CONSTRUCTION PLANS

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STREET AND DRAINAGE CONSTRUCTION PLANS

- C0 - CITY OF SEGUIN STREET & DRAINAGE GENERAL NOTES
- C1 - DRAINAGE AREA PLAN
- C2 - STREET PLAN & PROFILE "LABATT ST"
- C3 - STREET PLAN & PROFILE "YALE ST"
- C4 - STREET PLAN & PROFILE "ALMEDA RD"
- C5 - STREET PLAN & PROFILE "DIONICIO LOOP"
- C6 - STREET PLAN & PROFILE "ONATE ST"
- C7 - STREET PLAN & PROFILE "ALLEYTON COURT"
- C8 - STREET PLAN & PROFILE "BEVERIDGE RD"
- C9 - STREET PLAN & PROFILE "BURRS FERRY COURT"
- C10 - STREET PLAN & PROFILE "DEWEYVILLE LN"
- C11 - TRAFFIC SIGNAGE & STRIPING PLAN
- C11A - RIGHT TURN LANE PLAN
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- C12 - STANDARD STREET DETAILS
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- C14 - TYPICAL CONCRETE DRIVEWAY DETAILS
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- C16 - TYPICAL CONCRETE DRIVEWAY DETAILS
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- C18 - SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS
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- C19A - METAL BEAM GUARD FENCE DETAILS
- C19B - METAL BEAM GUARD FENCE DETAILS
- C20 - DRAINAGE PLAN & PROFILE DRAIN "A"
- C21 - DRAINAGE PLAN & PROFILE DRAIN "C" & "CA"
- C22 - DRAINAGE PLAN & PROFILE DRAIN "D"
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- C22B - DRAINAGE PLAN & PROFILE DRAIN "H"
- C22C - DRAINAGE PLAN & PROFILE BAR DITCH DRAIN "I"
- C23 - MISCELLANEOUS DRAINAGE DETAILS
- C24 - MISCELLANEOUS DRAINAGE DETAILS
- C25 - MISCELLANEOUS DRAINAGE DETAILS
- C25A - MISCELLANEOUS DRAINAGE DETAILS
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- C26 - MISCELLANEOUS DRAINAGE DETAILS
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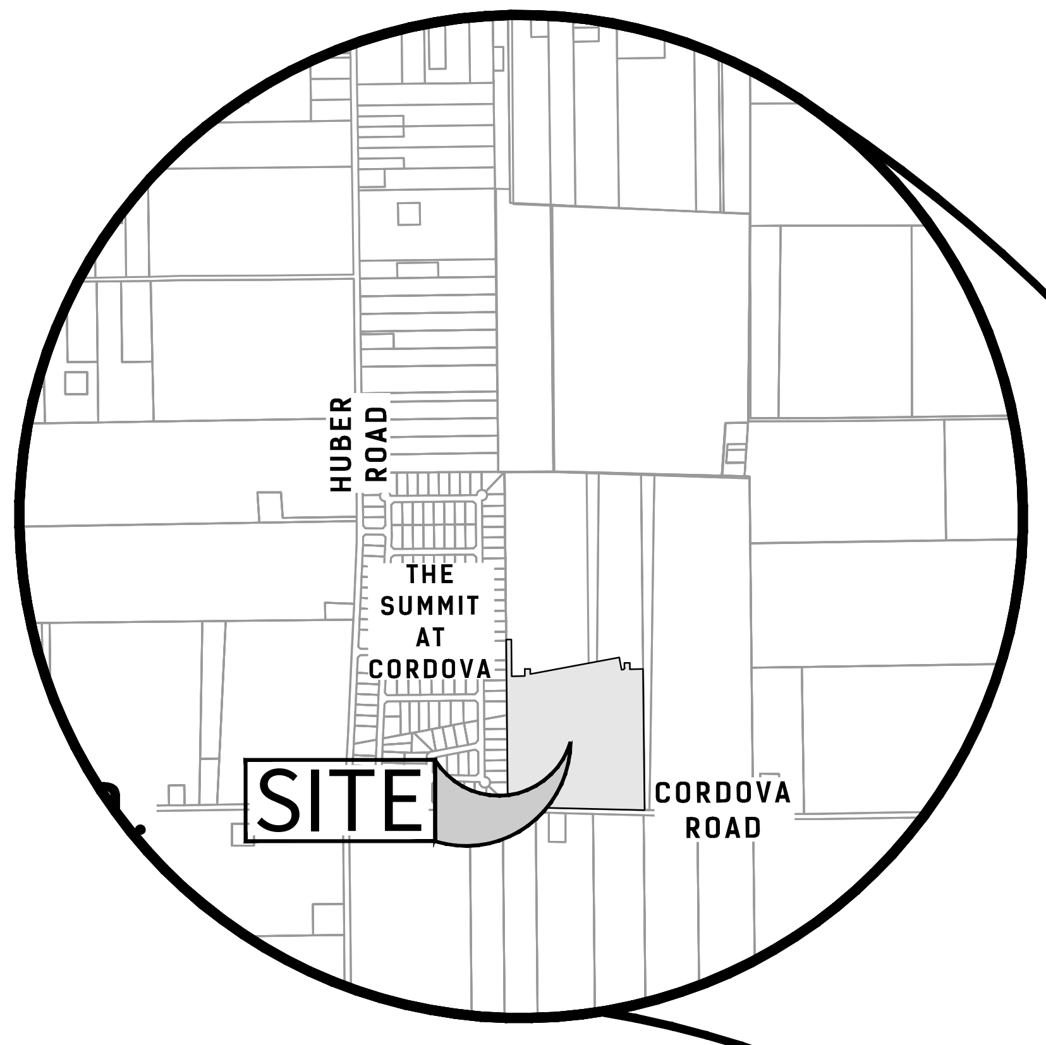
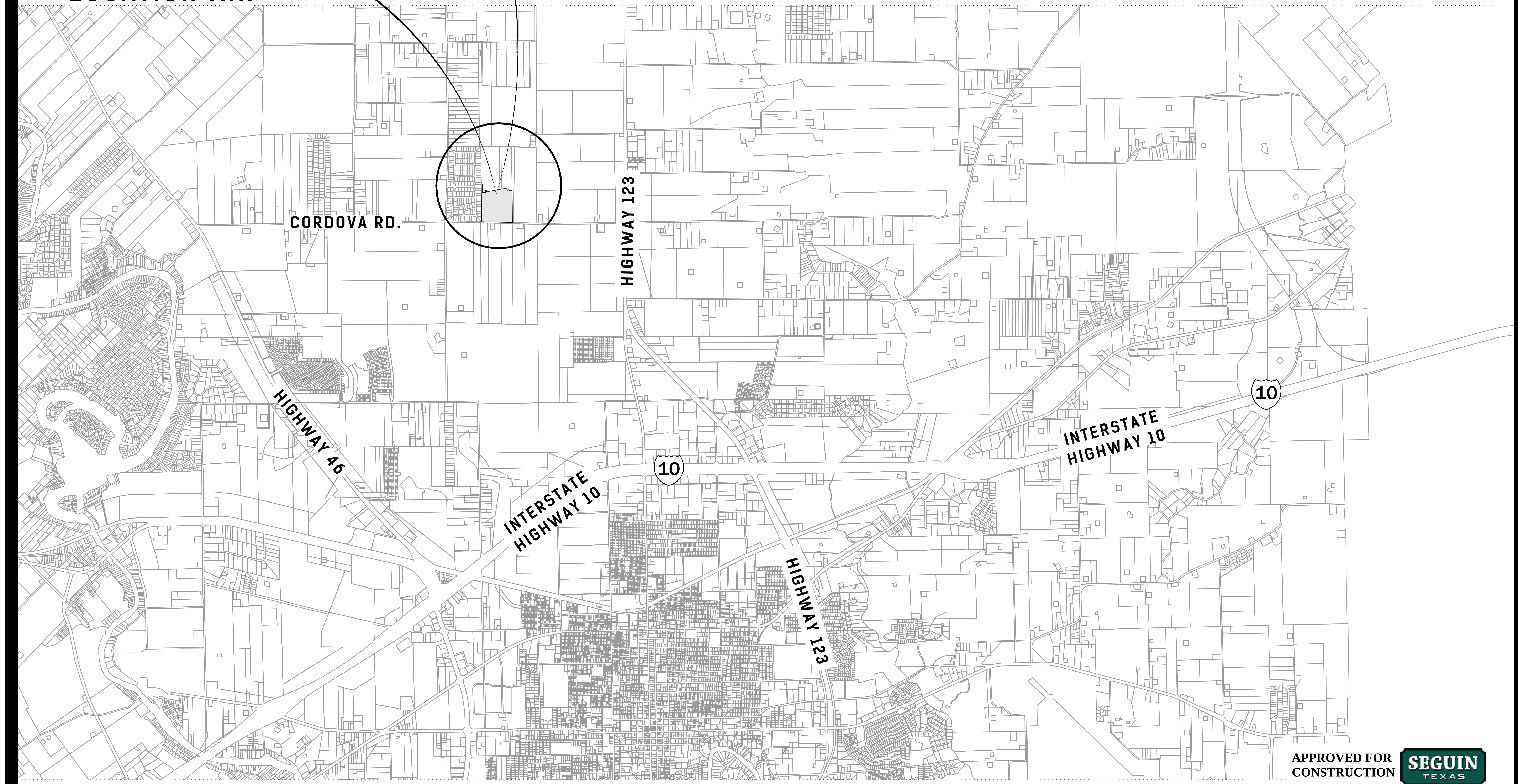


