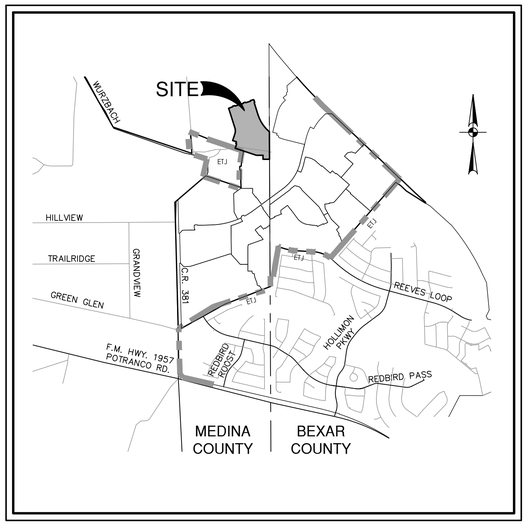
REDBIRD RANCH PHASE 2 UNIT 3M-4

MEDINA 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 2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

PAPE-DAWSON ENGINEERS
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

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SEWER: (SAWS MEDIO CREEK 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# 064582 TOTAL EDU'S: 120 TOTAL ACREAGE 26.158
TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

SHEET C0.00 HF

FOR PERMIT

PD JOB NO. 30004-35 REDBIRD RANCH PHASE 2 UNIT 3M-4

Date: Nov 15, 2024, 4:30pm User ID: tmartin
File: P:\300\04\35\Design\Civil\CV-30004-35.dwg

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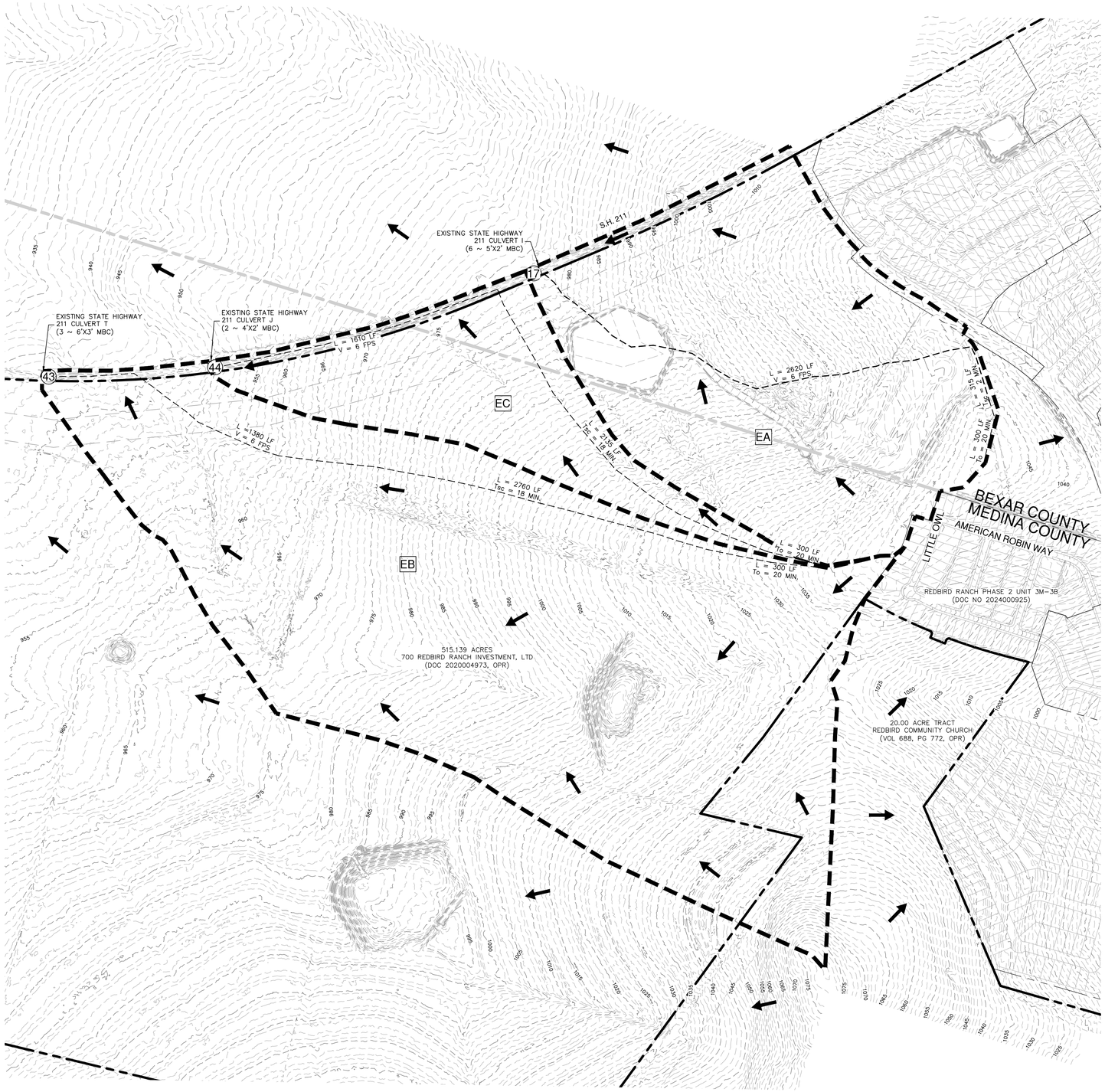

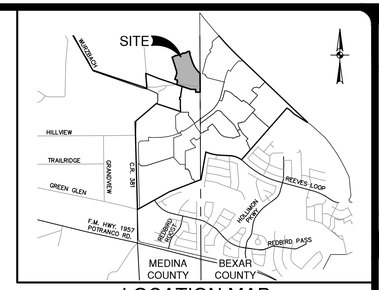

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 300'

0' 300' 600' 900'

MASTER DRAINAGE LEGEND

PROJECT LIMITS	
EXISTING CONTOUR	690
100 YR FLOODPLAIN	
RUNOFF FLOW PATH	
DRAINAGE AREA BOUNDARY	
FHA LOT GRADING TYPE	A,B,C
PROPOSED DIRECTION OF FLOW	
DRAINAGE CALCULATION POINT	11
DRAINAGE AREA	A

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (TR-55) L_O (FT)	n	S_O (ft/ft)	T_O* (MIN)	Shallow Concentrated Flow - 1** L_{SC} (FT)	Condition**	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MIN)	T_{C-TOT}	Rational Method Q=CIA IDF Curve: CoSA_A14_PA3 Return Year	Intensity (in/hr)	Q (cfs)
17	Existing TxDOT Culvert I	EA	80.59		HYDROLOGY PER HEC-HMS														5	-	176
																			25	-	312
																			100	-	437
43	Existing TxDOT Culvert T	EB	162.13		HYDROLOGY PER HEC-HMS														5	-	297
																			25	-	527
																			100	-	738
44	Existing TxDOT Culvert J	EC	34.27		HYDROLOGY PER HEC-HMS														5	-	70
																			25	-	122
																			100	-	170

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

MASTER DRAINAGE PLAN - EXISTING CONDITIONS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.00

FOR PERMIT

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NO.	REVISION	DATE

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 3M-4

SAN ANTONIO, TEXAS

MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.01

Date: Nov 15, 2024, 4:31pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SD0A-30004-35-ULT.dwg

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FOR PERMIT

Master Drainage Plan Calculations

(Ultimate Development)

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (TR-55) L_O (FT)	n	S_O (ft/ft)	T_O* (MIN)	Shallow Concentrated Flow - 1** L_{SC} (FT)	Condition***	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MIN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MIN)	$T_{C\text{-}TOT}$	Rational Method Q=CIA IDF Curve: CoSA_A14_PA3 Return Year	Intensity (in/hr)	Q (cfs)	Curb Inlet Q Total (cfs)	Q Intercept (cfs)	Q Bypass (cfs)
1	EXISTING DRAIN	UA	2.71	0.90	565	175	0.150	0.0100	18	-			-	-	390	6.0	1.1	19	5	4.66	11	11	-	-
																		19	25	6.45	16	16	-	-
																		19	100	8.00	20	20	-	-
2	EXISTING DRAIN	UB	1.78	0.88	440	295	0.150	0.0200	20	-			-	-	145	6.0	0.4	20	5	4.54	7	7	-	-
																		20	25	6.28	10	10	-	-
																		20	100	7.79	12	12	-	-
3	EXISTING 4-WAY INLET	UA + UB	4.49	0.89	440	295	0.150	0.0200	20	-	-	-	-	-	145	6.0	0.4	20	5	4.54	18	18	-	-
																		20	25	6.28	25	25	-	-
																		20	100	7.79	31	31	-	-
4	EXISTING ON-GRADE INLETS	UC	2.75	0.80	630	195	0.150	0.0190	15	-			-	-	435	6.0	1.2	16	5	5.10	11	11	10	1
																		16	25	7.07	16	16	13	3
																		16	100	8.79	19	19	14	5
5	EXISTING DRAIN	UA + UB +UC (INTERCEPT)	4.49	0.89	640	295	0.150	0.0200	20	-			-	-	345	6.0	1.0	20	5	4.54	18	28	-	-
																		20	25	6.28	25	38	-	-
																		20	100	7.79	31	45	-	-
6	UNIT 3M-4 DRAIN A	UD	3.27	0.80	385	295	0.150	0.0200	20	-			-	-	90	6.0	0.3	20	5	4.54	12	12	-	-
																		20	25	6.28	16	16	-	-
																		20	100	7.79	20	20	-	-
7	UNIT 3M-4 DRAIN A SUMP INLETS	UE + UF +UC (BYPASS)	9.70	0.80	1,160	300	0.150	0.0200	20	-			-	-	860	6.0	2.4	22	5	4.33	34	35	-	-
																		22	25	5.98	46	49	-	-
																		22	100	7.41	58	63	-	-
8	STREET CAPACITY CHECK	UF	2.08	0.80	1,160	300	0.150	0.0200	20				-	-	860	6.0	2.4	22	5	4.33	7	7	-	-
																		22	25	5.98	10	10	-	-
																		22	100	7.41	12	12	-	-
9	STREET CAPACITY CHECK	UE +UC (BYPASS)	7.62	0.80	1,160	300	0.150	0.0200	20				-	-	860	6.0	2.4	22	5	4.33	26	27	-	-
																		22	25	5.98	36	39	-	-
																		22	100	7.41	45	50	-	-
10	UNIT 3M-4 DRAIN A1	UD + UE + UF + UC (BYPASS)	12.97	0.80	1,160	300	0.150	0.0200	20				-	-	860	6.0	2.4	22	5	4.33	45	46	-	-
																		22	25	5.98	62	65	-	-
																		22	100	7.41	77	82	-	-
11	EXISTING DRAIN	UA + UB + UC + UD + UE + UG	20.71	0.82	1,565	295	0.150	0.0200	20	-			-	-	1,270	6.0	3.5	23	5	4.23	72	72	-	-
																		23	25	5.84	99	99	-	-
																		23	100	7.24	123	123	-	-
12	EXISTING DRAIN	UA + UB +UC + UD + UE + UG + UH	38.71	0.81	2,155	295	0.150	0.0200	20	-			-	-	1,860	6.0	5.2	25	5	4.06	127	127	-	-
																		25	25	5.60	176	176	-	-
																		25	100	6.93	217	217	-	-
13	UNIT 3M-4 DRAIN B ON-GRADE INLETS	UI	3.97	0.80	1,135	130	0.150	0.0200	10	-			-	-	1,005	6.0	2.8	12	5	5.86	19	19	15	4
																		12	25	8.19	26	26	18	8
																		12	100	10.24	33	33	23	10
14	STREET CAPACITY CHECK	UJ1	3.54	0.80	845	220	0.150	0.0200	16	-			-	-	625	6.0	1.7	17	5	4.94	14	14	-	-
																		17	25	6.84	19	19	-	-
																		17	100	8.50	24	24	-	-
15	UNIT 3M-4 DRAIN B	UI + UJ1 + UJ2	7.51	0.80	945	220	0.150	0.0200	16	-			-	-	725	6.0	2.0	18	5	4.80	29	29	-	-
																		18	25	6.63	40	40	-	-
																		18	100	8.24	50	50	-	-
16	UNIT 2M-1 EXISTING BASIN	UA + UB + UC + UD + UE + UF + UG + UH + UI + UN + UJ1 + UJ2	74.82	-	HYDROLOGY PER HEC-HMS														5	-	146	146	-	-
																			25	-	210	210	-	-
																			100	-	268	268	-	-
17	EXISTING TxDOT CULVERT I	UA + UB + UC + UD + UE + UF + UG + UH + UK + UL	90.53	-	HYDROLOGY PER HEC-HMS														5	-	171	171	-	
																			25	-	251	251	-	
																			100	-	325	325	-	
18	UNIT 3M-5 DRAIN D	UM	1.56	0.80	420	300	0.150	0.0200	20	-	U	0.02	-	-	120	6.0	0.3	20	5	4.54	6	6	-	-
																		20	25	6.28	8	8	-	-
																		20	100	7.79	10	10	-	-
19	UNIT 3M-5 DRAIN A1 ON-GRADE INLETS	UN	4.30	0.80	1,280	250	0.150	0.0200	18	-			-	-	1,030	6.0	2.9	20	5	4.54	16	16	15	1
																		20	25	6.28	22	22	19	3
																		20	100	7.79	27	27	22	5
20	UNIT 3M-5 DRAIN A2 ON-GRADE INLETS	UO	8.49	0.80	1,205	250	0.150	0.0200	18	-			-	-	955	6.0	2.7	20	5	4.54	31	31	16	15
																		20	25	6.28	43	43	19	24
																		20	100	7.79	53	53	21	32
21	UNIT 3M-5 DRAIN A1 SUMP INLET	UP +UN (BYPASS)+UO (BYPASS)	1.43	0.80	395	255	0.150	0.0200	18	-			-	-	140	6.0	0.4	18	5	4.80	5	21	-	-
																		18	25	6.63	8	35	-	-
																		18	100	8.24	9	46	-	-
22	UNIT 3M-5 DRAIN A1	UN + UO + UP	14.22	0.80	1,520	250	0.150	0.0200	18	-			-	-	1,270	6.0	3.5	21	5	4.43	50	50	-	-
																		21	25	6.12	70	70	-	-
																		21	100	7.59	86	86	-	-
23	UNIT 3M-5 DRAIN B1 ON-GRADE INLETS	UR	3.89	0.80	1,055	135	0.150	0.0200	11	-			-	-	920	6.0	2.6	13	5	5.66	18	18	14	4
																		13	25	7.89	25	25	18	7
																		13	100	9.85	31	31	21	10
24	UNIT 3M-5 DRAIN B2 ON-GRADE INLETS	US	7.62	0.80	1,060	255	0.150	0.0200	18	-			-	-	805	6.0	2.2	20	5	4.54	28	28	20	8
																		20	25	6.28	38	38	24	14
																		20	100	7.79	47	47	27	20
25	UNIT 3M-5 DRAIN B1 SUMP INLET	UT + US (BYPASS) + UR (BYPASS)	0.65	0.80	250	160	0.150	0.0200	12	-			-	-	90	6.0	0.3	5	5	7.88	4	16	-	-
																		5	25	11.00	6	27	-	-
																		5	100	13.79	7	37	-	-
26	UNIT 3M-5 DRAIN B1	UR + US + UT	12.16	0.80	1,455	255	0.150	0.0200	18				-	-	1,200	6.0	3.3	21	5	4.43	43	43	-	-
																		21	25	6.12	60	60	-	-
																		21	100	7.59	74	74	-	-
27	UNIT 3M-5 DRIAN C	UU	6.39	0.80	1,405	160	0.150	0.0200	12				-	-	1,245	6.0	3.5	15	5	5.28	27	27	-	-
																		15	25	7.32	37	37	-	-
																		15	100	9.12	47	47	-	-
28	FUTURE DRAIN SUMP INLETS	UU + UV	6.95	0.80	1,610	160	0.150	0.0200	12	-			-	-	1,450	6.0	4.0	16	5	5.10	28	28	-	-
																		16	25	7.07	39	39	-	-
																		16	100	8.79	49	49	-	-
29	FUTURE INTERCEPTOR & CULVERT	UW	0.95	0.47	620	300	0.150	0.0360	16	320	U	0.04	3.2	1.7		-	-	17	5	4.94	2	2	-	-
																		17	25	6.84	3	3	-	-
																		17	100	8.50	4	4	-	-
30	OFFSITE	UX	2.54	0.47	470	300	0.150	0.0360	16	170	U	0.04	3.2	0.9		-	-	16	5	5.10	6	6	-	-
																		16	25	7.07	8	8	-	-
																		16	100	8.79	10	10	-	-
31	FUTURE ON-GRADE INLET	UY	8.47	0.69	1,125	175	0.150	0.0200	13	-	U	-	-	-	950	6.0	2.6	15	5	5.28	31	31	23	8
																		15	25	7.32	43	43	30	13
																		15	100	9.12	53	53	34	19
32	FUTURE ON-GRADE INLETS	UX + UZ + UY (BYPASS)	5.22	0.58	1,675	300	0.150	0.0360	16	170	U	0.04	3.2	0.9	1,205	6.0	3.3	20	5	4.54	14	22	17	5
																		20	25	6.28	19	32	21	11
																		20	100	7.79	24	43	25	18
33	FUTURE ON-GRADE INLET	UAA	2.42	0.69	1,770	30	0.150	0.0200	5				-	-	1,740	6.0	4.8	9	5	6.54	11	11	10	1
																		9	25	9.17	15	15	13	2
																		9	100	11.49	19	19	15	4
34	FUTURE OUTFALL	UY (INTERCECPT) + UZ (INTERCEPT) + UAA (INTERCEPT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	5	-	-	50	-	-
																		0	25	-	-	64	-	-
																		0	100	-	-	74	-	-
35	UNIT 3M-5 DRAIN E	UM + UN + UO + UP + UQ + UW + UX + UZ (INTERCEPT) + UAA (INTERCEPT)	44.95	0.69	2,185	300	0.150	0.0200	20	1,220	U	0.02	2.3	8.9	665	6.0	1.8	30	5	3.70	115	165	-	-
																		30	25	5.10	159	222	-	-
																		30	100	6.31	196	270	-	-
36	FUTURE SUMP INLET	UAB	4.27	0.69	930	190	0.150	0.0200	14	-	-	-	-	-	740	6.0	2.1	16	5	5.10	15	15	-	-
																		16	25	7.07	21	21	-	-
																		16	100	8.79	26	26	-	-
37	FUTURE ON-GRADE INLET	UAC + UZ (BYPASS)	3.36	0.69	910	160	0.150	0.0200	12	-	-	-	-	-	750	6.0	2.1	14	5	5.47	13	18	14	4
																		14	25	7.60	18	29	19	10
																		14	100	9.48	22	40	22	18
38	FUTURE ON-GRADE INLET	UAD + UAA (BYPASS)	1.12	0.69	800	30	0.150	0.0200	5	-	-	-	-	-	770	6.0	2.1	7	5	7.11	5	6	6	-
																		7	25	9.95	8	10	9	1
																		7	100	12.49	10	14	12	2
39	FUTURE OUTFALL	UAB + UAC (INTERCEPT) + UAD (INTERCEPT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	5	-	-	35	-	-
																		0	25	-	-	49	-	-
																		0	100	-	-	60	-	-
40	UNIT 3M-4 BASIN 1	UM + UN + UO + UP + UQ + UR + US + UT + UU + UV + UW + UX + UY + UZ + UAA + UAB + UAE + UAC (INTERCEPT) + UAD (INTERCEPT)	91.75	0.72	2,625	300	0.150	0.0200	20	1,220	U	0.02	2.3	8.9	1,105	6.0	3.1	32	5	3.58	237	322	-	-
																		32	25	4.93	326	411	-	-
																		32	100	6.11	404	538	-	-
41	UNIT 3M-4 DRAIN C	UM + UN + UO + UP + UQ + UR + US + UT + UU + UV + UW + UY + UZ + UAA + UAB + UAE + UAF + UAC (INTERCEPT) + UAD (INTERCEPT)	93.01	0.73	3,450	300	0.150	0.0200	20	1,220	U	0.02	2.3	8.9	1,930	6.0	5.4	34	5	3.47	236	321	-	-
																		34	25	4.78	325	438	-	-
																		34	100	5.92	402	536	-	-
42	UNIT 3M-4 BASIN 2	UAG	35.29	0.69	1,690	240	0.150	0.0200	17	-	U	0.02	-	-	1,450	6.0	4.0	21	5	4.43	108	108	-	-
																		21	25	6.12	149	149	-	-
																		21	100	7.59	185	185	-	-
43	EXISTING TxDOT CULVERT T	UM + UN + UO + UP + UQ + UR + US + UT +UU + UV + UW + UX + UY + UZ + UAA + UAB + UAC + UAD + UAE + UAF + UAG + UAH	163.67	0.71	HYDROLOGY PER HEC-HMS														5	-	274	274	-	-
																			25	-	435	435	-	-
																			100	-	636	636	-	-
44	EXISTING TxDOT CULVERT J	UAI	24.30	0.69	HYDROLOGY PER HEC-HMS														5	-	70	70	-	-
																			25	-	113	113	-	-
																			100	-	152	152	-	-

NO.	REVISION	DATE

11-15-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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 3M-4

SAN ANTONIO, TEXAS

ULTIMATE CONDITIONS DRAINAGE CALCULATIONS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED JF DRAWN ML
SHEET C1.02

Date: Nov 15, 2024, 4:31pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SDOA-30004-35-ULT.dwg

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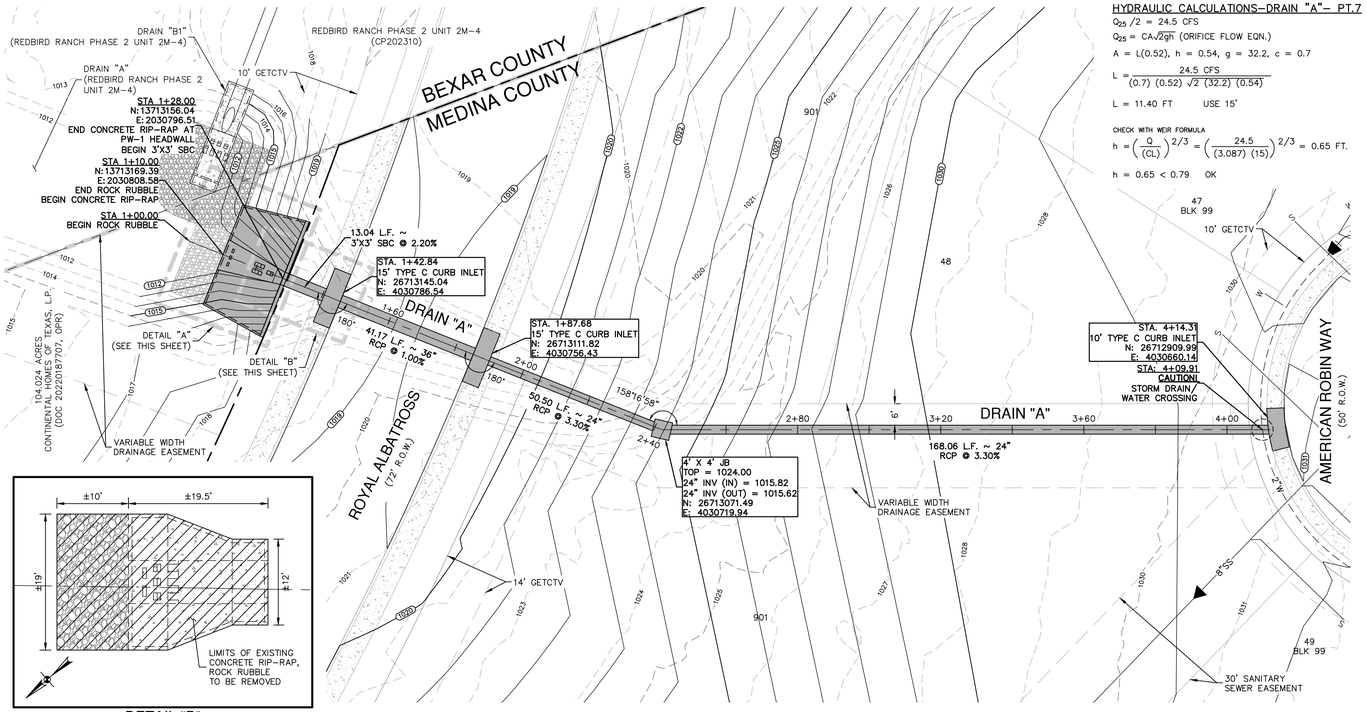
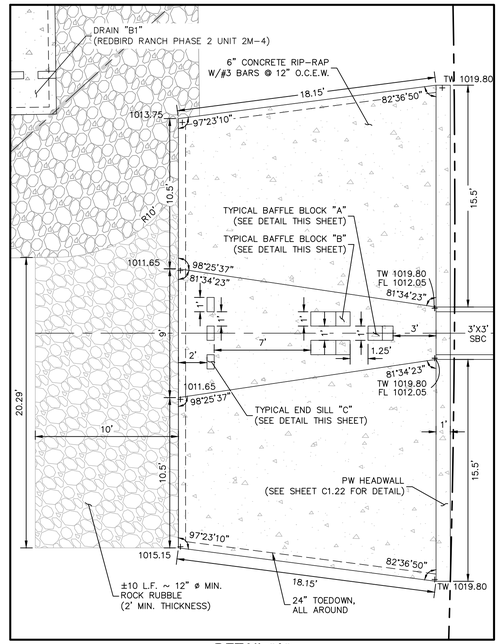
FOR PERMIT



DETAIL "B"
1" = 10'



DETAIL "A"
1" = 5'

HYDRAULIC CALCULATIONS–DRAIN "A"– PT.7

Q_{25} /2 = 24.5 CFS

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

A = L(0.52), h = 0.54, g = 32.2, c = 0.7

$$L = \frac{24.5 \text{ CFS}}{(0.7)\ (0.52)\ \sqrt{2}\ (32.2)\ (0.54)}$$

L = 11.40 FT USE 15'

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{24.5}{(3.087)\ (15)}\right)^{2/3} = 0.65 \text{ FT.}$$

h = 0.65 < 0.79 OK

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

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT

HYDRAULIC CALCULATIONS STORM DRAIN STA. 1+28.00 TO 1+42.84	
Q25 =	65 CFS
S =	2.20%
Sf =	0.59%
V =	14.07 FPS
n =	0.013
D =	3.00 FT
Dn =	1.54 FT

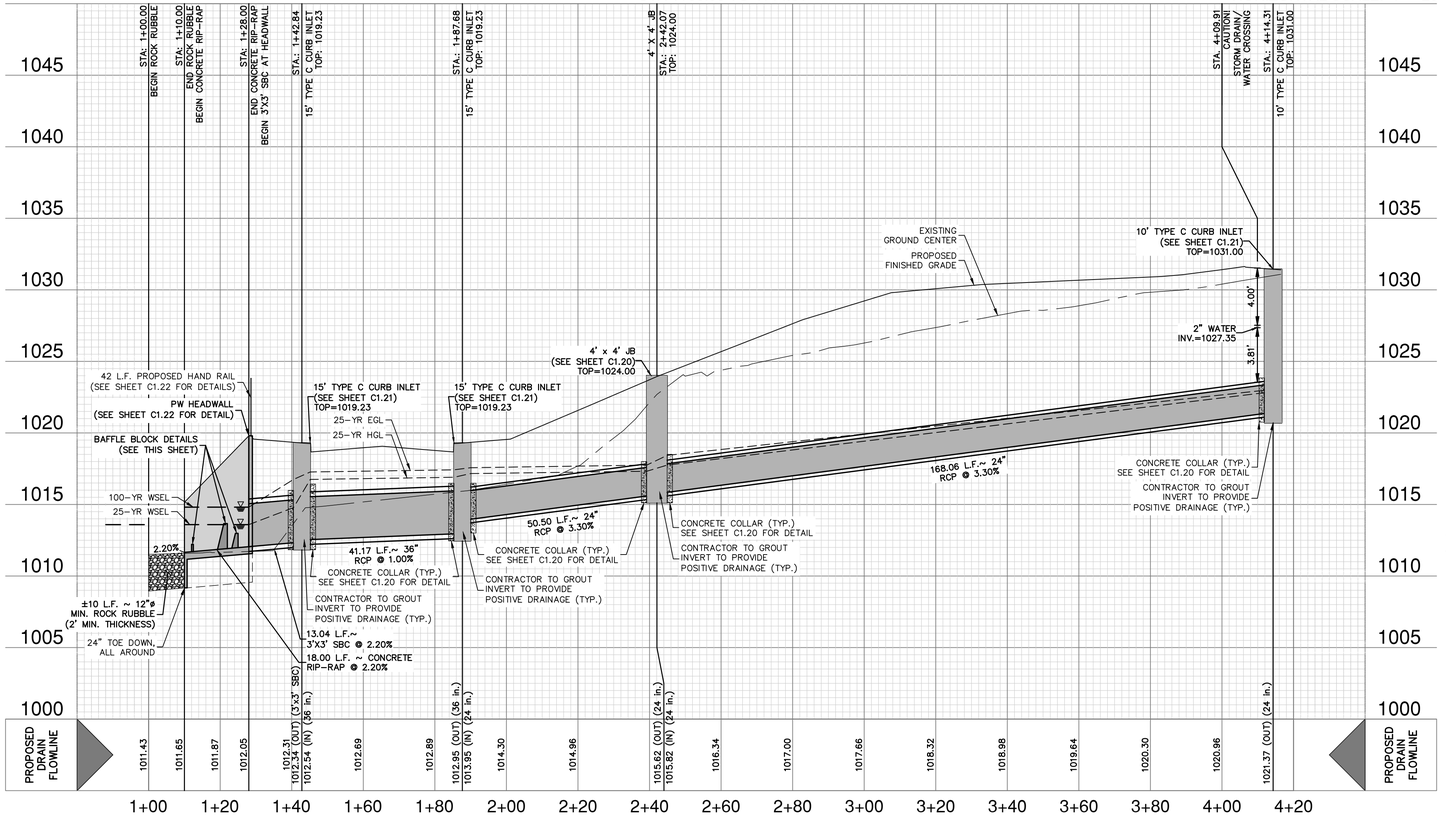
HYDRAULIC CALCULATIONS STORM DRAIN STA. 1+42.84 TO 1+87.68	
Q25 =	40.5 CFS
S =	1.00%
Sf =	0.38%
V =	5.80 FPS
n =	0.013
D =	3.0 FT
Dn =	3.00 FT

HYDRAULIC CALCULATIONS STORM DRAIN STA. 1+87.68 TO 2+42.07	
Q25 =	16 CFS
S =	3.30%
Sf =	0.50%
V =	5.09 FPS
n =	0.013
D =	2.0 FT
Dn =	2.00 FT

HYDRAULIC CALCULATIONS STORM DRAIN STA. 2+42.07 TO 4+14.31	
Q25 =	16 CFS
S =	3.30%
Sf =	0.50%
V =	5.14 FPS
n =	0.013
D =	2.0 FT
Dn =	1.94 FT

DRAIN "A"
STA 1+00.00 TO 4+14.31

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



HYDRAULIC CALCULATIONS–DRAIN "A"– PT.6

Q_{25} = 16 CFS

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

A = L(0.52), h = 0.54, g = 32.2, c = 0.7

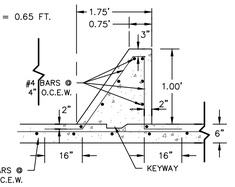
$$L = \frac{16 \text{ CFS}}{(0.7)\ (0.52)\ \sqrt{2}\ (32.2)\ (0.54)}$$

L = 7.45 FT USE 10'

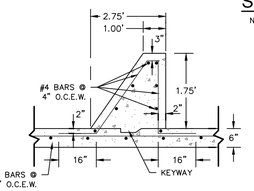
CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{16}{(3.087)\ (10)}\right)^{2/3} = 0.65 \text{ FT.}$$

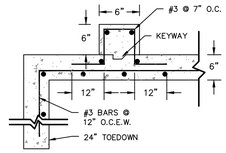
h = 0.65 < 0.79 OK



TYPICAL BAFFLE BLOCK DETAIL "A" SECTION
NOT-TO-SCALE



TYPICAL BAFFLE BLOCK DETAIL "B" SECTION
NOT-TO-SCALE



TYPICAL END SILL DETAIL "C" SECTION
NOT-TO-SCALE

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. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE 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, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4
SAN ANTONIO, TEXAS

DRAIN A - PLAN & PROFILE
STA 1+00.00 TO 4+14.31

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.03

FOR PERMIT

Date: Nov 15, 2024, 4:31pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SDA-30004-35.dwg

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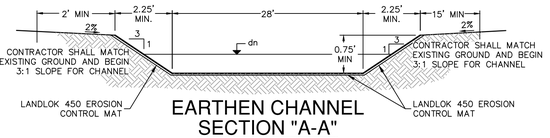
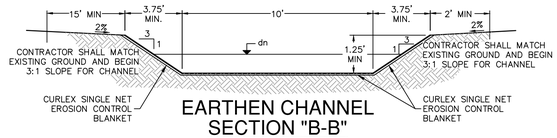


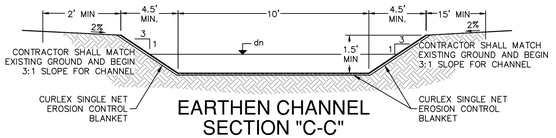
EARTHEN CHANNEL SECTION "A-A"

(STA. 1+00.00 – STA. 1+65.00)
NOT-TO-SCALE



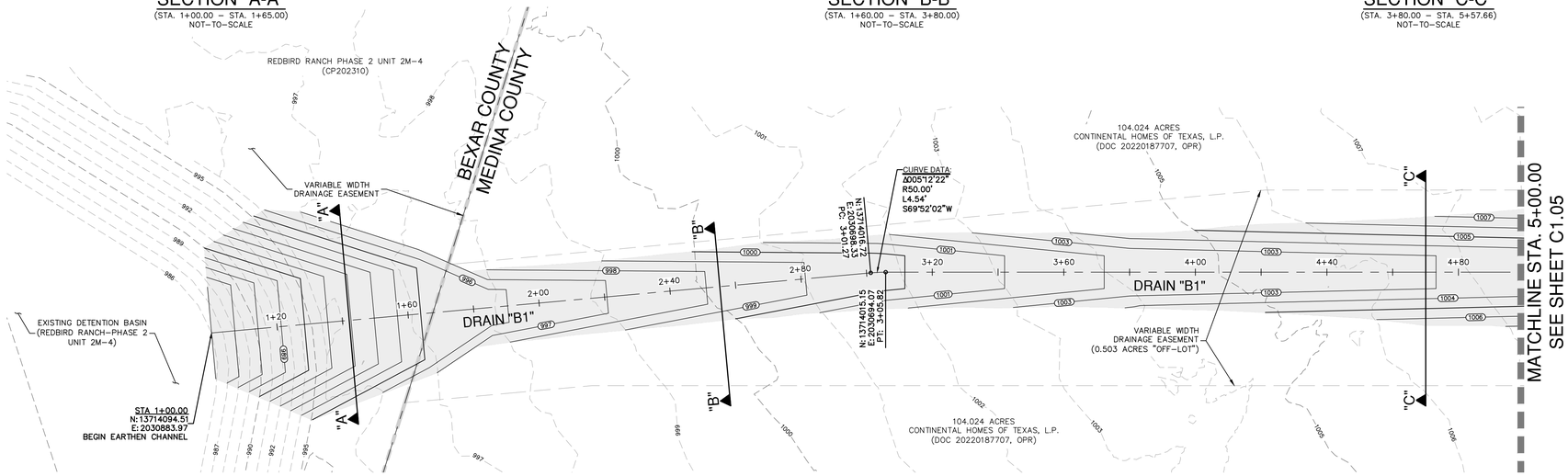
EARTHEN CHANNEL SECTION "B-B"

(STA. 1+60.00 – STA. 3+80.00)
NOT-TO-SCALE



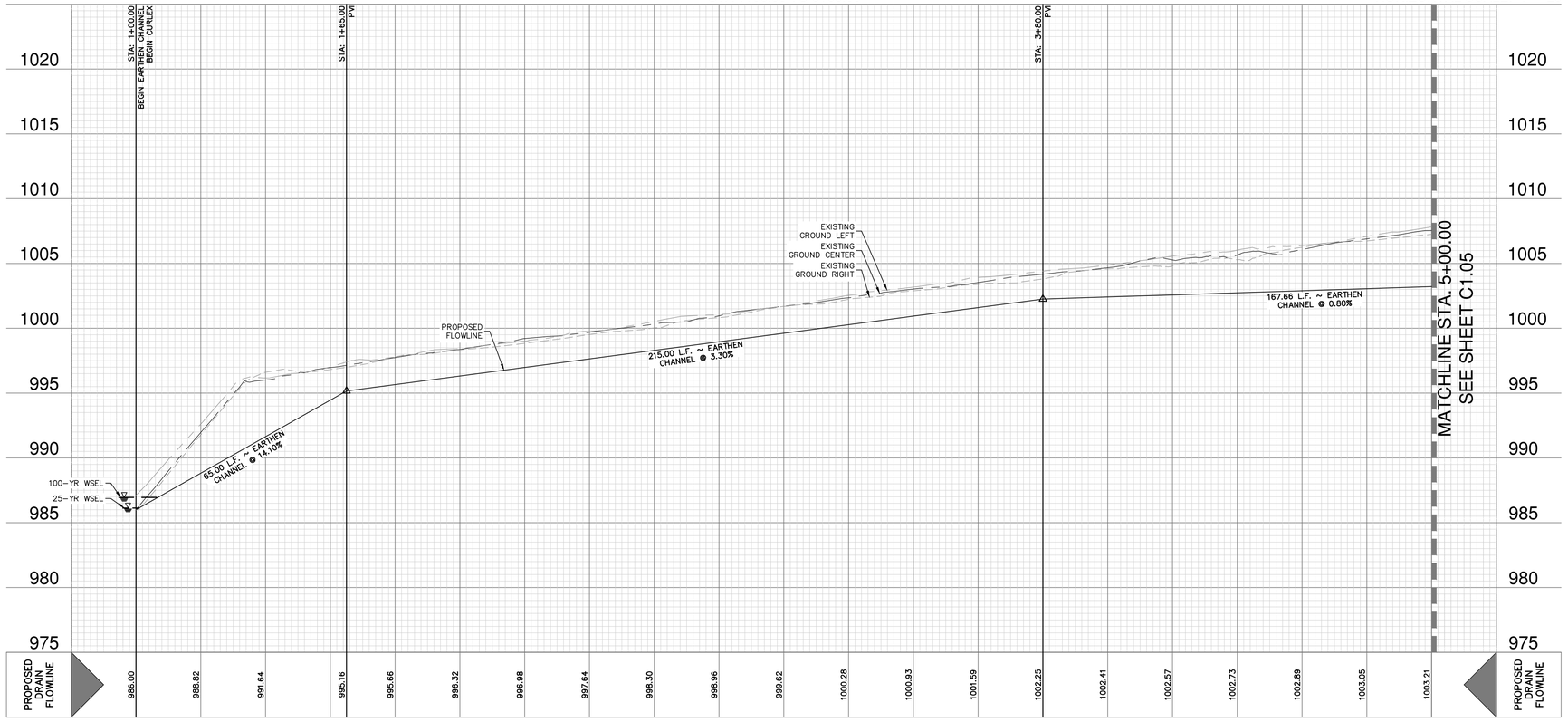
EARTHEN CHANNEL SECTION "C-C"

(STA. 3+80.00 – STA. 5+57.66)
NOT-TO-SCALE



DRAIN "B1"
STA 1+00.00 TO 5+00.00

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



DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690 —
- PROPOSED CONTOUR — 690 —
- PROPOSED WATER — W —
- PROPOSED SEWER — SS —
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 1+00.00 TO 1+65.00

Q_{25}	=	40 CFS
Bw	=	28 FT
n	=	0.035
S	=	14.10%
dn	=	0.23 FT
VN	=	5.95 FPS
dn+FrBd	=	0.73 FT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 1+65.00 TO 3+80.00

Q_{25}	=	40 CFS
Bw	=	10 FT
n	=	0.035
S	=	3.30%
dn	=	0.65 FT
VN	=	5.17 FPS
dn+FrBd	=	1.15 FT

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 3+80.00 TO 5+57.66

Q_{25}	=	40 CFS
Bw	=	10 FT
n	=	0.035
S	=	0.80%
dn	=	0.97 FT
VN	=	3.20 FPS
dn+FrBd	=	1.47 FT

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

DRAIN B1 - PLAN & PROFILE
STA 1+00.00 TO 5+00.00

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.04

FOR PERMIT

Date: Nov 15, 2024, 4:31pm User ID: tmartin
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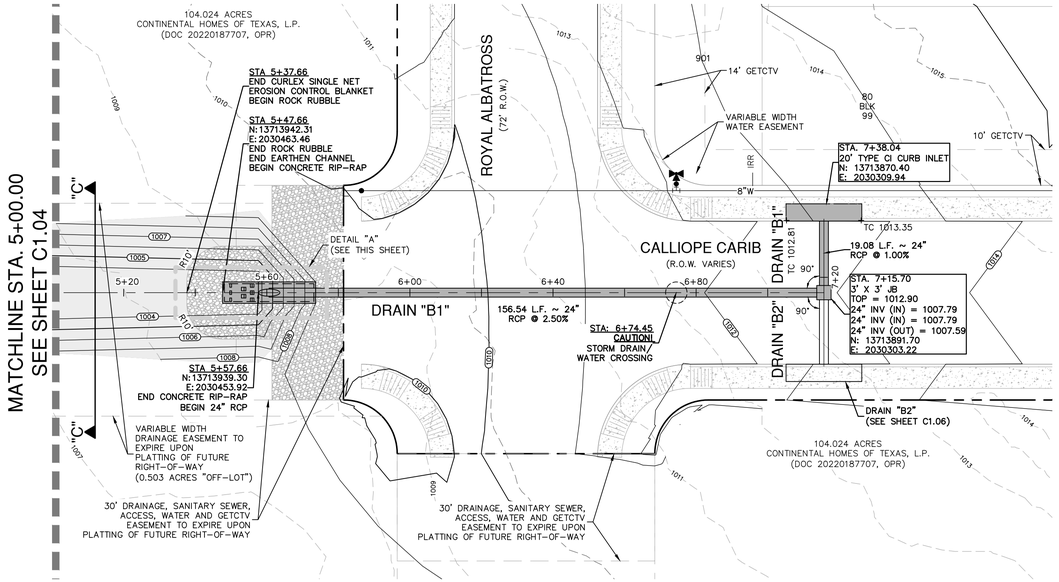
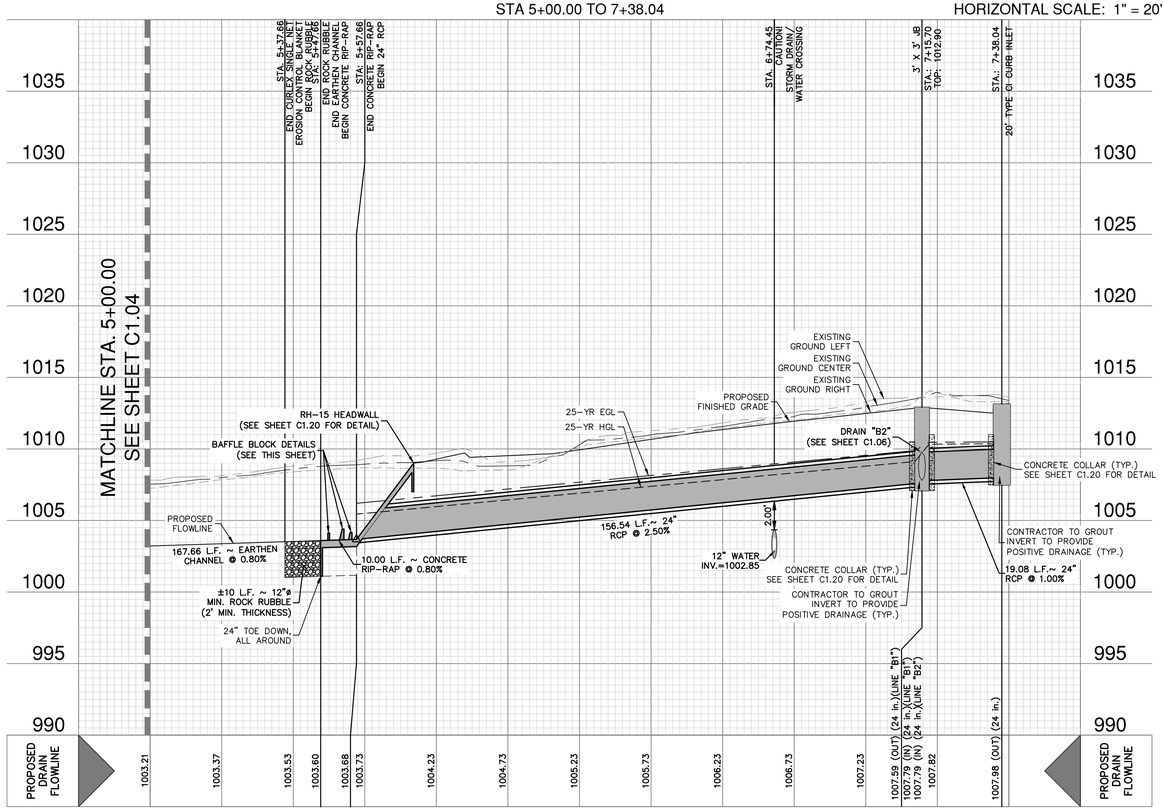
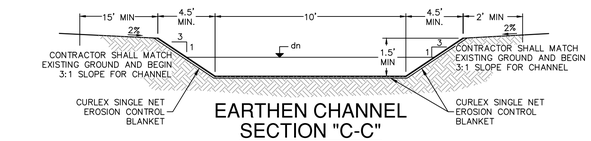


DRAIN "B1"
STA 5+00.00 TO 7+38.04

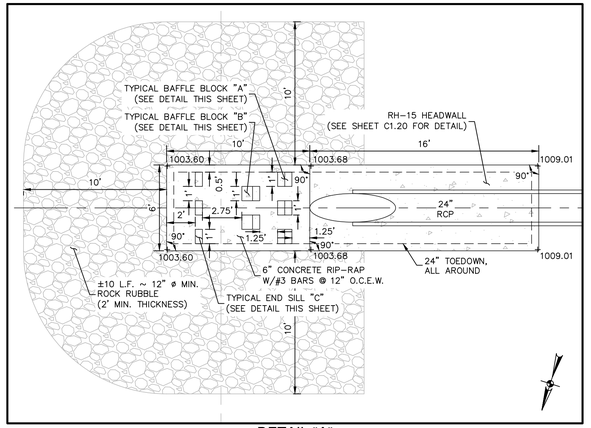
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'





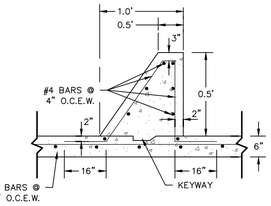
EARTHEN CHANNEL SECTION "C-C"

(STA. 3+80.00 – STA. 5+57.66)
NOT-TO-SCALE



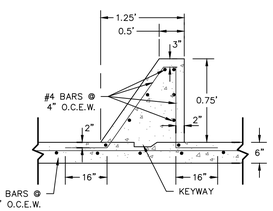
DETAIL "A"

1" = 5'



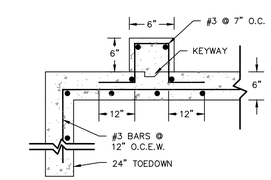
TYPICAL BAFFLE BLOCK DETAIL "A" SECTION

NOT-TO-SCALE



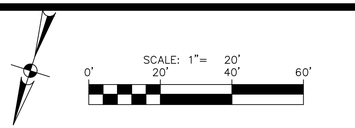
TYPICAL BAFFLE BLOCK DETAIL "B" SECTION

NOT-TO-SCALE



TYPICAL END SILL DETAIL "C" SECTION

NOT-TO-SCALE



DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT

DRAIN "B1" ON-GRADE INLET
HYDRAULIC CALCULATIONS
$Q_{25}/2$ = 13 CFS
S = 2.7%
L = 20' INLET
$Q_{CAPTURED}$ = 9 CFS
Q_{BYPASS} = 4 CFS

HYDRAULIC CALCULATIONS EARTH CHANNEL

STA. 3+80.00 TO 5+57.66

Q_{25}	=	40 CFS
Bw	=	10 FT
n	=	0.035
S	=	0.80%
dn	=	0.97 FT
VN	=	3.20 FPS
dn+FrBd	=	1.47 FT

HYDRAULIC CALCULATIONS STORM DRAIN

STA. 5+57.66 TO 7+15.70

Q25	=	18 CFS
S	=	2.50%
Sf	=	0.63%
V	=	6.15 FPS
n	=	0.013
D	=	2.0 FT
Dn	=	1.76 FT

HYDRAULIC CALCULATIONS STORM DRAIN

STA. 7+15.70 TO 7+38.04

Q25	=	9 CFS
S	=	1.00%
Sf	=	0.16%
V	=	2.87 FPS
n	=	0.013
D	=	2.0 FT
Dn	=	2.0 FT

DRAINAGE & GRADING NOTES:

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3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE 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:

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CAUTION!!

