CONSTRUCTION PLANS

CUDEENGINEERS.COM

COMAL COUNTY SCHOENTHAL MUNICIPAL UTILITY DISTRICT

CIVIL CONSTRUCTION DOCUMENTS

CONTESSA UNIT 1

DISTRICT:	DEVELOPER:	DESIGN ENGINEER:	SURVEYOR:	DISTRICT ENGINEER:
COMAL COUNTY SCHOENTHAL MUNICIPAL UTILITY DISTRICT CONTACT PERSON: JULIANNE KUGLE 1330 POST OAK BOULEVARD, SUITE 2650 HOUSTON, TX 77056 PH: (713) 850-9000	MERITAGE HOMES OF TEXAS, L.L.C. CONTACT PERSON: TONDA ALEXANDER 2722 W. BITTERS ROAD, SUITE 200 SAN ANTONIO, TX 78231 PH: (210) 298-4294	CUDE ENGINEERS CONTACT PERSON: JAVIER CASTELLO 4122 POND HILL ROAD, SUITE 101 SAN ANTONIO, TEXAS 78231 PHONE :(210) 681-2951	CUDE ENGINEERS CONTACT PERSON: CHRIS WALTERSCHEIDT 4122 POND HILL ROAD, SUITE 101 SAN ANTONIO, TEXAS 78231 PHONE :(210) 681-2951	CUDE ENGINEERS CONTACT PERSON: JEFFREY MCKINNEY 4122 POND HILL ROAD, SUITE 101 SAN ANTONIO, TEXAS 78231 PHONE :(210) 681-2951

STREET AND DRAINAGE CONSTRUCTION PLANS

- C0 - OVERALL COVER SHEET
- C1 - ULTIMATE MASTER DRAINAGE PLAN
- C2 - ULTIMATE MASTER DRAINAGE PLAN
- C3 - STREET PLAN & PROFILE - PIAZZA BLVD
- C4 - STREET PLAN & PROFILE - PIAZZA BLVD
- C5 - STREET PLAN & PROFILE - PIAZZA BLVD
- C6 - STREET PLAN & PROFILE - PIAZZA BLVD
- C7 - STREET PLAN & PROFILE - VERONA BLVD
- C8 - STREET PLAN & PROFILE - VERONA BLVD
- C9 - STREET PLAN & PROFILE - VERONA BLVD
- C10 - STREET PLAN & PROFILE - VIA SICILIA
- C11 - STREET PLAN & PROFILE - TORINO WAY
- C12 - STEET PLAN & PROFILE - VIA LUCCA
- C13 - MONTANIO DR ABANDONMENT PLAN
- C14 - TRAFFIC SIGNAGE PLAN
- C15 - TRAFFIC SIGNAGE PLAN
- C16 - STANDARD STREET DETAILS
- C17 - TXDOT DETAILS - PEDESTRIAN FACILITIES
- C18 - TXDOT DETAILS - SIGN MOUNTING DETAILS
- C19 - TXDOT DETAILS - PAVEMENT MARKINGS & GUARD RAILS
- C20 - DRAIN PLAN & PROFILE - DRAIN 'A'
- C21 - DRAIN PLAN & PROFILE - DRAIN 'A'
- C22 - DRAIN PLAN & PROFILE - DRAIN 'B'
- C23 - DRAIN PLAN & PROFILE - DRAIN 'C'
- C24 - DRAIN PLAN & PROFILE - DRAIN 'C'
- C25 - DRAIN PLAN & PROFILE - DRAIN 'C'
- C26 - DRAIN PLAN & PROFILE - DRAIN 'D'
- C27 - DRAIN PLAN & PROFILE - DRAIN 'D'
- C28 - DRAIN PLAN & PROFILE - DRAIN 'E'
- C29 - DRAIN PLAN & PROFILE - DRAIN 'E'
- C30 - DRAIN PLAN & PROFILE - DRAIN 'E'
- C31 - DRAIN PLAN & PROFILE - DRAIN 'F'
- C32 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C33 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C34 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C35 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C36 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C37 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C38 - DRAIN PLAN & PROFILE - DRAIN 'G'
- C39 - DRAIN PLAN & PROFILE - DRAIN 'H'
- C40 - DRAIN PLAN & PROFILE - DRAIN 'J'
- C41 - DRAIN PLAN & PROFILE - DRAIN 'K'
- C42 - DETENTION POND '1' PLAN
- C43 - DETENTION POND '2' PLAN
- C44 - DETENTION POND '2' PLAN
- C45 - DETENTION POND '3' PLAN
- C46 - DETENTION POND '3' PLAN
- C47 - DETENTION POND '4' PLAN
- C48 - DETENTION POND '4' PLAN
- C49 - DETENTION POND DETAILS
- C50 - CURB INLET DETAILS
- C51 - DRAINAGE DETAILS
- C52 - DRAINAGE DETAILS
- C53 - DRAINAGE DETAILS

WATER DISTRIBUTION CONSTRUCTION PLANS

- C54 - ONSITE WATER DISTRIBUTION PLAN
- C55 - ONSITE WATER DISTRIBUTION PLAN
- C56 - WATER DISTRIBUTION STANDARD DETAILS

MISCELLANEOUS CONSTRUCTION PLANS

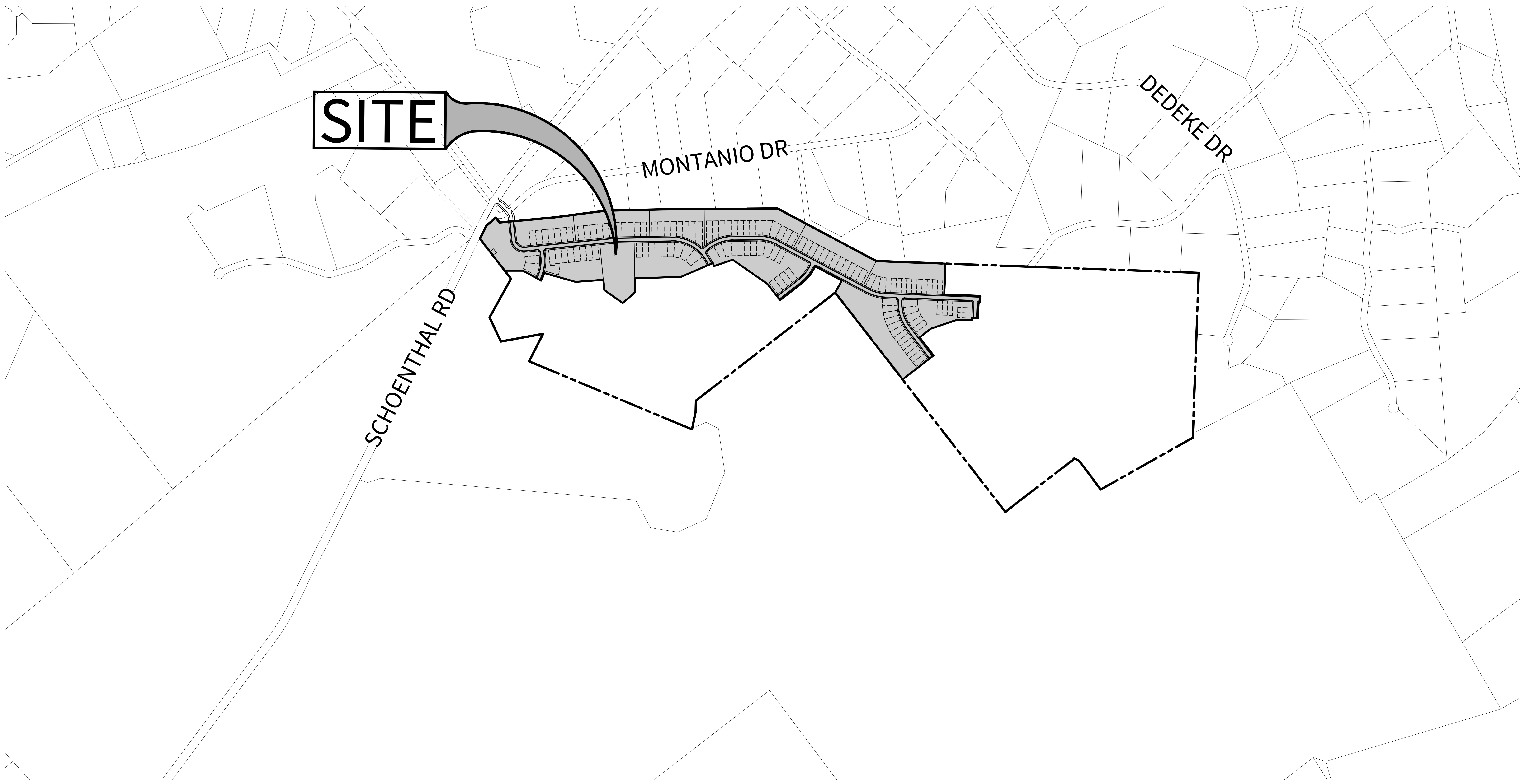
- C57 - UTILITY LAYOUT PLAN
- C58 - UTILITY LAYOUT PLAN
- C59 - ONSITE STORM WATER POLLUTION PREVENTION PLAN
- C60 - ONSITE STORM WATER POLLUTION PREVENTION PLAN
- C61 - ONSITE STORM WATER POLLUTION PREVENTION DETAILS

OFFSITE WATER DISTRIBUTION CONSTRUCTION PLANS

- C62 - OFFSITE WATER DISTRIBUTION - PHASE I
- C63 - OFFSITE WATER DISTRIBUTION - PHASE I
- C64 - OFFSITE WATER DISTRIBUTION - PHASE I
- C65 - OFFSITE WATER DISTRIBUTION STANDARD DETAILS

OFFSITE MISCELLANEOUS CONSTRUCTION PLANS

- C66 - OFFSITE STORM WATER POLLUTION PREVENTION PLAN
- C67 - OFFSITE STORM WATER POLLUTION PREVENTION PLAN
- C68 - OFFSITE STORM WATER POLLUTION PREVENTION PLAN



DISTRICT NOTES

THE DISTRICT ENGINEER, CUDE ENGINEERS (JEFFERY McKINNIE, PH:210-681-2951) SHALL BE CONTACTED 48 HOURS PRIOR TO:

i) PRE-CONSTRUCTION MEETINGS;
ii) BEGINNING EACH PHASE OF CONSTRUCTION;
iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
iv)FINAL WALK-THROUGH OF FACILITIES.

LOCATION MAP
N.T.S.

CONTESSA UNIT 1

CONSTRUCTION PLANS

DISTRICT ENGINEER'S APPROVAL

THESE PLANS HAVE BEEN REVIEW AND APPROVED BY__________________________ ON ____________________

REVIEW OF THE PLANS BY THE DISTRICT IS LIMITED TO STREETS, WATER, AND DRAINAGE AND DOES NOT INDICATE A REVIEW OF THE ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

____
DISTRICT ENGINEER

LEGAL DESCRIPTION:

CONTESSA, UNIT 1

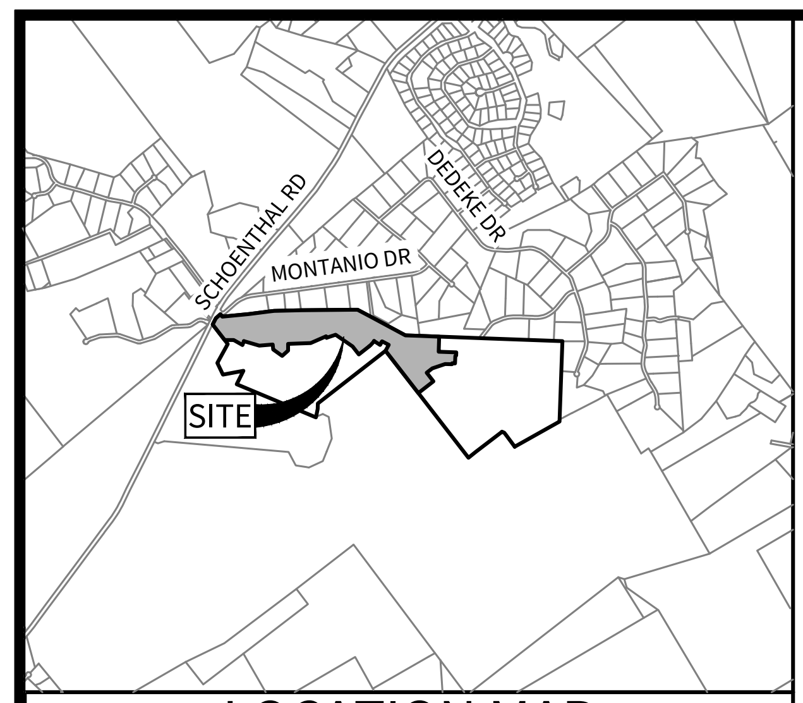
BEING 68.94 OF LAND LOCATED IN THE C. ARTIZ SURVEY NO. 318, A-10 W. TONNE SURVEY NO. 613, A-623, J. THOMPSON SURVEY NO. 755, A-611 AND THE S.A. & M.G.R.R. CO.. SURVEY 497 1/2, A-578, COMAL COUNTY, TEXAS AND BEING OUT OF A CALLED 249.7 ACRES OF LAND AS DESCRIBED IN DOCUMENT 201706004645, OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

DRAWN BY	DATE
CG/JG/LJ/TCD	06/09/2025
CHECKED BY	**PROJECT NO.**
XV/AL	04343.002

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW ONLY UNDER THE AUTHORITY OF JAVIER CASTELLO, P.E.#122170
6/9/2025
IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMITTING PURPOSES.
06/09/2025

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

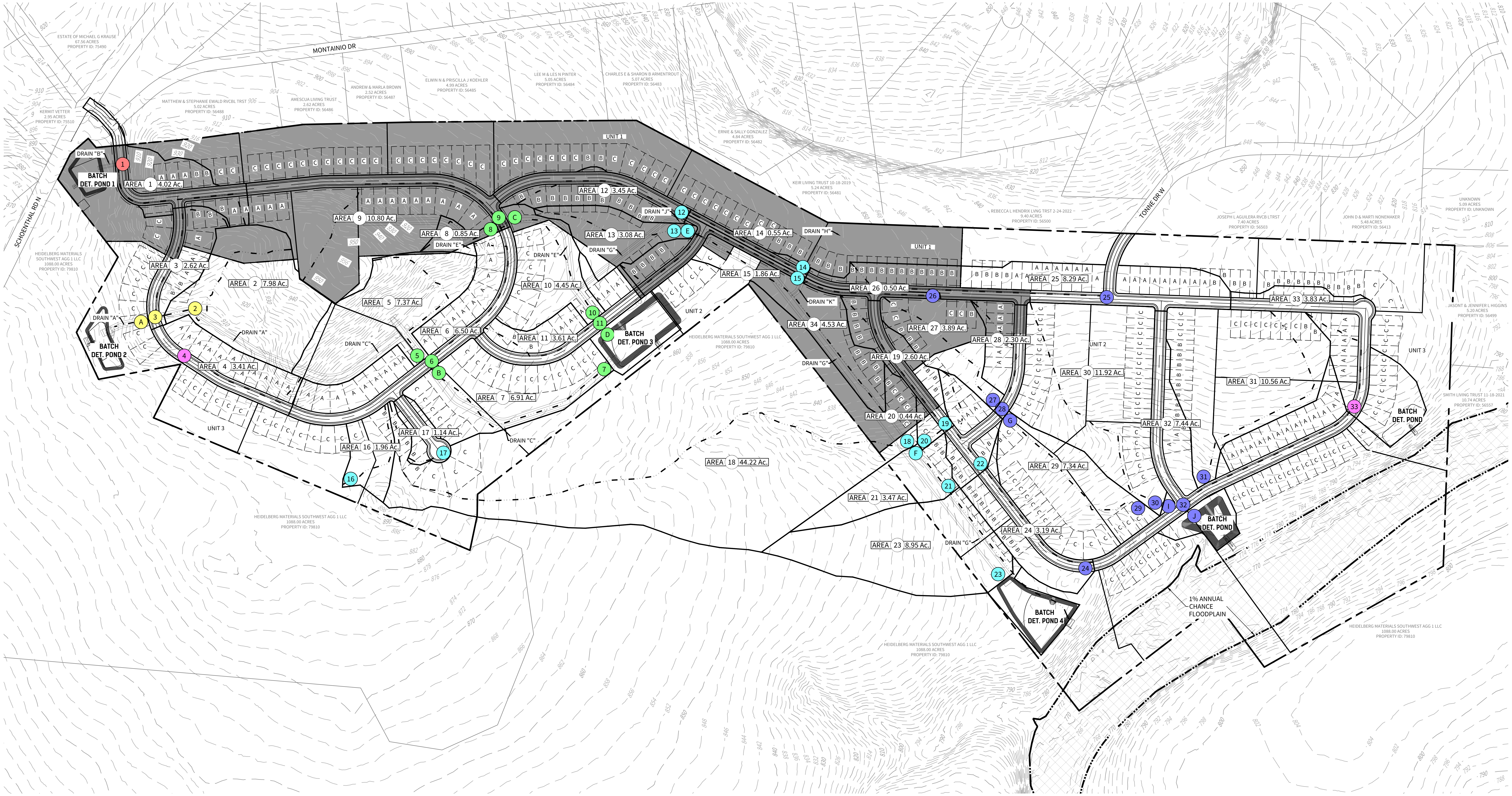


LOCATION MAP
N.T.S.

LEGEND

SUBDIVISION BOUNDARY	╍ ╍ ╍
UNIT BOUNDARY	▨
DRAINAGE AREA	────
Tc FLOW PATH	━ · > · ━
ACCUMULATION POINT	XX
1% ANNUAL CHANCE FLOODPLAIN	▨
LOT LINE	────
CONDO LINE	— — —

SCALE: 1"=250'
250 125 0 250



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EST. 1980
CUDE
ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION
UNIT 1

ULTIMATE MASTER DRAINAGE PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1

CUDEENGINEERS.COM

P:\04343\002\2-DWG\4-Plans\C2 ULTIMATE MASTER DRAINAGE PLAN.dwg 2025/06/09 3:29pm jochoa

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Project Name: Contessa Tract Subdivision

Calculation Summary for Time of Concentrations & Ultimate Flow, "U"

Precipitation Area Atlas 14 = **PA1**

HYDROLOGY					Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations					Concentrated Tc Computations			Overall	INTENSITY						Q FLOW						
Drainage Shed	Shed Area (Ac.)	Total Shed Area (Ac.)	AREA OF ACCUMULATION	C	*Length ‹ 100'*	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	*Length*	Paved (Y or N)	Downstream Elev	Slope	Time of Concentration	*Length*	Velocity (fps)	Time of Concentration	Time of Concentration (min)	I2	I5	I10	I25	I50	I100	Q2	Q5	Q10	Q25	Q50	Q100	Drainage Shed
1	4.02	4.02	= 1	0.69	*100.00*	N	938.00	933.37	4.63%	11.00	*64.50*	N	930.57	4.34%	0.32	*724.50*	6	2.01	13.33	4.49	5.64	6.59	7.93	9.00	10.06	12.45	15.64	18.28	22.00	24.96	27.90	1
2	7.98	7.98	= 2	0.69	*100.00*	N	947.26	938.48	8.78%	10.00	*593.00*	N	906.95	5.32%	2.65	*200.00*	6	0.56	13.20	4.51	5.67	6.62	7.97	9.04	10.11	24.83	31.22	36.45	43.88	49.78	55.67	2
3	2.62	2.62	= 3	0.69	*100.00*	N	936.64	931.21	5.43%	10.57	*164.00*	N	924.09	4.34%	0.81	*572.50*	6	1.59	12.97	4.54	5.72	6.68	8.04	9.12	10.20	8.21	10.34	12.08	14.53	16.49	18.44	3
A	-	10.60	= 2+3	0.69	*100.00*	N	947.26	938.48	8.78%	10.00	*593.00*	N	906.95	5.32%	2.65	*454.00*	6	1.26	13.91	4.40	5.53	6.45	7.76	8.80	9.84	32.18	40.45	47.18	56.76	64.36	71.97	A
4	3.43	3.43	= 4	0.69	*100.00*	N	908.37	904.34	4.03%	11.00	*61.30*	N	901.58	4.50%	0.30	*540.00*	6	1.50	12.80	4.57	5.75	6.72	8.09	9.18	10.27	10.82	13.61	15.90	19.15	21.73	24.31	4
5	7.37	7.37	= 5	0.69	*100.00*	N	950.85	943.57	7.28%	10.00	*380.00*	N	900.63	11.30%	1.17	*433.00*	6	1.20	12.37	4.64	5.84	6.82	8.23	9.33	10.44	23.60	29.70	34.68	41.85	47.45	53.09	5
6	4.88	4.88	= 6	0.69	*100.00*	N	908.52	904.22	4.30%	11.00	*66.40*	N	901.25	4.47%	0.32	*761.70*	6	2.12	13.44	4.47	5.62	6.56	7.90	8.96	10.02	15.05	18.92	22.09	26.60	30.17	33.74	6
B	-	12.25	= 5+6	0.69	*100.00*	N	908.52	904.22	4.30%	11.00	*66.40*	N	901.25	4.47%	0.32	*761.00*	6	2.11	13.44	4.47	5.62	6.56	7.90	8.96	10.02	37.78	47.50	55.45	66.77	75.73	84.69	B
7	6.91	19.16	= 5+6+7	0.69	*100.00*	N	908.52	904.22	4.30%	11.00	*66.40*	N	901.25	4.47%	0.32	*1872.90*	6	5.20	16.53	4.04	5.06	5.89	7.06	8.00	8.94	53.41	66.90	77.87	93.34	105.76	118.19	7
8	0.85	0.85	= 8	0.69	*100.00*	N	930.80	923.04	7.76%	10.00	*107.80*	N	912.56	9.72%	0.36	*291.00*	6	0.81	11.16	4.84	6.10	7.13	8.61	9.76	10.93	2.84	3.58	4.18	5.05	5.72	6.41	8
9	10.80	10.80	= 9	0.69	*100.00*	N	950.30	945.07	5.23%	10.77	*480.00*	N	914.50	6.37%	1.95	*787.10*	6	2.19	14.91	4.25	5.34	6.22	7.47	8.47	9.46	31.67	39.79	46.35	55.67	63.12	70.50	9
C	-	11.65	= 8+9	0.69	*100.00*	N	950.30	945.07	5.23%	10.77	*480.00*	N	914.50	6.37%	1.95	*787.10*	6	2.19	14.91	4.25	5.34	6.22	7.47	8.47	9.46	34.16	42.93	50.00	60.05	68.09	76.04	C
10	4.45	16.10	= 8+9+10	0.69	*100.00*	N	950.30	945.07	5.23%	10.77	*480.00*	N	914.50	6.37%	1.95	*1560.50*	6	4.33	17.06	3.97	4.97	5.79	6.94	7.87	8.78	44.10	55.21	64.32	77.10	87.43	97.54	10
11	3.66	3.66	= 11	0.69	*100.00*	N	897.19	891.45	5.74%	10.26	*169.40*	N	883.09	4.94%	0.78	*413.15*	6	1.15	12.19	4.67	5.88	6.86	8.28	9.39	10.51	11.79	14.85	17.32	20.91	23.71	26.54	11
D	-	19.76	= 8+9+10+11	0.69	*100.00*	N	950.30	945.07	5.23%	10.77	*480.00*	N	914.50	6.37%	1.95	*1560.50*	6	4.33	17.06	3.97	4.97	5.79	6.94	7.87	8.78	54.13	67.76	78.94	94.62	107.30	119.71	D
12	3.45	3.45	= 12	0.69	*100.00*	N	901.50	897.18	4.32%	11.00	*157.60*	N	890.35	4.33%	0.78	*667.00*	6	1.85	13.63	4.45	5.58	6.52	7.84	8.90	9.95	10.59	13.28	15.52	18.66	21.19	23.69	12
13	3.03	3.03	= 13	0.69	*100.00*	N	899.34	894.38	4.96%	11.00	*524.10*	N	874.69	3.76%	2.78	*208.00*	6	0.58	14.36	4.34	5.44	6.35	7.63	8.65	9.67	9.07	11.37	13.28	15.95	18.08	20.22	13
E	-	6.48	= 12+13	0.69	*100.00*	N	899.34	894.38	4.96%	11.00	*524.10*	N	874.69	3.76%	2.78	*208.00*	6	0.58	14.36	4.34	5.44	6.35	7.63	8.65	9.67	19.41	24.32	28.39	34.12	38.68	43.24	E
14	0.55	0.55	= 14	0.69	*21.00*	N	871.75	871.08	3.19%	11.81						*647.80*	6	1.80	13.61	4.45	5.59	6.52	7.85	8.90	9.96	1.69	2.12	2.47	2.98	3.38	3.78	14
15	1.85	1.85	= 15	0.69	*100.00*	N	879.52	877.88	1.64%	13.72	*61.00*	N	876.78	1.80%	0.47	*966.70*	6	2.69	16.87	4.00	5.00	5.82	6.98	7.91	8.84	5.11	6.38	7.43	8.91	10.10	11.28	15
16	1.96	1.96	= 16	0.69	*100.00*	N	896.78	893.78	3.00%	12.00	*198.00*	N	887.21	3.32%	1.12	*252.60*	6	0.70	13.82	4.42	5.55	6.47	7.78	8.83	9.88	5.98	7.51	8.75	10.52	11.94	13.36	16
17	1.14	1.14	= 17	0.69	*100.00*	N	887.58	885.07	2.51%	12.00	*34.80*	N	884.16	2.61%	0.22	*77.60*	6	0.22	12.44	4.63	5.83	6.80	8.20	9.31	10.41	3.64	4.59	5.35	6.45	7.32	8.19	17
18	44.22	77.98	= 8+9+10+11+12+13+15+17+18+34	0.69	*100.00*	N	896.48	894.16	2.32%	12.36	*1486.29*	N	857.16	2.49%	9.73	*1530.00*	6	4.25	26.34	3.20	3.99	4.64	5.56	6.27	7.00	172.18	214.69	249.66	299.16	337.36	376.64	18
19	2.60	2.60	= 19	0.69	*100.00*	N	853.61	851.69	1.92%	13.16	*135.40*	N	847.97	2.75%	0.84	*611.40*	6	1.70	15.70	4.14	5.19	6.05	7.26	8.23	9.20	7.43	9.31	10.85	13.02	14.76	16.50	19
20	0.44	3.04	= 19+20	0.69	*100.00*	N	853.61	851.69	1.92%	13.16	*135.40*	N	847.97	2.75%	0.84	*766.40*	6	2.13	16.13	4.08	5.12	5.97	7.15	8.11	9.06	8.56	10.74	12.52	15.00	17.01	19.00	20
F	-	81.02	= 8+9+10+11+12+13+15+17+18+19+20+34	0.69	*100.00*	N	896.48	894.16	2.32%	12.36	*1486.29*	N	857.16	2.49%	9.73	*1530.00*	6	4.25	26.34	3.20	3.99	4.64	5.56	6.27	7.00	178.89	223.06	259.39	310.83	350.52	391.33	F
21	3.47	81.02	= 8+9+10+11+12+13+15+17+18+19+20+34	0.69	*100.00*	N	896.48	894.16	2.32%	12.36	*1486.29*	N	857.16	2.49%	9.73	*1800.00*	6	5.00	27.09	3.15	3.93	4.57	5.48	6.17	6.90	176.10	219.70	255.48	306.35	344.93	385.74	21
22	2.44	2.44	= 22	0.69	*100.00*	N	838.79	837.26	1.53%	13.94	*255.80*	N	820.55	6.53%	1.02	*225.20*	6	0.63	15.59	4.16	5.21	6.08	7.29	8.26	9.24	7.00	8.77	10.24	12.27	13.91	15.56	22
G	-	86.93	= 8+9+10+11+12+13+15+17+18+19+20+21+22+34	0.69	*100.00*	N	896.48	894.16	2.32%	12.36	*1486.29*	N	857.16	2.49%	9.73	*1800.00*	6	5.00	27.09	3.15	3.93	4.57	5.48	6.17	6.90	188.94	235.73	274.12	328.70	370.09	413.87	G
23	8.95	95.88	= 8+9+10+11+12+13+15+17+18+19+20+21+22+23+34	0.69	*100.00*	N	896.48	894.16	2.32%	12.36	*1486.29*	N	857.16	2.49%	9.73	*2307.50*	6	6.41	28.50	3.08	3.84	4.46	5.34	6.02	6.72	203.76	254.04	295.06	353.28	398.27	444.58	23
24	3.19	3.19	= 24	0.69	*100.00*	N	818.77	816.12	2.65%	12.00	*67.20*	N	814.51	2.40%	0.45	*640.00*	6	1.78	14.23	4.36	5.47	6.38	7.66	8.69	9.72	9.60	12.04	14.04	16.86	19.13	21.39	24
25	8.30	8.30	= 25	0.69	*100.00*	N	853.66	852.62	1.04%	14.92	*64.80*	N	851.08	2.38%	0.43	*1182.20*	6	3.28	18.64	3.80	4.76	5.53	6.63	7.50	8.38	21.76	27.26	31.67	37.97	42.95	47.99	25
26	0.50	0.50	= 26	0.69	*22.20*	N	856.46	855.93	2.39%	12.23						*673.40*	6	1.87	14.10	4.38	5.49	6.41	7.70	8.74	9.77	1.51	1.89	2.21	2.66	3.02	3.37	26
27	3.89	4.39	= 26+27	0.69	*100.00*	N	850.47	848.20	2.27%	12.46	*503.70*	N	834.00	2.82%	3.10	*237.30*	6	0.66	16.22	4.07	5.10	5.95	7.13	8.08	9.03	12.33	15.45	18.02	21.60	24.48	27.35	27
28	2.30	2.30	= 28	0.69	*100.00*	N	843.94	840.86	3.08%	11.92	*230.70*	N	831.64	4.00%	1.19	*336.40*	6	0.93	14.05	4.38	5.50	6.42	7.72	8.75	9.79	6.95	8.73	10.19	12.25	13.89	15.54	28
H	-	6.69	= 26+27+28	0.69	*100.00*	N	850.47	848.20	2.27%	12.46	*503.70*	N	834.00	2.82%	3.10	*1215.00*	6	3.38	18.94	3.77	4.72	5.48	6.57	7.43	8.30	17.40	21.79	25.30	30.33	34.30	38.31	H
29	7.34	14.03	= 26+27+28+29	0.69	*100.00*	N	850.47	848.20	2.27%	12.46	*503.70*	N	834.00	2.82%	3.10	*1215.00*	6	3.38	18.94	3.77	4.72	5.48	6.57	7.43	8.30	36.50	45.69	53.05	63.60	71.93	80.35	29
30	11.92	20.22	= 25+30	0.69	*100.00*	N	839.48	836.24	3.24%	11.76	*480.90*	N	808.55	5.76%	2.06	*733.90*	6	2.04	15.86	4.12	5.17	6.02	7.22	8.18	9.15	57.48	72.13	83.99	100.73	114.13	127.66	30
I	-	34.25	= 25+26+27+28+29+30	0.69	*100.00*	N	831.43	827.40	4.03%	11.00	*226.70*	N	819.12	3.65%	1.22	*1315.20*	6	3.65	15.87	4.12	5.16	6.02	7.21	8.18	9.14	97.37	121.94	142.27	170.39	193.31	216.00	I
31	10.56	10.56	= 31	0.69	*100.00*	N	837.53	832.27	5.26%	10.74	*391.40*	N	817.31	3.82%	2.06	*738.70*	6	2.05	14.85	4.26	5.35	6.23	7.48	8.49	9.49	31.04	38.98	45.39	54.50	61.86	69.15	31
32	7.44	7.44	= 32	0.69	*100.00*	N	822.42	819.10	3.32%	11.68	*228.80*	N	812.34	2.95%	1.38	*918.20*	6	2.55	15.61	4.15	5.21	6.07	7.28	8.26	9.23	21.30	26.75	31.16	37.37	42.40	47.38	32
J	-	52.25	= 25+26+27+28+29+30+31+32	0.69	*100.00*	N	831.43	827.40	4.03%	11.00	*226.70*	N	819.12	3.65%	1.22	*1315.20*	6	3.65	15.87	4.12	5.16	6.02	7.21	8.18	9.14	148.54	186.03	217.04	259.94	294.91	329.52	J
33	3.83	3.83	= 33	0.69	*100.00*	N	831.43	827.40	4.03%	11.00	*226.70*	N	819.12	3.65%	1.22	*325.80*	6	0.91	13.12	4.52	5.69	6.64	7.99	9.07	10.14	11.95	15.04	17.55	21.12	23.97	26.80	33
34	4.53	12.86	= 12+13+15+34	0.69	*100.00*	N	899.34	894.38	4.96%	11.00	*524.10*	N	874.69	3.76%	2.78	*1525.60*	6	4.24	18.02	3.86	4.84	5.63	6.75	7.64	8.53	34.25	42.95	49.96	59.90	67.79	75.69	34

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CONTESSA SUBDIVISION
UNIT 1

ULTIMATE MASTER DRAINAGE PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

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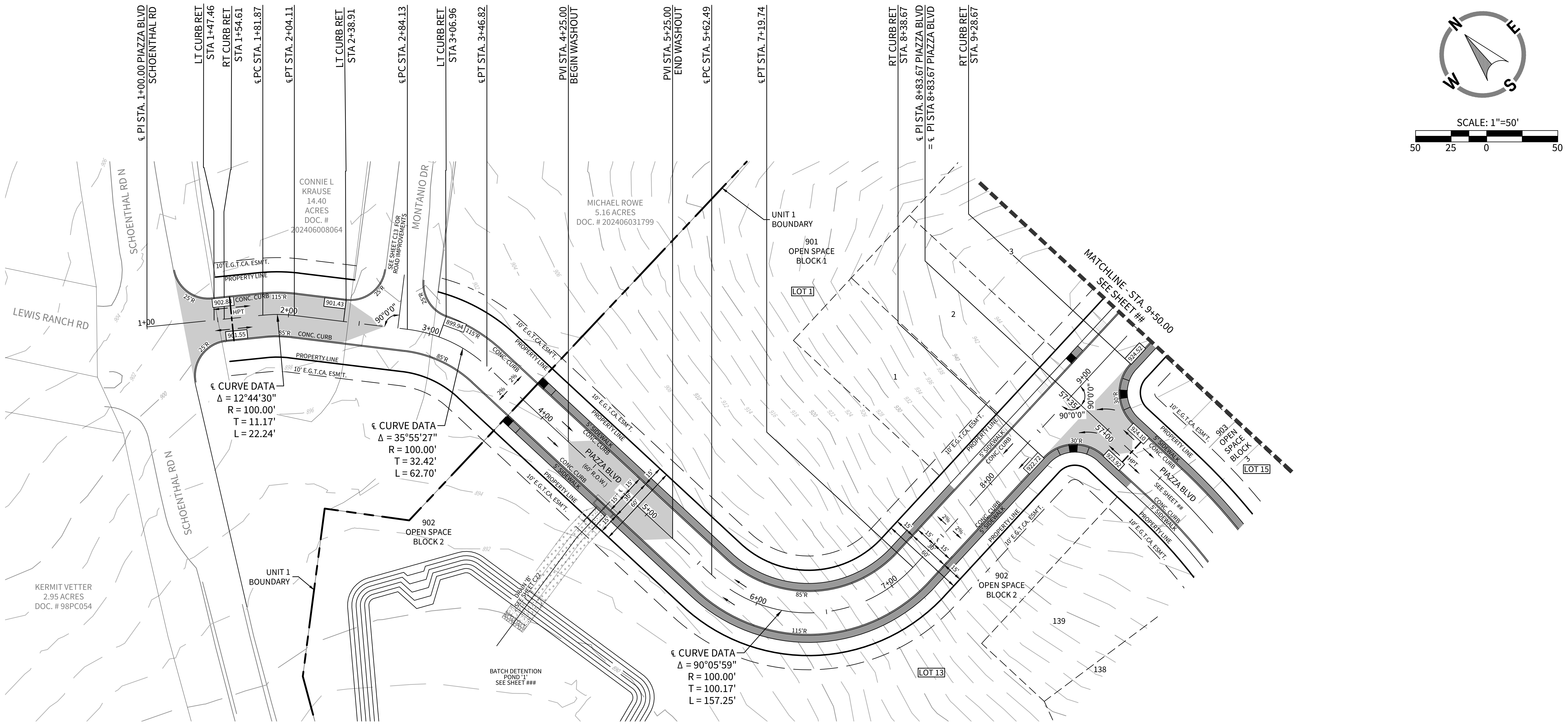

℄ PI STA. 1+00.00 PIAZZA BLVD SCHOENTHAL RD
LT CURB RET STA 1+47.46
RT CURB RET STA 1+54.61
℄ PC STA. 1+81.87
℄ PT STA. 2+04.11
LT CURB RET STA 2+38.91
℄ PC STA. 2+84.13
LT CURB RET STA 3+06.96
℄ PT STA. 3+46.82
PVI STA. 4+25.00 BEGIN WASHOUT
PVI STA. 5+25.00 END WASHOUT
℄ PC STA. 5+62.49
℄ PT STA. 7+19.74
RT CURB RET STA. 8+38.67
℄ PI STA. 8+83.67 PIAZZA BLVD = ℄ PI STA 8+83.67 PIAZZA BLVD
RT CURB RET STA. 9+28.67
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E
S
W
SCALE: 1"=50'
50
25
0
50
SCHOENTHAL RD N
LEWIS RANCH RD
CONNIE L KRAUSE 14.40 ACRES DOC. # 202406008064
MONTANIO DR.
MICHAEL ROWE 5.16 ACRES DOC. # 202406031799
UNIT 1 BOUNDARY
901 OPEN SPACE BLOCK 1
LOT 1
MATCHLINE - STA. 9+50.00 SEE SHEET ##
PROPERTY LINE
CONC. CURB
10' E.G.T.CA. ESM'T
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
℄ CURVE DATA Δ = 12°44'30" R = 100.00' T = 11.17' L = 22.24'
℄ CURVE DATA Δ = 35°55'27" R = 100.00' T = 32.42' L = 62.70'
℄ CURVE DATA Δ = 90°05'59" R = 100.00' T = 100.17' L = 157.25'
90°0'0"
PIAZZA BLVD
902 OPEN SPACE BLOCK 2
903 OPEN SPACE BLOCK 3
LOT 15
LOT 13
139
138
KERMIT VETTER 2.95 ACRES DOC. # 98PC054
BATCH DETENTION POND '1' SEE SHEET ###
1
2
3

LEGEND

— · > · —	PAVEMENT GUTTER LINE
— — — — —	CONDO LINE
☐	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	STREET WASHOUT – SEE DETAIL SHEET C16
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
▨■▨	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17

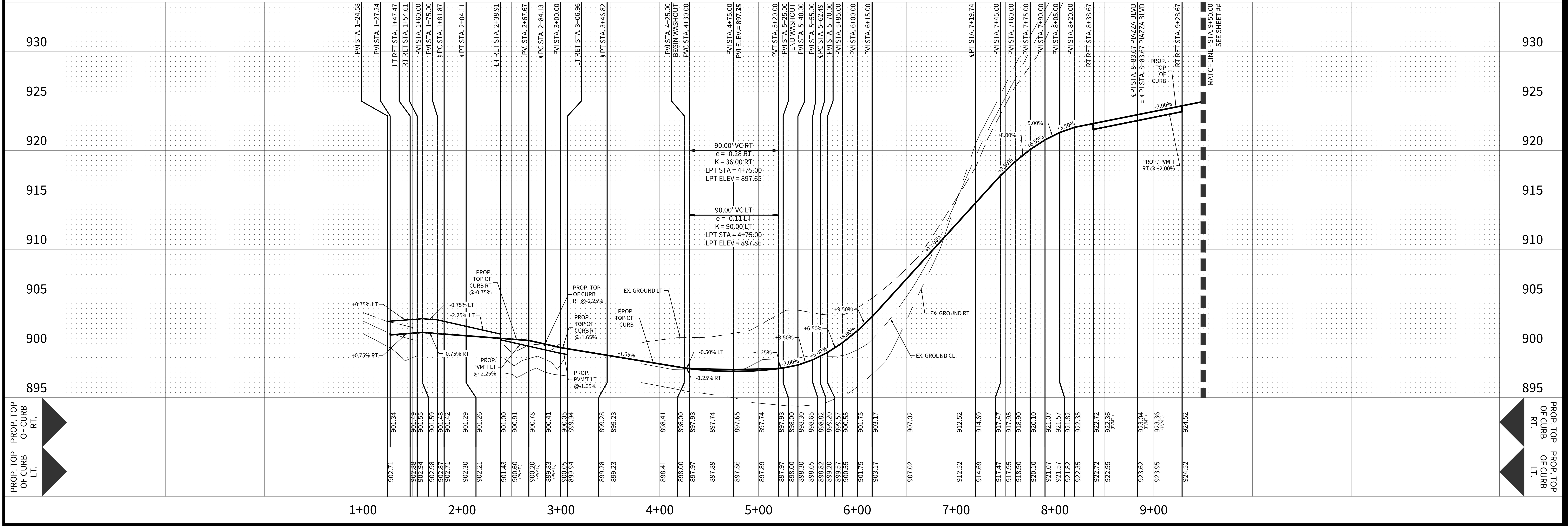
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

PIAZZA BLVD

STA. 1+00.00 TO STA. 9+50.00

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



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CONTESSA SUBDIVISION
UNIT 1

STREET PLAN & PROFILE - PIAZZA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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P:\04343\002\2-DWG\4-Plans\C3 STREET PLAN & PROFILE - PIAZZA BLVD.dwg 2025/06/09 3:30pm jochoa

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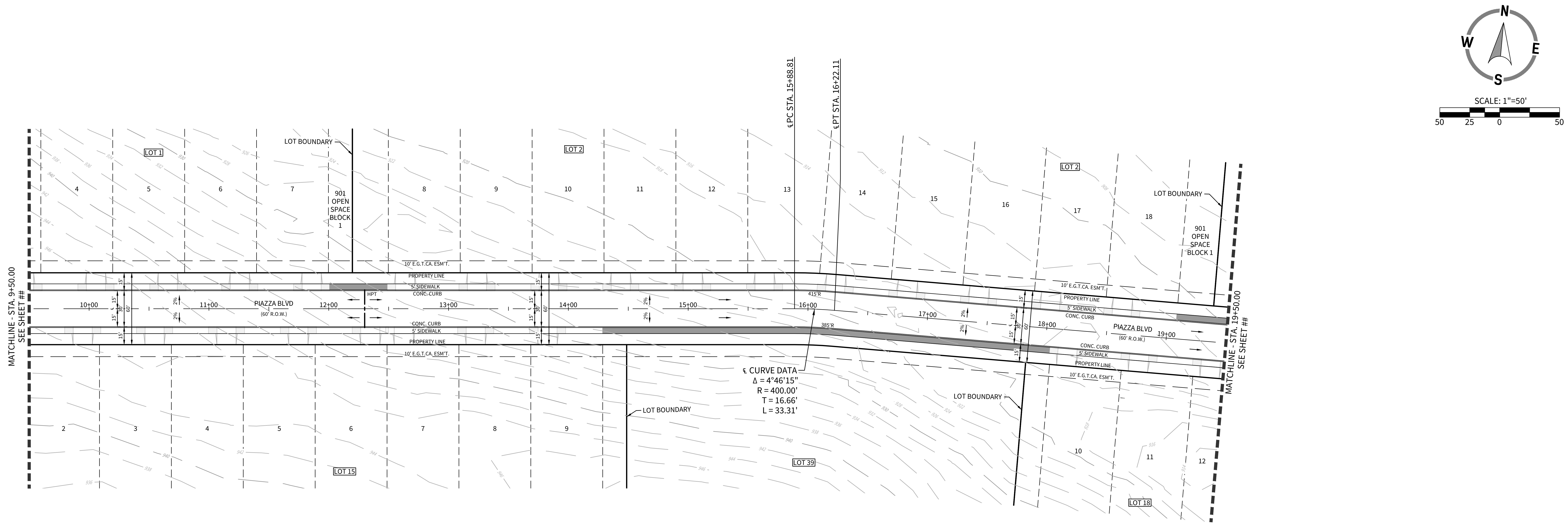


LEGEND

—— · > · ——	PAVEMENT GUTTER LINE
	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▭	STREET WASHOUT – SEE DETAIL SHEET C16
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
■	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17
— — — — —	CONDO LINE
———	LOT LINE

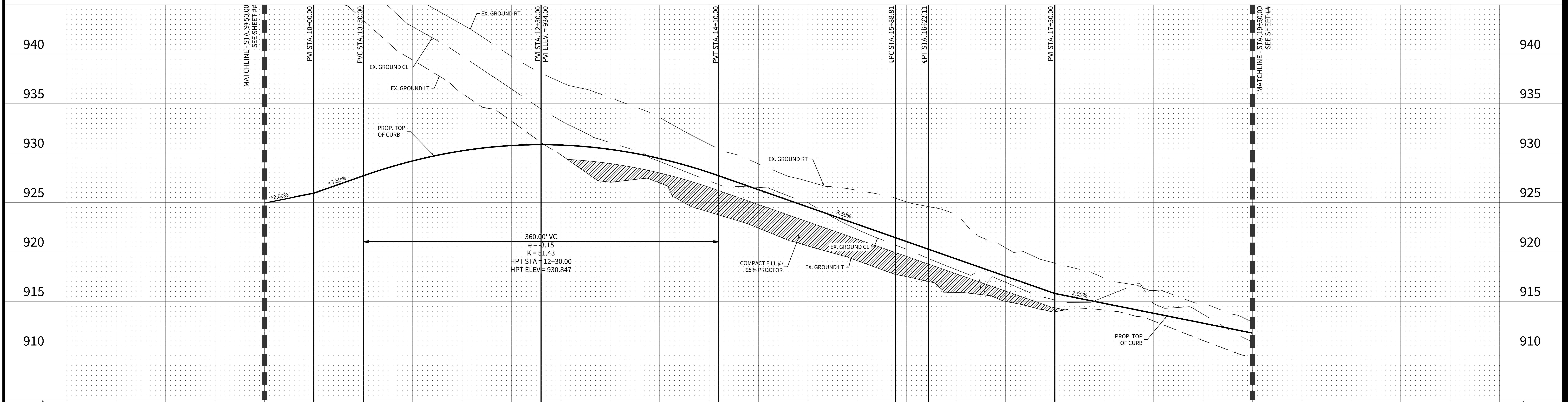
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

PIAZZA BLVD

STA. 9+50.00 TO STA. 19+50.00

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



PROP. TOP OF CURB RT.	924.95	925.95	927.70	929.20	930.22	930.76	930.85	930.81	930.37	929.45	928.04	927.70	926.30	924.55	922.80	921.44	921.05	920.27	919.30	917.55	915.80	914.80	913.80	912.80
PROP. TOP OF CURB LT.	924.95	925.95	927.70	929.20	930.22	930.76	930.85	930.81	930.37	929.45	928.04	927.70	926.30	924.55	922.80	921.44	921.05	920.27	919.30	917.55	915.80	914.80	913.80	912.80

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

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CONTESSA SUBDIVISION
UNIT 1

STREET PLAN & PROFILE - PIAZZA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

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P:\04343\002\2-DWG\4-Plans\C4 STREET PLAN & PROFILE - PIAZZA BLVD.dwg 2025/06/09 3:30pm jochoa

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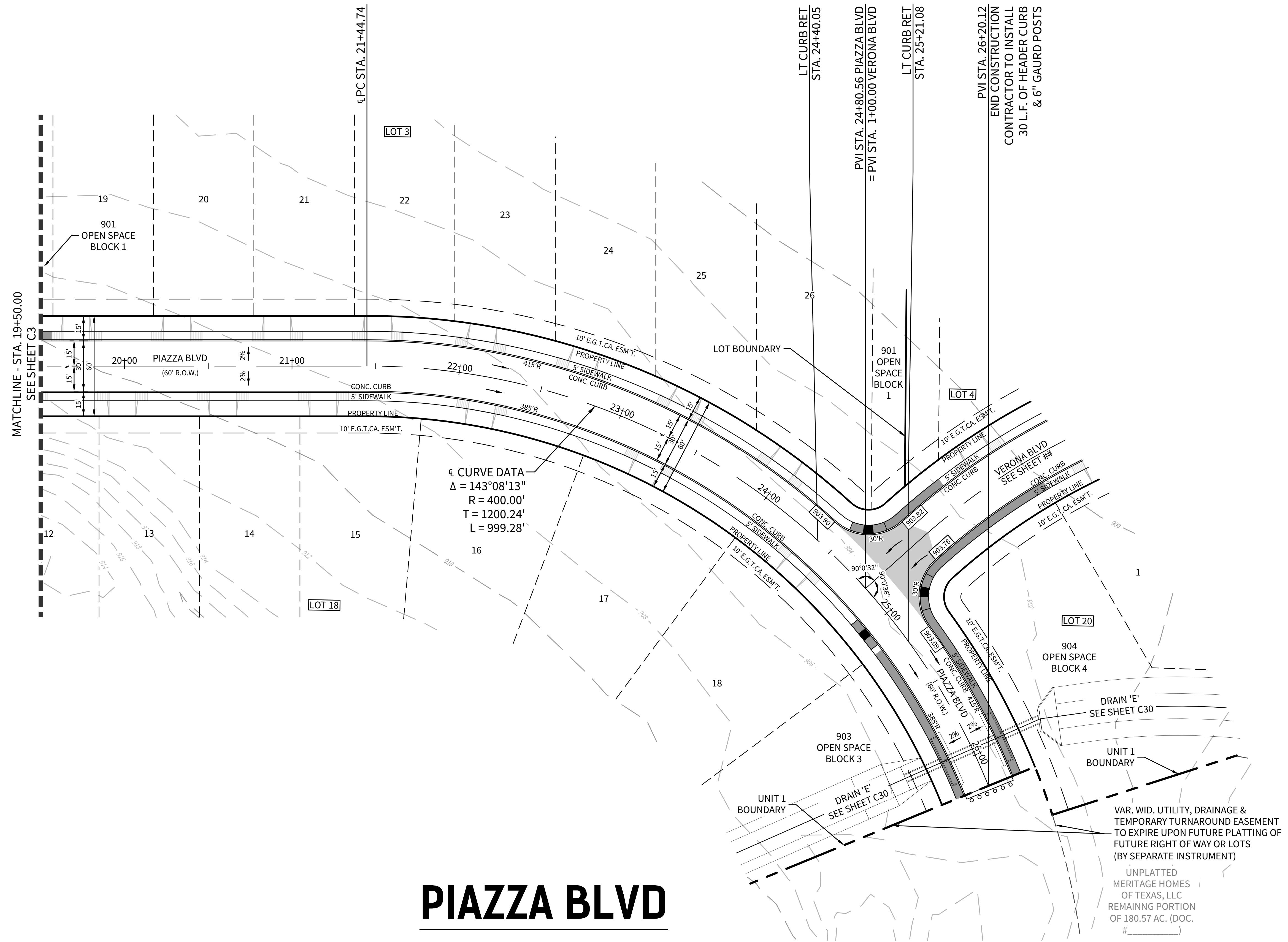

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SCALE: 1"=50'
50 25 0 50

LEGEND

— · > · —	PAVEMENT GUTTER LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▒	STREET WASHOUT – SEE DETAIL SHEET C16
▓	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
▓■▓	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17
— — — — —	CONDO LINE
———	LOT LINE

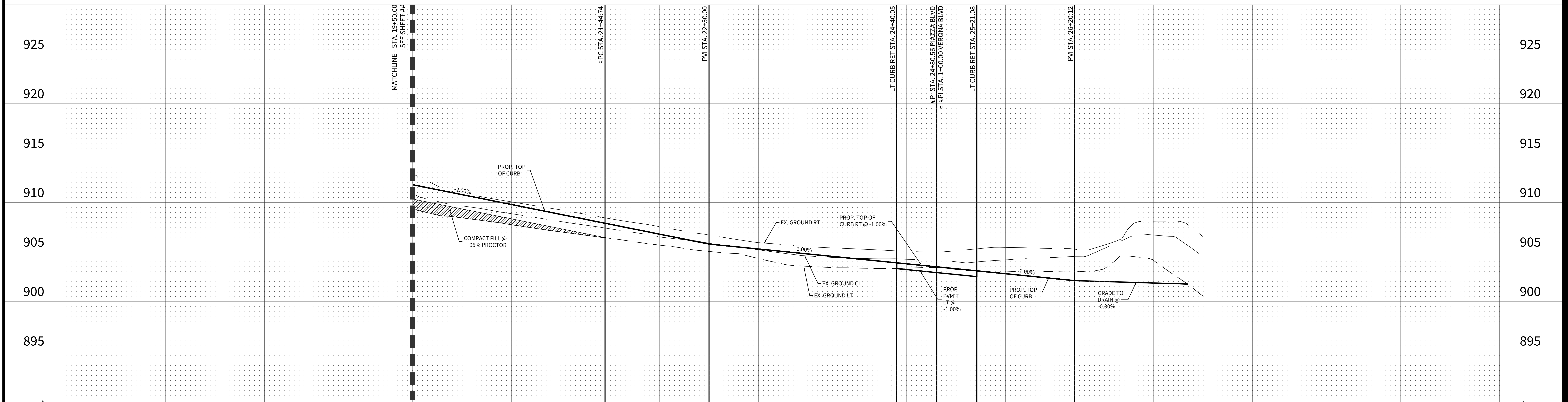
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

PIAZZA BLVD

STA. 19+50.00 TO STA. 26+20.12

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



PROP. TOP OF CURB RT.	911.80	910.80	909.80	908.80	907.90	906.80	905.80	905.30	904.80	904.30	903.90	903.80	903.49	903.30	903.09	902.80	902.30	902.10
PROP. TOP OF CURB LT.	911.80	910.80	909.80	908.80	907.90	906.80	905.80	905.30	904.80	904.30	903.90	903.21 (PVMT.)	902.91 (PVMT.)	902.71 (PVMT.)	903.09	902.80	902.30	902.10

20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

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CONTESSA SUBDIVISION UNIT 1

STREET PLAN & PROFILE - PIAZZA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

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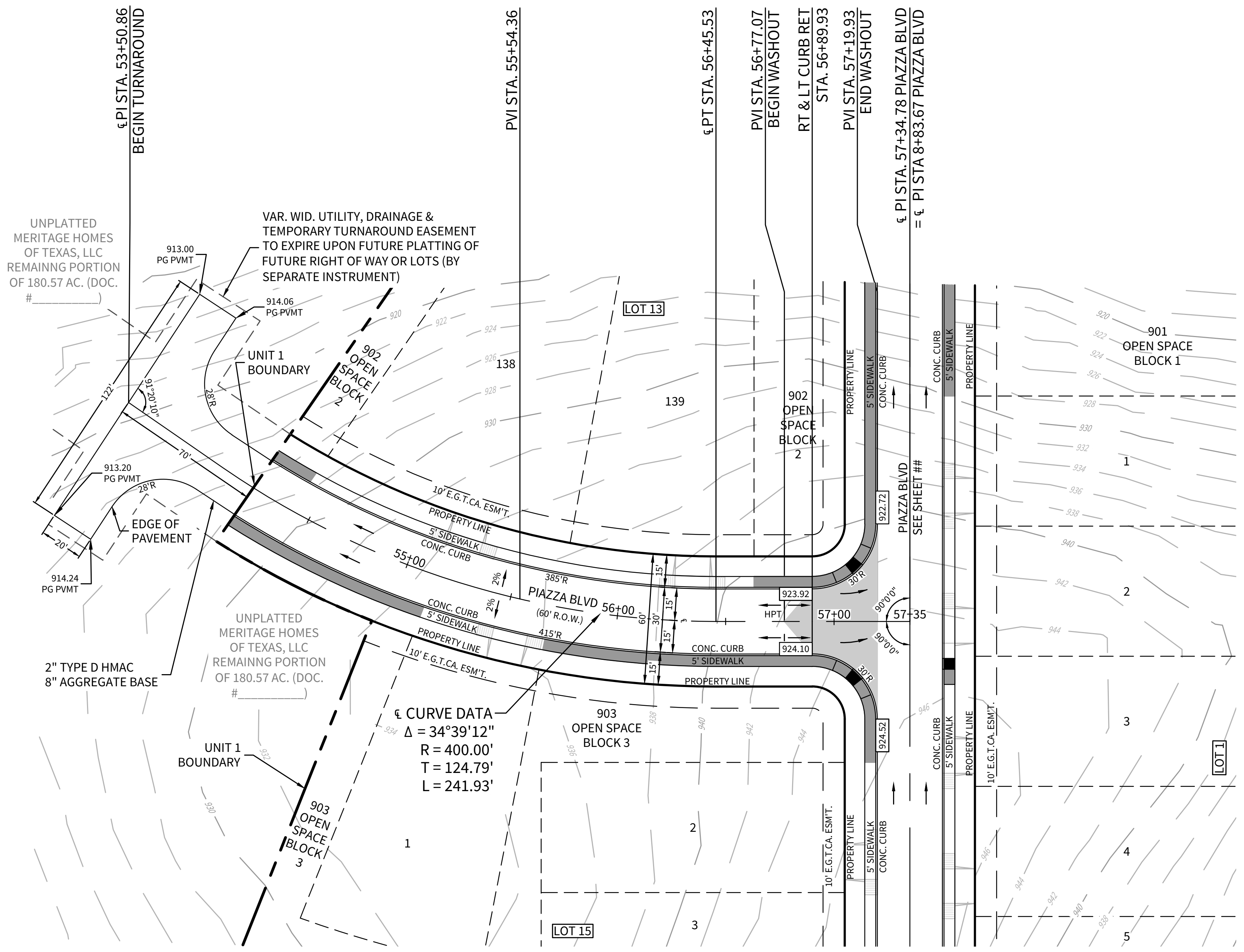


LEGEND

- PAVEMENT GUTTER LINE
- CONDO LINE
- DRIVEWAY TO BE BUILT WITH HOMEBUILDING
- STREET WASHOUT – SEE DETAIL SHEET C16
- SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
- ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17

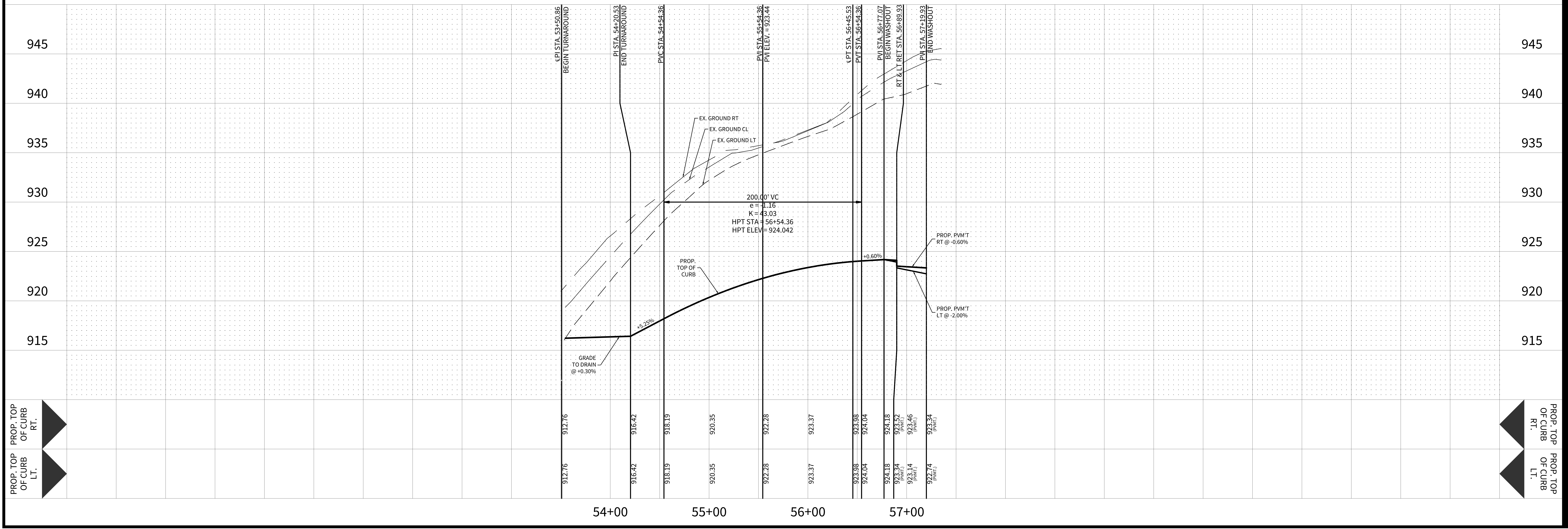
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX CURB RETURN ELEVATION
TOP OF CURB

PIAZZA BLVD

STA. 53+50.86 TO END

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



PROP. TOP OF CURB RT.	912.76	916.42	918.19	920.35	922.28	923.37	923.98	924.04	924.18	923.52 (PVMT.)	923.46 (PVMT.)	923.34 (PVMT.)
PROP. TOP OF CURB LT.	912.76	916.42	918.19	920.35	922.28	923.37	923.98	924.04	924.18	923.34 (PVMT.)	923.14 (PVMT.)	922.74 (PVMT.)

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CONTESSA SUBDIVISION
UNIT 1

STREET PLAN & PROFILE - PIAZZA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

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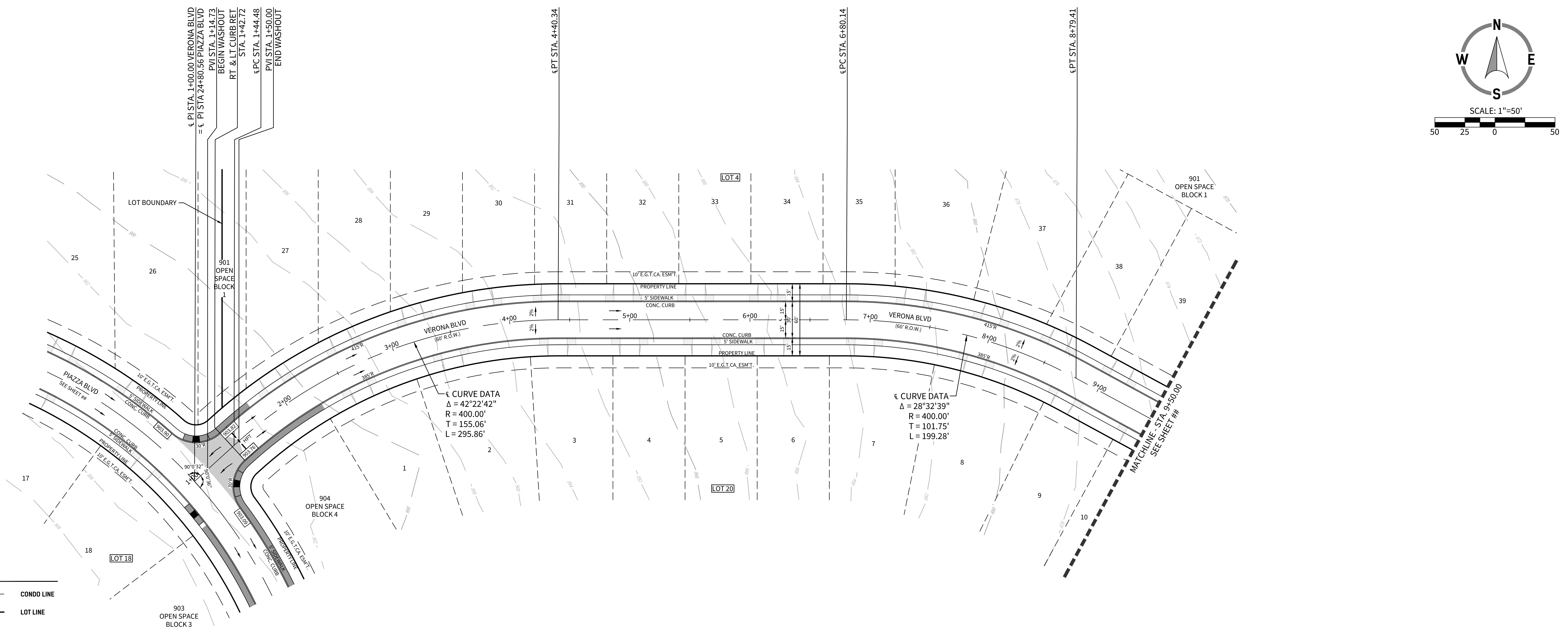


LEGEND

── · > · ──	PAVEMENT GUTTER LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	STREET WASHOUT – SEE DETAIL SHEET C16
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
■	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17
— — — —	CONDO LINE
────	LOT LINE

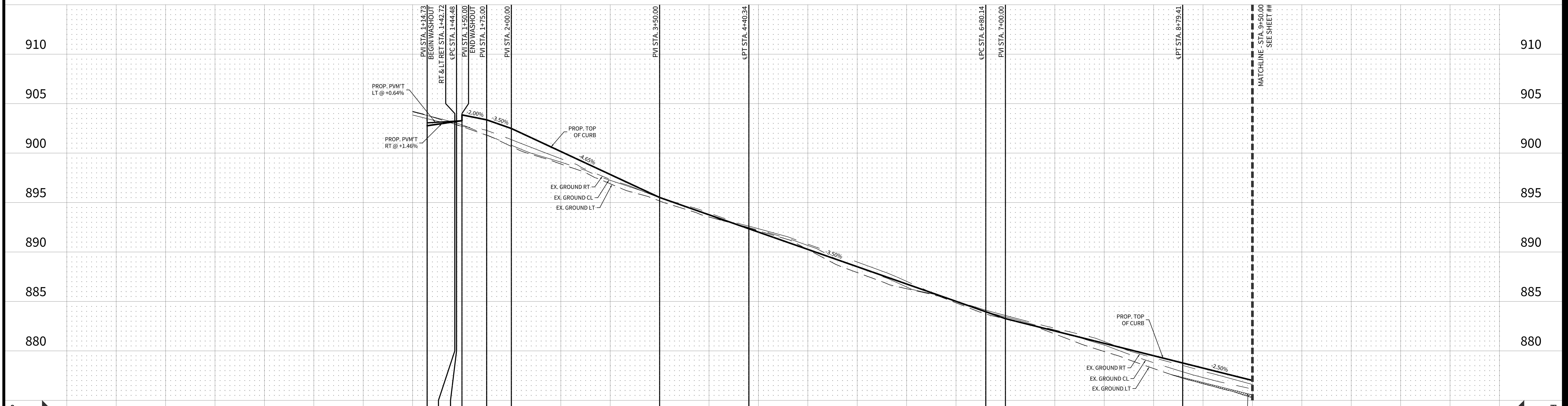
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

VERONA BLVD

STA. 1+00.00 TO STA. 9+50.00

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



PROP. TOP OF CURB RT.	902.76 (PVMT.)	903.17 (PVMT.)	903.78	903.86	903.36	902.49	900.16	897.84	895.51	893.76	892.35	892.01	890.26	888.51	886.76	885.01	883.96	883.26	882.01	880.76	879.51	878.78	878.26
PROP. TOP OF CURB LT.	903.05 (PVMT.)	903.23 (PVMT.)	903.83	903.86	903.36	902.49	900.16	897.84	895.51	893.76	892.35	892.01	890.26	888.51	886.76	885.01	883.96	883.26	882.01	880.76	879.51	878.78	878.26

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

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CONTESSA SUBDIVISION
UNIT 1

STREET PLAN & PROFILE - VERONA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
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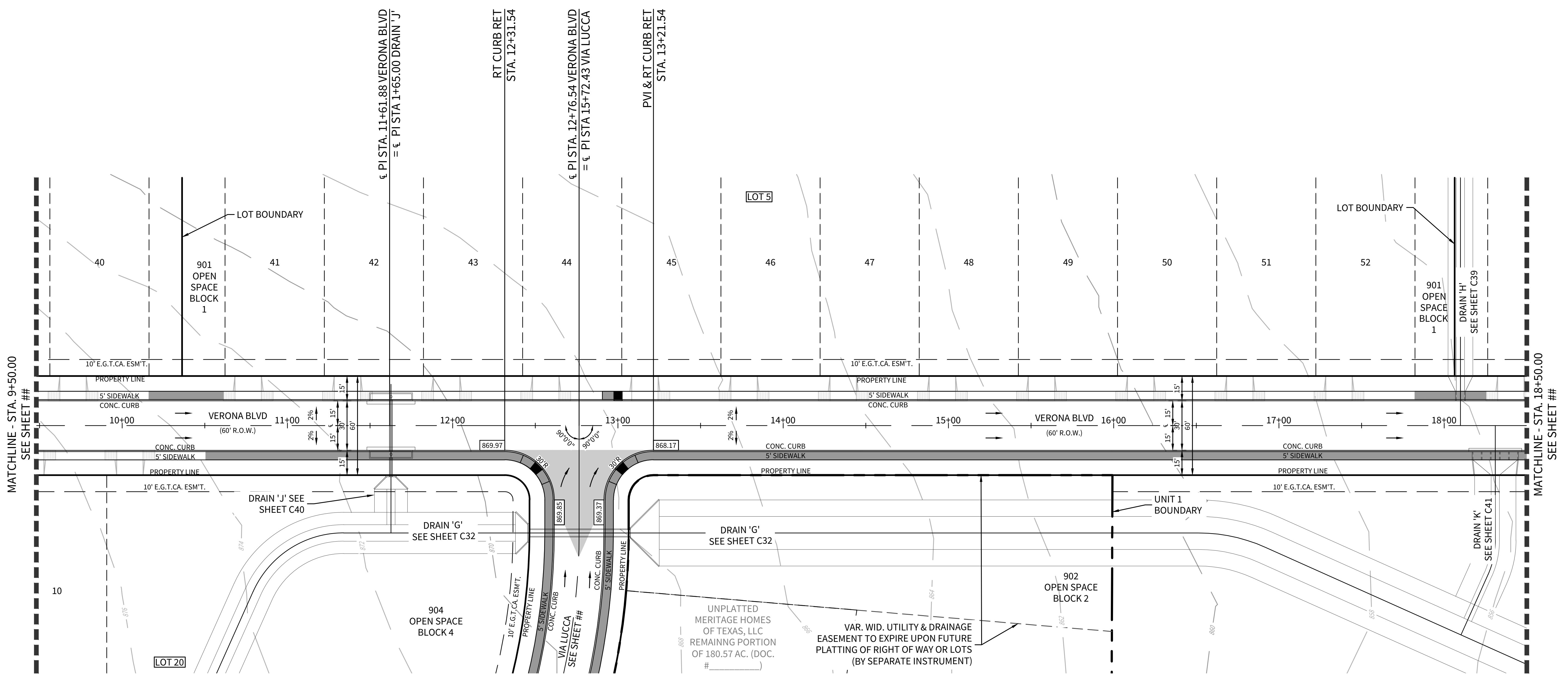
TBPE No. 455
TBPLS No. 10048500

C7

P:\04343\002\2-DWG\4-Plans\C7 STREET PLAN & PROFILE - VERONA BLVD.dwg 2025/06/09 3:31pm jochoa

SCALE: 1"=50'
50 25 0 50



LEGEND

— · > · —	PAVEMENT GUTTER LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▒	STREET WASHOUT – SEE DETAIL SHEET C16
▓	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
▓■▓	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17
— — — — —	CONDO LINE
———	LOT LINE

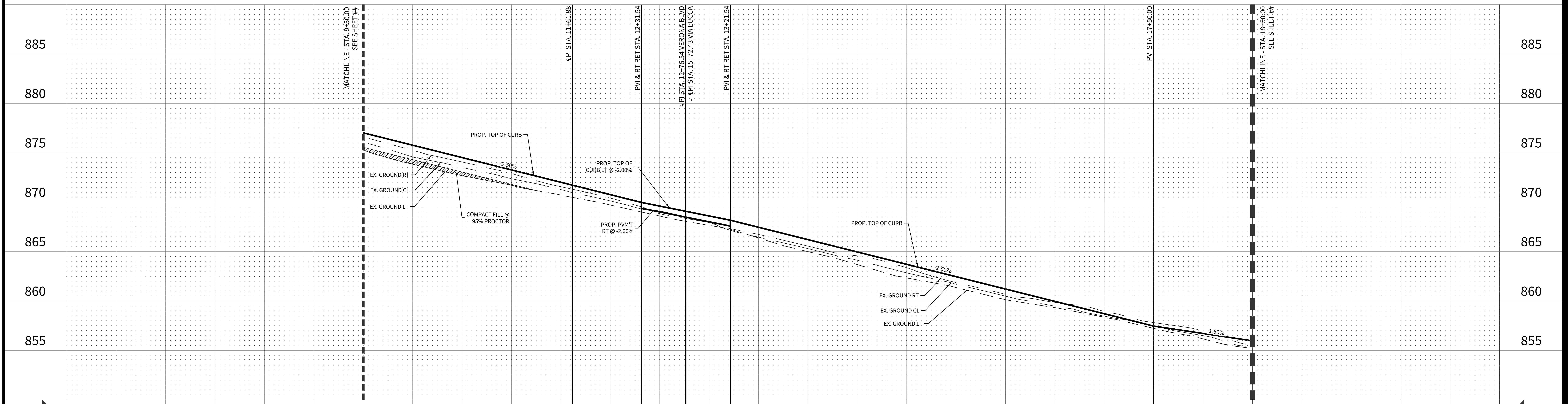
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

VERONA BLVD

STA. 9+50.00 TO STA. 18+50.00

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



PROP. TOP OF CURB RT.	877.01	875.76	874.51	873.26	872.01	871.72	870.76	869.97	869.02 (PVMT.)	868.49 (PVMT.)	868.02 (PVMT.)	868.17	867.46	866.21	864.96	863.71	862.46	861.21	859.96	858.71	857.46	856.71	PROP. TOP OF CURB RT.
PROP. TOP OF CURB LT.	877.01	875.76	874.51	873.26	872.01	871.72	870.76	869.97	869.60	869.07	868.60	868.17	867.46	866.21	864.96	863.71	862.46	861.21	859.96	858.71	857.46	856.71	PROP. TOP OF CURB LT.

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

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CONTESSA SUBDIVISION UNIT 1

STREET PLAN & PROFILE - VERONA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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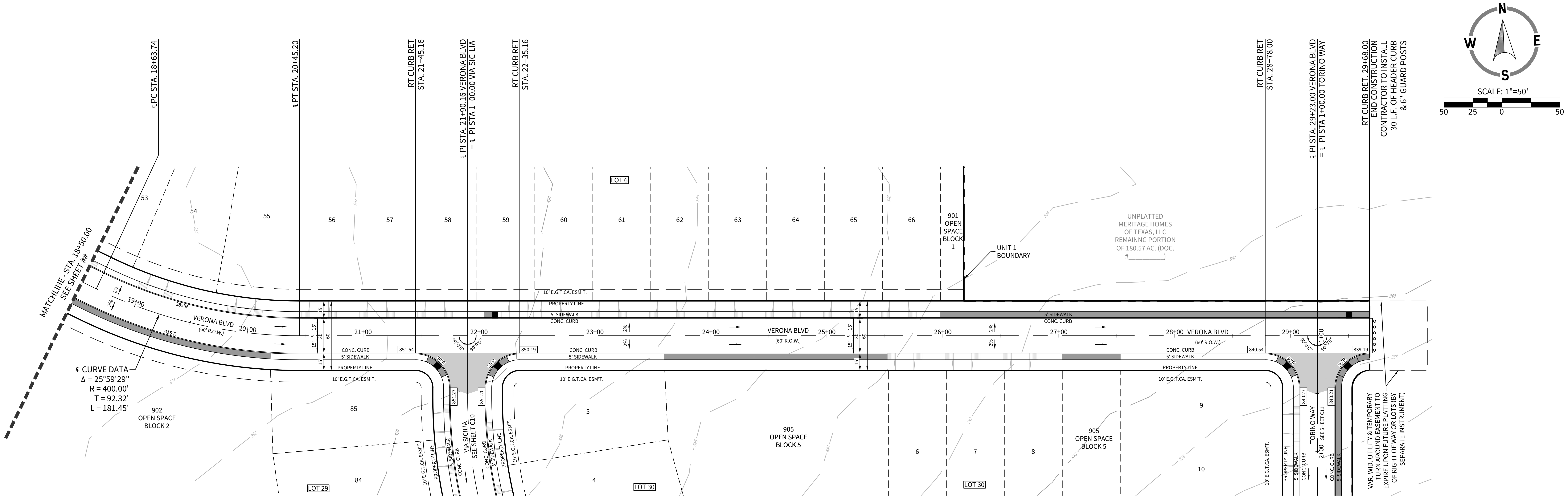
P:\04343\002\2-DWG\4-Plans\C8 STREET PLAN & PROFILE - VERONA BLVD.dwg 2025/06/09 5:07pm jgarcia


N
W
E
S
SCALE: 1"=50'
50 25 0 50
¢PC STA. 18+63.74
¢PT STA. 20+45.20
RT CURB RET STA. 21+45.16
¢PI STA. 21+90.16 VERONA BLVD = ¢PI STA 1+00.00 VIA SICILIA
RT CURB RET STA. 22+35.16
RT CURB RET STA. 28+78.00
¢PI STA. 29+23.00 VERONA BLVD = ¢PI STA 1+00.00 TORINO WAY
RT CURB RET. 29+68.00 END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & 6" GUARD POSTS
MATCHLINE - STA. 18+50.00 SEE SHEET ##
¢ CURVE DATA
Δ = 25°59'29"
R = 400.00'
T = 92.32'
L = 181.45'
902 OPEN SPACE BLOCK 2
901 OPEN SPACE BLOCK 1
UNIT 1 BOUNDARY
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 180.57 AC. (DOC. #)
905 OPEN SPACE BLOCK 5
VERONA BLVD (60' R.O.W.)
VIA SICILIA SEE SHEET C10
TORINO WAY SEE SHEET C11
10' E.G.T.CA. ESM'T.
PROPERTY LINE
5' SIDEWALK
CONC. CURB
LOT 6
LOT 29
LOT 30
53
54
55
56
57
58
59
60
61
62
63
64
65
66
84
85
4
5
6
7
8
9
10
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
29+00
851.54
850.19
840.54
839.19
VAR. WID. UTILITY & TEMPORARY TURN AROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS (BY SEPARATE INSTRUMENT)

LEGEND

— · > · —	PAVEMENT GUTTER LINE
	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▭	STREET WASHOUT – SEE DETAIL SHEET C16
▬	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
▬■▬	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17
— — — — —	CONDO LINE
———	LOT LINE

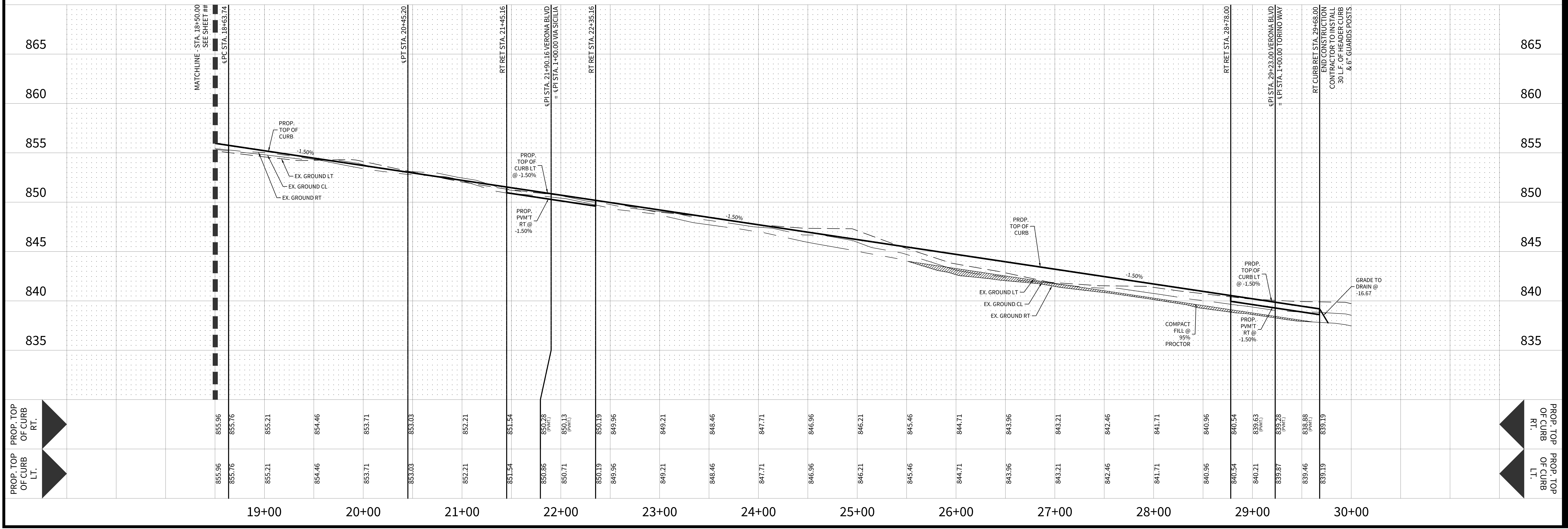
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

VERONA BLVD

STA. 18+50.00 TO STA. 29+68.00

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


865
860
855
850
845
840
835
MATCHLINE - STA. 18+50.00 SEE SHEET ##
¢PC STA. 18+63.74
¢PT STA. 20+45.20
RT RET STA. 21+45.16
¢PI STA. 21+90.16 VERONA BLVD = ¢PI STA. 1+00.00 VIA SICILIA
RT RET STA. 22+35.16
RT RET STA. 28+78.00
¢PI STA. 29+23.00 VERONA BLVD = ¢PI STA. 1+00.00 TORINO WAY
RT CURB RET STA. 29+68.00 END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & 6" GUARDS POSTS
PROP. TOP OF CURB
-1.50%
EX. GROUND LT
EX. GROUND CL
EX. GROUND RT
PROP. TOP OF CURB LT @ -1.50%
PROP. PVM'T RT @ -1.50%
-1.50%
PROP. TOP OF CURB
-1.50%
PROP. TOP OF CURB LT @ -1.50%
GRADE TO DRAIN @ -16.67
COMPACT FILL @ 95% PROCTOR
PROP. PVM'T RT @ -1.50%
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
29+00
30+00

PROP. TOP OF CURB RT.	PROP. TOP OF CURB LT.
855.96	855.96
855.76	855.76
855.21	855.21
854.46	854.46
853.71	853.71
853.03	853.03
852.21	852.21
851.54	851.54
850.28 (PVMT.)	850.86
850.13 (PVMT.)	850.71
850.19	850.19
849.96	849.96
849.21	849.21
848.46	848.46
847.71	847.71
846.96	846.96
846.21	846.21
845.46	845.46
844.71	844.71
843.96	843.96
843.21	843.21
842.46	842.46
841.71	841.71
840.96	840.96
840.54	840.54
839.63 (PVMT.)	840.21
839.28 (PVMT.)	839.87
838.88 (PVMT.)	839.46
839.19	839.19

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STREET PLAN & PROFILE - VERONA BLVD

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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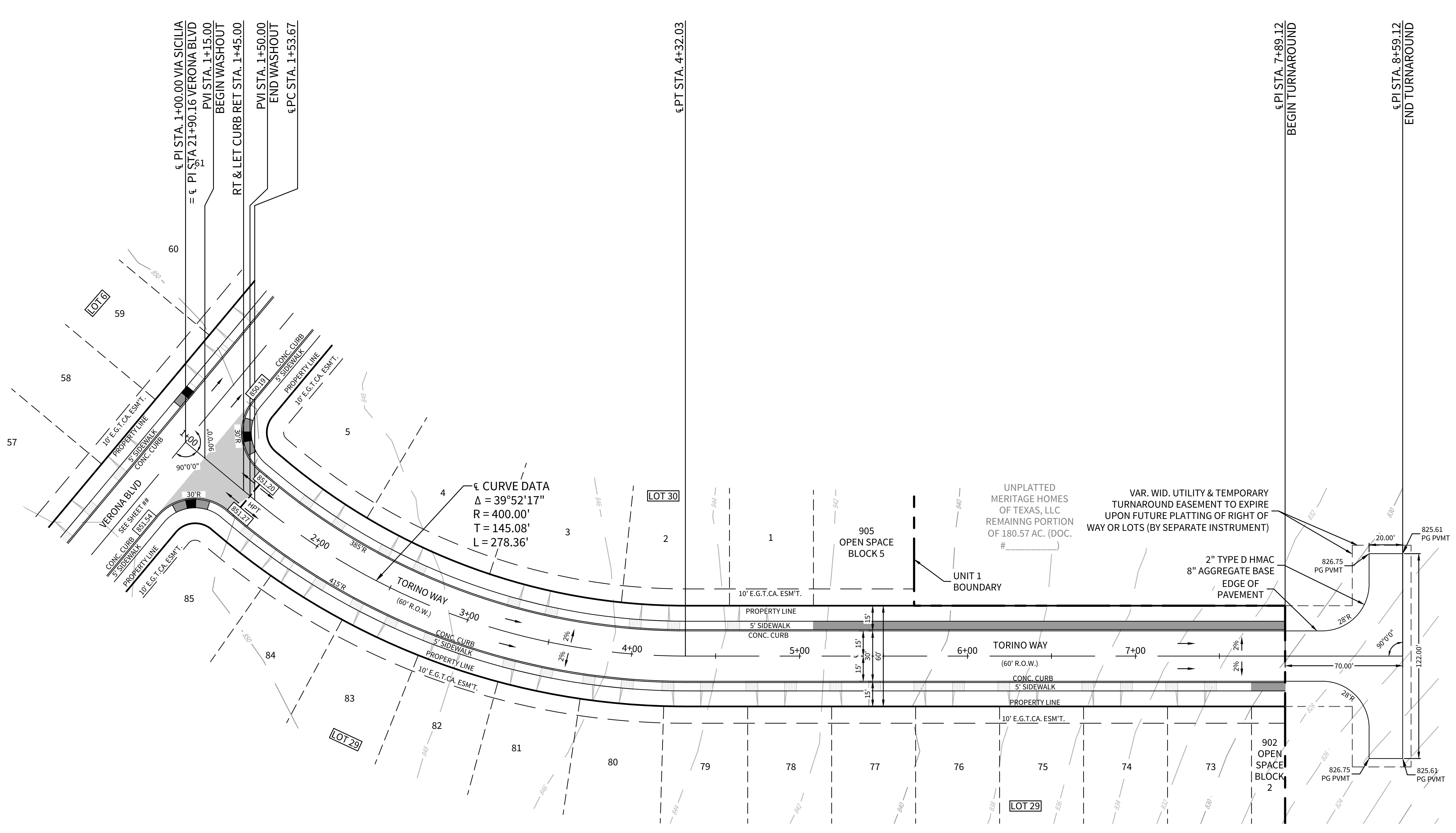


LEGEND

—— · > · ——	PAVEMENT GUTTER LINE
— — — — —	CONDO LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	STREET WASHOUT – SEE DETAIL SHEET C16
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
▨■▨	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17

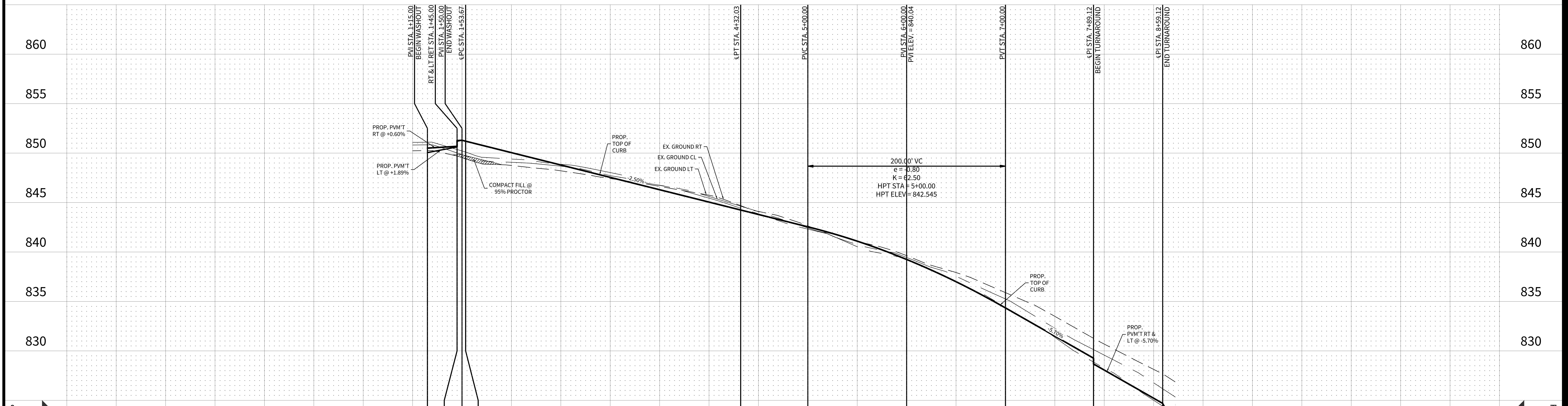
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

VIA SICILIA

STA. 1+00.00 TO STA. 8+59.12

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



PROP. TOP OF CURB RT.	850.50 (PVMT.)	850.68 (PVMT.)	851.29	851.20	850.04	848.79	847.54	846.29	845.04	844.24	843.79	842.54	841.09	839.24	836.99	834.34	831.49	829.26	825.27	PROP. TOP OF CURB RT.
PROP. TOP OF CURB LT.	850.05 (PVMT.)	850.62 (PVMT.)	851.30	851.20	850.04	848.80	847.54	846.30	845.04	844.24	843.80	842.54	841.10	839.24	837.00	834.34	831.50	829.26	825.27	PROP. TOP OF CURB LT.

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

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STREET PLAN & PROFILE - VIA SICILIA

DATE
06/09/2025

PROJECT NO.
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CG/JG/LJ/TCD

CHECKED BY
XV/AL

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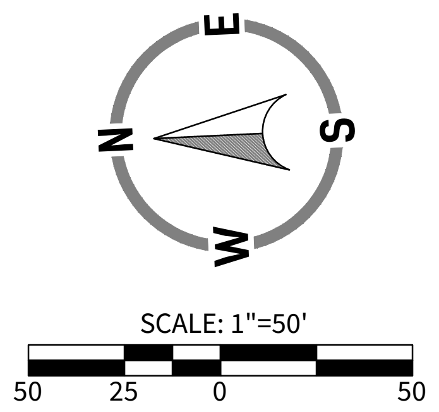
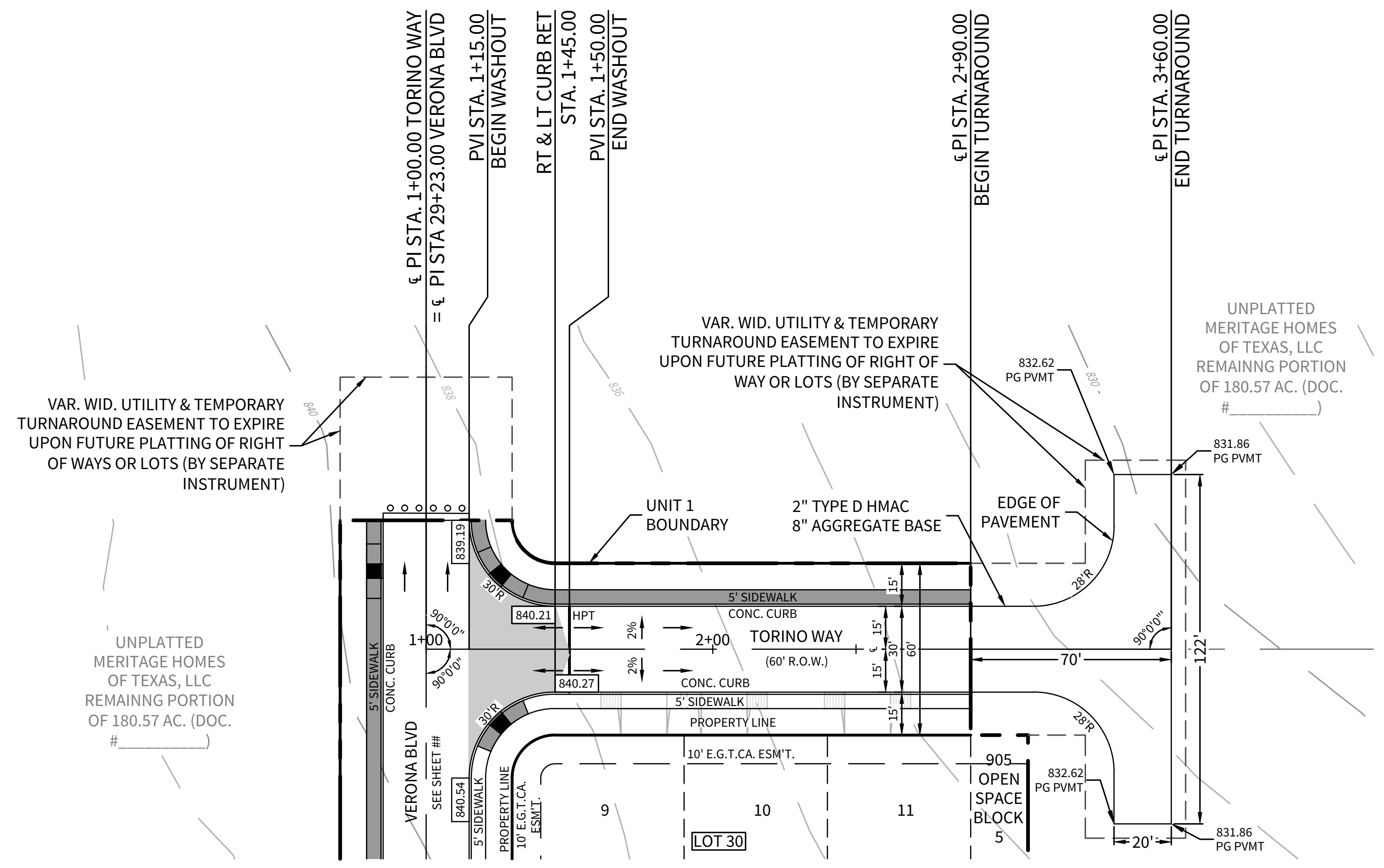
TBPLS No. 10048500

STREET PLAN & PROFILE - VIA SICILIA.dwg 2025/06/09 3:32pm jochoa





LEGEND

— · > —	PAVEMENT GUTTER LINE
— — — —	CONDO LINE
▭	DRIVEWAY TO BE BUILT WITH HOMEBUILDING
▨	STREET WASHOUT - SEE DETAIL SHEET C16
▨	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE
■	ADA SIDEWALK CURB RAMP - SEE DETAIL SHEET C17

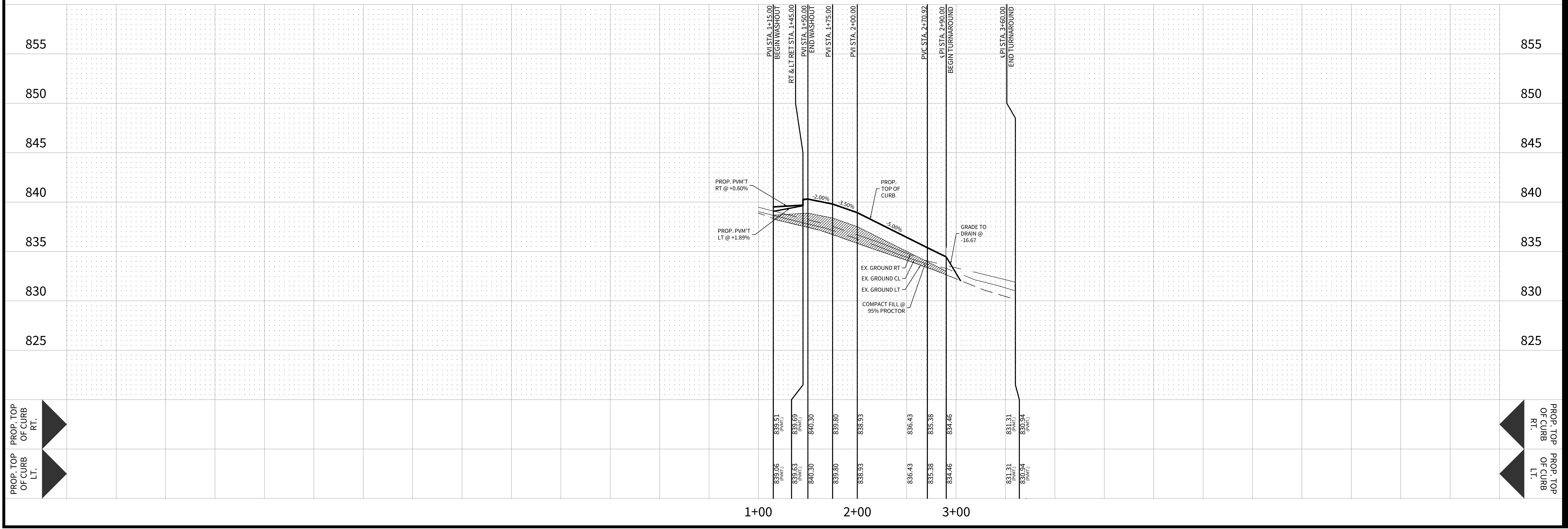
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

TORINO WAY

STA. 1+00.00 TO STA. 3+60.00

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



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STREET PLAN & PROFILE - TORINO WAY

DATE
06/09/2025

PROJECT NO.
04343.002

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CHECKED BY
XV/AL

REVISIONS

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P:\04343\002\2-DWG\4-Plans\C11 STREET PLAN & PROFILE - TORINO WAY.dwg 2025/06/09 3:40pm jochoa

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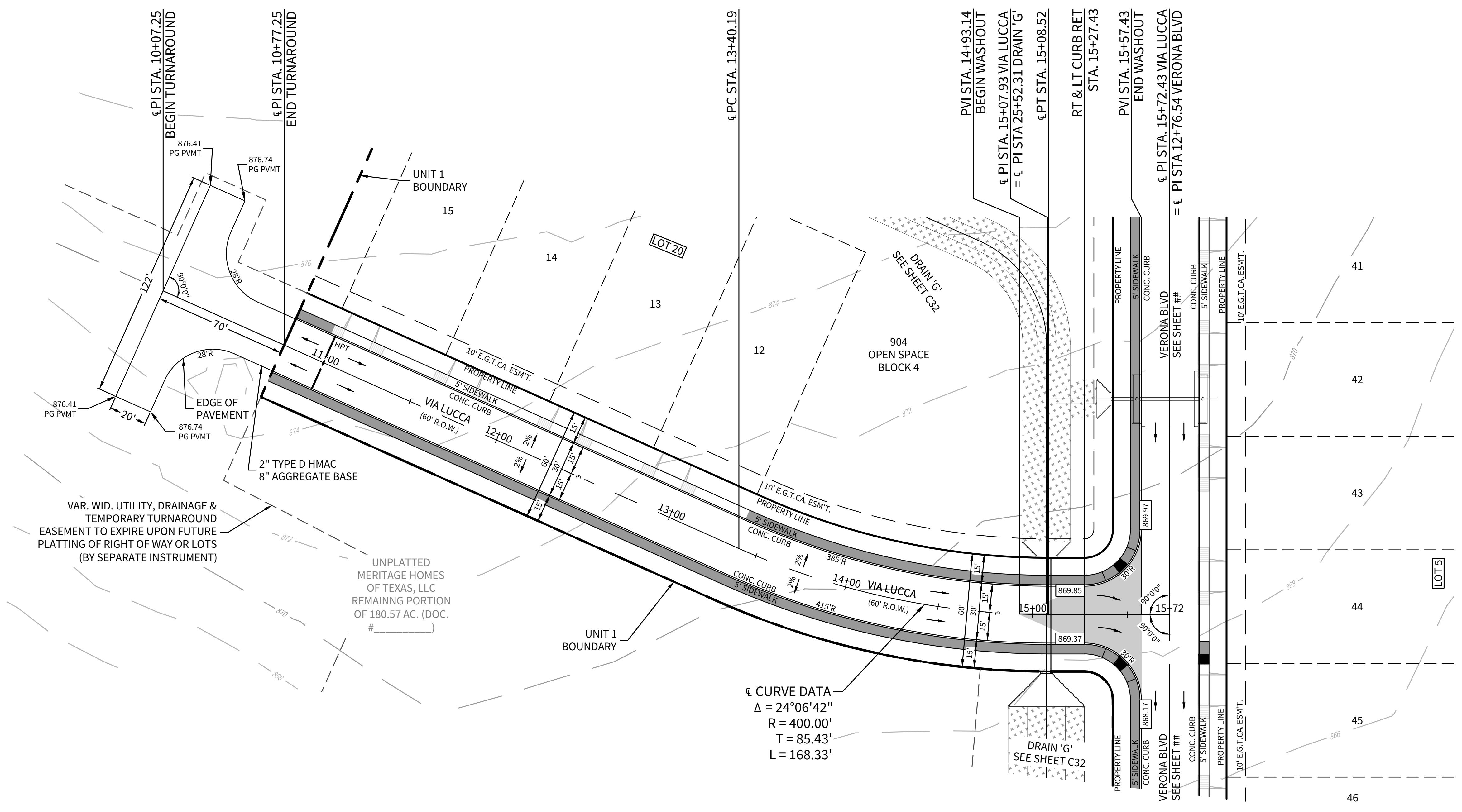
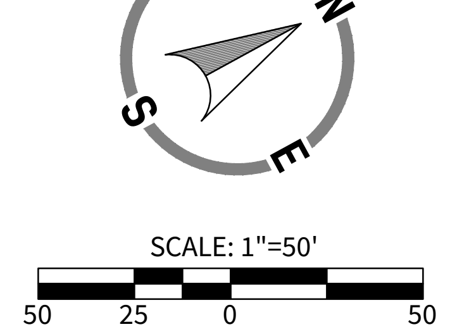




LEGEND

— · > · —	PAVEMENT GUTTER LINE	— — — — —	CONDO LINE
	DRIVEWAY TO BE BUILT WITH HOMEBUILDING		
	STREET WASHOUT – SEE DETAIL SHEET C16		
	SIDEWALK TO BE CONSTRUCTED WITH INFRASTRUCTURE		
	ADA SIDEWALK CURB RAMP – SEE DETAIL SHEET C17		

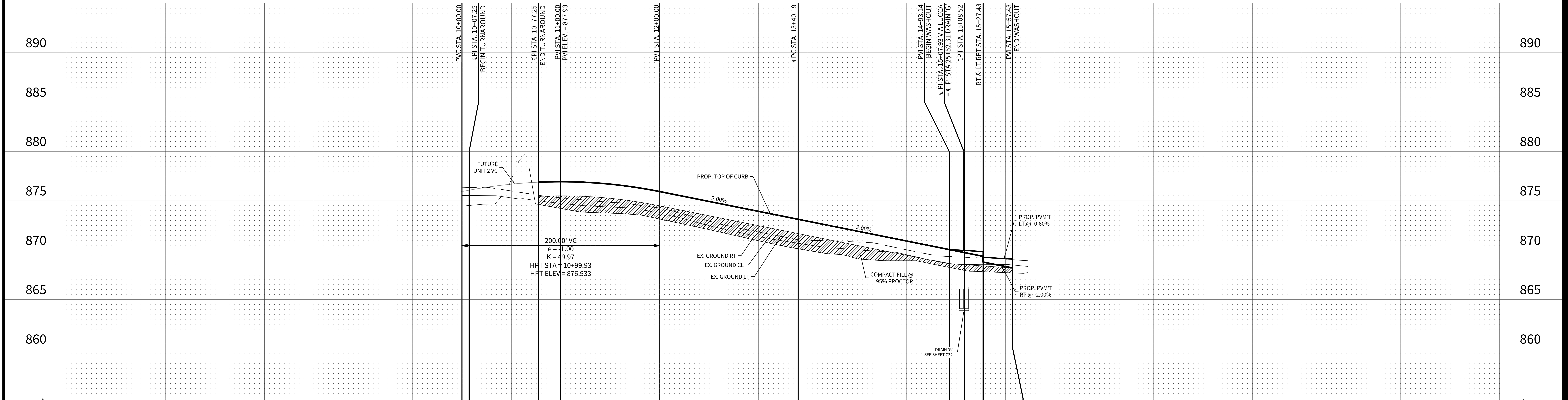
ONLY ADA RAMPS WITH A 900 SERIES OPEN SPACE WILL BE BUILT WITH INFRASTRUCTURE

XXX.XX	CURB RETURN ELEVATION TOP OF CURB

VIA LUCCA

STA. 10+07.25 TO END

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



PROP. TOP OF CURB RT.	875.93	876.07	876.68	876.88	876.93	876.68	875.93	874.93	873.93	873.12	872.93	871.93	870.92	870.06	869.92	869.75	868.79 (PVMT.)	868.34 (PVMT.)	868.19 (PVMT.)
PROP. TOP OF CURB LT.	875.93	876.07	876.68	876.88	876.93	876.68	875.93	874.93	873.93	873.12	872.93	871.93	870.92	870.06	870.02	869.97	869.27 (PVMT.)	869.14 (PVMT.)	869.09 (PVMT.)

10+00 11+00 12+00 13+00 14+00 15+00 16+00

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P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION
UNIT 1

STEET PLAN & PROFILE - VIA LUCCA

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

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XV/AL

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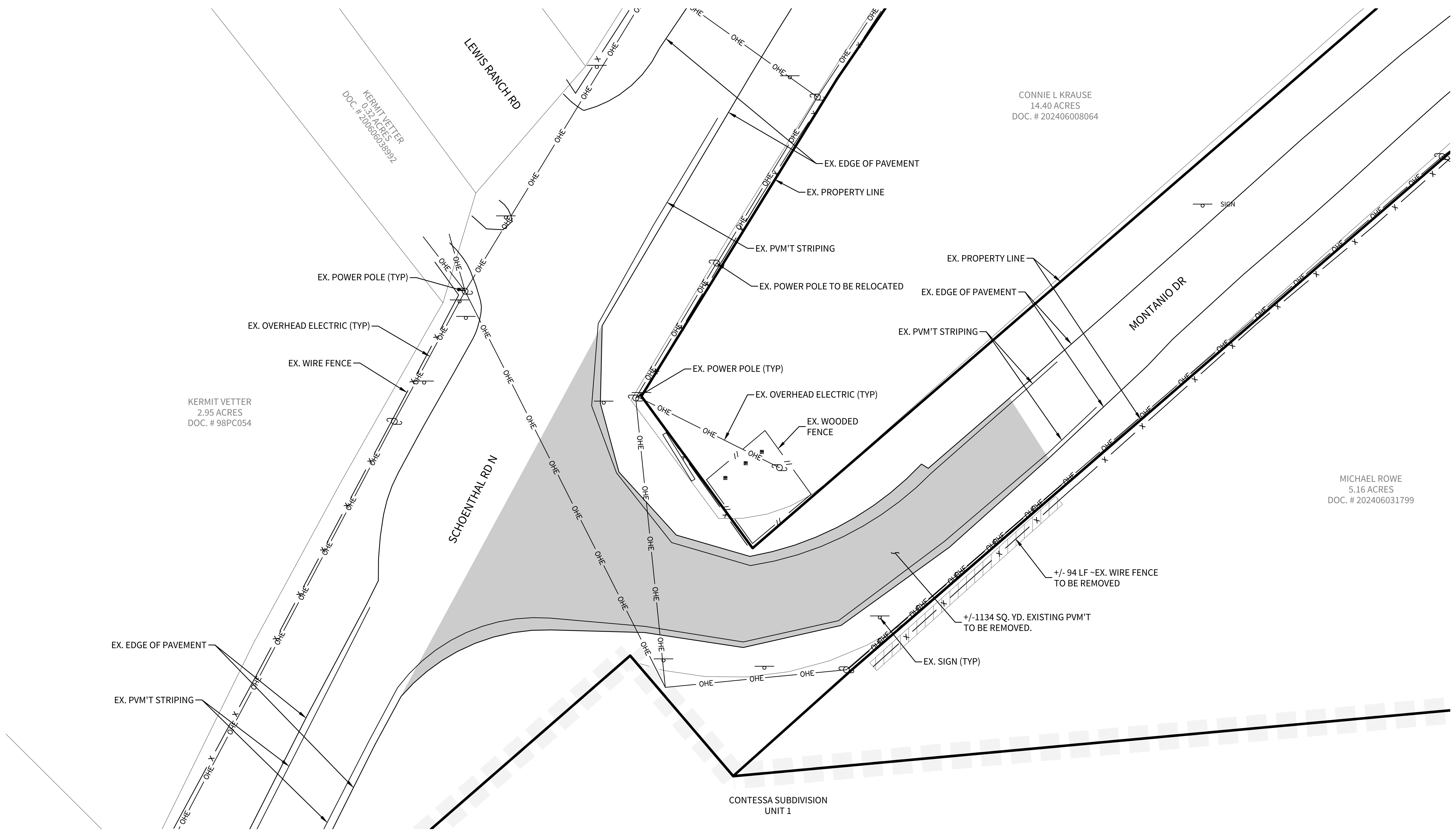
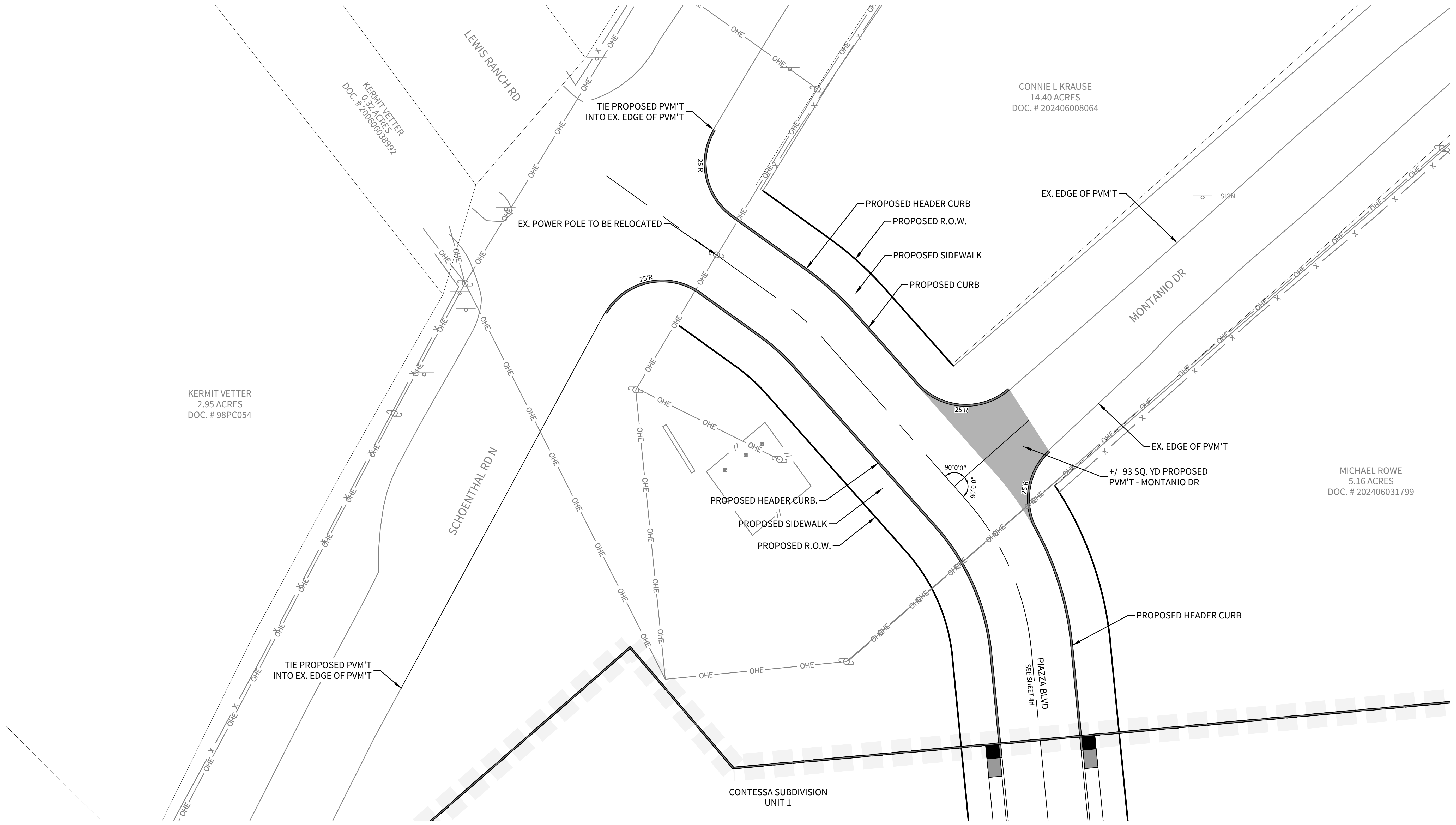


MONTANIO DR DEMOLITION PLAN

LEGEND

PROPERTY LINE	━━
EXISTING LOT LINE	──
EXISTING EDGE OF PVM'T	──
EXISTING OVERHEAD ELEC.	— OHE — OHE —
EXISTING WIRE FENCE	— x — x —
EXISTING SIGN	⊸
EXISTING POWER POLE	⊘
EXISTING PVM'T TO BE ABANDONED	▨



MONTANIO DR ABANDONMENT
PROPOSED CONDITIONS

LEGEND

PROPERTY LINE	━━
EXISTING LOT LINE	──
EXISTING EDGE OF PVM'T	──
EXISTING OVERHEAD ELEC.	— OHE — OHE —
EXISTING WIRE FENCE	— x — x —
EXISTING SIGN	⊸
EXISTING POWER POLE	⊘
PROPOSED R.O.W.	━━
PROPOSED CURB & SIDEWALK	═══
PROPOSED EDGE OF PVM'T	──
PROPOSED PEDESTRIAN RAMP	◗

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UNIT 1

MONTANIO DR ABANDONMENT PLAN

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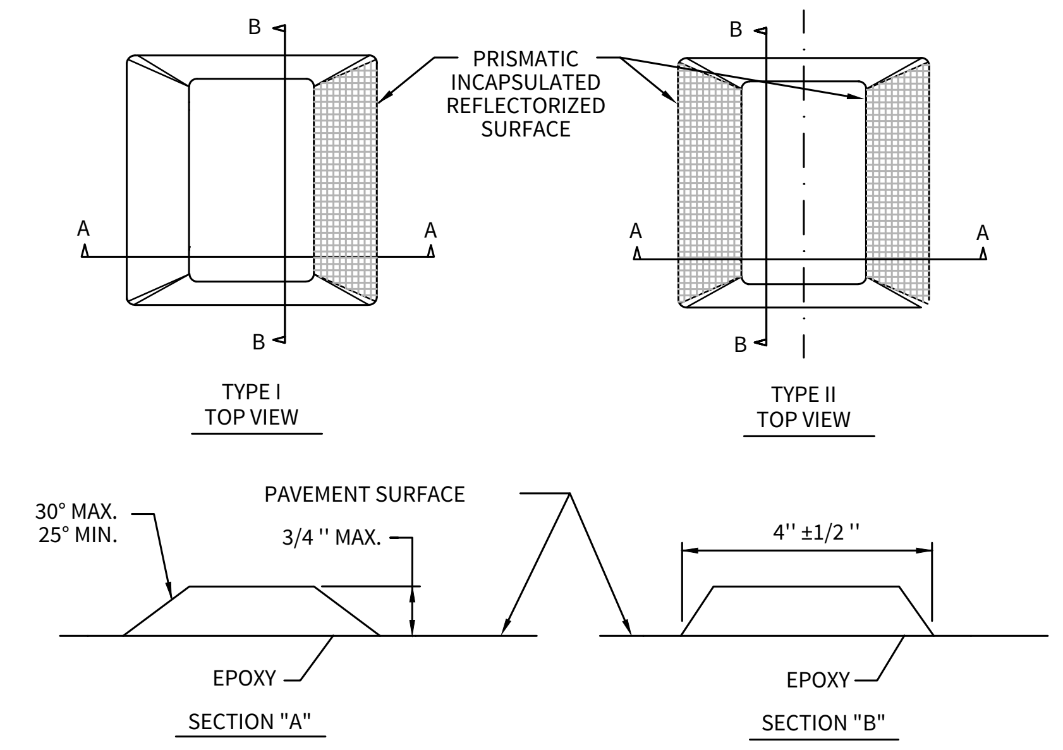


PAVEMENT REFLECTORS DETAIL

N.T.S.

1) REFLECTORIZED BLUE - FIRE HYDRANT

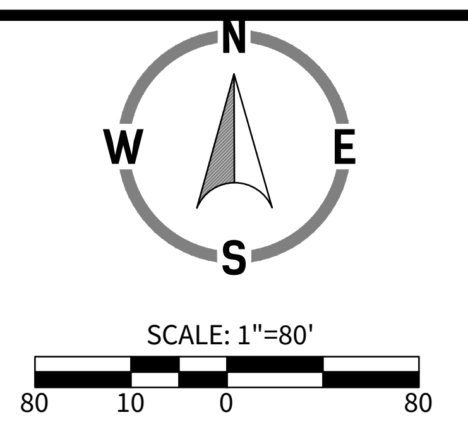
2) ADHENSIVE SHALL BE APPLIED IN SUFFICIENT TO ENSURE THE FOLLOWING:
  a) 100 PERCENT OF THE BONDING AREA OF RAISED PAVEMENT MARKERS SHALL BE IN CONTACT WITH THE ADHESIVE.
  b) RAISED PAVEMENT MARKERS SHALL NOT BE IN CONTACT WITH THE PAVEMENT SURFACE, BUT SHALL BE SEATED ON A CONTINUOUS LAYER OF ADHESIVE.
  c) BITUMINOUS ADHESIVE FOR MARKERS ON BITUMIOUS PAVEMENTS. EPOXY ADHENSIVE FOR MARKERS ON PORTLAND CEMENT CONCRETE PAVEMENTS. EPOXY ADHESIVE SHALL BE MACHINE MIXED.

3) RAISED PAVEMENT MARKERS SHALL BE FREE OF RUST, SCALE, DIRT, OIL, GREASE, MOISTURE, OR CONTAMINATES WHICH MIGHT ADVERSELY AFFECT THE ADHESIVE BOND. ADHESIVE OR ANY OTHER MATERIAL THAT IMPAIRS THE FUNCTIONAL REFLECTIVITY WILL NOT BE ACCEPTABLE.

4) PLACEMENT OF RAISED PAVEMENT MARKERS SHALL BE 4 FEET OFF STREET CENTELINE TOWARD ITEM MARKED.

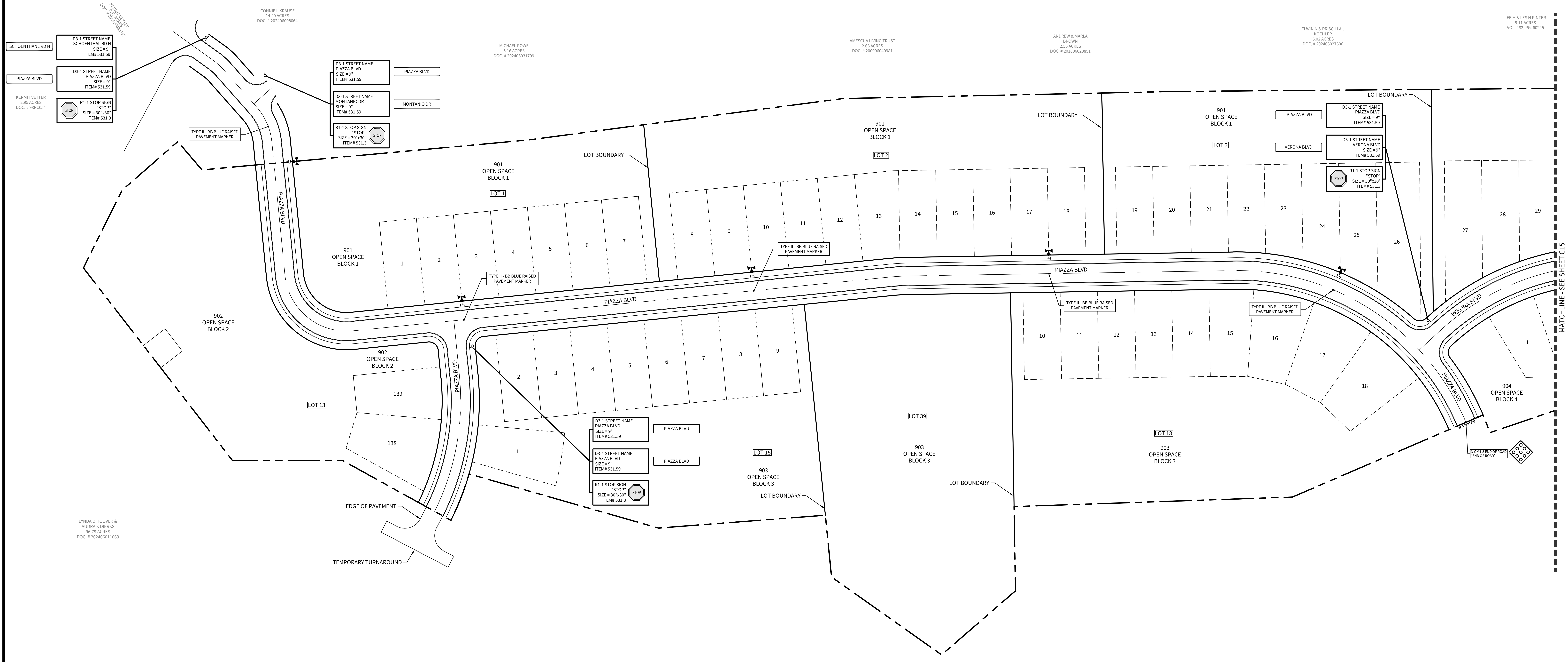
SIGNING AND PAVEMENT MARKING PLAN NOTES:

1. COMAL COUNTY WILL INSTALL COUNTY ROAD SIGNS AND INVOICE THE OWNER. THE CONTRACTOR IS TO INSTALL ALL TxDOT SIGNS AND PAVEMENT MARKINGS. ALL ROAD SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED ENGINEERING PLANS. THE COUNTY WILL INSPECT ALL SIGNS AT FINAL INSPECTION.
2. THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE COUNTY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.



CONTESSA UNIT 1
SIGN AND PAVEMENT MARKING QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
1	INSTALL SIGN POLE WITH STREET NAMES, BLOCK NUMBERS, AND STOP SIGN	EA.	7
2	RAISED PAVEMENT MARKER, TYPE II A-A (BLUE)	EA.	13
3	INSTALL SIGN POLE WITH "END OF ROAD" 3-OM4-3	EA.	2



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CONTESSA SUBDIVISION UNIT 1

TRAFFIC SIGNAGE PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

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PAVEMENT REFLECTORS DETAIL

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   b) RAISED PAVEMENT MARKERS SHALL NOT BE IN CONTACT WITH THE PAVEMENT SURFACE, BUT SHALL BE SEATED ON A CONTINUOUS LAYER OF ADHESIVE.
   c) BITUMINOUS ADHESIVE FOR MARKERS ON BITUMIOUS PAVEMENTS. EPOXY ADHENSIVE FOR MARKERS ON PORTLAND CEMENT CONCRETE PAVEMENTS. EPOXY ADHESIVE SHALL BE MACHINE MIXED.

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4) PLACEMENT OF RAISED PAVEMENT MARKERS SHALL BE 4 FEET OFF STREET CENTELINE TOWARD ITEM MARKED.

