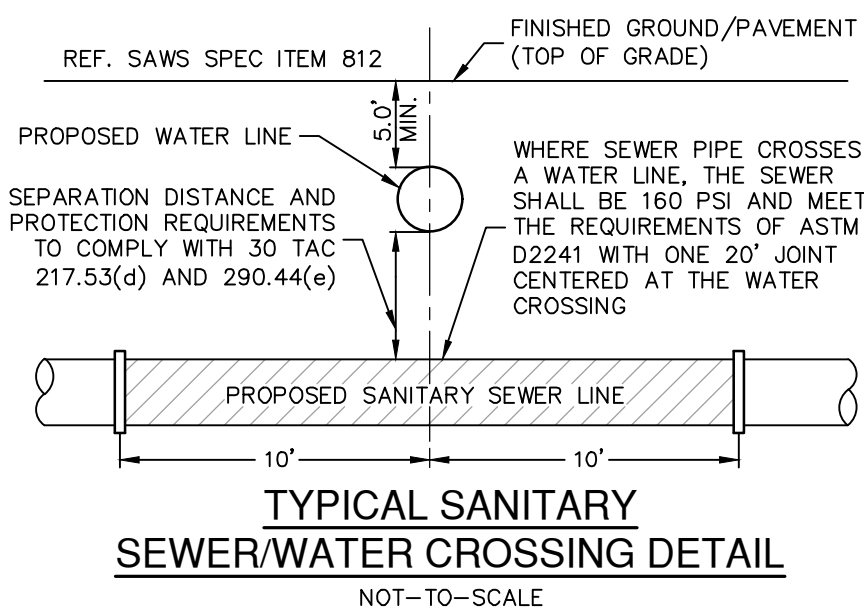
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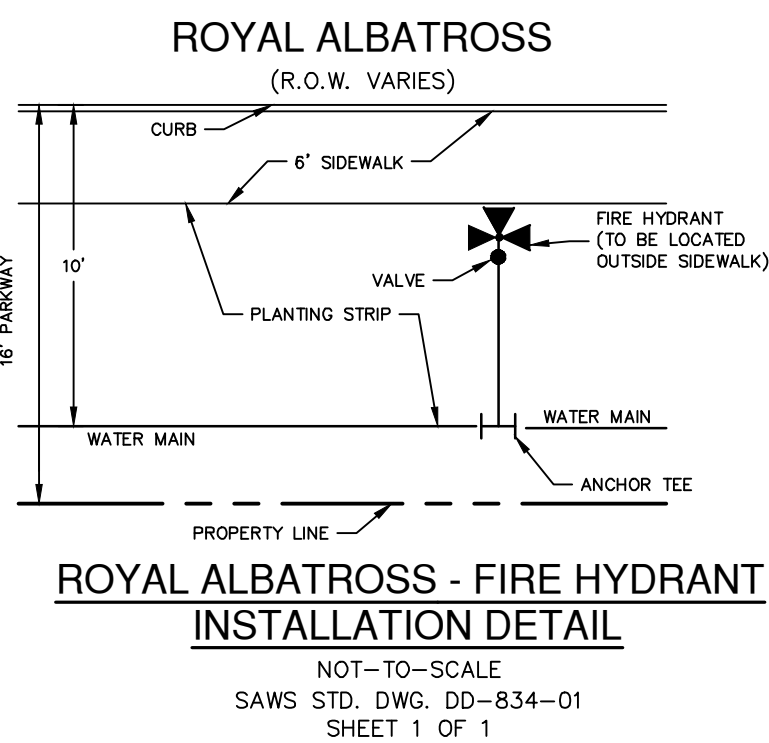
FIRE HYDRANT INSTALLATION
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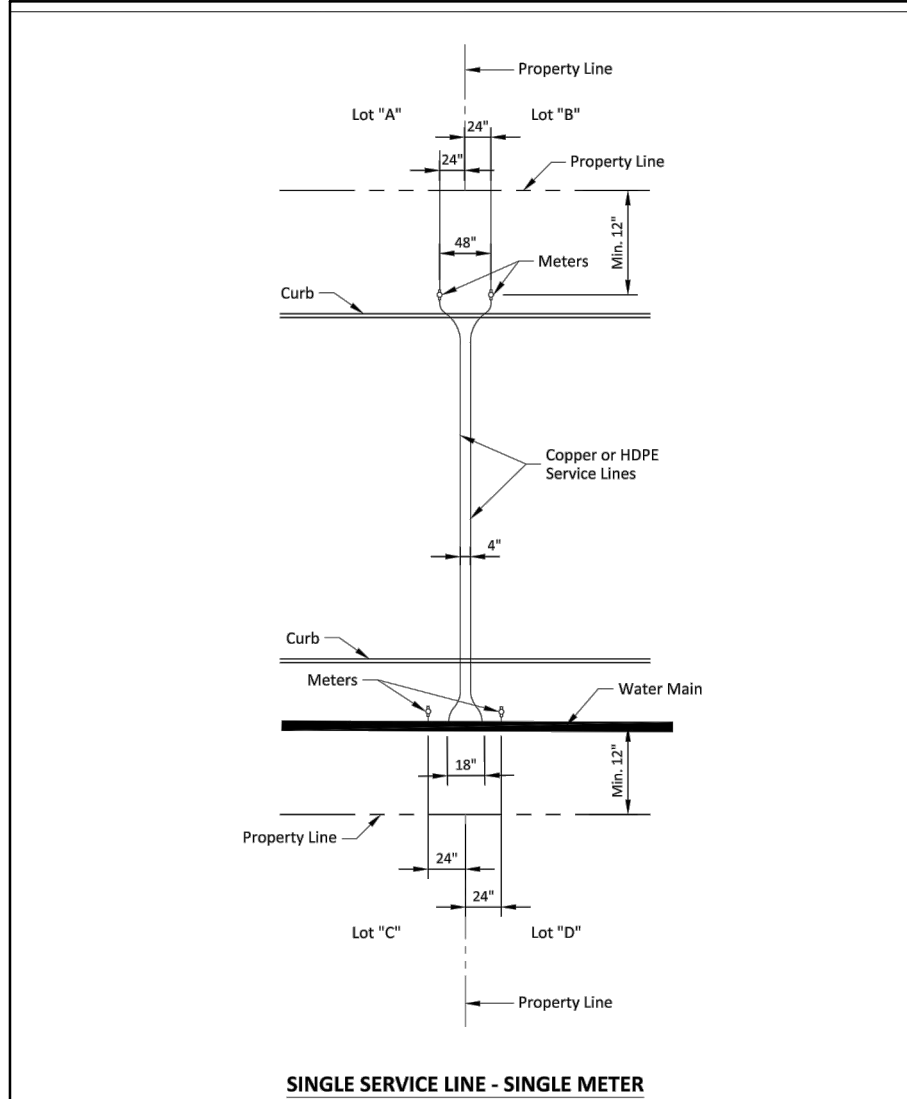
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TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

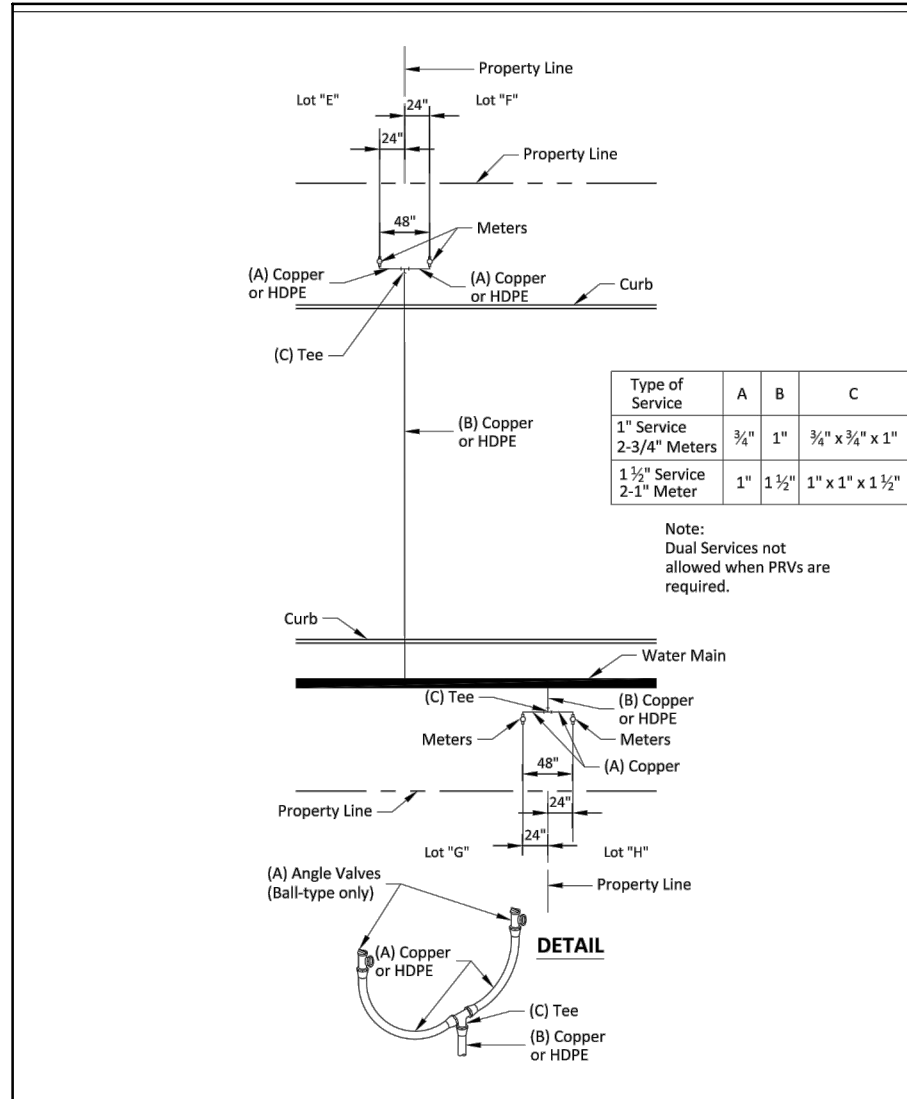


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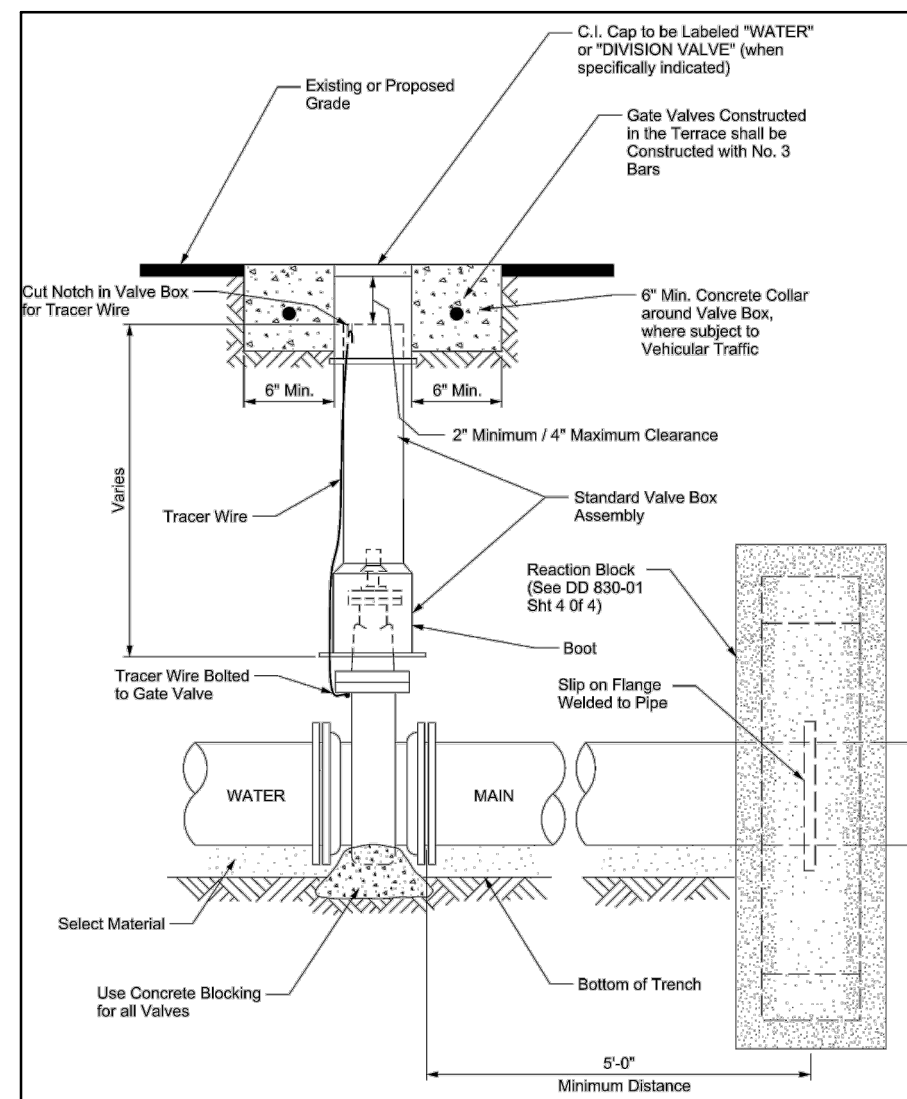
SINGLE SERVICE LINE - SINGLE METER

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

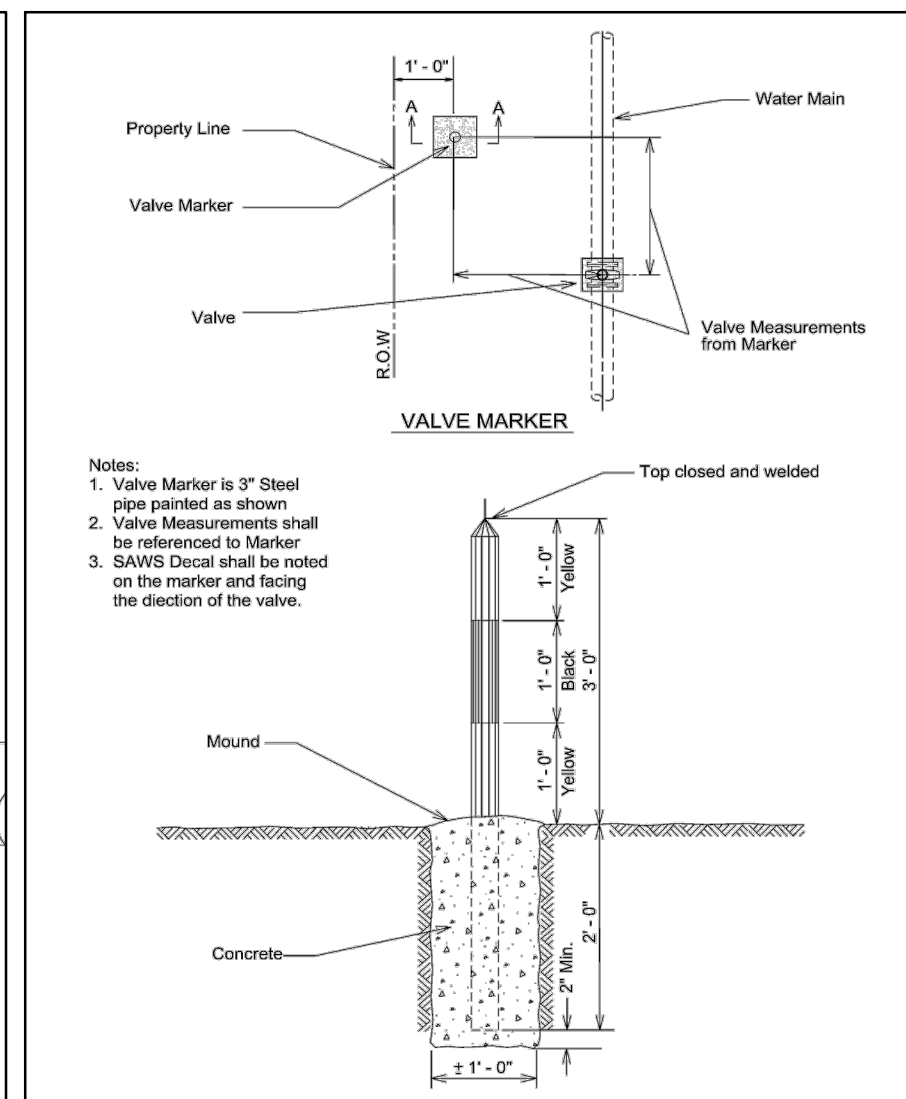


SINGLE SERVICE LINE - DUAL METER

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

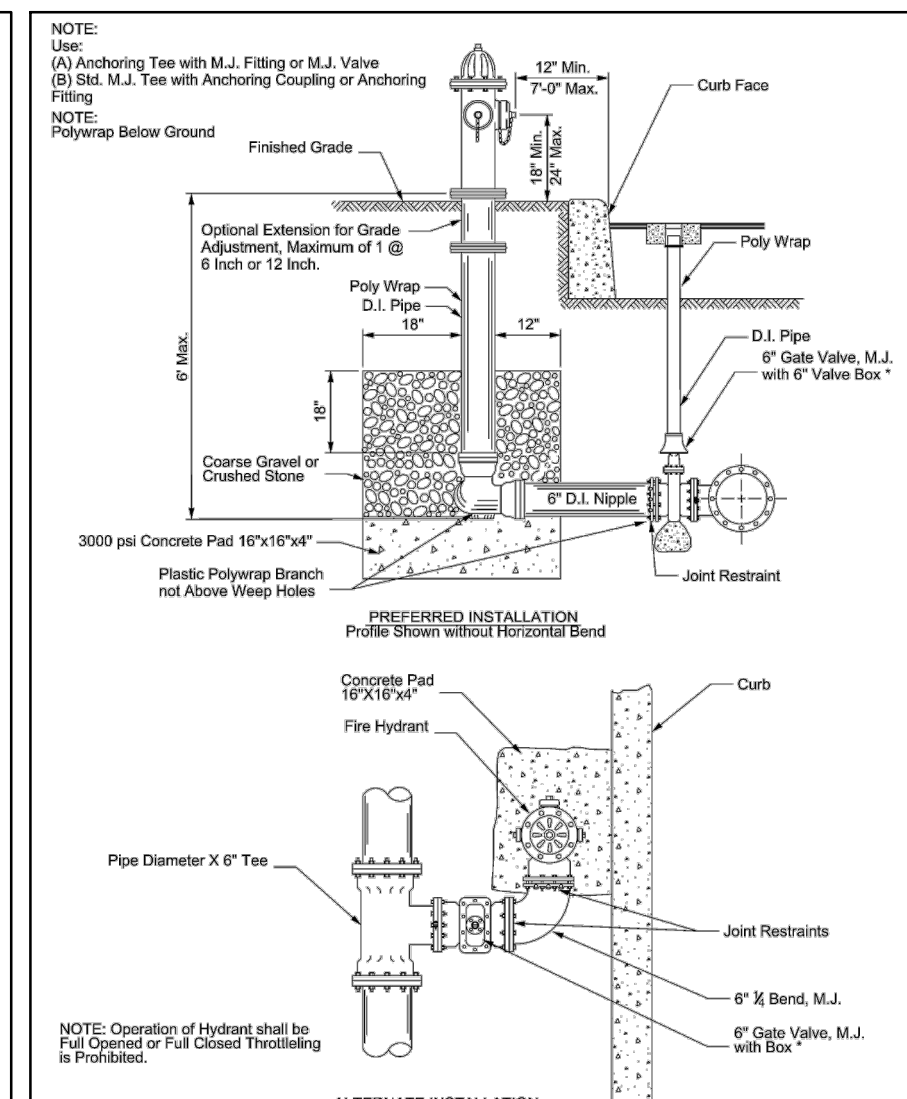


PROPERTY OF	INSTALLATION OF NON-GEARED	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	GATE VALVE WITH VALVE BOX	March 2008	August 2019
SAN ANTONIO, TEXAS	AND EXTENSION	DD-828-01	1 OF 1

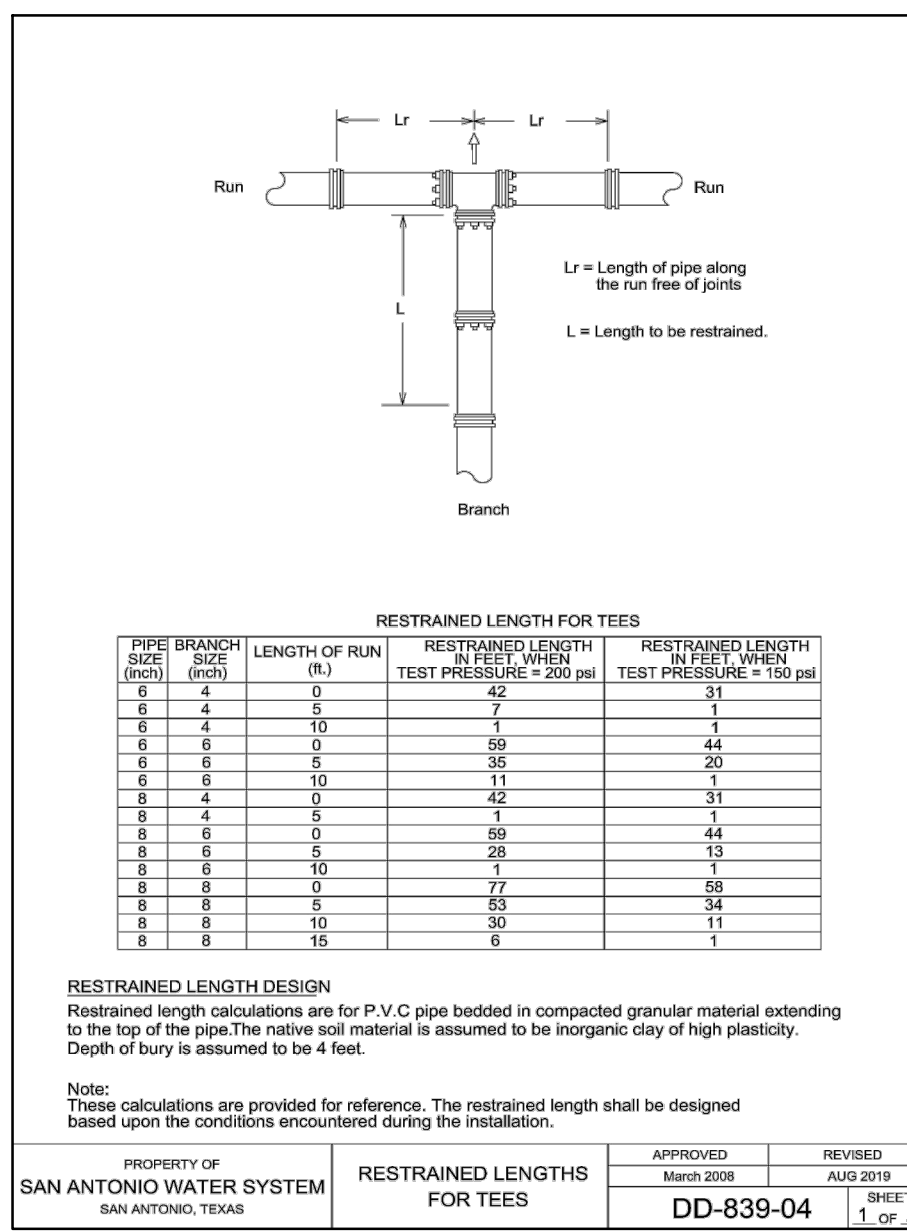


VALVE MARKER

PROPERTY OF	VALVE MARKER	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
SAN ANTONIO, TEXAS		DD-828-04	1 OF 1



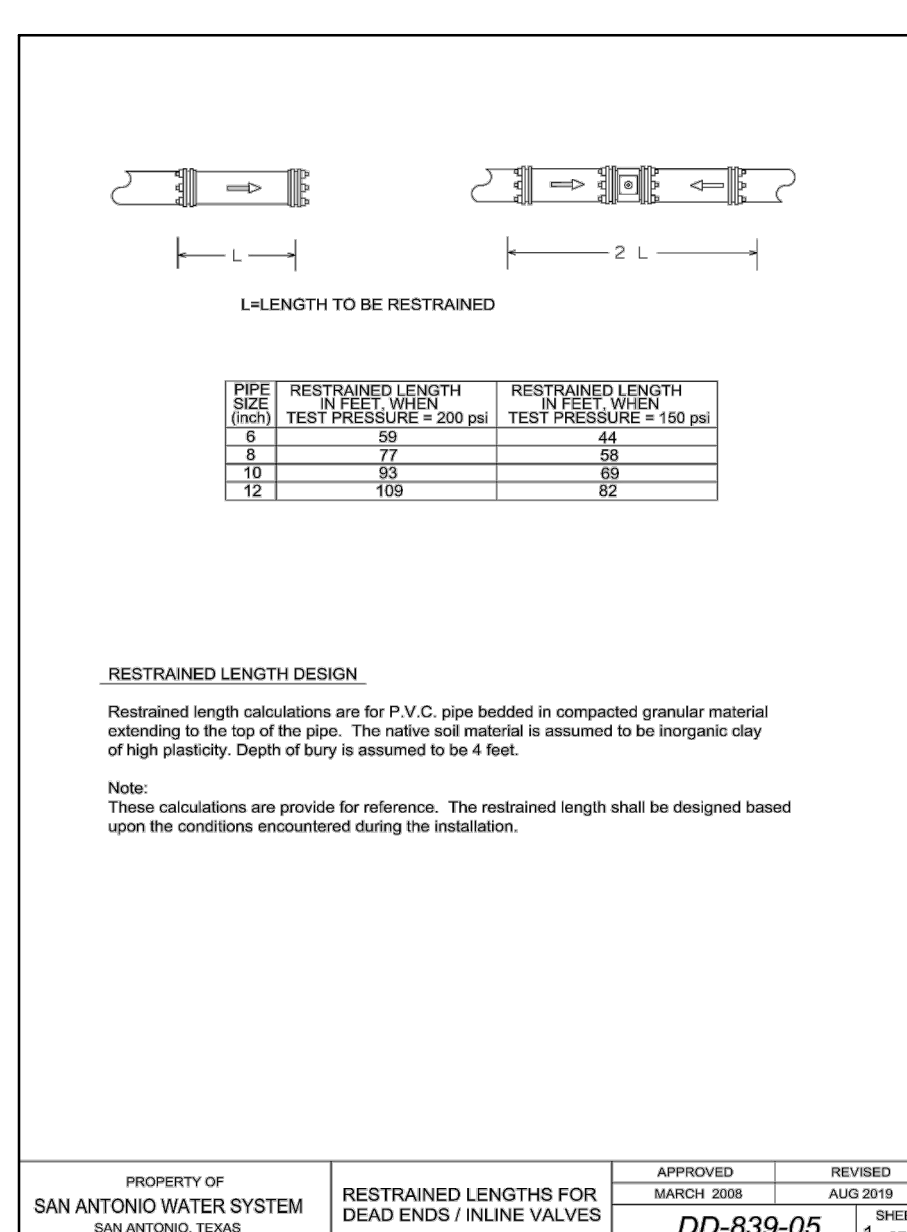
PROPERTY OF	FIRE HYDRANT	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	INSTALLATION	May 2013	August 2018
SAN ANTONIO, TEXAS	(JOINT RESTRAINT)	DD-834-01	1 OF 3



PIPE SIZE (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	4	4
8	4	4
10	4	4
12	4	4