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

DRAIN B1 - PLAN & PROFILE
STA 5+00.00 TO 7+38.04

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.05

FOR PERMIT

Date: Nov 15, 2024, 4:32pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SDB1-30004-35.dwg

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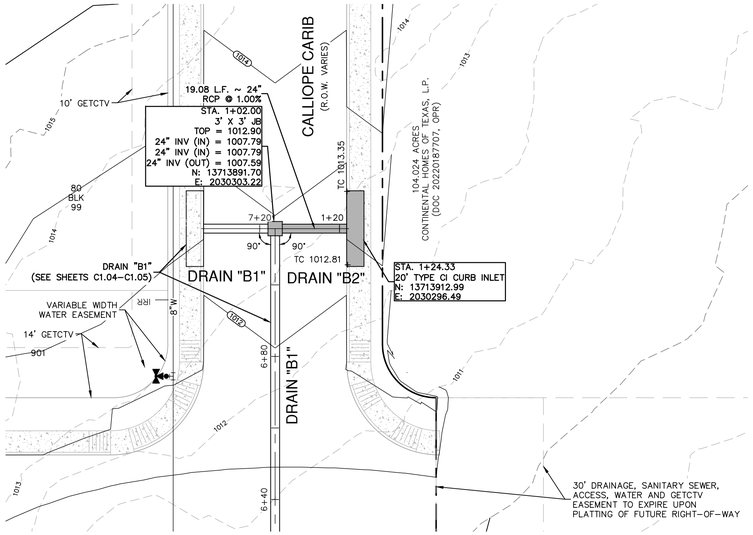
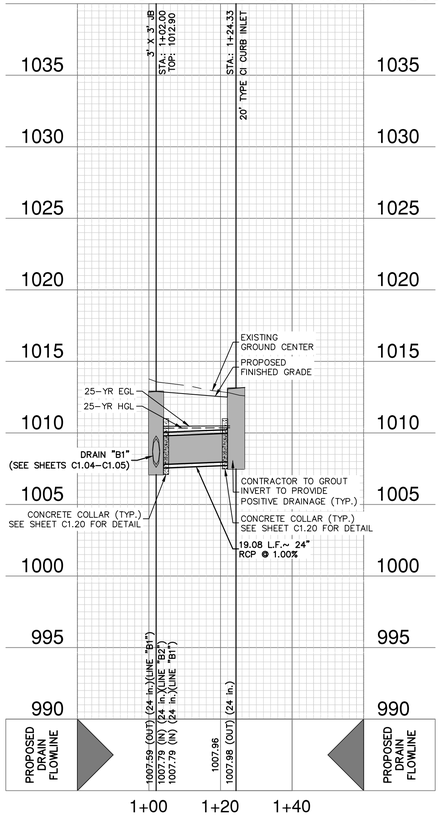


DRAIN "B2" VERTICAL SCALE: 1" = 5'
STA 1+02.00 TO 1+24.33 HORIZONTAL SCALE: 1" = 20'



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

DRAINAGE LEGEND

PROJECT LIMITS	
100 YR FLOODPLAIN	
EXISTING CONTOUR	690
PROPOSED CONTOUR	690
PROPOSED WATER	W
PROPOSED SEWER	SS
FLOW ARROW	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV
CURLEX SINGLE NET EROSION CONTROL BLANKETS	
LANDLOK 450 EROSION CONTROL MAT	

DRAIN "B2" ON–GRADE INLET
HYDRAULIC CALCULATIONS
Q_{25} /2 = 13 CFS
S = 2.7%
L = 20' INLET
$Q_{CAPTURED}$ = 9 CFS
Q_{BYPASS} = 4 CFS

HYDRAULIC CALCULATIONS
STORM DRAIN
STA. 1+02.00 TO 1+24.33

Q25	=	9 CFS
S	=	1.00%
Sf	=	0.16%
V	=	2.87 FPS
n	=	0.013
D	=	2.0 FT
Dn	=	2.0 FT

DRAINAGE & GRADING NOTES:

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4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE MEDINA COUNTY WILL ACCEPT.
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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

DRAIN B2 - PLAN & PROFILE
STA 1+02.00 TO 1+24.33

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.06

FOR PERMIT

Date: Nov 15, 2024, 4:32pm User ID: tmartin
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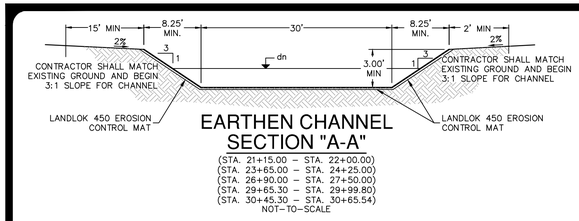
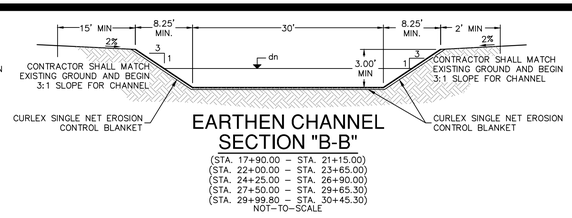


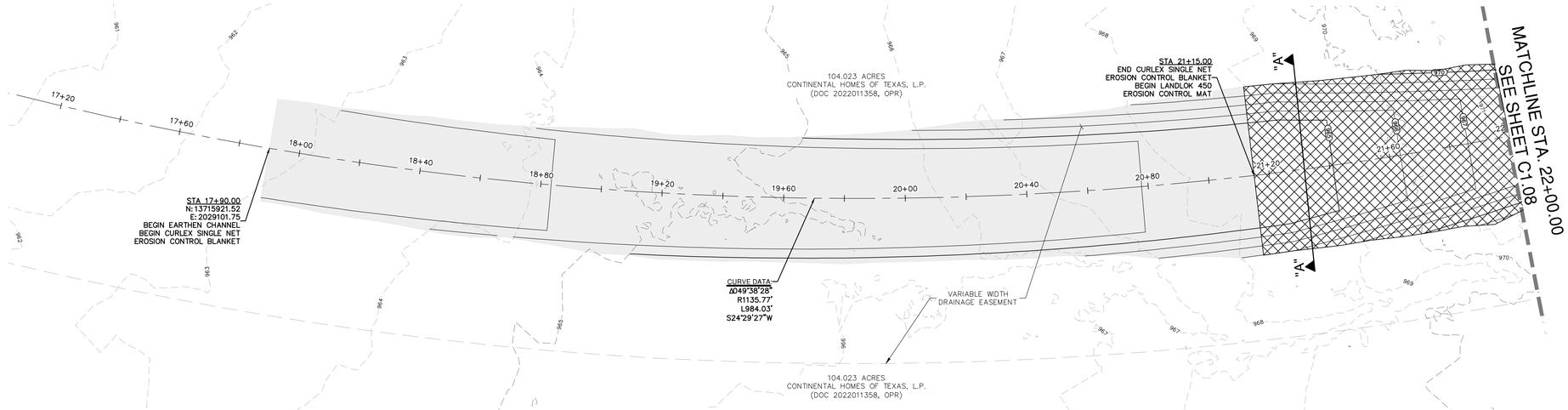
EARTHEN CHANNEL SECTION "A-A"

(STA. 21+15.00 – STA. 22+00.00)
(STA. 23+65.00 – STA. 24+25.00)
(STA. 26+90.00 – STA. 27+50.00)
(STA. 29+65.30 – STA. 29+99.80)
(STA. 30+45.30 – STA. 30+65.54)
NOT–TO–SCALE



EARTHEN CHANNEL SECTION "B-B"

(STA. 17+90.00 – STA. 21+15.00)
(STA. 22+00.00 – STA. 23+65.00)
(STA. 24+25.00 – STA. 26+90.00)
(STA. 27+50.00 – STA. 29+65.30)
(STA. 29+99.80 – STA. 30+45.30)
NOT–TO–SCALE



DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT

HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 17+90.00 TO 20+50.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 0.50%
dn = 2.46 FT
dn+FrBd = 2.96 FT
V = 4.76 FPS

HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 20+50.00 TO 21+25.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 0.60%
dn = 2.33 FT
dn+FrBd = 2.83 FT
V = 5.08 FPS

HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 21+25.00 TO 22+00.00

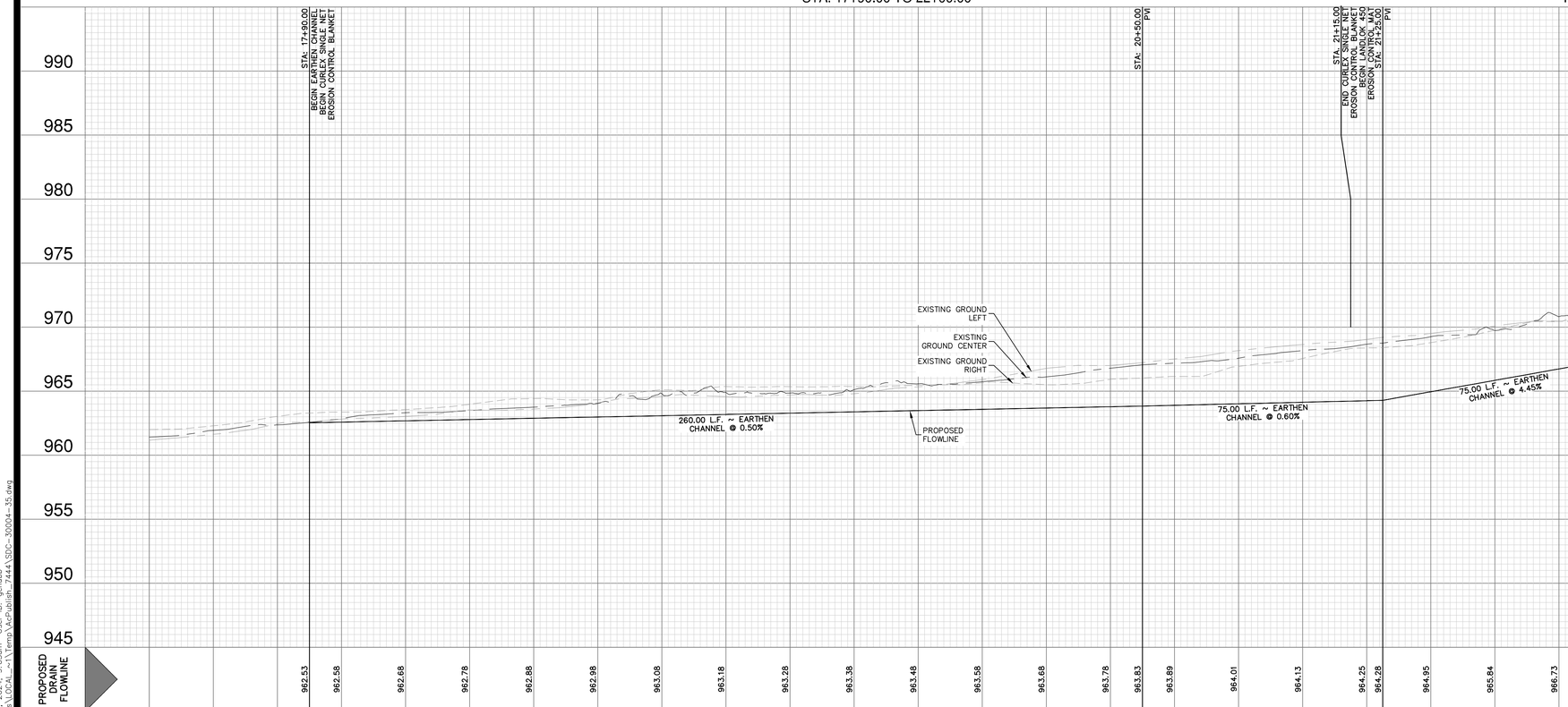
Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 4.45%
dn = 1.31 FT
dn+FrBd = 1.81 FT
V = 9.85 FPS

HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 22+00.00 TO 23+75.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 0.60%
dn = 2.33 FT
dn+FrBd = 2.83 FT
V = 5.08 FPS

DRAIN "C"
STA. 17+90.00 TO 22+00.00

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



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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11–15–2024

PAPE-DAWSON ENGINEERS
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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 3M-4
SAN ANTONIO, TEXAS

DRAIN C - PLAN & PROFILE
STA. 17+90.00 TO 22+00.00

PLAT NO.	N/A
JOB NO.	30004–35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	CA
SHEET	C1.07

FOR PERMIT

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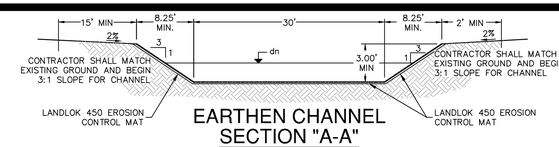
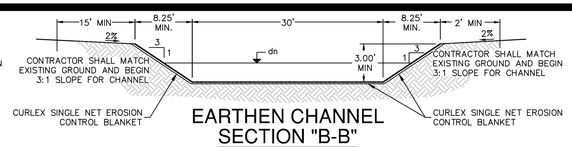


EARTHEN CHANNEL SECTION "A-A"

(STA. 21+15.00 – STA. 22+00.00)
(STA. 23+65.00 – STA. 24+25.00)
(STA. 26+90.00 – STA. 27+50.00)
(STA. 29+65.30 – STA. 29+99.80)
(STA. 30+45.30 – STA. 30+65.54)
NOT-TO-SCALE



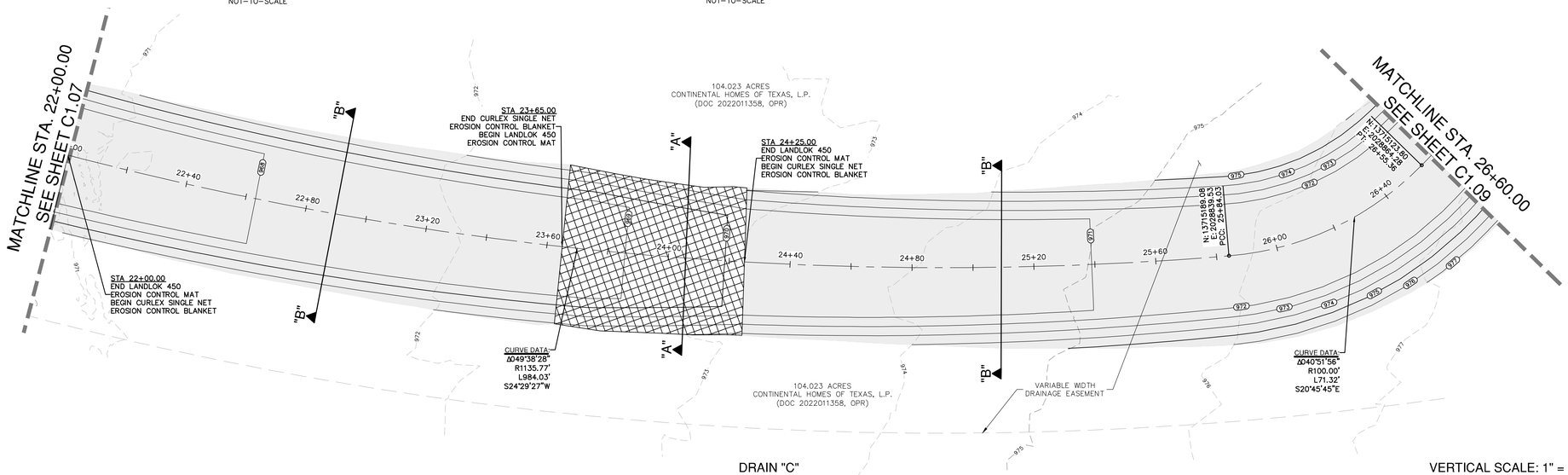
EARTHEN CHANNEL SECTION "B-B"

(STA. 17+90.00 – STA. 21+15.00)
(STA. 22+00.00 – STA. 23+65.00)
(STA. 24+25.00 – STA. 26+90.00)
(STA. 27+50.00 – STA. 29+65.30)
(STA. 29+99.80 – STA. 30+45.30)
NOT-TO-SCALE

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

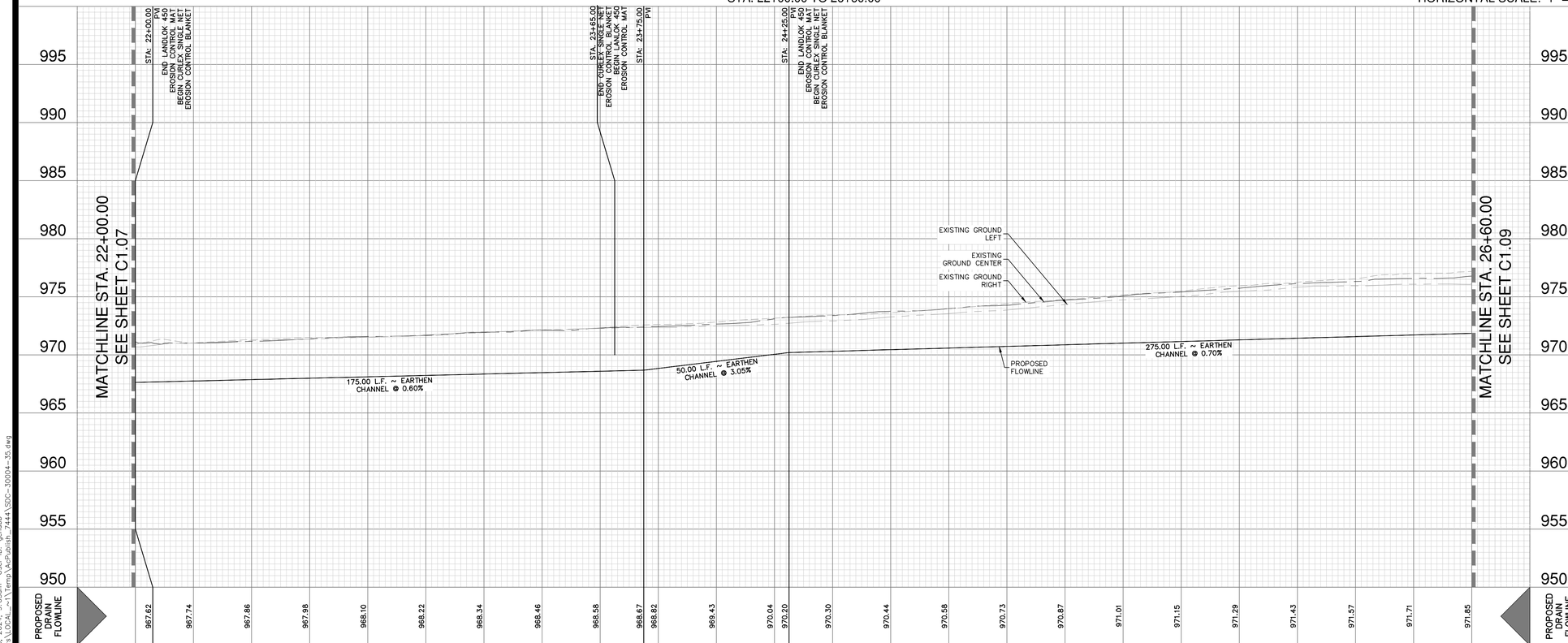
DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 690
- PROPOSED CONTOUR 690
- PROPOSED WATER W
- PROPOSED SEWER SS
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT



DRAIN "C"
STA. 22+00.00 TO 26+60.00

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



HYDRAULIC CALCULATIONS EARTHEN CHANNEL

STA. 22+00.00 TO 23+75.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 0.60%
dn = 2.33 FT
dn+FrBd = 2.83 FT
V = 5.08 FPS

HYDRAULIC CALCULATIONS EARTHEN CHANNEL

STA. 23+75.00 TO 24+25.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 3.05%
dn = 1.46 FT
dn+FrBd = 1.96 FT
V = 8.73 FPS

HYDRAULIC CALCULATIONS EARTHEN CHANNEL

STA. 24+25.00 TO 27+00.00

Q25 = 438 CFS
Bw = 30 FT
n = 0.035
S = 0.70%
dn = 2.23 FT
dn+FrBd = 2.73 FT
V = 5.35 FPS

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. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE 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, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4
SAN ANTONIO, TEXAS

DRAIN C - PLAN & PROFILE
STA. 22+00.00 TO 26+60.00

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN CA
SHEET C1.08

FOR PERMIT

Date: Nov 18, 2024, 9:05am User ID: gchubb
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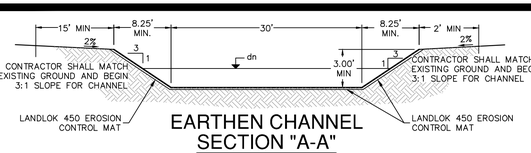
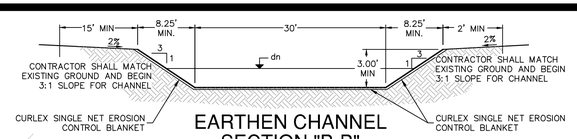


EARTHEN CHANNEL SECTION "A-A"

(STA. 21+15.00 – STA. 22+00.00)
(STA. 23+65.00 – STA. 24+25.00)
(STA. 26+90.00 – STA. 27+50.00)
(STA. 29+65.30 – STA. 29+99.80)
(STA. 30+45.30 – STA. 30+65.54)
NOT–TO–SCALE



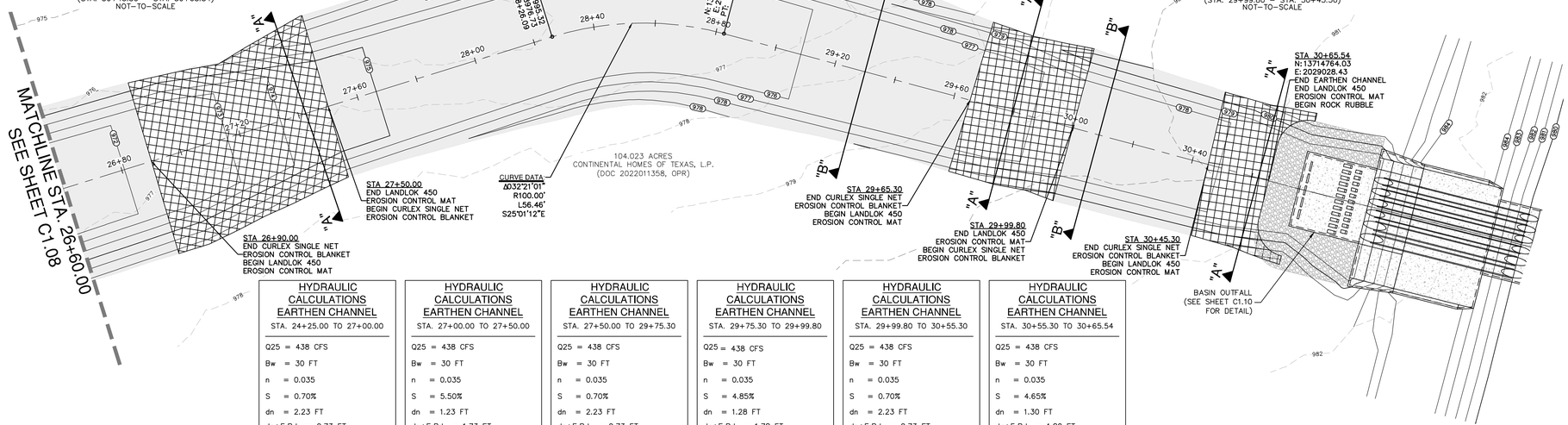
EARTHEN CHANNEL SECTION "B-B"

(STA. 17+90.00 – STA. 21+15.00)
(STA. 22+00.00 – STA. 23+65.00)
(STA. 24+25.00 – STA. 26+90.00)
(STA. 27+50.00 – STA. 29+65.30)
(STA. 29+99.80 – STA. 30+45.30)
NOT–TO–SCALE

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

DRAINAGE LEGEND

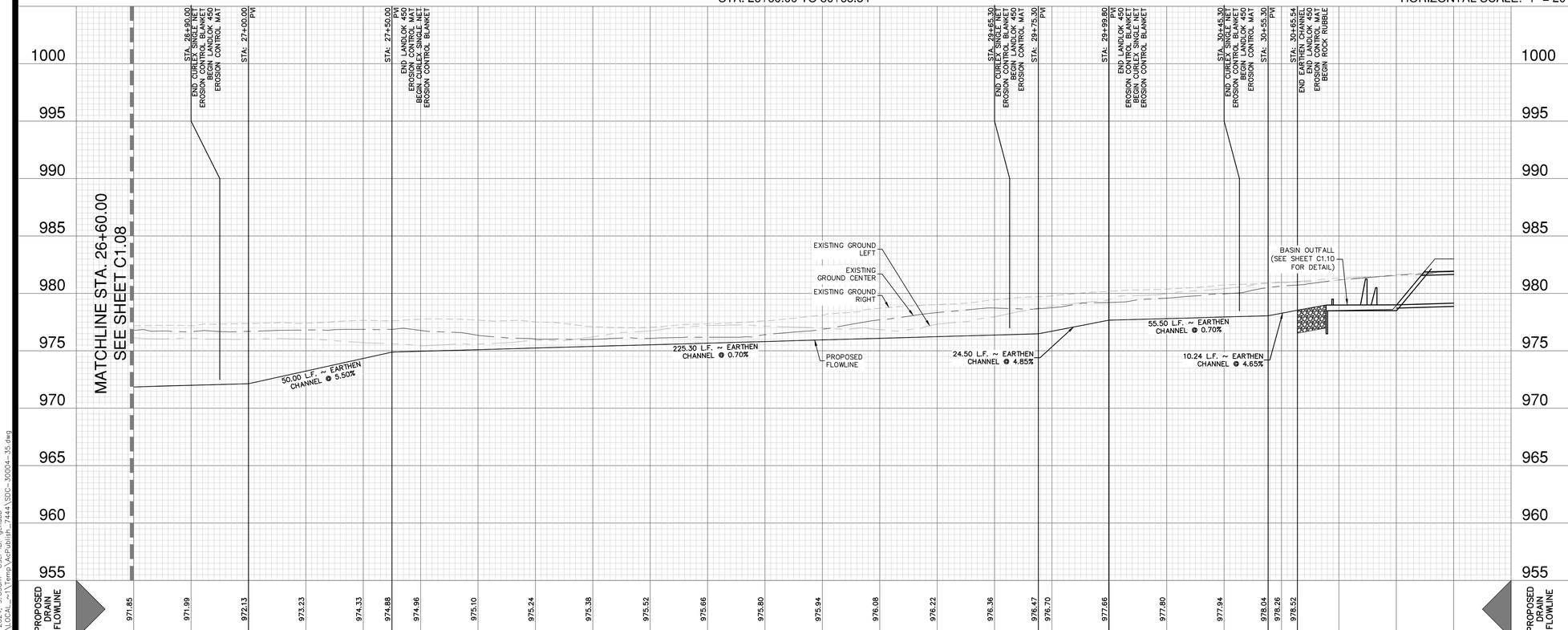
- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- LANDLOK 450 EROSION CONTROL MAT



HYDRAULIC CALCULATIONS EARTHEN CHANNEL	HYDRAULIC CALCULATIONS EARTHEN CHANNEL	HYDRAULIC CALCULATIONS EARTHEN CHANNEL	HYDRAULIC CALCULATIONS EARTHEN CHANNEL	HYDRAULIC CALCULATIONS EARTHEN CHANNEL	HYDRAULIC CALCULATIONS EARTHEN CHANNEL
STA. 24+25.00 TO 27+00.00	STA. 27+00.00 TO 27+50.00	STA. 27+50.00 TO 29+75.30	STA. 29+75.30 TO 29+99.80	STA. 29+99.80 TO 30+55.30	STA. 30+55.30 TO 30+65.54
Q25 = 438 CFS	Q25 = 438 CFS	Q25 = 438 CFS	Q25 = 438 CFS	Q25 = 438 CFS	Q25 = 438 CFS
Bw = 30 FT	Bw = 30 FT	Bw = 30 FT	Bw = 30 FT	Bw = 30 FT	Bw = 30 FT
n = 0.035	n = 0.035	n = 0.035	n = 0.035	n = 0.035	n = 0.035
S = 0.70%	S = 5.50%	S = 0.70%	S = 4.85%	S = 0.70%	S = 4.65%
dn = 2.23 FT	dn = 1.23 FT	dn = 2.23 FT	dn = 1.28 FT	dn = 2.23 FT	dn = 1.30 FT
dn+FrBd = 2.73 FT	dn+FrBd = 1.73 FT	dn+FrBd = 2.73 FT	dn+FrBd = 1.78 FT	dn+FrBd = 2.73 FT	dn+FrBd = 1.80 FT
V = 5.35 FPS	V = 10.57 FPS	V = 5.35 FPS	V = 10.19 FPS	V = 5.35 FPS	V = 10.05 FPS

DRAIN "C"
STA. 26+60.00 TO 30+65.54

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



DRAINAGE & GRADING NOTES:

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4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
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, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

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FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS — JOCELYN PEREZ — 98367 — LICENSED PROFESSIONAL ENGINEER — 11–15–2024

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 3M-4
SAN ANTONIO, TEXAS

DRAIN C - PLAN & PROFILE
STA. 26+60.00 TO 30+65.54

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN CA
SHEET C1.09

Date: Nov 18, 2024, 9:05am User ID: gchubb
File: C:\Users\LOCAL_~1\Temp\AcPublish_7444\SDC-30004-35.dwg
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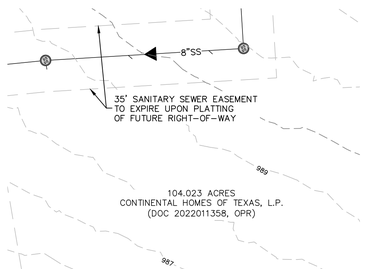
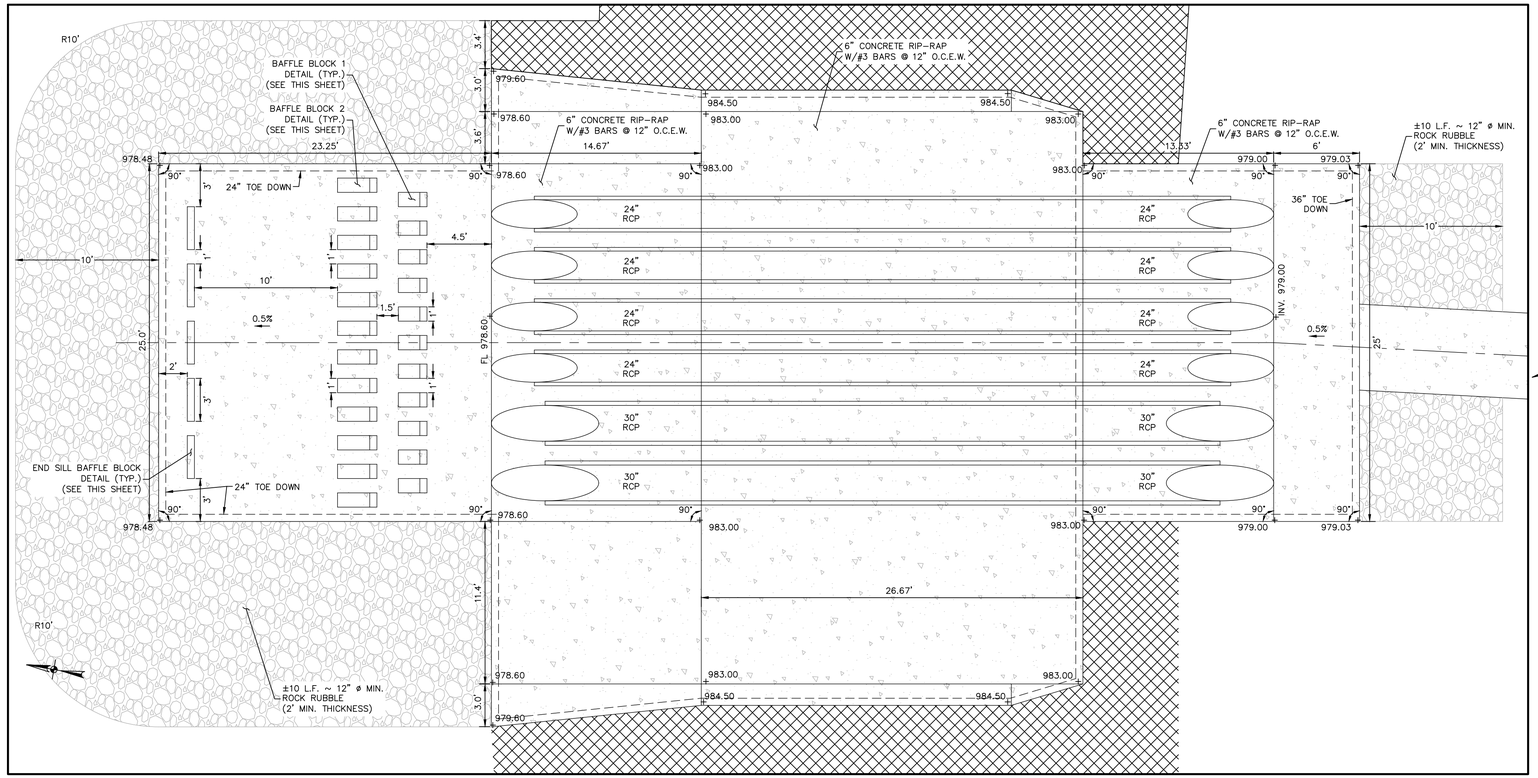
NOTE:

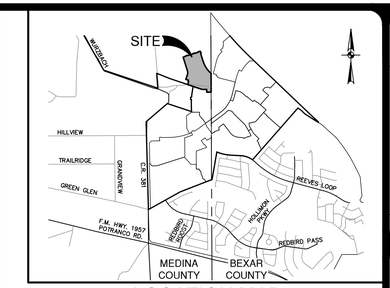
ALL DISTURBED AREA WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT CHANNEL. CONTRACTOR SHALL INCLUDE ALL COST TO REVEGETATE CHANNEL IN BASE BID, NO SEPERATE PAY ITEM.

OVERFLOW WEIR CALCULATIONS

Q_{100}	=	$(Cw)(L)(h)^{3/2}$
Q_{100}	=	516.5
C	=	3.087
L	=	190 ft
516.5	=	$(3.087)(190)(h)^{3/2}$
h	=	0.92 ft







LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 40'

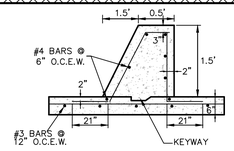
0' 40' 80' 120'

LEGEND

- UNIT BOUNDARY
- 750 EXISTING CONTOURS
- 750 PROPOSED CONTOURS
- +750.00 PROPOSED SPOT ELEVATION
- FLOW ARROW
- LANDLOK 450 (TP-TRM) EROSION CONTROL MAT
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- PROPOSED FENCE (SPECIFICATIONS BY OWNER)

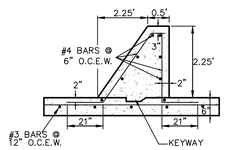
DETAIL "A"

1" = 5'



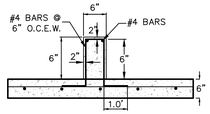
BASIN OUTFALL BAFFLE BLOCK 1 DETAIL

NOT-TO-SCALE



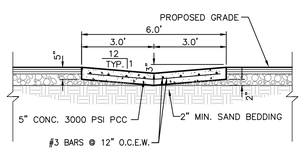
BASIN OUTFALL BAFFLE BLOCK 2 DETAIL

NOT-TO-SCALE



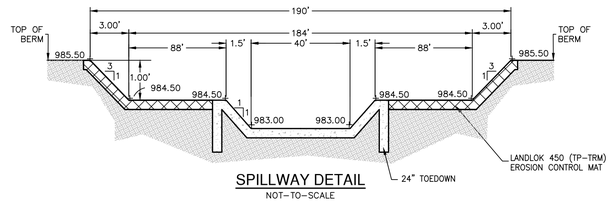
BASIN OUTFALL END SILL BLOCK DETAIL

NOT-TO-SCALE



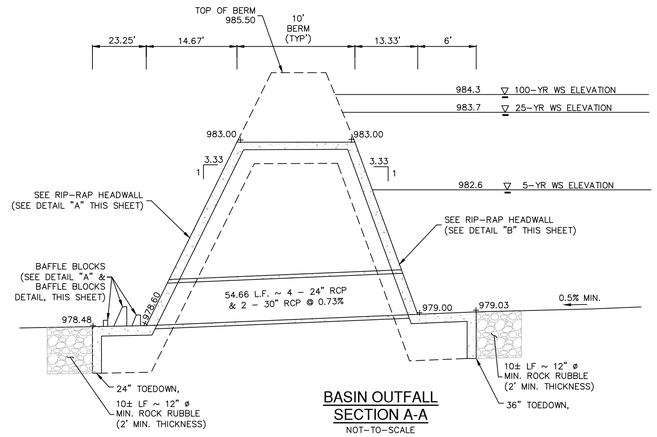
CONCRETE V-SWALE

NOT TO SCALE



SPILLWAY DETAIL

NOT-TO-SCALE



BASIN OUTFALL SECTION A-A

NOT-TO-SCALE

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FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

DETENTION BASIN PLAN-1

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	KM
SHEET	C1.10

Date: Nov 15, 2024, 4:33pm User ID: tmartin
File: P:\300\04\35\Design\Civil\BA1-30004-35.dwg

TRENCH EXCAVATION SAFETY PROTECTION:

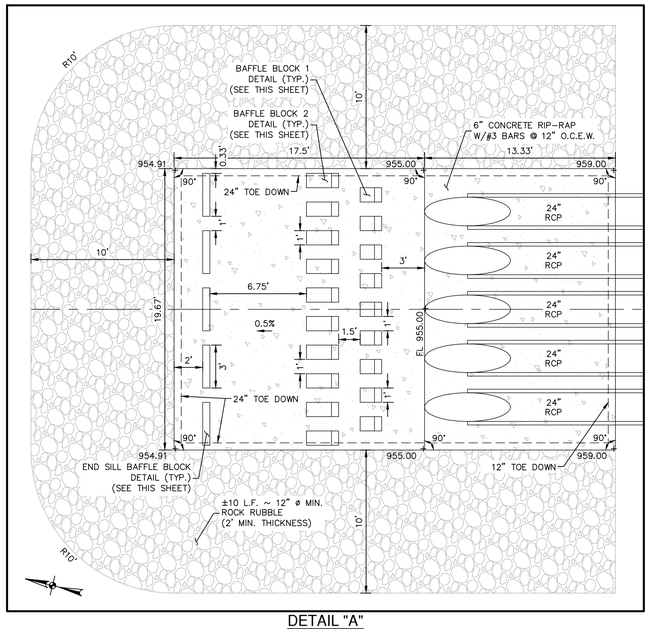
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

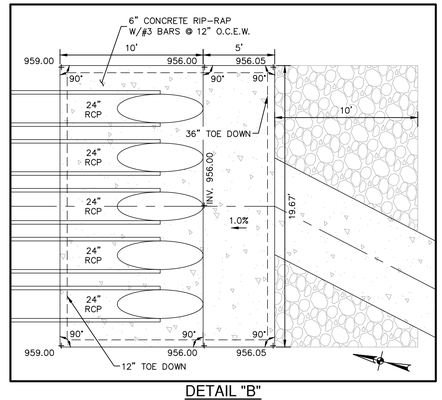
ALL DISTURBED AREA WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT CHANNEL. CONTRACTOR SHALL INCLUDE ALL COST TO REVEGETATE CHANNEL IN BASE BID, NO SEPERATE PAY ITEM.