N
W E
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SCALE: 1"=80'

80 10 0 80

CONTESSA UNIT 1
SIGN AND PAVEMENT MARKING QUANTITIES

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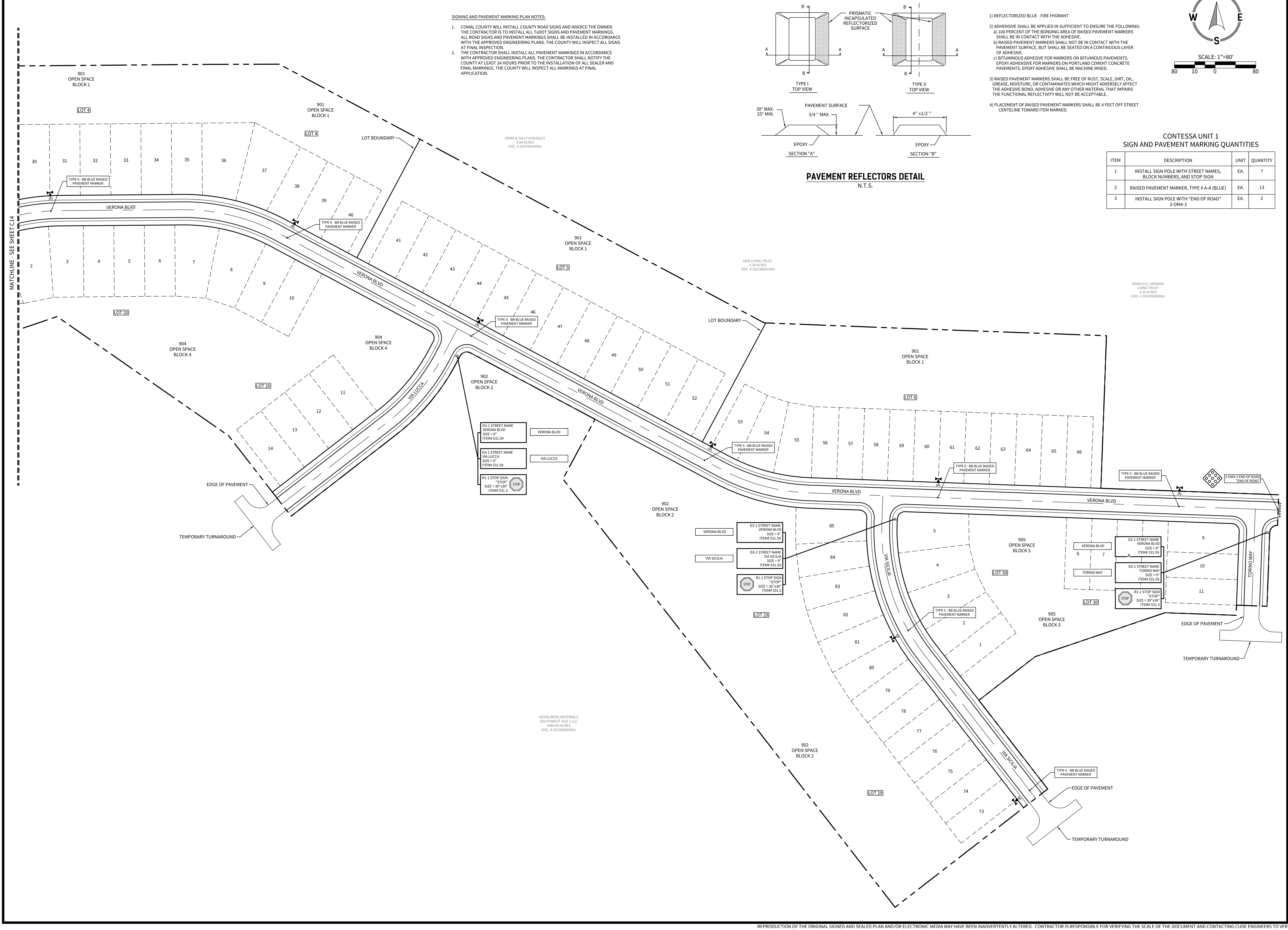

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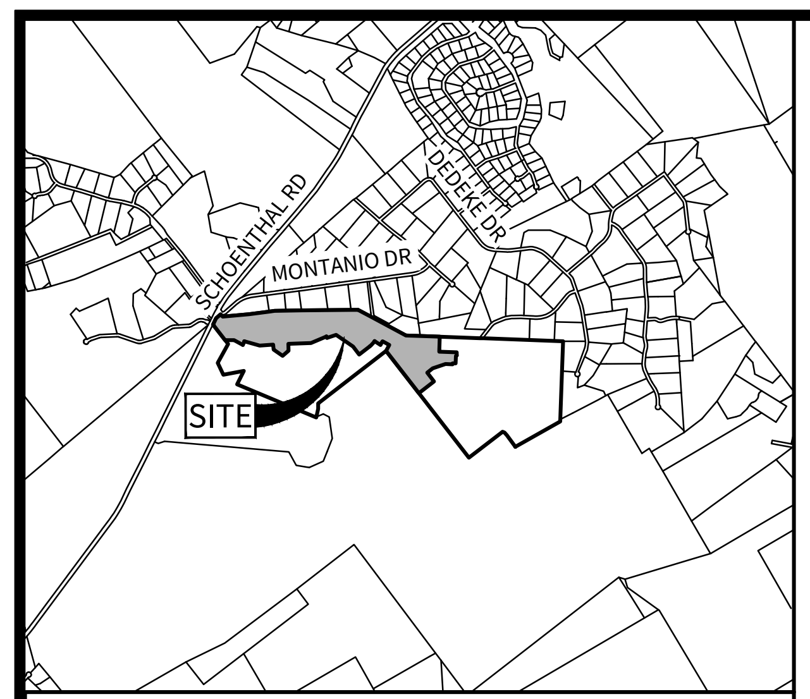

LOCATION MAP
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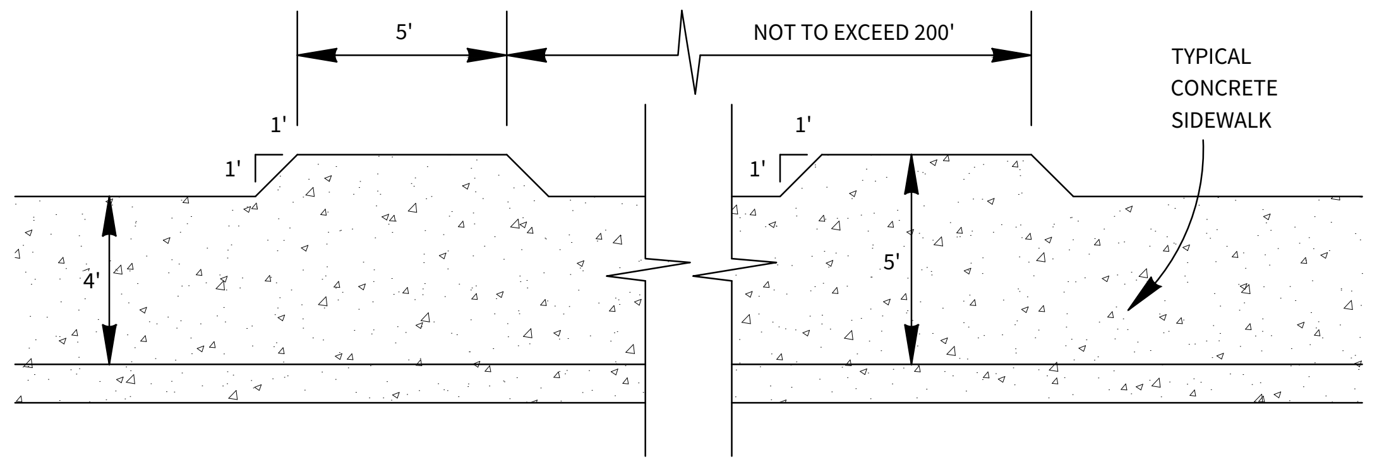
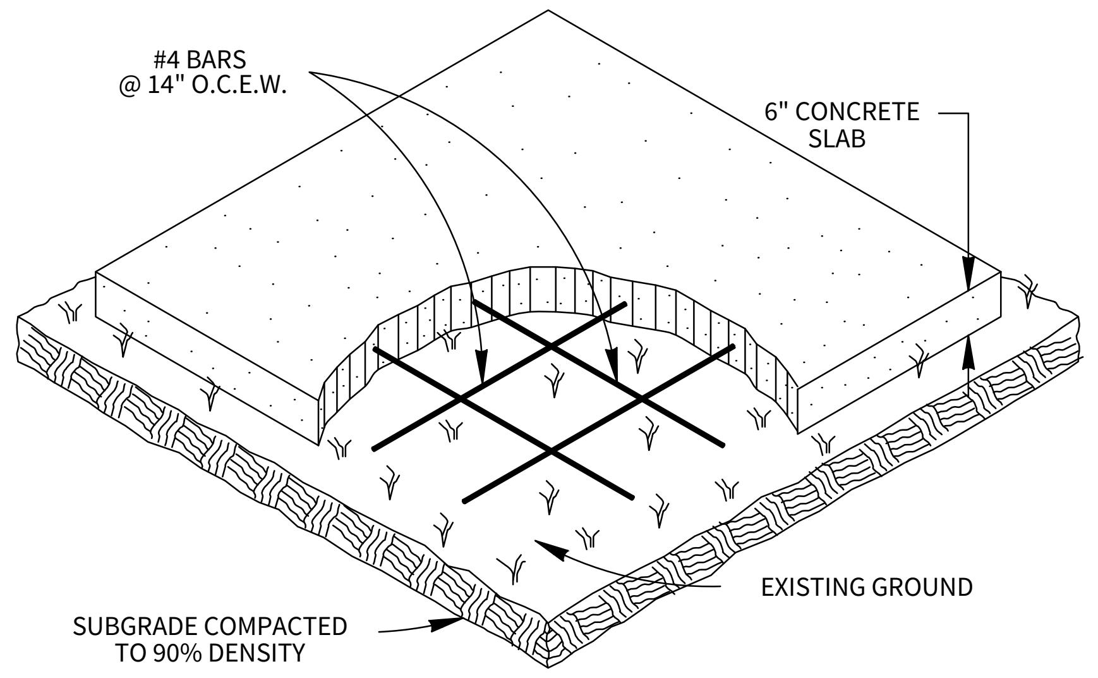


SIDEWALK PASSING SPACE

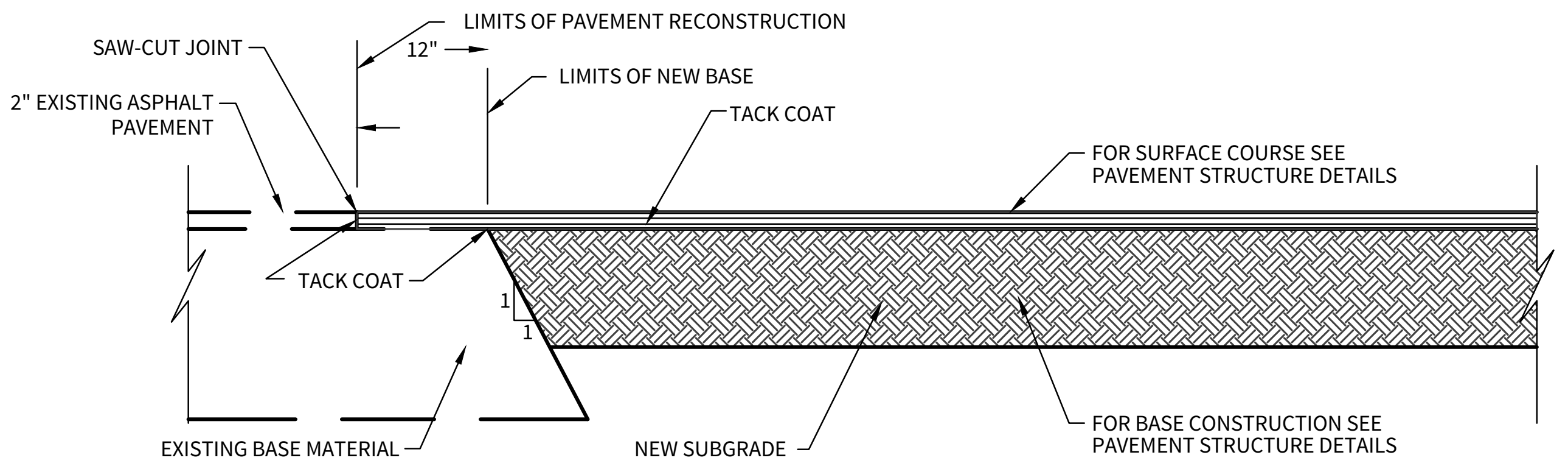
1. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
2. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.



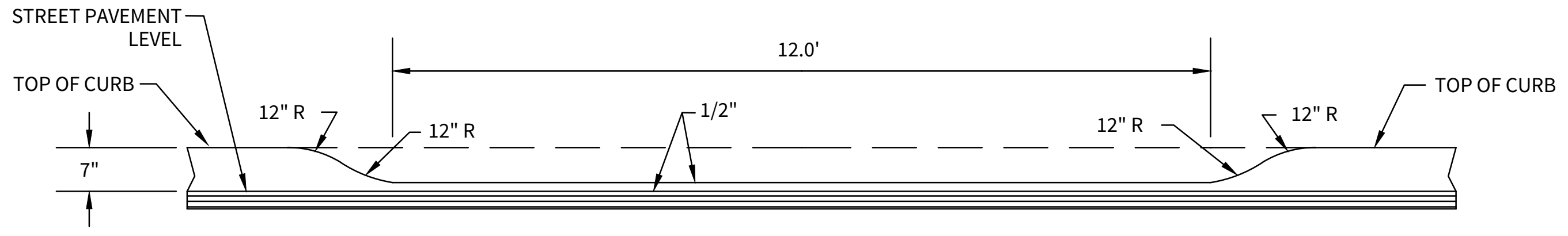
MAIL BOX PAD NOTE:

1. THE CONTRACTOR WILL CONSTRUCT SLABS FOR "TEMPORARY MAIL BOX COLLECTION PAD" FOR THE UNITED STATES POSTAL SERVICE WITH LOCATIONS AND SIZES SPECIFIED BY THE CITY ENGINEER DURING CONSTRUCTION.
2. THE CONSTRUCTION OF SLABS SHALL CONFORM TO ITEM 513 "REMOVING AND RELOCATING MAILBOXES".
3. PAYMENT WILL BE MADE UNDER ITEM 513.2 "COMMUNITY MAILBOX SLAB - PER SQUARE YARD".
4. UNIT PRICE WILL INCLUDE REMOVAL OF "TEMPORARY MAIL BOX COLLECTION PAD" SLABS AT THE END OF THE PROJECT. NO SEPARATE PAY ITEM.

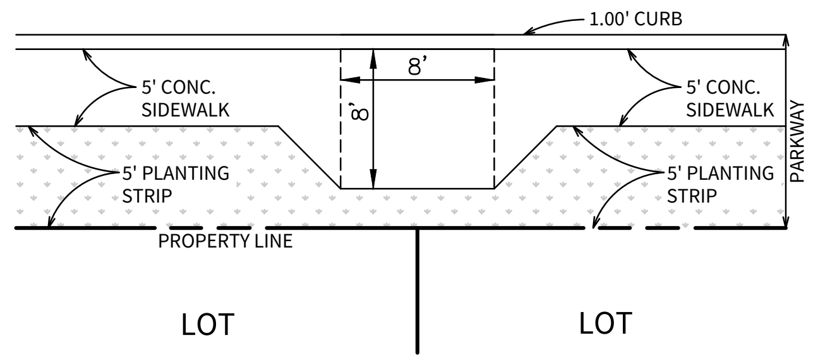
COMMUNITY MAIL BOX SLAB


LIMITS OF PAVEMENT RECONSTRUCTION
SAW-CUT JOINT
12"
LIMITS OF NEW BASE
2" EXISTING ASPHALT PAVEMENT
TACK COAT
FOR SURFACE COURSE SEE PAVEMENT STRUCTURE DETAILS
TACK COAT
1
1
EXISTING BASE MATERIAL
NEW SUBGRADE
FOR BASE CONSTRUCTION SEE PAVEMENT STRUCTURE DETAILS

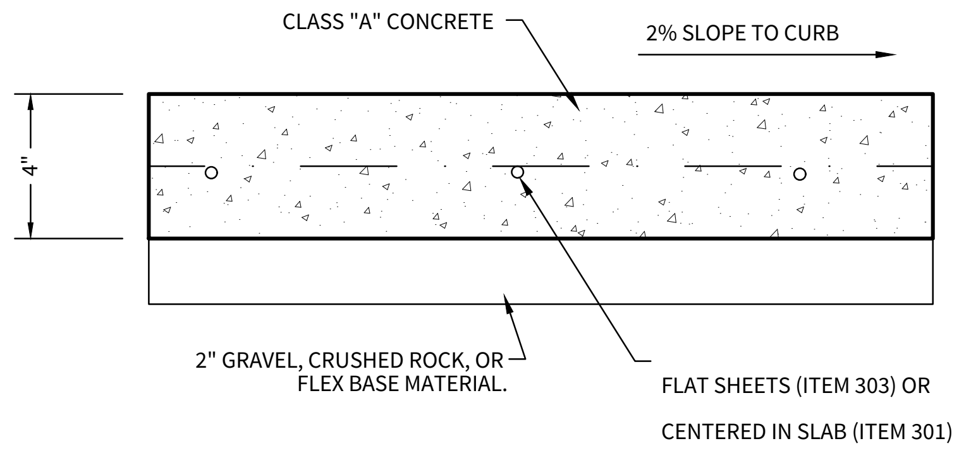
PAVEMENT JUNCTION DETAILS
N.T.S.



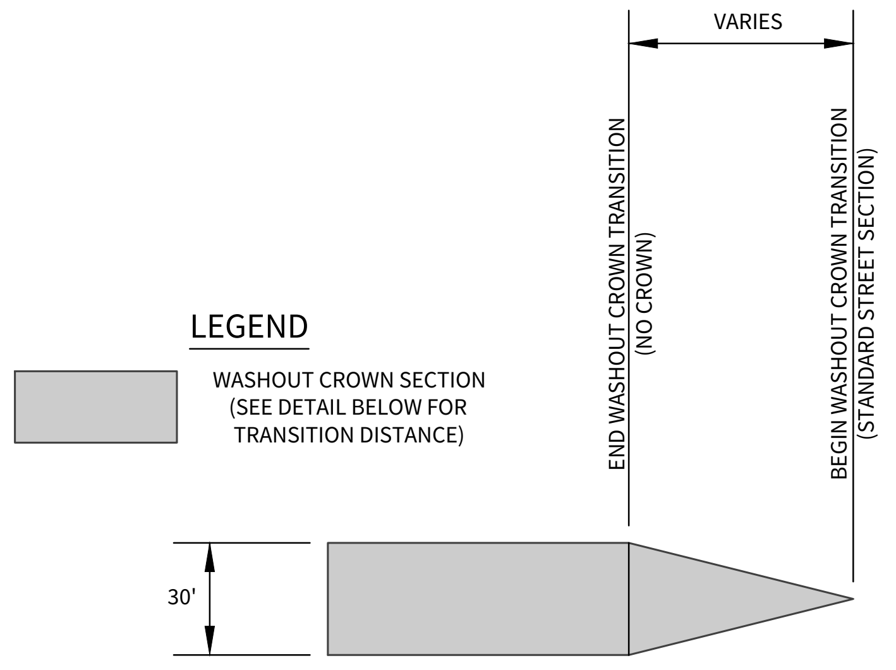
TYPICAL DRIVEWAY CUT SECTION



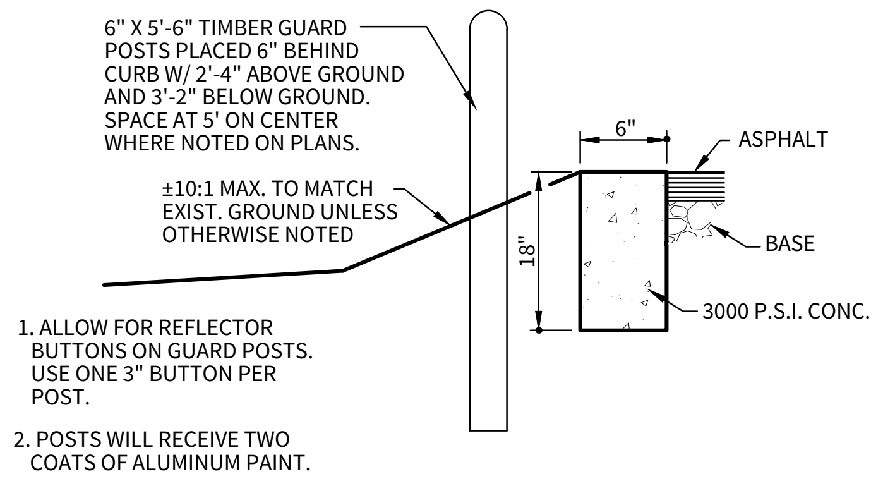
MAILBOX PAD DETAIL
N.T.S.


CLASS "A" CONCRETE
2% SLOPE TO CURB
4"
2" GRAVEL, CRUSHED ROCK, OR FLEX BASE MATERIAL.
FLAT SHEETS (ITEM 303) OR
CENTERED IN SLAB (ITEM 301)

CONCRETE SIDEWALK


LEGEND
WASHOUT CROWN SECTION (SEE DETAIL BELOW FOR TRANSITION DISTANCE)
VARIES
END WASHOUT CROWN TRANSITION (NO CROWN)
BEGIN WASHOUT CROWN TRANSITION (STANDARD STREET SECTION)
30'

WASHOUT CROWN TRANSITION DETAIL

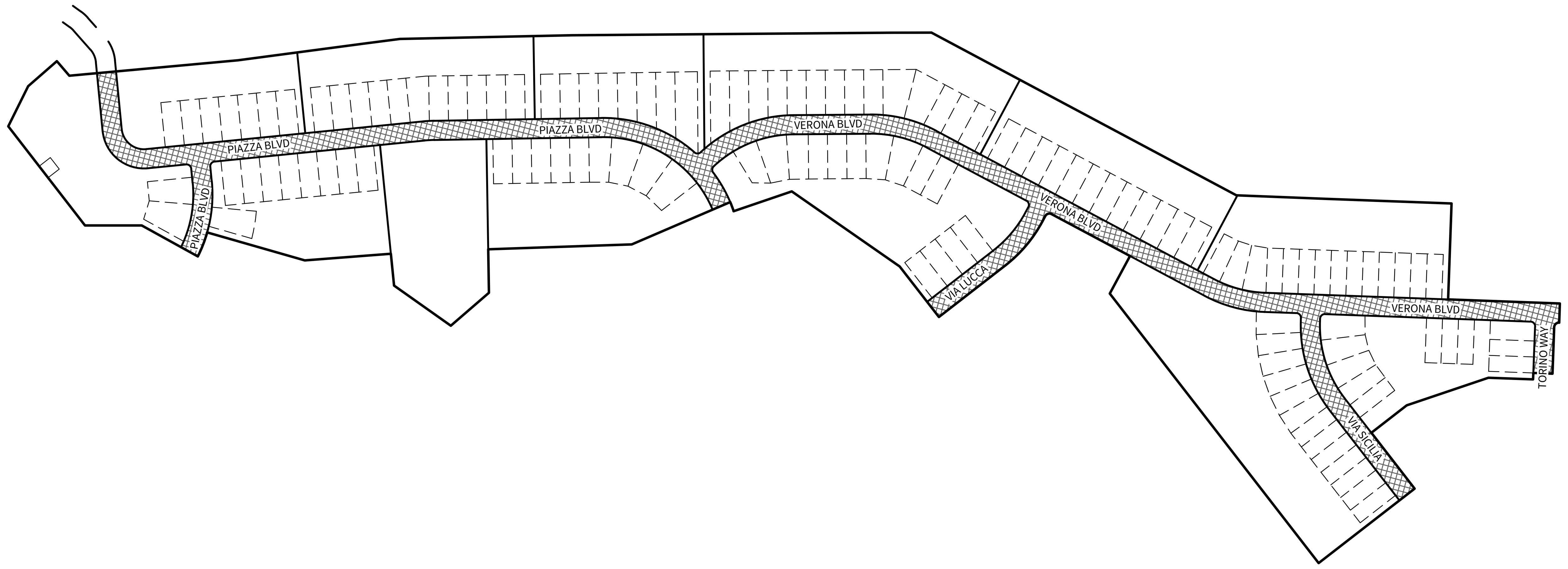

6" X 5'-6" TIMBER GUARD POSTS PLACED 6" BEHIND CURB W/ 2'-4" ABOVE GROUND AND 3'-2" BELOW GROUND. SPACE AT 5' ON CENTER WHERE NOTED ON PLANS.
±10:1 MAX. TO MATCH EXIST. GROUND UNLESS OTHERWISE NOTED
6"
ASPHALT
BASE
18"
3000 P.S.I. CONC.

1. ALLOW FOR REFLECTOR BUTTONS ON GUARD POSTS. USE ONE 3" BUTTON PER POST.
2. POSTS WILL RECEIVE TWO COATS OF ALUMINUM PAINT.

HEADER CURB & BOLLARD DETAIL

NOTES:

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT. SEE TABLE FOR STRUCTURAL NUMBER CALCULATION. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS. (SEE GEOTECH REPORT BY TERRADYNE, PROJECT NO. A241121-R1, DATED 08/14/24)
2. ANY AREAS OF CLAY ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED DOWN TO THE WEATHERED/FRIABLE MARLSTONE/LIMESTONE AND PROPERLY BACKFILLED WITH MARLSTONE/LIMESTONE MILLINGS HAVING A CBR VALUE DETERMINED BY THE GEOTECHNICAL ENGINEER.
3. A GEOTECHNICAL ENGINEERING REPRESENTATIVE SHALL BE RETAINED TO: (1) OBSERVE THE SITE PREPARATION AND SUBGRADE OPERATIONS. (2) EVALUATE THE ACTUAL SUBGRADE MATERIAL CLASSIFICATION; AND (3) VERIFY THAT RECOMMENDATIONS ARE FOLLOWED. THE ACTUAL SUBGRADE CONDITION AT A PARTICULAR LOCATION WILL NEED TO BE EVALUATED DURING CONSTRUCTION ONCE THE SUBGRADE IS CUT/FILLED TO THE PROPER GRADE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
5. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.
6. IF ALTERNATE PAVEMENT SECTION CHOSEN, COMAL COUNTY SHALL BE PROVIDED WITH REVISED CONSTRUCTION PLANS INDICATING SELECTED PAVEMENT DESIGN PRIOR TO CONSTRUCTION.
7. PAVEMENT SECTIONS ARE SUBJECT TO CHANGE DUE TO RETESTING OF SOIL AFTER STREET EXCAVATION HAS BEEN DONE TO TOP OF CURB.
8. CONTRACTOR SHALL CONTACT ENGINEER 48 HRS IN ADVANCE FOR FIELD OBSERVATION DURING STREET CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO CONTACT ENGINEER FOR INSPECTION OF THE SUBGRADE, BASE, ASPHALT, AND CURB.
9. GENERAL FILL MATERIALS SHOULD CONSIST OF ONSITE SOILS OR CLEAN IMPORTED FILL SOILS WITH EQUAL OR BETTER CBR CHARACTERISTICS TO THE ONSITE SOILS. GENERAL FILL MATERIAL SHOULD BE CLEAN AND FREE OF ANY VEGETATION ROOTS, ORGANIC MATERIALS, TRASH OR GARBAGE, CONSTRUCTION DEBRIS, OR OTHER DELETERIOUS MATERIALS AND SHOULD CONTAIN NO LARGER THAT THREE (3) INCHES IN MAXIMUM DIMENSION.



PAVEMENT DESIGN SCHEMATIC

NOTE:
1. REFERENCE GEOTECHNICAL REPORT (A241121-R1) FOR BORING INFORMATION AND CBR LOCATIONS

LEGEND:

▨ TYPICAL "RESIDENTIAL LOCAL 'A' STREET"

STREET TYPE	HMAC TYPE "D"	AGGREGATE BASE	LIME TREATED SUBGRADE (44 LB/SY)	BASE UNDER CURB	STRUCTURAL NUMBER
RESIDENTIAL LOCAL 'A' STREET	2.0"	8.0"	8.0"	6.0"	2.64

STREET PAVEMENT DESIGN OPTIONS

1. SUBGRADE - GEOTECH ENGINEER WILL BE PRESENT TO DETERMINE IF NATIVE MARL/ROCK SUBGRADE IS SUFFICIENT FOR PAVEMENT SECTION LISTED ABOVE.
2. CONTRACTOR SHALL APPLY CLAY SUBGRADE PAVEMENT SECTION (SEE GEOTECH REPORT BY TERRADYNE PROJECT NO. A241121-R1, DATED 08/14/24) IF GEOTECH ENGINEER DETERMINES NATIVE MARL/ROCK IS NOT SUFFICIENT. IF LIME TREATMENT IS REPLACED BY NATIVE MARL/ROCK, COMAL COUNTY PUBLIC WORKS WILL BE INFORMED OF ALL CHANGES. REVISIONS WILL BE SUBMITTED INDICATING WHERE LIME TREATMENT WAS USED, ALONG WITH STATIONING. CONTRACTOR TO REVIEW GEOTECH RECOMMENDATIONS PRIOR TO FINAL SUBGRADE PREPARATION.
3. FILL MATERIAL - CONTRACTOR SHALL OVER-EXCAVATE STREET SUBGRADE AREAS CONTAINING SOILS HAVING A PLASTICITY INDEX GREATER THAN 20 AND REPLACE A MINIMUM OF 8" OF SUBGRADE WITH ON-SITE LIMESTONE MILLINGS THAT HAVE A PLASTICITY INDEX OF LESS THAN 20 OR USE FILL MATERIAL FROM AREAS OF SIMILAR SUBGRADE MATERIAL FOR ROADWAY EMBANKMENTS. GEOTECHNICAL ENGINEER WILL BE PRESENT AT THE TIME OF SUBGRADE PREPARATION TO DETERMINE THE EXTENTS OF APPLICABLE PAVEMENT SECTIONS BASED ON FINAL SUBGRADE.

DETAILS ON THIS DRAWING ARE NOT TO SCALE

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CONTESSA SUBDIVISION
UNIT 1

STANDARD STREET DETAILS

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P:\04343\002\2-DWG\4-Plans\C16 STANDARD STREET DETAILS.dwg 2025/06/09 3:41pm jochoa

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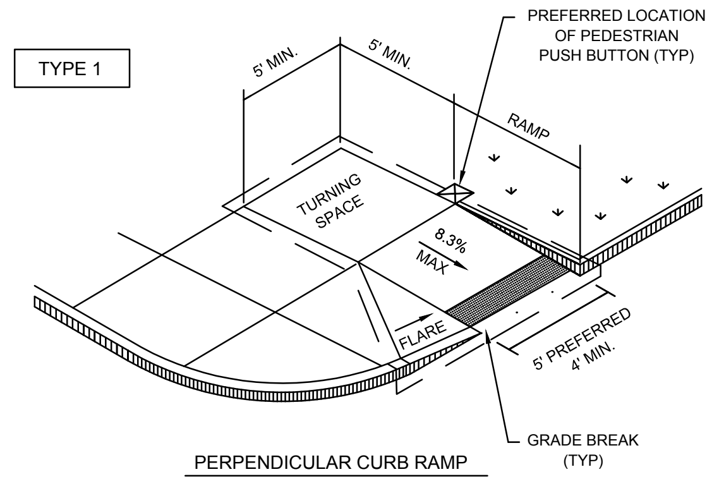
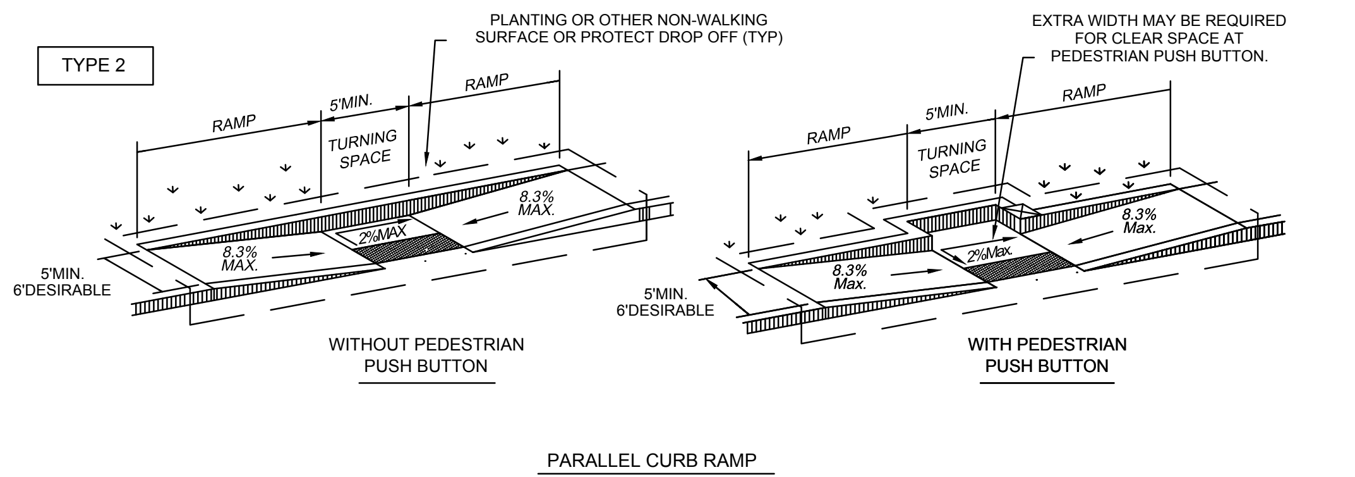
DATE:
FILE:



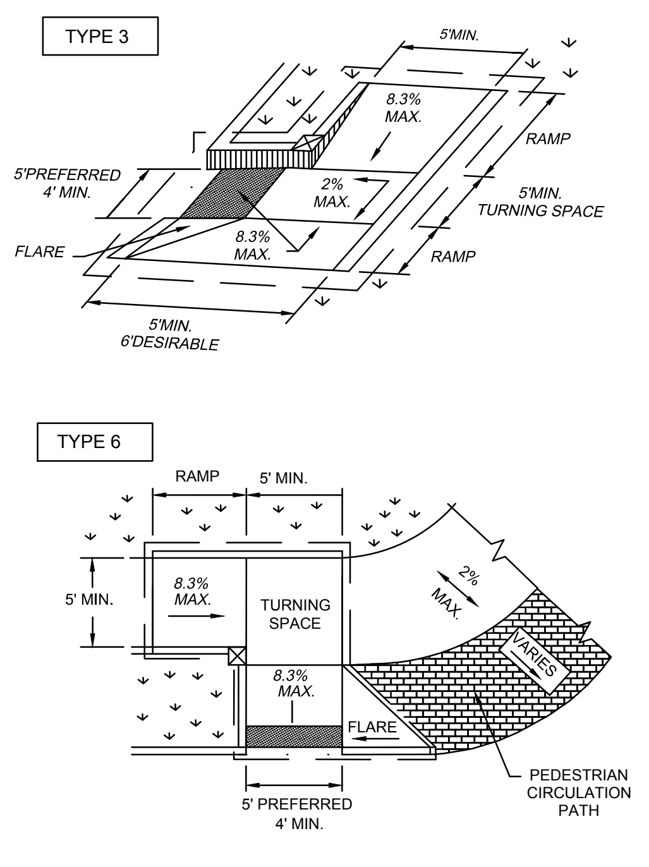
PERPENDICULAR CURB RAMP


TYPE 2
PLANTING OR OTHER NON-WALKING SURFACE OR PROTECT DROP OFF (TYP)
EXTRA WIDTH MAY BE REQUIRED FOR CLEAR SPACE AT PEDESTRIAN PUSH BUTTON.
RAMP
5'MIN.
TURNING SPACE
8.3% MAX
2% MAX
5'MIN. 6'DESIRABLE

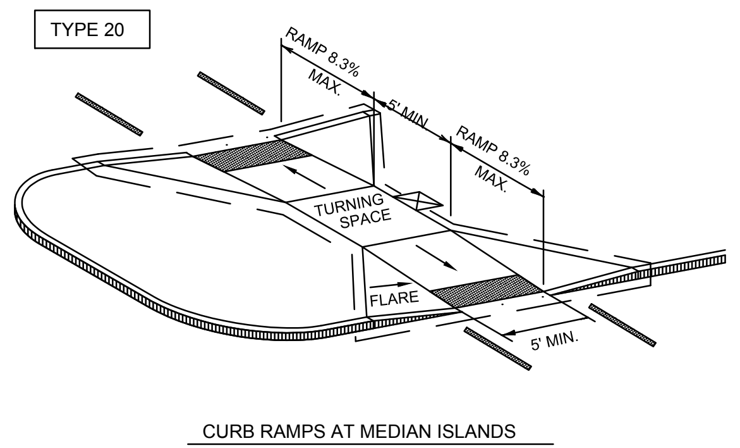
WITHOUT PEDESTRIAN PUSH BUTTON

WITH PEDESTRIAN PUSH BUTTON

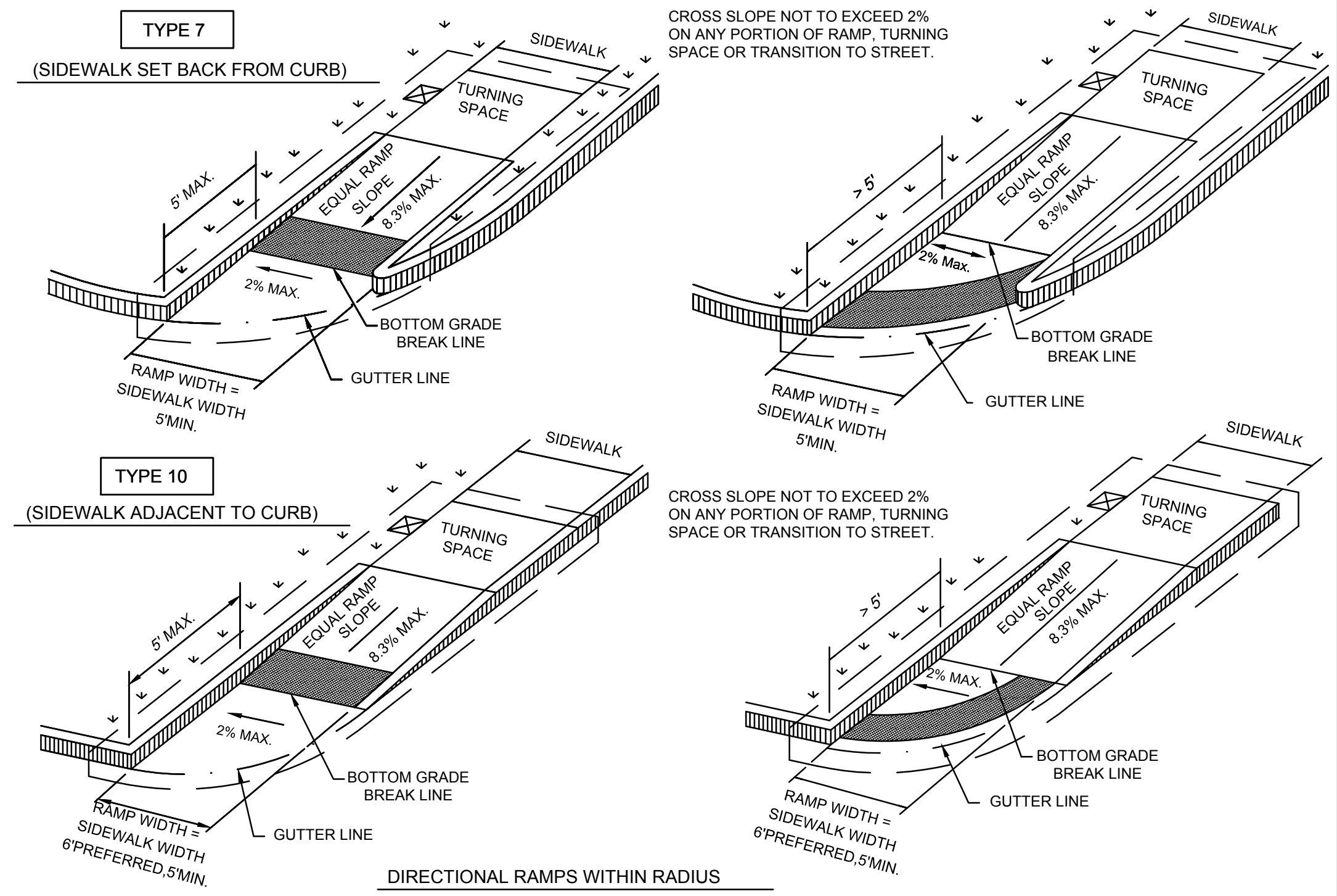
PARALLEL CURB RAMP



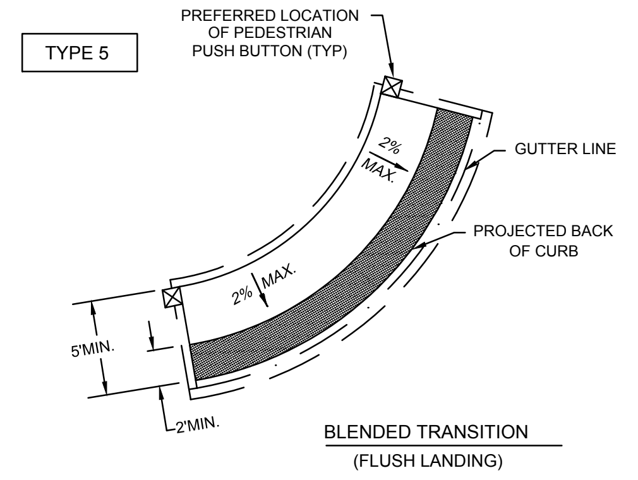
COMBINATION CURB RAMPS



CURB RAMPS AT MEDIAN ISLANDS

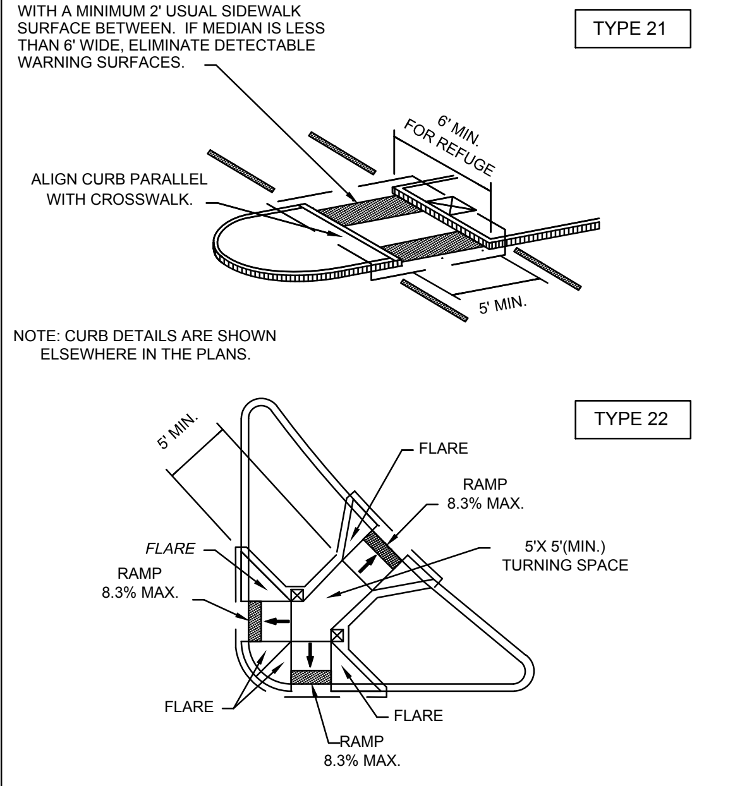

TYPE 7
(SIDEWALK SET BACK FROM CURB)
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.
SIDEWALK
TURNING SPACE
EQUAL RAMP SLOPE 8.3% MAX
5' MAX
2% MAX
BOTTOM GRADE BREAK LINE
GUTTER LINE
RAMP WIDTH = SIDEWALK WIDTH 5'MIN.
TYPE 10
(SIDEWALK ADJACENT TO CURB)
RAMP WIDTH = SIDEWALK WIDTH 6'PREFERRED,5'MIN.

DIRECTIONAL RAMPS WITHIN RADIUS



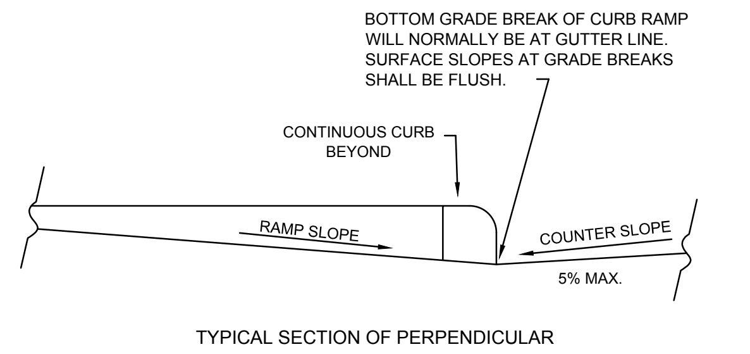
BLENDED TRANSITION
(FLUSH LANDING)

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.


TYPE 21
6' MIN. FOR REFUGE
ALIGN CURB PARALLEL WITH CROSSWALK
5' MIN.
TYPE 22
FLARE
RAMP 8.3% MAX
5'X 5'(MIN.) TURNING SPACE

NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

COMBINATION ISLAND RAMPS


BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.
CONTINUOUS CURB BEYOND
RAMP SLOPE
COUNTER SLOPE
5% MAX.

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.	⁂	GUTTER LINE	———
DETECTABLE WARNING SURFACE	▨	GRADE BREAK	- - -
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.	☒	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 | DW: VP | CK: PK & JG
©TxDOT: MARCH,2002 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.

2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.

3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.

4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.

5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.

6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.

7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.

8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).

9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.

10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.

11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.

12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.

13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".

14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.

15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.

16. Provide a smooth transition where the curb ramps connect to the street.

17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.

18. Existing features that comply with applicalble 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.

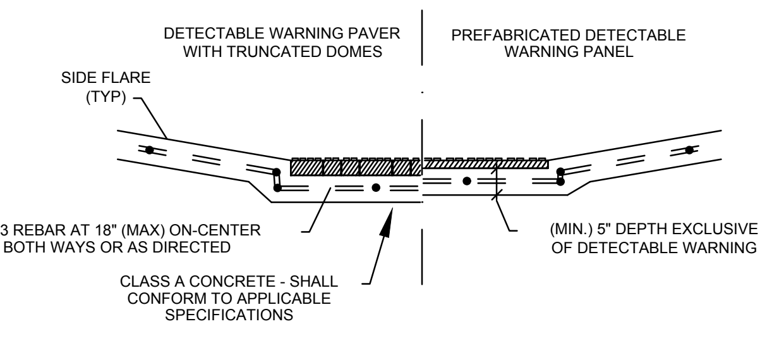
30. Changes in level greater than 1/4 inch are not permitted.

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.

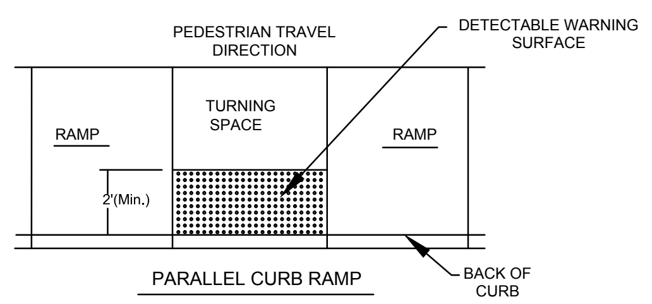
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".

34. Sidewalk details are shown elsewhere in the plans.

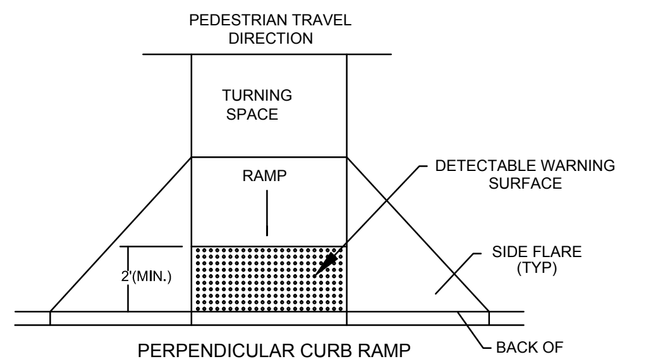

DETECTABLE WARNING PAVER WITH TRUNCATED DOMES
PREFABRICATED DETECTABLE WARNING PANEL
SIDE FLARE (TYP)
NO.3 REBAR AT 18" (MAX) ON-CENTER BOTH WAYS OR AS DIRECTED
CLASS A CONCRETE - SHALL CONFORM TO APPLICABLE SPECIFICATIONS
(MIN.) 5" DEPTH EXCLUSIVE OF DETECTABLE WARNING

SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

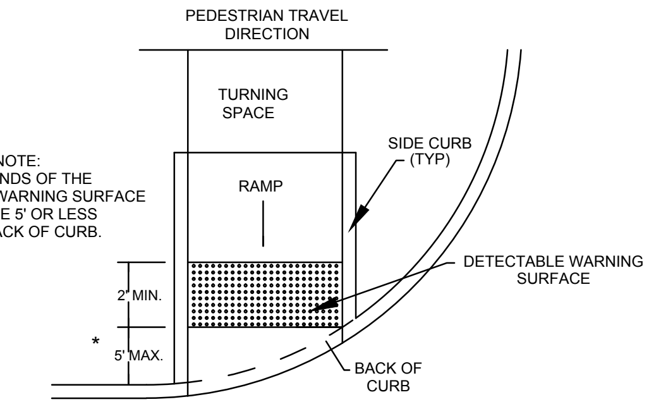
DETECTABLE WARNING SURFACE DETAILS



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.

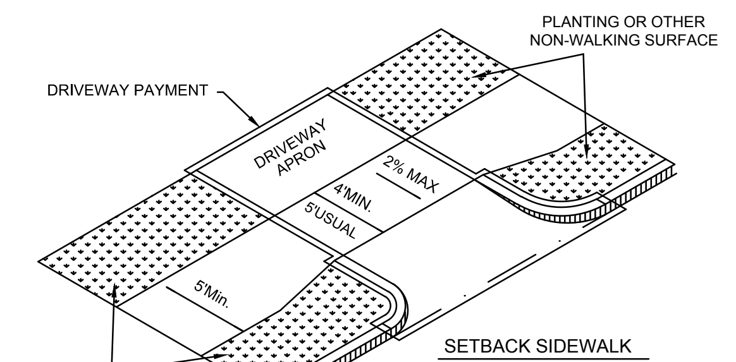
SHEET 2 OF 4

Texas Department of Transportation
Design Division Standard

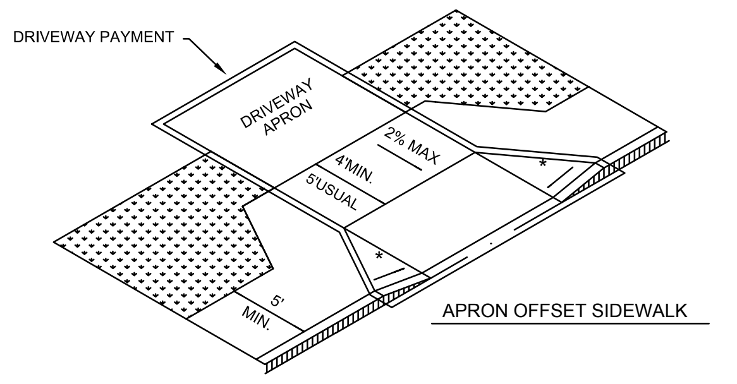
PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

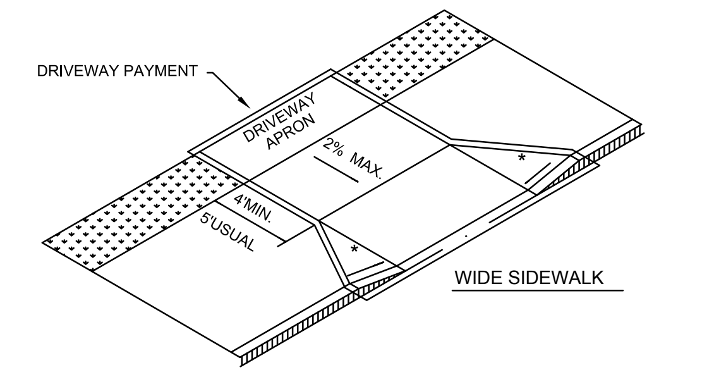
SIDEWALK TREATMENT AT DRIVEWAYS


PLANTING OR OTHER NON-WALKING SURFACE
DRIVEWAY PAYMENT
DRIVEWAY APRON
2% MAX
4'MIN.
5'USUAL
5'Min.
PLANTING OR OTHER NON-WALKING SURFACE

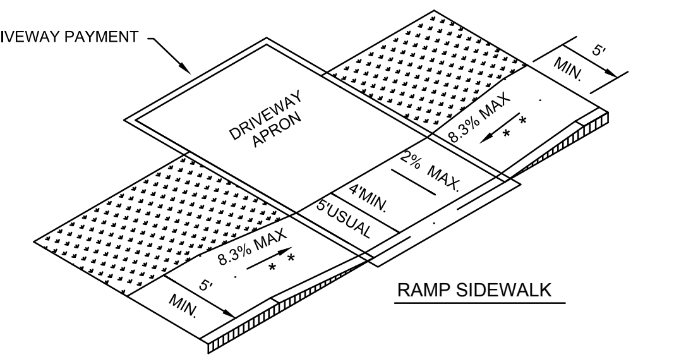
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

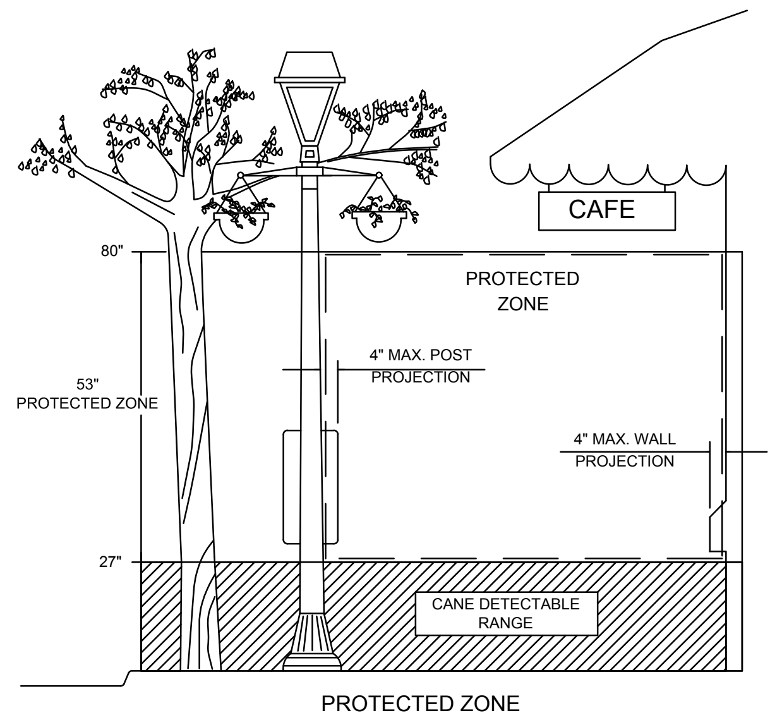


RAMP SIDEWALK

NOTES:

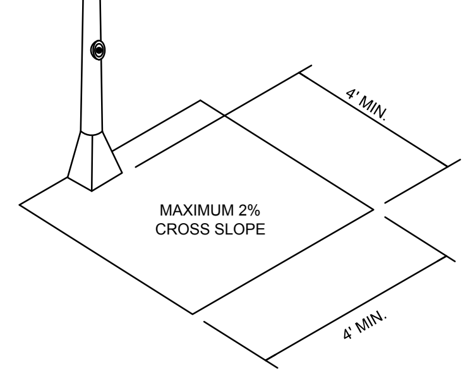
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

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

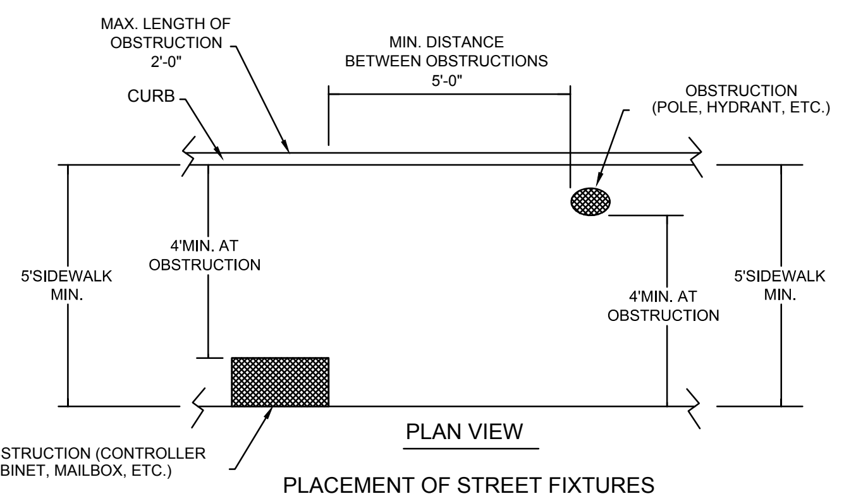


PROTECTED ZONE

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



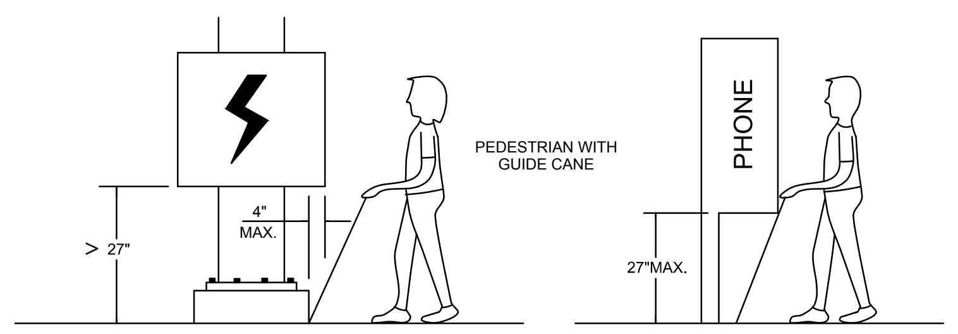
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON


MAX. LENGTH OF OBSTRUCTION 2'-0"
MIN. DISTANCE BETWEEN OBSTRUCTIONS 5'-0"
CURB
OBSTRUCTION (POLE, HYDRANT, ETC.)
4'MIN. AT OBSTRUCTION
5'SIDEWALK MIN.
4'MIN. AT OBSTRUCTION
5'SIDEWALK MIN.
OBSTRUCTION (CONTROLLER CABINET, MAILBOX, ETC.)

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"~~

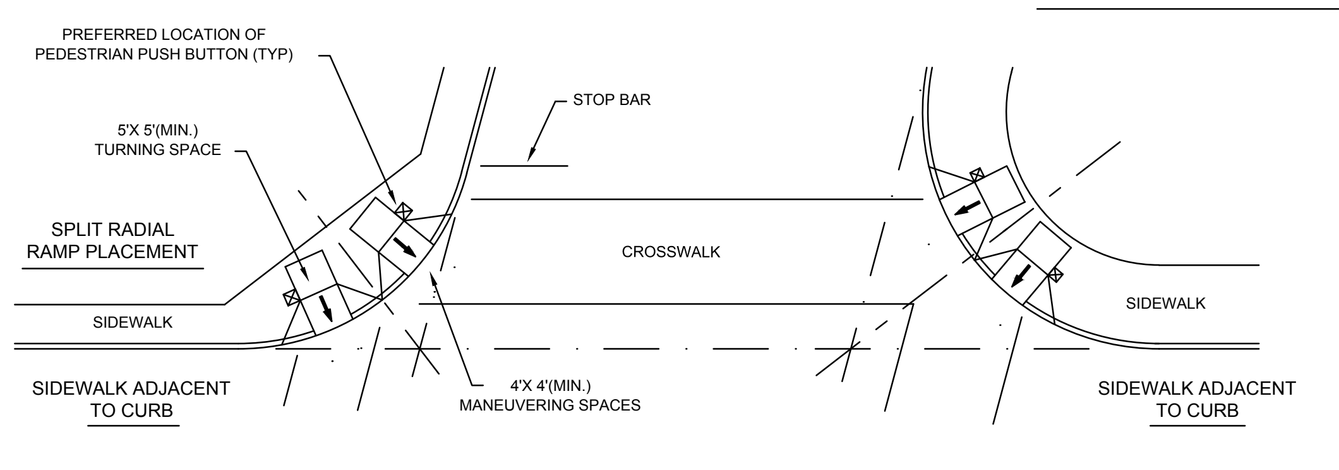
SHEET 3 OF 4

Texas Department of Transportation
Design Division Standard

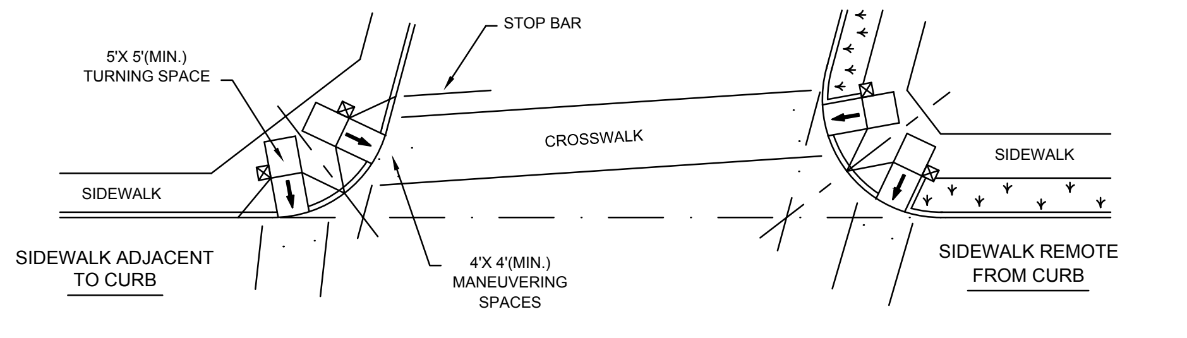
PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

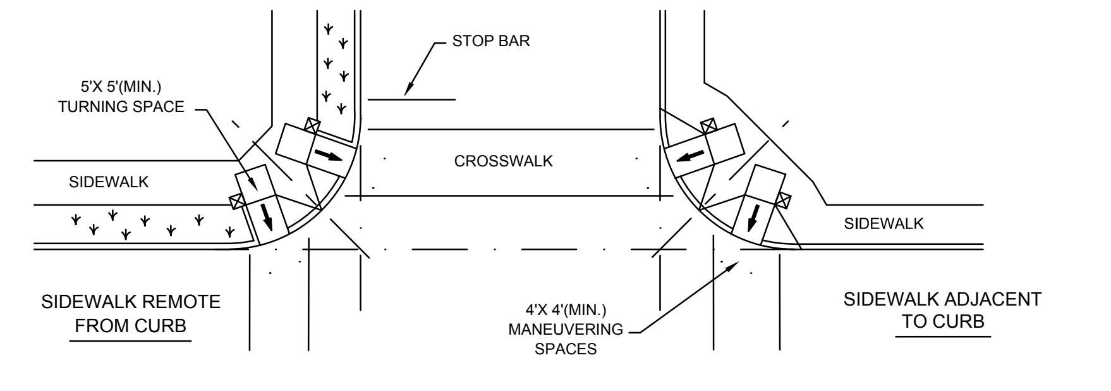
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS


PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (TYP)
5'X 5'(MIN.) TURNING SPACE
STOP BAR
SPLIT RADIAL RAMP PLACEMENT
CROSSWALK
SIDEWALK
SIDEWALK ADJACENT TO CURB
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK
SIDEWALK ADJACENT TO CURB

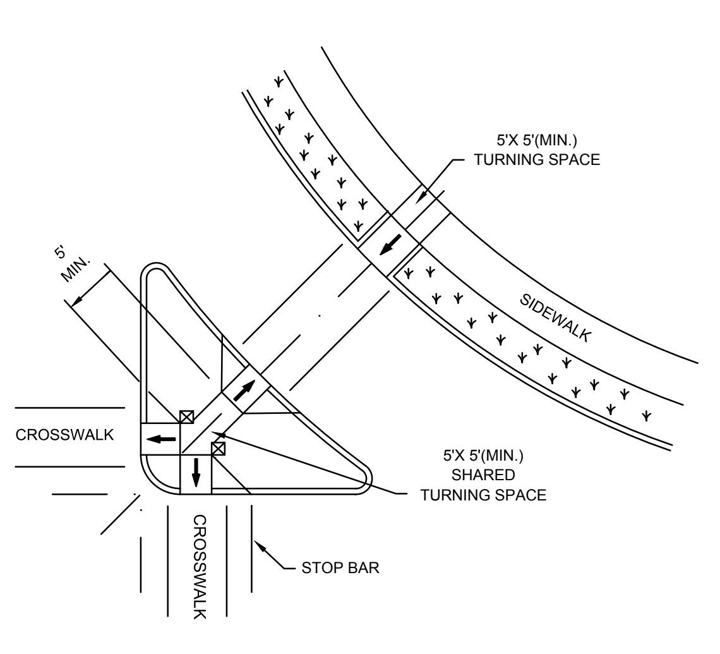
SKEWED INTERSECTION WITH "LARGE" RADIUS


5'X 5'(MIN.) TURNING SPACE
STOP BAR
CROSSWALK
SIDEWALK
SIDEWALK ADJACENT TO CURB
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK
SIDEWALK REMOTE FROM CURB

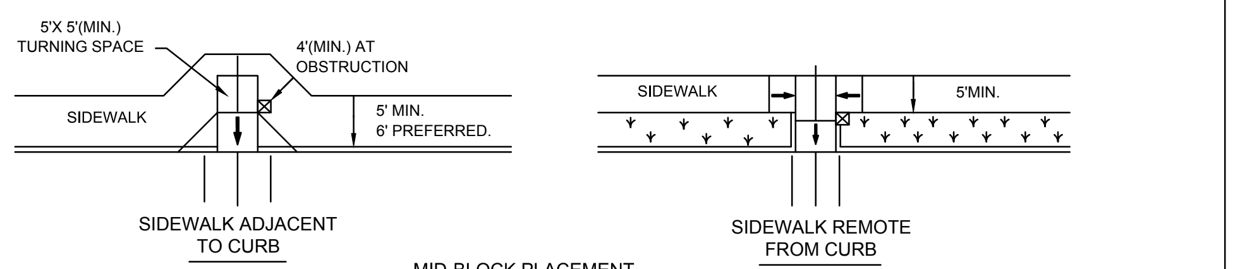
SKEWED INTERSECTION WITH "SMALL" RADIUS


5'X 5'(MIN.) TURNING SPACE
STOP BAR
CROSSWALK
SIDEWALK
SIDEWALK REMOTE FROM CURB
4'X 4'(MIN.) MANEUVERING SPACES
SIDEWALK
SIDEWALK ADJACENT TO CURB

NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND


5'X 5'(MIN.) TURNING SPACE
4'(MIN.) AT OBSTRUCTION
SIDEWALK
5' MIN. 6' PREFERRED.
SIDEWALK ADJACENT TO CURB
SIDEWALK
5'MIN.
SIDEWALK REMOTE FROM CURB

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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CONTESSA SUBDIVISION
UNIT 1

TXDOT DETAILS - PEDESTRIAN FACILITIES

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
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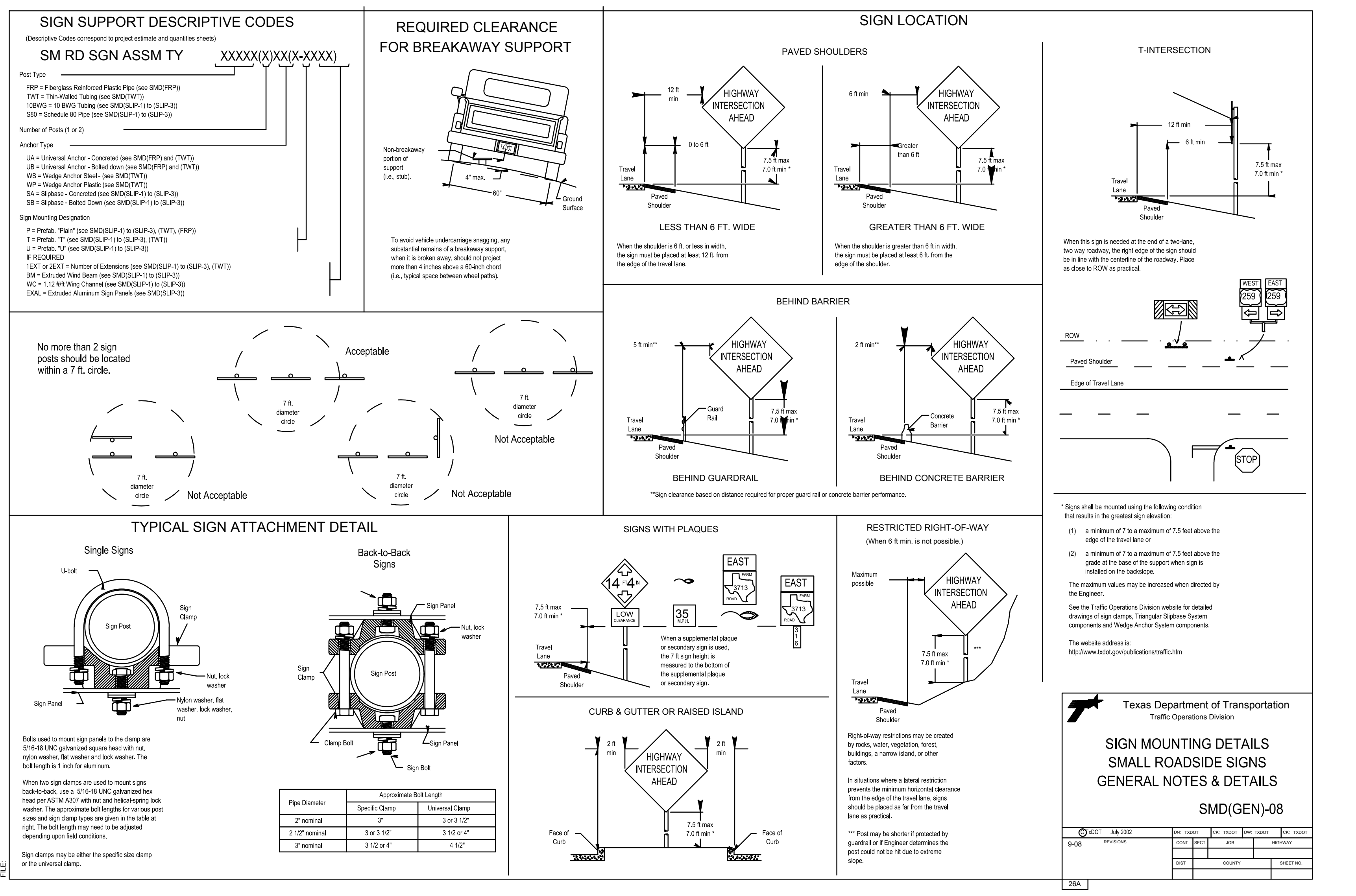
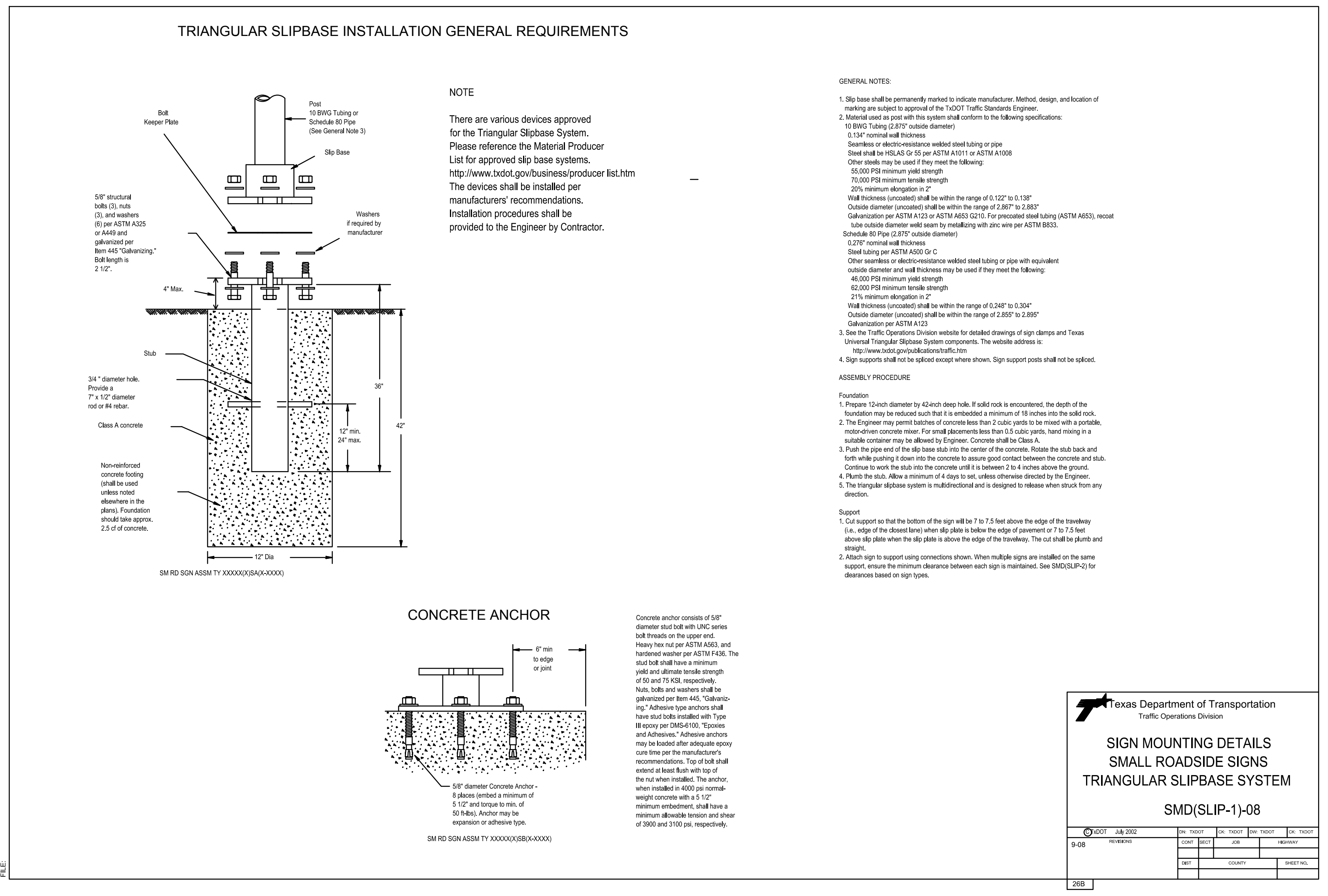
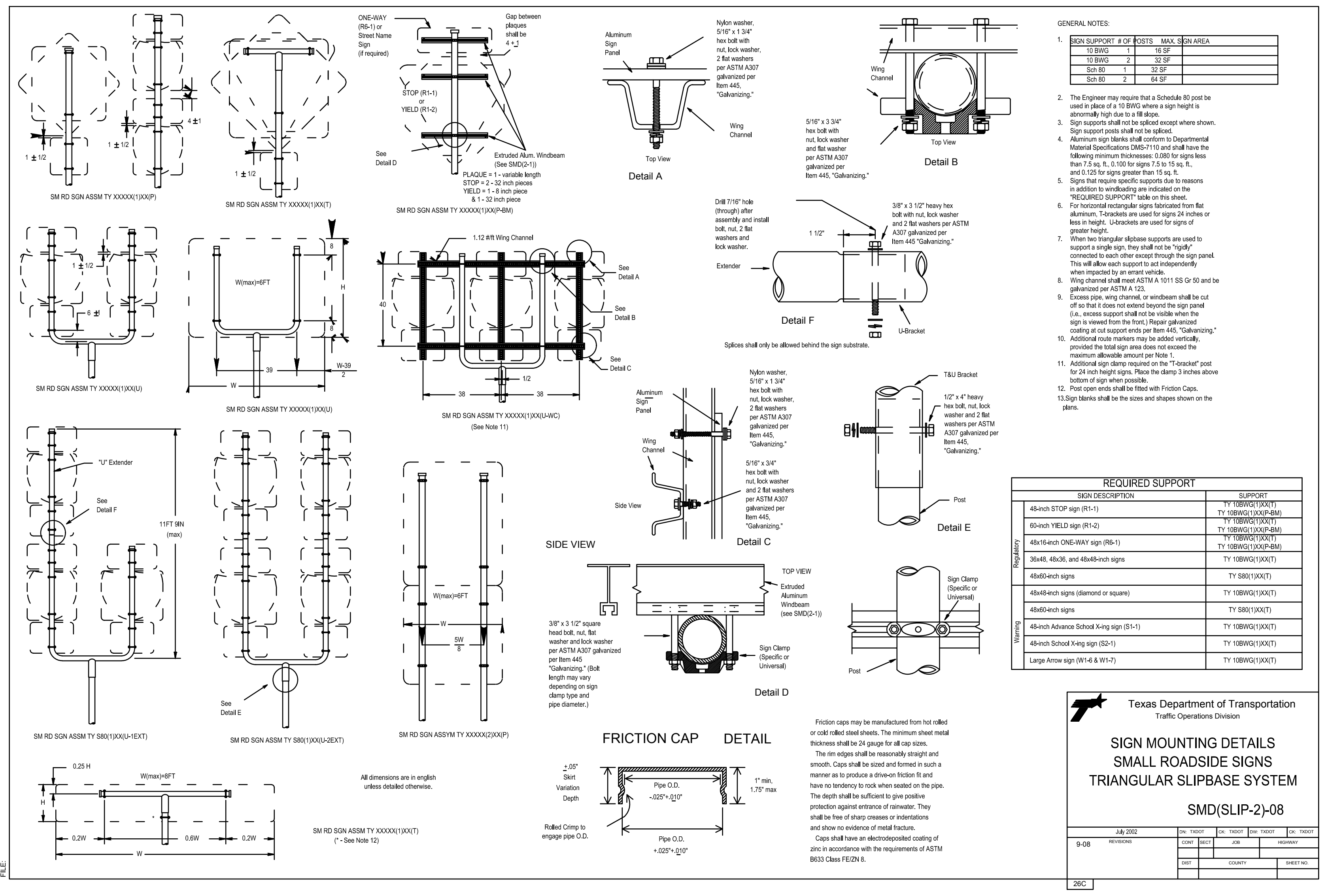
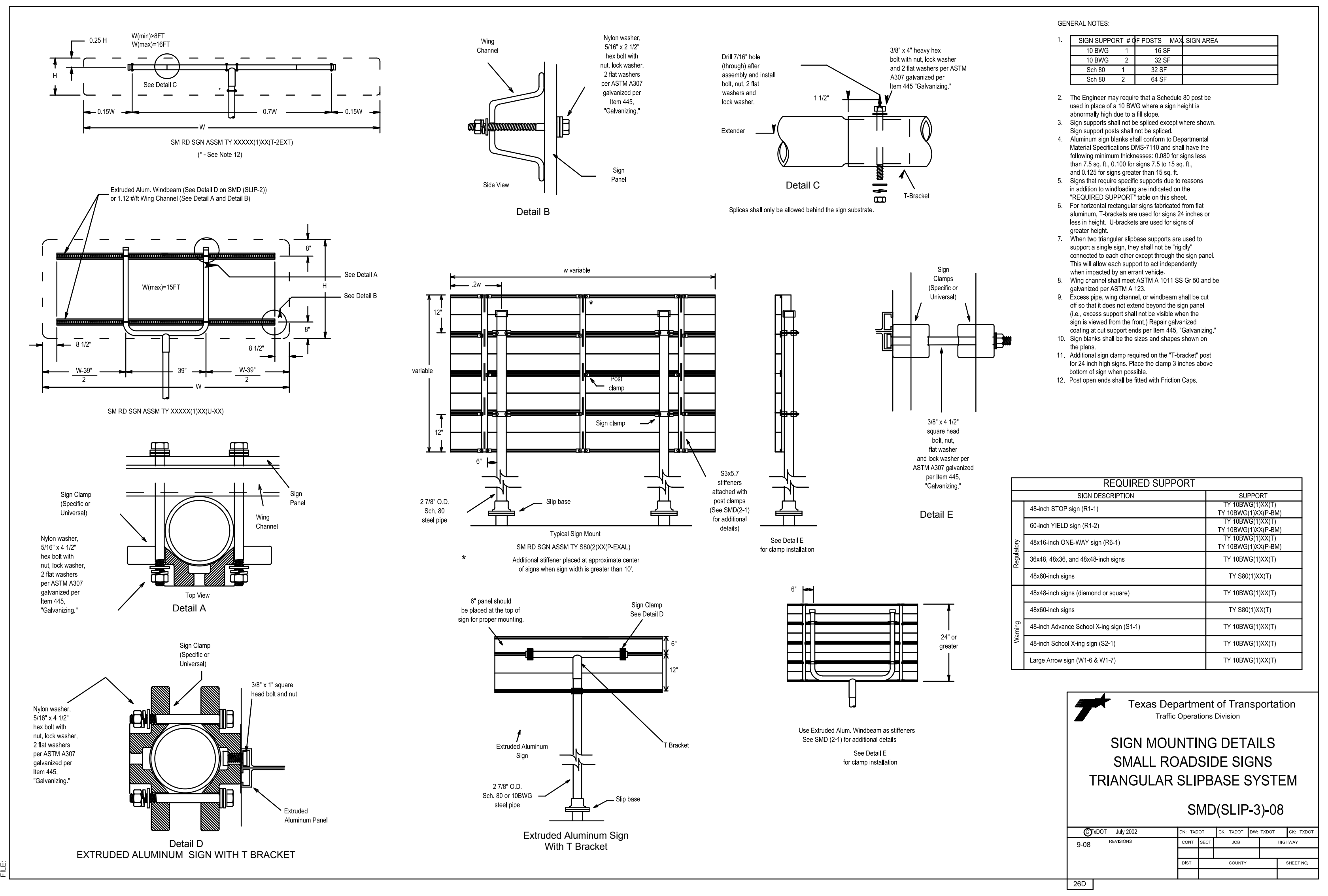
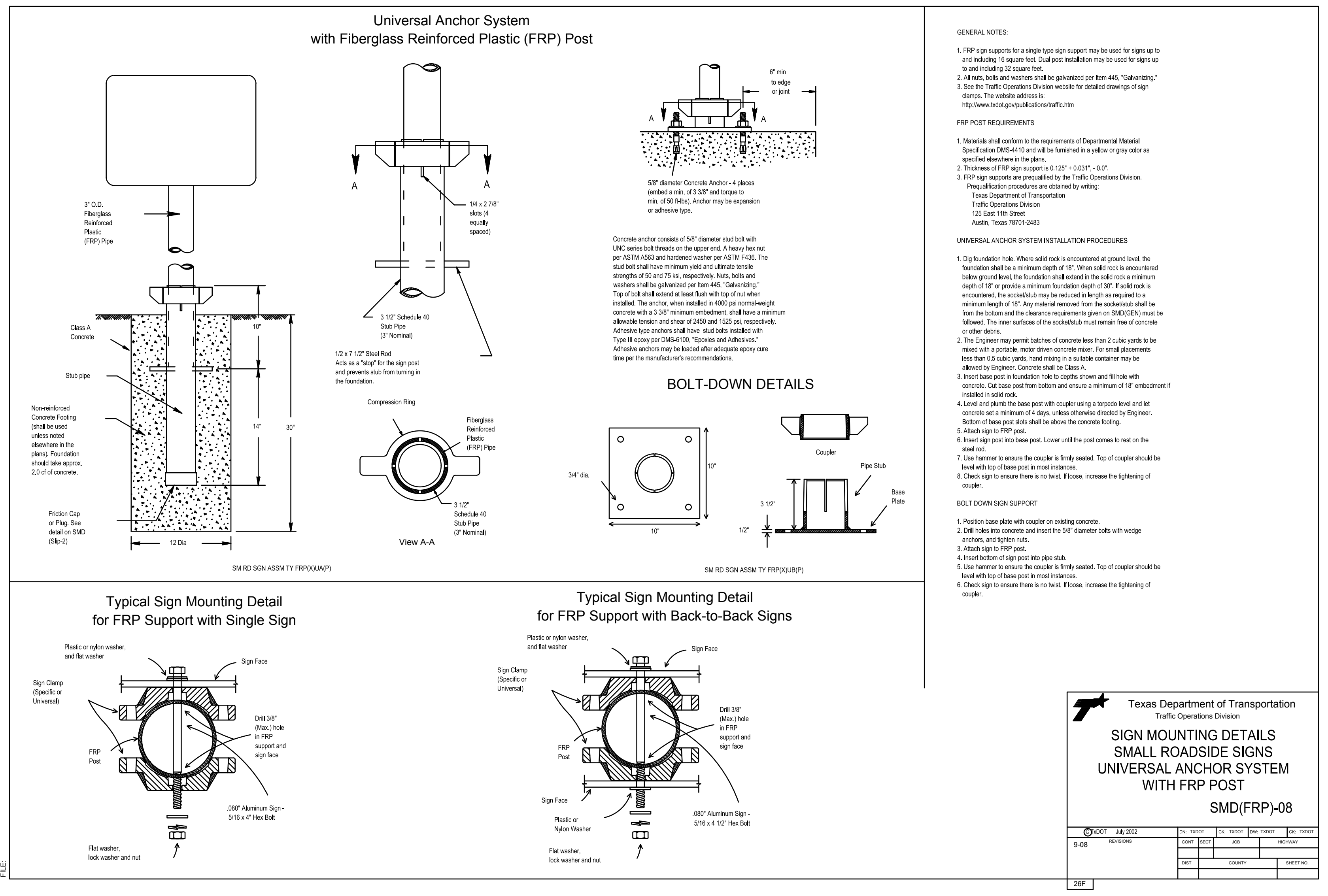
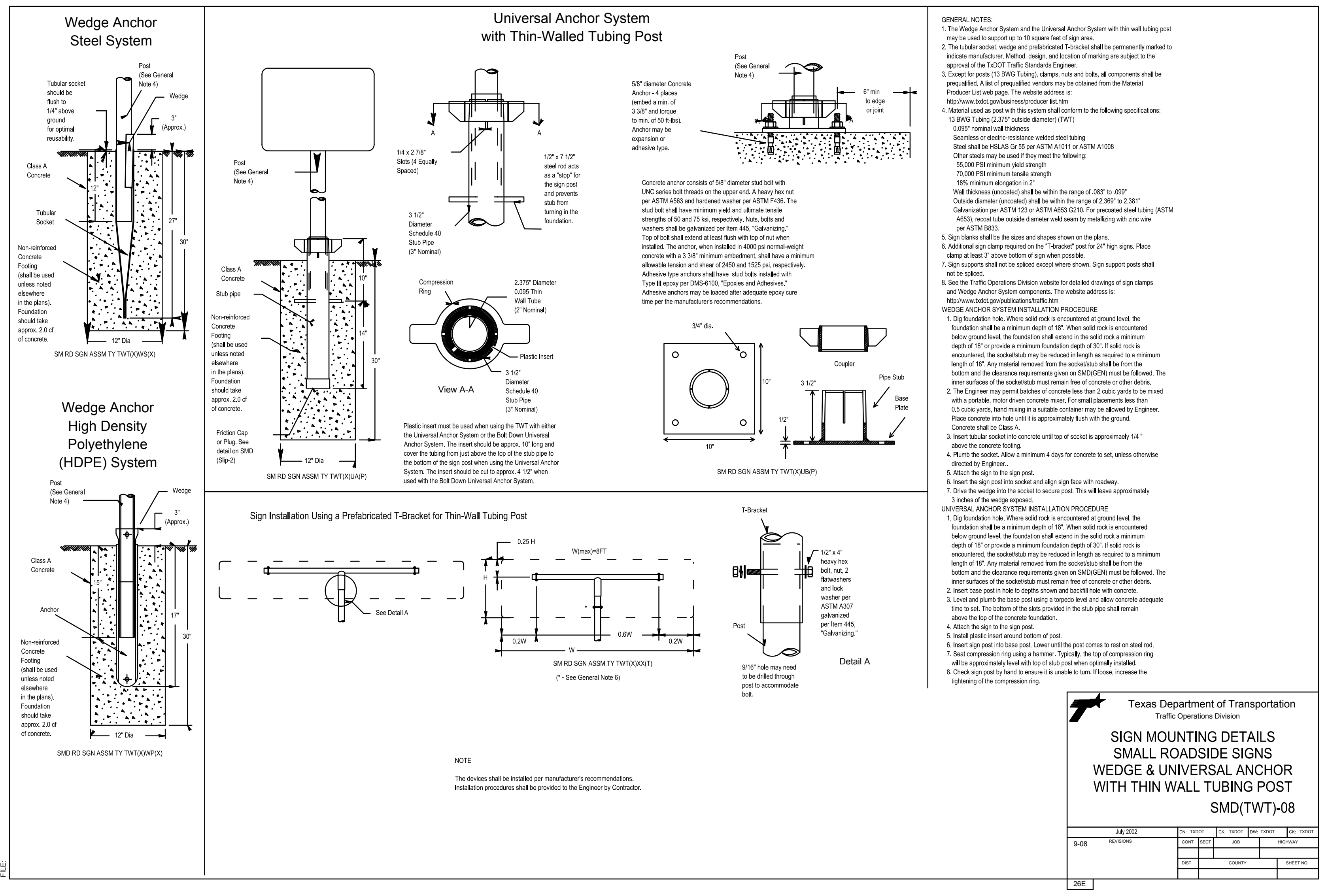

SIGN SUPPORT DESCRIPTIVE CODES
SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT
SIGN LOCATION
PAVED SHOULDERS
T-INTERSECTION
LESS THAN 6 FT. WIDE
GREATER THAN 6 FT. WIDE
BEHIND BARRIER
BEHIND GUARDRAIL
BEHIND CONCRETE BARRIER
HIGHWAY INTERSECTION AHEAD
No more than 2 sign posts should be located within a 7 ft. circle.
Acceptable
Not Acceptable
TYPICAL SIGN ATTACHMENT DETAIL
Single Signs
Back-to-Back Signs
SIGNS WITH PLAQUES
RESTRICTED RIGHT-OF-WAY
CURB & GUTTER OR RAISED ISLAND
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
GENERAL NOTES & DETAILS
SMD(GEN)-08


TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS
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
ASSEMBLY PROCEDURE
CONCRETE ANCHOR
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-1)-08




Detail A
Detail B
Detail C
Detail D
Detail E
EXTRUDED ALUMINUM SIGN WITH T BRACKET
Extruded Aluminum Sign With T Bracket
GENERAL NOTES
REQUIRED SUPPORT
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-3)-08


Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post
BOLT-DOWN DETAILS
View A-A
Typical Sign Mounting Detail for FRP Support with Single Sign
Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs
GENERAL NOTES
FRP POST REQUIREMENTS
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES
BOLT DOWN SIGN SUPPORT
Texas Department of Transportation
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM WITH FRP POST
SMD(FRP)-08


Wedge Anchor Steel System
Universal Anchor System with Thin-Walled Tubing Post
Wedge Anchor High Density Polyethylene (HDPE) System
View A-A
Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post
Detail A
NOTE
GENERAL NOTES
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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TXDOT DETAILS - SIGN MOUNTING DETAILS

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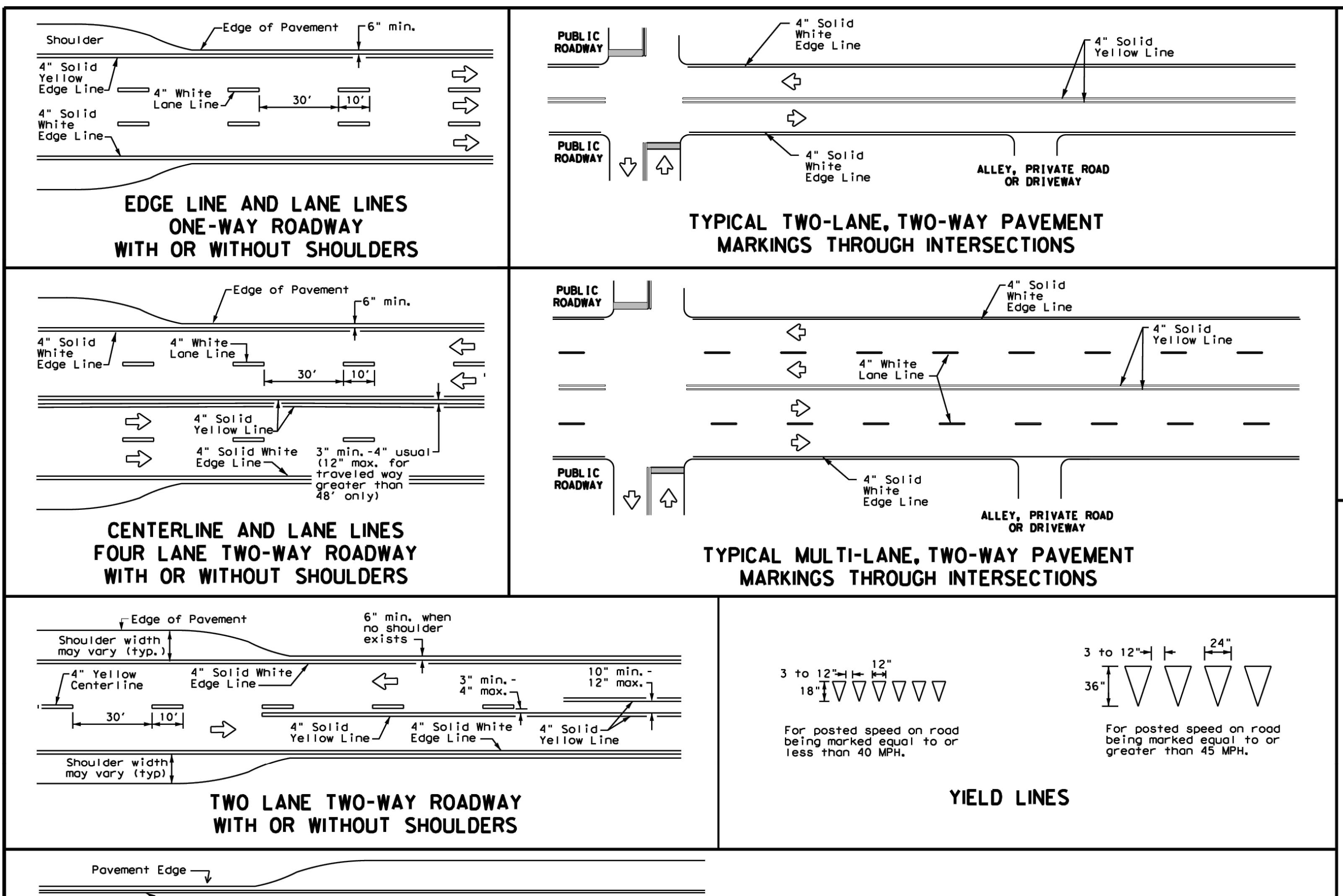


Shoulder
Edge of Pavement
6" min.
4" Solid Yellow Edge Line
4" White Lane Line
30'
10'
4" Solid White Edge Line
PUBLIC ROADWAY
4" Solid White Edge Line
4" Solid Yellow Line
ALLEY, PRIVATE ROAD OR DRIVEWAY
4" Solid Yellow Line
3" min.-4" usual 12" max. for traveled way greater than 48' only
Shoulder width may vary (typ.)
6" min. when no shoulder exists
4" Yellow Centerline
4" Solid White Edge Line
4" Solid Yellow Line
10" min. 12" max.
3 to 12"
12"
18"
24"
36"
For posted speed on road being marked equal to or less than 40 MPH.
For posted speed on road being marked equal to or greater than 45 MPH.

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

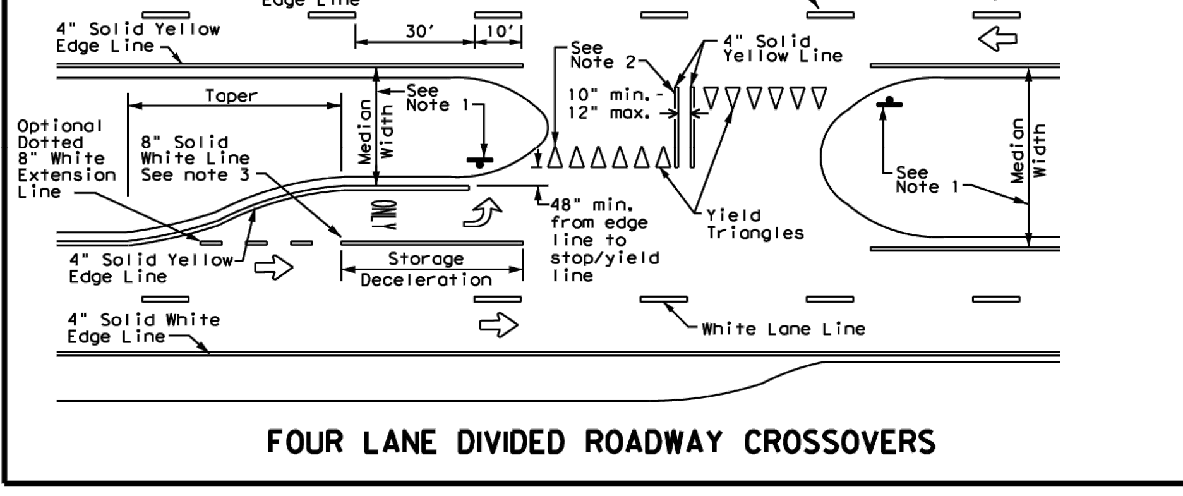
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

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

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

TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

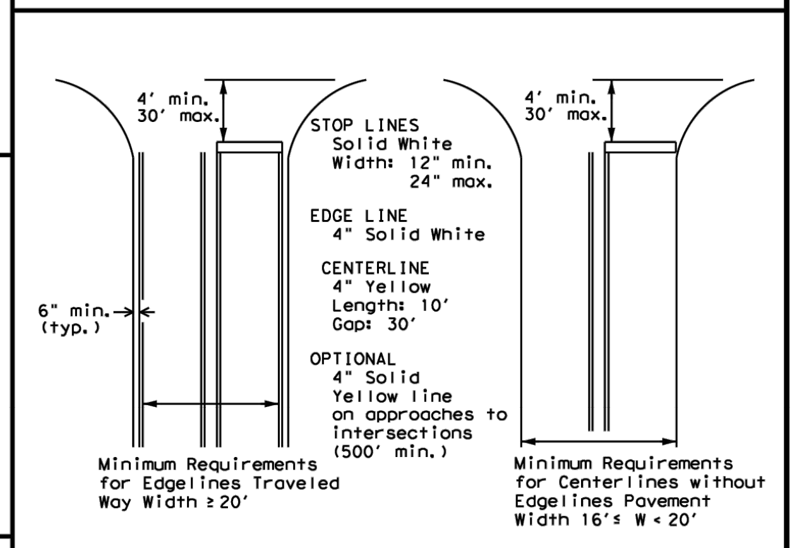
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling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

GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 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. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the 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.



4' min. 30' max.
STOP LINES Solid White Width: 12" min. 24" max.
EDGE LINE 4" Solid White
CENTERLINE 4" Yellow Length: 10' Gap: 30'
OPTIONAL 4" Solid Yellow line on approaches to intersections (500' min.)
6" min. (typ.)
Minimum Requirements for Edgelines Traveled Way Width ≥ 20'
Minimum Requirements for Centerlines without Edgelines Pavement Width 16'≤ W < 20'

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths
for Undivided Highways

Texas Department of Transportation
Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

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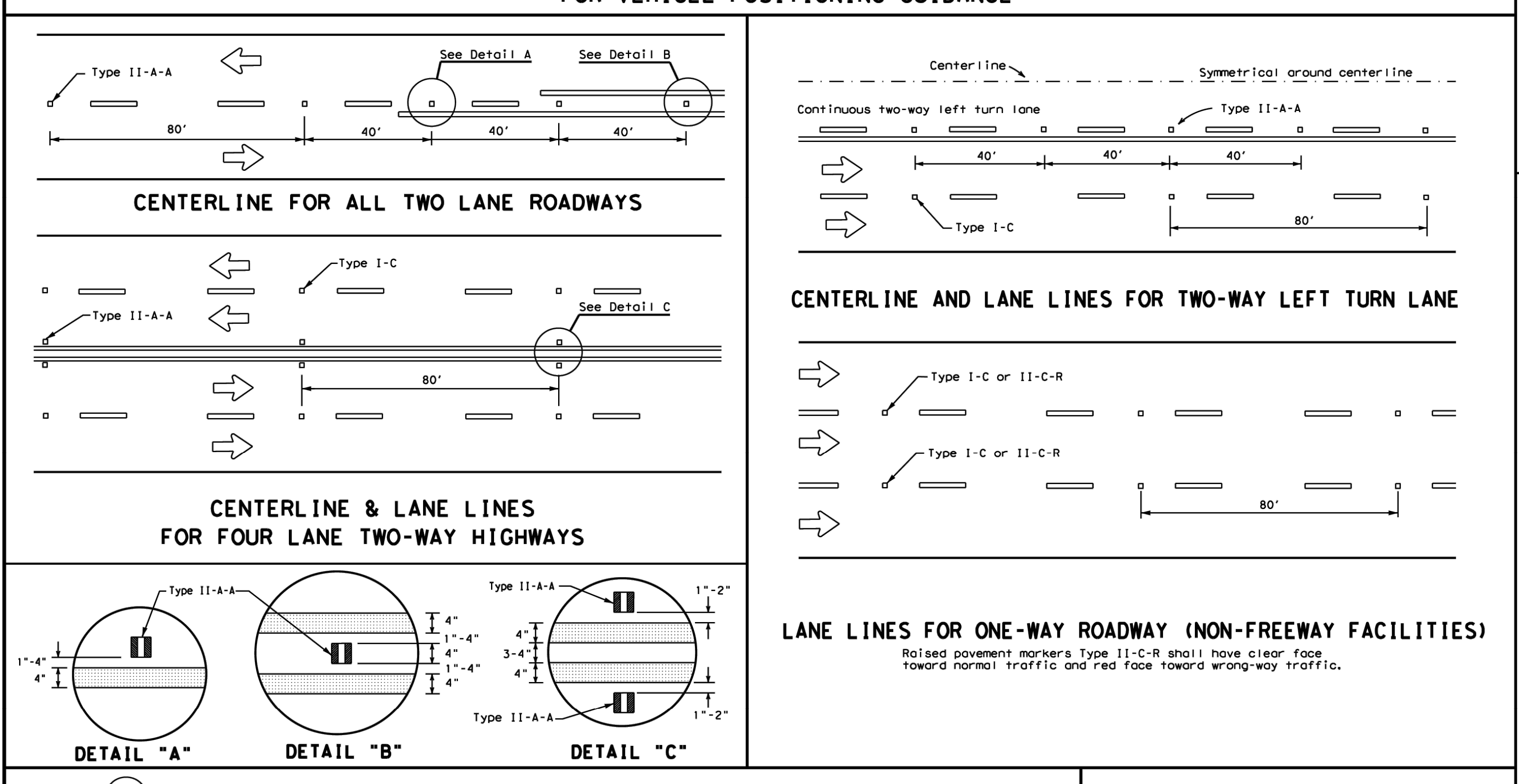
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



CENTERLINE FOR ALL TWO LANE ROADWAYS

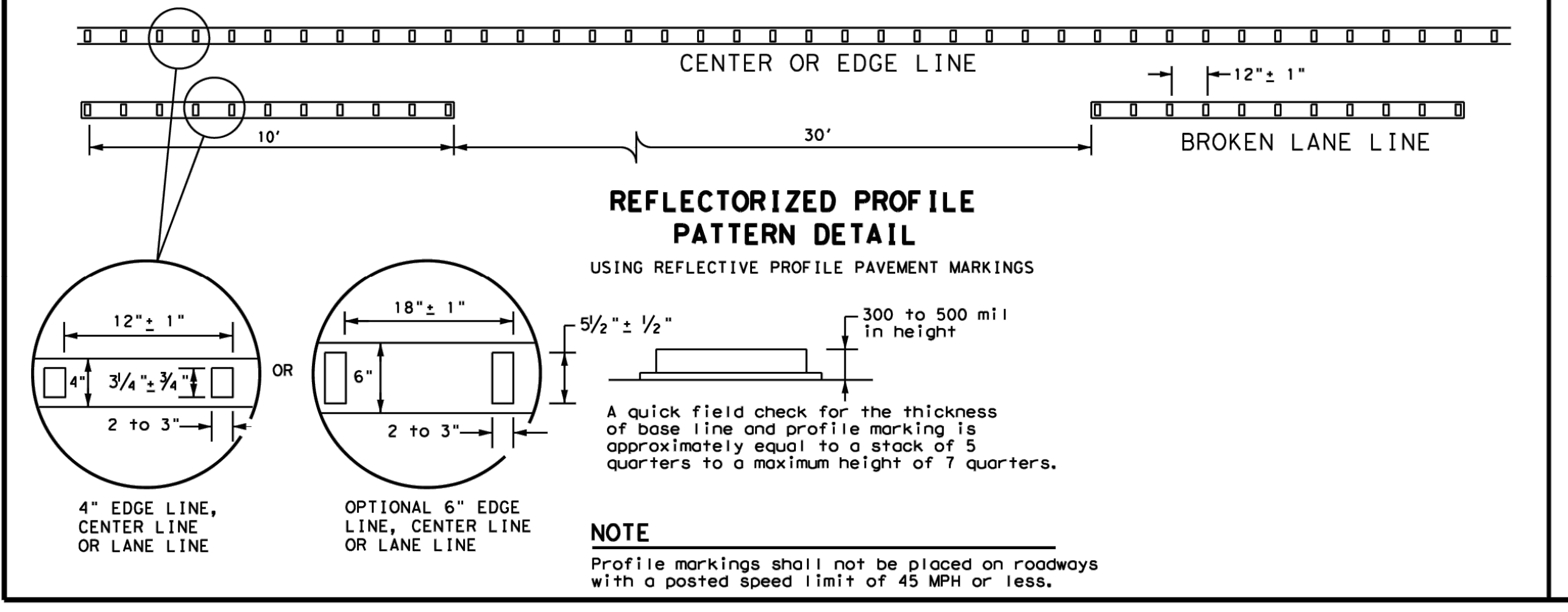
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS

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.

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



REFLECTORIZED PROFILE PATTERN DETAIL
USING REFLECTIVE PROFILE PAVEMENT MARKINGS

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

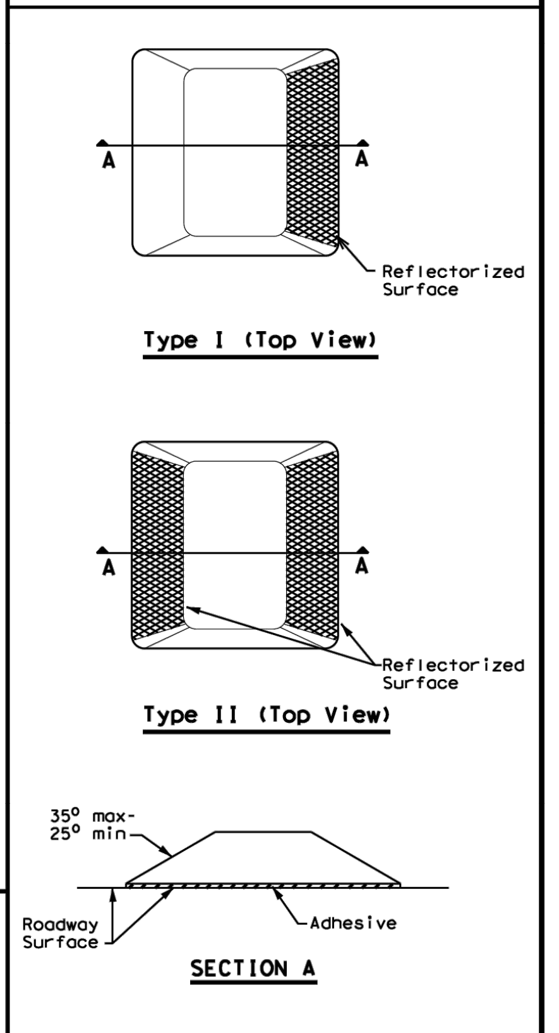
NOTE
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

1. All raised pavement markers placed in 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.

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.



RAISED PAVEMENT MARKERS

Texas Department of Transportation
Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS

PM(2)-20

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REVISIONS 4-92 2-10 5-00 2-12 8-00 6-20	DIST	COUNTY		SHEET NO.

22B

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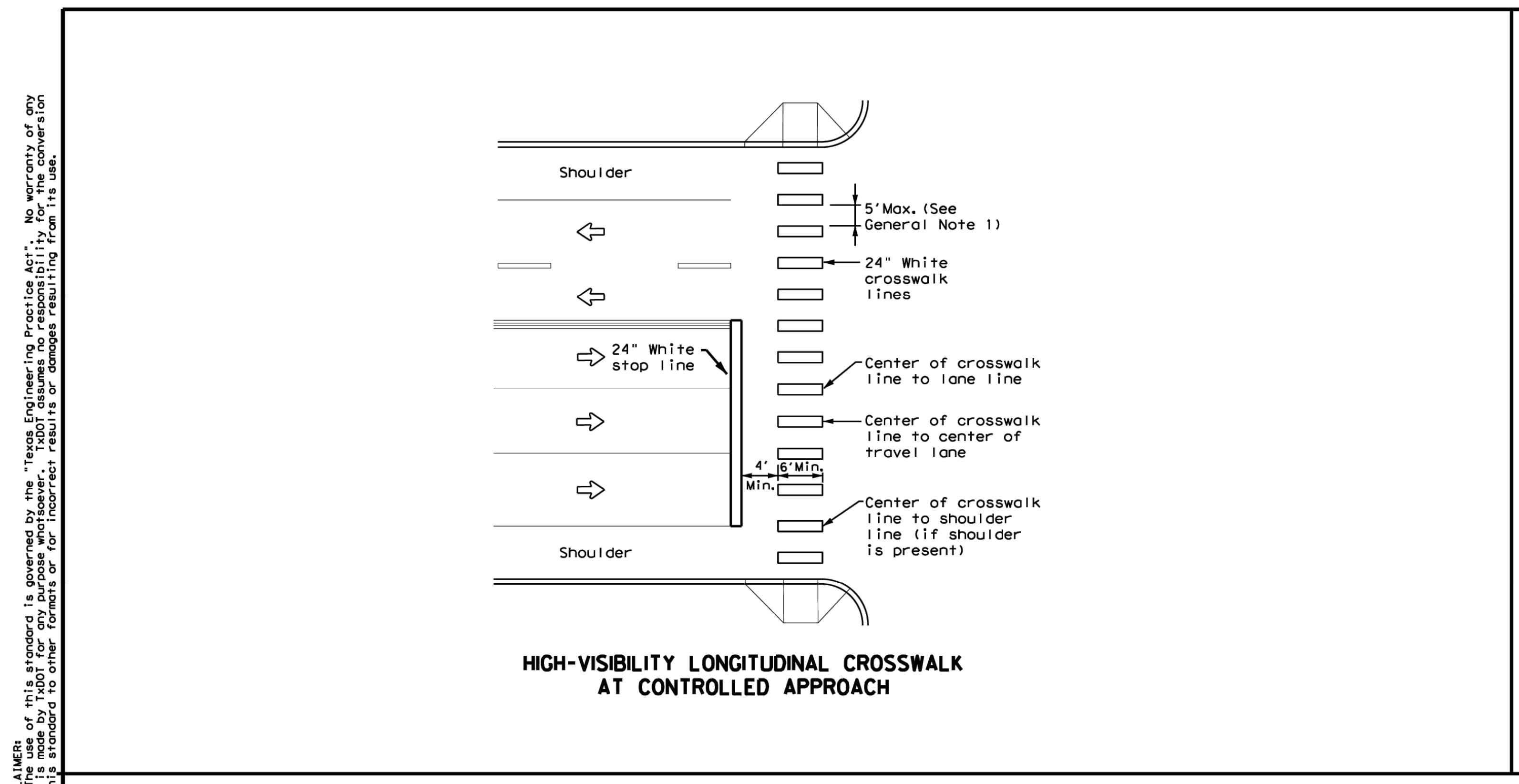
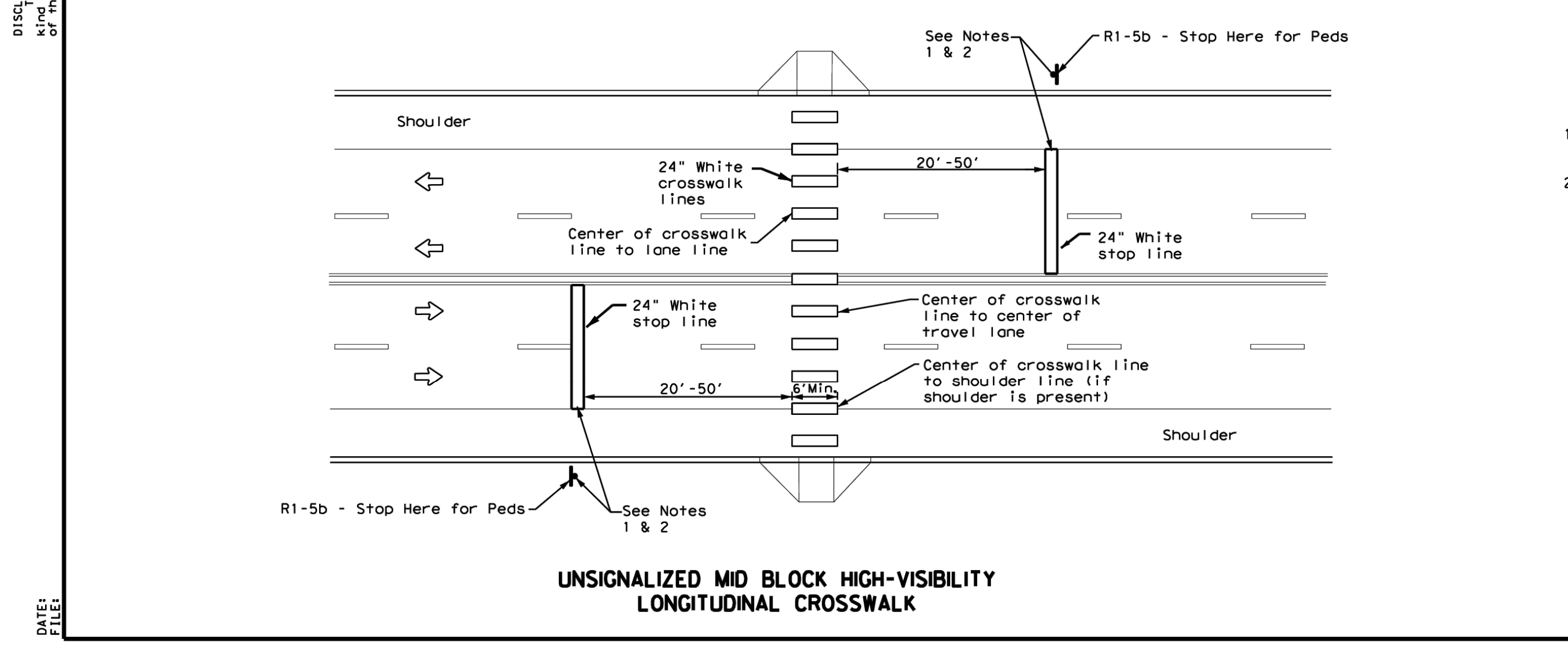


Shoulder
5' Max. (See General Note 1)
24" White crosswalk lines
24" White stop line
Center of crosswalk line to lane line
Center of crosswalk line to center of travel lane
Center of crosswalk line to shoulder line (if shoulder is present)
4' Min.
6' Min.
Shoulder

HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH



See Notes 1 & 2
R1-5b - Stop Here for Peds
Shoulder
24" White crosswalk lines
20'-50'
Center of crosswalk line to lane line
24" White stop line
Center of crosswalk line to center of travel lane
Center of crosswalk line to shoulder line (if shoulder is present)
6' Min.
Shoulder
R1-5b - Stop Here for Peds
See Notes 1 & 2

UNSIGNALIZED MID BLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

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

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

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

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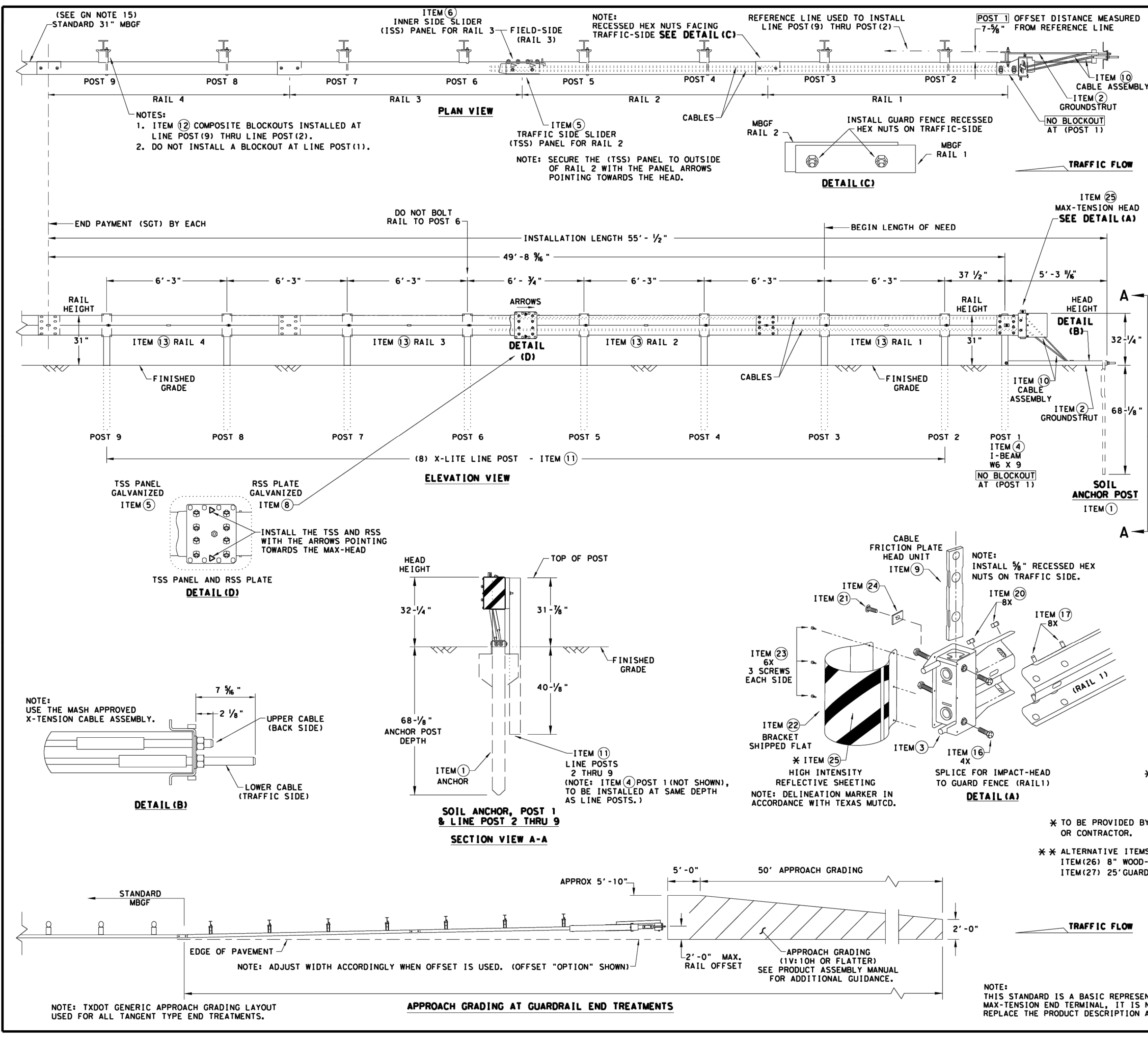

(SEE NOTE 15) STANDARD 31" MBGF
ITEM 6 INNER SIDE SLIDER (ISS) PANEL FOR RAIL 3
FIELD-SIDE (RAIL 3)
NOTE: RECESSED HEX NUTS FACING TRAFFIC-SIDE SEE DETAIL (C)
REFERENCE LINE USED TO INSTALL LINE POST(9) THRU POST(2)
POST 1 OFFSET DISTANCE MEASURED FROM REFERENCE LINE
7-⅝"
ITEM 10 CABLE ASSEMBLY
ITEM 2 GROUNDSTRUT
NO BLOCKOUT AT (POST 1)
PLAN VIEW
TRAFFIC FLOW
DETAIL (C)
END PAYMENT (SGT) BY EACH
DO NOT BOLT RAIL TO POST 6
INSTALLATION LENGTH 55'-½"
BEGIN LENGTH OF NEED
ITEM 25 MAX-TENSION HEAD SEE DETAIL (A)
RAIL HEIGHT 31"
HEAD HEIGHT DETAIL (B)
32-¼"
68-⅛"
SOIL ANCHOR POST ITEM 1
(8) X-LITE LINE POST - ITEM 11
ELEVATION VIEW
TSS PANEL AND RSS PLATE DETAIL (D)
SECTION VIEW A-A
DETAIL (B)
DETAIL (A)
SPLICE FOR IMPACT-HEAD TO GUARD FENCE (RAIL1)
APPROACH GRADING AT GUARDRAIL END TREATMENTS

* TO BE PROVIDED BY DISTRIBUTOR OR CONTRACTOR.

** ALTERNATIVE ITEMS NOT SHOWN.
ITEM(26) 8" WOOD-BLOCKOUTS
ITEM(27) 25' GUARD FENCE PANELS

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

GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800
2. FOR INSTALLATION, REPAIR, & MAINTENANCE REFER TO THE; MAX-TENSION INSTALLATION INSTRUCTION MANUAL. P/N MANMAX REV D (ECN 3516).
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURE'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. ALL STEEL COMPONENTS ARE GALVANIZED PER ASTM A123 OR EQUIVALENT UNLESS OTHERWISE STATED.
6. SYSTEM SHOWN USING STEEL WIDE FLANGE POST WITH COMPOSITE BLOCKOUTS.
7. COMPOSITE MATERIAL BLOCKOUT THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST(MPL)FOR CERTIFIED PRODUCERS.
8. REFER TO INSTALLATION MANUAL FOR SPECIFIC PANEL LAPPING GUIDANCE.
9. IF SOLID ROCK IS ENCOUNTERED SEE THE MANUFACTURER'S INSTALLATION MANUAL FOR INSTALLATION GUIDANCE.
10. POSTS SHALL NOT BE SET IN CONCRETE.
11. A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POST TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST.
12. MAX-TENSION SYSTEM SHALL NEVER BE INSTALLED WITHIN A CURVED SECTION OF GUARDRAIL.
13. IF A DELINEATION MARKER IS REQUIRED, MARKER SHALL BE IN ACCORDANCE WITH TEXAS MUTCD.
14. THE SYSTEM IS SHOWN WITH 12'-6" MBGF PANELS, 25'-0" MBGF PANELS ARE ALSO ALLOWED.
15. A MINIMUM OF 12'-6" OF 12GA. MBGF IS REQUIRED IMMEDIATELY DOWNSTREAM OF THE MAX-TENSION SYSTEM.

ITEM#	PART NUMBER	DESCRIPTION	QTY
1	BSI-1610060-00	SOIL ANCHOR - GALVANIZED	1
2	BSI-1610061-00	GROUND STRUT - GALVANIZED	1
3	BSI-1610062-00	MAX-TENSION IMPACT HEAD	1
4	BSI-1610063-00	W6x9 I-BEAM POST 6FT.-GALVANIZED	1
5	BSI-1610064-00	TSS PANEL - TRAFFIC SIDE SLIDER	1
6	BSI-1610065-00	ISS PANEL - INNER SIDE SLIDER	1
7	BSI-1610066-00	TOOTH - GEOMET	1
8	BSI-1610067-00	RSS PLATE - REAR SIDE SLIDER	1
9	B061058	CABLE FRICTION PLATE - HEAD UNIT	1
10	BSI-1610069-00	CABLE ASSEMBLY - MASH X-TENSION	2
11	BSI-1012078-00	X-LITE LINE POST-GALVANIZED	8
12	B090534	8" W-BEAM COMPOSITE-BLOCKOUT XT110	8
13	BSI-4004386	12'-6" W-BEAM GUARD FENCE PANELS 12GA.	4
14	BSI-1102027-00	X-LITE SQUARE WASHER	1
15	BSI-2001886	⅝" X 7" THREAD BOLT HH (GR.5)GEOMET	1
16	BSI-2001885	¾" X 3" ALL-THREAD BOLT HH (GR.5)GEOMET	4
17	4001115	⅝" X 1 ¼" GUARD FENCE BOLTS (GR.2)MGAL	48
18	2001840	⅝" X 10" GUARD FENCE BOLTS MGAL	8
19	2001636	⅝" WASHER F436 STRUCTURAL MGAL	2
20	4001116	⅝" RECESSED GUARD FENCE NUT (GR.2)MGAL	59
21	BSI-2001888	⅝" X 2" ALL THREAD BOLT (GR.5)GEOMET	1
22	BSI-1701063-00	DELINEATION MOUNTING (BRACKET)	1
23	BSI-2001887	¼" X ¾" SCREW SD HH 410SS	7
24	4002051	GUARDRAIL WASHER RECT AASHTO FWR03	1
* 25	SEE NOTE BELOW	HIGH INTENSITY REFLECTIVE SHEETING	1
** 26	4002337	8" W-BEAM TIMBER-BLOCKOUT, PDB01B	8
** 27	BSI-4004431	25' W-BEAM GUARDRAIL PANEL, 8-SPACE, 12GA.	2
28	MANMAX Rev-(D)	MAX-TENSION INSTALLATION INSTRUCTIONS	1

Texas Department of Transportation
Design Division Standard

MAX-TENSION END TERMINAL
MASH - TL-3

SGT(11S)31-18

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TXDOT DETAILS - PAVEMENT MARKINGS & GUARD RAILS

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06/09/2025

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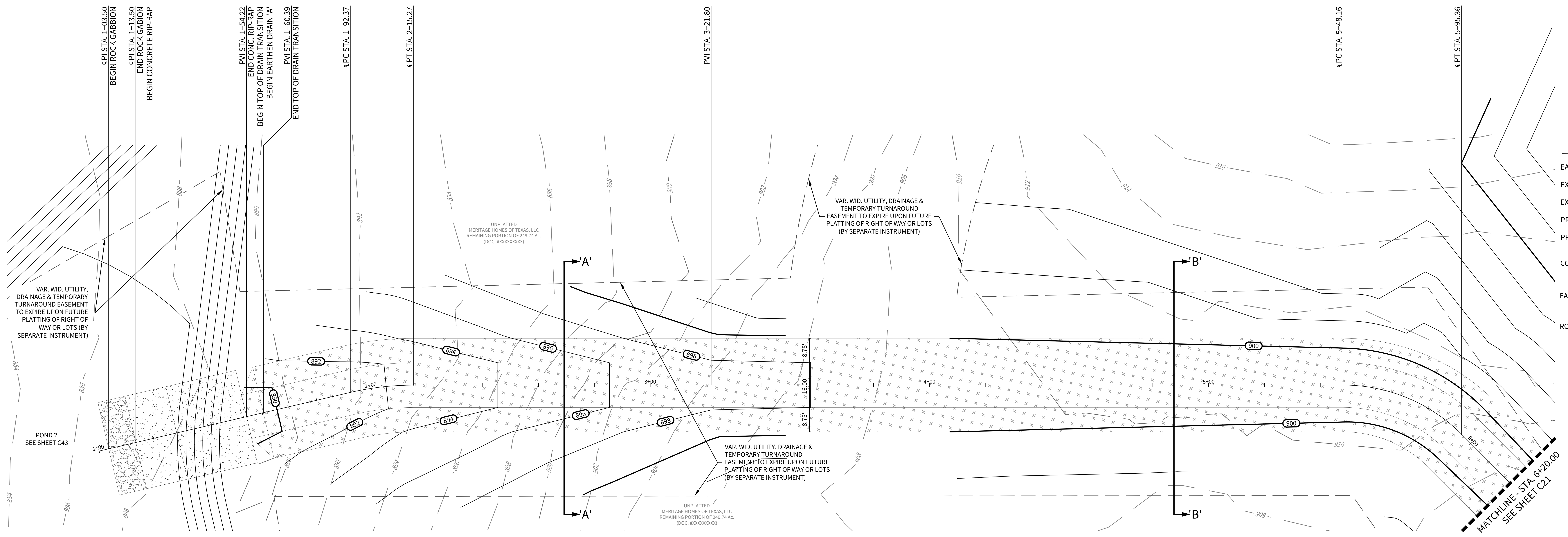
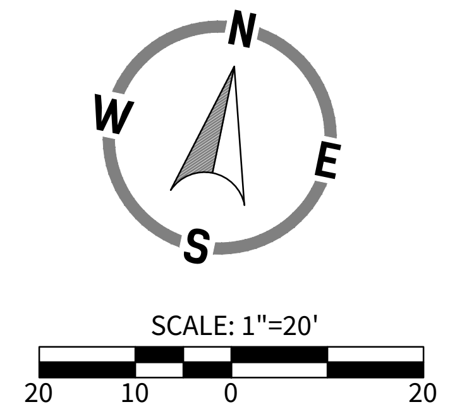


VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS (BY SEPARATE INSTRUMENT)

VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS (BY SEPARATE INSTRUMENT)

VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS (BY SEPARATE INSTRUMENT)

UNPLATTED
MERITAGE HOMES OF TEXAS, LLC
REMAINING PORTION OF 249.74 Ac.
(DOC. #XXXXXXXXX)

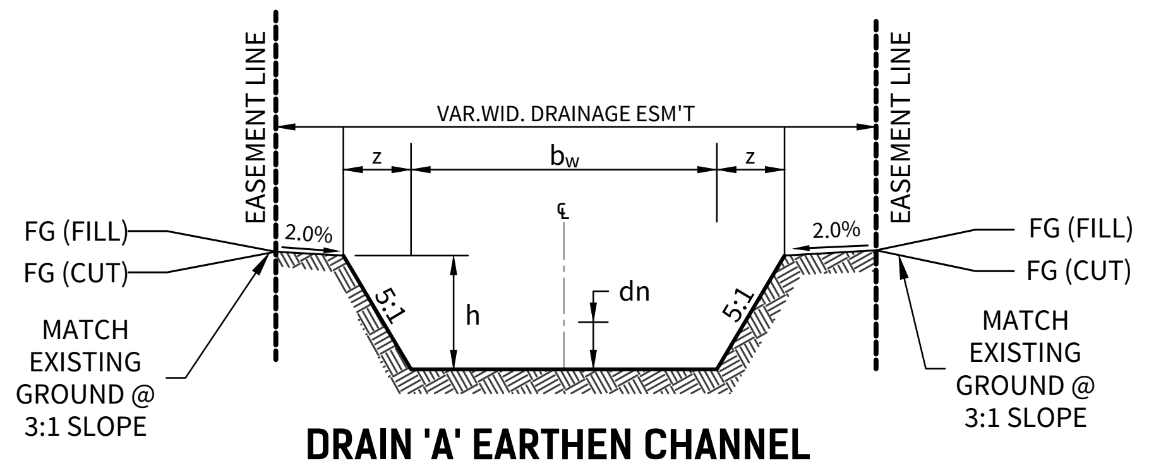


LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	498
EXISTING 10' CONTOUR	500
PROPOSED 2' CONTOUR	498
PROPOSED 10' CONTOUR	500
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
ROCK GABION	▨

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE



DRAIN 'A' EARTHEN CHANNEL

(N.T.S.)