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

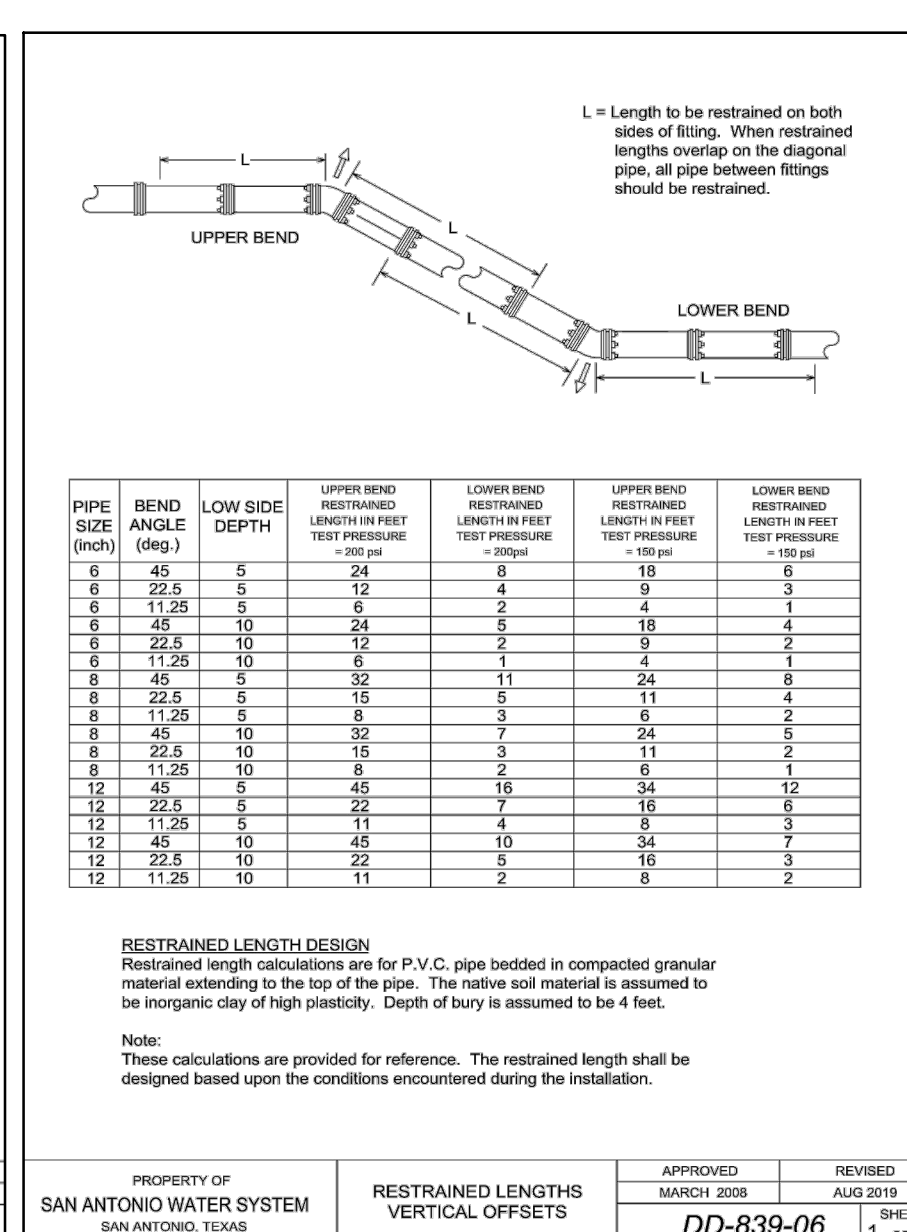
PROPERTY OF	RESTRAINED LENGTHS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	FOR TEES	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-839-04	1 OF 2



PIPE SIZE (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	4	4
8	4	4
10	4	4
12	4	4

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

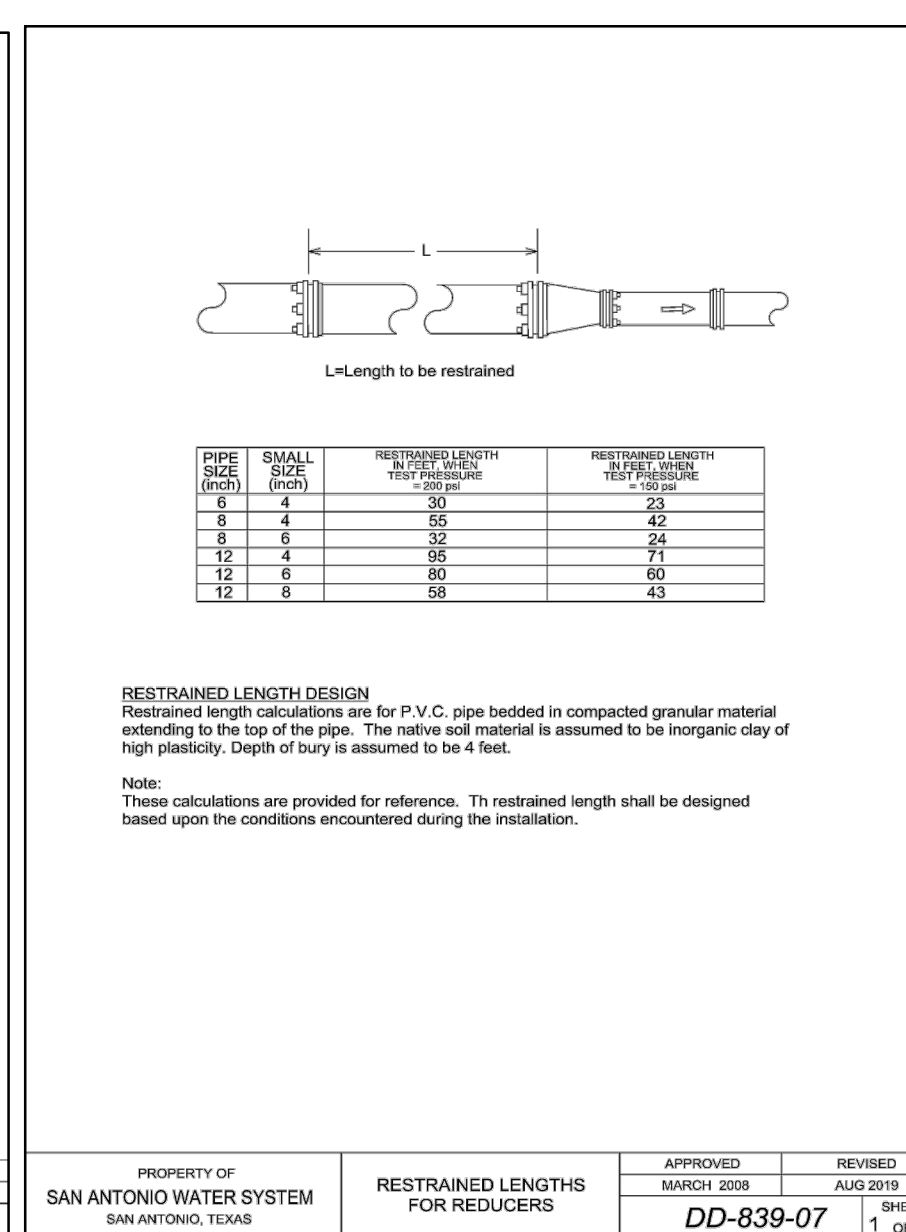
PROPERTY OF	RESTRAINED LENGTHS FOR	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	DEAD ENDS / INLINE VALVES	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-839-05	1 OF 1



PIPE SIZE (INCH)	BEND ANGLE (DEG.)	LOW SIDE DEPTH (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	45	5	24	8
8	45	5	32	10
10	45	5	40	12
12	45	5	48	14

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

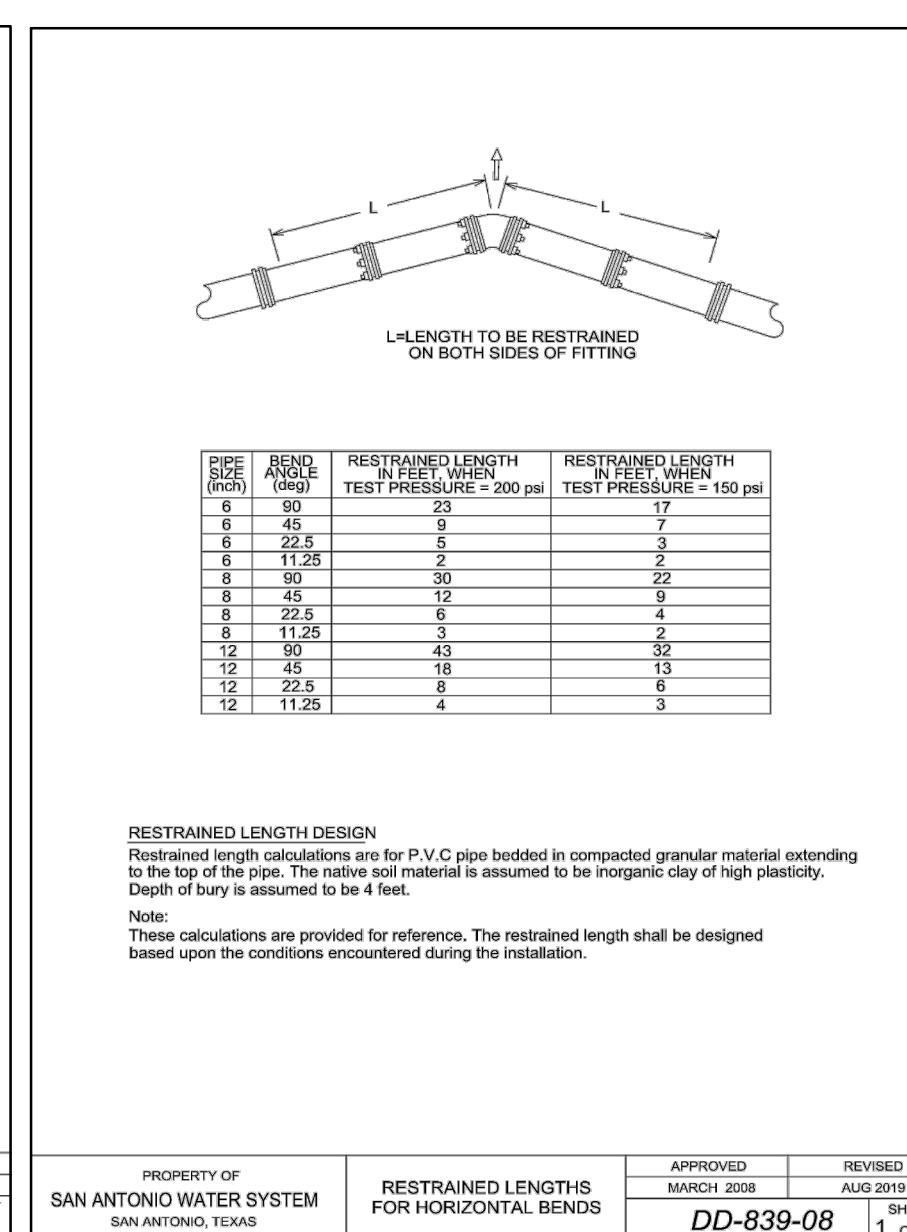
PROPERTY OF	RESTRAINED LENGTHS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	VERTICAL OFFSETS	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-839-06	1 OF 1



PIPE SIZE (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	4	4
8	4	4
10	4	4
12	4	4

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

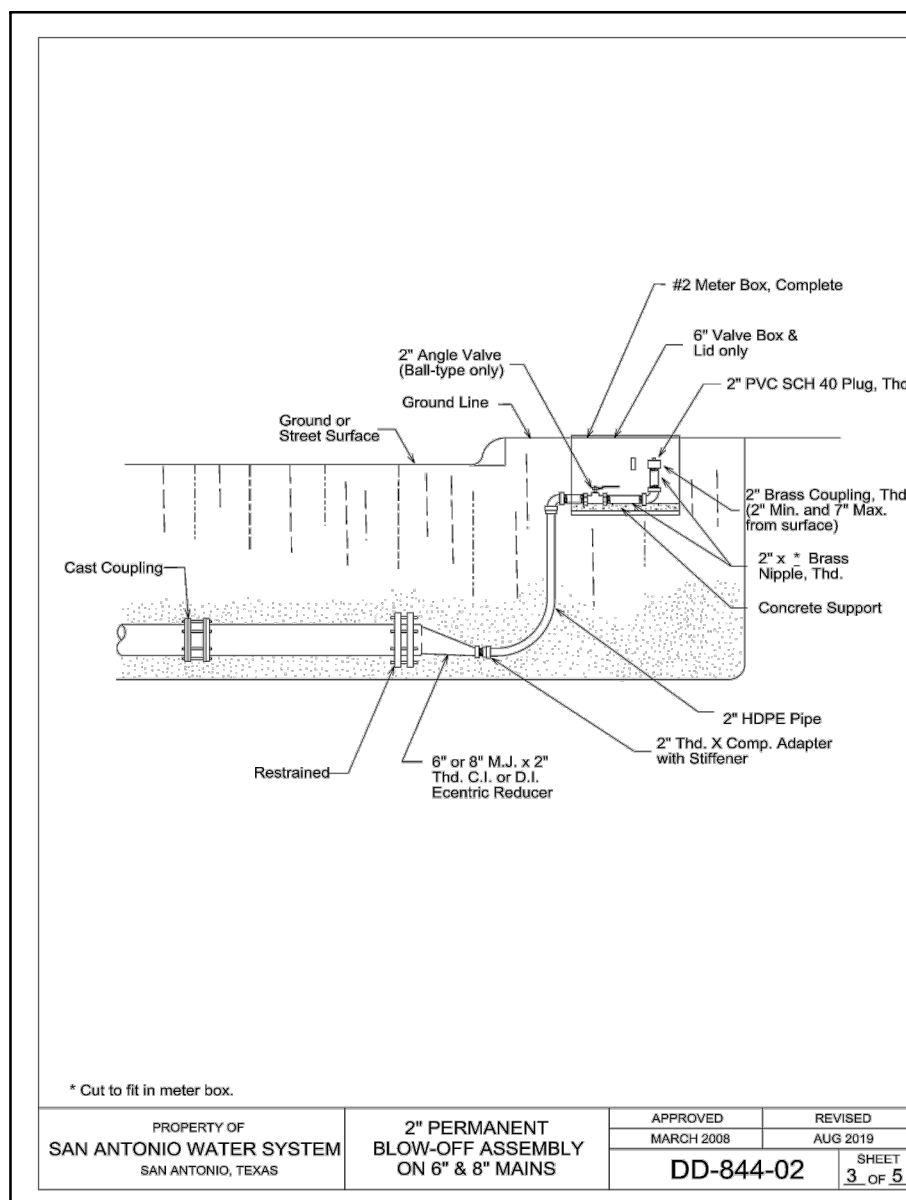
PROPERTY OF	RESTRAINED LENGTHS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	FOR REDUCERS	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-839-07	1 OF 1



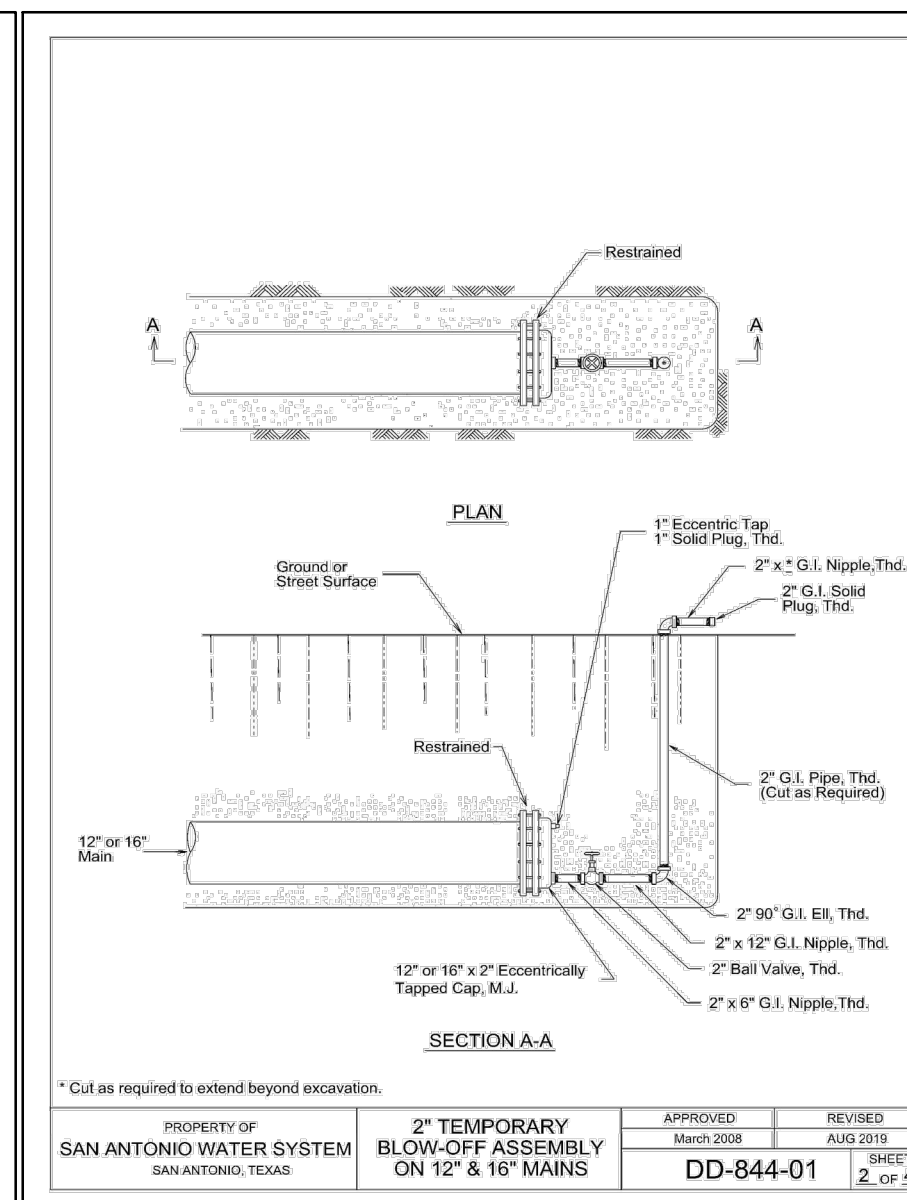
PIPE SIZE (INCH)	RESTRAINED LENGTH (FEET)	RESTRAINED LENGTH (FEET)
6	4	4
8	4	4
10	4	4
12	4	4

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

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



PROPERTY OF	2\"/>	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	PERMANENT BLOW-OFF ASSEMBLY ON 6\"/>	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-844-02	3 OF 5



PROPERTY OF	2\"/>	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	TEMPORARY BLOW-OFF ASSEMBLY ON 12\"/>	March 2008	August 2019
SAN ANTONIO, TEXAS		DD-844-01	2 OF 3

WATER (SAWS PRESSURE ZONE 1170)	
DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N. LOOP 1604 E.	
CITY: SAN ANTONIO	STATE: TEXAS
ZIP: 78247	
PHONE# 210-496-2668	FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S. 35 TOTAL ACREAGE 43.213	
TOTAL LINEAR FOOTAGE OF PIPE: 12\"/>	
NUMBER OF LOTS 36	

DATE

NO. REVISION

11-15-2023

JOCelyn PEREZ
PROFESSIONAL ENGINEER
98367

Fraibank

PAPE-DAWSON
ENGINEERS

NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR., STE. 102 | NEW BRUNSWICK, TX 78132 | 210.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

WATER DISTRIBUTION DETAILS

PLAT NO. CP202310

JOB NO. 30004-27

DATE AUGUST 2023

DESIGNER CL

CHECKED HF DRAWN BH

SHEET C4.10

FOR PERMIT

Date: Nov 15, 2023, 11:04am User: ID: hnp04615
File: P:\300\04\27\Design\04\WNT-30004-27.dwg

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SAWS CONSTRUCTION NOTES
(LAST REVISED JULY 2017)

SAWS GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
- A.CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM" TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER" TAC TITLE 30 PART 1 CHAPTER 290.
- B.CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- C.CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".
- D.CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
- E.CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS](http://www.saws.org/business_center/specs). UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.
4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES. REQUESTING MARKERS LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
- SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://www.saws.org/service/locates)
 - COSA DRAINAGE (210) 207-0724 OR (210) 207-6026
 - COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
 - COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
 - TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
- HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
11. ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SAWS NOTE:

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

SAWS WATER NOTES

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS. THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
- FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS CENTER (210) 233-2014
2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS- CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSP)
4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS. IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
5. ALL VALVES SHALL READ "OPEN RIGHT".
6. PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 985 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF *PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).
7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.
8. BACKFLOW PREVENTION DEVICES:
- ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
 - ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.
9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.

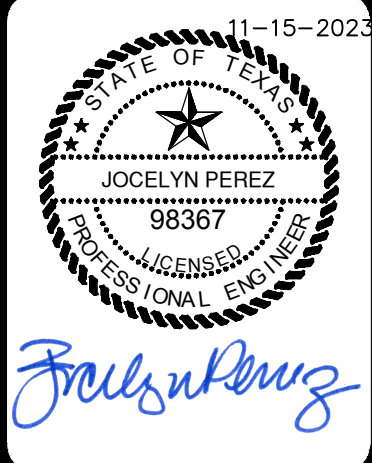
PROJECT WATER NOTES

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

WATER (SAWS PRESSURE ZONE 1170)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N. LOOP 1604 E.	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668	FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213	
TOTAL LINEAR FOOTAGE OF PIPE: 12"-1008 L.F. PLAT NO. CP202310	
8"-1,595 L.F.	
NUMBER OF LOTS 36	SAWS JOB NO. 23-1154

DATE	NO.	REVISION



PAPE-DAWSON
ENGINEERS

NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, TX 78162 | 210.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

WATER DISTRIBUTION NOTES

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C4.20

FOR PERMIT

MATCHLINE "A" - SEE THIS SHEET

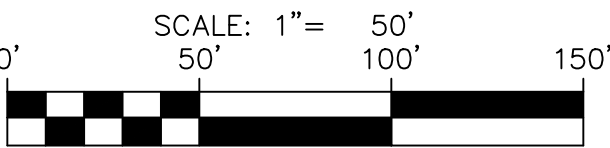
BENCHMARK LOCATION MAP

BENCHMARKS

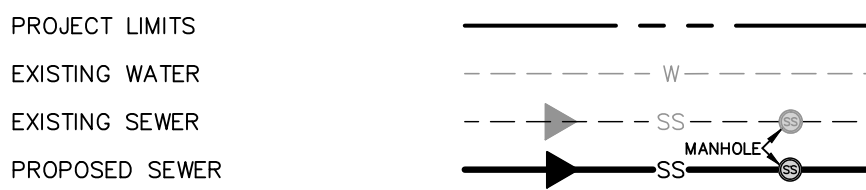
Point #	Northing	Easting	Elevation	Full Description
2001	13,713,794	2,032,201	1010.53	RIRCTV
2002	13,713,748	2,032,295	1009.82	RIRCTV
2004	13,713,852	2,032,402	1003.44	RIRCVT
10001	13,711,320	2,033,638	1018.03	SITE BENCH MARK - (SIRC)
10132	13,710,208	2,032,728	980.84	SITE BENCH MARK - (CC-132)
10142	13,711,108	2,033,146	1016.83	SITE BENCH MARK - (CC-142)

LOCATION MAP

NOT-TO-SCALE



SEWER LEGEND



REF. SAWS SPEC ITEM 812 FINISHED GROUND/PAVEMENT (TOP OF GRADE)

PROPOSED WATER LINE
SEPARATION DISTANCE AND PROTECTION REQUIREMENTS TO COMPLY WITH 30 TAC 217.53(d) AND 290.44(e)



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

CAUTION!!

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

FINISHED FLOOR NOTES:

1. 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.

2. 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.

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 DESIGNER, 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.

SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N. LOOP 1604 E.			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78247	
PHONE# 210-496-2668	FAX#		
SAWS BLOCK MAP# 084-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213			
TOTAL LINEAR FOOTAGE OF PIPES 4666 L.F. of 8" SS			
NUMBER OF LOTS 36 SAWS JOB NO. 23-1626			

PAPE-DAWSON ENGINEERS

NEW BRAUNfels | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1075 INDEPENDENCE DR. STE. 102 | NEW BRAUNfels, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

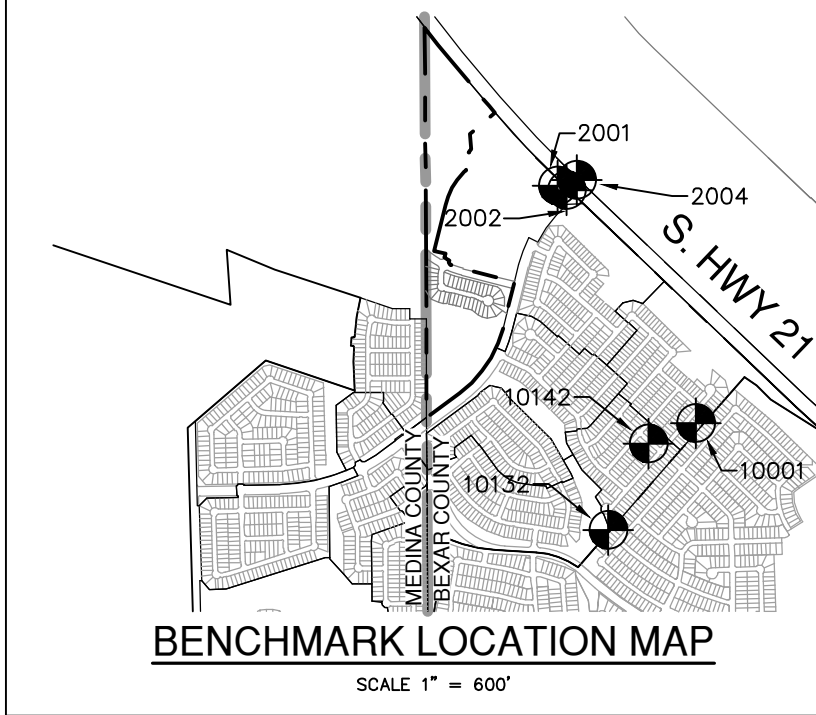
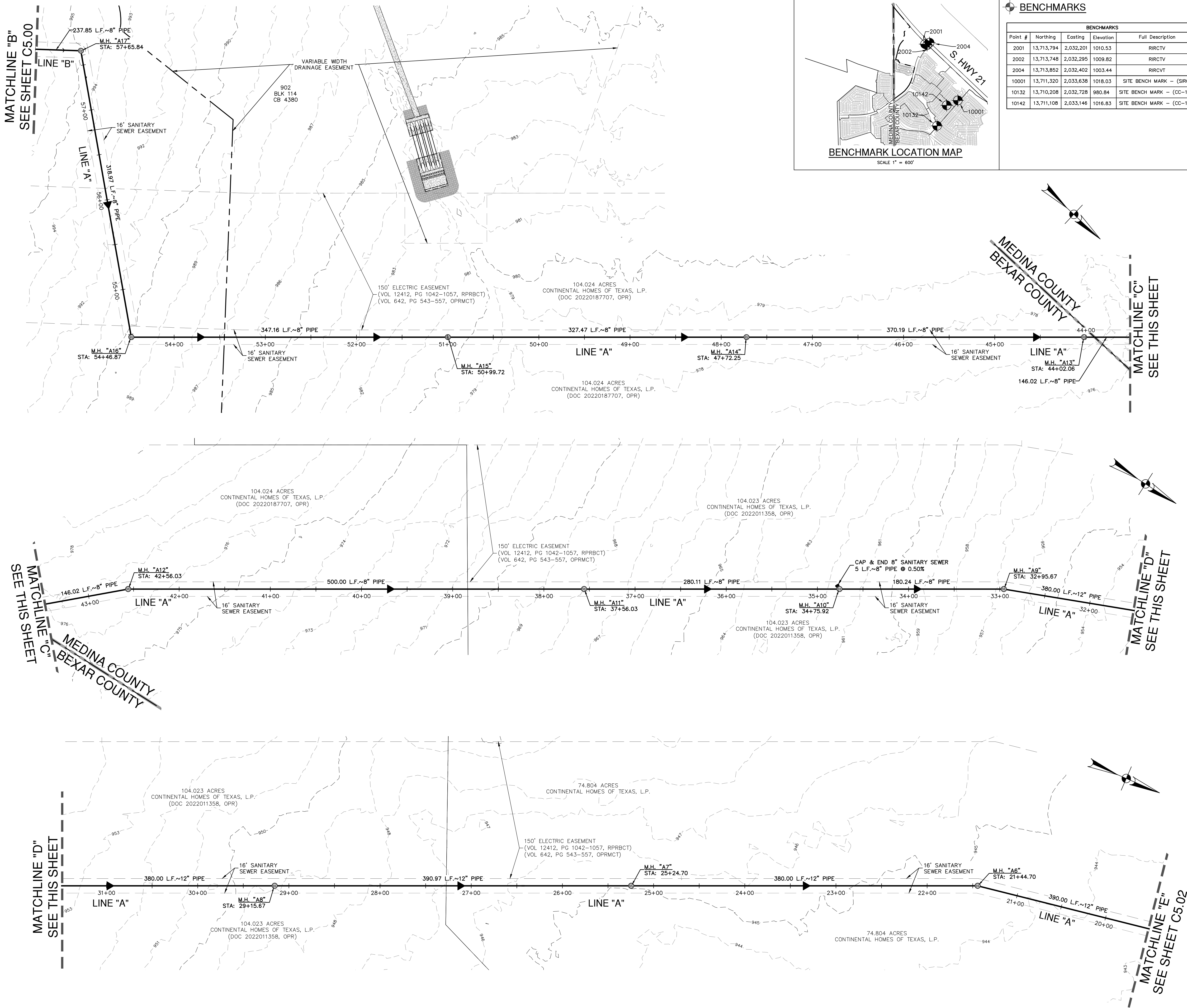
OVERALL SANITARY SEWER PLAN