OVERFLOW WEIR CALCULATIONS

Q_{100}	=	$(Cw)(L)(h)^{3/2}$
Q_{100}	=	238.3
C	=	3.087
L	=	105 ft
238.3	=	$(3.087)(105)(h)^{3/2}$
h	=	0.81 ft



DETAIL "A"
1" = 5'



DETAIL "B"
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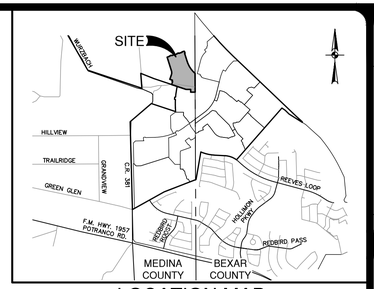


LOCATION MAP

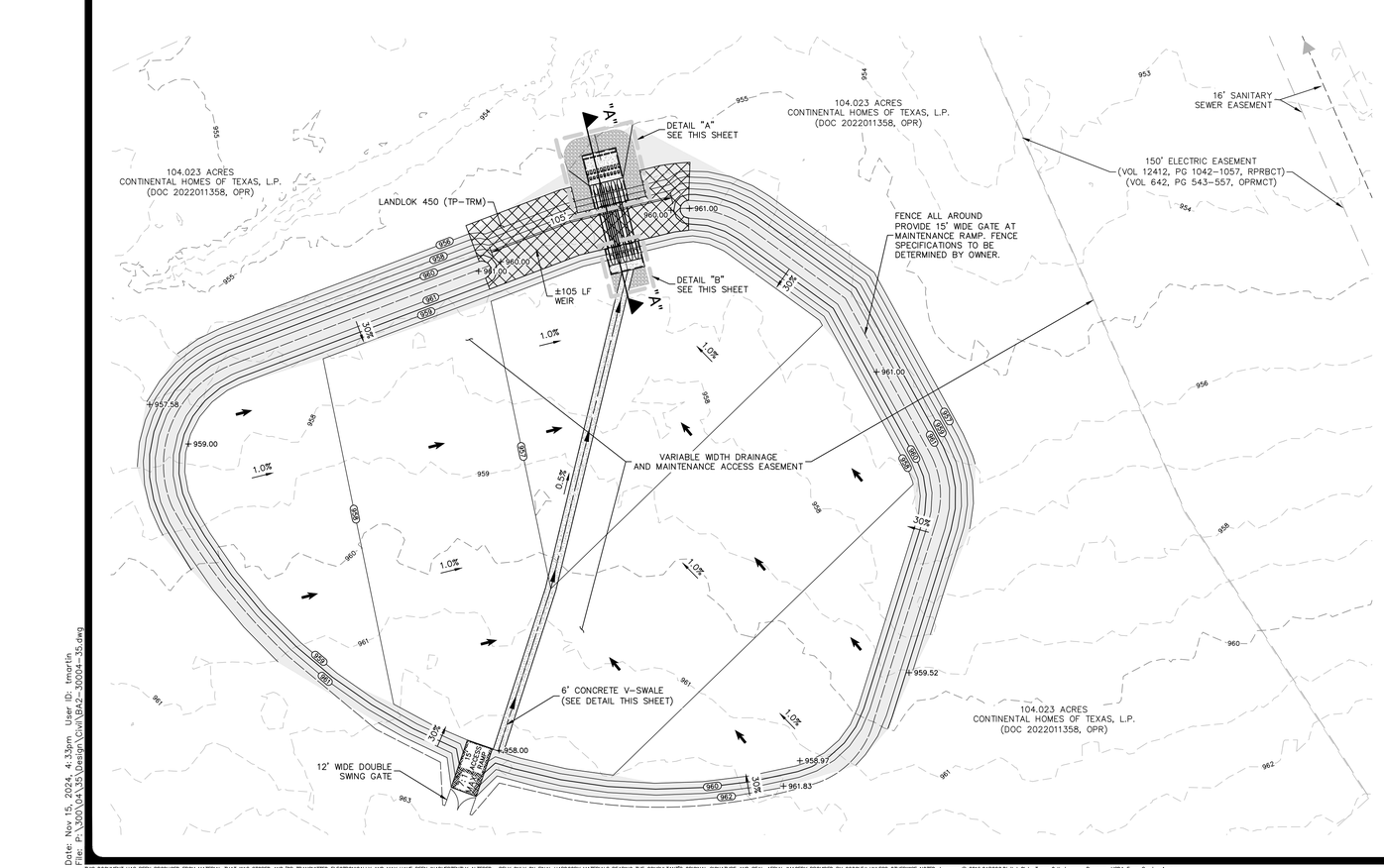
NOT-TO-SCALE

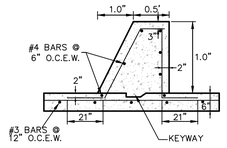
SCALE: 1"= 40'

0' 40' 80' 120'

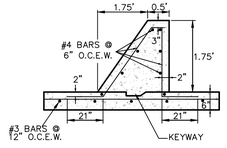
LEGEND

- UNIT BOUNDARY
- 750 EXISTING CONTOURS
- 750 PROPOSED CONTOURS
- +750.00 PROPOSED SPOT ELEVATION
- FLOW ARROW
- LANDLOK 450 (TP-TRM) EROSION CONTROL MAT
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- PROPOSED FENCE (SPECIFICATIONS BY OWNER)

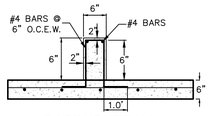




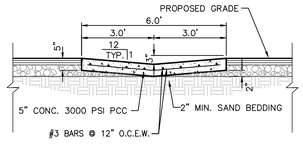
BASIN OUTFALL
BAFFLE BLOCK 1 DETAIL
NOT-TO-SCALE



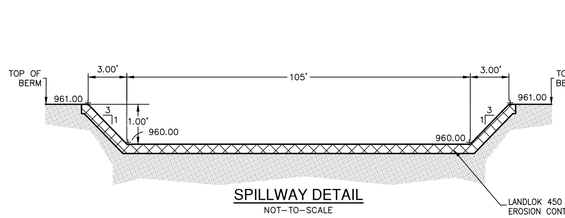
BASIN OUTFALL
BAFFLE BLOCK 2 DETAIL
NOT-TO-SCALE



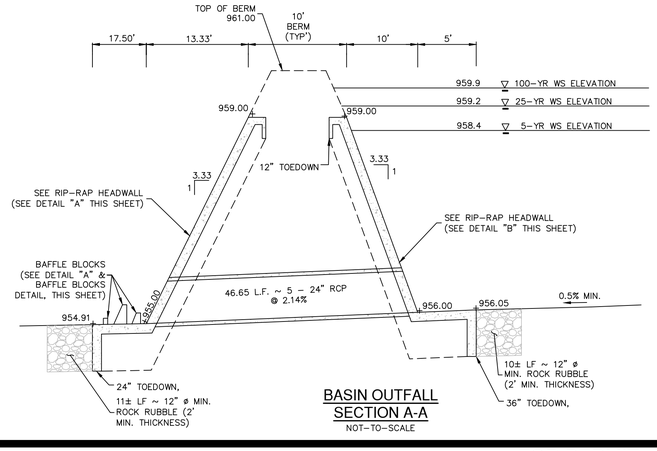
BASIN OUTFALL
END SILL BLOCK DETAIL
NOT-TO-SCALE



CONCRETE V-SWALE
NOT TO SCALE



SPILLWAY DETAIL
NOT-TO-SCALE



BASIN OUTFALL
SECTION A-A
NOT-TO-SCALE

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

PAPE-DAWSON ENGINEERS
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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

DETENTION BASIN PLAN-2

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	KM
DRAWN	
SHEET	C1.11

Date: Nov 15, 2024, 4:33pm User ID: tmartin
File: P:\300\04\35\Design\Civil\BA2-30004-35.dwg

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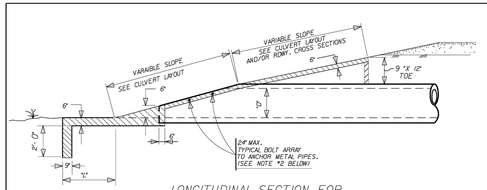
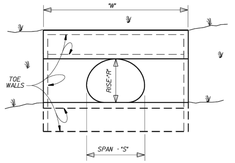
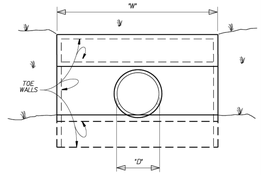
FOR PERMIT



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT

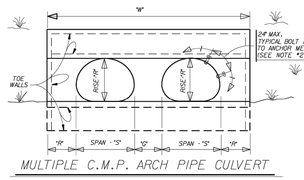


SINGLE CIRCULAR PIPE CULVERT
(CMP or RCP)

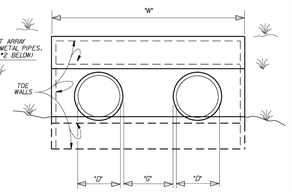
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"D"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-10"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	21'-10"	27'-6"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	31'-3"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	35'-6"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	39'-6"

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



MULTIPLE C.M.P. ARCH PIPE CULVERT



MULTIPLE CIRCULAR PIPE CULVERT
(CMP or RCP)

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH DIM.		"L"	"D"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	SPAN "S"	RISE "R"			"W"			
2	28"	19"	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-10"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

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

NOTES:

1.) FOR RIPRAP QUANTITIES AND SLOPES, SEE CULVERT LAYOUT SHEET. CONCRETE SHALL BE CLASS B UNLESS OTHERWISE SHOWN IN THE PLANS.

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

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

4.) FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN ITEMS 460 AND/OR 464.

5.) IF THE SIDES OF THE HEADWALL IS ADJACENT TO A 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

©1998 Texas Department of Transportation

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
STATE	DIST.	COUNTY	
TEXAS	SAT.		
CONT.	SECT.	JOB	HIGHWAY NO.

10/95

STRUCTURE DETAILS
STRUCTURE_DS.DGN

American Excelsior Company®
Earth Science Division

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

Product Participant of: QDOR Performance Verified

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 trenched 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 trenched. Curlex blankets shall be trenched 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

American Excelsior Company®
Earth Science Division

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

Product Participant of: QDOR Performance Verified

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 yd² (41.8 m²)	100.0 yd² (83.6 m²)	200.0 yd² (167.2 m²)
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[4]:	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 oxo-biodegrader 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

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

MADE IN THE U.S.A.

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

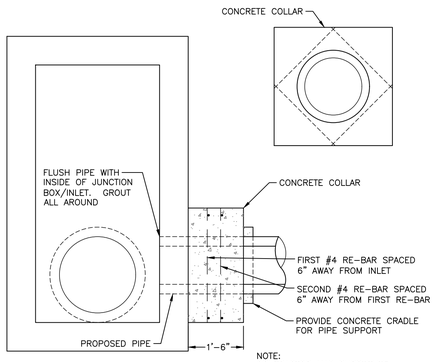
W0516R1116

NO.	REVISION	DATE

11-15-2024

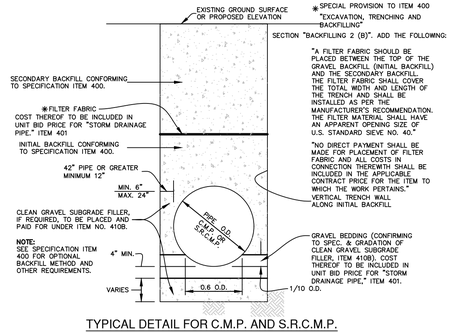
STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER

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

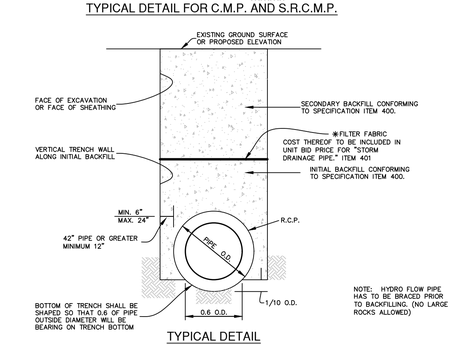


NOTE:
CONTRACTOR MAY SUBSTITUTE FLOWABLE FILL IN LIEU OF REINFORCED CONCRETE COLLAR ONLY WHEN APPROVED BY THE OWNER.

CONCRETE COLLAR DETAIL
NOT-TO-SCALE



TYPICAL DETAIL FOR C.M.P. AND S.R.C.M.P.



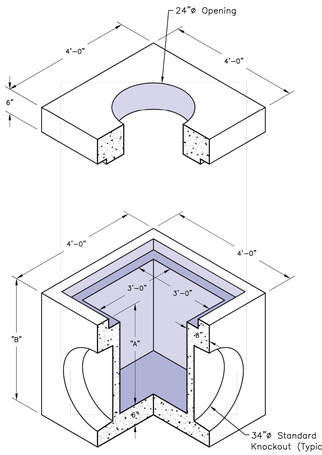
TYPICAL DETAIL

PIPE BEDDING AND BACKFILL DETAILS
NOT-TO-SCALE

Oldcastle Precast®

Water

3'-0"x3'-0" I.D. Junction Box
Model: JB-330



Roof Slab
Weight – 975 Lbs.
Item# – 1041220

GENERAL NOTES:
1. Different Height of Extensions and Bodies are Available by Request.
2. Frame and Cover Also Available.

SPECIFICATIONS:
1. Concrete has a design strength of 5000 PSI at 28 days.
2. Steel reinforcement: ASTM A-615 Grade 60 or ASTM A-497 Welded wire fabric.
3. Loading: Designed for H20 Loading.
4. C.I. Castings: ASTM A-48, Class 30/35.

Body
Weight – See Table
Item# – See Table

Body			
A	B	Weight	Item#
12"	18"	2250 Lbs.	1203520
18"	24"	2775 Lbs.	1203560
24"	30"	3300 Lbs.	1203660
30"	36"	3825 Lbs.	1203740
36"	42"	4350 Lbs.	1203780
42"	48"	4875 Lbs.	1203880
48"	54"	5400 Lbs.	1203960

Texas Region

For more information about our products please visit us on the web at:
oldcastleprecast.com
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JB-7

888-9 Oldcastle
(888-965-3227)

ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 psi.

REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60, A706 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS

STANDARD STRUCTURAL DESIGN IS BASED ON AASHTO HS 20 WHEEL LOADING

WATER TABLE IS AT 3'-0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN

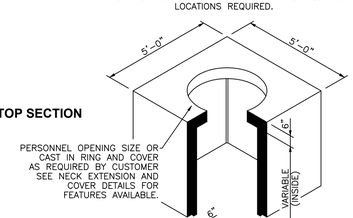
THE STANDARD DESIGN IS BASED ON THE TOP AT ANY ELEVATION BETWEEN FINISHED GRADE AND 5'-0" BELOW GRADE.

THE STRUCTURE SHALL BE PLACED ON A COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES.

SPECIAL DESIGNS BASED ON OTHER LOADINGS OR DEEPER INSTALLATION DEPTHS ARE AVAILABLE ON REQUEST.

PIPE OPENINGS CAN BE PROVIDED IN THE SIZE AND LOCATIONS REQUIRED.

TOP SECTION

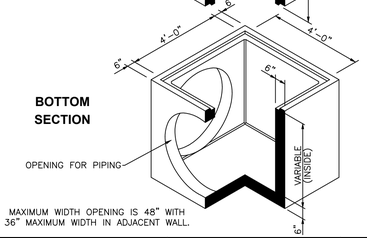


PERSONNEL OPENING SIZE OR CAST IN RING AND COVER AS REQUIRED BY CUSTOMER SEE NECK EXTENSION AND COVER DETAILS FOR FEATURES AVAILABLE.

APPROXIMATE TOP OR BOTTOM WEIGHTS
2'-0" INSIDE 4600 LBS.
2'-6" INSIDE 5300 LBS.
3'-0" INSIDE 6000 LBS.
3'-6" INSIDE 6700 LBS.
4'-0" INSIDE 7300 LBS.

MINIMUM EXCAVATION
7'-0"x7'-0"

BOTTOM SECTION



OPENING FOR PIPING

MAXIMUM WIDTH OPENING IS 48" WITH 36" MAXIMUM WIDTH IN ADJACENT WALL.

Oldcastle Precast
1900 Rilling Road San Antonio, TX 78214
Phone: (210) 923-4523 Fax: (210) 721-0473

44-J-2PC
FILE NAME: 44J2D.dwg
ISSUE DATE: March, 2005
www.oldcastlesanantonio.com

4'-0"x4'-0" 2-PIECE JUNCTION BOX

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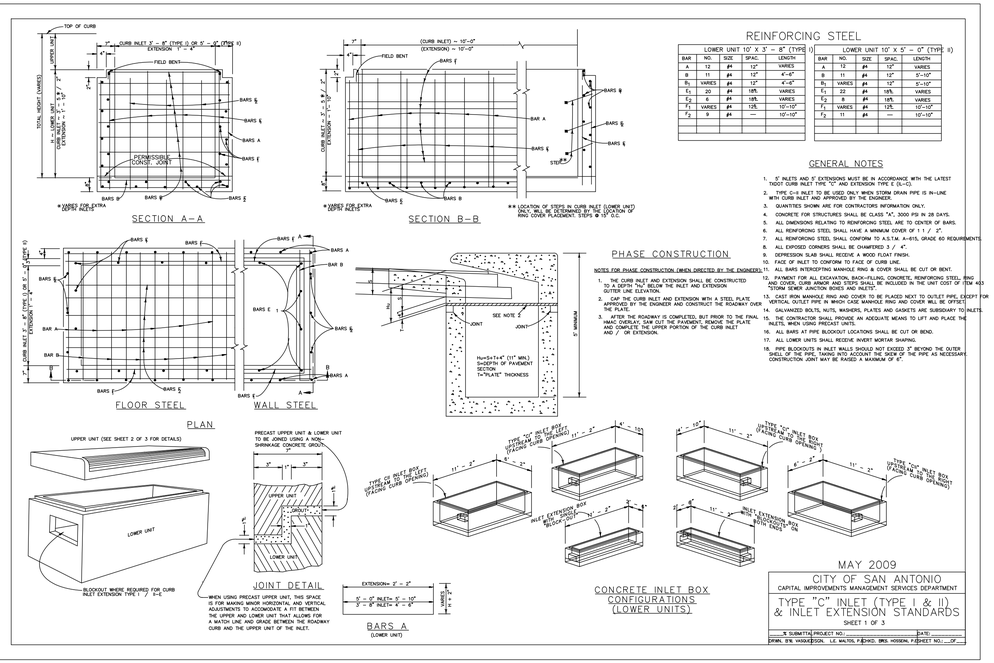
REDBIRD RANCH PHASE 2 UNIT 3M-4
SAN ANTONIO, TEXAS
DRAINAGE DETAILS

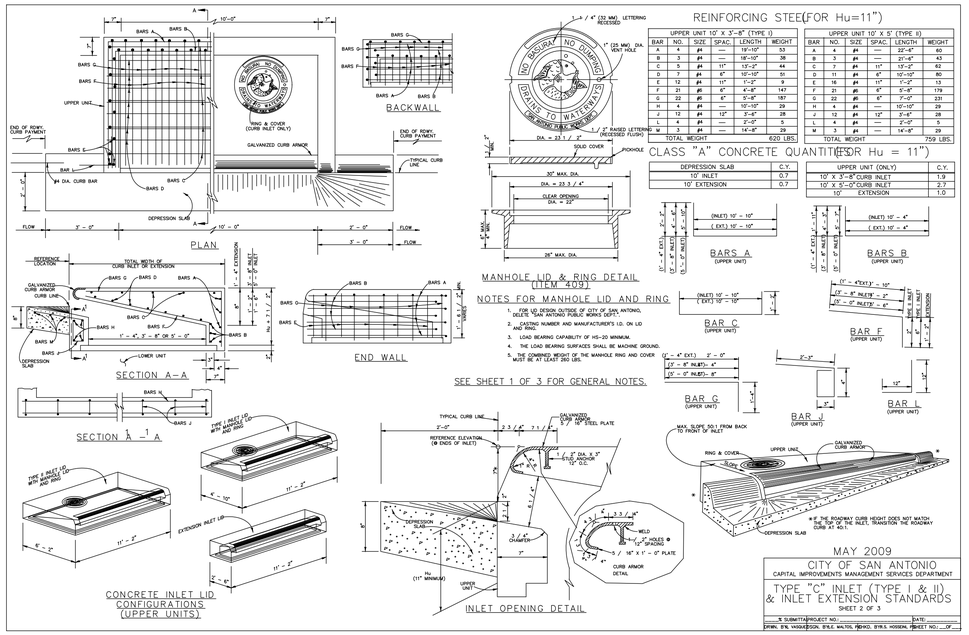
PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.20

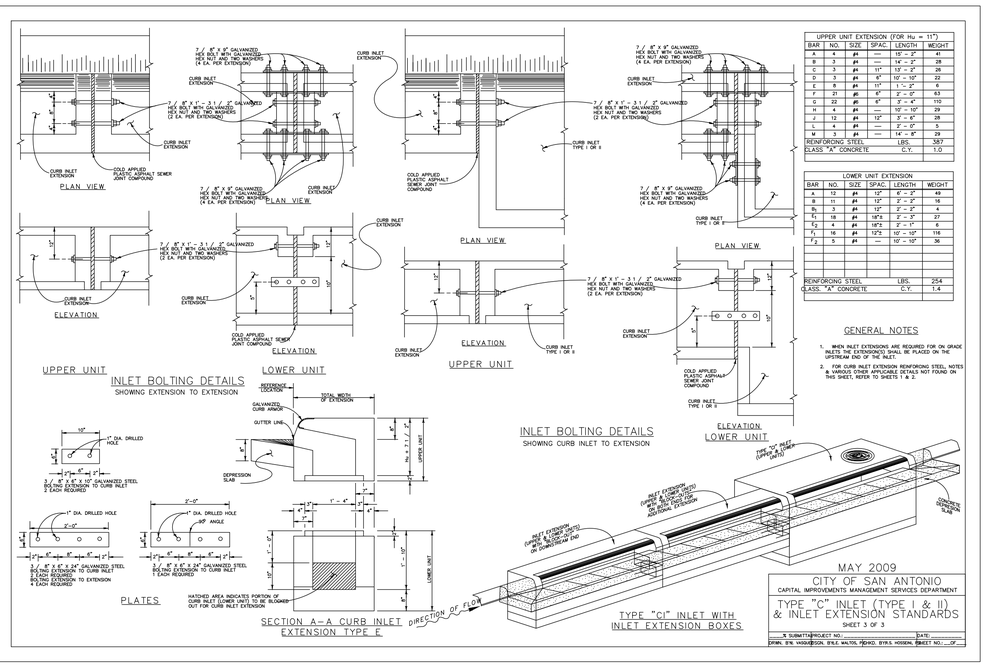
FOR PERMIT

Date: Nov 15, 2024, 4:34pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SDT-30004-35.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANTS ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE© UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas OrthoImagery Program, USDA Farm Service Agency.






7 / 8" x 9" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (4 EA. PER EXTENSION)
7 / 8" x 1' – 3 1 / 2" GALVANIZED HEX BOLT AND TWO WASHERS (2 EA. PER EXTENSION)
CURB INLET EXTENSION
CURB INLET TYPE I OR II
COLD APPLIED PLASTIC ASPHALT SEWER JOINT COMPOUND
PLAN VIEW
ELEVATION
UPPER UNIT
LOWER UNIT
INLET BOLTING DETAILS
SHOWING EXTENSION TO EXTENSION
INLET BOLTING DETAILS
SHOWING CURB INLET TO EXTENSION
REFERENCE LOCATION
TOTAL WIDTH OF EXTENSION
GALVANIZED CURB ARMOR
GUTTER LINE
DEPRESSION SLAB
UPPER UNIT
LOWER UNIT
1" DIA. DRILLED HOLE
2'–0"
90° ANGLE
3 / 4" x 8" x 10" GALVANIZED STEEL PLATE TO CURB INLET 2 EACH REQUIRED
3 / 4" x 8" x 8" GALVANIZED STEEL PLATE TO EXTENSION TO EXTENSION 4 EACH REQUIRED
3 / 4" x 8" x 24" GALVANIZED STEEL PLATE TO CURB INLET 1 EACH REQUIRED
PLATES
HATCHED AREA INDICATES PORTION OF CURB INLET (LOWER UNIT) TO BE BLOCKED OUT FOR CURB INLET EXTENSION
SECTION A–A CURB INLET EXTENSION TYPE E
DIRECTION OF FLOW
INLET EXTENSION CURB & GUTTER END TO CURB/SIDEWALK END
INLET EXTENSION BOX BLOCK–OUT
INLET EXTENSION BOX
TYPE "CI" INLET WITH INLET EXTENSION BOXES
UPPER UNIT EXTENSION LOWER UNIT
UPPER UNIT INLET LOWER UNIT
UPPER UNIT EXTENSION LOWER UNIT
ELEVATION
UPPER UNIT INLET LOWER UNIT
UPPER UNIT EXTENSION LOWER UNIT
UPPER UNIT EXTENSION LOWER UNIT
UPPER UNIT EXTENSION

LANDLOK® TRM

Product Data

LANDLOK® 450

LANDLOK® 450 turf reinforcement mat (TRM) features X3® technology that consists of a dense web of interlocking, multi-lobed polypropylene fibers positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The TRM is designed to accelerate seedling emergence, exhibit high resiliency, and possess strength and elongation properties to limit stretching in a saturated condition. Every component of LANDLOK® 450 is stabilized against chemical and ultraviolet degradation which are normally found in a natural soil environment. Furthermore, the TRM contains no biodegradable components.

LANDLOK® 450 conforms to the property values listed below[1] 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/yd²	339 g/m²
Thickness [2]	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	6.2 x 5.1 kN/m
Elongation [2]	ASTM D-6818	50%	50%
Resiliency [2]	ASTM D-6524	90%	90%
Flexibility [2]	ASTM D-6575	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/ft²	479 Pa
Manning's n (Unvegetated) [2, 4]	Calculated	0.025	0.025
Seedling Emergence [2]	ASTM D-7322	409%	409%
ROLL SIZES		8 ft x 140 ft 16 ft x 140 ft 16 ft x 348.75 ft	2.45 m x 42.7 m 4.88 m x 42.7 m 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 Propex for further information.
4. Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.

Propex GEOSOLUTIONS

ENGINEERED EARTH SOLUTIONS™

www.propexglobal.com

Propex Operating Company, LLC · 4019 Industry Drive · Chattanooga, TN 37416 · ph 800 621 1273 · ph 423 855 1466

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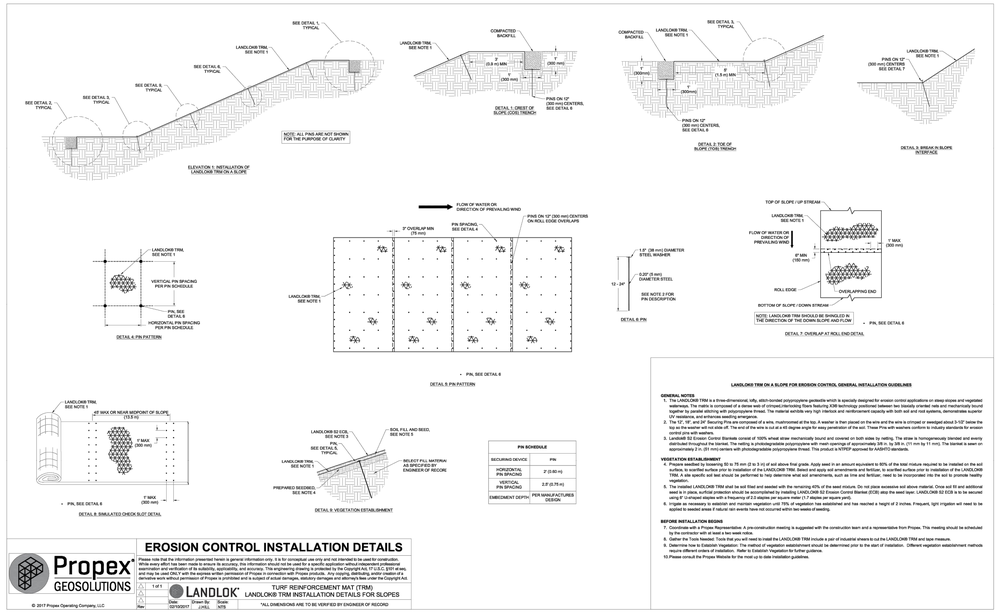

LANDLOK TRM ON A SLOPE FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

GENERAL NOTES

1. The LANDLOK® TRM is a three-dimensional, rolly, stitch-bonded polypropylene geotextile which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of a dense web of crimped, interlocking fibers featuring 50% technology positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seeding emergence.
2. The 12", 18", and 24" Securing Pins are composed of a wire, mushroomed at the top. A washer is then placed on the wire and the wire is crimped or swedged about 5-1/2" below the top so the washer will not slide off. The end of the wire is cut at a 45 degree angle for easy penetration of the soil. These Pins with washers conform to industry standards for erosion control pins with washers.
3. Landlok® 52 Erosion Control Blankets consist of 100% wheat straw mechanically bound and covered on both sides by netting. The straw is homogeneously blended and evenly distributed throughout the blanket. The netting is photodegradable polypropylene with mesh openings of approximately 3/8 in. by 3/8 in. (11 mm by 11 mm). The blanket is sewn on approximately 2 in. (51 mm) centers with photodegradable polypropylene thread. This product is NTPEP approved for AASHTO standards.

VEGETATION ESTABLISHMENT

4. Prepare seedbed by loosening 50 to 75 mm (2 to 3 in) of soil above final grade. Apply seed in an amount equivalent to 60% of the total mixture required to be installed on the soil surface, to scarified surface prior to installation of the LANDLOK® TRM. Select and apply soil amendments and fertilizer, to scarified surface prior to installation of the LANDLOK® TRM. Soil and specific soil test should be performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.
5. The installed LANDLOK® TRM shall be soil filled and seeded with the remaining 40% of the seed mixture. Do not place excessive soil above material. Once soil fill and additional seed is in place, surficial protection should be accomplished by installing LANDLOK® 52 Erosion Control Blanket (ECB) atop the seed layer. LANDLOK® 52 ECB is to be secured using 6" U-shaped staples with a frequency of 2.5 staples per square meter (1.7 staples per square yard).
6. Inspect all areas for vegetative growth and maintain vegetation until 75% of vegetation has established and has reached a height of 2 inches. If frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding.

BEFORE INSTALLATION BEGINS

7. Coordinate with a Propex Representative. A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
8. Gather the Tools Needed: Tools that you will need to install the LANDLOK® TRM include a pair of industrial shears to cut the LANDLOK® TRM and tape measure.
9. Determine Which Installation Method Will Be Used: Depending on the application, a different installation method should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
10. Please consult the Propex Website for the most up to date installation guidelines.

PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PIN SPACING	2' (0.60 m)
VERTICAL PIN SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURERS DESIGN

EROSION CONTROL INSTALLATION DETAILS

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1 of 1

TURF REINFORCEMENT MAT (TRM)

LANDLOK® TRM INSTALLATION DETAILS FOR CHANNELS

Rev	Date: 02/13/2017	Drawn By: J. HILL	Scale: NTS

*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

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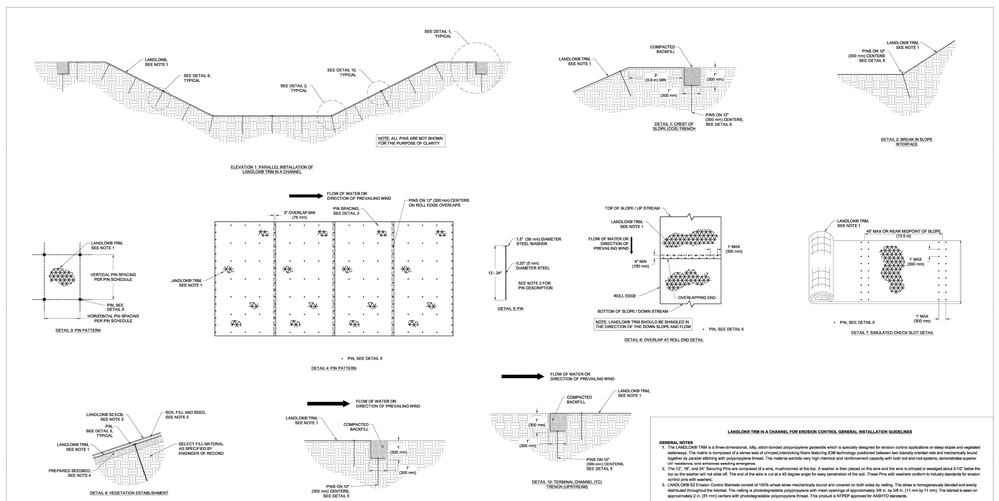

LANDLOK TRM IN A CHANNEL FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

GENERAL NOTES

1. The LANDLOK® TRM is a three-dimensional, rolly, stitch-bonded polypropylene geotextile which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of a dense web of crimped, interlocking fibers featuring 50% technology positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seeding emergence.
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VEGETATION ESTABLISHMENT

4. Prepare seedbed by loosening 50 to 75 mm (2 to 3 in) of soil above final grade. Apply seed in an amount equivalent to 60% of the total mixture required to be installed on the soil surface, to scarified surface prior to installation of the LANDLOK® TRM. Select and apply soil amendments and fertilizer, to scarified surface prior to installation of the LANDLOK® TRM. Soil and specific soil test should be performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.
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PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PIN SPACING	2' (0.60 m)
VERTICAL PIN SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURERS DESIGN

EROSION CONTROL INSTALLATION DETAILS

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TURF REINFORCEMENT MAT (TRM)

LANDLOK® TRM INSTALLATION DETAILS FOR CHANNELS

Rev	Date: 02/13/2017	Drawn By: J. HILL	Scale: NTS

*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

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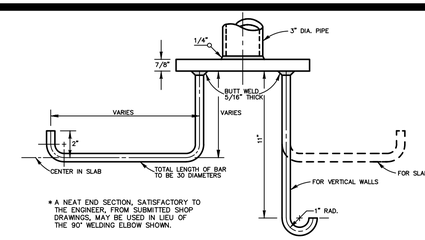
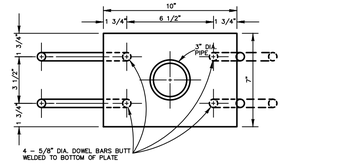
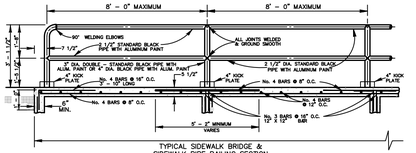
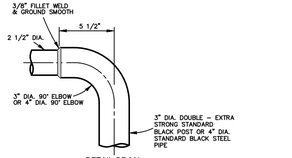




PIPE ANCHORAGE DETAILS



TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION



DETAIL OF 90° WELDING ELBOWS

PIPE RAILING DETAIL

NOT TO SCALE

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

PAPE-DAWSON ENGINEERS

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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

DRAINAGE DETAILS

LANDLOK TRM IN A CHANNEL FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

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10. Please consult the Propex Website for the most up to date installation guidelines.

PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PIN SPACING	2' (0.60 m)
VERTICAL PIN SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURERS DESIGN

EROSION CONTROL INSTALLATION DETAILS

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TURF REINFORCEMENT MAT (TRM)

LANDLOK® TRM INSTALLATION DETAILS FOR CHANNELS

Rev	Date: 02/13/2017	Drawn By: J. HILL	Scale: NTS

*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

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

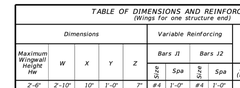
Dimensions				Variable Reinforcing		Estimated Quantities per ft of wing (2-wings) (4)		Estimated Quantities per ft of Toewall (1-toewall)	
Maximum Wingwall Height Hw	W	X	Y	Bars J1		Bars J2			
				Size	Spa	Size	Spa	Reinf (LB/Ft)	Conc (CY/Ft)	Reinf (LB/Ft)	Conc (CY/Ft)
2'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"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

TABLE OF WINGWALL REINFORCING
(2-wings)

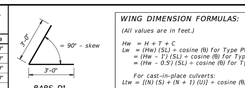
Bar	Size	No.	Spa
D1	#6	–	1'-0"
D2	#6	–	1'-0"
E1	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	–	8"
M1	#4	4	–
P	#4	–	1'-0"
W	#4	–	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#5	–	1'-0"
M2	#4	2	–
E2	#4	–	1'-0"



BARS D1



BARS D2

WING DIMENSION FORMULAS:

(All values are in feet.)

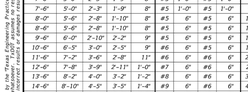
Hw = H + T + C
Lw = (Hw) (SL) + cosine (θ) for Type PW-1
= (Hw – T) (SL) + cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw – 0.5') (SL) + cosine (θ) for Type PW-2 and Hw < 4'

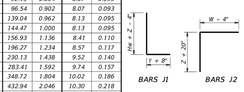
For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (t)] + cosine (θ)

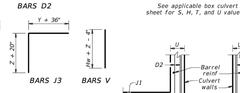
For precast culverts:
Ltw = [(N) (2 U + S) + (N – 1) (0.5')] + cosine (θ)
Total Wingwall Area (two wings) = SA'
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) – 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) – 1.5 SF for Type PW-2 and Hw < 4'

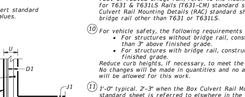
Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toe-of-slope spans
SL:1 = Channel slope ratio (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

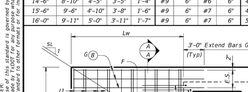
See applicable box culvert standard sheet for S, H, T, and U values.



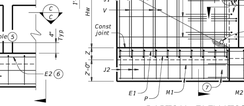




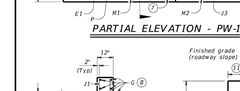




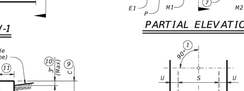
PARTIAL ELEVATION - PW-1



PARTIAL ELEVATION - PW-2



SECTION A-A
(Showing wing reinforcement.)



SECTION B-B
(Showing wing reinforcement.)

PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS

Length of wings based on SL:1 slope along this line.

PLAN

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

DATE:
FILE:

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

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

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of railing is to be measured perpendicular to the wingwall.
Use Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

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

1. Skew = 0°
2. At discharge end, chamfer may be ¾" minimum.
3. For 15° skew ~ 1"
   For 30° skew ~ 2"
   For 45° skew ~ 3"
4. Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
5. Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
6. Extend Bars E2 1'-6" minimum into the wingwall footing.
7. Lap Bars M1 1'-6" minimum with Bars M2.
8. Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
9. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with 1'-0" or 1'-6" curbs, refer to the Curb Details (CD) standard sheet. For TX31 & TX31S Rails (TX31-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than TX31 or TX31S.
10. For vehicle safety, the following requirements must be met:
    - For structures without bridge rail, construct curbs no more than 3" above finished grade.
    - For structures with bridge rail, construct curbs flush with finished grade.

    Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
11. 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
12. 3'-0" for Hw < 4'.
13. 6" for Hw < 4'.

Texas Department of Transportation — Bridge Division Standard

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

PW

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	REVISIONS				
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PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.22

Date: Nov 15, 2024, 4:34pm User ID: tmartin
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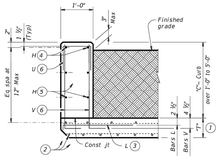
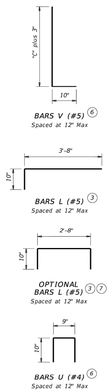


TYPICAL SECTION

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



BARS V (#5) (4)
Spaced at 12" Max

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

OPTIONAL BARS L (#5) (3) (7)
Spaced at 12" Max

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

(1) "T" is equal to the culvert top slab thickness. For precast boxes with slabs less than 7" thick, see SCP-MD standard for additional details.

(2) Adjust normal culvert slab bars as necessary to clear obstructions.

(3) Place bars L as shown. Tilt hook as necessary to maintain cover.

(4) Place normal culvert curb bars H(#4) as shown. Adjust as necessary to clear obstructions.

(5) Additional bars H(#4) as required to maintain 12" Max spacing.

(6) Replace normal culvert curb bars K with one bar U and two bars V as shown spaced at 12" Max. Adjust length of bars V as necessary to maintain clear cover.

(7) Optional bars L are to be used only for precast box culverts with 7'-0" closure pour.

(8) Quantities shown are for Contractor's information only. Quantities are per linear foot of curb length. The value in table can be interpolated for intermediate values of curb height, "C". Quantity includes bars K (when applicable).

TABLE OF ESTIMATED CURB QUANTITIES (8)

Curb Height "C"	Conc (CY/LF)	Reinf Steel (lb/LF)
1'-0"	0.037	8.9
1'-6"	0.056	14.3
2'-0"	0.074	15.4
2'-6"	0.093	17.7
3'-0"	0.111	18.8
3'-6"	0.130	21.2
4'-0"	0.148	22.2
4'-6"	0.167	24.6
5'-0"	0.185	25.6

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

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class "C" concrete (f'c = 3,600 psi) minimum for curbs.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
These extended curb details have sufficient strength to allow for future retrofit of Type T631 or T631LS railing. These details are suitable for use with PR1, PR2 and PR3 type rails. These details are not suitable for the mounting of other rail types. For new construction using T631 or T631LS railing, use the T631-CM standard.
This Curb is considered as part of the Box Culvert for payment.

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

Texas Department of Transportation — Bridge Division Standard

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

ECD

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REVISIONS				
09-06 General Notes added T631-CM.	DIST	COUNTY		SHEET NO.

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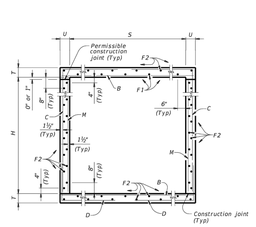
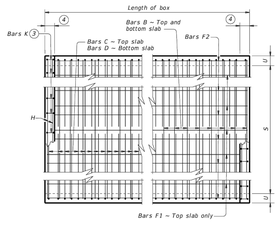


TYPICAL SECTION



PLAN OF REINF STEEL

(1) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 3'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(2) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.
Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) For curbs less than 1'-0" high, the reinforcing bar height is necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

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

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

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

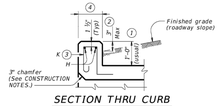
CONSTRUCTION NOTES:
Do not use permanent forms.
Chamfer the bottom edge of the top slab 3" at the entrance.
Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed.

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

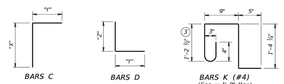
Provide bar laps, where required, as follows:
- Uncoated or galvanized – #4 = 1'-8" Min
- Uncoated or galvanized – #5 = 2'-1" Min

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

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



SECTION THRU CURB



BARS C

BARS D

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

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL

SCC-3 & 4

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SECTION DIMENSIONS

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

QUANTITIES

FILL HEIGHT (5)	Bars B S	Bars B H	Bars B T	Bars B U	Bars C No.	Bars C Size	Bars C Spa	Bars C Length	Bars C Weight	Bars D No.	Bars D Size	Bars D Spa	Bars D Length	Bars D Weight	Bars M – #4 No.	Bars M – #4 Spa	Bars M – #4 Length	Bars M – #4 Weight	Bars F1 – #4 at 18" Spa No.	Bars F1 – #4 at 18" Spa Length	Bars F1 – #4 at 18" Spa Wt	Bars F2 – #4 at 18" Spa No.	Bars F2 – #4 at 18" Spa Length	Bars F2 – #4 at 18" Spa Weight	Bars H #4 – #4 Length	Bars H #4 – #4 Wt	Bars K No.	Bars K Wt	Per Foot of Barrel Conc (CY)	Per Foot of Barrel Reinf (LB)	Curb Conc (CY)	Curb Reinf (LB)	Total Conc (CY)	Total Reinf (LB)
1'-0"	2'-0"	8"	7"	30"	108	#5	9"	3'-11"	441	108	#4	9"	5'-4"	385	2'-6"	2'-10"	108	#4	9"	5'-1"	367	2'-10"	2'-3"	108	9"	2'-0"	144	3	39'-9"	80	19	39'-9"	505	3'-11"	10	10	28	0.292	48.1	0.3	38	12.0	1,960
1'-0"	2'-0"	8"	7"	30"	108	#5	9"	3'-11"	441	108	#4	9"	6'-4"	457	3'-6"	2'-10"	108	#4	9"	5'-1"	367	2'-10"	2'-3"	108	9"	3'-0"	216	3	39'-9"	80	23	39'-9"	611	3'-11"	10	10	28	0.335	54.3	0.3	38	13.7	2,210
1'-0"	2'-0"	8"	7"	30"	108	#5	9"	4'-11"	554	162	#4	6"	5'-8"	613	2'-6"	2'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	2'-0"	144	3	39'-9"	80	21	39'-9"	538	4'-11"	13	12	33	0.342	63.4	0.4	46	14.1	2,581
1'-0"	2'-0"	8"	7"	30"	108	#5	9"	4'-11"	554	162	#4	6"	6'-8"	721	3'-6"	2'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	3'-0"	216	3	39'-9"	80	25	39'-9"	664	4'-11"	13	12	33	0.385	70.5	0.4	46	15.8	2,867
1'-0"	4'-0"	8"	7"	30"	108	#5	9"	4'-11"	554	162	#4	6"	7'-8"	830	4'-6"	3'-2"	162	#4	6"	5'-5"	586	3'-2"	2'-3"	108	9"	4'-0"	289	3	39'-9"	80	25	39'-9"	664	4'-11"	13	12	33	0.428	75.1	0.4	46	17.5	3,049

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

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL

SCC-3 & 4

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06-0601 Updated K values.	DIST	COUNTY		SHEET NO.