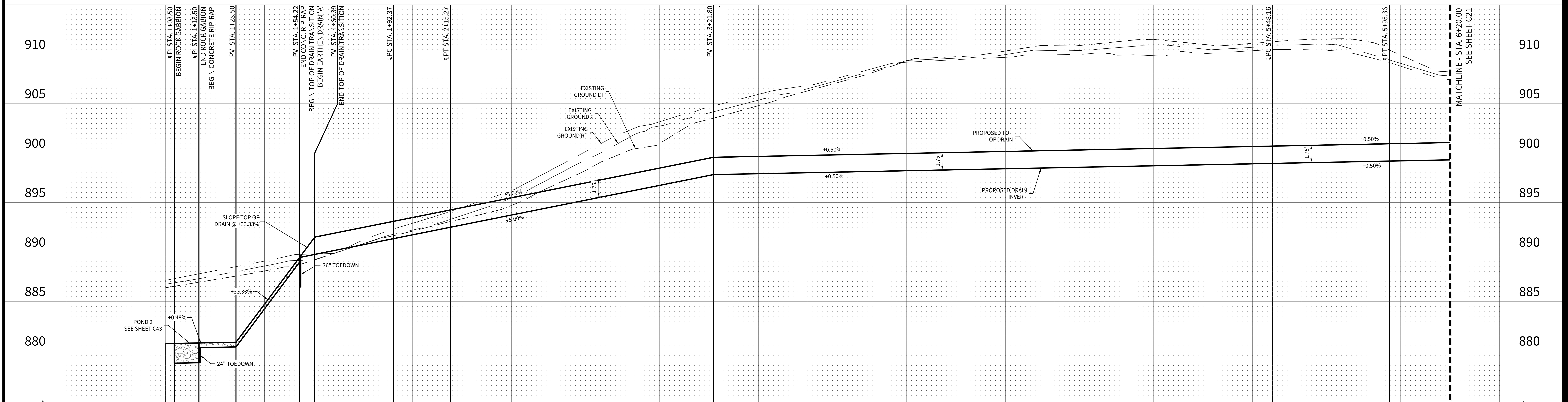
	'A-A'	'B-B'
Q_{25} (cfs)	56.76	56.76
b_w (ft)	16.00'	16.00'
z (ft)	8.75'	8.75'
n	0.035	0.035
h (ft)	1.75'	1.75'
S (%)	5.00%	0.50%
d_n (ft)	0.53'	1.02'
V (fps)	5.71	2.63

'A-A' STA. 1+60.39 TO STA. 3+21.80
'B-B' STA. 3+21.80 TO STA. 5+20.00

DRAIN 'A'

STA. 1+03.50 TO STA. 6+20.00

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



PROP. TOP OF DRAIN							889.44	891.50	892.48	893.10	893.48	894.24	894.48	895.48	896.48	897.48	898.48
PROP. DRAIN INVERT	880.73	880.75	880.80	880.83	880.87	884.70	889.44	889.75	890.73	891.35	891.73	892.49	892.73	893.73	894.73	895.73	896.73

PROP. TOP OF DRAIN	899.57	899.66	899.76	899.86	899.96	900.06	900.16	900.26	900.36	900.46	900.56	900.66	900.70	900.76	900.86	900.94	900.96
PROP. DRAIN INVERT	897.82	897.91	898.01	898.11	898.21	898.31	898.41	898.51	898.61	898.71	898.81	898.91	898.95	899.01	899.11	899.19	899.21

1+00 2+00 3+00 4+00 5+00 6+00

PROP. TOP OF DRAIN
PROP. DRAIN INVERT

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ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'A'

DATE
06/09/2025
PROJECT NO.
04343.002
DRAWN BY
CG/JG/LJ/TCD
CHECKED BY
XV/AL

REVISIONS

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P:\04343\002\2-DWG\4-Plans\C20 DRAIN PLAN & PROFILE - DRAIN 'A'.dwg 2025/06/09 3:42pm jochoa

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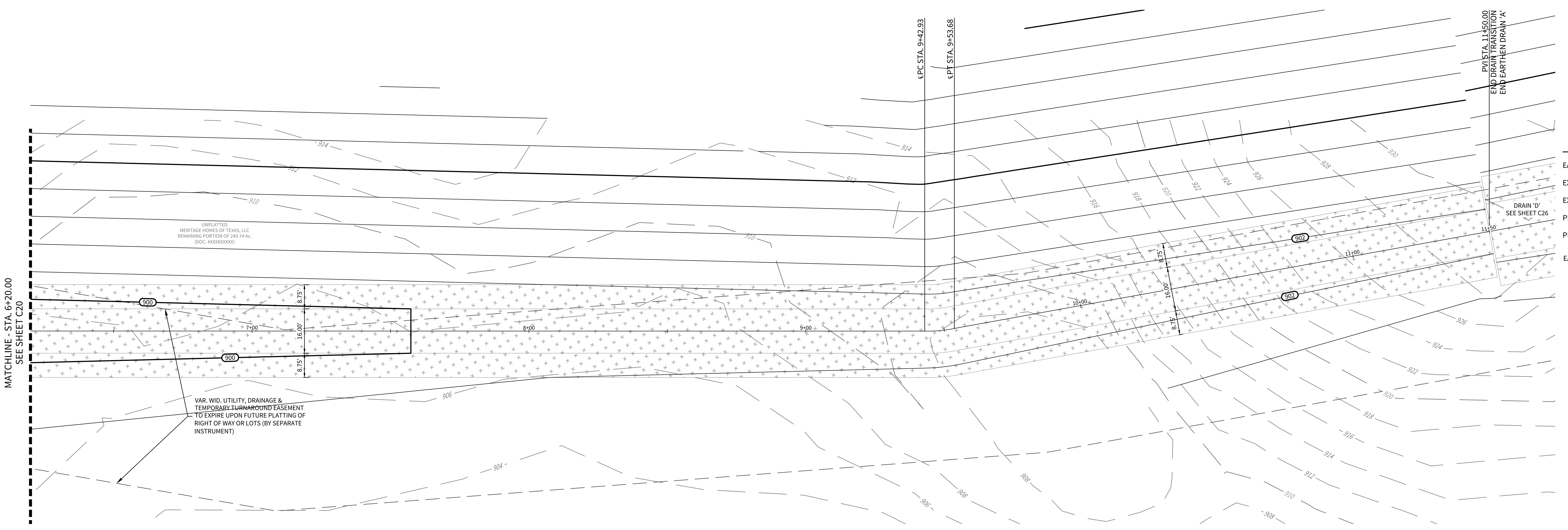
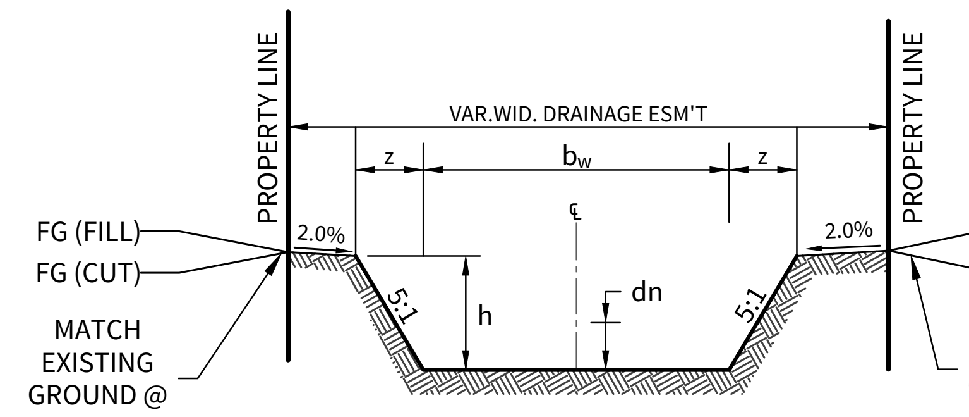


SCALE: 1"=20'

20 10 0 20

LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	- - 498 - -
EXISTING 10' CONTOUR	- - 500 - -
PROPOSED 2' CONTOUR	—(498)—
PROPOSED 10' CONTOUR	—(500)—
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'A' EARTHEN CHANNEL

[N.T.S.]

	'B-B'
Q_{25} (cfs)	56.76
b_w (ft)	16.00'
z (ft)	8.75'
n	0.035
h (ft)	1.75'
S (%)	0.50%
d_n (ft)	1.02'
V (fps)	2.63

'B-B' STA. 6+20.00 TO STA. 11+41.03

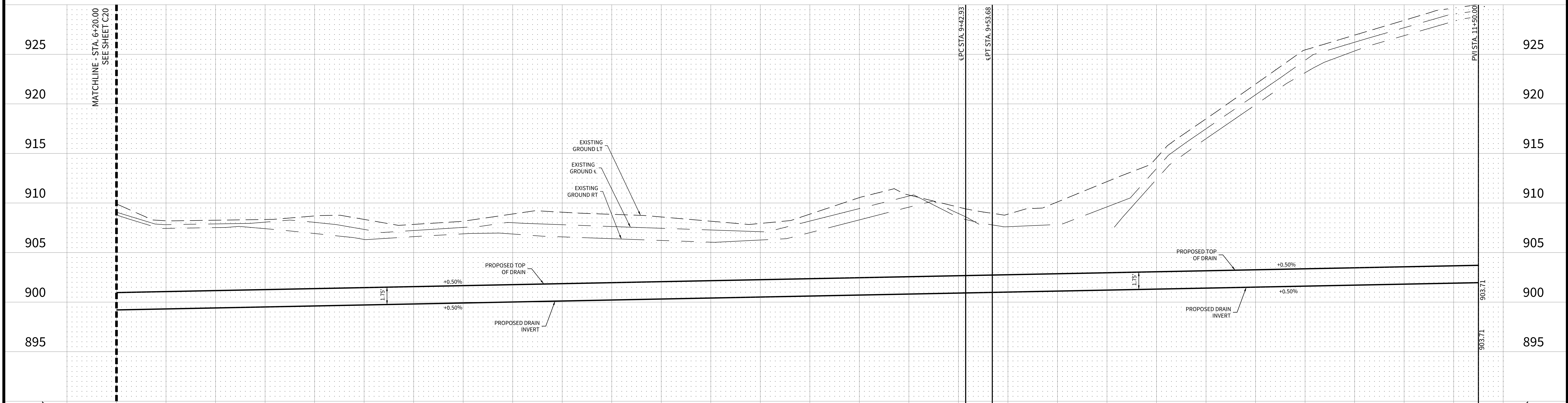
DRAIN 'A'

STA. 6+20.00 TO END

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



	6+00					7+00					8+00					9+00				℄ PC STA. 9+42.93	℄ PT STA. 9+53.68			10+00					11+00			PVI STA. 11+50.00
PROP. TOP OF DRAIN	900.96	901.06	901.16	901.26	901.36	901.46	901.56	901.66	901.76	901.86	901.96	902.06	902.16	902.26	902.36	902.46	902.56	902.68	902.73	902.76	902.86	902.96	903.06	903.16	903.26	903.36	903.46	903.56				
PROP. DRAIN INVERT	899.21	899.31	899.41	899.51	899.61	899.71	899.81	899.91	900.01	900.11	900.21	900.31	900.41	900.51	900.61	900.71	900.81	900.93	900.98	901.01	901.11	901.21	901.31	901.41	901.51	901.61	901.71	901.81				901.96

6+00 7+00 8+00 9+00 10+00 11+00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'A'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

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P:\04343\002\2-DWG\4-Plans\C21 DRAIN PLAN & PROFILE - DRAIN 'A'.dwg 2025/06/09 3:45pm jochoa

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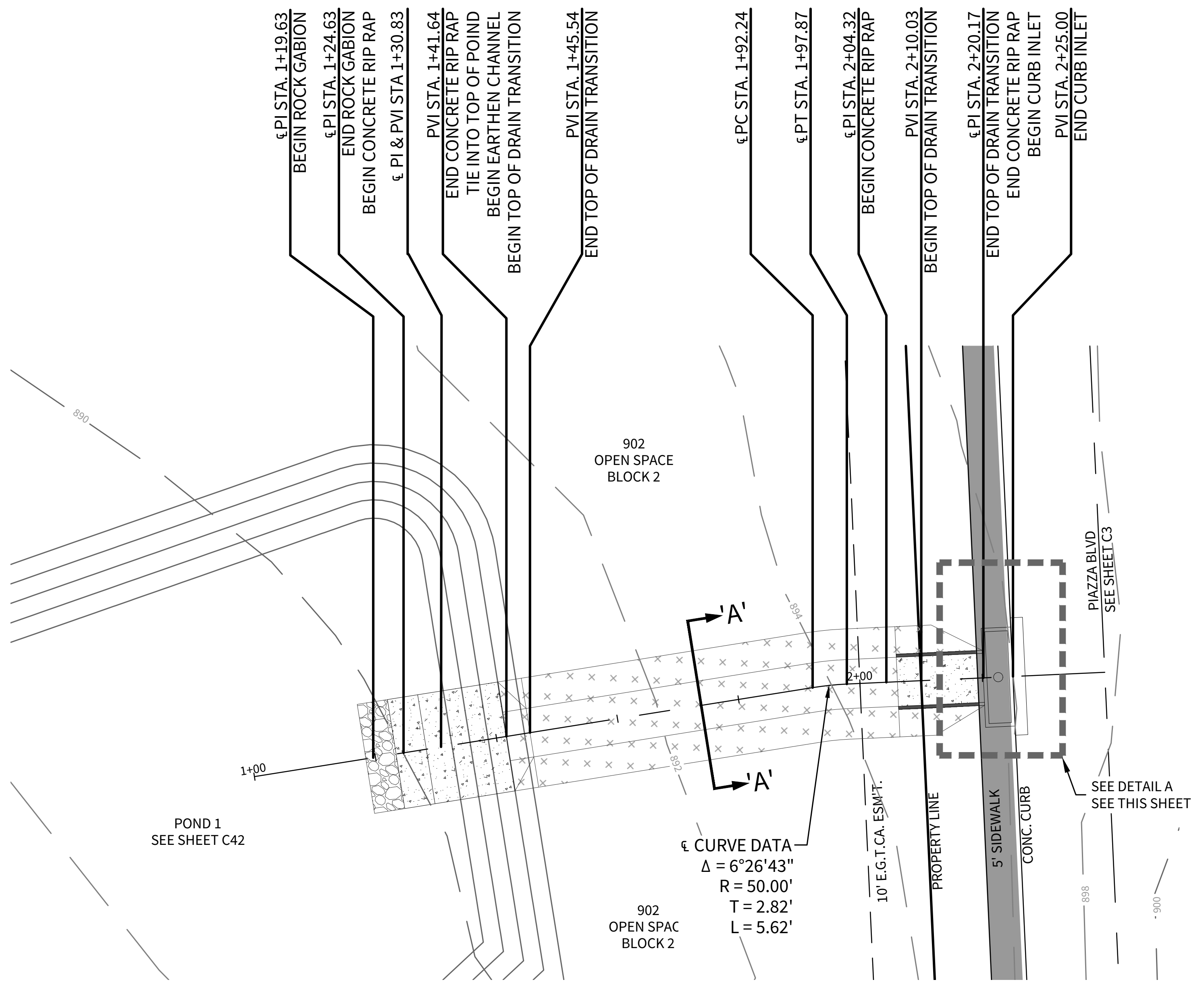
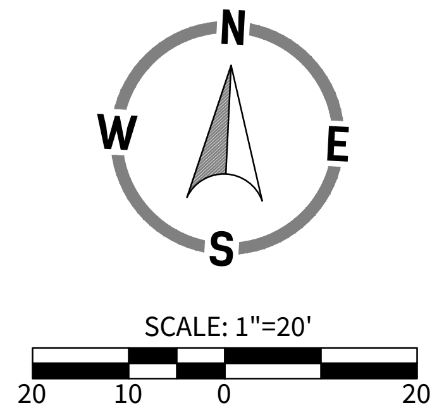
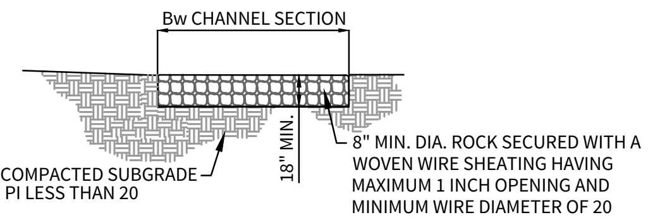




LEGEND

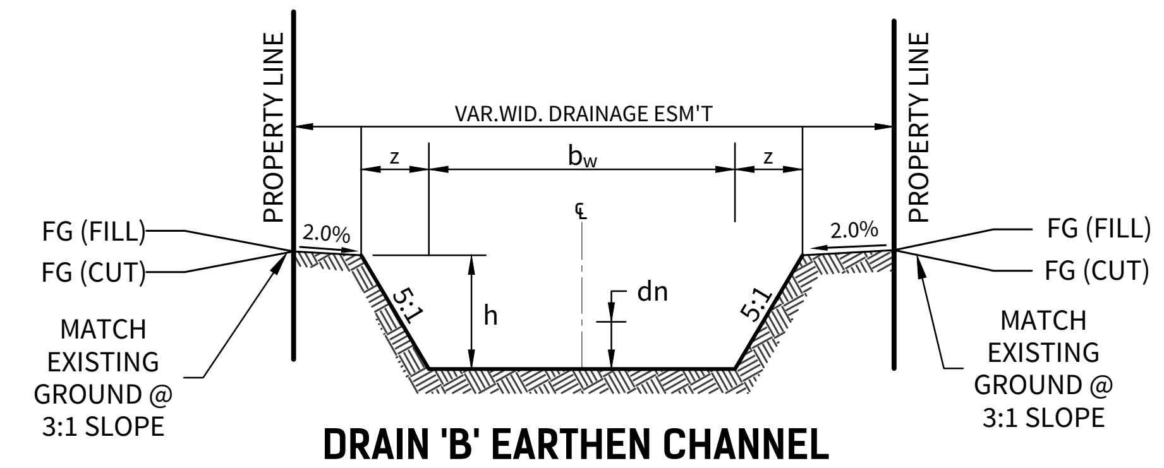
PROPOSED RIGHT OF WAY	——
E.G.T.CA. EASEMENT	— — —
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROPOSED 1' CONTOUR	—(499)—
PROPOSED 5' CONTOUR	—(500)—
EARTHEN DRAINAGE CHANNEL	▨
CONCRETE RIP RAP	▨
ROCK GABION	▨


Bw CHANNEL SECTION
18" MIN.
95% COMPACTED SUBGRADE AND PI LESS THAN 20
8" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

GABION STYLE ROCK EROSION CONTROL MATTRESS DETAIL

NOTE: GABION MATTRESS TO BE FREE OF GEO-TEXTILE FABRIC LINING.

(N.T.S.)



	'A-A'
Q_{25} (cfs)	56.76
b_w (ft)	8.00'
z (ft)	5.00'
n	0.035
h (ft)	1.00'
S (%)	8.00%
d_n (ft)	0.39'
V (fps)	5.68

DRAIN 'B' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+48.58 TO STA. 2+04.32

DRAIN 'B'

STA. 1+00.00 TO STA. END

CURB INLET OPENING

Q_{25} = 22.00 c.f.s. / 2.06 = 10.66' REQ.

USED 15' INLET

A = 8.00 s.f. (1 - 8' x 1')

V = 2.75 f.p.s.

Hv = 0.12'

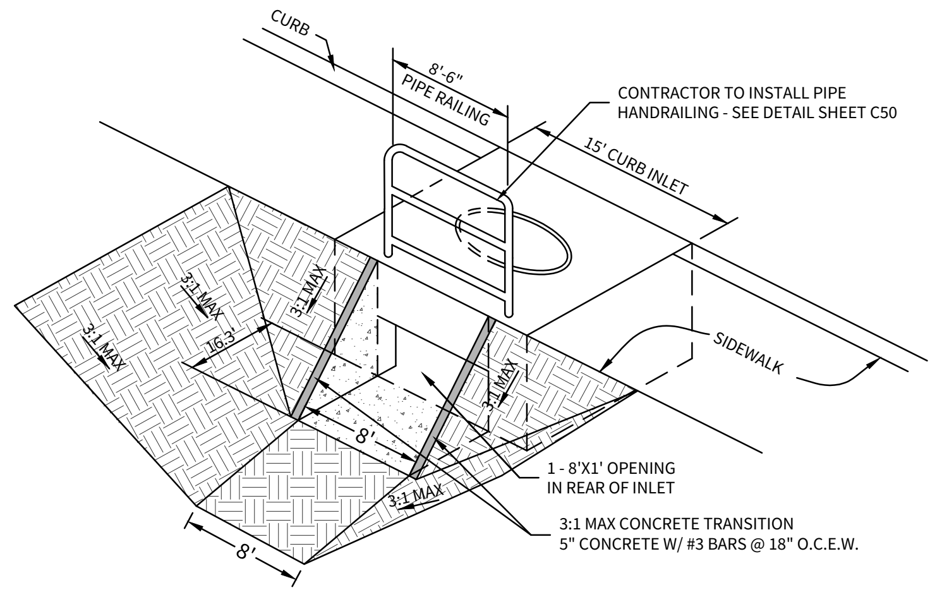
1.5Hv = 0.18'

Hw = z + y + 1.5Hv

Hw = 894.09' + 1.0' + 0.18'

Hw = 895.27

GUTTER = 896.86


CURB
8'-6"
PIPE RAILING
CONTRACTOR TO INSTALL PIPE HANDRAILING - SEE DETAIL SHEET C50
15' CURB INLET
SIDEWALK
3:1 MAX
3:1 MAX
3:1 MAX
3:1 MAX
3:1 MAX
16.3'
8'
8'
1 - 8'X1' OPENING IN REAR OF INLET
3:1 MAX CONCRETE TRANSITION 5" CONCRETE W/ #3 BARS @ 18" O.C.E.W.

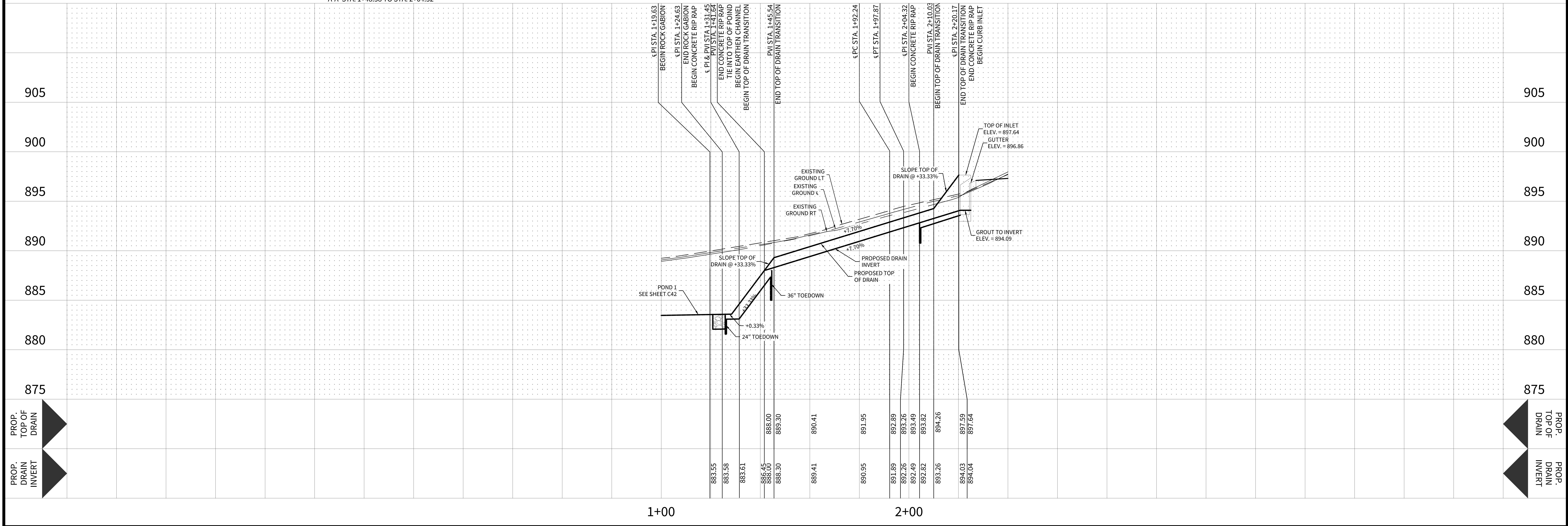
DRAIN 'B' DETAIL A
CURB INLET & EARTHEN DRAIN DETAIL (N.T.S.)

NOTE: CONTRACTOR TO DOWEL CONC. TRANSITION TO REAR OF INLET WITH #4 DOWELS @ 12" O.C.

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'B'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
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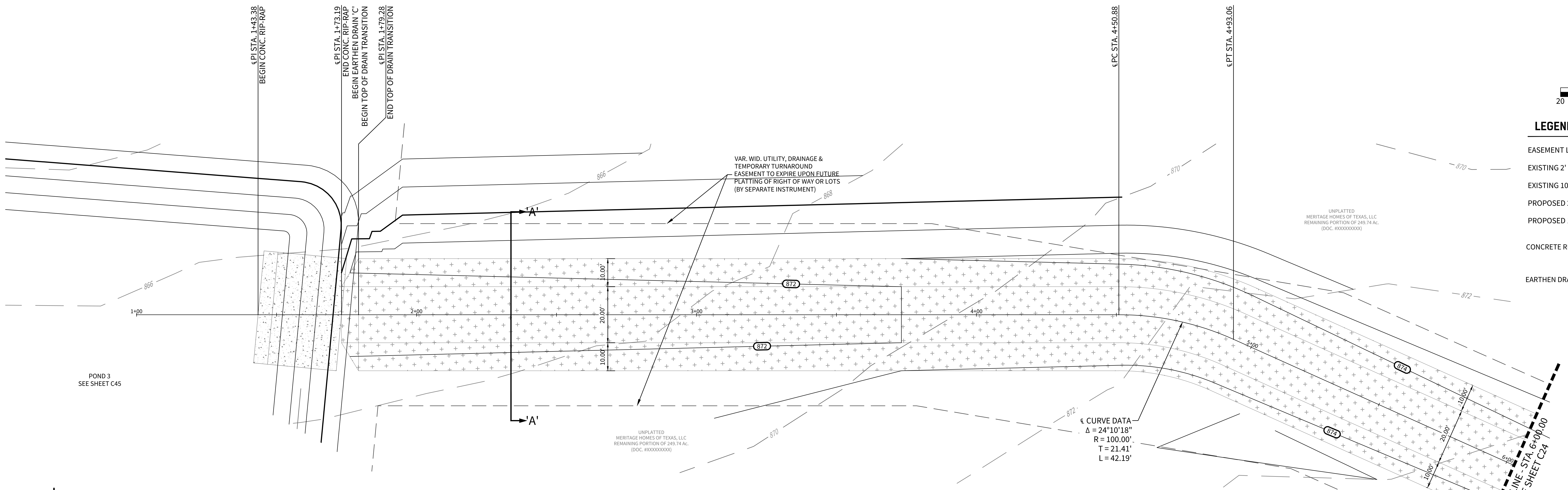


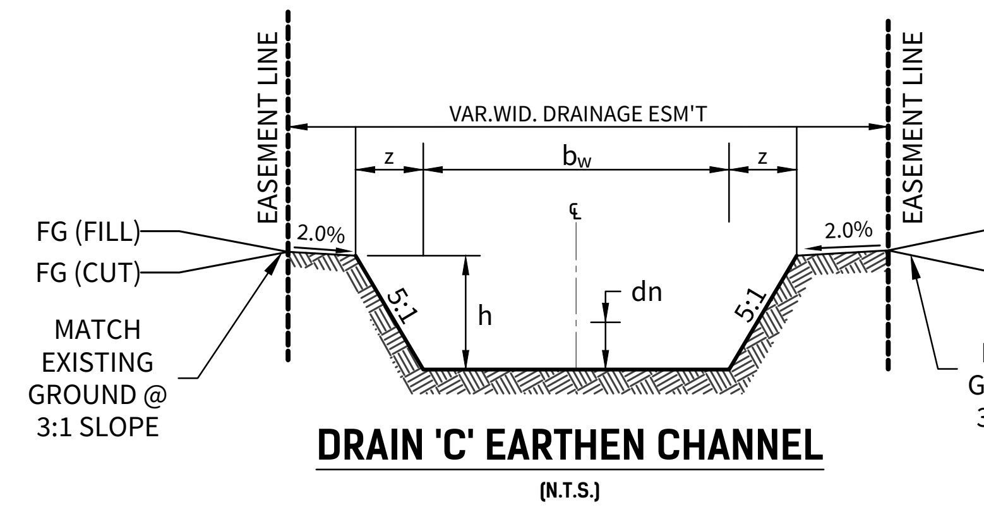
℄ PI STA. 1+43.38
BEGIN CONC. RIP-RAP
℄ PI STA. 1+73.19
END CONC. RIP-RAP
BEGIN EARTHEN DRAIN 'C'
BEGIN TOP OF DRAIN TRANSITION
℄ PI STA. 1+79.28
END TOP OF DRAIN TRANSITION
℄ PC STA. 4+50.88
℄ PT STA. 4+93.06
VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS (BY SEPARATE INSTRUMENT)
'A'
'A'
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 249.74 Ac. (DOC. XXXXXXXXXX)
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 249.74 Ac. (DOC. XXXXXXXXXX)
POND 3
SEE SHEET C45
1+00
2+00
3+00
4+00
5+00
6+00
866
868
870
872
874
10.00'
20.00'
10.00'
℄ CURVE DATA
Δ = 24°10'18"
R = 100.00'
T = 21.41'
L = 42.19'
MATCHLINE - STA. 6+00.00
SEE SHEET C24

SCALE: 1"=20'

20 10 0 20

LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — 500 — — —
PROPOSED 2' CONTOUR	—— 498 ——
PROPOSED 10' CONTOUR	—— 500 ——
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'C' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+79.28 TO STA. 6+00.00

	'A-A'
Q_{25} (cfs)	93.34
b_w (ft)	20.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	0.50%
d_n (ft)	1.21'
V (fps)	2.96

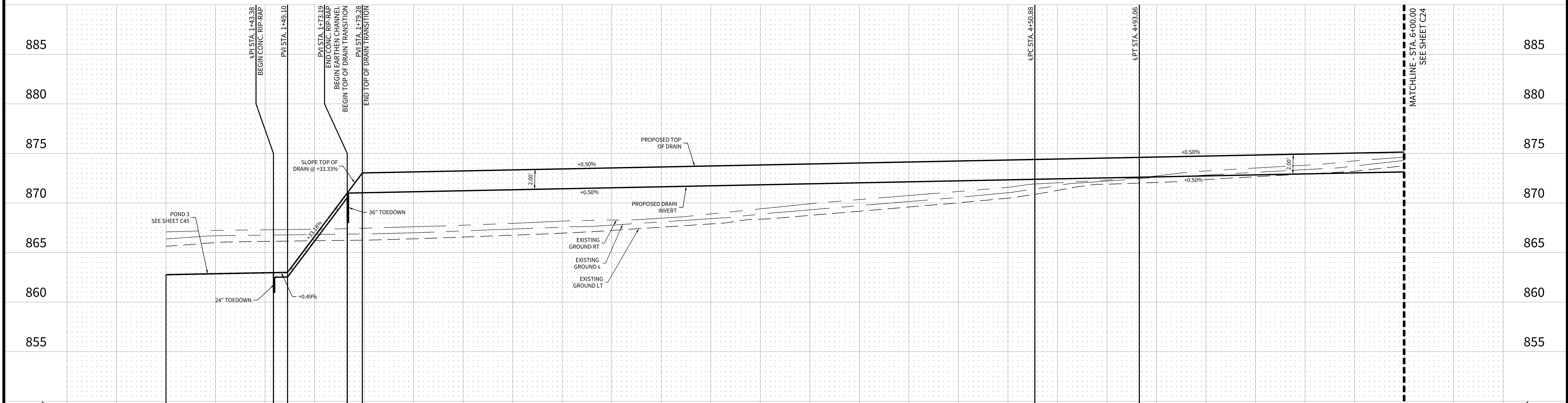
DRAIN 'C'

STA. 1+79.28 TO STA. 6+00.00

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN		862.86	862.96	862.98	863.00	866.62	871.00	873.03	873.13	873.23	873.33	873.43	873.53	873.63	873.73	873.83	873.93	874.03	874.13	874.23	874.33	874.39	874.43	874.53	874.60	874.63	874.73	874.83	874.93	875.03
PROP. DRAIN INVERT	862.76	862.86	862.96	862.98	863.00	866.62	871.00	871.03	871.13	871.23	871.33	871.43	871.53	871.63	871.73	871.83	871.93	872.03	872.13	872.23	872.33	872.39	872.43	872.53	872.60	872.63	872.73	872.83	872.93	873.03

1+00 2+00 3+00 4+00 5+00 6+00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'C'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
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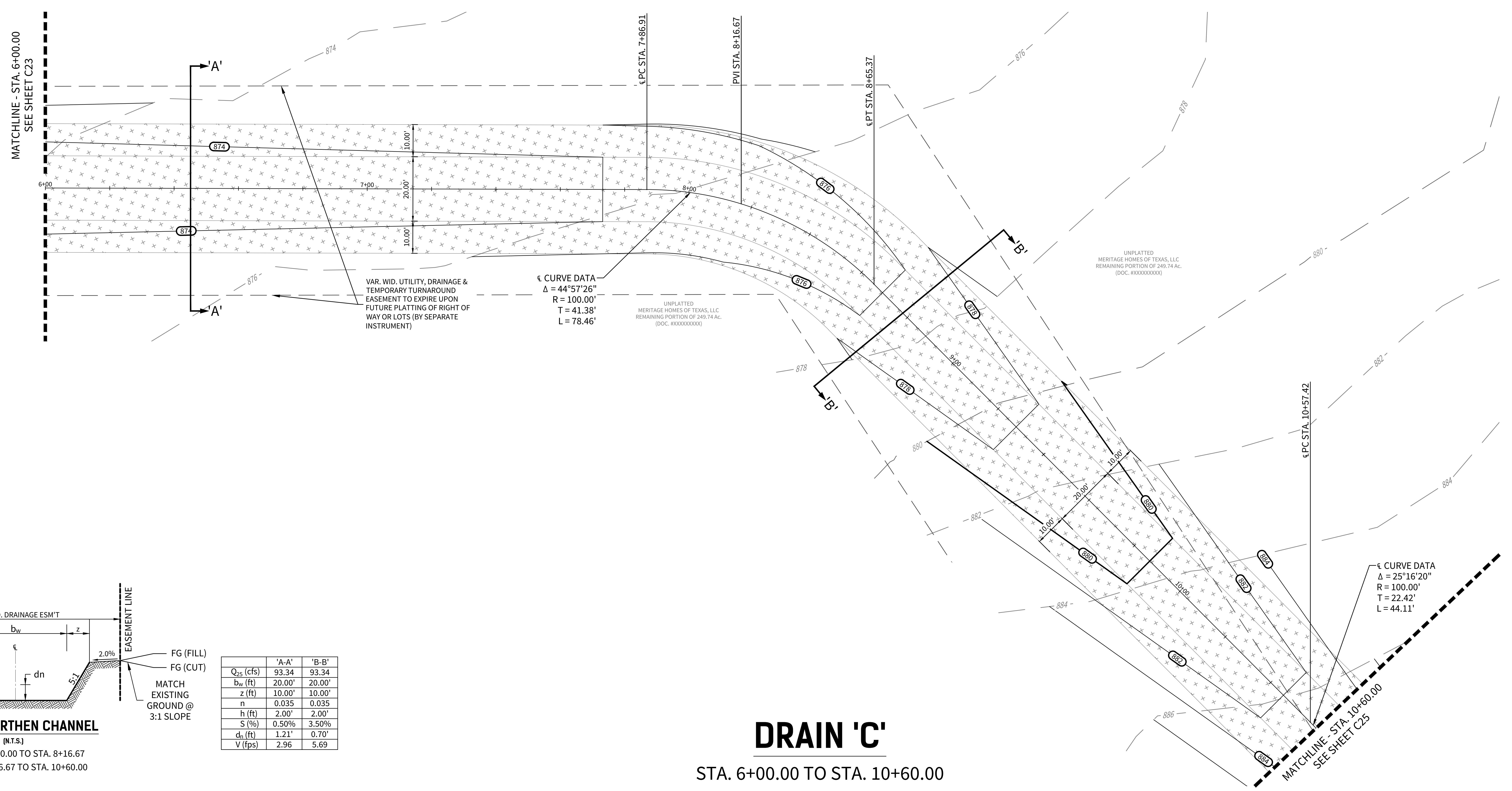


DRAIN 'C'

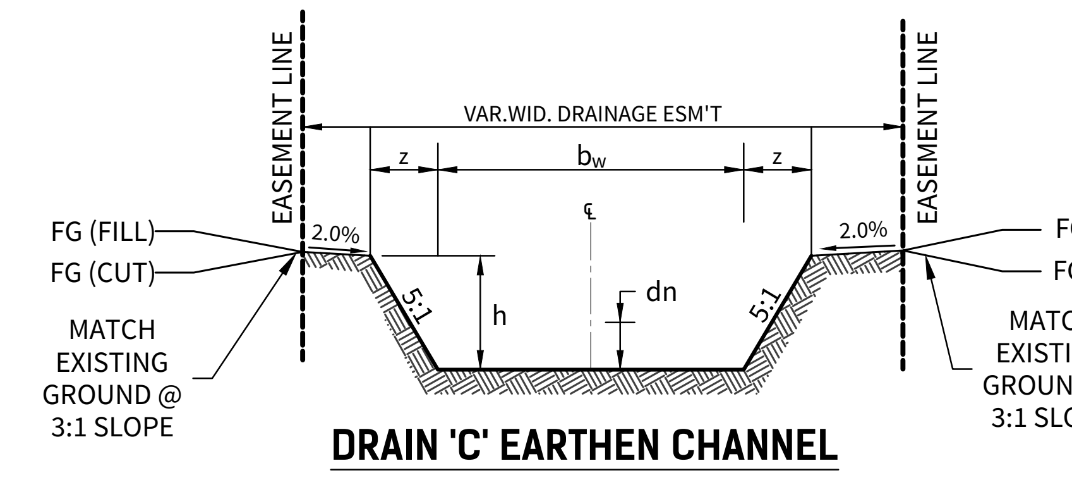
STA. 6+00.00 TO STA. 10+60.00

SCALE: 1"=20'

20 10 0 20

LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — 500 — — —
PROPOSED 2' CONTOUR	—— 498 ——
PROPOSED 10' CONTOUR	—— 500 ——
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'C' EARTHEN CHANNEL

(N.T.S.)

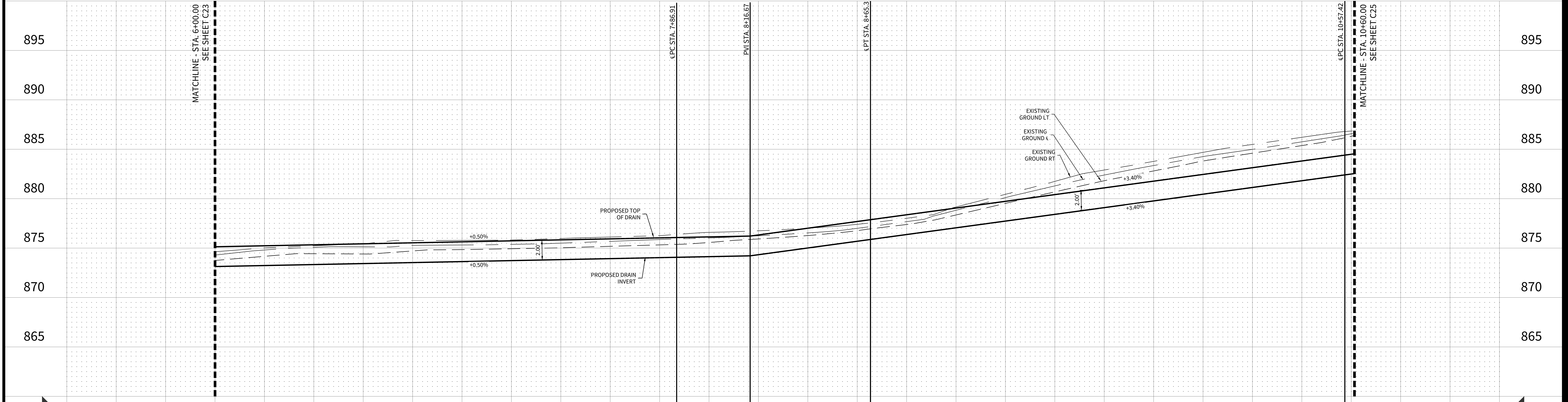
'A-A' STA. 6+00.00 TO STA. 8+16.67
'B-B' STA. 8+16.67 TO STA. 10+60.00

	'A-A'	'B-B'
Q_{25} (cfs)	93.34	93.34
b_w (ft)	20.00'	20.00'
z (ft)	10.00'	10.00'
n	0.035	0.035
h (ft)	2.00'	2.00'
S (%)	0.50%	3.50%
d_n (ft)	1.21'	0.70'
V (fps)	2.96	5.69

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



	6+00					7+00							8+00					9+00					10+00			
PROP. TOP OF DRAIN	875.13	875.23	875.33	875.43	875.53	875.63	875.73	875.83	875.93	876.03	876.07	876.13	876.22	876.33	877.01	877.69	877.87	878.37	879.05	879.73	880.41	881.09	881.77	882.45	883.13	883.81	884.40
PROP. DRAIN INVERT	873.13	873.23	873.33	873.43	873.53	873.63	873.73	873.83	873.93	874.03	874.07	874.13	874.22	874.33	875.01	875.69	875.87	876.37	877.05	877.73	878.41	879.09	879.77	880.45	881.13	881.81	882.40

6+00 7+00 8+00 9+00 10+00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'C'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

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TBPLS No. 10048500

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C24 DRAIN PLAN & PROFILE - DRAIN 'C'.dwg 2025/06/09 3:46pm jochoa

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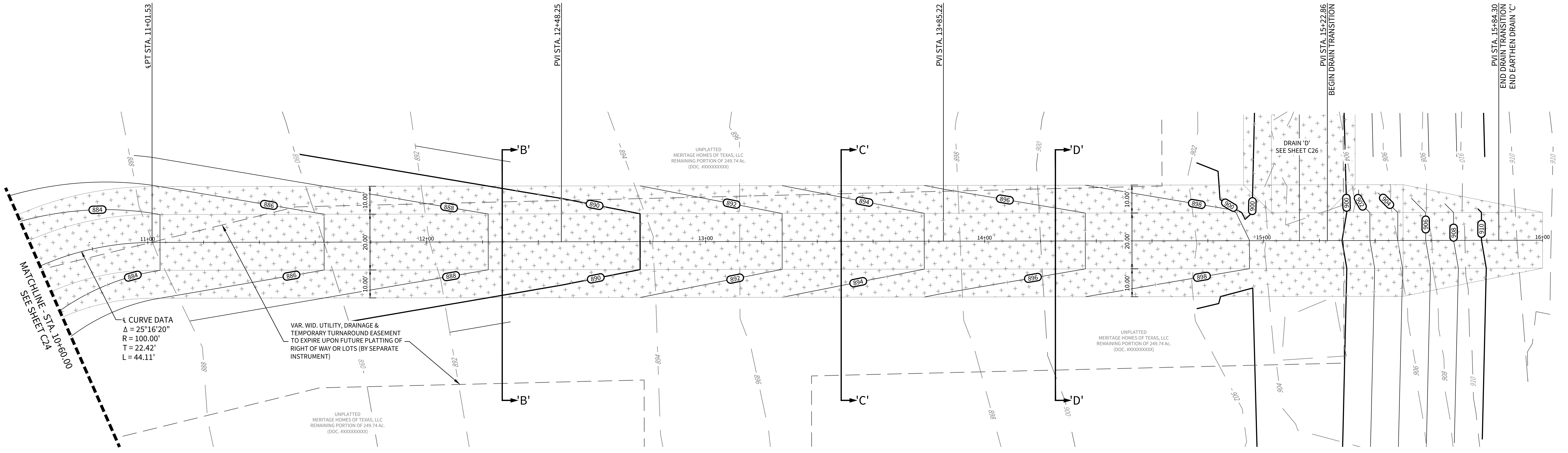
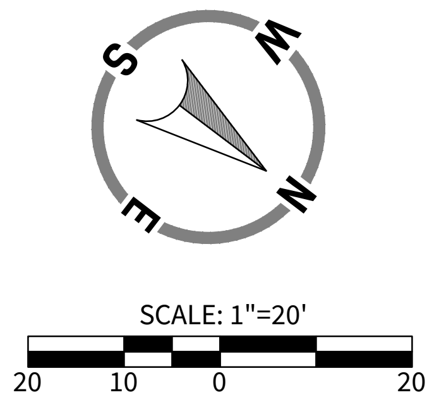
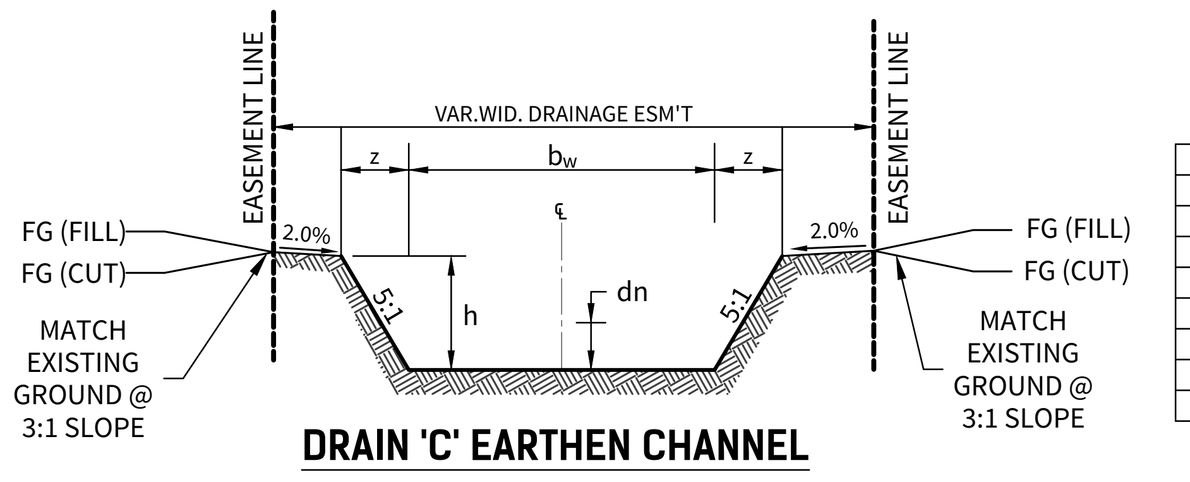




LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	– – 498 – –
EXISTING 10' CONTOUR	– – 500 – –
PROPOSED 2' CONTOUR	—(498)—
PROPOSED 10' CONTOUR	—(500)—
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'C' EARTHEN CHANNEL

(N.T.S.)

'B-B' STA. 10+60.00 TO STA. 12+48.25
'C-C' STA. 12+48.25 TO STA. 13+85.22
'D-D' STA. 13+85.22 TO STA. 15+50.00

	'B-B'	'C-C'	'D-D'
Q_{25} (cfs)	93.34	41.85	41.85
b_w (ft)	20.00'	16.00'	5.00'
z (ft)	10.00'	10.00'	10.00'
n	0.035	0.035	0.035
h (ft)	2.00'	2.00'	2.00'
S (%)	3.50%	1.56%	4.00%
d_n (ft)	0.70'	0.63'	0.81'
V (fps)	5.69	3.50	5.73

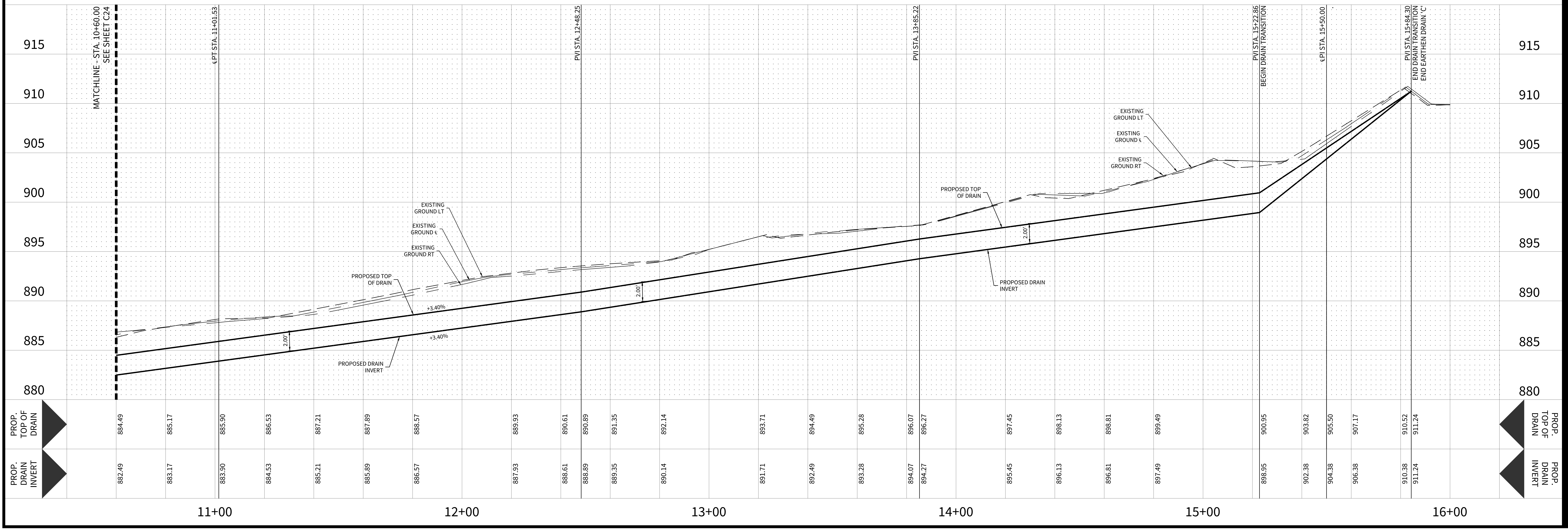
NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

DRAIN 'C'

STA. 10+60.00 TO END

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



PROP. TOP OF DRAIN	PROP. DRAIN INVERT
884.49	882.49
885.17	883.17
885.90	883.90
886.53	884.53
887.21	885.21
887.89	885.89
888.57	886.57
889.93	887.93
890.61	888.61
890.89	888.89
891.35	889.35
892.14	890.14
893.71	891.71
894.49	892.49
895.28	893.28
896.07	894.07
896.27	894.27
897.45	895.45
898.13	896.13
898.81	896.81
899.49	897.49
900.95	898.95
903.82	902.38
905.50	904.38
907.17	906.38
910.52	910.38
911.24	911.24

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'C'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

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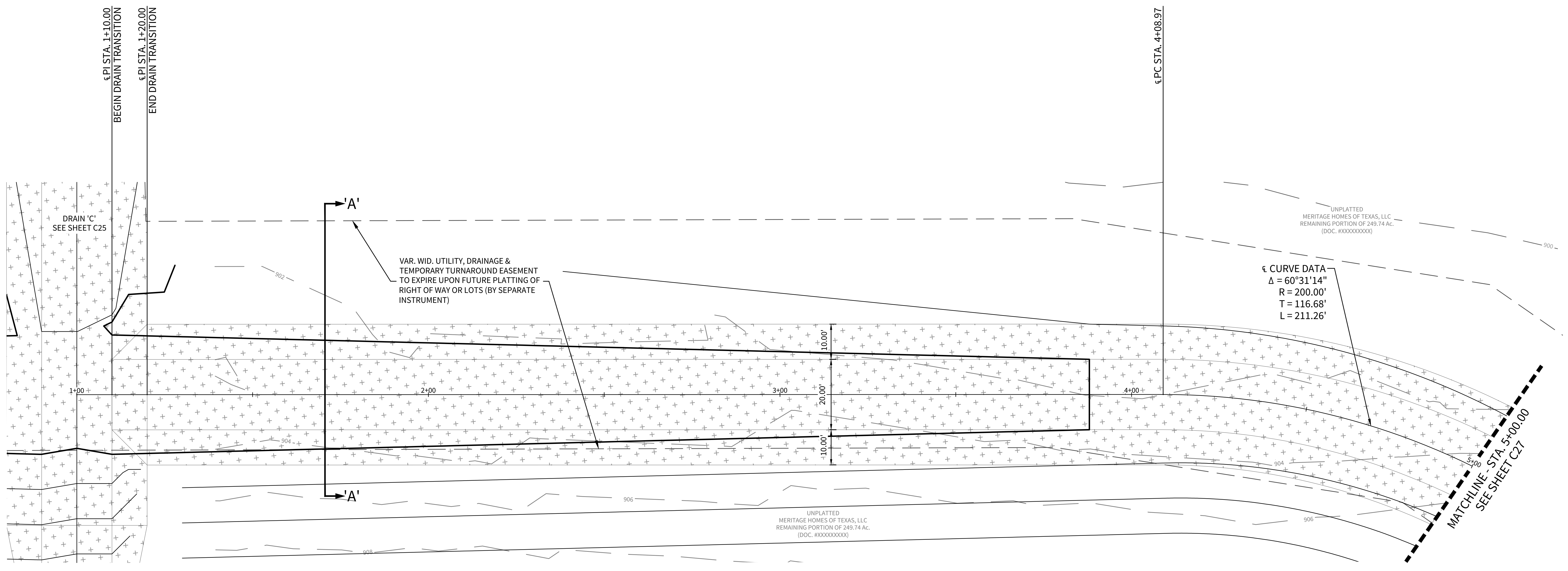
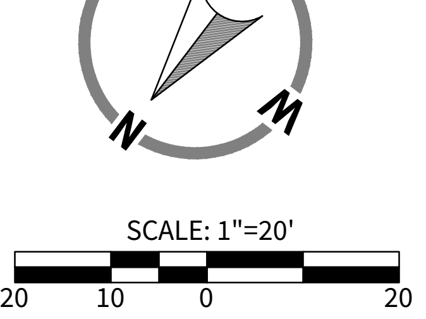
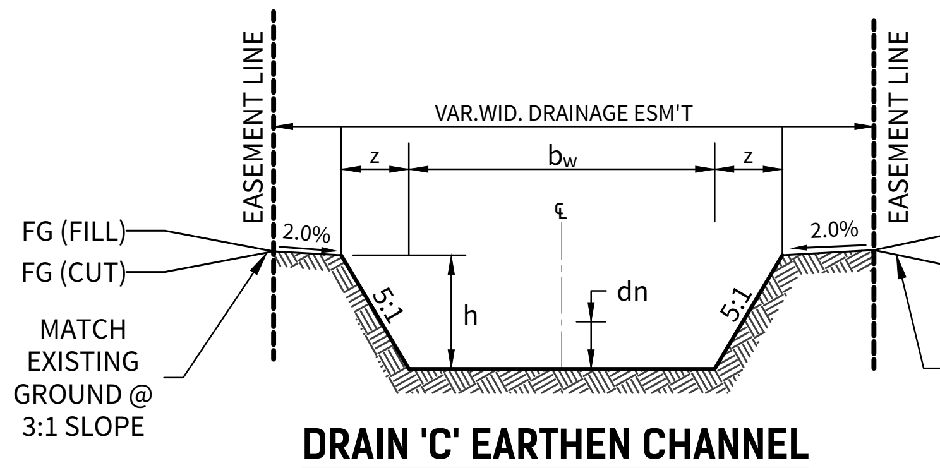




LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	- - 498 - -
EXISTING 10' CONTOUR	— — 500 — —
PROPOSED 2' CONTOUR	—498—
PROPOSED 10' CONTOUR	—500—
EARTHEN DRAINAGE CHANNEL	▨



	'A-A'
Q_{25} (cfs)	41.85
b_w (ft)	5.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	4.00%
d_n (ft)	0.81'
V (fps)	5.73

DRAIN 'C' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 15+20.00 TO STA. 15+33.69
'B-B' STA. 15+33.69 TO STA. 18+89.44

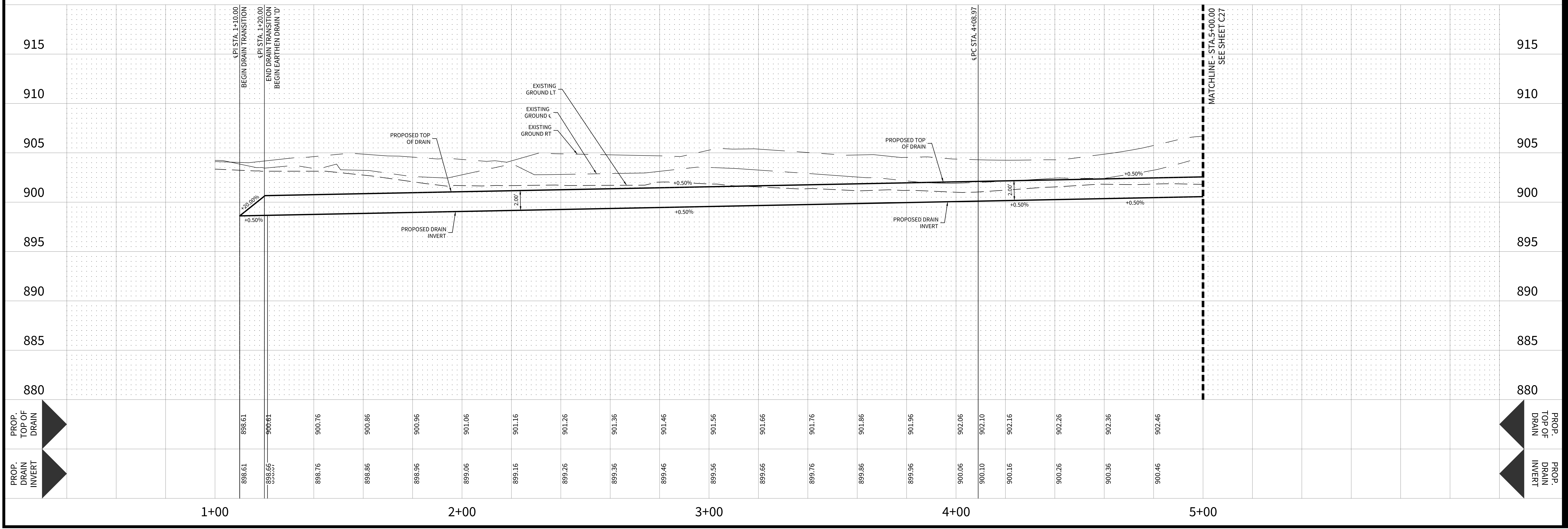
NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

DRAIN 'D'

STA. 1+00.00 TO STA. 5+00.00

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



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UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'D'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

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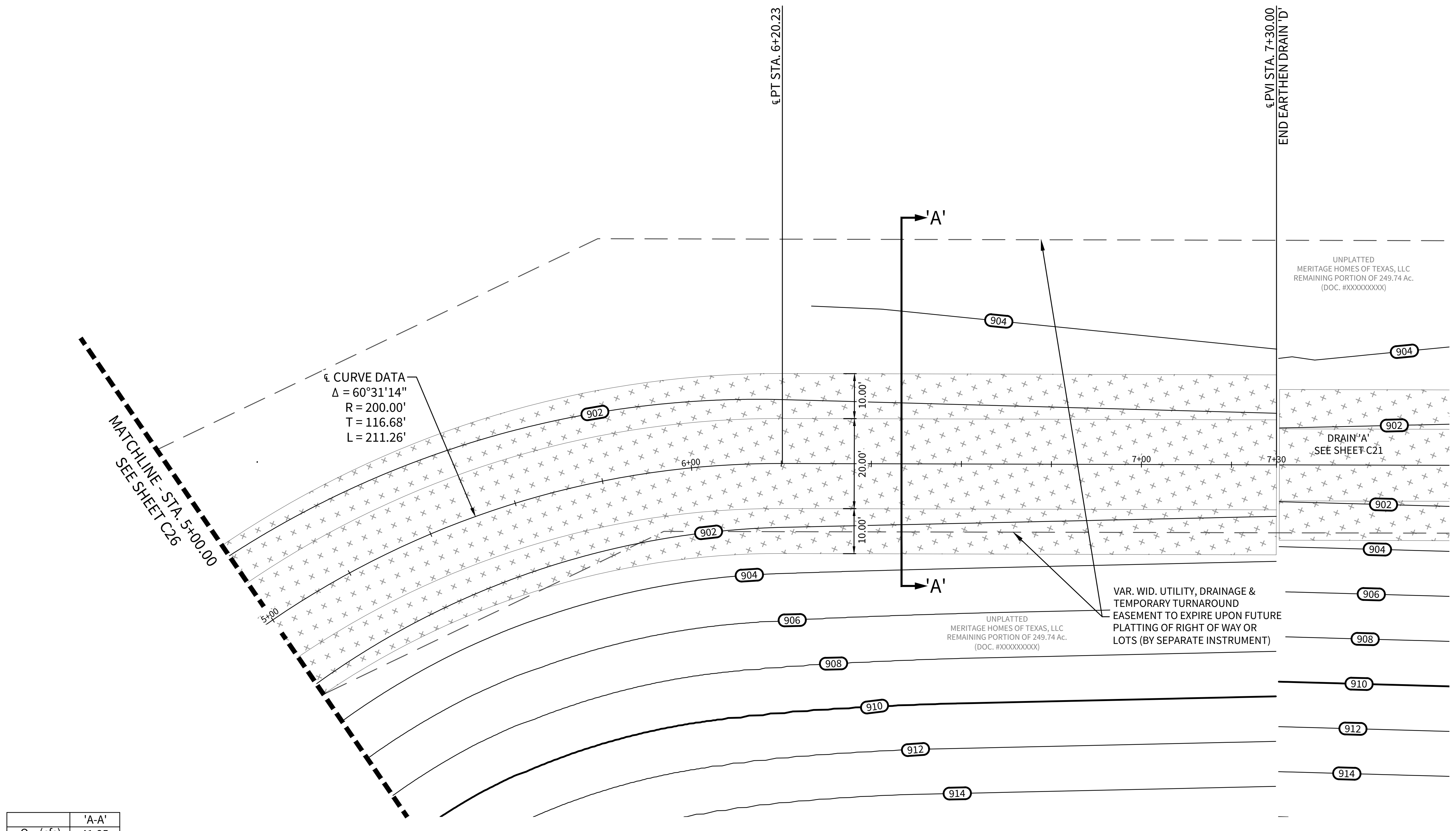
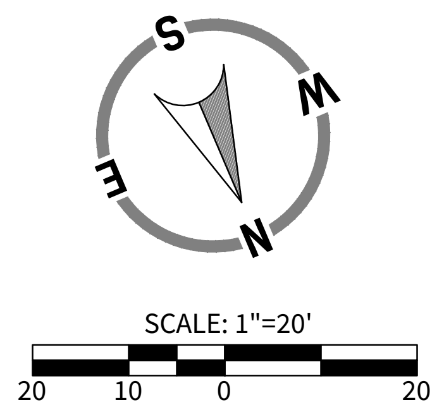
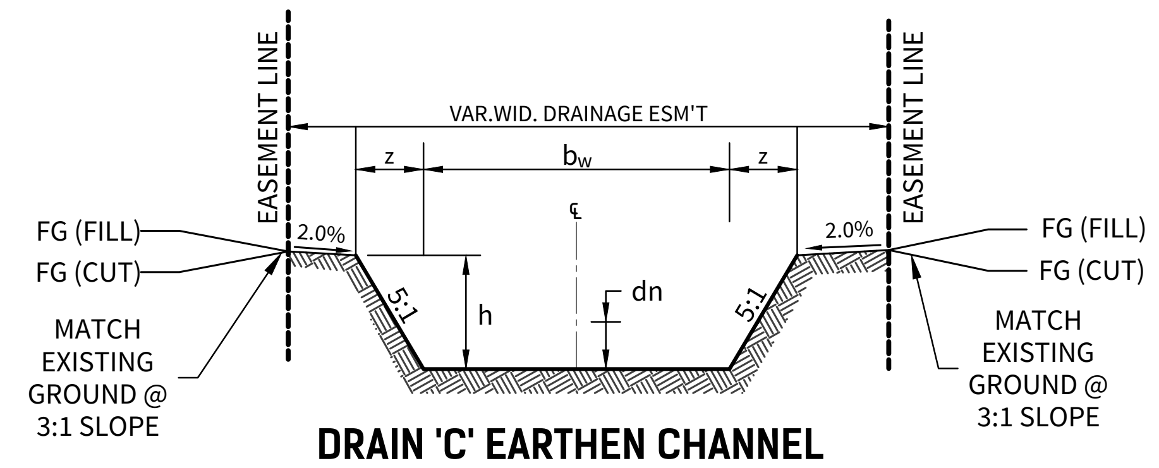




LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	- - 498 - -
EXISTING 10' CONTOUR	- - 500 - -
PROPOSED 2' CONTOUR	— 498 —
PROPOSED 10' CONTOUR	— 500 —
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'C' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 5+00.00 TO STA. 7+30.00

	'A-A'
Q_{25} (cfs)	41.85
b_w (ft)	5.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	4.00%
d_n (ft)	0.81'
V (fps)	5.73

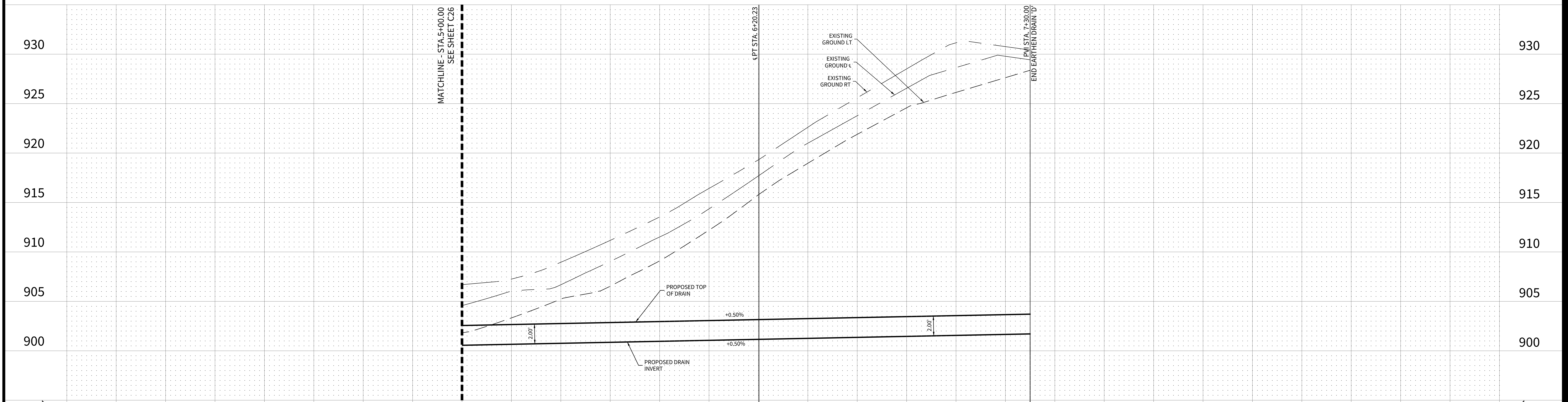
NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

DRAIN 'D'

STA. 5+00.00 TO END

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



PROP. TOP OF DRAIN	902.56	902.66	902.76	902.86	902.96	903.06	903.16	903.26	903.36	903.46	903.56	903.66	903.71
PROP. DRAIN INVERT	900.56	900.66	900.76	900.86	900.96	901.06	901.16	901.26	901.36	901.46	901.56	901.66	901.71

5+00
6+00
7+00

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DRAIN PLAN & PROFILE - DRAIN 'D'

DATE
06/09/2025

PROJECT NO.
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CG/JG/LJ/TCD

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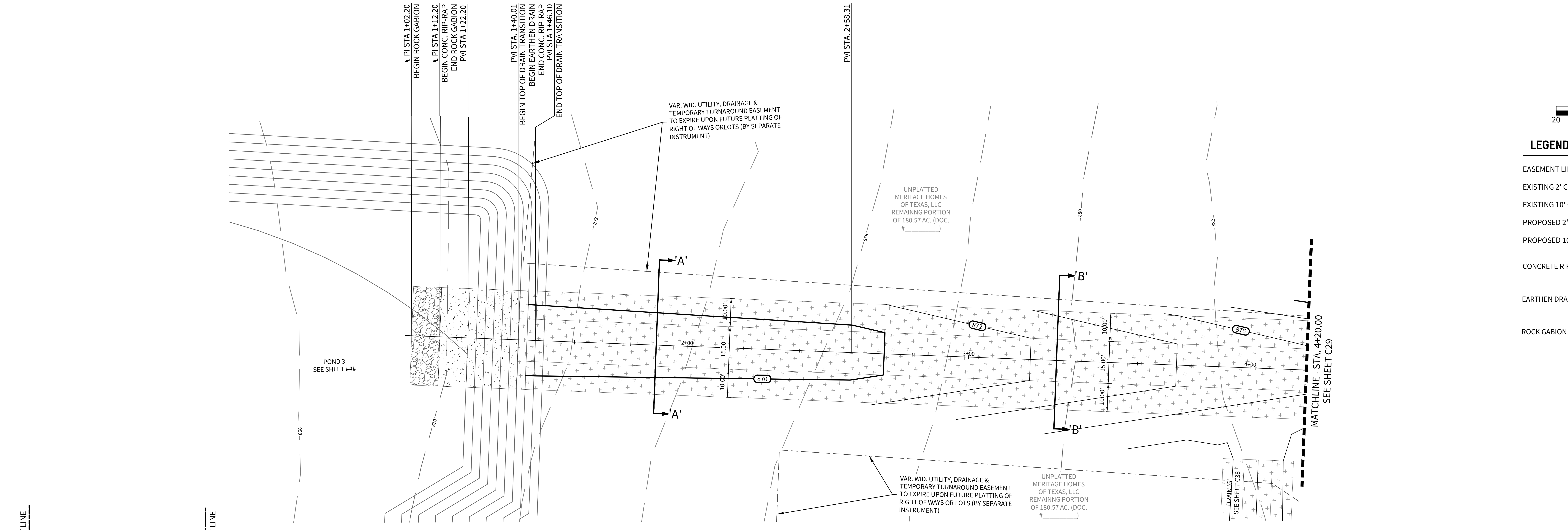
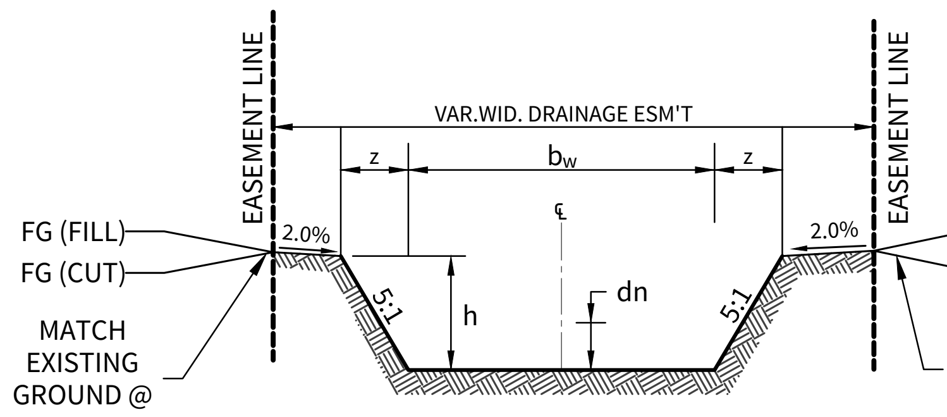

℄ PI STA 1+02.20
BEGIN ROCK GABION
℄ PI STA 1+12.20
BEGIN CONC. RIP-RAP
END ROCK GABION
PVI STA 1+22.20
PVI STA. 1+40.01
BEGIN TOP OF DRAIN TRANSITION
BEGIN EARTHEN DRAIN
END CONC. RIP-RAP
PVI STA. 1+46.10
END TOP OF DRAIN TRANSITION
PVI STA. 2+58.31
VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAYS ORLOTS (BY SEPARATE INSTRUMENT)
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 180.57 AC. (DOC. #________)
POND 3 SEE SHEET ###
'A'
'B'
2+00
3+00
4+00
10.00'
15.00'
870
872
876
MATCHLINE - STA. 4+20.00 SEE SHEET C29
VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAYS OR LOTS (BY SEPARATE INSTRUMENT)
DRAIN 'G' SEE SHEET C38
SCALE: 1"=20'
20 10 0 20

LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	— — 498 — —
EXISTING 10' CONTOUR	— — 500 — —
PROPOSED 2' CONTOUR	—(498)—
PROPOSED 10' CONTOUR	—(500)—
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨
ROCK GABION	▨



DRAIN 'E' EARTHEN CHANNEL

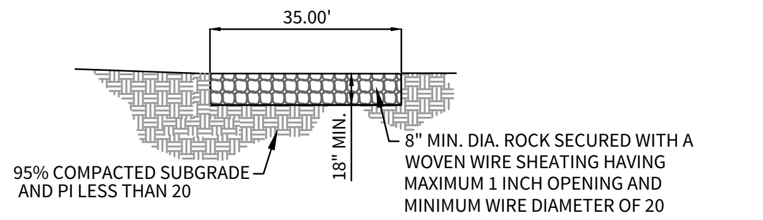
(N.T.S.)

'A-A' STA. 1+46.10 TO STA. 2+58.31
'B-B' STA. 2+58.31 TO STA. 4+20.00

	'A-A'	'B-B'
Q_{25} (cfs)	94.62	77.10
b_w (ft)	15.00'	15.00'
z (ft)	10.00'	10.00'
n	0.035	0.035
h (ft)	2.00'	2.00'
S (%)	0.50%	3.85%
d_n (ft)	1.39'	0.71'
V (fps)	3.10	5.88

DRAIN 'E'

STA. 1+00.00 TO STA. 4+20.00


35.00'
95% COMPACTED SUBGRADE AND PI LESS THAN 20
18" MIN.
8" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

GABION STYLE ROCK EROSION CONTROL MATTRESS DETAIL

NOTE: GABION MATTRESS TO BE FREE OF GEO-TEXTILE FABRIC LINING.
(N.T.S.)

NOTES

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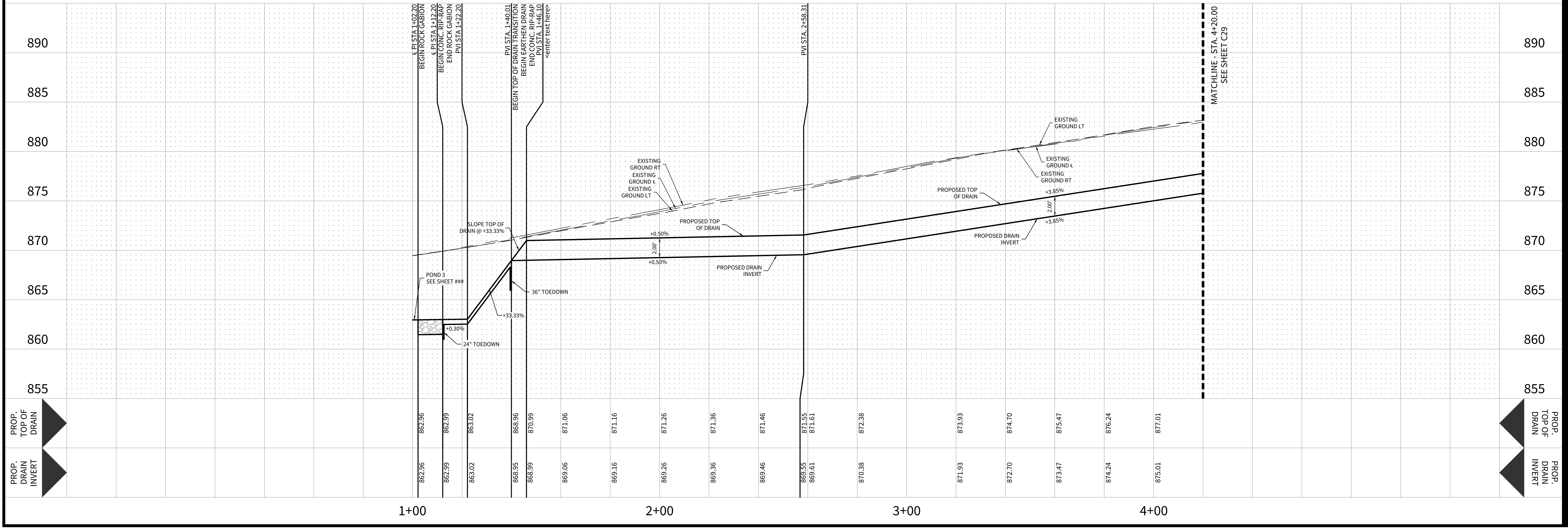
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



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UNIT 1

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TBPLS No. 10048500

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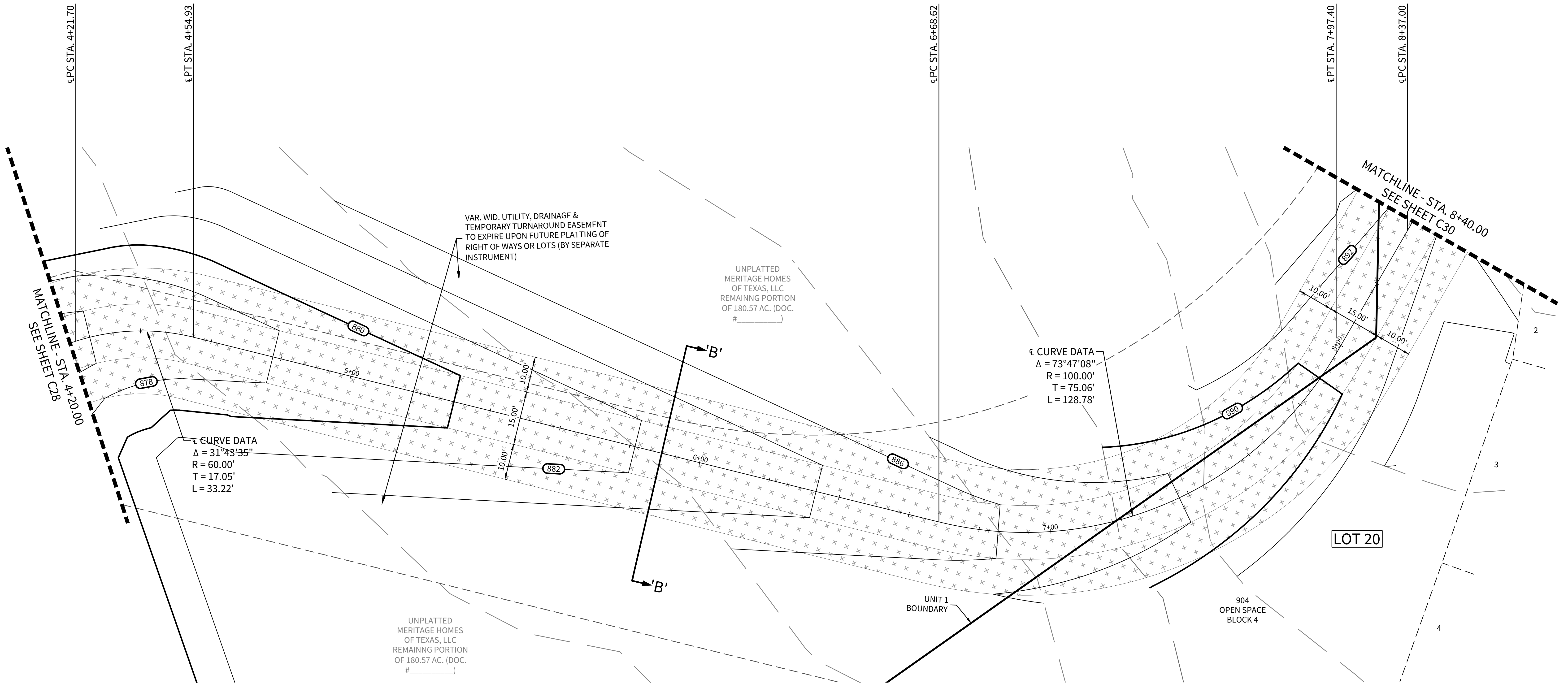
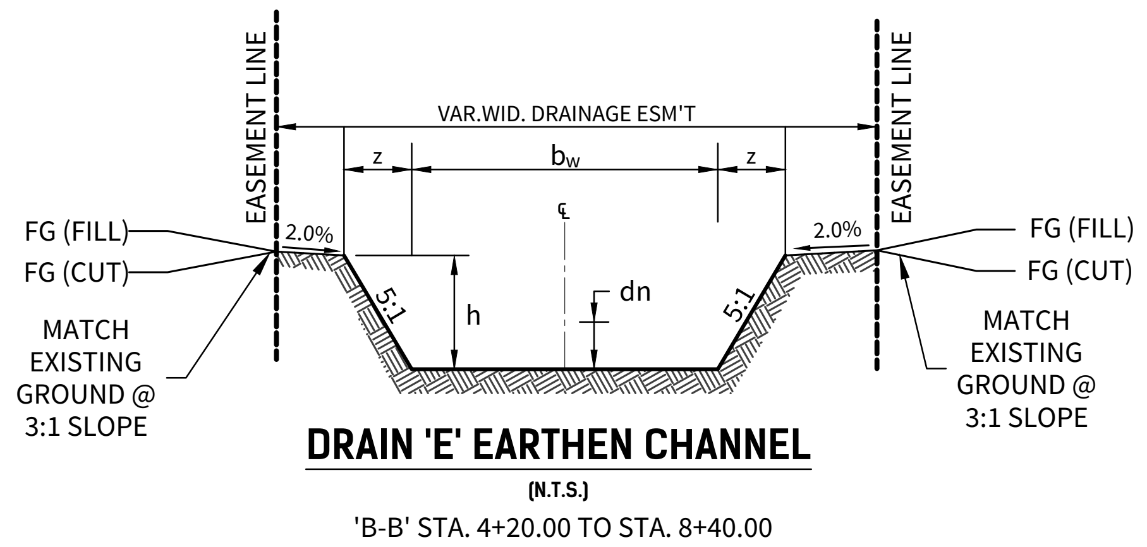


SCALE: 1"=20'

20	10
0	20

LEGEND

PROPERTY LINE	▬
EASEMENT LINE	— — —
EXISTING 2' CONTOUR	— — 498 — —
EXISTING 10' CONTOUR	— — 500 — —
PROPOSED 2' CONTOUR	—(498)—
PROPOSED 10' CONTOUR	—(500)—
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'E' EARTHEN CHANNEL

(N.T.S.)

'B-B' STA. 4+20.00 TO STA. 8+40.00

	'B-B'
Q_{25} (cfs)	77.10
b_w (ft)	15.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	3.85%
d_n (ft)	0.71'
V (fps)	5.88

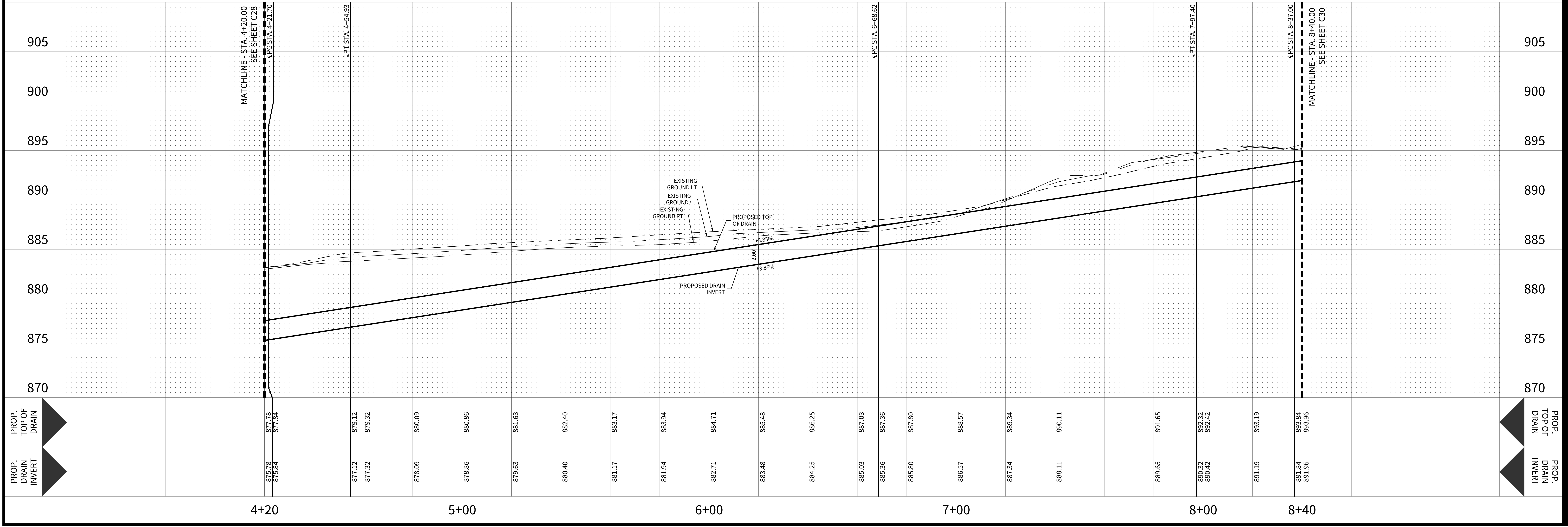
NOTES

1. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

DRAIN 'E'

STA. 4+20.00 TO STA. 8+40.00

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



PROP. TOP OF DRAIN	PROP. DRAIN INVERT
877.78	875.78
877.84	875.84
879.12	877.12
879.32	877.32
880.09	878.09
880.86	878.86
881.63	879.63
882.40	880.40
883.17	881.17
883.94	881.94
884.71	882.71
885.48	883.48
886.25	884.25
887.03	885.03
887.36	885.36
887.80	885.80
888.57	886.57
889.34	887.34
890.11	888.11
891.65	889.65
892.32	890.32
892.42	890.42
893.19	891.19
893.84	891.84
893.96	891.96

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'E'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

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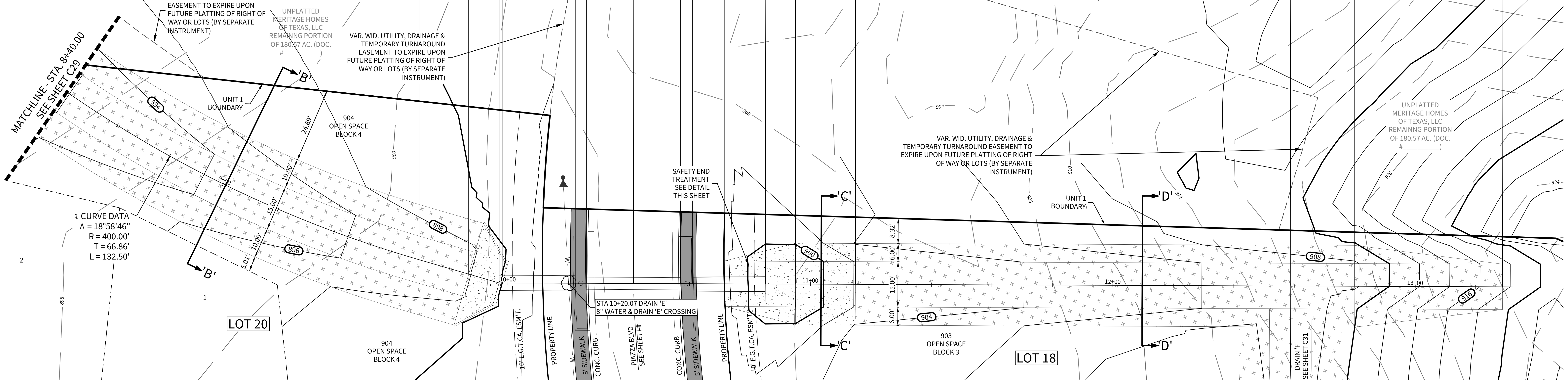
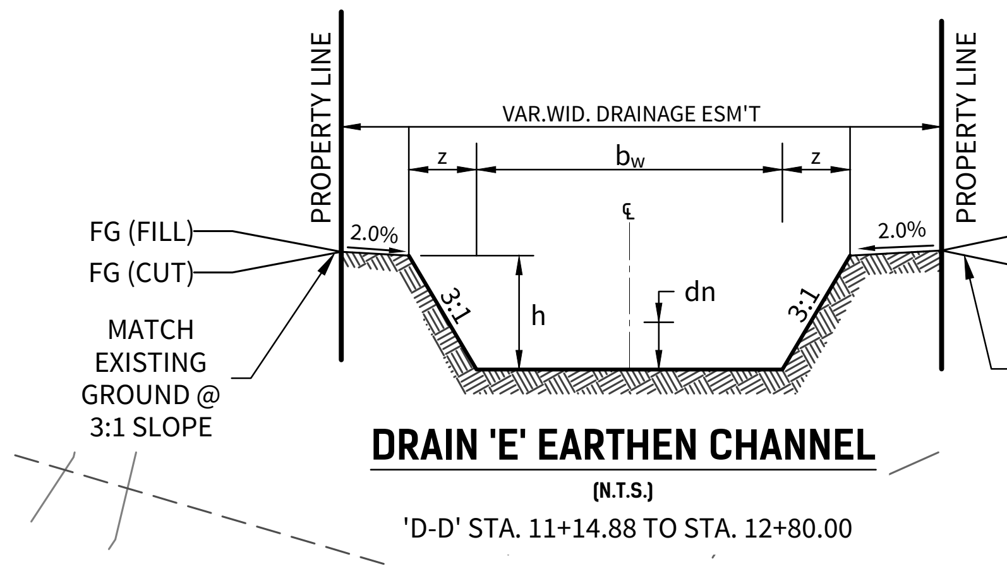




DRAIN 'E' EARTHEN CHANNEL

(N.T.S.)

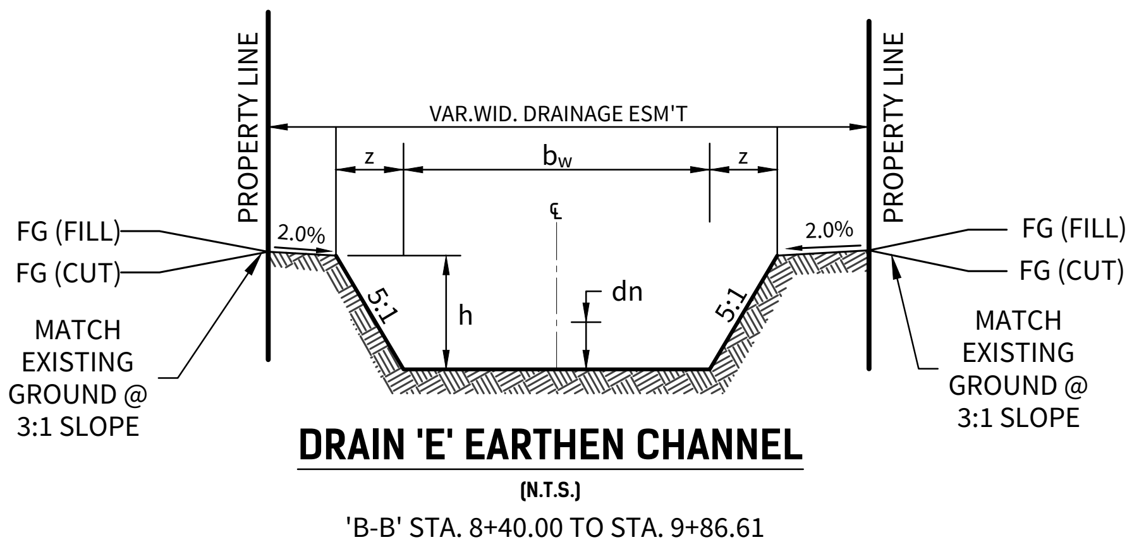
'D-D' STA. 11+14.88 TO STA. 12+80.00

	'D-D'
Q_{25} (cfs)	77.10
b_w (ft)	15.00'
z (ft)	6.00'
n	0.035
h (ft)	2.00'
S (%)	3.40%
d_n (ft)	0.75'
V (fps)	5.93

SCALE: 1"=20'
20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- PROPOSED CONDO LOT
- PROPOSED RIGHT OF WAY
- E.G.T.CA. EASEMENT
- EXISTING 2' CONTOUR — 498
- EXISTING 10' CONTOUR — 500
- PROPOSED 2' CONTOUR — 498
- PROPOSED 10' CONTOUR — 500
- EARTHEN DRAINAGE CHANNEL
- CONCRETE RIP-RAP

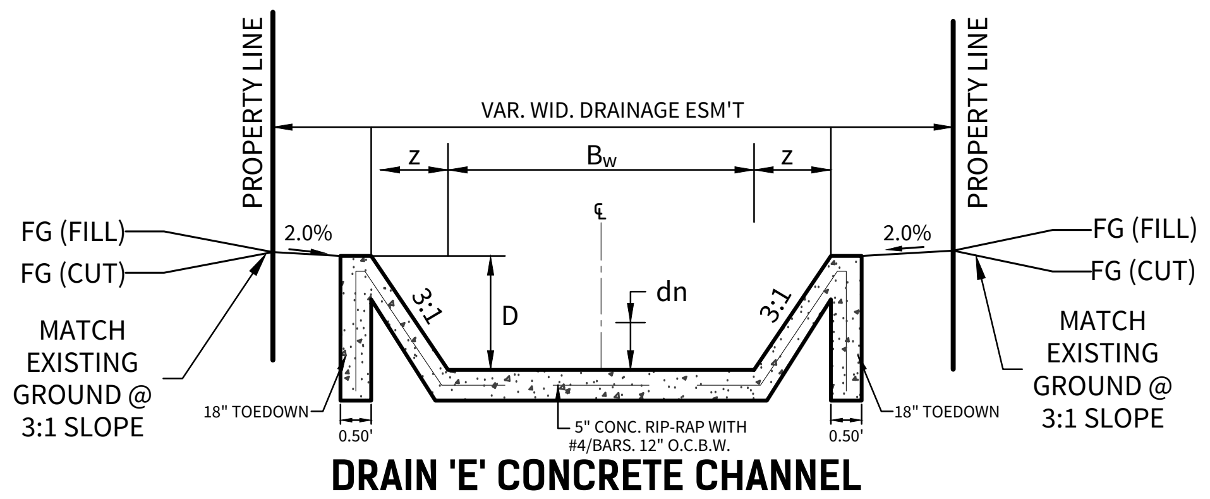


DRAIN 'E' EARTHEN CHANNEL

(N.T.S.)

'B-B' STA. 8+40.00 TO STA. 9+86.61

	'B-B'
Q_{25} (cfs)	77.10
b_w (ft)	15.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	3.85%
d_n (ft)	0.71'
V (fps)	5.88



DRAIN 'E' CONCRETE CHANNEL

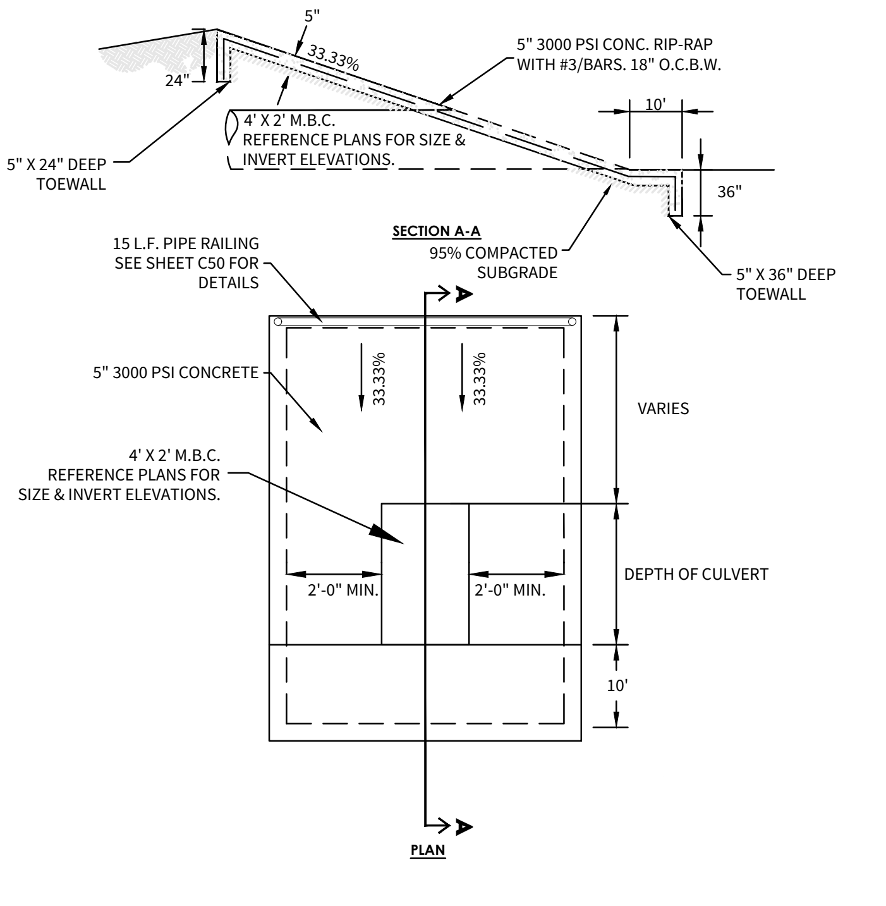
(N.T.S.)

'C-C' STA. 10+85.11 TO STA. 11+14.88

	'C-C'
Q_{25} (cfs)	77.10
b_w (ft)	15.00'
z (ft)	6.00'
n	0.013
h (ft)	2.00'
S (%)	20.00%
d_n (ft)	0.25'
V (fps)	19.63

DRAIN 'E'

STA. 8+40.00 TO END



5"
33.33%
24"
5" 3000 PSI CONC. RIP-RAP WITH #3/BARS. 18" O.C.B.W.
4' X 2' M.B.C. REFERENCE PLANS FOR SIZE & INVERT ELEVATIONS.
5" X 24" DEEP TOEWALL
10'
36"
SECTION A-A
95% COMPACTED SUBGRADE
5" X 36" DEEP TOEWALL
15 L.F. PIPE RAILING SEE SHEET C50 FOR DETAILS
5" 3000 PSI CONCRETE
33.33%
VARIES
4' X 2' M.B.C. REFERENCE PLANS FOR SIZE & INVERT ELEVATIONS.
DEPTH OF CULVERT
2'-0" MIN.
10'
A
PLAN

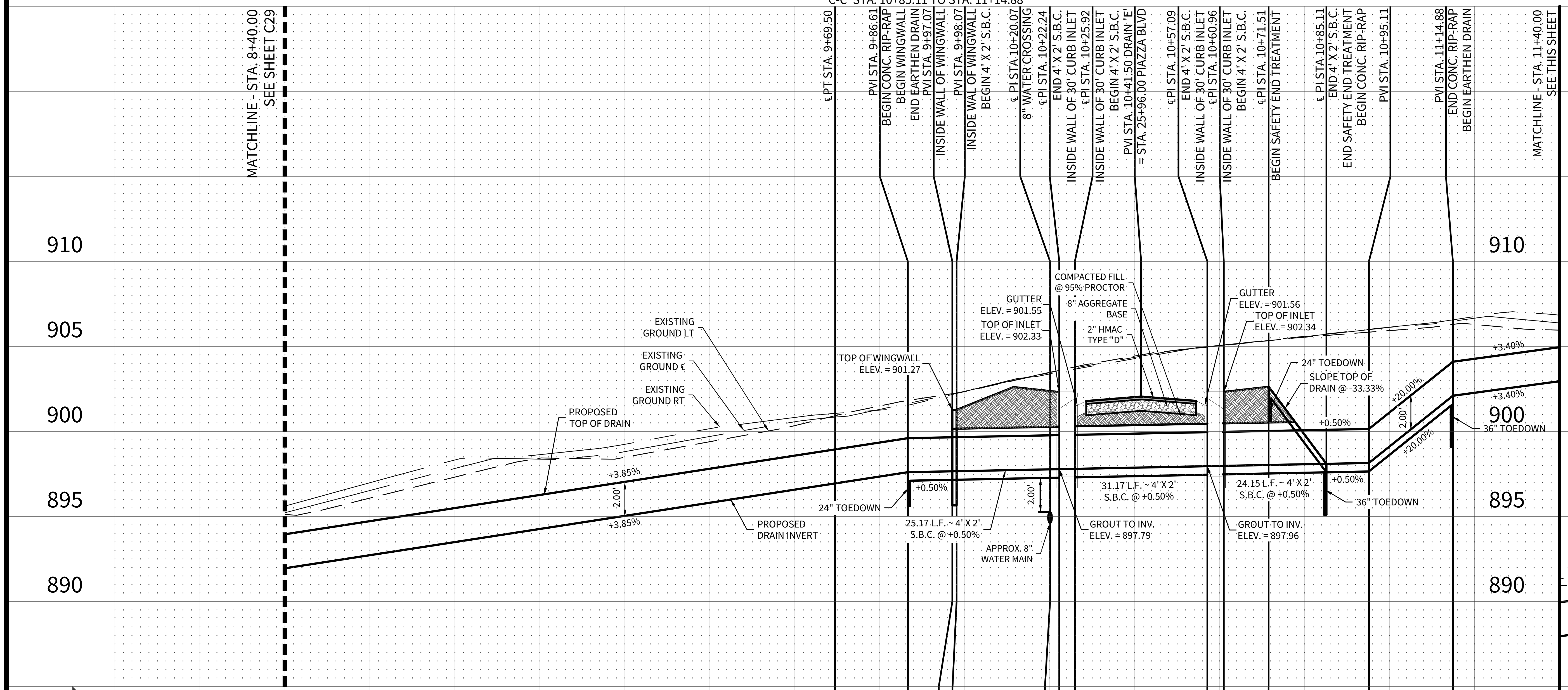
1 SCALE: NONE

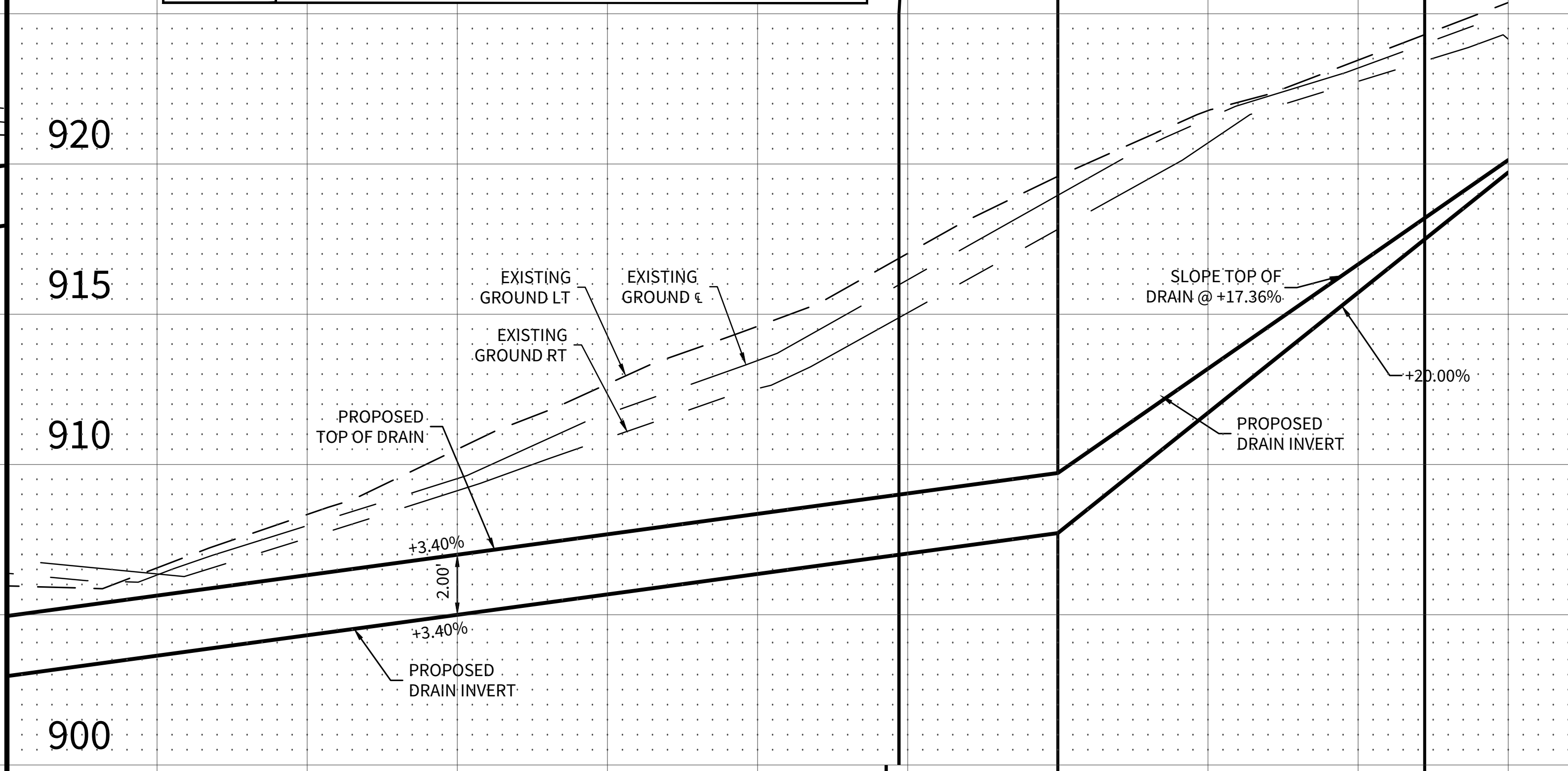
SAFETY END TREATMENT DETAIL

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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





PROP. TOP OF DRAIN	PROP. DRAIN INVERT
893.96	891.96
894.73	892.73
895.50	893.50
896.27	894.27
897.04	895.04
897.81	895.81
898.58	896.58
898.95	896.95
899.35	897.35
899.61	897.61
	897.66
	897.67
	897.68
	897.78
	897.79
	897.81
	897.88
	897.96
	897.98
	898.03
900.08	898.08
900.15	898.15
901.13	899.13
904.11	902.11
904.28	902.28
904.96	902.96
904.96	902.96
905.64	903.64
906.32	904.32
907.00	905.00
907.68	905.68
908.36	906.36
909.00	907.00
909.04	907.04
909.72	907.72
913.19	911.72
916.66	915.72
924.00	

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CONTESSA SUBDIVISION UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'E'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS **DATE**

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P:\04343\002\2-DWG\4-Plans\C30 DRAIN PLAN & PROFILE - DRAIN 'E'.dwg 2025/06/09 3:47pm jochoa

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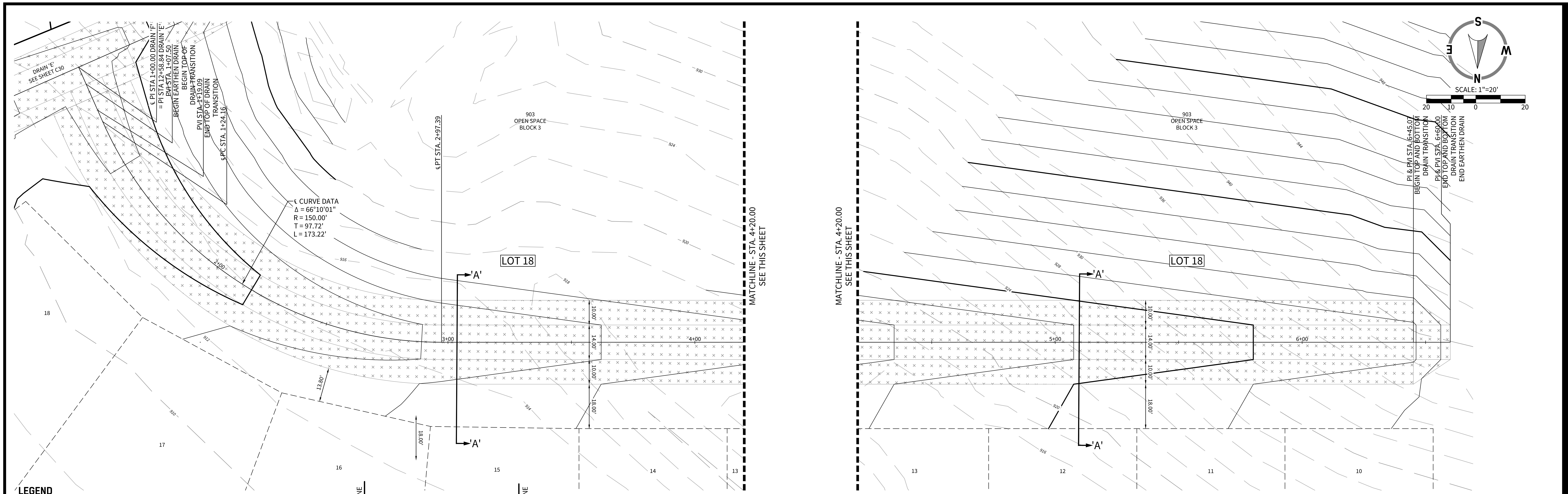
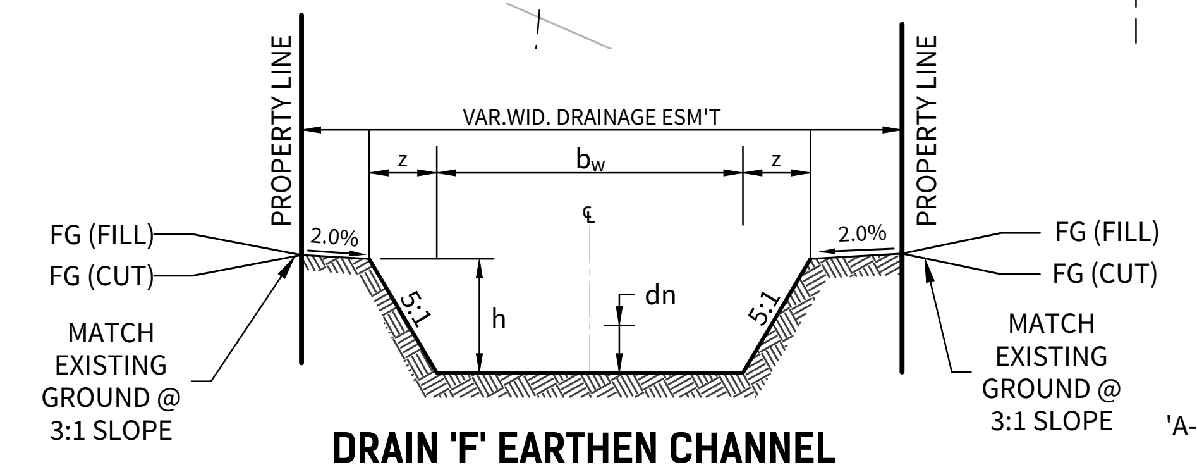

DRAIN 'E' SEE SHEET C30
℄ PI STA 1+00.00 DRAIN 'F' = PI STA 12+58.84 DRAIN 'E'
PVI STA. 1+07.50 BEGIN EARTHEN DRAIN
BEGIN TOP OF DRAIN TRANSITION
PVI STA. 1+19.09 END TOP OF DRAIN TRANSITION
℄ PC STA. 1+24.16
℄ PT STA. 2+97.39
903 OPEN SPACE BLOCK 3
℄ CURVE DATA
Δ = 66°10'01"
R = 150.00'
T = 97.72'
L = 173.22'
LOT 18
'A'
3+00
4+00
5+00
6+00
10.00'
14.00'
18.00'
13.80'
MATCHLINE - STA. 4+20.00 SEE THIS SHEET
PI & PVI STA. 6+45.07 BEGIN TOP AND BOTTOM DRAIN TRANSITION
PI & PVI STA. 6+60.00 END TOP AND BOTTOM DRAIN TRANSITION END EARTHEN DRAIN
18
17
16
15
14
13
12
11
10
S
E
W
N
SCALE: 1"=20'
20 10 0 20

LEGEND

EXISTING 2' CONTOUR	498
EXISTING 10' CONTOUR	500
PROPOSED 2' CONTOUR	498
PROPOSED 10' CONTOUR	500
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'F' EARTHEN CHANNEL

(N.T.S.)

	'A-A'
Q_{25} (cfs)	12.00
b_w (ft)	14.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	2.75%
d_n (ft)	0.28'
V (fps)	2.82

'A-A' STA. 1+19.09 TO STA. 6+45.07

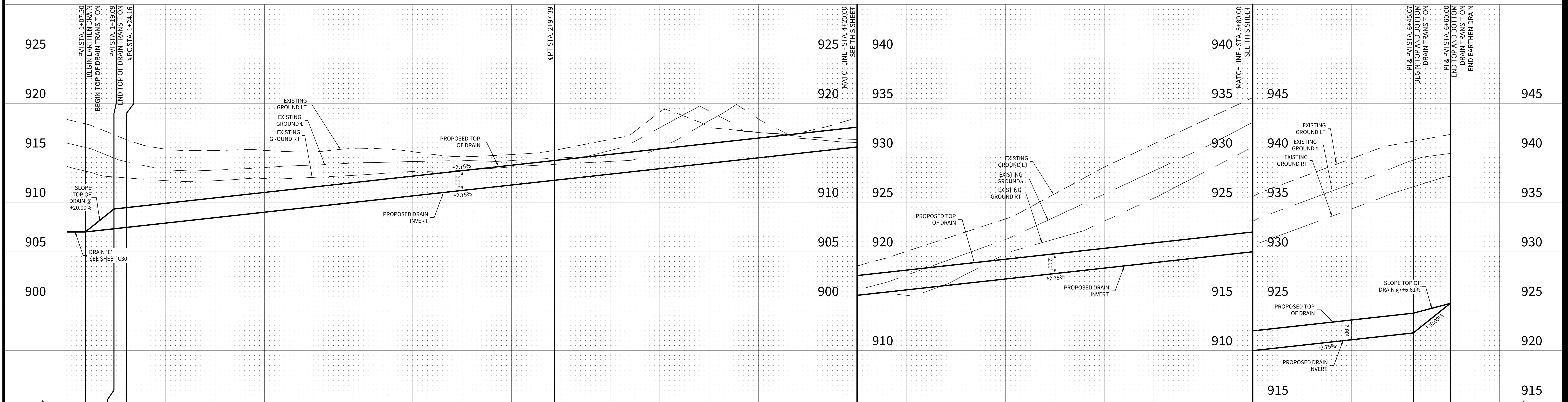
DRAIN 'F'

STA. 1+07.50 TO END

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN	PROP. DRAIN INVERT
907.00	907.00
909.32	
909.34	907.34
907.46	907.46
909.89	907.89
910.44	908.44
910.99	908.99
911.54	909.54
912.09	910.09
912.64	910.64
913.19	911.19
913.74	911.74
914.22	912.22
914.29	912.29
914.84	912.84
915.39	913.39
915.94	913.94
916.49	914.49
917.04	915.04
917.59	915.59
917.59	915.59
918.14	916.14
918.69	916.69
919.24	917.24
919.79	917.79
920.34	918.34
920.89	918.89
921.44	919.44
921.99	919.99
922.54	920.54
923.09	921.09
923.64	921.64
923.78	921.78
924.77	924.77

1+00 2+00 3+00 4+00 5+00 6+00

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DRAIN PLAN & PROFILE - DRAIN 'F'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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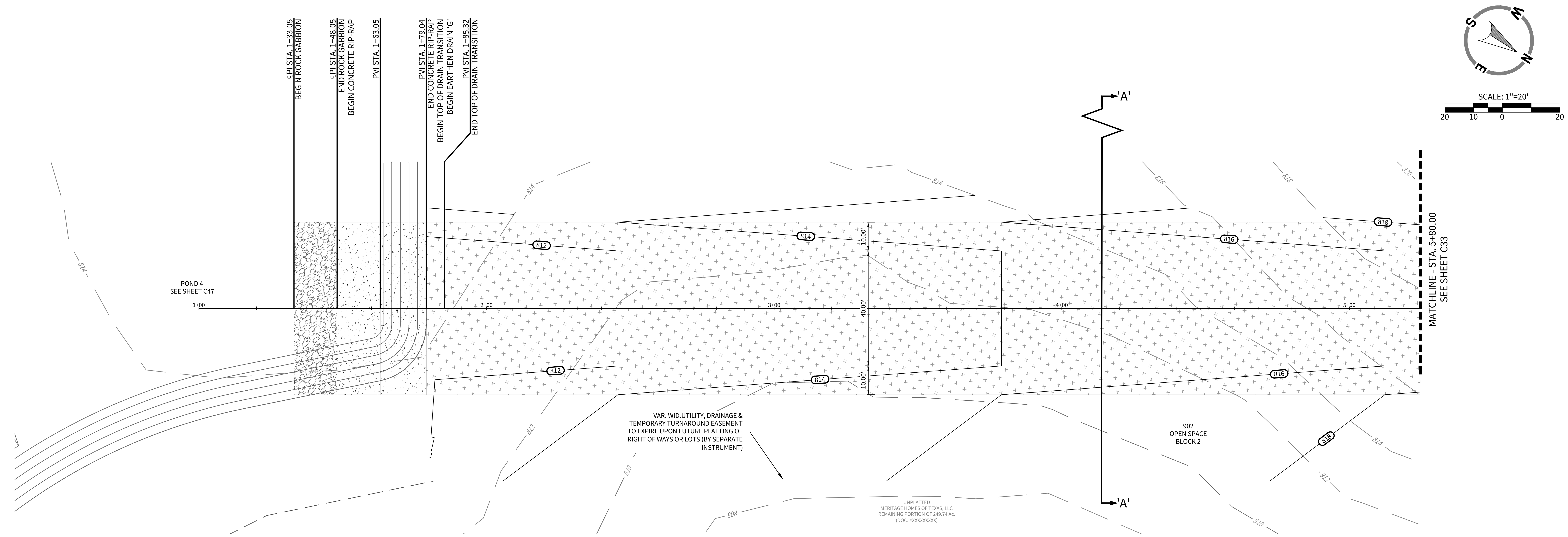
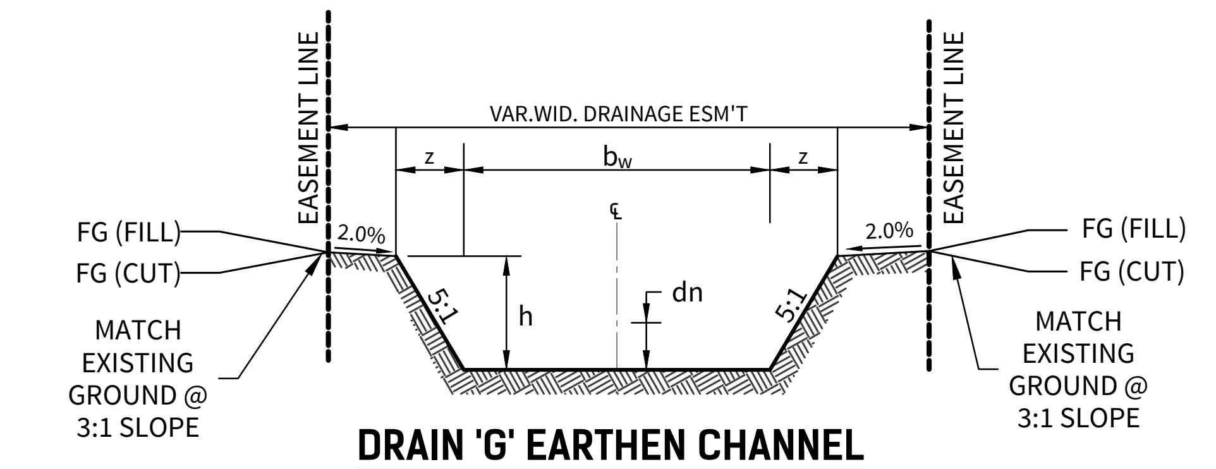
LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — 500 — — —
PROPOSED 2' CONTOUR	—— 498 ——
PROPOSED 10' CONTOUR	—— 500 ——
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨





DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+85.32 TO STA. 5+80.00

	'A-A'
Q_{25} (cfs)	353.28
b_w (ft)	30.00'
z (ft)	12.50'
n	0.035
h (ft)	2.50'
S (%)	0.75%
d_n (ft)	1.86'
V (fps)	4.82

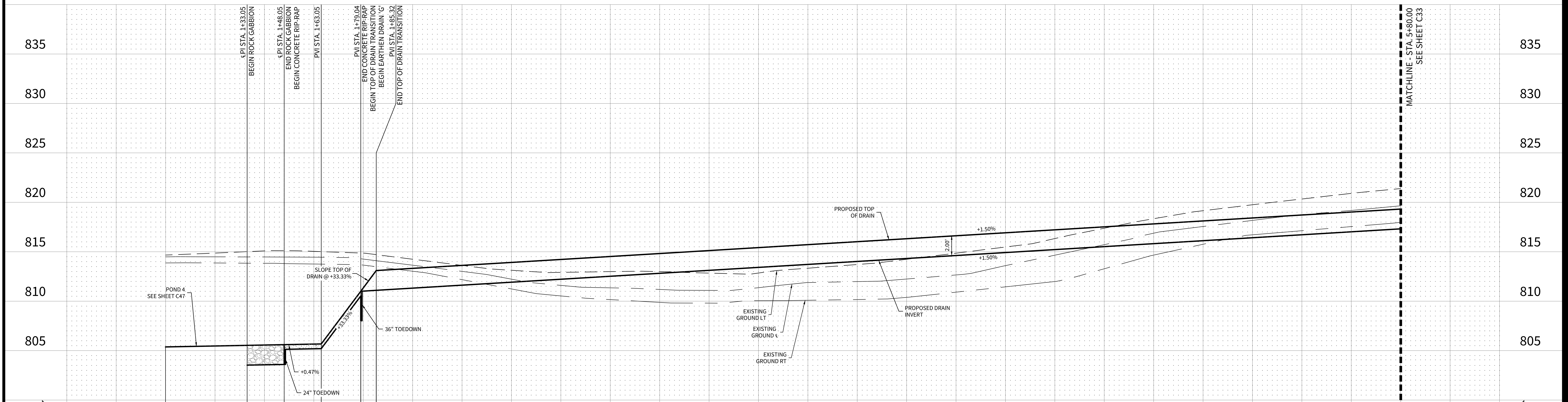
DRAIN 'G'

STA. 1+85.32 TO STA. 5+80.00

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN							811.00	813.09	813.31	813.61	813.91	814.21	814.51	814.81	815.11	815.41	815.71	816.01	816.31	816.61	816.91	817.21	817.51	817.81	818.11	818.41	818.71	819.01
PROP. DRAIN INVERT	805.38	805.47	805.53	805.56	805.60	805.67	811.00	811.09	811.31	811.61	811.91	812.21	812.51	812.81	813.11	813.41	813.71	814.01	814.31	814.61	814.91	815.21	815.51	815.81	816.11	816.41	816.71	817.01

1+00 2+00 3+00 4+00 5+00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

# 1. 2. 3. 4. 5. 6. 7. 8. 9.

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TBPLS No. 10048500

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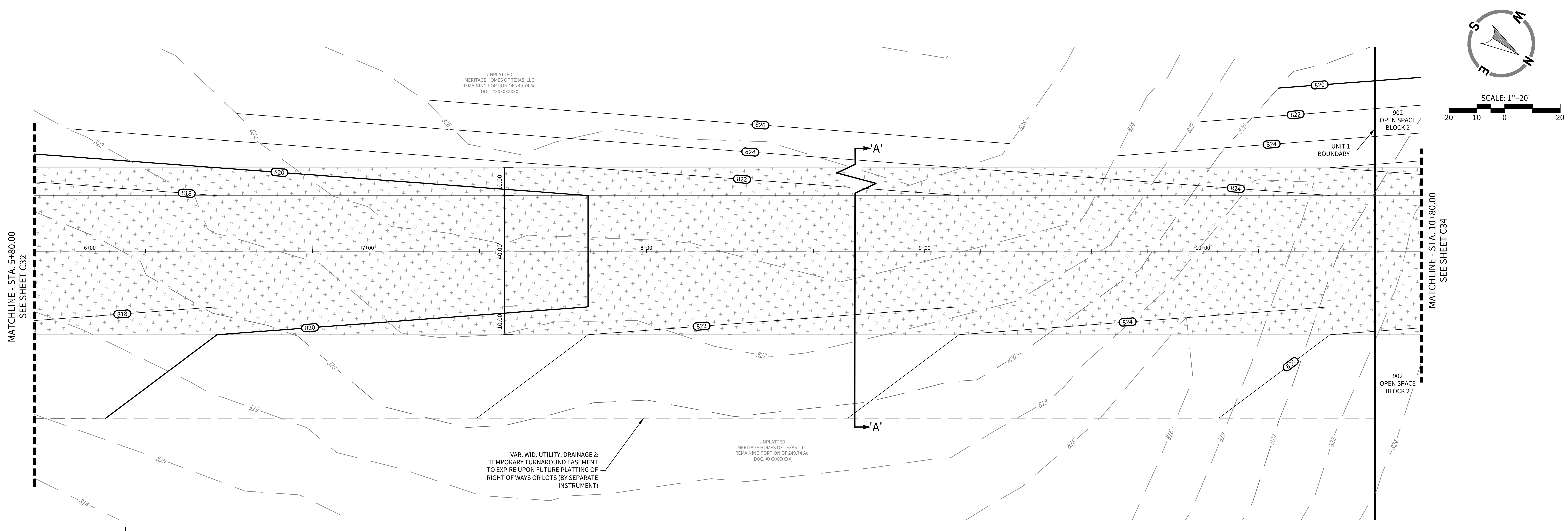
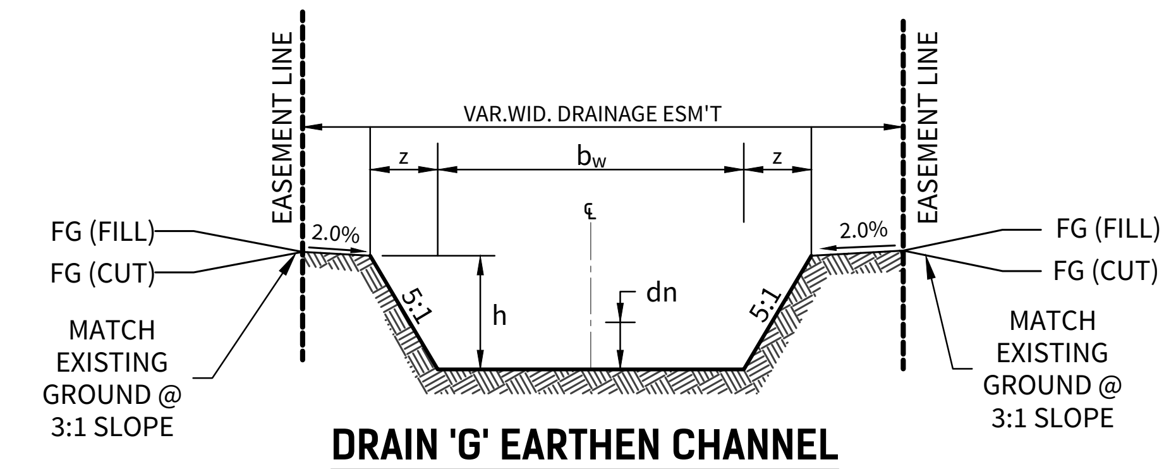
P:\04343\002\2-DWG\4-Plans\C32 DRAIN PLAN & PROFILE - DRAIN 'G'.dwg 2025/06/09 4:42pm ljordan





DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 5+80.00 TO STA. 10+80.00

	'A-A'
Q_{25} (cfs)	353.28
b_w (ft)	30.00'
z (ft)	12.50'
n	0.035
h (ft)	2.50'
S (%)	0.75%
d_n (ft)	1.86'
V (fps)	4.82

DRAIN 'G'

STA. 5+80.00 TO STA. 10+80.00

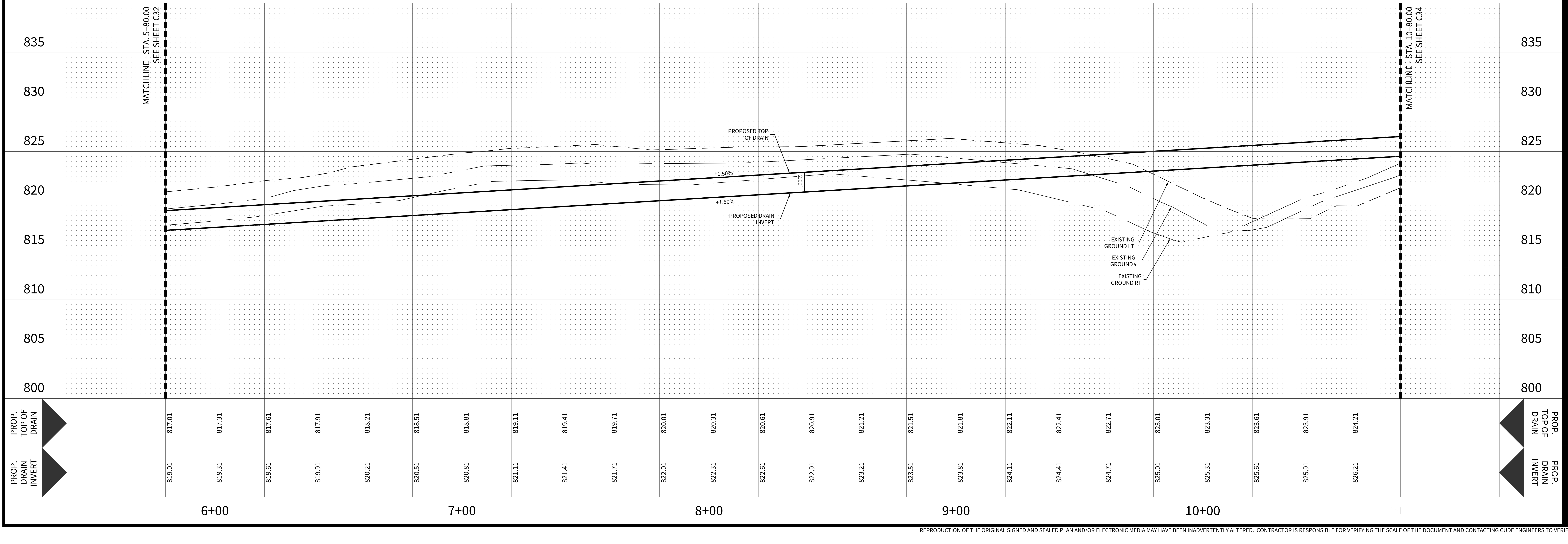
LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — 498 — —
EXISTING 10' CONTOUR	— — 500 — —
PROPOSED 2' CONTOUR	—(498)—
PROPOSED 10' CONTOUR	—(500)—
EARTHEN DRAINAGE CHANNEL	▨

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN	817.01	817.31	817.61	817.91	818.21	818.51	818.81	819.11	819.41	819.71	820.01	820.31	820.61	820.91	821.21	821.51	821.81	822.11	822.41	822.71	823.01	823.31	823.61	823.91	824.21	PROP. TOP OF DRAIN
PROP. DRAIN INVERT	819.01	819.31	819.61	819.91	820.21	820.51	820.81	821.11	821.41	821.71	822.01	822.31	822.61	822.91	823.21	823.51	823.81	824.11	824.41	824.71	825.01	825.31	825.61	825.91	826.21	PROP. DRAIN INVERT

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
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TBPLS No. 10048500

C33

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P:\04343\002\2-DWG\4-Plans\C33 DRAIN PLAN & PROFILE - DRAIN 'G'.dwg 2025/06/09 4:43pm ljordan

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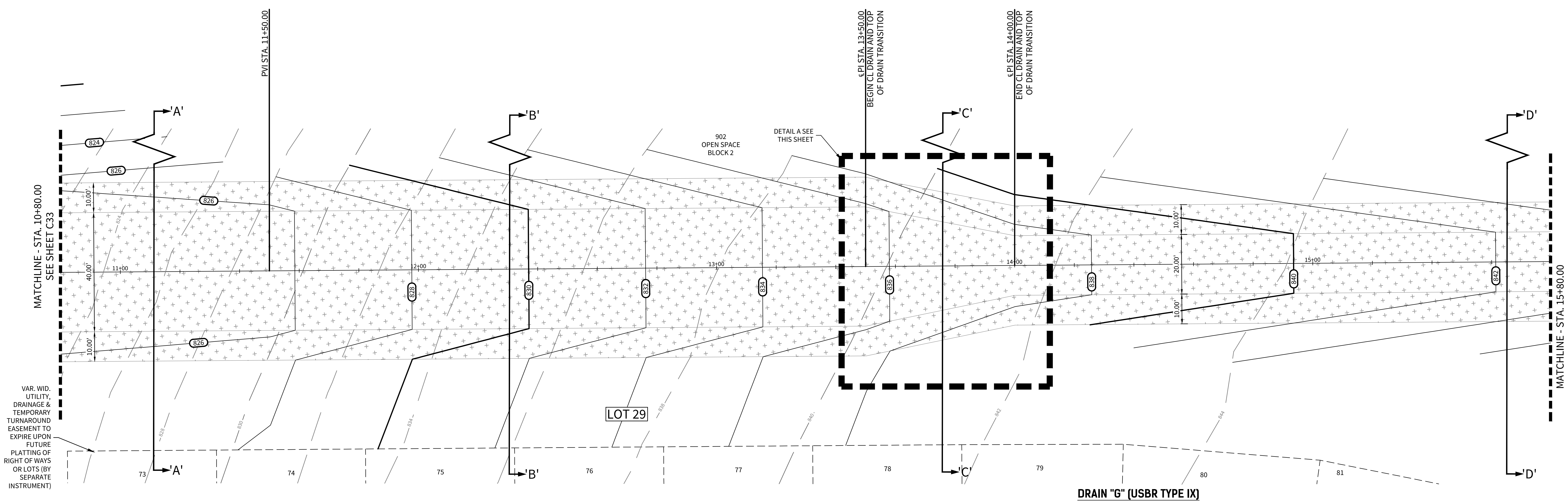
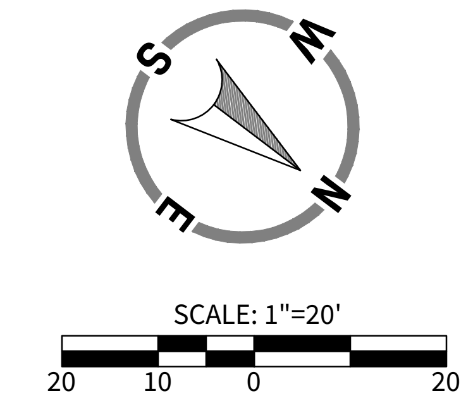
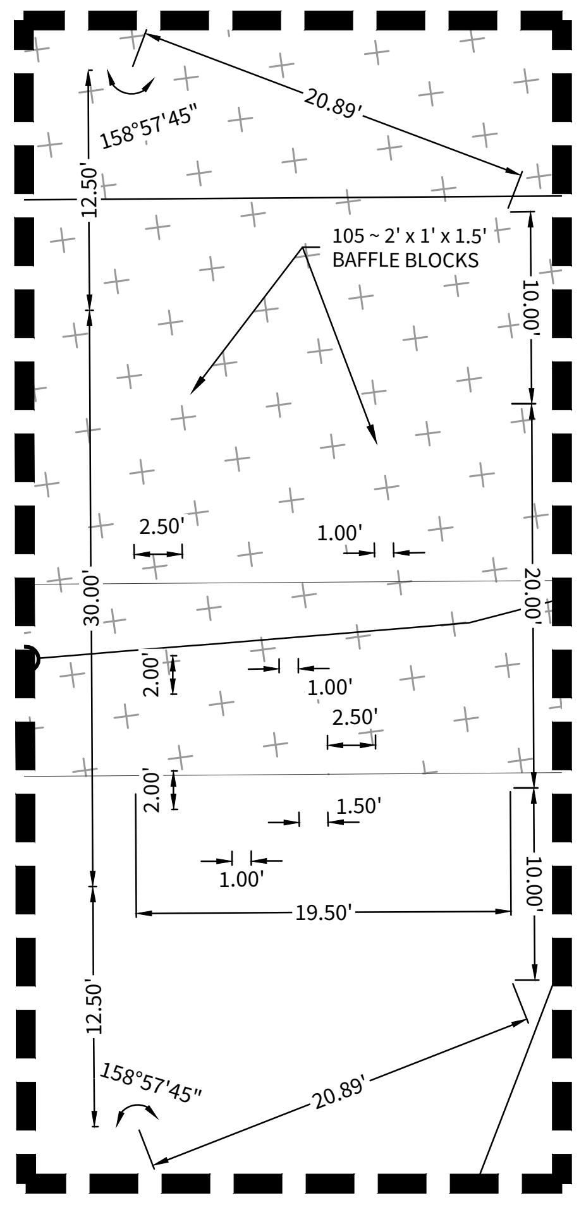
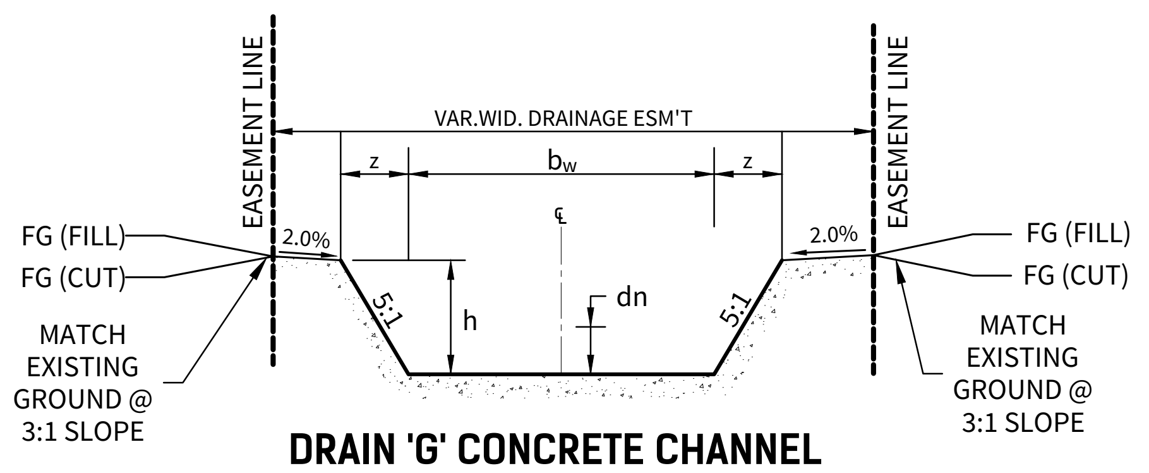

PVI STA. 11+50.00
℄PI STA. 13+50.00 BEGIN CL DRAIN AND TOP OF DRAIN TRANSITION
℄PI STA. 14+00.00 END CL DRAIN AND TOP OF DRAIN TRANSITION
'A'
'B'
'C'
'D'
902 OPEN SPACE BLOCK 2
DETAIL A SEE THIS SHEET
MATCHLINE - STA. 10+80.00 SEE SHEET C33
MATCHLINE - STA. 15+80.00 SEE SHEET C35
824
826
828
830
832
834
836
838
840
842
10.00'
40.00'
20.00'
11+00
12+00
13+00
14+00
15+00
LOT 29
73
74
75
76
77
78
79
80
81
VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAYS OR LOTS (BY SEPARATE INSTRUMENT)





DETAIL A

SCALE: 1" = 10'

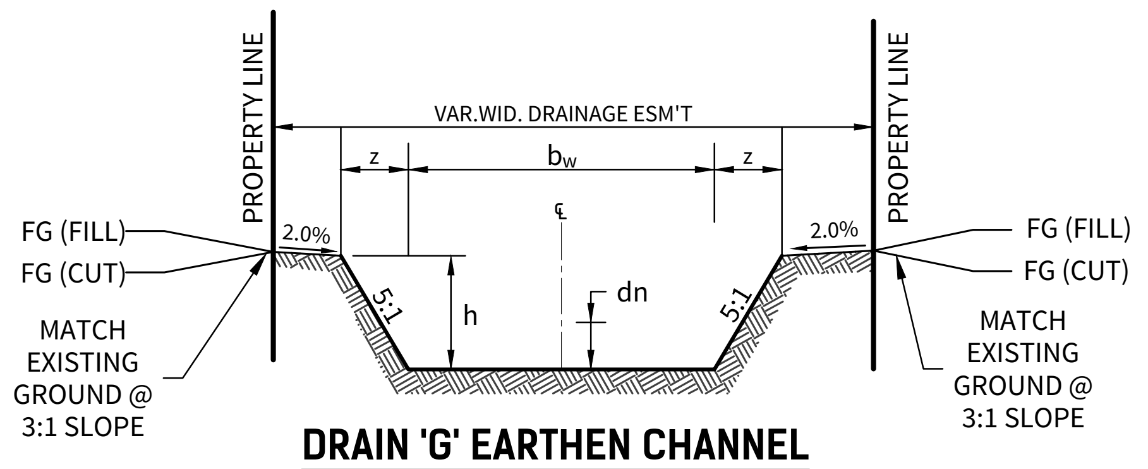


DRAIN 'G' CONCRETE CHANNEL

(N.T.S.)