LOCATION MAP



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

VICINITY MAP

EST. 1980
CUDE
ENGINEERS

CORDOVA TRAILS SUBDIVISION
UNIT 1

CONSTRUCTION PLANS

ASHTON WOODS

DEVELOPER:
ASHTON WOODS SAN ANTONIO
RESIDENTIAL, LLC
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DRAWN BY	DATE
AC	12/06/2021
CHECKED BY	**PROJECT NO.**
DDC/CD	03480.002

Digitally signed by David D Cupit II
DN: cn=David D Cupit II, c=US, o=Cude Engineers, email=dcupit@cudeengineers.com
Date: 2021.12.11 14:56:30 -06'00'

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455

STREET AND DRAINAGE CONSTRUCTION PLAN

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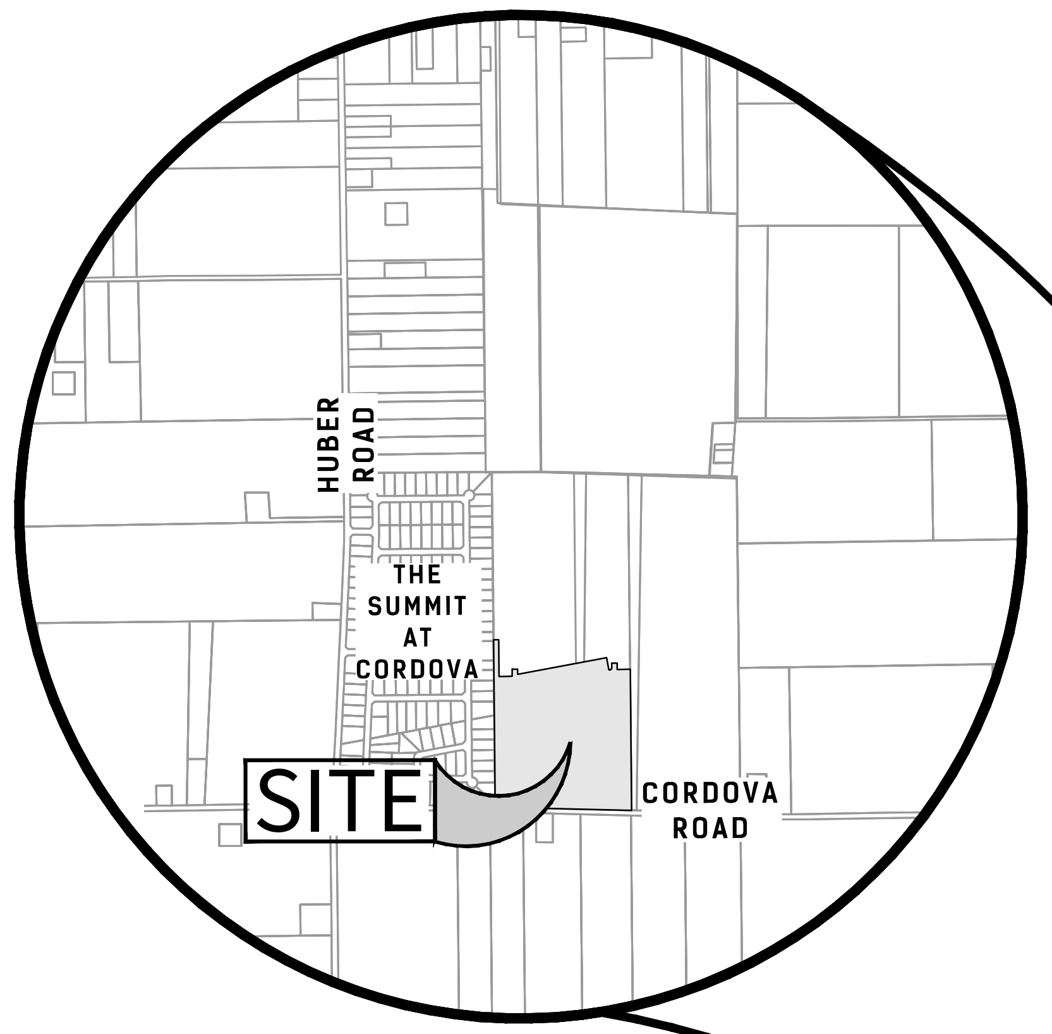

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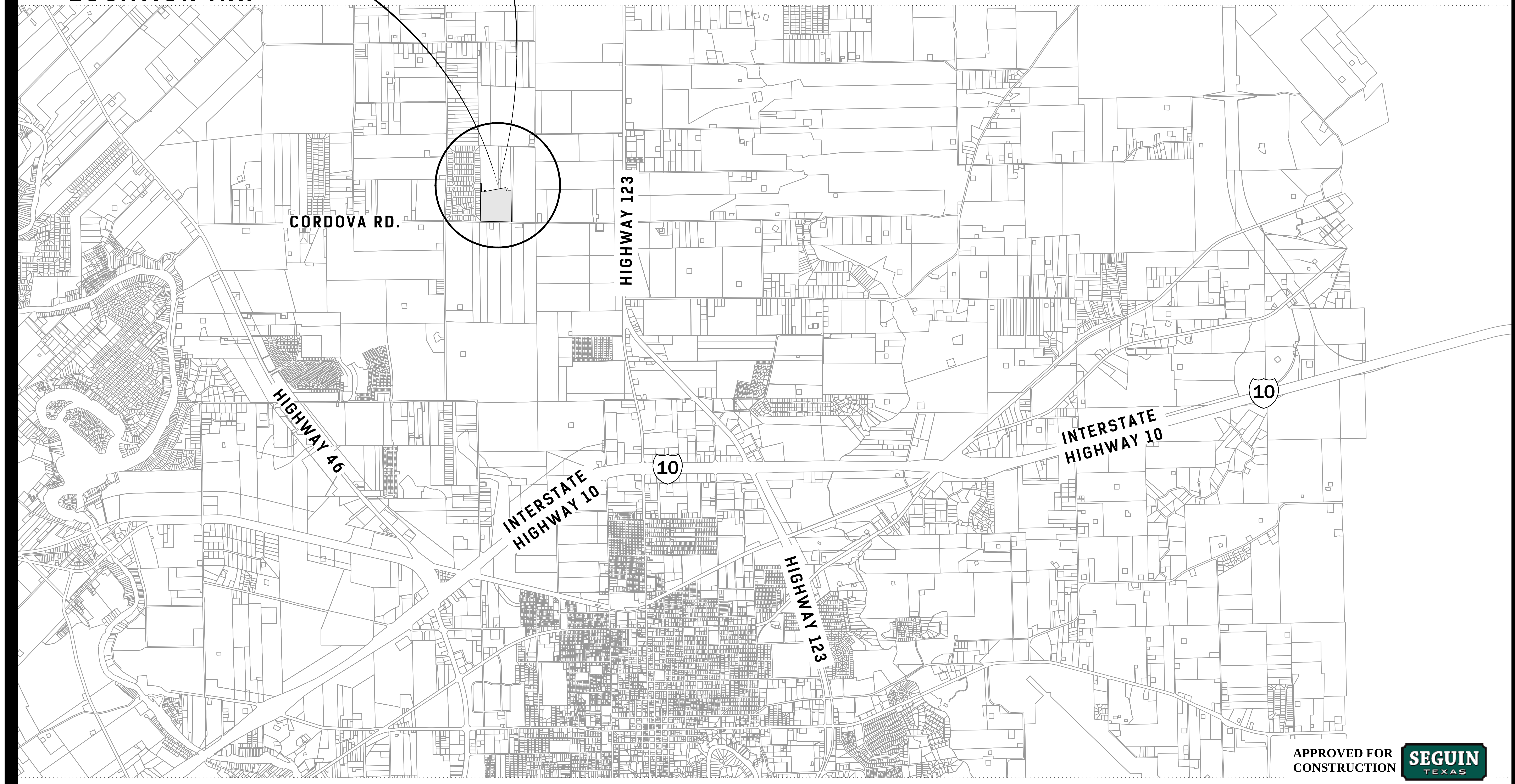

APPROVED FOR CONSTRUCTION
SEGUIN
TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

VICINITY MAP

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CUDE
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CORDOVA TRAILS SUBDIVISION
UNIT 1

STREET & DRAINAGE CONSTRUCTION PLANS

ASHTON WOODS™

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DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455

GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SEGUIN DESIGN STANDARDS.