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DATE:
FILE:

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4
SAN ANTONIO, TEXAS

DRAINAGE DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C1.23

FOR PERMIT

Date: Nov 15, 2024, 4:34pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SDDT-30004-35.dwg

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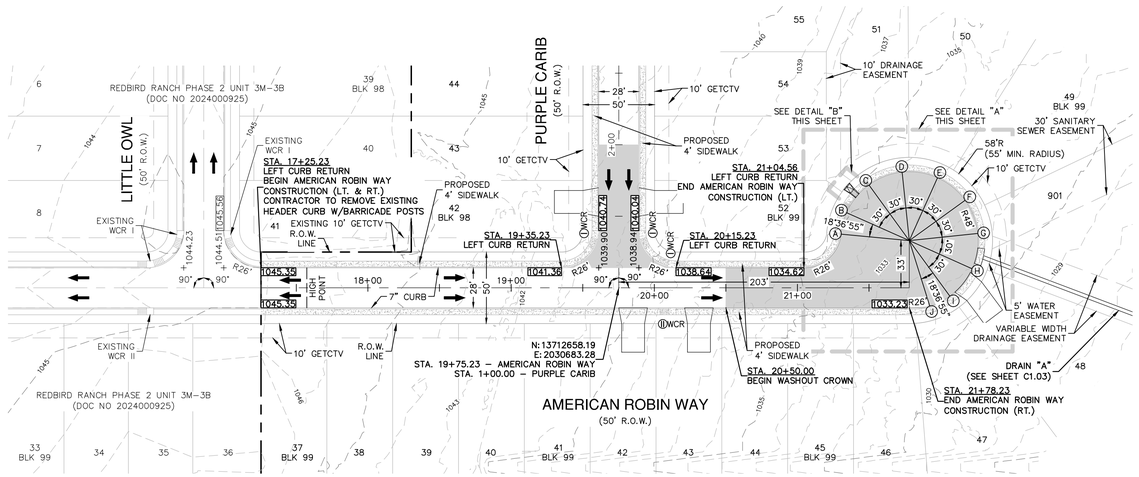
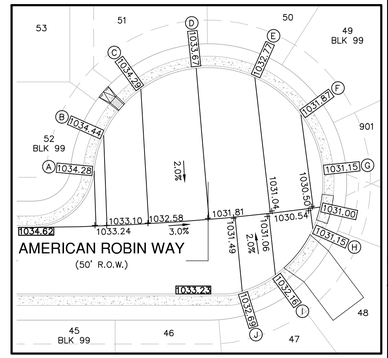


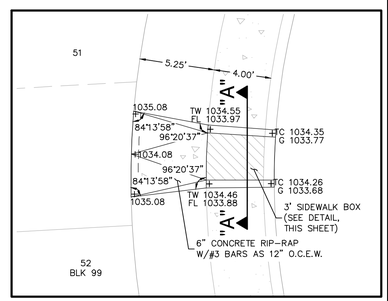
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	DWCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV



DETAIL "A"
SCALE: 1" = 30'



DETAIL "B"
SCALE: 1" = 5'

STREET 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.
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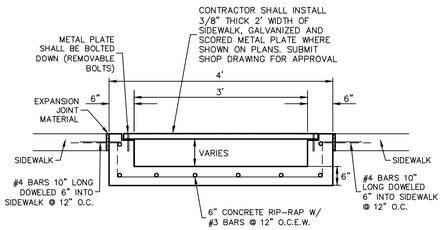
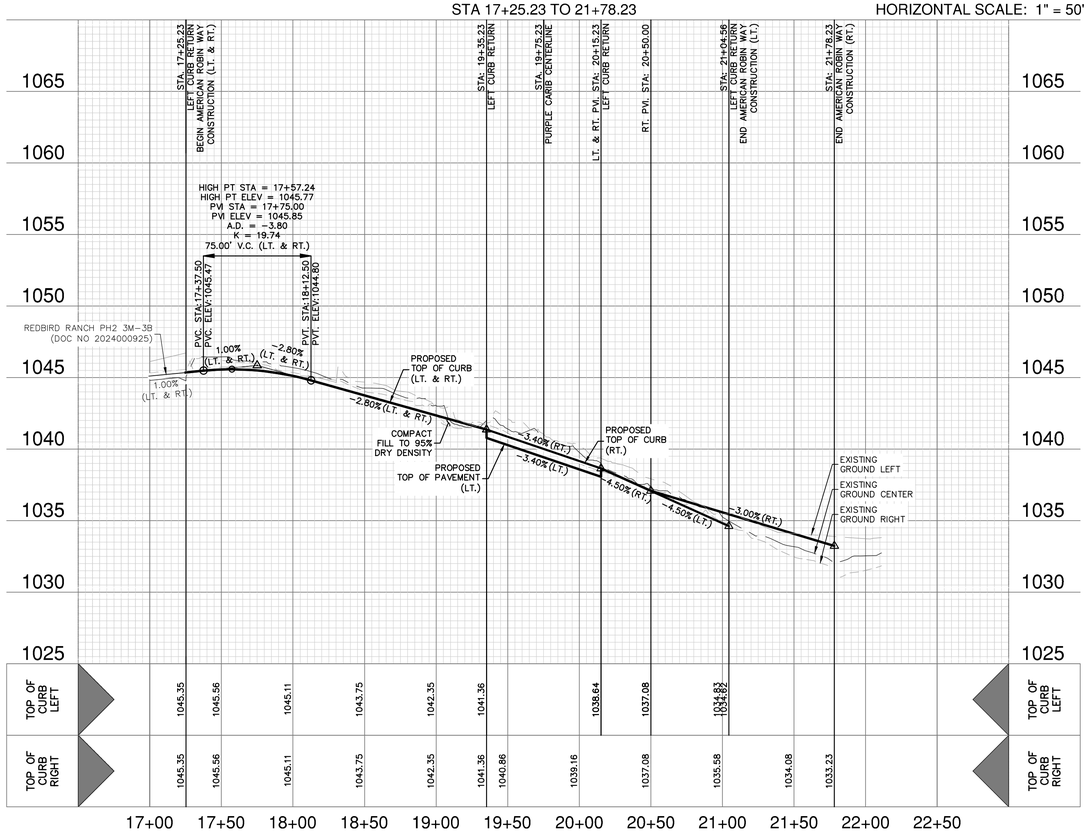
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6).



SECTION A-A
3' SIDEWALK BOX
NOT TO SCALE



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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-15-2024

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

AMERICAN ROBIN WAY - PLAN & PROFILE
STA 17+25.23 TO 21+78.23

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C2.00

FOR PERMIT

Date: Nov 18, 2024, 9:48am User ID: gchubb
File: P:\300\04\35\Design\Civil\ST-30004-35-AMERICAN ROBIN WAY.dwg

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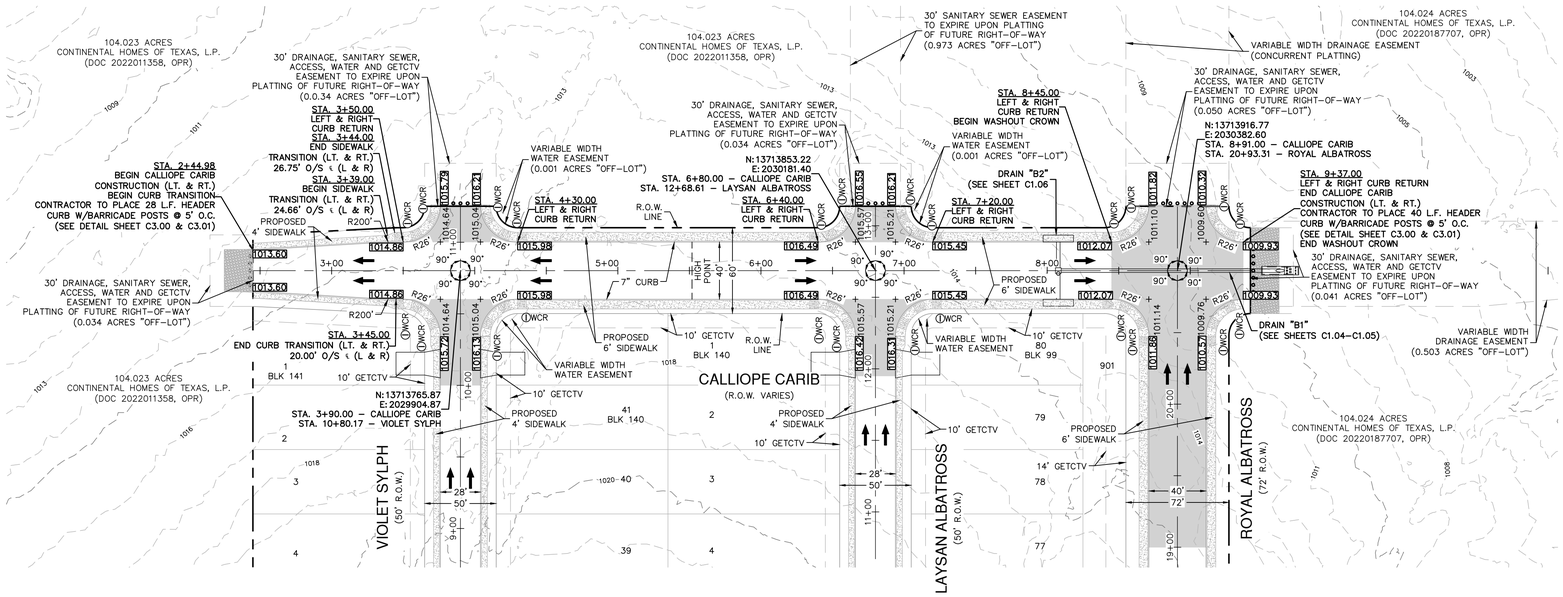

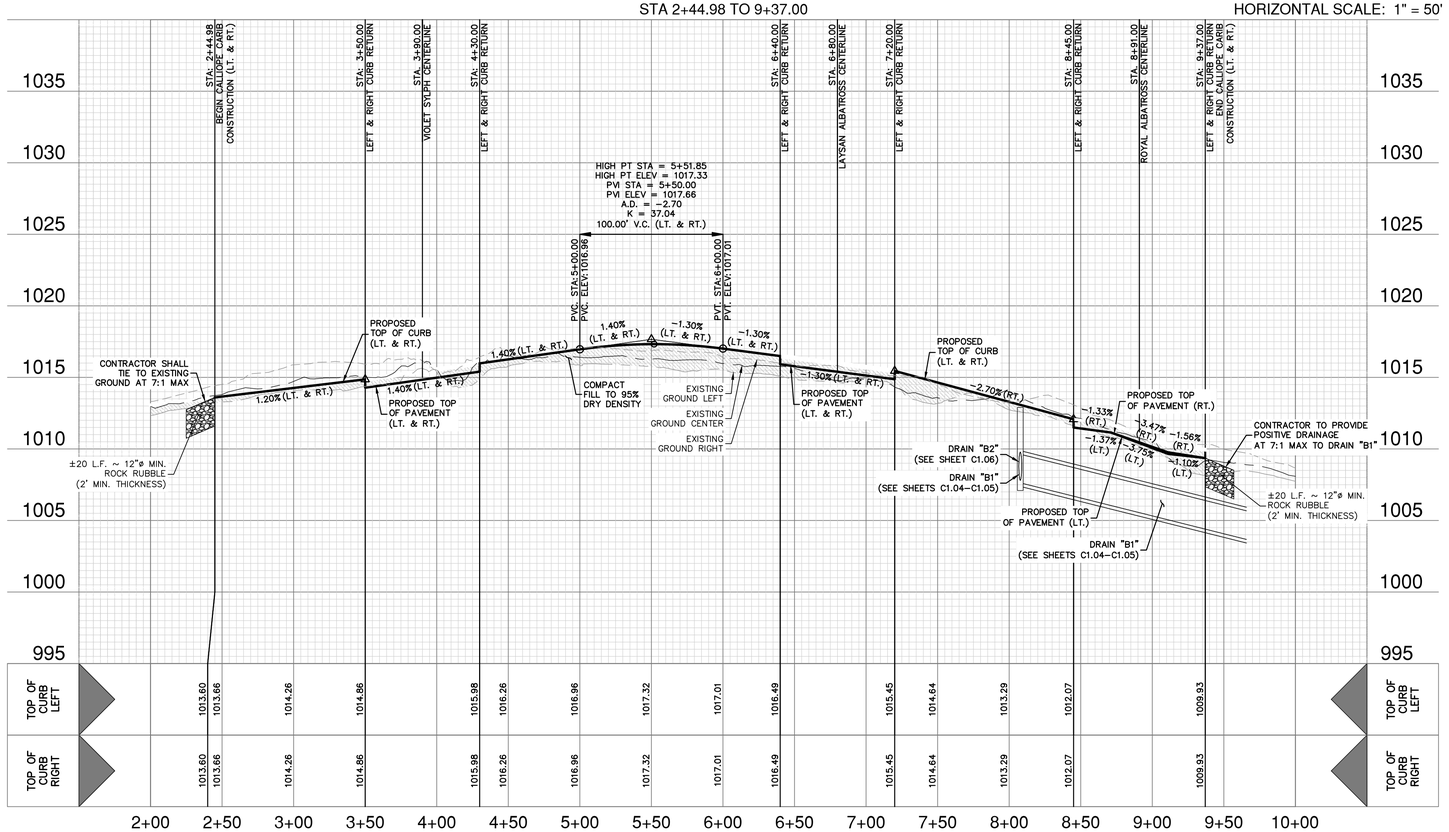

SCALE: 1"= 50'
0' 50' 100' 150'

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) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

STREET 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.
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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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 3M-4

SAN ANTONIO, TEXAS

CALLIOPE CARIB - PLAN & PROFILE
STA 2+44.98 TO 9+37.00

PLAT NO.	N/A
JOB NO.	30004–35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C2.01

FOR PERMIT

Date: Nov 15, 2024, 4:35pm User ID: lmartin
File: P:\300\04\35\Design\Civil\ST-30004-35-CALLIOPE CARIB.dwg
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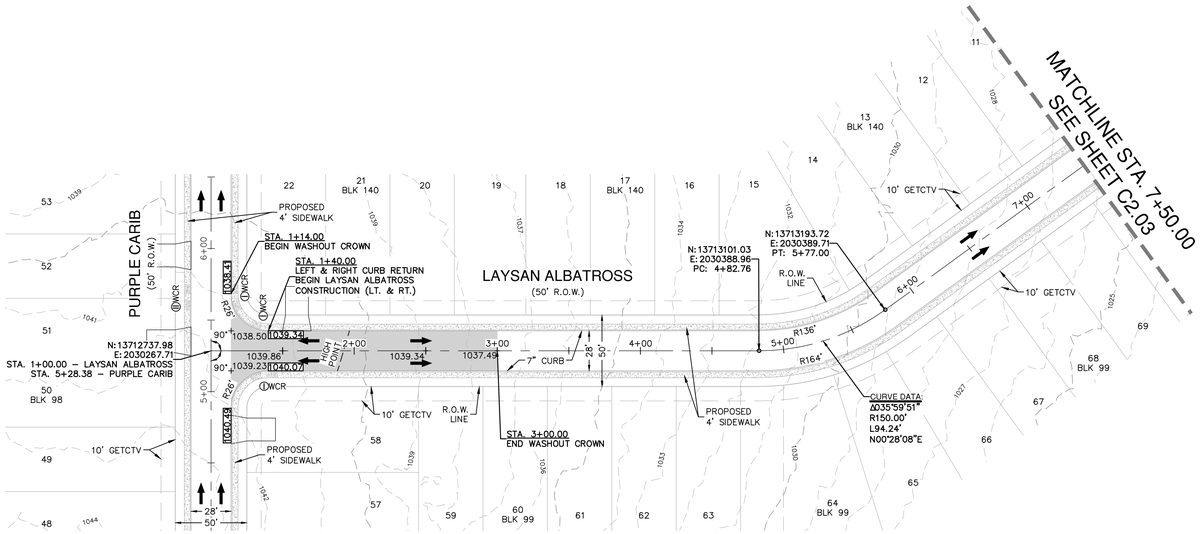
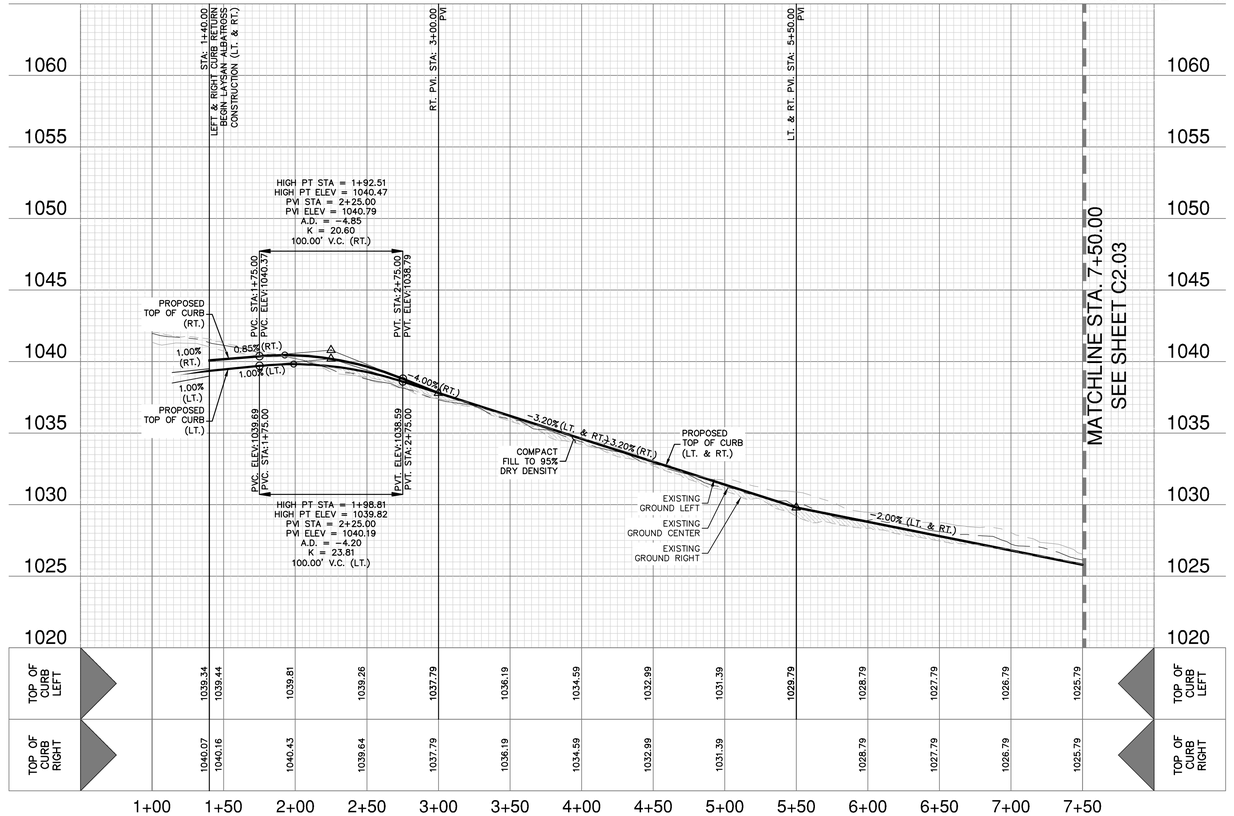


STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	DWCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

LAYSAN ALBATROSS
STA 1+40.00 TO 7+50.00

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



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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

LAYSAN ALBATROSS - PLAN & PROFILE
STA 1+40.00 TO 7+50.00

PLAT NO.	N/A
JOB NO.	30004–35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C2.02

FOR PERMIT

Date: Nov 18, 2024, 9:49am User ID: gchubb
File: P:\300\04\35\Design\Civil\ST–30004–35–LAYSAN ALBATROSS.dwg

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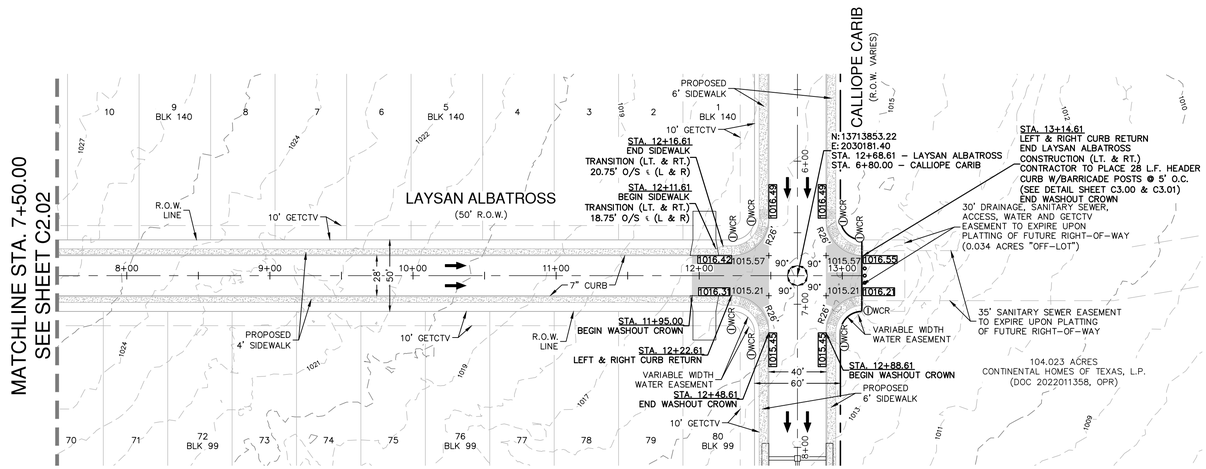
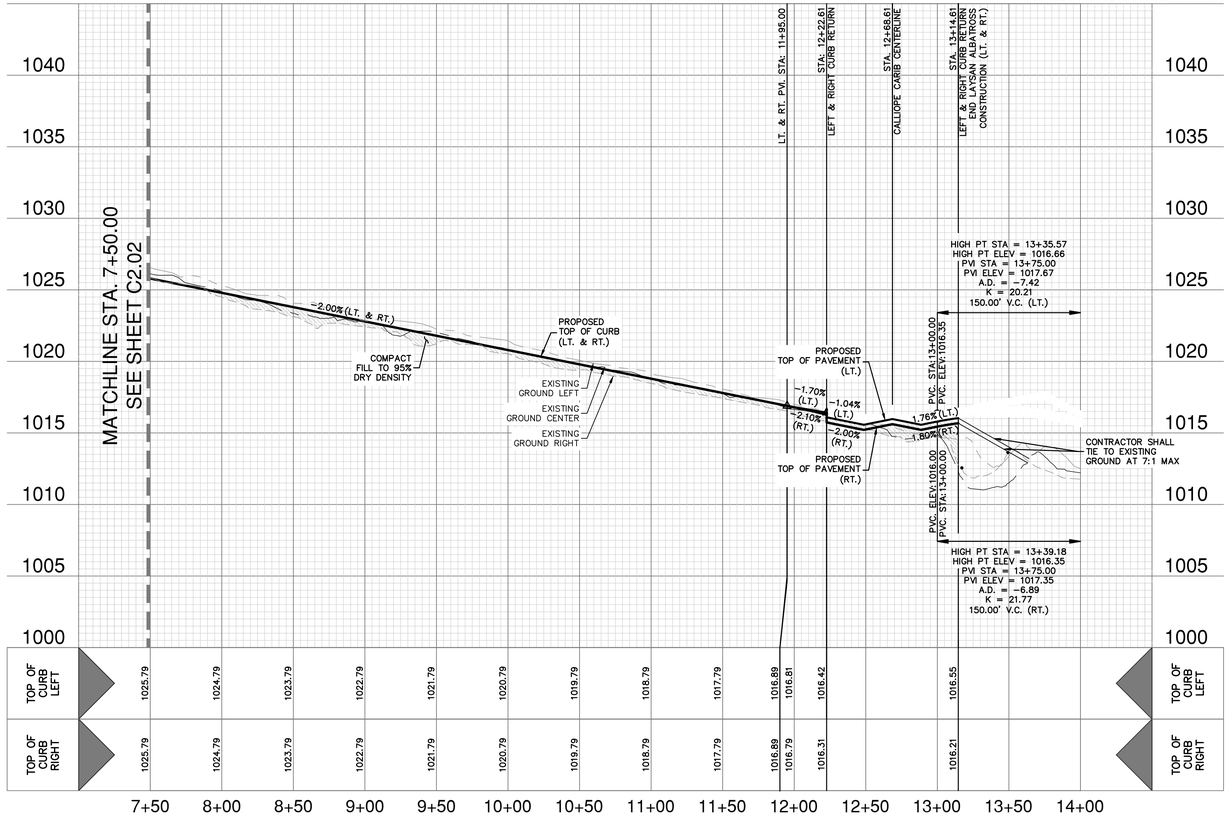


STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	ⓌCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

LAYSAN ALBATROSS
STA 7+50.00 TO 13+14.61

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



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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

LAYSAN ALBATROSS - PLAN & PROFILE
STA 7+50.00 TO 13+14.61

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C2.03

FOR PERMIT

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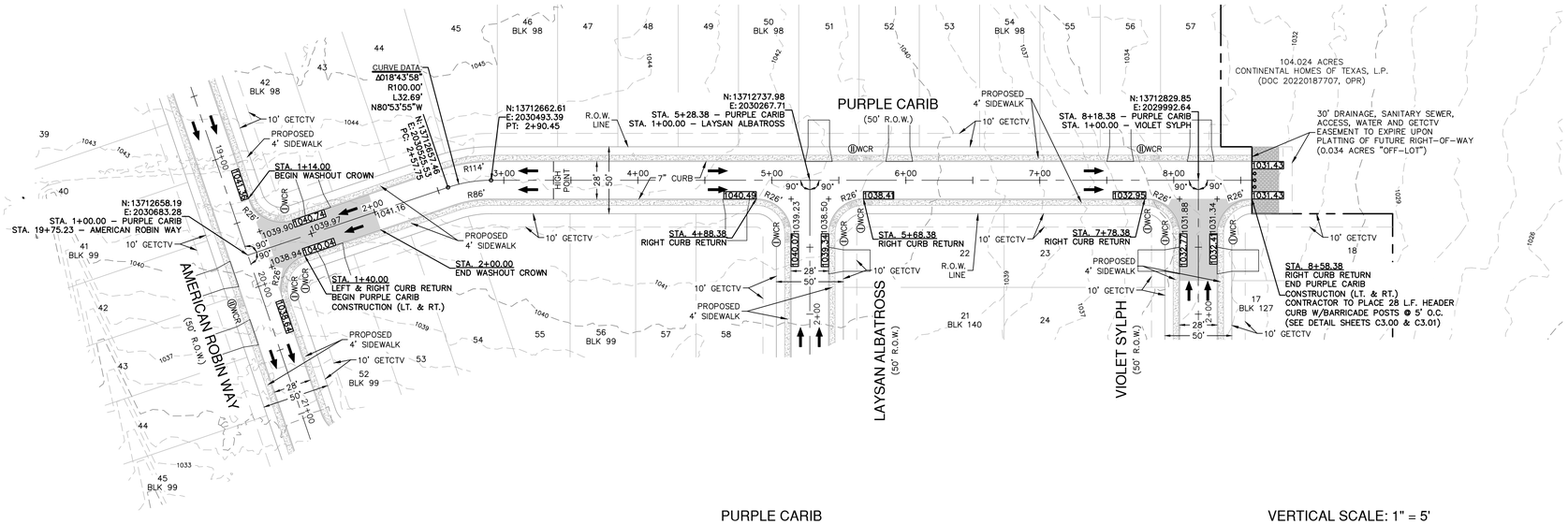


SCALE: 1"= 50'

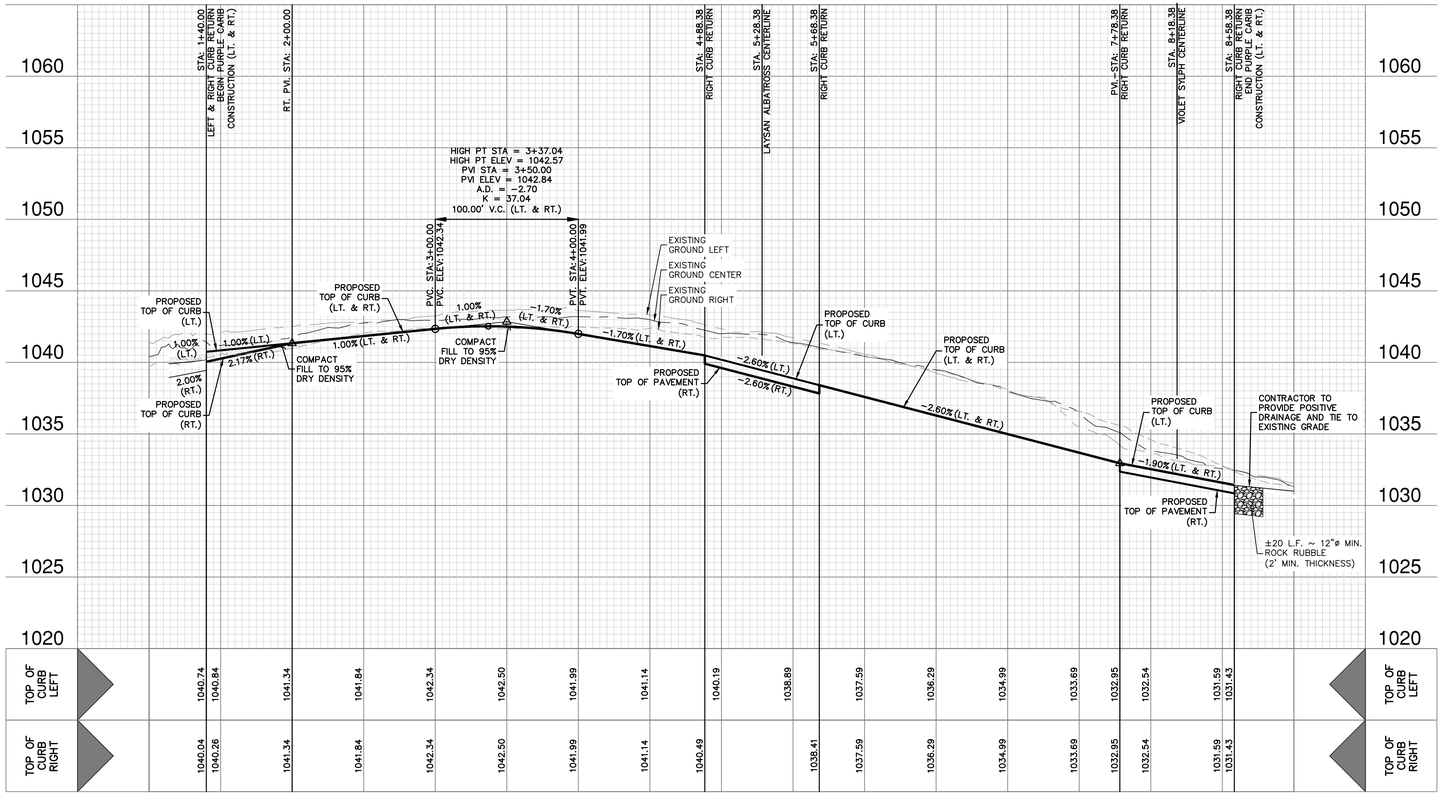
0' 50' 100' 150'

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) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

PURPLE CARIB
STA 1+40.00 TO 8+58.38

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



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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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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 3M-4

SAN ANTONIO, TEXAS

PURPLE CARIB - PLAN & PROFILE
STA 1+40.00 TO 8+58.38

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C2.04

Date: Nov 15, 2024, 4:36pm User ID: tmartin
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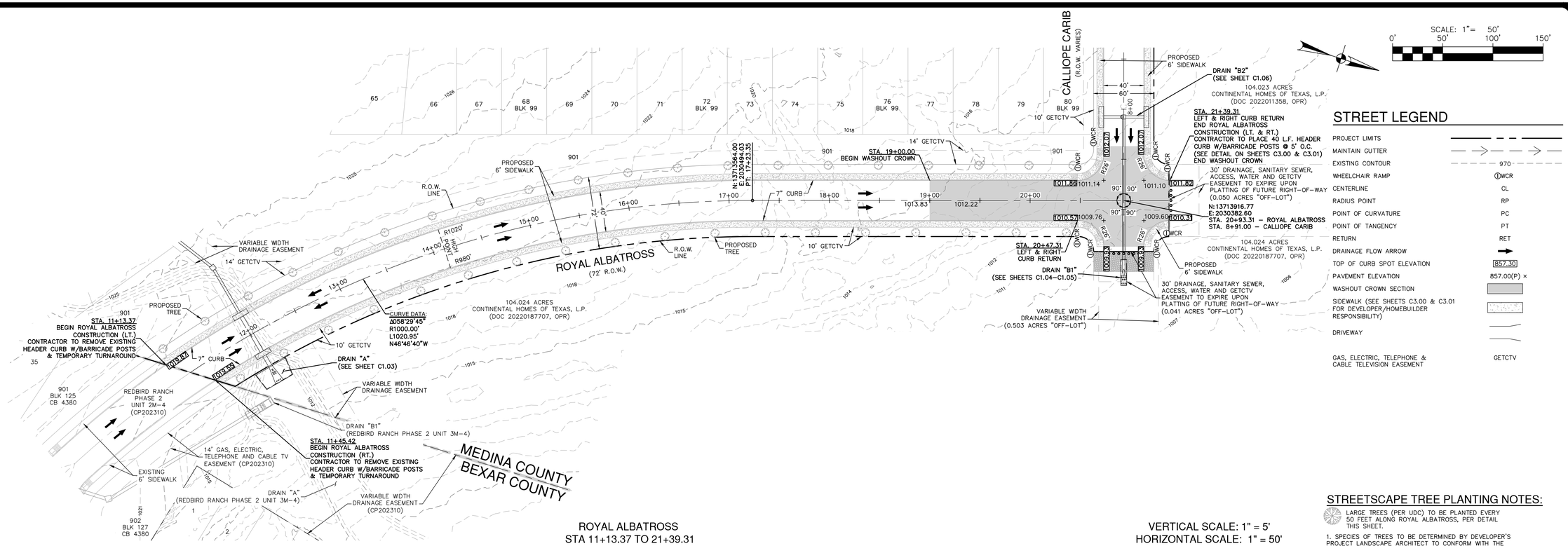
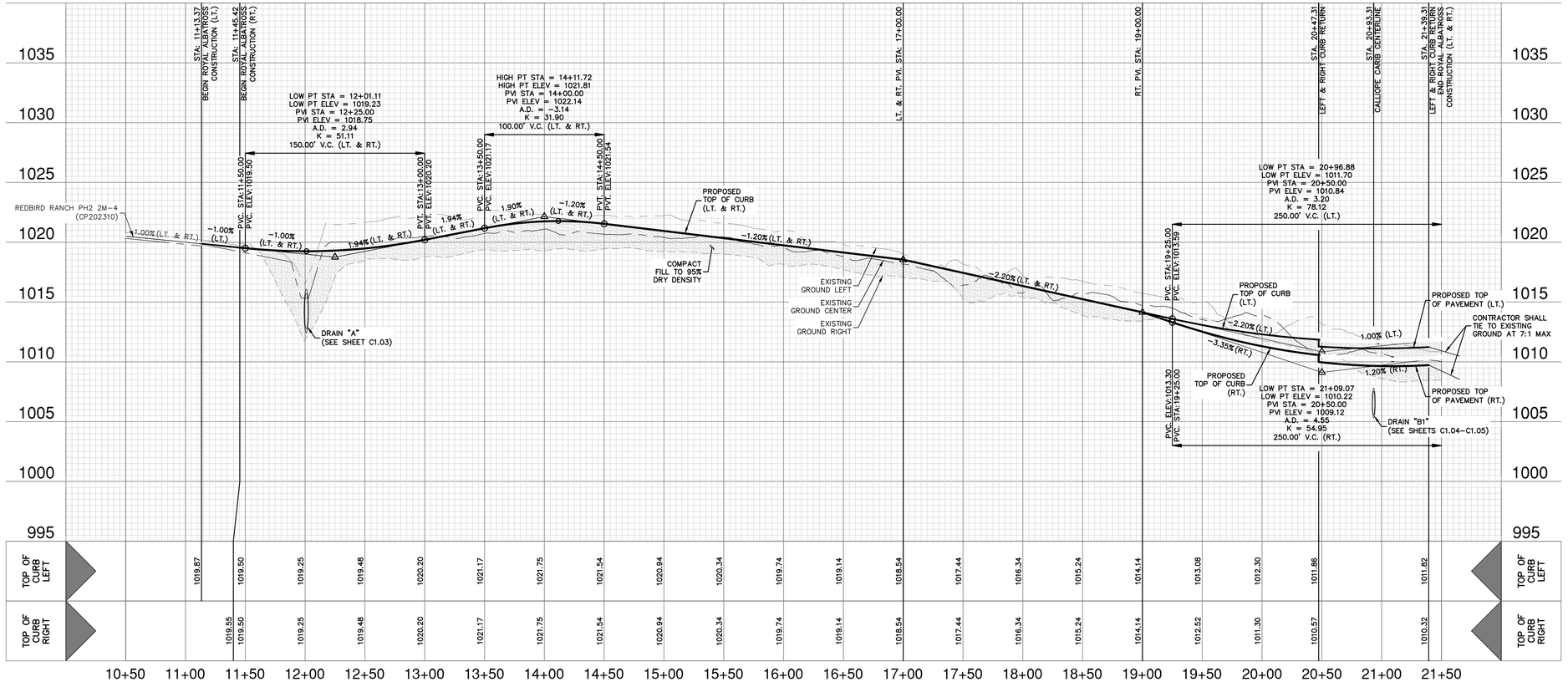


STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	DWCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

ROYAL ALBATROSS
STA 11+13.37 TO 21+39.31

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



STREETSCAPE TREE PLANTING NOTES:

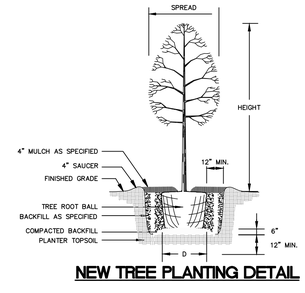
LARGE TREES (PER UDC) TO BE PLANTED EVERY 50 FEET ALONG ROYAL ALBATROSS, PER DETAIL THIS SHEET.

1. SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS.

2. DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.

3. ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED BY THE LATEST VERSION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

4. TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC, IF OVERHEAD ELECTRIC IS REQUIRED BY CPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES, PER THE UDC.



NEW TREE PLANTING DETAIL

STREET 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. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6).

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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 3M-4

SAN ANTONIO, TEXAS

ROYAL ALBATROSS - PLAN & PROFILE
STA 11+13.37 TO 21+39.31

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C2.05

FOR PERMIT

Date: Nov 15, 2024, 4:36pm User ID: tmartin
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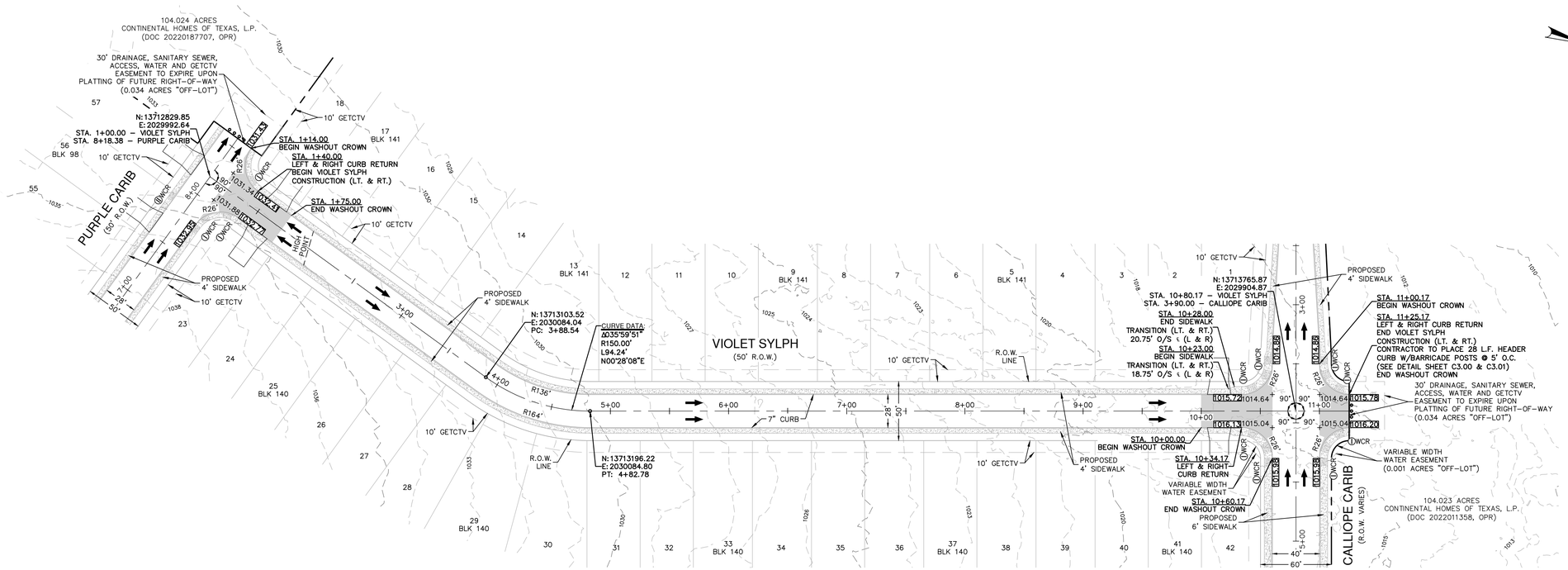
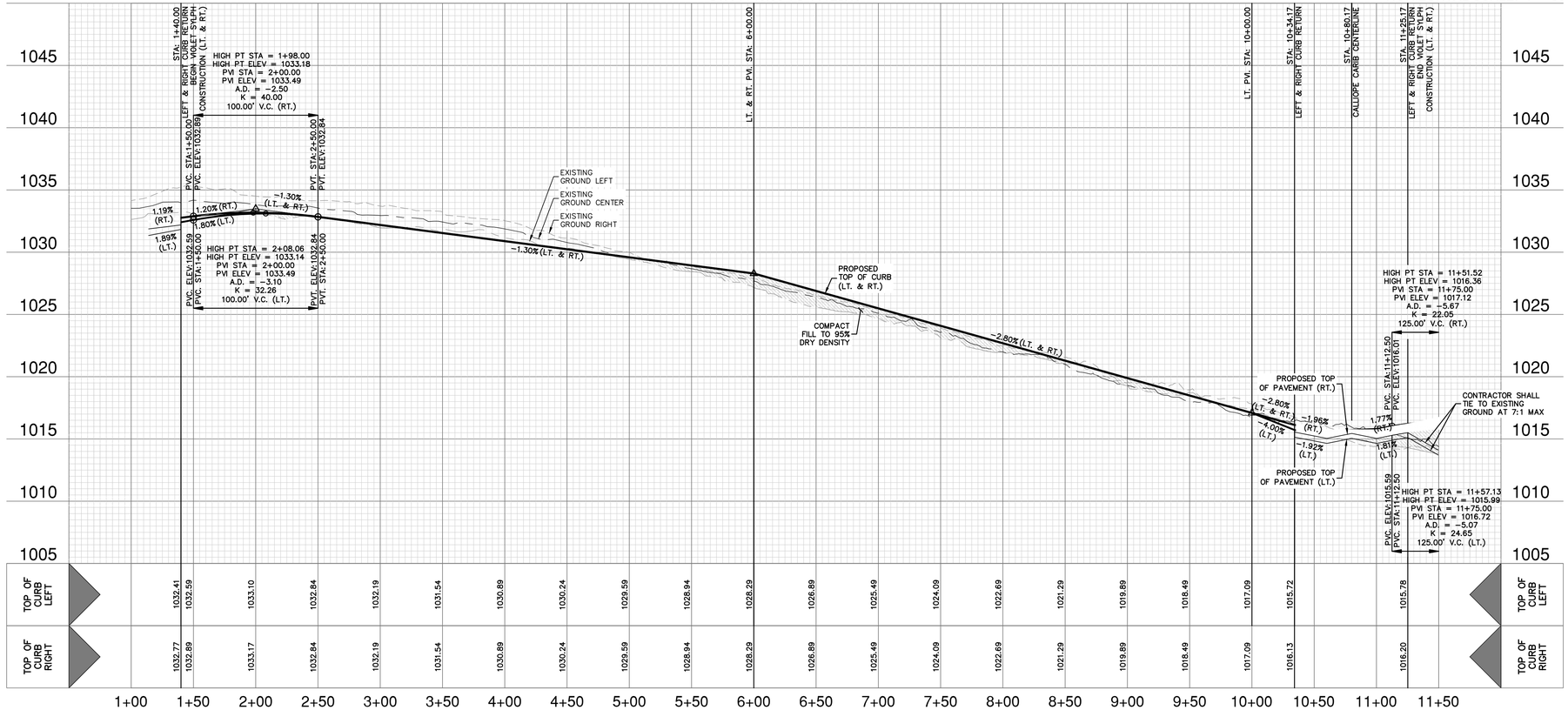


STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	970
WHEELCHAIR RAMP	ⓌCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

VIOLET SYLPH
STA 1+40.00 TO 11+25.17

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



STREET NOTES:

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4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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NO.	REVISION	DATE

11-15-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

VIOLET SYLPH - PLAN & PROFILE
STA 1+40.00 TO 11+25.17

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	BH
DRAWN	
SHEET	C2.06

Date: Nov 15, 2024, 4:36pm User ID: lmartin
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PAVEMENT SECTION DETAIL

STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	AGGREGATE BASE	TREATED SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL NUMBER	
AMERICAN ROBIN WAY	STA 17+25.23 TO 21+78.23	2"	–	10"	6*	NO	2.5	2(.44) = 0.88 10(.14) = 1.4 6(.08) = 0.48	2.76
CALLIOPE CARIB	STA 2+44.98 TO 9+37.00	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
LAYSAN ALBATROSS	STA 1+40.00 TO 13+14.61	2"	–	10"	6*	NO	2.5	2(.44) = 0.88 10(.14) = 1.4 6(.08) = 0.48	2.76
PURPLE CARIB	STA 1+40.00 TO 8+58.38	2"	–	10"	6*	NO	2.5	2(.44) = 0.88 10(.14) = 1.4 6(.08) = 0.48	2.76
ROYAL ALBATROSS	STA 11+13.37 TO 21+39.31	2"	2"	16"	8*	NO	2.5	2(.44) = 0.88 2(.44) = 0.88 18.5(.14) = 2.59 8(.08) = 0.64	4.64
VIOLET SYLPH	STA 1+40.00 TO 11+25.17	2"	–	10"	6*	NO	2.5	2(.44) = 0.88 8.5(.14) = 1.19 6(.08) = 0.48	2.76

*SEE SUBGRADE NOTES

GENERAL NOTES:

1. CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT PREPARED BY **InTEC OF SAN ANTONIO, LP** DATED **AUGUST 7, 2023.**
2. 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.
3. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
4. THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE AGGREGATE OR GRAVEL CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
5. 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.
6. WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2–FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.
7. SIGNIFICANT PAVEMENT DISTRESS HAS BEEN OBSERVED DURING CONSTRUCTION PHASE WITH THE COMBINATION OF CONSTRUCTION TRAFFIC AND IRRIGATION WATER / RAIN WATER GETTING UNDERNEATH THE ASPHALT.
8. SIGNIFICANT PAVEMENT DISTRESS HAS BEEN OBSERVED DURING CONSTRUCTION PHASE WITH THE COMBINATION OF CONSTRUCTION TRAFFIC AND IRRIGATION WATER / RAIN WATER GETTING UNDERNEATH THE ASPHALT.
9. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT / CONCRETE OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE SHOULD BE REDUCED. ONE OF THE FOLLOWING METHODS SHOULD BE USED:
   - DEEPER CURBS; SUCH AS CURBS EXTENDING A MINIMUM OF 3 INCHES INTO SUBGRADE.
   - COMPACTED CLAYS BACKFILLED AGAINST THE CURBS.
10. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.