'B-B' STA. 12+09.50 TO STA. 12+50.00

	'B-B'
Q_{25} (cfs)	299.16
b_w (ft)	30.00'
z (ft)	10.00'
n	0.013
h (ft)	2.00'
S (%)	25.00%
d_n (ft)	0.44'
V (fps)	30.90



DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 10+80.00 TO STA. 11+90.00
'C-C' STA. 12+50.00 TO STA. 15+50.00
'D-D' STA. 15+50.00 TO STA. 15+80.00

	'A-A'	'C-C'	'D-D'
Q_{25} (cfs)	310.83	59.90	59.90
b_w (ft)	30.00'	20.00'	20.00'
z (ft)	12.50'	10.00'	10.00'
n	0.035	0.035	0.035
h (ft)	2.50'	2.00'	2.00'
S (%)	0.75%	3.50%	2.85%
d_n (ft)	1.86'	0.54'	0.57'
V (fps)	4.82	4.89	4.57

DRAIN 'G'

STA. 10+80.00 TO STA. 15+80.00

DRAIN "G" (USBR TYPE IX) BAFFLED APRON CALCULATIONS

CRITICAL DEPTH (Y_c) = 1.35 FT

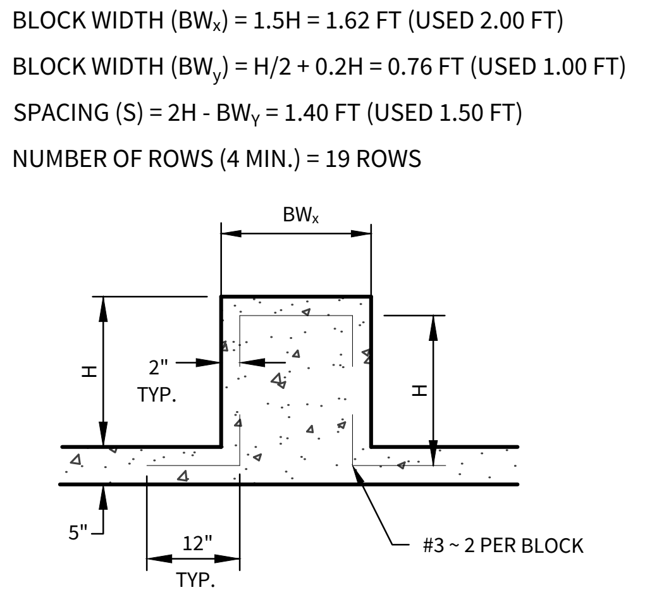
BLOCK HEIGHT (H) = $0.8Y_C$ = 1.08 FT (USED 1.50 FT)

BLOCK WIDTH (BW_x) = 1.5H = 1.62 FT (USED 2.00 FT)

BLOCK WIDTH (BW_y) = H/2 + 0.2H = 0.76 FT (USED 1.00 FT)

SPACING (S) = 2H - BW_Y = 1.40 FT (USED 1.50 FT)

NUMBER OF ROWS (4 MIN.) = 19 ROWS



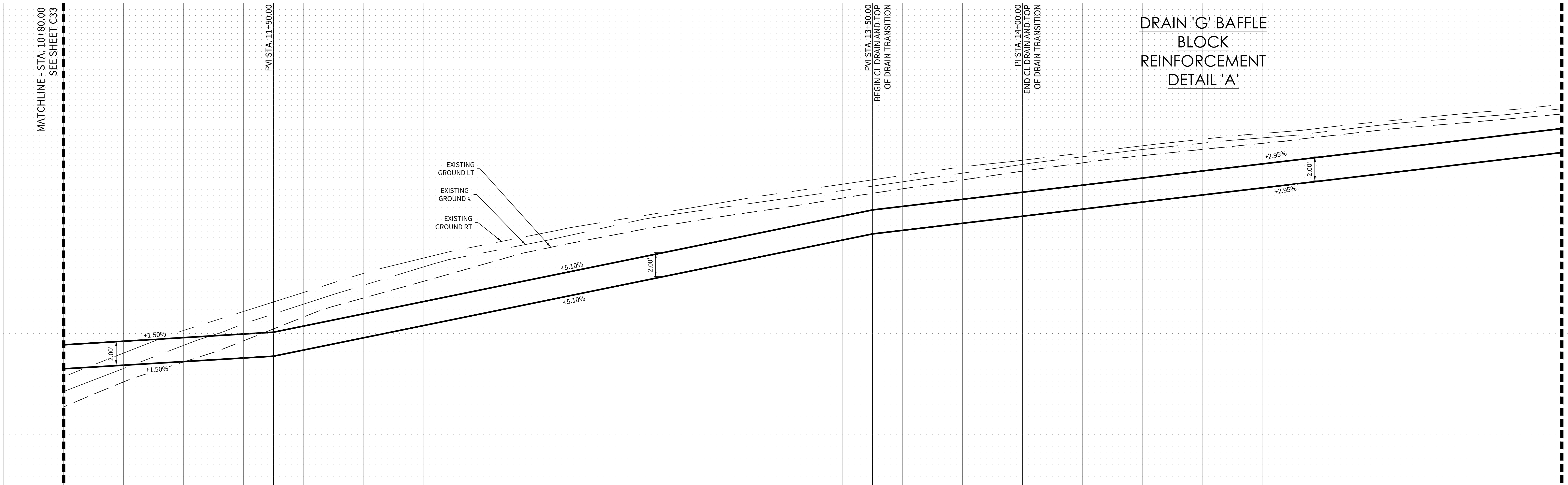
LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — 500 — — —
PROPOSED 2' CONTOUR	—— (498) ——
PROPOSED 10' CONTOUR	—— (500) ——
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	▨

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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


MATCHLINE - STA. 10+80.00 SEE SHEET C33
PVI STA. 11+50.00
PVI STA. 13+50.00 BEGIN CL DRAIN AND TOP OF DRAIN TRANSITION
PI STA. 14+00.00 END CL DRAIN AND TOP OF DRAIN TRANSITION
MATCHLINE - STA. 15+80.00 SEE SHEET C35
EXISTING GROUND LT
EXISTING GROUND ℄
EXISTING GROUND RT
+1.50%
+1.50%
2.00'
+5.10%
+5.10%
2.00'
+2.95%
+2.95%
2.00'

DRAIN 'G' BAFFLE BLOCK REINFORCEMENT DETAIL 'A'

	11+00					12+00					13+00					14+00					15+00				
PROP. TOP OF DRAIN	826.51	826.81	827.11	827.41	827.56	828.07	829.09	830.11	831.13	832.15	833.17	834.19	835.21	836.23	837.25	837.76	838.06	838.65	839.24	839.83	840.42	841.01	841.60	842.19	842.78
PROP. DRAIN INVERT	824.51	824.81	825.11	825.41	825.56	826.07	827.09	828.11	829.13	830.15	831.17	832.19	833.21	834.23	835.25	835.76	836.06	836.65	837.24	837.83	838.42	839.01	839.60	840.19	840.78

PROP. TOP OF DRAIN	843.37	843.96
PROP. DRAIN INVERT	841.37	841.96

DRAIN "G" (USBR TYPE III) BAFFLE BLOCK CALCULATIONS

Y_1 = 1.06 FT V_1 = 8.00 FPS F_1 = 1.37

V_2 = 4.82 FPS

$Y_2/Y_1 = \frac{1}{2}(\sqrt{1+8(F1)^2}-1) = 1.50$

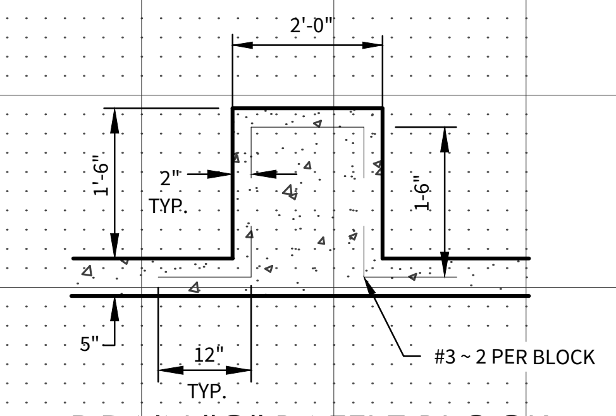
Y_2 = 1.59 FT

$L_b = 4.5(Y_2) / (F_1)^{0.76}$ = 5.63 FT (USED 10 FT)

L_b / 3 = 1.88 FT (USED 3.5 FT)

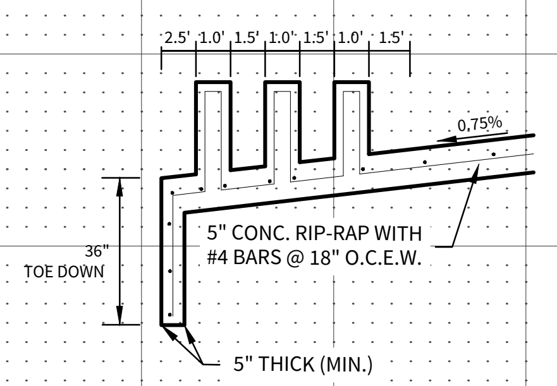
$H = Y_1(0.168 * F_1 + 0.58)$ = 0.88 FT (USED 1.50 FT)

EXIT VELOCITY = 6.00 FPS



DRAIN "G" BAFFLE BLOCK REINFORCEMENT DETAIL 'A'

(N.T.S.)



DRAIN "G" BAFFLE BLOCK DETAIL 'A'

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CONTESSA SUBDIVISION UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE	06/09/2025
PROJECT NO.	04343.002
DRAWN BY	CG/JG/LJ/TCD
CHECKED BY	XV/AL

REVISIONS

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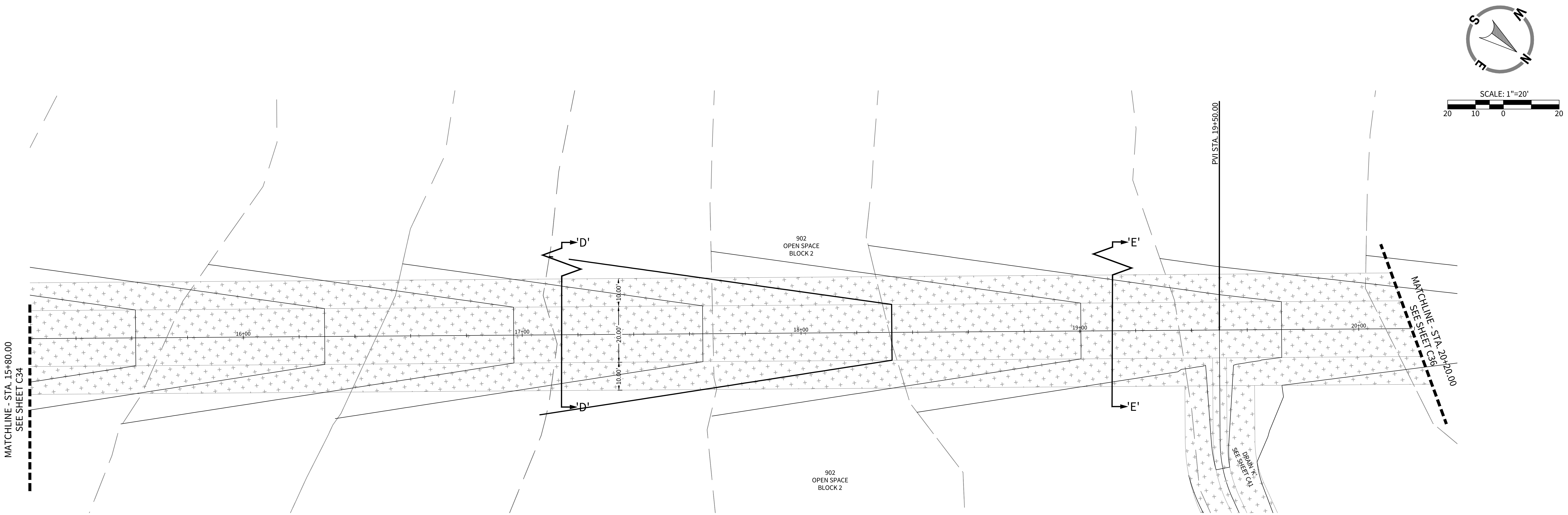
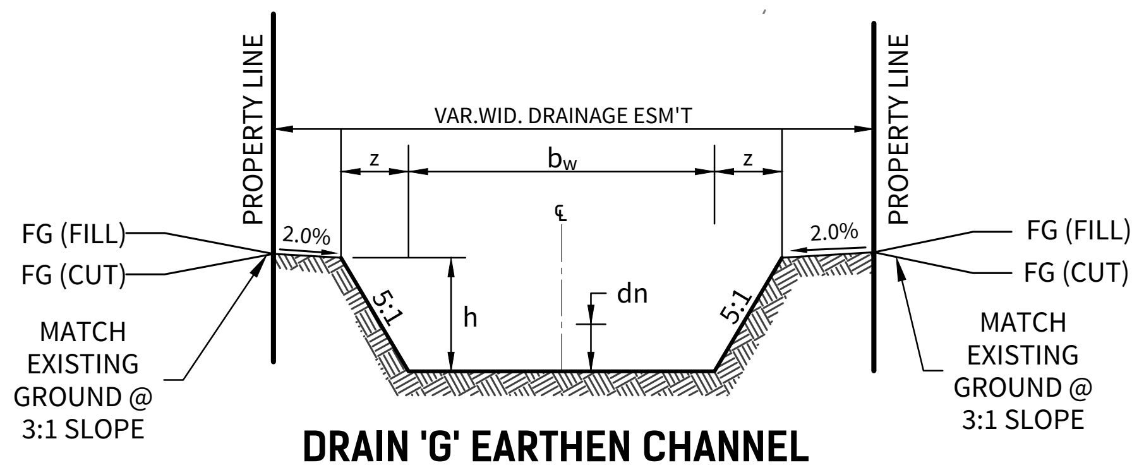




DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'D-D' STA. 15+80.00 TO STA. 19+50.00
'E-E' STA. 19+50.00 TO STA 20+80.00

	'D-D'	'E-E'
Q_{25} (cfs)	59.90	59.90
b_w (ft)	20.00'	20.00'
z (ft)	10.00'	10.00'
n	0.035	0.035
h (ft)	2.00'	2.00'
S (%)	2.85%	2.00%
d_n (ft)	0.57'	0.89'
V (fps)	4.57	4.64

DRAIN 'G'

STA. 15+80.00 TO STA. 20+20.00

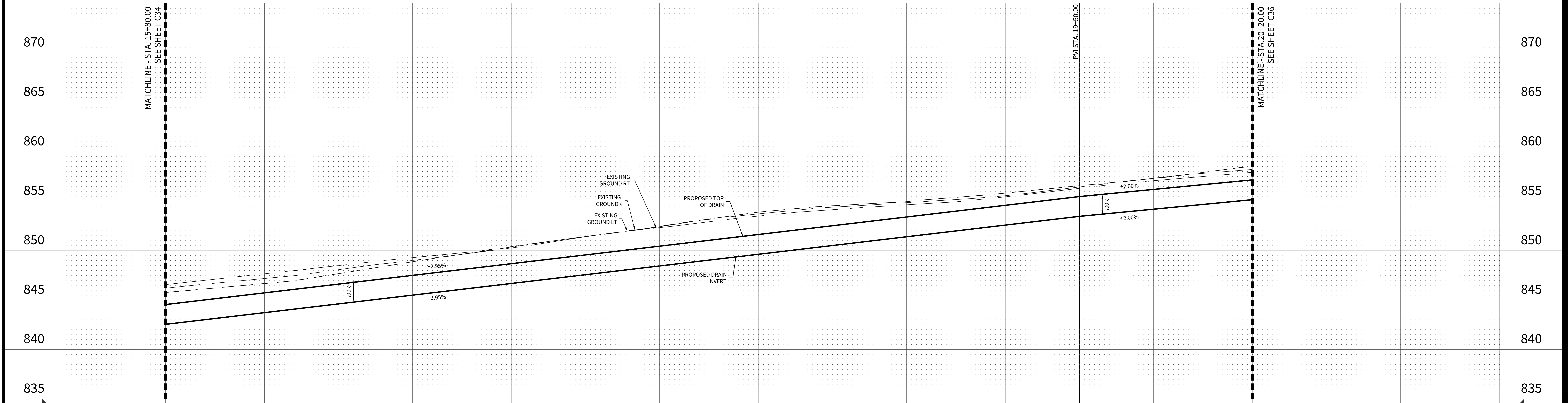
LEGEND

EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — 500 — — —
PROPOSED 2' CONTOUR	—— 498 ——
PROPOSED 10' CONTOUR	—— 500 ——
EARTHEN DRAINAGE CHANNEL	▨

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN	842.55	843.14	843.73	844.32	844.91	845.50	846.09	846.68	847.27	847.86	848.45	849.04	849.63	850.22	850.81	851.40	851.99	852.58	853.17	853.46	853.70	854.18	854.66
PROP. DRAIN INVERT	844.55	845.14	845.73	846.32	846.91	847.50	848.09	848.68	849.27	849.86	850.45	851.04	851.63	852.22	852.81	853.40	853.99	854.58	855.17	855.46	855.70	856.18	856.66

16+00 17+00 18+00 19+00 20+00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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P:\04343\002\2-DWG\4-Plans\C35 DRAIN PLAN & PROFILE - DRAIN 'G'.dwg 2025/06/09 4:44pm ljordan

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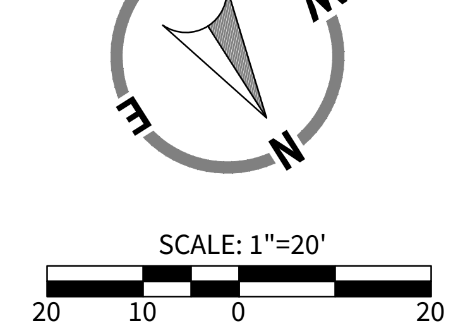
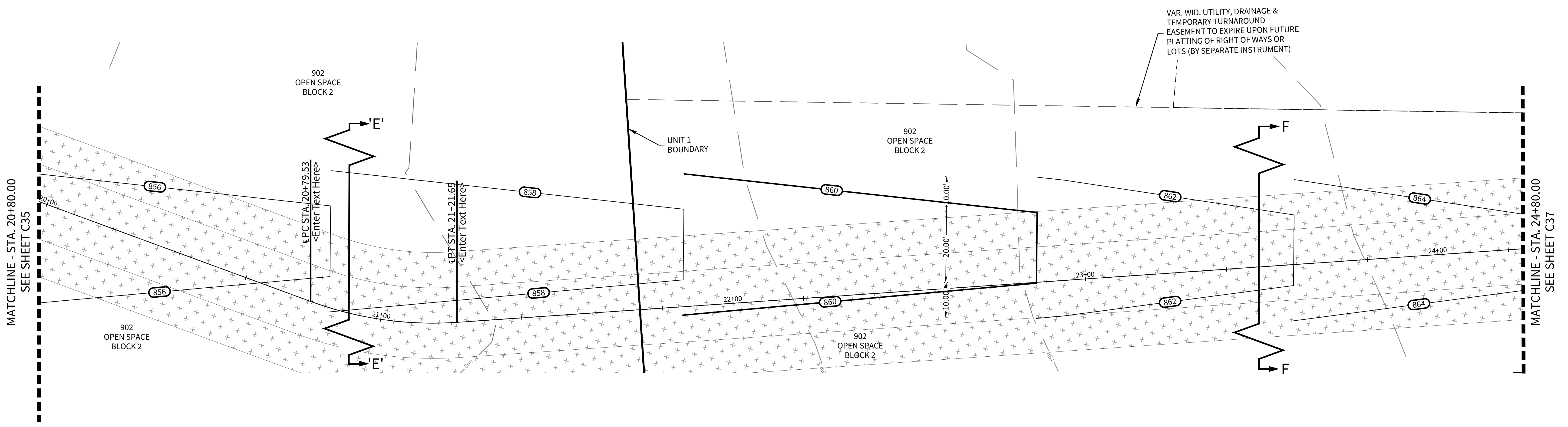
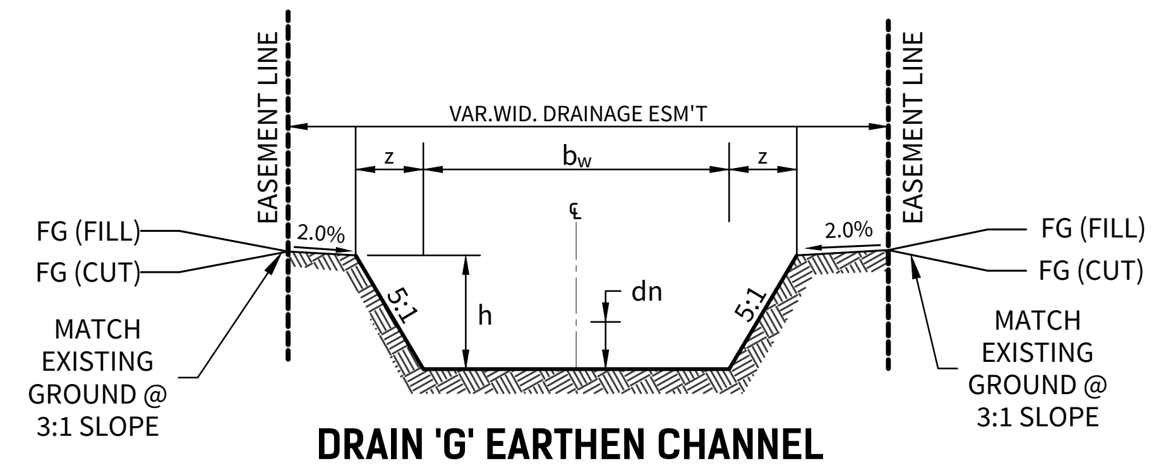



VAR. WID. UTILITY, DRAINAGE & TEMPORARY TURNAROUND EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAYS OR LOTS (BY SEPARATE INSTRUMENT)
902
OPEN SPACE
BLOCK 2
'E'
'E'
F
F
UNIT 1
BOUNDARY
℄PC STA. 20+79.53
<Enter Text Here>
℄PT STA. 21+21.65
<Enter Text Here>
856
858
860
862
864
21+00
22+00
23+00
24+00
10.00'
20.00'
MATCHLINE - STA. 20+80.00
SEE SHEET C35
MATCHLINE - STA. 24+80.00
SEE SHEET C37

LEGEND

EASEMENT LINE	— — —
EXISTING 2' CONTOUR	— 499 —
EXISTING 10' CONTOUR	— 500 —
PROPOSED 2' CONTOUR	— 498 —
PROPOSED 10' CONTOUR	— 500 —
EARTHEN DRAINAGE CHANNEL	▨



DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'E-E' STA. 20+80.00 TO STA. 23+50.00
'F-F' STA. 23+50.00 TO STA. 24+80.00

	'E-E'	'F-F'
Q_{25} (cfs)	59.90	59.90
b_w (ft)	20.00'	20.00'
z (ft)	10.00'	10.00'
n	0.035	0.035
h (ft)	2.00'	2.00'
S (%)	2.00%	2.84%
d_n (ft)	0.89'	0.81'
V (fps)	4.64	5.24

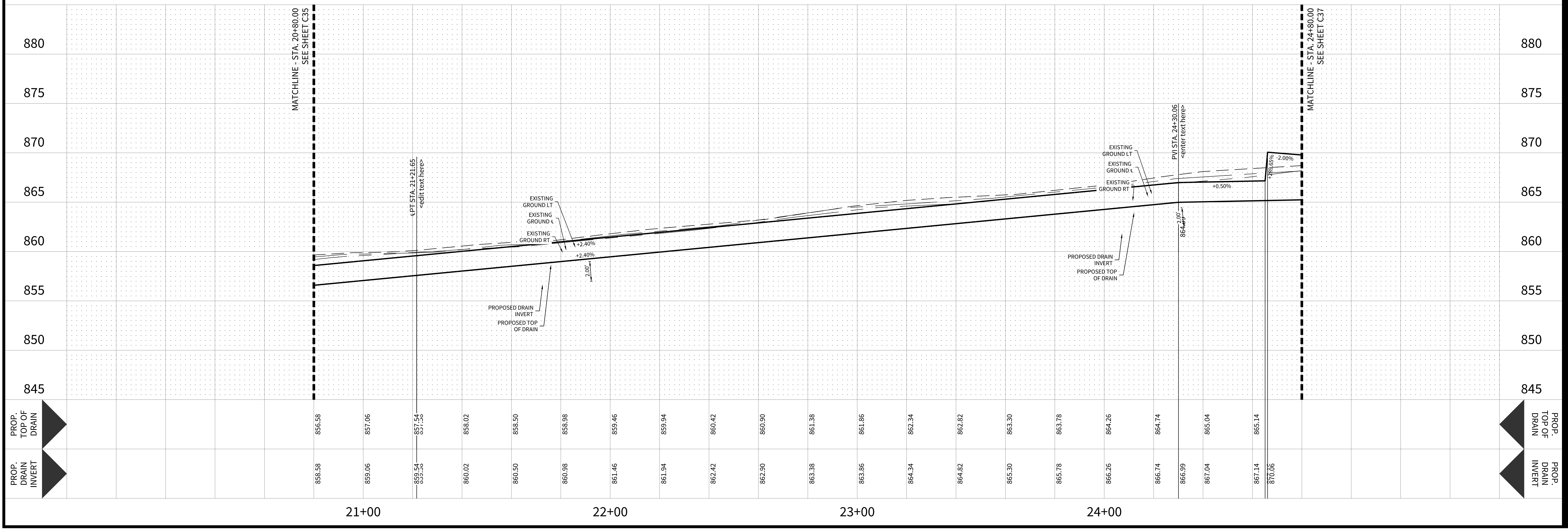
DRAIN 'G'

STA. 20+80.00 TO STA. 24+80.00

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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P:\04343\002\2-DWG\4-Plans\C36 DRAIN PLAN & PROFILE - DRAIN 'G'.dwg 2025/06/09 3:51pm jochoa

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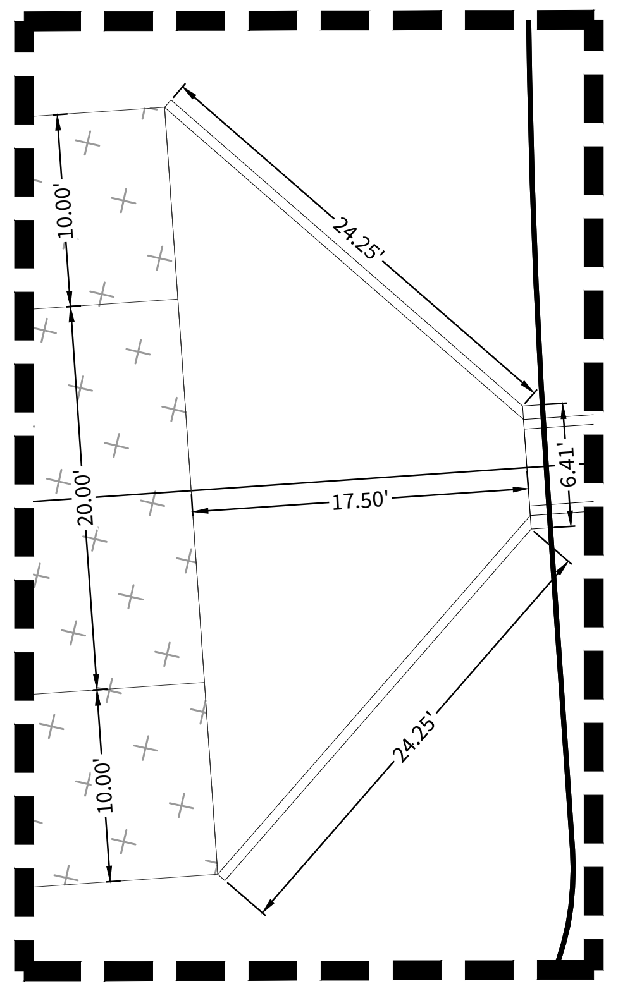
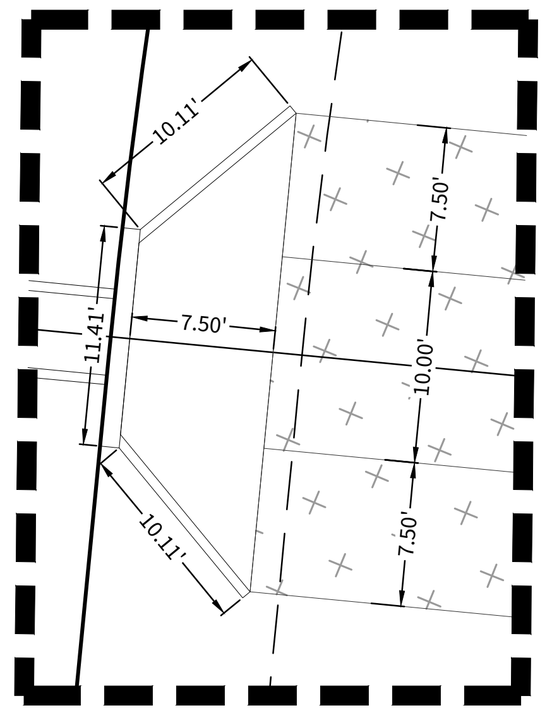


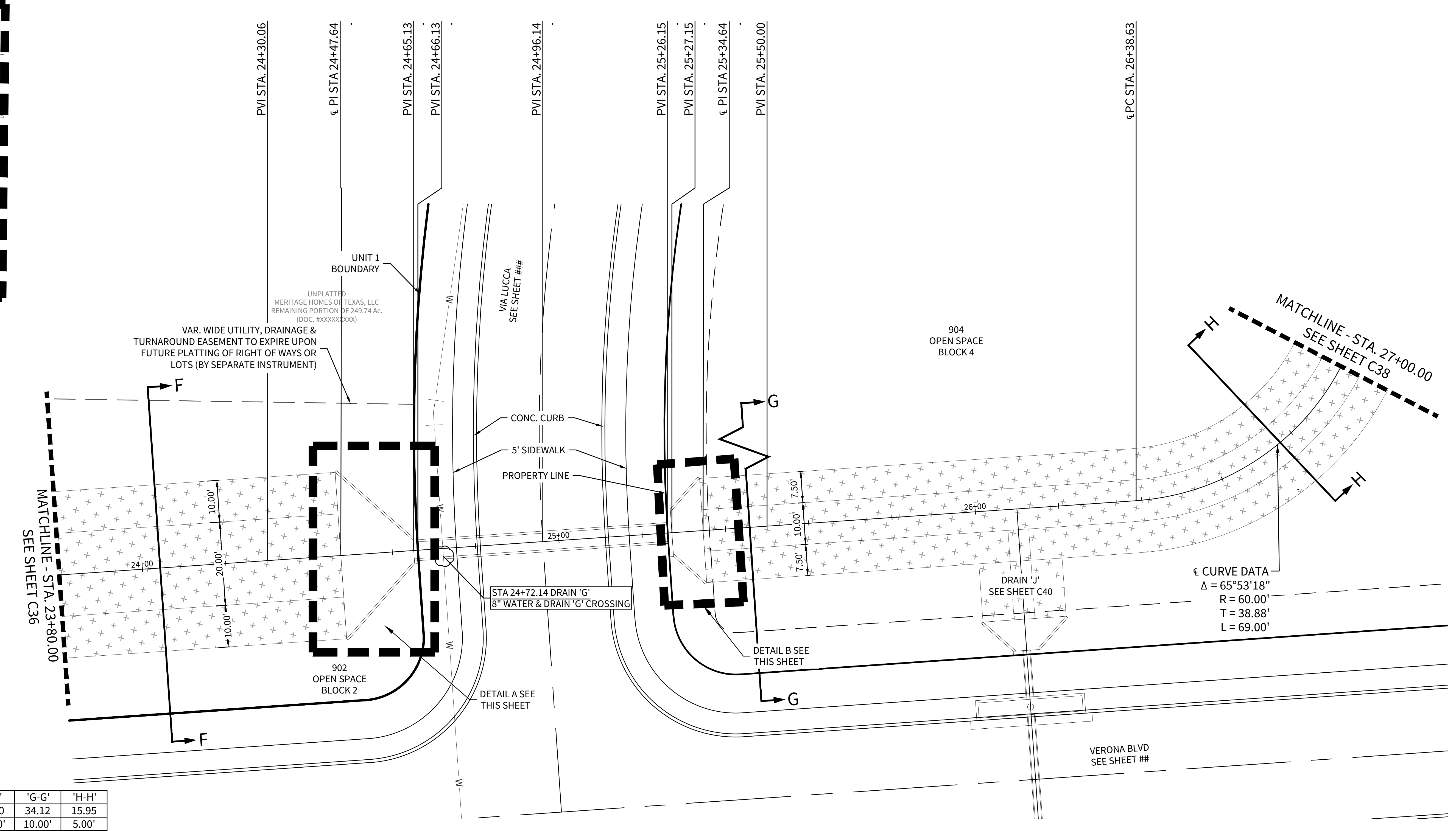
DETAIL A

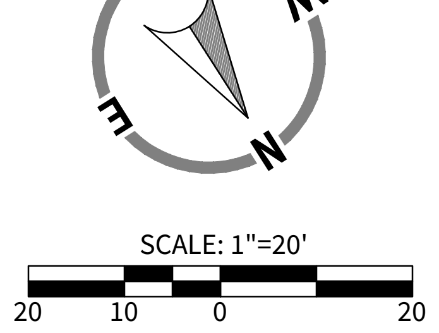
SCALE: 1" = 10'



DETAIL B

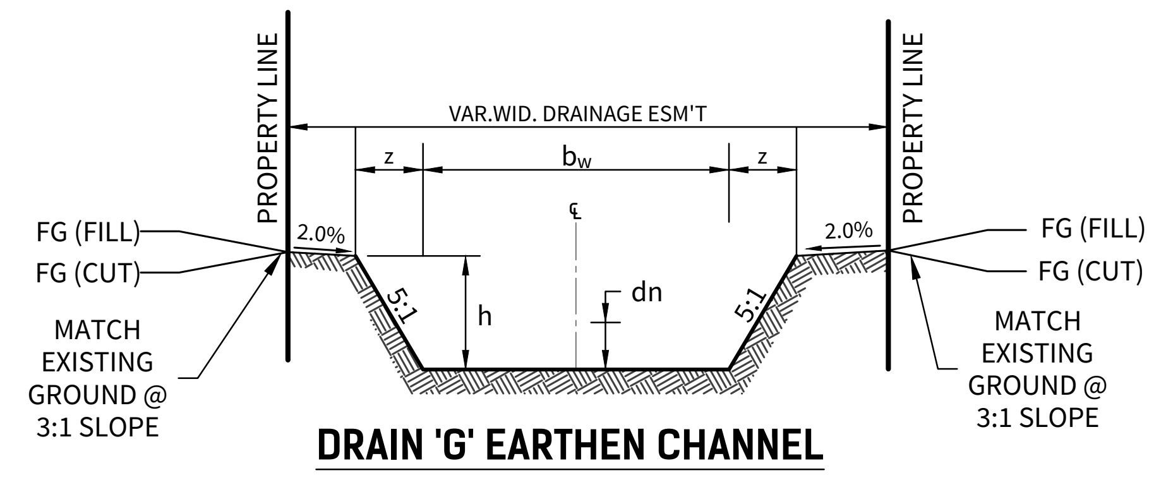
SCALE: 1" = 10'





LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	— — — 498 — — —
EXISTING 10' CONTOUR	— — — —500 — — —
PROPOSED 2' CONTOUR	——— (498) ———
PROPOSED 10' CONTOUR	——— (500) ———
CONCRETE RIP RAP	▨
EARTHEN DRAINAGE CHANNEL	+ + +



DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'F-F' STA. 24+80.00 TO STA. 24+89.94
'G-G' STA. 26+12.47 TO STA. 26+90.46
'H-H' STA. 26+90.46 TO STA. 27+00.00

	'F-F'	'G-G'	'H-H'
Q_{25} (cfs)	59.90	34.12	15.95
b_w (ft)	20.00'	10.00'	5.00'
z (ft)	10.00'	7.50'	7.50'
n	0.035	0.035	0.035
h (ft)	2.00'	1.50'	1.50'
S (%)	2.84%	0.50%	4.00%
d_n (ft)	0.57'	0.96'	0.49'
V (fps)	4.56	2.41	4.35

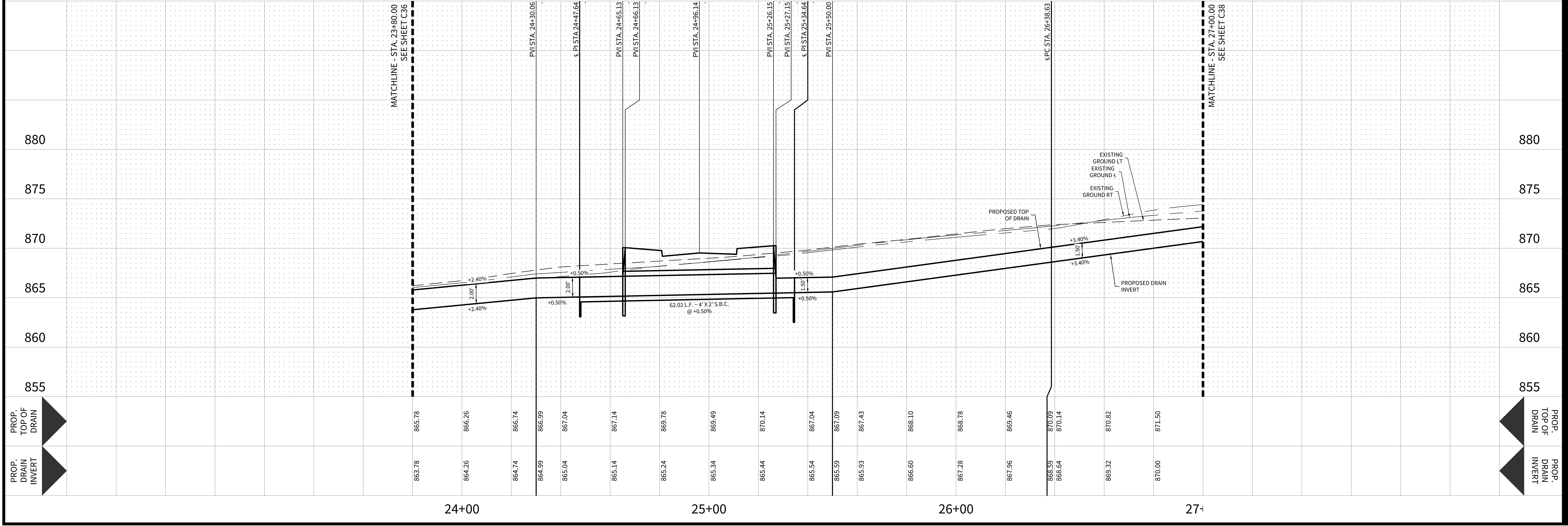
DRAIN 'G'

STA. 23+80.00 TO STA. 27+00.00

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN	865.78	866.26	866.74	866.99	867.04	867.14	869.78	869.49	870.14	867.04	867.09	867.43	868.10	868.78	869.46	870.09	870.14	870.82	871.50
PROP. DRAIN INVERT	863.78	864.26	864.74	864.99	865.04	865.14	865.24	865.34	865.44	865.54	865.59	865.93	866.60	867.28	867.96	868.59	868.64	869.32	870.00

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CONTESSA SUBDIVISION
UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

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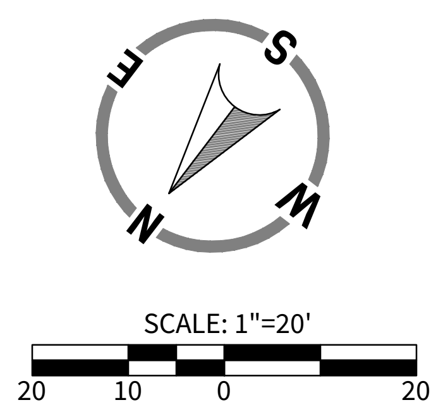
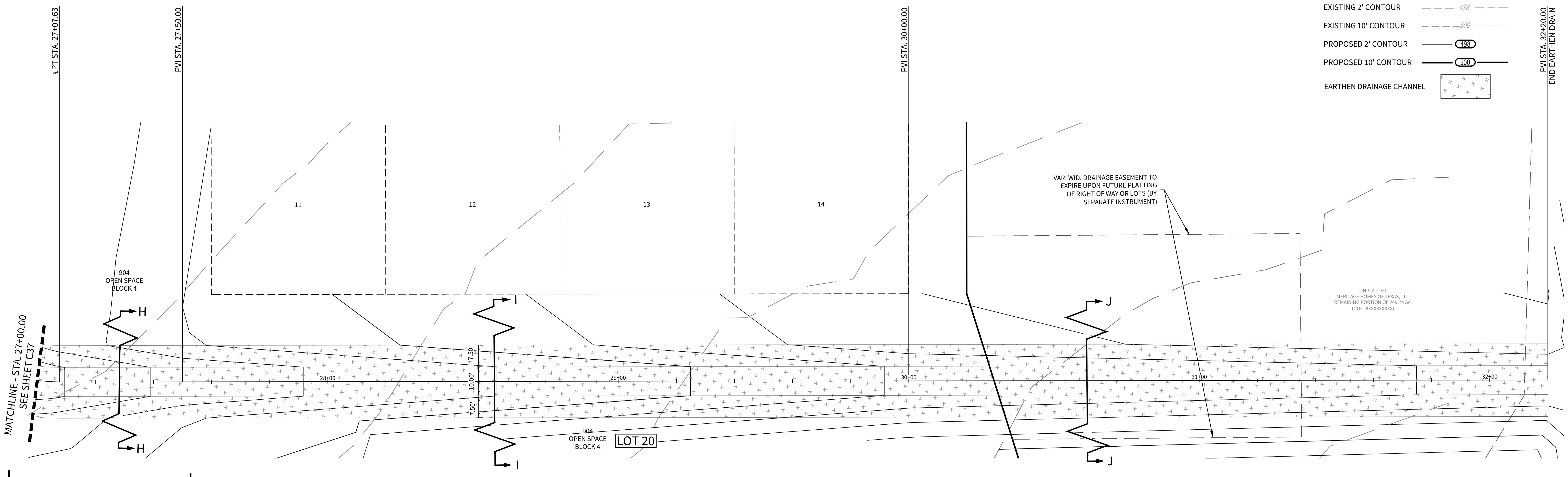
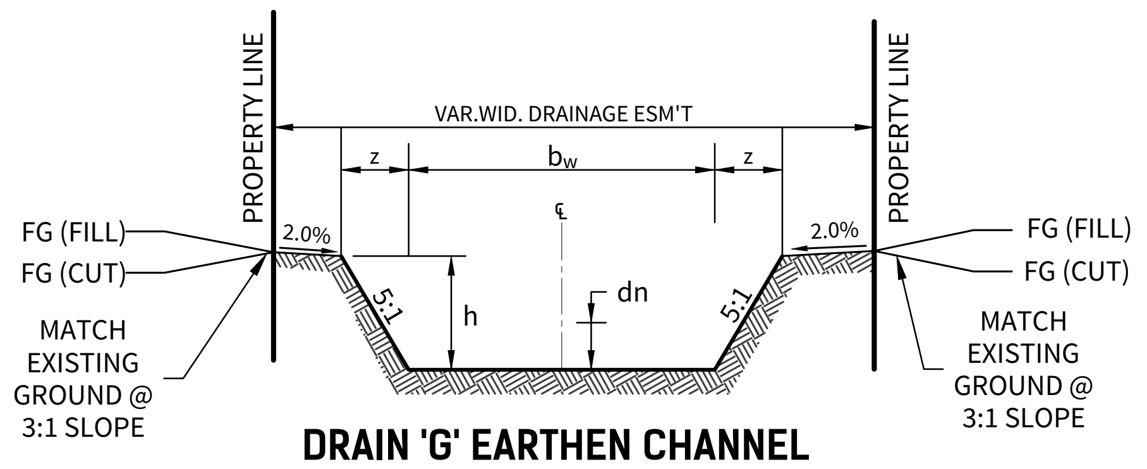
LEGEND

EASEMENT LINE	— — — —
EXISTING 2' CONTOUR	– – – 498 – – –
EXISTING 10' CONTOUR	– – – 500 – – –
PROPOSED 2' CONTOUR	——(498)——
PROPOSED 10' CONTOUR	——(500)——
EARTHEN DRAINAGE CHANNEL	▨







DRAIN 'G' EARTHEN CHANNEL

(N.T.S.)

'H-H' STA. 27+00.00 TO STA. 28+30.31

'I-I' STA. 28+30.31 TO STA. 29+50.00

'J-J' STA. 29+50.00 TO STA. 31+54.03

	'H-H'	'I-I'	'J-J'
Q_{25} (cfs)	15.95	15.95	15.95
b_w (ft)	5.00'	5.00'	5.00'
z (ft)	7.50'	7.50'	7.50'
n	0.035	0.035	0.035
h (ft)	1.50'	1.50'	1.50'
S (%)	4.00%	2.00%	1.67%
d_n (ft)	0.49'	0.59'	0.62'
V (fps)	4.35	3.41	3.19

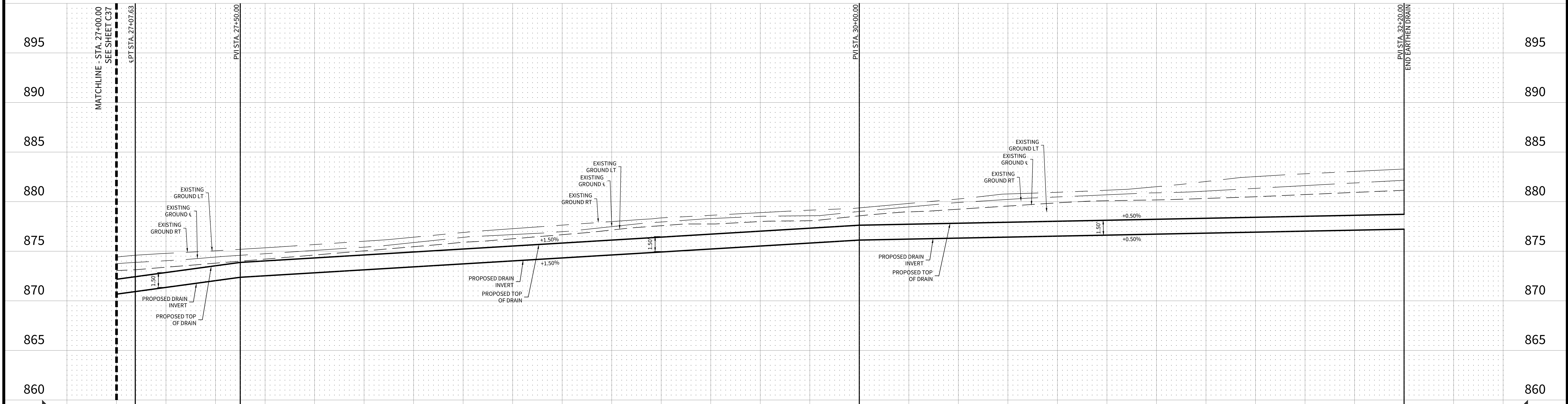
DRAIN 'G'

STA. 27+00.00 TO END

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



PROP. TOP OF DRAIN	872.18	872.44	872.86	873.54	873.88	874.03	874.33	874.63	874.93	875.23	875.53	875.83	876.13	876.43	876.73	877.03	877.33	877.63	877.73	877.83	877.93	878.03	878.13	878.23	878.33	878.43	878.53	878.63	878.73
PROP. DRAIN INVERT	870.68	870.94	871.36	872.04	872.38	872.53	872.83	873.13	873.43	873.73	874.03	874.33	874.63	874.93	875.23	875.53	875.83	876.13	876.23	876.33	876.43	876.53	876.63	876.73	876.83	876.93	877.03	877.13	877.23

28+00 29+00 30+00 31+00 32+00

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DRAIN PLAN & PROFILE - DRAIN 'G'

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

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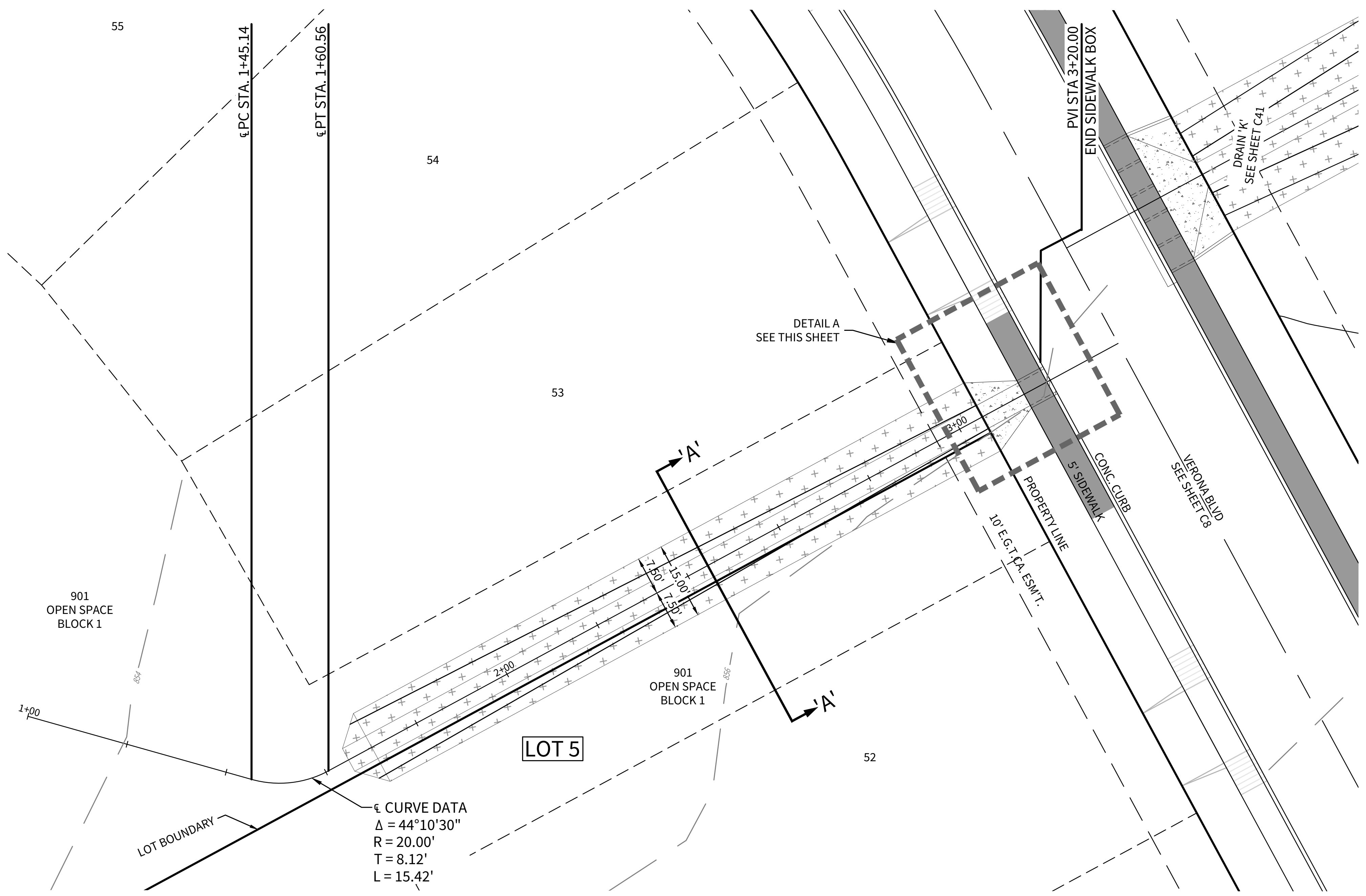
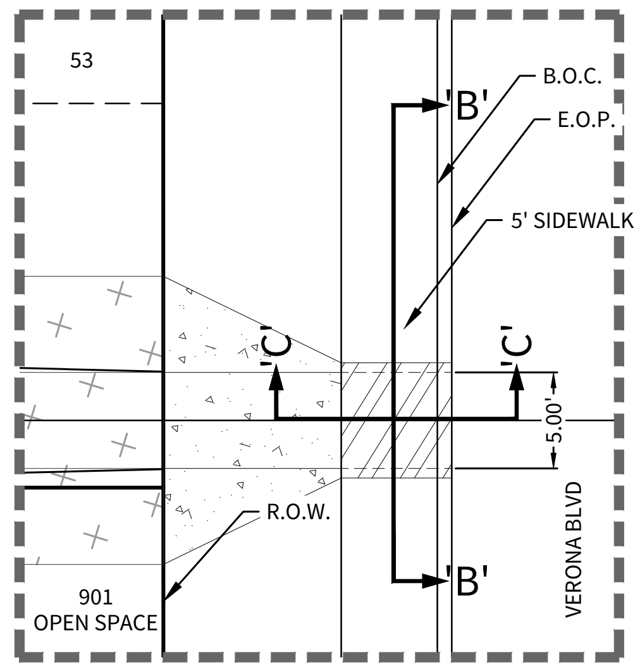
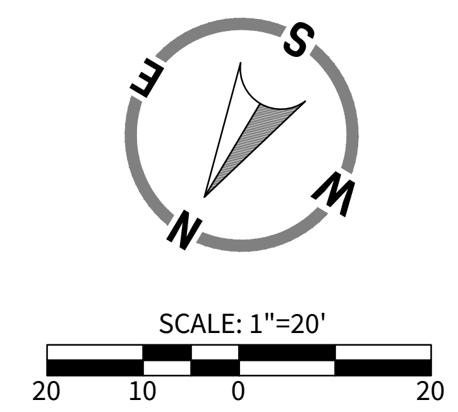




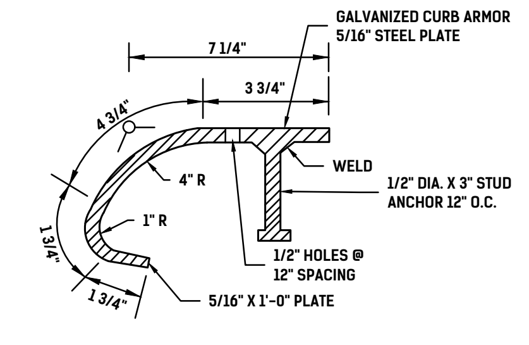
DETAIL A

(SCALE 1" = 10')



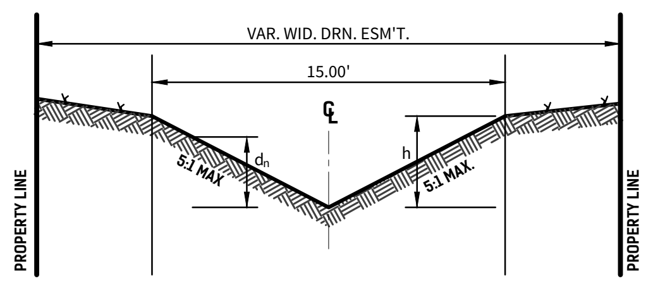
LEGEND

PROPERTY BOUNDARY	— — —
PROPOSED LOT LINE	— — —
PROPOSED RIGHT OF WAY	———
E.G.T.CA. EASEMENT	— — —
EXISTING 1' CONTOUR	— 499 —
EXISTING 5' CONTOUR	— 500 —
PROPOSED 1' CONTOUR	— 499 —
PROPOSED 5' CONTOUR	— 500 —
EARTHEN DRAINAGE CHANNEL	▨



CURB ARMOR DETAIL

(N.T.S)

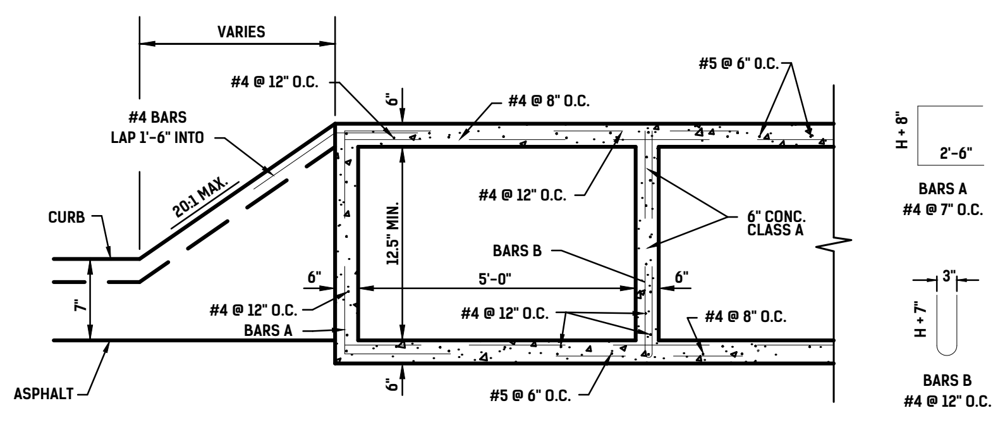


DRAIN 'E' SECTION

(N.T.S.)

'A-A' STA. 3+35.85 TO STA. 5+01.86

	'A-A'
Q_{25} (cfs)	2.98
b_w (ft)	N/A
z (ft)	5:1
n	0.035
h (ft)	1.50'
S (%)	1.13%
d_n (ft)	0.56'
V (fps)	1.91

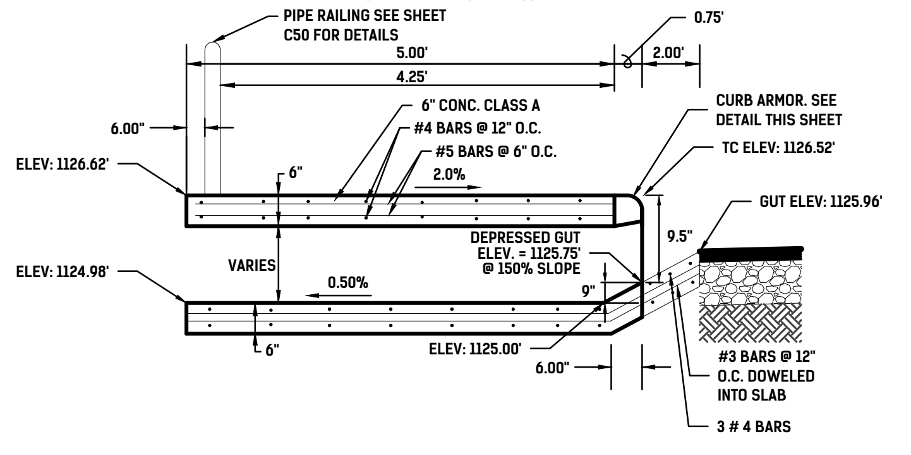


TYPICAL SIDEWALK BOX DRAIN SECTION 'B–B'

(N.T.S)

DRAIN 'H'

STA. 2+56.88 TO END



DRAIN "A" INLET SECTION 'C–C'

(N.T.S)

SIDEWALK BOX OPENING

WEIR EQUATION

$Q_{25} = CL(H)^{3/2}$

$Q_{25} = 2.98$ C.F.S.

$C = 3.087$

$H = 0.79'$

$$L = \frac{2.98 \text{ C.F.S}}{(3.087)(0.79)^{3/2}}$$

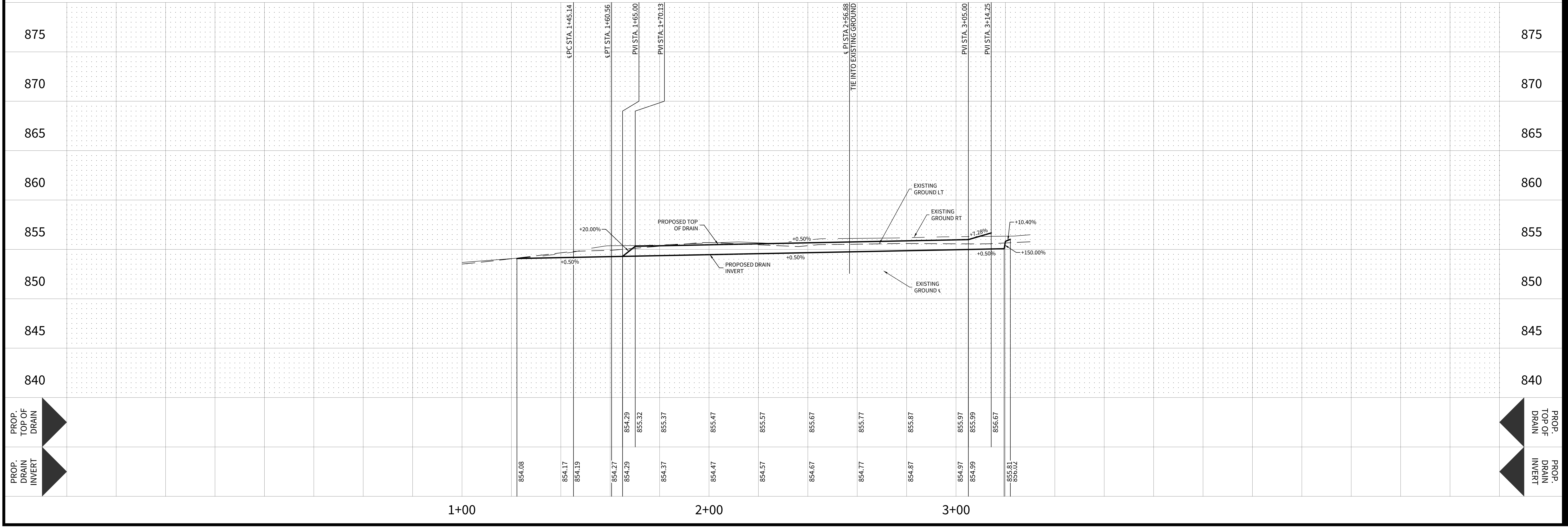
$L = 1.37'$

USE 1 ~ 5 FT SIDEWALK BOXES

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

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



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DRAIN PLAN & PROFILE - DRAIN 'H'

DATE
06/09/2025

PROJECT NO.
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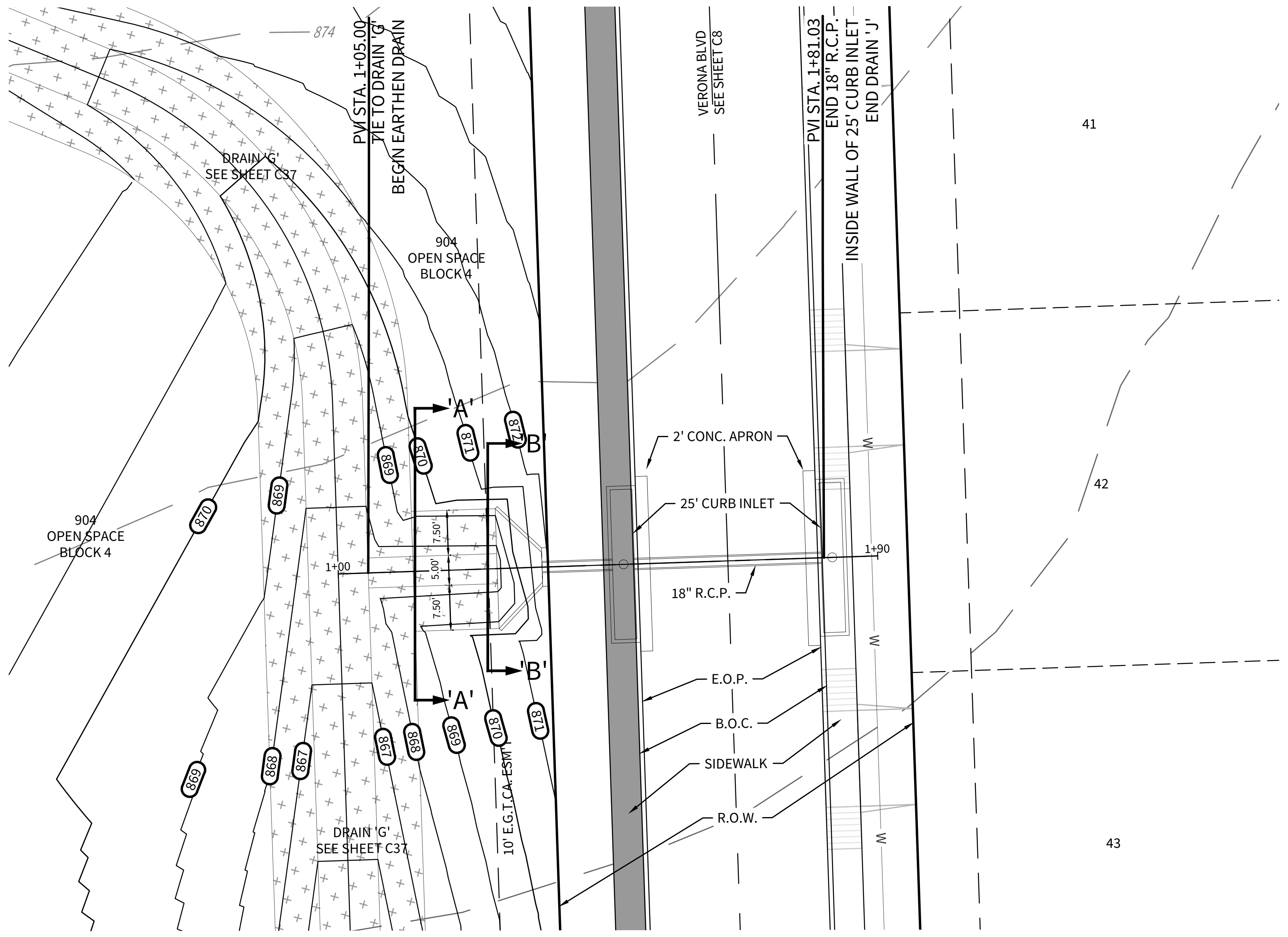

SCALE: 1"=20'

20 10 0 20

LEGEND

PROPERTY BOUNDARY	— — —
PROPOSED LOT LINE	— — —
PROPOSED RIGHT OF WAY	———
E.G.T.CA. EASEMENT	- - - -
EXISTING 1' CONTOUR	— — 499 — —
EXISTING 5' CONTOUR	— — 500 — —
PROPOSED 1' CONTOUR	—— 499 ——
PROPOSED 5' CONTOUR	—— 500 ——
EARTHEN DRAINAGE CHANNEL	▨

NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
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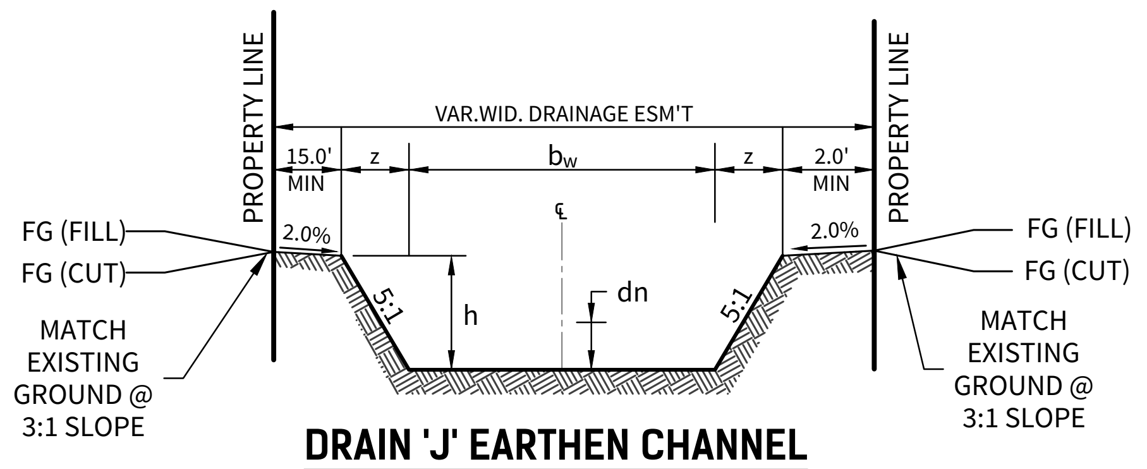


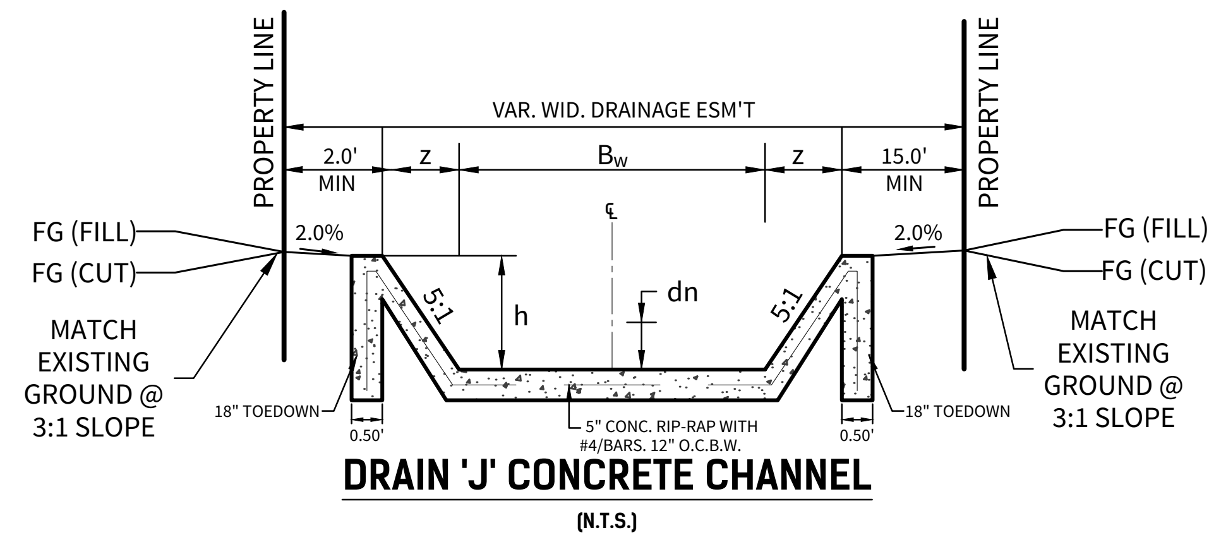
DRAIN 'J' EARTHEN CHANNEL

(N.T.S.)

'A-A' STA. 1+00.00 TO STA. 1+88.19

	'A-A'
Q_{25} (cfs)	18.66
b_w (ft)	5.00'
z (ft)	7.50'
n	0.035
h (ft)	1.50'
S (%)	0.50%
d_n (ft)	0.91'
V (fps)	2.16

	'A-A'
Q_{25} (cfs)	18.66
b_w (ft)	5.00'
z (ft)	7.50'
n	0.013
h (ft)	1.50'
S (%)	0.50%
d_n (ft)	0.55'
V (fps)	4.40



DRAIN 'J' CONCRETE CHANNEL

(N.T.S.)

'B-B' STA. 1+88.19 TO STA. 1+93.19

DRAIN 'J'

STA. 1+00.00 TO STA. END

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

INLET DRAIN 'J' 25' INLET CURB INLET ON GRADE – TxDOT METHOD

Q_{25} = 9.33 c.f.s.
S_X = GUTTER CROSS SLOPE = 0.02
S_L = STREET SLOPE = 0.010
$S_E = S_X + (\frac{A}{W})E_O$
S_E = EQUIVALENT CROSS SLOPE = 0.07

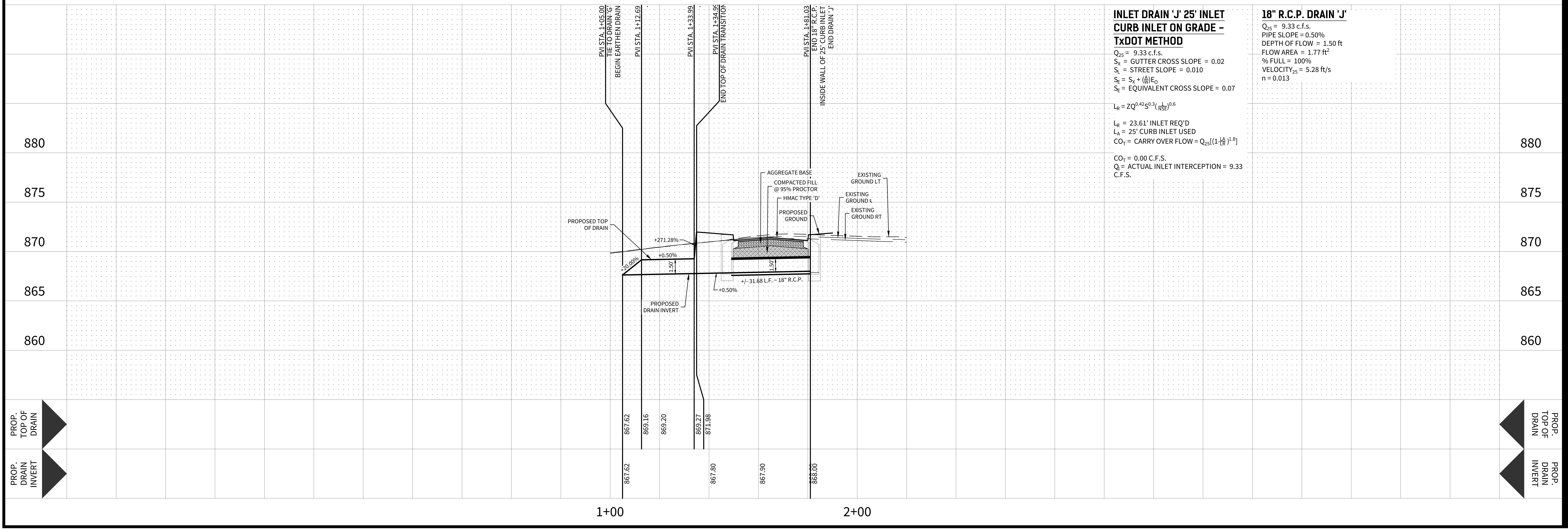
$L_R = ZQ^{0.42}S^{0.3}(\frac{1}{NSE})^{0.6}$

L_R = 23.61' INLET REQ'D
L_A = 25' CURB INLET USED
CO_T = CARRY OVER FLOW = $Q_{25}[(1-\frac{LA}{LR})^{1.8}]$

CO_T = 0.00 C.F.S.
Q_I = ACTUAL INLET INTERCEPTION = 9.33 C.F.S.

18" R.C.P. DRAIN 'J'

Q_{25} = 9.33 c.f.s.
PIPE SLOPE = 0.50%
DEPTH OF FLOW = 1.50 ft
FLOW AREA = 1.77 ft^2
% FULL = 100%
$VELOCITY_{25}$ = 5.28 ft/s
n = 0.013



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CONTESSA SUBDIVISION UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'J'

DATE
06/09/2025

PROJECT NO.
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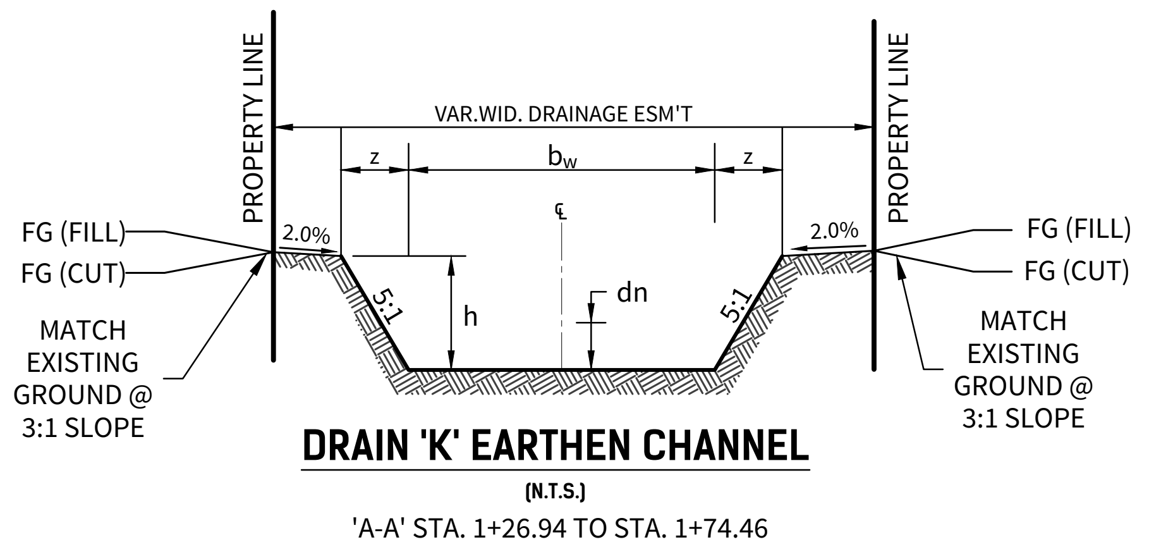
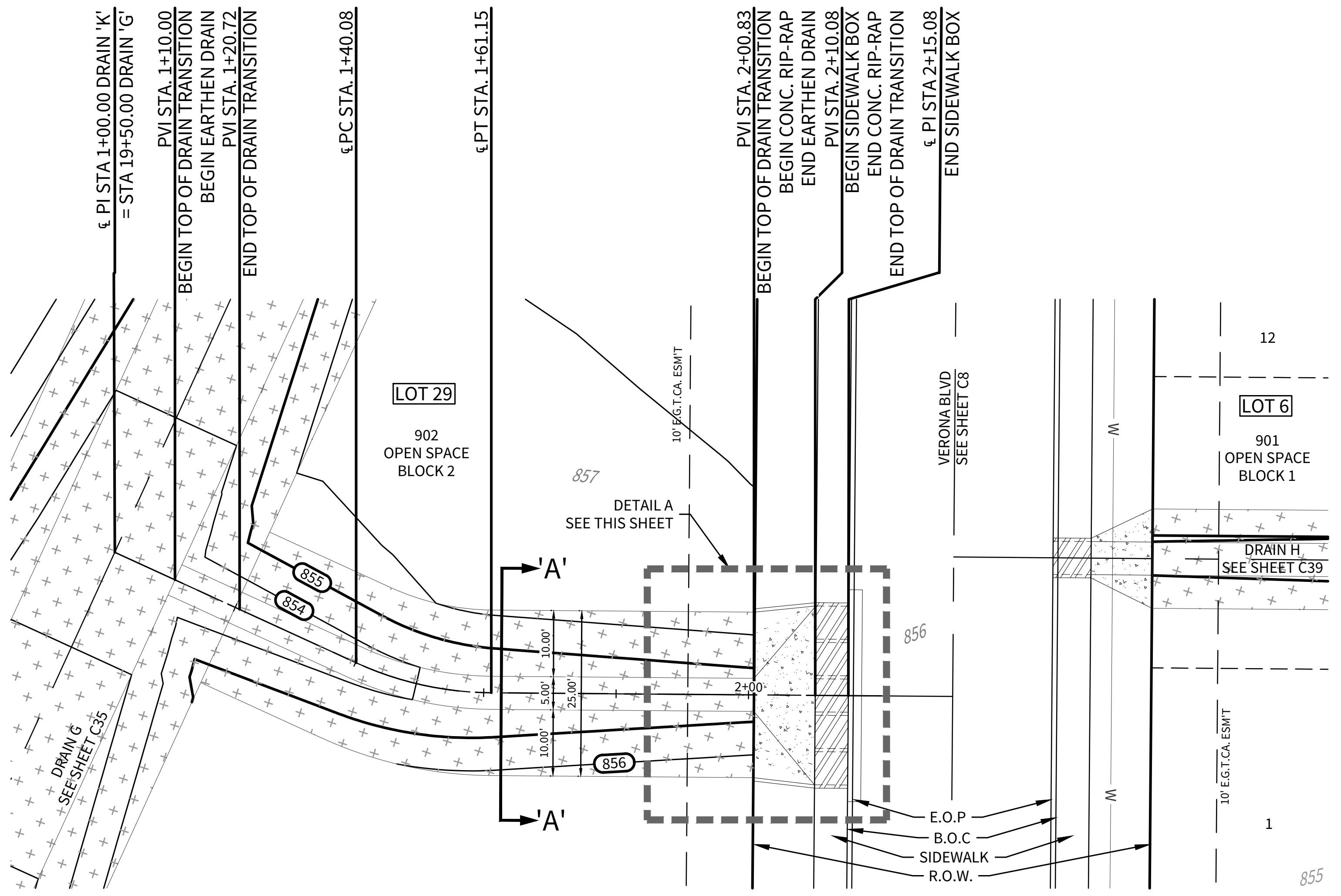


DRAIN 'K' EARTHEN CHANNEL

[N.T.S.]

'A-A' STA. 1+26.94 TO STA. 1+74.46

	'A-A'
Q_{25} (cfs)	8.91
b_w (ft)	5.00'
z (ft)	10.00'
n	0.035
h (ft)	2.00'
S (%)	1.35%
d_n (ft)	0.48'
V (fps)	2.50



SCALE: 1"=20'

20 10 0 20

LEGEND

PROPOSED LOT LINE
PROPOSED RIGHT OF WAY
E.G.T.CA. EASEMENT
EXISTING 1' CONTOUR — 499
EXISTING 5' CONTOUR — 500
PROPOSED 1' CONTOUR — 499
PROPOSED 5' CONTOUR — 500
CONCRETE RIP RAP
EARTHEN DRAINAGE CHANNEL

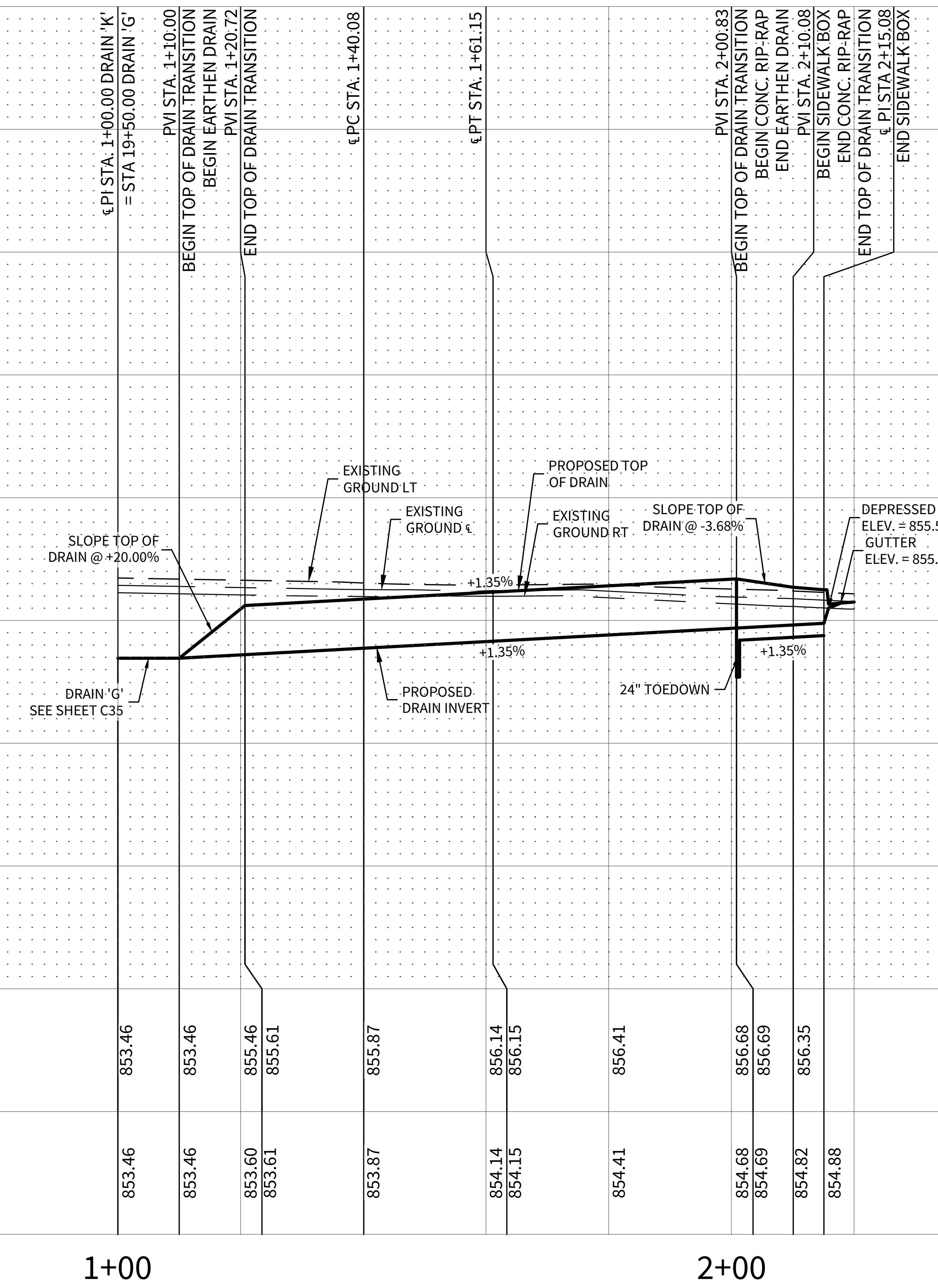
NOTES

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATE BY SEEDING OR SODDING. EIGHT-FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE DISTRICT WILL ACCEPT THE CHANNEL FOR MAINTENANCE

DRAIN 'K'

STA. 1+00.00 TO END

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



INLET DRAIN 'K' 25' INLET CURB INLET ON GRADE – TxDOT METHOD

Q_{25} = 8.91 c.f.s.
S_X = GUTTER CROSS SLOPE = 0.02
S_L = STREET SLOPE = 0.010
$S_E = S_X + (\frac{A}{W})E_O$
S_E = EQUIVALENT CROSS SLOPE = 0.07

$L_R = ZQ^{0.42}S^{0.3}(\frac{1}{NSE})^{0.6}$

L_R = 23.00' INLET REQ'D
L_A = 25' CURB INLET USED
CO_T = CARRY OVER FLOW = $Q_{25}[(1-\frac{LA}{LR})^{1.8}]$

CO_T = 0.00 C.F.S.
Q_I = ACTUAL INLET INTERCEPTION = 8.91 C.F.S.

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ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

DRAIN PLAN & PROFILE - DRAIN 'K'

DATE	06/09/2025
PROJECT NO.	04343.002
DRAWN BY	CG/JG/LJ/TCD
CHECKED BY	XV/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
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TBPLS No. 10048500

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P:\04343\002\2-DWG\4-Plans\C41 DRAIN PLAN & PROFILE - DRAIN 'K'.dwg 2025/06/09 4:01pm jochoa

LEGEND

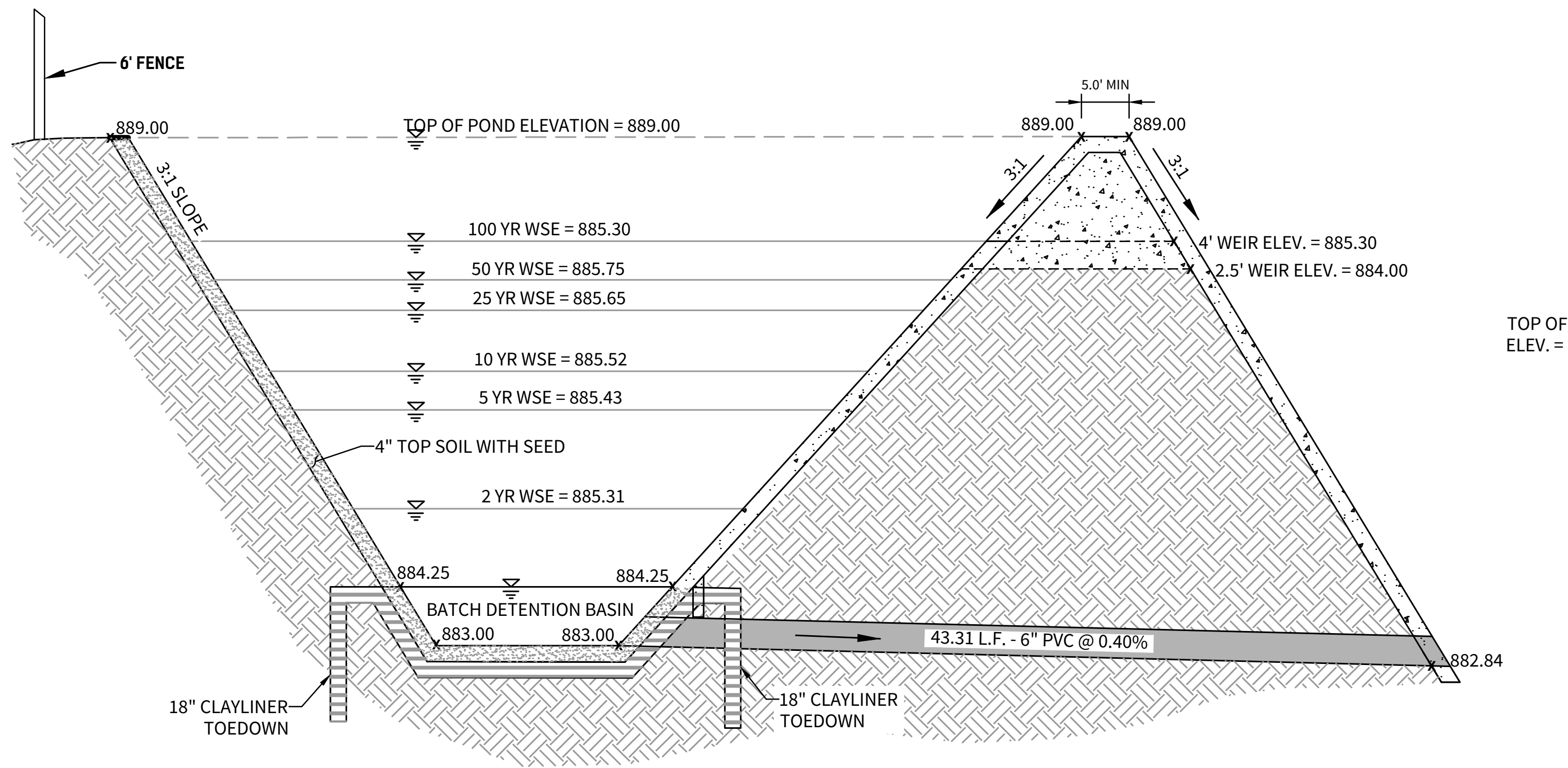
▨	CONC. RIP RAP
▨	GABION MATTRESS
▨	EARTHEN VEGETATION
─(892)─	PROPOSED CONTOUR
─890─	EXISTING CONTOUR
3:1 →	PROPOSED SLOPE
─ ─ ─	DRAINAGE FLOW LINE
▨	1% ANNUAL CHANCE FLOODPLAIN
▨	CLAY LINER
▨	CONCRETE DRIVEWAY POND ACCESS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

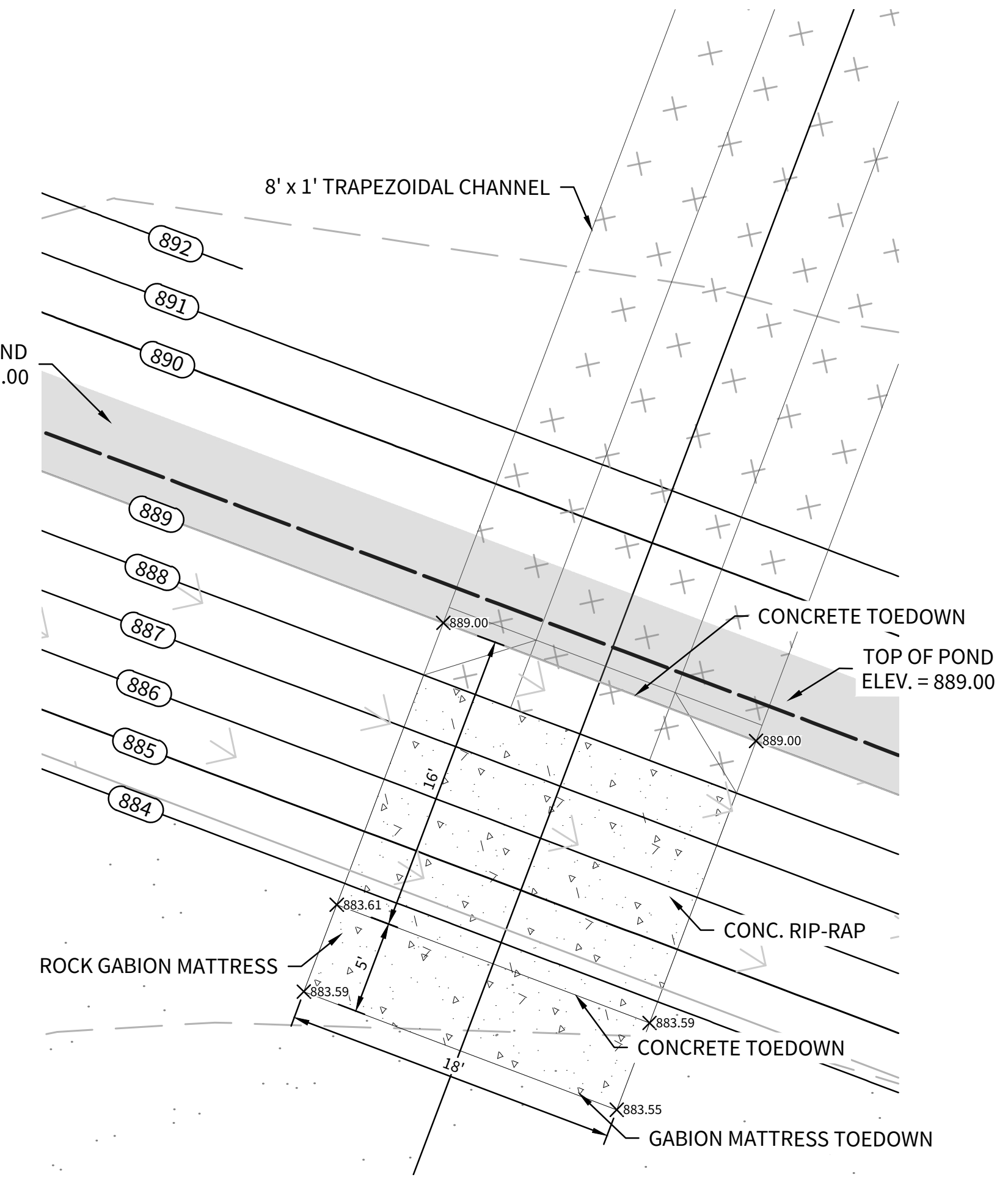
1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 1,822 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 28,809 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 2,172 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 6" CAPACITY AT 0.40% SLOPED OUTFALL = 0.55 CFS
   b. DRAWDOWN TIME = 28,809 CF / 0.55 CFS = 14.52 HOURS

SEQUENCE OF OPERATION

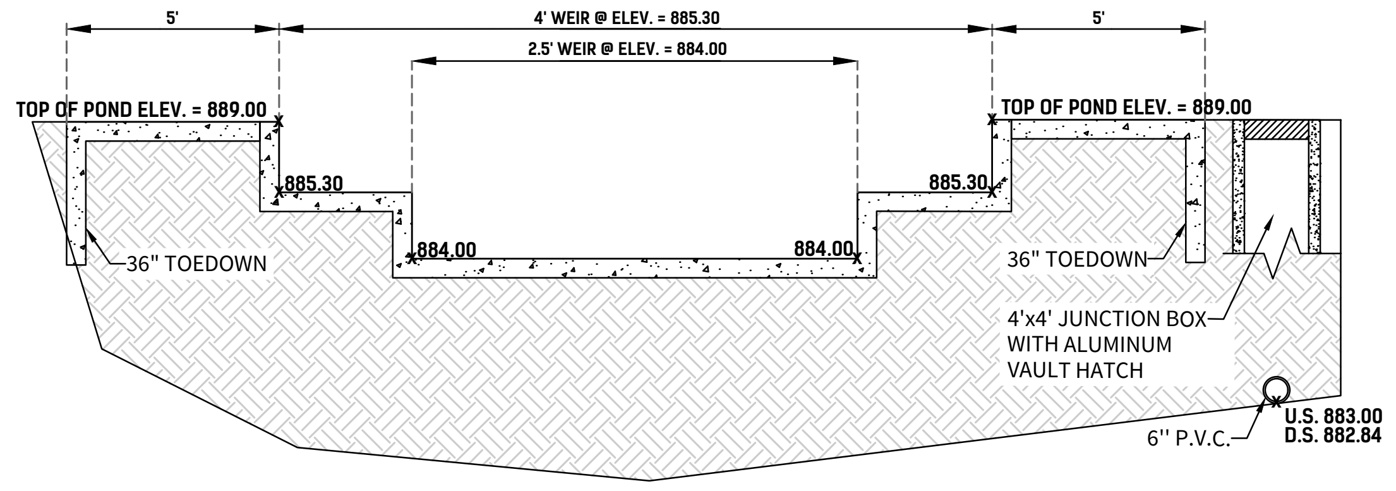
1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO STRT DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 24 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6"BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTIVATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.



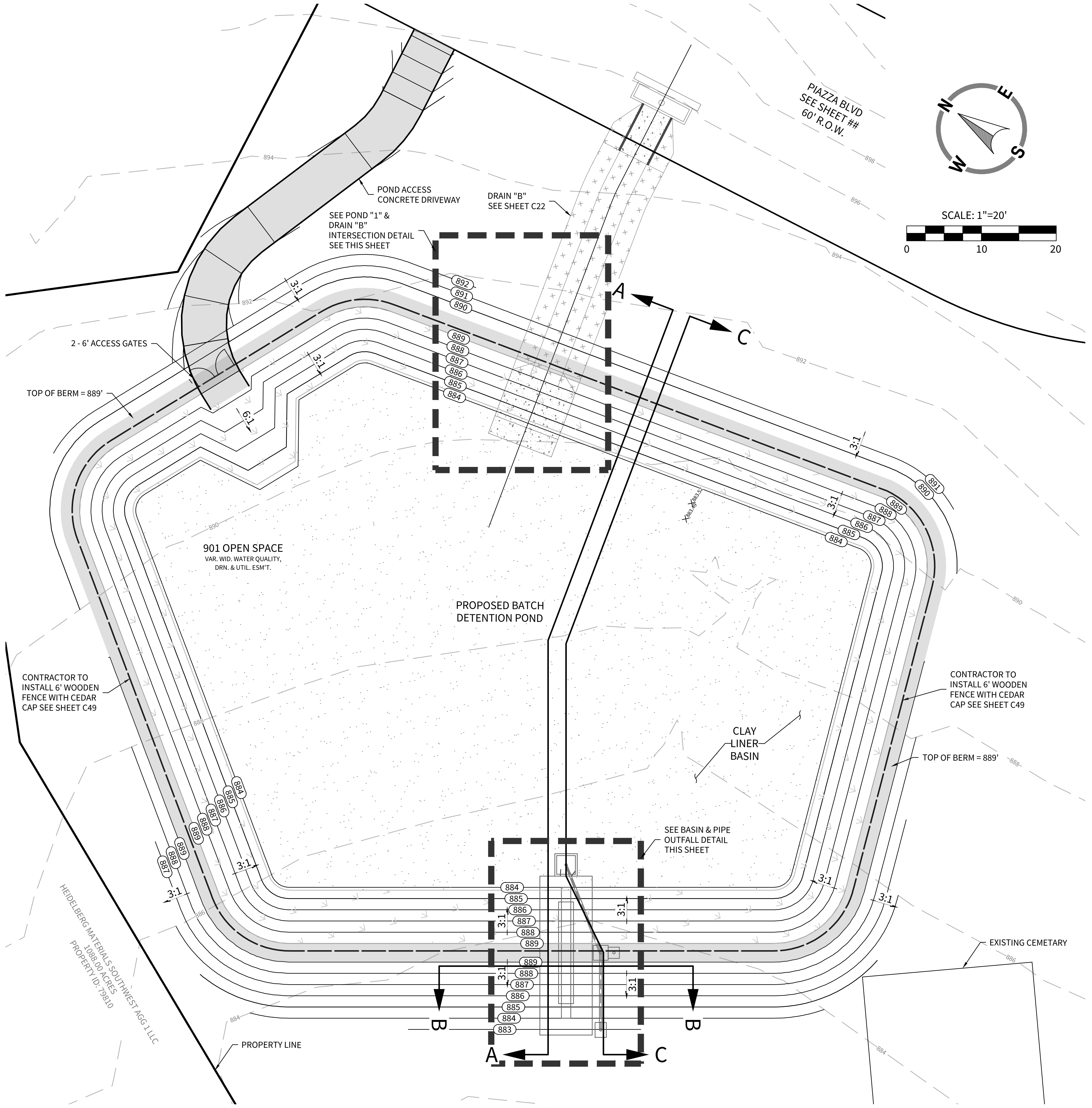
SECTION A-A
N.T.S.



POND "1" & DRAIN "B" INTERSECTION DETAIL
SCALE: 1" = 10'


5'
4' WEIR @ ELEV. = 885.30
5'
2.5' WEIR @ ELEV. = 884.00
TOP OF POND ELEV. = 889.00
TOP OF POND ELEV. = 889.00
885.30
885.30
884.00
884.00
36" TOEDOWN
36" TOEDOWN
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
6'' P.V.C.
U.S. 883.00
D.S. 882.84

SECTION B-B
N.T.S.

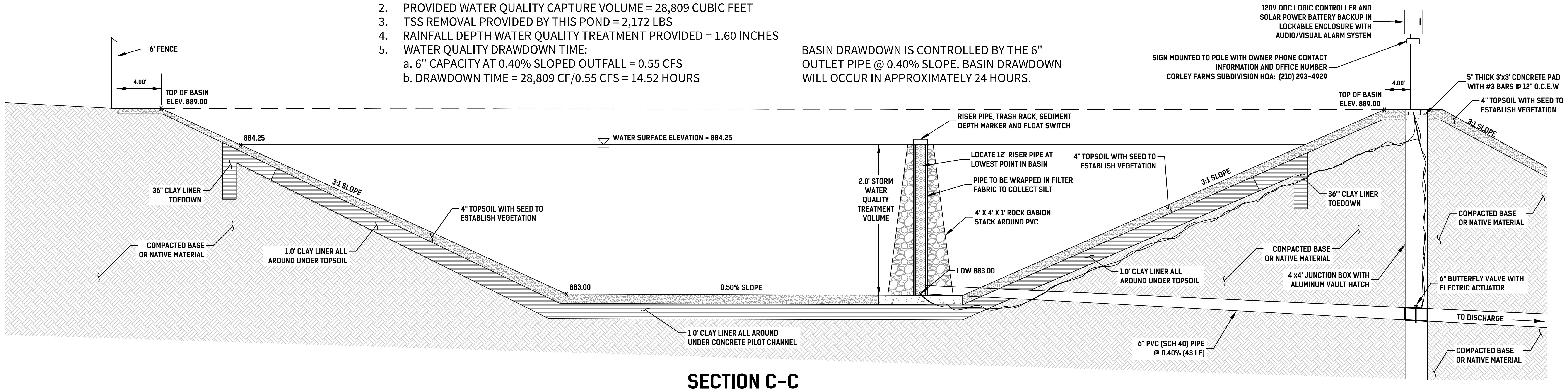

PIAZZA BLVD
SEE SHEET ##
60' R.O.W.
N
E
S
W
SCALE: 1"=20'
0
10
20
POND ACCESS CONCRETE DRIVEWAY
DRAIN "B" SEE SHEET C22
SEE POND "1" & DRAIN "B" INTERSECTION DETAIL SEE THIS SHEET
2 - 6' ACCESS GATES
TOP OF BERM = 889'
A
C
3:1
6:1
892
891
890
889
888
887
886
885
884
901 OPEN SPACE
VAR. WID. WATER QUALITY, DRN. & UTIL. ESM'T.
PROPOSED BATCH DETENTION POND
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
CLAY LINER BASIN
TOP OF BERM = 889'
SEE BASIN & PIPE OUTFALL DETAIL THIS SHEET
EXISTING CEMETARY
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC
1088.00 ACRES
PROPERTY ID: 79810
PROPERTY LINE
B
B
883
A
C

BASIN DESIGN DATA

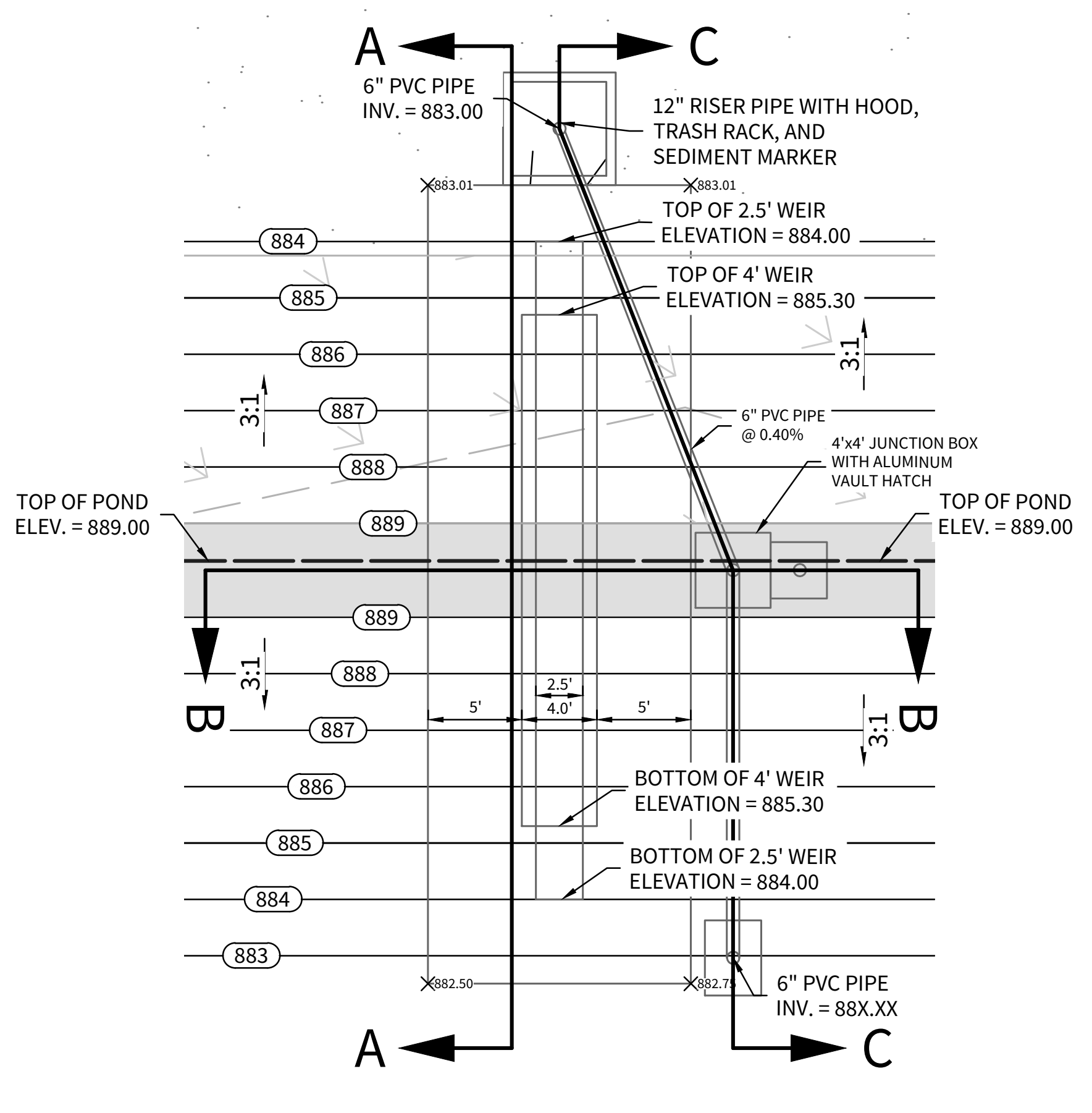
BASIN WATERSHED: 4.02 Ac. (175,213 SF)
DESIGN WATER SURFACE ELEV. = 884.75'
TOP OF CLAY LINER ELEVATION = 883.00'
WATER QUALITY STORAGE DEPTH = 1.75 FEET

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 1,822 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 28,809 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 2,172 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 6" CAPACITY AT 0.40% SLOPED OUTFALL = 0.55 CFS
   b. DRAWDOWN TIME = 28,809 CF/0.55 CFS = 14.52 HOURS

BASIN DRAWDOWN IS CONTROLLED BY THE 6" OUTLET PIPE @ 0.40% SLOPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 24 HOURS.


6' FENCE
4.00'
TOP OF BASIN ELEV. 889.00
884.25
WATER SURFACE ELEVATION = 884.25
3:1 SLOPE
36" CLAY LINER TOEDOWN
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
COMPACTED BASE OR NATIVE MATERIAL
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
883.00
0.50% SLOPE
1.0' CLAY LINER ALL AROUND UNDER CONCRETE PILOT CHANNEL
RISER PIPE, TRASH RACK, SEDIMENT DEPTH MARKER AND FLOAT SWITCH
2.0' STORM WATER QUALITY TREATMENT VOLUME
LOCATE 12" RISER PIPE AT LOWEST POINT IN BASIN
PIPE TO BE WRAPPED IN FILTER FABRIC TO COLLECT SILT
4' X 4' X 1' ROCK GABION STACK AROUND PVC
LOW 883.00
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
36"' CLAY LINER TOEDOWN
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
COMPACTED BASE OR NATIVE MATERIAL
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
6" PVC (SCH 40) PIPE @ 0.40% (43 LF)
120V DDC LOGIC CONTROLLER AND SOLAR POWER BATTERY BACKUP IN LOCKABLE ENCLOSURE WITH AUDIO/VISUAL ALARM SYSTEM
SIGN MOUNTED TO POLE WITH OWNER PHONE CONTACT INFORMATION AND OFFICE NUMBER
CORLEY FARMS SUBDIVISION HOA: (210) 293-4929
TOP OF BASIN ELEV. 889.00
4.00'
5" THICK 3'x3' CONCRETE PAD WITH #3 BARS @ 12" O.C.E.W
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
COMPACTED BASE OR NATIVE MATERIAL
6" BUTTERFLY VALVE WITH ELECTRIC ACTUATOR
TO DISCHARGE
COMPACTED BASE OR NATIVE MATERIAL

SECTION C-C
N.T.S.