2. SITE
    a. EXISTING CONDITIONS
        i. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS.
        ii. CONTRACTOR IS TO NOT DISPOSE OF ANY CONSTRUCTION MATERIALS WITHIN DEDICATED PARKLAND AT ANY TIME WHILE THE RESIDENTIAL SUBDIVISION IS BEING BUILT UNLESS APPROVED IN WRITING BY THE DIRECTOR OF PARKS AND RECREATION OR DESIGNEE.
    b. TREES
        i. NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
        ii. THE CONTRACTOR SHALL COMPLY WITH CITY OF SEGUIN OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
        iii. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX—INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).
        iv. CONTRACTOR SHALL REFERENCE TREE PLAN AND PRIVATE GRADING PLAN FOR CLEARING AND GRADING LIMITS.
        v. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST.
    c. ACCESS
        i. ACCESS TO THE SITE IS PROVIDED THROUGH THE EXISTING CORDOVA ROAD ROAD.
    d. BENCHMARK
        i. BENCHMARK TO BE SET BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. DRIVEWAYS
    a. RESIDENTIAL DRIVEWAYS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY TO DENOTE A POTENTIAL CONFLICT WITH DRAINAGE FACILITY AND/OR ADA RAMP. ALL DRIVEWAYS SERVING A RESIDENTIAL LOT SHALL BE BUILT AT THE TIME OF HOMEBUILDING.
    b. ALL DRIVEWAYS SERVING OPEN SPACES WHERE PUBLIC INFRASTRUTURE IS PRESENT SHALL BE BUILT WITH THE SUBDIVISION INFRASTRUCTURE.
    c. DRIVEWAY CONSTRUCTION SHALL FOLLOW LOCAL DESIGN SPECIFICATIONS AND DETAILS.
4. ADA RAMPS/SIDEWALKS
    a. THE LOCATION OF ACCESSIBLE CURB RAMPS ARE SHOWN ON THE PLANS. ALL RAMPS SHALL CONFIRM TO ADA/TAS REQUIREMENTS IN ACCORDANCE WITH TXDOT PED-18 DETAILS.
    ALL ACCESSIBLE CURB RAMPS SHALL BE CONSTRUCTED WITH THE SUBDIVISION IMPROVEMENTS.

    c. THE ADA RAMP STANDARD DETAILS ARE INTENDED TO SHOW TYPICAL LAYOUTS FOR THE CONSTRUCTION OF THE CURB RAMPS. THE INFORMATION SHOWN ON THE STANDARD DETAILS MEET THE REQUIREMENTS SHOWN IN THE "2012 TEXAS ACCESSIBILITY STANDARDS" (TAS) AND THE "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN" BY THE DEPARTMENT OF JUSTICE.
    d. SIDEWALKS MUST BE CONSTRUCTED WITH THE STREET INFRASTRUCTURE UNLESS FRONTING RESIDENTIAL LOTS. IF SIDEWALK IS FRONTING A RESIDENTIAL LOT, SIDEWALK IS TO BE CONSTRUCTED AT THE TIME OF HOME BUILDING.
    e. ALL SIDEWALK CONSTRUCTION MUST BE FREE OF OBSTRUCTION.
    f. CONTRACTOR TO VERIFY STREET LIGHT LOCATION PRIOR TO SIDEWALK CONSTRUCTION.
5. STREET
    a. FOR ALL REFERENCES TO THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), THE CONTRACTOR SHALL SEE THEIR CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES, WHICH I ALSO LOCATED AT WWW.TXDOT.GOV.
    b. THE FRAME & COVER FOR WASTEWATER MANHOLES WILL BE TEMPORARILY REMOVED DURING CONSTRUCTION OF THE ROAD SECTION. THE STRUCTURE WILL BE COVERED AS TO NOT ALLOW CONSTRUCTION DEBRIS & MATERIAL INTO THE SEWER SYSTEM, THE ROAD BASE LAID, COMPACTED PER PROJECT SPECIFICATIONS, AND FINAL PAVING INSTALLED.
    c. THE WASTEWATER MANHOLE FRAME AND COVER WILL BE THEN SET TO FINAL GRADE AND PROPERLY SECURED AS PART OF THE CONCRETE ENCASEMENT. THE CONTRACTOR IS REQUIRED TO ADJUST ALL MANHOLES AND WATER VALVES TO MATCH THE GRADE OF THE STREET SECTION OR THE ELEVATION SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
6. DRAINAGE
    a. CONTRACTOR IS RESPONSIBLE FOR ENSURING POSITIVE SITE DRAINAGE AT ALL TIMES DURING AND UPON COMPLETION OF INFRASTRUCTURE.
    b. CONCRETE COLLARS SHALL BE INSTALLED FOR CAST-IN-PLACE & PRECAST CURB INLETS FOR EVERY PIPE CONNECTION.
    c. FLOODPLAIN
        i. THE CONTRACTOR SHALL NOT PLACE ANY FILL MATERIAL OR INFRASTRUCTURE IMPROVEMENTS WITHIN THE FLOOD PLAIN WITHOUT APPROVAL FROM THE CITY OF SEGUIN FLOODPLAIN ADMINISTRATOR, AND/OR THE CITY ENGINEER.
        ii. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
        iii. CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING THE FLOODPLAIN LIMITS PRIOR TO CONSTRUCTION IF WORKING WITHIN BEXAR COUNTY.
    d. VEGETATION
        i. CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS WITHIN EASEMENT LIMITS UPON COMPLETION OF CONSTRUCTION WITHIN ROW LIMITS.
        ii. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION. HYDROMULCH PAY ITEM INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACIEVE 85% VEGETATION.
7. UTILITY
    a. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION OR DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION AND FOR THE SAFETY AND PROTECTION THEREOF AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK
    b. CONTRACTOR IS TO NOTIFY ENGINEER OF ANY DISCREPANCIES OR UTILITY CONFLICTS.
    c. CONTRACTOR IS REQUIRED TO NOTIFY GVEC WHEN ENCROACHING UPON ANY OF THEIR EXISTING OVERHEAD ELECTRIC EASEMENTS IF THIS ENCROACHMENT IS NOT NOTED ON THE CONSTRUCTION SET.
8. CONDUITS
    a. PRIOR TO THE INSTALLATION OF STREET BASE MATERIAL, CONTRACTOR SHALL COORDINATE WITH ENGINEER AND UTILITY PROVIDERS TO INSTALL NECESSARY CONDUITS FOR UTILITY INSTALLATION.
9. MATERIALS/SPECS
    a. CONSTRUCTION WILL CONFORM TO THE FOLLOWING CURRENT SPECIFICATIONS AS APPLICABLE.
        i. CITY OF SEGUIN DESIGN STANDARDS, LATEST EDITION
        ii. SPRINGS HILL WATER SUPPLY CORP. STANDARD DRAWINGS & SPECIFICATIONS LATEST EDITION
        iii. TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES, LATEST EDITION
        iv. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS." TEXAS COMMISSION ON ENVIRONMENTAL QUALITY "DESIGN CRITERIA FOR SEWERAGE SYSTEMS" CHAPTER 217.
        v. REFER TO 30 TAC CHAPTER 290 FOR PUBLIC DRINKING WATER STANDARDS
    b. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
    c. ALL REQUIRED MATERIAL TESTING SHALL FOLLOW LOCAL MINIMUM REQUIREMENTS.
10. PERMITTING
    a. UNLESS OTHERWISE STATED, CONTRACTOR CANNOT BEGIN CONSTRUCTION ACTIVITIES IN THE CITY'S JURISDICTION, INCLUDING CLEARING AND/OR ROUGH GRADING, BEFORE FIRST OBTAINING ALL CITY APPROVALS AND PERMITS.
    b. ALL WORK IN GUADALUPE COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
    c. ANY IMPROVEMENTS WITHIN THE TXDOT RIGHT OF WAY OR PROPOSED DEDICATION CANNOT BE INSTALLED WITHOUT A TXDOT DRIVEWAY, UTILITY PERMIT AND/OR DONATION AGREEMENT.
    d. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED ADEQUATE PERMITS AND A NOTICE TO PROCEED WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
11. TRAFFIC CONTROL
    a. ALL CONSTRUCTION OPERATIONS SHALL BE CONDUCTED TO PROVIDE MINIMAL INTERFERENCE TO TRAFFIC. ALL TRAFFIC SIGNAL EQUIPMENT INSTALLATIONS SHALL BE ARRANGED SO AS TO PERMIT CONTINUOUS MOVEMENT OF TRAFFIC IN ALL DIRECTIONS AT ALL TIMES.
    b. UNLESS OTHERWISE NOTED, ROADS AND STREETS SHALL BE KEPT OPEN TO TRAFFIC AT ALL TIMES. CONTRACTOR SHALL ARRANGE CONSTRUCTION SO AS TO CLOSE ONLY ONE LANE OF A ROADWAY AT A TIME.
    c. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SIGNAGE NECESSARY DURING CONSTRUCTION ANY TRAFFIC CONTROL MEASURES SHOULD BE IN COMPLIANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND THE CITY OF SEGUIN STANDARDS.
12. CAUTION NOTE:
    a. THE CONTRACTOR SHALL BE AWARE THAT A 4" & 8" WATER MAIN EXIST ALONG CORDOVA ROAD. 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.