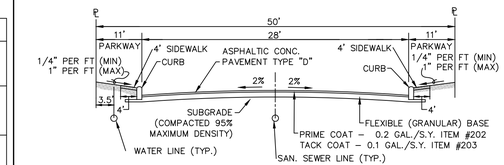
STREET SUBGRADE NOTES:

1. CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME.
2. FILL USED TO RAISE THE GRADE:
   - APPROVED FILL MATERIAL FREE SHOULD HAVE A MINIMUM CBR VALUE OF 2.5 AND A MAXIMUM PLASTICITY INDEX VALUE OF 60 (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.
3. BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE BORING & TEST PITS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE EITHER LESS THAN OR EQUAL TO 20 OR GREATER THAN 20.
4. IF THE SUBGRADE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20, AS PER CITY OF SAN ANTONIO OR BEXAR COUNTY REQUIREMENTS, SUBGRADE STABILIZATION IS NOT NEEDED.
5. 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 ARE PRESENTED HERE. PLEASE CONTACT INTEC FOR CEMENT APPLICATION RATES.
   - STABILIZED TO A DEPTH OF 6 OR 8 INCHES USING 7 ½ 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:

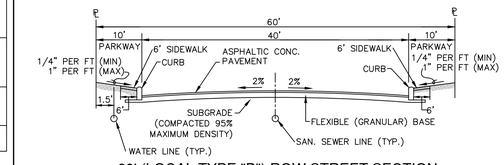
FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:

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



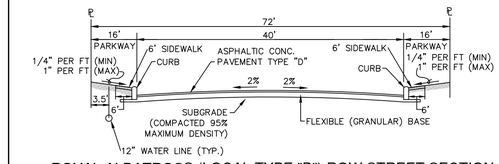
50' (LOCAL TYPE "A") ROW STREET SECTION

NOT–TO–SCALE



60' (LOCAL TYPE "B") ROW STREET SECTION

NOT–TO–SCALE



ROYAL ALBATROSS (LOCAL TYPE "B") ROW STREET SECTION

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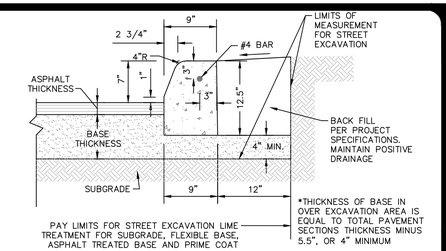
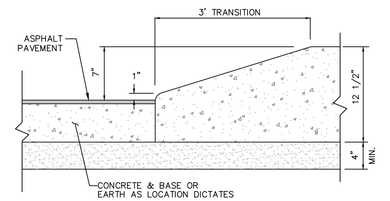


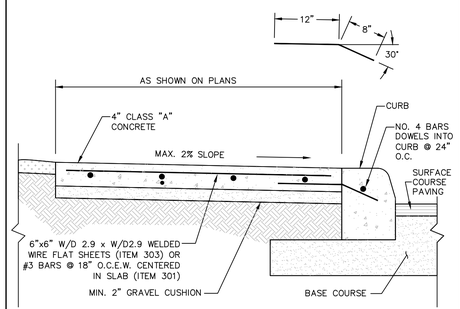
CONCRETE CURB DETAIL

NOT–TO–SCALE



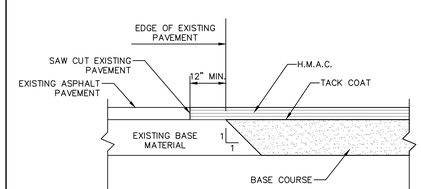
CURB TRANSITION DETAIL
(FROM PAVEMENT TO STANDARD CURB)

NOT–TO–SCALE



SIDEWALK DETAIL

NOT–TO–SCALE



ASPHALT/ASPHALT JUNCTURE DETAIL

NOT–TO–SCALE

NO. REVISION DATE

JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
11–15–2024

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

TYPICAL STREET DETAILS

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C2.10

FOR PERMIT

Date: Nov 15, 2024, 4:36pm User ID: tmartin
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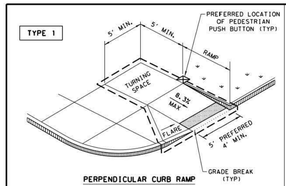
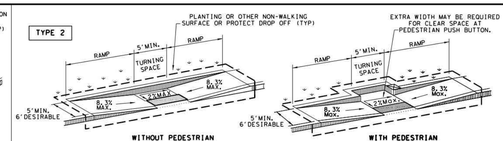
DATE:
FILE:

TYPE 1



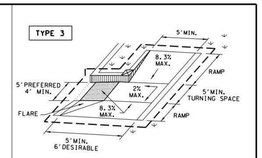
PERPENDICULAR CURB RAMP

TYPE 2

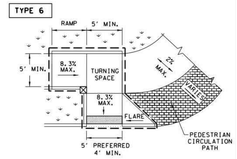


PARALLEL CURB RAMP

TYPE 3

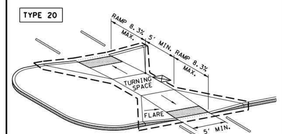


TYPE 6



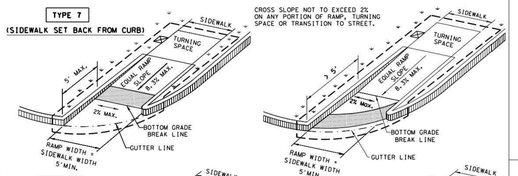
COMBINATION CURB RAMPS

TYPE 20

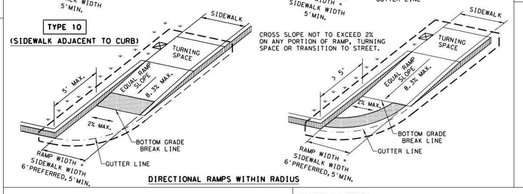


CURB RAMPS AT MEDIAN ISLANDS

TYPE 7
(SIDEWALK SET BACK FROM CURB)

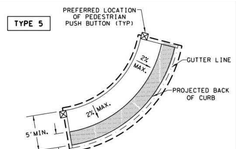


TYPE 10
(SIDEWALK ADJACENT TO CURB)



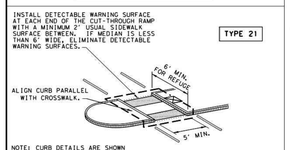
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 5



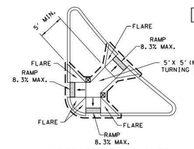
BLENDED TRANSITION
(FLUSH LANDING)

TYPE 21

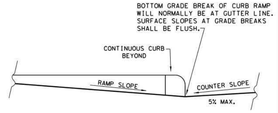


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

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

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

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	CK: KM	CK: PK & JG
TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2005	DIST		COUNTY	SHEET NO.
REVISED 05.2012				
REVISED 04.2018				

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

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

DETECTABLE WARNING MATERIAL

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

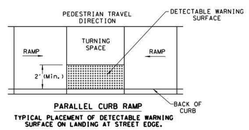
DETECTABLE WARNING PAVERS (IF USED)

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

SIDEWALKS

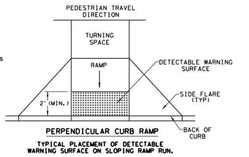
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items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

DETECTABLE WARNING SURFACE DETAILS



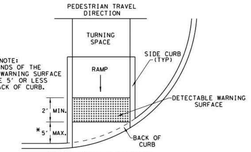
PARALLEL CURB RAMP

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



PERPENDICULAR CURB RAMP

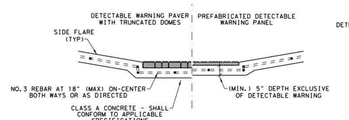
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



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

DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

SHEET 2 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	CK: KM	CK: PK & JG
TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2005	DIST		COUNTY	SHEET NO.
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REVISED 04.2018				

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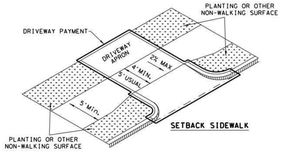
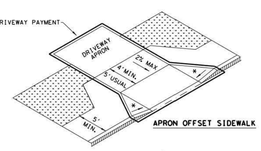
DATE:
FILE:

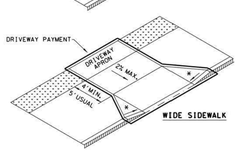
SIDEWALK TREATMENT AT DRIVEWAYS



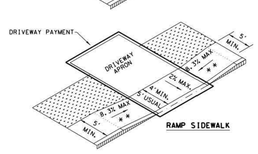
SETBACK SIDEWALK



APRON OFFSET SIDEWALK

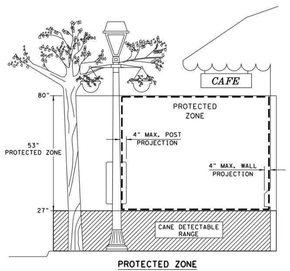


WIDE SIDEWALK



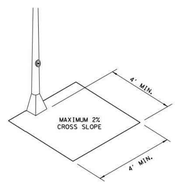
RAMP SIDEWALK

NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%, HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

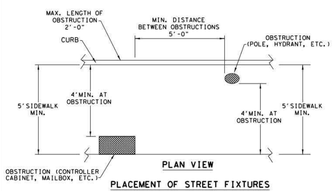


PROTECTED ZONE

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



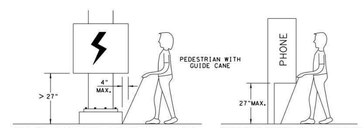
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW

PLACEMENT OF STREET FIXTURES

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



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

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

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	CK: KM	CK: PK & JG
TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2005	DIST		COUNTY	SHEET NO.
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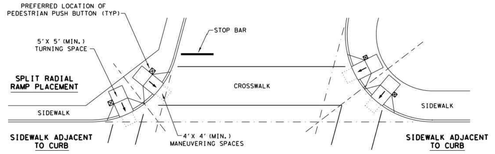
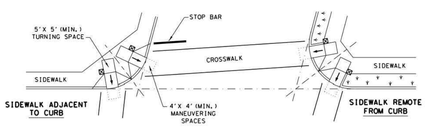
FILE:

TYPICAL CROSSING LAYOUTS

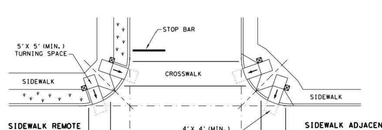
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



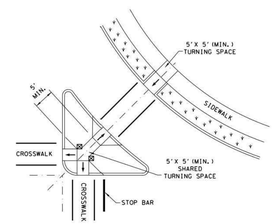
SKEWED INTERSECTION WITH "LARGE" RADIUS



SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION W/FREE RIGHT TURN & ISLAND

MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE.

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

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

SHEET 4 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

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REVISED 08.2005	DIST		COUNTY	SHEET NO.
REVISED 05.2012				
REVISED 04.2018				

NO.	REVISION	DATE

11-15-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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 3M-4

SAN ANTONIO, TEXAS

TYPICAL STREET DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C2.11

FOR PERMIT

Date: Nov 15, 2024, 4:36pm User ID: tmartin
File: P:\300\04\35\Design\Civil\STDT-30004-35.dwg

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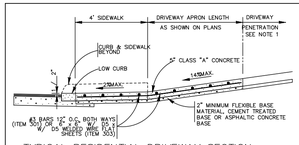
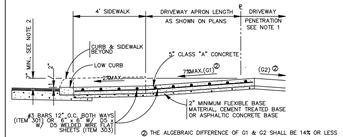


TYPICAL RESIDENTIAL DRIVEWAY SECTION

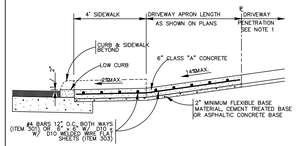
WITH SIDEWALK ABUTTING CURB
ITEM 503.1



① THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

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



TYPICAL COMMERCIAL DRIVEWAY SECTION

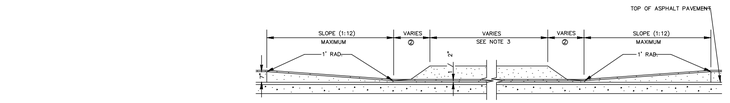
WITH SIDEWALK ABUTTING CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

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

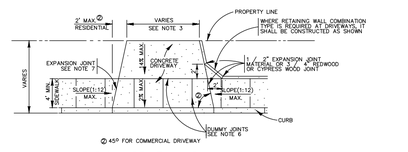
TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL – ONE WAY	12'	20'
COMMERCIAL – TWO WAY	24'	30'

4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



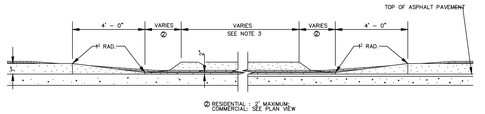
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



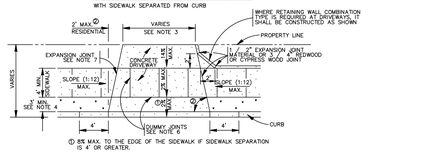
TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



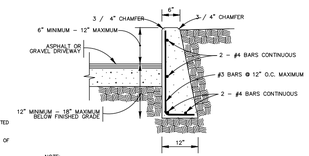
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB



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

DRIVEWAY – CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
ITEM 307.1

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

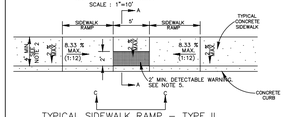
CONCRETE DRIVEWAY STANDARDS

___% SUBMITTAL	PROJECT NO.___		DATE:___
DRWN. BY: _S_ESQUIVEL_	DSGN. BY:___	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.___ OF___

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

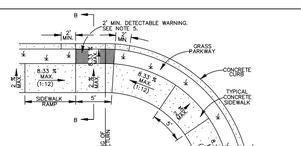
TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB
SCALE : 1"=10'



TYPICAL SIDEWALK RAMP – TYPE II

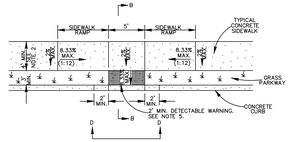
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE : 1"=10'



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

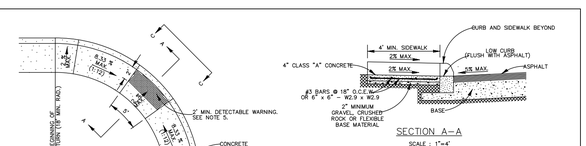
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1"=10'



TYPICAL SIDEWALK RAMP – TYPE IV

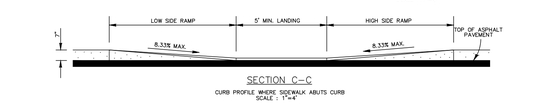
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1"=10'



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

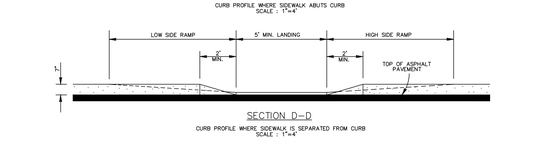
TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB
SCALE : 1"=10'



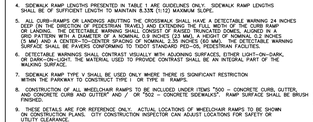
SECTION C–C

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



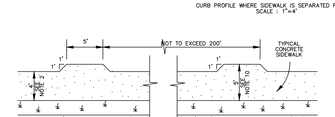
SECTION D–D

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



DETECTABLE WARNING SURFACE

SCALE : 1"=4"

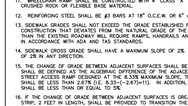


SIDEWALK PASSING SPACE

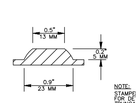
SCALE : 1"=10'

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

TABLE 1



PLAN DETAIL



DOME SECTION

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE PROPOSED DETECTABLE WARNING SURFACE THAT IS TO BE INSTALLED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A RADIAL PATTERN, WITH A BASE DIAMETER OF 9 INCHES, A TOP DIAMETER OF 4.5 INCHES, AND A HEIGHT OF 0.2 INCHES AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-05, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK WITH A GRADE THAT IS STEEPER THAN 5% IS CONSIDERED A RAMP AND MUST COMPLY WITH RAMP CRITERIA. WHERE THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33%–(–2.67%)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE

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

TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB
SCALE : 1"=10'

TYPICAL SIDEWALK RAMP – TYPE II

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

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

TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1"=10'

TYPICAL SIDEWALK RAMP – TYPE IV

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

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

TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB
SCALE : 1"=10'

SECTION C–C

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

SECTION D–D

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

DETECTABLE WARNING SURFACE

SCALE : 1"=4"

SIDEWALK PASSING SPACE

SCALE : 1"=10'

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

TABLE 1

PLAN DETAIL

DOME SECTION

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE PROPOSED DETECTABLE WARNING SURFACE THAT IS TO BE INSTALLED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

	PROJECT NO.___		DATE:___
	DSGN. BY:___	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.___ OF___

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

TYPICAL STREET DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C2.12

FOR PERMIT

Date: Nov 15, 2024, 4:36pm User ID: tmartin
File: P:\300\04\35\Design\Civil\STDT-30004-35.dwg

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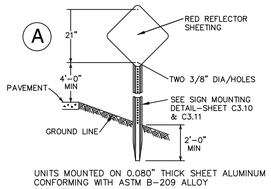
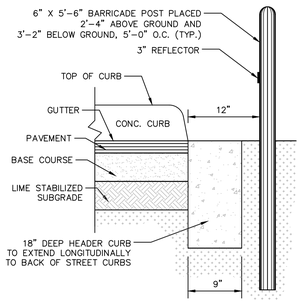


UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.

TYPE 4 OM4-3
18" x 18"

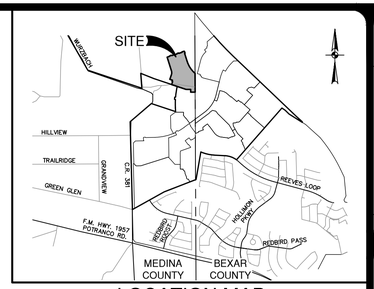
OBJECT MARKER TYPE 4

NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	TRAFFIC FLOW ARROW	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (SITEWORK CONTRACTOR/DEVELOPER RESPONSIBILITY)	
Street Name	STREET SIGN	531.57
STOP	R1-1 30"X30"	531.3
	TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)	
	OM4-3 (531.56) END OF ROAD MARKER	
SPEED LIMIT 35	R2-1 24"X30"	

DRIVEWAY NOTE:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED JF DRAWN BH
SHEET C3.00

FOR PERMIT

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE© UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

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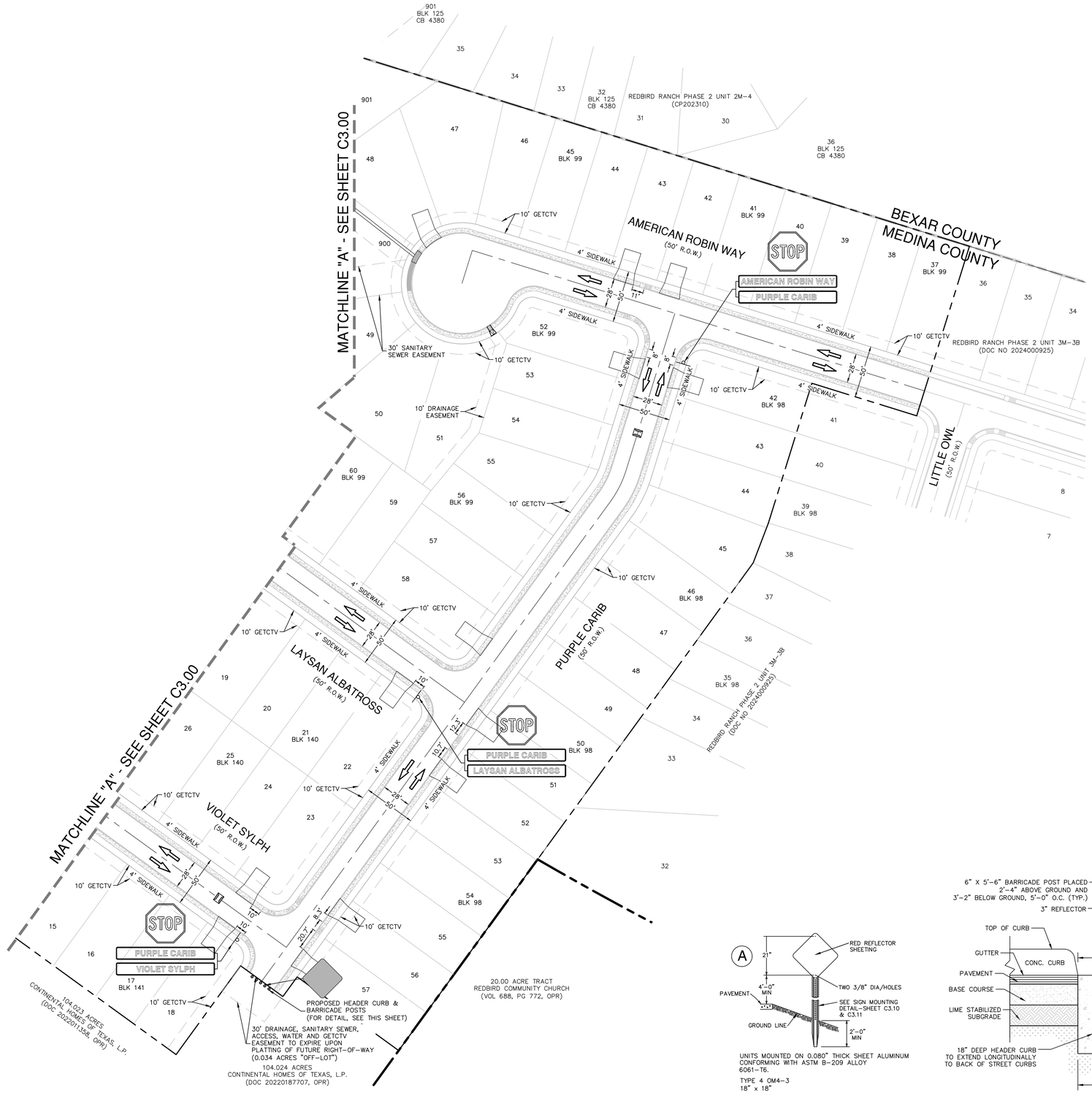
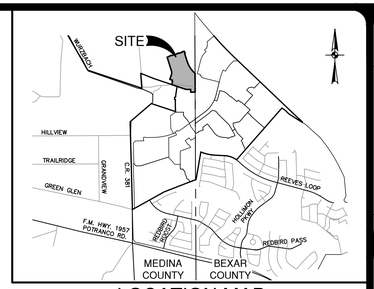




LOCATION MAP
NOT-TO-SCALE

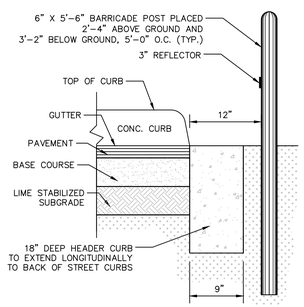
SCALE: 1"= 50'
0' 50' 100' 150'

SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	TRAFFIC FLOW ARROW	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (SITEWORK CONTRACTOR/DEVELOPER RESPONSIBILITY)	
Street Name	STREET SIGN	531.57
STOP	R1-1 30"X30"	531.3
	TYPE II BLUE RAISED PAVEMENT MARKERS -- NO SEPARATE PAY ITEM (N.T.S.)	
	0M4-3 (531.56) END OF ROAD MARKER	

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

TYPE 4 0M4-3
18" x 18"

OBJECT MARKER TYPE 4
NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

OVERALL SIGNAGE PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C3.01

FOR PERMIT

Date: Nov 15, 2024, 4:37pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SSOA-30004-35.dwg
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DATE: 7/15/24

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

Post Type

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

Number of Posts (1 or 2)

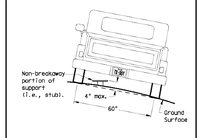
Anchor Type

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

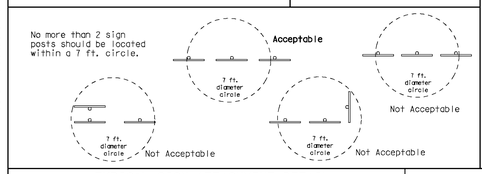
Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED:
TEXT or (EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BW = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = L 1.2 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

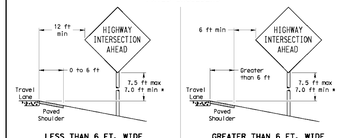


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



SIGN LOCATION

PAVED SHOULDERS



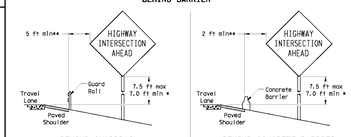
LESS THAN 6 FT. WIDE

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

GREATER THAN 6 FT. WIDE

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

BEHIND BARRIER

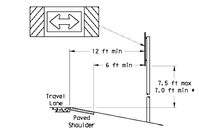


BEHIND GUARDRAIL

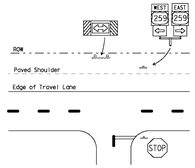
BEHIND CONCRETE BARRIER

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

T-INTERSECTION



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



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

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

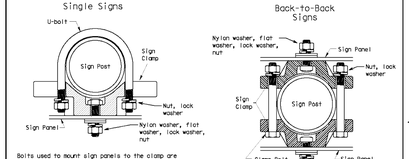
(2) a minimum of 7 ft to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

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

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

TYPICAL SIGN ATTACHMENT DETAIL



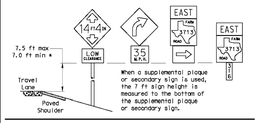
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

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

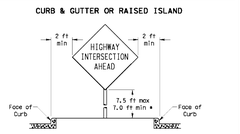
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



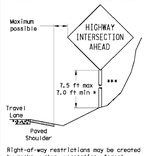
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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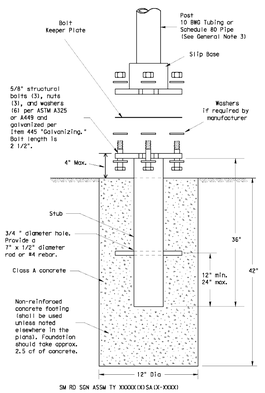
9-08	REVISIONS		CONT	SECT	JOB	HIGHWAY
			DISTRICT		COUNTY	
			FED.RD. DIV.NO.		PROJECT NO.	

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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

NOTE

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

GENERAL NOTES:

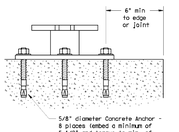
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)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

ASSEMBLY PROCEDURE

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

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

CONCRETE ANCHOR



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

Concrete anchor consists of 5/8" diameter steel bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per SMG-8100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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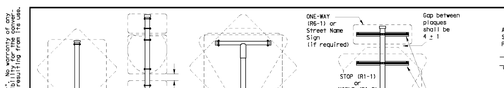
9-08	REVISIONS		CONT	SECT	JOB	HIGHWAY
			DISTRICT		COUNTY	
			FED.RD. DIV.NO.		PROJECT NO.	

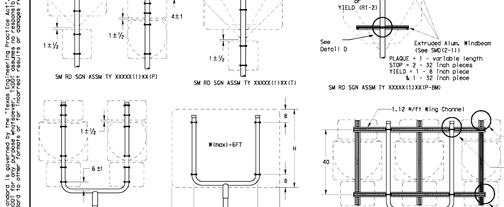


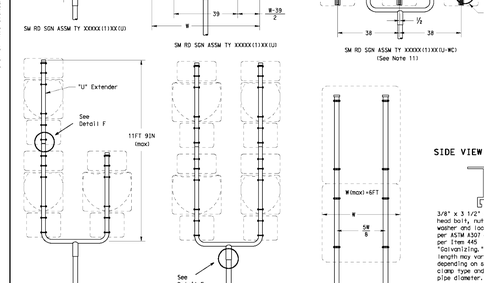
GENERAL NOTES:

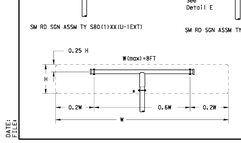
SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

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

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY SB01(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



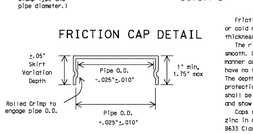




SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

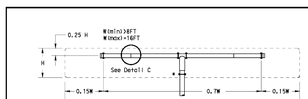
FRICTION CAP DETAIL

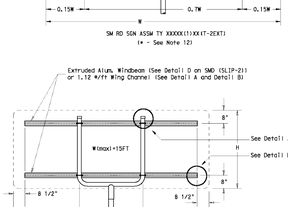


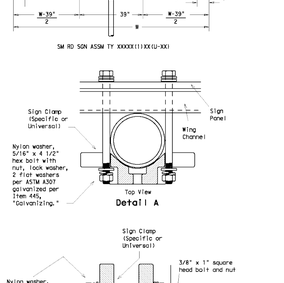
Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

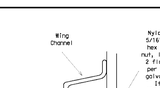
The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free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

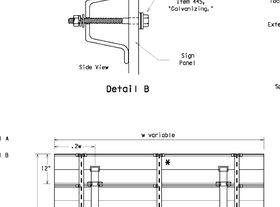
Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

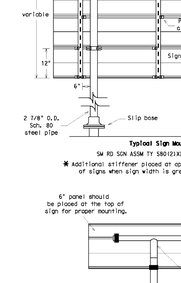


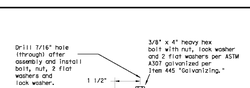












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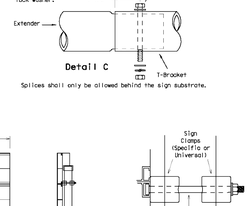
Sch 80	1	32 SF
Sch 80	2	64 SF

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

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY SB01(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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9-08	REVISIONS		CONT	SECT	JOB	HIGHWAY
			DISTRICT		COUNTY	
			FED.RD. DIV.NO.		PROJECT NO.	

NO.	REVISION	DATE

9-6-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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 3M-4

SAN ANTONIO, TEXAS

TXDOT SIGN MOUNTED DETAILS

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C3.10

FOR PERMIT

Date: Aug 23, 2024, 3:34pm User ID: gchubb
File: P:\3001\04\35\Design\Civil\SIGDT-30004-35.dwg
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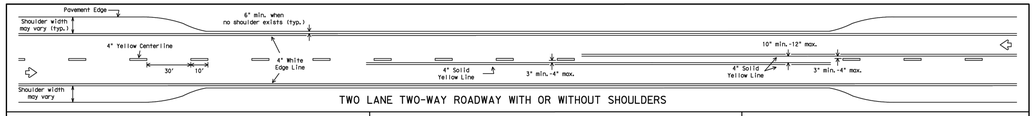
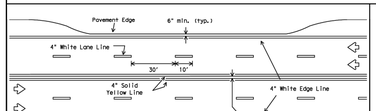
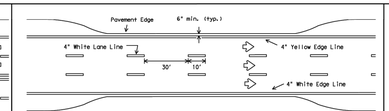


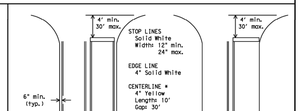
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

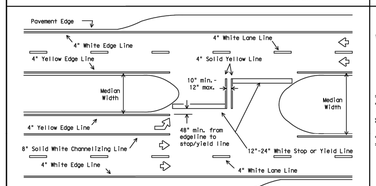


EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



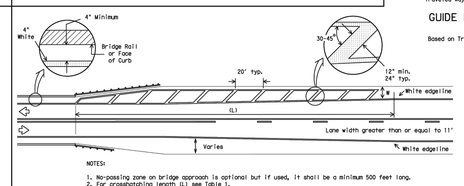
GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways



All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.

FOUR LANE DIVIDED ROADWAY INTERSECTIONS



NOTES:
1. No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
2. For crosshatching length (L) see Table 1.
3. The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
4. The crosshatching is not required if delineators or barrier reflectors are used along the structure.
5. For guard fence details, refer elsewhere in the plans.

ROADWAYS WITH REDUCED SHOULDER
WIDTHS ACROSS BRIDGE OR CULVERT

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

* 85th Percentile Speed may be used on roads where posted speed is not established. Crosshatching length should be rounded up to nearest 5 foot increment.

L=Length of crosshatching (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

EXAMPLES:

An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:

$L = 8 \times 70 = 560$ ft.

A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:

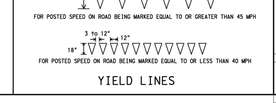
$L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES

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

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

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



YIELD LINES

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD
PAVEMENT MARKINGS

PM(1)-12

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REVISIONS	CONT	SECT	JOB	HIGHWAY
8-95 2-12				
5-00	DIST	COUNTY		SHEET NO.
8-00				
5-03				
7-13				

DATE: FILE:

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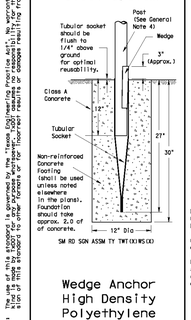
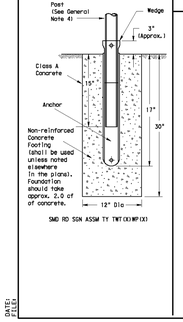
Wedge Anchor Steel System



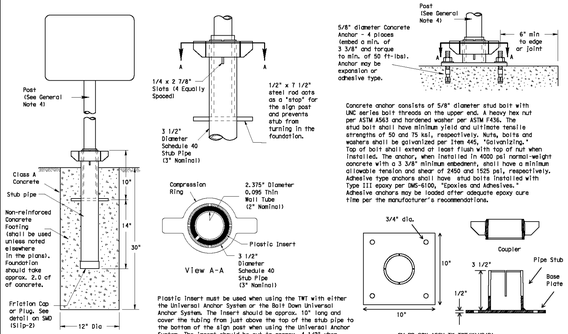
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System



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

Universal Anchor System with Thin-Walled Tubing Post

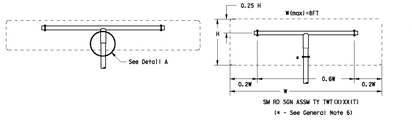


SM RD SGN ASSM TY TWT(X)UA(P)

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

Plastic Insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 12" long and cover the tubing from just above the top of the stub pipe to the bottom of the slip post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

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



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

NOTE

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

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: https://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.365" to 2.391"
   Galvanization per ASTM 123 or ASTM A653 G210. For preceded steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

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

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

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

Texas Department of Transportation
Traffic Operations Division

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

SMD (TWT)-08

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

266

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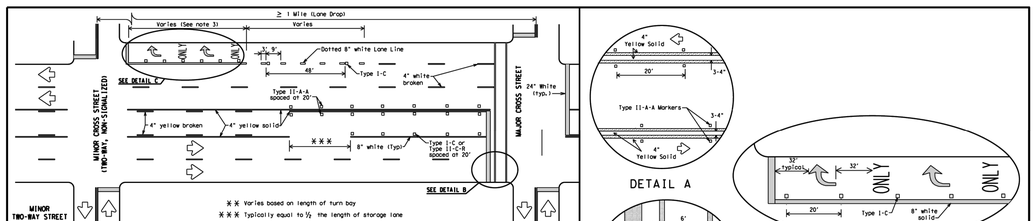
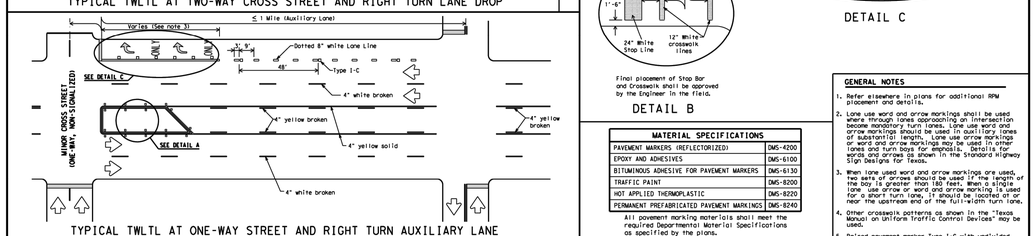
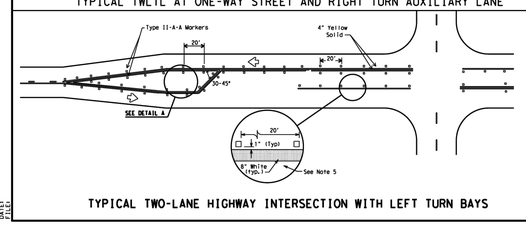


TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



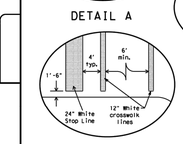
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS

DETAIL A

DETAIL C



Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

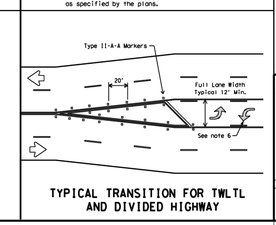
DETAIL B

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

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

GENERAL NOTES

1. Refer elsewhere in plans for additional RPM placement and details.
2. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings may be used in short turn lanes and in the turn bays for separate lanes and turn bays for shared lanes. Details for words and arrows as shown in the Standard Highway Sign Designs for Texas.
3. When lane used word and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
4. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.
5. Raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Raised pavement marker type II-C-R with divided highways and raised medians.
6. A two-way left-turn (TWLT) lane-use arrow pavement marking should be used on or just downstream from the beginning of a two-way left-turn lane within a TWLT median. Additional arrows for each approach intersection or dedicated turn bay is not required unless stated elsewhere in the plans.



TYPICAL TRANSITION FOR TWLTL
AND DIVIDED HIGHWAY

Texas Department of Transportation
Traffic Operations Division

PAVEMENT MARKINGS FOR
TWO-WAY LEFT TURN LANES
DIVIDED HIGHWAYS AND
RURAL LEFT TURN BAYS

PM(3)-12

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REVISIONS	CONT	SECT	JOB	HIGHWAY
5-00 2-12				
8-03	DIST	COUNTY		SHEET NO.
8-07				
7-13				

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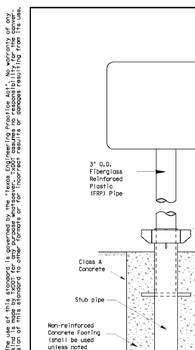
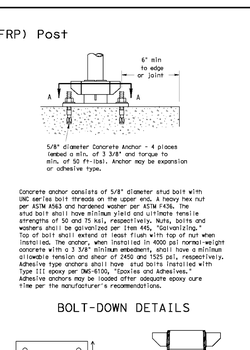
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



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

BOLT-DOWN DETAILS



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

GENERAL NOTES:

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

FRP POST REQUIREMENTS

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

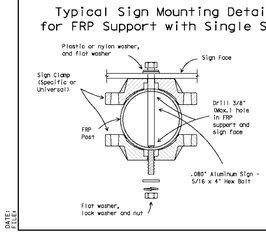
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

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

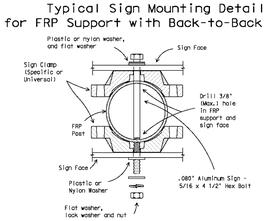
BOLT DOWN SIGN SUPPORT

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

Typical Sign Mounting Detail for FRP Support with Single Sign



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



Texas Department of Transportation
Traffic Operations Division

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

SMD (FRP)-08

©TxDOT July 2022	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08				
	DIST	COUNTY		SHEET No.

266

NO. REVISION | DATE

9-6-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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 3M-4

SAN ANTONIO, TEXAS

TXDOT SIGN MOUNTED DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C3.11

FOR PERMIT

Date: Aug 23, 2024, 3:34pm User ID: gchubb
File: P:\3001\04\35\Design\Civil\SGDT-30004-35.dwg

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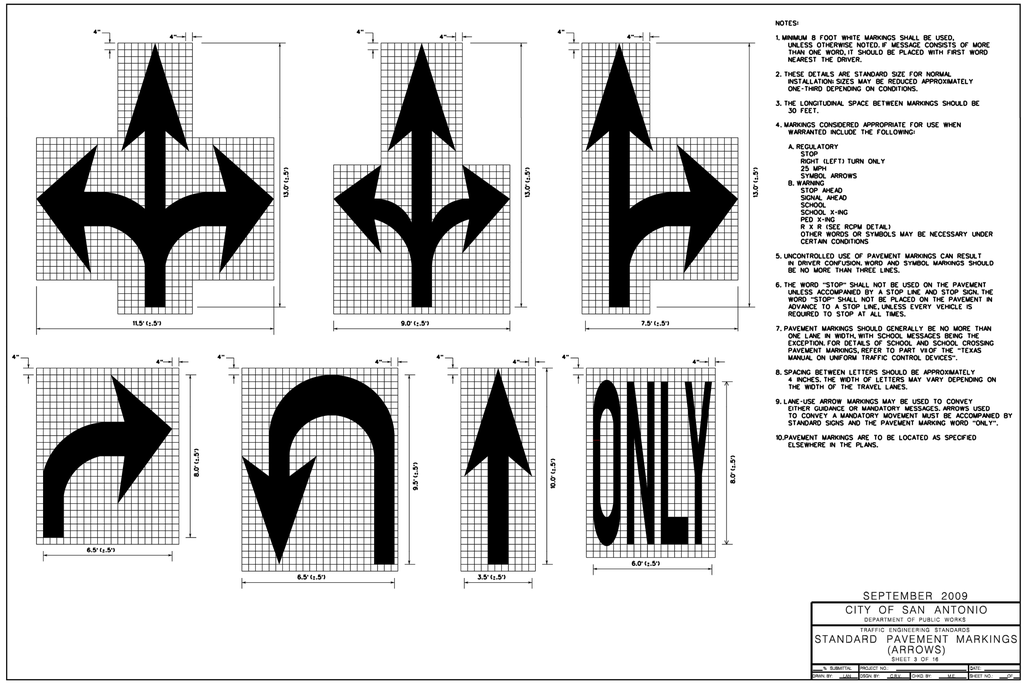

NOTES:

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION. SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS.
3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET.
4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:
   - A. REGULATORY
     - STOP
     - RIGHT (LEFT) TURN ONLY
     - 25 MPH
     - SYMBOL ARROWS
   - B. WARNING
     - STOP AHEAD
     - SIGNAL AHEAD
     - SCHOOL
     - SCHOOL X-ING
     - PED X-ING
     - R X R (SEE RCPM DETAIL)
     - OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS
5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES.
7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VI OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
8. SPACING BETWEEN LETTERS SHOULD BE APPROXIMATELY 4 INCHES. THE WIDTH OF LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES.
9. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANED BY STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED ELSEWHERE IN THE PLANS.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING STANDARDS

STANDARD PAVEMENT MARKINGS (ARROWS)

SHEET 3 OF 16

DWG. % SUBMITTAL	PROJECT NO.	DATE
DRAWN BY	DESIGN BY	CHKD BY	APP'D	SHEET NO.

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

DATE:
FILE:

REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS

CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

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

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

6" EDGE LINE, 6" CENTERLINE OR 6" LANE LINE

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

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

NOTES

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

GENERAL NOTES

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

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

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

Type I (Top View)

Type II (Top View)

SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation — Traffic Safety Division Standard

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

FILE:	pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
4-77	8-00 6-20				
4-92	2-10 12-22	DIST	COUNTY		SHEET NO.
8-95	8-12				

REVISIONS

5-22

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HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

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

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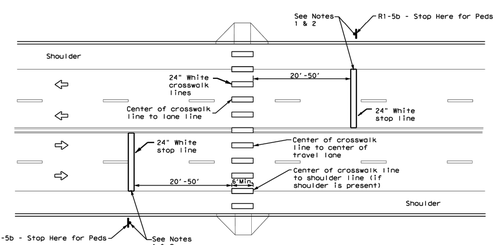

UNSIGNALIZED MID BLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with "Stop Here for Pedestrians" signs at unsignalized mid block cross walks.
2. Use stop bars with "Stop Here on Red" signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation — Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22

FILE:	pm4-22.dgn	DN:	CK:	DW:	CK:
©TxDOT	June 2020	CONT	SECT	JOB	HIGHWAY
5-22	REVISIONS				
		DIST	COUNTY		SHEET NO.