A
C
6" PVC PIPE INV. = 883.00
12" RISER PIPE WITH HOOD, TRASH RACK, AND SEDIMENT MARKER
883.01
883.01
TOP OF 2.5' WEIR ELEVATION = 884.00
TOP OF 4' WEIR ELEVATION = 885.30
884
885
886
887
888
889
3:1
6" PVC PIPE @ 0.40%
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
TOP OF POND ELEV. = 889.00
TOP OF POND ELEV. = 889.00
B
B
2.5'
4.0'
5'
5'
BOTTOM OF 4' WEIR ELEVATION = 885.30
BOTTOM OF 2.5' WEIR ELEVATION = 884.00
883
882.50
882.75
6" PVC PIPE INV. = 88X.XX
A
C

BASIN & PIPE OUTFALL DETAIL
SCALE: 1" = 10'

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San Antonio, Texas 78231
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CONTESSA SUBDIVISION
UNIT 1

####################

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS	DATE	#
		1.
		2.
		3.
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		5.
		6.
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LEGEND

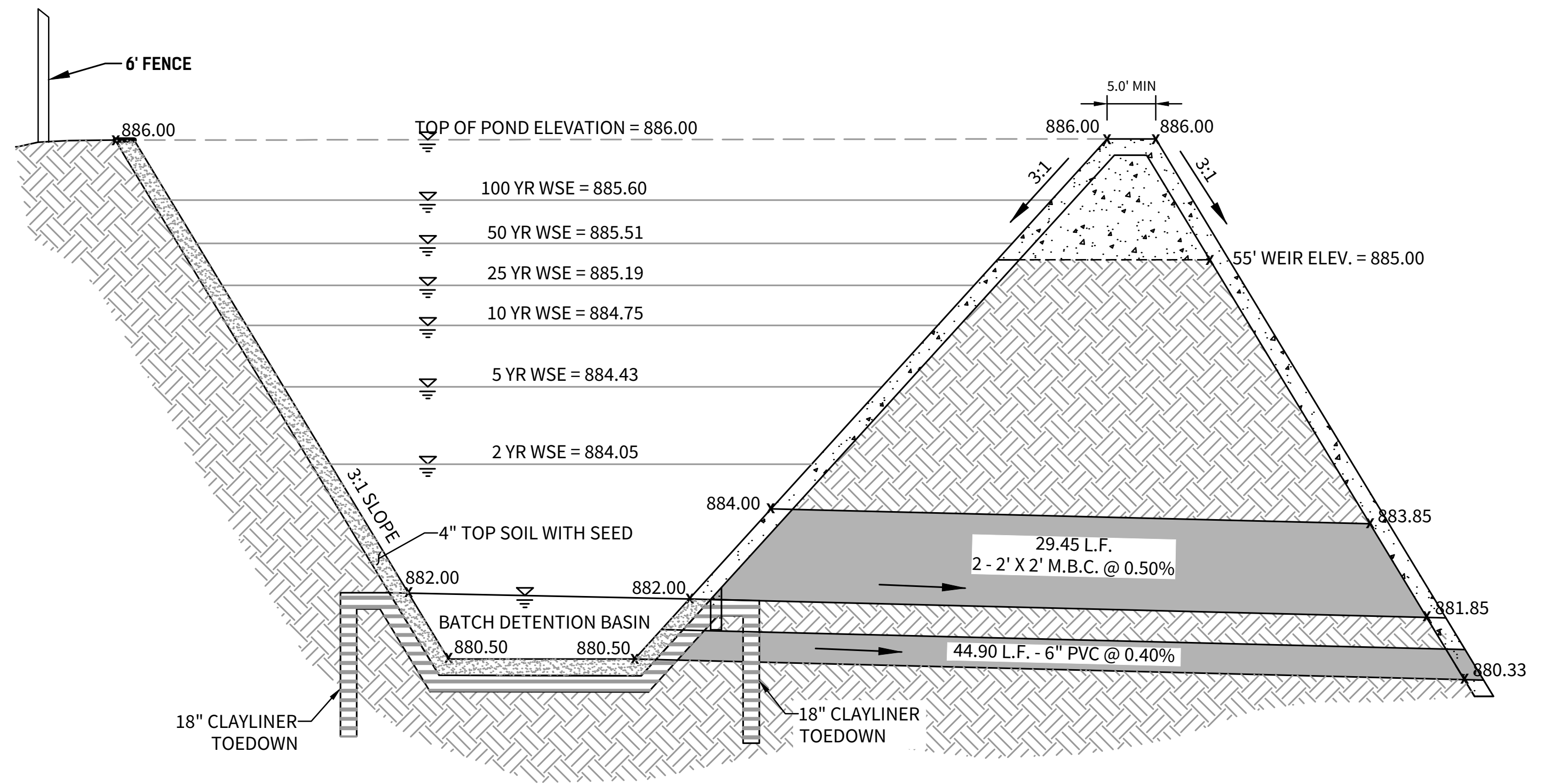
▨	CONC. RIP RAP
▩	GABION MATTRESS
☐	EARTHEN VEGETATION
(892)	PROPOSED CONTOUR
—890—	EXISTING CONTOUR
3:1 →	PROPOSED SLOPE
— — —	DRAINAGE FLOW LINE
▦	1% ANNUAL CHANCE FLOODPLAIN
☐	CLAY LINER
▒	CONCRETE DRIVEWAY POND ACCESS
░	GRAVEL DRIVEWAY POND ACCESS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 1,472 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 16,589 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 1,743 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 6" CAPACITY AT 0.40% SLOPED OUTFALL = 0.55 CFS
   b. DRAWDOWN TIME = 16,589 CF / 0.55 CFS = 8.36 HOURS

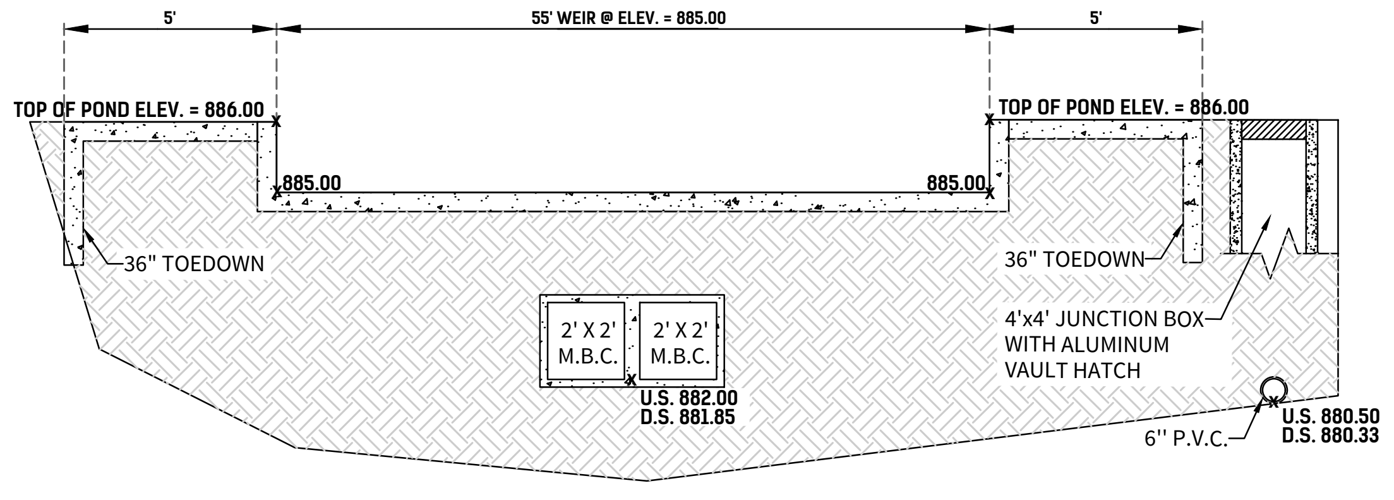
SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO STRT DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 24 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6"BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTIVATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.



SECTION A-A

N.T.S.


5'
55' WEIR @ ELEV. = 885.00
5'
TOP OF POND ELEV. = 886.00
TOP OF POND ELEV. = 886.00
885.00
885.00
36" TOEDOWN
36" TOEDOWN
2' X 2' M.B.C.
2' X 2' M.B.C.
U.S. 882.00
D.S. 881.85
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
6'' P.V.C.
U.S. 880.50
D.S. 880.33

SECTION B-B

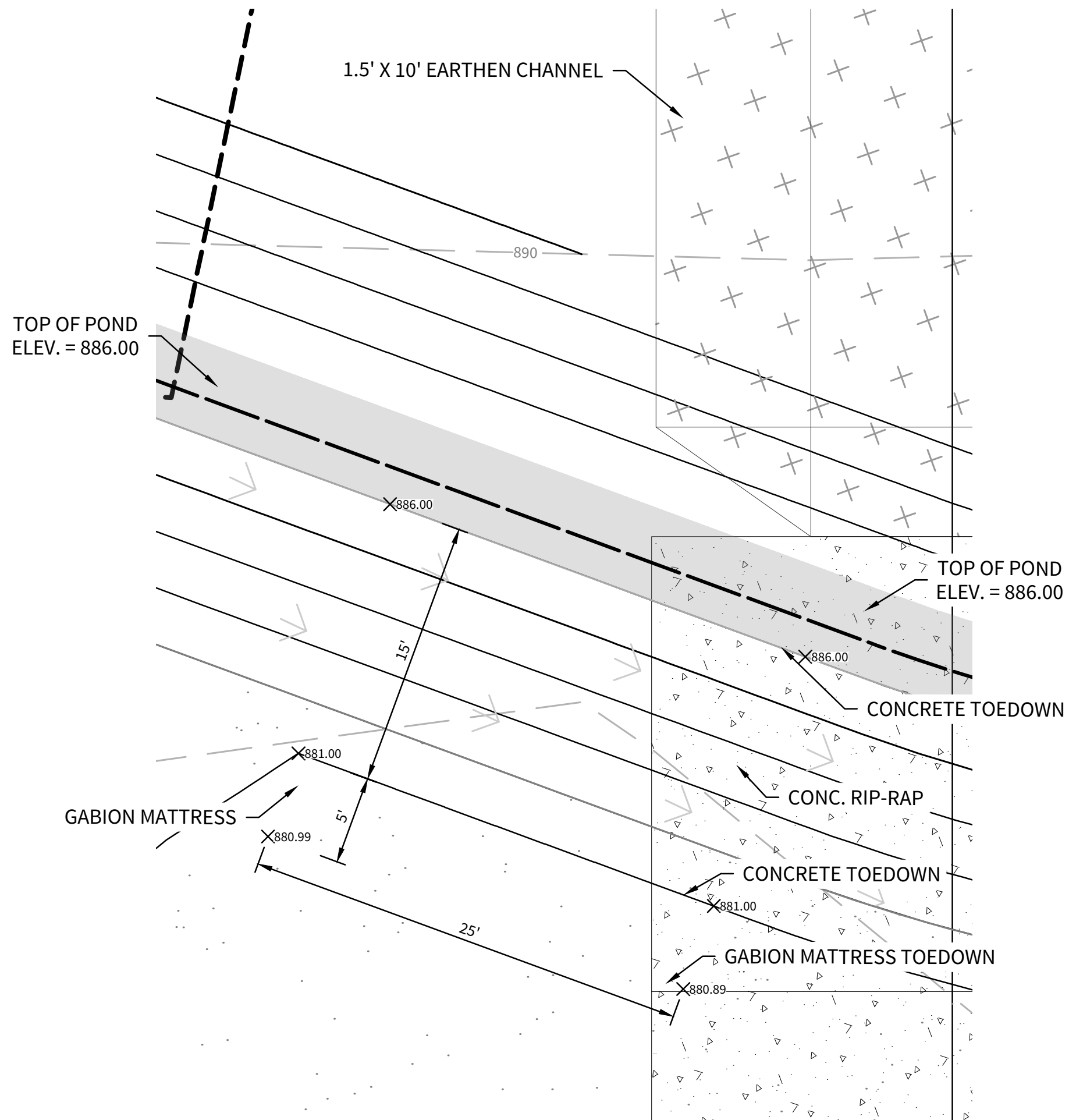
N.T.S.

BASIN DESIGN DATA

BASIN WATERSHED: 10.60 Ac. (462,026 SF)
DESIGN WATER SURFACE ELEV. = 882.25'
TOP OF CLAY LINER ELEVATION = 880.50'
WATER QUALITY STORAGE DEPTH = 1.75 FEET

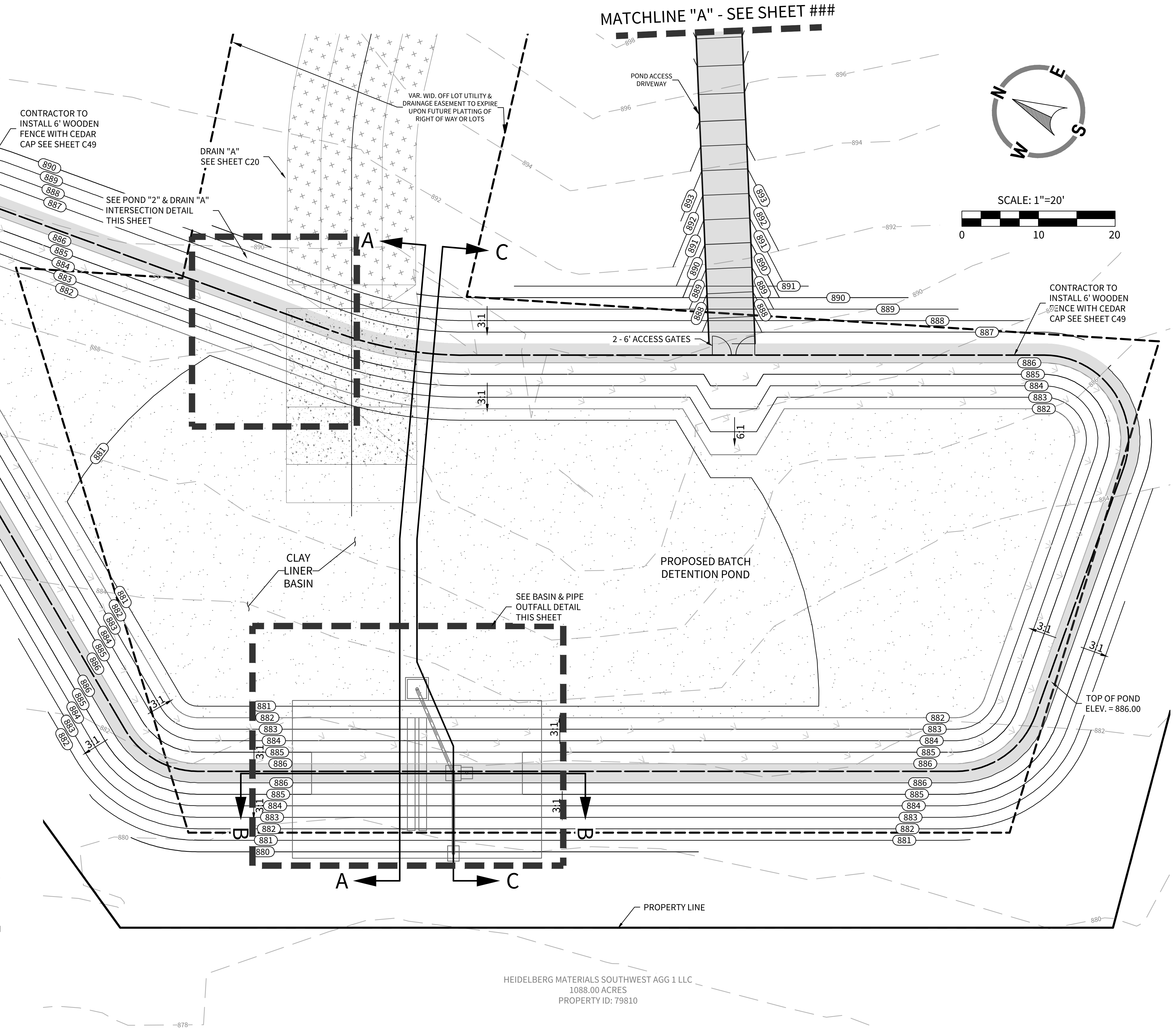
1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 1,472 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 16,589 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 1,743 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 6" CAPACITY AT 0.40% SLOPED OUTFALL = 0.55 CFS
   b. DRAWDOWN TIME = 16,589 CF/0.55 CFS = 8.36 HOURS

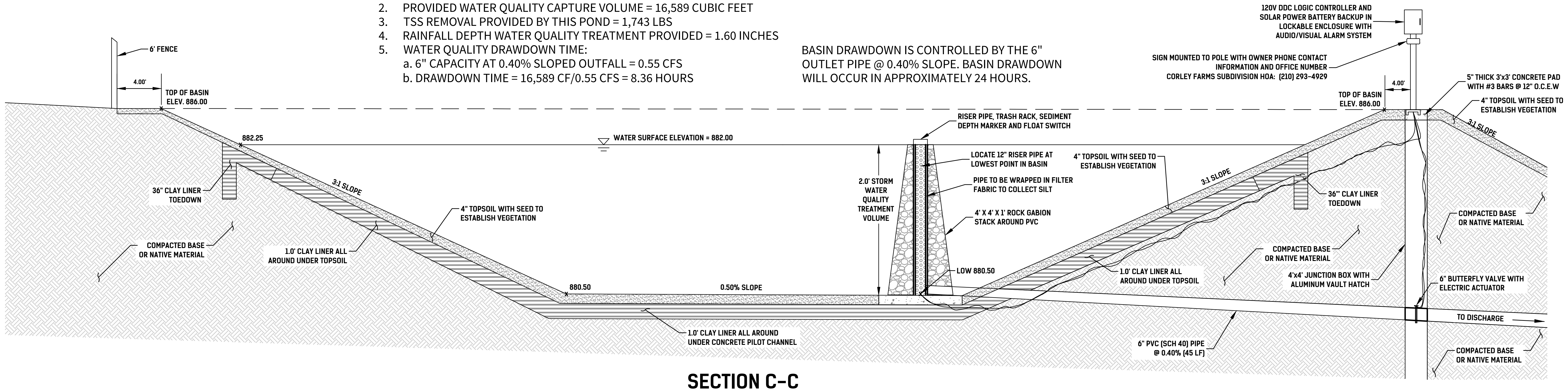
BASIN DRAWDOWN IS CONTROLLED BY THE 6" OUTLET PIPE @ 0.40% SLOPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 24 HOURS.



POND "2" & DRAIN "A" INTERSECTION DETAIL

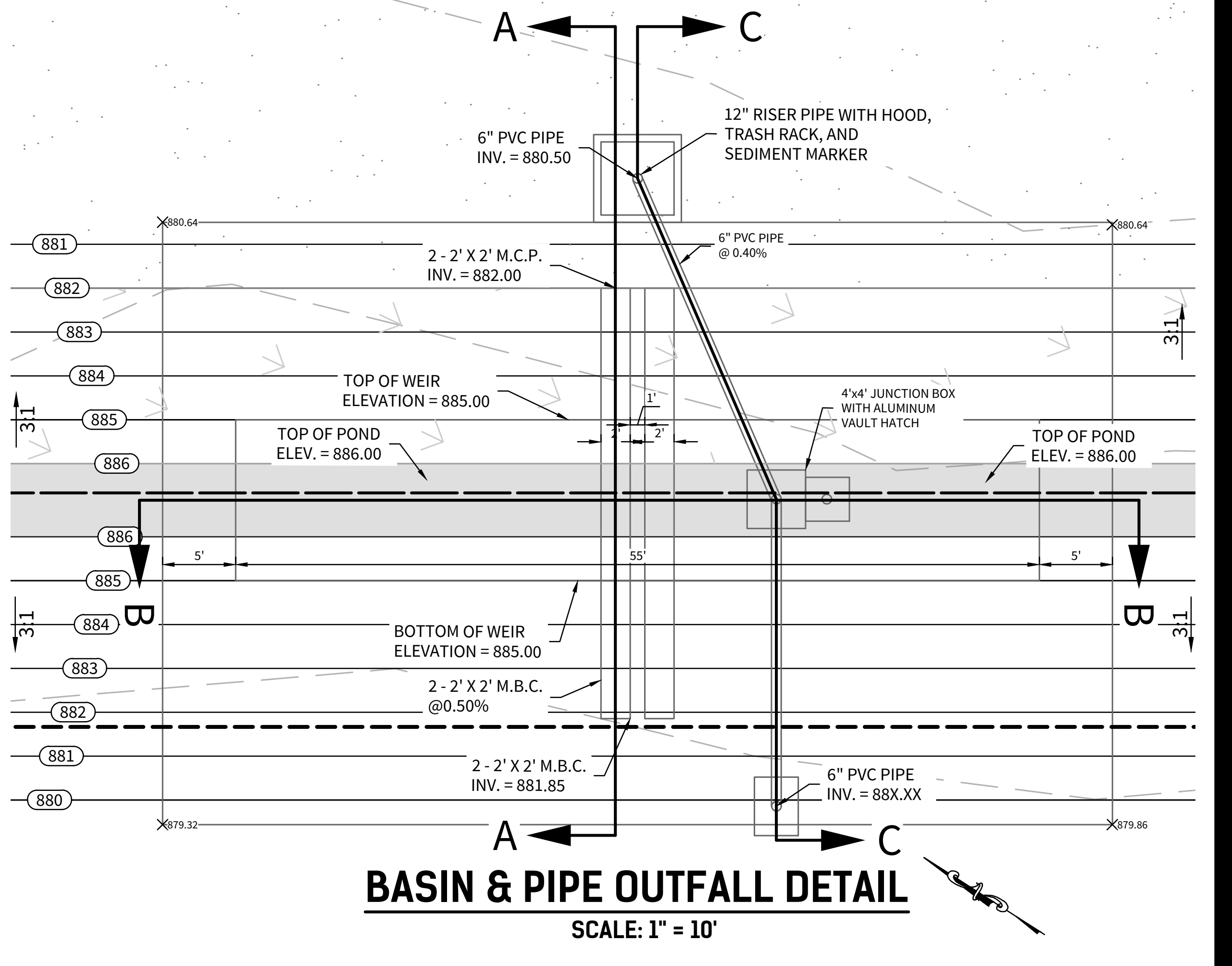
SCALE: 1" = 10'


MATCHLINE "A" - SEE SHEET ###
POND ACCESS DRIVEWAY
VAR. WID. OFF LOT UTILITY & DRAINAGE EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
DRAIN "A" SEE SHEET C20
TOP OF POND ELEV. = 886.00
SEE POND "2" & DRAIN "A" INTERSECTION DETAIL THIS SHEET
N
E
S
W
SCALE: 1"=20'
0
10
20
2 - 6' ACCESS GATES
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
A
C
3:1
6:1
CLAY LINER BASIN
PROPOSED BATCH DETENTION POND
SEE BASIN & PIPE OUTFALL DETAIL THIS SHEET
TOP OF POND ELEV. = 886.00
B
B
A
C
PROPERTY LINE
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC
1088.00 ACRES
PROPERTY ID: 79810


6' FENCE
4.00'
TOP OF BASIN ELEV. 886.00
882.25
WATER SURFACE ELEVATION = 882.00
36" CLAY LINER TOEDOWN
3:1 SLOPE
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
COMPACTED BASE OR NATIVE MATERIAL
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
880.50
0.50% SLOPE
1.0' CLAY LINER ALL AROUND UNDER CONCRETE PILOT CHANNEL
RISER PIPE, TRASH RACK, SEDIMENT DEPTH MARKER AND FLOAT SWITCH
2.0' STORM WATER QUALITY TREATMENT VOLUME
LOCATE 12" RISER PIPE AT LOWEST POINT IN BASIN
PIPE TO BE WRAPPED IN FILTER FABRIC TO COLLECT SILT
4' X 4' X 1' ROCK GABION STACK AROUND PVC
LOW 880.50
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
36'" CLAY LINER TOEDOWN
COMPACTED BASE OR NATIVE MATERIAL
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
6" PVC (SCH 40) PIPE @ 0.40% (45 LF)
120V DDC LOGIC CONTROLLER AND SOLAR POWER BATTERY BACKUP IN LOCKABLE ENCLOSURE WITH AUDIO/VISUAL ALARM SYSTEM
SIGN MOUNTED TO POLE WITH OWNER PHONE CONTACT INFORMATION AND OFFICE NUMBER
CORLEY FARMS SUBDIVISION HOA: (210) 293-4929
4.00'
TOP OF BASIN ELEV. 886.00
5" THICK 3'x3' CONCRETE PAD WITH #3 BARS @ 12" O.C.E.W
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
COMPACTED BASE OR NATIVE MATERIAL
6" BUTTERFLY VALVE WITH ELECTRIC ACTUATOR
TO DISCHARGE
COMPACTED BASE OR NATIVE MATERIAL

SECTION C-C

N.T.S.


A
C
6" PVC PIPE INV. = 880.50
12" RISER PIPE WITH HOOD, TRASH RACK, AND SEDIMENT MARKER
880.64
880.64
6" PVC PIPE @ 0.40%
2 - 2' X 2' M.C.P. INV. = 882.00
TOP OF WEIR ELEVATION = 885.00
1'
2'
2'
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
TOP OF POND ELEV. = 886.00
TOP OF POND ELEV. = 886.00
5'
55'
5'
3:1
B
B
BOTTOM OF WEIR ELEVATION = 885.00
2 - 2' X 2' M.B.C. @0.50%
2 - 2' X 2' M.B.C. INV. = 881.85
6" PVC PIPE INV. = 88X.XX
879.32
879.86
A
C

BASIN & PIPE OUTFALL DETAIL

SCALE: 1" = 10'

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DATE
06/09/2025

PROJECT NO.
04343.002

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P:\04343\002\2-DWG\4-Plans\C44 DETENTION POND "2" PLAN.dwg 2025/06/09 5:14pm jgarcia

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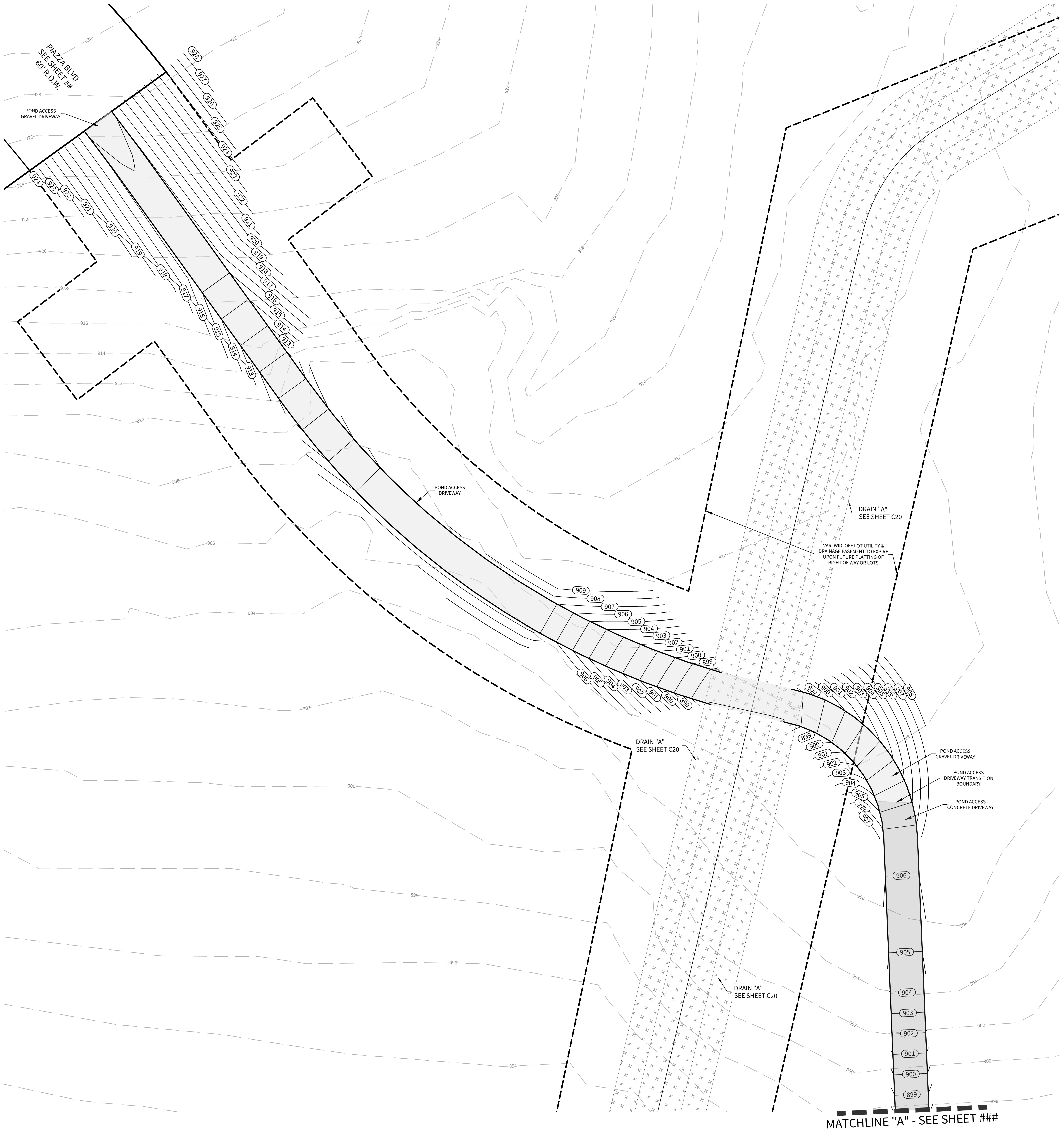
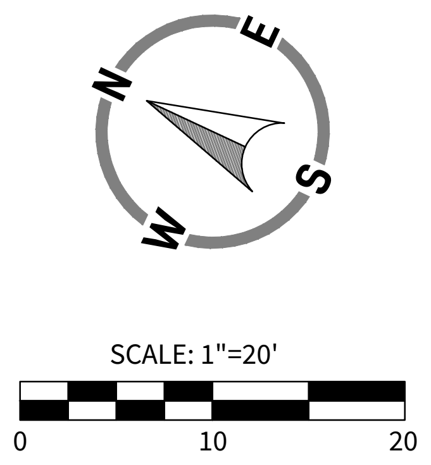
LEGEND

▨	CONC. RIP RAP
▨	GABION MATTRESS
☐	EARTHEN VEGETATION
—892—	PROPOSED CONTOUR
—890—	EXISTING CONTOUR
3:1 →	PROPOSED SLOPE
– – –	DRAINAGE FLOW LINE
▨	1% ANNUAL CHANCE FLOODPLAIN
☐	CLAY LINER
▩	CONCRETE DRIVEWAY POND ACCESS
☐	GRAVEL DRIVEWAY POND ACCESS





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06/09/2025

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P:\04343\002\2-DWG\4-Plans\C44 DETENTION POND '2' PLAN.dwg 2025/06/09 5:14pm jgarcia

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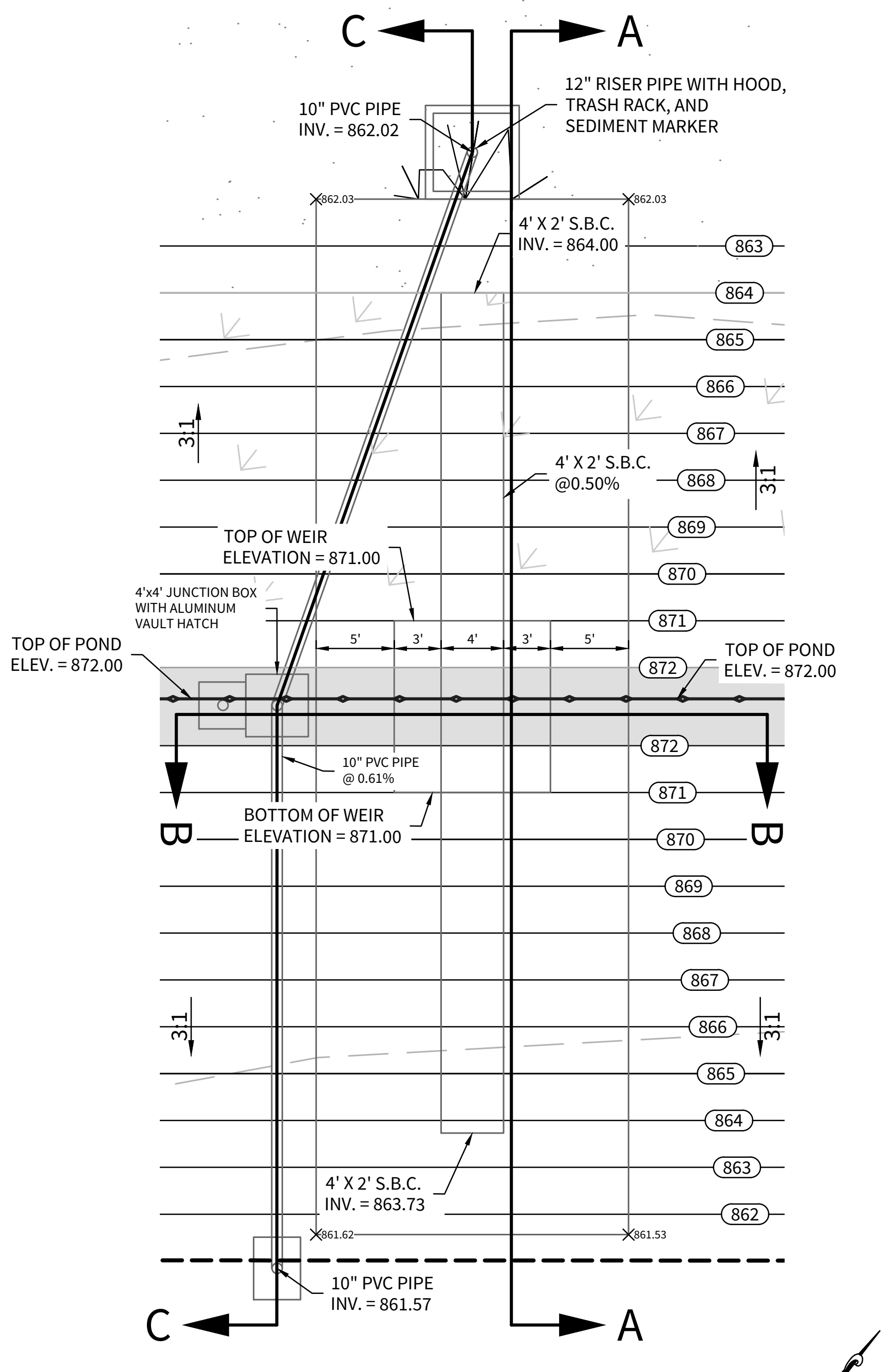
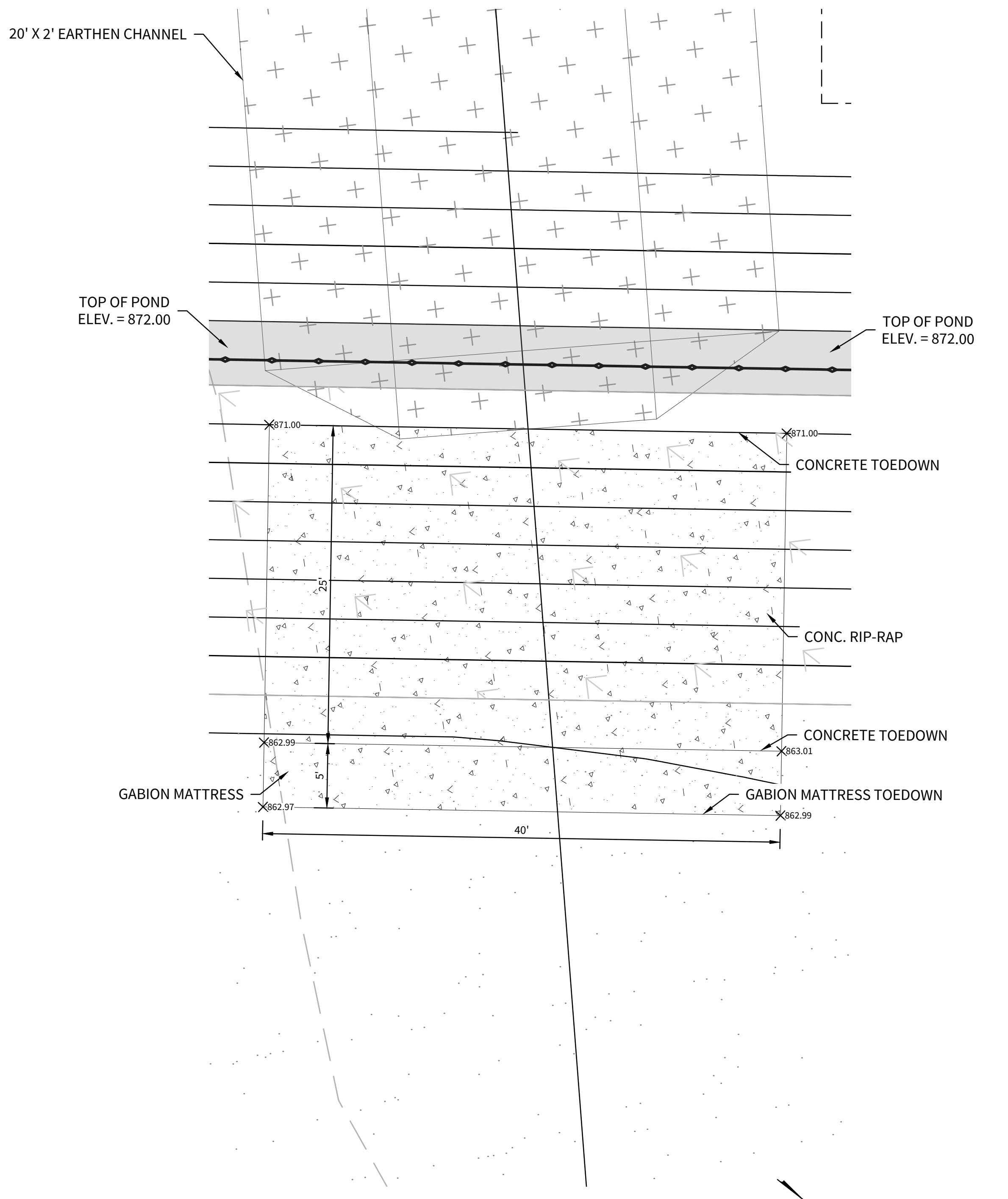
LEGEND

▨	CONC. RIP RAP
▨	GABION MATTRESS
☐	EARTHEN VEGETATION
892	PROPOSED CONTOUR
890	EXISTING CONTOUR
3:1 →	PROPOSED SLOPE
— — —	DRAINAGE FLOW LINE
▨	1% ANNUAL CHANCE FLOODPLAIN
☐	CLAY LINER
▨	CONCRETE DRIVEWAY POND ACCESS
☐	GRAVEL DRIVEWAY POND ACCESS



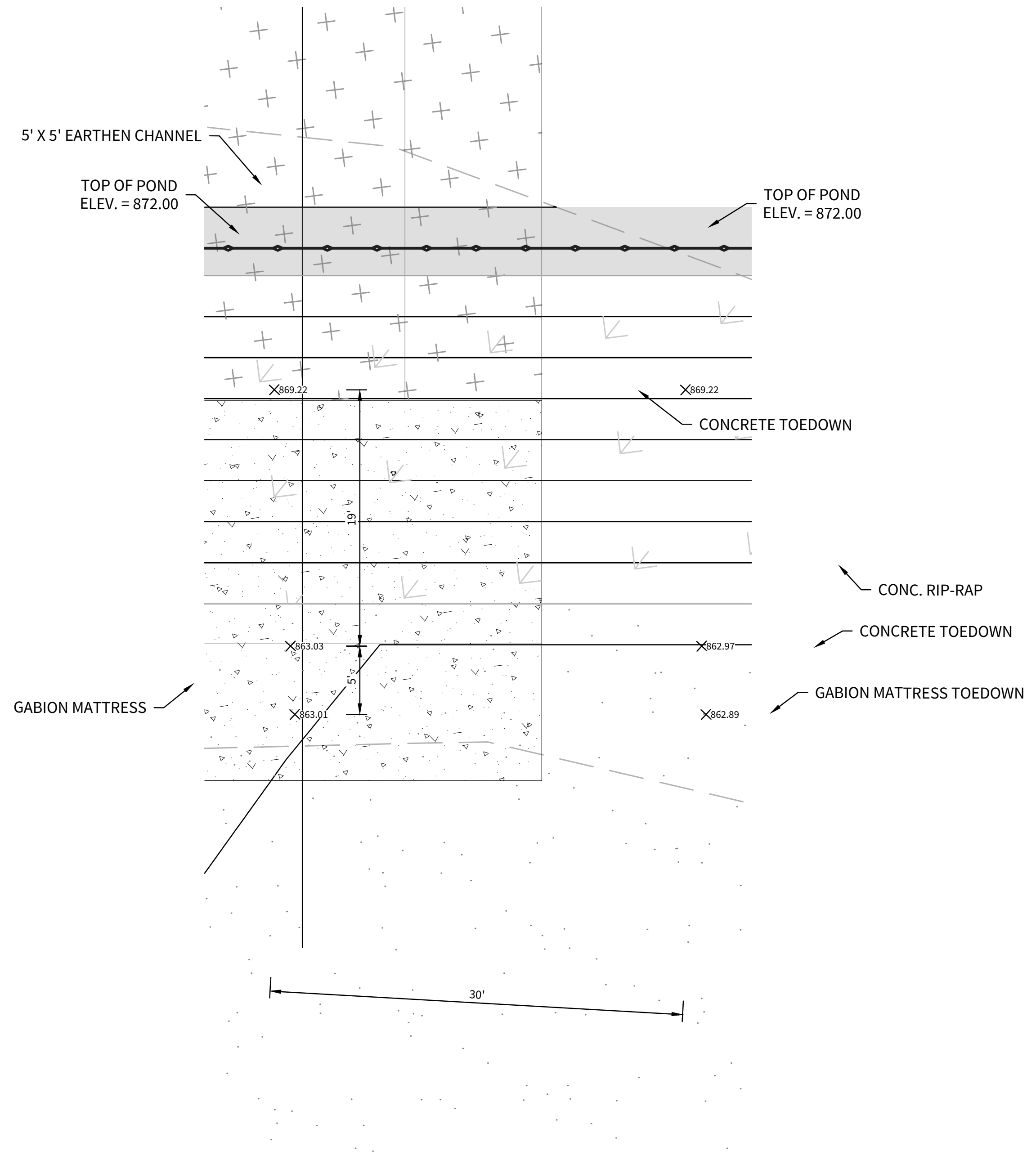
BASIN & PIPE OUTFALL DETAIL

SCALE: 1" = 10'



POND "3" & DRAIN "C" INTERSECTION DETAIL

SCALE: 1" = 10'



POND "3" & DRAIN "E" INTERSECTION DETAIL

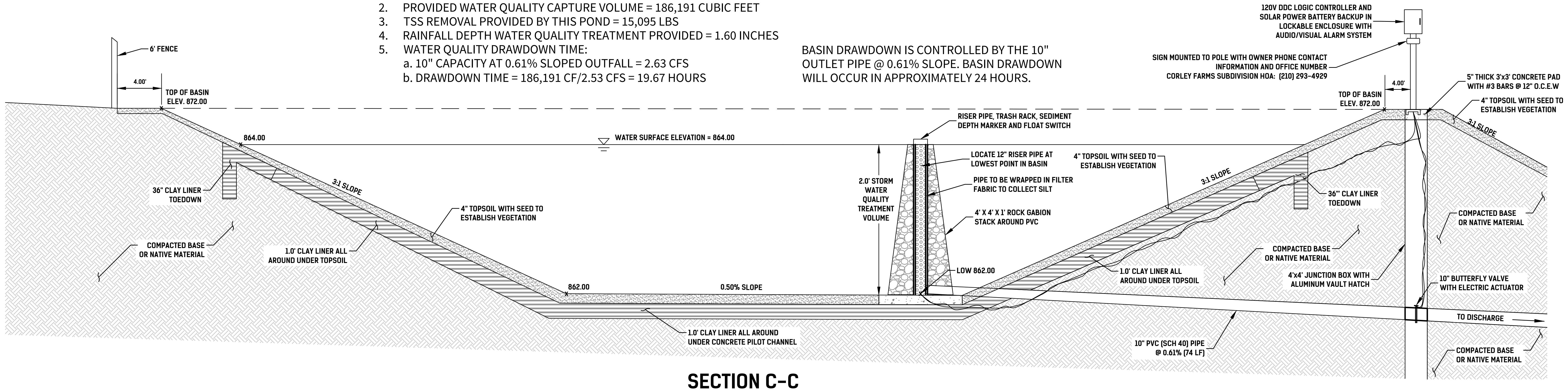
SCALE: 1" = 10'

BASIN DESIGN DATA

BASIN WATERSHED: 40.53 Ac. (1,765,395 SF)
DESIGN WATER SURFACE ELEV. = 867.50'
TOP OF CLAY LINER ELEVATION = 862.00'
WATER QUALITY STORAGE DEPTH = 5.50 FEET

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 12,710 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 186,191 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 15,095 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 10" CAPACITY AT 0.61% SLOPED OUTFALL = 2.63 CFS
   b. DRAWDOWN TIME = 186,191 CF/2.53 CFS = 19.67 HOURS

BASIN DRAWDOWN IS CONTROLLED BY THE 10" OUTLET PIPE @ 0.61% SLOPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 24 HOURS.



SECTION C-C

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P:\04343\002\2-DWG\4-Plans\C46 DETENTION POND '3' PLAN.dwg 2025/06/09 4:01pm jochoa

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LEGEND

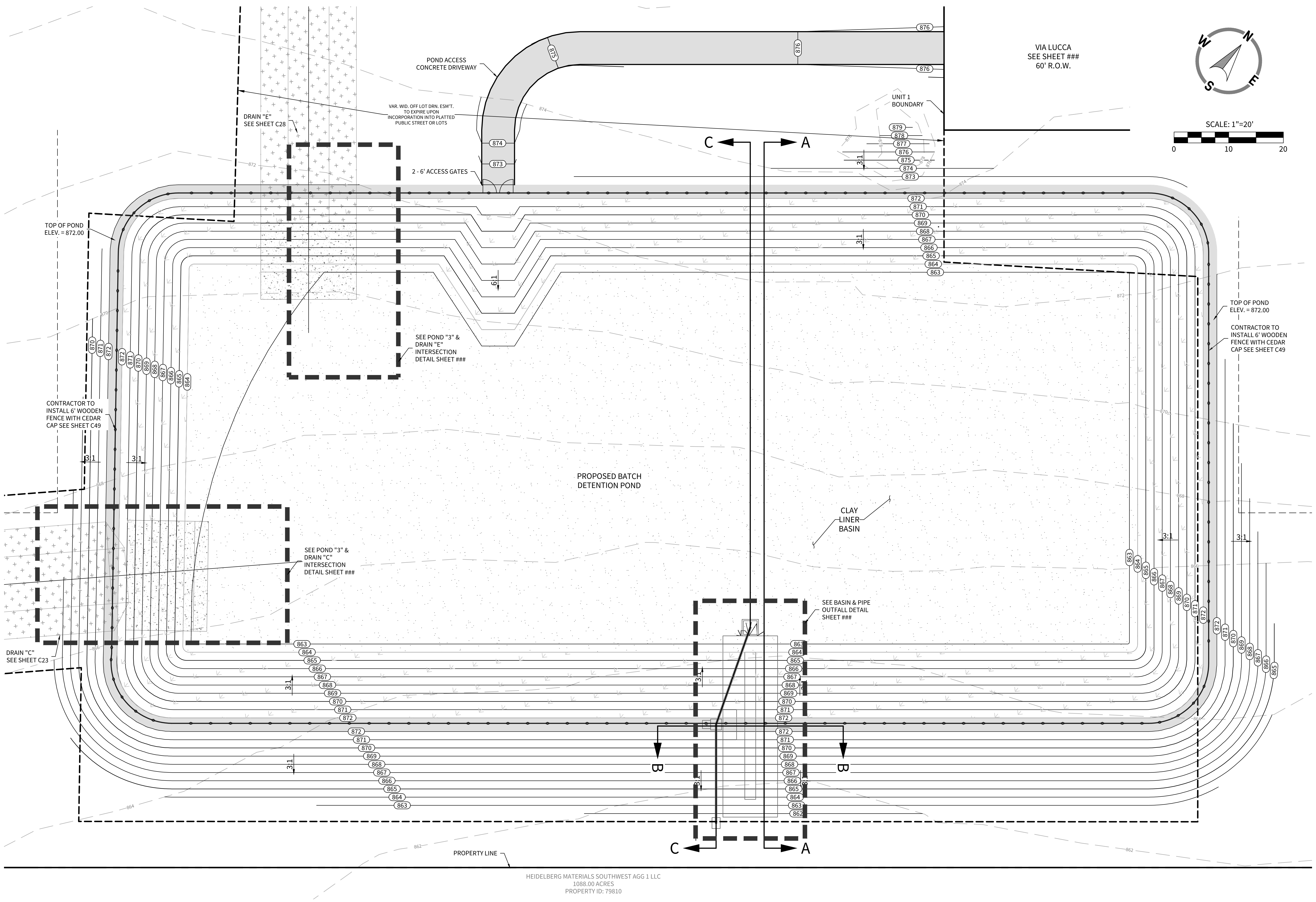
▨	CONC. RIP RAP
▨	GABION MATTRESS
☐	EARTHEN VEGETATION
(892)	PROPOSED CONTOUR
890	EXISTING CONTOUR
3:1	PROPOSED SLOPE
- - -	DRAINAGE FLOW LINE
▨	1% ANNUAL CHANCE FLOODPLAIN
☐	CLAY LINER
▨	CONCRETE DRIVEWAY POND ACCESS
☐	GRAVEL DRIVEWAY POND ACCESS

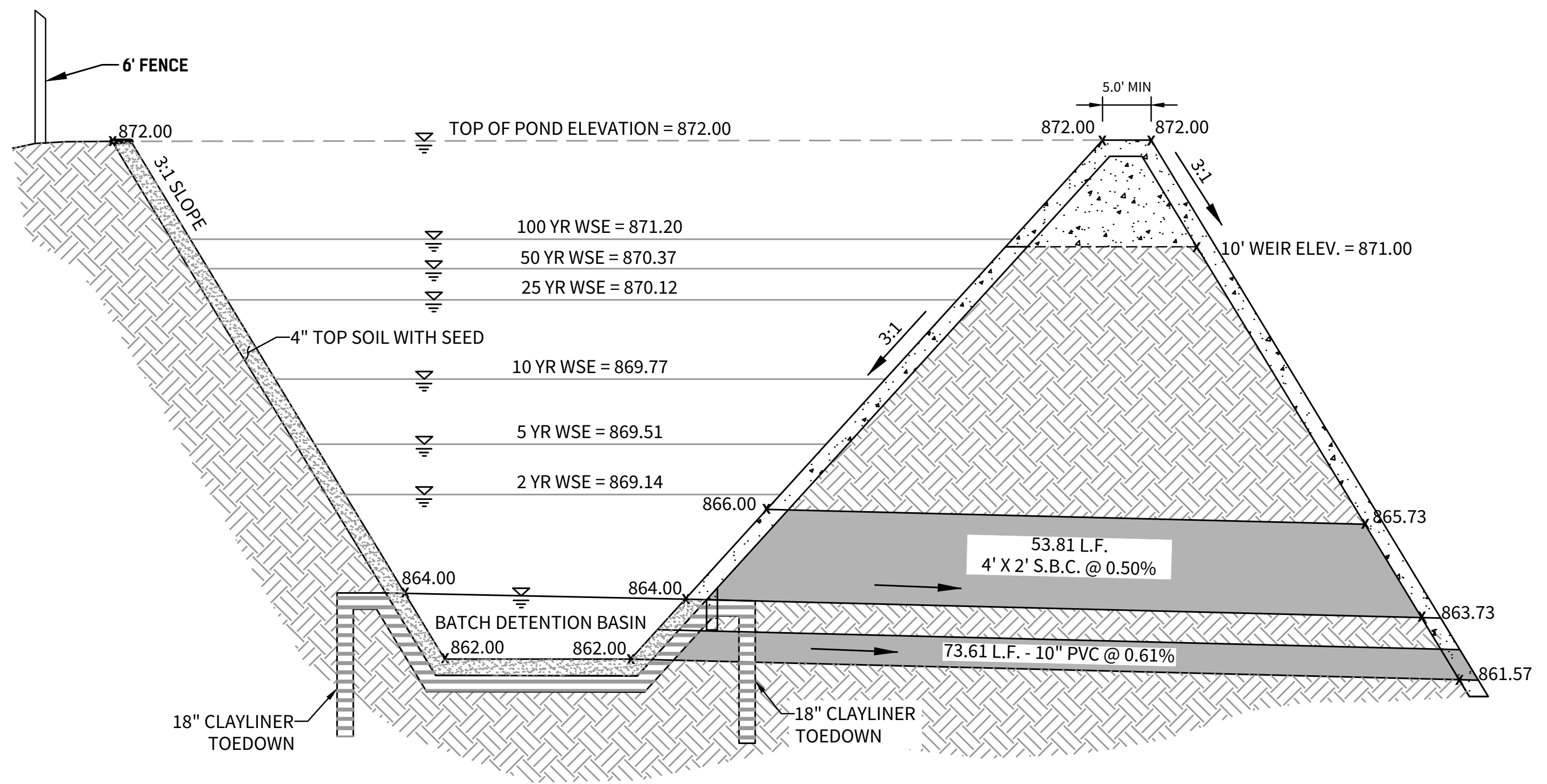
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 12,710 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 186,191 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 15,095 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 10" CAPACITY AT 0.61% SLOPED OUTFALL = 2.63 CFS
   b. DRAWDOWN TIME = 186,191 CF / 2.63 CFS = 19.67 HOURS

SEQUENCE OF OPERATION

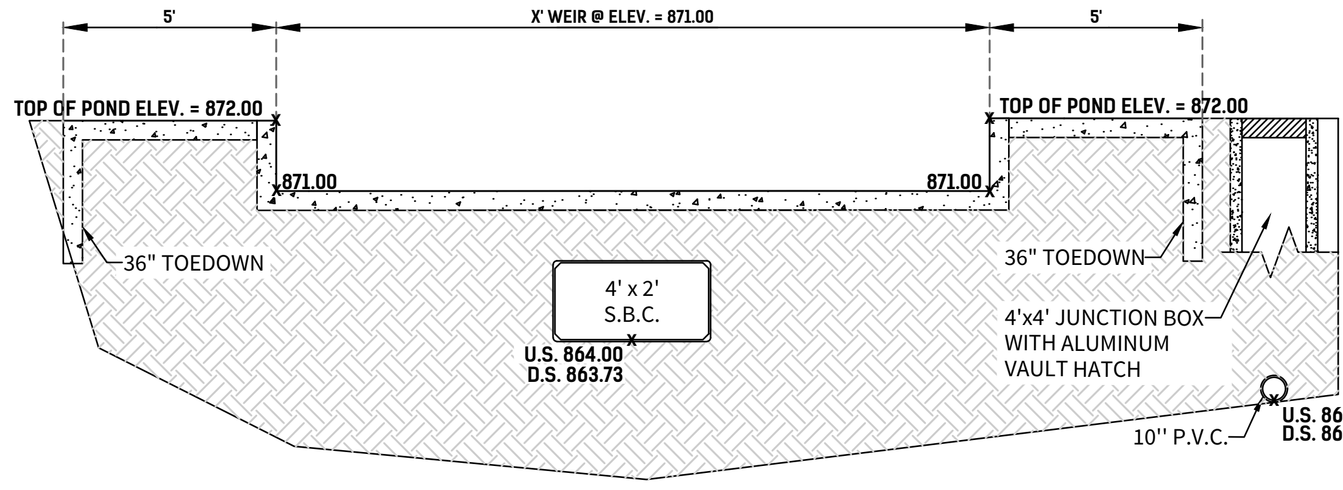
1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO STRT DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 10" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 24 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 10"BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTIVATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.


POND ACCESS CONCRETE DRIVEWAY
VIA LUCCA SEE SHEET ### 60' R.O.W.
UNIT 1 BOUNDARY
SCALE: 1"=20'
0 10 20
DRAIN "E" SEE SHEET C28
VAR. WID. OFF LOT DRN. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET OR LOTS
2 - 6' ACCESS GATES
TOP OF POND ELEV. = 872.00
SEE POND "3" & DRAIN "E" INTERSECTION DETAIL SHEET ###
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
PROPOSED BATCH DETENTION POND
CLAY LINER BASIN
SEE POND "3" & DRAIN "C" INTERSECTION DETAIL SHEET ###
SEE BASIN & PIPE OUTFALL DETAIL SHEET ###
DRAIN "C" SEE SHEET C23
3:1
6:1
A
B
C
PROPERTY LINE
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC
1088.00 ACRES
PROPERTY ID: 79810
876
875
874
873
872
871
870
869
868
867
866
865
864
863
862



SECTION A–A

N.T.S.



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UNIT 1

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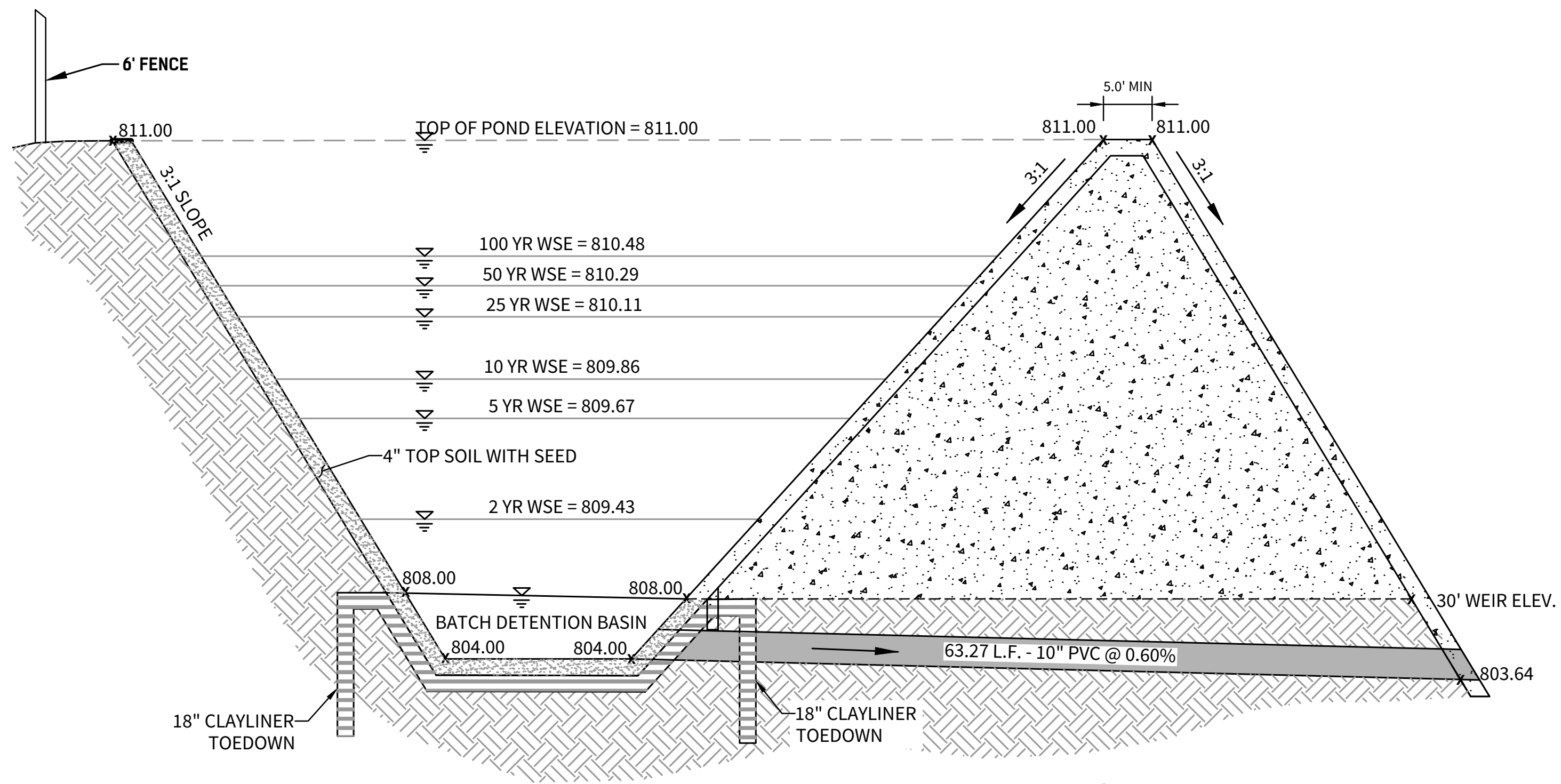

SECTION A–A

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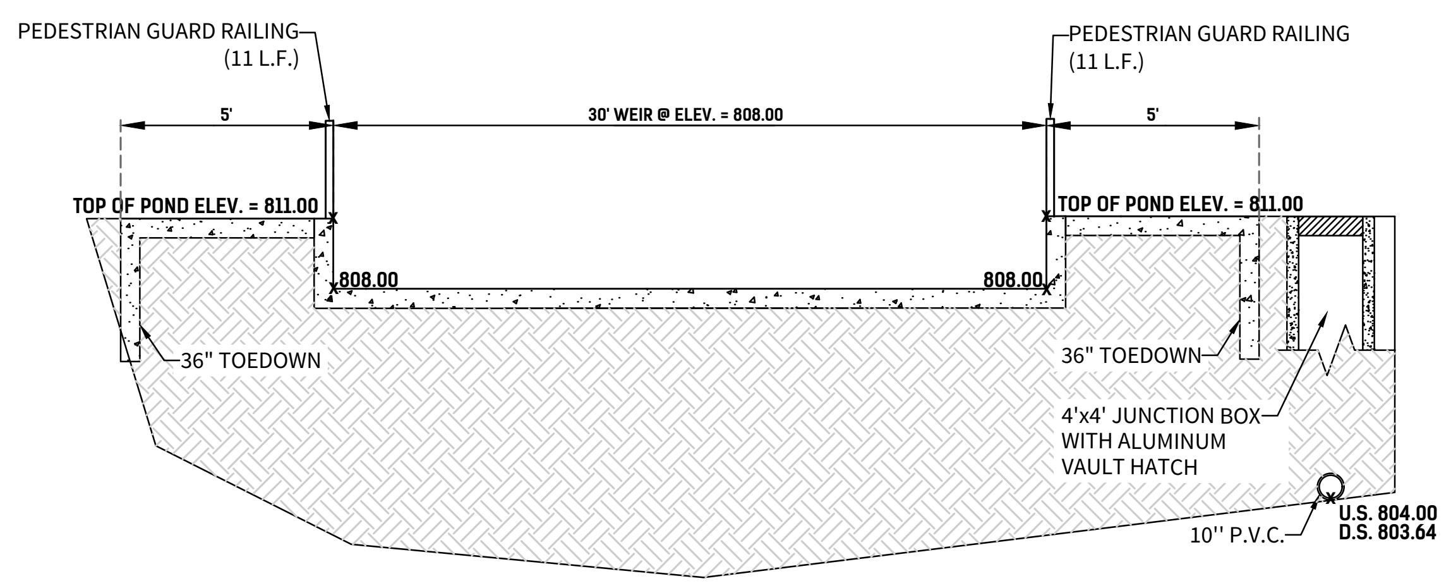
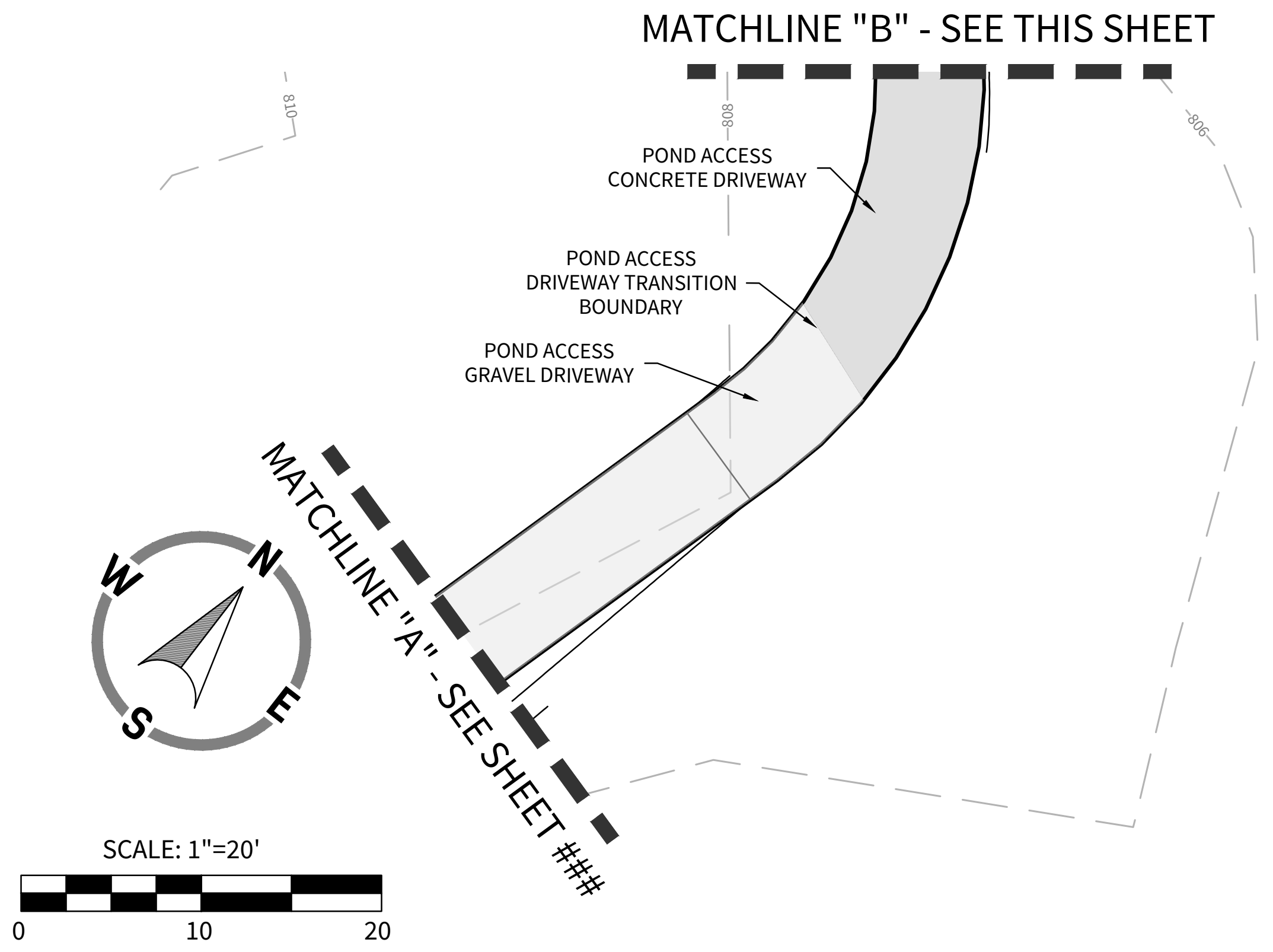
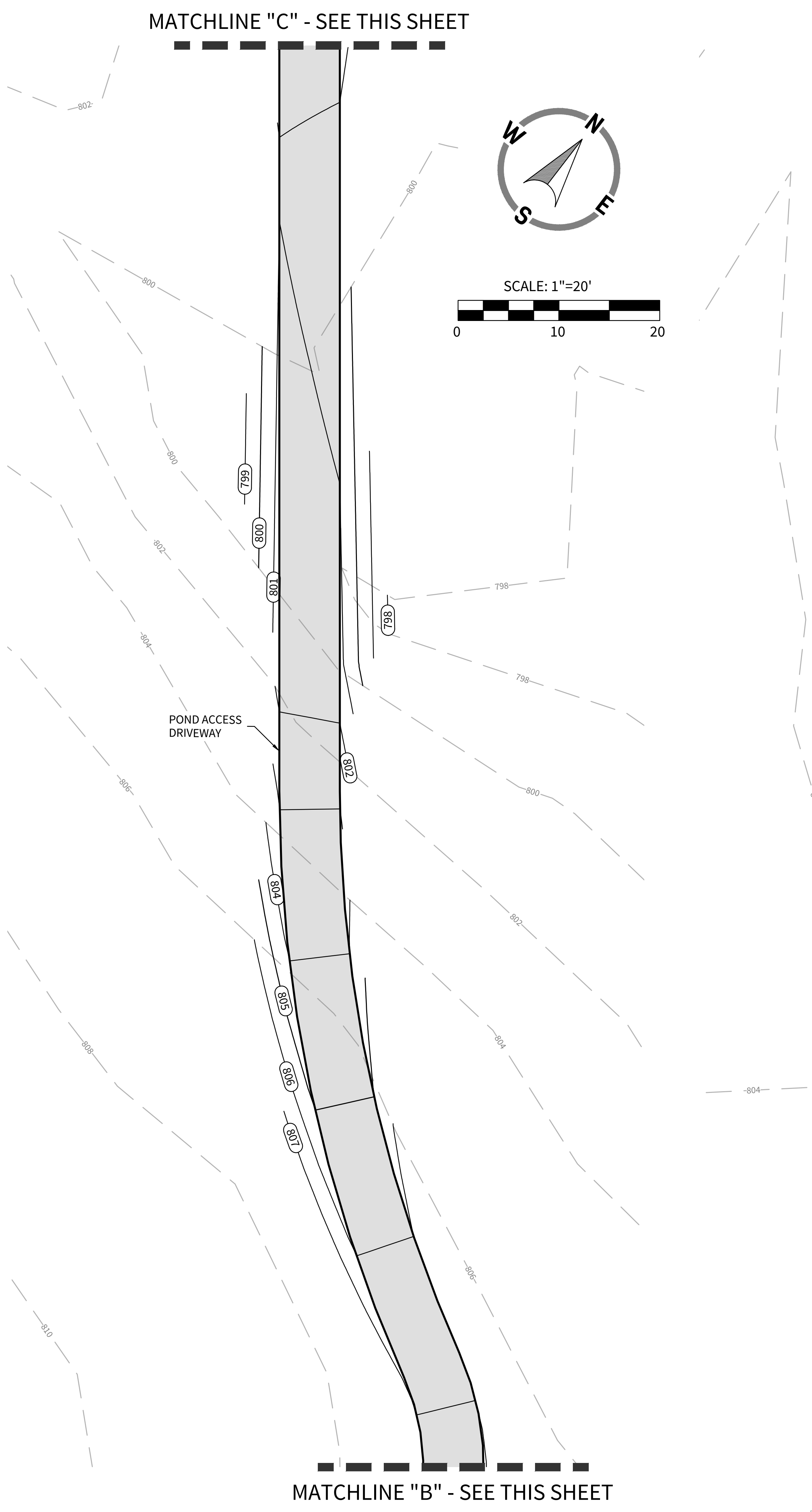
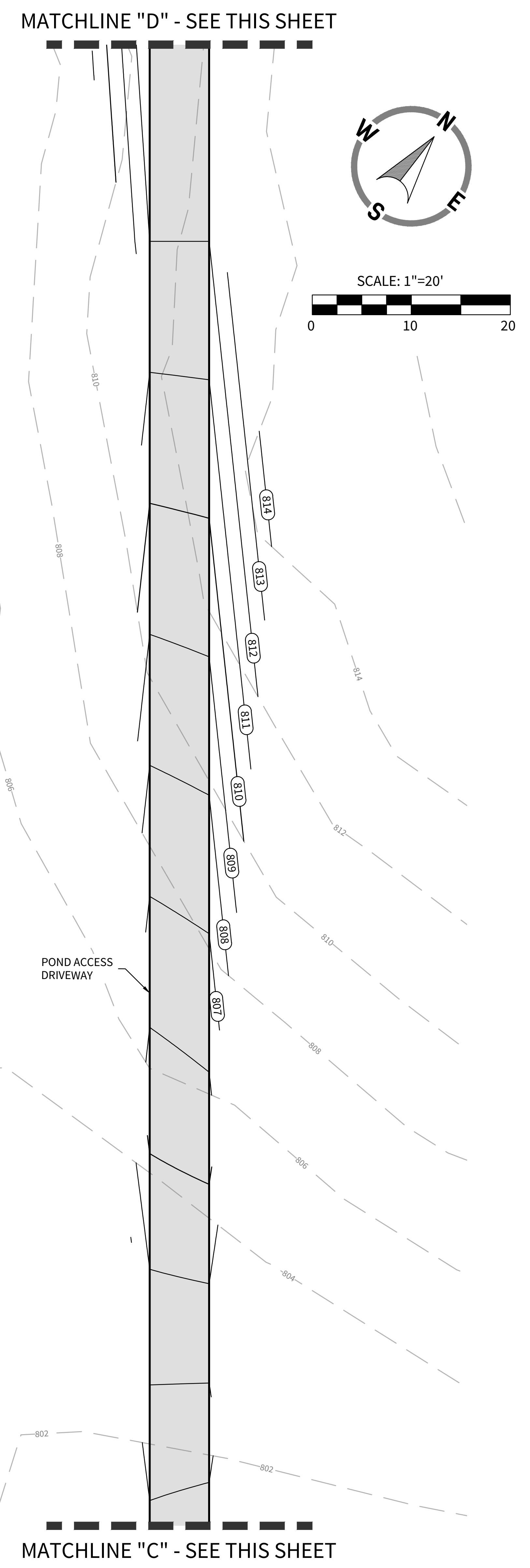

PEDESTRIAN GUARD RAILING (11 L.F.)
PEDESTRIAN GUARD RAILING (11 L.F.)
5'
30' WEIR @ ELEV. = 808.00
5'
TOP OF POND ELEV. = 811.00
TOP OF POND ELEV. = 811.00
808.00
808.00
36" TOEDOWN
36" TOEDOWN
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
10'' P.V.C.
U.S. 804.00
D.S. 803.64

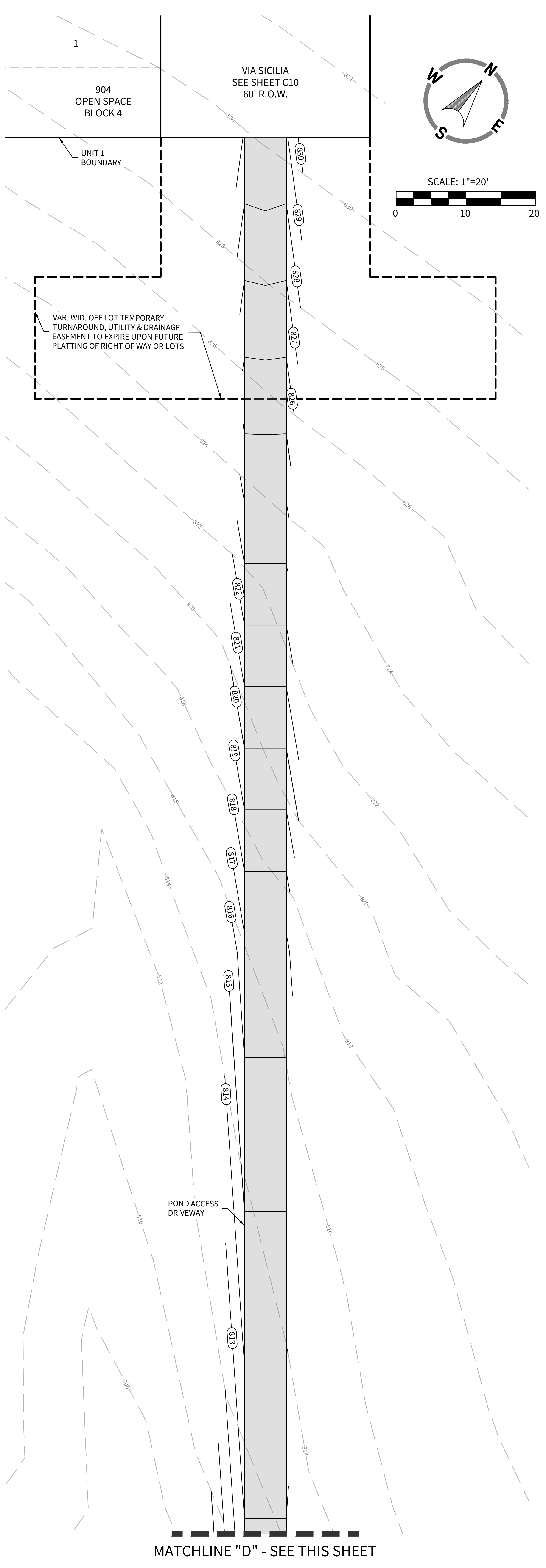
SECTION B–B

N.T.S.


MATCHLINE "B" - SEE THIS SHEET
POND ACCESS CONCRETE DRIVEWAY
POND ACCESS DRIVEWAY TRANSITION BOUNDARY
POND ACCESS GRAVEL DRIVEWAY
MATCHLINE "A" - SEE SHEET ###
W
N
S
E
SCALE: 1"=20'
0
10
20





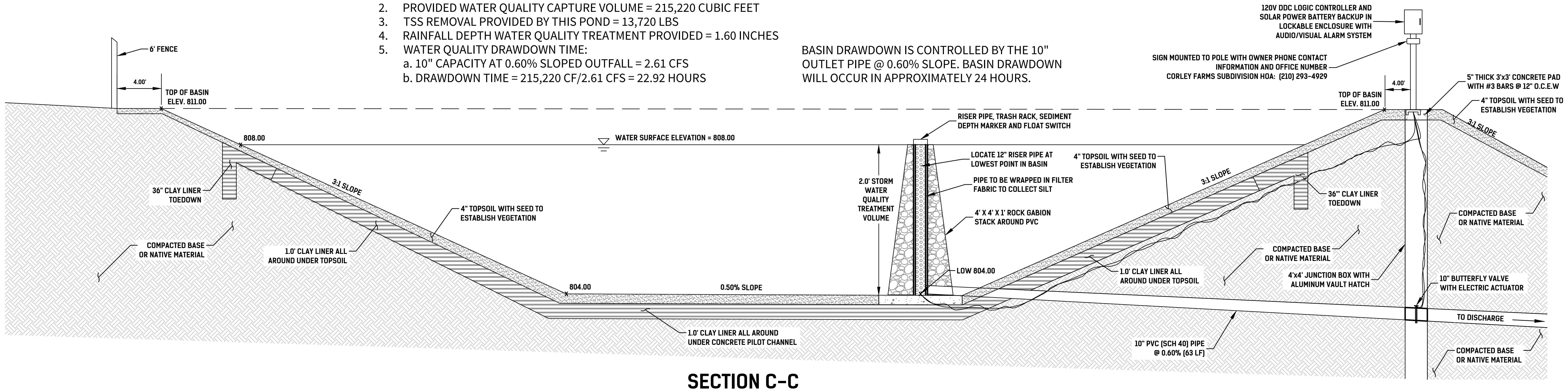


BASIN DESIGN DATA

BASIN WATERSHED: 80.07 Ac. (3,487,843 SF)
DESIGN WATER SURFACE ELEV. = 808.00'
TOP OF CLAY LINER ELEVATION = 804.00'
WATER QUALITY STORAGE DEPTH = 4.00 FEET

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 10,942 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 215,220 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 13,720 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 10" CAPACITY AT 0.60% SLOPED OUTFALL = 2.61 CFS
   b. DRAWDOWN TIME = 215,220 CF/2.61 CFS = 22.92 HOURS

BASIN DRAWDOWN IS CONTROLLED BY THE 10" OUTLET PIPE @ 0.60% SLOPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 24 HOURS.


6' FENCE
4.00'
TOP OF BASIN ELEV. 811.00
808.00
WATER SURFACE ELEVATION = 808.00
36" CLAY LINER TOEDOWN
3:1 SLOPE
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
COMPACTED BASE OR NATIVE MATERIAL
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
804.00
0.50% SLOPE
1.0' CLAY LINER ALL AROUND UNDER CONCRETE PILOT CHANNEL
2.0' STORM WATER QUALITY TREATMENT VOLUME
RISER PIPE, TRASH RACK, SEDIMENT DEPTH MARKER AND FLOAT SWITCH
LOCATE 12" RISER PIPE AT LOWEST POINT IN BASIN
PIPE TO BE WRAPPED IN FILTER FABRIC TO COLLECT SILT
4' X 4' X 1' ROCK GABION STACK AROUND PVC
LOW 804.00
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
1.0' CLAY LINER ALL AROUND UNDER TOPSOIL
10" PVC (SCH 40) PIPE @ 0.60% (63 LF)
COMPACTED BASE OR NATIVE MATERIAL
36"' CLAY LINER TOEDOWN
4'x4' JUNCTION BOX WITH ALUMINUM VAULT HATCH
120V DDC LOGIC CONTROLLER AND SOLAR POWER BATTERY BACKUP IN LOCKABLE ENCLOSURE WITH AUDIO/VISUAL ALARM SYSTEM
SIGN MOUNTED TO POLE WITH OWNER PHONE CONTACT INFORMATION AND OFFICE NUMBER CORLEY FARMS SUBDIVISION HOA: (210) 293-4929
4.00'
TOP OF BASIN ELEV. 811.00
5" THICK 3'x3' CONCRETE PAD WITH #3 BARS @ 12" O.C.E.W
4" TOPSOIL WITH SEED TO ESTABLISH VEGETATION
3:1 SLOPE
COMPACTED BASE OR NATIVE MATERIAL
10" BUTTERFLY VALVE WITH ELECTRIC ACTUATOR
TO DISCHARGE
COMPACTED BASE OR NATIVE MATERIAL

SECTION C–C

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CONTESSA SUBDIVISION
UNIT 1

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LEGEND

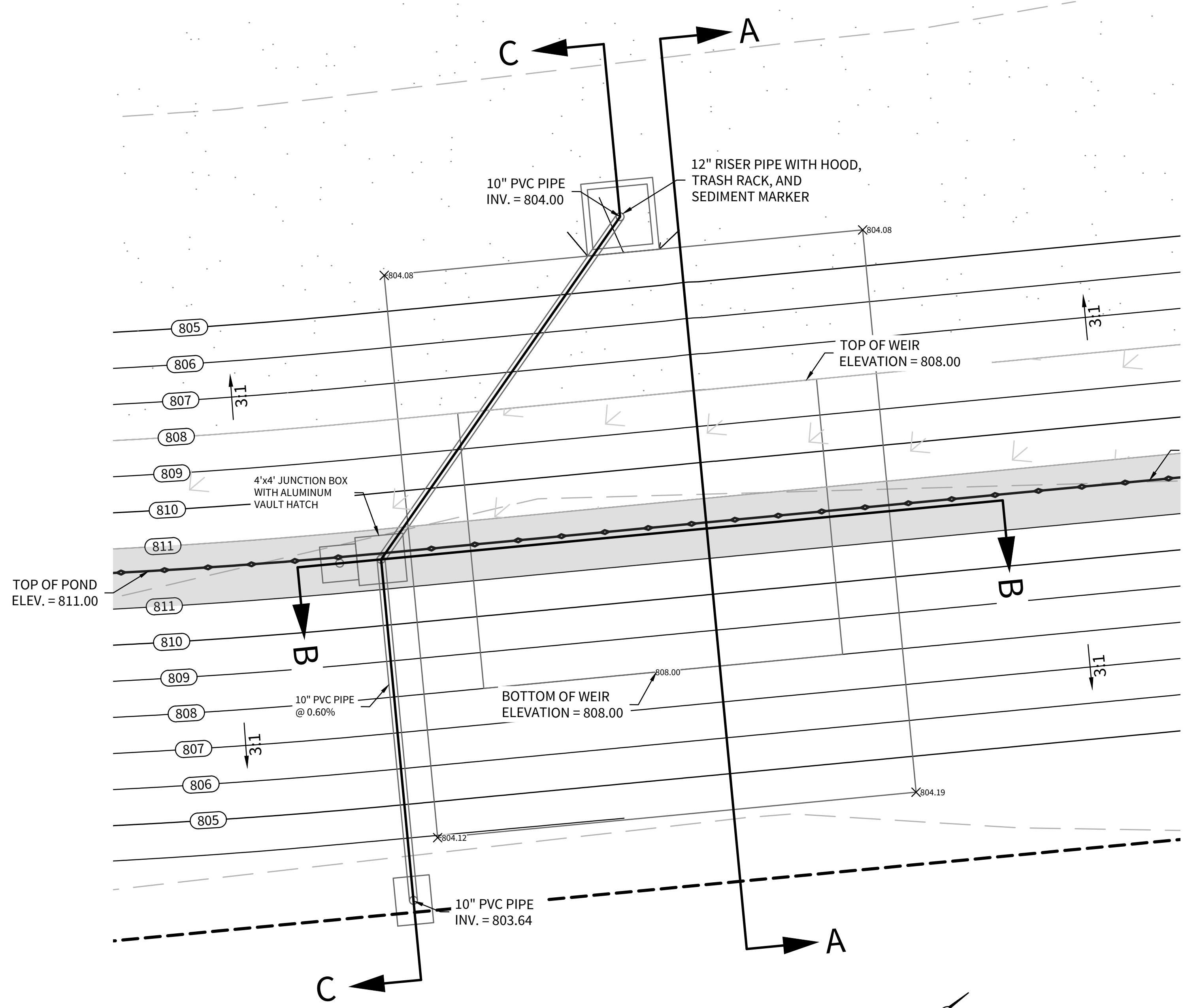
▨	CONC. RIP RAP
▨	GABION MATTRESS
▨	EARTHEN VEGETATION
(892)	PROPOSED CONTOUR
—890—	EXISTING CONTOUR
3:1 →	PROPOSED SLOPE
— - - —	DRAINAGE FLOW LINE
▨	1% ANNUAL CHANCE FLOODPLAIN
▨	CLAY LINER
▨	CONCRETE DRIVEWAY POND ACCESS
☐	GRAVEL DRIVEWAY POND ACCESS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

1. TSS REMOVAL REQUIRED BY APPLICABLE ORDINANCE & RG 348 FOR THIS SITE LOCATION: = 80% = 10,942 LBS
2. PROVIDED WATER QUALITY CAPTURE VOLUME = 215,220 CUBIC FEET
3. TSS REMOVAL PROVIDED BY THIS POND = 13,720 LBS
4. RAINFALL DEPTH WATER QUALITY TREATMENT PROVIDED = 1.60 INCHES
5. WATER QUALITY DRAWDOWN TIME:
   a. 10" CAPACITY AT 0.60% SLOPED OUTFALL = 2.56 CFS
   b. DRAWDOWN TIME = 215,220 CF / 2.56 CFS = 23.34 HOURS

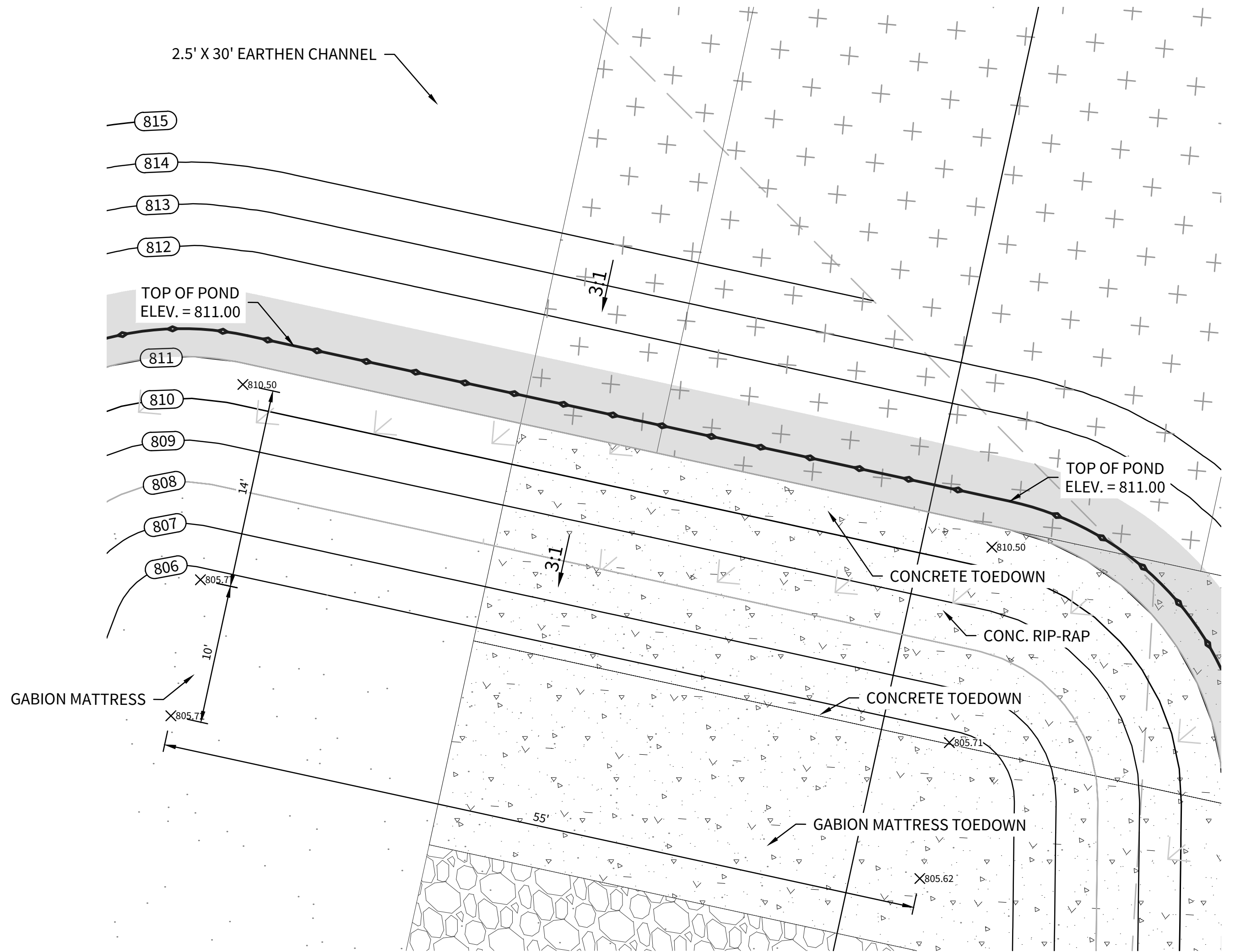
SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO STRT DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 10" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 24 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 10"BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTIVATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.



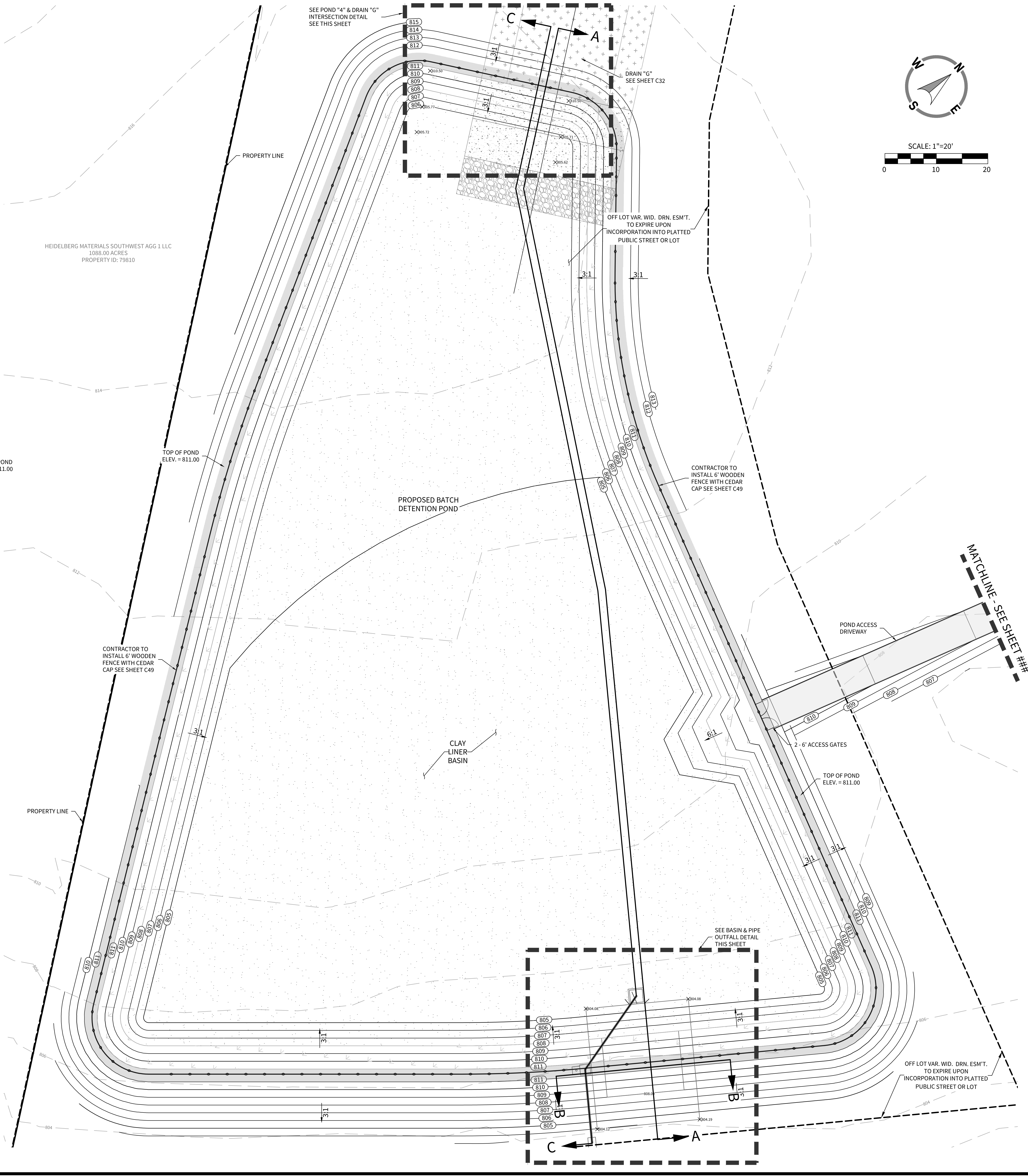
BASIN & PIPE OUTFALL DETAIL

SCALE: 1" = 10'



POND "4" & DRAIN "G" INTERSECTION DETAIL

SCALE: 1" = 10'


SEE POND "4" & DRAIN "G" INTERSECTION DETAIL SEE THIS SHEET
815
814
813
812
811
810
809
808
807
806
810.50
805.77
805.72
805.71
805.62
810.50
C
A
3:1
DRAIN "G"
SEE SHEET C32
PROPERTY LINE
OFF LOT VAR. WID. DRN. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET OR LOT
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC
1088.00 ACRES
PROPERTY ID: 79810
SCALE: 1"=20'
0
10
20
N
E
S
W
TOP OF POND
ELEV. = 811.00
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
PROPOSED BATCH DETENTION POND
CLAY LINER BASIN
CONTRACTOR TO INSTALL 6' WOODEN FENCE WITH CEDAR CAP SEE SHEET C49
MATCHLINE - SEE SHEET ###
POND ACCESS DRIVEWAY
810
809
808
807
6:1
2 - 6' ACCESS GATES
TOP OF POND
ELEV. = 811.00
PROPERTY LINE
SEE BASIN & PIPE OUTFALL DETAIL THIS SHEET
804.08
804.08
805
806
807
808
809
810
811
B
B
808.00
804.19
804.12
C
A
OFF LOT VAR. WID. DRN. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET OR LOT
804
806
810
812
814

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06/09/2025

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P:\04343\002\2-DWG\4-Plans\C48 DETENTION POND '4' PLAN.dwg 2025/06/09 4:02pm jochoa

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GENERAL NOTES:

1. THE DETENTION POND FACILITY SHALL ALSO BE USED AS A TEMPORARY SEDIMENT TRAP FOR THE PURPOSES OF THE TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM CONSTRUCTION PERMIT FOR THIS SITE. THE CONTRACTOR SHALL CLEAN ALL SEDIMENT OUT OF THE DETENTION FACILITY UPON FINAL STABILIZATION OF THE SITE.
2. CONTRACTOR TO HYDROMULCH ENTIRE DISTURBED LIMITS OF EARTHEN PORTION OF POND. 85% OF POND SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF COMAL COUNTY.
3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.
4. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTER STRIPS AND BASIN) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY A UTILITY LOCATOR AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION ACTIVITY ADJACENT TO THE CONSTRUCTION OF ANY ON-SITE DRAINAGE FACILITIES TO PROTECT ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITY FACILITY FROM DAMAGE OR HARM. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGES TO UTILITIES AS A RESULT OF NOT LOCATING UNDERGROUND UTILITY RESOURCES.
6. THE CONTRACTOR SHALL ALERT ENGINEER FOR FIELD OBSERVATION A MIN. OF 24 HOURS PRIOR TO EACH OF THE FOLLOWING EVENTS; DRAIN PIPE INSTALLATION COMPLETION, AND ANY CONCRETE POURS. THE CONTRACTOR SHALL ALSO PROVIDE A MATERIAL SUBMITTAL TO THE ENGINEER FOR REVIEW ON THE FOLLOWING MATERIALS; PERMEABLE GEOTEXTILE FABRIC, CLAY LINER.
7. ANY AREAS EXPOSED TO HIGH VELOCITY FLOWS SHALL EITHER HAVE A 6" THICK ROCK GABION MATTRESS INSTALLED OR THE INSTALLATION OF APPROPRIATE GEOTECHNICAL LINER AS DIRECTED BY THE CONSTRUCTION ENGINEER IN CHARGE.
8. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
9. ALL REBAR SPLICES AND LAPS SHALL BE A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE SPECIFIED.
10. A 6 FOOT HIGH FENCE (WOOD, CHAINLINK, OR OTHER DECORATIVE FENCE AS SPECIFIED BY THE OWNER OR BY RESTRICTIVE COVENANT) SHALL BE INSTALLED AT THE TOP OF THE WATER QUALITY BASIN ALONG ALL SIDES. AT THE LOCATION OF THE 12' WIDE (MIN) MAINTENANCE RAMP, A 12 FOOT WIDE GATE (EITHER BEING A SINGLE GATE OR TWO 6' WIDE GATES) WITH LOCK SHALL BE PROVIDED TO ALLOW ACCESS TO THE WATER QUALITY POND.
11. BASIN DRAWDOWN IS CONTROLLED BY THE PVC PIPE (6" FOR PONDS 1 & 2, AND 10" FOR PONDS 3 & 4). BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 24 HOURS.
12. CONTRACTOR TO SET THE VALVE POSITION TO FULLY OPEN.
13. CLAY SUBGRADE CONDITIONS ONSITE TODAY. DURING CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE GEOTECH ENGINEER OF RECORD AND CIVIL ENGINEER TO DETERMINE IF EXISTING CLAY SUBGRADE IS SUITABLE IN LIEU OF NEW CLAY PLACEMENT.
14. CONTRACTOR IS REQUIRED ELECTRICAL PLANS/SPECIFICATIONS FOR REVIEW BY CIVIL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
15. REFER TO STORMWATER MANAGEMENT PLAN INFORMATION REGARDING DETENTION STAGE AND MITIGATION OF 5 YEAR, 25 YEAR AND 100 YEAR PEAK STORM EVENTS. UPPER LEVEL WEIRS (ABOVE THE DESIGN WATER SURFACE ELEVATION) FOR MITIGATION OF THESE STORM EVENT WILL BE FINALIZED WITH THE CIVIL PLANS.

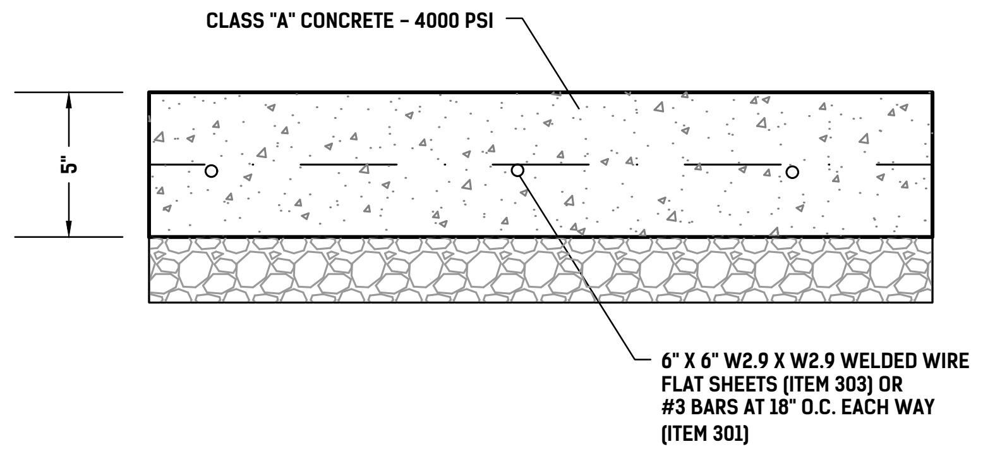
NOTES TO CONTRACTOR

(EACH PHASE OF BASIN CONSTRUCTION)

1. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:
    - REINFORCING STEEL FOR BASIN OVERFLOW WALL HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE AND RISER PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.
    - BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE)
2. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR APPROVAL.
3. UPON SUBSTANTIAL COMPLETION, OR AS REQUIRED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELDS SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:
    - TOP OF BANK/WALL AT EACH CORNER OF BASIN
    - TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
    - OVERFLOW WEIRS
4. WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.
5. THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 24 HOURS. CONTRACTOR TO SET BUTTERFLY VALVE TO FULLY OPEN TO BE CONTROLLED DDC CONTROLLER.
6. BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.

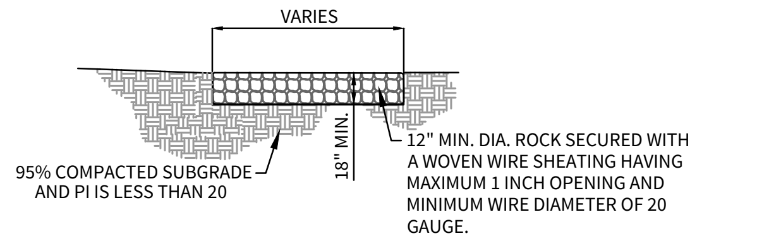
CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	NOTES
PERMEABILITY	ASTM D-2434	0.000001 CM/SEC
PLASTICITY INDEX	ASTM D-423 & D424	NOT LESS THAN 15%
LIQUID LIMIT OF CLAY	ASTM D-2216	NOT LESS THAN 30%
CLAY PARTICLE PASSING	ASTM D-422	NOT LESS THAN 30%
CLAY COMPACTION	ASTM D-2216	95% OF STANDARD PROCTOR DENSITY


CLASS "A" CONCRETE – 4000 PSI
5"
6" X 6" W2.9 X W2.9 WELDED WIRE FLAT SHEETS (ITEM 303) OR #3 BARS AT 18" O.C. EACH WAY (ITEM 301)

CONCRETE RIP-RAP DETAIL

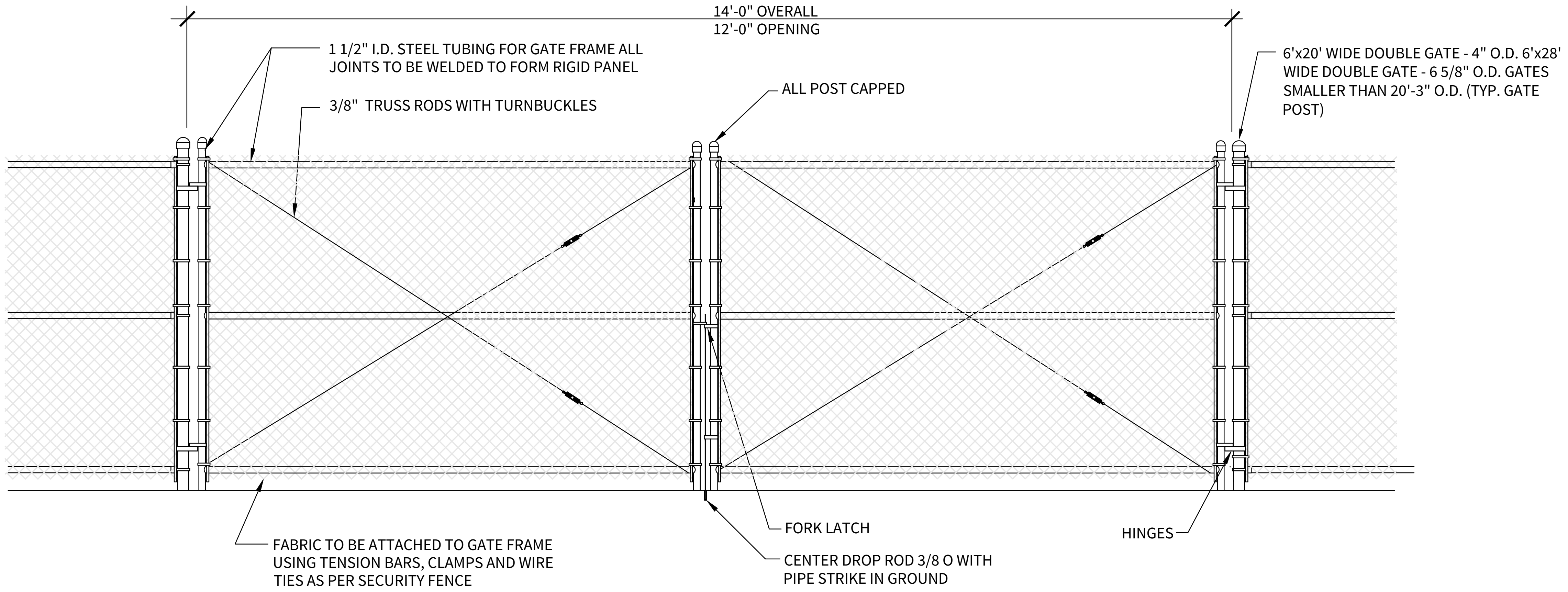
N.T.S.


VARIES
95% COMPACTED SUBGRADE AND PI IS LESS THAN 20
18" MIN.
12" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

GABION STYLE ROCK EROSION CONTROL MATRESS DETAIL

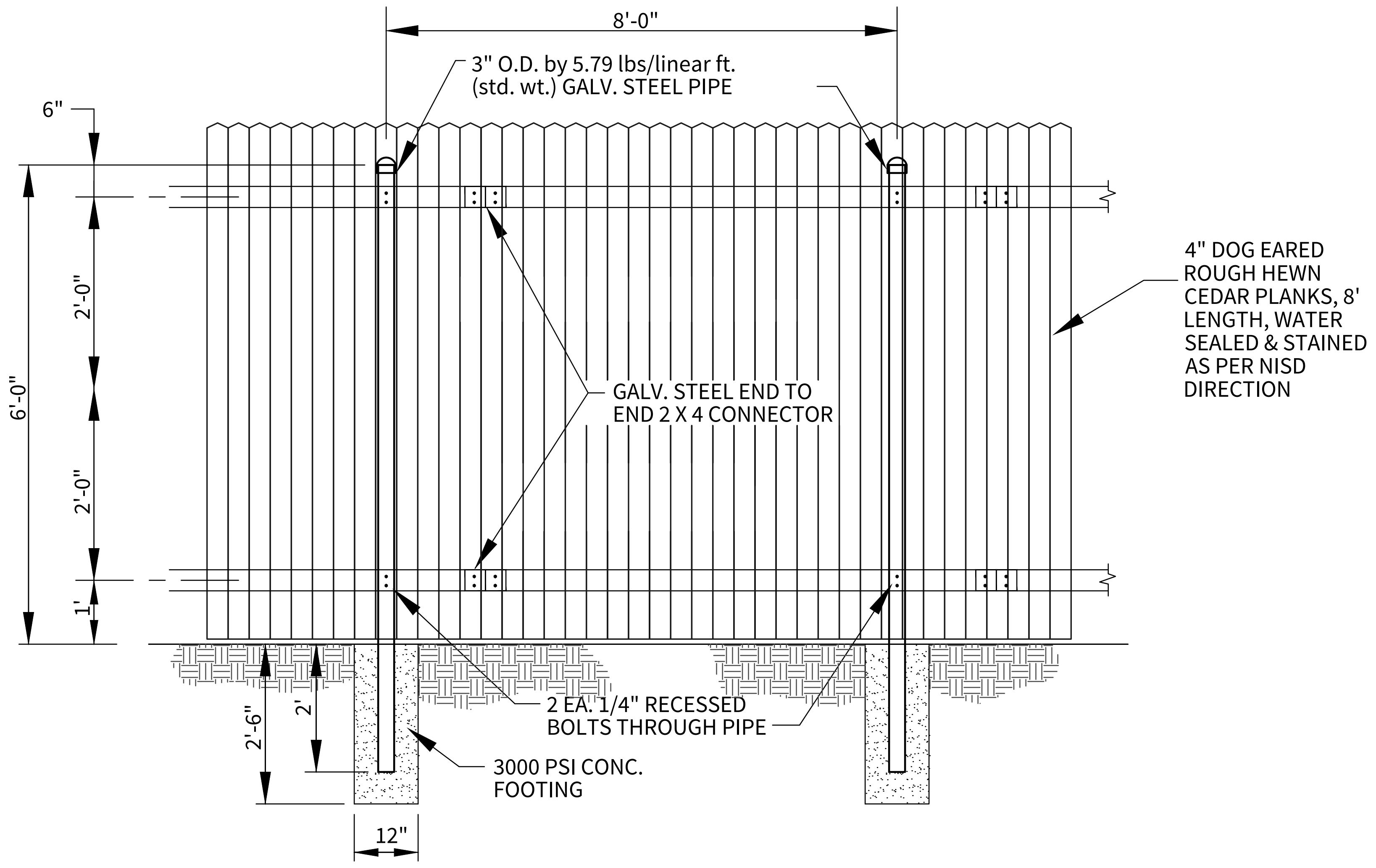
NOTE: GABION MATTRESS TO BE FREE OF GEO-TEXTILE FABRIC LINING AT DETENTION POND OUTFALL.

(N.T.S.)


14'-0" OVERALL
12'-0" OPENING
1 1/2" I.D. STEEL TUBING FOR GATE FRAME ALL JOINTS TO BE WELDED TO FORM RIGID PANEL
3/8" TRUSS RODS WITH TURNBUCKLES
ALL POST CAPPED
6'x20' WIDE DOUBLE GATE - 4" O.D. 6'x28' WIDE DOUBLE GATE - 6 5/8" O.D. GATES SMALLER THAN 20'-3" O.D. (TYP. GATE POST)
FABRIC TO BE ATTACHED TO GATE FRAME USING TENSION BARS, CLAMPS AND WIRE TIES AS PER SECURITY FENCE
FORK LATCH
CENTER DROP ROD 3/8 O WITH PIPE STRIKE IN GROUND
HINGES

CHAIN LINK FENCE GATE DETAIL

NTS


8'-0"
3" O.D. by 5.79 lbs/linear ft. (std. wt.) GALV. STEEL PIPE
6"
6'-0"
2'-0"
2'-0"
1'
4" DOG EARED ROUGH HEWN CEDAR PLANKS, 8' LENGTH, WATER SEALED & STAINED AS PER NISD DIRECTION
GALV. STEEL END TO END 2 X 4 CONNECTOR
2 EA. 1/4" RECESSED BOLTS THROUGH PIPE
2'-6"
2'
3000 PSI CONC. FOOTING
12"

WOODEN PRIVACY FENCE DETAIL

N.T.S.

NOTE: THE OWNER SHALL SPECIFY THE USE OF EITHER A CHAINLINK FENCE OR A WOODEN PRIVACY FENCE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO INSTALLATION AND CONSTRUCTION.

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UNIT 1

DETENTION POND DETAILS

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06/09/2025

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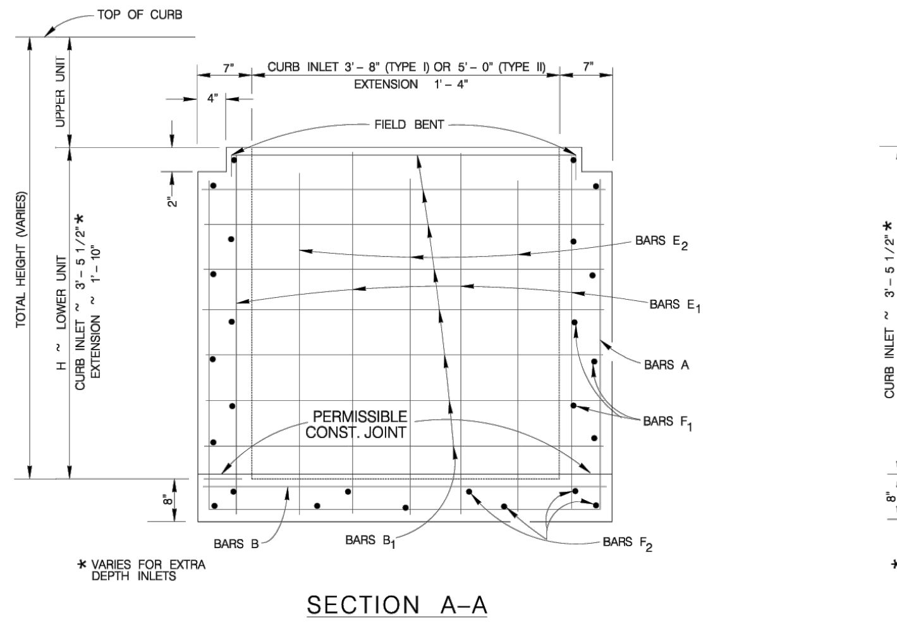
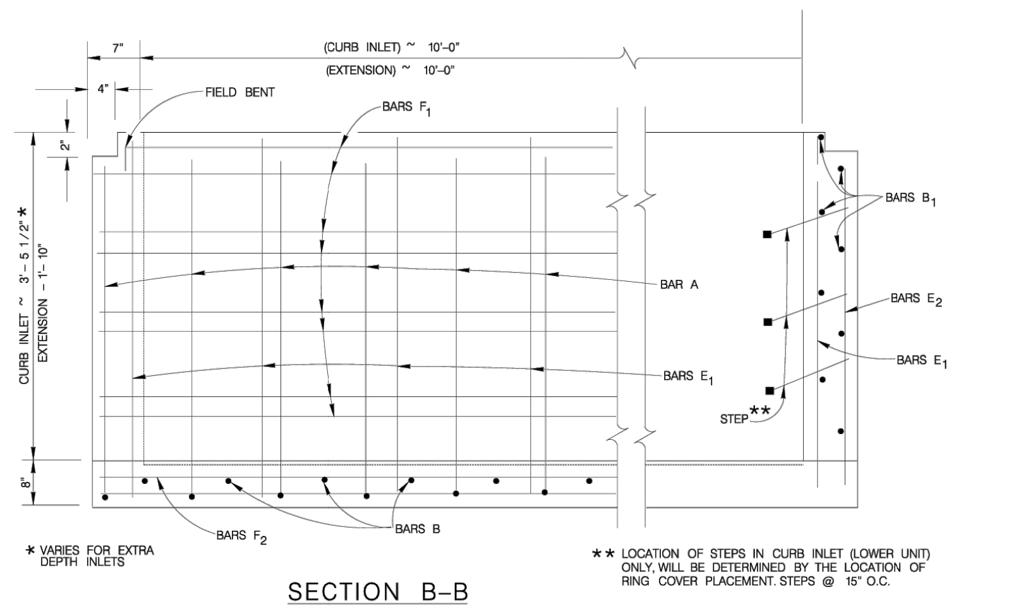


SECTION A–A


(CURB INLET) 10'-0"
(EXTENSION) 10'-0"
FIELD BENT
BARS F1
BAR A
BARS E2
BARS E1
STEP
* VARIES FOR EXTRA DEPTH INLETS
** LOCATION OF STEPS IN CURB INLET (LOWER UNIT) ONLY, WILL BE DETERMINED BY THE LOCATION OF RING COVER PLACEMENT. STEPS @ 15" O.C.

SECTION B–B

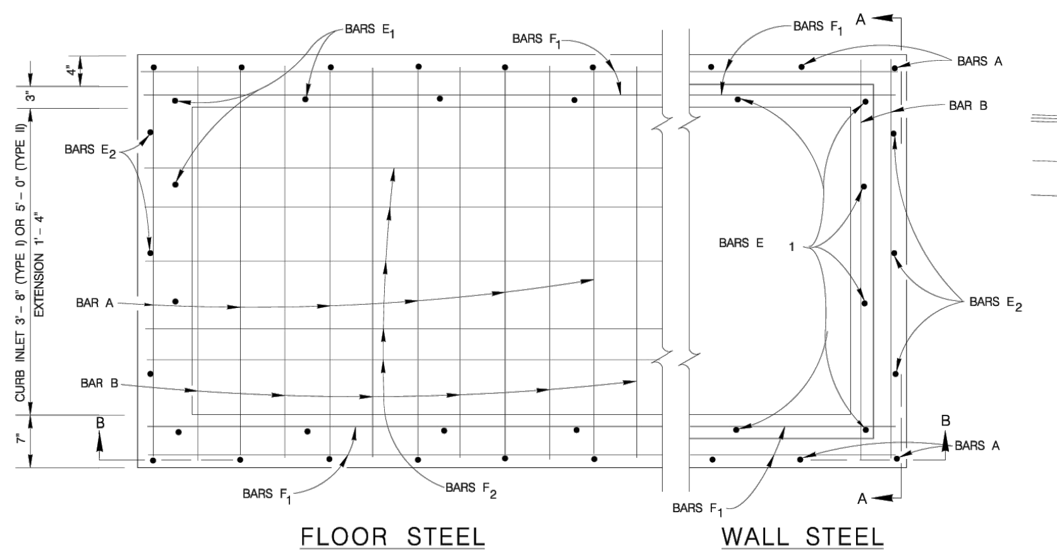
REINFORCING STEEL

LOWER UNIT 10' X 3' – 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'–6"
B_1	VARIES	#4	12"	4'–6"
E_1	20	#4	18"±	VARIES
E_2	6	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'–10"
F_2	9	#4	—	10'–10"

LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'–10"
B_1	VARIES	#4	12"	5'–10"
E_1	22	#4	18"±	VARIES
E_2	8	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'–10"
F_2	11	#4	—	10'–10"

GENERAL NOTES

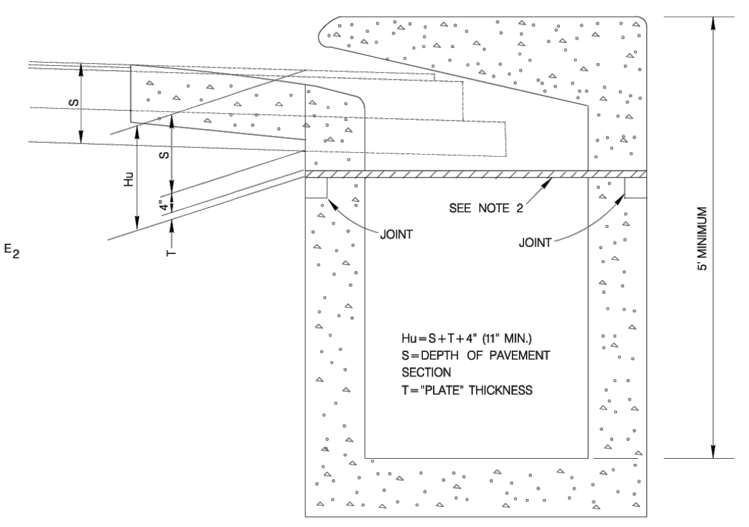
1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (IL–C).
2. TYPE C–II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN–LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A–615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK–FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BEND.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".



FLOOR STEEL

WALL STEEL

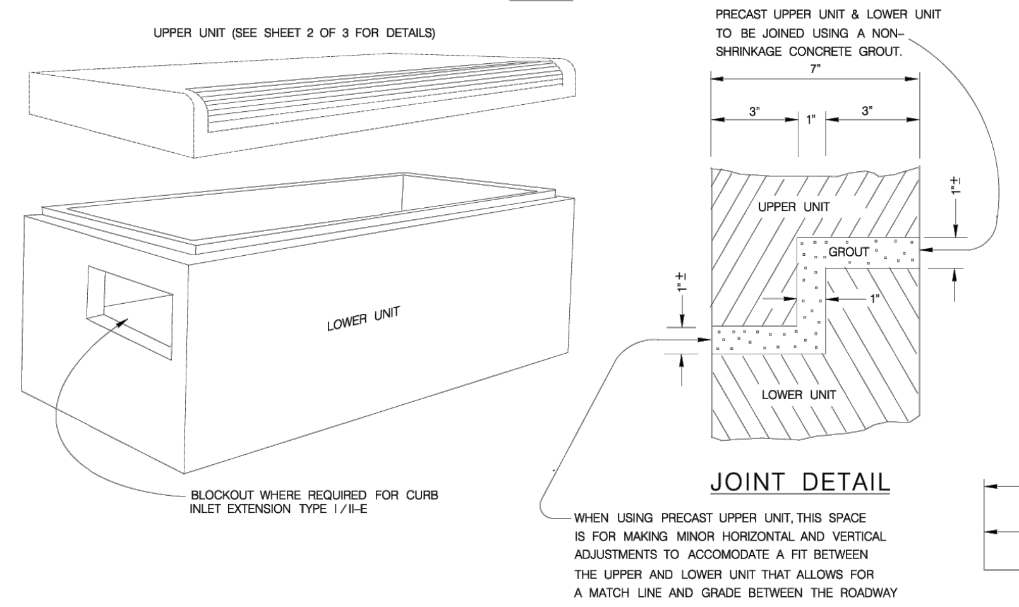
PLAN



PHASE CONSTRUCTION

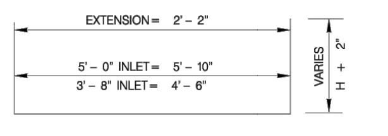
NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hu" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND /OR EXTENSION.

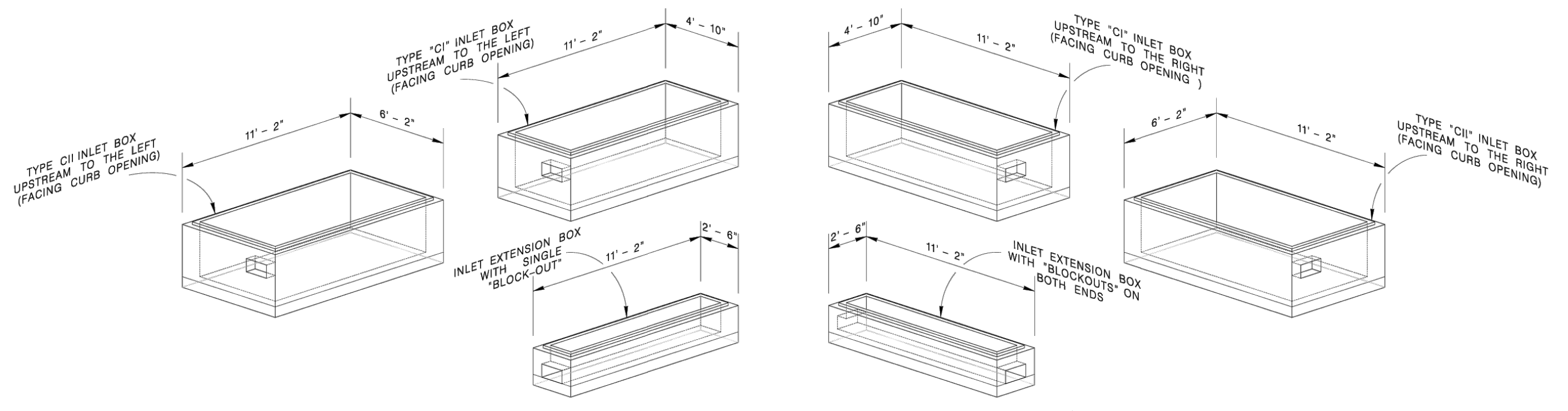

UPPER UNIT (SEE SHEET 2 OF 3 FOR DETAILS)
LOWER UNIT
BLOCKOUT WHERE REQUIRED FOR CURB INLET EXTENSION TYPE I / II–B
PRECAST UPPER UNIT & LOWER UNIT TO BE JOINED USING A NON-SHRINKAGE CONCRETE GROUT.
UPPER UNIT
GROUT
LOWER UNIT

JOINT DETAIL

WHEN USING PRECAST UPPER UNIT, THIS SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.



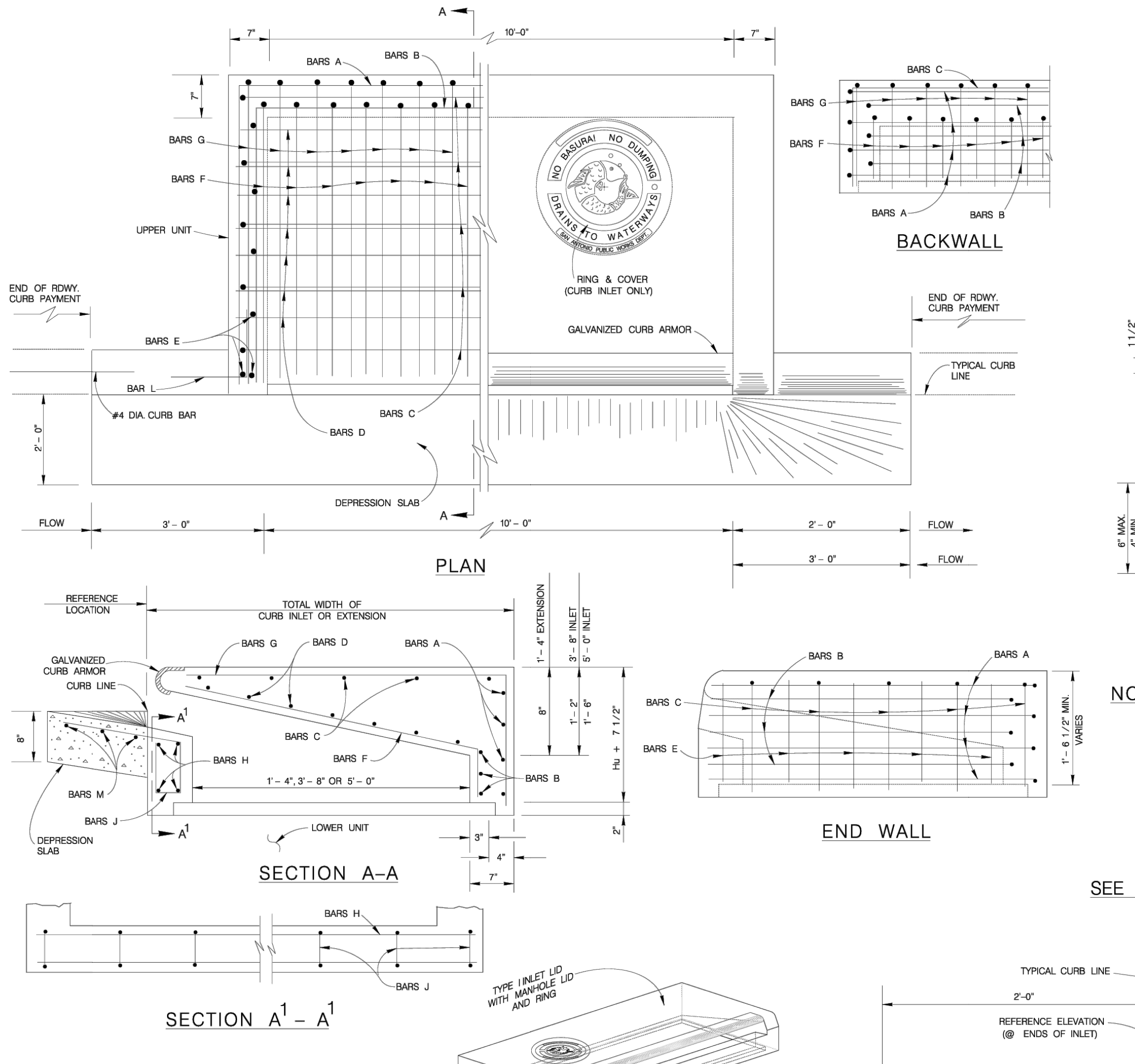
BARS A
(LOWER UNIT)


TYPE "CI" INLET BOX UPSTREAM TO THE LEFT (FACING CURB OPENING)
TYPE "CI" INLET BOX UPSTREAM TO THE RIGHT (FACING CURB OPENING)
TYPE "CII" INLET BOX UPSTREAM TO THE LEFT (FACING CURB OPENING)
TYPE "CII" INLET BOX UPSTREAM TO THE RIGHT (FACING CURB OPENING)
INLET EXTENSION BOX WITH SINGLE "BLOCK-OUT"
INLET EXTENSION BOX WITH "BLOCK-OUTS" ON BOTH ENDS
4' – 10"
11' – 2"
6' – 2"
8' – 6"
11' – 3"

CONCRETE INLET BOX CONFIGURATIONS
(LOWER UNITS)

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS

SHEET 1 OF 3



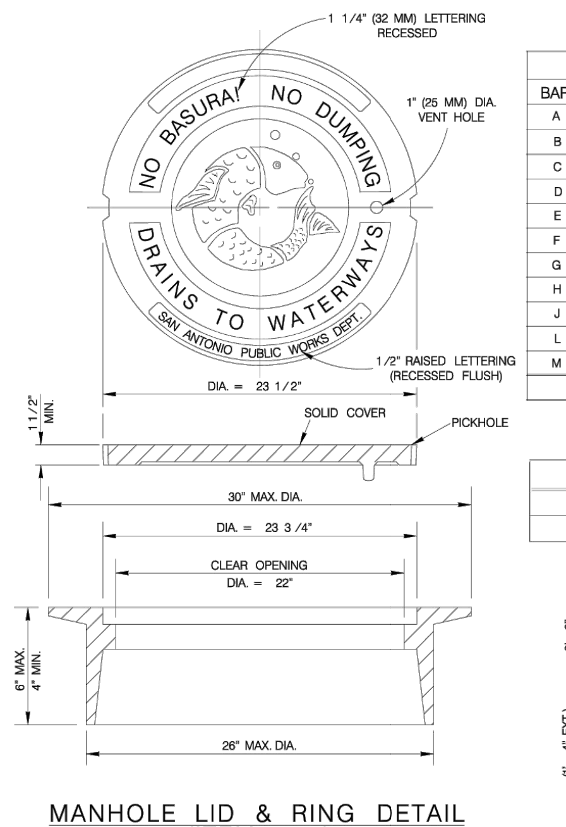
PLAN

BACKWALL

SECTION A–A

END WALL

SECTION A^1 – A^1


NO BASURA NO DUMPING
DRAINS TO WATERWAYS
SAN ANTONIO PUBLIC WORKS DEPT.
1 1/4" (32 MM) LETTERING RECESSED
1" (25 MM) DIA. VENT HOLE
1/2" RAISED LETTERING (RECESSED FLUSH)
SOLID COVER
PICKHOLE
DIA. = 23 1/2"
CLEAR OPENING DIA. = 22"
26" MAX. DIA.
6" MAX.
4" MIN.