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C5.00

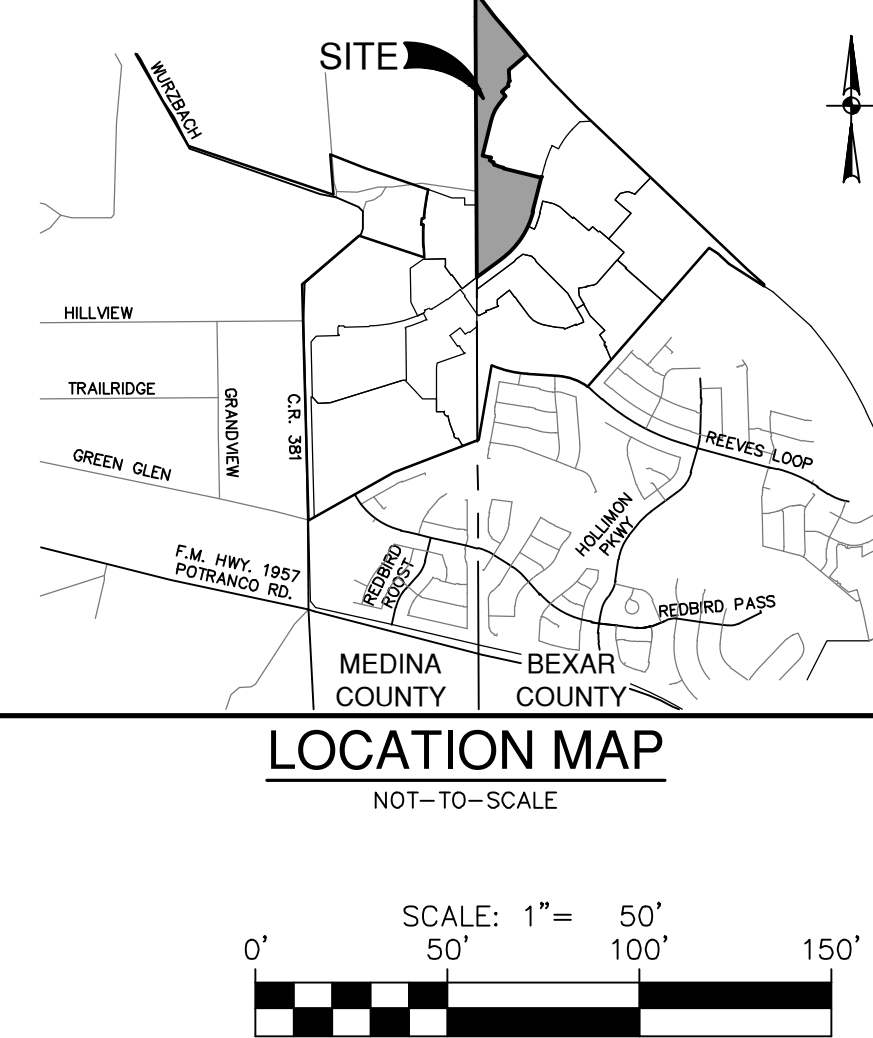
FOR PERMIT

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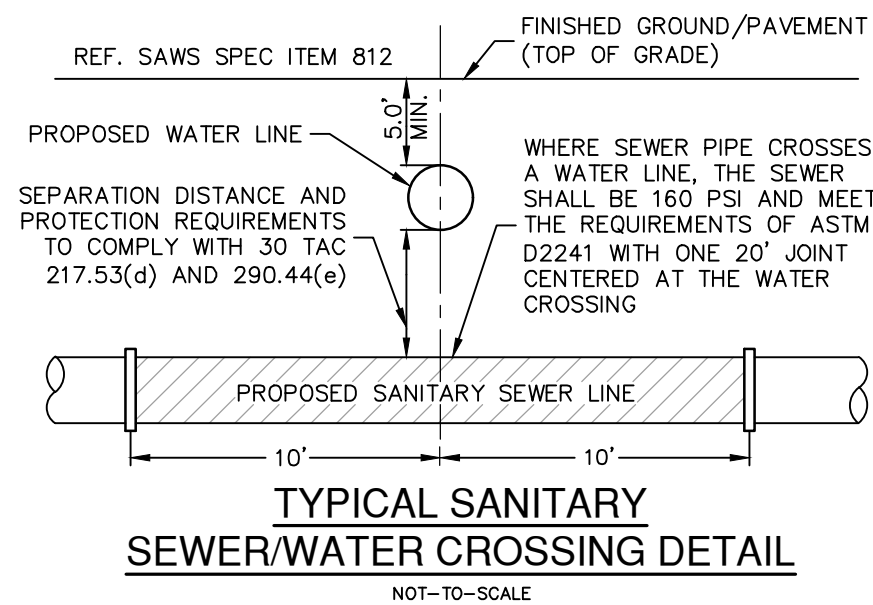
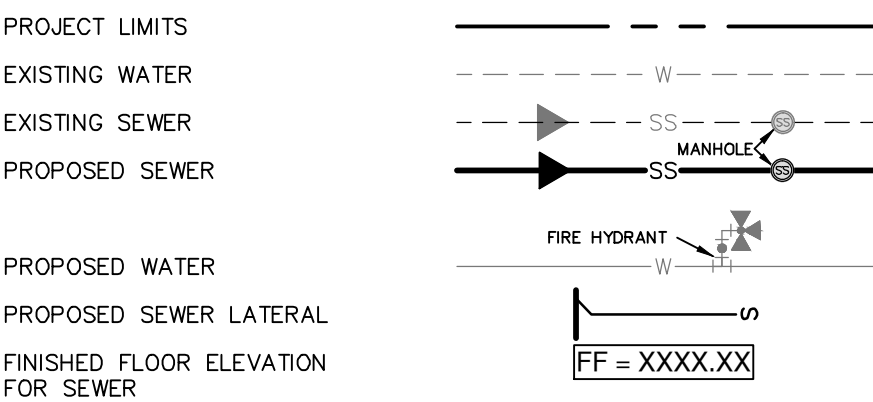
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BENCHMARKS				
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SEWER LEGEND



CAUTION!!

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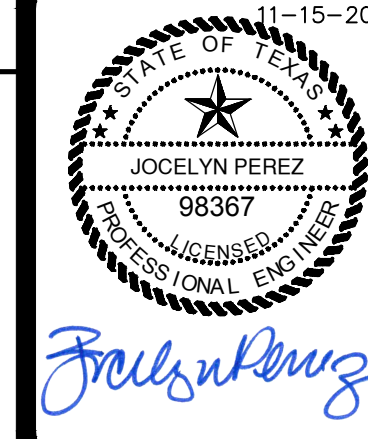
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SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME:	CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS:	5419 N. LOOP 1604 E.
CITY:	SAN ANTONIO
STATE:	TEXAS
ZIP:	78247
PHONE#	210-496-2668
FAX#	
SAWS BLOCK MAP#	064-582
TOTAL EDU'S	35
TOTAL ACREAGE	43.213
TOTAL LINEAR FOOTAGE OF PIPE	4,666 L.F. of 8" SS
SAWS JOB NO.	23-1626

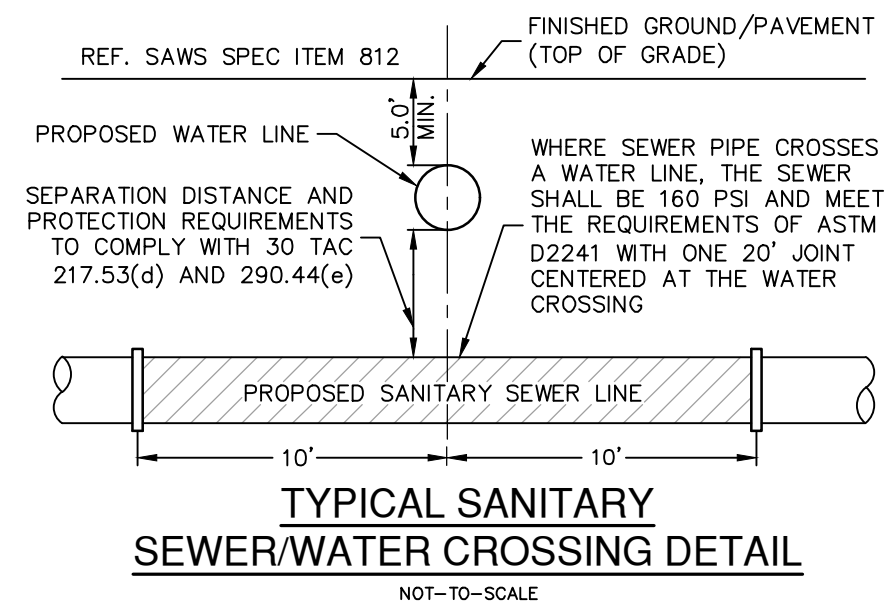
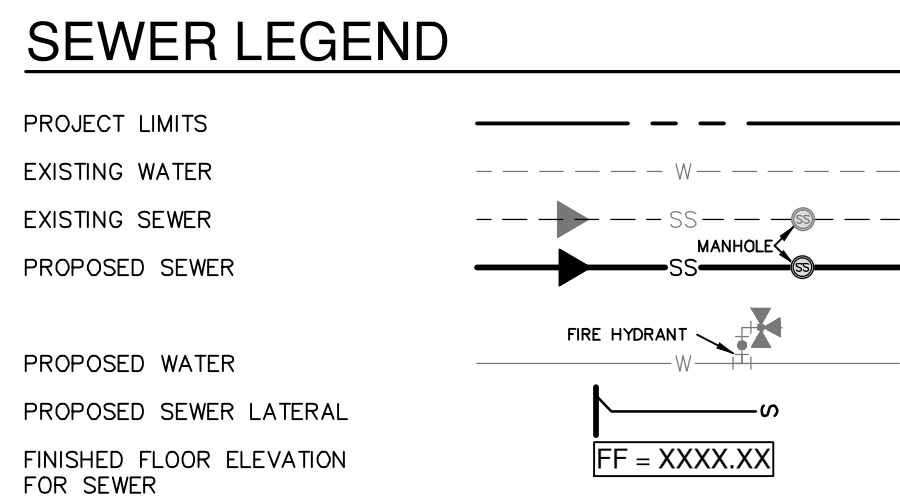
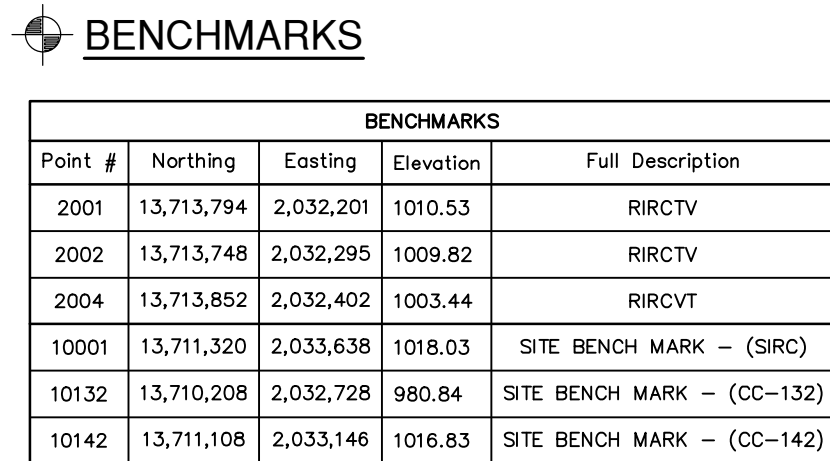
DATE	
NO.	
REVISION	



REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
OVERALL SANITARY SEWER PLAN

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C5.01

FOR PERMIT



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ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213
TOTAL LINEAR FOOTAGE OF PIPE 3196 LF. of 8" SS 4666 LF. of 12" PLAT NO. CP202310
NUMBER OF LOTS 36 SAWS JOB NO. 23-1626

**PAPE-DAWSON
ENGINEERS**

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

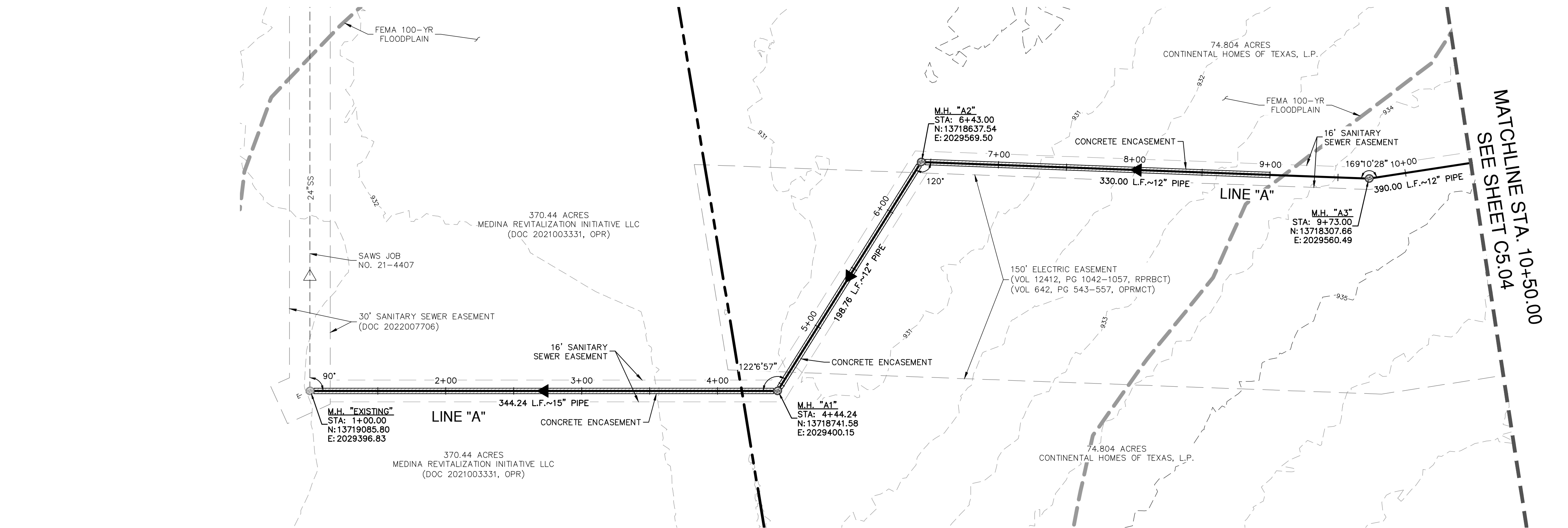
OVERALL SANITARY SEWER PLAN

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED **HF** DRAWN
SHEET C5.02

FOR PERMIT

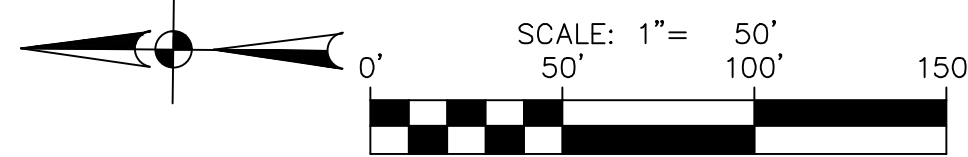
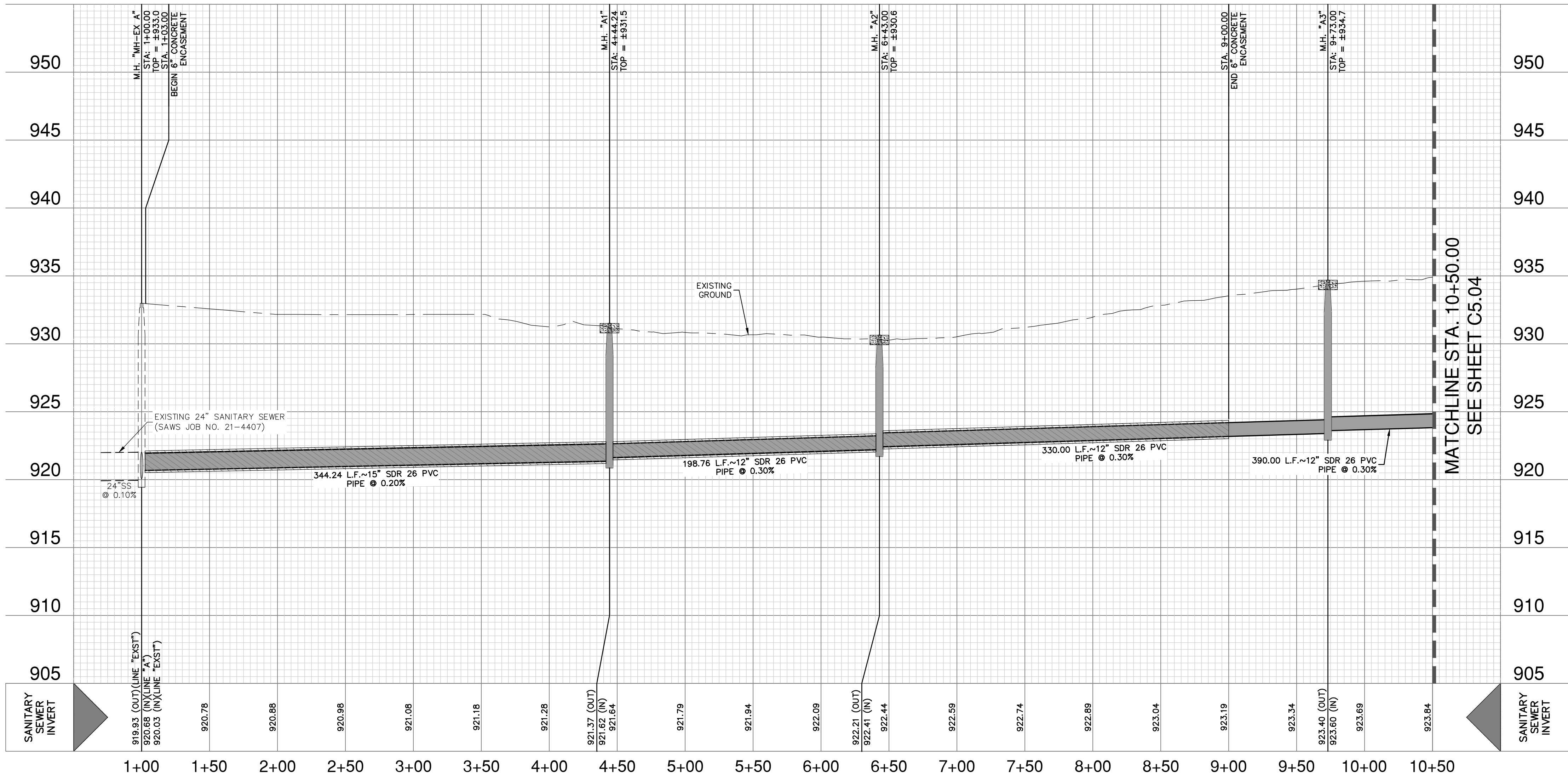
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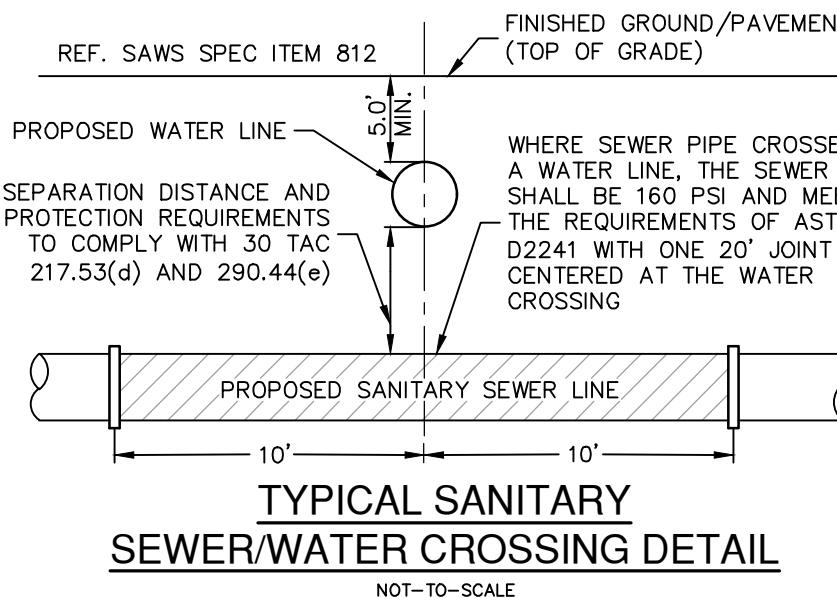
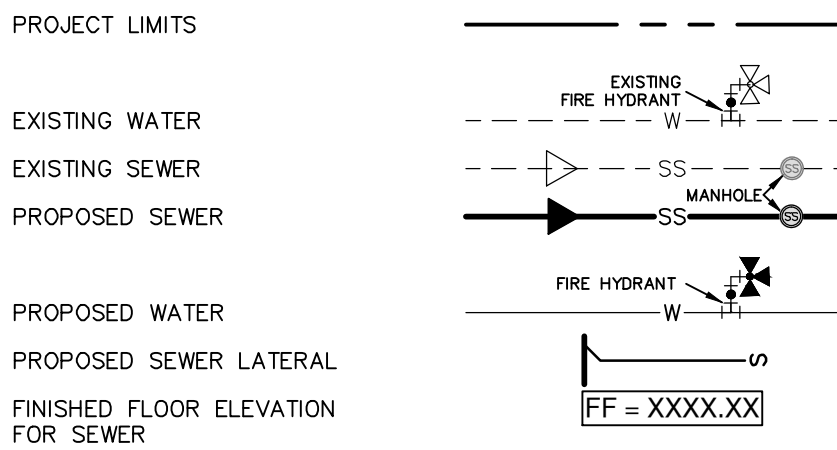


SANITARY SEWER LINE "A"
STA 1+00.00 TO 10+50.00

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



SEWER LEGEND



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SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

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CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668	FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213	
TOTAL LINEAR FOOTAGE OF PIPE 3,186 L.F. AT 12" SPLAT NO. CP202310	
NUMBER OF LOTS 36	SAWS JOB NO. 23-1626

PAPE-DAWSON
ENGINEERS

NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, NJ 07102 | 201.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

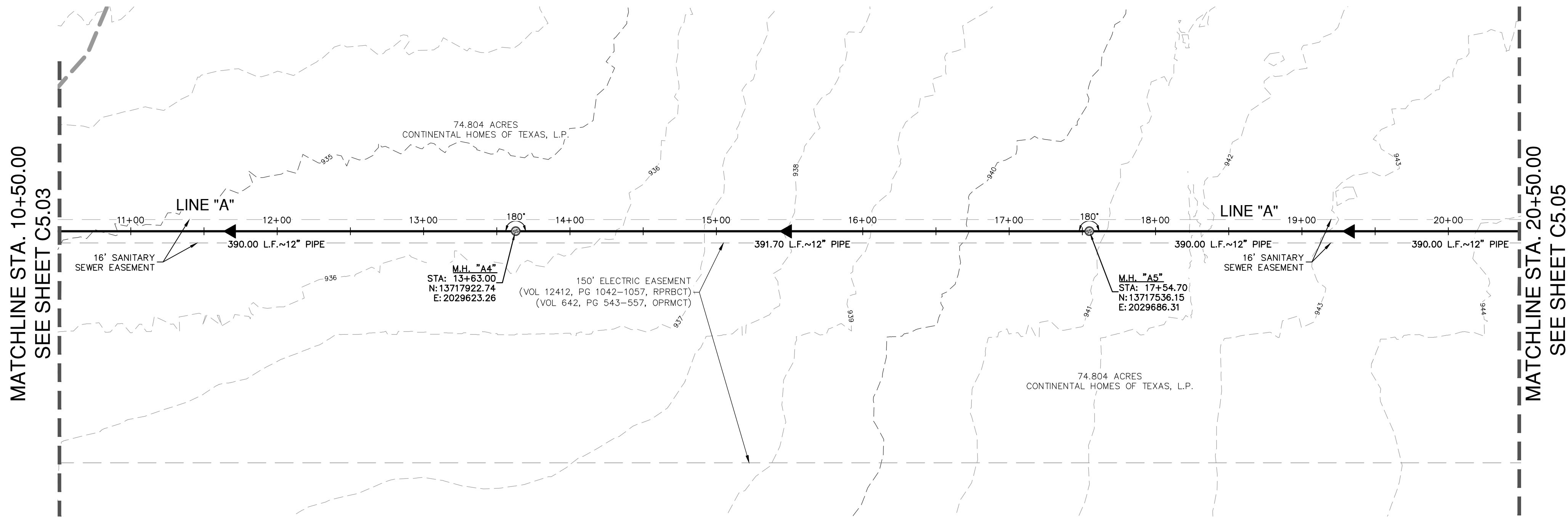
SANITARY SEWER LINE A - PLAN & PROFILE
STA 1+00.00 TO 10+50.00

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.03

FOR PERMIT

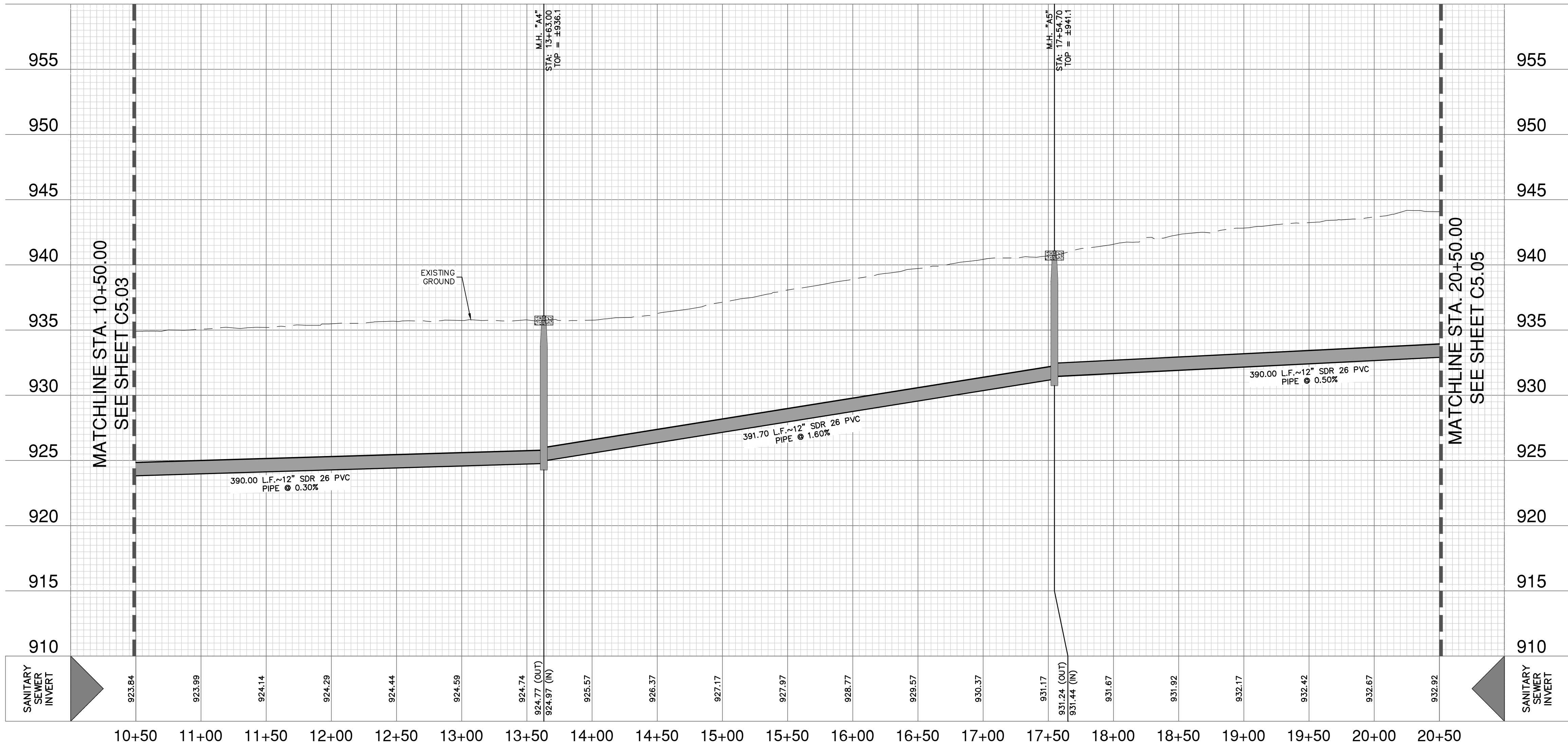
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SANITARY SEWER LINE "A"
STA 10+50.00 TO 20+50.00

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



SEWER LEGEND

PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED SEWER LATERAL
FINISHED FLOOR ELEVATION FOR SEWER

REF. SAWS SPEC ITEM 812
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE AND PROTECTION REQUIREMENTS TO COMPLY WITH 30 TAC 217.53(d) AND 290.44(e)
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10'
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

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DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE: 210-496-2668 FAX:
SAWS BLOCK MAP# 064-582 TOTAL EDU'S: 35 TOTAL ACREAGE 43.213
TOTAL LINEAR FOOTAGE OF PIPE: 390.00 L.F. OF 12" SDR 26 PVC
NUMBER OF LOTS: 36 SAWS JOB NO. 23-1626