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STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

TXDOT SIGN MOUNTED DETAILS

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	DRAWN BH
SHEET	C3.12

FOR PERMIT

Date: Aug 23, 2024, 3:34pm User ID: gchubb
File: P:\3001\04\35\Design\Civil\SIGDT-30004-35.dwg

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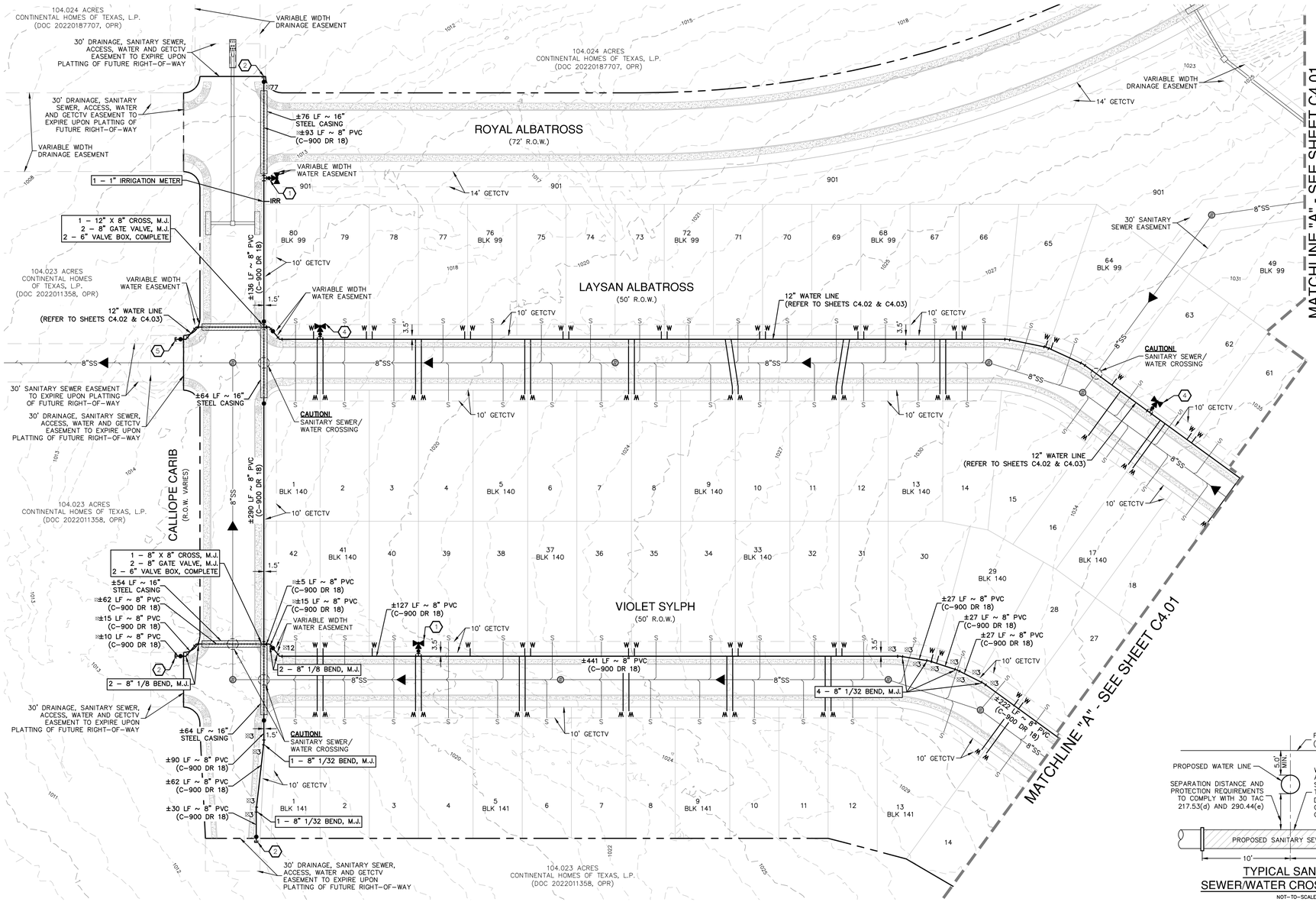

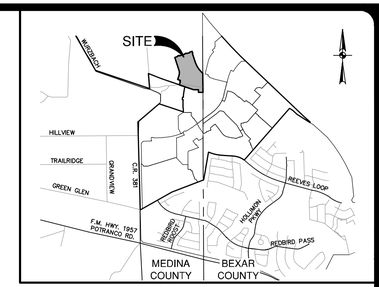

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

WATER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT

EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT

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

PROPOSED 1" DUAL SERVICE WITH 5/8" METER

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

JOINT RESTRAINT

ITEM	UNIT	QUANTITY
2" WATER LINE	LF	88
8" WATER LINE	LF	2301
12" WATER LINE	LF	1902
3/4" SINGLE SERVICE, SHORT	EA	64
1" SINGLE SERVICE, LONG	EA	56
LUEs	EA	121
FIRE HYDRANT	EA	6
TEST STATION	EA	6
1" IRRIGATION SERVICE & 3/4" METER	EA	1

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 YANCEY DETAIL W-20, SHEET C4.10)
TEST STATION

1 – 2 1/2" FLUSH VALVE (SEE YANCEY DETAIL W-32, SHEET C4.10)
1 – 8" GATE VALVE, M.J.
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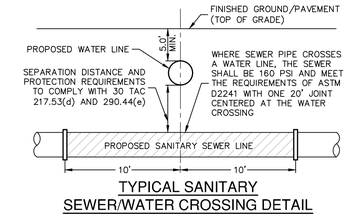

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

11-15-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

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 3M-4

SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C4.00

FOR PERMIT

Date: Nov 18, 2024, 5:04pm User ID: gchubb
File: P:\300\04\35\Design\Civil\WTOA-30004-35.dwg

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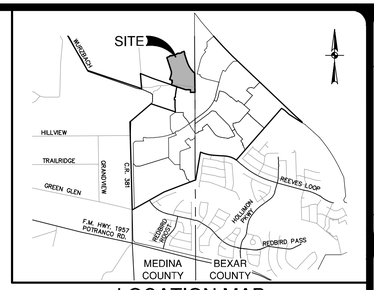

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SCALE: 1"= 50'

0' 50' 100' 150'

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TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
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PAPE-DAWSON ENGINEERS
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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C4.01

Date: Nov 18, 2024, 5:05pm User ID: gchubb
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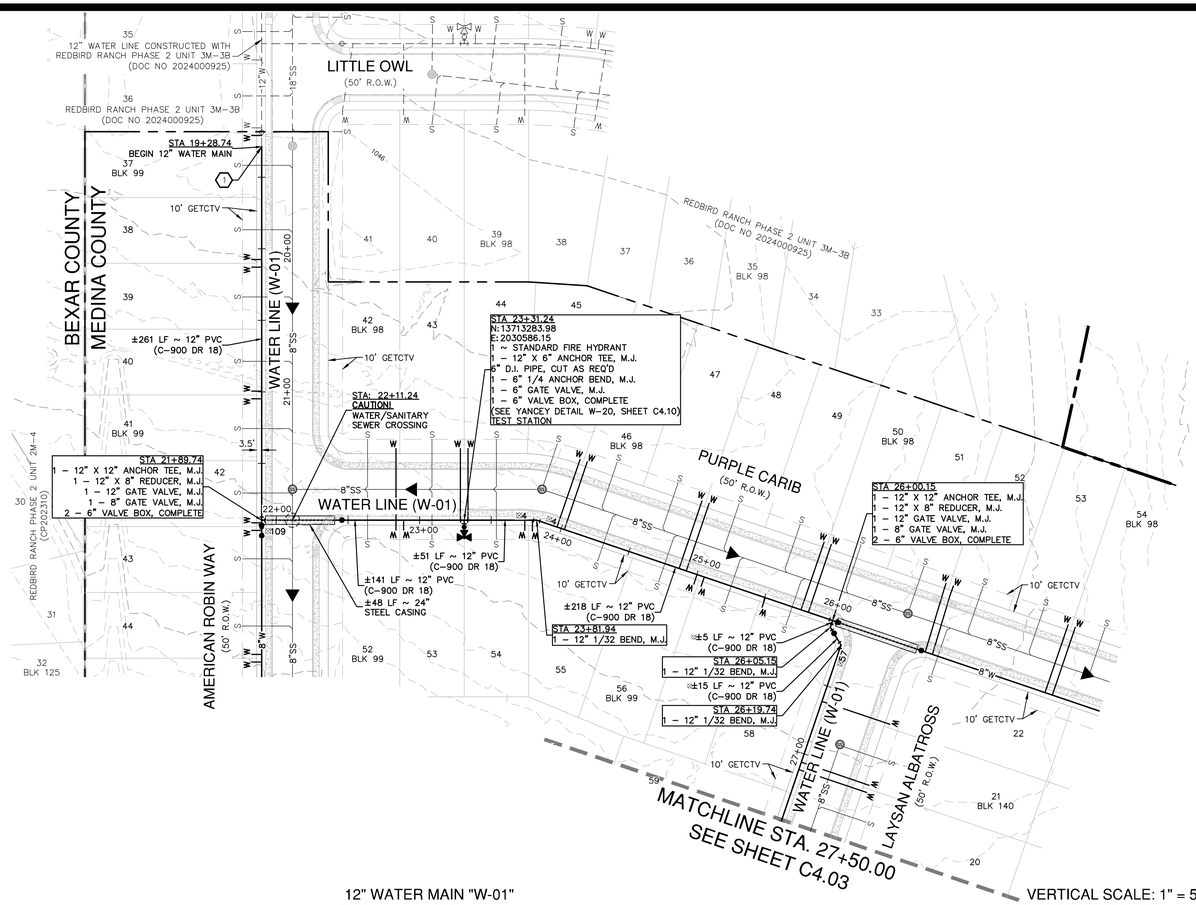
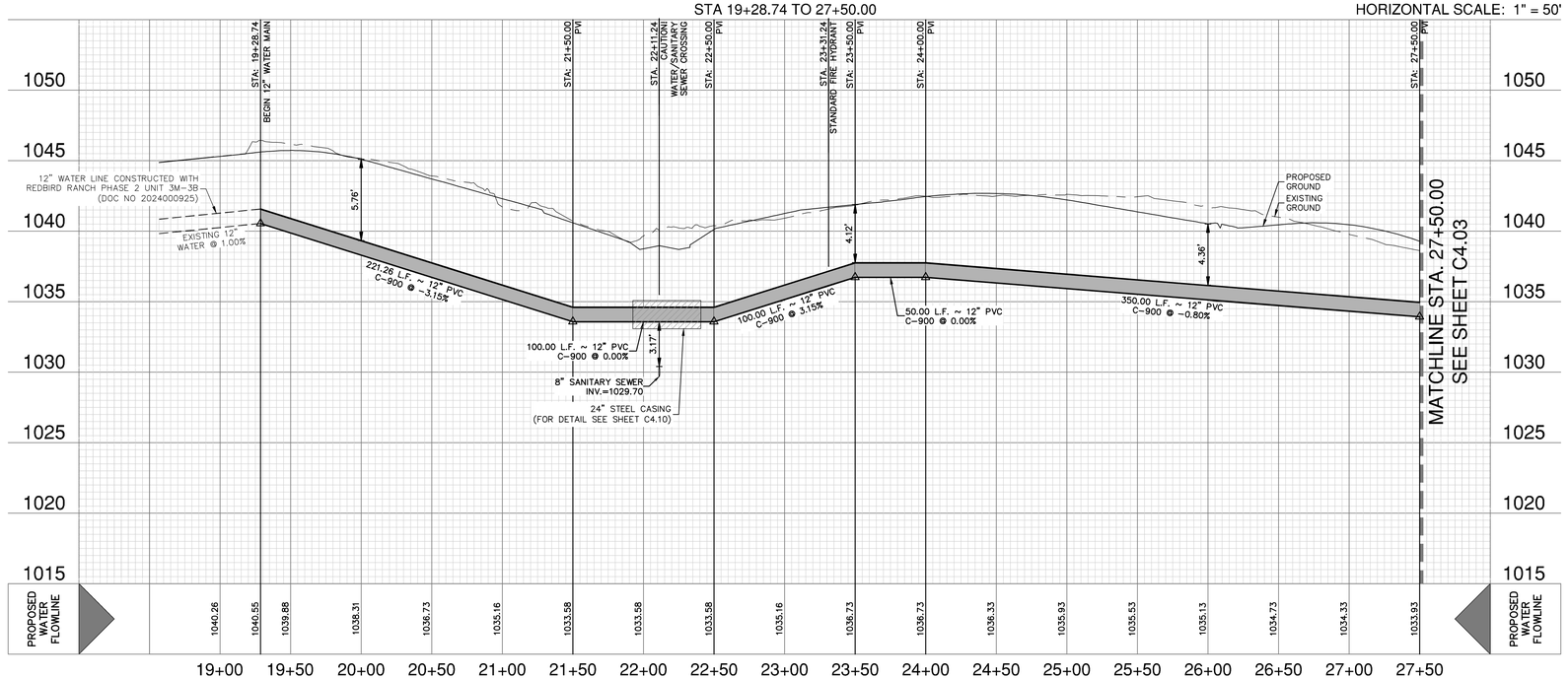
FOR PERMIT





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

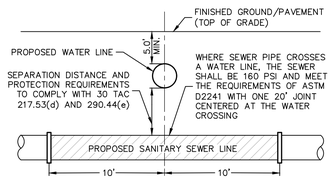
WATER LEGEND

- PROJECT LIMITS
- EXISTING WATER — FIRE HYDRANT — W
- EXISTING SEWER — SS — MANHOLE
- PROPOSED SEWER — SS
- PROPOSED WATER — FIRE HYDRANT — W
- PROPOSED SINGLE SERVICE — W
- PROPOSED DUAL SERVICE — W W
- SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) — IRR
- JOINT RESTRAINT
- VEGETATIVE FILTER STRIP — GETCTV
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT

NOTE:
NORTHING & EASTINGS ARE SHOWN TO CENTER OF FIRE HYDRANTS.

FOR CHLORINATION INJECTION
2 – 1" CORPORATION STOP, C.C.XI.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.

UPON SUCCESSFUL HYDROSTATIC TESTING, DISINFECTION OF THE NEW MAIN AND ACCEPTANCE BY YANCEY W.S.C. THE CONTRACTOR SHALL TIE TO EXISTING 12" WATER MAIN



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

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.

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

12 INCH WATER MAIN-01
STA 19+28.74 TO 27+50.00

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C4.02

FOR PERMIT

Date: Nov 18, 2024, 5:06pm User ID: gchubb
File: P:\300\04\35\Design\Civil\WT-01-30004-35.dwg
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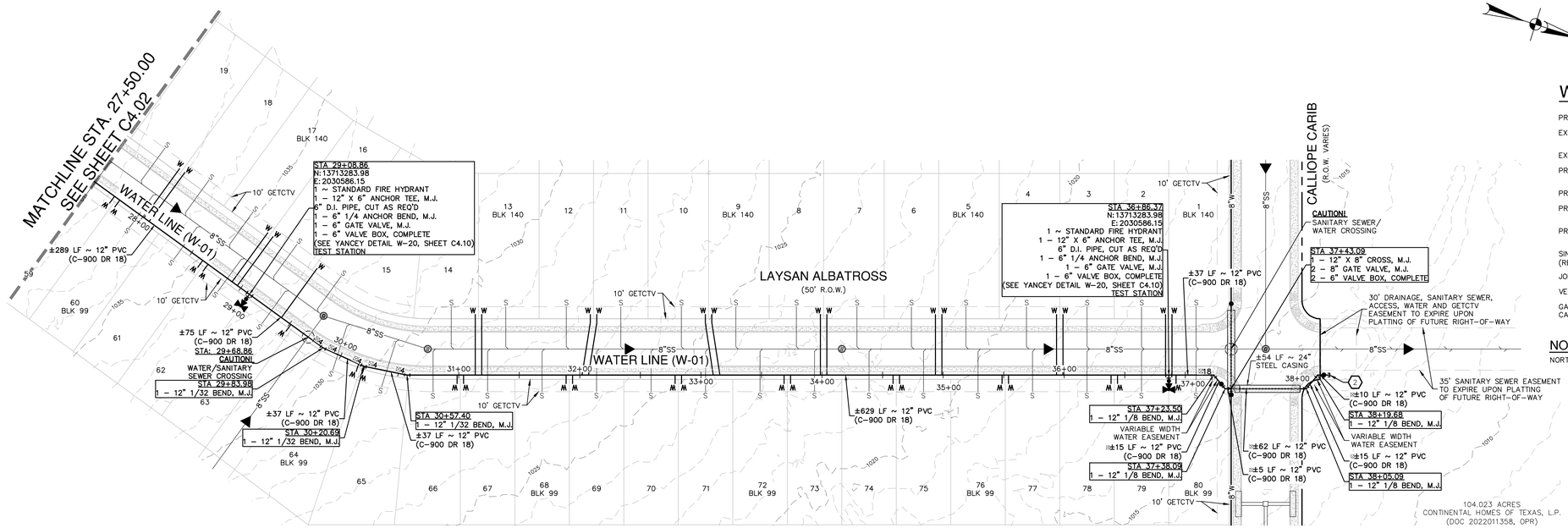


SCALE: 1"= 50'
0' 50' 100' 150'

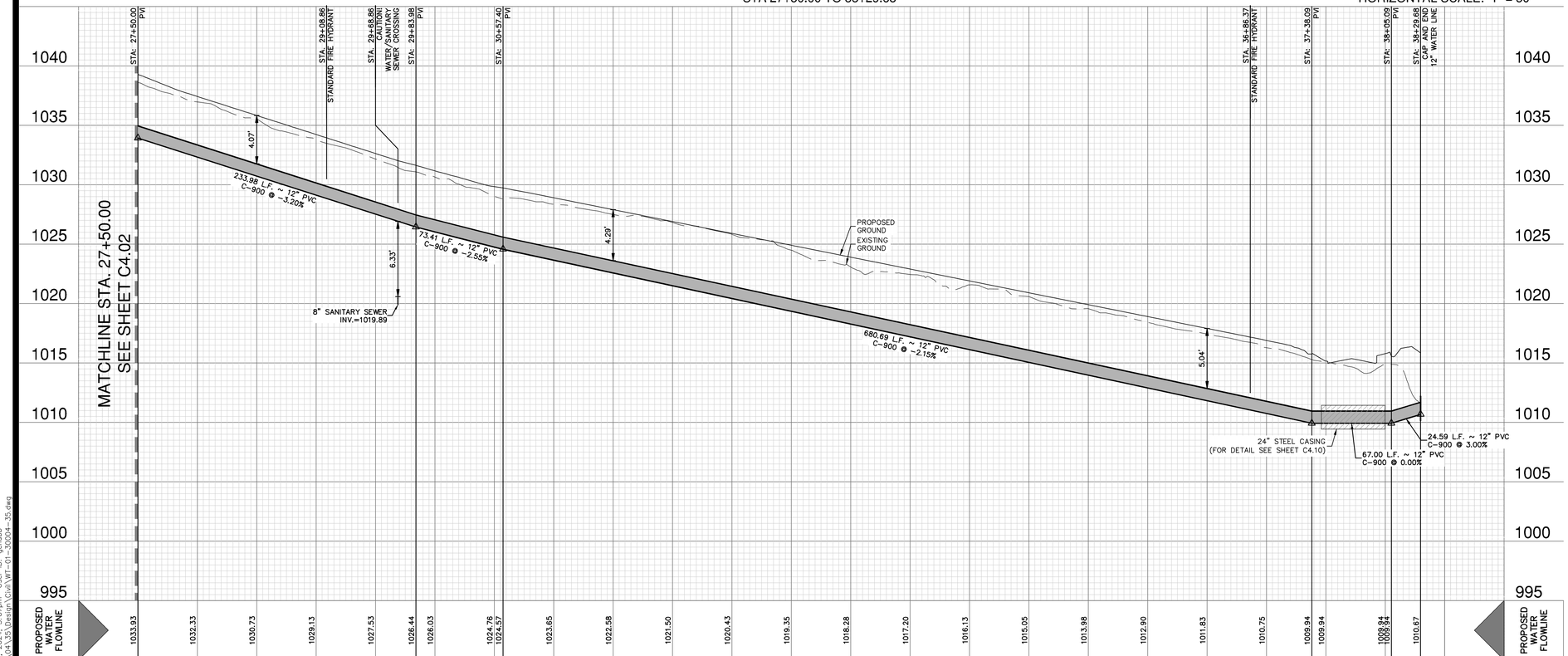
WATER LEGEND

- PROJECT LIMITS
- EXISTING WATER — FIRE HYDRANT
- EXISTING SEWER — MANHOLE
- PROPOSED SEWER — MANHOLE
- PROPOSED WATER — FIRE HYDRANT
- PROPOSED SINGLE SERVICE
- PROPOSED DUAL SERVICE
- SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) — IRR
- JOINT RESTRAINT
- VEGETATIVE FILTER STRIP
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — GETCTV

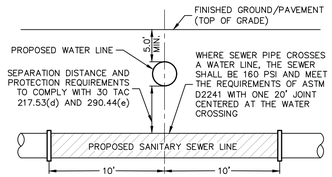
NOTE:
NORTHING & EASTINGS ARE SHOWN TO CENTER OF FIRE HYDRANTS.

12" WATER MAIN "W-01"
STA 27+50.00 TO 38+29.68

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



2 – 1 1/2" FLUSH VALVE (SEE YANCEY DETAIL W-33, SHEET C4.10)
1 – 12" GATE VALVE, M.J.
1 – 6" VALVE BOX, COMPLETE



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

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.

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DATE
NO. REVISION

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-15-2024

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

12 INCH WATER MAIN-01
STA 27+50.00 TO 38+29.68

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C4.03

FOR PERMIT

Date: Nov 18, 2024, 5:07pm User ID: gchubb
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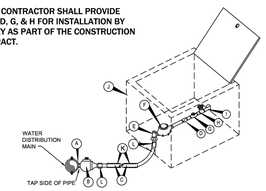
MATERIAL LIST

A. 3/4" BRASS TAP SADDLE FOR SHORT, SINGLE -FORD 202BS
1" BRASS TAP SADDLE FOR LONG, SINGLE - FORD 202BS
B. 3/4" CORP. STOP FOR SHORT, SINGLE - FORD FB1100-3-NL
C. 3/4" CORP. STOP FOR LONG, SINGLE - FORD FB1100-3-NL
C. 3/4" POLY-PEX (MUNICIPEX PEXa by REHAU) TUBING FOR SHORT, SINGLE
1" POLY-PEX (MUNICIPEX PEXa by REHAU) TUBING FOR LONG, SINGLE
D. 3/4" ZURN PRESSURE REDUCING VALVE - 3/4" NR3XL (WILL BE INSTALLED BY YANCEY).
E. 5/8" x 3/4" x (3/4" or 1") FORD COMPRESSION 90 (ANGLE) STOP, BA43 (232W or 342W) - G-NL.
F. 5/8"X5/8"X 5/8" METER (WILL BE PROVIDED BY YANCEY).
G. DUAL CHECK VALVE FORD HHC38-323 WITH SWIVEL COUPLING NUT (WILL BE INSTALLED BY YANCEY).
H. 3/4" APOLLO BALL VALVE FEMALE I.P.T. 70LF-104-01 (WILL BE INSTALLED BY YANCEY).
I. 3/4" COPPER TUBING TO MEET MEETING PLUMBING CODE
J. EQUIDISTANCE SYMBOL (WILL BE PROVIDED BY CUSTOMER).
J. PLASTIC METER BOX W/LID - FORD D1500-12S, (SOLID BLUE LID)
K. 3" SCH 40 PVC PIPE FOR LONG SERVICES
L. 3/4" STAINLESS STEEL INSERTS, FORD SL SHORT, SINGLE
1" STAINLESS STEEL INSERTS, FORD S2, LONG

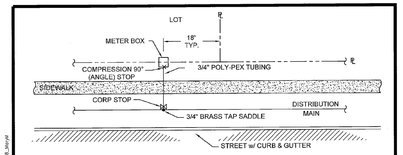
NOTE: CONTRACTOR SHALL PROVIDE ITEMS D, G, & H FOR INSTALLATION BY YANCEY AS PART OF THE CONSTRUCTION CONTRACT.



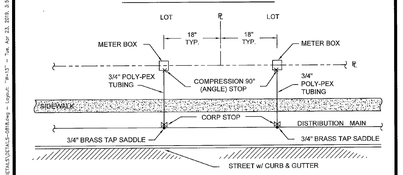
METER SERVICE

METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 04/19
DWG. W-11	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



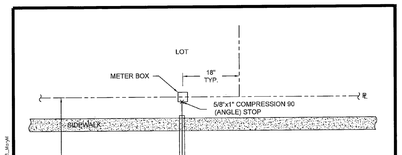
SAME SIDE
SINGLE SERVICE-URBAN



SAME SIDE
DUAL SERVICE-URBAN

METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 08/18
DWG. W-13	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

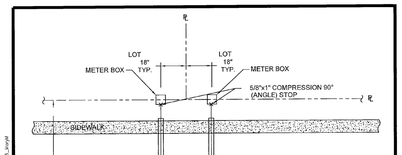


OPPOSITE SIDE
SINGLE SERVICE-URBAN

NOTE:
UNLESS OTHERWISE REQUIRED BY THE ROADWAY AUTHORITY, CASING PIPE SHALL BE SCH 40 PVC.

METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 04/19
DWG. W-14	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

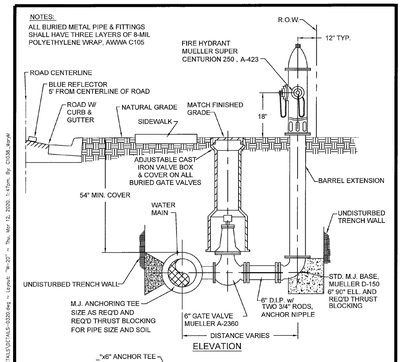


OPPOSITE SIDE
DUAL SERVICE-URBAN

NOTE:
UNLESS OTHERWISE REQUIRED BY THE ROADWAY AUTHORITY, CASING PIPE SHALL BE SCH 40 PVC.

METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 04/19
DWG. W-17	

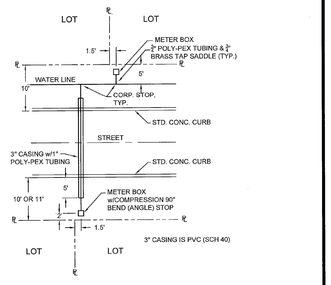
YANCEY W.S.C.
MEDINA COUNTY, TEXAS



NOTE:
NORTHING & EASTINGS ARE SHOWN TO CENTER OF FIRE HYDRANTS

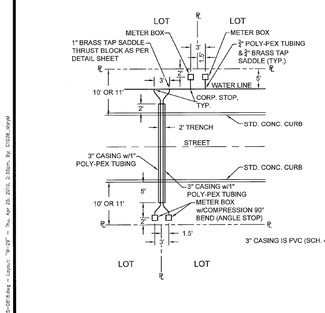
FIRE HYDRANT DETAIL (URBAN)	
SCALE : NONE	REV. DATE 3/20
DWG. W-20	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



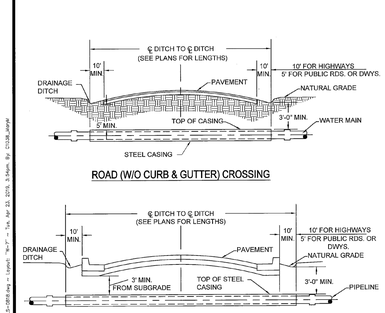
SINGLE SHORT & LONG WATER SERVICES & BOX DETAIL	
SCALE : NONE	REV. DATE : 04/19
DWG. W-28	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



LONG (SHARED TRENCH) & SINGLE SHORT WATER SERVICES & METER BOX DETAIL	
SCALE : NONE	REV. DATE : 04/19
DWG. W-29	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



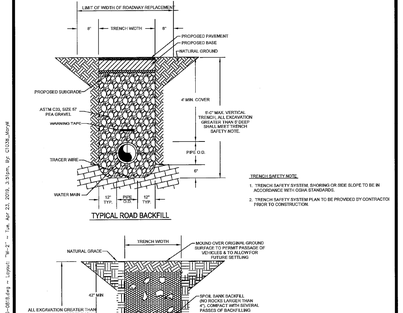
ROAD (W/O CURB & GUTTER) CROSSING

ROAD (W/CURB & GUTTER) CROSSING

THREADED COUPLING SHALL BE STANDARD WEIGHT OR HEAVIER PIPE CONFORMING TO ASTM A 53 OR OTHER ACCEPTABLE STANDARD SPECIFICATION. STEEL CASING SHALL BE NEW OR USED IN GOOD CONDITION ACCEPTABLE TO YANCEY WATER SUPPLY CORPORATION AND TO THE ROADWAY AUTHORITY.

BORING & ENCASEMENT DETAILS	
SCALE : NONE	REV. DATE : 2/08
DWG. W-7	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

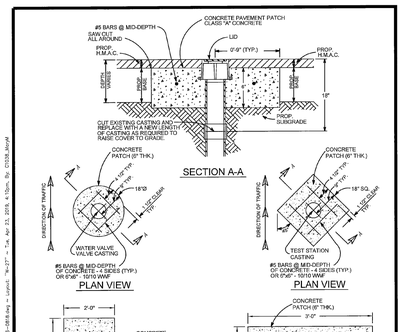


TYPICAL ROAD BACKFILL

TYPICAL TRENCH BACKFILL

TRENCH DETAILS (WITHIN MEDINA COUNTY) ROW	
SCALE : NONE	REV. DATE : 1/12
DWG. W-2	

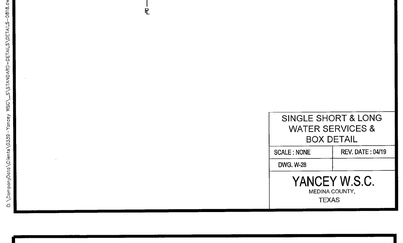
YANCEY W.S.C.
MEDINA COUNTY, TEXAS



NOTES:
1. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS PLACED.
2. CONTRACTOR SHALL REMOVE ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
3. REMOVE EXISTING CASTING DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND CASTING.
4. MINIMUM OF EIGHT (8) BAGS TO BE PLACED AROUND VALVE BOX FOR DEPTHS GREATER THAN 12.0 FEET DEEP. CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE BOTTOM OF THE ASPHALT PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.

WATER VALVE BOX ADJUSTMENT & CONCRETE PAD DETAIL	
SCALE : NONE	REV. DATE : 10/17
DWG. W-27	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

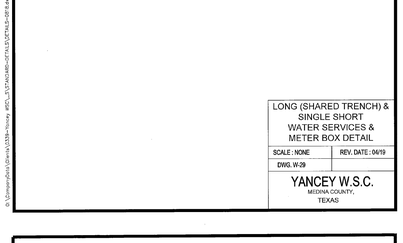


NOTE:
BLOCK TO EXTEND MIN. 12" INTO UNDISTURBED SOIL IN TRENCH WALLS & BOTTOM

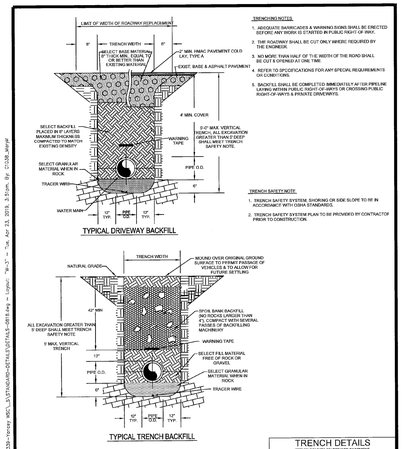
★ CUT TO FIT IN METER BOX

2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	
SCALE : NONE	REV. DATE : 04/19
DWG. W-32	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



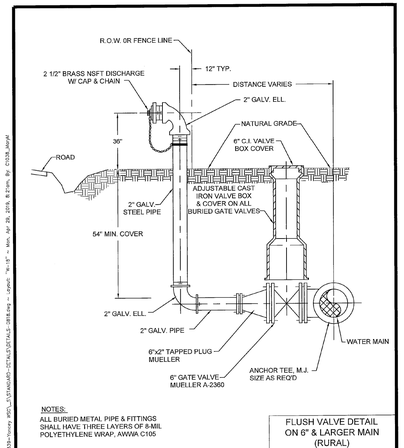
TYPICAL DRIVEWAY BACKFILL



TYPICAL TRENCH BACKFILL

TRENCH DETAILS	
SCALE : NONE	REV. DATE : 1/12
DWG. W-3	

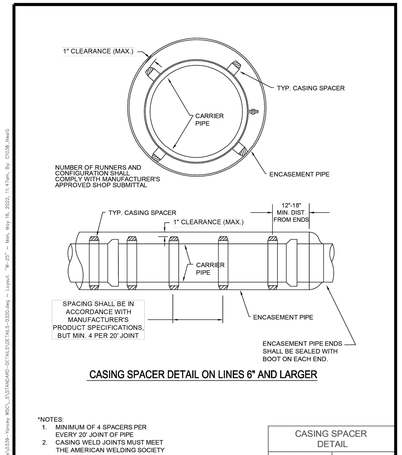
YANCEY W.S.C.
MEDINA COUNTY, TEXAS



NOTES:
ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105

FLUSH VALVE DETAIL ON 6" & LARGER MAIN (RURAL)	
SCALE : NONE	REV. DATE : 04/19
DWG. W-18	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

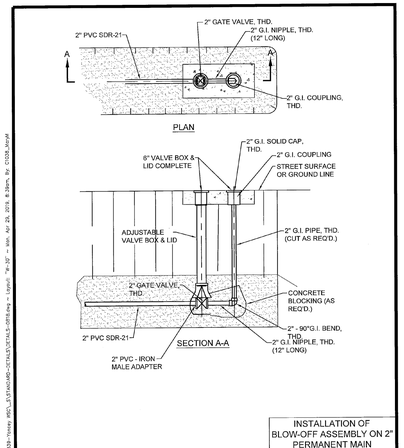


CASING SPACER DETAIL ON LINES 6" AND LARGER

*NOTES:
1. MINIMUM OF 4 SPACERS PER EVERY 20' JOINT OF PIPE
2. CASING WELD JOINTS MUST MEET THE AMERICAN WELDING SOCIETY (AWS) STANDARDS AND THE STANDARD WELDING PROCEDURE SPECIFICATIONS (SWPS).

CASING SPACER DETAIL	
SCALE : NONE	REV. DATE : 08/21
DWG. W-25	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



INSTALLATION OF BLOW-OFF ASSEMBLY ON 2" PERMANENT MAIN	
SCALE : NONE	REV. DATE : 04/19
DWG. W-30	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

PAPE-DAWSON ENGINEERS
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1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 210.375.9000
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

REDBIRD RANCH PHASE 2 UNIT 3M-4
SAN ANTONIO, TEXAS
WATER DISTRIBUTION DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C4.10

FOR PERMIT

Date: Aug 23, 2024, 3:36pm User ID: gchubb
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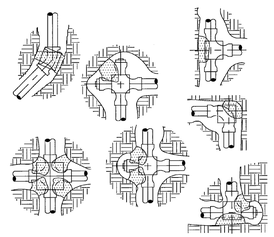
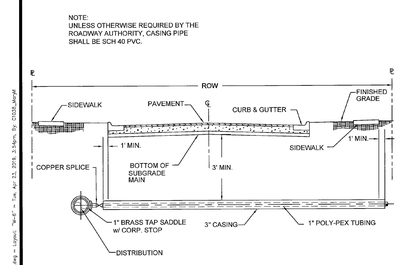


NOTES

1. THE EARTH BEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
2. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
3. ALL THRUST BLOCKS SHALL CONTAIN A MINIMUM OF 1 1/2 CUBIC YARDS OF CONCRETE.
4. CONCRETE SHALL BE 2000 p.s.i. AT 28 DAYS MINIMUM.
5. ALL FITTINGS AND FITTING JOINTS MUST BE WRAPPED w/ THREE LAYERS OF 8-MIL POLYETHYLENE IN ACCORDANCE WITH AWWA C105.
6. 12"x 12"x 4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL VALVES, FITTINGS, ETC.

THRUST BLOCK ANCHORING DETAIL	
SCALE : NONE	REV. DATE : 2/05
DWG. W-10	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



SERVICE LINE
BORING & ENCASEMENT DETAILS-URBAN

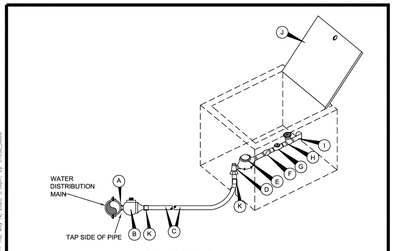
METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 09/18
DWG. W-6	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

1. All fittings 4" and larger must be installed with Mega-Lug.
2. The valve on a hot tap must be anchored to the hot tap saddle.
3. All ductile iron fittings, valves, etc. must have a stable foundation of concrete blocking.
4. The YWSC Construction Inspector is to inspect all construction material prior to installation. The Contractor should coordinate with Inspector on construction material shipments.
5. Typically, no valves may be installed under roadways, driveways or concrete.
6. Prior to construction the Contractor shall coordinate a Pre-Construction Conference with the YWSC Construction Inspector.
7. Typically, no ductile iron fittings or valves shall be installed under a public roadway or concrete.
8. The YWSC Construction Inspector must be present prior to and during disinfection and pressure testing.
9. The Owner will provide water for pressure testing and disinfection testing at currently established rates. Water for other construction purposes may or may not be available. The Contractor shall coordinate with the YWSC Construction Inspector to make all arrangements for water.
10. All valve housings and meter boxes must be installed 3"-5" above finished grade for approval. Any valve housings or meter boxes installed at or below grade will not be accepted.
11. All water distribution and transmission main fittings must be ductile iron.
12. All bolts on Mechanical Joint fittings and/or Mega-Lugs must be wrapped in plastic prior to concrete being poured.
13. Adequate chlorine residuals must be recorded 24 hours before bacteriological samples may be taken.
14. Any contractor taking Yancey water for construction purposes prior to the water mains being disinfected must have an air gap at the entry point on the truck or backflow preventor at the bottom of tanker.
15. All required water samples must be taken by the Contractor.
16. After final acceptance, by Yancey, of the water system improvements Yancey will be provided a one-year warranty by the Contractor.
17. Upon final acceptance, by Yancey, of the water system improvements, the improvements will become sole property of Yancey.
18. Water and Wastewater services must maintain a minimum of 12" vertical separation, preferably 24".
19. All inline valves over 12" nominal size shall be butterfly valves rather than gate valves.
20. Yancey W.S.C. Construction Inspector has full responsibility of reviewing contractor's work, materials, etc. Failure to comply with YWSC specifications will result in rejection of the work & delay of service until compliance is met.
21. All water lines 2" and smaller shall be ASTM D2241, SDR 21 unless otherwise approved. All water lines 4" and larger shall be AWWA C900 DR 18.
22. All encasement material for water distribution or transmission mains shall be steel. Any exceptions to this requirement must be granted by YWSC Management.
23. Minimum and Maximum cover over water lines is 4.0 feet.
24. 2"-12" gate valves shall be Mueller Company A-2360 Series Resilient Wedge MJ ends. 16" and larger butterfly valves shall be Mueller.
25. Fire hydrants shall be Mueller Company Centurion 250, A-423.
26. Contractor to pressure test water lines at 200 psi for first 15 minutes and 150 psi for the remaining 3 hours and 45 minutes. Yancey uses 10% of AWWA water loss during pressure test.
27. Test Station shall be "Copperhead Snakepit" (Lite Duty Adjustable Box Type)
28. Each fitting requires a minimum of two (2) joint bell joint harness restraints each way, where possible.
29. All fittings require Mechanical Joint Restraints and Concrete Thrust Blocking.
30. Foster Adapters are required between all fittings.
31. Valve stem risers (valve extensions) are required on all valves and the extension nut shall be installed within 2' of finished grade.
32. Contractor shall install tracer wire (#14 AWG) in all trenches, including all meter services, terminating inside the meter box.
33. All water service line shall be Municipex (PEXa) by Rehau.
34. Casing weld joints must meet the American Welding Society (AWS) standards.

GENERAL CONSTRUCTION NOTES	
SCALE : NONE	REV. DATE : 04/19
DWG. W-1	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS



MATERIAL LIST

A. BRASS SADDLE
ON LINES 4"
1" SADDLE - FORD 202BS
1-1/2" SADDLE - FORD 202BS
2" SADDLE - FORD 202BS
ON LINES 6" TO 12"
1" SADDLE - FORD 202BS
1-1/2" SADDLE - FORD 202BS
2" SADDLE - FORD 202BS
ON LINES 4"
1" SADDLE - FORD 202BS
1-1/2" SADDLE - FORD 202BS
2" SADDLE - FORD 202BS

B. CORP. STOP
1" - FORD FB1100-4-G-NL
1-1/2" - FORD FB1100-6-G-NL
2" - FORD FB1100-7-G-NL

C. SERVICE LINE
1" - POLY-PEX TUBING
1-1/2" - POLY-PEX TUBING
2" - POLY-PEX TUBING

D. COMPRESSION 90 (ANGLE) STOP
1" - FORD BA43-444W-G-NL
1-1/2" - FORD BA43-666W-G-NL
2" - FORD BA43-777W-G-NL

E. WATER METER
(WILL BE PROVIDED BY YANCEY)

F. ZURN PRESSURE REDUCING VALVE
(WILL BE PROVIDED BY YANCEY)

G. REGULATOR
(WILL BE PROVIDED BY YANCEY)

H. BALL VALVE CURB, NON-RISING STEM,
MALE I.P.T. BY FEMALE I.P.T.
1" - FORD
1-1/2" - FORD
2" - FORD
(WILL BE PROVIDED BY YANCEY)

I. CUSTOMER SERVICE LINE MEETING PLUMBING CODE REQUIREMENTS
(WILL BE PROVIDED BY CUSTOMER).

J. PLASTIC METER BOX w/LID
MUELLER
SECOND METER BOX MAY BE REQUIRED FOR DUAL CHECK VALVE.

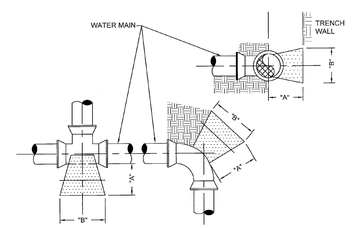
K. STAINLESS STEEL INSERT
1" - FORD 92
1-1/2" - FORD 94
2" - FORD 99

1"-2" COMMERCIAL METER SERVICE DETAIL	
SCALE : NONE	REV. DATE : 03/20
DWG. W-24	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

PIPE SIZE	DIMENSION "B" (SQUARE)				
	PLUGS & TEES	90° BENDS	45° BENDS	22 1/2° BENDS	VALVES
4"&6"	1'-3"	1'-6"	1'-0"	9"	1'-3"
8"	1'-9"	2'-0"	1'-6"	1'-0"	1'-6"
10"	2'-0"	2'-0"	1'-9"	1'-3"	2'-0"
12"	2'-6"	3'-0"	2'-3"	1'-6"	2'-3"
16"	3'-3"	4'-0"	2'-9"	2'-0"	2'-9"

DIMENSION "A" SHALL BE A MINIMUM OF 1'-0" BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.



THRUST BLOCK DIMENSIONING DETAIL	
SCALE : NONE	REV. DATE : 2/06
DWG. W-8	

YANCEY W.S.C.
MEDINA COUNTY, TEXAS

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4
SAN ANTONIO, TEXAS

WATER DISTRIBUTION DETAILS

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
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FOR PERMIT

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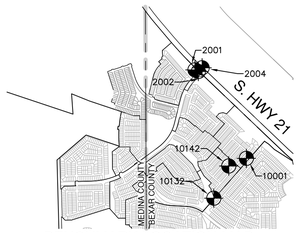

BENCHMARK LOCATION MAP

SCALE 1" = 600'

BENCHMARKS

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
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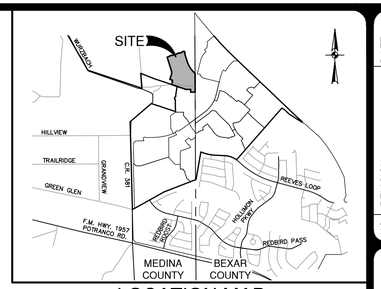
10132	13,710,208	2,032,728	980.84	SITE BENCH MARK – (CC–132)
10142	13,711,108	2,033,146	1016.83	SITE BENCH MARK – (CC–142)



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

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

VARIABLE WIDTH DRAINAGE EASEMENT

30' DRAINAGE, SANITARY SEWER, ACCESS, WATER AND GETCTV EASEMENT TO EXPIRE UPON PLATTING OF FUTURE RIGHT–OF–WAY

ROYAL ALBATROSS
(72' R.O.W.)

LAYSAN ALBATROSS
(50' R.O.W.)

VIOLET SYLPH
(50' R.O.W.)

CALLIOPE CARIB
(R.O.W. VARIES)

104.023 ACRES
CONTINENTAL HOMES OF TEXAS, L.P.
(DOC 2022011358, OPR)

35' SANITARY SEWER EASEMENT TO EXPIRE UPON PLATTING OF FUTURE RIGHT–OF–WAY

VARIABLE WIDTH WATER EASEMENT

14' GETCTV

10' GETCTV

8"W

12"W

IRR

M.H. "B1"
STA: 3+00.83

236.18 L.F.~8" PIPE

LINE "B"

200.63 L.F.~8" PIPE

M.H. "A15"
STA: 35+26.00

STA 1+21.50
CAUTION!
SANITARY SEWER/
WATER CROSSING

90.20 L.F.~8" PIPE

M.H. "A16"
STA: 36+16.20

285.00 L.F.~8" PIPE

LINE "A"

219.37 L.F.~8" PIPE

M.H. "A13"
STA: 28+34.00

STA 28+62.50
CAUTION!
SANITARY SEWER/
WATER CROSSING

350.00 L.F.~8" PIPE

M.H. "A14"
STA: 31+84.00

342.00 L.F.~8" PIPE

290.00 L.F.~8" PIPE

LINE "C"

STA 3+57.32
CAUTION!
SANITARY SEWER/
WATER CROSSING

M.H. "C1"
STA: 3+90.00

300.00 L.F.~8" PIPE

M.H. "C2"
STA: 6+90.00

300.00 L.F.~8" PIPE

M.H. "C3"
STA: 9+90.00

88.83 L.F.~8" PIPE

M.H. "C4"
STA: 10+78.83

290.00 L.F.~8" PIPE

STA 4+18.50
CAUTION!
SANITARY SEWER/
WATER CROSSING

30' SANITARY SEWER EASEMENT

MATCHLINE "A" - SEE SHEET C5.01

MATCHLINE "B" - SEE SHEET C5.02

MATCHLINE "A" - SEE SHEET C5.01

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT — W

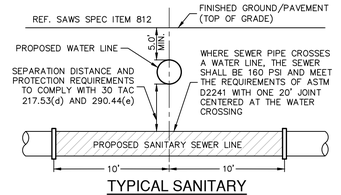
EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT — W

PROPOSED SEWER LATERAL — FF = XXXX.XX

FINISHED FLOOR ELEVATION FOR SEWER



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT–TO–SCALE

CAUTION!!

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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.

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: (SAWS MEDIO CREEK 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# 064582 TOTAL EDU'S 120 TOTAL ACREAGE 26.158

TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.

NUMBER OF LOTS 120 SAWS JOB NO. 24–1559

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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 3M-4

SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. N/A

JOB NO. 30004–35

DATE AUGUST 2024

DESIGNER GC

CHECKED HF DRAWN BH

SHEET C5.00

FOR PERMIT

Date: Nov 15, 2024, 4:38pm User ID: tmartin
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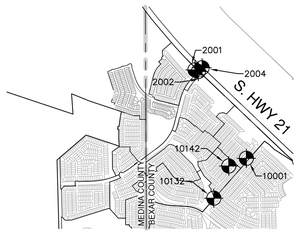

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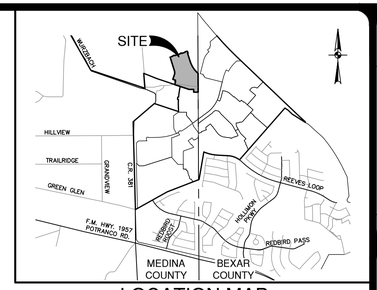


LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT

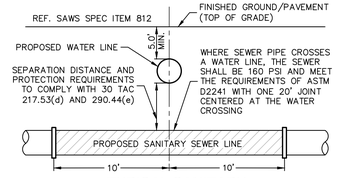
EXISTING SEWER — SS

PROPOSED SEWER — SS — MANHOLE

PROPOSED WATER — FIRE HYDRANT

PROPOSED SEWER LATERAL

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX



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# 064582 TOTAL EDU'S 120 TOTAL ACREAGE 26.158

TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.

NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4

SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. N/A

JOB NO. 30004-35

DATE AUGUST 2024

DESIGNER GC

CHECKED HF DRAWN BH

SHEET C5.01

FOR PERMIT

Date: Nov 15, 2024, 4:38pm User ID: tmartin
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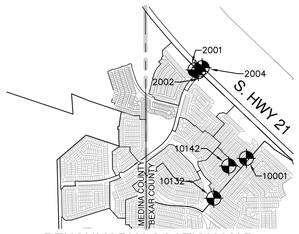
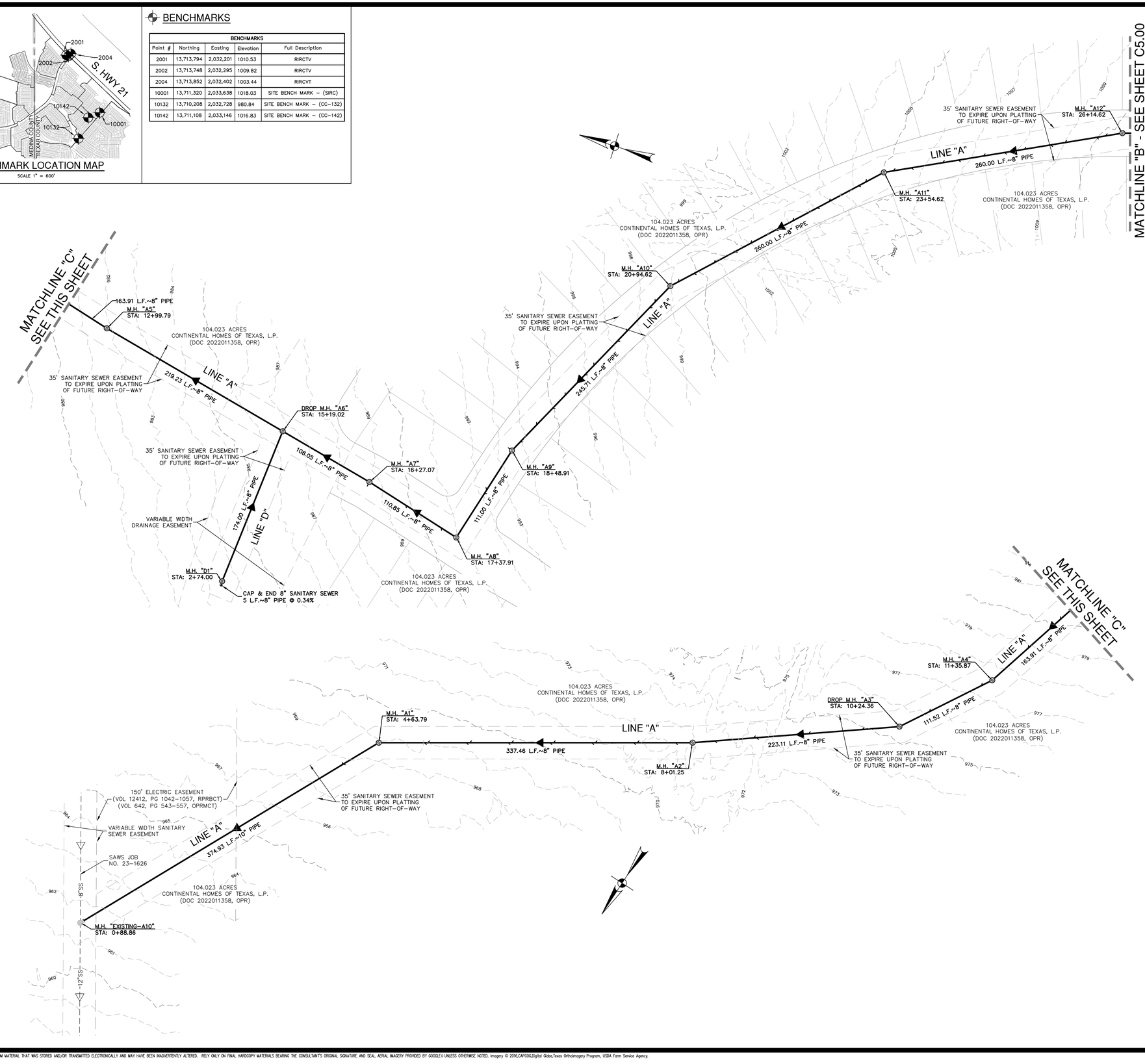


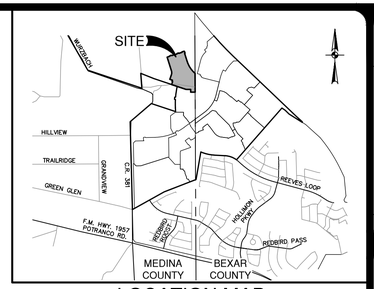
BENCHMARK LOCATION MAP

SCALE 1" = 600'

BENCHMARKS

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

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT — W

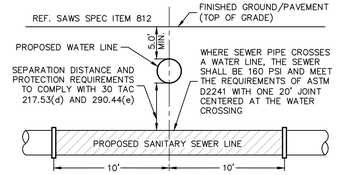
EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT — W

PROPOSED SEWER LATERAL — S

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX



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.

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DATE

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9–6–2024

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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO. N/A

JOB NO. 30004–35

DATE AUGUST 2024

DESIGNER GC

CHECKED HF DRAWN BH

SHEET C5.02

FOR PERMIT

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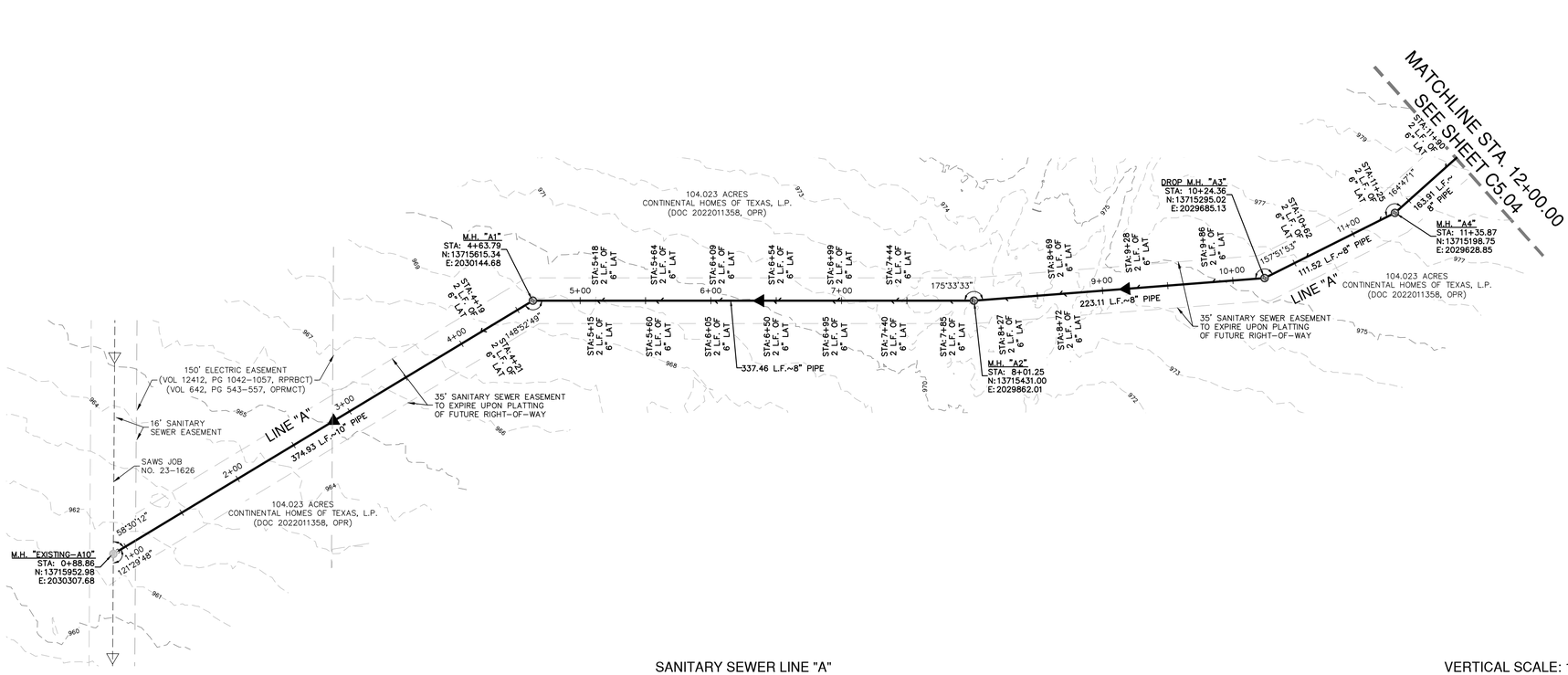
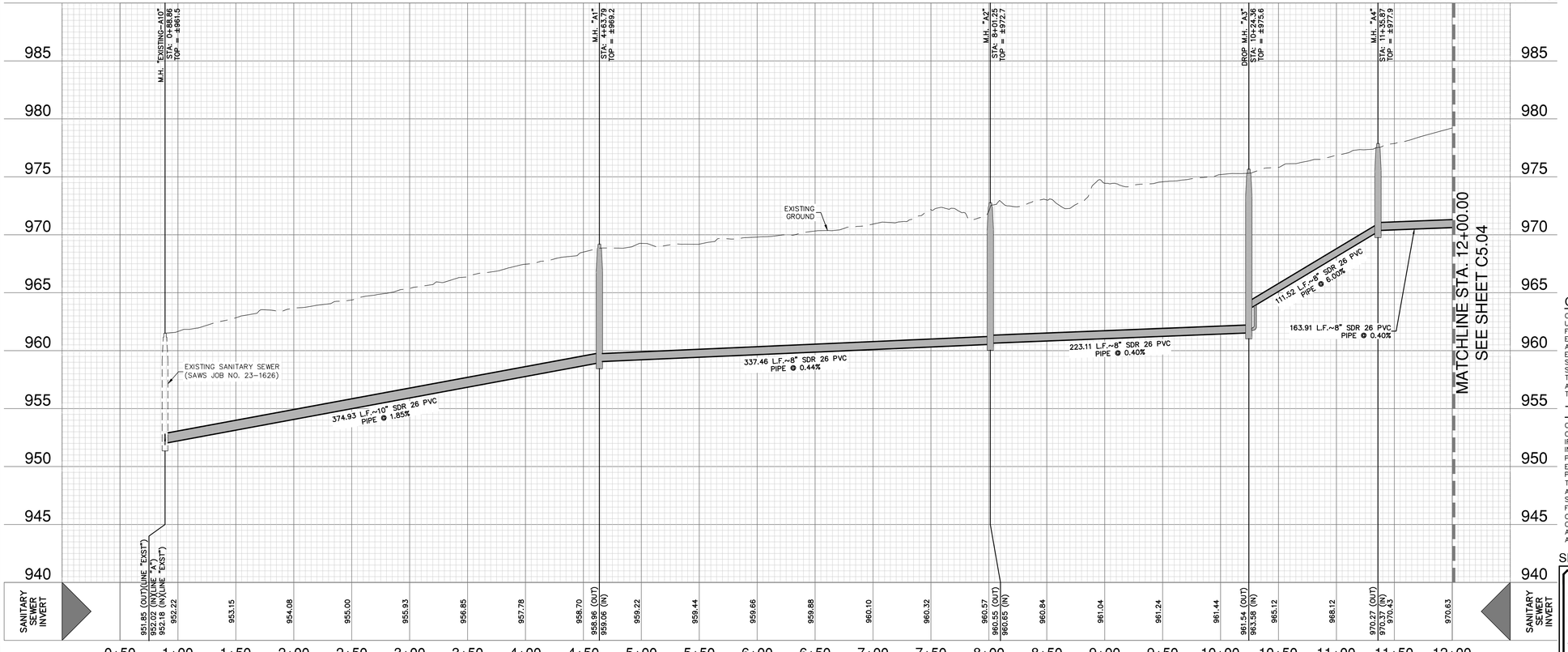


SANITARY SEWER LINE "A"
STA 0+88.86 TO 12+00.00

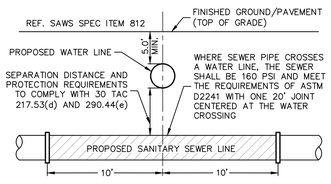
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



SEWER LEGEND

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

EXISTING FIRE HYDRANT
MANHOLE
FIRE HYDRANT
FF = XXXX.XX



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

CAUTION!!

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TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

PAPE-DAWSON ENGINEERS
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION #470

REDBIRD RANCH PHASE 2 UNIT 3M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 0+88.86 TO 12+00.00

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C5.03

FOR PERMIT

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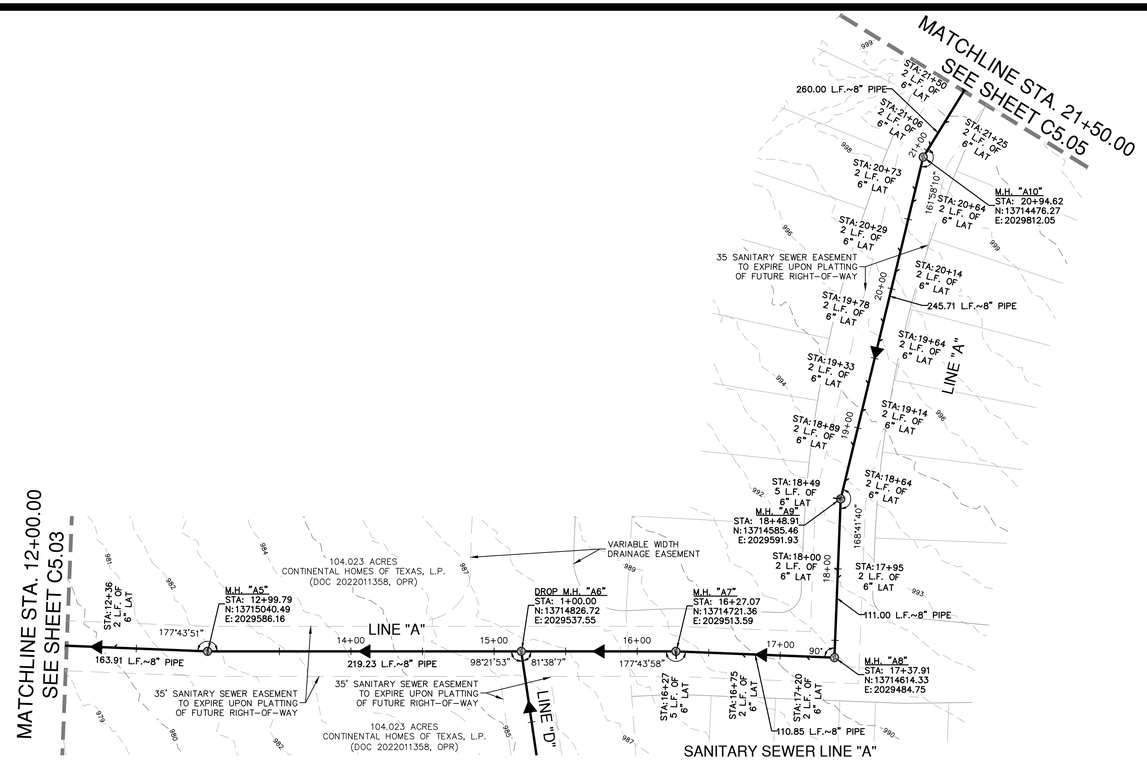
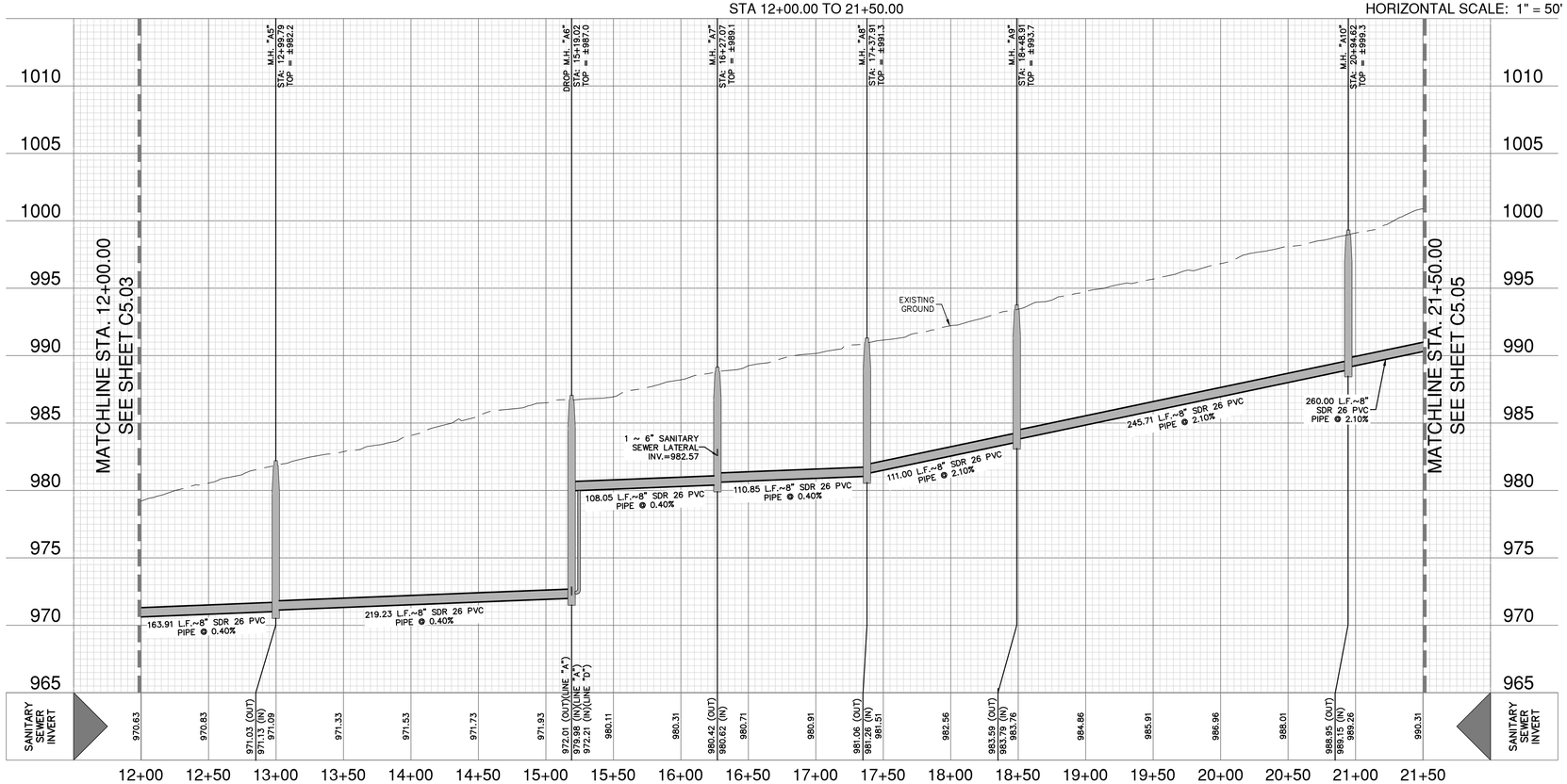


SANITARY SEWER LINE "A"
STA 12+00.00 TO 21+50.00

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



SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT — W

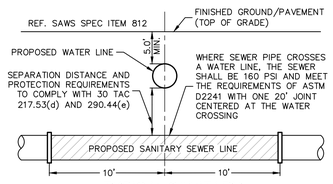
EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT — W

PROPOSED SEWER LATERAL — S

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 12+00.00 TO 21+50.00

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C5.04

FOR PERMIT

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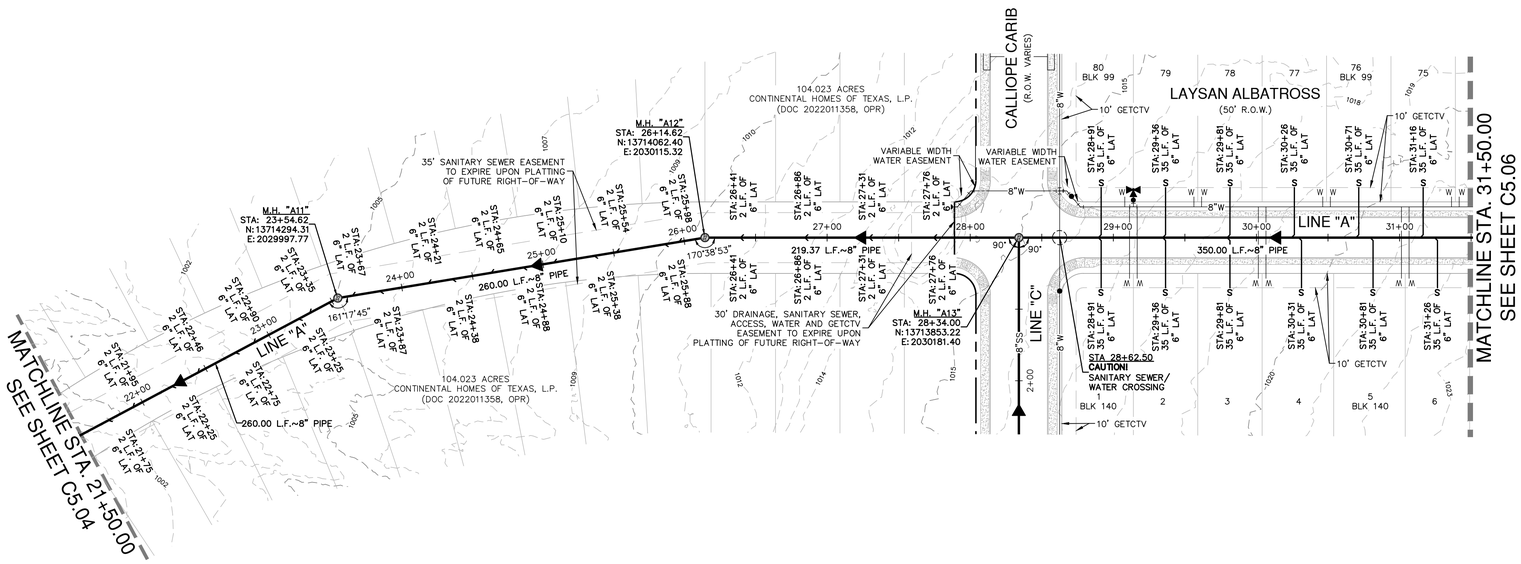

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

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

EXISTING FIRE HYDRANT · MANHOLE · FIRE HYDRANT · FF = XXXX.XX

SANITARY SEWER LINE "A"
STA 21+50.00 TO 31+50.00

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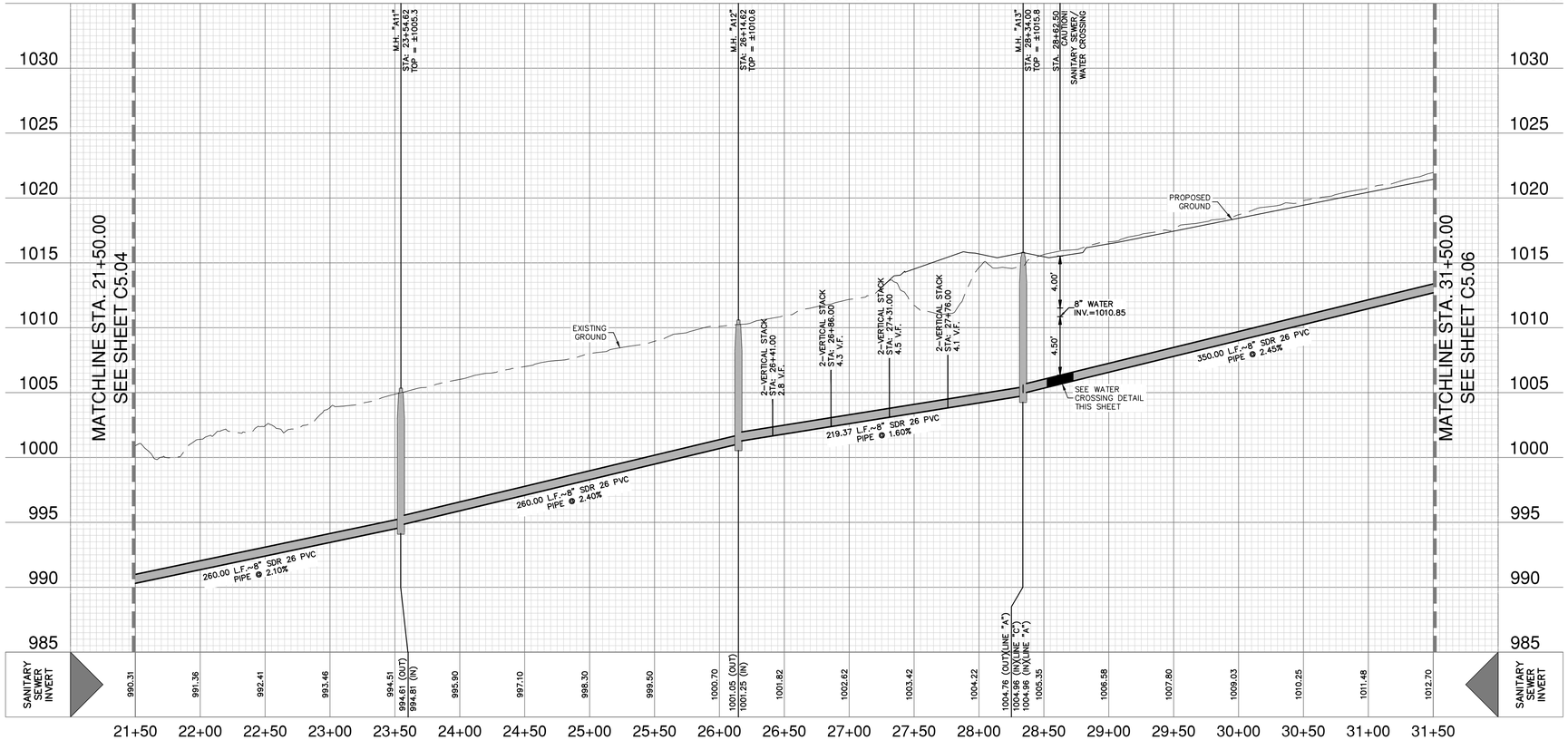

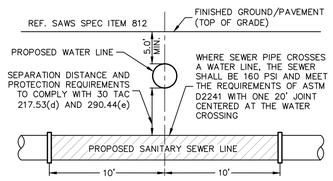

TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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SANITARY SEWER LINE A - PLAN & PROFILE
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JOB NO. 30004-35
DATE AUGUST 2024
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CHECKED HF DRAWN BH
SHEET C5.05

FOR PERMIT

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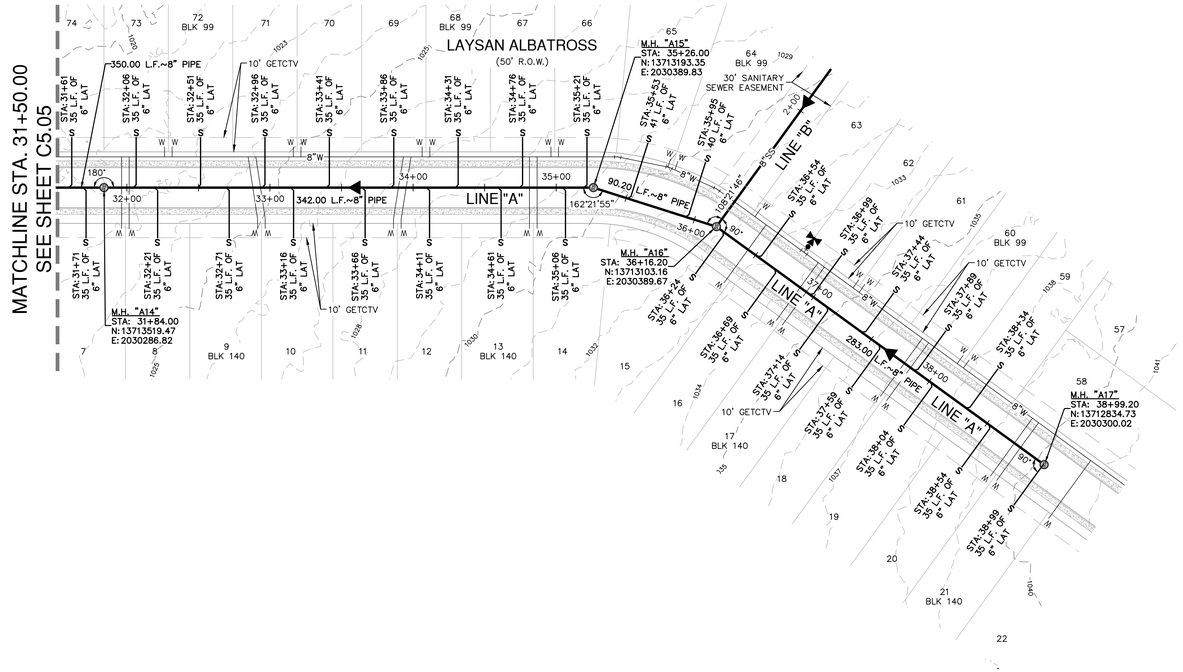


SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT

EXISTING SEWER — MANHOLE

PROPOSED SEWER

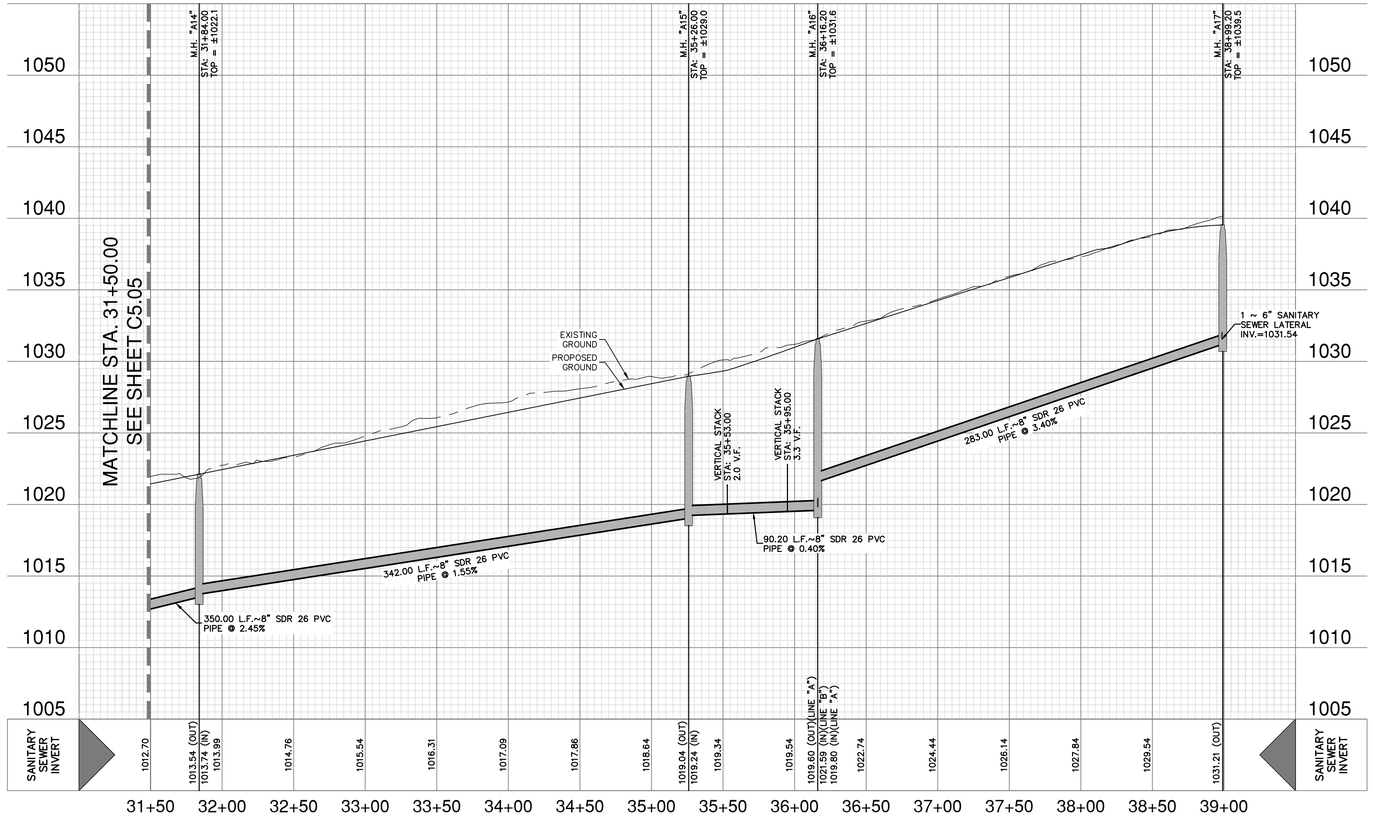
PROPOSED WATER — FIRE HYDRANT

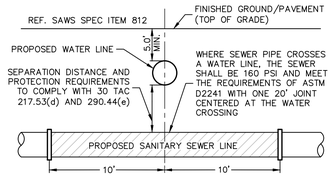
PROPOSED SEWER LATERAL

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX

SANITARY SEWER LINE "A"
STA 31+50.00 TO 38+99.20

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





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

CAUTION!!

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

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SEWER: (SAWS MEDIO CREEK 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# 064582 TOTAL EDU'S 120 TOTAL ACREAGE 26.158
TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4

SAN ANTONIO, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 31+50.00 TO 38+99.20

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF BH
DRAWN	
SHEET	C5.06

Date: Aug 23, 2024, 3:39pm User ID: gchubb
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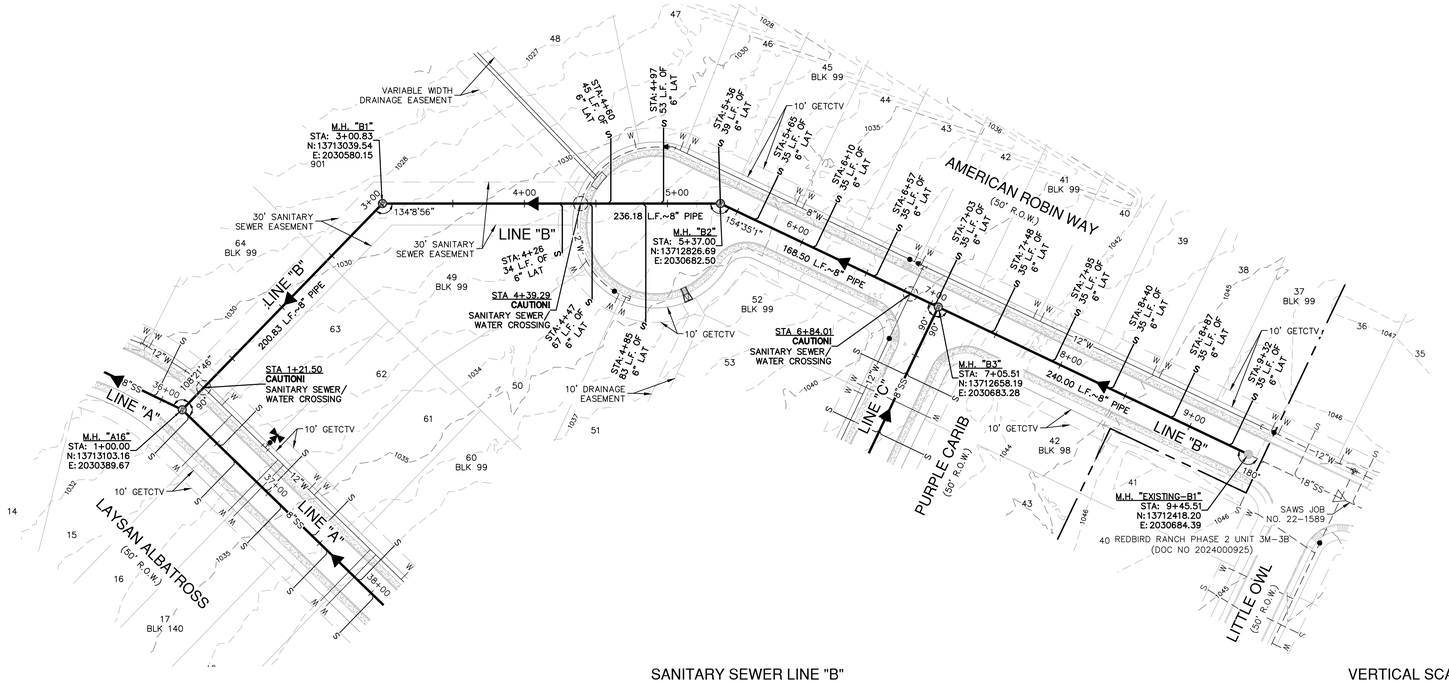
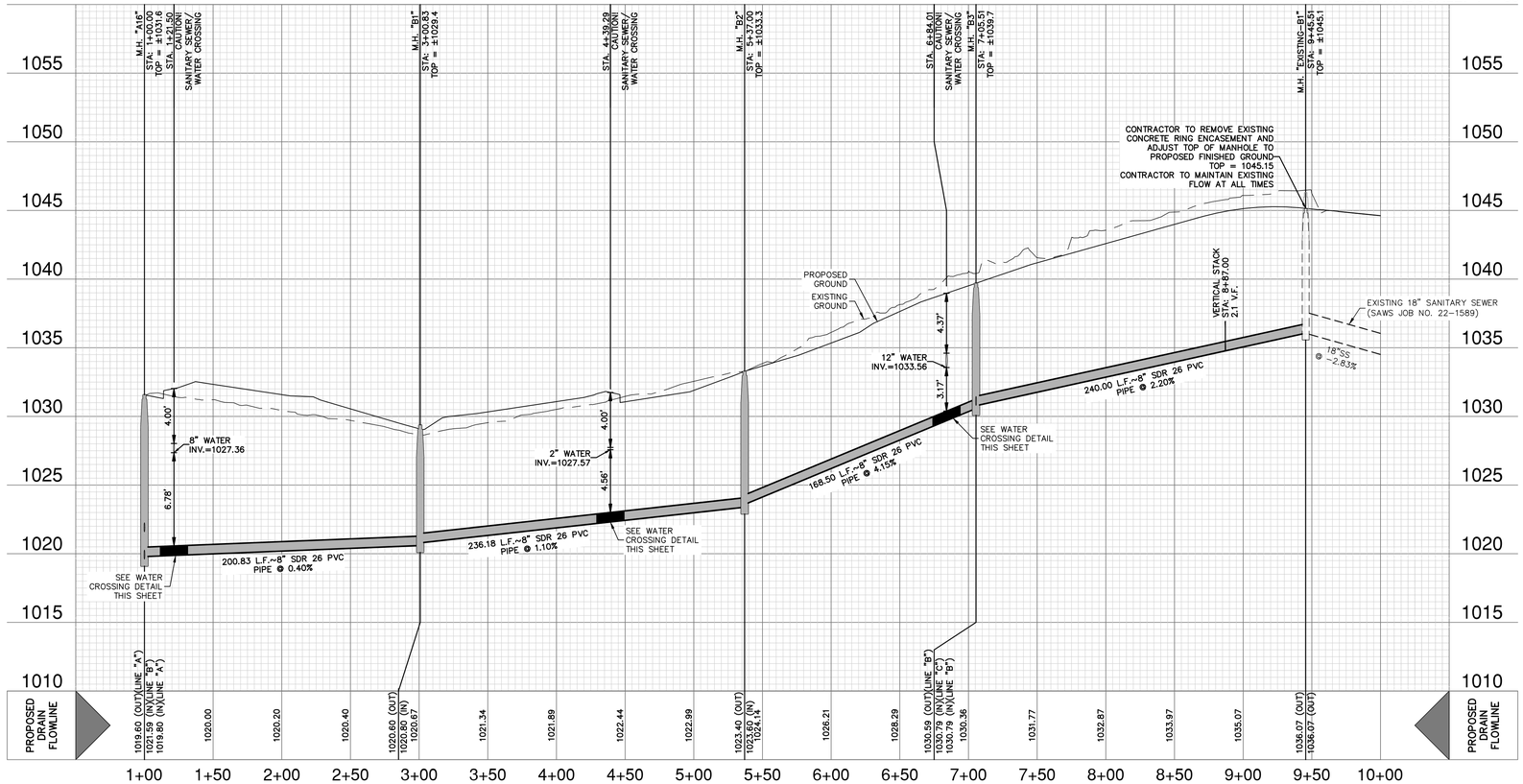


SANITARY SEWER LINE "B"
STA 1+00.00 TO 9+45.51

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



SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT — W

EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT — W

PROPOSED SEWER LATERAL — S

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

CAUTION!!

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TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-15-2024

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 3M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE B - PLAN & PROFILE
STA 1+00.00 TO 9+45.51

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C5.07

FOR PERMIT

Date: Nov 15, 2024, 4:39pm User ID: tmartin
File: P:\300\04\35\Design\Civil\SSB-30004-35.dwg
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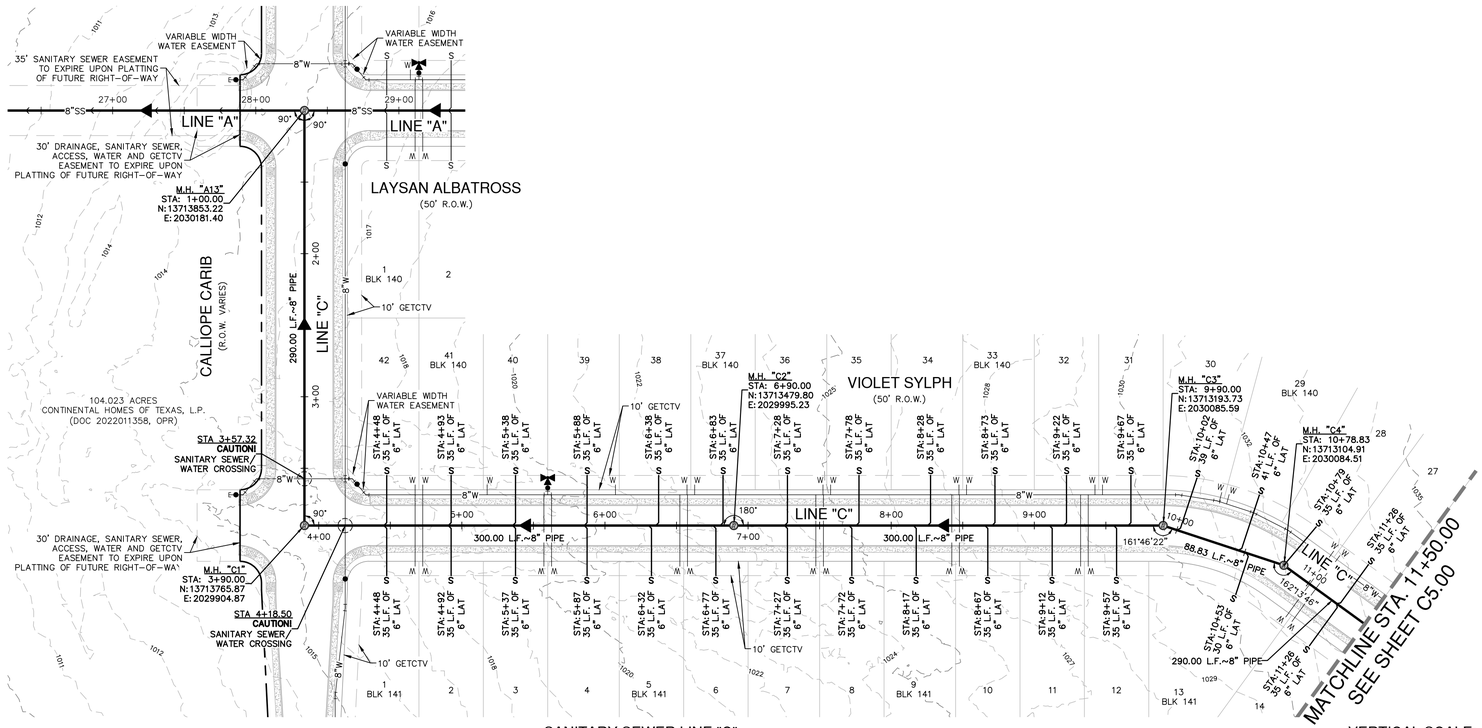
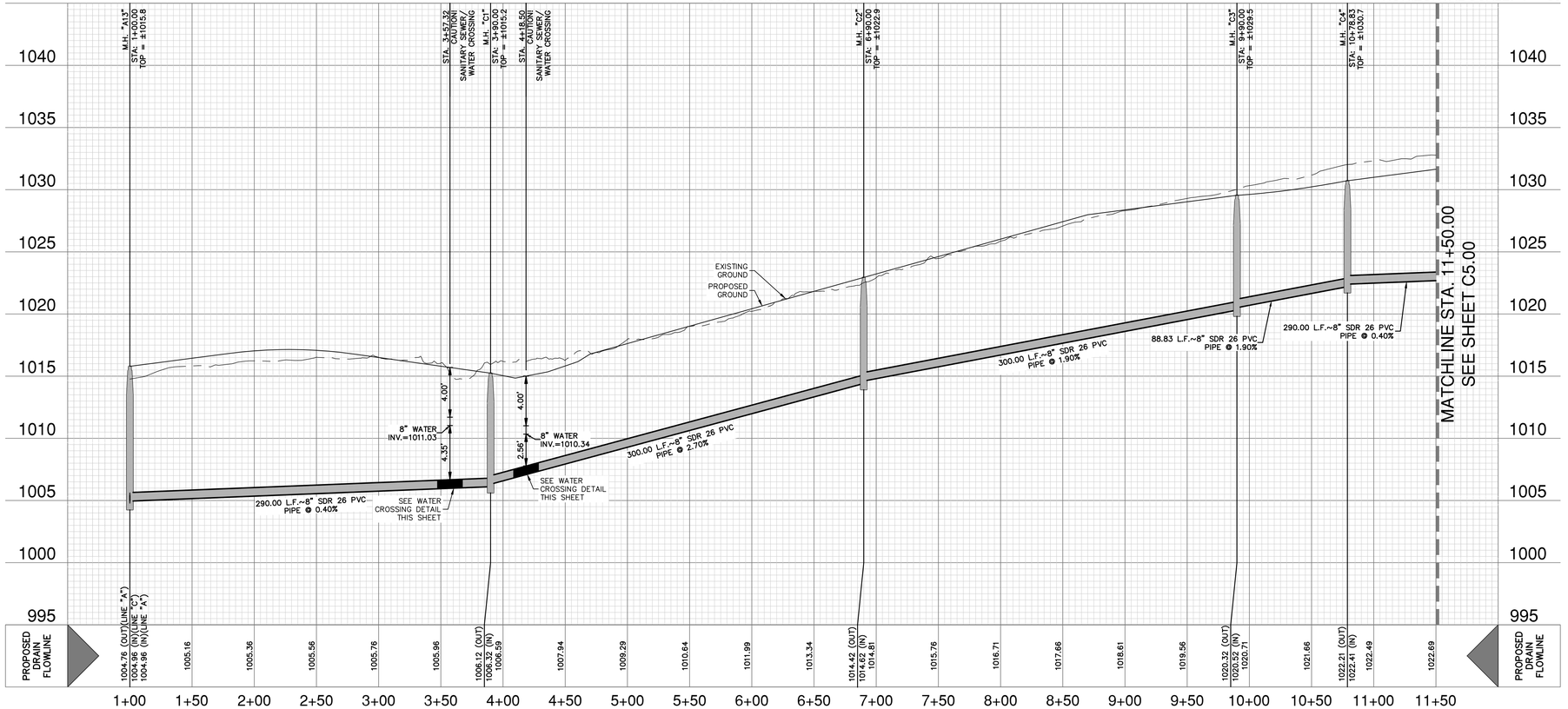


SANITARY SEWER LINE "C"
STA 1+00.00 TO 11+50.00

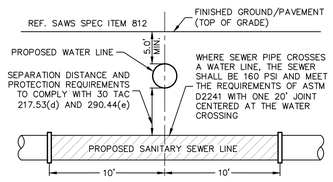
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



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

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER (EXISTING FIRE HYDRANT)
- EXISTING SEWER
- PROPOSED SEWER (MANHOLE)
- PROPOSED WATER (FIRE HYDRANT)
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX



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

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SEWER: (SAWS MEDIO CREEK W.R.C.)