MANHOLE LID & RING DETAIL
(ITEM 409)

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS–20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.

REINFORCING STEEL (FOR Hu = 11")

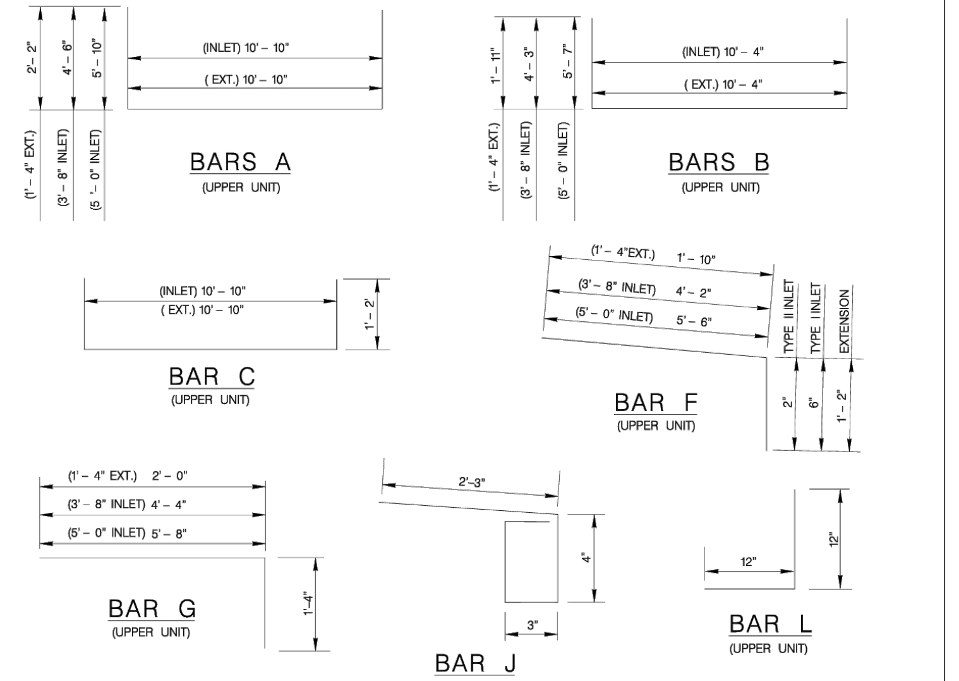
UPPER UNIT 10' X 3'–8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'–10"	53
B	3	#4	—	18'–10"	38
C	5	#4	11"	13'–2"	44
D	7	#4	6"	10'–10"	51
E	12	#4	11"	1'–2"	9
F	21	#6	6"	4'–8"	147
G	22	#6	6"	5'–8"	187
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	22'–6"	60
B	3	#4	—	21'–6"	43
C	7	#4	11"	13'–2"	62
D	11	#4	6"	10'–10"	80
E	16	#4	11"	1'–2"	13
F	21	#6	6"	5'–8"	179
G	22	#6	6"	7'–0"	231
H	4	#4	—	10'–10"	29
J	12	#4	12"	3'–6"	28
L	4	#4	—	2'–0"	5
M	3	#4	—	14'–8"	29
TOTAL WEIGHT					759 LBS.

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

UPPER UNIT (ONLY)	C.Y.
10' X 3'–8" CURB INLET	1.9
10' X 5'–0" CURB INLET	2.7
10' EXTENSION	1.0



BARS A
(UPPER UNIT)

BARS B
(UPPER UNIT)

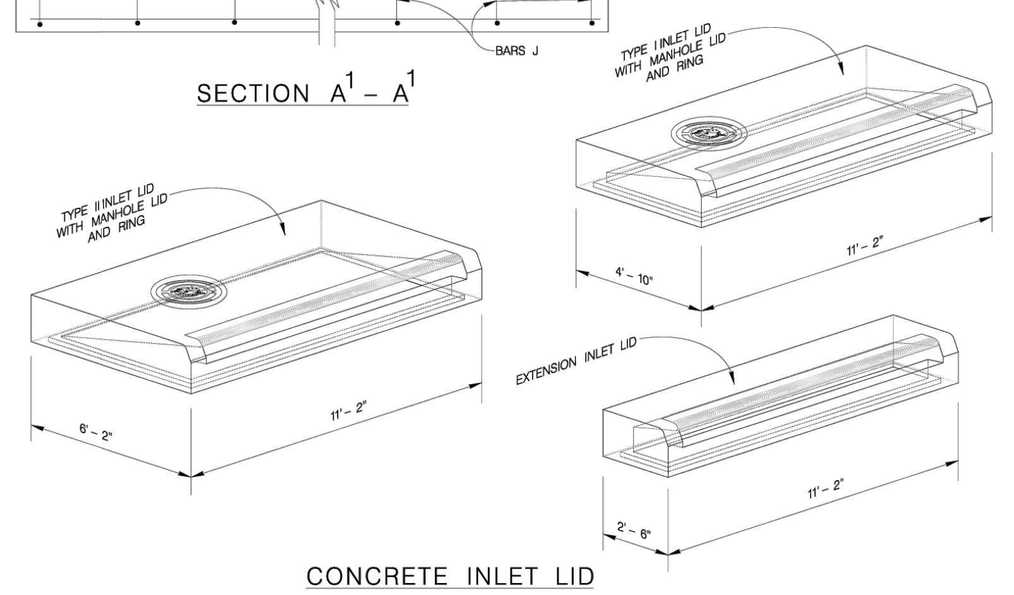
BAR C
(UPPER UNIT)

BAR F
(UPPER UNIT)

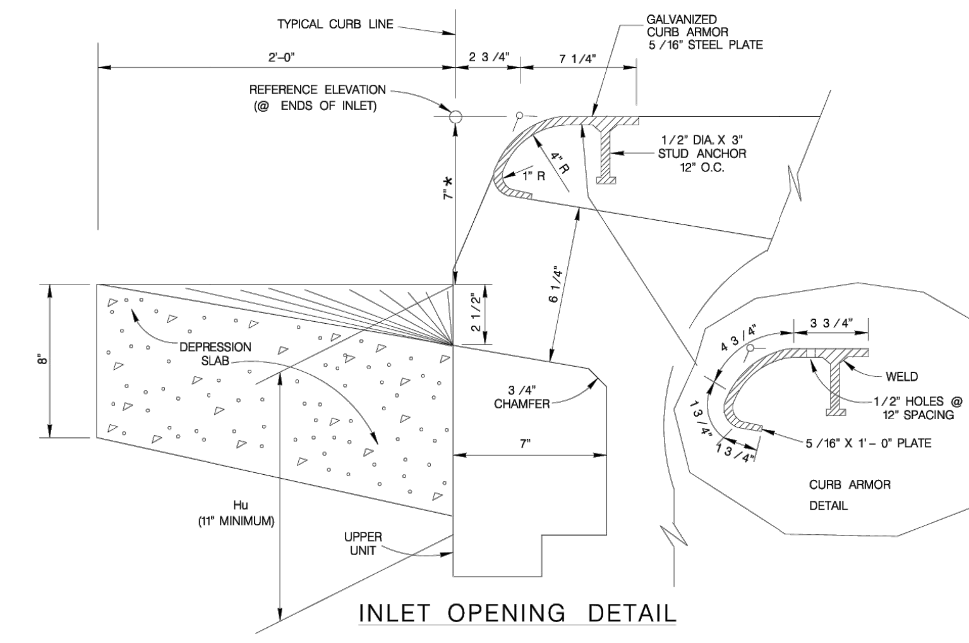
BAR G
(UPPER UNIT)

BAR J
(UPPER UNIT)

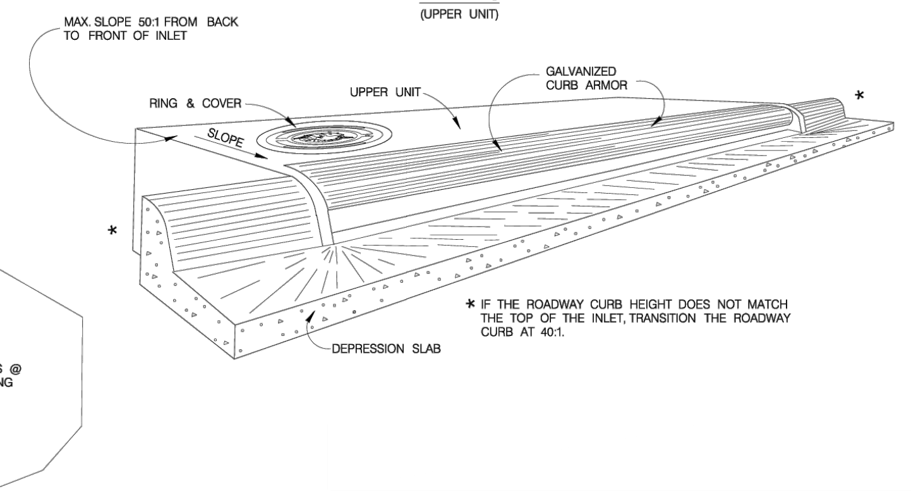
BAR L
(UPPER UNIT)


TYPE "CI" INLET LID WITH MANHOLE LID AND RING
TYPE "CII" INLET LID WITH MANHOLE LID AND RING
EXTENSION INLET LID
11' – 2"
6' – 2"
4' – 10"
11' – 2"

CONCRETE INLET LID
CONFIGURATIONS
(UPPER UNITS)

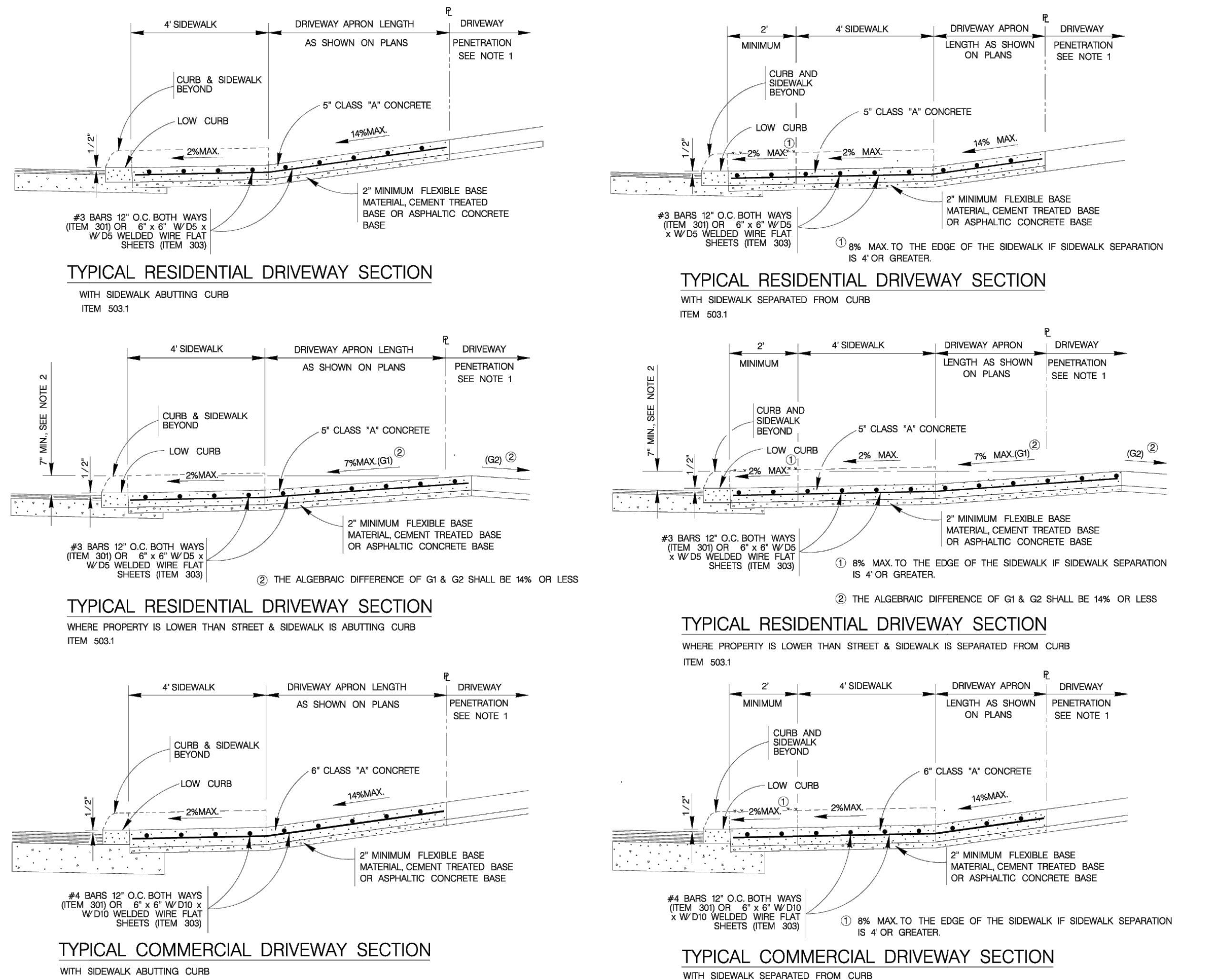


INLET OPENING DETAIL


MAX. SLOPE 50:1 FROM BACK TO FRONT OF INLET
RING & COVER
GALVANIZED CURB ARMOR
DEPRESSION SLAB
* IF THE ROADWAY CURB HEIGHT DOES NOT MATCH THE TOP OF THE INLET, TRANSITION THE ROADWAY CURB AT 40:1.

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS

SHEET 2 OF 3


4' SIDEWALK
DRIVEWAY APRON LENGTH AS SHOWN ON PLANS
DRIVEWAY PENETRATION SEE NOTE 1
CURB & SIDEWALK BEYOND
LOW CURB
6" CLASS "A" CONCRETE
2% MAX.
#3 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D5 x W/D5 WELDED WIRE FLAT SHEETS (ITEM 303)
#4 BARS 12" O.C. BOTH WAYS (ITEM 301) OR 6" x 6" W/D10 x W/D10 WELDED WIRE FLAT SHEETS (ITEM 303)
2" MINIMUM FLEXIBLE BASE MATERIAL, CEMENT TREATED BASE OR ASPHALTIC CONCRETE BASE
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.
③ THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 503.1

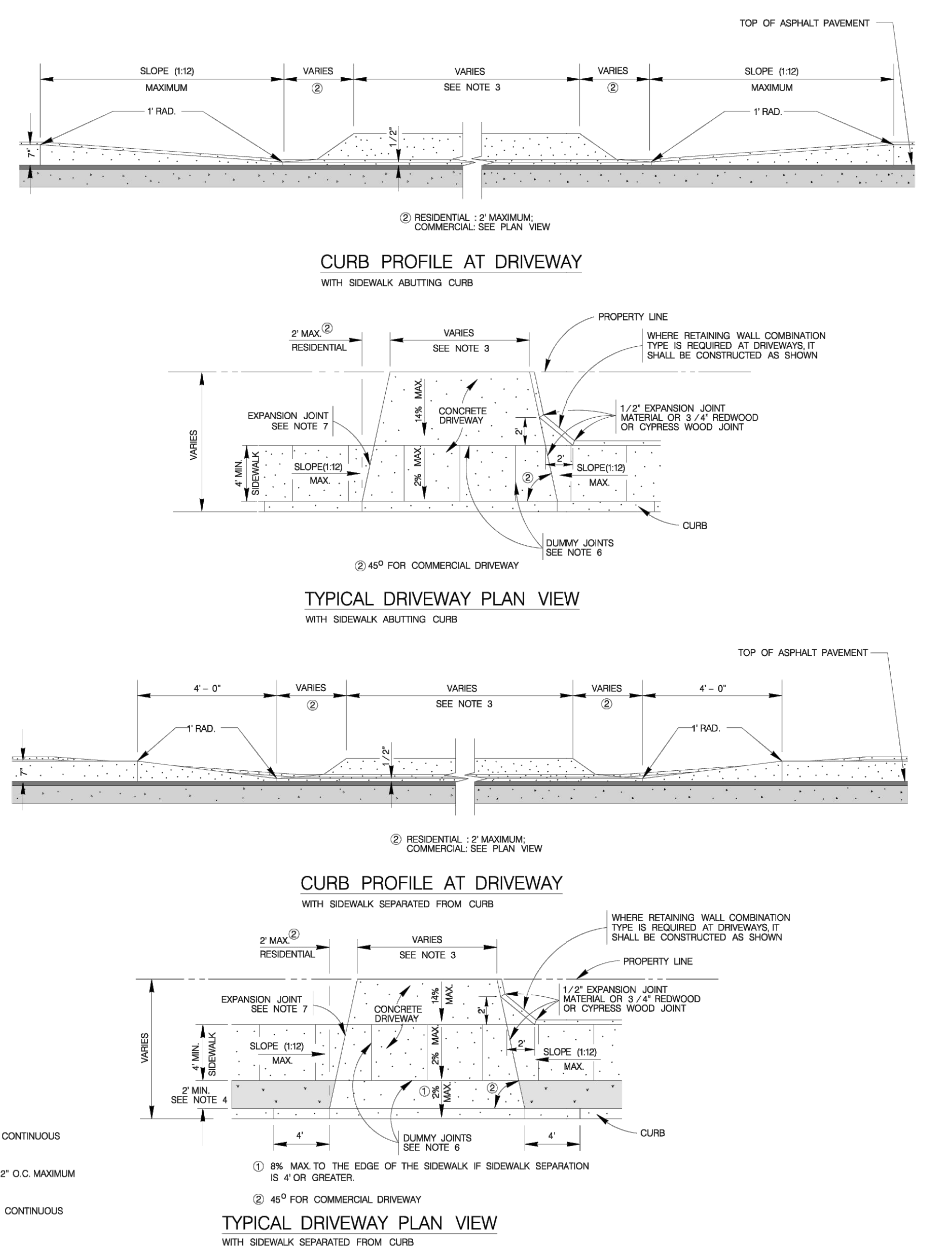
TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1

TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
ITEM 503.1

TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1

TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 503.2

TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2


SLOPE (1:12)
VARIES
SEE NOTE 3
TOP OF ASPHALT PAVEMENT
1' RAD.
② RESIDENTIAL - 2' MAXIMUM COMMERCIAL SEE PLAN VIEW
PROPERTY LINE
WHERE RETAINING WALL COMBINATION TYPE IS REQUIRED AT DRIVEWAYS, IT SHALL BE CONSTRUCTED AS SHOWN
EXPANSION JOINT SEE NOTE 7
CONCRETE DRIVEWAY
1/2" EXPANSION JOINT MATERIAL OR 3/4" REDWOOD OR CYPRESS WOOD JOINT
DUMMY JOINTS SEE NOTE 6
CURB
② 40' FOR COMMERCIAL DRIVEWAY
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

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

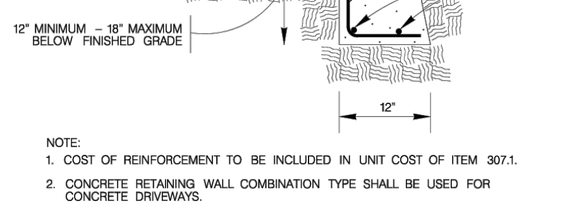
TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK SEPARATED FROM CURB

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'

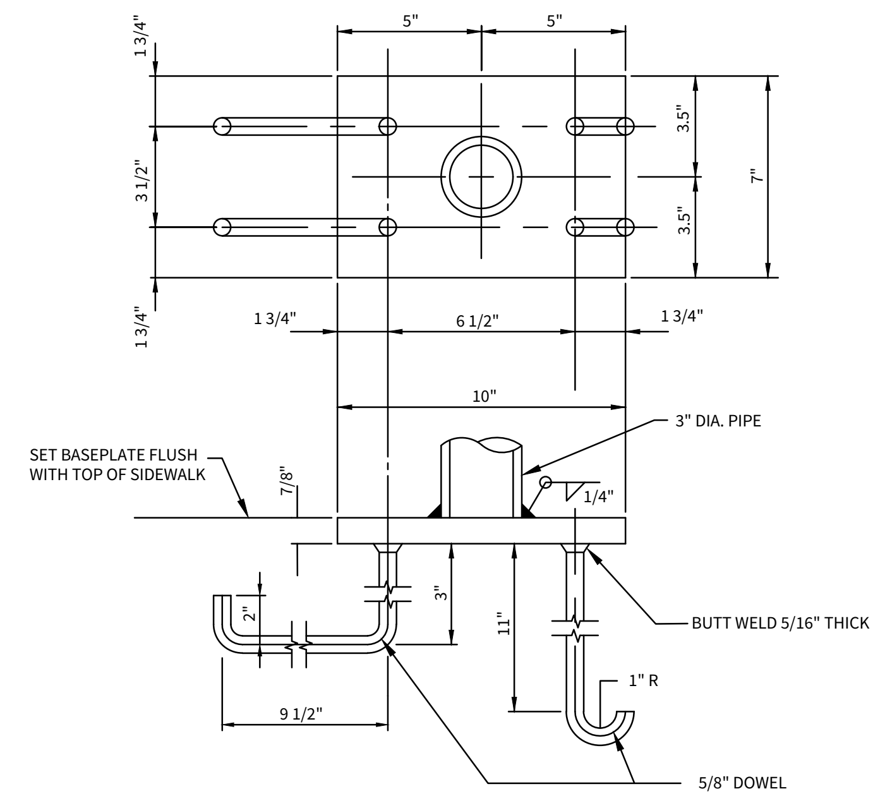
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE 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.


3/4" CHAMFER
6" MINIMUM – 12" MAXIMUM
ASPHALT OR GRAVEL DRIVEWAY
#3 BARS @ 12" O.C. MAXIMUM
2 – #4 BARS CONTINUOUS
12" MINIMUM – 18" MAXIMUM BELOW FINISHED GRADE
10"

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.

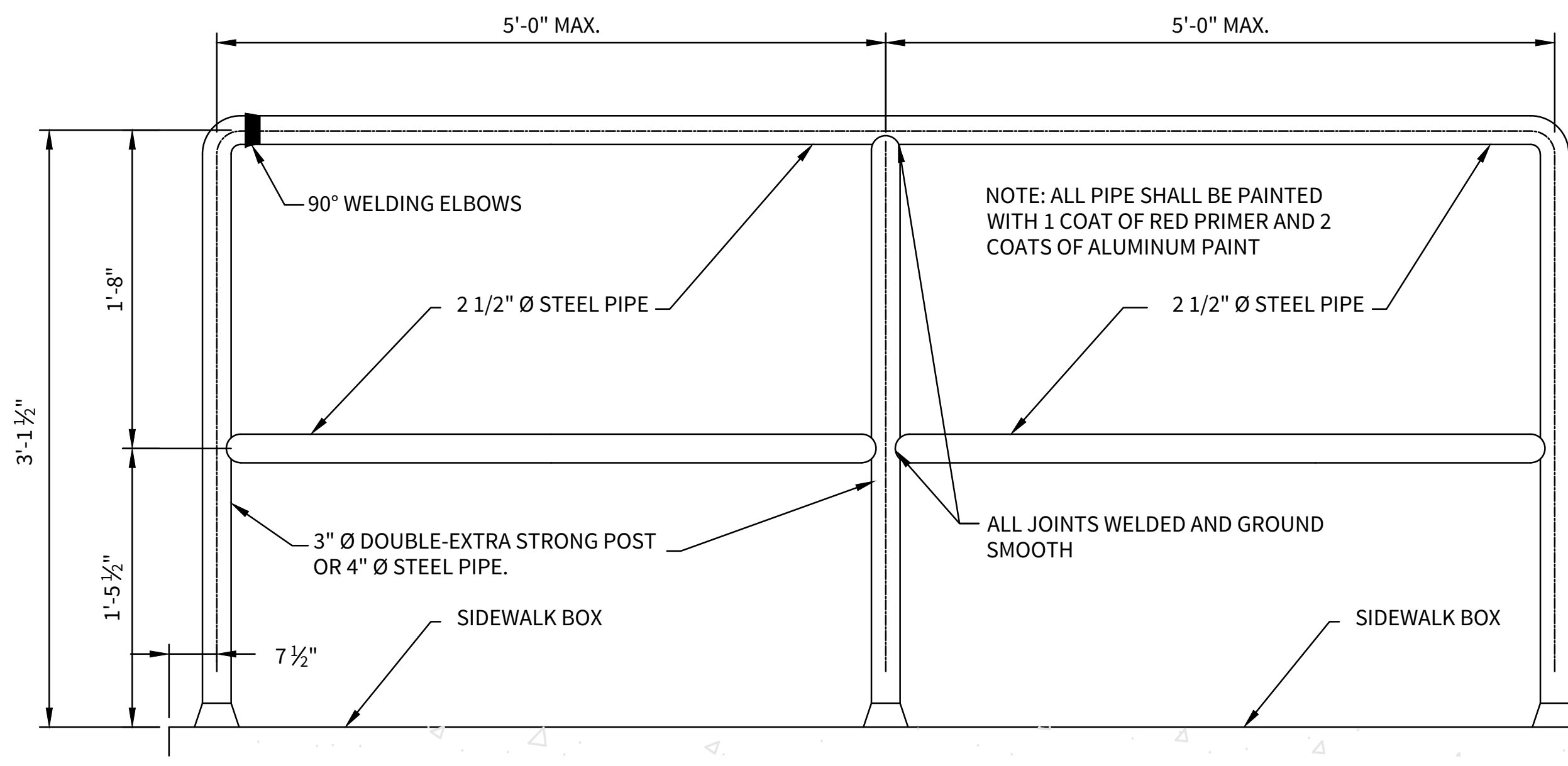
DRIVEWAY – CONCRETE RETAINING WALL
ON COMPACTED SUBGRADE
ITEM 307.1

CONCRETE DRIVEWAY STANDARDS



PIPE ANCHORAGE DETAILS

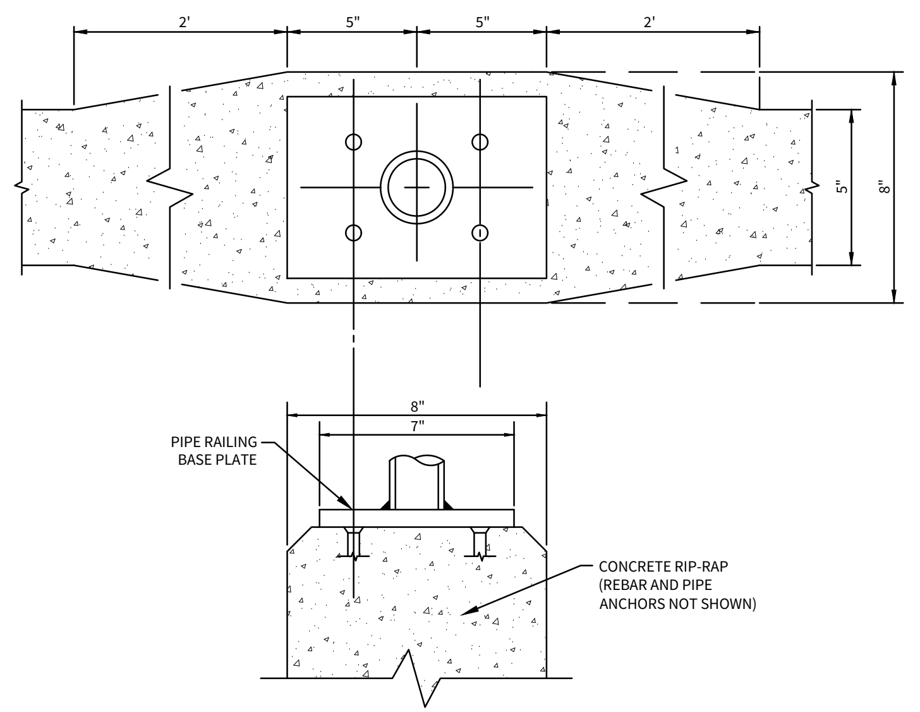
N.T.S.



NOTE: ALL PIPE SHALL BE PAINTED WITH 1 COAT OF RED PRIMER AND 2 COATS OF ALUMINUM PAINT

NOTE: ALL CONSTRUCTION OF HANDRAIL SHALL FOLLOW THE CITY OF MARION STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

PIPE RAILING DETAIL

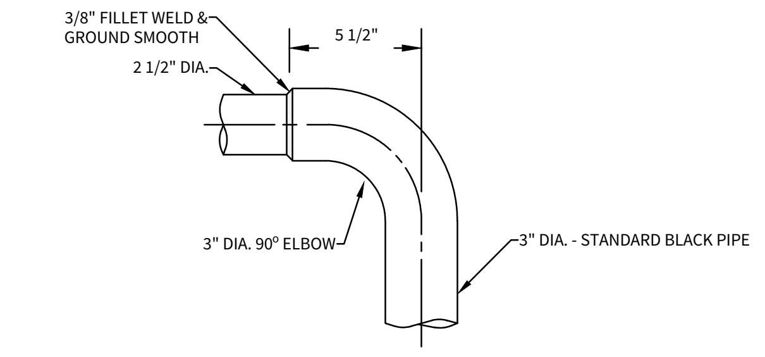


CONCRETE RIP–RAP AT PIPE RAILING BASE PLATE DETAIL

NOTES:

1) CONTRACTOR TO FLARE CONCRETE RIP-RAP TO 8" AT PROPOSED PIPE RAILING BASE PLATE LOCATIONS.

N.T.S.


3/8" FILLET WELD & GROUND SMOOTH
5 1/2"
2 1/2" DIA.
3" DIA. 90° ELBOW
3" DIA. - STANDARD BLACK PIPE

DETAIL OF 90° WELDING ELBOWS

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

SCALE: 1" = 8"

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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

CURB INLET DETAILS

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

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P:\04343\002\2-DWG\4-Plans\C50 CURB INLET DETAILS.dwg 2025/06/09 3:58pm jochoa

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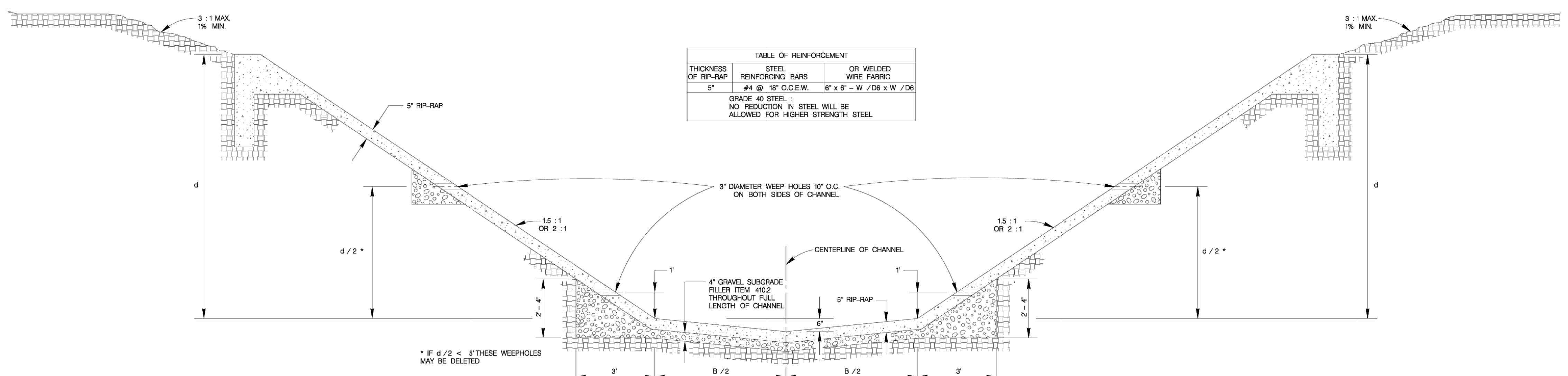
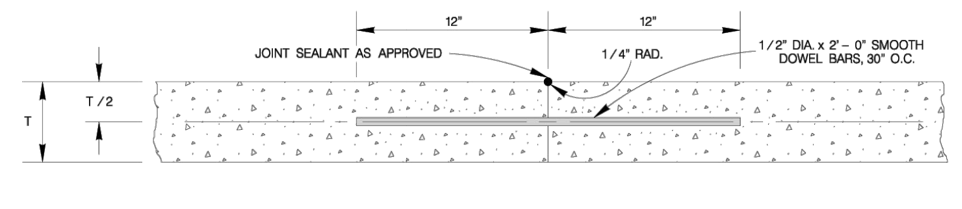
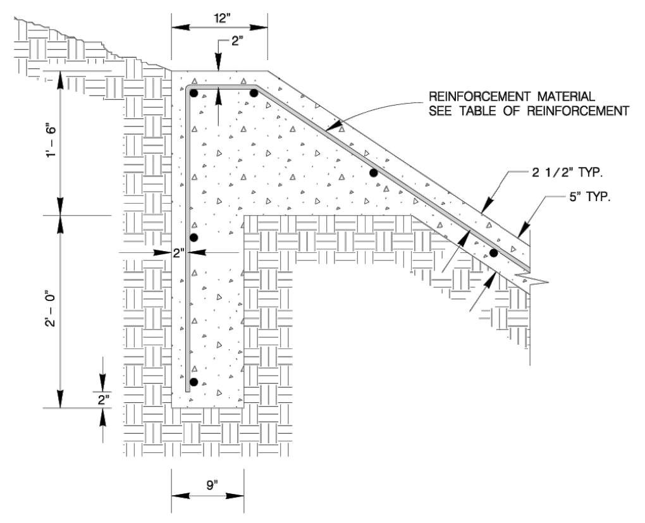

3 : 1 MAX
1% MIN.
5" RIP-RAP
3" DIAMETER WEEP HOLES 10" O.C.
ON BOTH SIDES OF CHANNEL
1.5 : 1
OR 2 : 1
d
d / 2 *
CENTERLINE OF CHANNEL
4" GRAVEL SUBGRADE FILLER ITEM 410.2 THROUGHOUT FULL LENGTH OF CHANNEL
5" RIP-RAP
* IF d / 2 < 5' THESE WEEPHOLES MAY BE DELETED
3'
B / 2
B

TABLE OF REINFORCEMENT		
THICKNESS OF RIP–RAP	STEEL REINFORCING BARS	OR WELDED WIRE FABRIC
5"	#4 @ 18" O.C.E.W.	6" x 6" – W /D6 x W /D6
GRADE 40 STEEL : NO REDUCTION IN STEEL WILL BE ALLOWED FOR HIGHER STRENGTH STEEL		

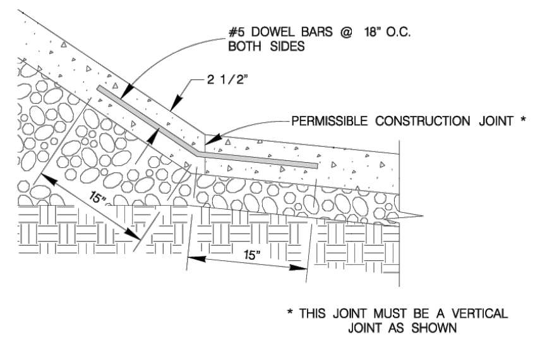
TYPICAL CHANNEL SECTION
LOOKING DOWNSTREAM
SCALE : 1" = 4'


12"
JOINT SEALANT AS APPROVED
1/4" RAD.
1/2" DIA x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
T / 2
T

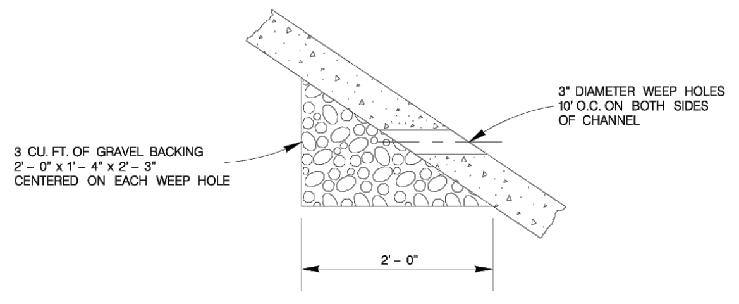
CONVERSE CONTRACTION
OR CONSTRUCTION JOINT
SCALE : 1" = 1'



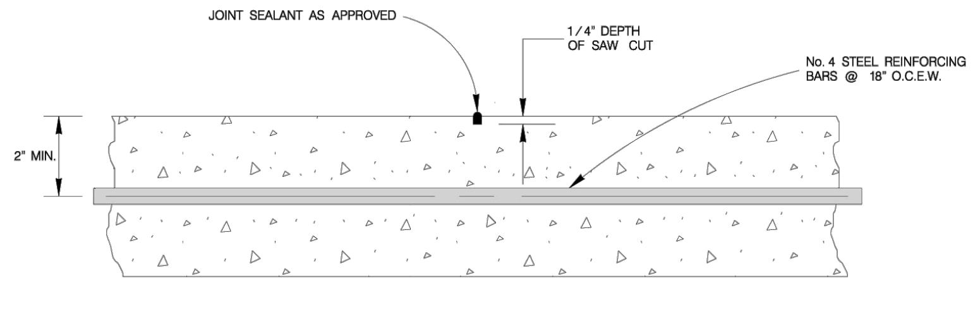
REINFORCEMENT DETAIL
TOE-DOWN
SCALE : 1" = 2'


#5 DOWEL BARS @ 18" O.C. BOTH SIDES
2 1/2"
PERMISSIBLE CONSTRUCTION JOINT *
15"
* THIS JOINT MUST BE A VERTICAL JOINT AS SHOWN

ALL SECTIONS
SCALE : 1" = 2'


3" DIAMETER WEEP HOLES 10' O.C. ON BOTH SIDES OF CHANNEL
3 CU FT. OF GRAVEL BACKING CENTERED ON EACH WEEP HOLE
2' - 0"

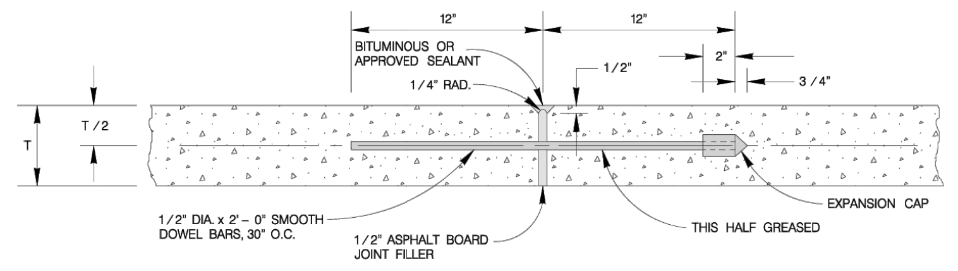
WEEP HOLES DETAILS
FOR SIDE SLOPES
SCALE : 1" = 2'


JOINT SEALANT AS APPROVED
1/4" DEPTH OF SAW CUT
No. 4 STEEL REINFORCING BARS @ 18" O.C.E.W.
2" MIN.

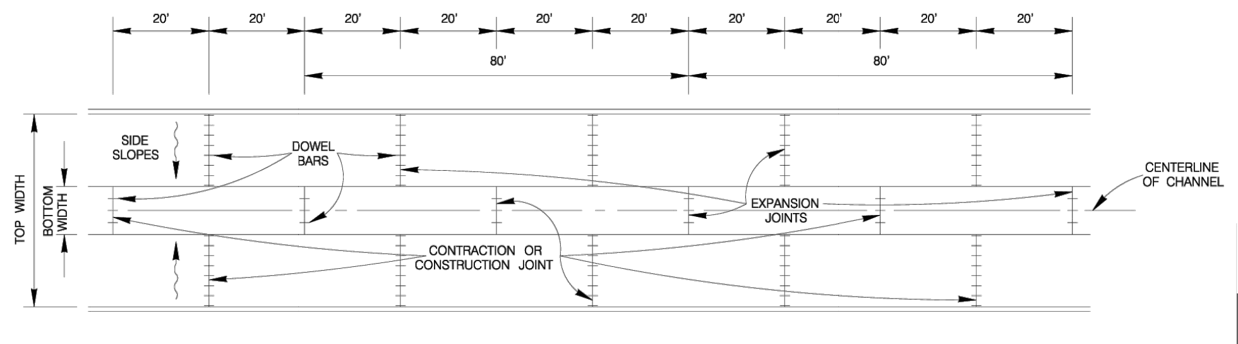
"SAW CUT" CONTRACTION JOINT
SCALE : 1" = 6"

GENERAL NOTES

1. CONCRETE FOR CHANNEL RIP-RAP SHALL BE CLASS "A" 3000 P.S.I.
2. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN.
3. ALL REINFORCEMENT STEEL SHALL MEET ASTM DESIGNATIONS AS CALLED FOR IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
4. NEW RIP-RAP SHOULD BE ATTACHED TO EXISTING RIP-RAP BY NO. 4 BARS DOWELED 6" INTO EXISTING RIP-RAP. THESE BARS ARE TO BE SPACED 18" O.C. AND HAVE A LENGTH OF 18".

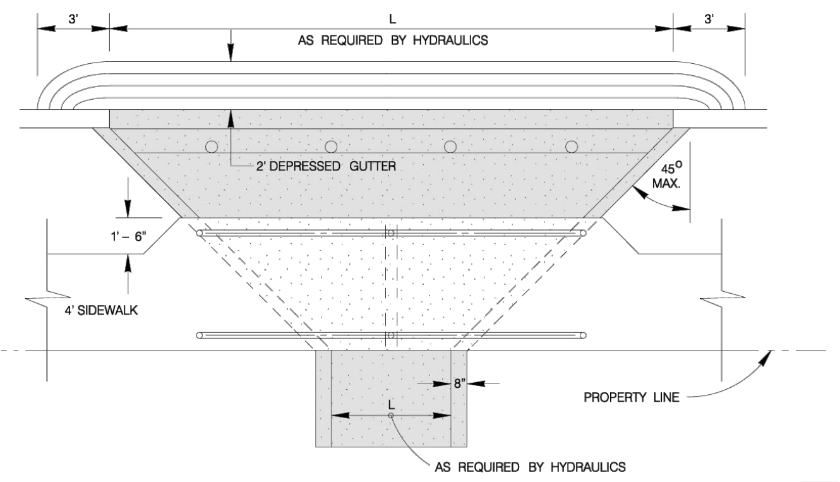

12"
BITUMINOUS OR APPROVED SEALANT
1/4" RAD.
1/2"
3 / 4"
T / 2
T
1/2" DIA x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
1/2" ASPHALT BOARD JOINT FILLER
THIS HALF GREASED
EXPANSION CAP

TRANSVERSE EXPANSION JOINT
SCALE : 1" = 1'

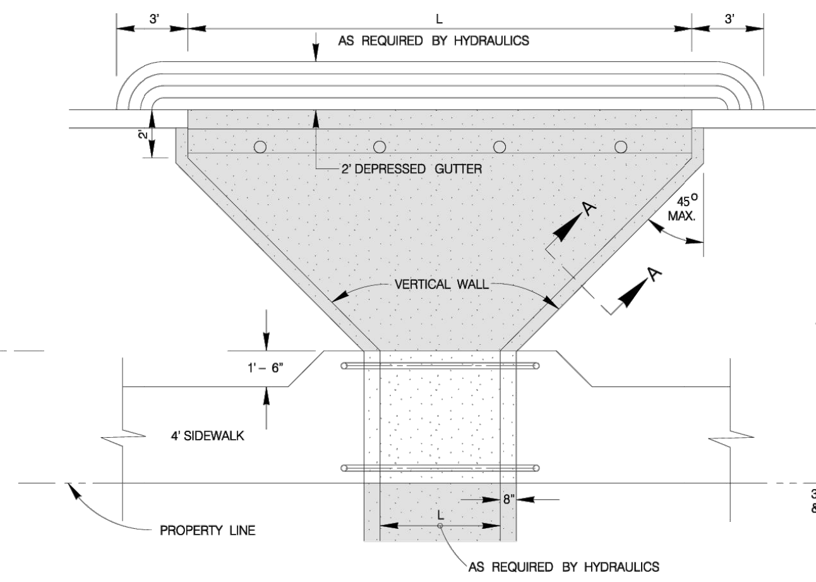


EXPANSION AND CONTRACTION JOINTS
FOR CONCRETE CHANNEL LINING
SCALE : 1" = 40'

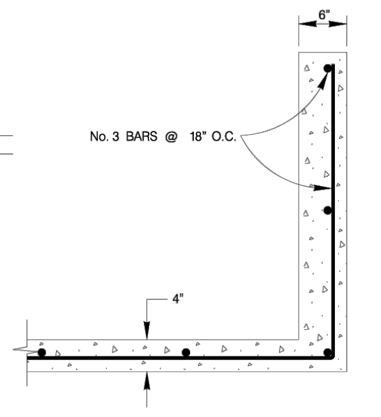
TYPICAL CONCRETE CHANNEL
RIP-RAP STANDARDS



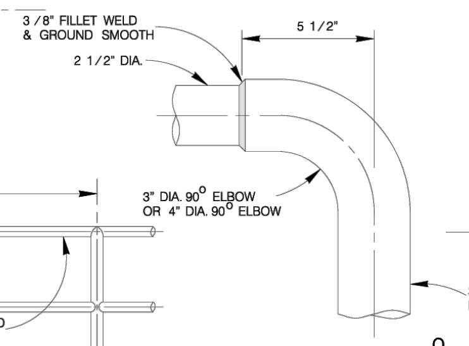
PLAN VIEW "A"
SCALE : 1" = 8'



PLAN VIEW "B"
SCALE : 1" = 8'

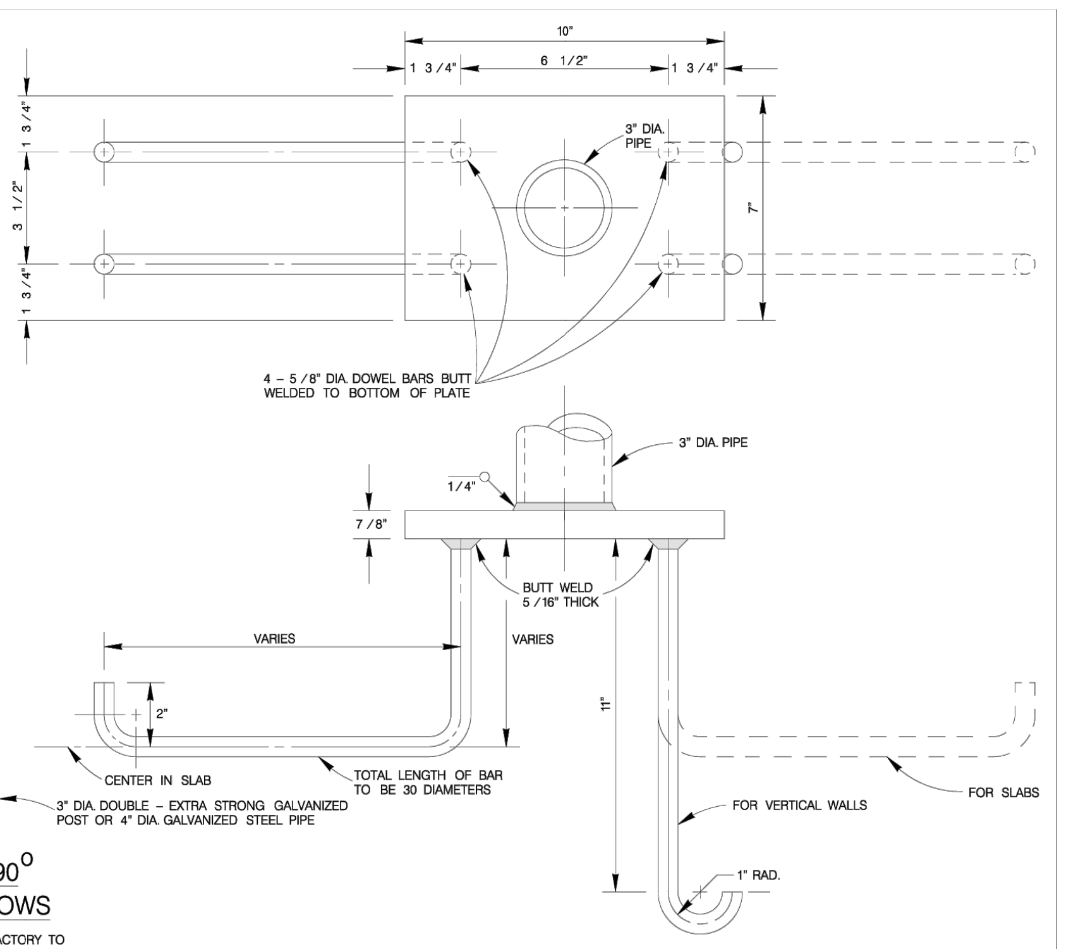


SECTION A-A
SCALE : 1" = 2'

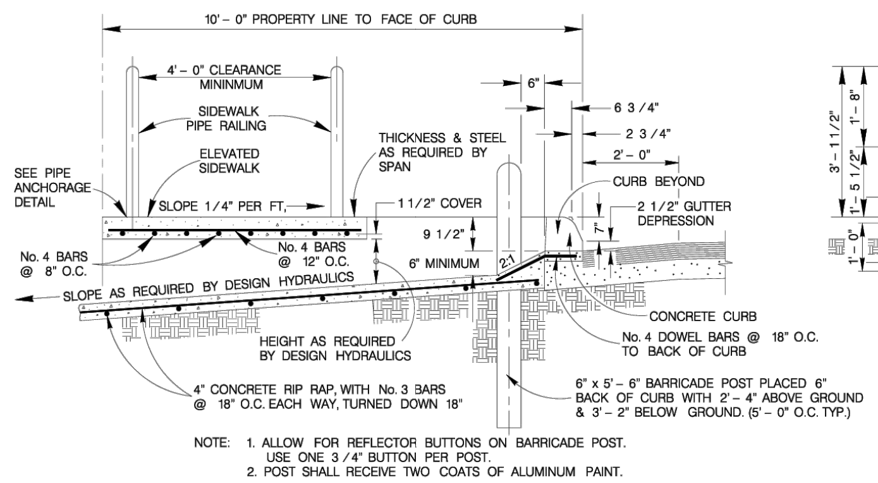

3 / 8" FILLET WELD & GROUND SMOOTH
5 1/2"
2 1/2" DIA.
3" DIA 90° ELBOW OR 4" DIA 90° ELBOW

DETAIL OF 90° WELDING ELBOWS

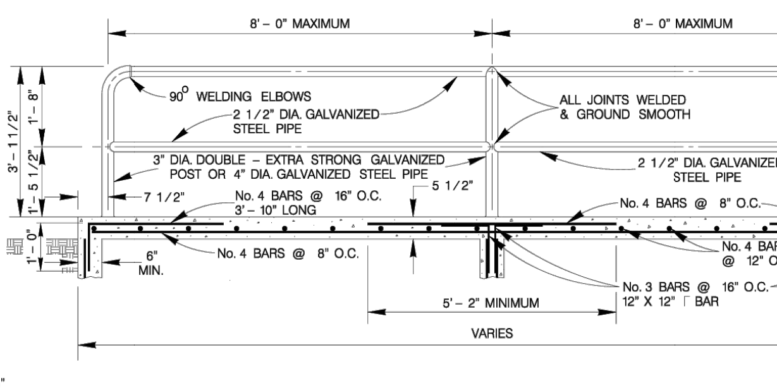
✱ A NEAT END SECTION SATISFACTORY TO THE ENGINEER FROM SUBMITTED SHOP DRAWINGS MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.
SCALE : 1" = 8"


10"
1 3/4"
6 1/2"
3" DIA PIPE
4 - 5 / 8" DIA DOWEL BARS BUTT WELDED TO BOTTOM OF PLATE
1/4"
7 / 8"
BUTT WELD 5 / 16" THICK
VARIES
CENTER IN SLAB
3" DIA DOUBLE - EXTRA STRONG GALVANIZED POST OR 4" DIA GALVANIZED STEEL PIPE
TOTAL LENGTH OF BAR TO BE 30 DIAMETERS
FOR VERTICAL WALLS
FOR SLABS
1" RAD.

PIPE ANCHORAGE DETAILS
SCALE : 1" = 8"

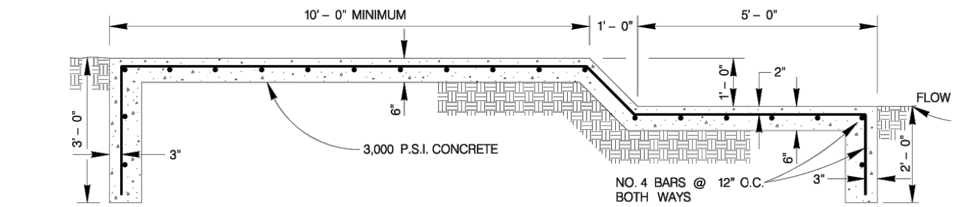

10' - 0" PROPERTY LINE TO FACE OF CURB
4' - 0" CLEARANCE MINIMUM
SIDEWALK PIPE RAILING
ELEVATED SIDEWALK
SEE PIPE ANCHORAGE DETAIL
SLOPE 1/4" PER FT.
THICKNESS & STEEL AS REQUIRED BY SPAN
1 1/2" COVER
No. 4 BARS @ 12" O.C.
SLOPE AS REQUIRED BY DESIGN HYDRAULICS
HEIGHT AS REQUIRED BY DESIGN HYDRAULICS
4" CONCRETE RIP RAP WITH No. 3 BARS @ 18" O.C. EACH WAY, TURNED DOWN 18"
CURB BEYOND
2 1/2" GUTTER DEPRESSION
6" MINIMUM
CONCRETE CURB
No. 4 DOWEL BARS @ 18" O.C. TO BACK OF CURB
6" x 6" - 8' BARRICADE POST PLACED 6" BACK OF CURB WITH 2' - 4" ABOVE GROUND & 3' - 3" BELOW GROUND (6' - 0" O.C. TYP.)
NOTE: 1. ALLOW FOR REFLECTOR BUTTONS ON BARRICADE POST. USE ONE 2 / 4" BUTTON PER POST.
2. POST SHALL RECEIVE TWO COATS OF ALUMINUM PAINT.

ELEVATED SIDEWALK & DROP CURB
DETAILS FOR DRAINAGE CHANNELS
SCALE : 1" = 4'

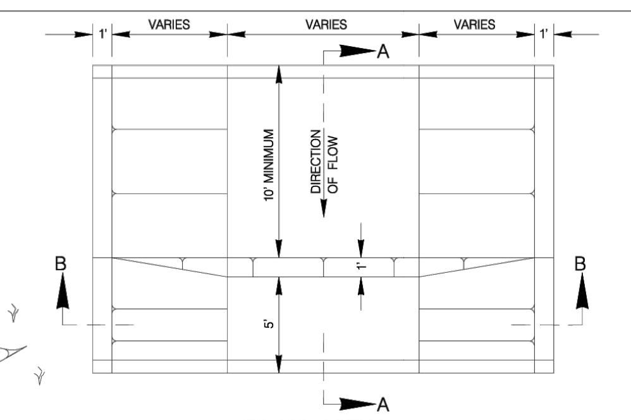

8' - 0" MAXIMUM
90° WELDING ELBOWS
3 1/2" DIA GALVANIZED STEEL PIPE
ALL JOINTS WELDED & GROUND SMOOTH
3" DIA DOUBLE - EXTRA STRONG GALVANIZED POST OR 4" DIA GALVANIZED STEEL PIPE
2 1/2" DIA GALVANIZED STEEL PIPE
No. 4 BARS @ 16" O.C. 3' - 10" LONG
5 1/2"
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 10" O.C.
No. 3 BARS @ 18" O.C. 12" X 12" 1 BAR
6' - 3" MINIMUM
VARIES

TYPICAL SIDEWALK BRIDGE &
SIDEWALK PIPE RAILING SECTION
SCALE : 1" = 4'

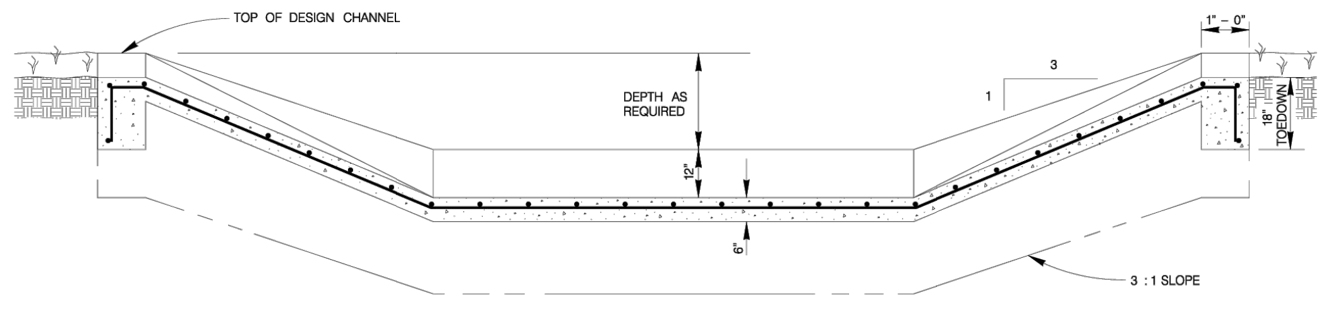
RETARD DETAILS



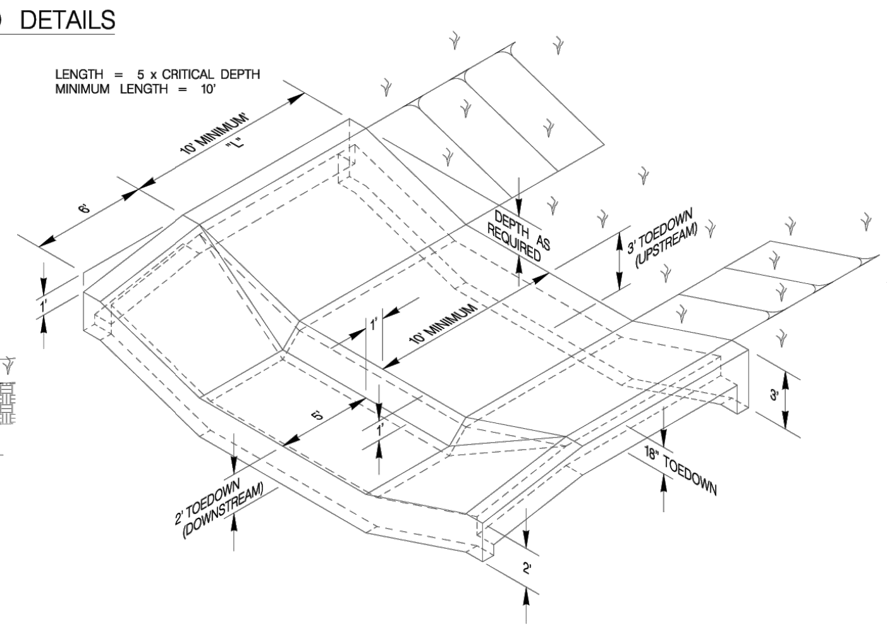
SECTION A – A
SCALE : 1" = 4'
NOTE : RETARD TO BE CARRIED TO THE TOP OF DESIGN CHANNEL SECTION



PLAN VIEW
SCALE : 1" = 10'



SECTION B – B
SCALE : 1" = 4'



ISOMETRIC VIEW
SCALE : 1" = 10'

ELEVATED SIDEWALK & RETARD
STANDARDS

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION
UNIT 1

DRAINAGE DETAILS

DATE
06/09/2025
PROJECT NO.
04343.002
DRAWN BY
CG/JG/LJ/TCD
CHECKED BY
XV/AL

REVISIONS	DATE
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	

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P:\04343\002\2-DWG\4-Plans\C51 DRAINAGE DETAILS.dwg 2025/06/09 3:58pm jochoa

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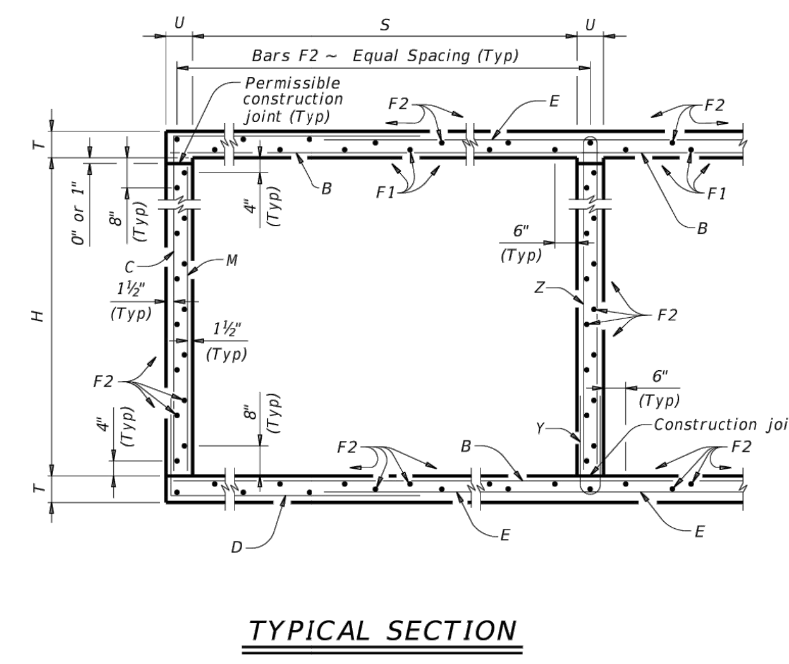
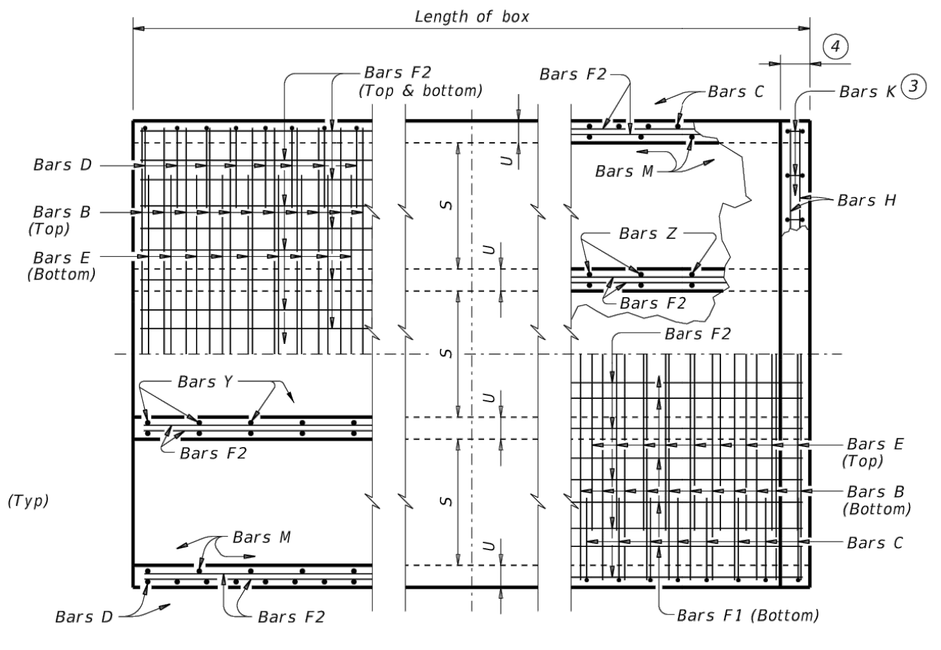
DATE:
FILE:

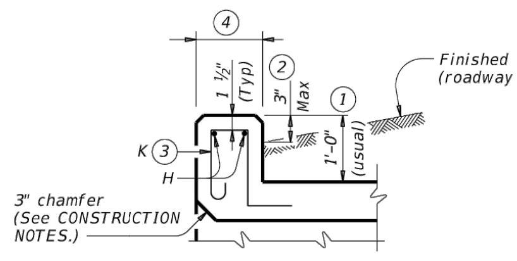

Bars F2 ~ Equal Spacing (Typ)
Permissible construction joint (Typ)
U
T
H
Bars F1
6" (Typ)
Construction joint (Typ)
C
D
E
M
Y
Z
B

TYPICAL SECTION



BOTTOM SLAB | TOP SLAB

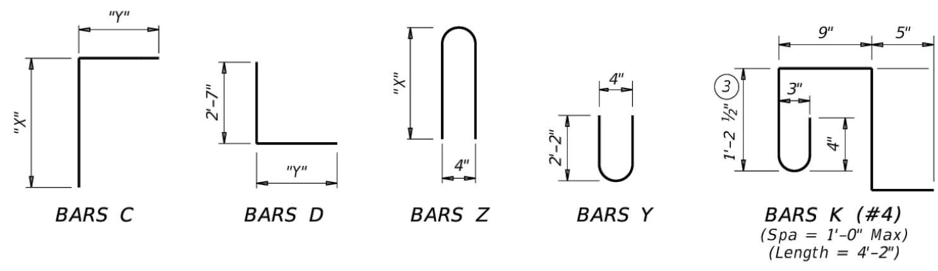
PART PLANS


④
1 ½" (Typ)
3" Max
Finished grade (roadway slope)
K
H
① (Curb)
3" chamfer (See CONSTRUCTION NOTES.)

SECTION THRU CURB

TABLE OF BAR DIMENSIONS

H	"X"	"Y"
2'-0"	2'-6 ½"	3'-8 ½"
3'-0"	3'-6 ½"	3'-8 ½"
4'-0"	4'-6 ½"	3'-8 ½"
5'-0"	5'-6 ½"	3'-8 ½"



BARS C | BARS D | BARS Z | BARS Y | BARS K (#4) (Spa = 1'-0" Max) (Length = 4'-2")

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

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

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

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

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

CONSTRUCTION NOTES:

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

MATERIAL NOTES:

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

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

GENERAL NOTES:

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

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

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
5'-0" SPAN
0' TO 20' FILL
MC-5-20

FILE: CD-MC520-20.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT
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REVISIONS | DIST | COUNTY | SHEET NO.

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DATE:
FILE:

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

NUMBER OF SPANS	SECTION DIMENSIONS				Bars B					Bars C & D							Bars E					Bars F1 ~ #4				Bars F2 ~ #4				Bars M ~ #4				Bars Y & Z ~ #4						Bars H 4 ~ #4		Bars K		QUANTITIES Per Foot of Barrel		Curb		Total	
													Bars C		Bars D																					Bars Y		Bars Z											
	S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	Length	Wt	No.	Size	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Renf (Lb)	Conc (CY)	Renf (Lb)	Conc (CY)	Renf (Lb)
2	5'-0"	2'-0"	8"	7"	108	#5	9"	11'-6"	1,295	108	#5	9"	6'-3"	704	6'-4"	713	108	#5	9"	8'-8"	976	8	18"	39'-9"	212	38	18"	39'-9"	1,009	108	9"	2'-0"	144	54	9"	4'-7"	165	5'-3"	189	11'-6"	31	26	72	0.710	135.2	0.9	103	29.3	5,510
3	5'-0"	2'-0"	8"	7"	108	#5	9"	17'-1"	1,924	108	#5	9"	6'-3"	704	6'-4"	713	108	#5	9"	14'-3"	1,605	12	18"	39'-9"	319	54	18"	39'-9"	1,434	108	9"	2'-0"	144	108	9"	4'-7"	331	5'-3"	379	17'-1"	46	38	106	1.029	188.8	1.3	152	42.4	7,705
4	5'-0"	2'-0"	8"	7"	108	#5	9"	22'-8"	2,553	108	#5	9"	6'-3"	704	6'-4"	713	108	#5	9"	19'-10"	2,234	16	18"	39'-9"	425	70	18"	39'-9"	1,859	108	9"	2'-0"	144	162	9"	4'-7"	496	5'-3"	568	22'-8"	61	48	134	1.348	242.4	1.7	195	55.6	9,891
5	5'-0"	2'-0"	8"	7"	108	#5	9"	28'-3"	3,182	108	#5	9"	6'-3"	704	6'-4"	713	108	#5	9"	25'-5"	2,863	20	18"	39'-9"	531	86	18"	39'-9"	2,284	108	9"	2'-0"	144	216	9"	4'-7"	661	5'-3"	758	28'-3"	75	60	167	1.667	296.0	2.1	242	68.8	12,082
6	5'-0"	2'-0"	8"	7"	108	#5	9"	33'-10"	3,811	108	#5	9"	6'-3"	704	6'-4"	713	108	#5	9"	31'-0"	3,492	24	18"	39'-9"	637	102	18"	39'-9"	2,708	108	9"	2'-0"	144	270	9"	4'-7"	827	5'-3"	947	33'-10"	90	70	195	1.986	349.6	2.5	285	82.0	14,268
2	5'-0"	3'-0"	8"	7"	108	#6	9"	11'-6"	1,865	108	#5	9"	7'-3"	817	6'-4"	713	108	#5	9"	8'-8"	976	8	18"	39'-9"	212	44	18"	39'-9"	1,168	108	9"	3'-0"	216	54	9"	4'-7"	165	7'-3"	262	11'-6"	31	26	72	0.775	159.9	0.9	103	31.9	6,497
3	5'-0"	3'-0"	8"	7"	108	#6	9"	17'-1"	2,771	108	#5	9"	7'-3"	817	6'-4"	713	108	#5	9"	14'-3"	1,605	12	18"	39'-9"	319	62	18"	39'-9"	1,646	108	9"	3'-0"	216	108	9"	4'-7"	331	7'-3"	523	17'-1"	46	38	106	1.115	223.5	1.3	152	45.9	9,093
4	5'-0"	3'-0"	8"	7"	108	#6	9"	22'-8"	3,677	108	#5	9"	7'-3"	817	6'-4"	713	108	#5	9"	19'-10"	2,234	16	18"	39'-9"	425	80	18"	39'-9"	2,124	108	9"	3'-0"	216	162	9"	4'-7"	496	7'-3"	785	22'-8"	61	48	134	1.456	287.2	1.7	195	59.9	11,682
5	5'-0"	3'-0"	8"	7"	108	#6	9"	28'-3"	4,583	108	#5	9"	7'-3"	817	6'-4"	713	108	#5	9"	25'-5"	2,863	20	18"	39'-9"	531	98	18"	39'-9"	2,602	108	9"	3'-0"	216	216	9"	4'-7"	661	7'-3"	1,046	28'-3"	75	60	167	1.796	350.8	2.1	242	73.9	14,274
6	5'-0"	3'-0"	8"	7"	108	#6	9"	33'-10"	5,488	108	#5	9"	7'-3"	817	6'-4"	713	108	#5	9"	31'-0"	3,492	24	18"	39'-9"	637	116	18"	39'-9"	3,080	108	9"	3'-0"	216	270	9"	4'-7"	827	7'-3"	1,308	33'-10"	90	70	195	2.137	414.5	2.5	285	88.0	16,863
2	5'-0"	4'-0"	8"	7"	108	#6	9"	11'-6"	1,865	108	#5	9"	8'-3"	929	6'-4"	713	108	#5	9"	8'-8"	976	8	18"	39'-9"	212	44	18"	39'-9"	1,168	108	9"	4'-0"	289	54	9"	4'-7"	165	9'-3"	334	11'-6"	31	26	72	0.840	166.3	0.9	103	34.5	6,754
3	5'-0"	4'-0"	8"	7"	108	#6	9"	17'-1"	2,771	108	#5	9"	8'-3"	929	6'-4"	713	108	#5	9"	14'-3"	1,605	12	18"	39'-9"	319	62	18"	39'-9"	1,646	108	9"	4'-0"	289	108	9"	4'-7"	331	9'-3"	667	17'-1"	46	38	106	1.202	231.8	1.3	152	49.4	9,422
4	5'-0"	4'-0"	8"	7"	108	#6	9"	22'-8"	3,677	108	#5	9"	8'-3"	929	6'-4"	713	108	#5	9"	19'-10"	2,234	16	18"	39'-9"	425	80	18"	39'-9"	2,124	108	9"	4'-0"	289	162	9"	4'-7"	496	9'-3"	1,001	22'-8"	61	48	134	1.564	297.2	1.7	195	64.3	12,083
5	5'-0"	4'-0"	8"	7"	108	#6	9"	28'-3"	4,583	108	#5	9"	8'-3"	929	6'-4"	713	108	#5	9"	25'-5"	2,863	20	18"	39'-9"	531	98	18"	39'-9"	2,602	108	9"	4'-0"	289	216	9"	4'-7"	661	9'-3"	1,335	28'-3"	75	60	167	1.926	362.7	2.1	242	79.1	14,748
6	5'-0"	4'-0"	8"	7"	108	#6	9"	33'-10"	5,488	108	#5	9"	8'-3"	929	6'-4"	713	108	#5	9"	31'-0"	3,492	24	18"	39'-9"	637	116	18"	39'-9"	3,080	108	9"	4'-0"	289	270	9"	4'-7"	827	9'-3"	1,668	33'-10"	90	70	195	2.288	428.1	2.5	285	94.0	17,408
2	5'-0"	5'-0"	8"	7"	108	#6	9"	11'-6"	1,865	108	#5	9"	9'-3"	1,042	6'-4"	713	108	#5	9"	8'-8"	976	8	18"	39'-9"	212	50	18"	39'-9"	1,328	108	9"	5'-0"	361	54	9"	4'-7"	165	11'-3"	406	11'-6"	31	26	72	0.904	176.7	0.9	103	37.0	7,171
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4	5'-0"	5'-0"	8"	7"	108	#6	9"	22'-8"	3,677	108	#5	9"	9'-3"	1,042	6'-4"	713	108	#5	9"	19'-10"	2,234	16	18"	39'-9"	425	90	18"	39'-9"	2,390	108	9"	5'-0"	361	162	9"	4'-7"	496	11'-3"	1,217	22'-8"	61	48	134	1.672	313.9	1.7	195	68.6	12,750
5	5'-0"	5'-0"	8"	7"	108	#6	9"	28'-3"	4,583	108	#5	9"	9'-3"	1,042	6'-4"	713	108	#5	9"	25'-5"	2,863	20	18"	39'-9"	531	110	18"	39'-9"	2,921	108	9"	5'-0"	361	216	9"	4'-7"	661	11'-3"	1,623	28'-3"	75	60	167	2.056	382.5	2.1	242	84.3	15,540
6	5'-0"	5'-0"	8"	7"	108	#6	9"	33'-10"	5,488	108	#5	9"	9'-3"	1,042	6'-4"	713	108	#5	9"	31'-0"	3,492	24	18"	39'-9"	637	130	18"	39'-9"	3,452	108	9"	5'-0"	361	270	9"	4'-7"	827	11'-3"	2,029	33'-10"	90	70	195	2.439	451.0	2.5	285	100.1	18,326

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation | Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
5'-0" SPAN
0' TO 20' FILL
MC-5-20

FILE: CD-MC520-20.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT
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REVISIONS | DIST | COUNTY | SHEET NO.

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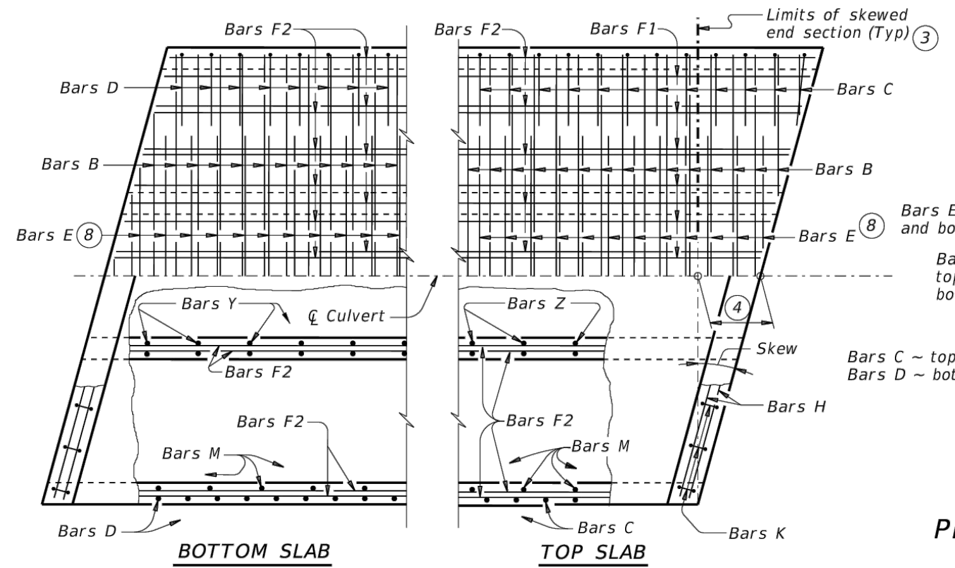
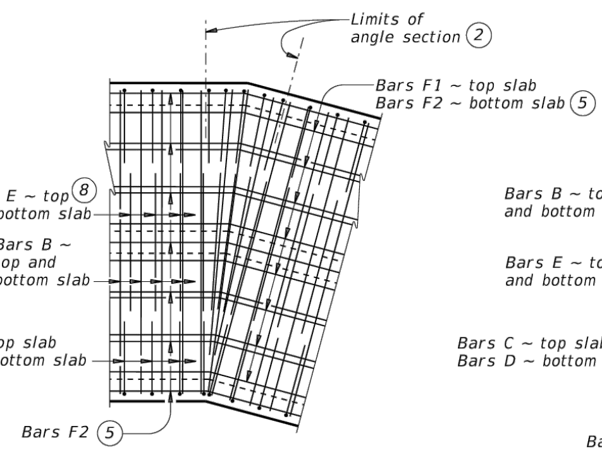
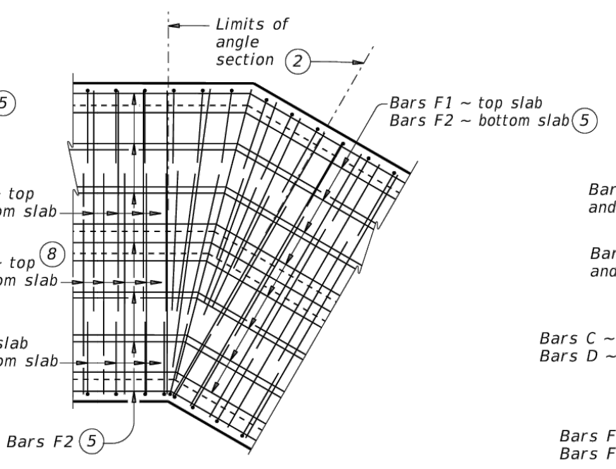


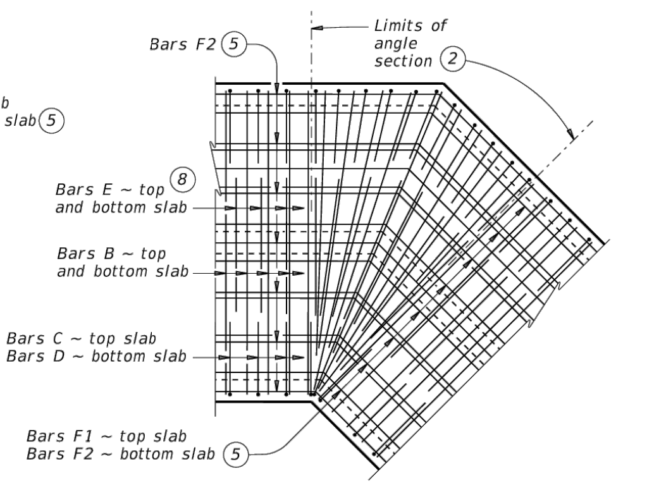
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° ⑦



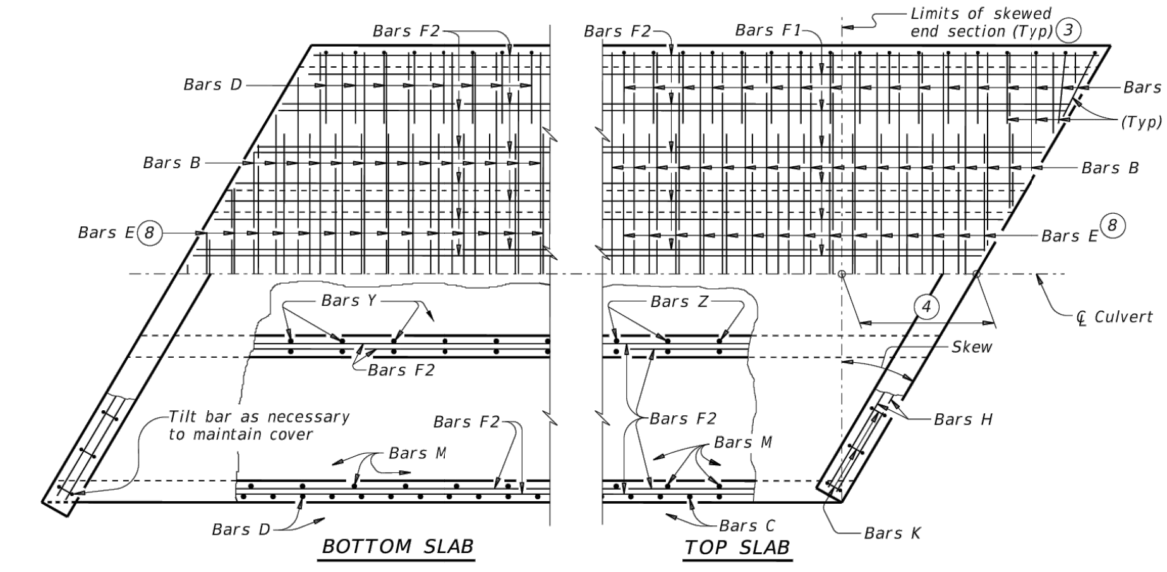
PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



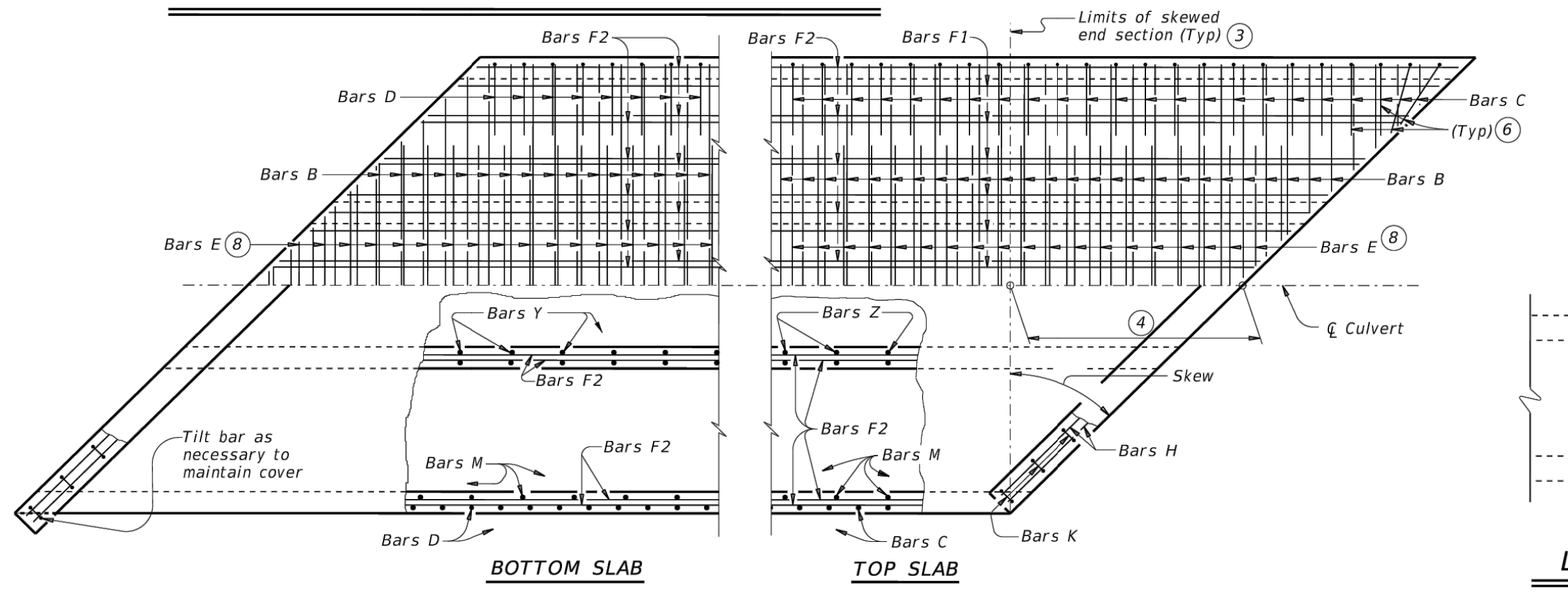
PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



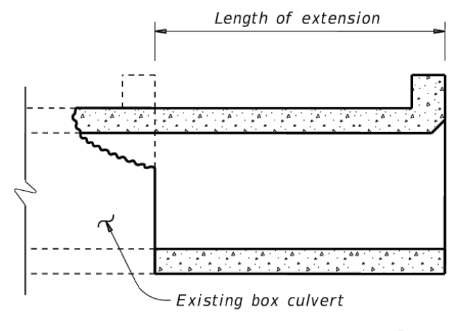
PLAN OF ANGLE SECTION ~ OVER 30° TO 45°



PLAN OF SKEWED ENDS ~ OVER 15° TO 30°



PLAN OF SKEWED ENDS ~ OVER 30° TO 45°



LENGTHENING DETAIL ①

① For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, Class C, D, E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.

② When the spacing between Bars B or Bars E becomes less than half of the normal spacing, cut bars to avoid conflict.

③ The length of Bars B and Bars E will vary in the skewed end sections.

④ [One half of overall width] x [tangent of the skew angle]

⑤ Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.

⑥ When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.

⑦ At the Contractor's option, for skews of 15° or less, place Bars B, C, D, and E parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B and Bars E shown on the Multiple Box Culverts Cast-In-Place (MC) standard sheets to accommodate the skew.

⑧ Extend Bars E as shown on the MC standard sheet for direct traffic culverts.

CONSTRUCTION NOTES:

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

MATERIAL NOTES:

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

GENERAL NOTES:

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

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS
MC-MD

FILE: CD-MC-MD-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT
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REVISIONS | DIST | COUNTY | SHEET NO.

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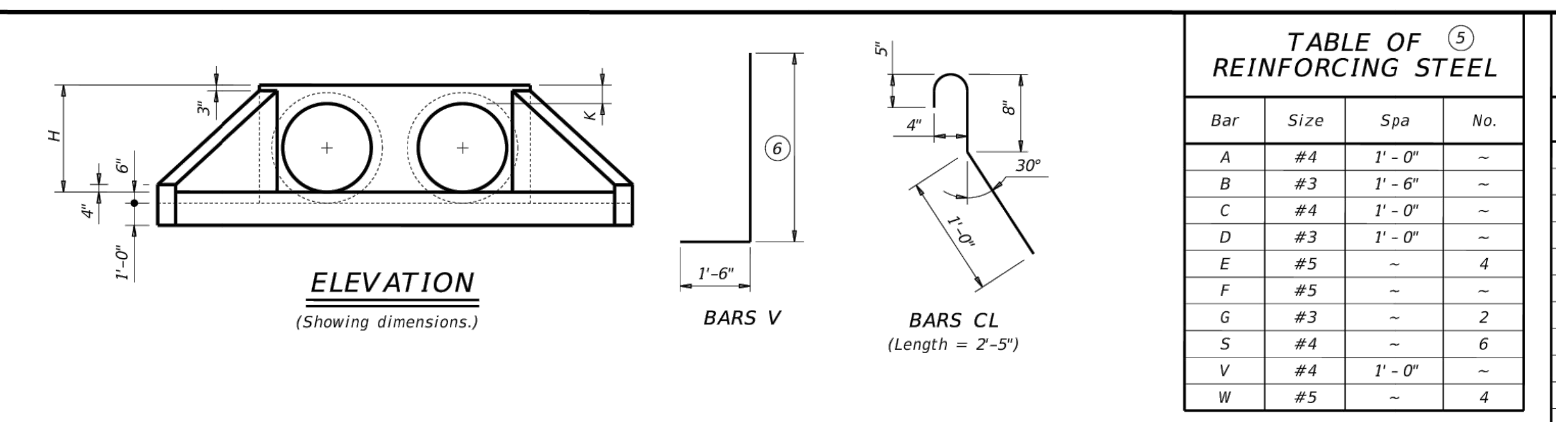
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL ⑤

Slope	Dia of Pipe (D)	Values for One Pipe W	X	Y	L	Reinf (Lbs)	Conc (CY) ①	Values to be Added for Each Addt'l Pipe X and W	Reinf (Lbs)	Conc (CY) ①
2:1	12"	4'-7 ½"	2'-6"	2'-10"	3'-3 ¼"	88	0.6	1'-9"	20	0.2
	15"	5'-5 ¾"	2'-9 ½"	3'-4"	3'-10 ¼"	103	0.7	2'-2"	24	0.3
	18"	6'-4 ¼"	3'-1"	3'-10"	4'-5"	124	0.9	2'-8"	32	0.3
	21"	7'-2 ¾"	3'-4 ½"	4'-4"	5'-0"	143	1.1	3'-1"	43	0.4
	24"	8'-2 ½"	3'-9 ½"	4'-10"	5'-7"	164	1.3	3'-7"	50	0.5
	27"	9'-1"	4'-1"	5'-4"	6'-2"	179	1.5	3'-11"	56	0.6
	30"	9'-11 ½"	4'-4 ½"	5'-10"	6'-8 ¾"	203	1.7	4'-4"	65	0.8
	33"	10'-10"	4'-8"	6'-4"	7'-3 ¾"	224	2.0	4'-8"	71	0.9
	36"	11'-8 ¼"	4'-11 ½"	6'-10"	7'-10 ¾"	249	2.2	5'-1"	81	1.0
	42"	13'-5 ¼"	5'-6 ½"	7'-10"	9'-0 ½"	298	2.8	5'-10"	97	1.3
	48"	15'-9"	6'-1 ½"	9'-4"	10'-9 ¼"	360	3.8	6'-7"	117	1.7
	54"	17'-5 ¾"	6'-8 ½"	10'-4"	11'-11 ¼"	427	4.5	7'-6"	151	2.1
	60"	19'-2 ¾"	7'-3 ½"	11'-4"	13'-1"	481	5.3	8'-3"	174	2.5
	66"	20'-11 ½"	7'-10 ½"	12'-4"	14'-3"	544	6.2	8'-9"	194	2.9
	72"	22'-8 ½"	8'-5 ½"	13'-4"	15'-4 ¾"	601	7.1	9'-4"	213	3.3
3:1	12"	6'-3"	2'-6"	4'-3"	4'-11"	118	0.8	1'-9"	22	0.2
	15"	7'-5"	2'-9 ½"	5'-0"	5'-9 ¼"	137	1.1	2'-2"	28	0.3
	18"	8'-6 ¾"	3'-1"	5'-9"	6'-7 ¾"	170	1.3	2'-8"	37	0.5
	21"	9'-8 ¾"	3'-4 ½"	6'-6"	7'-6"	195	1.6	3'-1"	48	0.6
	24"	11'-0"	3'-9 ½"	7'-3"	8'-4 ½"	227	2.0	3'-7"	58	0.7
	27"	12'-2"	4'-1"	8'-0"	9'-2 ¾"	251	2.3	3'-11"	67	0.8
	30"	13'-4"	4'-4 ½"	8'-9"	10'-1 ¼"	293	2.7	4'-4"	77	1.0
	33"	14'-5 ¾"	4'-8"	9'-6"	10'-11 ¾"	318	3.1	4'-8"	84	1.2
	36"	15'-7 ¾"	4'-11 ½"	10'-3"	11'-10"	351	3.5	5'-1"	96	1.4
	42"	17'-11 ½"	5'-6 ½"	11'-9"	13'-6 ¾"	432	4.5	5'-10"	119	1.7
	48"	21'-1 ¾"	6'-1 ½"	14'-0"	16'-2"	537	6.1	6'-7"	146	2.3
	54"	23'-5 ½"	6'-8 ½"	15'-6"	17'-10 ¾"	630	7.3	7'-6"	186	2.9
	60"	25'-9 ¼"	7'-3 ½"	17'-0"	19'-7 ½"	719	8.7	8'-3"	219	3.4
	66"	28'-1"	7'-10 ½"	18'-6"	21'-4 ¼"	811	10.1	8'-9"	242	3.9
	72"	30'-4 ¾"	8'-5 ½"	20'-0"	23'-1 ¼"	924	11.7	9'-4"	272	4.4
4:1	12"	7'-10 ¾"	2'-6"	5'-8"	6'-6 ½"	148	1.1	1'-9"	24	0.3
	15"	9'-4"	2'-9 ½"	6'-8"	7'-8 ½"	181	1.5	2'-2"	32	0.4
	18"	10'-9 ½"	3'-1"	7'-8"	8'-10 ¼"	221	1.9	2'-8"	42	0.5
	21"	12'-2 ¾"	3'-4 ½"	8'-8"	10'-0"	260	2.3	3'-1"	57	0.7
	24"	13'-9 ½"	3'-9 ½"	9'-8"	11'-2"	301	2.8	3'-7"	67	0.9
	27"	15'-3"	4'-1"	10'-8"	12'-3 ¾"	334	3.3	3'-11"	77	1.0
	30"	16'-8 ¼"	4'-4 ½"	11'-8"	13'-5 ¾"	385	3.8	4'-4"	89	1.3
	33"	18'-1 ¾"	4'-8"	12'-8"	14'-7 ½"	425	4.5	4'-8"	101	1.4
	36"	19'-7"	4'-11 ½"	13'-8"	15'-9 ¼"	472	5.1	5'-1"	115	1.7
	42"	22'-5 ¾"	5'-6 ½"	15'-8"	18'-1"	583	6.5	5'-10"	141	2.1
	48"	26'-6 ¼"	6'-1 ½"	18'-8"	21'-6 ¾"	730	8.9	6'-7"	175	2.8
	54"	29'-5"	6'-8 ½"	20'-8"	23'-10 ¼"	875	10.7	7'-6"	226	3.6
	60"	32'-3 ¾"	7'-3 ½"	22'-8"	26'-2"	996	12.7	8'-3"	264	4.3
	66"	35'-2 ½"	7'-10 ½"	24'-8"	28'-5 ¾"	1,140	14.9	8'-9"	300	4.9
	72"	38'-1 ¼"	8'-5 ½"	26'-8"	30'-9 ½"	1,297	17.3	9'-4"	334	5.6
6:1	12"	11'-2"	2'-6"	8'-6"	9'-9 ¾"	224	1.9	1'-9"	28	0.4
	15"	13'-2 ¼"	2'-9 ½"	10'-0"	11'-6 ½"	268	2.5	2'-2"	37	0.5
	18"	15'-2 ½"	3'-1"	11'-6"	13'-3 ¼"	330	3.2	2'-8"	50	0.7
	21"	17'-2 ¾"	3'-4 ½"	13'-0"	15'-0 ¼"	387	3.9	3'-1"	69	0.9
	24"	19'-4 ½"	3'-9 ½"	14'-6"	16'-9"	453	4.8	3'-7"	80	1.2
	27"	21'-4 ¾"	4'-1"	16'-0"	18'-5 ¾"	512	5.7	3'-11"	96	1.4
	30"	23'-5 ¼"	4'-4 ½"	17'-6"	20'-2 ½"	593	6.7	4'-4"	110	1.7
	33"	25'-5 ½"	4'-8"	19'-0"	21'-11 ¼"	675	7.8	4'-8"	127	2.0
	36"	27'-5 ¾"	4'-11 ½"	20'-6"	23'-8"	735	9.0	5'-1"	144	2.3
	42"	31'-6 ¼"	5'-6 ½"	23'-6"	27'-1 ½"	922	11.5	5'-10"	179	3.0
	48"	37'-3 ½"	6'-1 ½"	28'-0"	32'-4"	1,191	15.9	6'-7"	231	4.0
	54"	41'-4 ¼"	6'-8 ½"	31'-0"	35'-9 ½"	1,424	19.2	7'-6"	300	5.0
	60"	45'-4 ¾"	7'-3 ½"	34'-0"	39'-3"	1,631	22.9	8'-3"	353	6.0



ELEVATION
(Showing dimensions.)

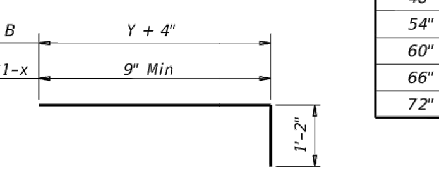
BARS V | BARS CL (Length = 2'-5")

TABLE OF REINFORCING STEEL ⑤

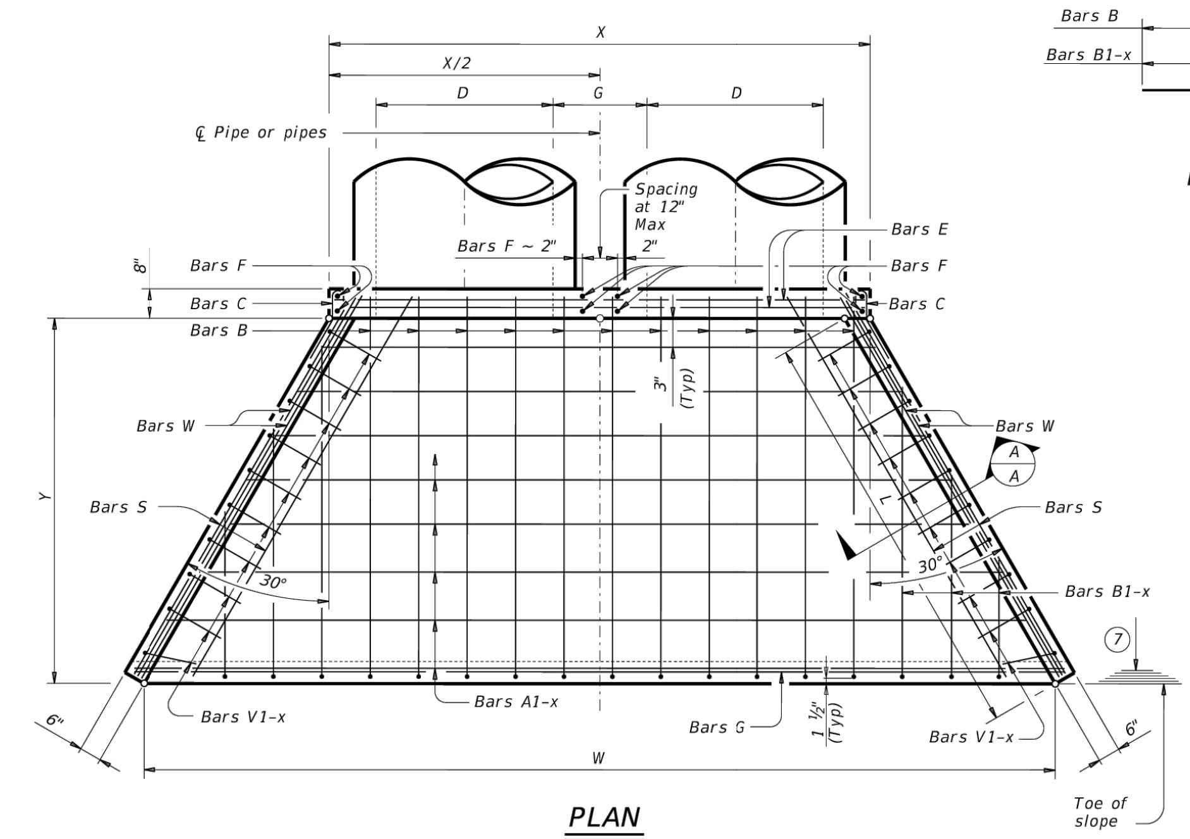
Bar	Size	Spa	No.
A	#4	1'-0"	~
B	#3	1'-6"	~
C	#4	1'-0"	~
D	#3	1'-0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
S	#4	~	6
V	#4	1'-0"	~
W	#5	~	4

TABLE OF CONSTANT DIMENSIONS

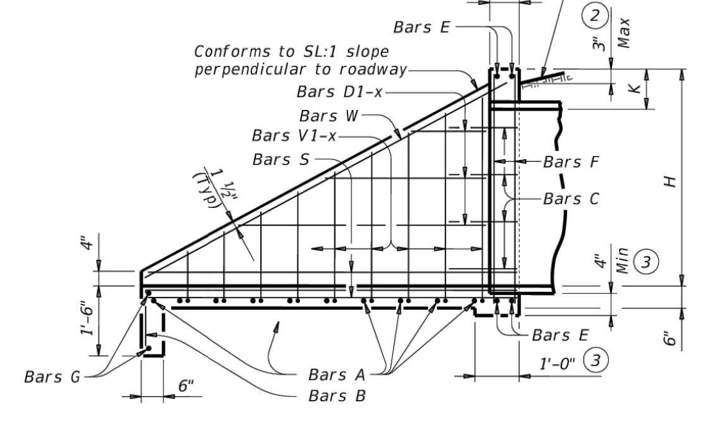
Dia of Pipe (D)	G	K ④	H
12"	0'-9"	1'-0"	2'-0"
15"	0'-11"	1'-0"	2'-3"
18"	1'-2"	1'-0"	2'-6"
21"	1'-4"	1'-0"	2'-9"
24"	1'-7"	1'-0"	3'-0"
27"	1'-8"	1'-0"	3'-3"
30"	1'-10"	1'-0"	3'-6"
33"	1'-11"	1'-0"	3'-9"
36"	2'-1"	1'-0"	4'-0"
42"	2'-4"	1'-0"	4'-6"
48"	2'-7"	1'-3"	5'-3"
54"	3'-0"	1'-3"	5'-9"
60"	3'-3"	1'-3"	6'-3"
66"	3'-3"	1'-3"	6'-9"
72"	3'-4"	1'-3"	7'-3"



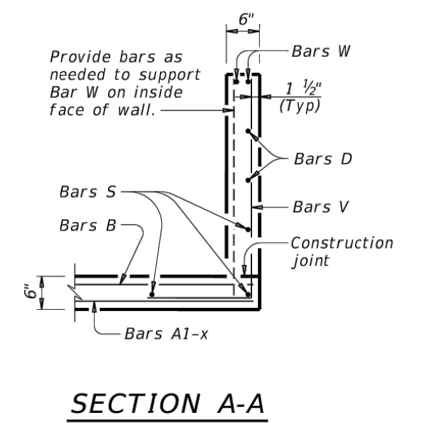
BARS B and B1-x



PLAN



TYPICAL WING ELEVATION



SECTION A-A

① Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

② For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.

④ Dimensions shown are usual and maximum.

⑤ Quantities shown are for one structure end only (one headwall).

⑥ Min Length = 6" + 3" x $\left(\frac{12 \text{ x } H - 7}{12 \text{ x } L}\right)$
Max Length = 12 x H - 3" x $\left(\frac{12 \text{ x } H - 7}{12 \text{ x } L}\right)$ - 1"

⑦ Lengths of wings based on SL:1 slope along this line.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

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

Texas Department of Transportation | Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS
CH-FW-0

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CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

4122 Pond Hill Road, Suite 101
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P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1
DRAINAGE DETAILS

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

# 1. 2. 3. 4. 5. 6. 7. 8. 9.

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C52 DRAINAGE DETAILS.dwg 2025/06/09 3:58pm jochoa

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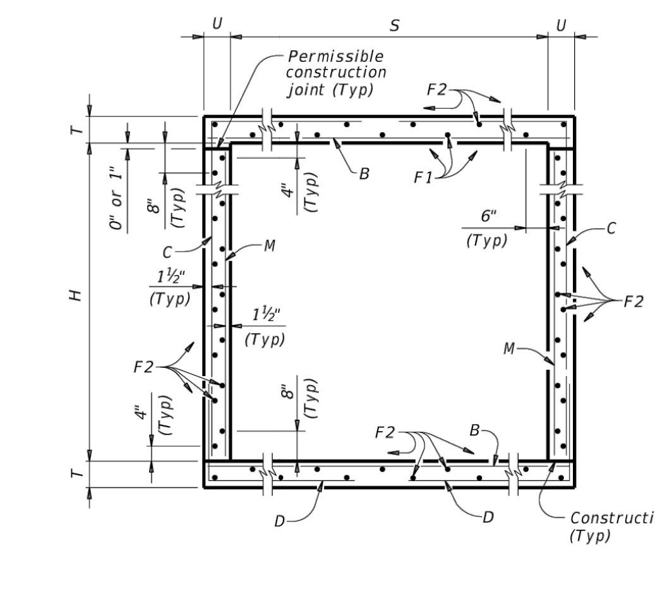
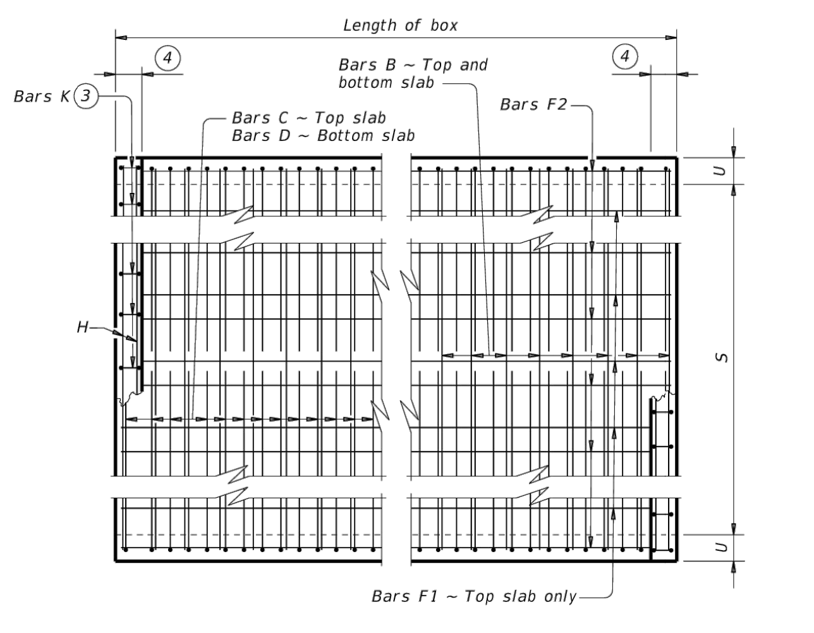
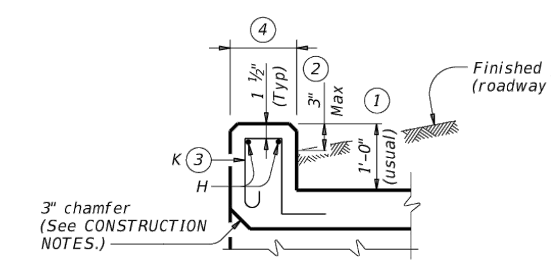


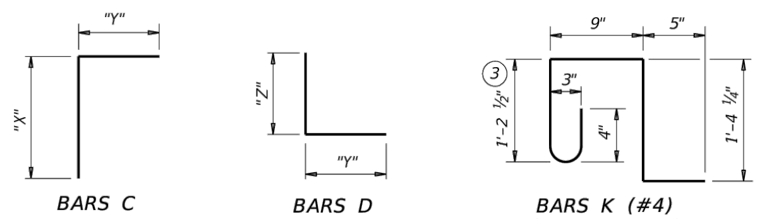
TYPICAL SECTION



PLAN OF REINF STEEL


Finished grade (roadway slope)
3" chamfer (See CONSTRUCTION NOTES.)
K
M

SECTION THRU CURB



BARS C

BARS D

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

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

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

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

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

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

CONSTRUCTION NOTES:

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

MATERIAL NOTES:

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

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

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the 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.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation
Bridge Division Standard

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

SCC-5 & 6

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

SECTION DIMENSIONS				FILL HEIGHT ⑤	Bars B					Bars C							Bars D							Bars M ~ #4				Bars F1 ~ #4 at 18" Spa			Bars F2 ~ #4 at 18" Spa			Bars H 4 ~ #4		Bars K		QUANTITIES: Per Foot of Barrel		Curb		Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	" X "	" Y "	No.	Size	Spa	Length	Weight	" Y "	" Z "	No.	Spa	Length	Weight	No.	Length	Wt	No.	Length	Weight	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
5' - 0"	2' - 0"	8"	7"	26'	108	#6	9"	5' - 11"	960	108	#5	9"	6' - 3"	704	2' - 6"	3' - 9"	108	#5	9"	6' - 5"	723	3' - 9"	2' - 8"	108	9"	2' - 0"	144	4	39' - 9"	106	22	39' - 9"	584	5' - 11"	16	14	39	0.391	80.5	0.5	55	16.1	3,276
5' - 0"	2' - 0"	9"	7"	30'	108	#6	9"	5' - 11"	960	108	#5	9"	6' - 4"	713	2' - 7"	3' - 9"	108	#5	9"	6' - 6"	732	3' - 9"	2' - 9"	108	9"	2' - 0"	144	4	39' - 9"	106	22	39' - 9"	584	5' - 11"	16	14	39	0.429	81.0	0.5	55	17.6	3,294
5' - 0"	3' - 0"	8"	7"	26'	108	#6	9"	5' - 11"	960	108	#5	9"	7' - 3"	817	3' - 6"	3' - 9"	108	#5	9"	6' - 5"	723	3' - 9"	2' - 8"	108	9"	3' - 0"	216	4	39' - 9"	106	26	39' - 9"	690	5' - 11"	16	14	39	0.434	87.8	0.5	55	17.8	3,567
5' - 0"	3' - 0"	9"	7"	30'	108	#6	9"	5' - 11"	960	108	#5	9"	7' - 4"	826	3' - 7"	3' - 9"	108	#5	9"	6' - 6"	732	3' - 9"	2' - 9"	108	9"	3' - 0"	216	4	39' - 9"	106	26	39' - 9"	690	5' - 11"	16	14	39	0.472	88.3	0.5	55	19.3	3,585
5' - 0"	4' - 0"	8"	7"	26'	108	#6	9"	5' - 11"	960	108	#5	9"	8' - 3"	929	4' - 6"	3' - 9"	108	#5	9"	6' - 5"	723	3' - 9"	2' - 8"	108	9"	4' - 0"	289	4	39' - 9"	106	26	39' - 9"	690	5' - 11"	16	14	39	0.477	92.4	0.5	55	19.5	3,752
5' - 0"	4' - 0"	9"	7"	30'	108	#6	9"	5' - 11"	960	108	#5	9"	8' - 4"	939	4' - 7"	3' - 9"	108	#5	9"	6' - 6"	732	3' - 9"	2' - 9"	108	9"	4' - 0"	289	4	39' - 9"	106	26	39' - 9"	690	5' - 11"	16	14	39	0.515	92.9	0.5	55	21.1	3,771
5' - 0"	5' - 0"	8"	7"	26'	108	#6	9"	5' - 11"	960	108	#5	9"	9' - 3"	1,042	5' - 6"	3' - 9"	108	#5	9"	6' - 5"	723	3' - 9"	2' - 8"	108	9"	5' - 0"	361	4	39' - 9"	106	30	39' - 9"	797	5' - 11"	16	14	39	0.521	99.7	0.5	55	21.3	4,044
5' - 0"	5' - 0"	9"	7"	30'	108	#6	9"	5' - 11"	960	108	#5	9"	9' - 4"	1,051	5' - 7"	3' - 9"	108	#5	9"	6' - 6"	732	3' - 9"	2' - 9"	108	9"	5' - 0"	361	4	39' - 9"	106	30	39' - 9"	797	5' - 11"	16	14	39	0.559	100.2	0.5	55	22.8	4,062
6' - 0"	2' - 0"	8"	7"	20'	108	#6	9"	6' - 11"	1,122	108	#5	9"	6' - 7"	742	2' - 6"	4' - 1"	108	#5	9"	6' - 9"	760	4' - 1"	2' - 8"	108	9"	2' - 0"	144	5	39' - 9"	133	25	39' - 9"	664	6' - 11"	18	16	45	0.440	89.1	0.5	63	18.1	3,628
6' - 0"	2' - 0"	9"	7"	26'	108	#6	9"	6' - 11"	1,122	162	#5	6"	6' - 8"	1,126	2' - 7"	4' - 1"	162	#5	6"	6' - 10"	1,155	4' - 1"	2' - 9"	108	9"	2' - 0"	144	5	39' - 9"	133	25	39' - 9"	664	6' - 11"	18	16	45	0.485	108.6	0.5	63	19.9	4,407
6' - 0"	2' - 0"	10"	8"	30'	108	#6	9"	7' - 1"	1,149	162	#5	6"	6' - 10"	1,155	2' - 8"	4' - 2"	162	#5	6"	7' - 0"	1,183	4' - 2"	2' - 10"	82	12"	2' - 0"	110	5	39' - 9"	133	25	39' - 9"	664	7' - 1"	19	18	50	0.551	109.9	0.5	69	22.6	4,463
6' - 0"	3' - 0"	8"	7"	20'	108	#6	9"	6' - 11"	1,122	108	#5	9"	7' - 7"	854	3' - 6"	4' - 1"	108	#5	9"	6' - 9"	760	4' - 1"	2' - 8"	108	9"	3' - 0"	216	5	39' - 9"	133	29	39' - 9"	770	6' - 11"	18	16	45	0.484	96.4	0.5	63	19.9	3,918
6' - 0"	3' - 0"	9"	7"	26'	108	#6	9"	6' - 11"	1,122	162	#5	6"	7' - 8"	1,295	3' - 7"	4' - 1"	162	#5	6"	6' - 10"	1,155	4' - 1"	2' - 9"	108	9"	3' - 0"	216	5	39' - 9"	133	29	39' - 9"	770	6' - 11"	18	16	45	0.528	117.3	0.5	63	21.6	4,754
6' - 0"	3' - 0"	10"	8"	30'	108	#6	9"	7' - 1"	1,149	162	#5	6"	7' - 10"	1,324	3' - 8"	4' - 2"	162	#5	6"	7' - 0"	1,183	4' - 2"	2' - 10"	82	12"	3' - 0"	164	5	39' - 9"	133	29	39' - 9"	770	7' - 1"	19	18	50	0.601	118.1	0.5	69	24.6	4,792
6' - 0"	4' - 0"	8"	7"	20'	108	#6	9"	6' - 11"	1,122	108	#5	9"	8' - 7"	967	4' - 6"	4' - 1"	108	#5	9"	6' - 9"	760	4' - 1"	2' - 8"	108	9"	4' - 0"	289	5	39' - 9"	133	29	39' - 9"	770	6' - 11"	18	16	45	0.527	101.0	0.5	63	21.6	4,104
6' - 0"	4' - 0"	9"	7"	26'	108	#6	9"	6' - 11"	1,122	162	#5	6"	8' - 8"	1,464	4' - 7"	4' - 1"	162	#5	6"	6' - 10"	1,155	4' - 1"	2' - 9"	108	9"	4' - 0"	289	5	39' - 9"	133	29	39' - 9"	770	6' - 11"	18	16	45	0.571	123.3	0.5	63	23.4	4,996
6' - 0"	4' - 0"	10"	8"	30'	108	#6	9"	7' - 1"	1,149	162	#5	6"	8' - 10"	1,493	4' - 8"	4' - 2"	162	#5	6"	7' - 0"	1,183	4' - 2"	2' - 10"	82	12"	4' - 0"	219	5	39' - 9"	133	29	39' - 9"	770	7' - 1"	19	18	50	0.650	123.7	0.5	69	26.5	5,016
6' - 0"	5' - 0"	8"	7"	20'	108	#6	9"	6' - 11"	1,122	108	#5	9"	9' - 7"	1,080	5' - 6"	4' - 1"	108	#5	9"	6' - 9"	760	4' - 1"	2' - 8"	108	9"	5' - 0"	361	5	39' - 9"	133	33	39' - 9"	876	6' - 11"	18	16	45	0.570	108.3	0.5	63	23.3	4,395
6' - 0"	5' - 0"	9"	7"	26'	108	#6	9"	6' - 11"	1,122	162	#5	6"	9' - 8"	1,633	5' - 7"	4' - 1"	162	#5	6"	6' - 10"	1,155	4' - 1"	2' - 9"	108	9"	5' - 0"	361	5	39' - 9"	133	33	39' - 9"	876	6' - 11"	18	16	45	0.614	132.0	0.5	63	25.1	5,343
6' - 0"	5' - 0"	10"	8"	30'	108	#6	9"	7' - 1"	1,149	162	#5	6"	9' - 10"	1,661	5' - 8"	4' - 2"	162	#5	6"	7' - 0"	1,183	4' - 2"	2' - 10"	82	12"	5' - 0"	274	5	39' - 9"	133	33	39' - 9"	876	7' - 1"	19	18	50	0.700	131.9	0.5	69	28.5	5,345
6' - 0"	6' - 0"	8"	7"	20'	108	#6	9"	6' - 11"	1,122	108	#5	9"	10' - 7"	1,192	6' - 6"	4' - 1"	108	#5	9"	6' - 9"	760	4' - 1"	2' - 8"	108	9"	6' - 0"	433	5	39' - 9"	133	37	39' - 9"	982	6' - 11"	18	16	45	0.613	115.6	0.5	63	25.0	4,685
6' - 0"	6' - 0"	9"	7"	26'	108	#6	9"	6' - 11"	1,122	162	#5	6"	10' - 8"	1,802	6' - 7"	4' - 1"	162	#5	6"	6' - 10"	1,155	4' - 1"	2' - 9"	108	9"	6' - 0"	433	5	39' - 9"	133	37	39' - 9"	982	6' - 11"	18	16	45	0.657	140.7	0.5	63	26.8	5,690
6' - 0"	6' - 0"	10"	8"	30'	108	#6	9"	7' - 1"	1,149	162	#5	6"	10' - 10"	1,830	6' - 8"	4' - 2"	162	#5	6"	7' - 0"	1,183	4' - 2"	2' - 10"	82	12"	6' - 0"	329	5	39' - 9"	133	37	39' - 9"	982	7' - 1"	19	18	50	0.749	140.2	0.5	69	30.5	5,675

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-5 & 6

FILE: CD-SCC56-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 04/2021 Updated X values.	DIST	COUNTY		SHEET NO.

DATE:
FILE:

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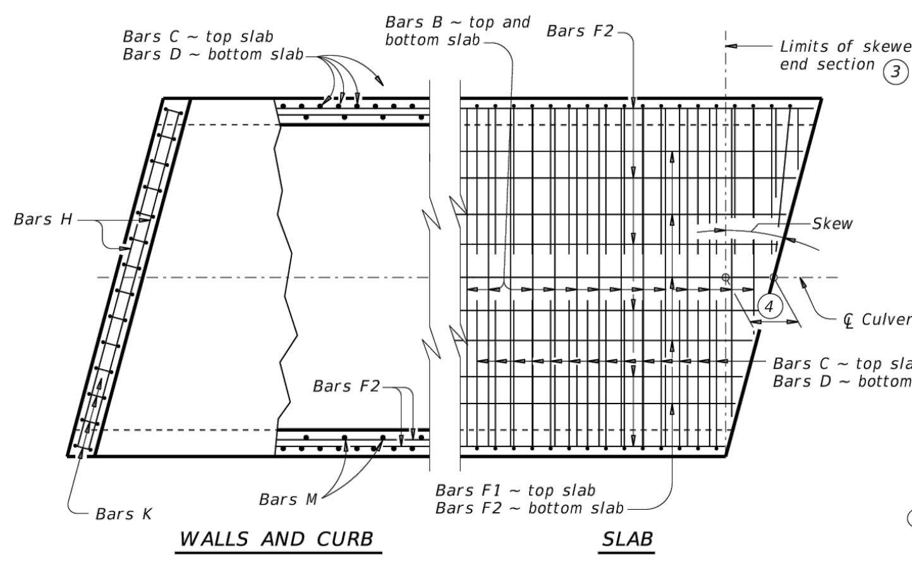
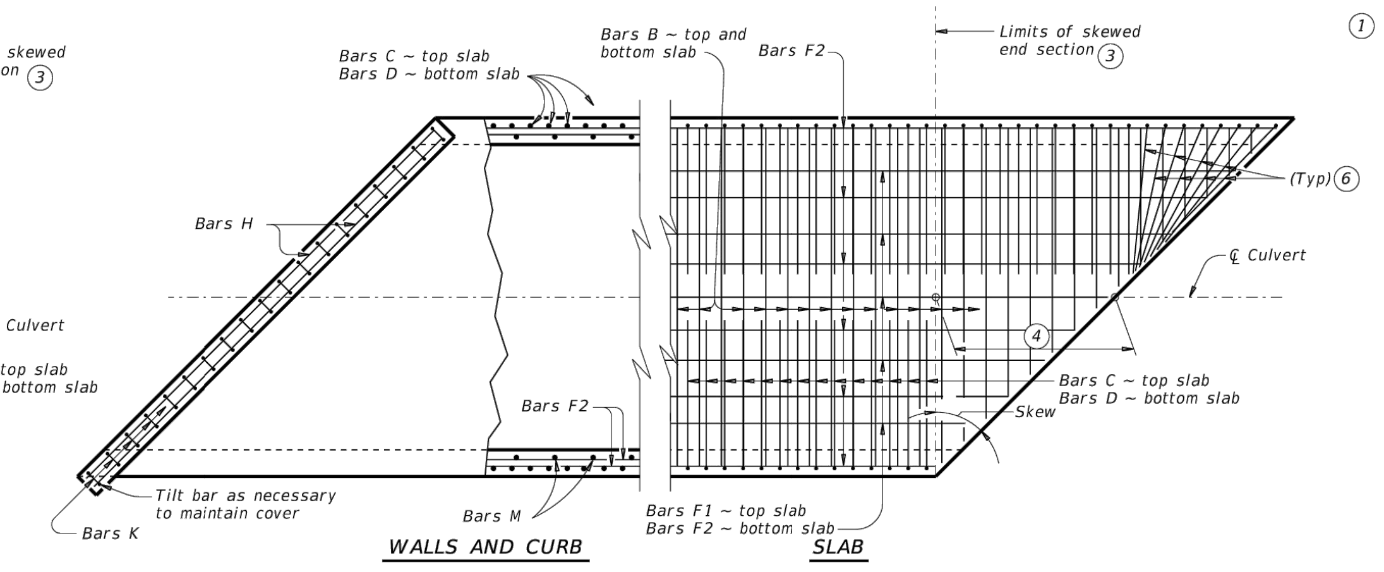
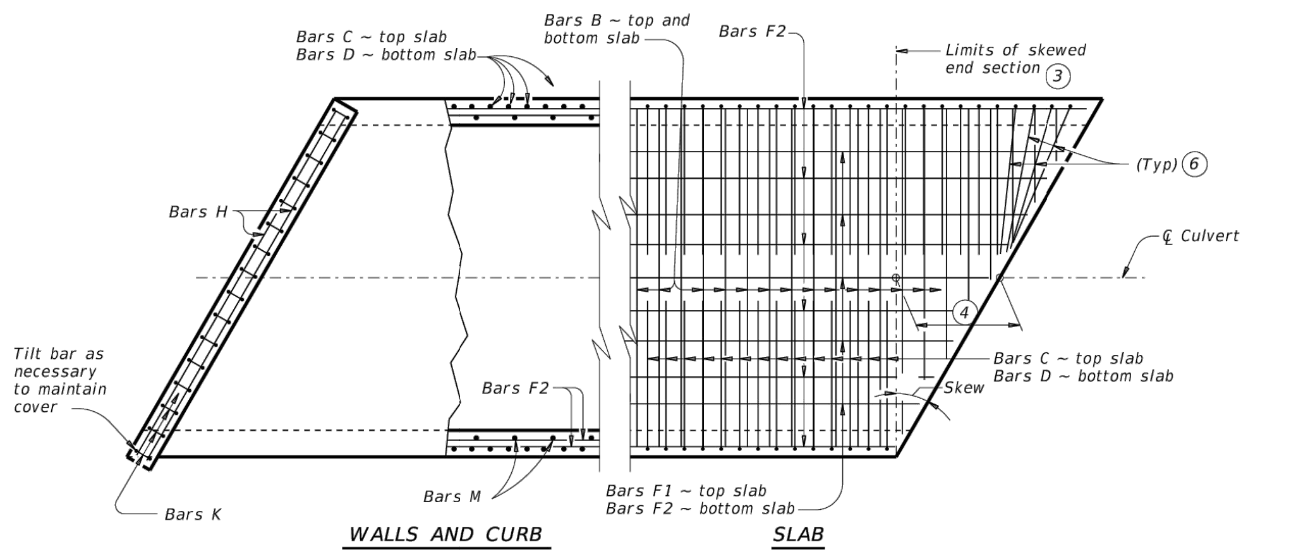


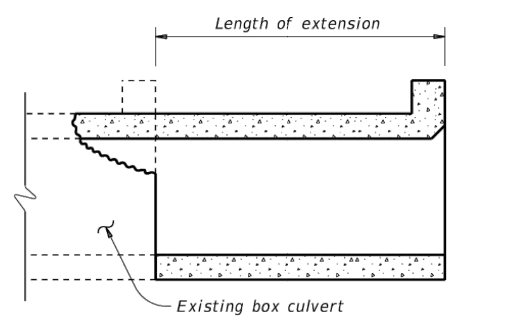
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° ⑦



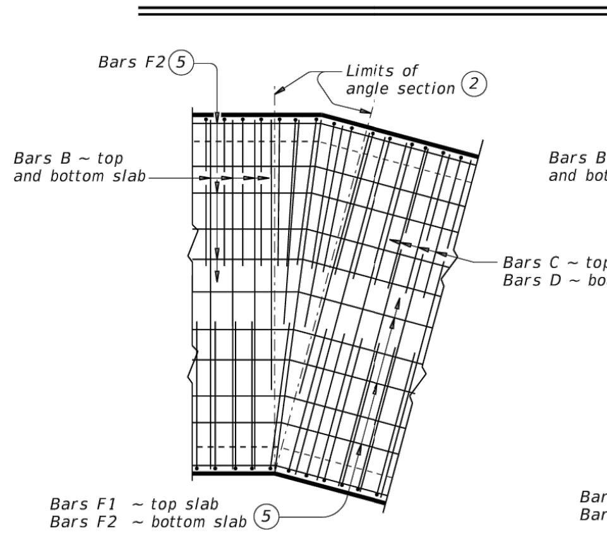
PLAN OF SKEWED ENDS ~ OVER 30° TO 45°



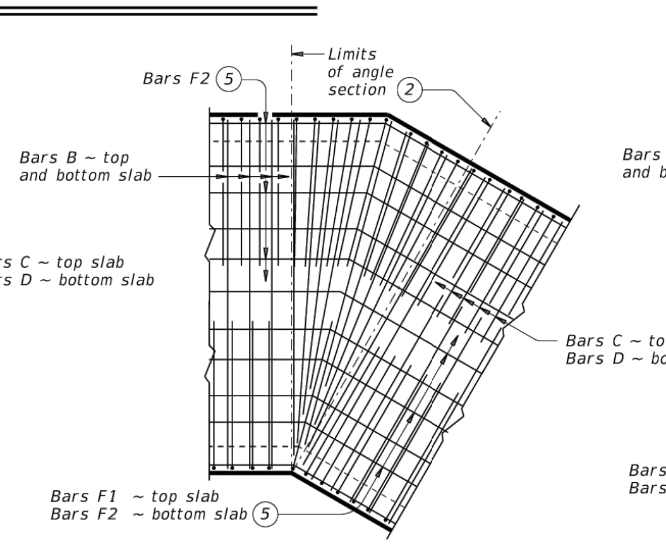
PLAN OF SKEWED ENDS ~ OVER 15° TO 30°



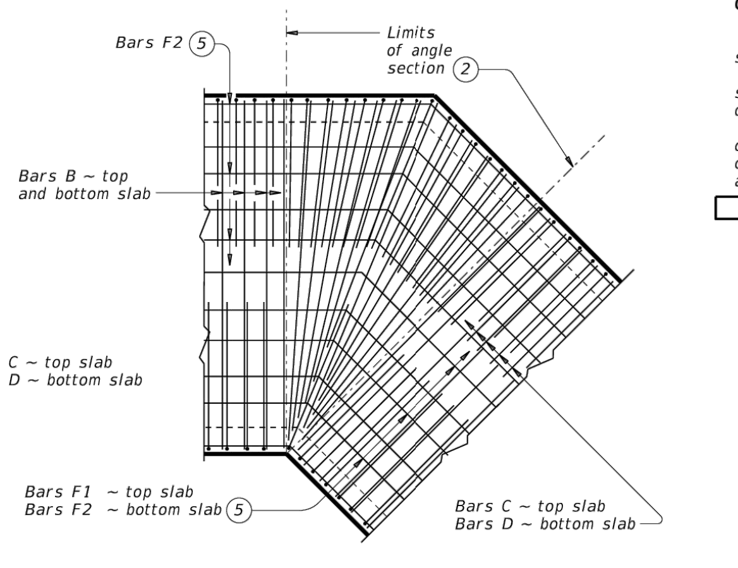
LENGTHENING DETAIL ①



PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

① For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, C, D , E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.