    ACCESSIBLE CURB RAMPS, FOR PASSAGE TO AND THROUGH THE PUBLIC RIGHT OF WAY, SHALL BE CONSTRUCTED WITH THE SUBDIVISION INFRASTRUCTURE. SIDEWALKS WHICH ARE LOCATED WITHIN THE DEVELOPMENT THAT ARE LOCATED ADJACENT TO OPEN SPACE/PARKLAND AREAS SHALL BE CONSTRUCTED AS PART OF THE SUBDIVISION INFRASTRUCTURE.

    SLOPED SIDEWALKS, FOR PASSAGE TO AND THROUGH DRIVEWAY APRONS, SHALL BE BUILT WITH AND AS PART OF THE PUBLIC SIDEWALK AT TIME OF RESIDENTIAL HOME CONSTRUCTION.
13. MISCELLANEOUS
    a. TRENCH EXCAVATION PROTECTION
        i. 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.
    b. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL REQUIRED MEETINGS AND INSPECTIONS AS NEEDED. A MINIMUM OF 48 HOURS' NOTICE MUST BE GIVEN TO THE DEVELOPER'S ENGINEER FOR ANY REQUESTED SITE VISITS.
    c. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM A FINAL "SITE CLEAN" AFTER CONSTRUCTION ACTIVITY HAS CEASED AND OBTAINED ALL FINAL ACCEPTANCES. THE CONTRACTOR WILL BE RESPONSIBLE FOR HAULING OFF AND DISPOSING OF ALL INFRASTRUCTURE CONSTRUCTION RELATED DEBRIS, REGARDLESS OF ORIGIN.
    d. THE ENGINEER WILL STAKE STREET AND DRAIN IMPROVEMENTS ONE TIME ONLY; ANY CONSTRUCTION STAKES REMOVED OR DESTROYED BY THE CONTRACTOR OR HIS EMPLOYEES WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CITY OF SEGUIN SEGUIN SUPPLEMENTAL NOTES:

1. ADA COMPLIANT SIDEWALKS AND ACCESSIBLE CURB RAMPS TO BE CONSTRUCTED WITH THE DEVELOPMENT CONSTRUCTION. ANY LOT OR PARCEL THAT IS PART OF THE SUBDIVISION AND IS NOT REQUIRED TO SECURE A BUILDING PERMIT, OR A SITE PERMIT, SHALL CONSTRUCT THE SIDEWALKS WITH THE STREET CONSTRUCTION. ACCESSIBLE CURB SHALL BE CONSTRUCTED WITH THE STREET CONSTRUCTION.

2. ALL STORM DRAINAGE PIPE WITHIN THE CITY R.O.W. SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III MINIMUM. 18-INCH MINIMUM UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.

    ALL CURB INLETS, JUNCTION BOXES, OR OTHER STORM STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH TXDOT ITEM 465, CURRENT EDITION.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS
SUBDIVISION UNIT 1

CITY OF SEGUIN STREET & DRAINAGE GENERAL NOTES

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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DAVID D. CUPIT II
122076
07.29.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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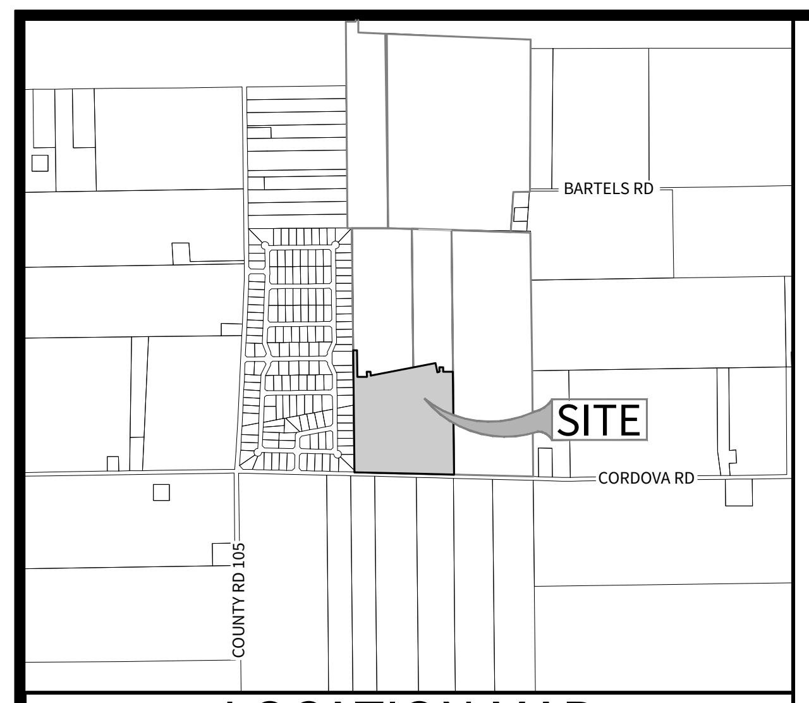

LOCATION MAP
N.T.S.

OWNER/DEVELOPER:

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17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
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TEL: (210) 681-2951
FAX: (210) 523-7112

SCALE: 1" =300'

LEGEND

UNIT BOUNDARY	▨
DRAINAGE AREA	🟥
Tc FLOW PATH	→ - - →
ACCUMULATION POINT	(XX)
EXISTING EARTHEN DRAIN	🟨
PROPOSED EARTHEN DRAIN	🟩
EXISTING CONCRETE DRAIN	🟪
PROPOSED CONCRETE DRAIN	🟧
EXISTING DETENTION POND	🟦
PROPOSED DETENTION POND	🟦

Project Name: Cordova Trails
Calculation Summary for Time of Concentrations

		Sheet Flow Tc Compuations						Shallow Conc. Tc Compuations						Concentrated Tc Computations						Overall			
Drainage Shed	Shed Area (Ac.)	Length	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	Length	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	Length	Upstream Elev.	Downstream Elev	Slope	Velocity (fps)	Time of Concentration	Time of Concentration (min	Lag Time (0.6 x Tc) (min)	Time of Concentration (hrs)	Lag Time (0.6 x Tc) (hrs)
1	11.40	300.00	N	605.18	603.34	0.61%	20.00	162.27	N	603.34	602.34	0.62%	2.18	2532.00				6	7.03	29.21	17.53	0.487	0.292
2	19.60	300.00	N	602.50	601.39	0.37%	20.00	158.56	N	601.39	600.81	0.37%	2.58	2091.00				6	5.81	28.39	17.03	0.473	0.284
3	9.88	300.00	N	599.11	598.10	0.34%	20.00	97.22	N	598.10	597.78	0.33%	1.6	2414.00				6	6.71	28.31	16.98	0.472	0.283
4	0.00	300.00	N	605.18	603.34	0.61%	20.00	162.27	N	603.34	602.34	0.62%	2.18	2532.00				6	7.03	29.21	17.53	0.487	0.292
5A	1.57	220.00	N	599.04	598.34	0.32%	20.00							188.00				6	0.52	20.52	12.31	0.342	0.205
5B	3.17	220.00	N	599.04	598.34	0.32%	20.00							1635.51				6	4.54	24.54	14.73	0.409	0.245
5C	0.86	220.00	N	599.04	598.34	0.32%	20.00							1810.33				6	5.03	25.03	15.02	0.417	0.250
6	10.03	235.00	N	600.61	597.71	1.23%	20.00							554.00				6	1.54	21.54	12.92	0.359	0.215
7	0.00	220.00	N	599.04	598.34	0.32%	20.00							1810.33				6	5.03	25.03	15.02	0.417	0.250
8	3.80	141.46	N	596.49	588.14	5.90%	12.00							835.05				6	2.32	14.32	8.59	0.239	0.143
8A	0.72	25.38	N	595.90	592.86	11.98%	10.00							877.98				6	2.44	12.44	7.46	0.207	0.124
9	0.00	220.00	N	599.04	598.34	0.32%	20.00							2854.04				6	7.93	27.93	16.76	0.465	0.279
10	5.20	130.00	N	602.88	601.44	1.11%	16.00							857.07				6	2.38	18.38	11.03	0.306	0.184
11	1.39	172.62	N	595.25	593.80	0.84%	20.00											6		20.00	12.00	0.333	0.200
12	0.00	220.00	N	599.04	598.34	0.32%	20.00							2933.28				6	8.15	28.15	16.89	0.469	0.281
13	11.17	300.00	N	599.18	598.68	0.17%	20.00	81.65	N	598.68	597.18	1.84%	0.62	240.76				6	0.67	21.29	12.77	0.355	0.213
14	9.73	300.00	N	600.81	596.56	1.42%	20.00	51.20	N	596.56	596.16	0.78%	0.61	408.21				6	1.13	21.74	13.05	0.362	0.217
15	0.00	300.00	N	599.18	598.68	0.17%	20.00	81.65	N	598.68	597.18	1.84%	0.62	609.97				6	1.69	22.31	13.39	0.372	0.223
16	9.29	150.00	N	598.89	597.25	1.09%	17.00							670.00				6	1.86	18.86	11.32	0.314	0.189
17	0.00	300.00	N	599.18	598.68	0.17%	20.00	81.65	N	598.68	597.18	1.84%	0.62	897.88				6	2.49	23.11	13.87	0.385	0.231
18	3.50	110.00	N	598.60	597.22	1.25%	14.00							606.95				6	1.69	15.69	9.41	0.261	0.157
19	0.00	300.00	N	599.18	598.68	0.17%	20.00	81.65	N	598.68	597.18	1.84%	0.62	1190.17				6	3.31	23.93	14.36	0.399	0.239
20	14.14	225.46	N	602.59	600.19	1.06%	20.00							1000.00				6	2.78	22.78	13.67	0.380	0.228
21	4.46	263.36	N	599.63	596.69	1.11%	20.00							347.24				6	0.96	20.96	12.58	0.349	0.210
22	0.00	225.46	N	602.99	600.88	0.94%	20.00							1438.55				6	4.00	24.00	14.40	0.400	0.240
23	5.42	190.00	N	596.68	594.51	1.14%	19.00							197.12				6	0.55	19.55	11.73	0.326	0.195
24	14.22	300.00	N	593.71	591.50	0.74%	20.00							467.99				6	1.30	21.30	12.78	0.355	0.213
25	0.00	225.46	N	602.99	600.88	0.94%	20.00							2443.53				6	6.79	26.79	16.07	0.446	0.268
26	4.53	125.1	N	599.8	593.7	4.92%	12.00											6		12.00	7.20	0.200	0.120