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TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE C - PLAN & PROFILE
STA 1+00.00 TO 11+50.00

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C5.08

FOR PERMIT

Date: Aug 23, 2024, 3:40pm User ID: gchubb
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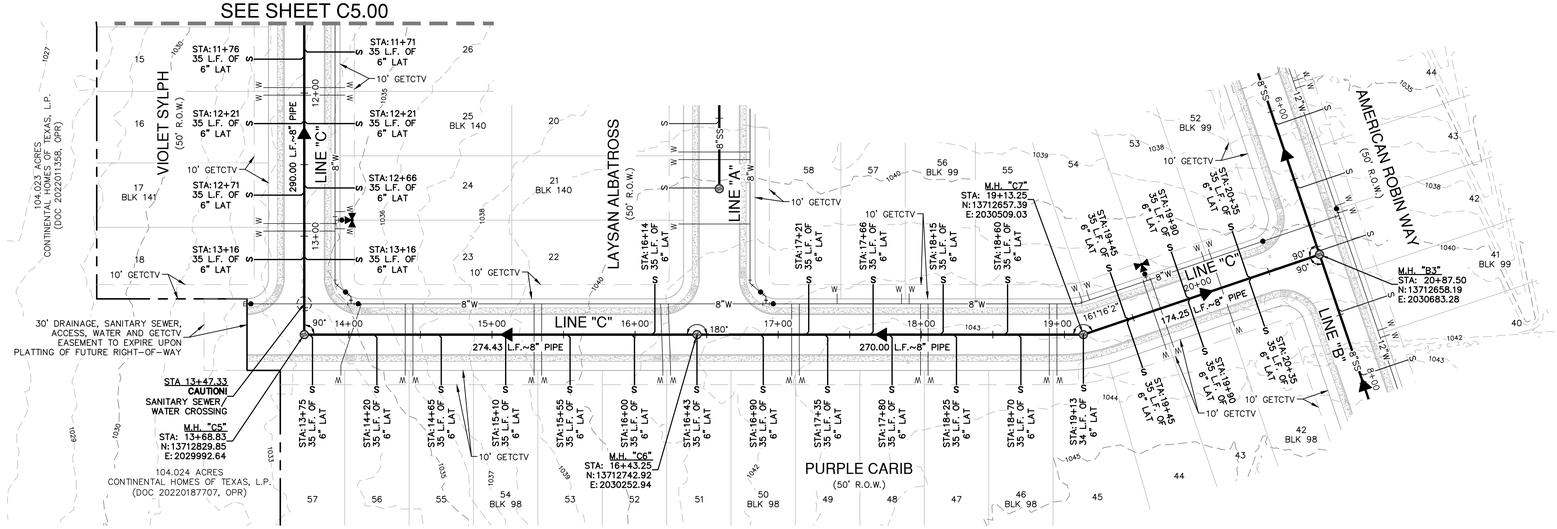


SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

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

EXISTING FIRE HYDRANT

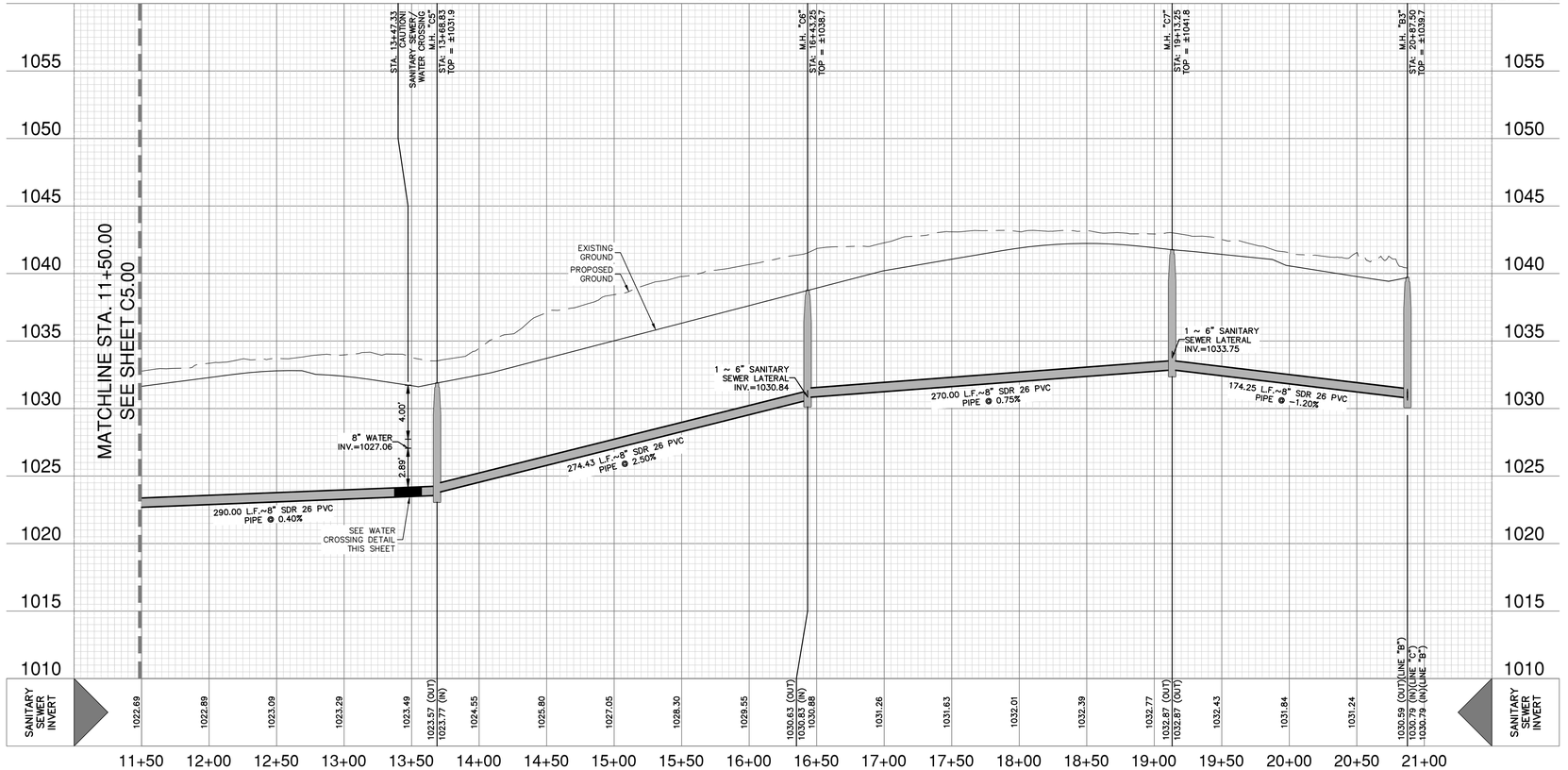
MANHOLE

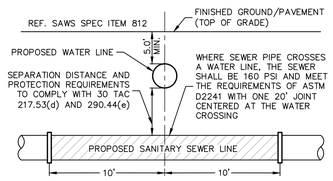
FIRE HYDRANT

FF = XXXX.XX

SANITARY SEWER LINE "C"
STA 11+50.00 TO 20+87.50

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





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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SEWER: (SAWS MEDIO CREEK W.R.C.)

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9-6-2024

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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

SANITARY SEWER LINE C - PLAN & PROFILE
STA 11+50.00 TO 20+87.50

PLAT NO.	N/A
JOB NO.	30004-35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF DRAWN BH
SHEET	C5.09

FOR PERMIT

Date: Aug 23, 2024, 3:41pm User ID: gchubb
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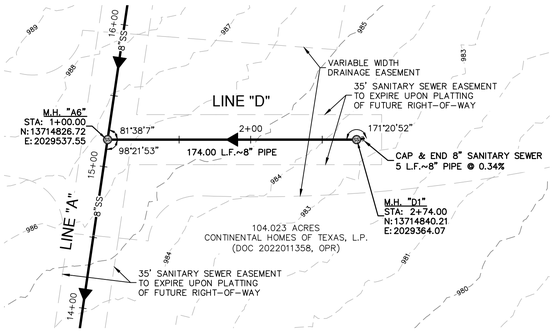
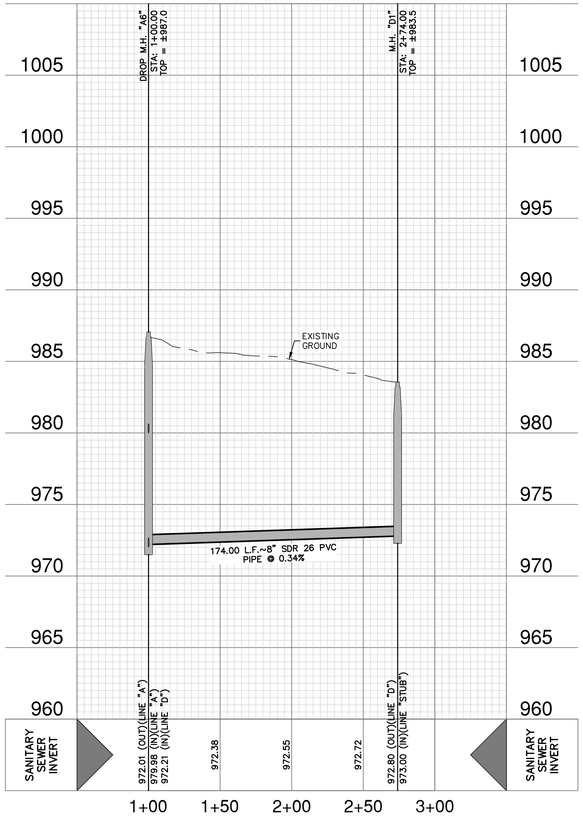


SANITARY SEWER LINE "D" VERTICAL SCALE: 1" = 5'
STA 1+00.00 TO 2+74.00 HORIZONTAL SCALE: 1" = 50'



SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — EXISTING FIRE HYDRANT — W

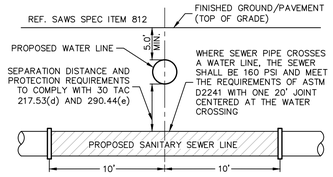
EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT — W

PROPOSED SEWER LATERAL — S

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX



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

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

SEWER: (SAWS MEDIO CREEK 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# 064582 TOTAL EDU'S 120 TOTAL ACREAGE 26.158
TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
NUMBER OF LOTS 120 SAWS JOB NO. 24-1559

FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4
SAN ANTONIO, TEXAS

SANITARY SEWER LINE D - PLAN & PROFILE
STA 1+00.00 TO 2+74.00

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C5.10

Date: Aug 23, 2024, 3:42pm User ID: gchubb
File: P:\300\04\35\Design\Civil\SSD-30004-35.dwg
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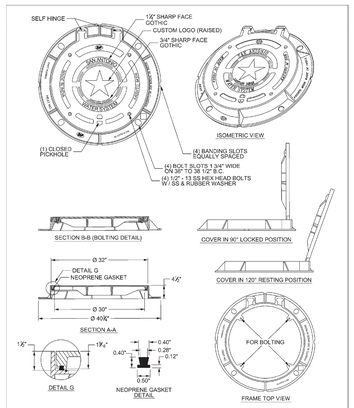
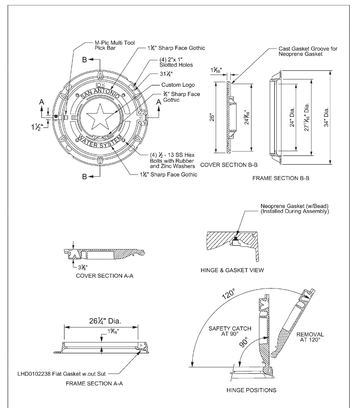


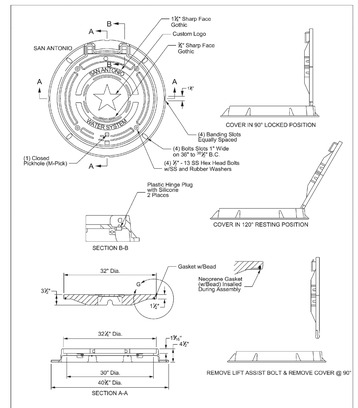
S/P Industries

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



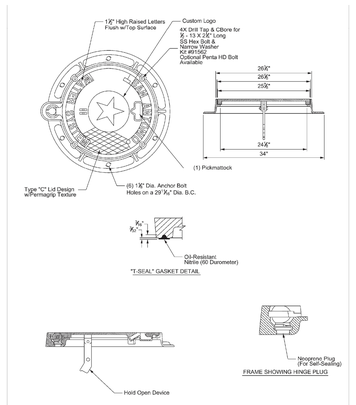
ERGO Assembly

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



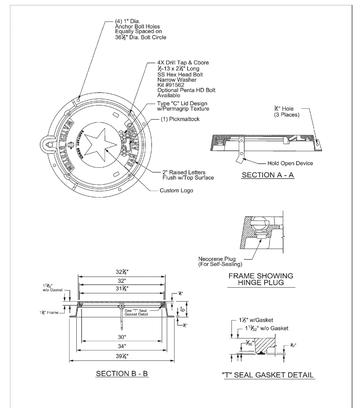
ERGO XL Assembly

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



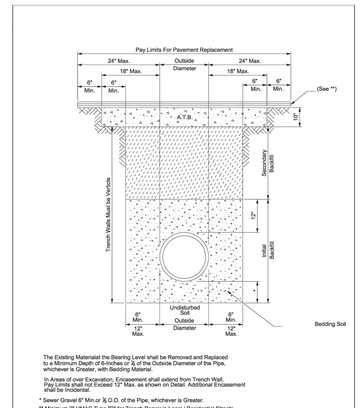
NEENAH FOUNDRY

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



NEENAH FOUNDRY

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

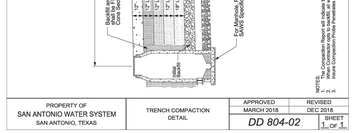


The Existing Materialat the Bearing Level shall be Removed and Replaced to a Minimum Depth of 6 inches or ¼ of the Outside Diameter of the Pipe, whichever is Greater, with Bedding Material.

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

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

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED	REVISED
		DD-804-01	MARCH 2008 DEC 2018
			SHEET 1 OF 1


Backfill around Manhole or Structure Shall be Flowable Fill up to 1 Foot above Section. See Note 2
Test Only when Necessary
Fill Meeting Material. Refer to Backfill Information
+/- 400 L.F.
Test points Every 100' Max.
Backfill around Manhole or Structure Shall be Flowable Fill up to 1 Foot above Section. See Note 2
12" Cone Lift
12" Cone Lift
12" Cone Lift
For Manhole, Refer to SAWS Specification 802
Flexible Pipe Connection
Rigid Pipe Connection
Flexible Pipe Connection
Rigid Pipe Connection
Flexible Pipe Connection
Rigid Pipe Connection

SAWS CONSTRUCTION NOTES

(LAST REVISED JANUARY 2022)

SAWS GENERAL SECTION

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

   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER"; TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE";
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION";
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION";
   E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

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

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

4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

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

   - SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
   - COSA DRAINAGE (210) 207-0724 OR (210) 207-6026
   - COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
   - COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
   - TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

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

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

9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.

11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

    WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

    ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.

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

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

SAWS SEWER NOTES

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

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

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

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

2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".

3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

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

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

6. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.

7. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.

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

PROJECT SEWER NOTES

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

SEWER: (SAWS MEDIO CREEK 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# 064582 TOTAL EDU'S 120 TOTAL ACREAGE 26.158
TOTAL LINEAR FOOTAGE OF PIPE: 6,817 L.F. of 8" SS Main PLAT NO.
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STATE OF TEXAS
JOCELYN PEREZ
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LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4

SAN ANTONIO, TEXAS

SANITARY SEWER NOTES

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C5.30

FOR PERMIT

Date: Aug 23, 2024, 3:42pm User ID: gchubb
File: P:\300\04\35\Design\Civil\SSNT-30004-35.dwg

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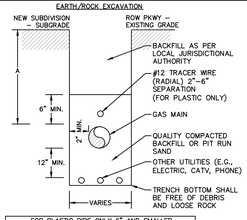
GENERAL TRENCHING AND BACKFILL DETAIL OF PLASTIC GAS MAIN CONSTRUCTION	RESIDENTIAL SERVICE JOINT TRENCH & BACKFILL

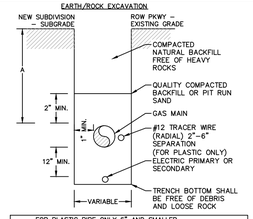
EARTH/ROCK EXCAVATION



FOR PLASTIC PIPE ONLY 6" AND SMALLER			
	SUBDIVISION[1]	ROW[2]	TXDOT ROW[3]
			EOP>10'	EOP≤10'
A	36"	36"	48"	60"

NOTES:
1. JOINT TRENCH WITH OTHER UTILITIES (e.g., ELEC, CATV, & PHONE)
2. DEPTHS FOR ROAD CROSSING ARE MINIMUM AND SHOULD BE EVALUATED FOR CONFLICTS WITH OTHER UTILITIES.
3.TXDOT ROW DEPTHS SHOWN ARE TRENCH INSTALLATIONS FROM THE EDGE OF PAVEMENT (EOP) OF STATE ROAD.
4. DIMENSIONS SHOWN FOR PROJECTS IN COSA AND COUNTY ROWs SHOULD BE VERIFIED WITH JURISDICTIONAL ENTITY.
5. APPROVED EXCEPTIONS FOR DEPTH REQUIREMENTS MUST BE MADE BY A SUPERVISOR AND BE IN ACCORDANCE WITH RRC REGULATIONS & O&M PROCEDURES. (MINIMUM 2' OF COVER)

EARTH/ROCK EXCAVATION

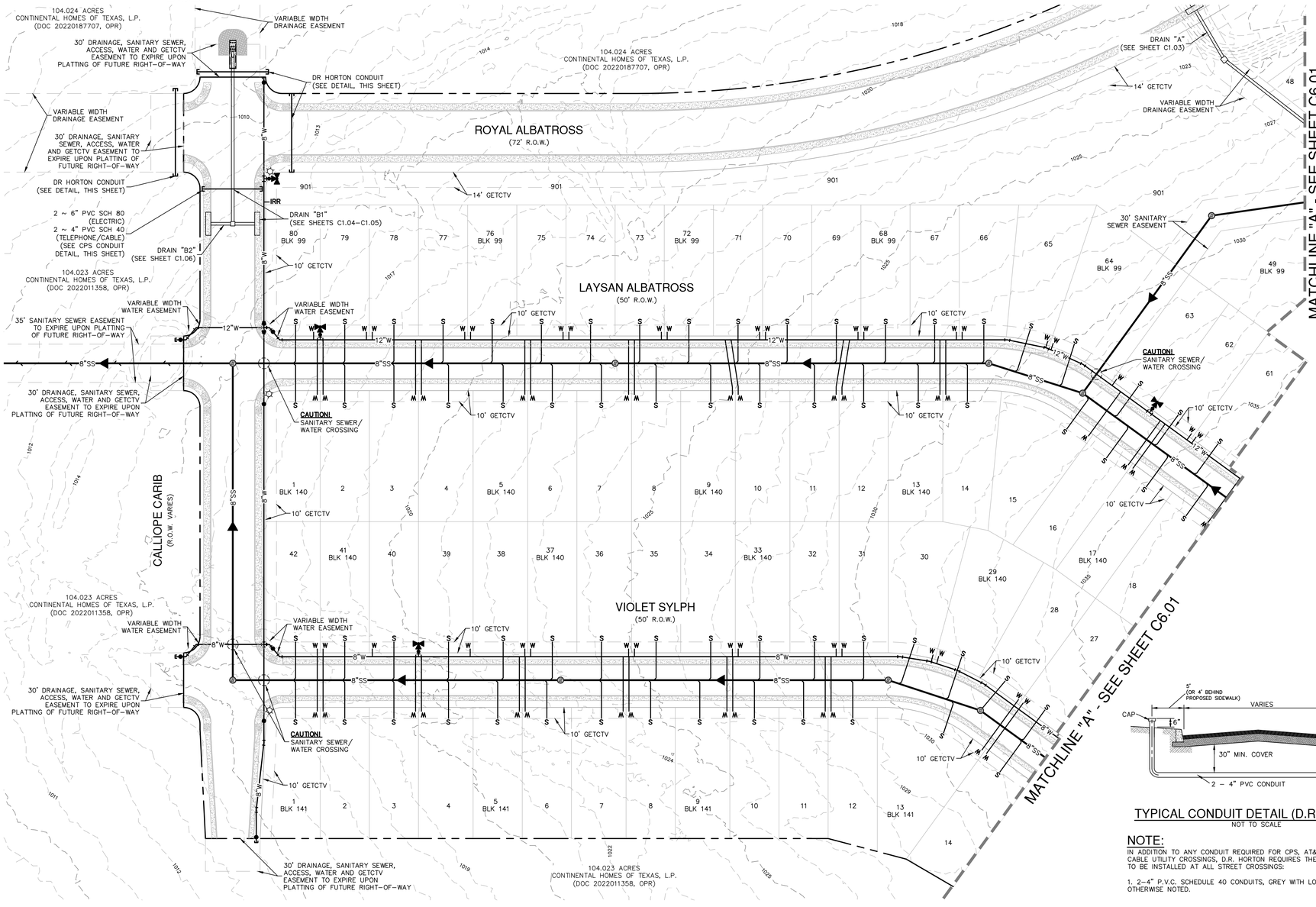


FOR PLASTIC PIPE ONLY 6" AND SMALLER						
	SUBDIVISION 2,5		ROW[4]		TXDOT ROW 2,3	
	PVT. PROPERTY	RD[1]	PKWY	RD	EOP>10'	EOP≤10'
A	36"	36"	36"	36"	48"	60"

NOTES:
1. JOINT TRENCH WITH ELECTRIC UTILITY.
2. DEPTHS FOR ROAD CROSSING ARE MINIMUM AND SHOULD BE EVALUATED FOR CONFLICTS WITH OTHER UTILITIES.
3.TXDOT ROW DEPTHS SHOWN ARE TRENCH INSTALLATIONS FROM THE EDGE OF PAVEMENT (EOP) OF STATE ROAD.
4. DIMENSIONS SHOWN FOR PROJECTS IN COSA AND COUNTY ROWs SHOULD BE VERIFIED WITH JURISDICTIONAL ENTITY.
5. SUBDIVISION– INSTALLATION FOR SERVICES FOR NEW SUBDIVISIONS.

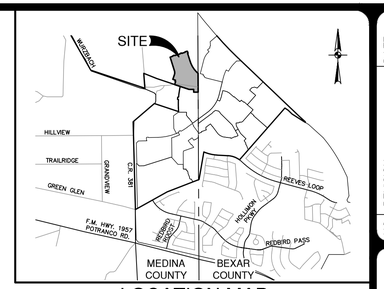
CONDUIT DETAILS

NOT–TO–SCALE



LOCATION MAP

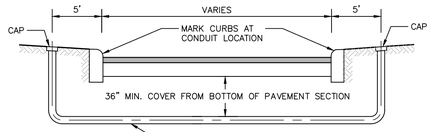
NOT–TO–SCALE



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

UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS, FIRE HYDRANT
PROPOSED WATER	W
PROPOSED WYE & LATERAL	S
SINGLE WATER SERVICE	W
DUAL WATER SERVICE	W
STREET LIGHTS	SL
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV



CONDUIT NOTES

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

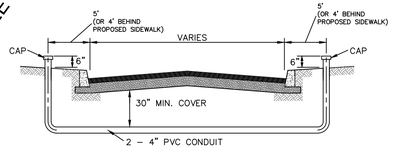
ALL CONDUIT SHALL BE P.V.C. SCHEDULE 80 WITH MINIMUM BURY OF 30 INCHES.

ALL CONDUIT SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.

A NYLON "PULL STRING" SHALL BE LEFT IN PLACE IN ALL CONDUITS AFTER FINAL ACCEPTANCE OF CONDUIT WORK. THE NYLON "PULL STRING" SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100 LBS.

TYPICAL CONDUIT DETAIL

NOT–TO–SCALE



TYPICAL CONDUIT DETAIL (D.R. HORTON)

NOT TO SCALE

NOTE:

IN ADDITION TO ANY CONDUIT REQUIRED FOR CPS, AT&T, AND/OR SPECTRUM CABLE UTILITY CROSSINGS, D.R. HORTON REQUIRES THE FOLLOWING CONDUITS TO BE INSTALLED AT ALL STREET CROSSINGS:

1. 2–4" P.V.C. SCHEDULE 40 CONDUITS, GREY WITH LONG SWEEPS, UNLESS OTHERWISE NOTED.

CPS NOTES:

1. WHEN TRENCHING IS IN FRONT LOT CONSTRUCTION WATER &/OR SEWER SERVICES ARE NOT TO BE PLACED UNTIL CPS ENERGY FACILITIES ARE INSTALLED WHEN TRENCHING IN RIGHT OF WAY WATER & SEWER SERVICE WILL NEED TO BE ROLLED BACK &/OR OUT OF CPS ENERGY TRENCHLINE.
2. WHEN CPS ENERGY AND WATER SERVICES ARE CROSSING STREET CPS ENERGY REQUIRES A MINIMUM OF 6' (FEET) OF HORIZONTAL SEPARATION (WHEN PARALLELING) AND 1' (FOOT) VERTICAL SEPARATION (WHEN CROSSING) TO AVOID CONFLICTS.

TRENCH EXCAVATION SAFETY PROTECTION:

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

CAUTION!!

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11–15–2024

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 3M-4

SAN ANTONIO, TEXAS

OVERALL UTILITY PLAN

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C6.00

FOR PERMIT

Date: Nov 15, 2024, 4:40pm User ID: tmartin
File: P:\300\04\35\Design\Civil\UTOA–30004–35.dwg

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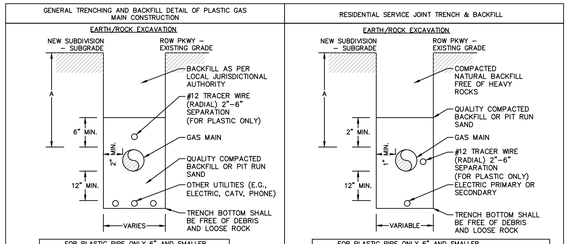
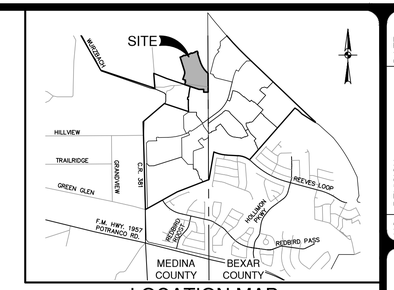


CONDUIT DETAILS
NOT–TO–SCALE



LOCATION MAP
NOT–TO–SCALE

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

UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS, MANHOLE
PROPOSED SEWER	SS, FIRE HYDRANT
PROPOSED WATER	W
PROPOSED WYE & LATERAL	W, S
SINGLE WATER SERVICE	W
DUAL WATER SERVICE	W, W
STREET LIGHTS	SL
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	GETCTV

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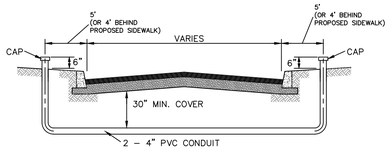

TYPICAL CONDUIT DETAIL (D.R. HORTON)
NOT TO SCALE

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11–15–2024

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 3M-4
SAN ANTONIO, TEXAS
OVERALL UTILITY PLAN

PLAT NO. N/A
JOB NO. 30004–35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C6.01

FOR PERMIT

Date: Nov 15, 2024, 4:40pm User ID: tmartin
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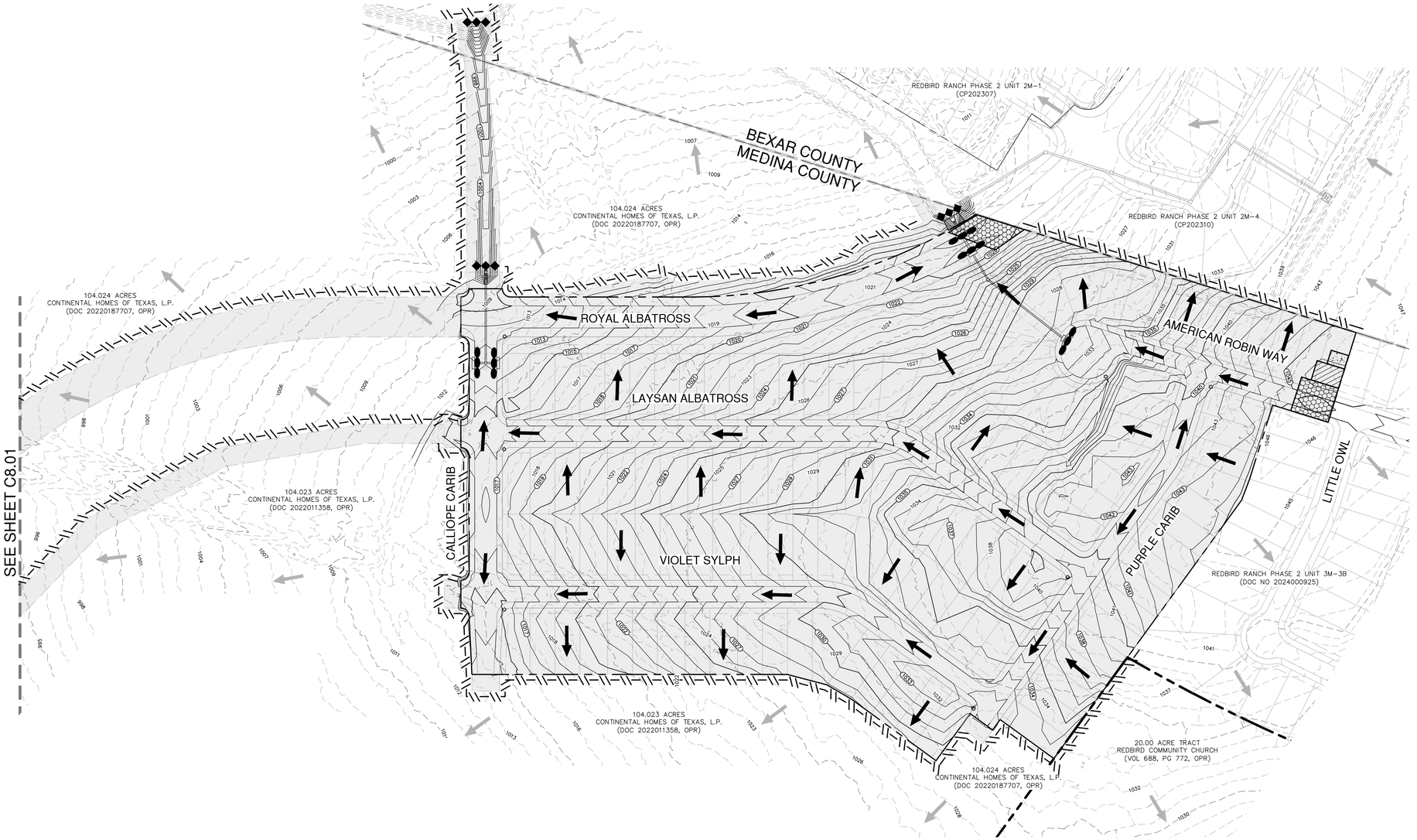

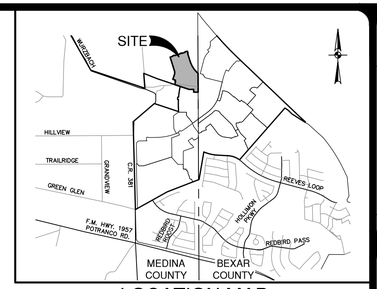

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 100'

0' 100' 200' 300'

SWPPP LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR (976)
- PROPOSED CONTOUR (970)
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SILT FENCE
- ROCK BERM
- GRAVEL FILTER BAGS
- GRATE 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

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

13. SHADED AREA ▭ DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.

14. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.

15. 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.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

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

FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

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 3M-4

SAN ANTONIO, TEXAS

STORMWATER POLLUTION PREVENTION PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C8.00

Date: Aug 23, 2024, 3:44pm User ID: gchubb
File: P:\3001\04\35\Design\Civil\SWPPP-30004-35.dwg

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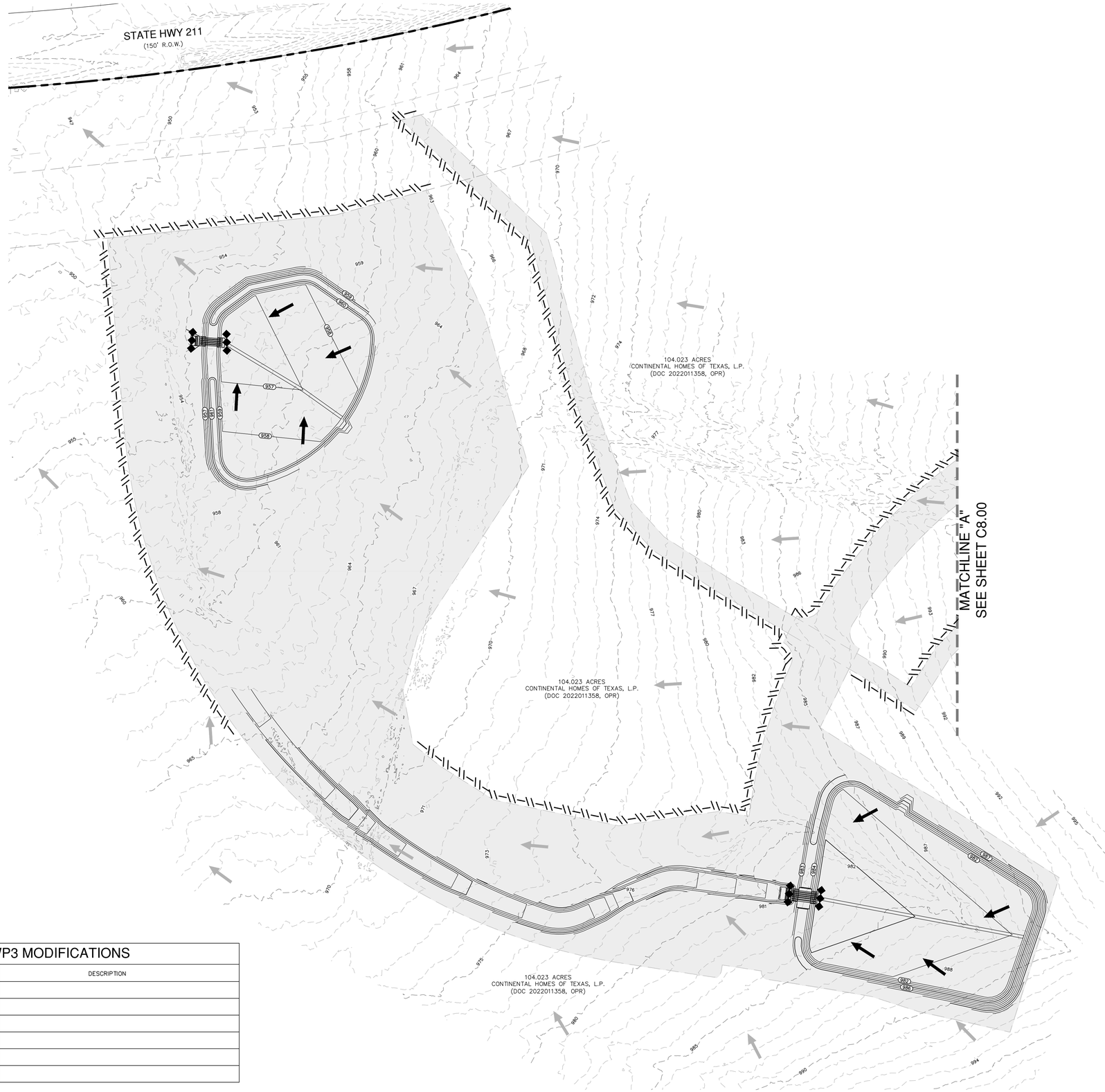

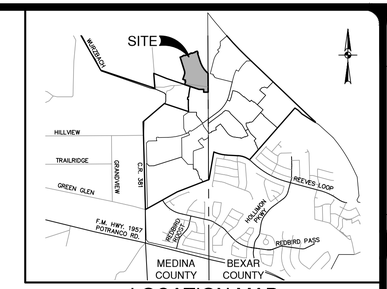

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 100'

0' 100' 200' 300'

SWPPP LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 976
- PROPOSED CONTOUR — 976
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SILT FENCE
- ROCK BERM
- GRAVEL FILTER BAGS
- GRATE 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)

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4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

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EXHIBIT 2

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9-6-2024

PAPE-DAWSON ENGINEERS
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REDBIRD RANCH PHASE 2 UNIT 3M-4

SAN ANTONIO, TEXAS

STORMWATER POLLUTION PREVENTION PLAN

PLAT NO. N/A
JOB NO. 30004-35
DATE AUGUST 2024
DESIGNER GC
CHECKED HF DRAWN BH
SHEET C8.01

FOR PERMIT

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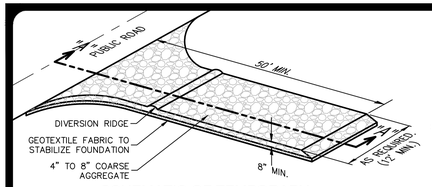
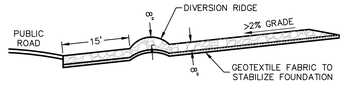


SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4–INCH TO 8–INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8–INCHES.

3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/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.

COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL–SEDIMENT WASHES ONTO PUBLIC ROAD.

2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC–EXTEND PAD BEYOND THE MINIMUM 50–FOOT LENGTH AS NECESSARY.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

5. UNSTABLE FOUNDATION – USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.

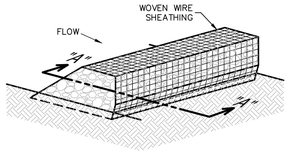
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.

4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

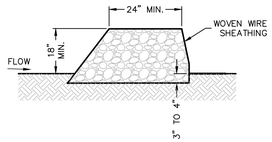
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT–TO–SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT–LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY 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.

MATERIALS

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

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

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

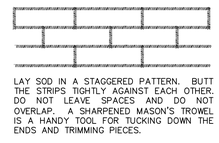
COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

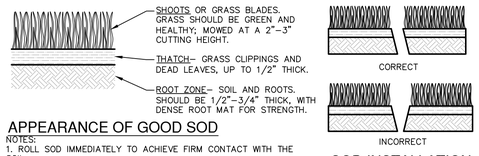
ROCK BERM DETAIL

NOT–TO–SCALE



LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



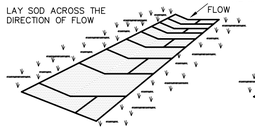
APPEARANCE OF GOOD SOD

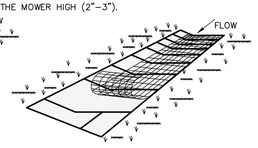
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

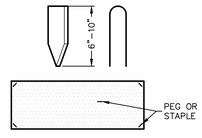
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

3. MOW WHEN THE SOD IS ESTABLISHED – IN 2–3 WEEKS. SET THE MOWER HIGH (2"–3").

SOD INSTALLATION







USE PEGS OR STAPLES TO FASTEN SOD FIRMLY – AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3–4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.

3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.

7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2–3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

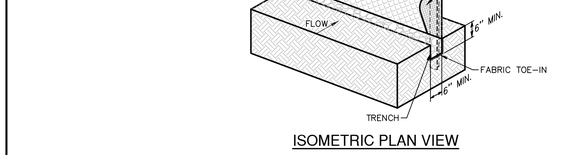
INSPECTION AND MAINTENANCE GUIDELINES

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

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

SOD INSTALLATION DETAIL

NOT–TO–SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE, WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER–BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

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

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

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1–FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN–SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

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

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

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

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

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

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

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

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

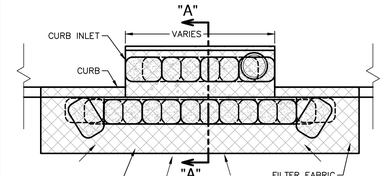
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

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

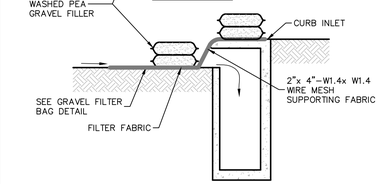
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE DETAIL

NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"–W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

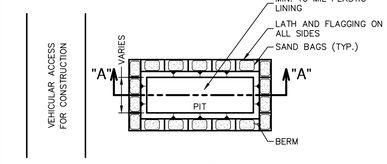
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

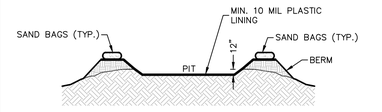
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT–TO–SCALE



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

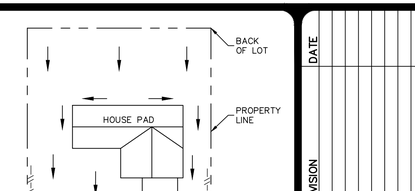
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

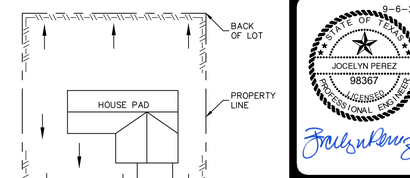
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

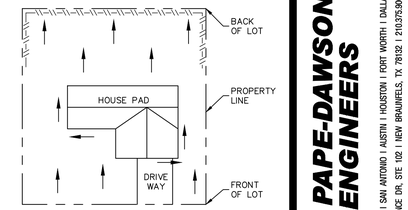
NOT–TO–SCALE



LOT TYPE-A



LOT TYPE-B



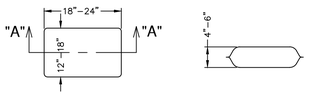
LOT TYPE-C

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.

LEGEND
SILT FENCE
DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT–TO–SCALE



PLAN VIEW

SECTION "A-A"

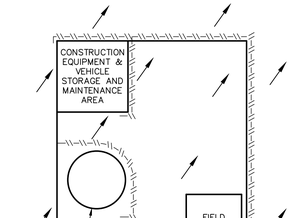
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT–TO–SCALE



LEGEND
SILT FENCE
FLOW ARROWS

CONSTRUCTION STAGING AREA

NOT–TO–SCALE

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

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

EXHIBIT 3

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
9–6–2024

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 3M-4
SAN ANTONIO, TEXAS
STORMWATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO.	N/A
JOB NO.	30004–35
DATE	AUGUST 2024
DESIGNER	GC
CHECKED	HF
DRAWN	BH
SHEET	C8.10

FOR PERMIT

Date: Aug 23, 2024, 3:45pm User ID: gchubb
File: P:\300\04\35\Design\Civil\SWPPP–30004–35–DT.dwg
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