② When the spacing between Bars B becomes less than half of the normal spacing, cut bars to avoid conflict.

③ The length of Bars B vary in the skewed end sections.

④ [One half of overall width] x [tangent of the skew angle]

⑤ Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.

⑥ When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.

⑦ At the Contractor's option, for skews of 15° or less, place Bars B, C, and D parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B shown on the Single Box Culverts Cast-In-Place (SCC) standards sheets to accommodate the skew.

CONSTRUCTION NOTES:

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

MATERIAL NOTES:

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

GENERAL NOTES:

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

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation
Bridge Division Standard

SINGLE BOX CULVERTS
CAST-IN-PLACE
MISCELLANEOUS DETAILS

SCC-MD

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

DATE:
FILE:

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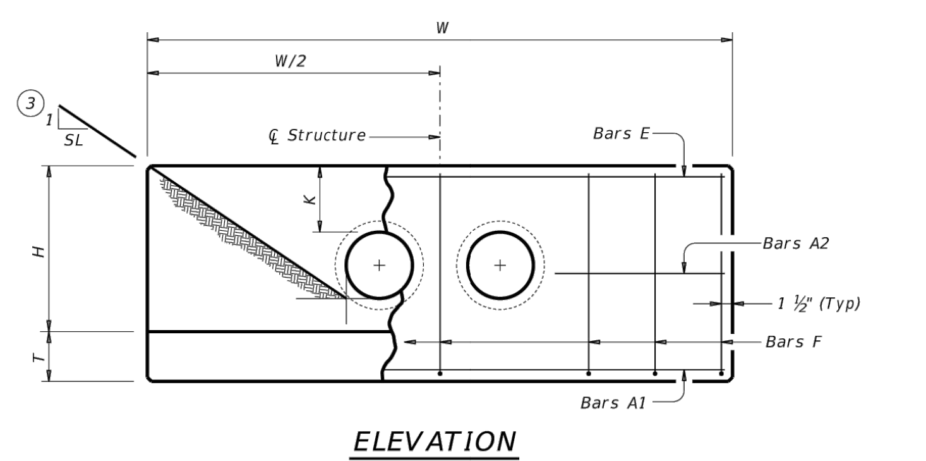
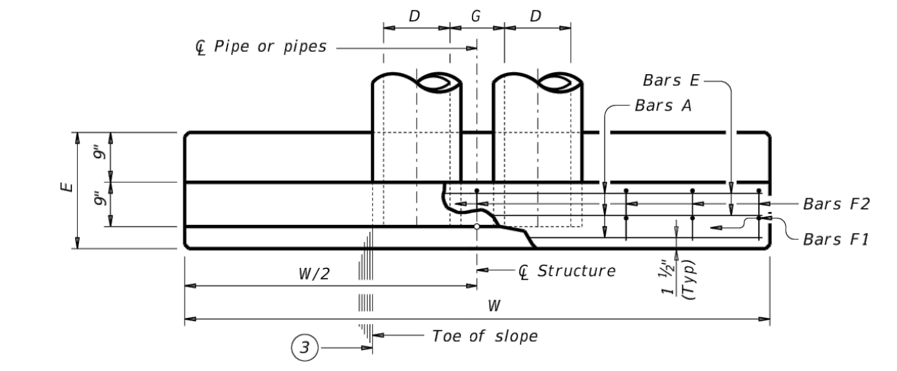
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL ⑤

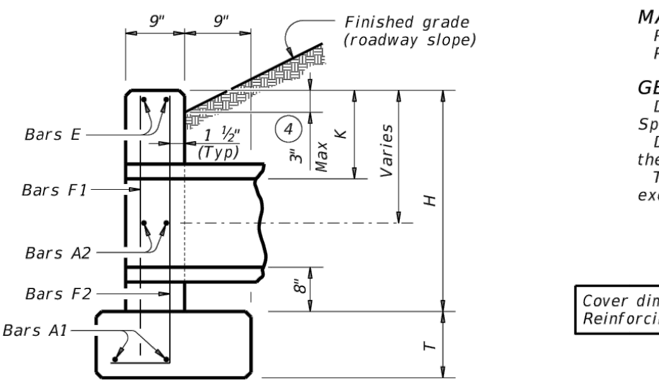
Slope	Dia of Pipe (D)	Values for One Pipe: W	Reinf (Lbs) ①	Conc (CY) ②	Values To Be Added for Each Addt'l Pipe: W	Reinf (Lbs) ①	Conc (CY) ②
2:1	12"	9' - 0"	122	1.1	1' - 9"	15	0.2
	15"	10' - 3"	136	1.3	2' - 2"	16	0.2
	18"	11' - 6"	163	1.5	2' - 8"	19	0.3
	21"	12' - 9"	200	1.8	3' - 1"	31	0.4
	24"	14' - 0"	217	2.1	3' - 7"	34	0.4
	27"	15' - 3"	254	2.4	3' - 11"	37	0.5
	30"	16' - 6"	272	2.7	4' - 4"	40	0.6
	33"	17' - 9"	314	3.1	4' - 8"	43	0.6
	36"	19' - 0"	371	3.9	5' - 1"	46	0.8
	42"	21' - 6"	442	4.9	5' - 10"	52	1.0
	48"	25' - 0"	569	6.4	6' - 7"	59	1.3
	54"	27' - 6"	701	7.5	7' - 6"	82	1.6
	60"	30' - 0"	794	8.8	8' - 3"	90	1.8
	66"	32' - 6"	894	10.2	8' - 9"	96	2.0
	72"	35' - 0"	1,055	11.7	9' - 4"	103	2.3
3:1	12"	13' - 0"	175	1.6	1' - 9"	14	0.2
	15"	14' - 9"	193	1.9	2' - 2"	17	0.2
	18"	16' - 6"	228	2.2	2' - 8"	19	0.3
	21"	18' - 3"	299	2.6	3' - 1"	31	0.4
	24"	20' - 0"	323	3.0	3' - 7"	33	0.4
	27"	21' - 9"	371	3.5	3' - 11"	37	0.5
	30"	23' - 6"	415	4.0	4' - 4"	40	0.5
	33"	25' - 3"	469	4.6	4' - 8"	43	0.6
	36"	27' - 0"	556	5.7	5' - 1"	46	0.8
	42"	30' - 6"	675	7.1	5' - 10"	52	1.0
	48"	35' - 6"	837	9.2	6' - 7"	59	1.3
	54"	39' - 0"	1,015	11.0	7' - 6"	84	1.6
	60"	42' - 6"	1,171	12.9	8' - 3"	91	1.8
	66"	46' - 0"	1,298	14.9	8' - 9"	98	2.0
	72"	49' - 6"	1,561	17.1	9' - 4"	103	2.3
4:1	12"	17' - 0"	229	2.0	1' - 9"	15	0.2
	15"	19' - 3"	266	2.4	2' - 2"	17	0.2
	18"	21' - 6"	308	2.9	2' - 8"	19	0.3
	21"	23' - 9"	382	3.5	3' - 1"	31	0.3
	24"	26' - 0"	430	3.9	3' - 7"	34	0.4
	27"	28' - 3"	486	4.7	3' - 11"	37	0.5
	30"	30' - 6"	539	5.2	4' - 4"	40	0.6
	33"	32' - 9"	603	6.0	4' - 8"	42	0.6
	36"	35' - 0"	738	7.5	5' - 1"	47	0.8
	42"	39' - 6"	881	9.3	5' - 10"	52	1.0
	48"	46' - 0"	1,102	12.1	6' - 7"	61	1.3
	54"	50' - 6"	1,364	14.4	7' - 6"	84	1.6
	60"	55' - 0"	1,547	16.9	8' - 3"	91	1.8
	66"	59' - 6"	1,741	19.5	8' - 9"	98	2.0
	72"	64' - 0"	2,077	22.4	9' - 4"	102	2.3
6:1	12"	25' - 0"	336	3.0	1' - 9"	14	0.2
	15"	28' - 3"	384	3.6	2' - 2"	17	0.2
	18"	31' - 6"	452	4.2	2' - 8"	19	0.3
	21"	34' - 9"	581	5.1	3' - 1"	31	0.4
	24"	38' - 0"	644	5.8	3' - 7"	34	0.4
	27"	41' - 3"	737	6.9	3' - 11"	37	0.5
	30"	44' - 6"	807	7.7	4' - 4"	39	0.6
	33"	47' - 9"	912	8.9	4' - 8"	44	0.6
	36"	51' - 0"	1,108	11.0	5' - 1"	48	0.8
	42"	57' - 6"	1,318	13.7	5' - 10"	54	1.0
	48"	67' - 0"	1,682	17.9	6' - 7"	59	1.3
	54"	73' - 6"	2,072	21.3	7' - 6"	83	1.6
	60"	80' - 0"	2,351	24.9	8' - 3"	89	1.8
	66"	86' - 6"	2,643	28.9	8' - 9"	96	2.0
	72"	93' - 0"	3,121	33.1	9' - 4"	101	2.3



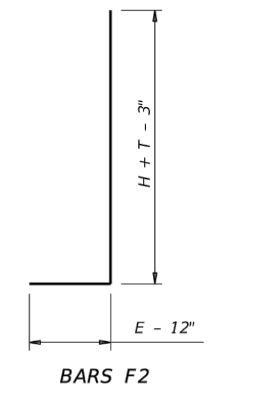
ELEVATION



PLAN OF NON-SKEWED PIPES



SECTION AT CENTER OF PIPE



BARS F2

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K ⑤	H	T	E
12"	0' - 9"	1' - 0"	2' - 8"	0' - 9"	1' - 9"
15"	0' - 11"	1' - 0"	2' - 11"	0' - 9"	1' - 9"
18"	1' - 2"	1' - 0"	3' - 2"	0' - 9"	1' - 9"
21"	1' - 4"	1' - 0"	3' - 5"	0' - 9"	2' - 0"
24"	1' - 7"	1' - 0"	3' - 8"	0' - 9"	2' - 0"
27"	1' - 8"	1' - 0"	3' - 11"	0' - 9"	2' - 3"
30"	1' - 10"	1' - 0"	4' - 2"	0' - 9"	2' - 3"
33"	1' - 11"	1' - 0"	4' - 5"	0' - 9"	2' - 6"
36"	2' - 1"	1' - 0"	4' - 8"	1' - 0"	2' - 6"
42"	2' - 4"	1' - 0"	5' - 2"	1' - 0"	2' - 9"
48"	2' - 7"	1' - 3"	5' - 11"	1' - 0"	3' - 0"
54"	3' - 0"	1' - 3"	6' - 5"	1' - 0"	3' - 3"
60"	3' - 3"	1' - 3"	6' - 11"	1' - 0"	3' - 6"
66"	3' - 3"	1' - 3"	7' - 5"	1' - 0"	3' - 9"
72"	3' - 4"	1' - 3"	7' - 11"	1' - 0"	4' - 0"

TABLE OF REINFORCING STEEL ⑥

Bar	Size	Spa	No.
A1	#5	~	2
A2	#5	1' - 6"	~
E	#5	~	2
F	#5	1' - 0"	~

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

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

① Total quantities include one 3'-1" lap for bars over 60' in length.

② Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

③ Indicated slope is perpendicular to centerline pipe or pipes.

④ For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

⑤ Dimensions shown are usual and maximum.

⑥ Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation
Bridge Division Standard

CONCRETE HEADWALLS
WITH PARALLEL WINGS FOR
NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: CD-CH-PW0-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DATE:
FILE:

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EST. 1980
CUDE
ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

DRAINAGE DETAILS

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

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06/09/2025
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TBPE No. 455
TBPLS No. 10048500

C53

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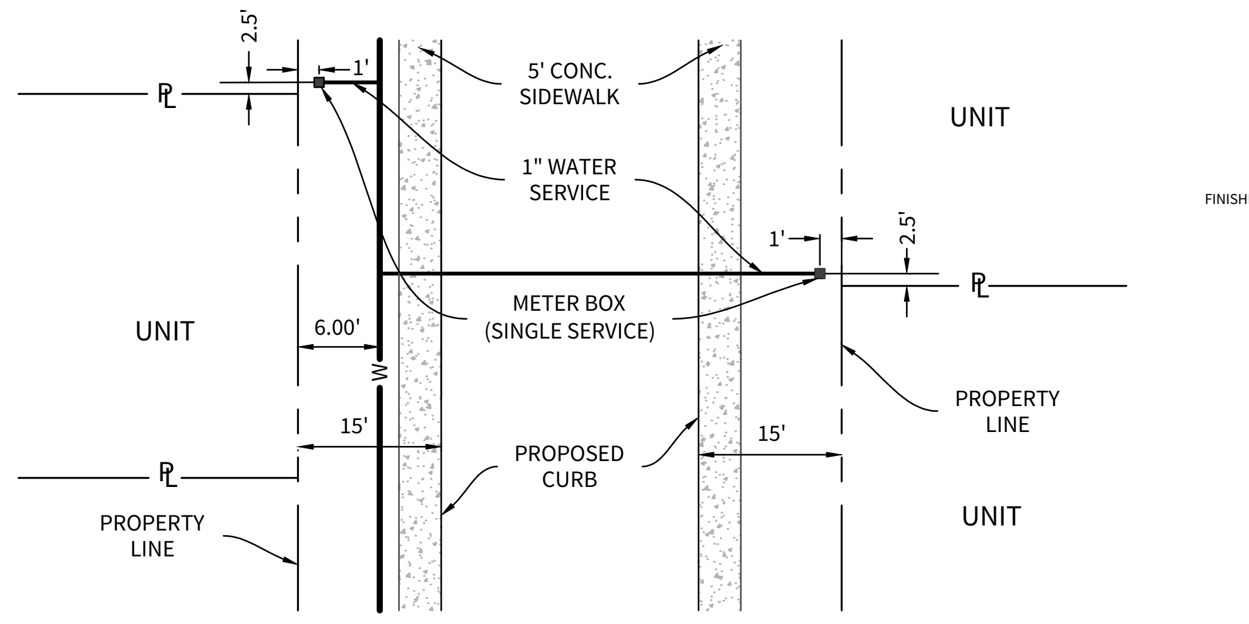
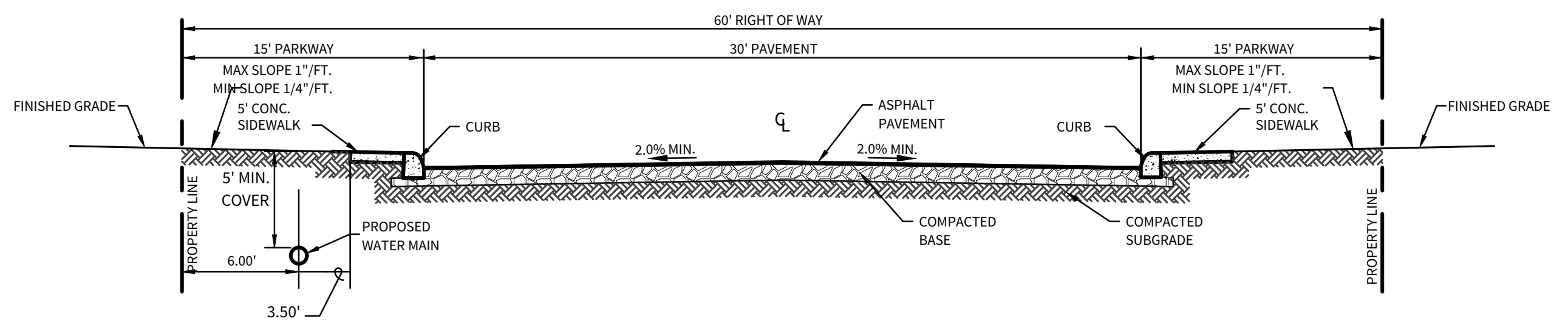


WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.



LOCAL "A" STREET CROSS-SECTION

PRESSURE ZONE 1125 HGL

Developer's Name	MERITAGE HOMES OF TEXAS, L.L.C.
Developer's Address	2722 WEST BITTERS ROAD, SUITE 200

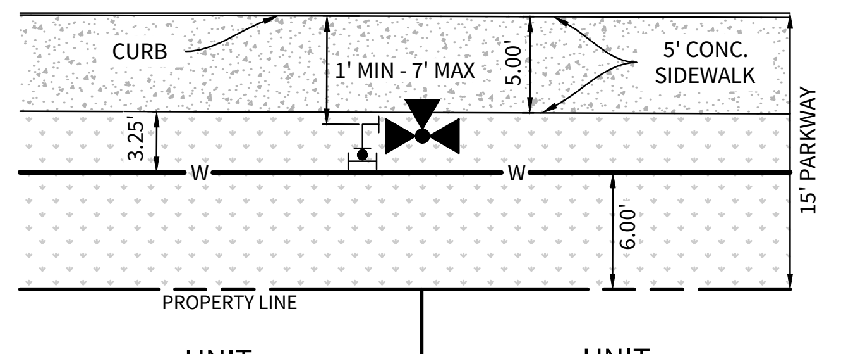
City SAN ANTONIO State TEXAS Zip 78231

Phone # (210) 298-4294 Fax #

SAWS Block Map # N/A Total EDU's 125 Total Acreage 69.16

Total Linear Footage of Pipe 8" W - 2,019 L.F. 12" W - 5,194 L.F. Plat No. -

Number of Lots 125 SAWS Job No. -



NOTE:

1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (5' SIDEWALK)

N.T.S.

CONTESSA UNIT 1 - WATER DEVELOPMENT
ONSITE ESTIMATED QUANTITY TAKE-OFF

(CONTRACTOR RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES REQUIRED)

Item No.	Description	Quantity	Units
1	8" PVC C-909 PC 235	2,020	LF
2	12" PVC C-909 PC 235	5,192	LF
3	8" GATE VALVES	4	EA
4	12" GATE VALVES	6	EA
5	FIRE HYDRANTS	13	EA
6	PIPE FITTINGS, ALL SIZES AND TYPES	5	TON
7	2" BLOWOFF, TEMPORARY	6	EA
8	1" LONG SERVICE (5/8" METER)	44	EA
9	1" SHORT SERVICE (5/8" METER)	81	EA
10	TRENCH EXCAVATION SAFETY PROTECTION	7,212	LF
11	HYDROSTATIC TESTING	1	EA
12	METER BOX (NON-STANDARD METER BOX)	125	EA
13	DISINFECTION SAMPLE PORT	1	EA
14	TIE INTO EXISTING SEWER MAIN	1	EA

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JULY 2017*

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:

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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 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 Comal 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. Water Section.

WATER SECTION

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly. For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestoscontaining material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 1125 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 1125 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if *PRV is/are required for such lot(s), only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

8. Backflow Prevention Devices:

☐ All irrigation services within residential areas are required to have backflow prevention devices.

☐ All commercial backflow prevention devices must be approved by SAWS prior to installation.

9. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

10. All meters shall be 5/8", unless otherwise noted.

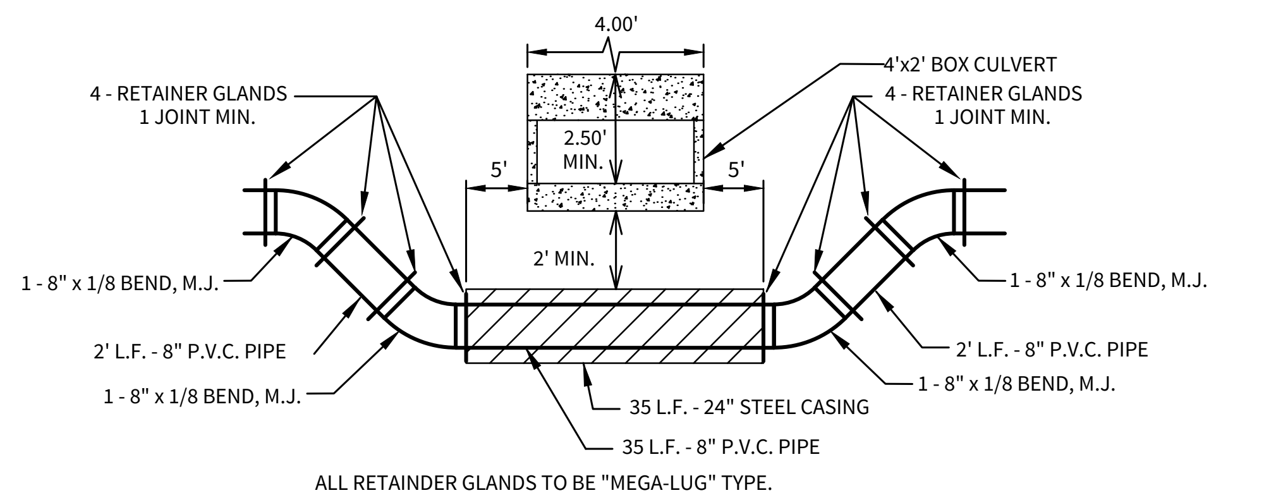
11. All pipes shall be C-900 Class 235 DR 18, unless otherwise noted.

SCALE: 1"=80'

80 10 0 80

NOTES:

1. ALL 8" & 12" PVC SHALL BE C-900 CLASS 235 DR 18.
2. SAWS SHALL MACHINE CHLORINATE ALL NEW WATER MAINS.
3. CONTRACTOR SHALL NOTIFY ENGINEER AND COMAL COUNTY TREE INSPECTIONS DEPARTMENT PRIOR TO THE REMOVAL OF ANY TREES. DAMAGE TO ANY PROTECTED TREES WILL BE MITIGATED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM DEPTH OF 5 FEET ON ALL 12" & 8" MAINS
5. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR FUTURE GRADES OF STREETS FOR CORRECT DEPTH INSTALLATION OF THE OFFSITE WATER MAINS.
6. ALL WATER SERVICES SHALL BE $\frac{3}{4}$" COPPER SERVICE WITH $\frac{5}{8}$" METER UNLESS OTHER WISE NOTED.



ALL RETAINER GLANDS TO BE "MEGA-LUG" TYPE.

WATER / DRAIN "E" CROSSING DETAIL

SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)

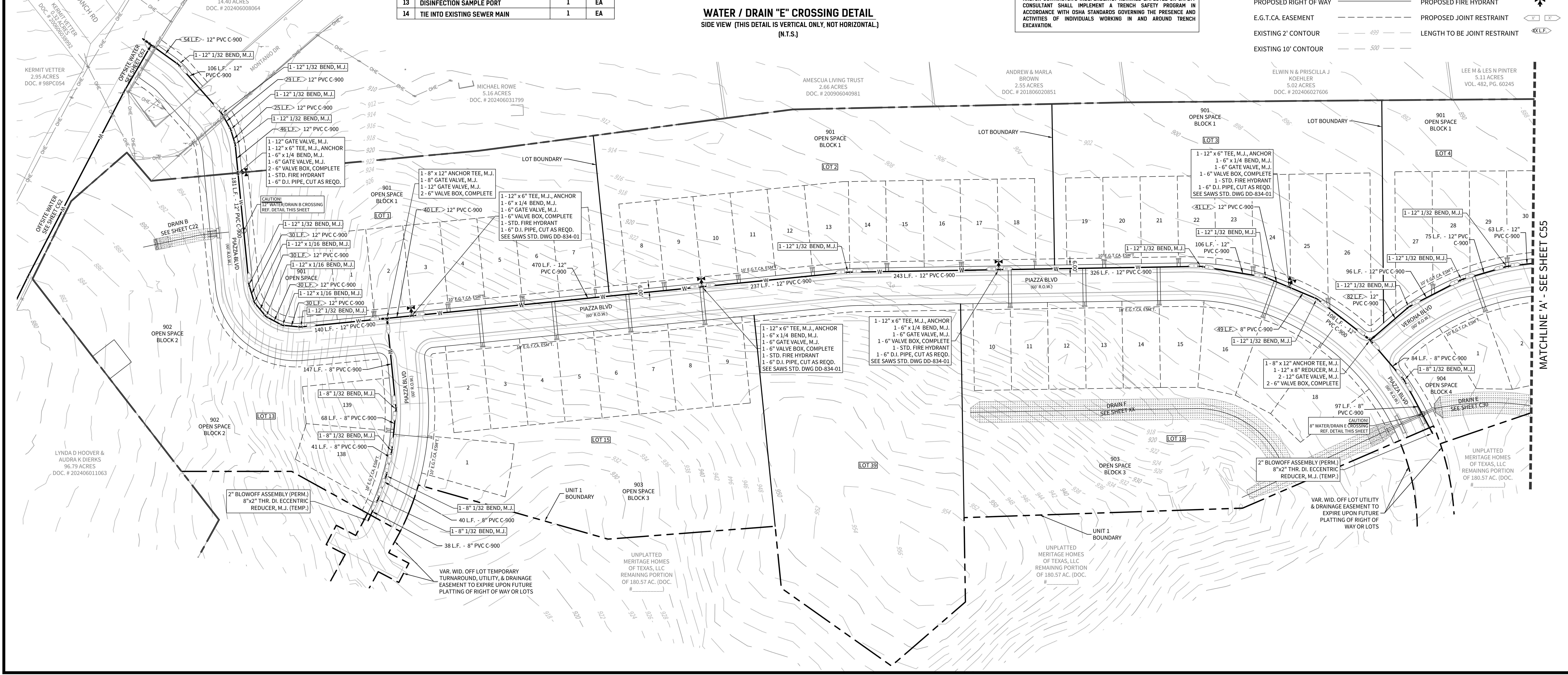
(N.T.S.)

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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.

LEGEND

OVERALL UNIT BOUNDARY	— — — —	PROPOSED WATER LINE	—W—
PROPOSED LOT LINE	——	PROPOSED WATER SERVICE	W—
PROPOSED RIGHT OF WAY	——	PROPOSED FIRE HYDRANT	
E.G.T.CA. EASEMENT	- - - -	PROPOSED JOINT RESTRAINT	X' X'
EXISTING 2' CONTOUR	— 499 —	LENGTH TO BE JOINT RESTRAINT	XX L.F.
EXISTING 10' CONTOUR	— 500 —		



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4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

ONSITE WATER DISTRIBUTION PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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P:\04343\002\2-DWG\4-Plans\C55 ONSITE WATER DISTRIBUTION PLAN.dwg 2025/06/09 3:59pm jochoa

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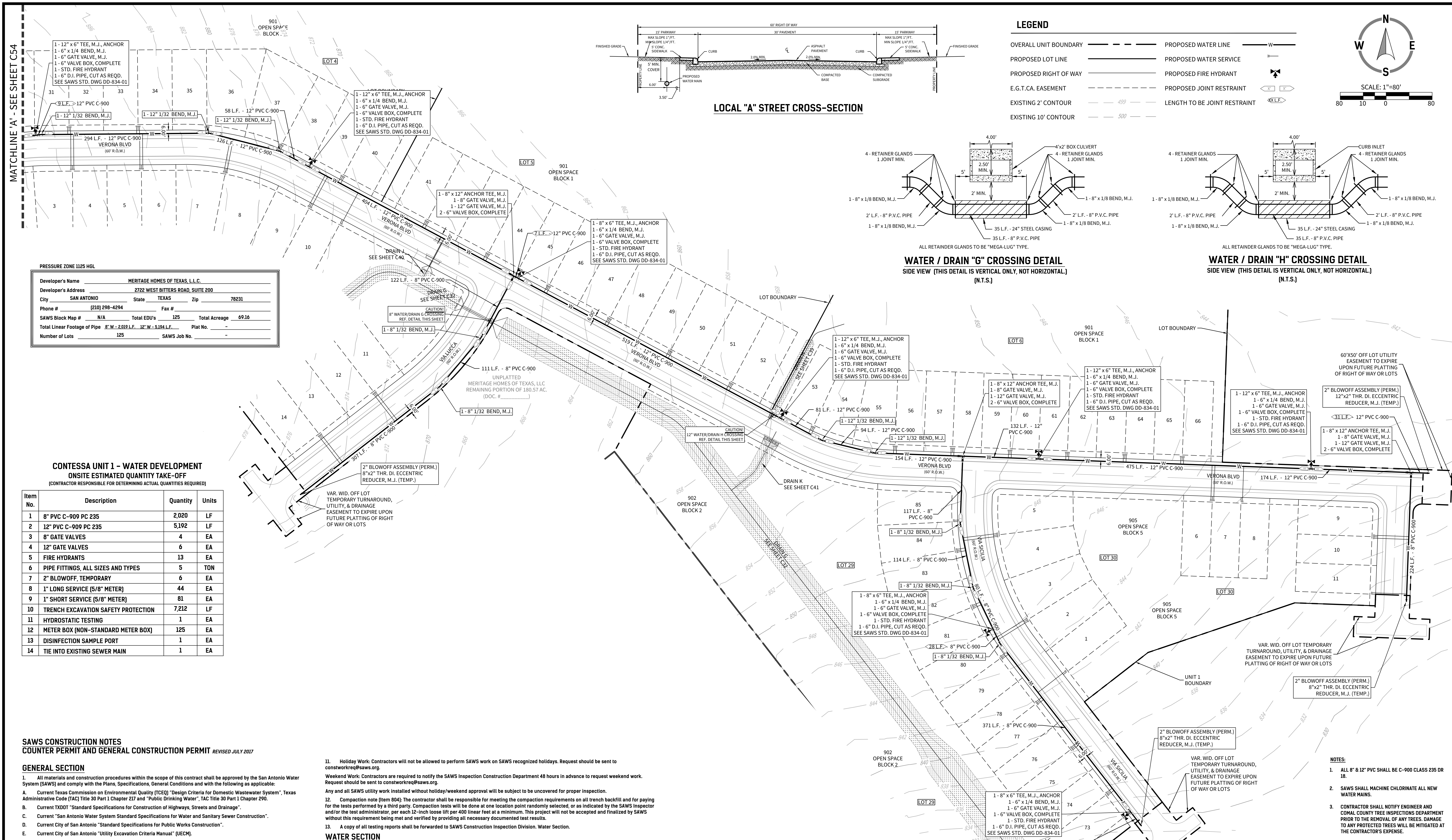

LOCAL "A" STREET CROSS-SECTION

WATER / DRAIN "G" CROSSING DETAIL

SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)
(N.T.S.)

WATER / DRAIN "H" CROSSING DETAIL

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(N.T.S.)

ALL RETAINDER GLANDS TO BE "MEGA-LUG" TYPE.

LEGEND

OVERALL UNIT BOUNDARY	— — — —	PROPOSED WATER LINE	——W——
PROPOSED LOT LINE	——	PROPOSED WATER SERVICE	W——
PROPOSED RIGHT OF WAY	——	PROPOSED FIRE HYDRANT	⧓
E.G.T.CA. EASEMENT	– – – –	PROPOSED JOINT RESTRAINT	X' X'
EXISTING 2' CONTOUR	— 499 —	LENGTH TO BE JOINT RESTRAINT	XX L.F.
EXISTING 10' CONTOUR	— 500 —		

PRESSURE ZONE 1125 HGL

Developer's Name MERITAGE HOMES OF TEXAS, L.L.C.
Developer's Address 2722 WEST BITTERS ROAD, SUITE 200
City SAN ANTONIO State TEXAS Zip 78231
Phone # (210) 298-4294 Fax #
SAWS Block Map # N/A Total EDU's 125 Total Acreage 69.16
Total Linear Footage of Pipe 8" W - 2,019 L.F. 12" W - 5,194 L.F. Plat No. -
Number of Lots 125 SAWS Job No. -

CONTESSA UNIT 1 - WATER DEVELOPMENT

ONSITE ESTIMATED QUANTITY TAKE-OFF

(CONTRACTOR RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES REQUIRED)

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4	12" GATE VALVES	6	EA
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COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JULY 2017*

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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. Water Section.

WATER SECTION

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly. For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestoscontaining material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 1125 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 1125 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if *PRV is/are required for such lot(s), only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

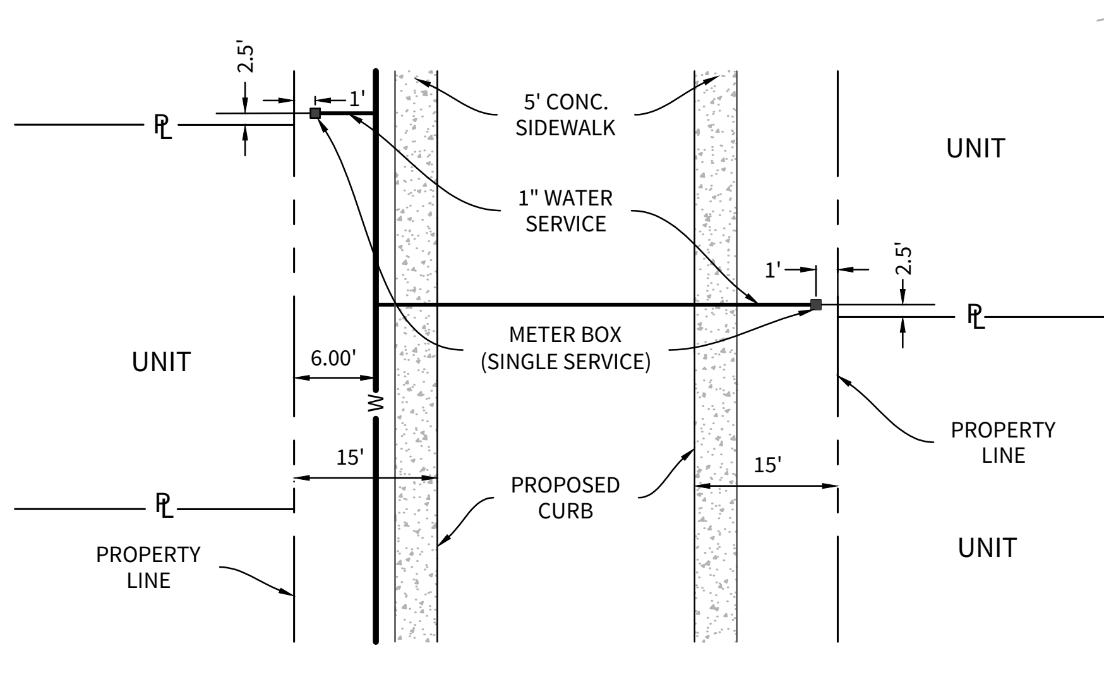
8. Backflow Prevention Devices:

☐ All irrigation services within residential areas are required to have backflow prevention devices.
☐ All commercial backflow prevention devices must be approved by SAWS prior to installation.

9. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

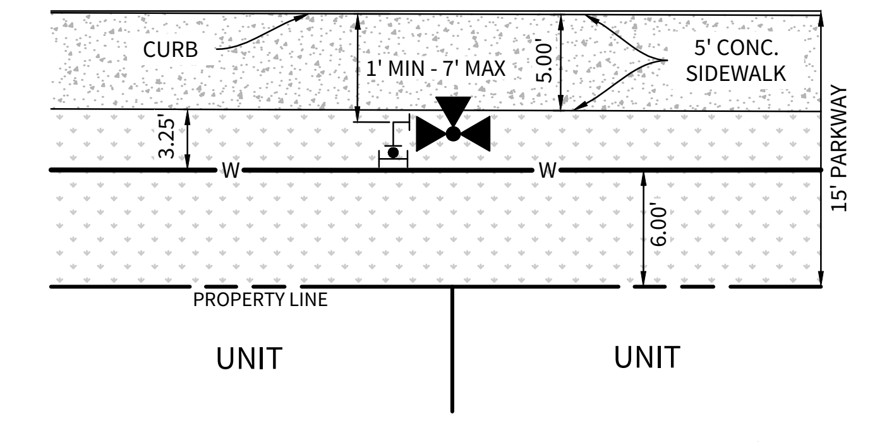
10. All meters shall be 5/8", unless otherwise noted.

11. All pipes shall be C-900 Class 235 DR 18, unless otherwise noted.



WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.



LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (5' SIDEWALK)

N.T.S.

NOTE:

1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

NOTES:

1. ALL 8" & 12" PVC SHALL BE C-900 CLASS 235 DR 18.
2. SAWS SHALL MACHINE CHLORINATE ALL NEW WATER MAINS.
3. CONTRACTOR SHALL NOTIFY ENGINEER AND COMAL COUNTY TREE INSPECTIONS DEPARTMENT PRIOR TO THE REMOVAL OF ANY TREES. DAMAGE TO ANY PROTECTED TREES WILL BE MITIGATED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM DEPTH OF 5 FEET ON ALL 12" & 8" MAINS
5. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR FUTURE GRADES OF STREETS FOR CORRECT DEPTH INSTALLATION OF THE OFFSITE WATER MAINS.
6. ALL WATER SERVICES SHALL BE $\frac{3}{4}$" COPPER SERVICE WITH $\frac{5}{8}$" METER UNLESS OTHER WISE NOTED.

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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.

CUDEENGINEERS.COM
EST. 1980
CUDE ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

ONSITE WATER DISTRIBUTION PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

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06/09/2025
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C55

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P:\04343\002\2-DWG\4-Plans\C55 ONSITE WATER DISTRIBUTION PLAN.dwg 2025/06/09 3:59pm jochoa

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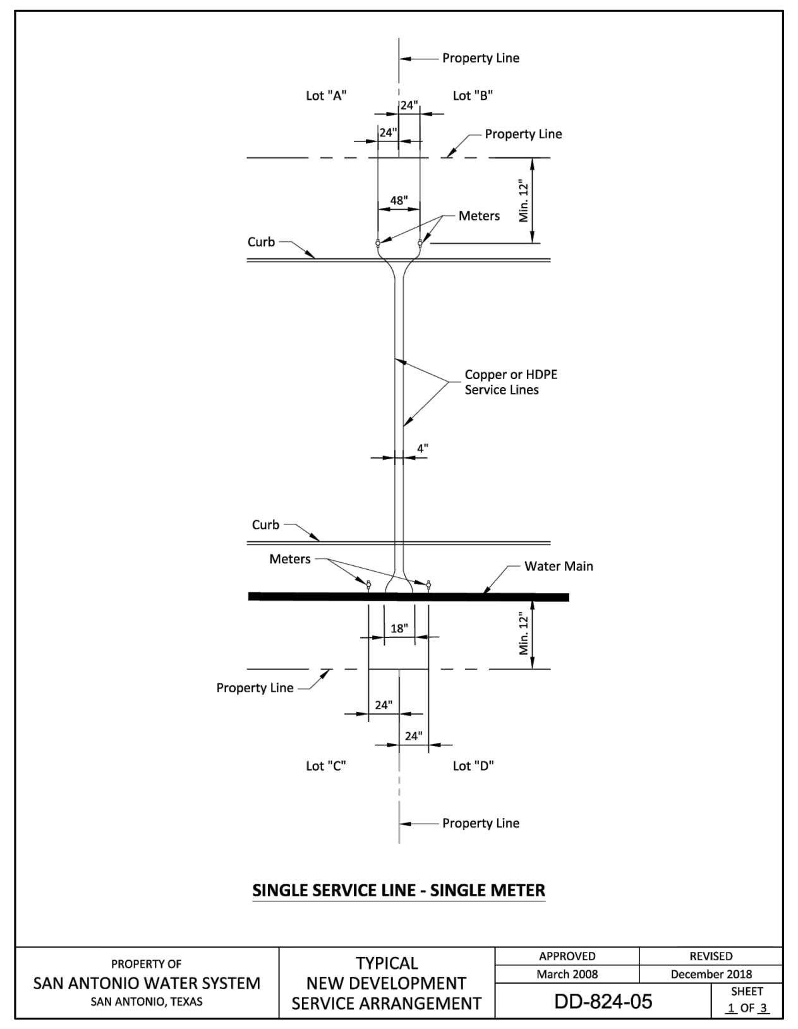
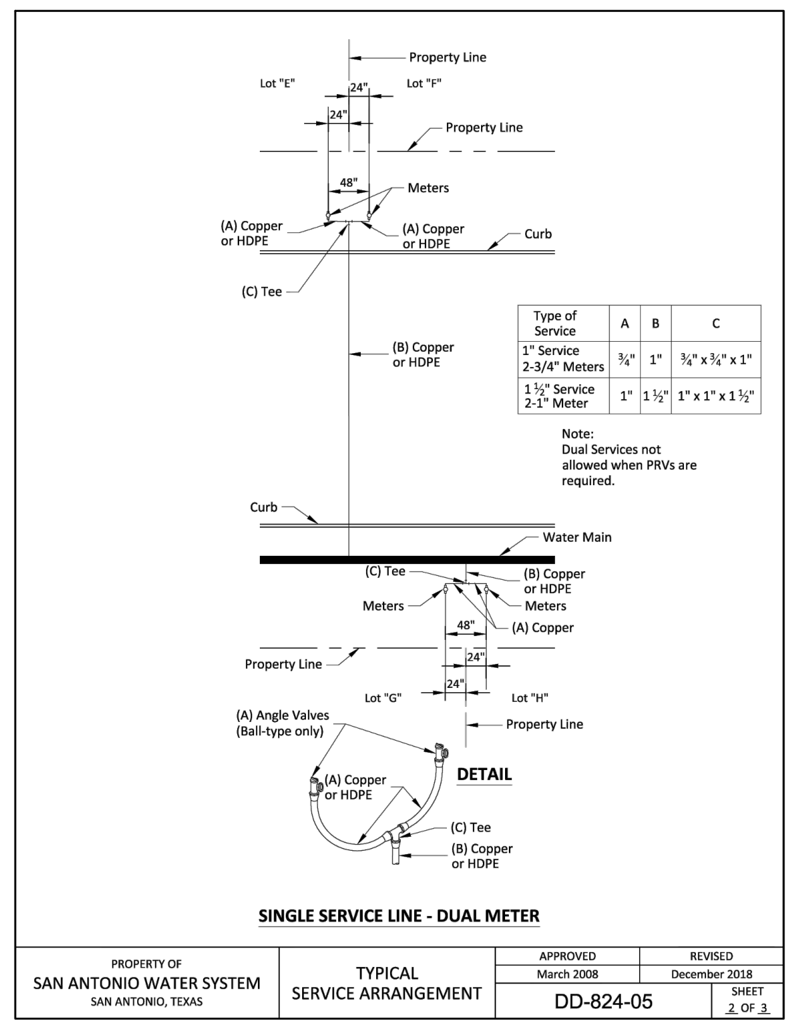
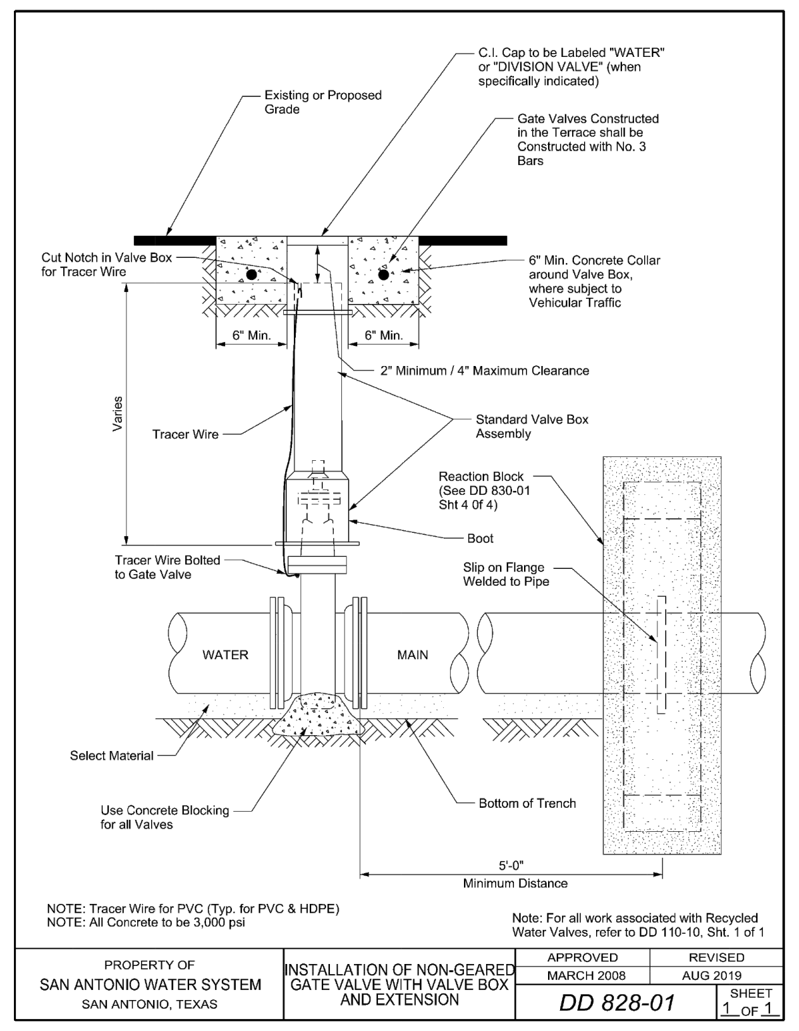

Property Line
Lot "A"
Lot "B"
Meters
Curb
Copper or HDPE Service Lines
Water Main
Lot "C"
Lot "D"
SINGLE SERVICE LINE - SINGLE METER
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT
APPROVED March 2008 REVISED December 2018
DD-824-05 SHEET 1 OF 3


Property Line
(A) Copper or HDPE
(C) Tee
(B) Copper or HDPE
Curb
Water Main
Meters
(A) Angle Valves (Ball-type only)
DETAIL
SINGLE SERVICE LINE - DUAL METER
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
TYPICAL SERVICE ARRANGEMENT
APPROVED March 2008 REVISED December 2018
DD-824-05 SHEET 2 OF 3

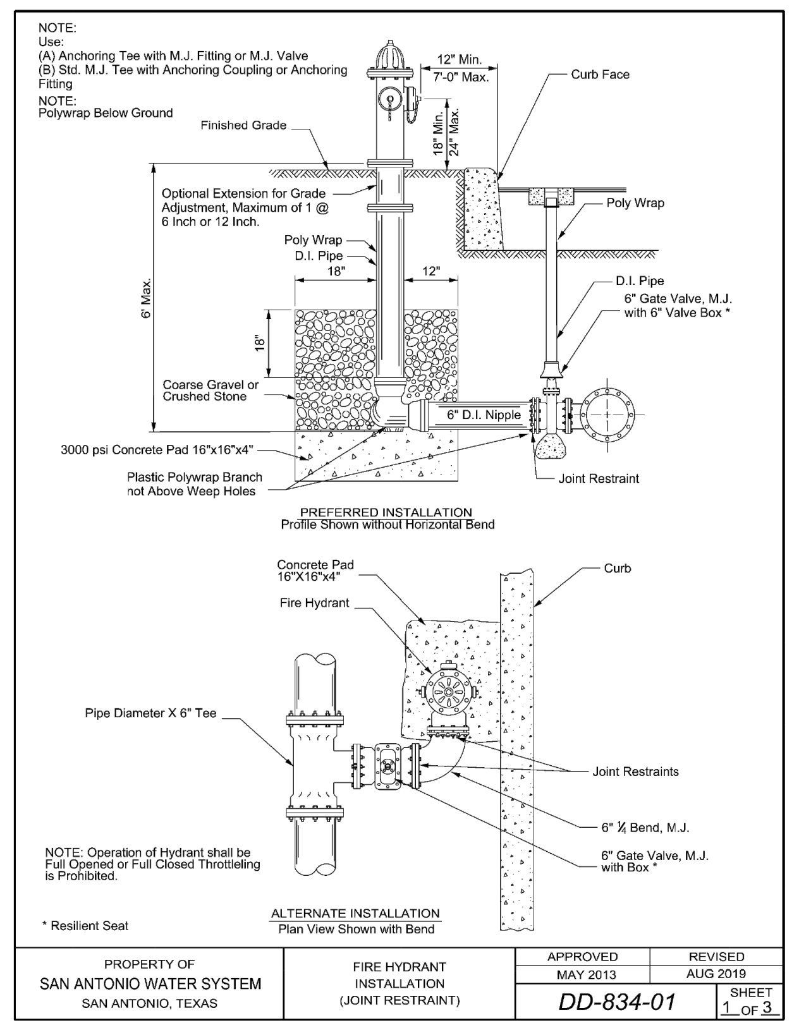
Note: Dual Services not allowed when PRVs are required.

Type of Service	A	B	C
1" Service 2-3/4" Meters	¾"	1"	¾" x ¾" x 1"
1 ½" Service 2-1" Meter	1"	1 ½"	1" x 1" x 1 ½"


Existing or Proposed Grade
C.I. Cap to be Labeled "WATER" or "DIVISION VALVE" (when specifically indicated)
Gate Valves Constructed in the Terrace shall be Constructed with No. 3 Bars
Cut Notch in Valve Box for Tracer Wire
6" Min. Concrete Collar around Valve Box, where subject to Vehicular Traffic
2" Minimum / 4" Maximum Clearance
Standard Valve Box Assembly
Tracer Wire
Reaction Block
Boot
Slip-on Flange Welded to Pipe
Tracer Wire Bolted to Gate Valve
WATER
MAIN
Select Material
Use Concrete Blocking for all Valves
Bottom of Trench
5'-0" Minimum Distance
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION
APPROVED MARCH 2008 REVISED AUG 2019
DD 828-01 SHEET 1 OF 1

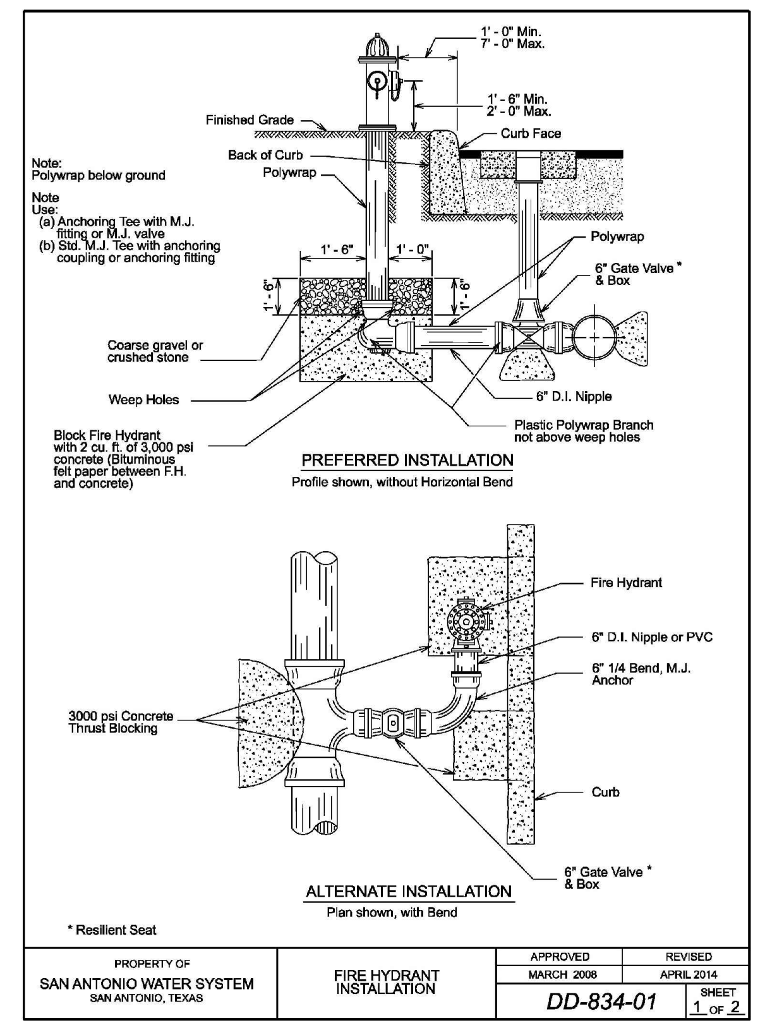
NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

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

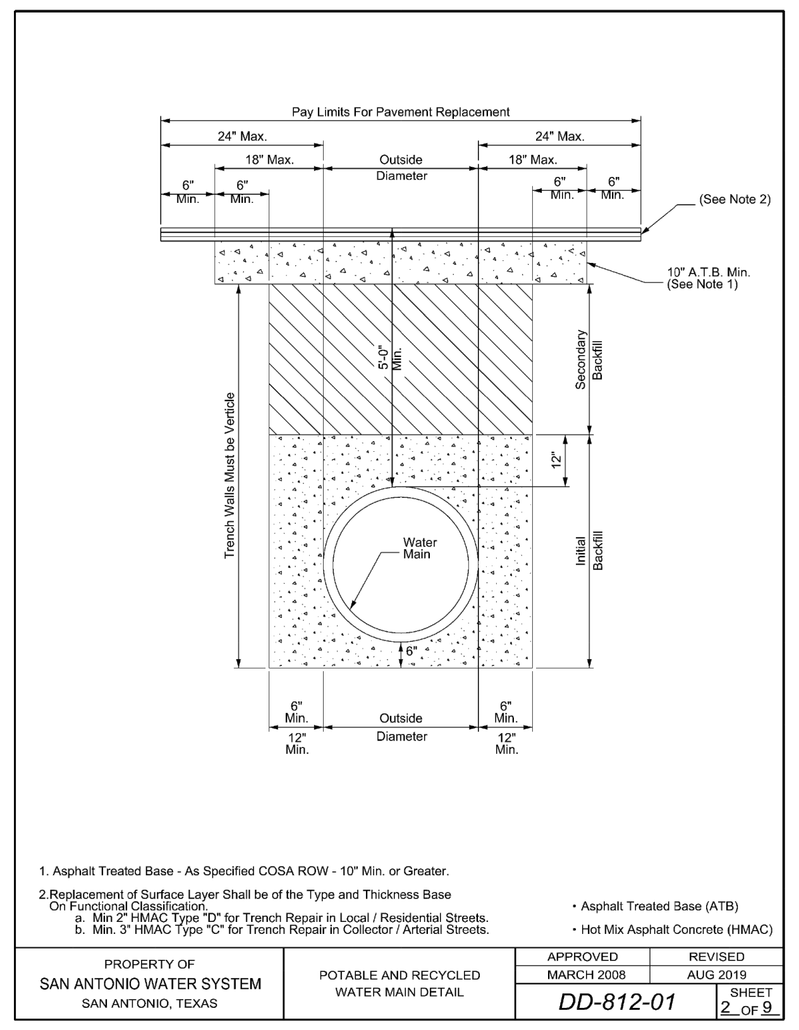

Curb Face
Finished Grade
Poly Wrap
D.I. Pipe
6" Gate Valve, M.J. with 6" Valve Box *
Coarse Gravel or Crushed Stone
6" D.I. Nipple
Joint Restraint
3000 psi Concrete Pad 18"x18"x4"
PREFERRED INSTALLATION
Profile Shown without Horizontal Bend
Concrete Pad
Fire Hydrant
Pipe Diameter X 6" Tee
Joint Restraints
6" ¼ Bend, M.J.
6" Gate Valve, M.J. with Box *
Curb
ALTERNATE INSTALLATION
Plan View Shown with Bend
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)
APPROVED MAY 2013 REVISED AUG 2019
DD-834-01 SHEET 1 OF 3

NOTE: Operation of Hydrant shall be Full Opened or Full Closed Throttleling is Prohibited.

* Resilient Seat

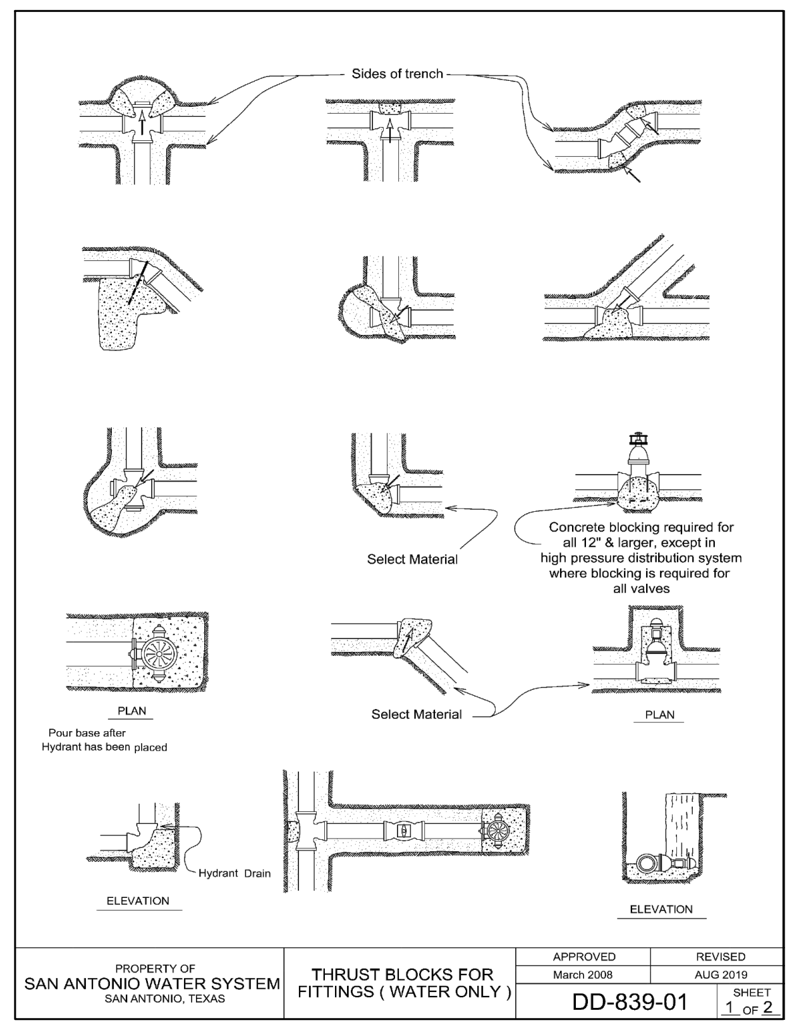

Finished Grade
Back of Curb
Polywrap
Curb Face
6" Gate Valve * & Box
Coarse gravel or crushed stone
Weep Holes
6" D.I. Nipple
Plastic Polywrap Branch not above weep holes
PREFERRED INSTALLATION
Profile shown, without Horizontal Bend
Fire Hydrant
6" D.I. Nipple or PVC
6" 1/4 Bend, M.J. Anchor
3000 psi Concrete Thrust Blocking
Curb
6" Gate Valve * & Box
ALTERNATE INSTALLATION
Plan shown, with Bend
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
FIRE HYDRANT INSTALLATION
APPROVED MARCH 2008 REVISED APRIL 2014
DD-834-01 SHEET 1 OF 2

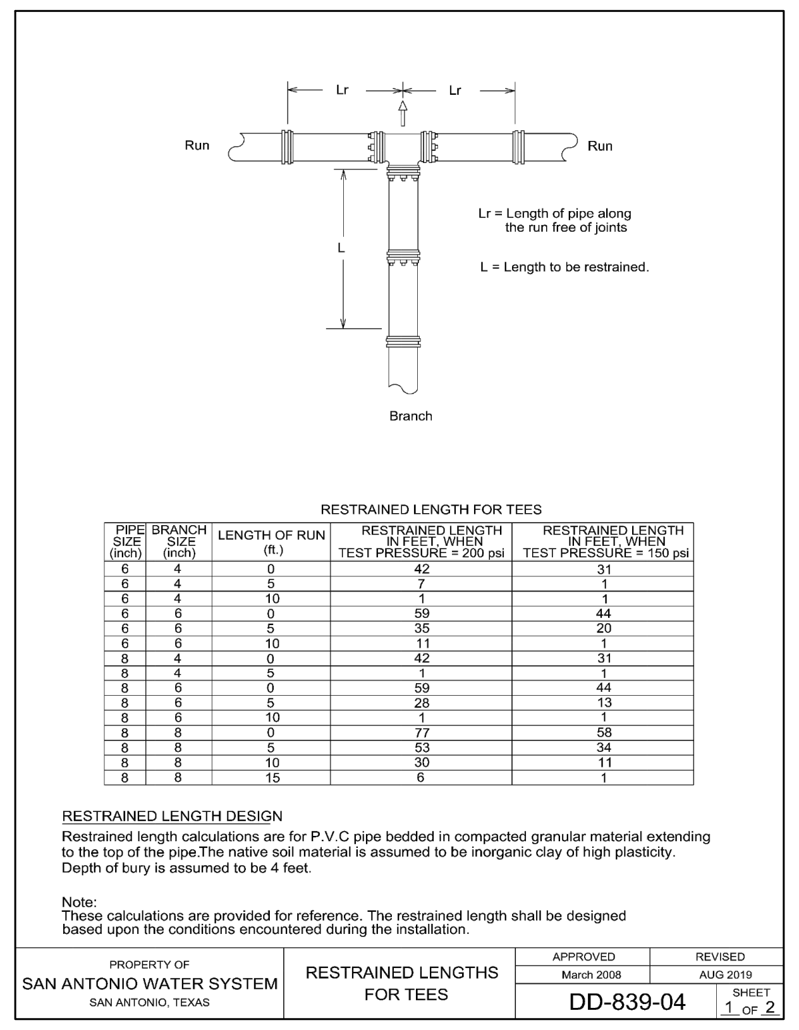
* Resilient Seat


Pay Limits For Pavement Replacement
24" Max.
18" Max.
Outside Diameter
(See Note 2)
10" A.T.B. Min. (See Note 1)
Water Main
6" Min.
12" Min.
Outside Diameter
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
POTABLE AND RECYCLED WATER MAIN DETAIL
APPROVED MARCH 2008 REVISED AUG 2019
DD-812-01 SHEET 2 OF 9

1. Asphalt Treated Base - As Specified COSA ROW - 10" Min. or Greater.
2. Replacement of Surface Layer Shall be of the Type and Thickness Base On Functional Classification.
   a. Min 2" HMAC Type "D" for Trench Repair in Local / Residential Streets.
   b. Min. 3" HMAC Type "C" for Trench Repair in Collector / Arterial Streets.

- Asphalt Treated Base (ATB)
- Hot Mix Asphalt Concrete (HMAC)


Sides of trench
Concrete blocking required for all 12" & larger, except in high pressure distribution system where blocking is required for all valves
Select Material
PLAN
Pour base after Hydrant has been placed
ELEVATION
Hydrant Drain
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
THRUST BLOCKS FOR FITTINGS (WATER ONLY)
APPROVED March 2008 REVISED AUG 2019
DD-839-01 SHEET 1 OF 2


Lr
Run
Branch
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
RESTRAINED LENGTHS FOR TEES
APPROVED March 2008 REVISED AUG 2019
DD-839-04 SHEET 1 OF 2

Lr = Length of pipe along the run free of joints

L = Length to be restrained.

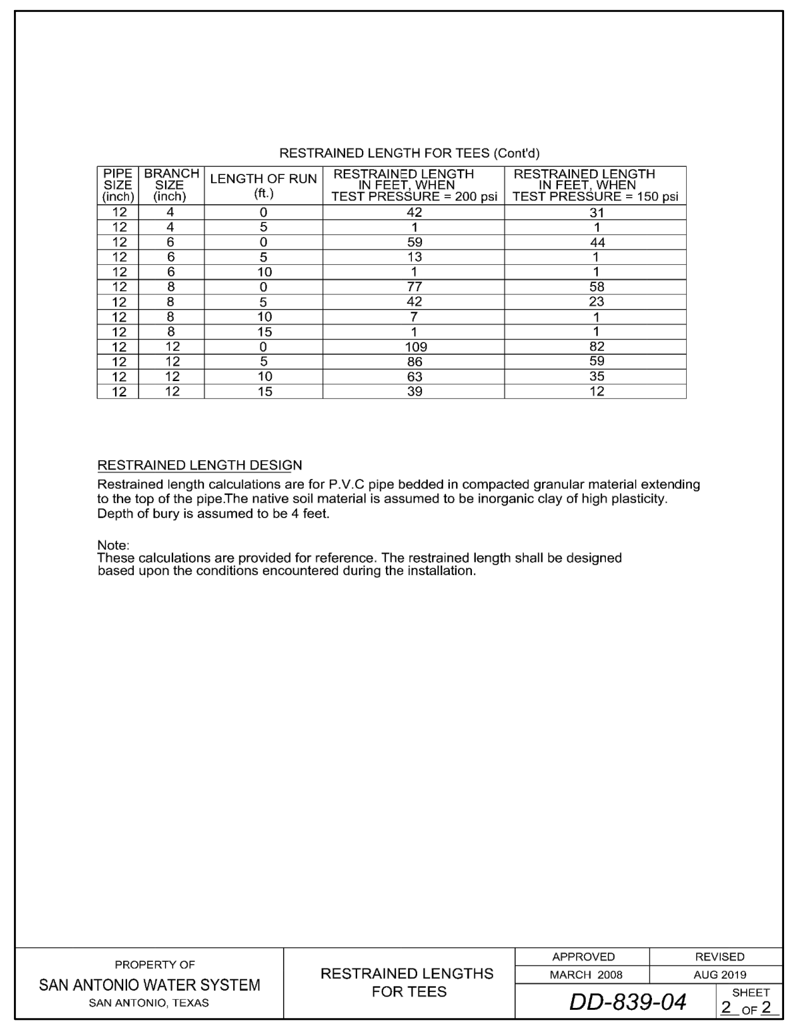
RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	1	1
8	6	0	59	44
8	6	5	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1

RESTRAINED LENGTH DESIGN

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

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


PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
RESTRAINED LENGTHS FOR TEES
APPROVED MARCH 2008 REVISED AUG 2019
DD-839-04 SHEET 2 OF 2

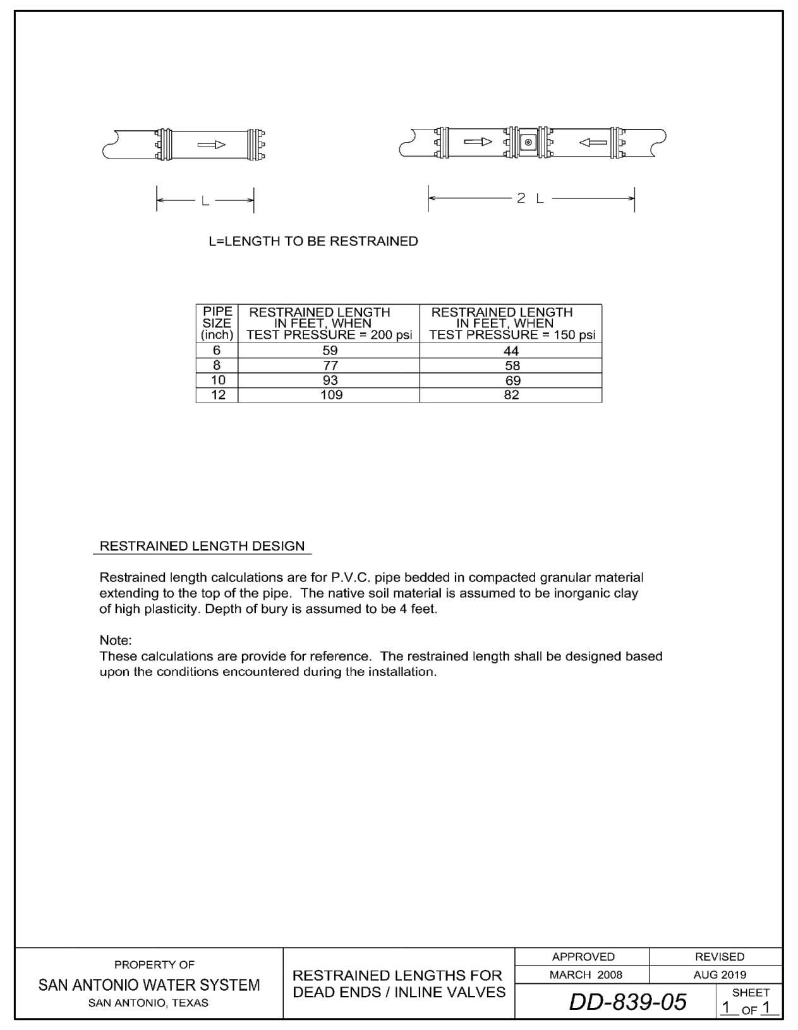
RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

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

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


L
2 L
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES
APPROVED MARCH 2008 REVISED AUG 2019
DD-839-05 SHEET 1 OF 1

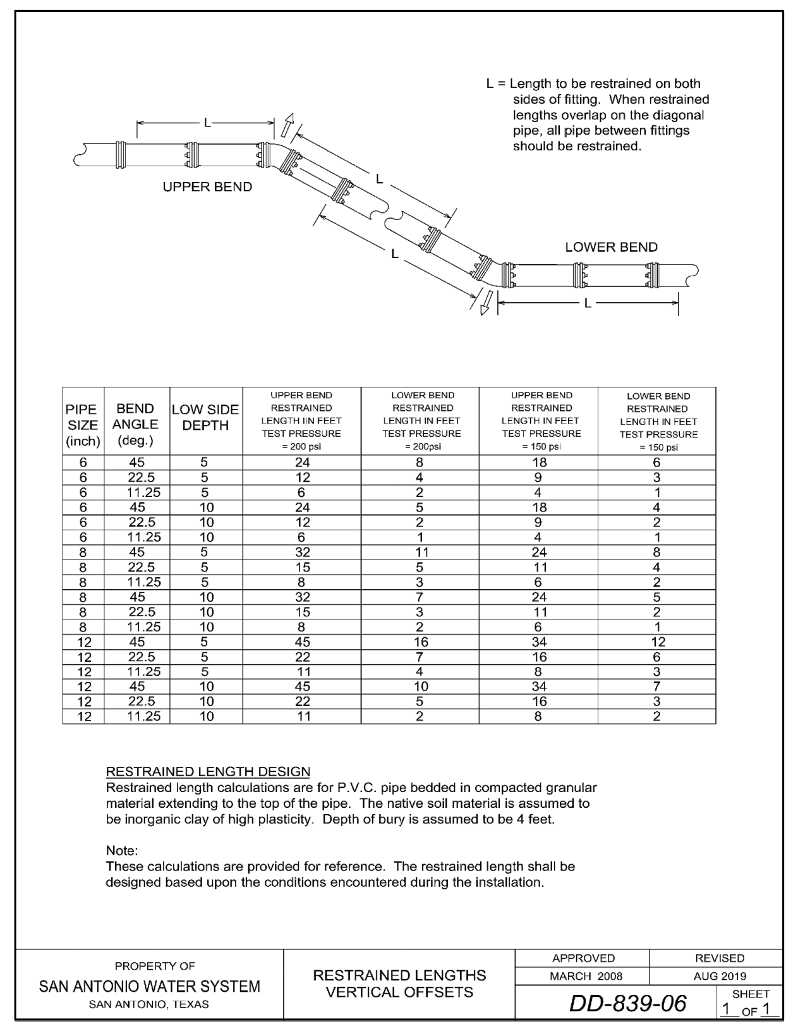
L=LENGTH TO BE RESTRAINED

PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

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

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


L
UPPER BEND
LOWER BEND
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
RESTRAINED LENGTHS VERTICAL OFFSETS
APPROVED MARCH 2008 REVISED AUG 2019
DD-839-06 SHEET 1 OF 1

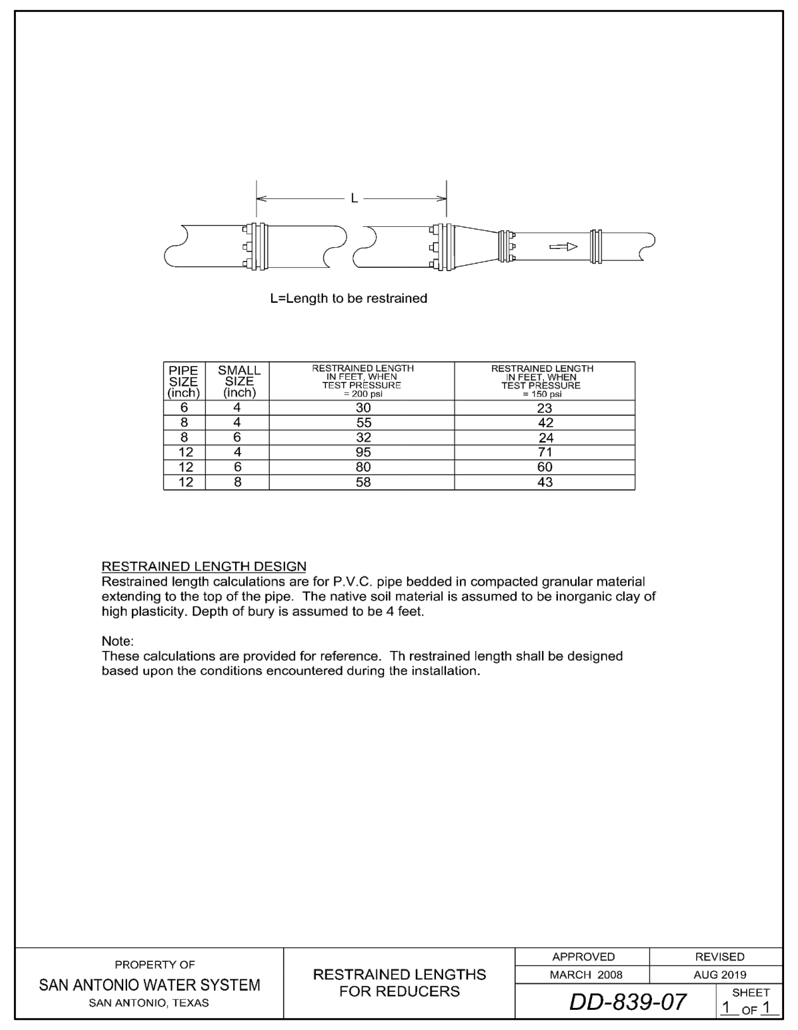
L = Length to be restrained on both sides of fitting. When restrained lengths overlap on the diagonal pipe, all pipe between fittings should be restrained.

PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IIN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN

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

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


L
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
RESTRAINED LENGTHS FOR REDUCERS
APPROVED MARCH 2008 REVISED AUG 2019
DD-839-07 SHEET 1 OF 1

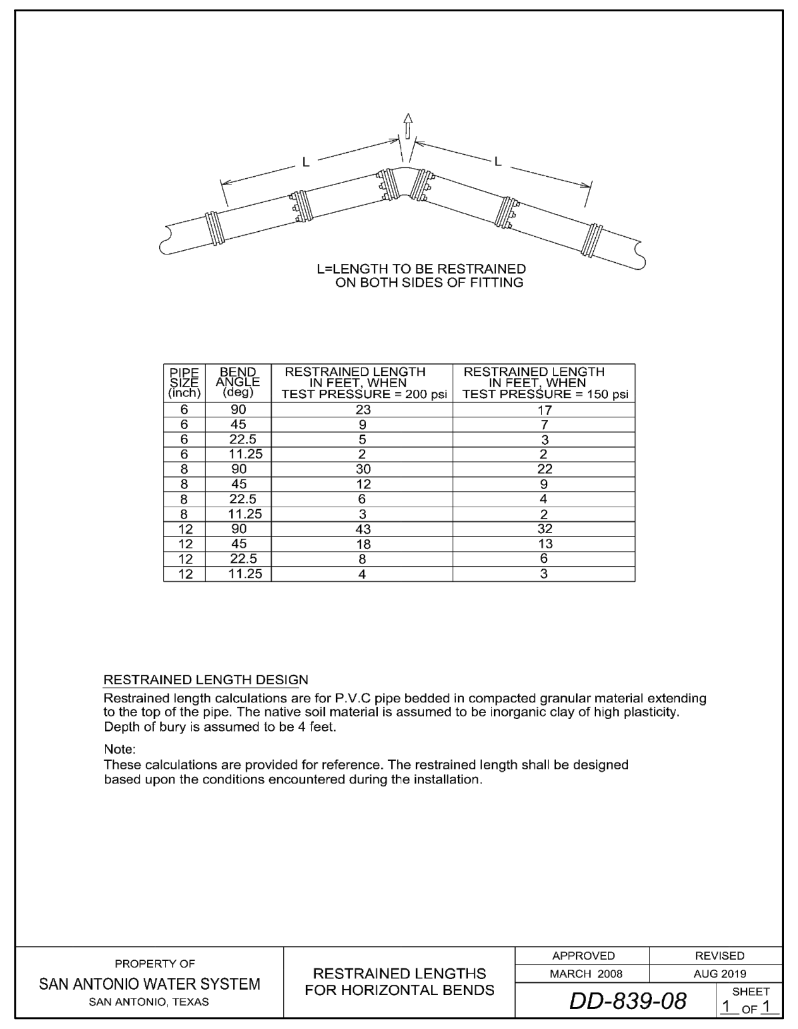
L=Length to be restrained

PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN

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

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


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

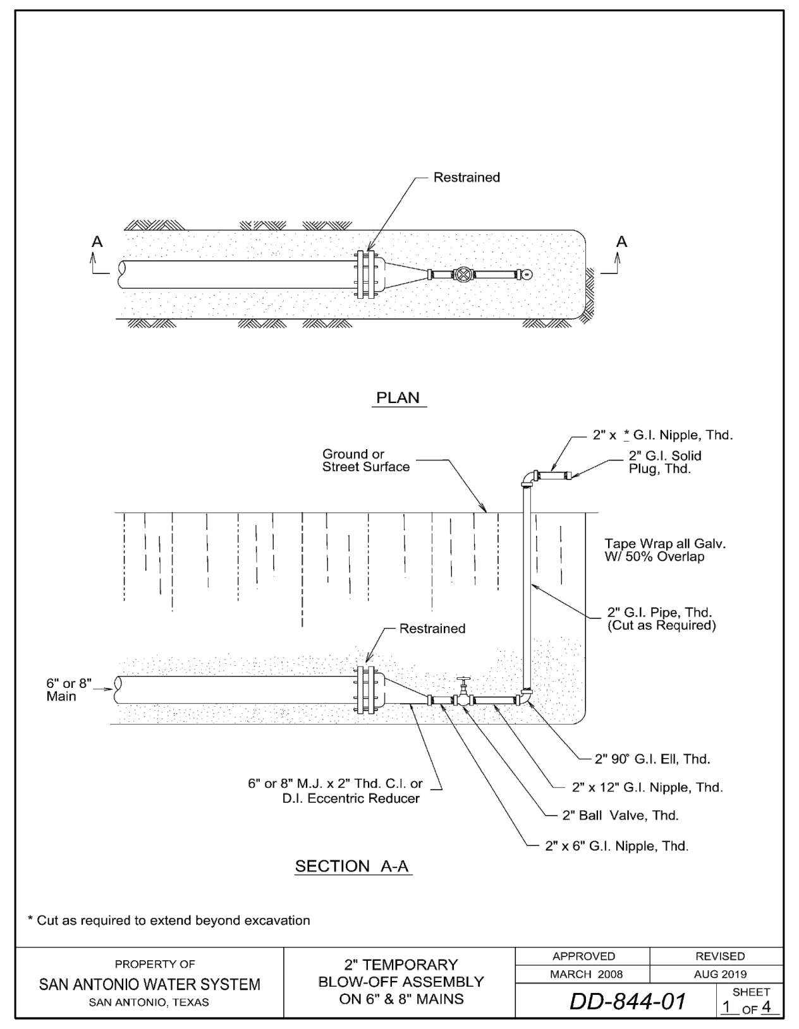
L=LENGTH TO BE RESTRAINED ON BOTH SIDES OF FITTING

PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

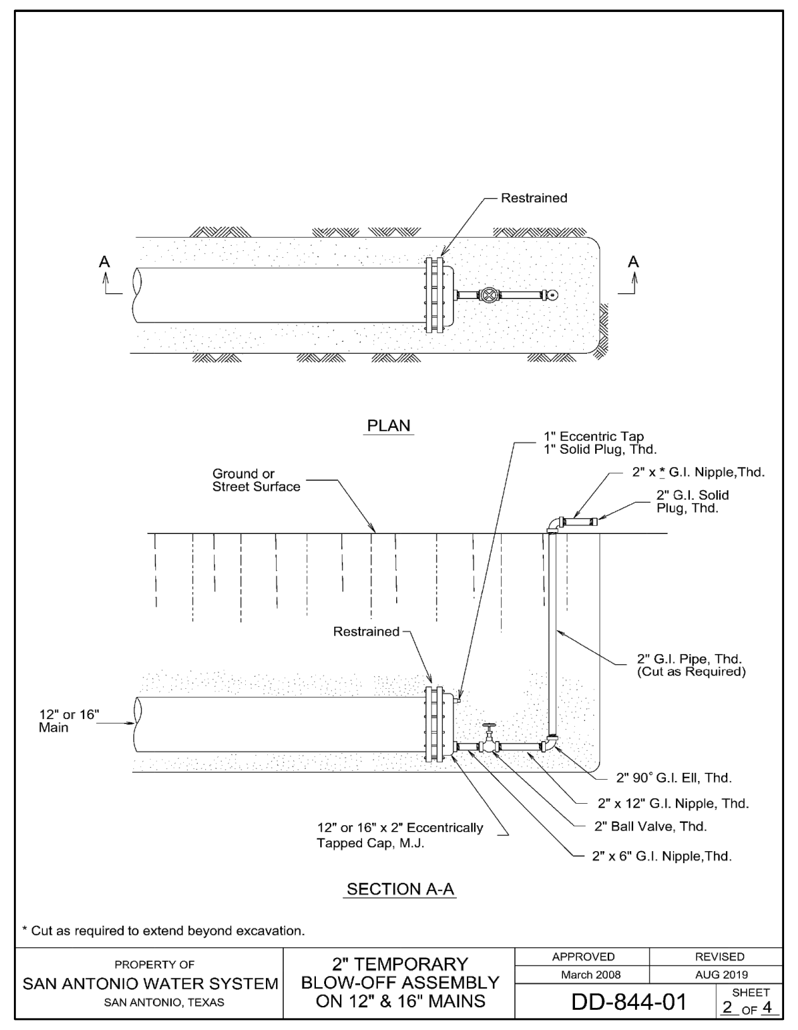
RESTRAINED LENGTH DESIGN

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

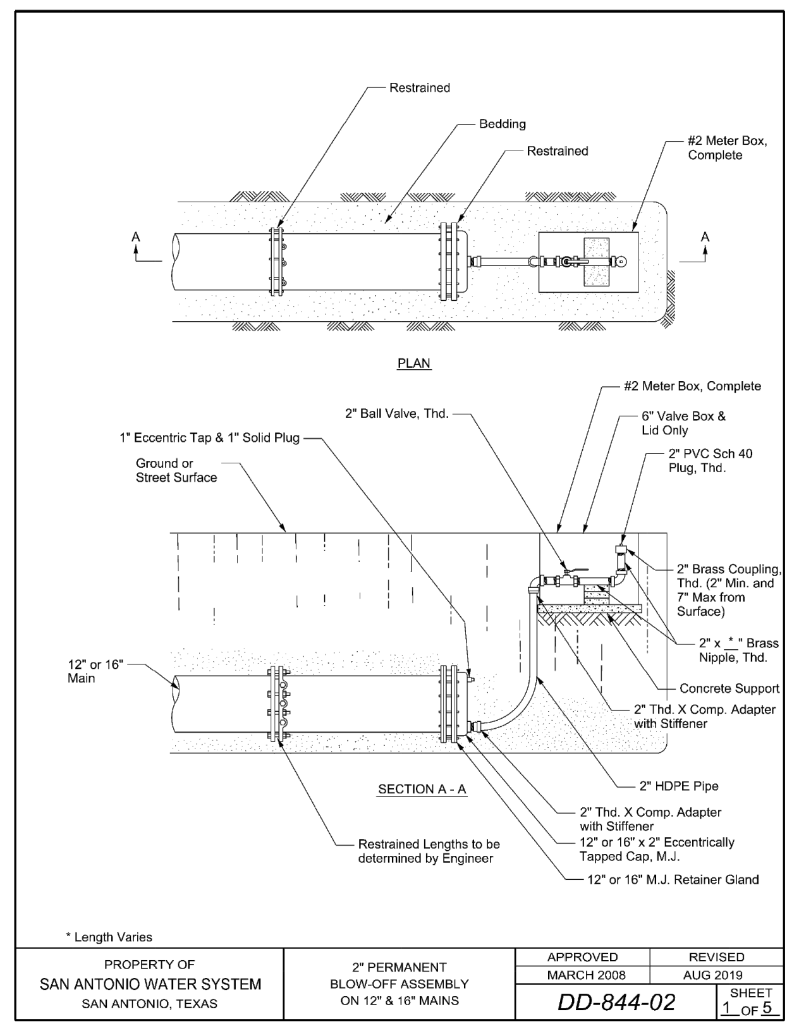
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.


Restrained
A
PLAN
2" x * G.I. Nipple, Thd.
2" G.I. Solid Plug, Thd.
Ground or Street Surface
Tape Wrap all Galv. W/ 50% Overlap
2" G.I. Pipe, Thd. (Cut as Required)
6" or 8" Main
2" 90' G.I. Ell, Thd.
2" x 12" G.I. Nipple, Thd.
6" or 8" M.J. x 2" Thd. C.I. or D.I. Eccentric Reducer
2" Ball Valve, Thd.
2" x 6" G.I. Nipple, Thd.
SECTION A-A
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS
APPROVED MARCH 2008 REVISED AUG 2019
DD-844-01 SHEET 1 OF 4

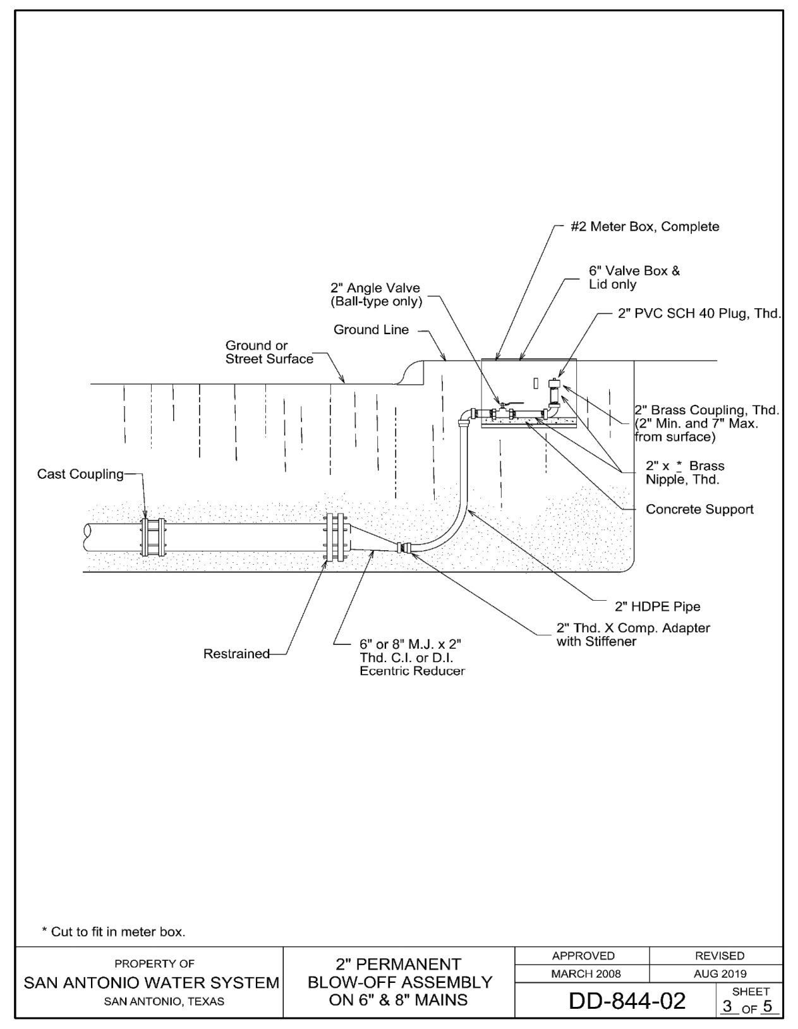
* Cut as required to extend beyond excavation


Restrained
A
PLAN
1" Eccentric Tap 1" Solid Plug, Thd.
2" x * G.I. Nipple,Thd.
2" G.I. Solid Plug, Thd.
Ground or Street Surface
2" G.I. Pipe, Thd. (Cut as Required)
12" or 16" Main
2" 90' G.I. Ell, Thd.
2" x 12" G.I. Nipple, Thd.
12" or 16" x 2" Eccentrically Tapped Cap, M.J.
2" Ball Valve, Thd.
2" x 6" G.I. Nipple,Thd.
SECTION A-A
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" & 16" MAINS
APPROVED March 2008 REVISED AUG 2019
DD-844-01 SHEET 2 OF 4

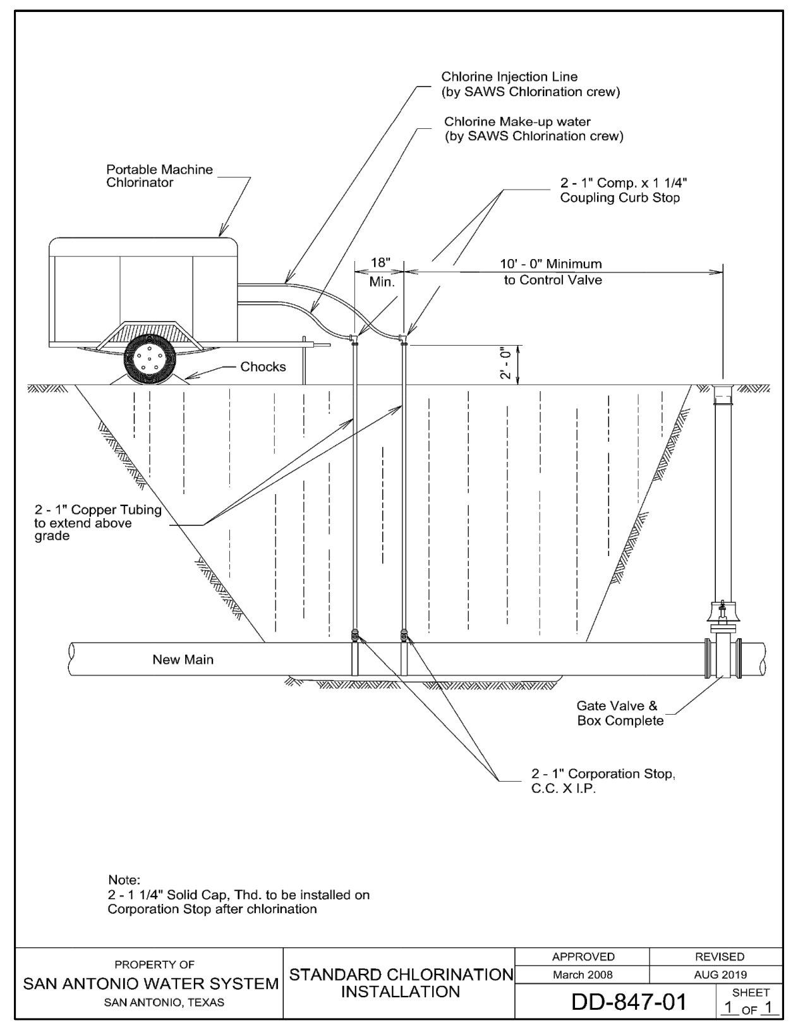
* Cut as required to extend beyond excavation.


Restrained
Sodding
#2 Meter Box, Complete
A
PLAN
#2 Meter Box, Complete
6" Valve Box & Lid Only
2" PVC Sch 40 Plug, Thd.
1" Eccentric Tap & 1" Solid Plug
2" Ball Valve, Thd.
Ground or Street Surface
2" Brass Coupling, Thd. (2" Min. and 7" Max from Surface)
2" x * Brass Nipple, Thd.
Concrete Support
2" Thd. X Comp. Adapter with Stiffener
12" or 16" Main
SECTION A - A
2" HDPE Pipe
Restrained Lengths to be determined by Engineer
12" or 16" x 2" Eccentrically Tapped Cap, M.J.
12" or 16" M.J. Retainer Gland
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
2" PERMANENT BLOW-OFF ASSEMBLY ON 12" & 16" MAINS
APPROVED MARCH 2008 REVISED AUG 2019
DD-844-02 SHEET 1 OF 5

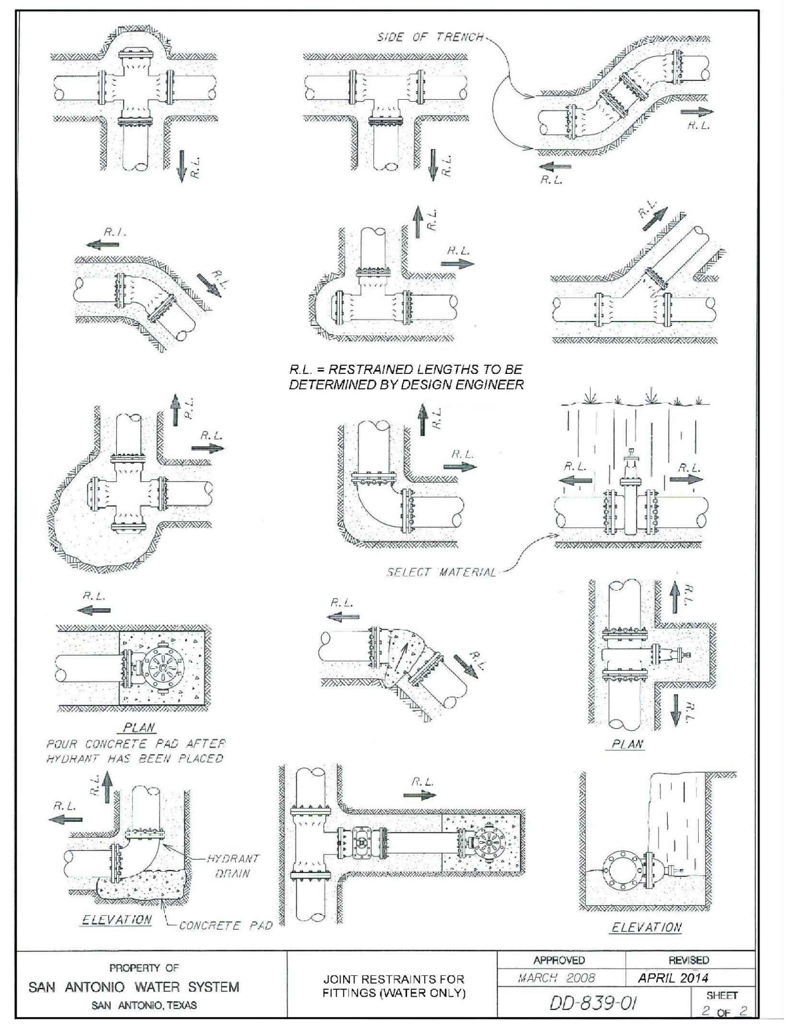
* Length Varies


#2 Meter Box, Complete
6" Valve Box & Lid only
2" Angle Valve (Ball-type only)
2" PVC SCH 40 Plug, Thd.
Ground Line
Ground or Street Surface
2" Brass Coupling, Thd. (2" Min. and 7" Max. from surface)
2" x * Brass Nipple, Thd.
Concrete Support
Cast Coupling
2" HDPE Pipe
2" Thd. X Comp. Adapter with Stiffener
Restrained
6" or 8" M.J. x 2" Thd. C.I. or D.I. Eccentric Reducer
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS
APPROVED MARCH 2008 REVISED AUG 2019
DD-844-02 SHEET 3 OF 5

* Cut to fit in meter box.


Chlorine Injection Line (by SAWS Chlorination crew)
Chlorine Make-up water (by SAWS Chlorination crew)
Portable Machine Chlorinator
2 - 1" Comp. x 1 1/4" Coupling Curb Stop
18" Min
10' - 0" Minimum to Control Valve
Chocks
2 - 1" Copper Tubing to extend above grade
New Main
Gate Valve & Box Complete
2 - 1" Corporation Stop. C.C. X I.P.
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
STANDARD CHLORINATION INSTALLATION
APPROVED March 2008 REVISED AUG 2019
DD-847-01 SHEET 1 OF 1

Note:
2 - 1 1/4" Solid Cap, Thd. to be installed on Corporation Stop after chlorination


SIDE OF TRENCH
R.L. = RESTRAINED LENGTHS TO BE DETERMINED BY DESIGN ENGINEER
SELECT MATERIAL
PLAN
POUR CONCRETE PAD AFTER HYDRANT HAS BEEN PLACED
ELEVATION
CONCRETE PAD
HYDRANT DRAIN
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
JOINT RESTRAINTS FOR FITTINGS (WATER ONLY)
APPROVED MARCH 2008 REVISED APRIL 2014
DD-839-01

CONTESSA SUBDIVISION
UNIT 1

WATER DISTRIBUTION STANDARD DETAILS

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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TBPLS No. 10048500

C56

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P:\04343\002\2-DWG\4-Plans\C56 WATER DISTRIBUTION STANDARD DETAILS.dwg 2025/06/09 3:59pm jochoa

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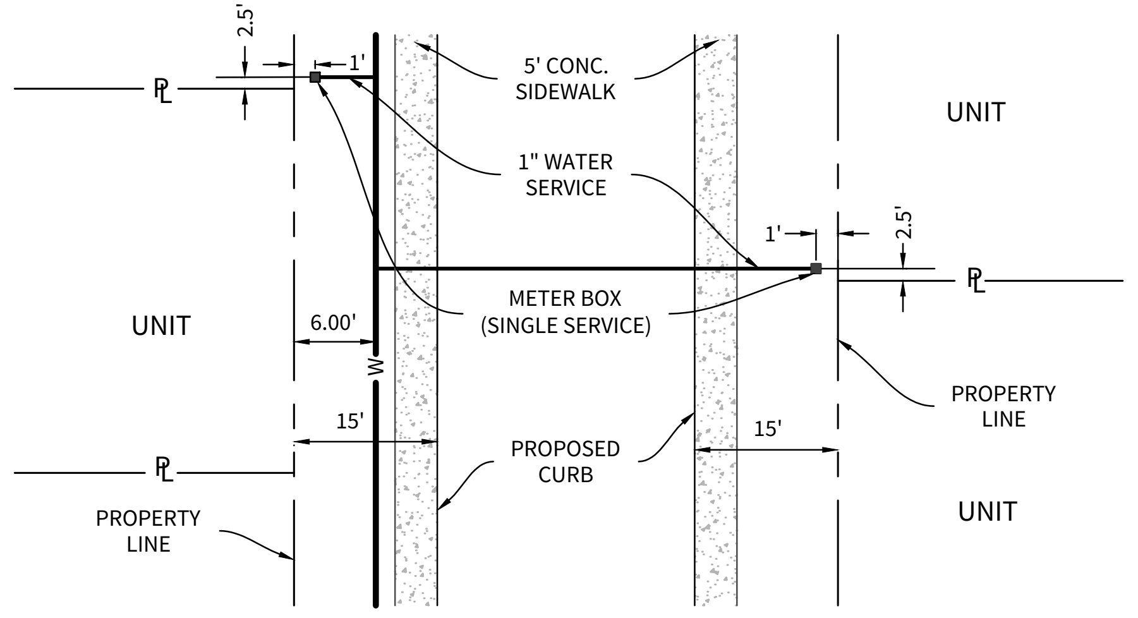
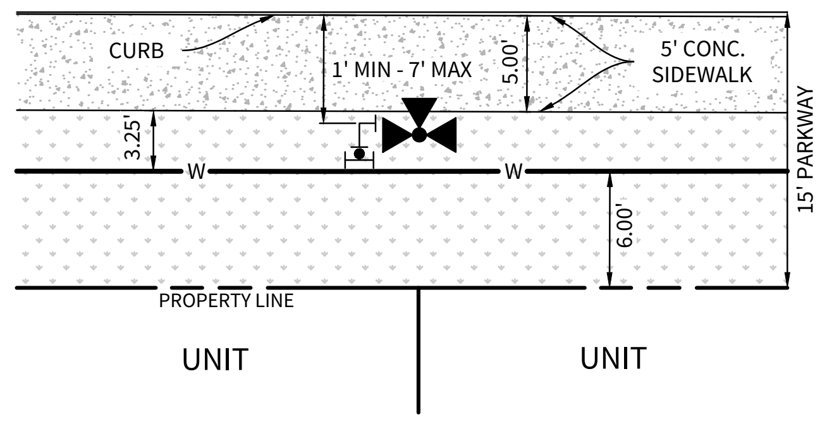


WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.

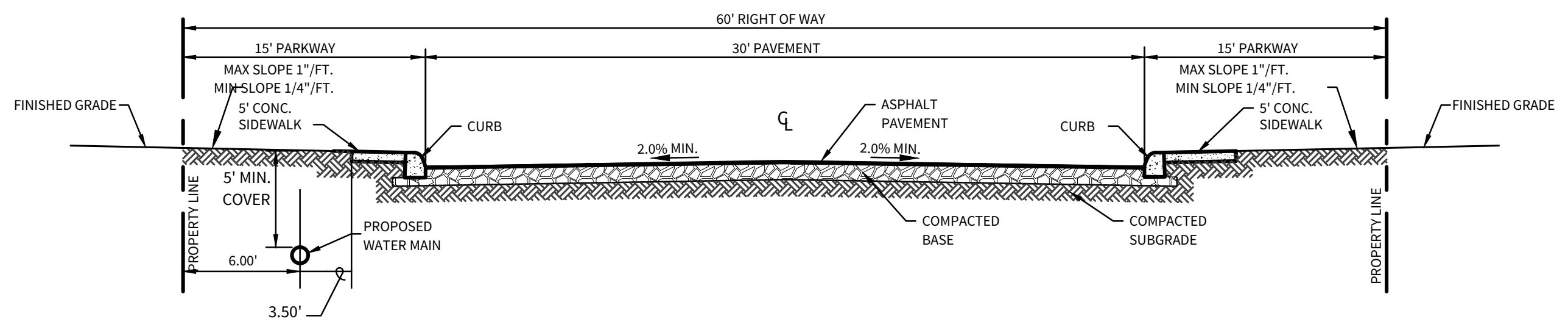


NOTE:

1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (5' SIDEWALK)

N.T.S.



LOCAL "A" STREET CROSS-SECTION

PRESSURE ZONE 1125 HGL

Developer's Name MERITAGE HOMES OF TEXAS, L.L.C.
Developer's Address 2722 WEST BITTERS ROAD, SUITE 200
City SAN ANTONIO State TEXAS Zip 78231
Phone # (210) 298-4294 Fax #
SAWS Block Map # N/A Total EDU's 125 Total Acreage 69.16
Total Linear Footage of Pipe 8" W - 2,019 L.F. 12" W - 5,194 L.F. Plat No. -
Number of Lots 125 SAWS Job No. -

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JULY 2017*

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 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 Comal 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. Water Section.

WATER SECTION

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly. For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestoscontaining material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 1125 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 1125 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if *PRV is/are required for such lot(s), only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

8. Backflow Prevention Devices:

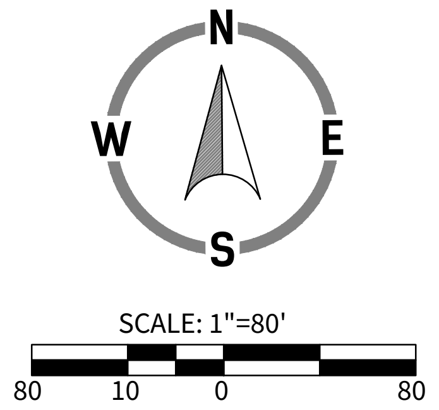
☐ All irrigation services within residential areas are required to have backflow prevention devices.

☐ All commercial backflow prevention devices must be approved by SAWS prior to installation.

9. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

10. All meters shall be 5/8", unless otherwise noted.

11. All pipes shall be C-900 Class 235 DR 18, unless otherwise noted.



NOTES:

1. ALL 8" & 12" PVC SHALL BE C-900 CLASS 235 DR 18.
2. SAWS SHALL MACHINE CHLORINATE ALL NEW WATER MAINS.
3. CONTRACTOR SHALL NOTIFY ENGINEER AND COMAL COUNTY TREE INSPECTIONS DEPARTMENT PRIOR TO THE REMOVAL OF ANY TREES. DAMAGE TO ANY PROTECTED TREES WILL BE MITIGATED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM DEPTH OF 5 FEET ON ALL 12" & 8" MAINS
5. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR FUTURE GRADES OF STREETS FOR CORRECT DEPTH INSTALLATION OF THE OFFSITE WATER MAINS.
6. ALL WATER SERVICES SHALL BE $\frac{3}{4}$" COPPER SERVICE WITH $\frac{5}{8}$" METER UNLESS OTHER WISE NOTED.

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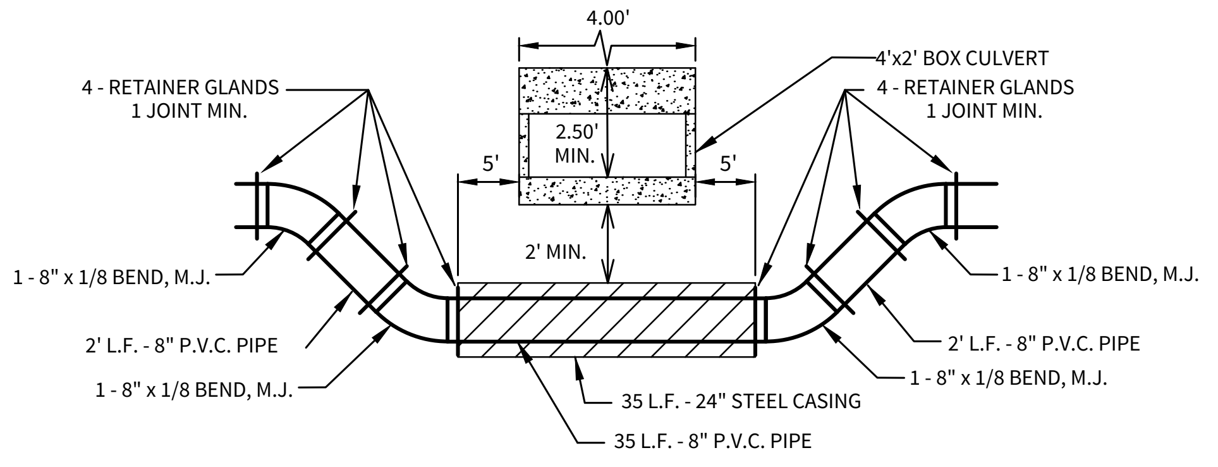
CONTESSA SUBDIVISION UNIT 1

UTILITY LAYOUT PLAN



ALL RETAINDER GLANDS TO BE "MEGA-LUG" TYPE.

WATER / DRAIN "E" CROSSING DETAIL

SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)

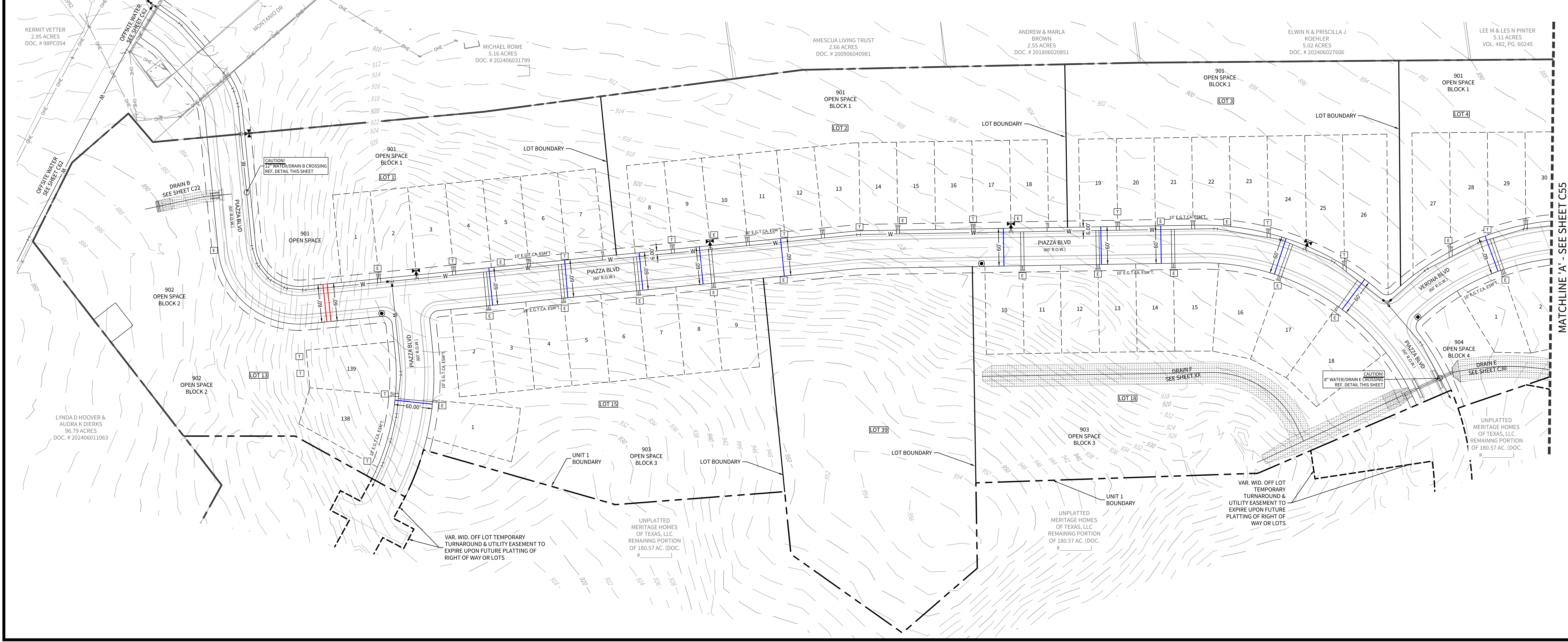
(N.T.S.)

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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.

LEGEND

OVERALL UNIT BOUNDARY	——— — — ———	PROPOSED WATER SERVICE	⋟—
PROPOSED LOT LINE	———	PROPOSED FIRE HYDRANT	⧓
PROPOSED RIGHT OF WAY	———	PROPOSED STREET LIGHT	◉
E.G.T.CA. EASEMENT	— — — —	CONDUIT PRIMARY CROSSING	🟥
EXISTING 2' CONTOUR	— — 499 — —	CONDUIT SECONDARY CROSSING	🟦
EXISTING 10' CONTOUR	— — 500 — —	ELECTRIC TRANSFORMER	T
PROPOSED WATER LINE	——W——	ELECTRIC SECONDARY PEDESTAL	E


CONNIE L KRAUSE 45.13 ACRES DOC. # 202406008064
CONNIE L KRAUSE 14.40 ACRES DOC. # 202406008064
LEWIS RANCH RD
SCHOENTHAL RD N
MONTANIO DR
KERMIT VETTER 2.95 ACRES DOC. # 98PC054
OFFSITE WATER SEE SHEET C52
OFFSITE WATER SEE SHEET C62
MICHAEL ROWE 5.16 ACRES DOC. # 202406031799
AMESCUA LIVING TRUST 2.66 ACRES DOC. # 200906040981
ANDREW & MARLA BROWN 2.55 ACRES DOC. # 201806020851
ELWIN N & PRISCILLA J KOEHLER 5.02 ACRES DOC. # 202406027606
LEE M & LES N PINTER 5.11 ACRES VOL. 482, PG. 60245
901 OPEN SPACE BLOCK 1
901 OPEN SPACE
902 OPEN SPACE BLOCK 2
903 OPEN SPACE BLOCK 3
904 OPEN SPACE BLOCK 4
LOT 1
LOT 2
LOT 3
LOT 4
LOT 13
LOT 15
LOT 18
LOT 39
LOT BOUNDARY
CAUTION! 12" WATER/DRAIN B CROSSING REF. DETAIL THIS SHEET
CAUTION! 8" WATER/DRAIN E CROSSING REF. DETAIL THIS SHEET
DRAIN B SEE SHEET C22
DRAIN E SEE SHEET C30
DRAIN F SEE SHEET XX
PIAZZA BLVD (60' R.O.W.)
VERONA BLVD (60' R.O.W.)
10' E.G.T.CA. ESM'T.
16' E.G.T.CA. ESM'T.
60.00'
MATCHLINE 'A' - SEE SHEET C55
UNIT 1 BOUNDARY
VAR. WID. OFF LOT TEMPORARY TURNAROUND & UTILITY EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS
LYNDA D HOOVER & AUDRA K DIERKS 96.79 ACRES DOC. # 202406011063
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 180.57 AC. (DOC. #
OHE
W
T
E

MATCHLINE 'A' - SEE SHEET C55

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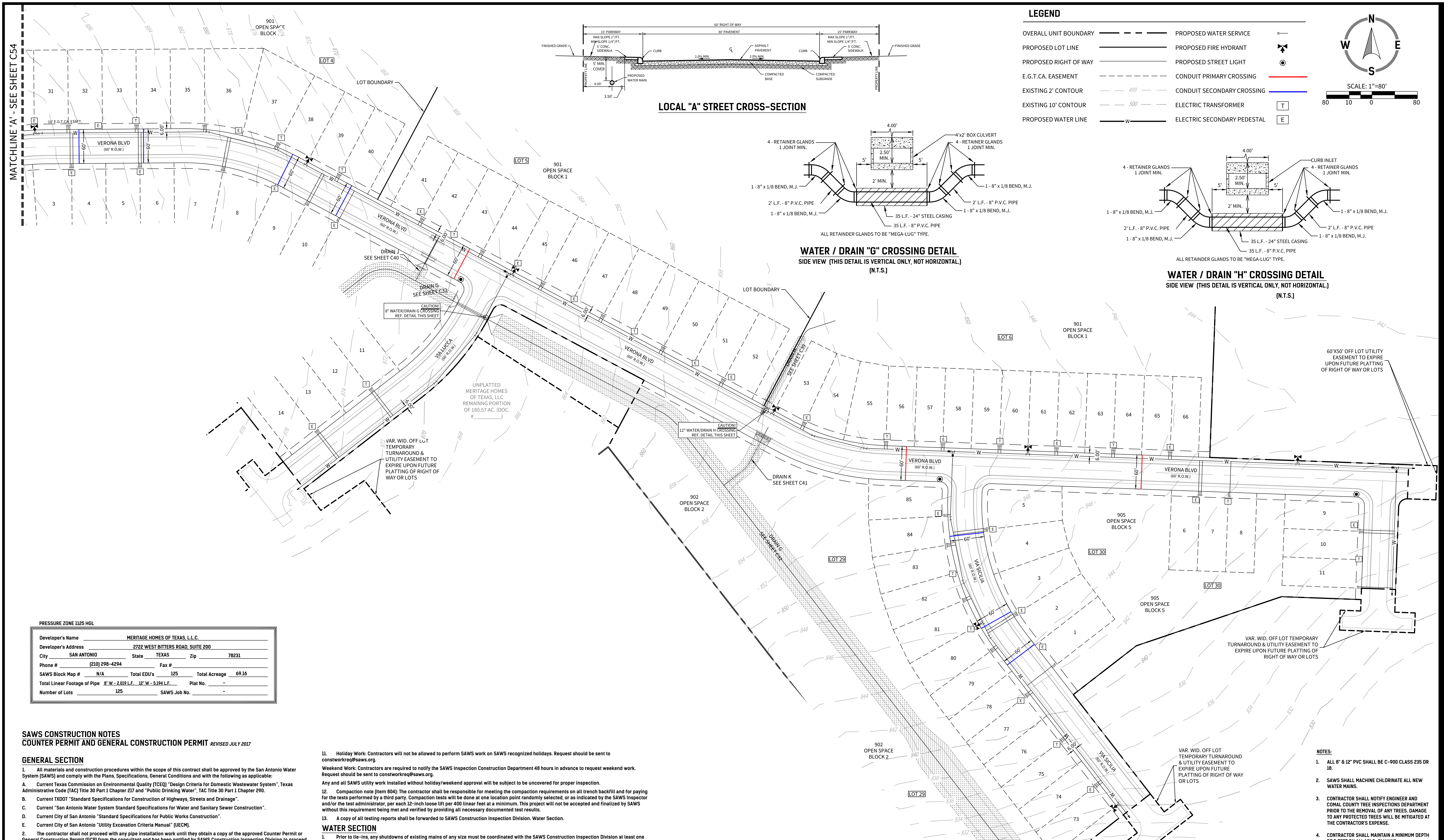

MATCHLINE 'A' - SEE SHEET C54
VERONA BLVD (60' R.O.W.)
VIA LUCCA (60' R.O.W.)
VIA SICILIA (60' R.O.W.)
10' E.G.T.CA. ESMT.
LOT BOUNDARY
901 OPEN SPACE BLOCK 1
902 OPEN SPACE BLOCK 2
905 OPEN SPACE BLOCK 5
LOT 4
LOT 5
LOT 6
LOT 29
LOT 30
DRAIN J SEE SHEET C40
DRAIN G SEE SHEET C32
DRAIN K SEE SHEET C41
CAUTION! 8" WATER/DRAIN G CROSSING REF. DETAIL THIS SHEET
CAUTION! 12" WATER/DRAIN H CROSSING REF. DETAIL THIS SHEET
UNPLATTED MERITAGE HOMES OF TEXAS, LLC REMAINING PORTION OF 180.57 AC. (DOC. #...)
VAR. WID. OFF LOT TEMPORARY TURNAROUND & UTILITY EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS
60'X50' OFF LOT UTILITY EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS
VAR. WID. OFF LOT TEMPORARY TURNAROUND & UTILITY EASEMENT TO EXPIRE UPON FUTURE PLATTING OF RIGHT OF WAY OR LOTS

LOCAL "A" STREET CROSS-SECTION

60' RIGHT OF WAY
15' PARKWAY
30' PAVEMENT
MAX SLOPE 1"/FT. MIN SLOPE 1/4"/FT.
5' CONC. SIDEWALK
FINISHED GRADE
CURB
ASPHALT PAVEMENT
2.0% MIN.
COMPACTED BASE
COMPACTED SUBGRADE
5' MIN. COVER
PROPOSED WATER MAIN
PROPERTY LINE

WATER / DRAIN "G" CROSSING DETAIL

SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)
(N.T.S.)

4.00'
4'x2' BOX CULVERT
4 - RETAINER GLANDS 1 JOINT MIN.
2.50' MIN.
2' MIN.
1 - 8" x 1/8 BEND, M.J.
2' L.F. - 8" P.V.C. PIPE
35 L.F. - 24" STEEL CASING
35 L.F. - 8" P.V.C. PIPE
ALL RETAINER GLANDS TO BE "MEGA-LUG" TYPE.

WATER / DRAIN "H" CROSSING DETAIL

SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)
(N.T.S.)

4.00'
CURB INLET
4 - RETAINER GLANDS 1 JOINT MIN.
2.50' MIN.
2' MIN.
1 - 8" x 1/8 BEND, M.J.
2' L.F. - 8" P.V.C. PIPE
35 L.F. - 24" STEEL CASING
35 L.F. - 8" P.V.C. PIPE
ALL RETAINER GLANDS TO BE "MEGA-LUG" TYPE.

LEGEND

OVERALL UNIT BOUNDARY	— — — —	PROPOSED WATER SERVICE	⩾—
PROPOSED LOT LINE	———	PROPOSED FIRE HYDRANT	⧓
PROPOSED RIGHT OF WAY	———	PROPOSED STREET LIGHT	◉
E.G.T.CA. EASEMENT	– – – –	CONDUIT PRIMARY CROSSING	🟥
EXISTING 2' CONTOUR	— 499 —	CONDUIT SECONDARY CROSSING	🟦
EXISTING 10' CONTOUR	— 500 —	ELECTRIC TRANSFORMER	T
PROPOSED WATER LINE	——W——	ELECTRIC SECONDARY PEDESTAL	E

SCALE: 1"=80'

80 10 0 80

PRESSURE ZONE 1125 HGL

Developer's Name	MERITAGE HOMES OF TEXAS, L.L.C.
Developer's Address	2722 WEST BITTERS ROAD, SUITE 200
City	SAN ANTONIO
State	TEXAS
Zip	78231
Phone #	(210) 298-4294
Fax #	
SAWS Block Map #	N/A
Total EDU's	125
Total Acreage	69.16
Total Linear Footage of Pipe	8" W - 2,019 L.F. 12" W - 5,194 L.F.
Plat No.	-
Number of Lots	125
SAWS Job No.	-

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JULY 2017*

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 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 Comal 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. Water Section.

WATER SECTION

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly. For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestoscontaining material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 1125 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 1125 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if *PRV is/are required for such lot(s), only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

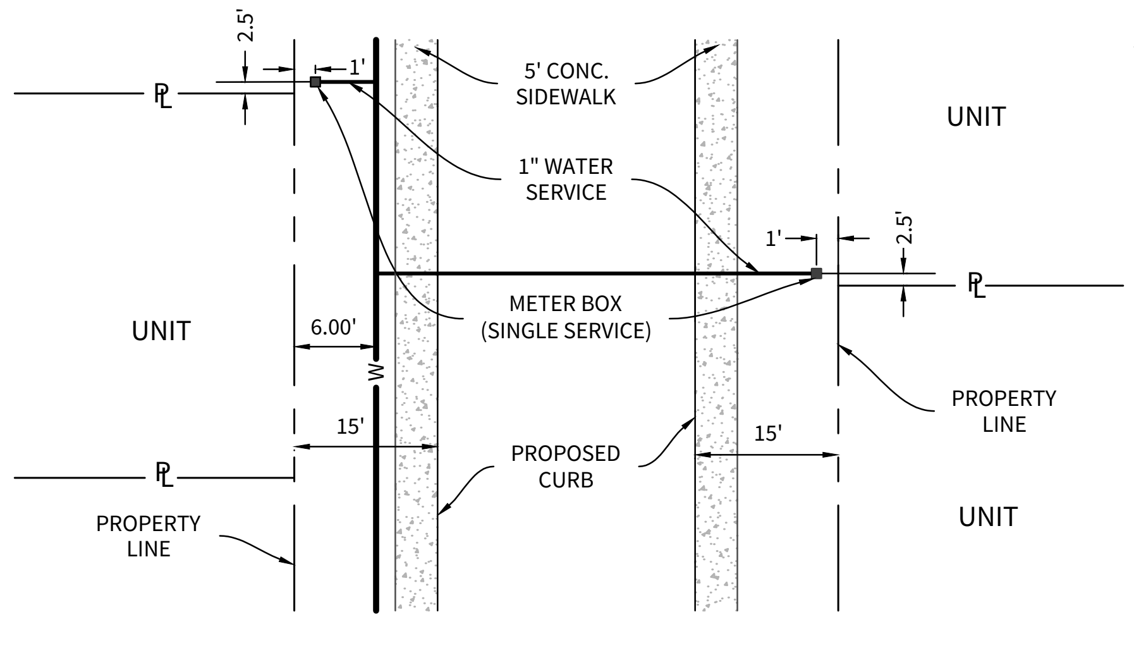
8. Backflow Prevention Devices:

☐ All irrigation services within residential areas are required to have backflow prevention devices.
☐ All commercial backflow prevention devices must be approved by SAWS prior to installation.

9. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

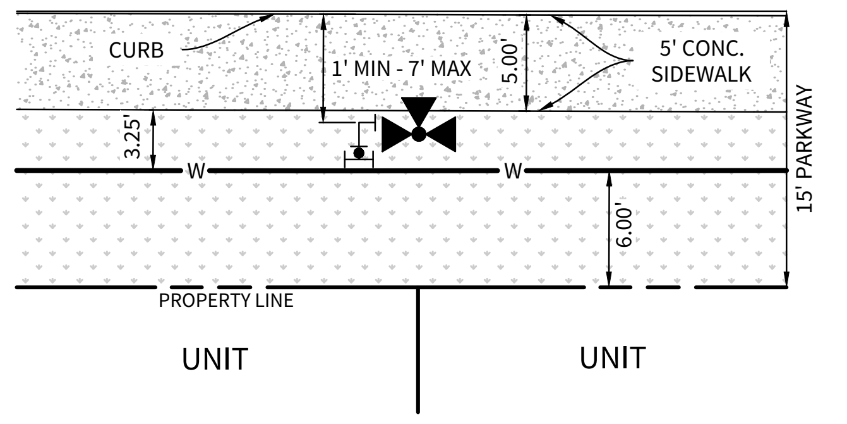
10. All meters shall be 5/8", unless otherwise noted.

11. All pipes shall be C-900 Class 235 DR 18, unless otherwise noted.



WATER METER BOX LOCATION (60' R.O.W.)

N.T.S.



LOCAL RESIDENTIAL FIRE HYDRANT DETAIL (5' SIDEWALK)

N.T.S.

NOTE:

1. EXCLUSIVE OF THE TEE, PAYMENT FOR THE FIRE HYDRANT SHALL INCLUDE ALL FITTINGS, 6" D.I. PIPE AND 6" GATE VALVE & BOX.
2. FIRE HYDRANT TO BE INSTALLED OUTSIDE OF THE LIMITS OF ALL PROPOSED SIDEWALKS.

NOTES:

1. ALL 8" & 12" PVC SHALL BE C-900 CLASS 235 DR 18.
2. SAWS SHALL MACHINE CHLORINATE ALL NEW WATER MAINS.
3. CONTRACTOR SHALL NOTIFY ENGINEER AND COMAL COUNTY TREE INSPECTIONS DEPARTMENT PRIOR TO THE REMOVAL OF ANY TREES. DAMAGE TO ANY PROTECTED TREES WILL BE MITIGATED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM DEPTH OF 5 FEET ON ALL 12" & 8" MAINS
5. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR FUTURE GRADES OF STREETS FOR CORRECT DEPTH INSTALLATION OF THE OFFSITE WATER MAINS.
6. ALL WATER SERVICES SHALL BE $\frac{3}{4}$" COPPER SERVICE WITH $\frac{5}{8}$" METER UNLESS OTHER WISE NOTED.

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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.

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ENGINEERS
4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION
UNIT 1

UTILITY LAYOUT PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

DATE

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TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

SEQUENCE OF INSTALLATION DURING CONSTRUCTION PROCESS:

1. STORM WATER MANAGEMENT FACILITIES MUST BE INSTALLED PRIOR TO SITE CONSTRUCTION. SUBD. ORD. 6.01.003

2. THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT (ITEM 2) SHALL BE INSTALLED PRIOR TO DISTURBING ANY SOIL EXCEPT AT THE LOCATION OF THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT. IT SHALL STAY IN PLACE AND BE MAINTAINED UNTIL THE END OF THE INFRASTRUCTURE CONSTRUCTION

3. SILT FENCE (ITEM 4) SHALL BE INSTALLED ALONG THE DOWN-GRADIENT BOUNDARY OF THE SITE PRIOR TO ANY DISTURBANCE OF THE SITE AS SHOWN ON THE SITE PLAN.

4. BAGGED GRAVEL INLET FILTERS (ITEM 6) SHALL BE PLACED AROUND ALL INLETS FOLLOWING INSTALLATION.

5. ROCK BERMS (ITEM 5) SHALL BE INSTALLED AROUND THE PERIMETER OF THE PROJECT AT NATURAL LOW POINTS FOLLOWING ROUGH GRADING OF THE SITE AND SHALL BE REMOVED ONCE GRADING TO THE ON-SITE STORMWATER DRAINAGE SYSTEM WITH BAGGED GRAVEL INLET FILTERS IN SUMP IS COMPLETE, ROCK BERMS WILL ALSO BE UTILIZED AT THE OUTLET OF THE POND WHILE IT IS BEING CONSTRUCTED.