Project Name: Cordova Trails
HYDROLOGY CALCULATIONS:

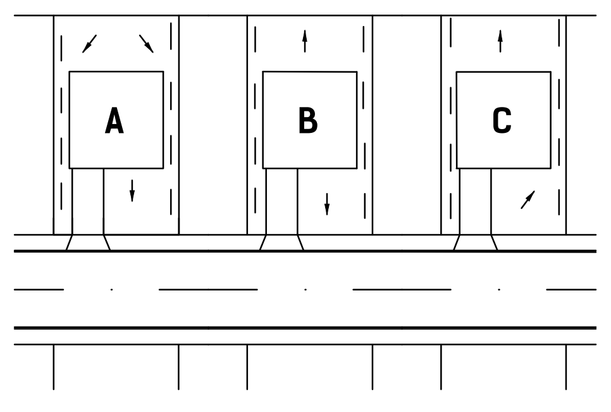
PT. #	AREA (Ac.)	AREA OF ACCUMULATION (Ac.)	TOTAL ACRES	C	Tc	I2	I10	I25	I50	I100	Q2	Q10	Q25	Q50	Q100
1	11.40	= A1	11.40	0.65	29.21	2.94	4.56	5.42	6.25	7.20	21.78	33.82	40.16	46.32	53.38
2	19.60	= A2	19.60	0.65	28.39	2.99	4.64	5.51	6.36	7.32	38.11	59.15	70.22	80.99	93.31
3	9.88	= A3	9.88	0.65	28.31	3.00	4.65	5.52	6.37	7.34	19.24	29.87	35.46	40.90	47.11
4	0.00	= A1:A3	40.88	0.65	29.21	2.94	4.56	5.42	6.25	7.20	40.27	69.87	83.55	96.07	109.87
5A	1.57	= A5A	1.57	0.65	20.52	3.61	5.58	6.61	7.61	8.75	3.68	5.70	6.75	7.77	8.93
5B	3.17	= A5A+A5B	4.74	0.65	24.54	3.26	5.05	5.99	6.91	7.95	10.05	15.57	18.47	21.28	24.50
5C	0.86	= A1:A4+A5A+A5B+A5C	5.60	0.62	25.03	3.22	5.00	5.93	6.83	7.87	51.37	87.08	103.97	119.60	136.96
6	10.03	= A6	10.03	0.65	21.54	3.51	5.44	6.44	7.42	8.53	22.89	35.45	42.00	48.36	55.62
7	0.00	= A1:A4 + A5:A6	15.63	0.65	25.03	3.22	5.00	5.93	6.83	7.87	73.02	120.65	143.78	165.48	189.78
8	3.80	= A8	3.80	0.65	14.32	4.34	6.69	7.91	9.08	10.41	10.71	16.53	19.53	22.43	25.72
8A	0.72	= A8A	0.72	0.65	12.44	4.63	7.14	8.42	9.66	11.07	2.17	3.34	3.94	4.52	5.18
9	0.00	= A1:A4 + A5:A6 + A8	19.43	0.65	27.93	3.02	4.69	5.57	6.42	7.39	78.42	129.08	153.83	177.13	203.24
10	5.20	= A10	5.20	0.65	18.38	3.83	5.92	7.00	8.05	9.25	12.93	20.00	23.67	27.22	31.28
11	1.39	= A11	1.39	0.65	20.00	3.66	5.66	6.70	7.71	8.87	3.30	5.11	6.06	6.97	8.01
12	0.00	= A1:A4 + A5:A6 + A8:A8A + A10:A11	26.74	0.65	28.15	3.01	4.67	5.54	6.39	7.36	92.53	150.98	179.83	207.11	237.80
13	11.17	'= A13	11.17	0.65	21.29	3.53	5.47	6.48	7.46	8.58	25.66	39.73	47.07	54.19	62.33
14	9.73	= A14	9.73	0.65	21.74	3.49	5.41	6.41	7.38	8.49	22.09	34.21	40.54	46.68	53.69
15	0.00	= A13:A14	20.90	0.65	22.31	3.44	5.33	6.32	7.28	8.37	46.77	72.45	85.85	98.88	113.75
16	9.29	= A16	9.29	0.65	18.86	3.77	5.84	6.91	7.95	9.14	22.79	35.26	41.73	48.01	55.17
17	0.00	= A13:A14 + A16	30.19	0.65	23.11	3.37	5.23	6.20	7.14	8.22	66.22	102.61	121.63	140.12	161.23
18	3.50	= A18	3.50	0.65	15.69	4.15	6.41	7.57	8.70	9.99	9.44	14.58	17.23	19.80	22.73
19	0.00	= A13:A14 + A16 + A18	33.69	0.65	23.93	3.31	5.13	6.08	7.01	8.06	72.46	112.30	133.15	153.42	176.57
20	14.14	= A20	14.14	0.65	22.78	3.40	5.27	6.25	7.20	8.28	31.28	48.46	57.43	66.15	76.11
21	4.46	= A21	4.46	0.65	20.96	3.56	5.52	6.54	7.53	8.65	10.33	16.00	18.95	21.82	25.09
22	0.00	= A20:A22	18.60	0.65	24.00	3.30	5.12	6.07	6.99	8.05	39.94	61.90	73.39	84.57	97.33
23	5.42	= A23	5.42	0.65	19.55	3.70	5.73	6.78	7.81	8.97	13.04	20.19	23.90	27.50	31.61
24	14.22	= A24	14.22	0.65	21.30	3.53	5.47	6.48	7.46	8.58	32.66	50.57	59.90	68.97	79.32
25	0.00	= A13:A14 + A16 + A18+A20:A22+A23:A24	71.93	0.65	26.79	3.10	4.80	5.70	6.57	7.57	144.80	224.65	266.59	307.37	353.99
26	4.53	= A26	4.53	0.65	12.00	4.70	7.25	8.55	9.81	11.24	13.84	21.35	25.18	28.88	33.09

*REFERENCE STORMWATER REPORT FOR DETENTION POND INFLOW AND OUTFLOW RATES (& SCS HYDROLOGY)