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS
NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, TX 78132 | 210.375.9900
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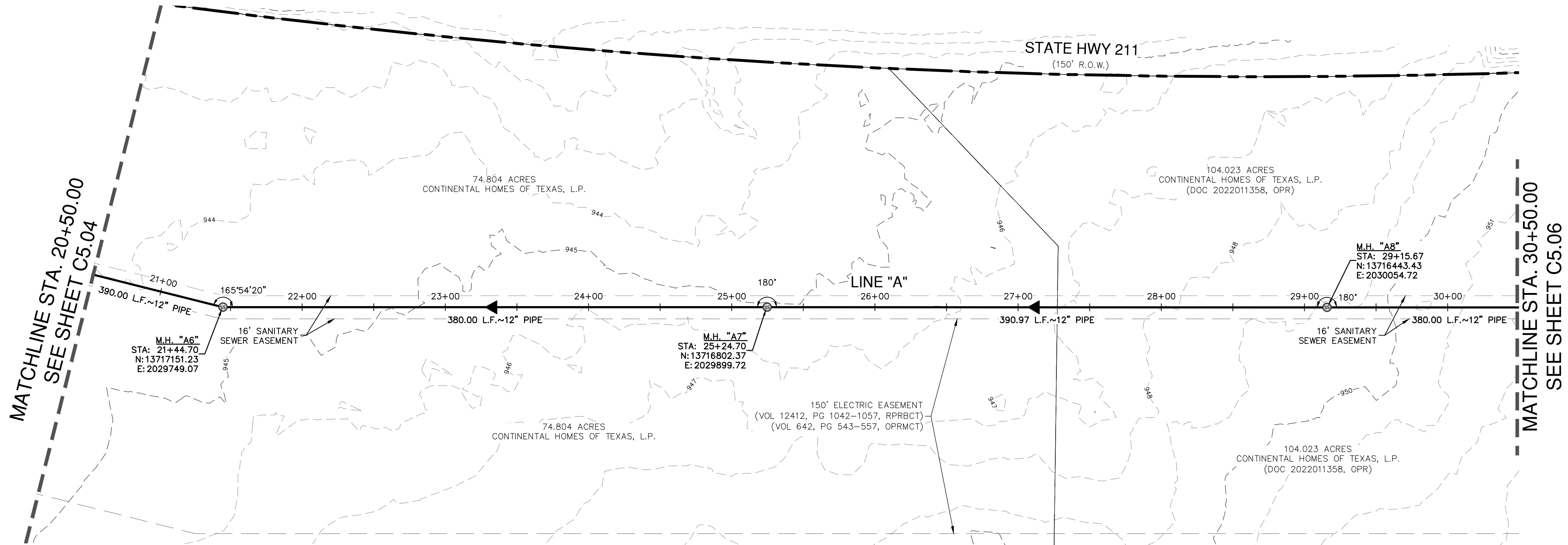
REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
SANITARY SEWER LINE A - PLAN & PROFILE
STA 10+50.00 TO 20+50.00

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.04

FOR PERMIT

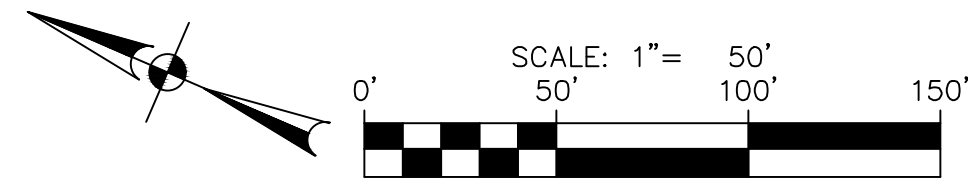
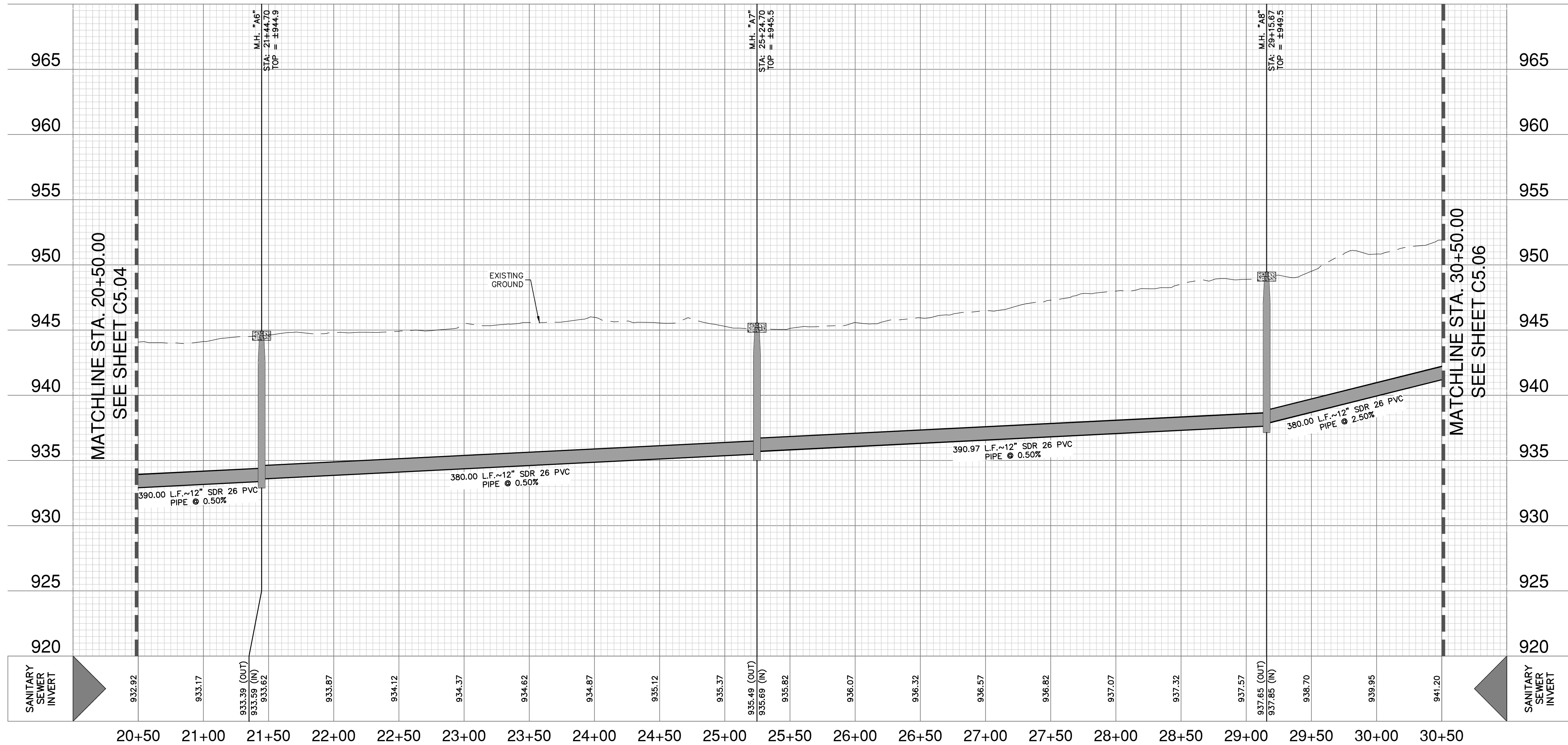
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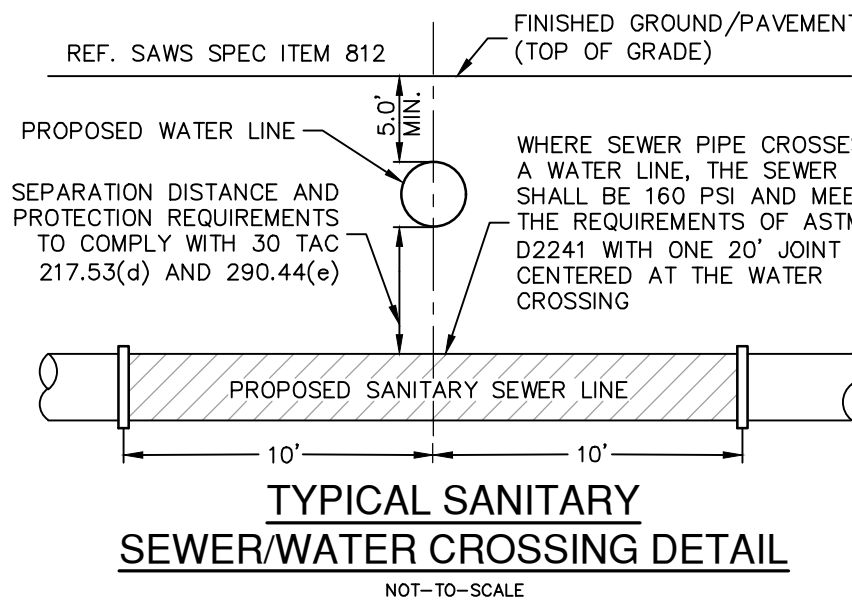
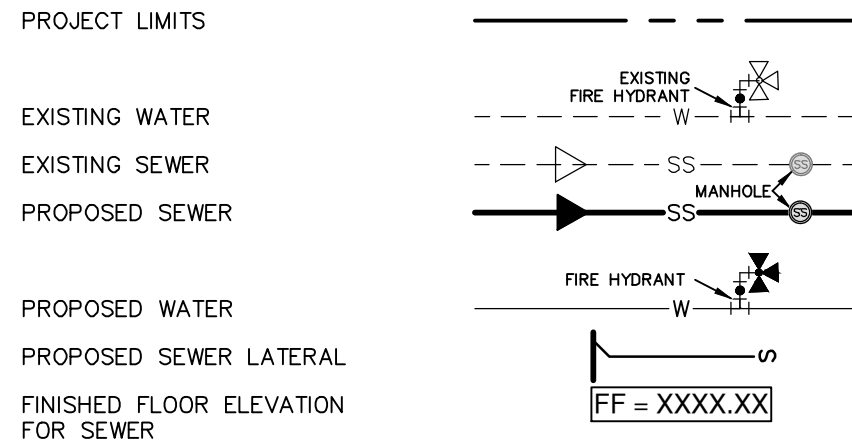


SANITARY SEWER LINE "A"
STA 20+50.00 TO 30+50.00

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HORIZONTAL SCALE: 1" = 50'



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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

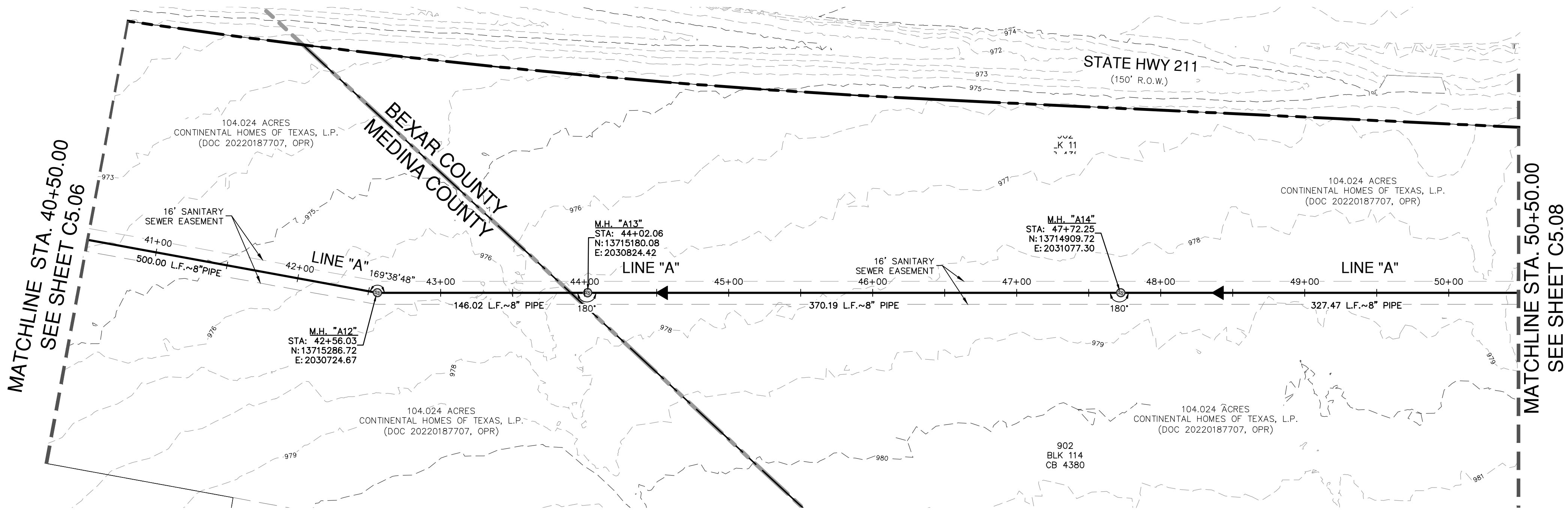
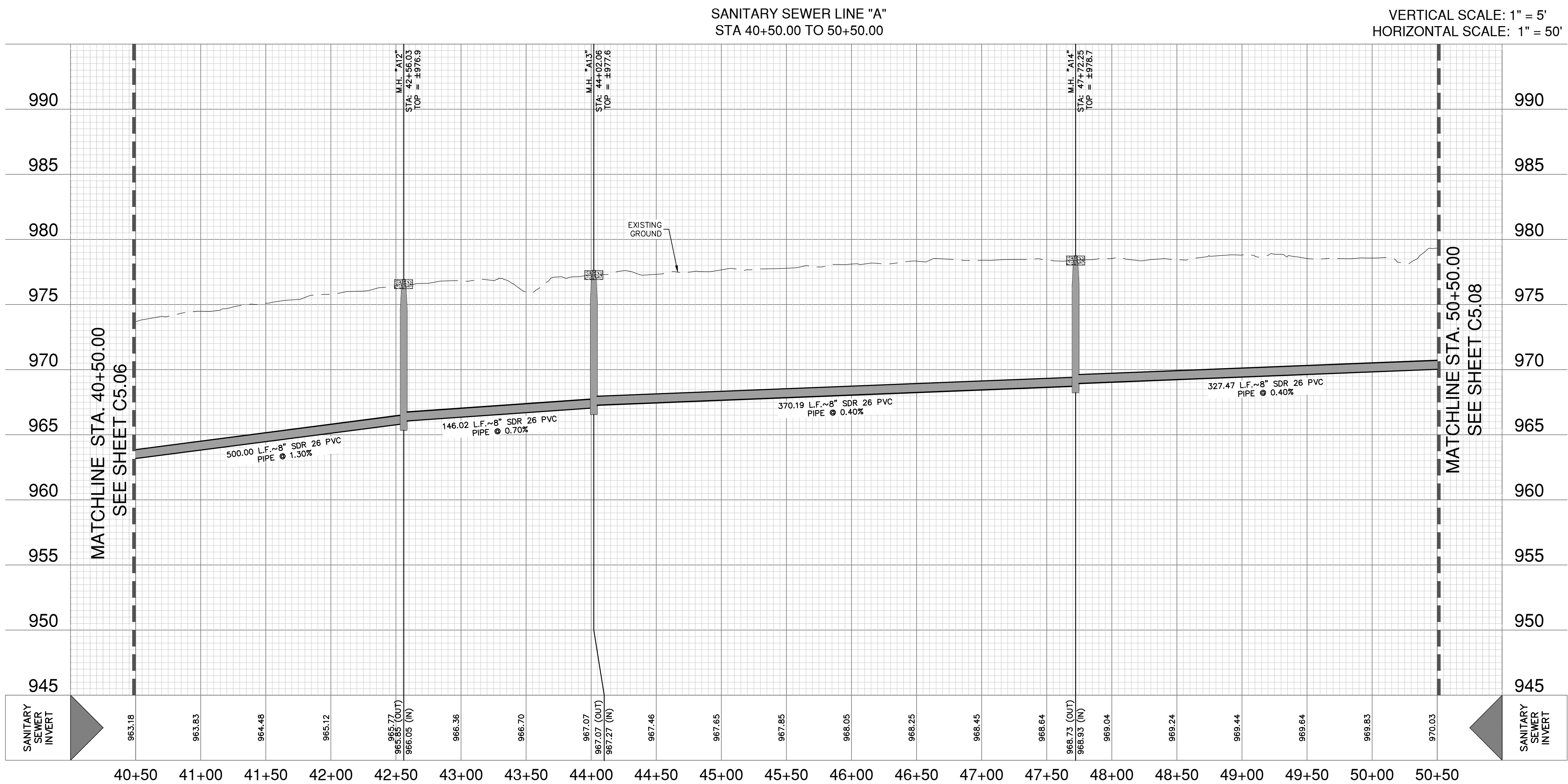
REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
SANITARY SEWER LINE A - PLAN & PROFILE
STA 20+50.00 TO 30+50.00

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C5.05

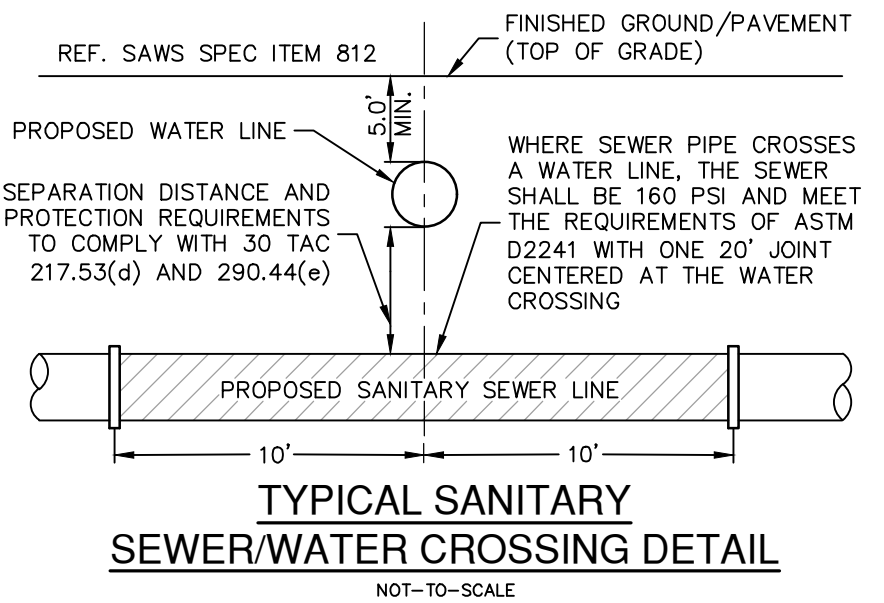
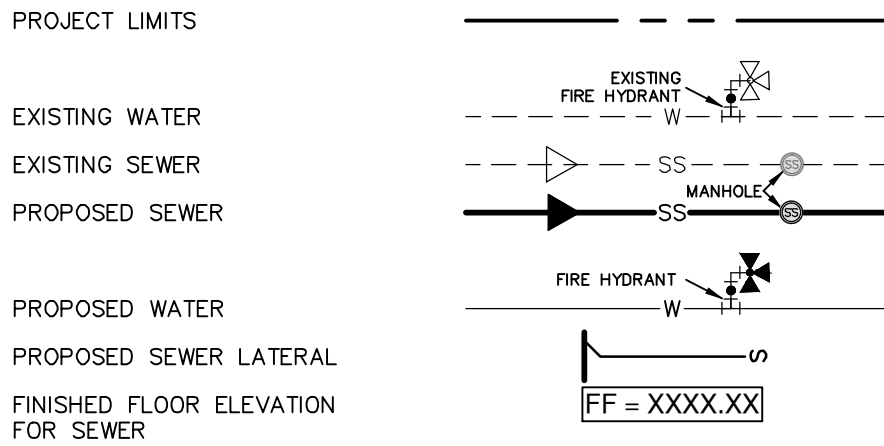
FOR PERMIT

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SEWER LEGEND



CAUTION!!

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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.

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.

SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N. LOOP 1604 E.	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668	FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.213	
TOTAL LINEAR FOOTAGE OF PIPES 3,186 L.F. AT 12" SPLAT NO. CP202310	
NUMBER OF LOTS 36	SAWS JOB NO. 23-1626

NO.	REVISION	DATE



11-15-2023

PAPE-DAWSON ENGINEERS

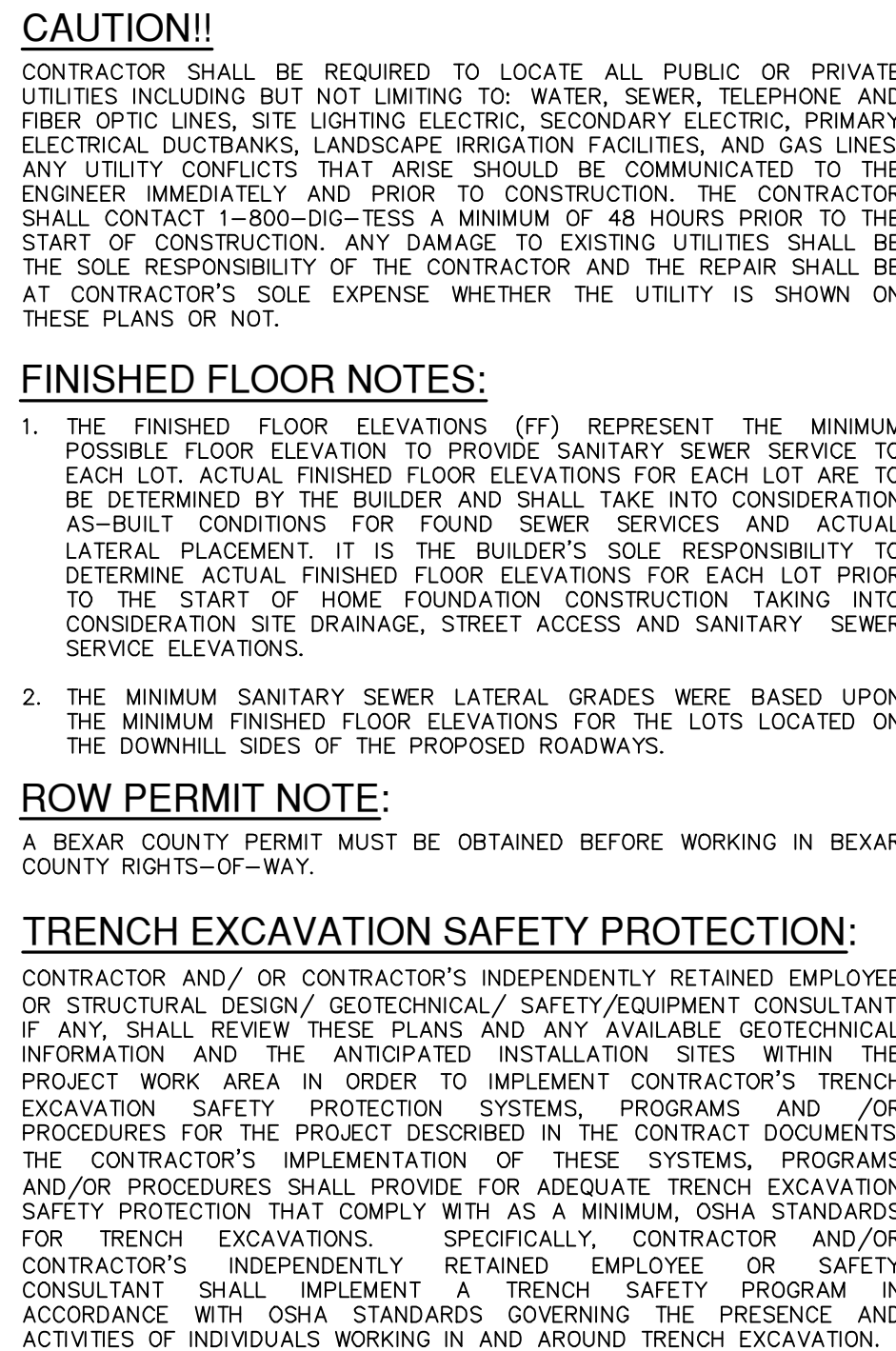
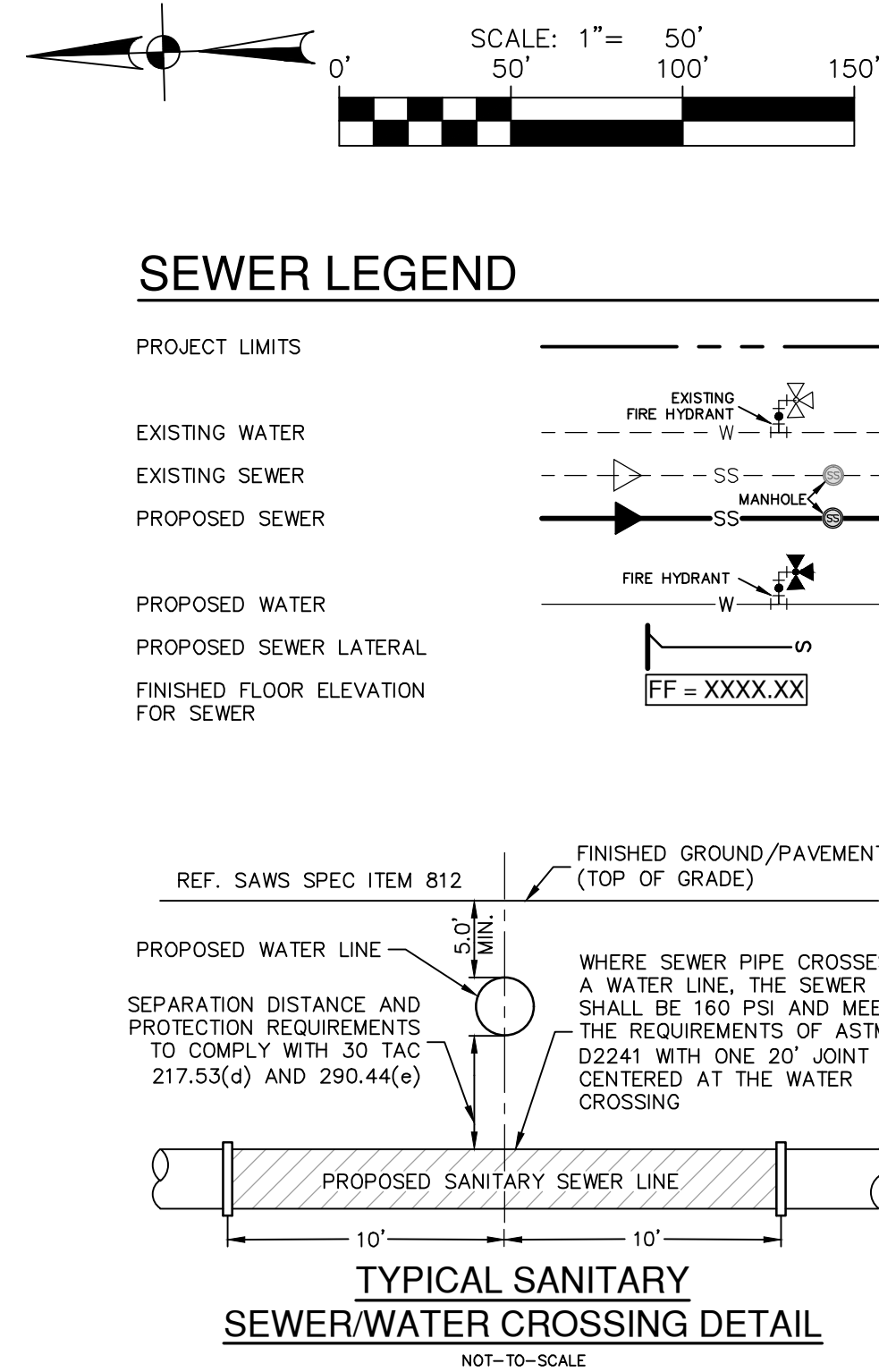
NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, NJ 07102 | 201.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 40+50.00 TO 50+50.00

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C5.07

FOR PERMIT



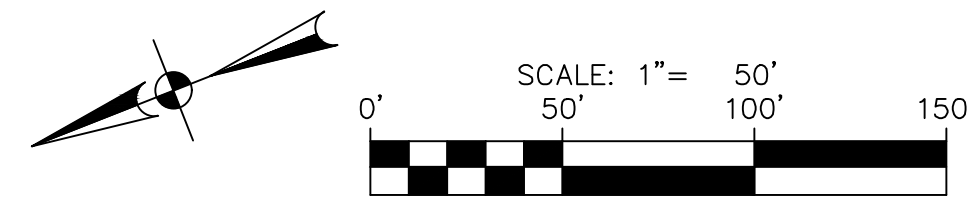
DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX# _____
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.21
TOTAL LINEAR FOOTAGE OF PIPE 3,198 LF. of 8" SS
3,198 LF. of 12" SPSL TOTAL CP202310
NUMBER OF LOTS 36 SAWS JOB NO. 23-1626

RED BIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 50+50.00 TO 57+65.84

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN J
SHEET C5.08

FOR PERMIT



PROJECT LIMITS


EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

MANHOLE

11-15-202

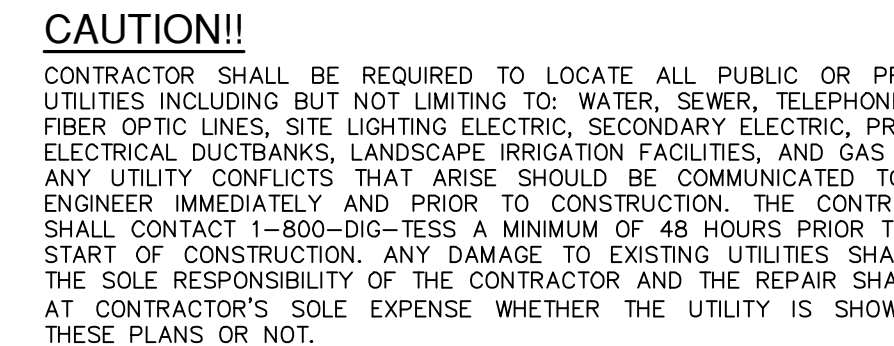


JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

Jocelyn Perez

**PAPE-DAWSON
ENGINEERS**

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR., STE. 102 | NEW BRAUNFELS, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470



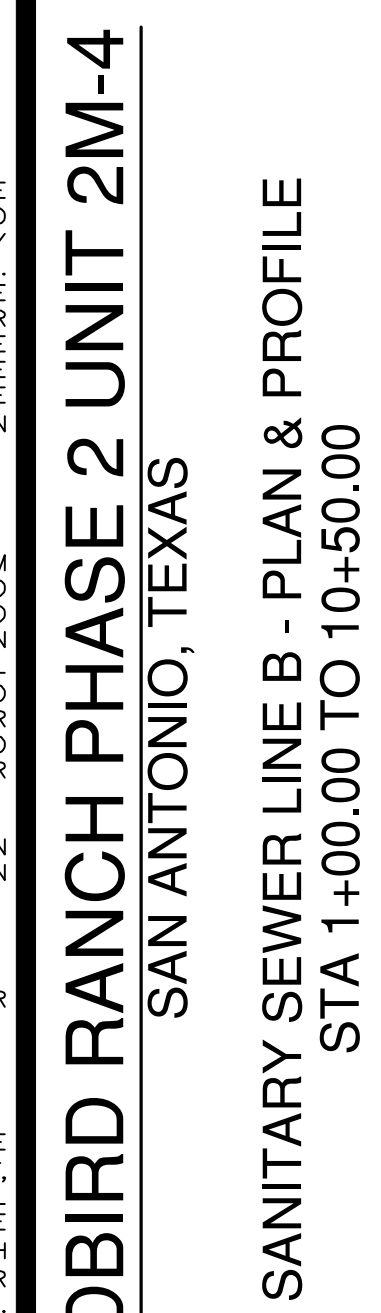
1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MOST POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT SHALL BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ADEQUATE LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT UP TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SERVICE ELEVATIONS.

2. THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED ON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.

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DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2658 FAX#
SAWS BLOCK MAP# 064-582 TOTAL EDU'S 35 TOTAL ACREAGE 43.21
TOTAL LINEAR FOOTAGE OF PIPE 3,186 LF. OF 8" SS
NUMBER OF LOTS 36 SAWS JOB NO. 23-126

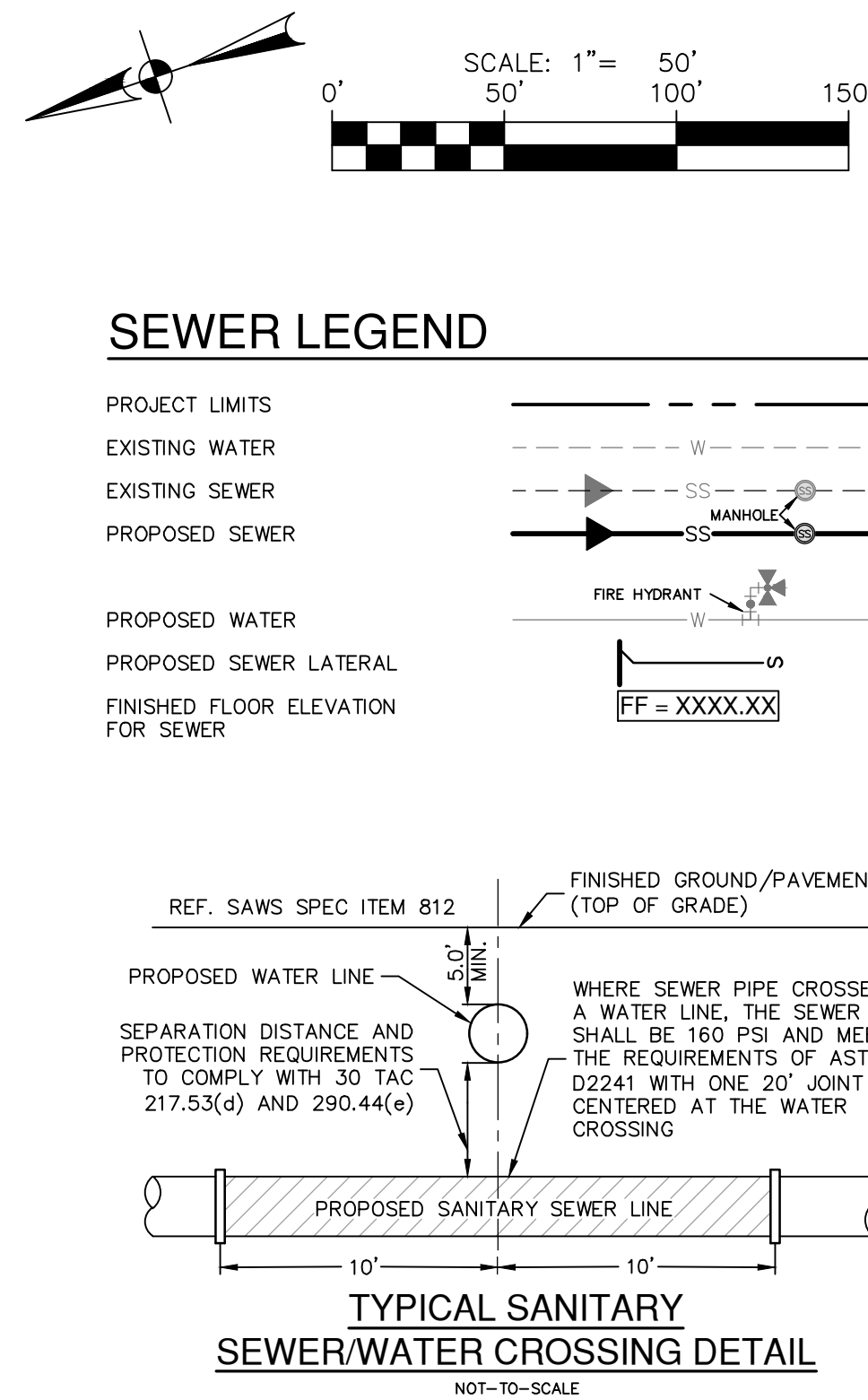
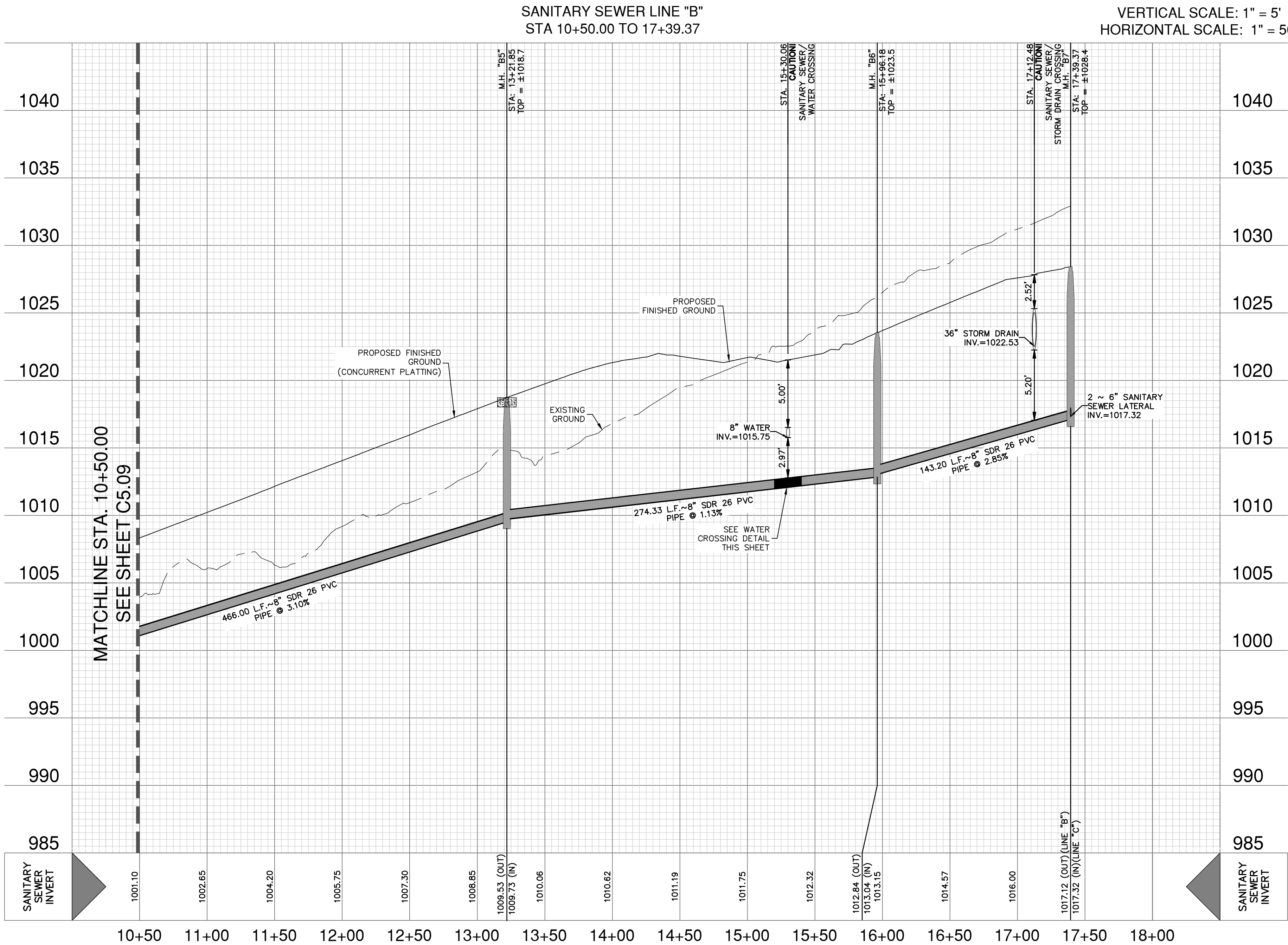


PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.09

FOR PERMIT

Date: Nov 15, 2023, 11:07am User: JD: hnp441
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1672 INDEPENDENCE DR. STE 102 | NEW BRUNSWICK, TX 78132 | 210.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

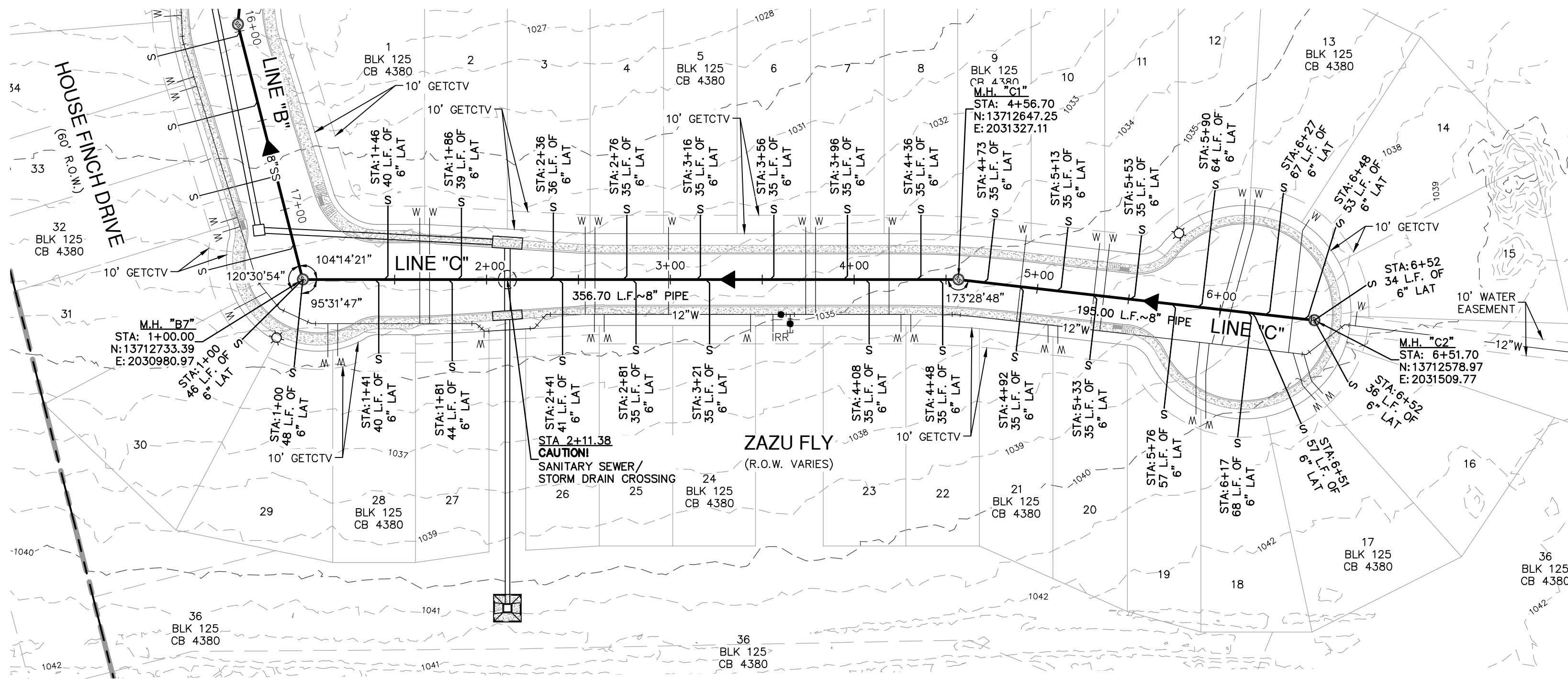
REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS
SANITARY SEWER LINE B - PLAN & PROFILE
STA 10+50.00 TO 17+39.37

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.10

FOR PERMIT

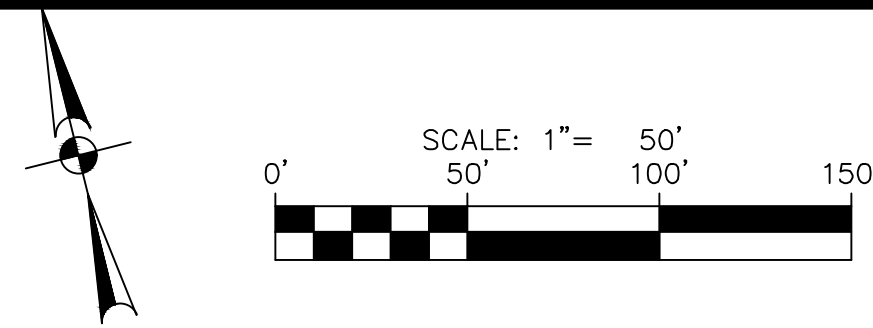
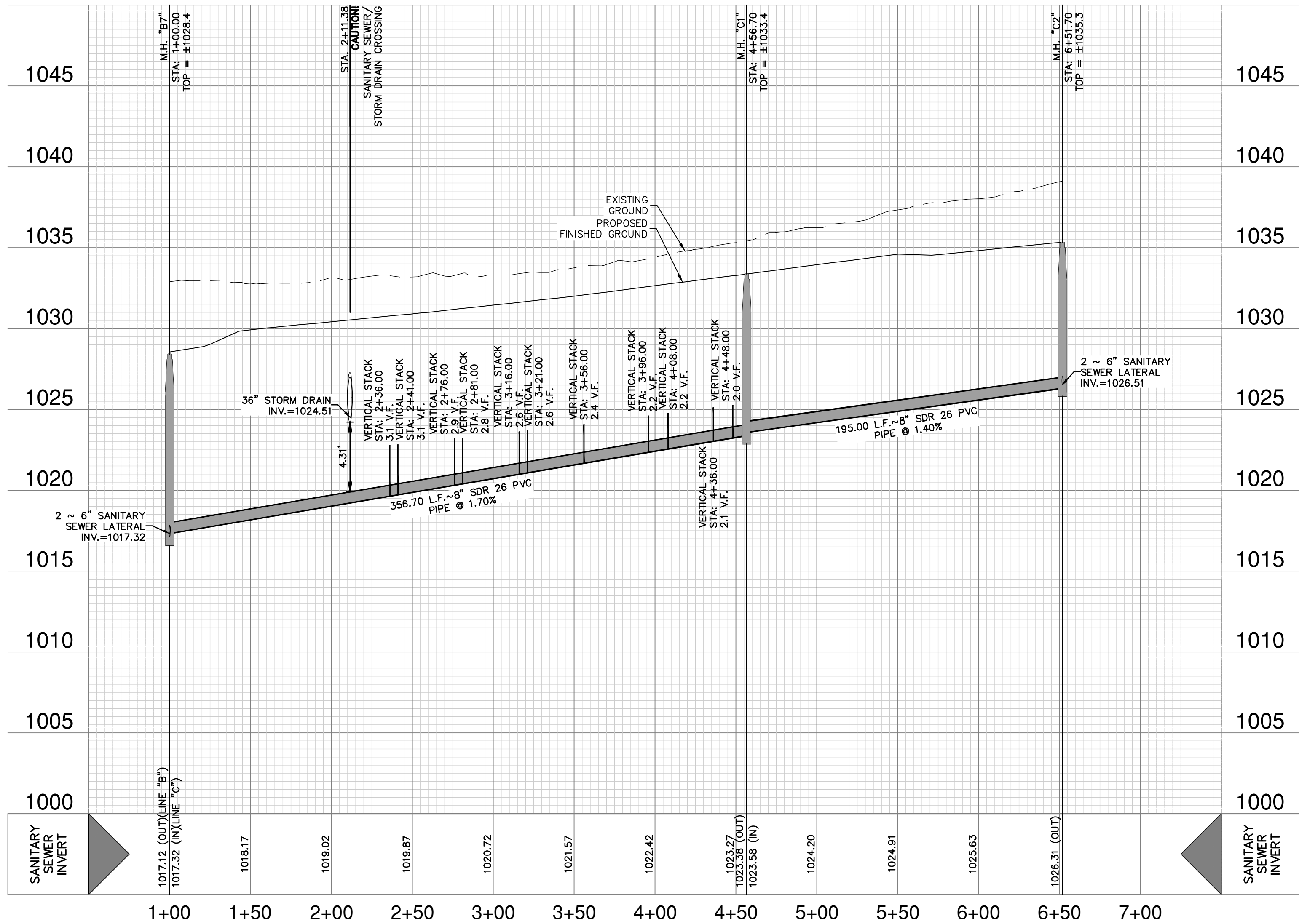
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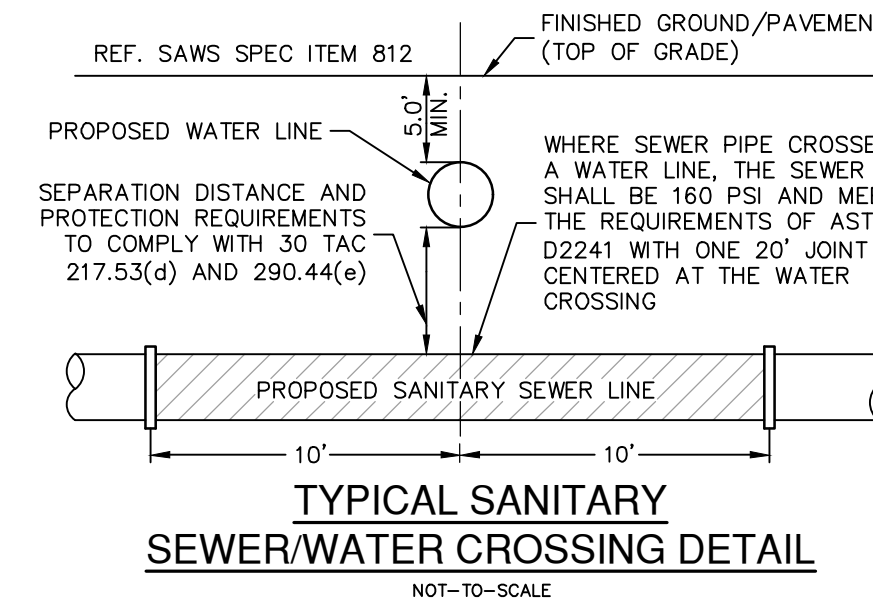
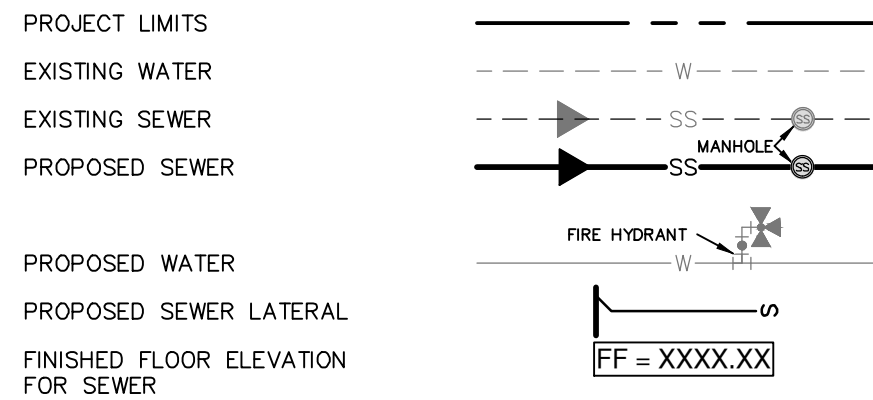


SANITARY SEWER LINE "C"
STA 1+00.00 TO 6+51.70

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



SEWER LEGEND



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SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N. LOOP 1604 E.			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78247	
PHONE# 210-496-2668	FAX#		
SAWS BLOCK MAP# 064-582, TOTAL EDU'S 35, TOTAL ACREAGE 43.213			
TOTAL LINEAR FOOTAGE OF PIPES 186 L.F. AT 12\"/>			
NUMBER OF LOTS 36	SAWS JOB NO. 23-1626		