INSPECTIONS:

DESIGNATED AND QUALIFIED PERSON(S) SHALL INSPECT POLLUTION CONTROL MEASURES EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT GREATER THAN 0.5 INCHES OF RAINFALL, AN INSPECTION REPORT THAT SUMMARIZES THE SCOPE OF THE INSPECTION, NAMES AND QUALIFICATIONS OF PERSONNEL CONDUCTING THE INSPECTION, DATE OF THE INSPECTION, MAJOR OBSERVATIONS, AND ACTIONS TAKEN AS A RESULT OF THE INSPECTION SHALL BE RECORDED AND MAINTAINED AS PART OF STORM WATER TPDES DATA FOR A PERIOD OF THREE YEARS AFTER THE DATE OF THE INSPECTION. COPY OF THE INSPECTION REPORT FORM IS PROVIDED IN THIS STORM WATER POLLUTION PREVENTION PLAN.

AS A MINIMUM, THE INSPECTOR SHALL OBSERVE: (1) SIGNIFICANT DISTURBED AREAS FOR EVIDENCE OF EROSION, (2) STORAGE AREAS FOR EVIDENCE OF LEAKAGE FROM THE EXPOSED STORED MATERIALS, (3) STRUCTURAL CONTROLS (ROCK BERM OUTLETS. SILT FENCES, DRAINAGE SWALES, ETC.) FOR EVIDENCE OF FAILURE OR EXCESS SILTATION (OVER 6 INCHES DEEP). (4) VEHICLE EXIT POINT FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING, (5) VEHICLE STORAGE AREAS FOR SIGNS OF LEAKING EQUIPMENT OR SPILLS, AND (6) CONCRETE TRUCK RINSE-OUT PIT FOR SIGNS OF POTENTIAL FAILURE. DEFICIENCIES NOTED DURING THE INSPECTION WILL BE CORRECTED AND DOCUMENTED WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE INSPECTION OR BEFORE THE NEXT ANTICIPATED STORM EVENT IF PRACTICABLE.

NOTES

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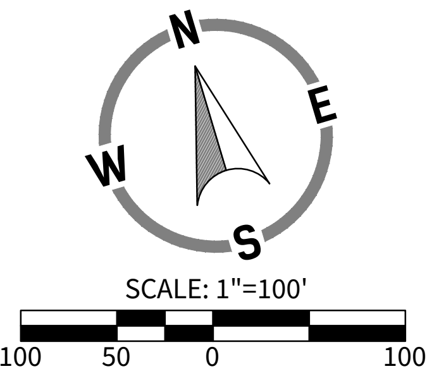
SEE SHEET C61 FOR STORM WATER POLLUTION PREVENTION DETAILS

LEGEND

OVERALL UNIT BOUNDARY	——— — — ———
PROPOSED LOT LINE	———
EXISTING RIGHT OF WAY	———
EXISTING 2' CONTOUR	— — 499 — —
EXISTING 10' CONTOUR	— — 500 — —
PROPOSED TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▦
PROPOSED ROCK BERM	▨
PROPOSED SILT FENCE	—— SF ——
STAGING AREA	▦
CONCRETE WASHOUT PIT	■
BAGGED GRAVEL INLET FILTER	▭



SCALE: 1"=100'

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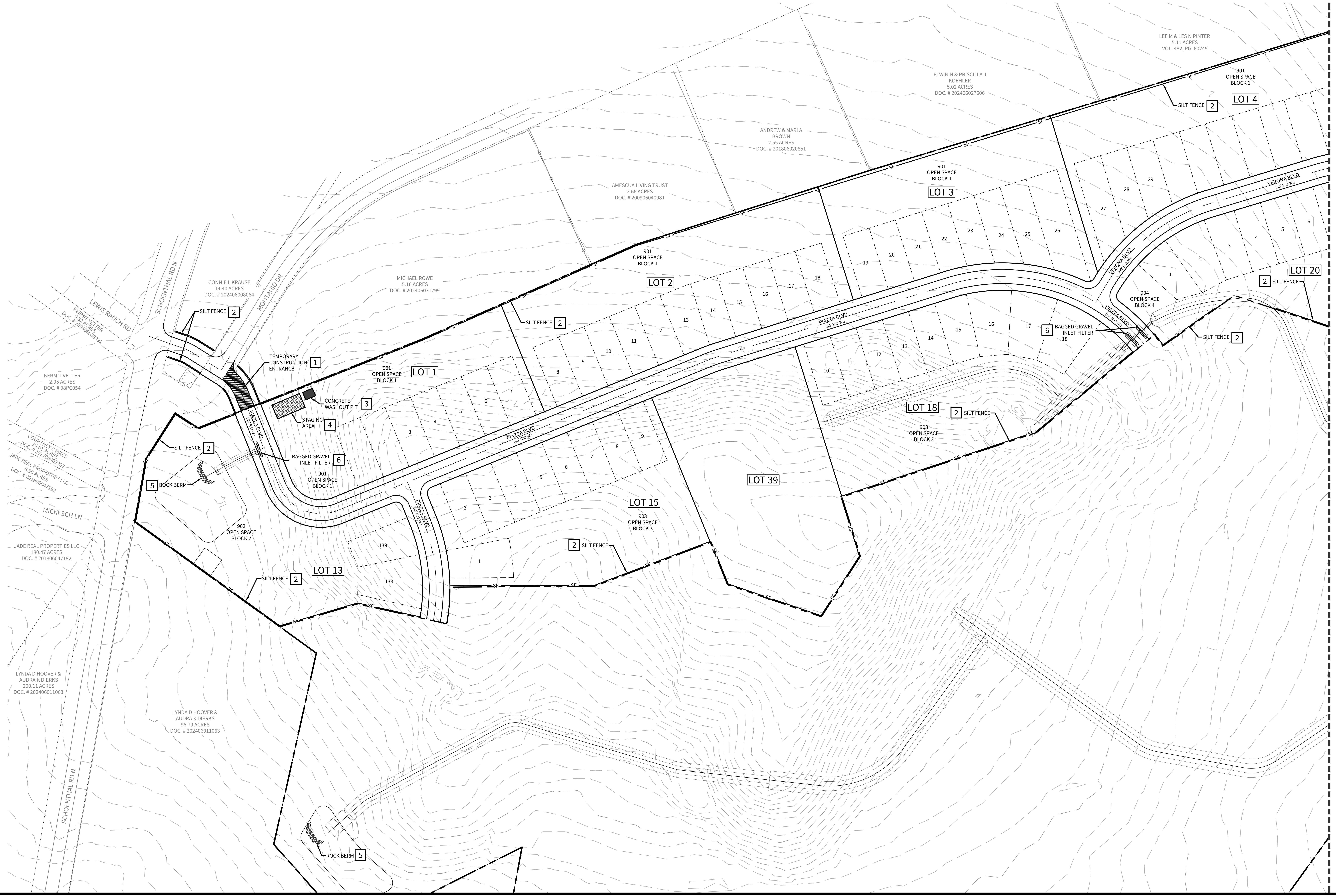

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CONTESSA SUBDIVISION
UNIT 1

ONSITE STORM WATER POLLUTION PREVENTION PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
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P:\04343\002\2-DWG\4-Plans\C60 ONSITE STORM WATER POLLUTION PREVENTION PLAN.dwg 2025/06/09 3:54pm jochoa

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SEE SHEET C61 FOR STORM WATER POLLUTION PREVENTION DETAILS

LEGEND

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EXISTING RIGHT OF WAY	──
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PROPOSED SILT FENCE	—— SF ——
STAGING AREA	▦
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BAGGED GRAVEL INLET FILTER	▭

SCALE: 1"=100'

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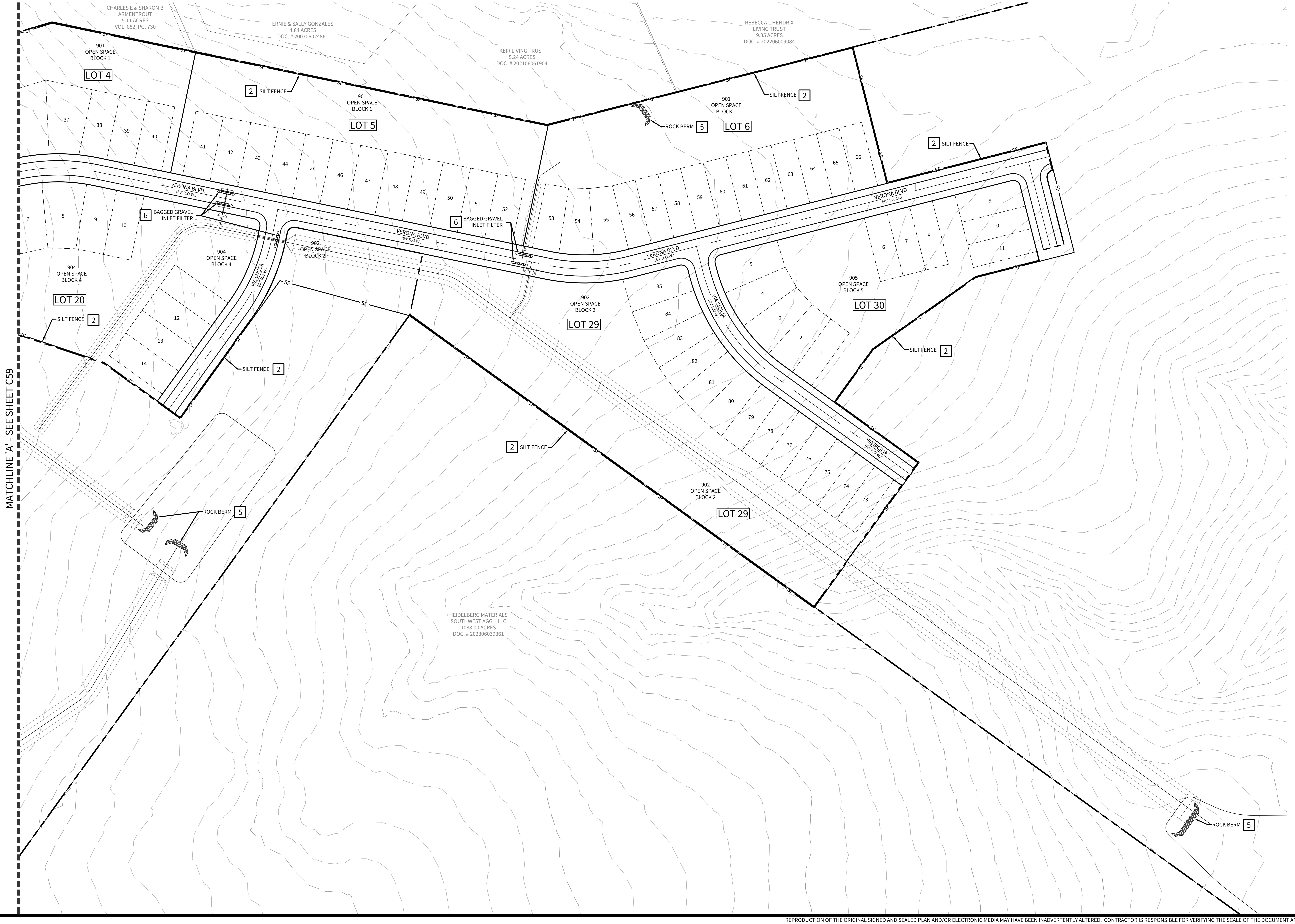

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MATCHLINE 'A' - SEE SHEET C59
CHARLES E & SHARON B ARMENTROUT 5.11 ACRES VOL. 882, PG. 730
ERNIE & SALLY GONZALES 4.84 ACRES DOC. # 200706024861
KEIR LIVING TRUST 5.24 ACRES DOC. # 202106061904
REBECCA L HENDRIX LIVING TRUST 9.35 ACRES DOC. # 202206009084
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC 1088.00 ACRES DOC. # 202306039361
901 OPEN SPACE BLOCK 1
LOT 4
LOT 5
LOT 6
LOT 20
LOT 29
LOT 30
902 OPEN SPACE BLOCK 2
904 OPEN SPACE BLOCK 4
905 OPEN SPACE BLOCK 5
VERONA BLVD (60' R.O.W.)
VIA LUCCA (60' R.O.W.)
VIA SICILIA (60' R.O.W.)
2 SILT FENCE
5 ROCK BERM
6 BAGGED GRAVEL INLET FILTER
SF

CONTESSA SUBDIVISION UNIT 1

ONSITE STORM WATER POLLUTION PREVENTION PLAN

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P:\04343\002\2-DWG\4-Plans\C60 ONSITE STORM WATER POLLUTION PREVENTION PLAN.dwg 2025/06/09 3:55pm jochoa

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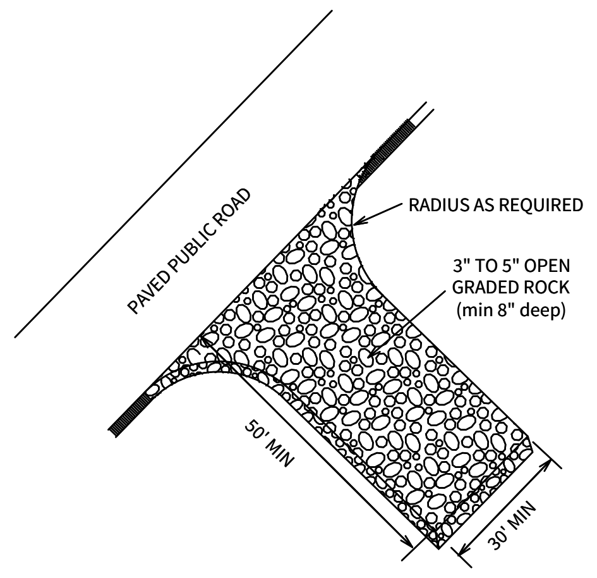
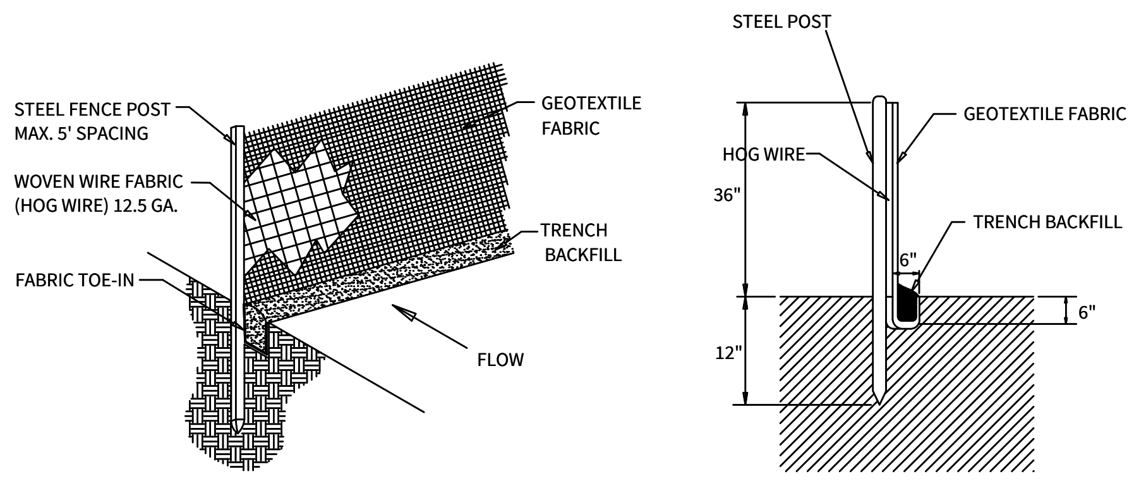


STABILIZED CONSTRUCTION EXIT NOTES:

1. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ON PUBLIC ROADWAY.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY.

1 TEMPORARY CONSTRUCTION ENTRANCE/EXIT

N.T.S.

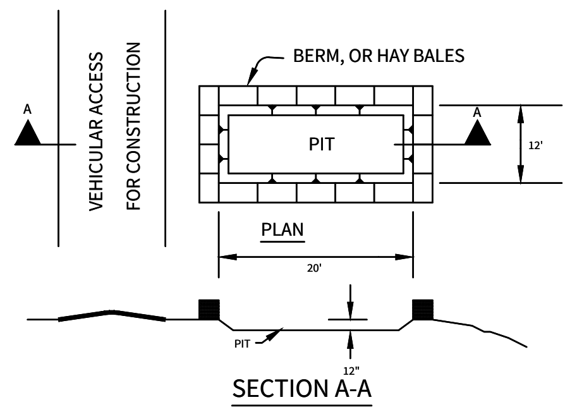


SILT FENCE DETAIL

SECTION DETAIL

2 STANDARD SILT FENCE

N.T.S.



SECTION A-A

GENERAL NOTES:

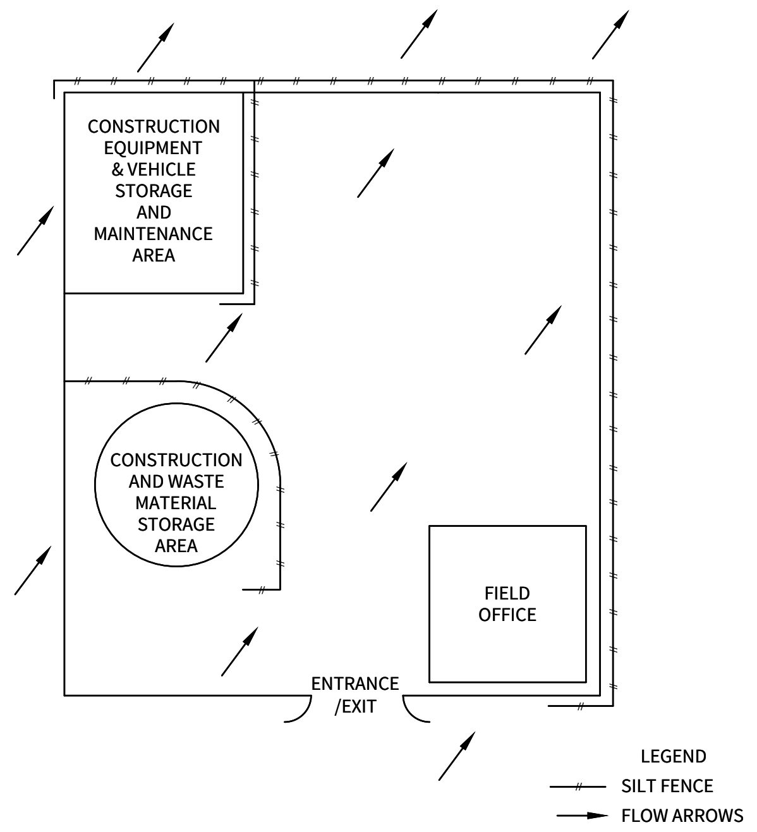
- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
- construction traffic.
- If hay bales are used, they shall be placed in accordance with details shown on Exhibit for hay bales.
- Washout pit shall be located in an area easily accessible to

Washout pit shall not be located in areas subject to inundation from storm water runoff.

- Washout pit shall be lined with a 10-mil thick polyethylene sheeting free of holes, tears and other defects.

3 CONCRETE TRUCK WASHOUT PIT

N.T.S.



4 TYP. CONSTRUCTION STAGING AREA

N.T.S.

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

SEQUENCE OF INSTALLATION DURING CONSTRUCTION PROCESS:

1. STORM WATER MANAGEMENT FACILITIES MUST BE INSTALLED PRIOR TO SITE CONSTRUCTION. SUBD. ORD. 6.01.003

2. THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT (ITEM 2) SHALL BE INSTALLED PRIOR TO DISTURBING ANY SOIL EXCEPT AT THE LOCATION OF THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT. IT SHALL STAY IN PLACE AND BE MAINTAINED UNTIL THE END OF THE INFRASTRUCTURE CONSTRUCTION

3. SILT FENCE (ITEM 4) SHALL BE INSTALLED ALONG THE DOWN-GRADIENT BOUNDARY OF THE SITE PRIOR TO ANY DISTURBANCE OF THE SITE AS SHOWN ON THE SITE PLAN.

4. BAGGED GRAVEL INLET FILTERS (ITEM 6) SHALL BE PLACED AROUND ALL INLETS FOLLOWING INSTALLATION.

5. ROCK BERMS (ITEM 5) SHALL BE INSTALLED AROUND THE PERIMETER OF THE PROJECT AT NATURAL LOW POINTS FOLLOWING ROUGH GRADING OF THE SITE AND SHALL BE REMOVED ONCE GRADING TO THE ON-SITE STORMWATER DRAINAGE SYSTEM WITH BAGGED GRAVEL INLET FILTERS IN SUMP IS COMPLETE, ROCK BERMS WILL ALSO BE UTILIZED AT THE OUTLET OF THE POND WHILE IT IS BEING CONSTRUCTED.

INSPECTIONS:

DESIGNATED AND QUALIFIED PERSON(S) SHALL INSPECT POLLUTION CONTROL MEASURES EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT GREATER THAN 0.5 INCHES OF RAINFALL, AN INSPECTION REPORT THAT SUMMARIZES THE SCOPE OF THE INSPECTION, NAMES AND QUALIFICATIONS OF PERSONNEL CONDUCTING THE INSPECTION, DATE OF THE INSPECTION, MAJOR OBSERVATIONS, AND ACTIONS TAKEN AS A RESULT OF THE INSPECTION SHALL BE RECORDED AND MAINTAINED AS PART OF STORM WATER TPDES DATA FOR A PERIOD OF THREE YEARS AFTER THE DATE OF THE INSPECTION. COPY OF THE INSPECTION REPORT FORM IS PROVIDED IN THIS STORM WATER POLLUTION PREVENTION PLAN.

AS A MINIMUM, THE INSPECTOR SHALL OBSERVE: (1) SIGNIFICANT DISTURBED AREAS FOR EVIDENCE OF EROSION, (2) STORAGE AREAS FOR EVIDENCE OF LEAKAGE FROM THE EXPOSED STORED MATERIALS, (3) STRUCTURAL CONTROLS (ROCK BERM OUTLETS. SILT FENCES, DRAINAGE SWALES, ETC.) FOR EVIDENCE OF FAILURE OR EXCESS SILTATION (OVER 6 INCHES DEEP). (4) VEHICLE EXIT POINT FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING, (5) VEHICLE STORAGE AREAS FOR SIGNS OF LEAKING EQUIPMENT OR SPILLS, AND (6) CONCRETE TRUCK RINSE-OUT PIT FOR SIGNS OF POTENTIAL FAILURE. DEFICIENCIES NOTED DURING THE INSPECTION WILL BE CORRECTED AND DOCUMENTED WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE INSPECTION OR BEFORE THE NEXT ANTICIPATED STORM EVENT IF PRACTICABLE.

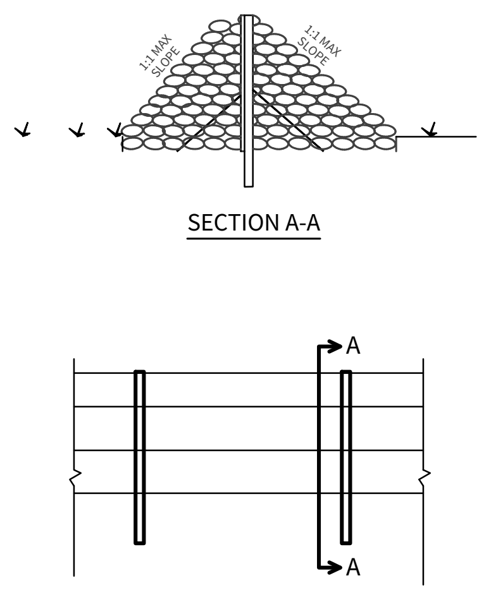
NOTES

1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF THE SILT FENCE, ROCK BERMS AND/OR TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE AT THE CONTRACTOR'S EXPENSE.

2. AREA OF SOIL DISTURBANCES INCLUDE STREET RIGHT-OF-WAYS, EASEMENTS AND LOTS.

3. THE CONTRACTOR IS REQUIRED TO MAINTAIN EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.

4. THE CITY AND/OR COUNTY INSPECTOR HAS THE AUTHORITY TO HAVE THE CONTRACTOR MODIFY THE EROSION CONTROLS AT THE DEVELOPER'S EXPENSE. THE DEVELOPER SHALL BE NOTIFIED OF THESE MODIFICATIONS PRIOR TO COMMENCEMENT OF MODIFICATIONS.



SECTION A-A

PLAN

5 ROCK BERM W/ SILT FENCE DETAIL

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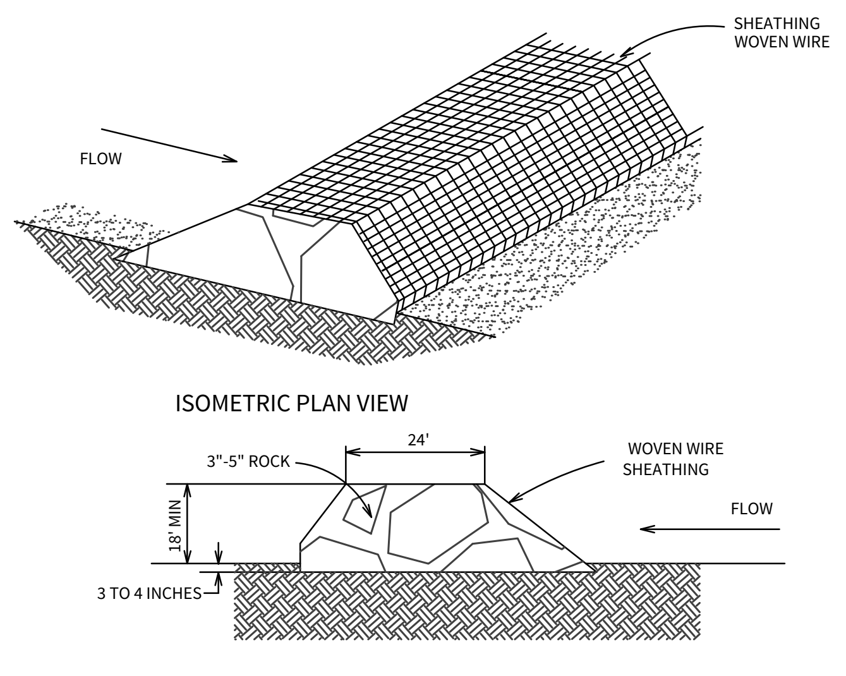
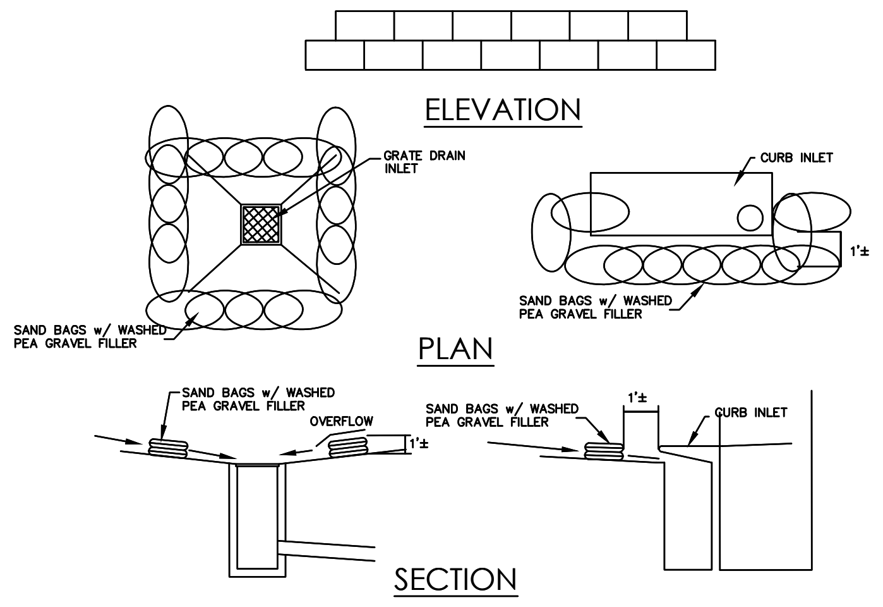


ISOMETRIC PLAN VIEW

SECTION DETAIL

ROCK BERM

N.T.S.



BAGGED GRAVEL INLET FILTER NOTES

1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2 , MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAGS SHOULD BE FILLED WITH ¾" GRAVEL .
4. WHEN A GRAVEL BAG IS FILLED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL. THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. 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.
9. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

6 BAGGED GRAVEL INLET FILTER NOTES

N.T.S.

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CONTESSA SUBDIVISION
UNIT 1

ONSITE STORM WATER POLLUTION PREVENTION DETAILS

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

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NOTES:

1. MOISTURE DENSITY COMPACTION TESTING FREQUENCY- WATER MAIN TRENCHES REQUIRED EVERY 300 LF FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.
2. ALL DUCTILE IRON PIPE TO BE AMERICAN, ZINC COATED, AWWA/ANSI C-151.
3. FIRE HYDRANTS SHALL BE MUELLER OR EJ TYPE AND SHALL BE 1' MINIMUM AND 7' MAXIMUM FROM THE BACK OF CURB.
4. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
5. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY CONTRACTOR.

SEE SHEET C65 FOR SAWS CONSTRUCTION & GENERAL NOTES

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE GVSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY GVSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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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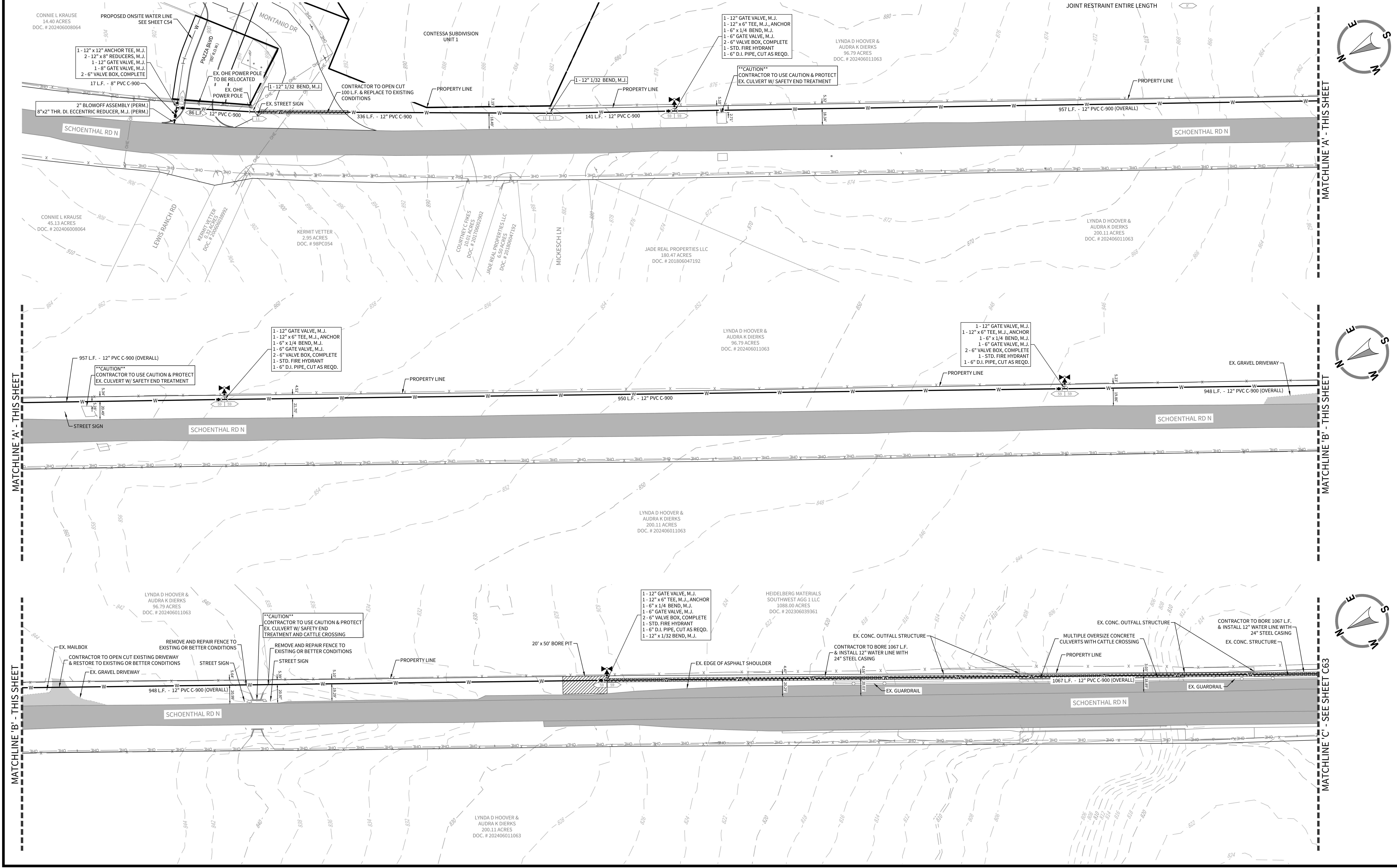
LEGEND

OVERALL UNIT BOUNDARY	— — — —
EXISTING LOT LINE	――
EXISTING RIGHT OF WAY	――
EXISTING 2' CONTOUR	— — 499 — —
EXISTING 10' CONTOUR	— — 500 — —
EXISTING WATER LINE	— — Wx — —
PROPOSED WATER LINE	――W――
PROPOSED FIRE HYDRANT	⧓
JOINT RESTRAINT	X'
JOINT RESTRAINT ENTIRE LENGTH	X'

SCALE: 1"=50'



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UNIT 1

OFFSITE WATER DISTRIBUTION - PHASE I

DATE
06/09/2025

PROJECT NO.
04343.002

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CG/JG/LJ/TCD

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XV/AL

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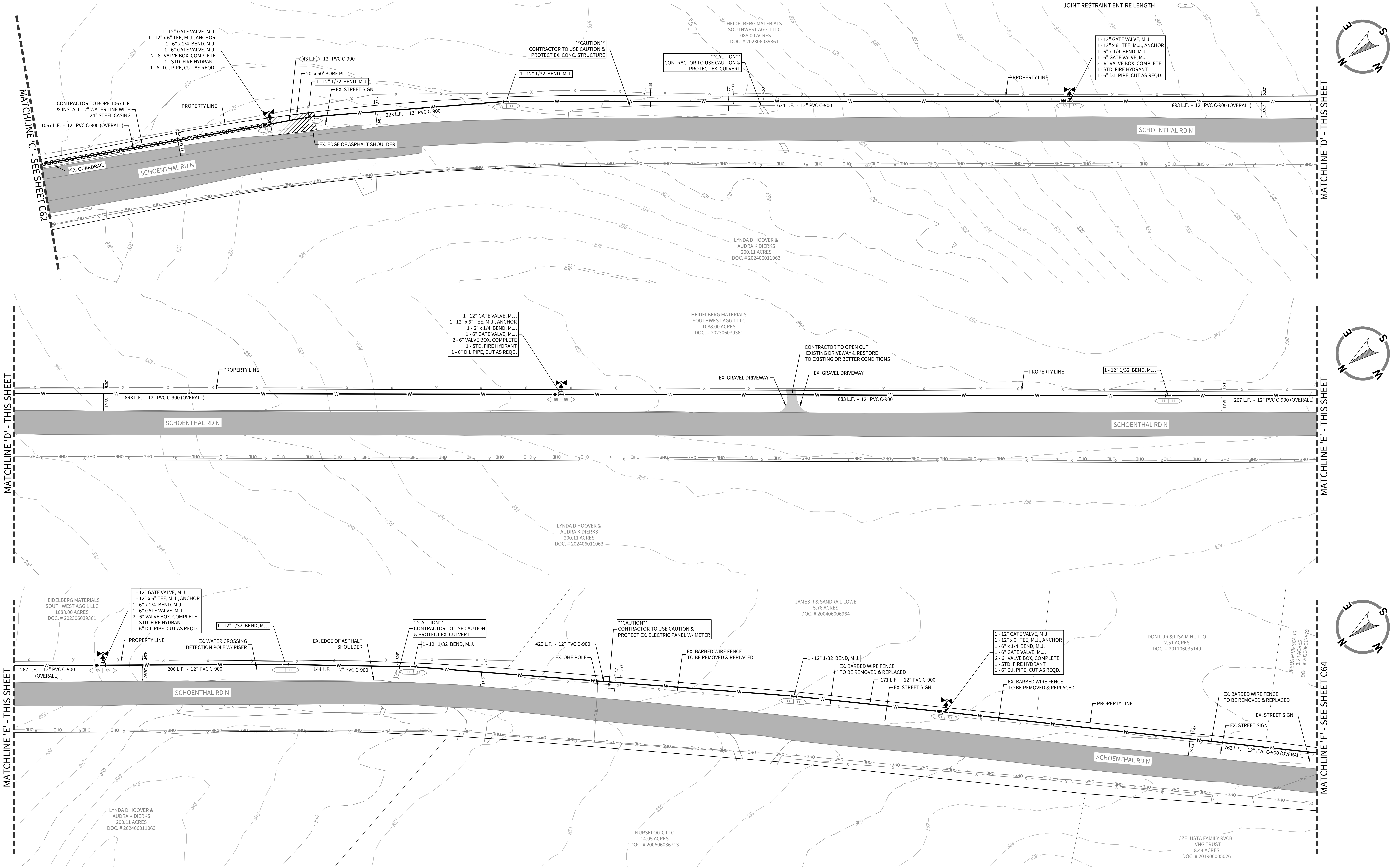

MATCHLINE 'C' - SEE SHEET C62
1 - 12" GATE VALVE, M.J.
1 - 12" x 6" TEE, M.J., ANCHOR
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQD.
43 L.F. 12" PVC C-900
20' x 50' BORE PIT
1 - 12" 1/32 BEND, M.J.
EX. STREET SIGN
CONTRACTOR TO BORE 1067 L.F. & INSTALL 12" WATER LINE WITH 24" STEEL CASING
PROPERTY LINE
1067 L.F. - 12" PVC C-900 (OVERALL)
223 L.F. - 12" PVC C-900
EX. EDGE OF ASPHALT SHOULDER
EX. GUARDRAIL
SCHOENTHAL RD N
CAUTION CONTRACTOR TO USE CAUTION & PROTECT EX. CONC. STRUCTURE
CAUTION CONTRACTOR TO USE CAUTION & PROTECT EX. CULVERT
634 L.F. - 12" PVC C-900
893 L.F. - 12" PVC C-900 (OVERALL)
HEIDELBERG MATERIALS SOUTHWEST AGG 1 LLC 1088.00 ACRES DOC. # 202306039361
LYNDA D HOOVER & AUDRA K DIERKS 200.11 ACRES DOC. # 202406011063
MATCHLINE 'D' - THIS SHEET
CONTRACTOR TO OPEN CUT EXISTING DRIVEWAY & RESTORE TO EXISTING OR BETTER CONDITIONS
EX. GRAVEL DRIVEWAY
683 L.F. - 12" PVC C-900
267 L.F. - 12" PVC C-900 (OVERALL)
MATCHLINE 'E' - THIS SHEET
EX. WATER CROSSING DETECTION POLE W/ RISER
206 L.F. - 12" PVC C-900
EX. EDGE OF ASPHALT SHOULDER
144 L.F. - 12" PVC C-900
429 L.F. - 12" PVC C-900
EX. OHE POLE
CAUTION CONTRACTOR TO USE CAUTION & PROTECT EX. ELECTRIC PANEL W/ METER
EX. BARBED WIRE FENCE TO BE REMOVED & REPLACED
171 L.F. - 12" PVC C-900
763 L.F. - 12" PVC C-900 (OVERALL)
JAMES R & SANDRA L LOWE 5.76 ACRES DOC. # 200406006964
DON L JR & LISA M HUTTO 2.51 ACRES DOC. # 201106035149
JESUS M VIESCA JR 3.24 ACRES DOC. # 202106017579
NURSELOGIC LLC 14.05 ACRES DOC. # 200606036713
CZELUSTA FAMILY RVCBL LVNG TRUST 8.44 ACRES DOC. # 201906005026
MATCHLINE 'F' - SEE SHEET C64
N E S W

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SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT *REVISED JULY 2017*

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 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 Kendall 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. Water Section

WATER SECTION

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly. For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestoscontaining material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

7. All pipes shall be C-900, CLASS 235 DR 18, unless otherwise noted.

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE GVSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY GVSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH NOTE

CONTRACTOR TO FOLLOW TRENCH EXCAVATION DETAIL PER JURISDICTION.

THRUST BLOCKING NOTE

ANCHORAGE/ THRUST BLOCKING AND JOINT RESTRAINTS SHALL BE DONE IN ACCORDANCE WITH SAWS STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION (ITEM NO. 839)

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) 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!!

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

CAUTION!!

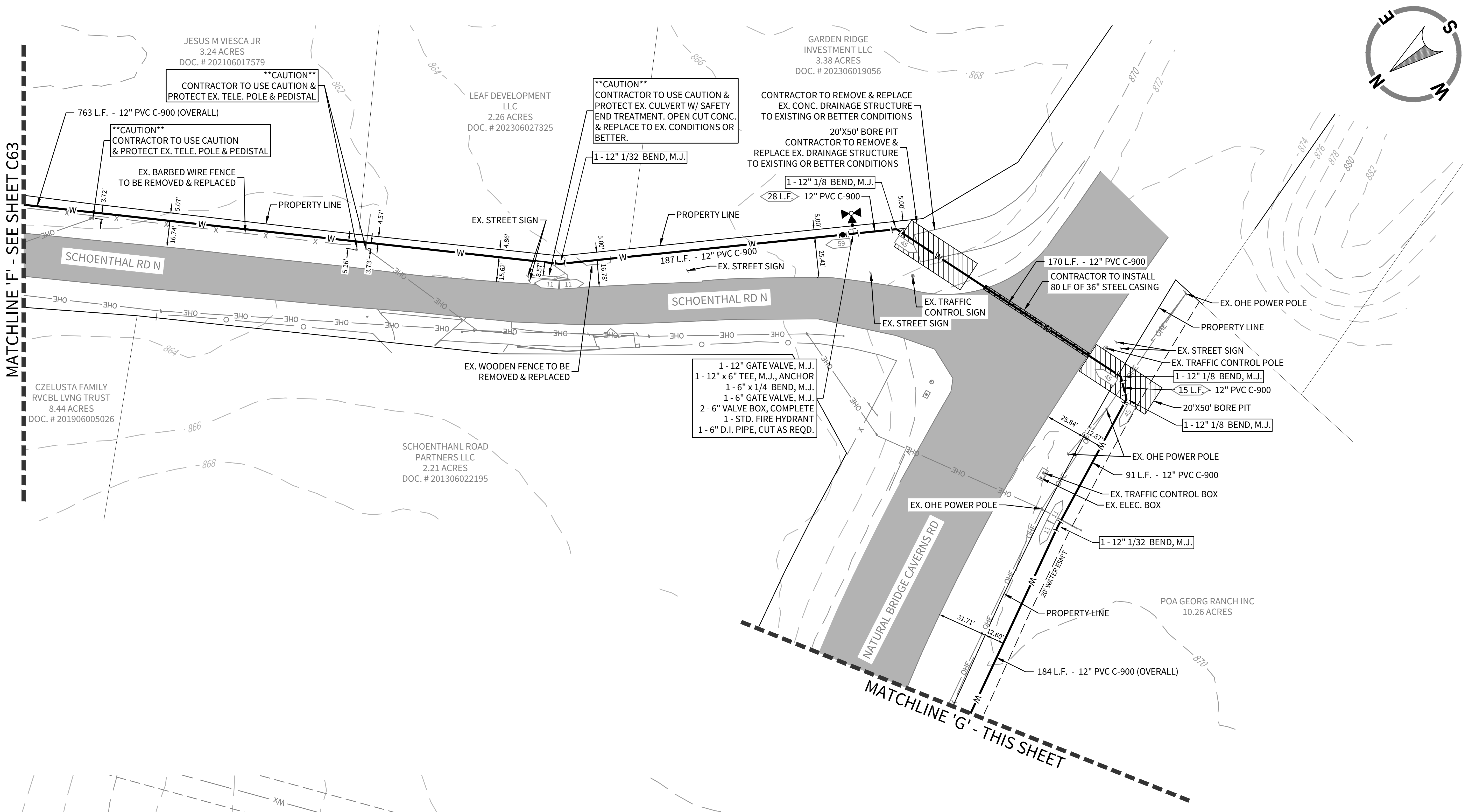
THE CONTRACTOR SHALL BE AWARE THAT OVERHEAD ELECTRIC LINES EXIST WITHIN THE VICINITY OF THE SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.

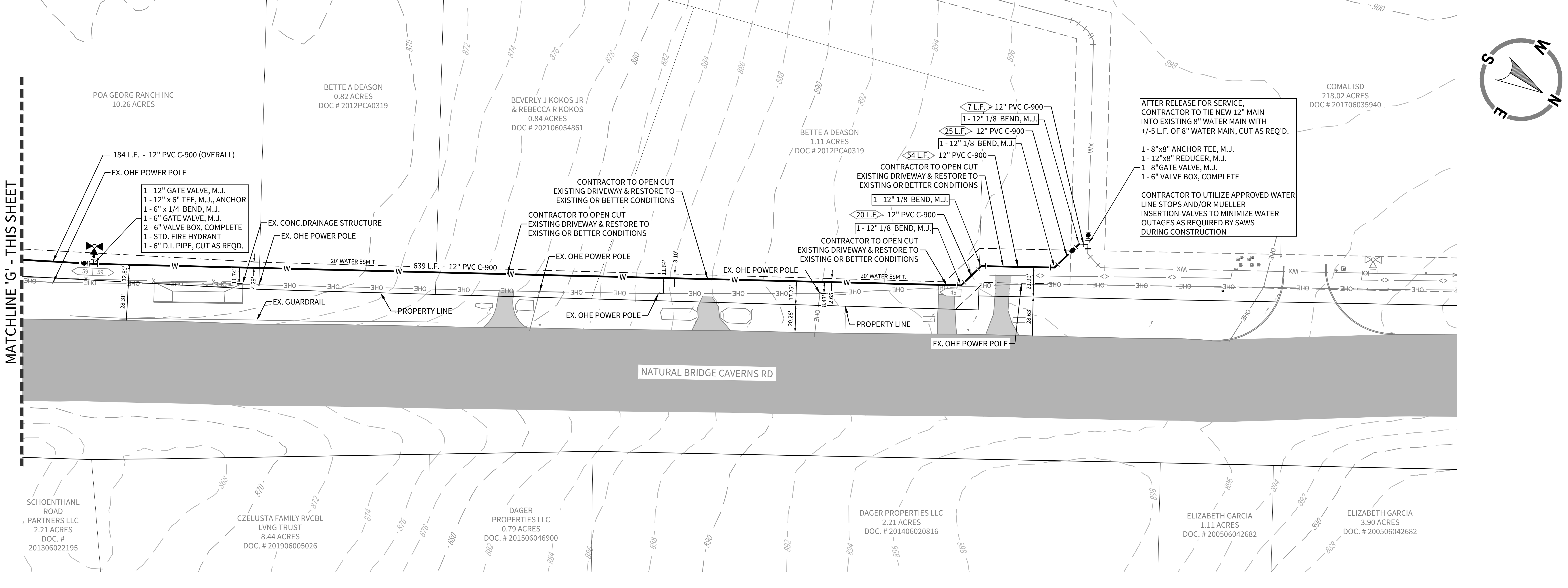
LEGEND

OVERALL UNIT BOUNDARY	— — — —
EXISTING LOT LINE	—
EXISTING RIGHT OF WAY	—
EXISTING 2' CONTOUR	— — 499 — —
EXISTING 10' CONTOUR	— — 500 — —
EXISTING WATER LINE	— — Wx — —
PROPOSED WATER LINE	—W—
PROPOSED FIRE HYDRANT	⧓
JOINT RESTRAINT	X'
JOINT RESTRAINT ENTIRE LENGTH	X'

SCALE: 1"=50'

50 25 0 50





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EST. 1980 CUDE ENGINEERS

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San Antonio, Texas 78231
P:(210) 681.2951 F: (210) 523.7112

CONTESSA SUBDIVISION UNIT 1

OFFSITE WATER DISTRIBUTION - PHASE I

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

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06/09/2025
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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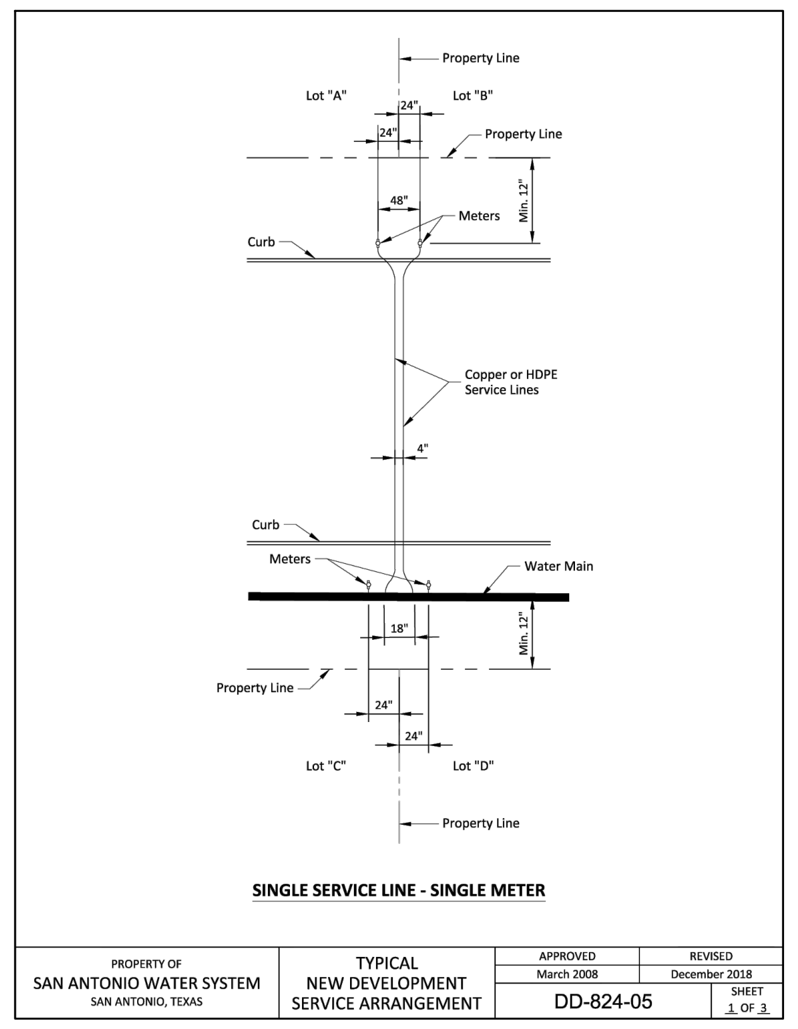
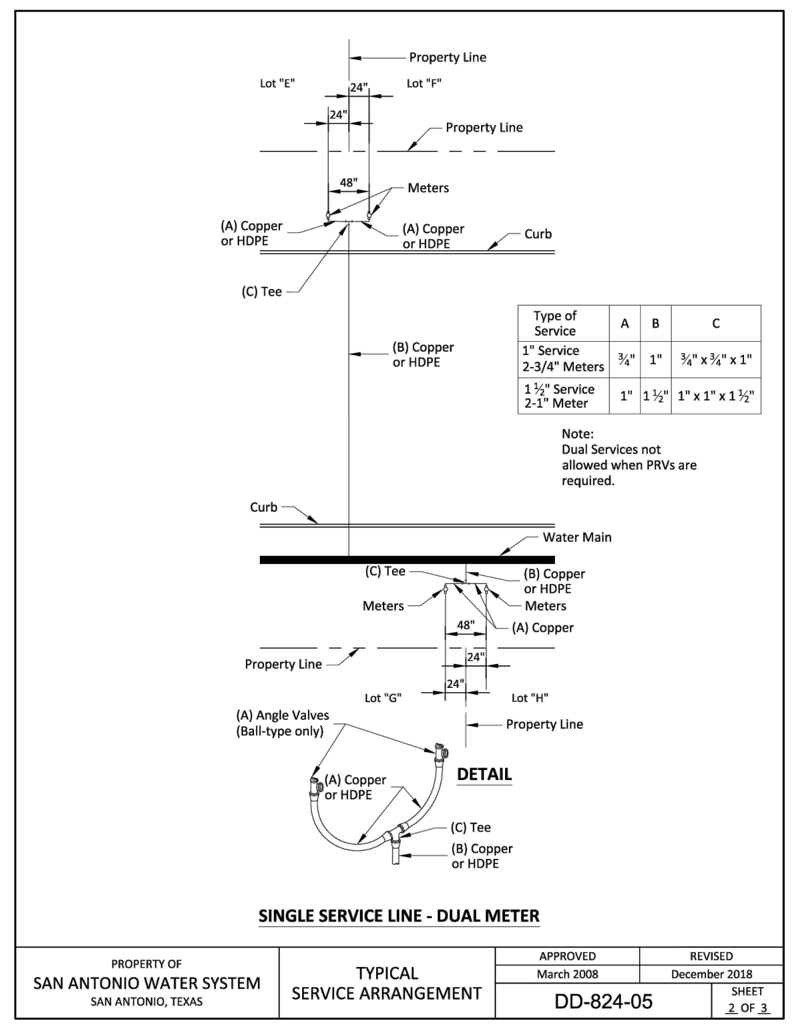
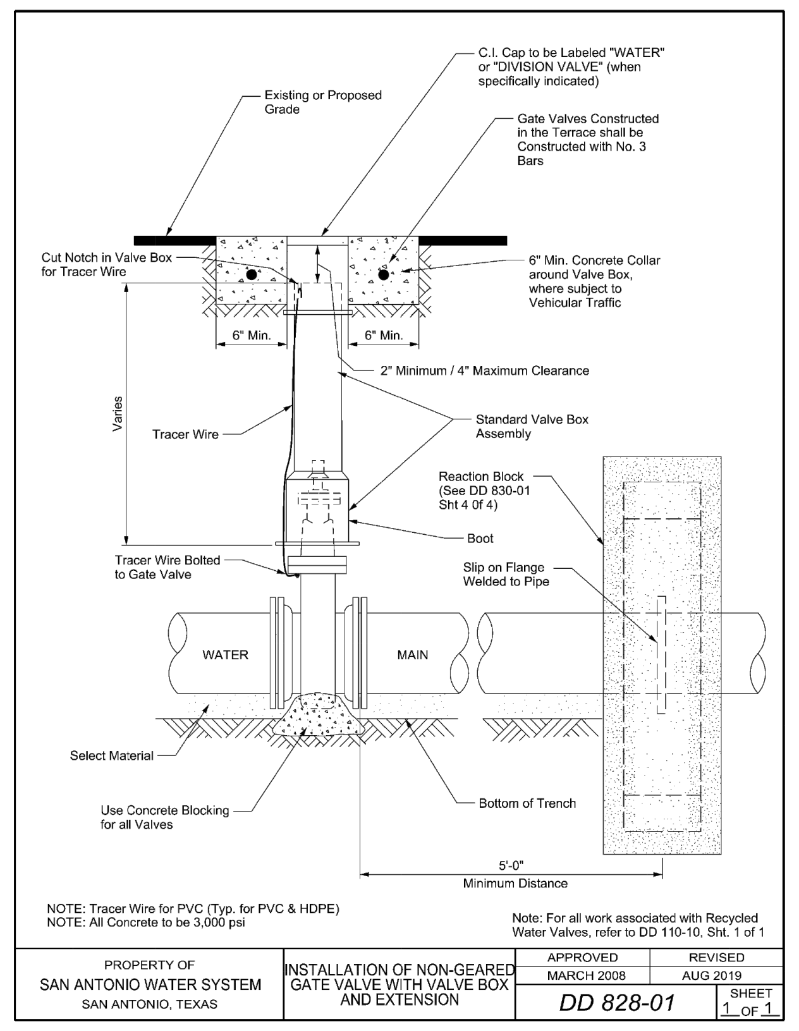
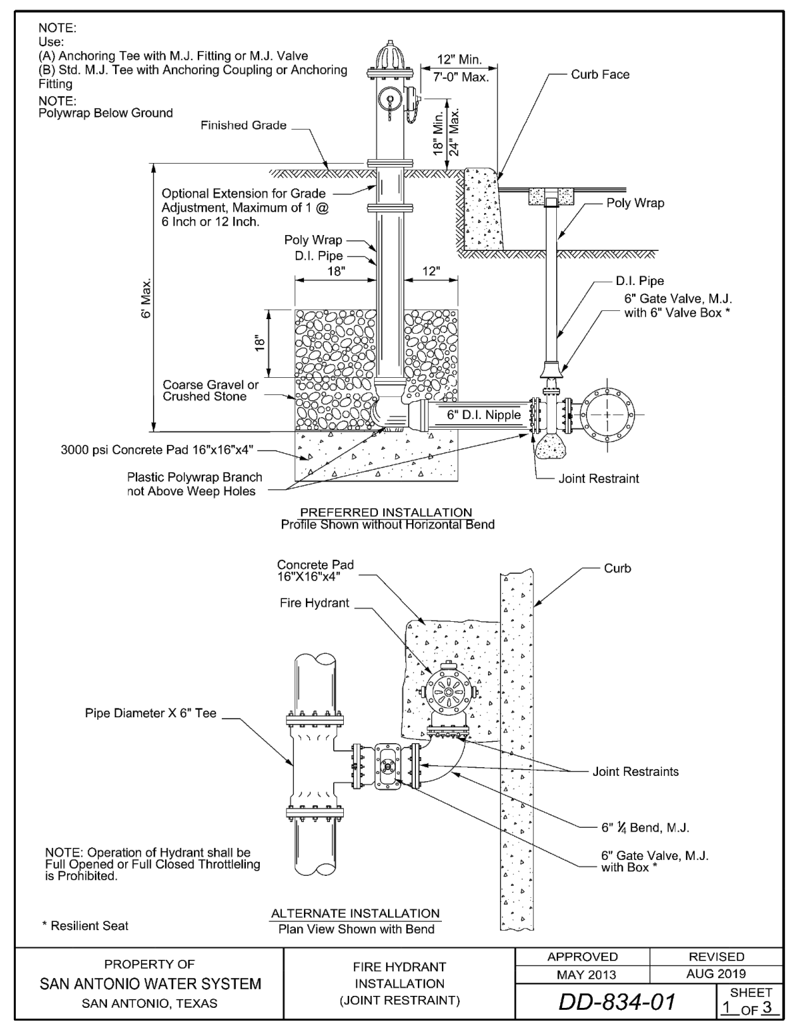
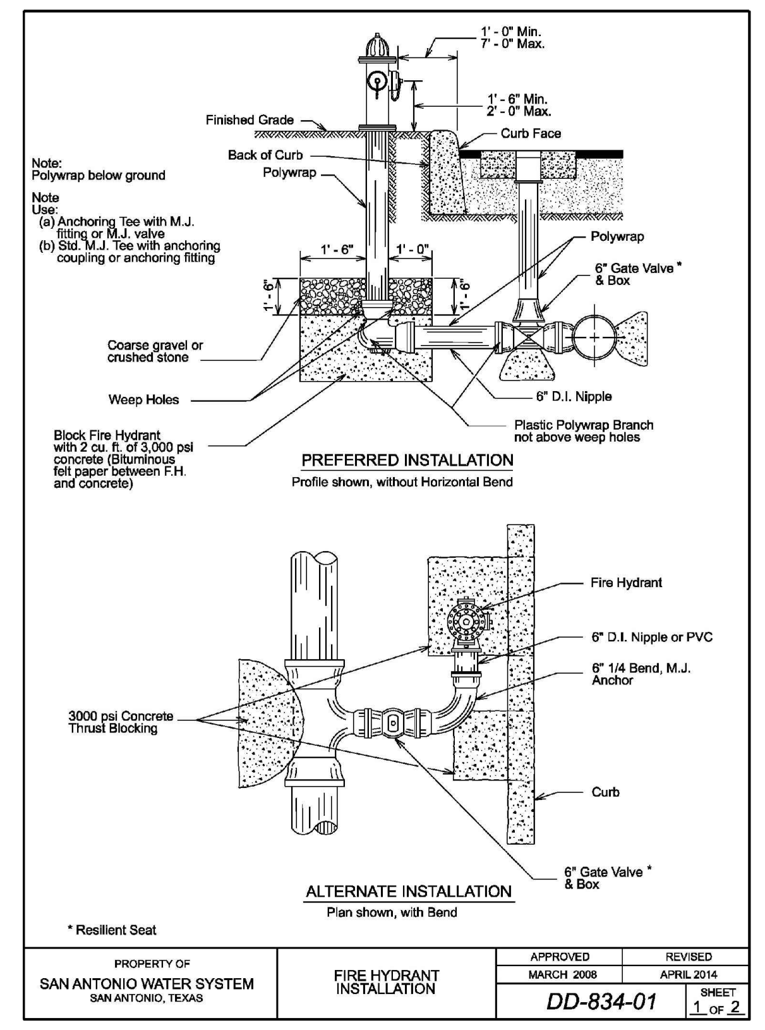
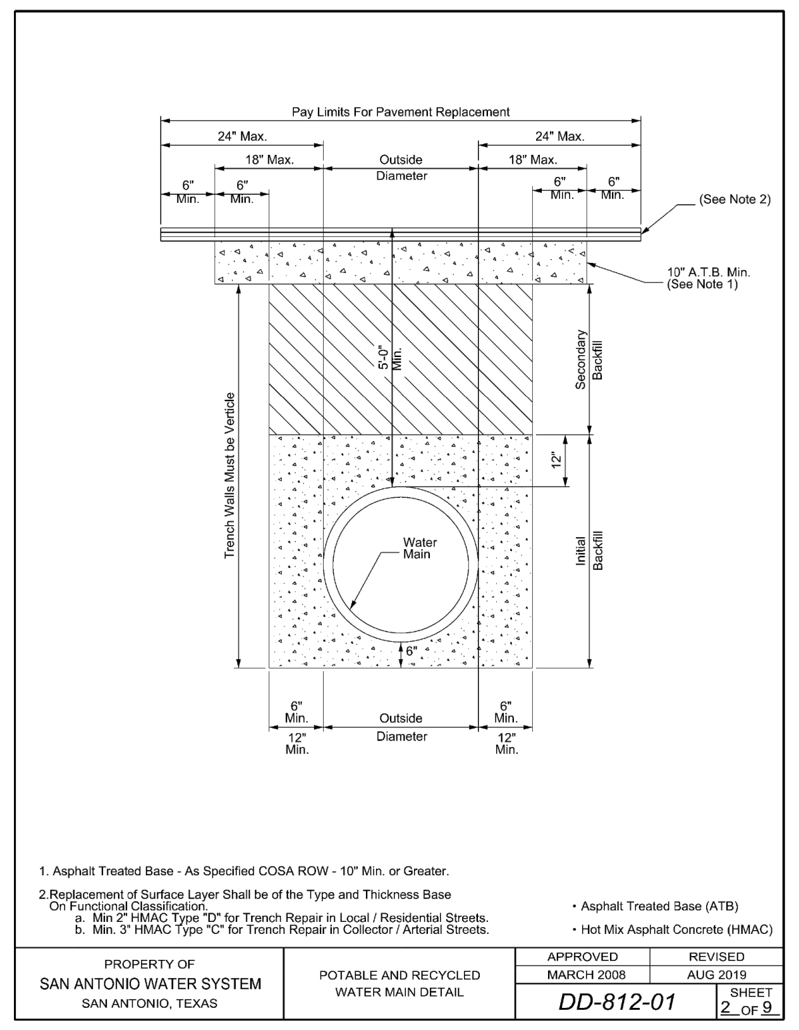


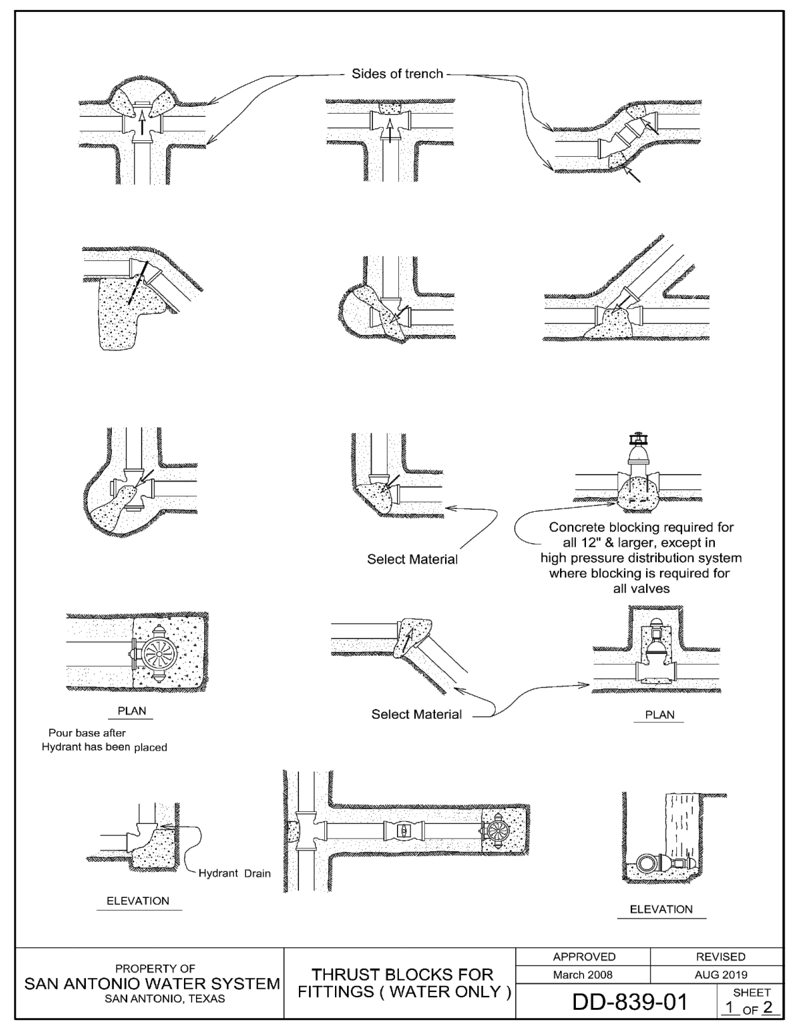


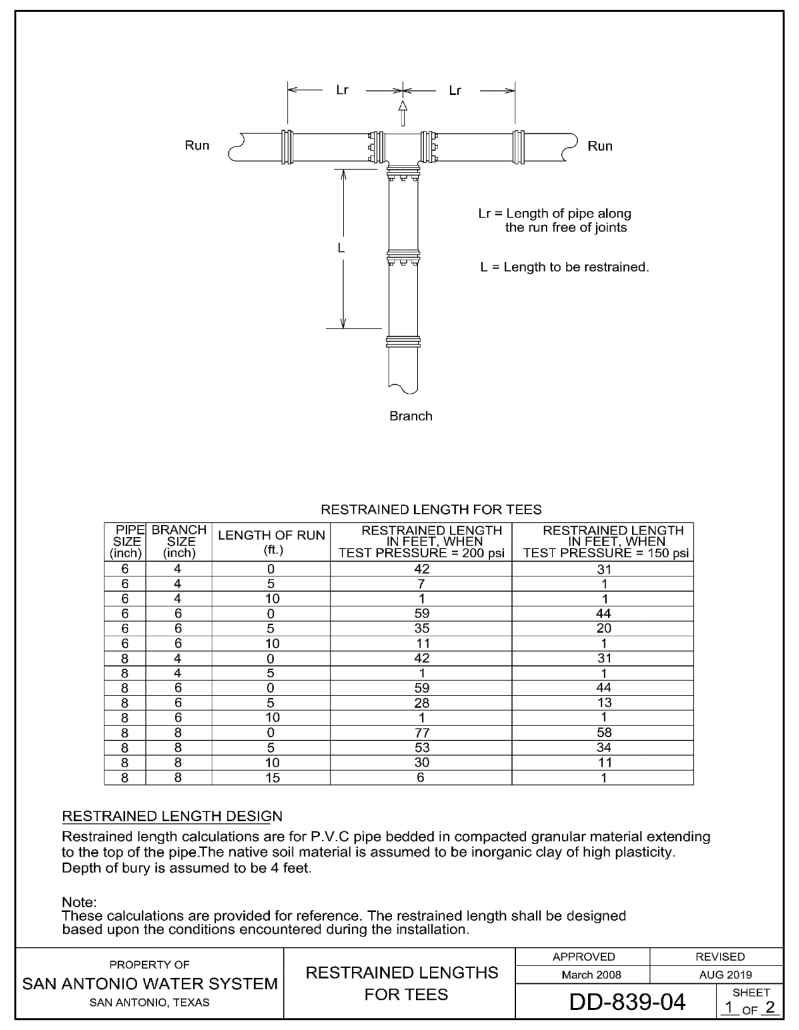

Existing or Proposed Grade
C.I. Cap to be Labeled "WATER" or "DIVISION VALVE" (when specifically indicated)
Gate Valves Constructed in the Terrace shall be Constructed with No. 3 Bars
Cut Notch in Valve Box for Tracer Wire
6" Min. Concrete Collar around Valve Box, where subject to Vehicular Traffic
2" Minimum / 4" Maximum Clearance
Standard Valve Box Assembly
Tracer Wire
Reaction Block
Boot
Slip on Flange Welded to Pipe
WATER
MAIN
Select Material
Use Concrete Blocking for all Valves
Bottom of Trench
Minimum Distance
NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION
APPROVED MARCH 2008
REVISED AUG 2019
DD 828-01
SHEET 1 OF 1








Sides of trench
Concrete blocking required for all 12" & larger, except in high pressure distribution system where blocking is required for all valves
Select Material
PLAN
ELEVATION
Hydrant Drain
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
THRUST BLOCKS FOR FITTINGS (WATER ONLY)
APPROVED March 2008
REVISED AUG 2019
DD-839-01
SHEET 1 OF 2



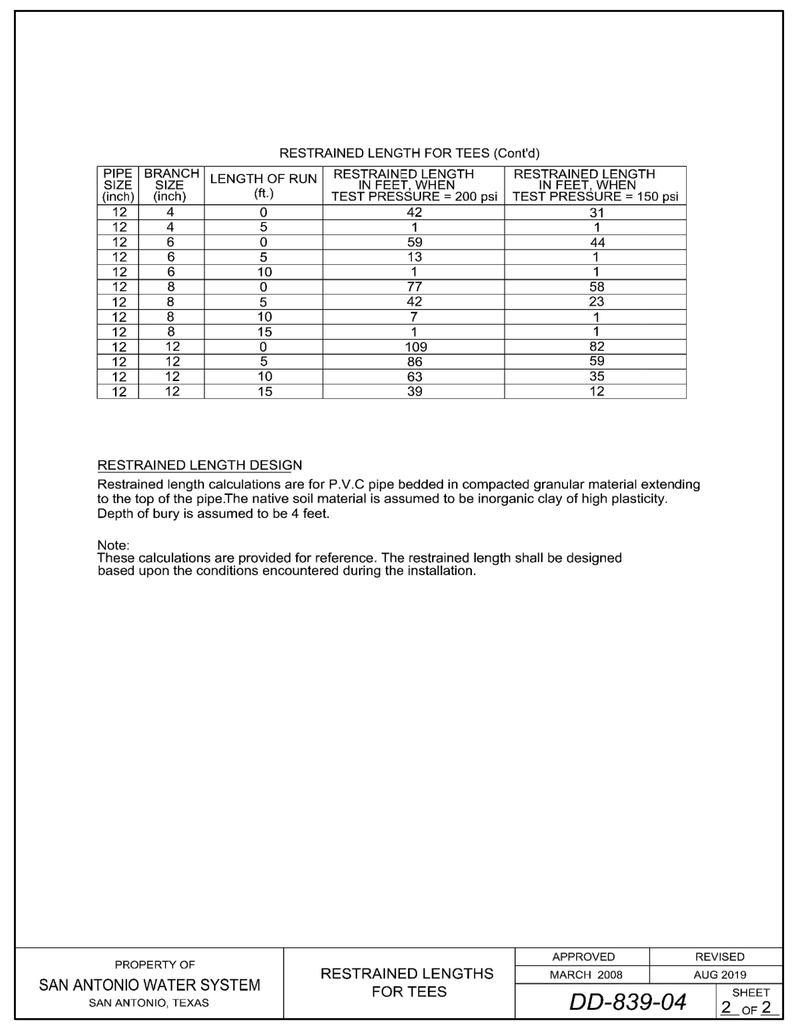
RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	1	1
8	6	0	59	44
8	6	5	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1

RESTRAINED LENGTH DESIGN

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

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



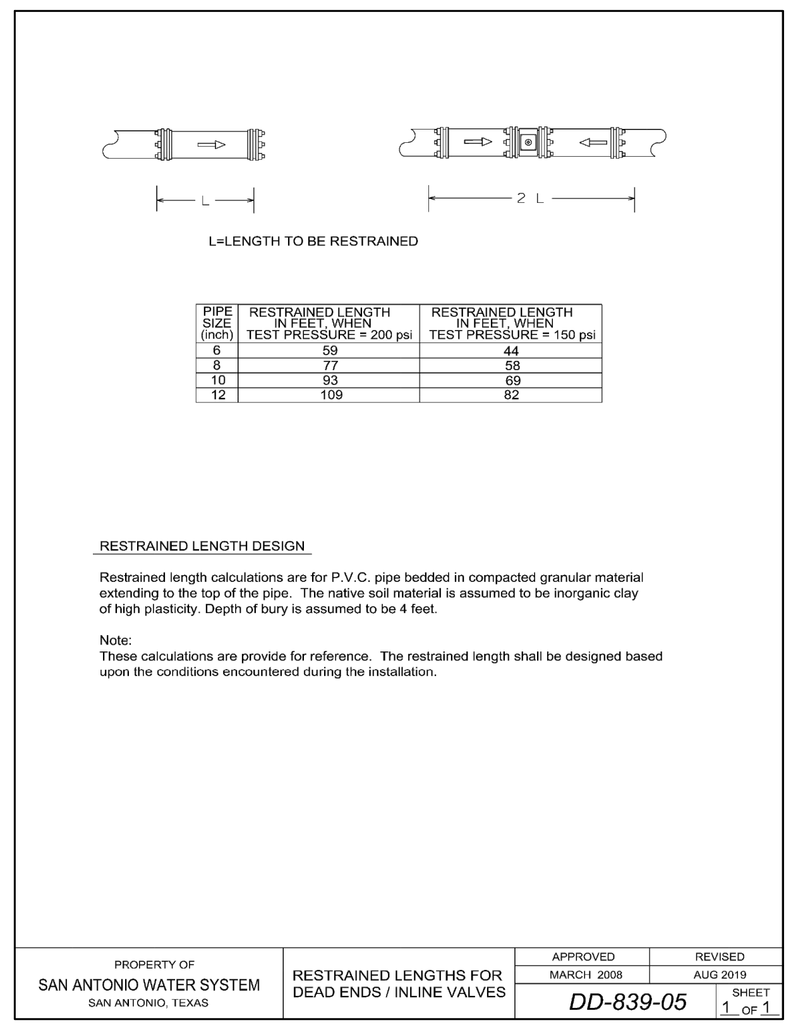
RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

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

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

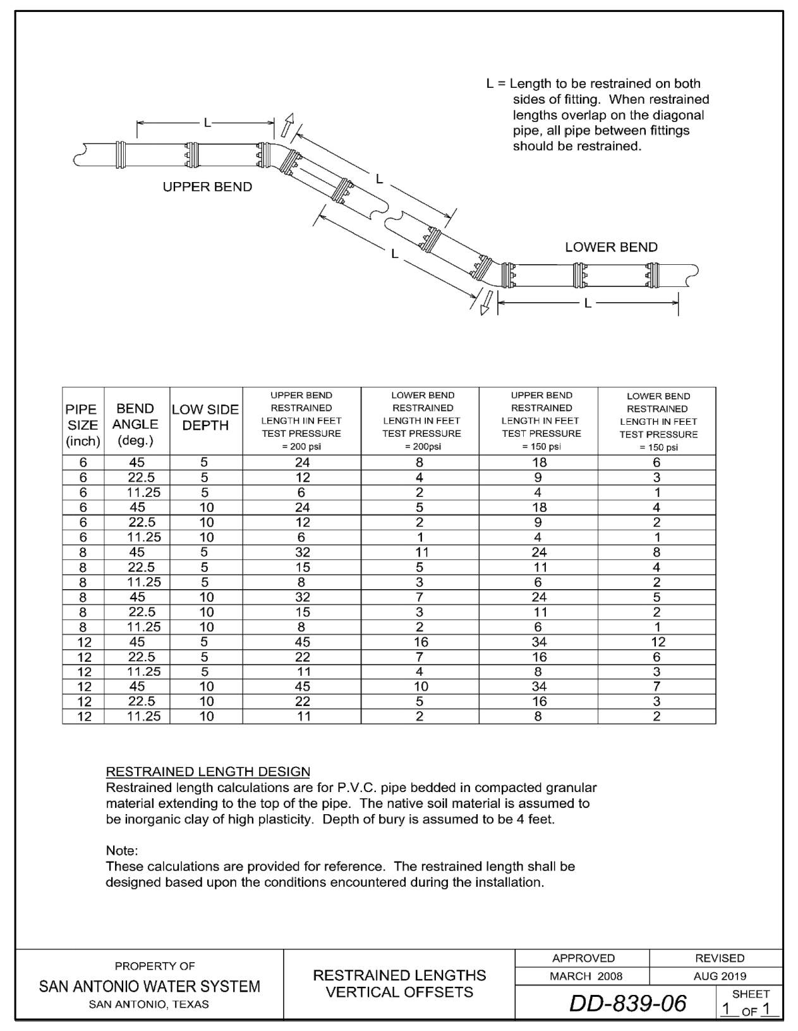


PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

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

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

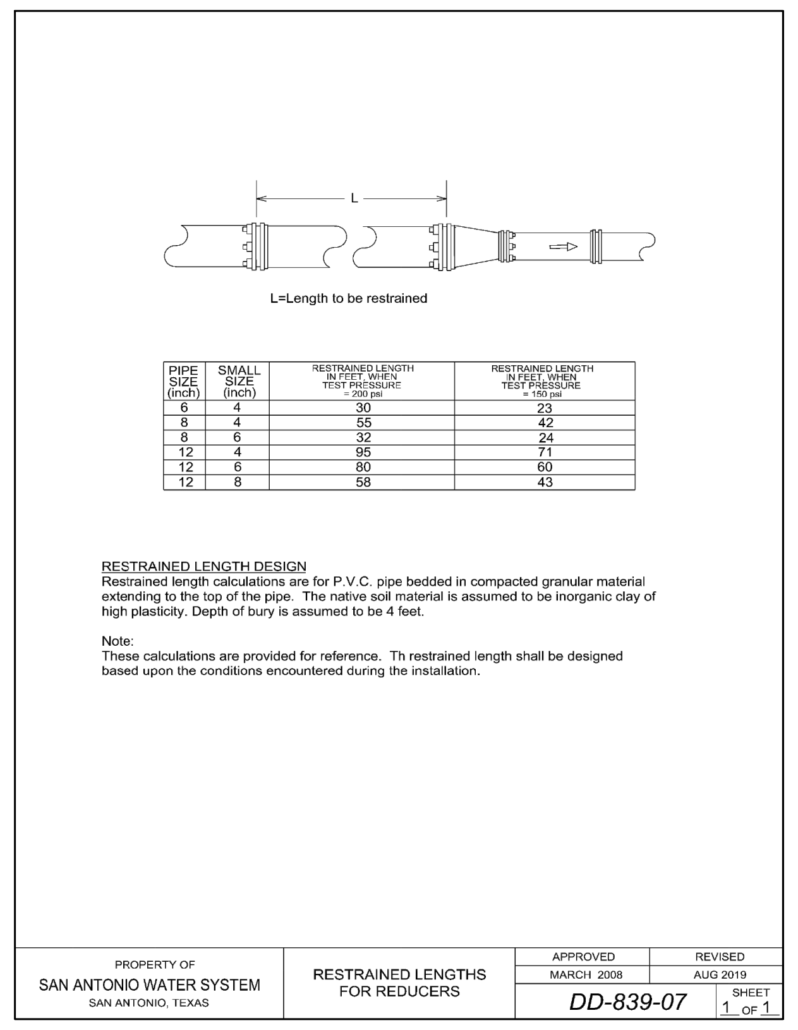

L = Length to be restrained on both sides of fitting. When restrained lengths overlap on the diagonal pipe, all pipe between fittings should be restrained.
UPPER BEND
LOWER BEND
L
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
RESTRAINED LENGTHS VERTICAL OFFSETS
APPROVED MARCH 2008
REVISED AUG 2019
DD-839-06
SHEET 1 OF 1

PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IIN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN

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

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

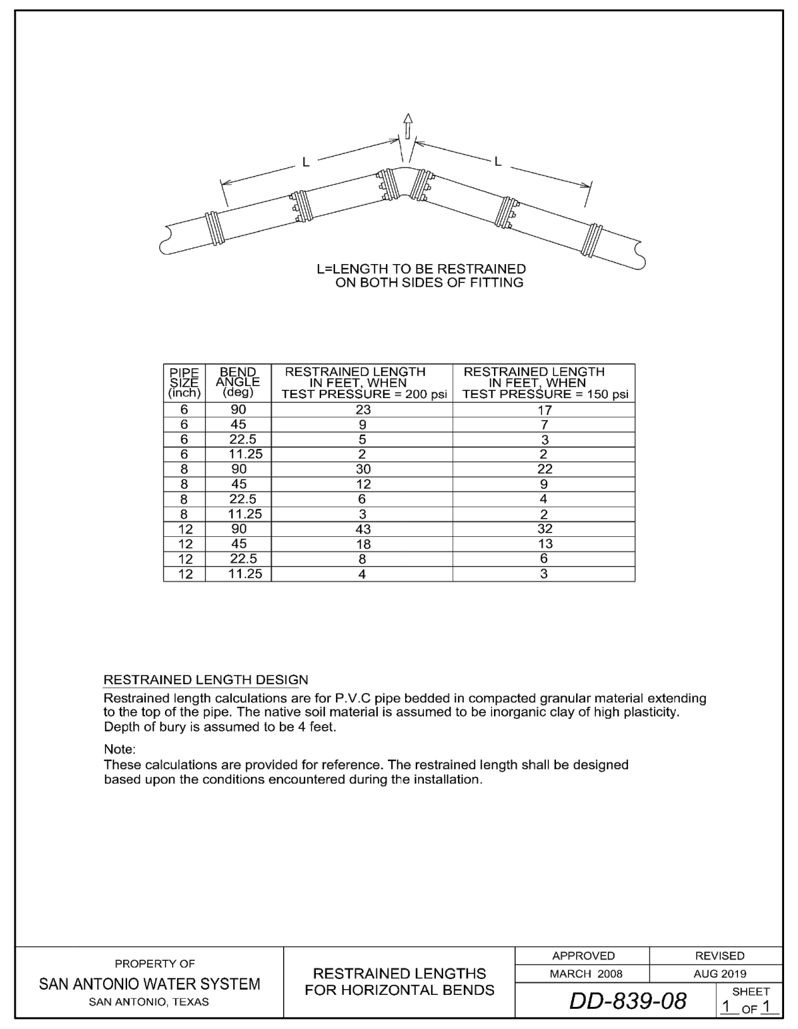


PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN

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

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

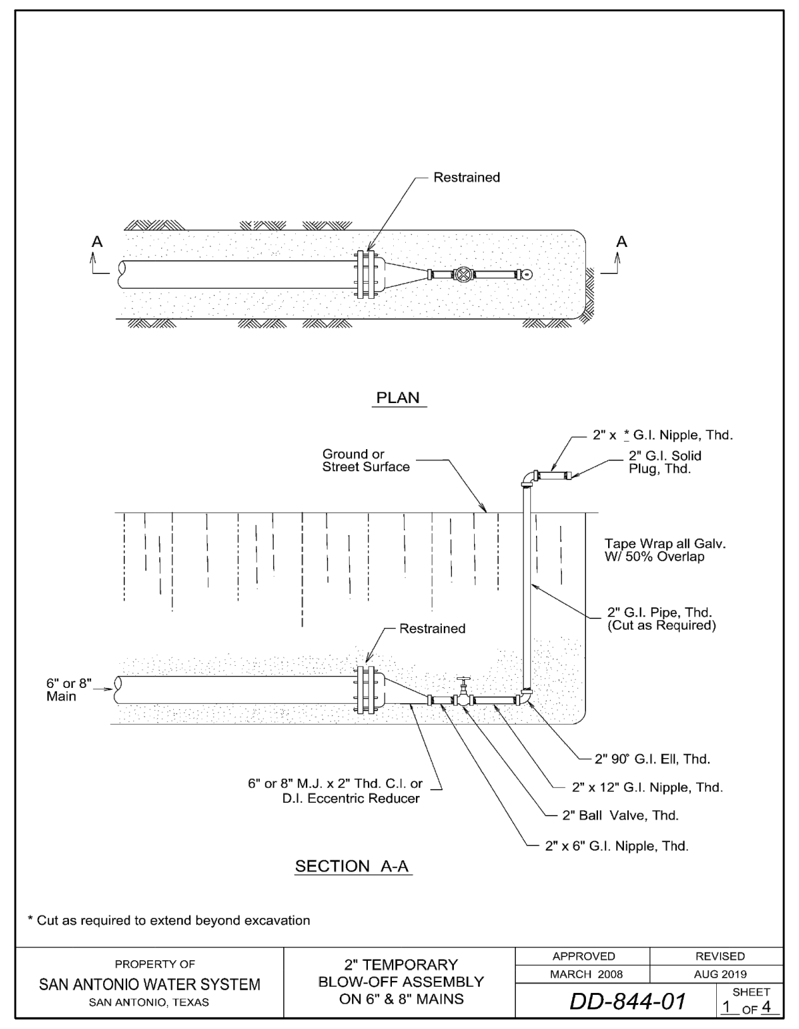


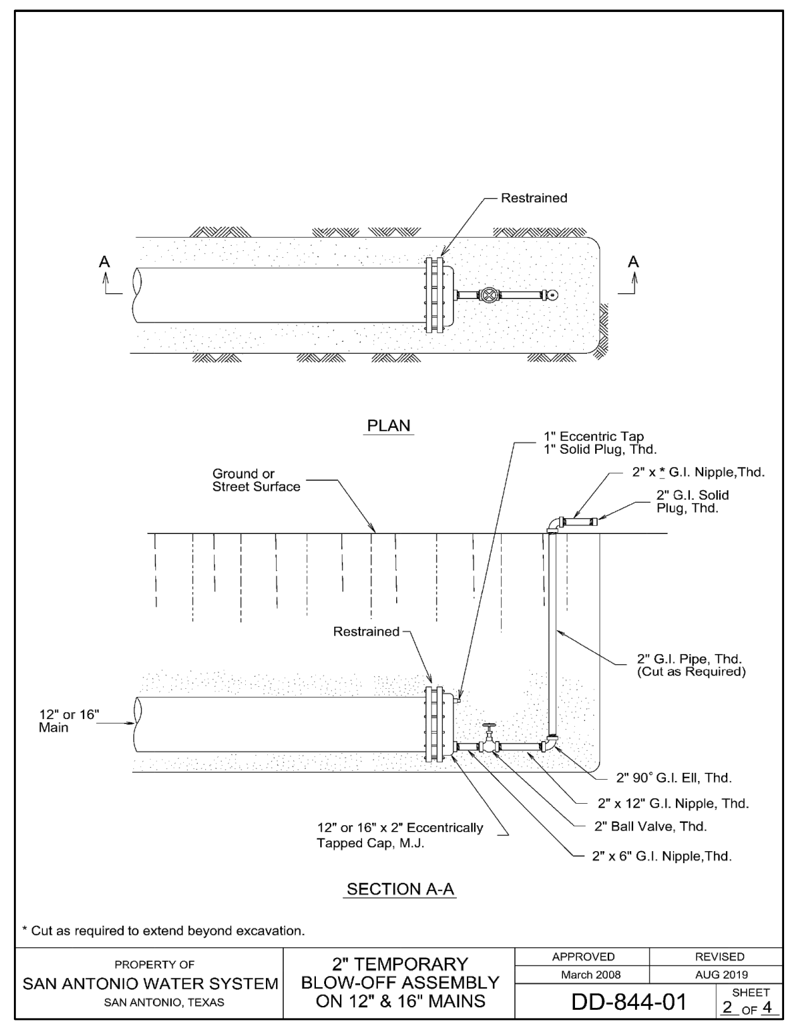
PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

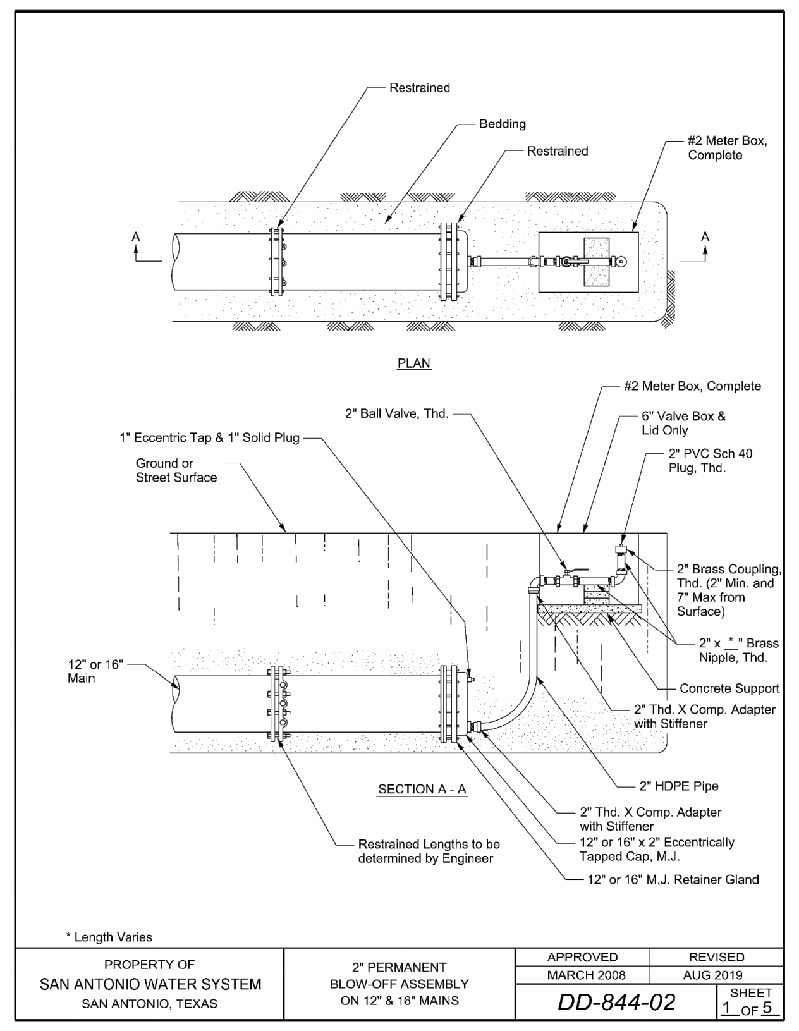
RESTRAINED LENGTH DESIGN

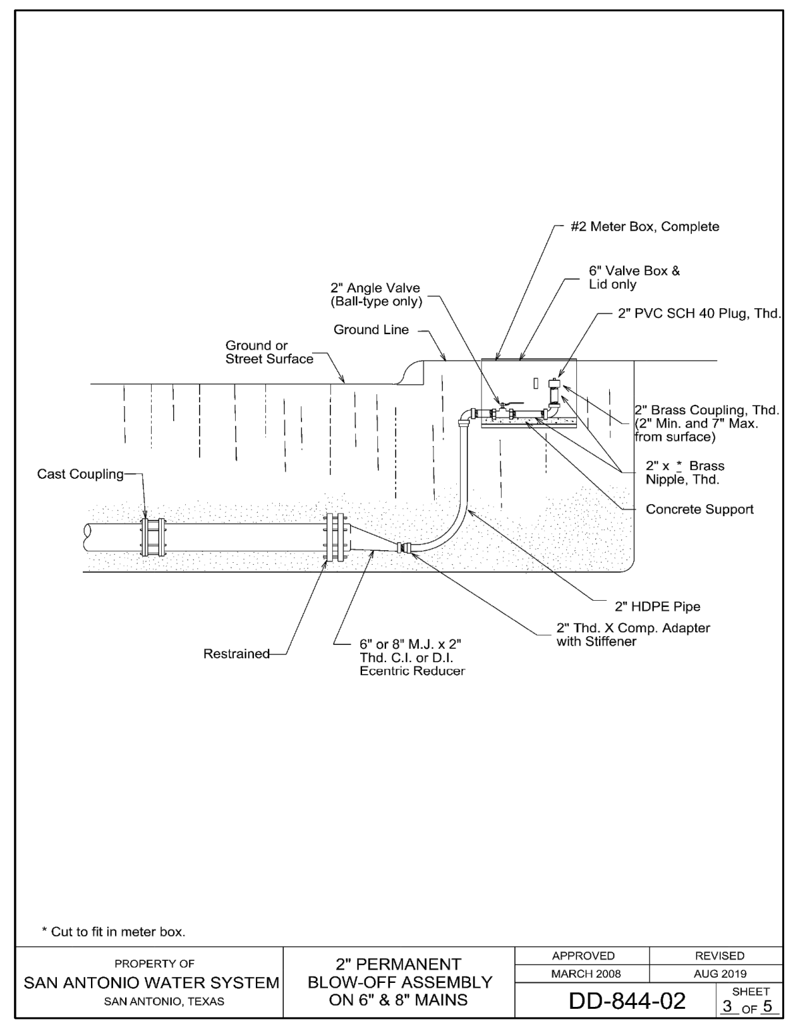
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

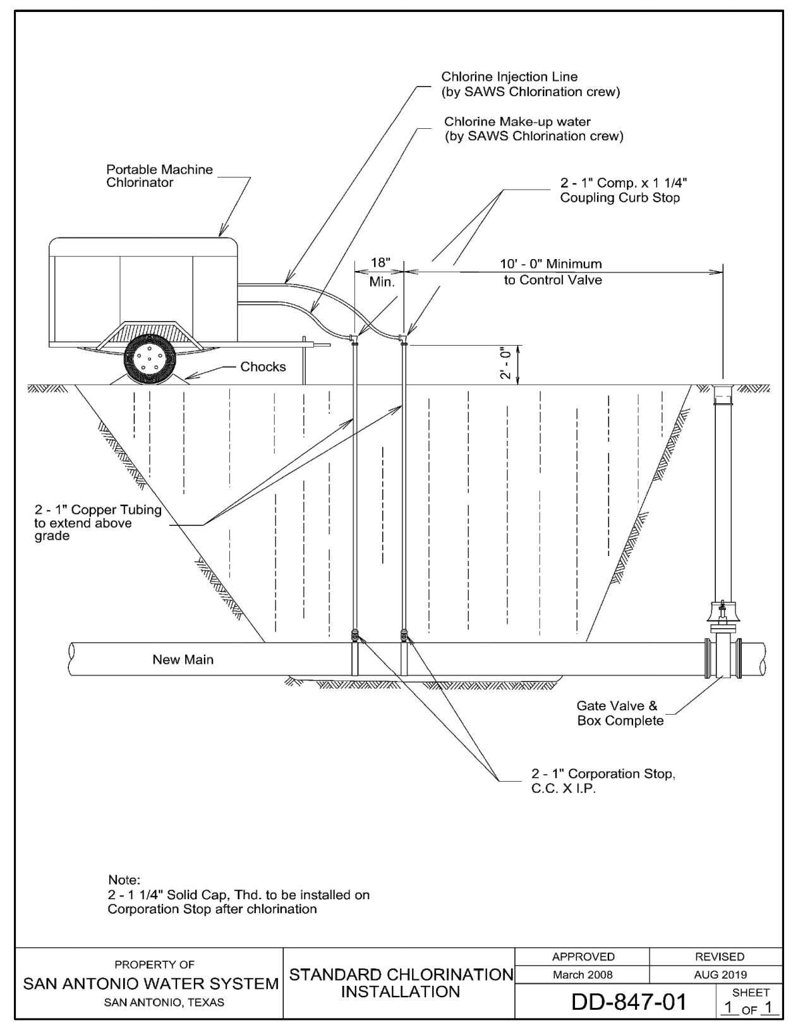
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

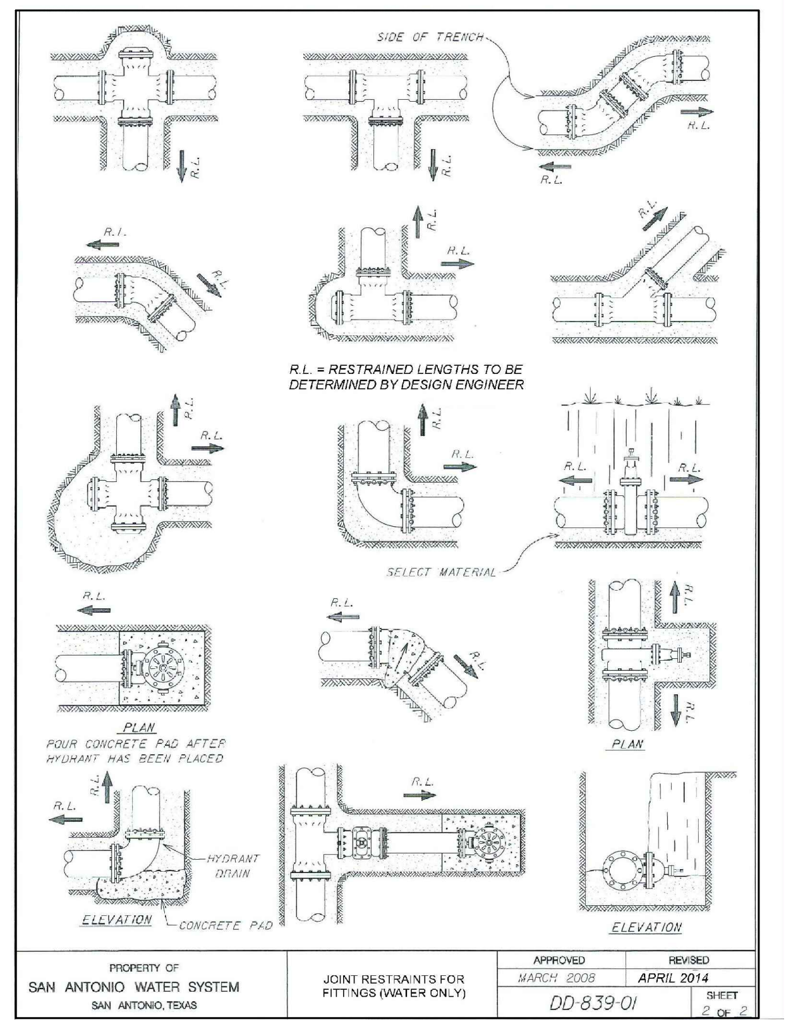









Chlorine Injection Line (by SAWS Chlorination crew)
Chlorine Make-up water (by SAWS Chlorination crew)
Portable Machine Chlorinator
Chocks
New Main
Gate Valve & Box Complete
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
STANDARD CHLORINATION INSTALLATION
APPROVED March 2008
REVISED AUG 2019
DD-847-01
SHEET 1 OF 1



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CONTESSA SUBDIVISION
UNIT 1

OFFSITE WATER DISTRIBUTION STANDARD DETAILS

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

REVISIONS

#	DATE
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TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

SEQUENCE OF INSTALLATION DURING CONSTRUCTION PROCESS:

1. STORM WATER MANAGEMENT FACILITIES MUST BE INSTALLED PRIOR TO SITE CONSTRUCTION. SUBD. ORD. 6.01.003

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5. ROCK BERMS (ITEM 5) SHALL BE INSTALLED AROUND THE PERIMETER OF THE PROJECT AT NATURAL LOW POINTS FOLLOWING ROUGH GRADING OF THE SITE AND SHALL BE REMOVED ONCE GRADING TO THE ON-SITE STORMWATER DRAINAGE SYSTEM WITH BAGGED GRAVEL INLET FILTERS IN SUMP IS COMPLETE, ROCK BERMS WILL ALSO BE UTILIZED AT THE OUTLET OF THE POND WHILE IT IS BEING CONSTRUCTED.

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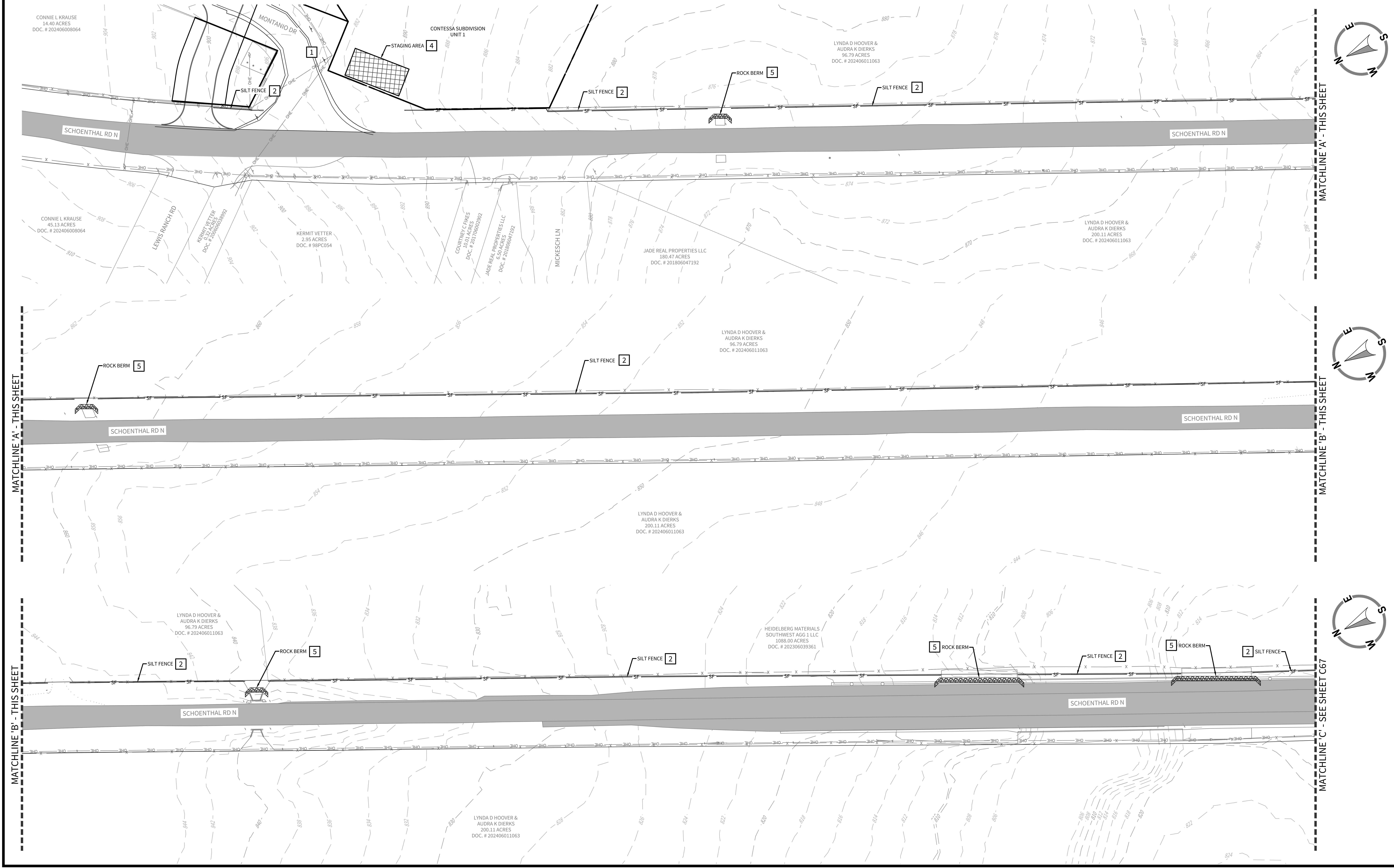
SEE SHEET C61 FOR STORM WATER POLLUTION PREVENTION DETAILS

LEGEND

OVERALL UNIT BOUNDARY	━━ ━ ━ ━━	PROPOSED TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▩
PROPOSED LOT LINE	──	PROPOSED ROCK BERM	⌓
EXISTING RIGHT OF WAY	──	PROPOSED SILT FENCE	── SF ──
EXISTING 2' CONTOUR	— — 499 — —	STAGING AREA	▦
EXISTING 10' CONTOUR	— — 500 — —	CONCRETE WASHOUT PIT	■

SCALE: 1"=50'

50 25 0 50



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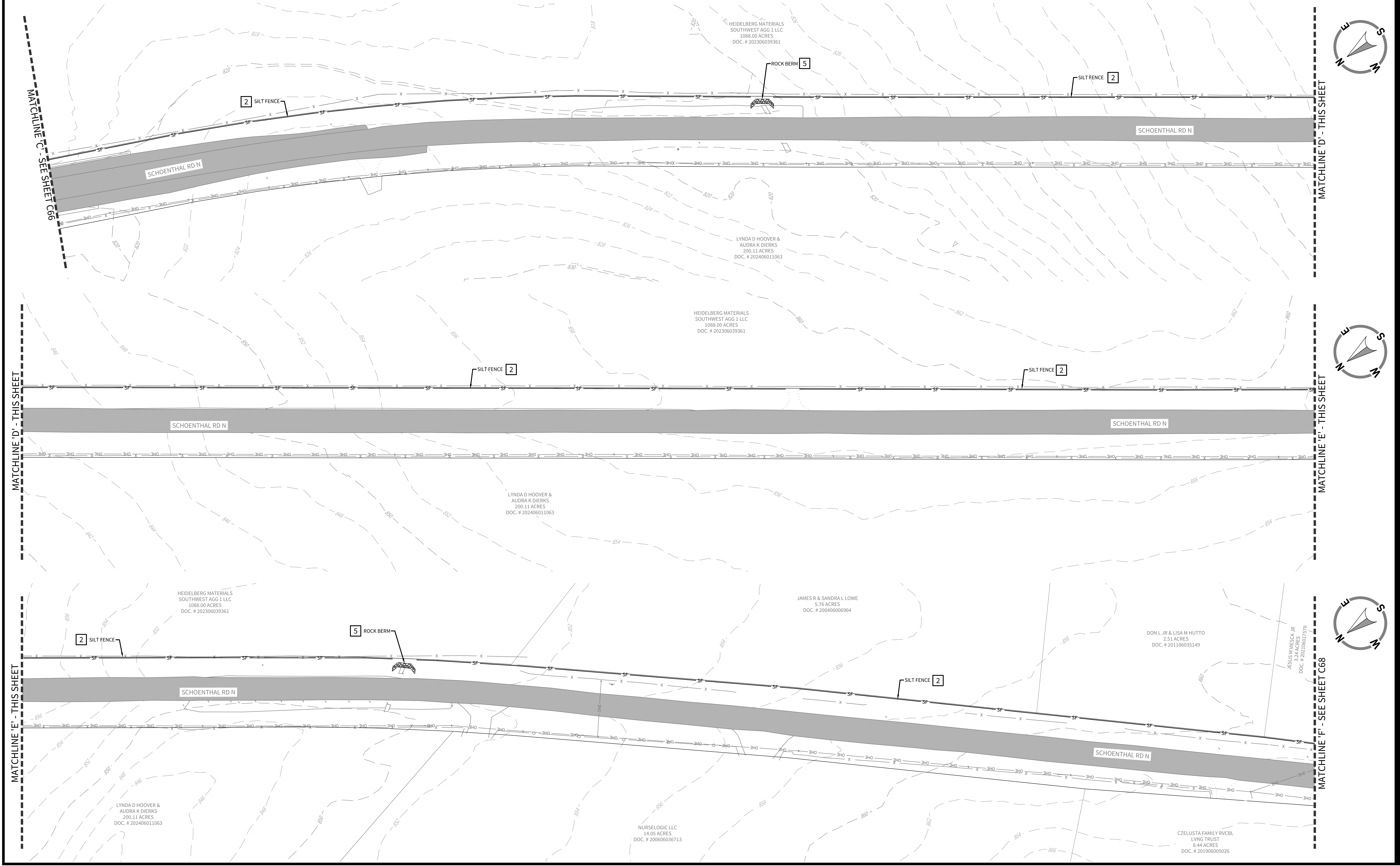
SEE SHEET C61 FOR STORM WATER POLLUTION PREVENTION DETAILS

LEGEND

OVERALL UNIT BOUNDARY	— — —	PROPOSED TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▩
PROPOSED LOT LINE	—	PROPOSED ROCK BERM	▨
EXISTING RIGHT OF WAY	—	PROPOSED SILT FENCE	—SF—
EXISTING 2' CONTOUR	— — 499 — —	STAGING AREA	▦
EXISTING 10' CONTOUR	— — 500 — —	CONCRETE WASHOUT PIT	■

SCALE: 1"=50'

50 25 0 50



CONTESSA SUBDIVISION UNIT 1

OFFSITE STORM WATER POLLUTION PREVENTION PLAN

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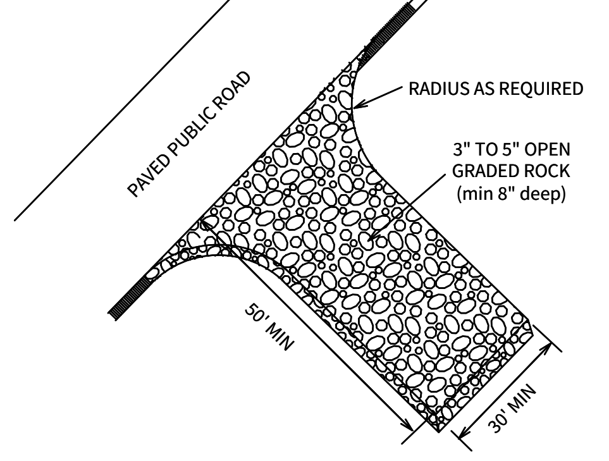
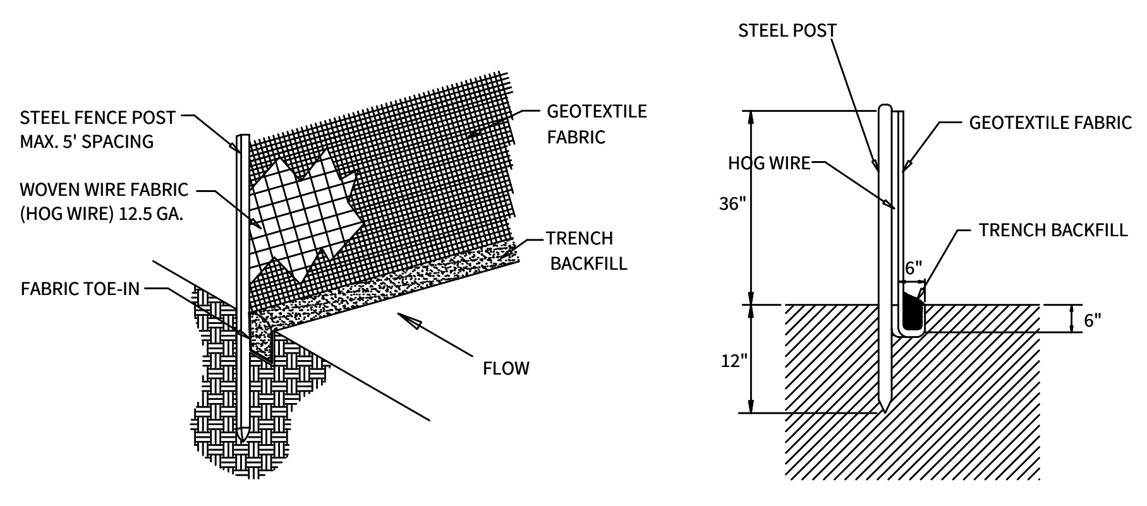


STABILIZED CONSTRUCTION EXIT NOTES:

1. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ON PUBLIC ROADWAY.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY.

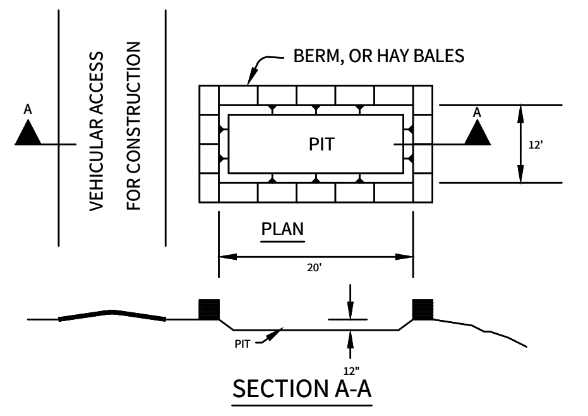
1 TEMPORARY CONSTRUCTION ENTRANCE/EXIT

N.T.S.



2 STANDARD SILT FENCE

N.T.S.



GENERAL NOTES:

- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.

construction traffic.

- If hay bales are used, they shall be placed in accordance with details shown on Exhibit for hay bales.

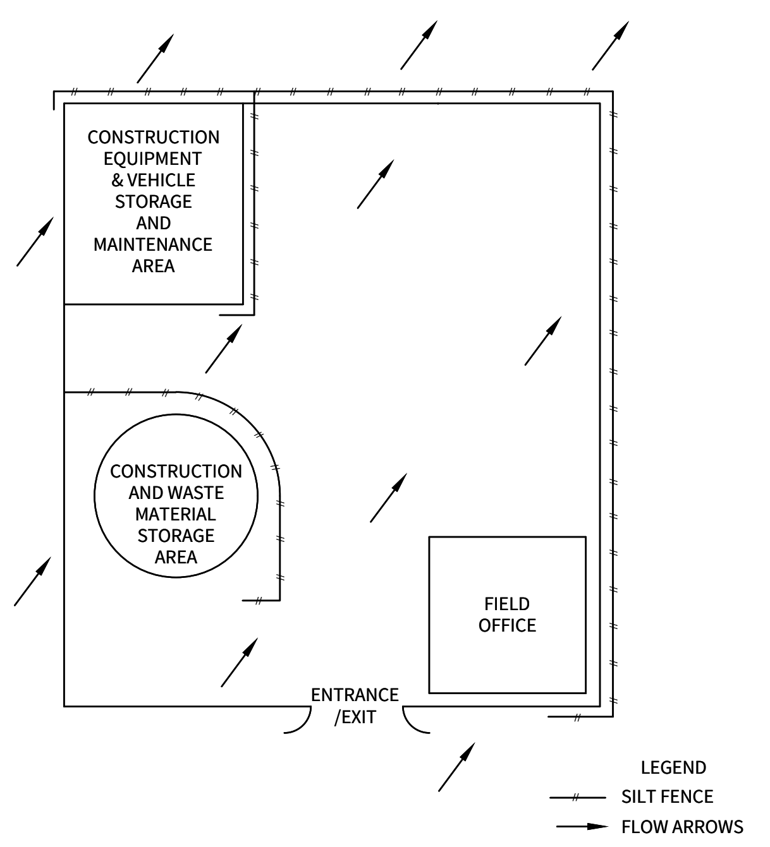
Washout pit shall be located in an area easily accessible to

Washout pit shall not be located in areas subject to inundation from storm water runoff.

- Washout pit shall be lined with a 10-mil thick polyethylene sheeting free of holes, tears and other defects.

3 CONCRETE TRUCK WASHOUT PIT

N.T.S.



CONSTRUCTION EQUIPMENT & VEHICLE STORAGE AND MAINTENANCE AREA
CONSTRUCTION AND WASTE MATERIAL STORAGE AREA
FIELD OFFICE
ENTRANCE /EXIT
LEGEND
SILT FENCE
FLOW ARROWS

4 TYP. CONSTRUCTION STAGING AREA

N.T.S.

LEGEND

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EXISTING RIGHT OF WAY	——
EXISTING 2' CONTOUR	— — 499 — —
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PROPOSED TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
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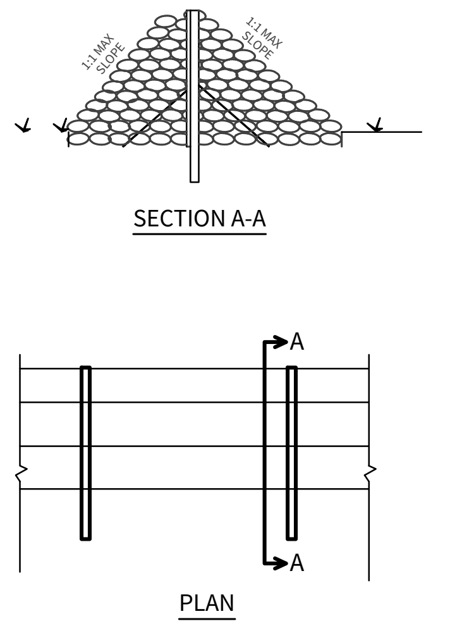
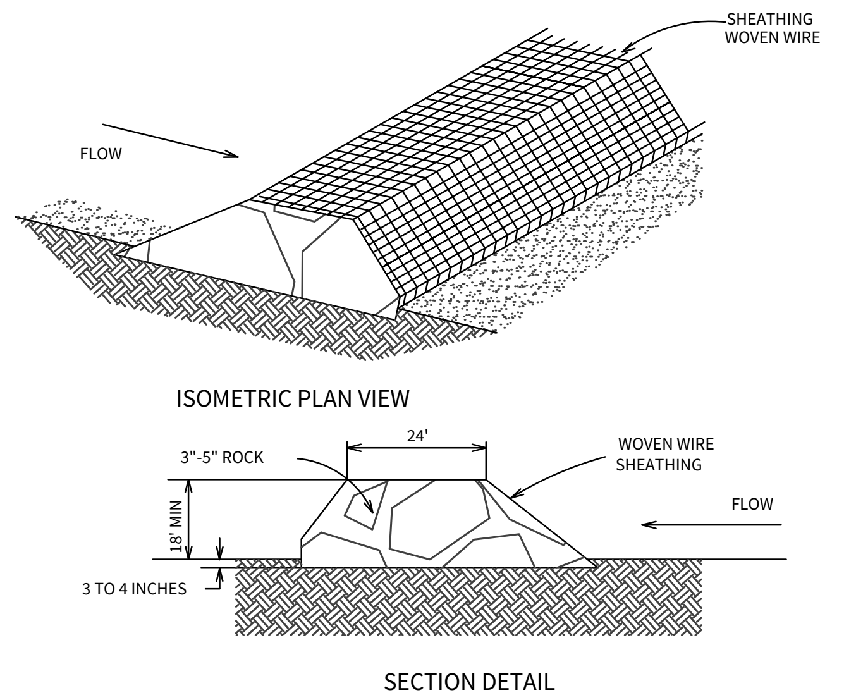


5 ROCK BERM W/ SILT FENCE DETAIL

N.T.S.



ROCK BERM

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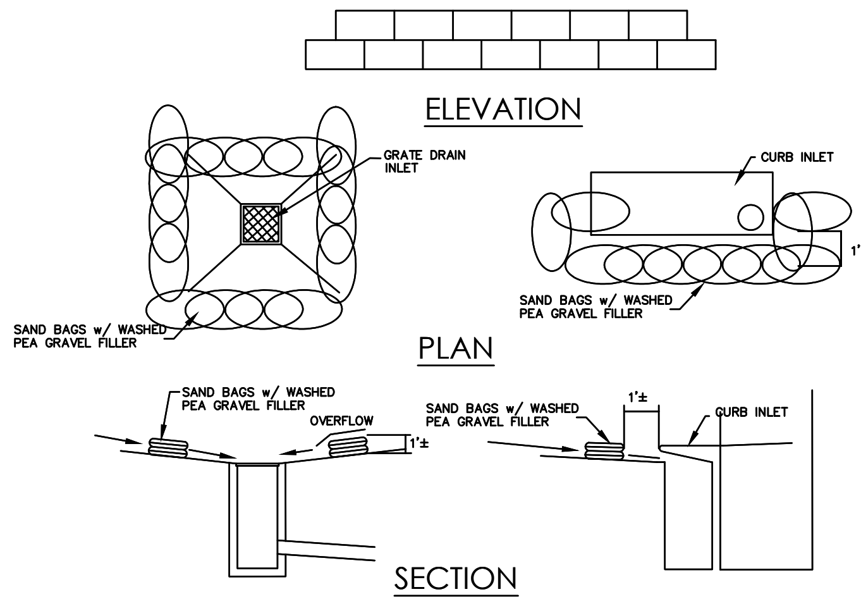

ELEVATION
GRATE DRAIN INLET
SAND BAGS w/ WASHED PEA GRAVEL FILLER
CURB INLET
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
PLAN
SAND BAGS w/ WASHED PEA GRAVEL FILLER
OVERFLOW
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
CURB INLET
SECTION

BAGGED GRAVEL INLET FILTER NOTES

1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BURLAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2 , MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAGS SHOULD BE FILLED WITH ¾" GRAVEL .
4. WHEN A GRAVEL BAG IS FILLED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL. THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INLETS. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. 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.
9. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

6 BAGGED GRAVEL INLET FILTER NOTES

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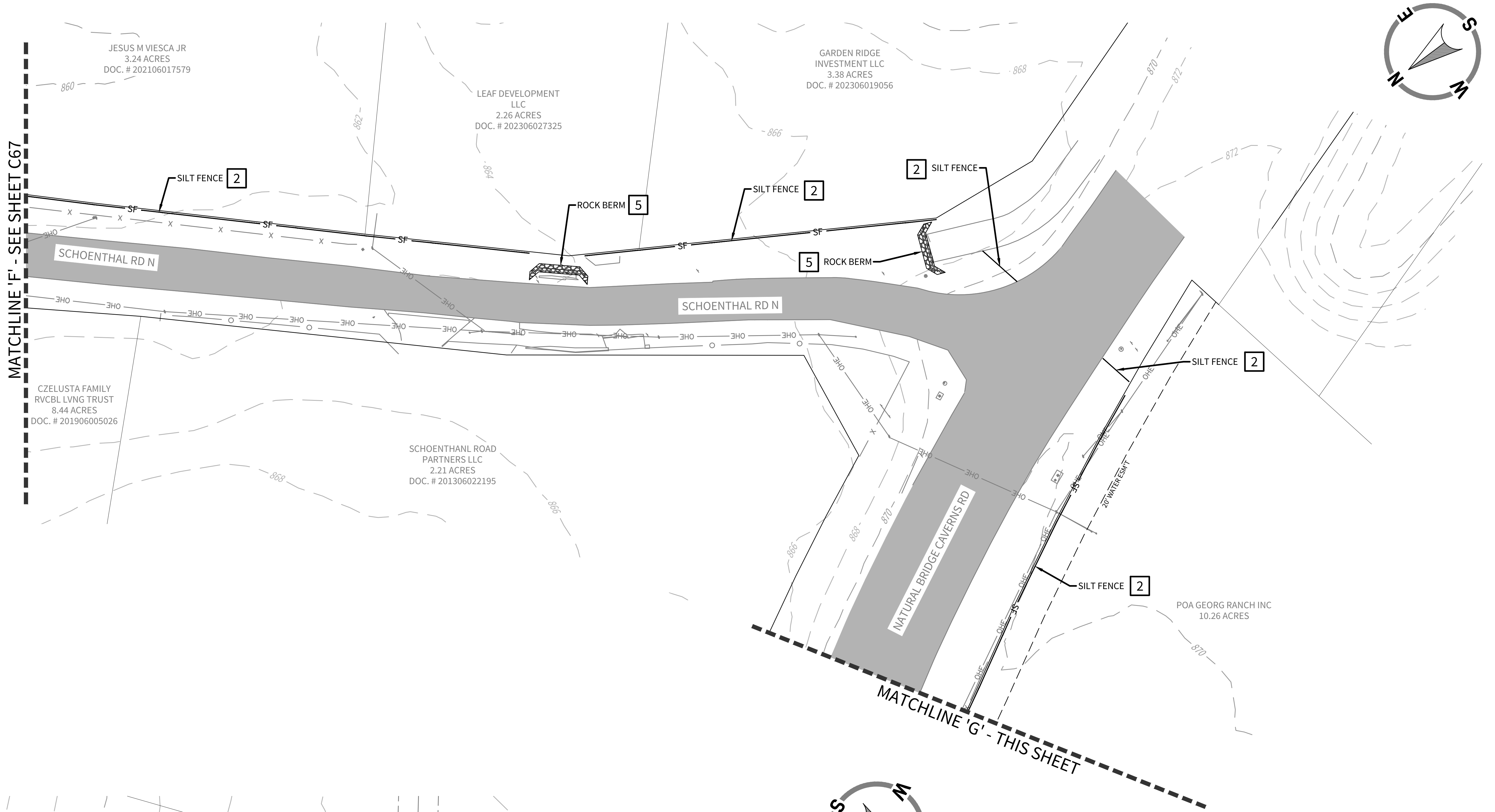

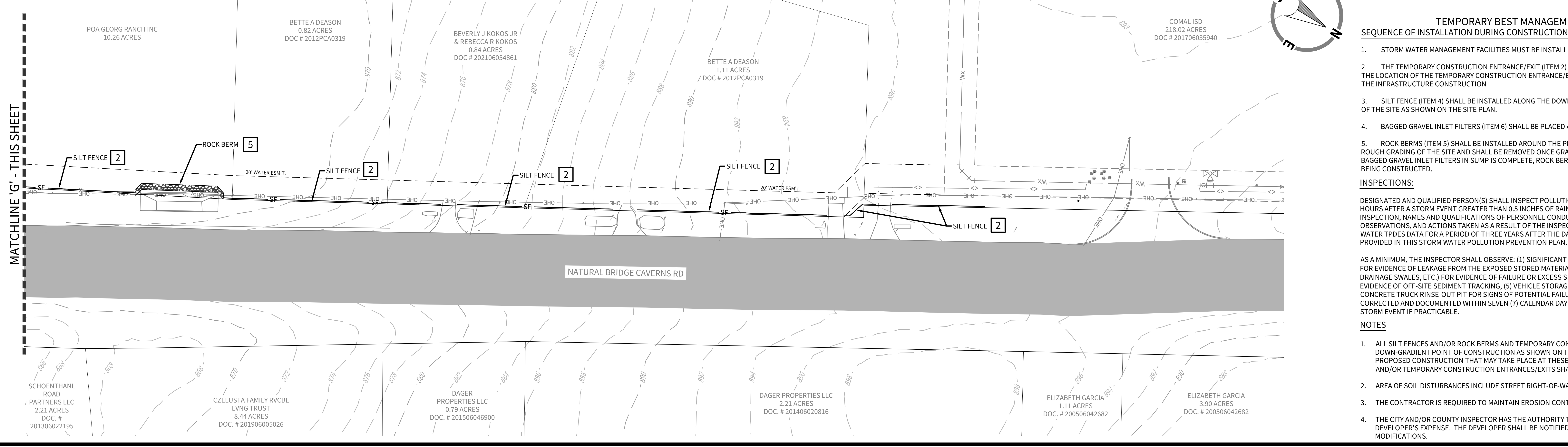

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San Antonio, Texas 78231
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CONTESSA SUBDIVISION
UNIT 1

OFFSITE STORM WATER POLLUTION PREVENTION PLAN

DATE
06/09/2025

PROJECT NO.
04343.002

DRAWN BY
CG/JG/LJ/TCD

CHECKED BY
XV/AL

#	DATE	REVISIONS
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