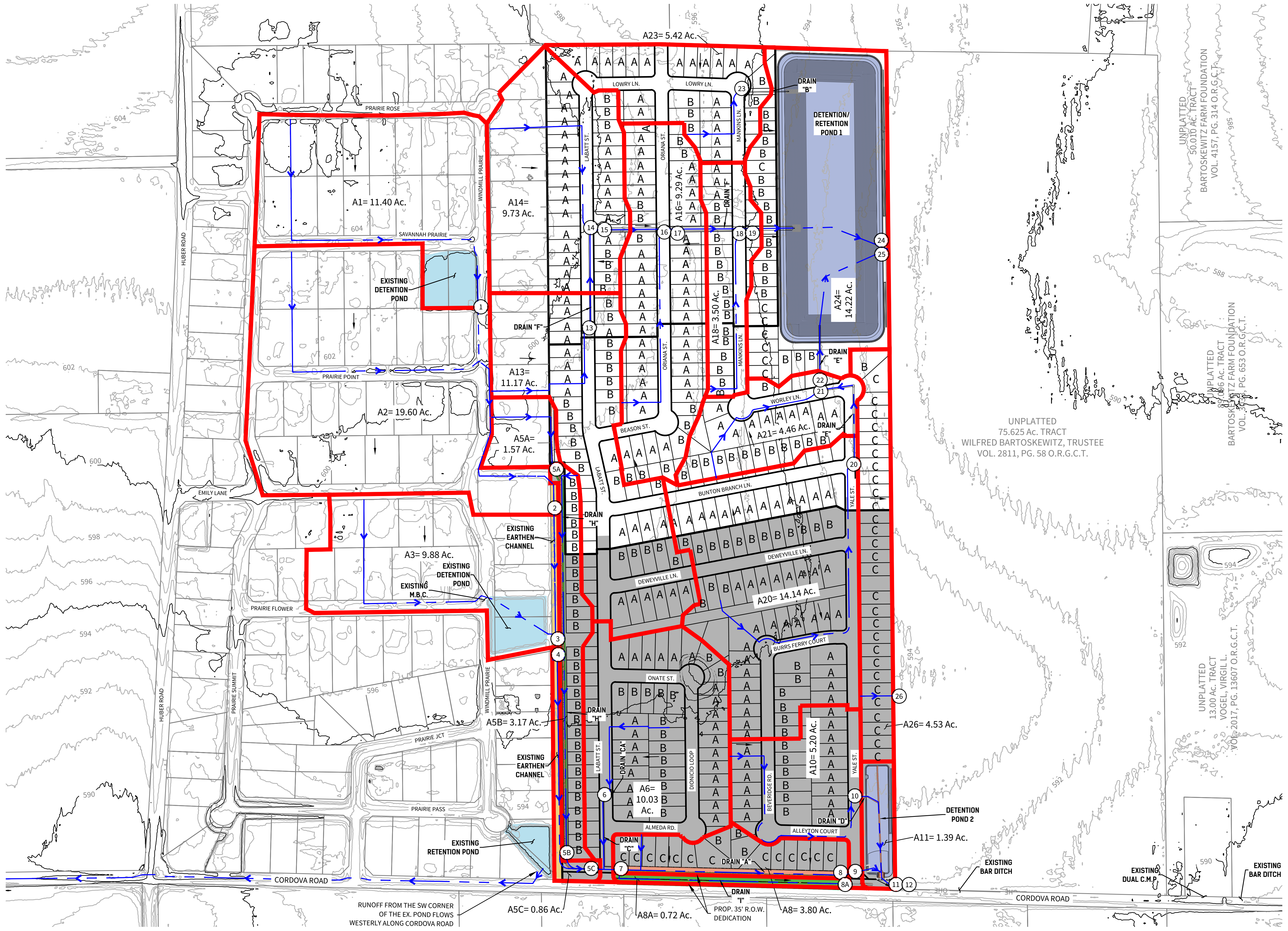
1

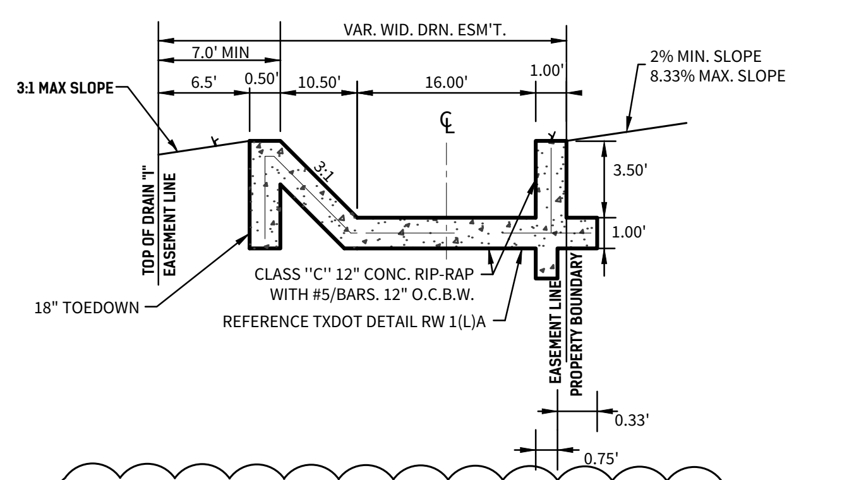
NOTE:

- THE WATER SURFACE ELEVATION AT THE INLET LOCATION OF DRAINS "C" AND "CA" OVERTOPS THE CROWN OF THE ROAD PER THE STREET CAPACITY ANALYSIS IN THE STORMWATER MANAGEMENT PLAN. AS SUCH, THE COMBINED FLOWS FROM POINT 6 ARE EVENLY DISTRIBUTED BETWEEN TWO 25' INLETS (SEE DRAINS "C" & "CA" ON SHEET 21 OF 29)
- THE WATER SURFACE ELEVATION AT THE INLET LOCATION OF DRAIN "D" OVERTOPS THE CROWN OF THE ROAD PER THE STREET CAPACITY ANALYSIS IN THE STORMWATER MANAGEMENT PLAN. AS SUCH, THE COMBINED FLOWS FROM POINT 10 ARE EVENLY DISTRIBUTED BETWEEN TWO 15' INLETS (SEE DRAIN "D" ON SHEET 22 OF 29)



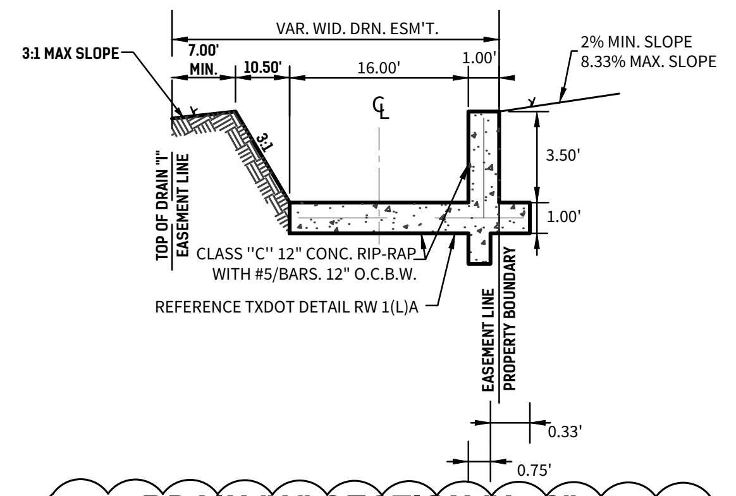
TYPICAL LOT SITE PLAN
N.T.S.



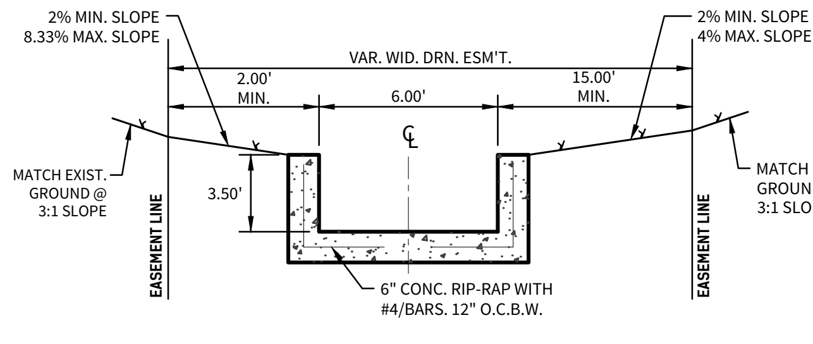

VAR. WID. DRN. ESM'T.
3:1 MAX SLOPE
2% MIN. SLOPE 8.33% MAX. SLOPE
CLASS "C" 12" CONC. RIP-RAP WITH #5 BARS, 12" O.C.B.W.
REFERENCE TXDOT DETAIL RW 1(L)A
18" TOEDOWN

(N.T.S.) **DRAIN "A" SECTION "A-1" & "A-3"**

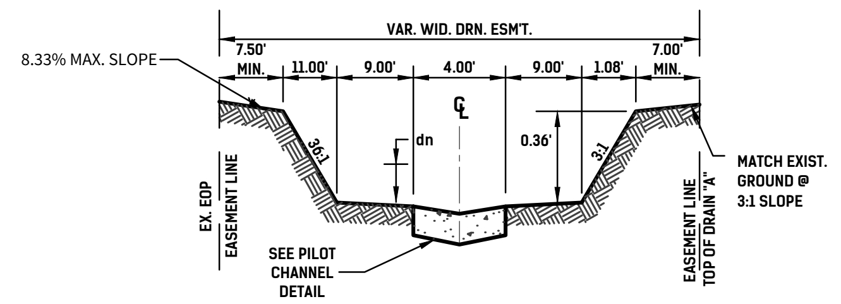
1


VAR. WID. DRN. ESM'T.
3:1 MAX SLOPE
2% MIN. SLOPE 8.33% MAX. SLOPE
CLASS "C" 12" CONC. RIP-RAP WITH #5 BARS, 12" O.C.B.W.
REFERENCE TXDOT DETAIL RW 1(L)A

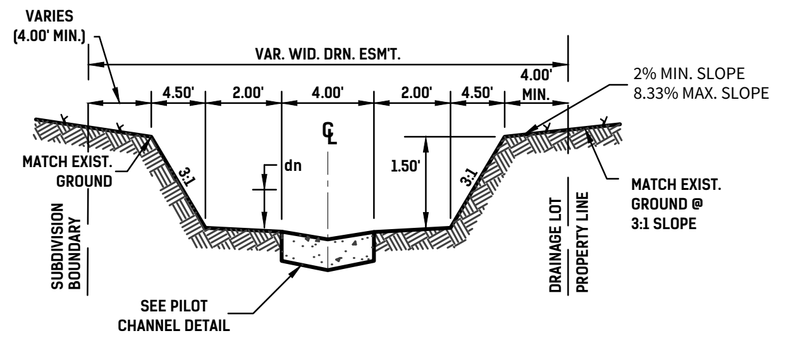
DRAIN "A" SECTION "A-2" (N.T.S.)