NO.	REVISION	DATE



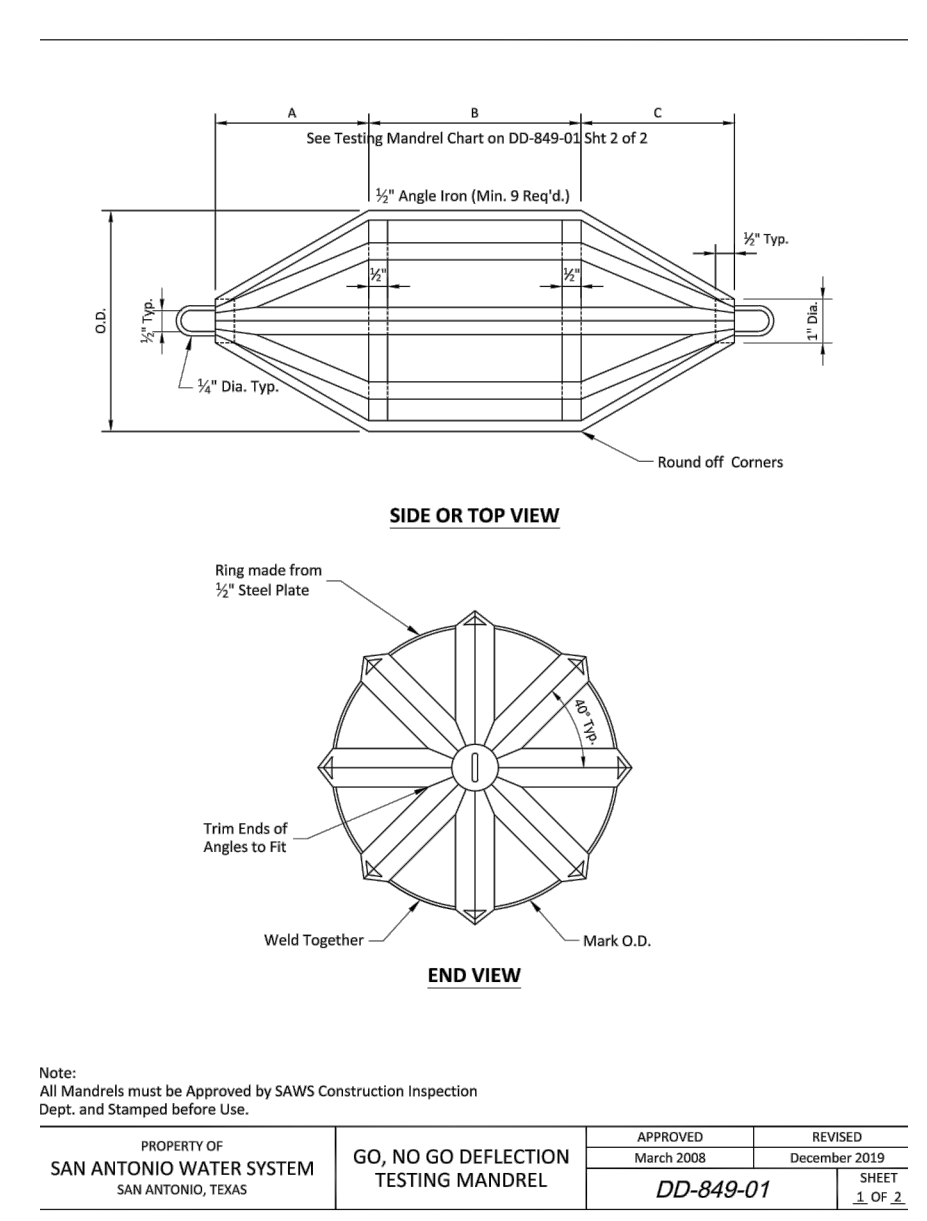
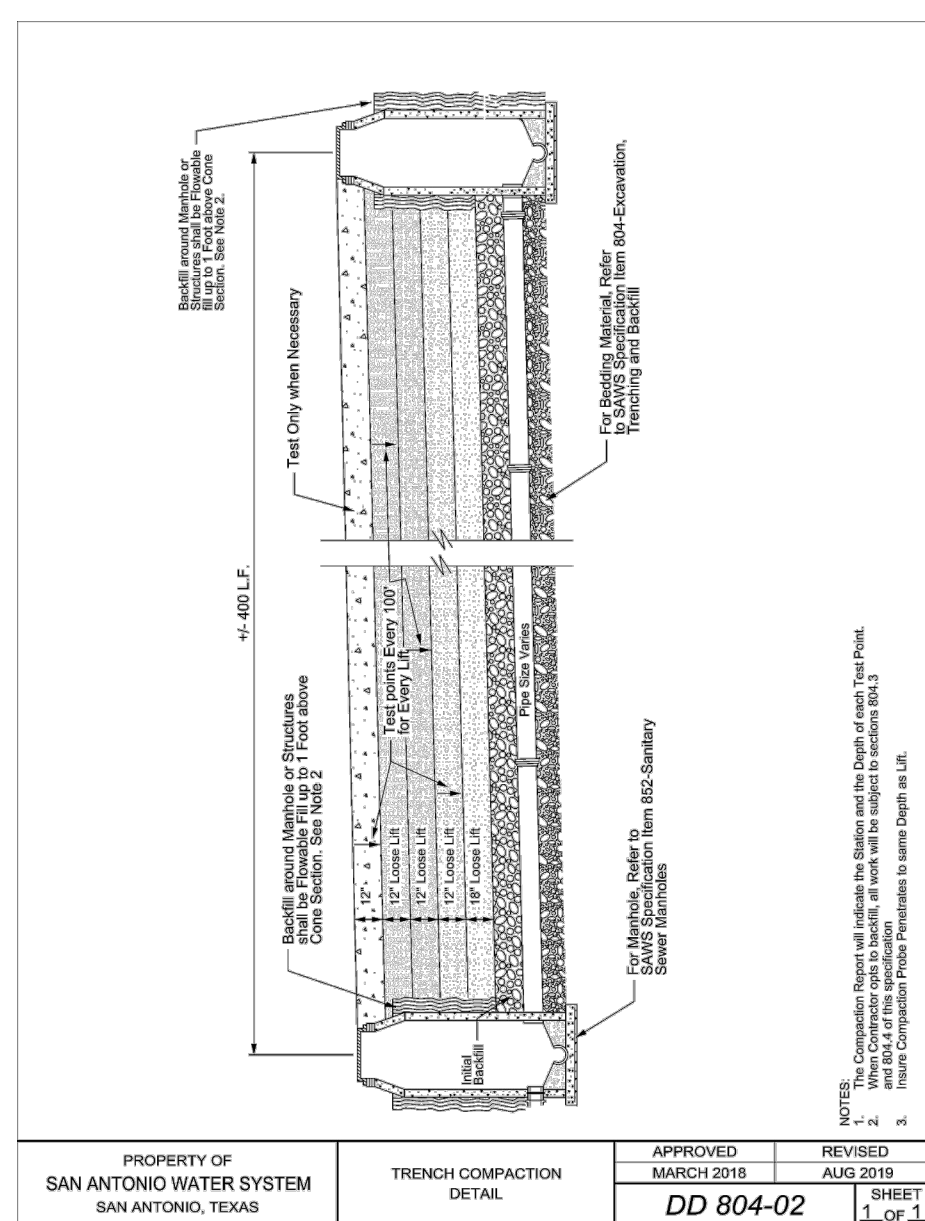
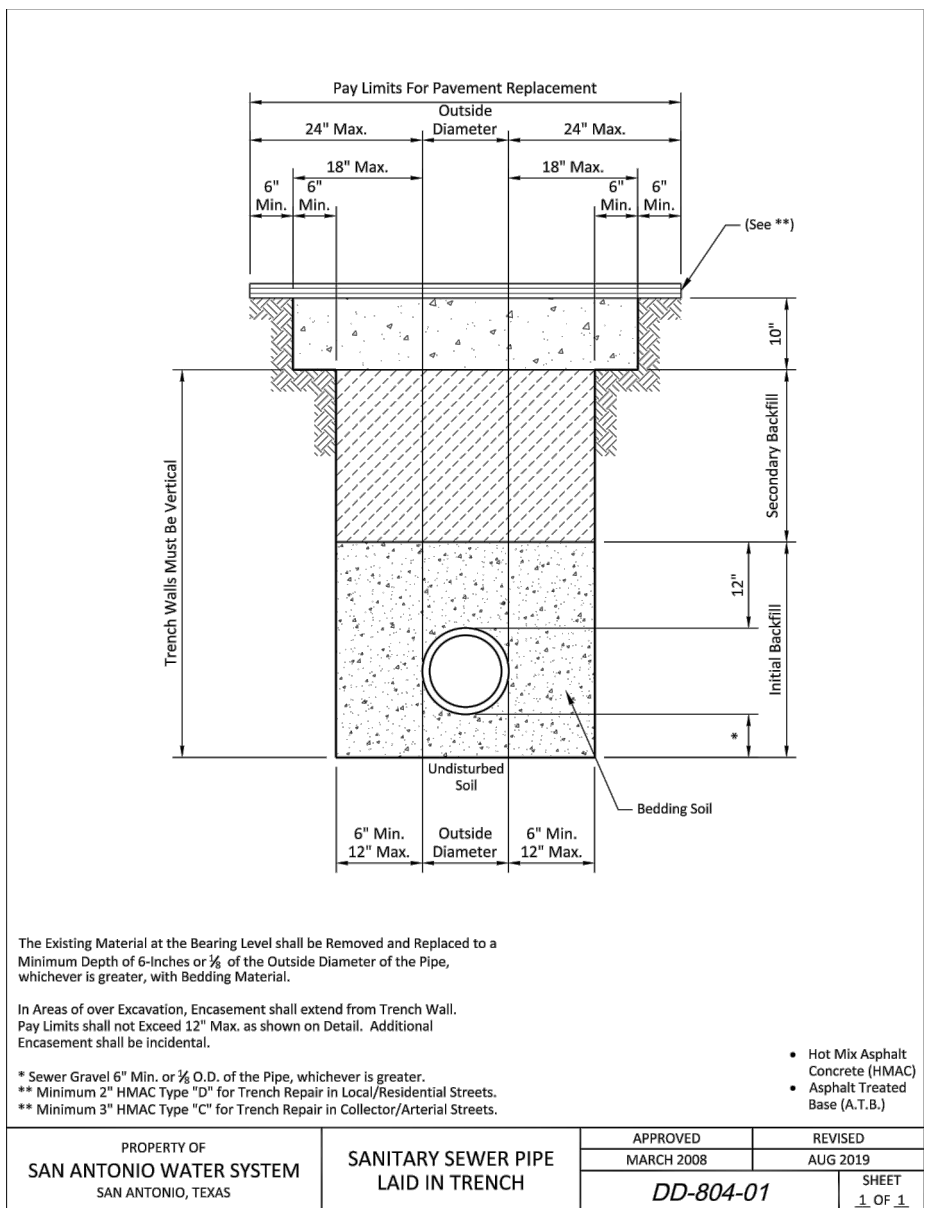
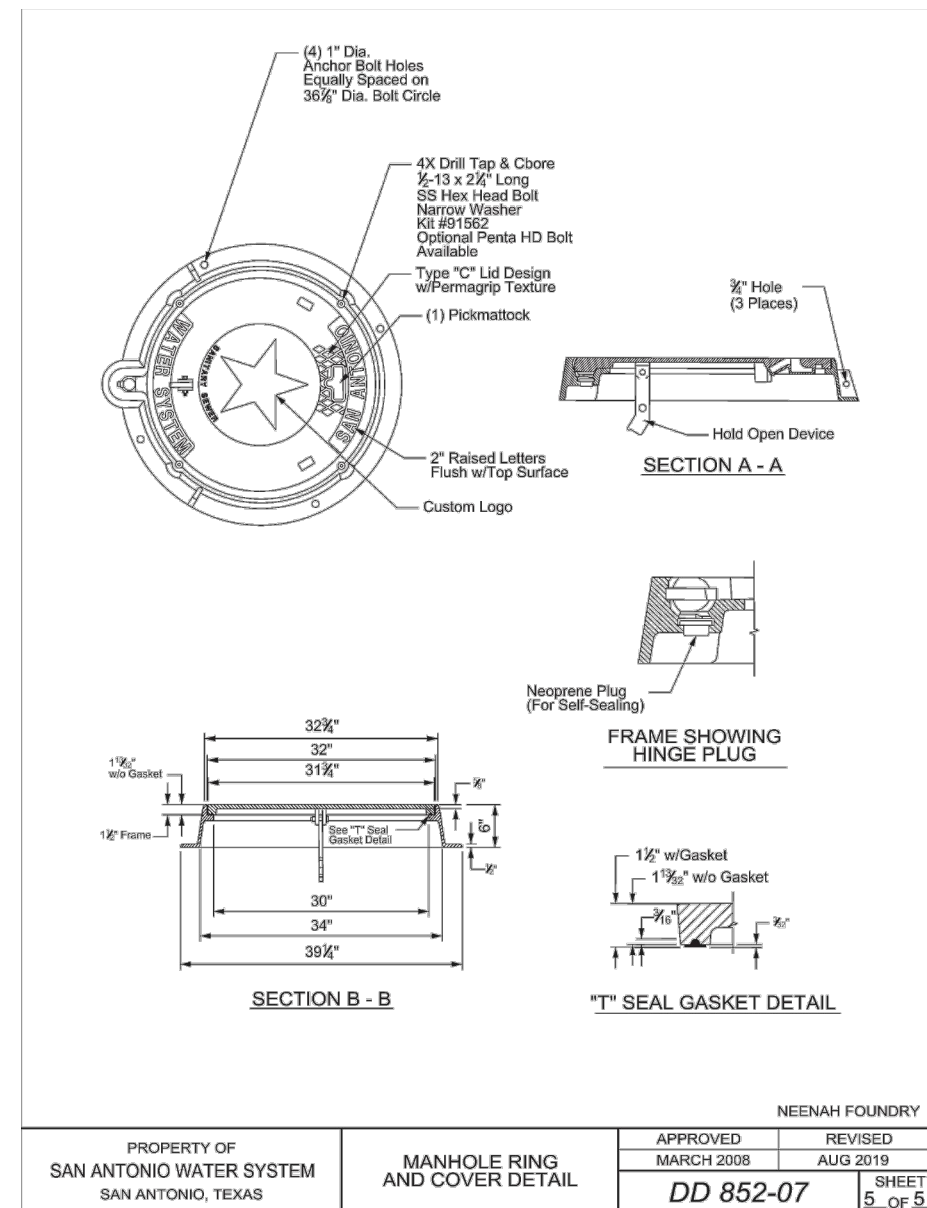
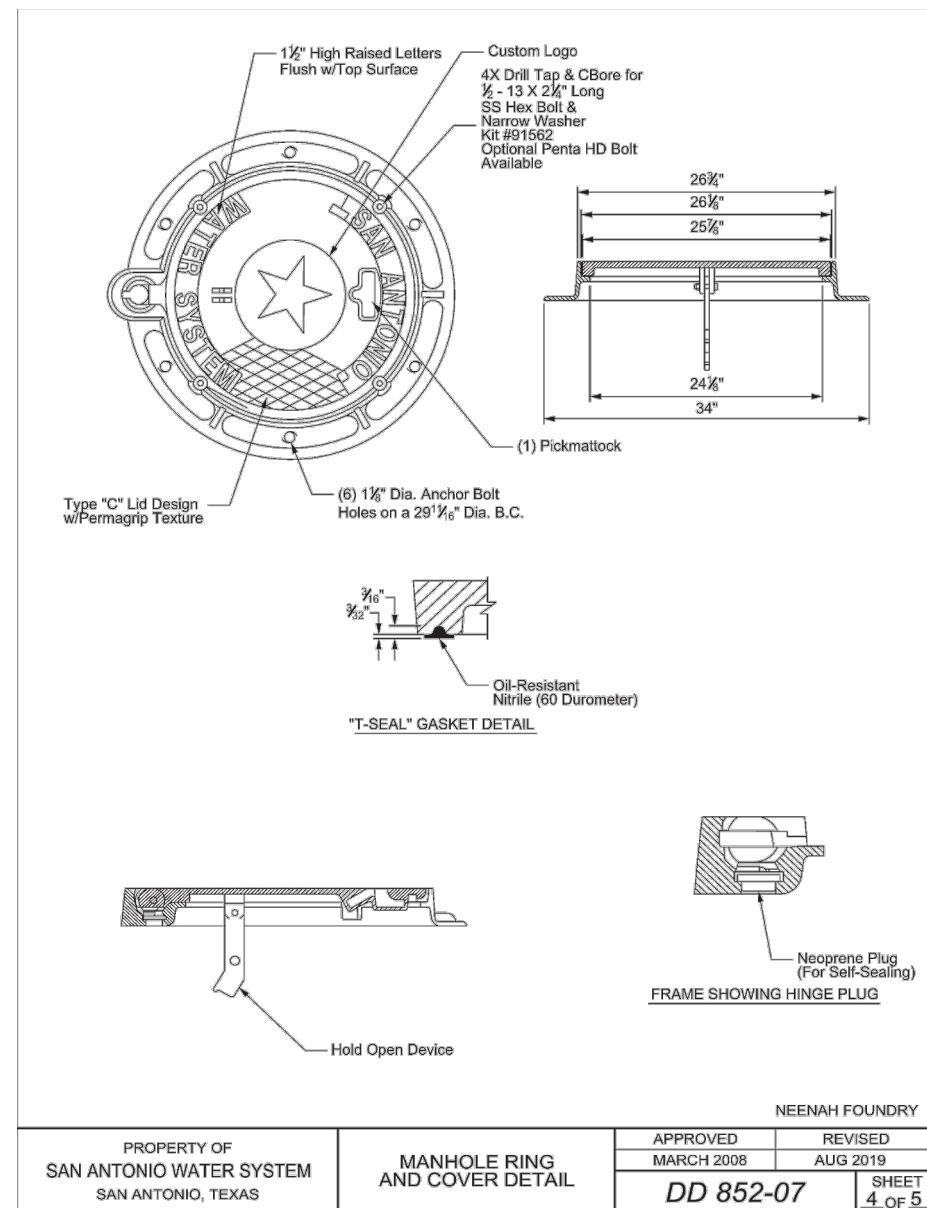
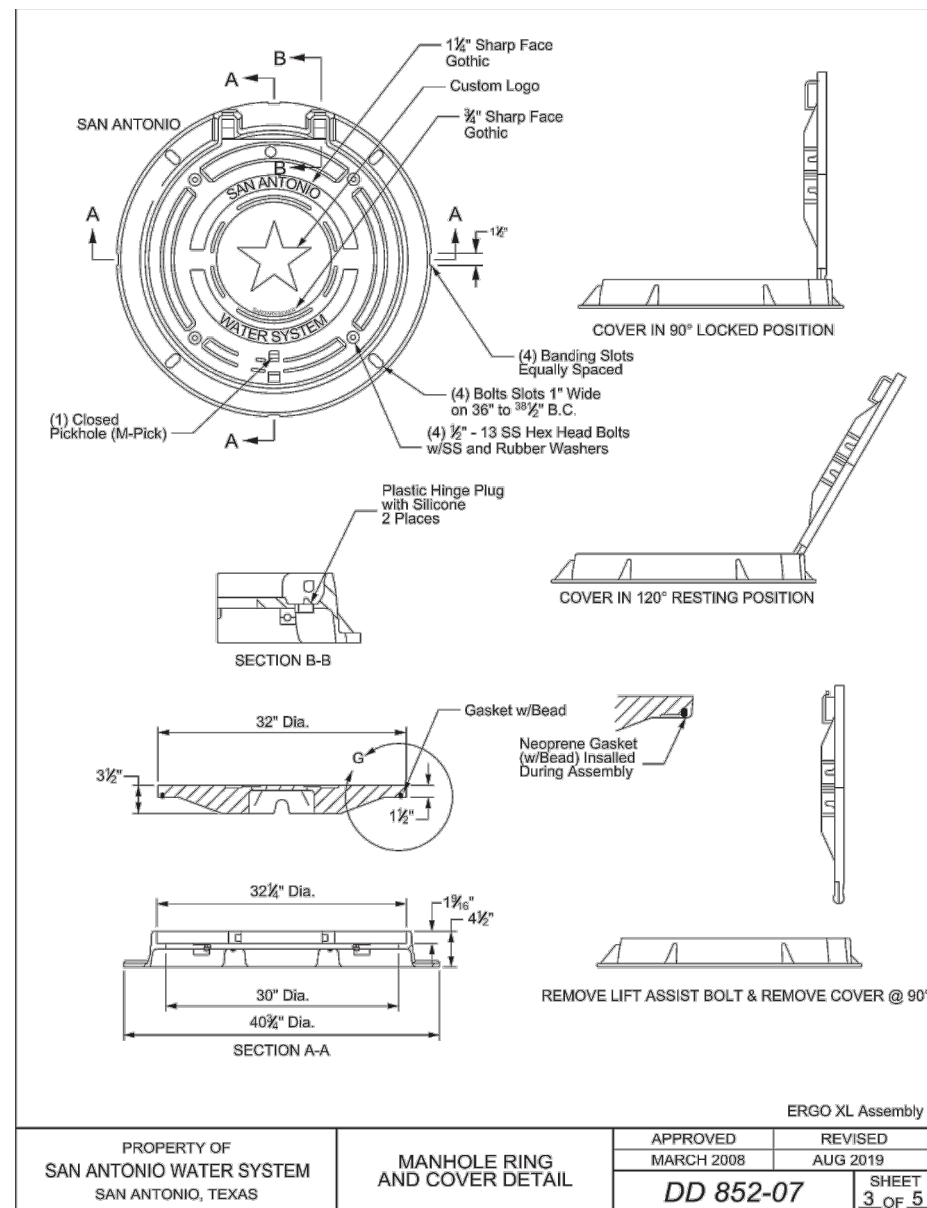
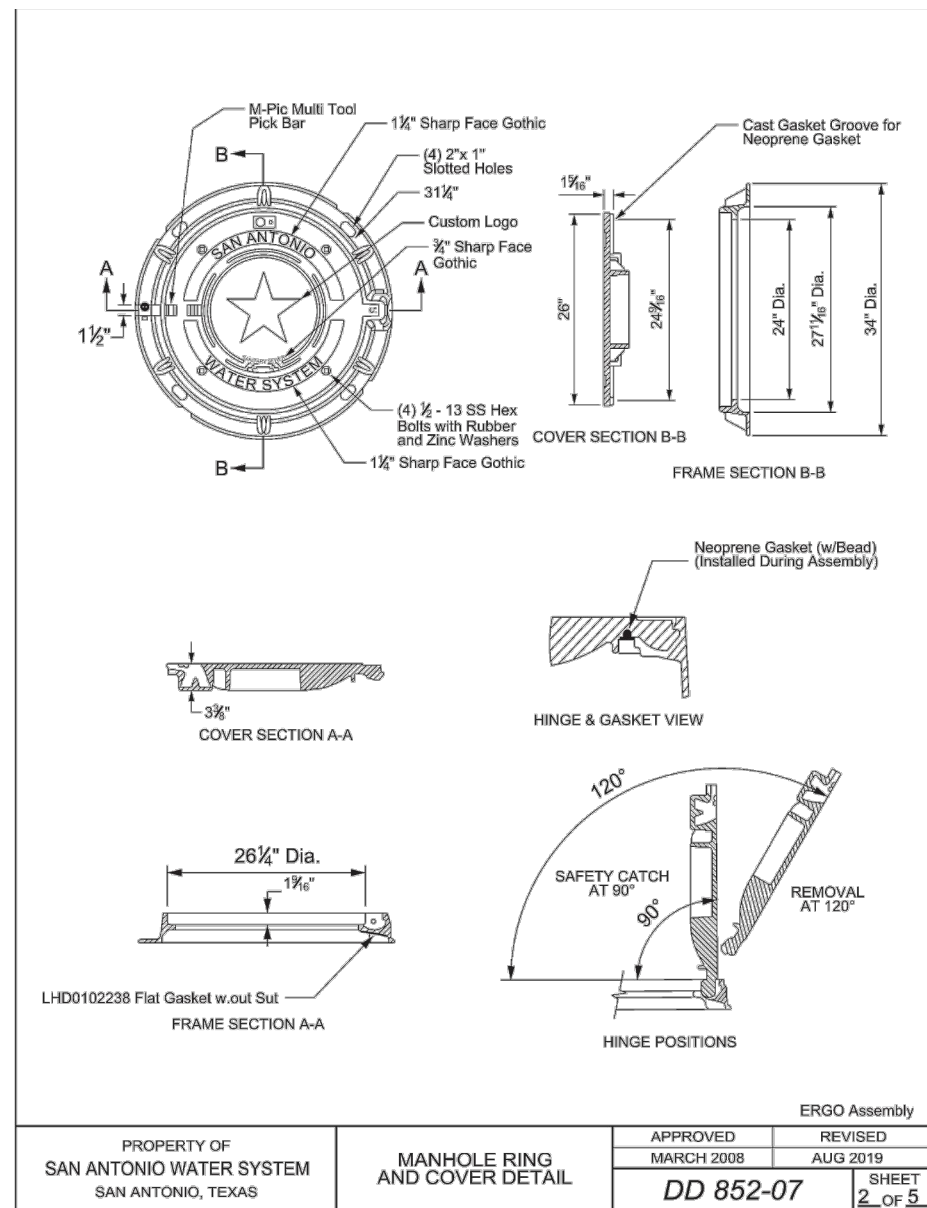
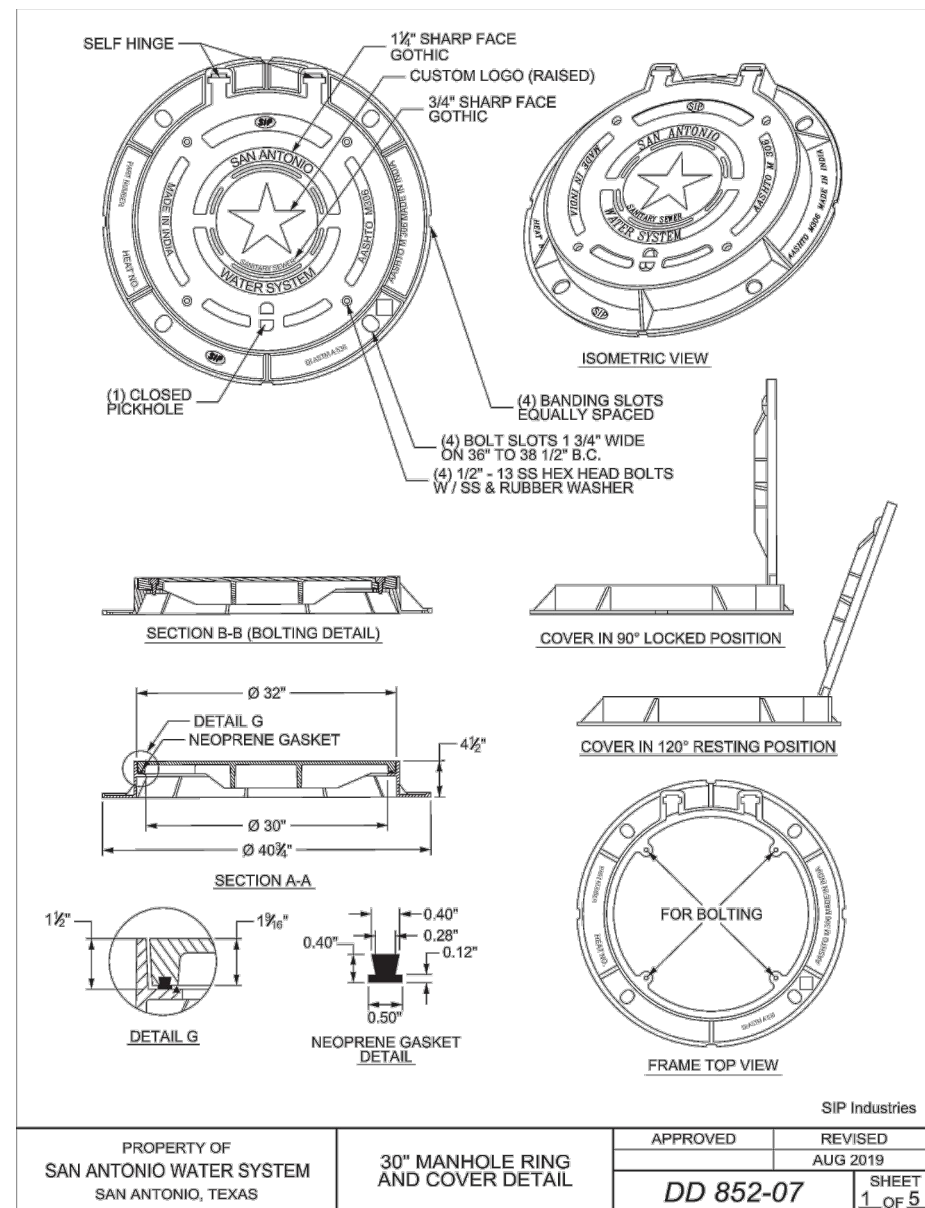
PAPE-DAWSON ENGINEERS
NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1077 INDEPENDENCE DR., STE. 102 | NEW BRUNSWICK, TX 78132 | 210.375.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE C - PLAN & PROFILE
STA 1+00.00 TO 6+51.70

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C5.11

FOR PERMIT



SIZE	A	B*	MANDREL O.D.	RING O.D.
			PVC (SDR 26)	PVC (SDR 26)
6"	4.0"	4.5"	5.50	4.79
8"	5.5"	6"	7.37	6.66
10"	7.0"	7.5"	9.21	8.50
12"	8.0"	9"	10.96	10.25
15"	10.0"	11"	13.42	12.71
18"	12.0"	13.5"	—	—
21"	14.0"	16"	—	—
24"	16.0"	18"	—	—
27"	18.0"	20"	—	—