VAR. WID. DRN. ESM'T.
2% MIN. SLOPE 8.33% MAX. SLOPE
2% MIN. SLOPE 4% MAX. SLOPE
MATCH EXIST. GROUND @ 3:1 SLOPE
6" CONC. RIP-RAP WITH #4 BARS, 12" O.C.B.W.

DRAIN "D" SECTION "D-1" (N.T.S.)

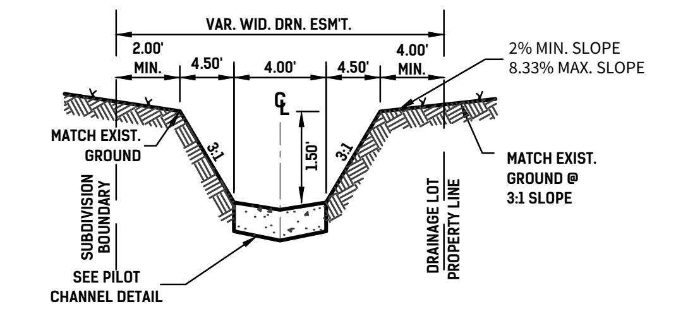


BAR DRAIN "I" SECTION "I-1" (N.T.S.)

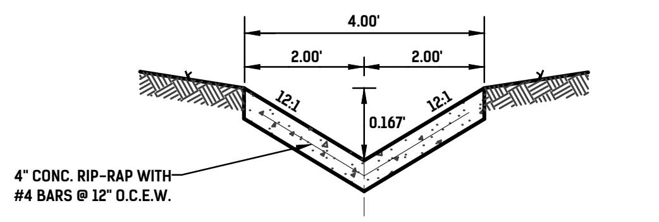


DRAIN "H" SECTION "H-1" (N.T.S.)

1



DRAIN "H" SECTION "H-2" (N.T.S.)



PILOT CHANNEL DETAIL
(N.T.S.)

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

RATIONAL METHOD HYDROLOGY - FOR SIZING OF ONSITE DRAINAGE CURB INLETS, STORM SEWERS, AND CHANNELS ONLY

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

DRAINAGE AREA PLAN

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - REVISED DRAIN CROSS SECTIONS
2.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C1

P:\03480\000\2-Drawings\00_DRMP.dwg 2021/09/26 7:56pm acalvillo

KEYNOTES:

1	CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2	BEGIN HEADER CURB
3	CONTRACTOR TO INSTALL SIDEWALK WITH INFRASTRUCTURE
4	BEGIN/END SIDEWALK
5	BEGIN WASHOUT STA 1+11.78
6	END WASHOUT STA 1+48.83
7	BEGIN WASHOUT & 7" THICKENED CONCRETE PAVEMENT. STA 3+96.17
8	END WASHOUT & 7" THICKENED CONCRETE PAVEMENT. STA 5+46.17
9	BEGIN WASHOUT STA 5+65.02
10	END WASHOUT STA 7+35.02
11	CONTRACTOR TO INSTALL MAILBOX PAD WITH INFRASTRUCTURE. COMMUNITY MAILBOX AREA SHALL BE ADA COMPLIANT.
12	END HEADER CURB/BEGIN CURB & GUTTER
13	END CURB & GUTTER/BEGIN SPILL CURB
14	END SPILL CURB & BEGIN CURB/GUTTER
15	EX. POWER POLE TO BE RELOCATED

ELEVATIONS:

XXXX.XX	PROPOSED TOP OF CONCRETE CURB ELEVATION
XXXX.XX	PROPOSED ASPHALT PAVEMENT ELEVATION

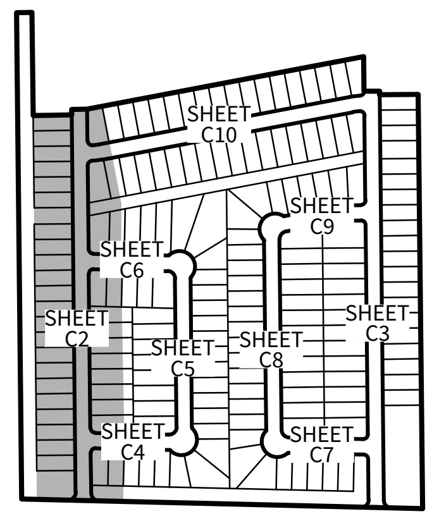
NOTES:

1. CONTRACTOR TO CONSTRUCT ADA RAMPS WITH INFRASTRUCTURE
2. LOT 2 & 3, BLOCK 1 WILL HAVE REDUCED DRIVEWAY DUE TO CURB INLET.

LEGEND:

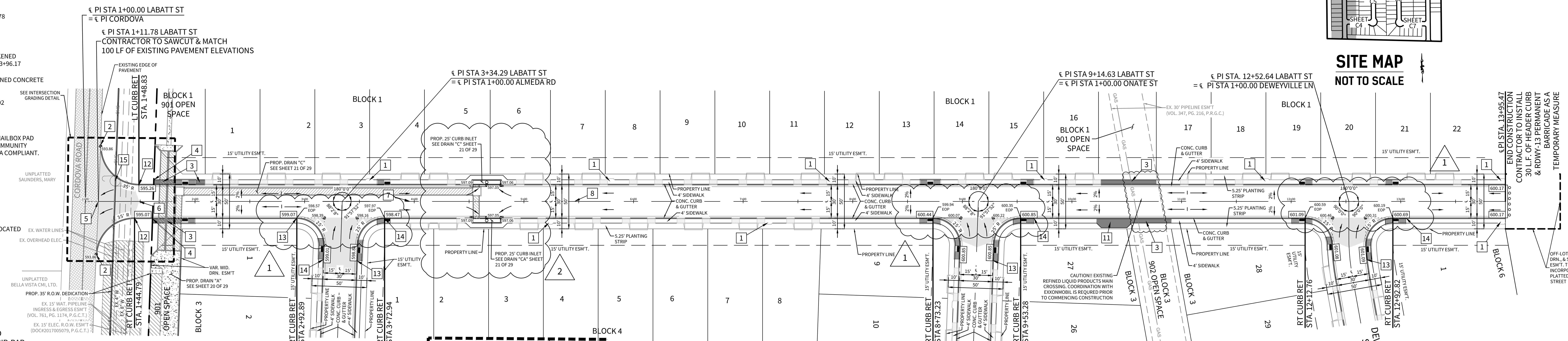
▯	- PROPOSED DRIVEWAY LOCATION
▨	- PROPOSED EARTHEN DRAIN
⁘	- PROPOSED CONCRETE RIP-RAP
░	- PROPOSED PAVEMENT WIDENING LIMITS FOR CORDOVA ROAD SEE SHEET C11A
▩	- EXISTING PAVEMENT LIMITS
■	- PROPOSED SIDEWALK (TO BE CONSTRUCTED WITH INFRASTRUCTURE)
▨	- PROPOSED UNDERGROUND STORM SEWER
▢	- STREET WASHOUT (SEE SHEET C12)

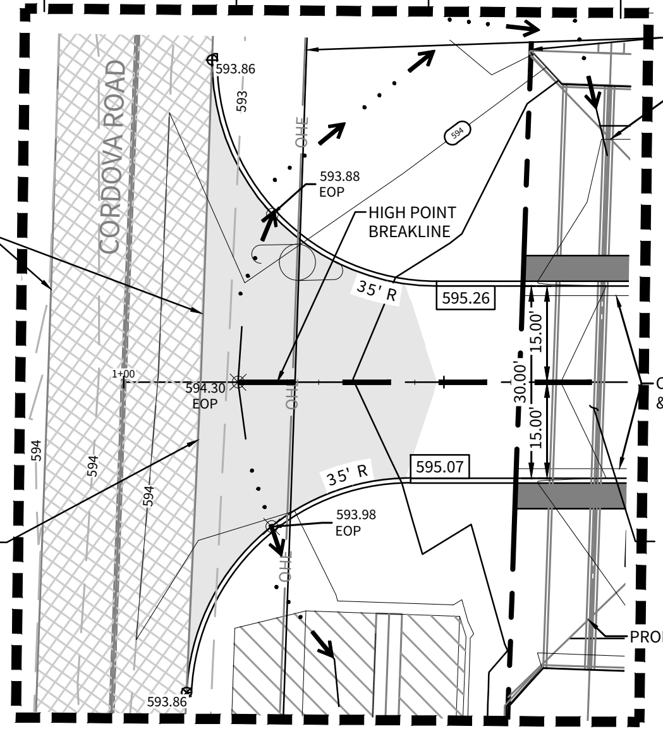
TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)