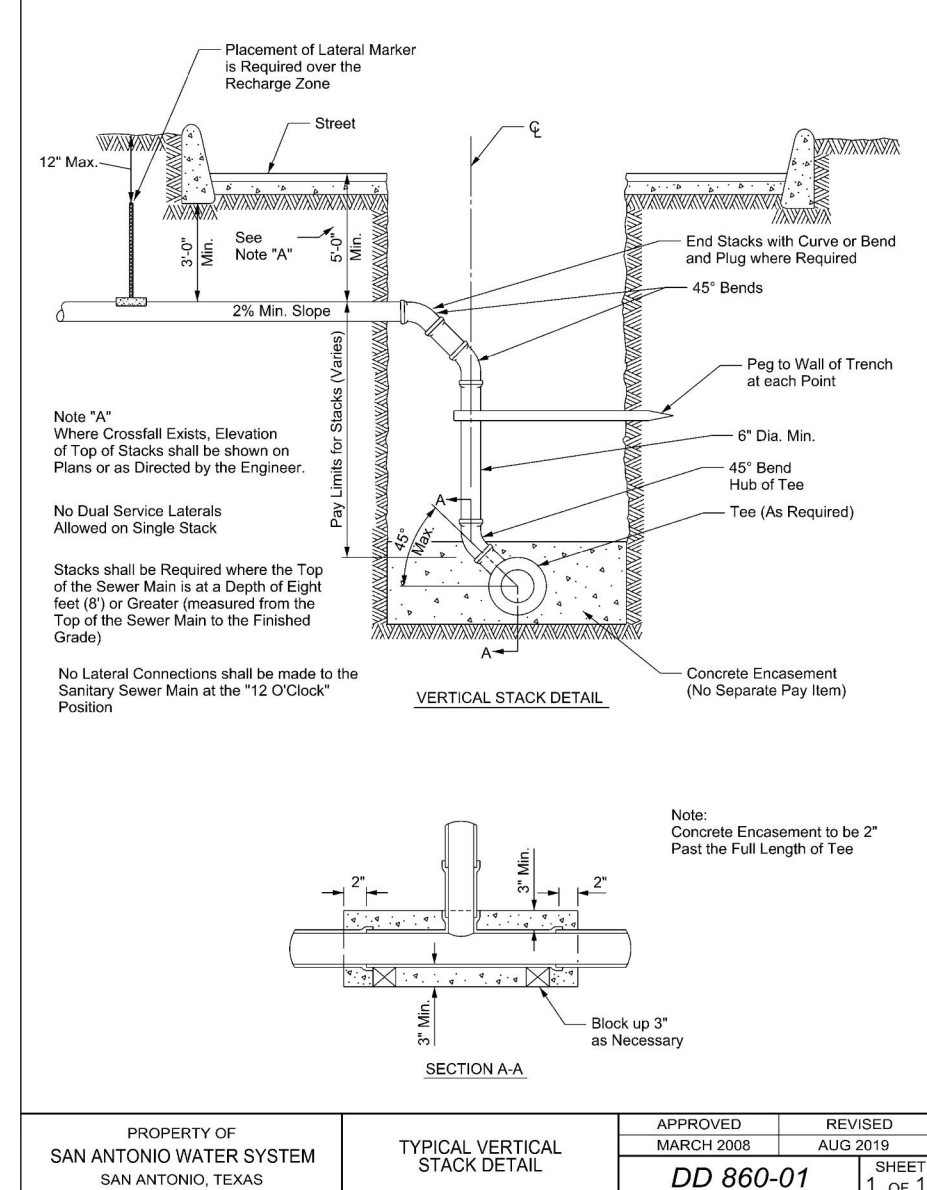
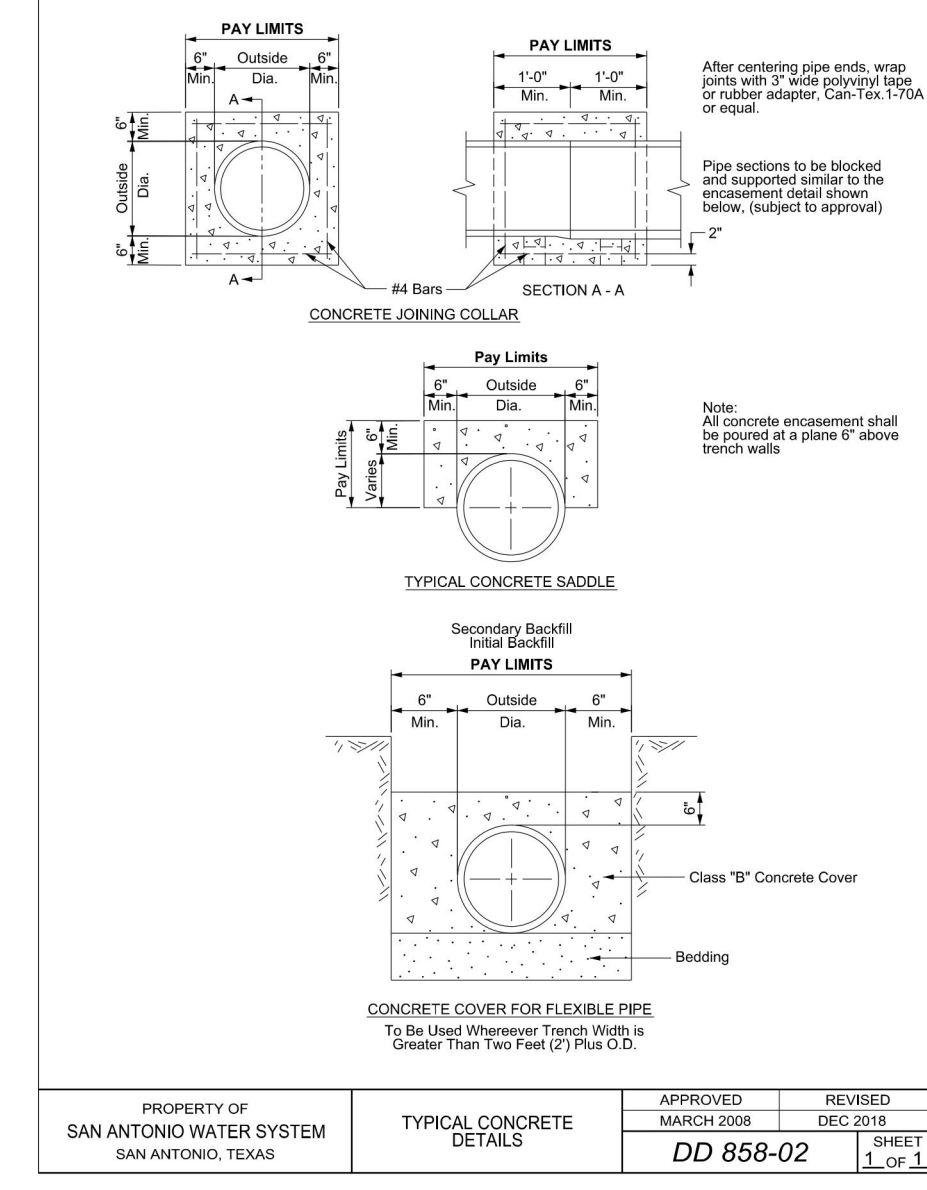
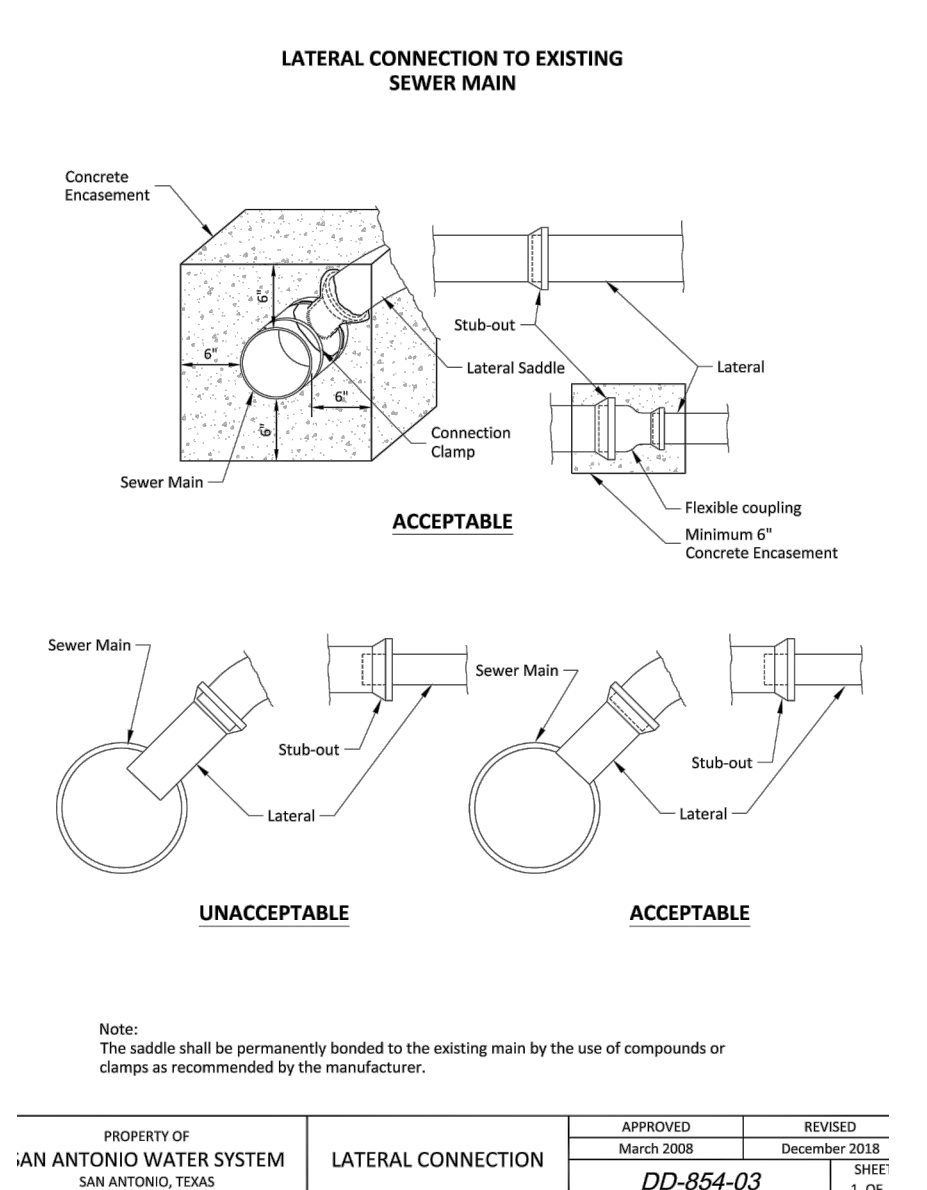
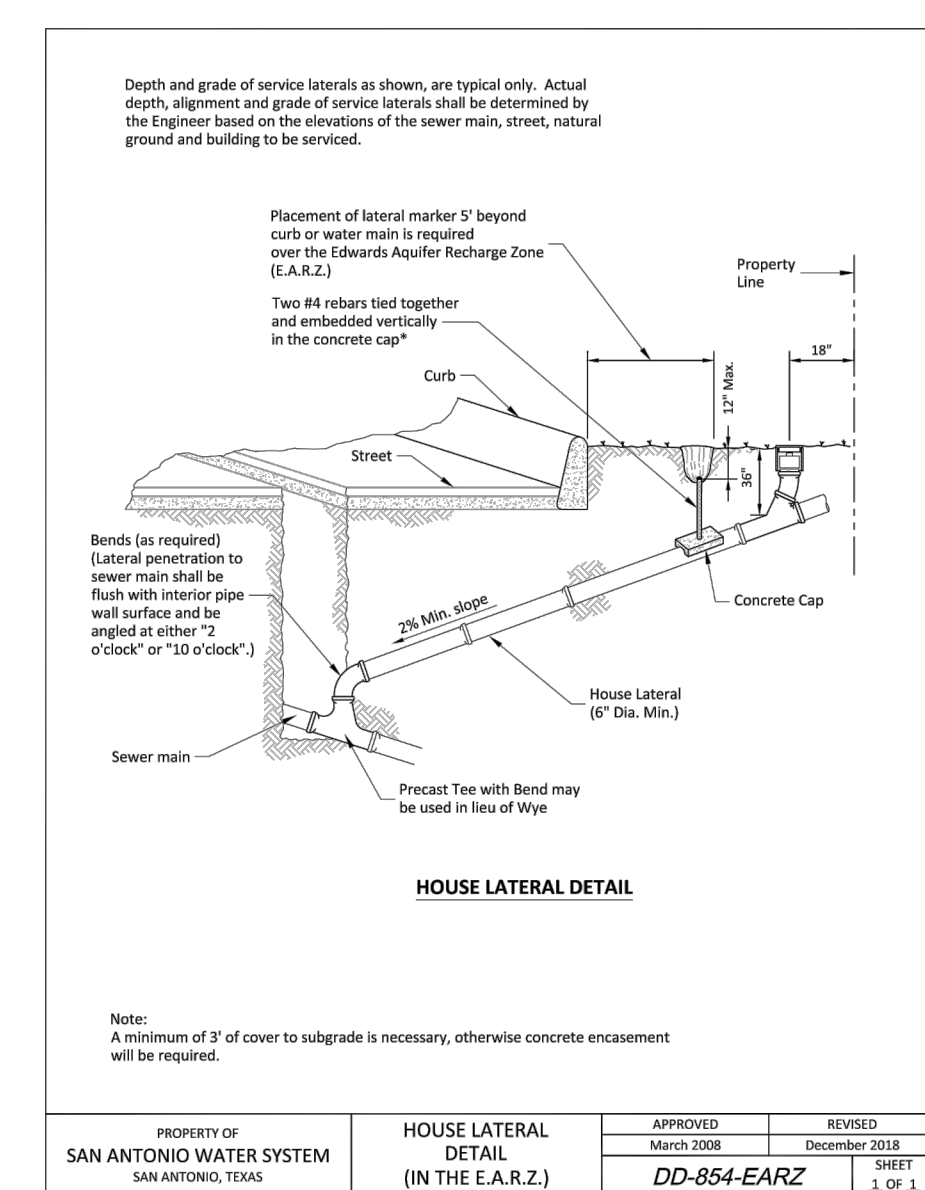
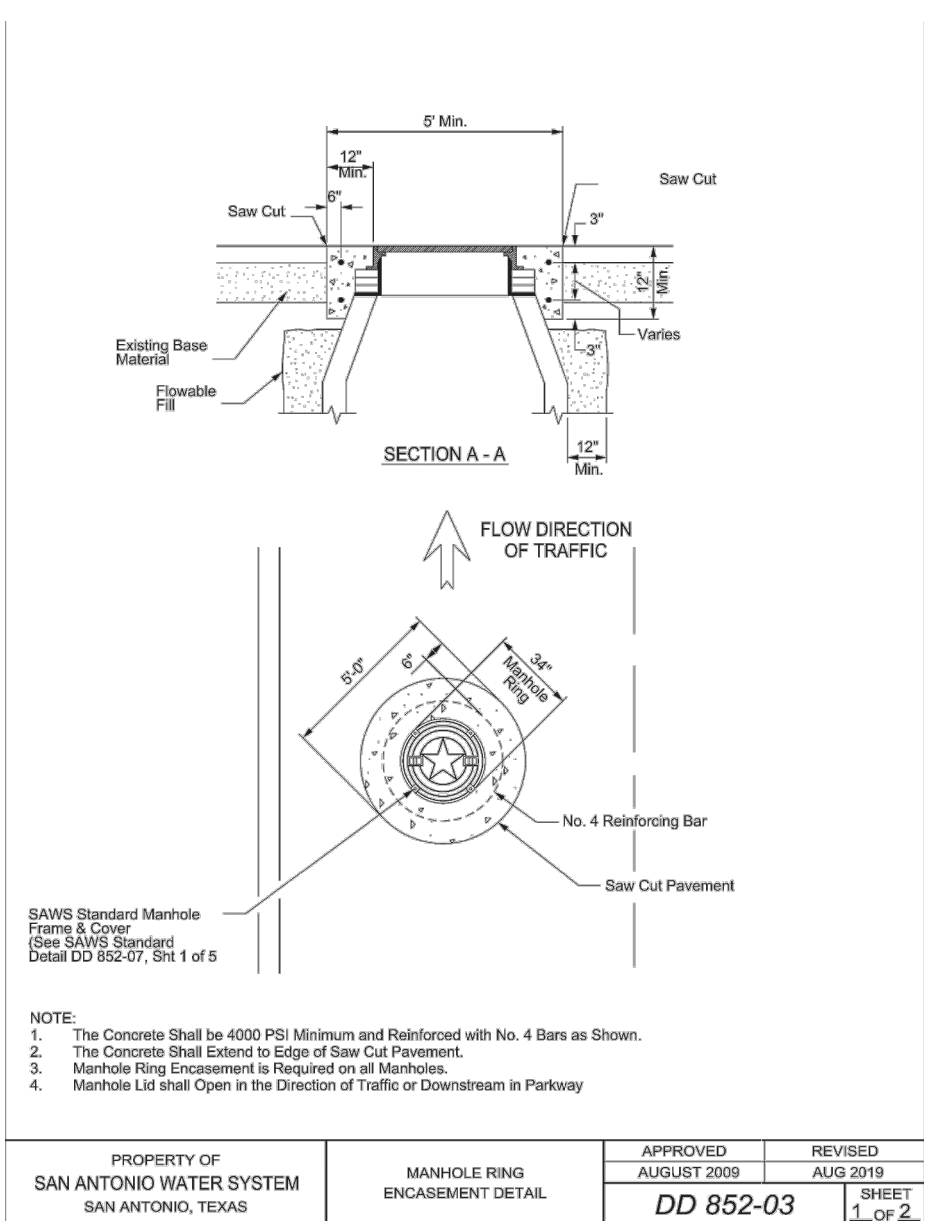
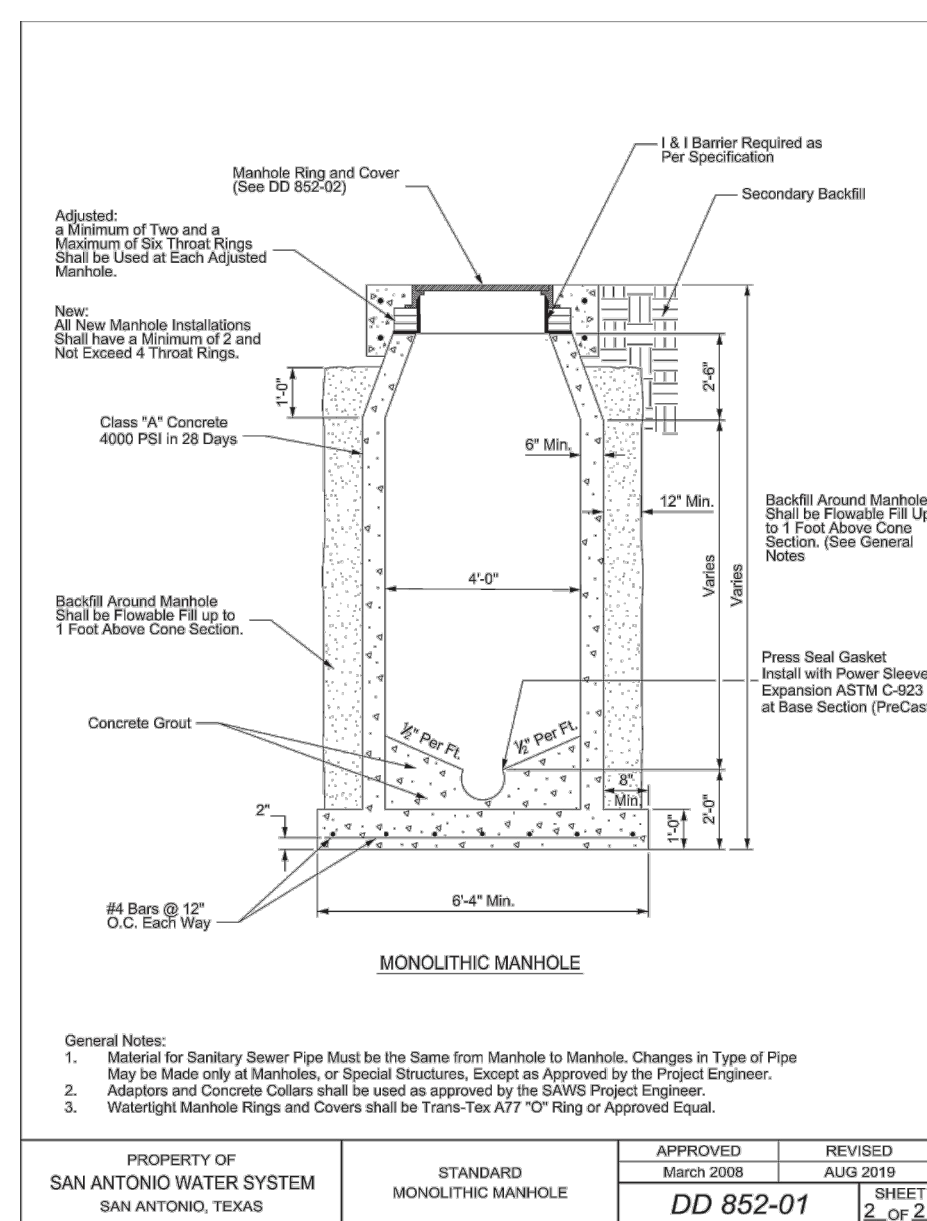
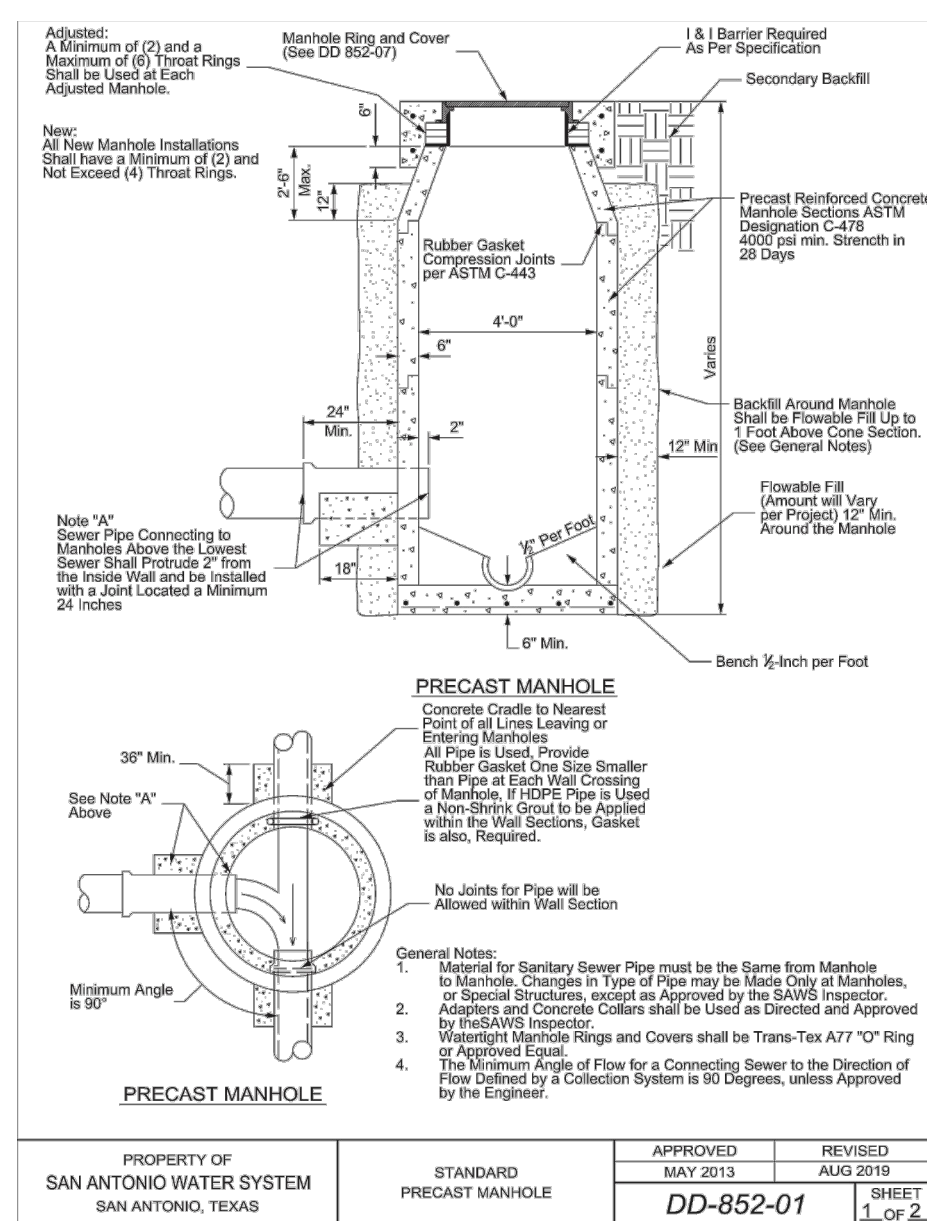
*Minimum Length

CHART

Notes:
 PVC Pipes and Fittings 6" to 15" in Diameter shall Conform to ASTM D-2241
 PVC Pipes and Fittings 18" to 27" in Diameter shall Conform to ASTM F-679

This information is provided as a reference. All deflection testing shall be done in accordance with TCEQ Chapter 217.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	GO, NO GO DEFLECTION TESTING MANDREL CHART	APPROVED	REVISED
		March 2008	December 2019
		SHEET 1 of 6 DD-849-01	



SEWER: Upper Medina River Sewershed - Dos Rios W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N. LOOP 1604 E.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 064-582, TOTAL EUD. IS. 35 TOTAL ACREAGE 42.132
4.666 L.F. OF 8" SS
TOTAL LINEAR FOOTAGE OF PIPE 3,198 L.F. OF 12" SPLST LNO. CP202310
NUMBER OF LOTS 36 SAWS JOB NO. 23-1626



**PAPE-DAWSON
ENGINEERS**

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

SANITARY SEWER DETAILS

PLAT NO. CP202310
JOB NO. 30004-27
DATE AUGUST 2023
DESIGNER CL
CHECKED HF DRAWN BI
SHEET C5.20

FOR PERMIT

This topographic map illustrates a proposed residential development. The central area is divided into numerous lots, many of which are labeled with numbers (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36) and associated block and subdivision information (e.g., BLK 125 CB 4380). The map features several roads: "HOUSE FINCH DRIVE" on the left, "ROYAL ALBATROSS" at the top, "ZAZU FLY" in the center, and "GOODENOUGH LANE" on the right. A diagonal line separates "BEXAR COUNTY" to the north and "MEDINA COUNTY" to the south. Surrounding land parcels are also shown, including "104.024 ACRES CONTINENTAL HOMES OF TEXAS, L.P. (DOC 20220187707, OPR)" and "17.797 ACRE TRACT 700 REDBIRD RANCH INVESTMENTS LTD (DOC 2022003433, OPR)". The map includes contour lines indicating elevation and various survey markers.

STATE HWY 211
(150' R.O.W.)

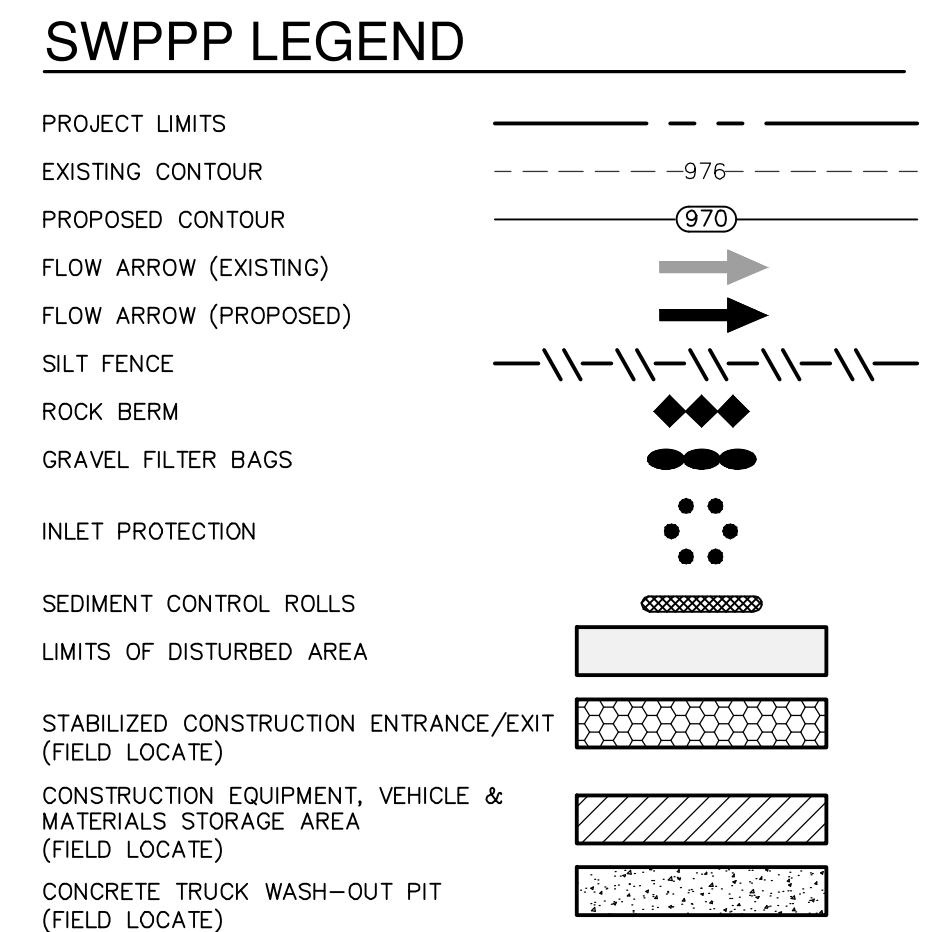
902 BLK 114 CB 4380

902 BLK 114 CB 4380

104.024 ACRES TEXAS, L.P.
(DOC 20220187707, OPR)

902 BLK 114 CB 4380

104.024 ACRES
CONTINENTAL HOMES OF TEXAS, L.P.
(DOC 20220187707, OPR)

[illegible]

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE/AREAS.
10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERM IN DRAINAGE FEATURES.
12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
13. SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THE TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP2) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
14. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITH TxDOT RIGHT-OF-WAY WITH TxDOT.
15. CPD ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND SHALL BE INSTALLING ELEVATOR UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

EXHIBIT 2

[illegible]

**PAPE-DAWSON
ENGINEERS**

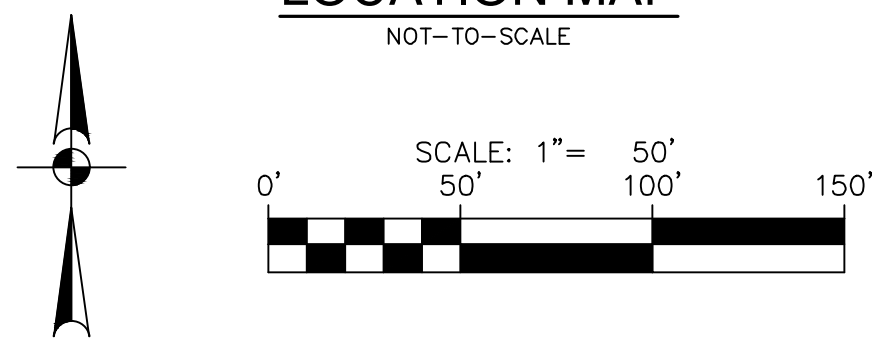
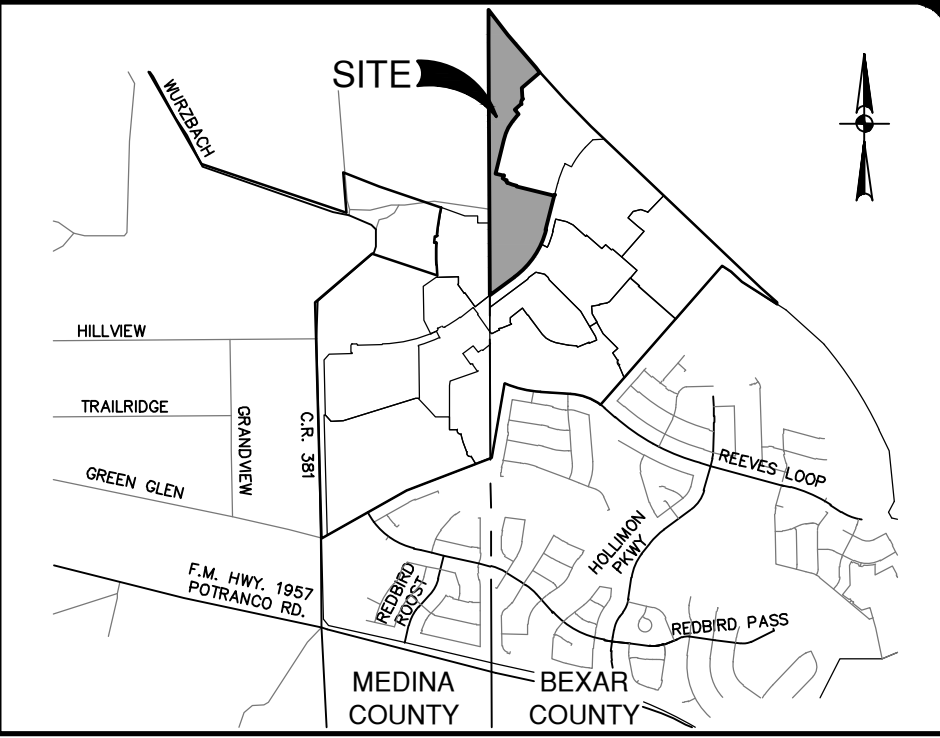
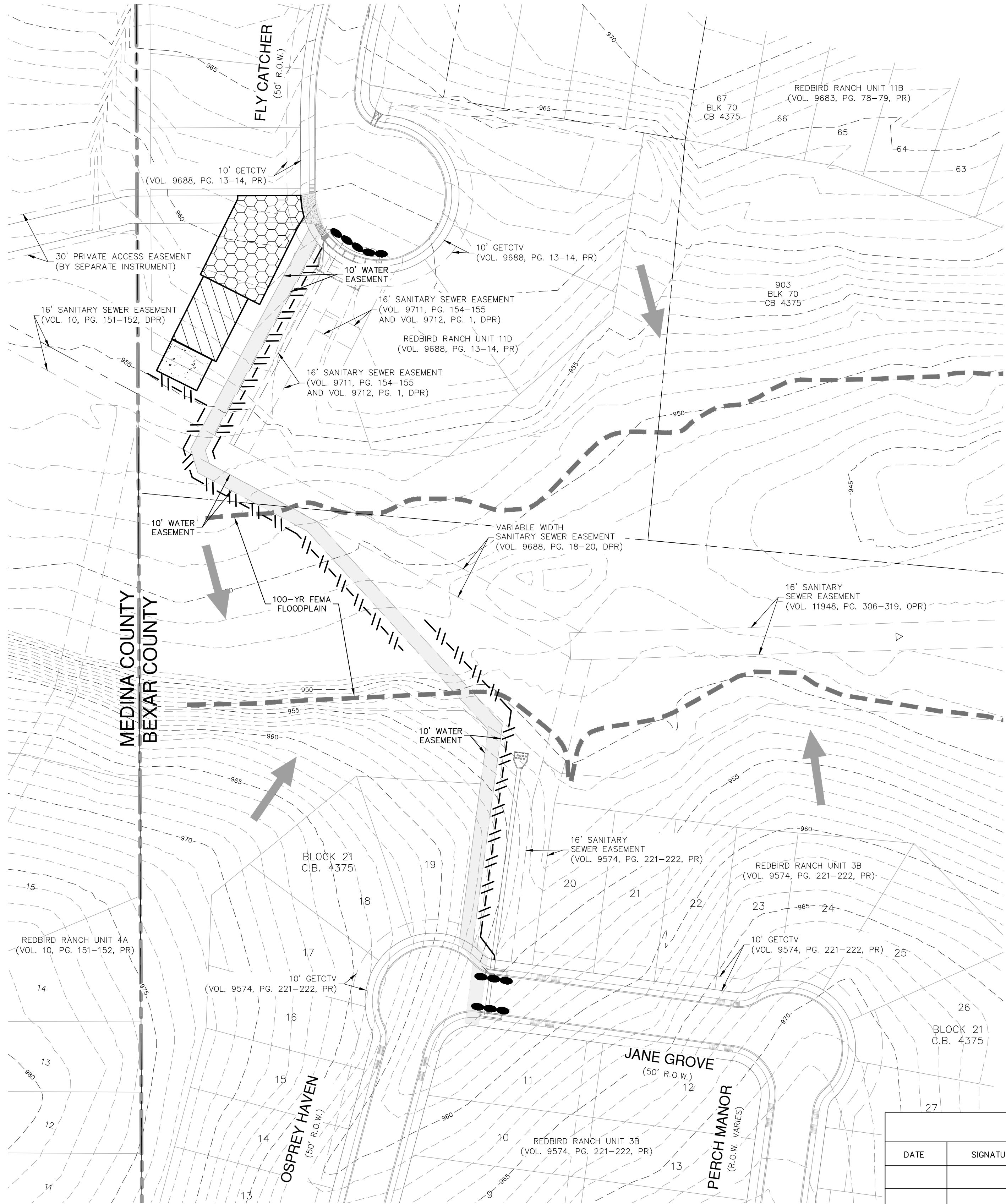
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

PLAT NO. CP202310
 JOB NO. 30004-27
 DATE AUGUST 2023
 DESIGNER CL
 CHECKED HF DRAWN BH
 SHEET C8.00

Date: Oct 11, 2023, 9:32am User: ID: bhkrcat
File: P:\300\04\12\Design\Civil\SWPPP-30004-27-QFST.dwg

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SWPPP LEGEND	
PROJECT LIMITS	---
EXISTING CONTOUR	---976---
PROPOSED CONTOUR	---970---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	
ROCK BERM	
GRAVEL FILTER BAGS	
INLET PROTECTION	
SEDIMENT CONTROL ROLLS	
LIMITS OF DISTURBED AREA	
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	

- ### GENERAL NOTES
- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
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 - PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TxDOT RIGHT-OF-WAY WITH TxDOT.
 - CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

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

SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS

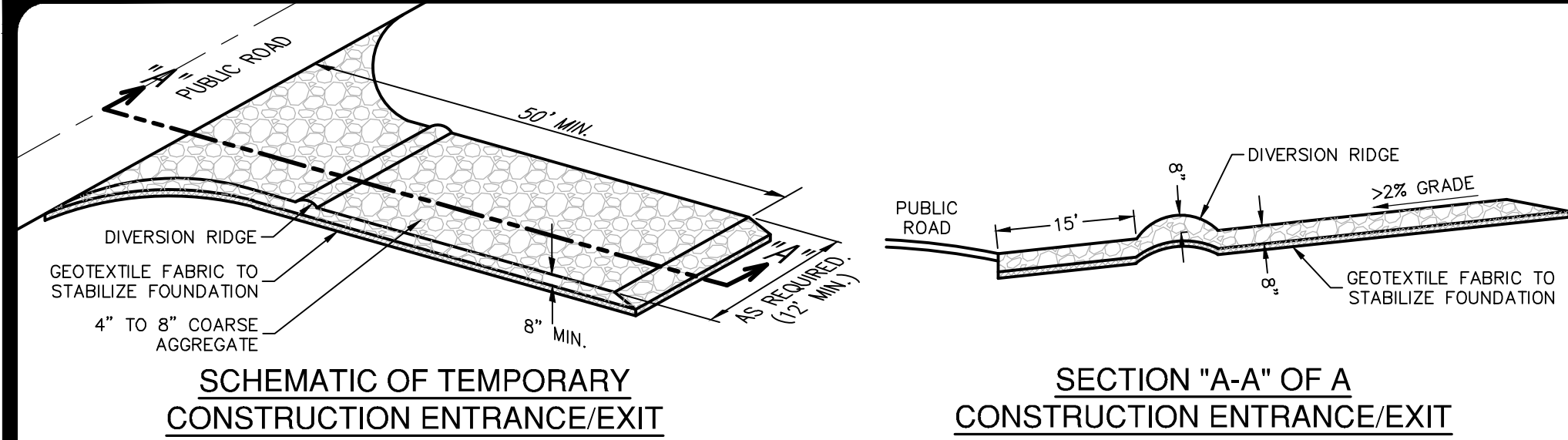
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4
SAN ANTONIO, TEXAS

STORMWATER POLLUTION PREVENTION PLAN

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DESIGNER	CL
CHECKED	HF
DRAWN	BH
SHEET	C8.02

FOR PERMIT

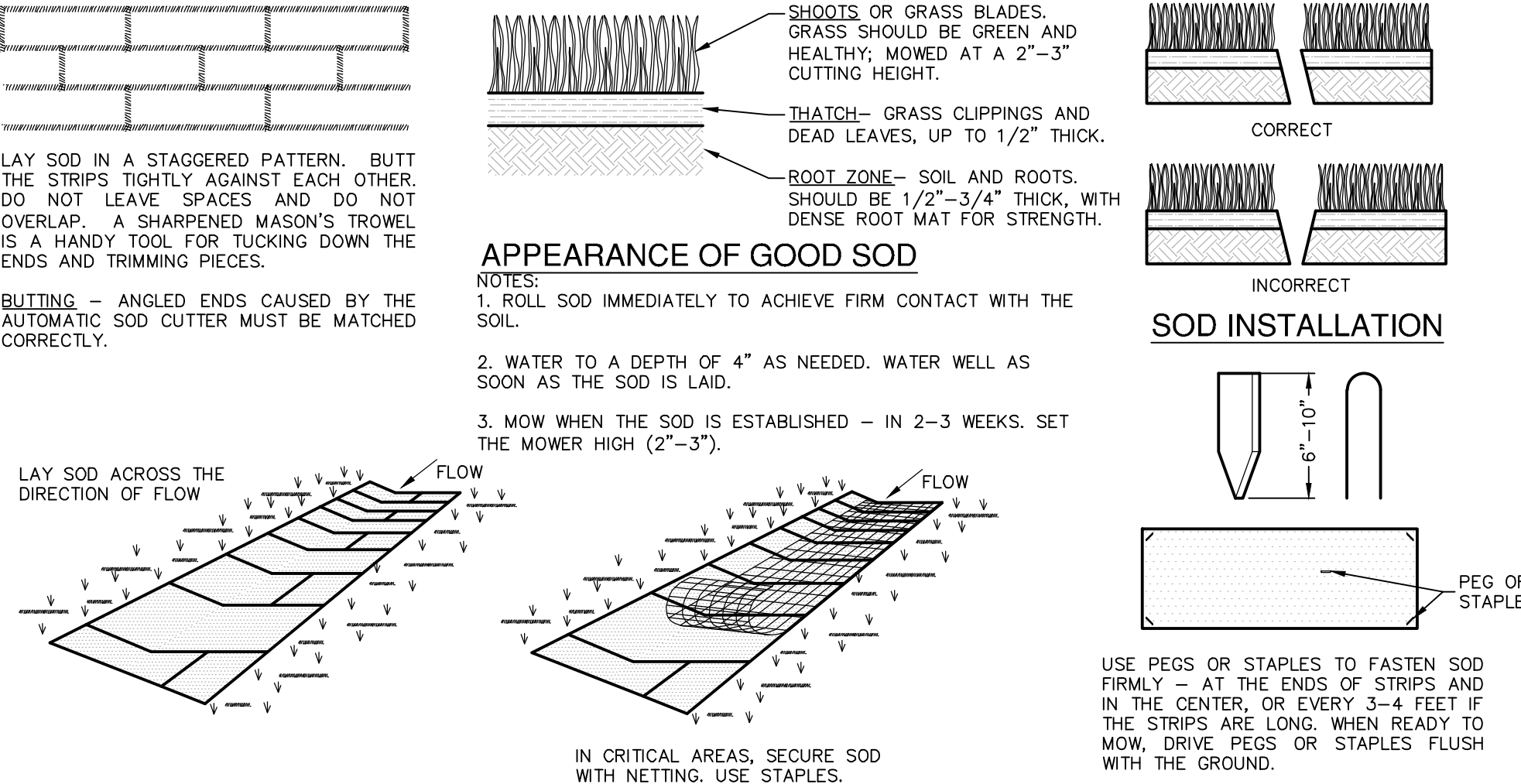


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH 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 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
 6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
 7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
 8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

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

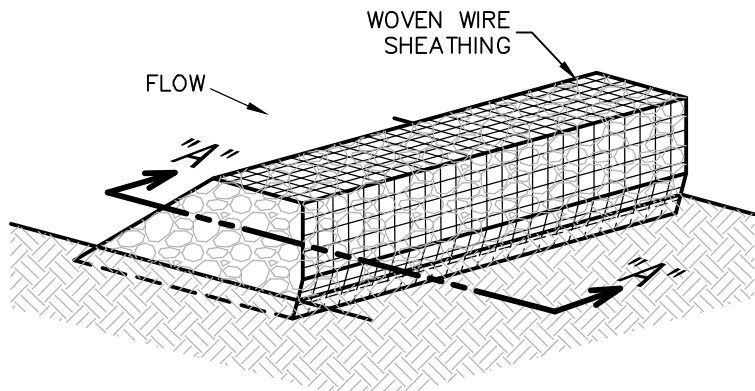
NOT-TO-SCALE

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

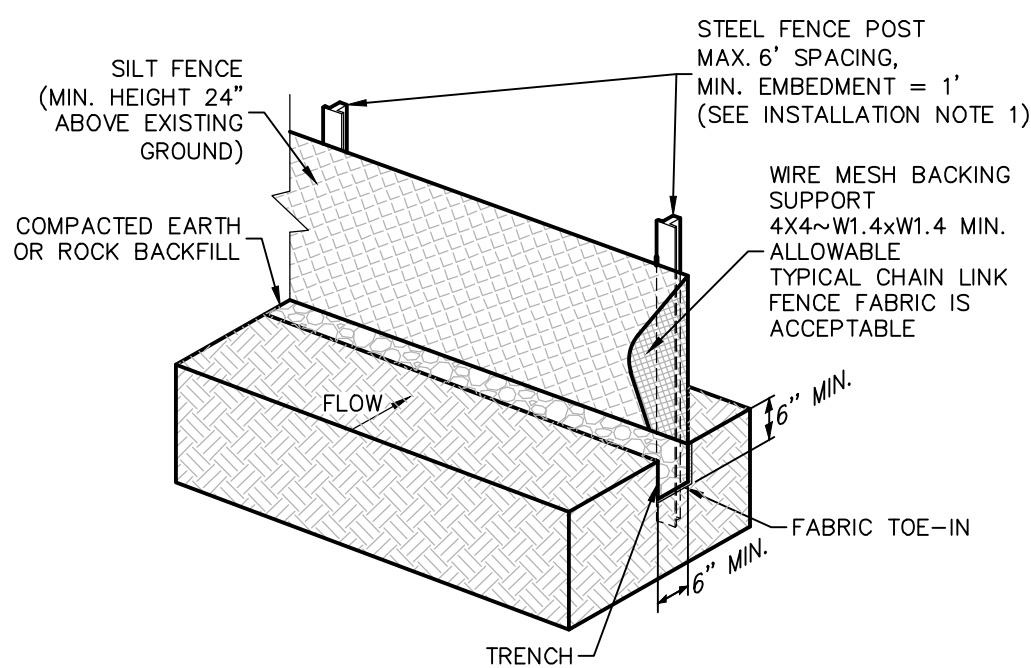
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE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

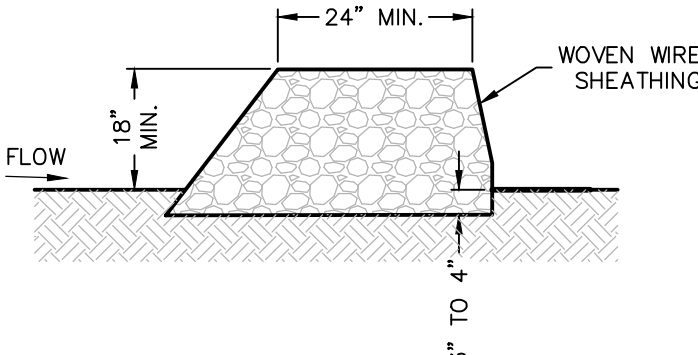
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE 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 BRINELL 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

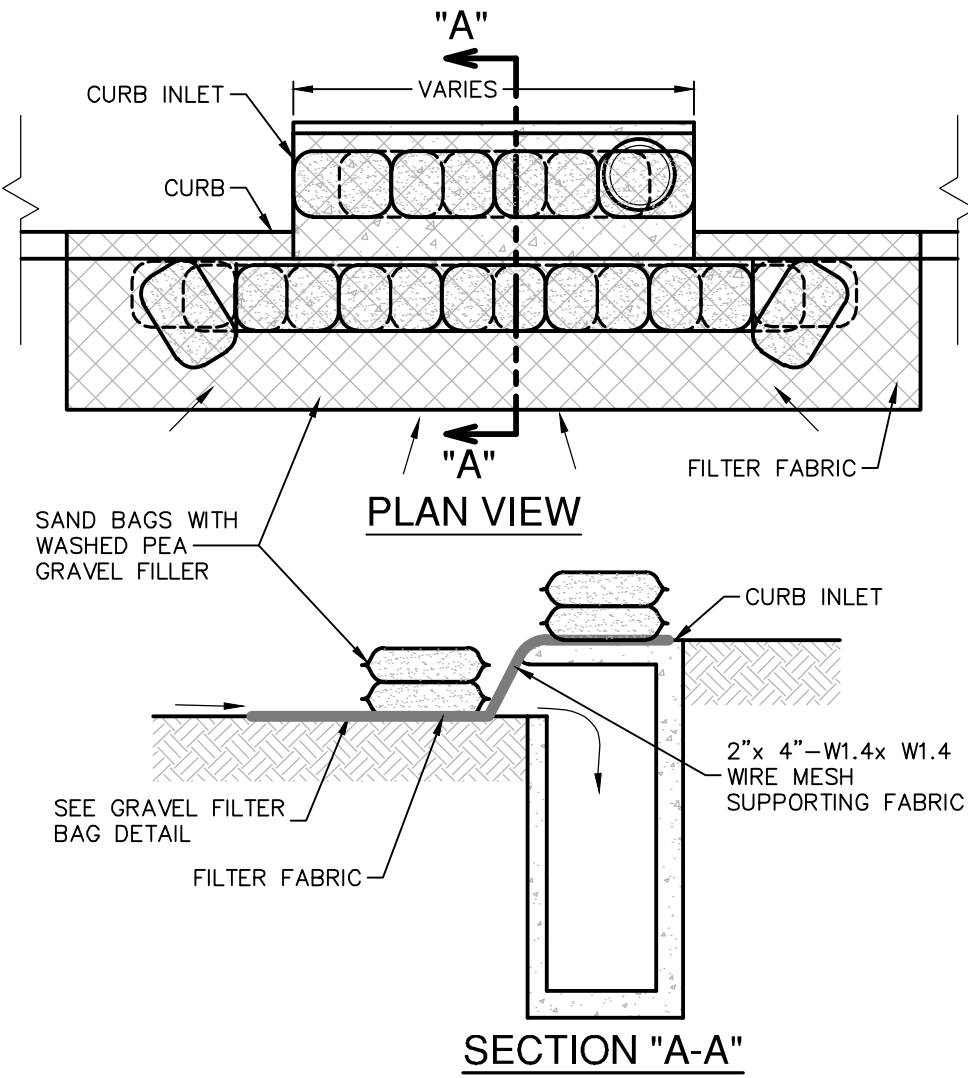
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

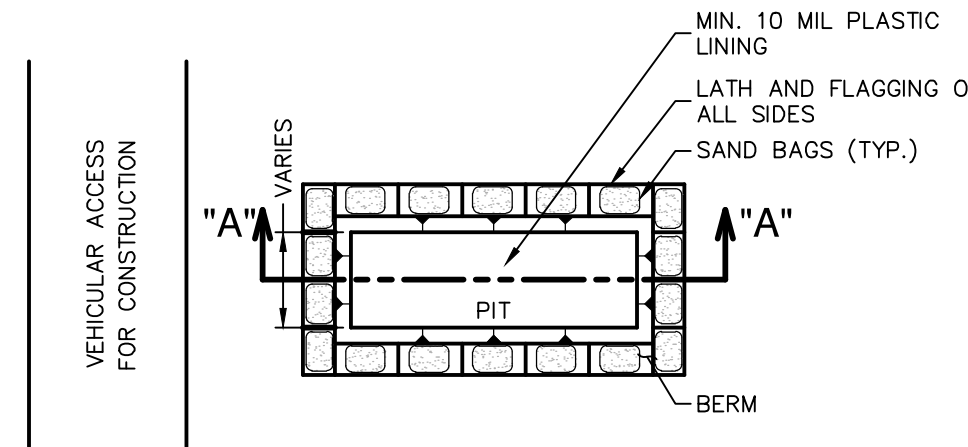


GENERAL NOTES

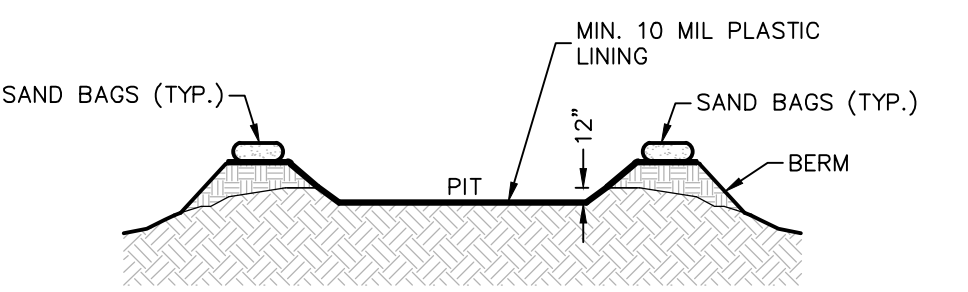
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL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



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.
5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

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

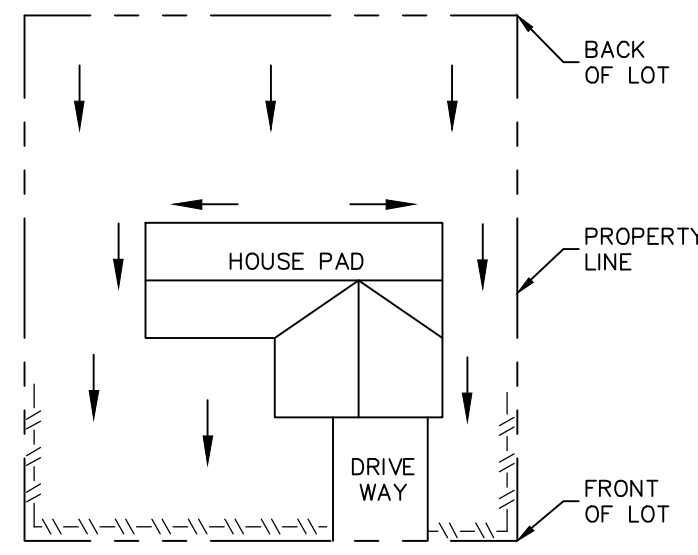
MAINTENANCE

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

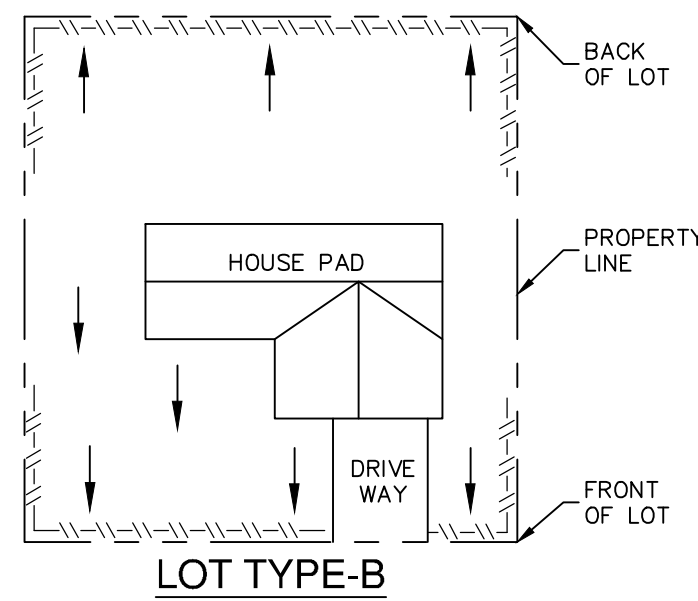
CONCRETE TRUCK WASHOUT

PIT DETAIL

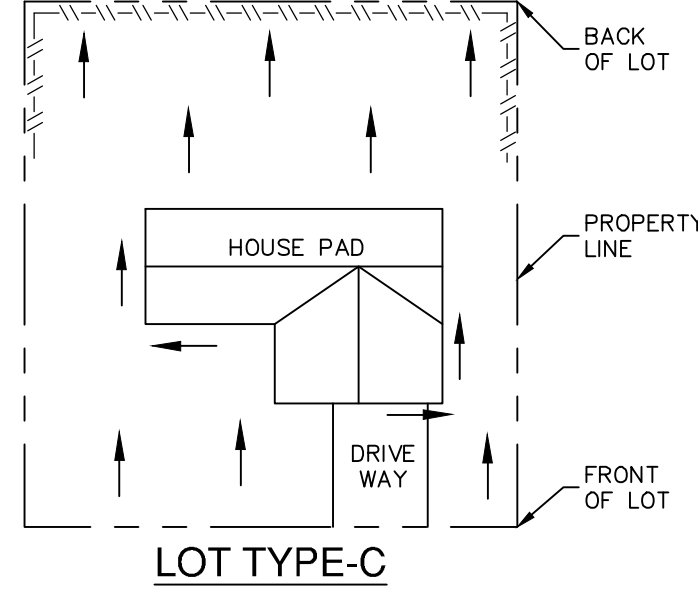
NOT-TO-SCALE



LOT TYPE-A



LOT TYPE-B

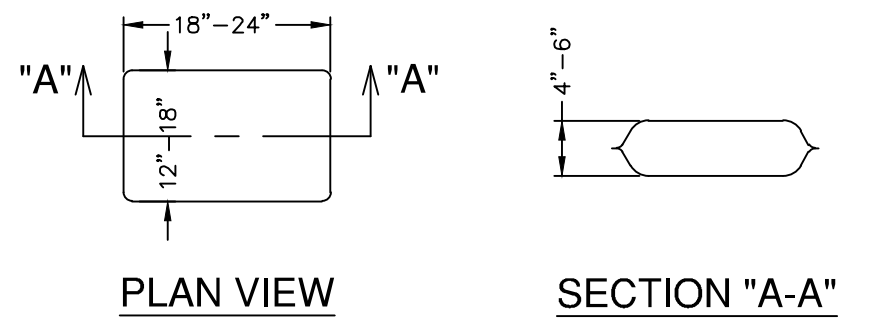


LOT TYPE-C

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.

TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE



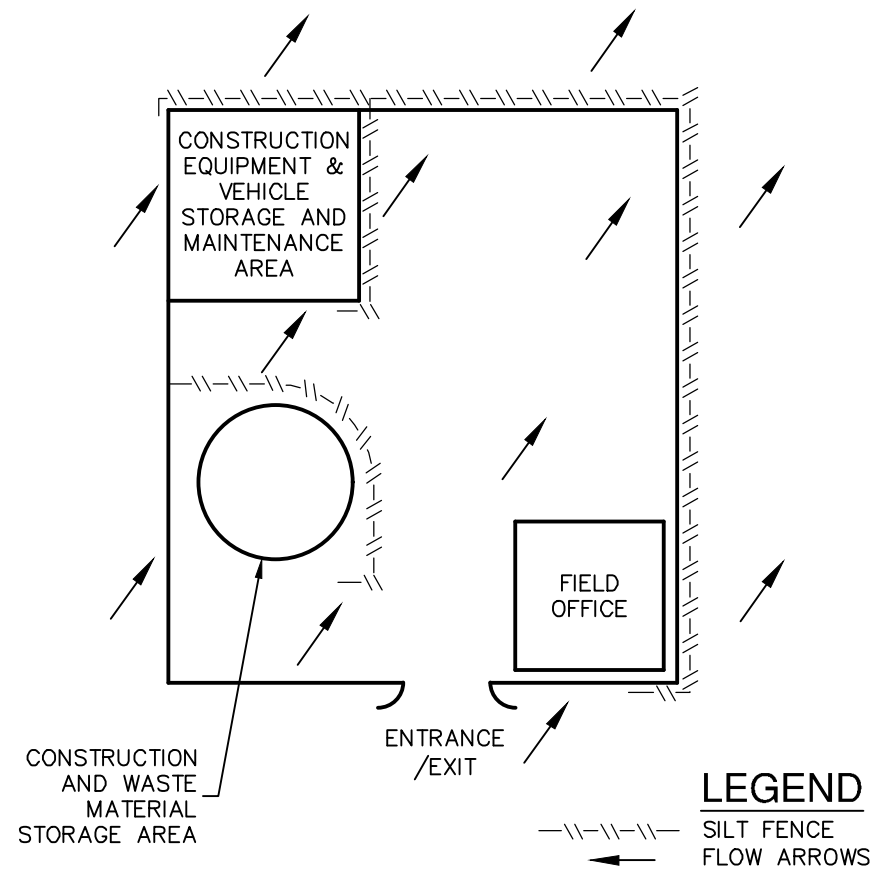
PLAN VIEW

SECTION "A-A"

- NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
 2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).
 3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



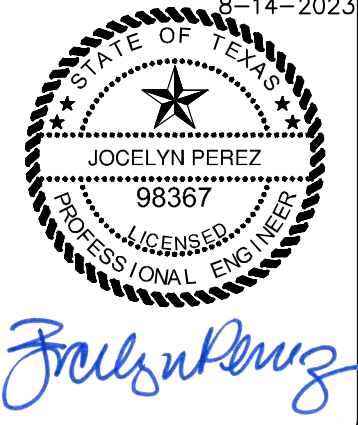
CONSTRUCTION STAGING AREA

NOT-TO-SCALE

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

NEW BRUNSWICK | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
1072 INDEPENDENCE DR., STE. 102 | NEW BRUNSWICK, TX 78132 | 210.275.9900
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 2M-4

SAN ANTONIO, TEXAS

STORMWATER POLLUTION PREVENTION DETAILS

PLAT NO.	CP202310
JOB NO.	30004-27
DATE	AUGUST 2023
DRAWN	BH
CHECKED	HF
SHEET	C8.10

FOR PERMIT