SITE MAP

NOT TO SCALE


℄ PI STA 1+00.00 LABATT ST
= ℄ PI CORDOVA
℄ PI STA 1+11.78 LABATT ST
CONTRACTOR TO SAWCUT & MATCH
100 LF OF EXISTING PAVEMENT ELEVATIONS
EXISTING EDGE OF PAVEMENT
SEE INTERSECTION GRADING DETAIL
CORDOVA ROAD
LT CURB RET STA. 1+48.83
RT CURB RET STA. 1+44.79
BLOCK 1 901 OPEN SPACE
UNPLATTED SAUNDERS, MARY
UNPLATTED BELLA VISTA CMI, LTD.
EX. WATER LINES
EX. OVERHEAD ELEC.
PROP. 35' R.O.W. DEDICATION
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T (VOL. 761, PG. 1174, P.G.C.T.)
EX. 15' ELEC. R.O.W. ESM'T (DOC#2017005079, P.G.C.T.)
VAR. WID. DRN. ESM'T
PROP. DRAIN "A" SEE SHEET 20 OF 29
PROP. DRAIN "C" SEE SHEET 21 OF 29
15' UTILITY ESM'T.
BLOCK 1
BLOCK 3
℄ PI STA 3+34.29 LABATT ST
= ℄ PI STA 1+00.00 ALMEDA RD
PROP. 25' CURB INLET SEE DRAIN "C" SHEET 21 OF 29
PROP. 25' CURB INLET SEE DRAIN "CA" SHEET 21 OF 29
PROPERTY LINE
RT CURB RET STA 2+92.89
RT CURB RET STA 3+72.94
ALMEDA RD SEE SHEET 4 OF 29
CONC. CURB & GUTTER
4' SIDEWALK
5.25' PLANTING STRIP
℄ PI STA 9+14.63 LABATT ST
= ℄ PI STA 1+00.00 ONATE ST
BLOCK 1 901 OPEN SPACE
EX. 30' PIPELINE ESM'T (VOL. 347, PG. 216, P.R.G.C.)
CAUTION!! EXISTING REFINED LIQUID PRODUCTS MAIN CROSSING. COORDINATION WITH EXXONMOBIL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION
BLOCK 3 902 OPEN SPACE
RT CURB RET STA 8+73.23
RT CURB RET STA 9+53.28
ONATE ST SEE SHEET 6 OF 29
℄ PI STA. 12+52.64 LABATT ST
= ℄ PI STA 1+00.00 DEWEYVILLE LN
RT CURB RET STA. 12+12.76
RT CURB RET STA. 12+92.82
DEWEYVILLE LN SEE SHEET 10 OF 29
PI STA. 13+95.47
END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & RDWY-13 PERMANENT BARRICADE AS A TEMPORARY MEASURE
OFF-LOT 50' x 50' WAT., DRN., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET
BLOCK 6


CORDOVA ROAD
PROP. 35' R.O.W. DEDICATION
PROPERTY LINE
BLOCK 4
HIGH POINT BREAKLINE
EXISTING EDGE OF PAVEMENT
593.86
595.26
595.07
CONC. CURB & GUTTER
PROP.DRAIN "A" SEE SHEET 20 OF 29
CONTRACTOR TO REWORK EXISTING ASPHALT AT TIE IN TO CREATE DRAINAGE FLOW LINES AS SHOWN. CONTRACTOR WILL BE REQUIRED TO SEAL COAT REWORKED PAVEMENT ALONG CORDOVA ROAD

INTERSECTION GRADING DETAIL

(SCALE 1" = 30')

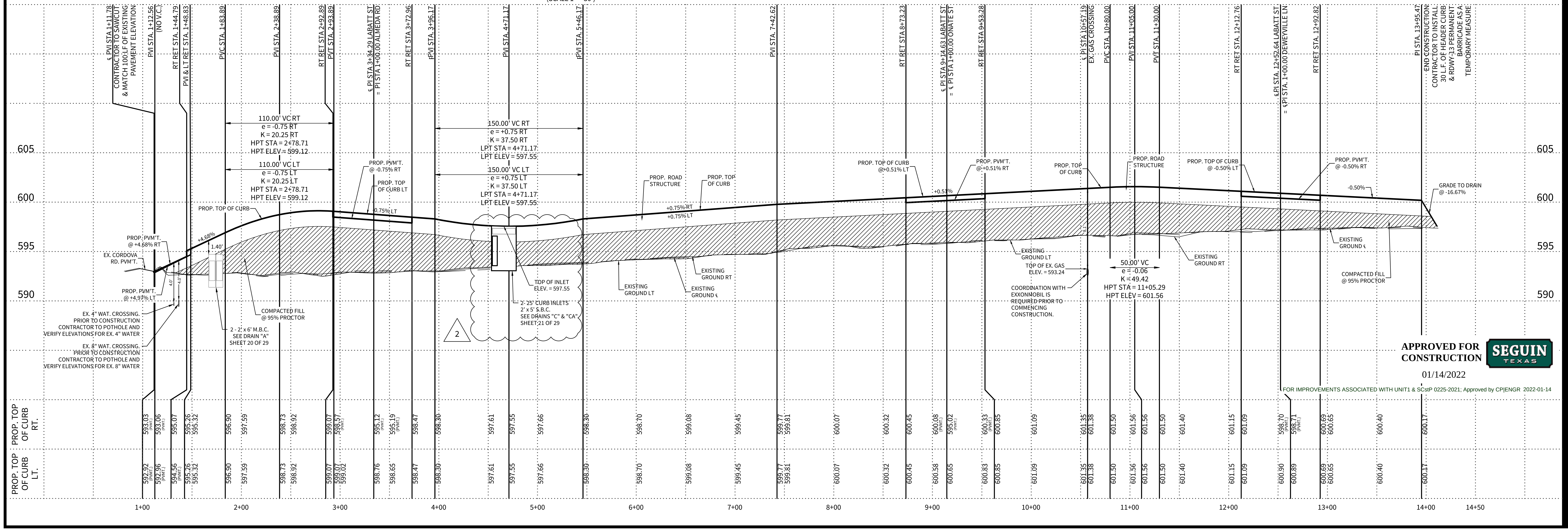
LABATT ST

STA. 1+00.00 TO STA. 13+95.47

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC., 4" & 8" WATER MAIN ALONG CORDOVA RD. 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.

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


℄ PVI STA 1+11.78 CONTRACTOR TO SAWCUT & MATCH 100 LF OF EXISTING PAVEMENT ELEVATION
PVI STA. 1+12.56 (NO V.C.)
RT RET STA. 1+44.79
PVI & LT RET STA. 1+48.83
PVC STA. 1+83.89
PVI STA. 2+38.89
RT RET STA 2+92.89
PVT STA. 2+93.89
℄ PI STA 3+34.29 LABATT ST = ℄ PI STA 1+00.00 ALMEDA RD
RT RET STA 3+72.96
PVI STA. 3+96.17
PVI STA. 4+71.17
PVI STA. 5+46.17
PVI STA. 7+42.62
RT RET STA. 8+73.23
℄ PI STA 9+14.63 LABATT ST = ℄ PI STA 1+00.00 ONATE ST
RT RET STA. 9+53.28
PVI STA. 10+57.19 EX. GAS CROSSING
PVC STA. 10+80.00
PVI STA. 11+05.00
PVT STA. 11+30.00
RT RET STA. 12+12.76
℄ PI STA. 12+52.64 LABATT ST = ℄ PI STA. 1+00.00 DEWEYVILLE LN
RT RET STA. 12+92.82
PI STA. 13+95.47 END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & RDWY-13 PERMANENT BARRICADE AS A TEMPORARY MEASURE
110.00' VC RT
e = -0.75 RT
K = 20.25 RT
HPT STA = 2+78.71
HPT ELEV = 599.12
110.00' VC LT
e = -0.75 LT
K = 20.25 LT
HPT STA = 2+78.71
HPT ELEV = 599.12
150.00' VC RT
e = +0.75 RT
K = 37.50 RT
LPT STA = 4+71.17
LPT ELEV = 597.55
150.00' VC LT
e = +0.75 LT
K = 37.50 LT
LPT STA = 4+71.17
LPT ELEV = 597.55
50.00' VC
e = -0.06
K = 49.42
HPT STA = 11+05.29
HPT ELEV = 601.56
PROP. PVM'T. @ +4.68% RT
EX. CORDOVA RD. PVM'T.
PROP. PVM'T. @ +4.97% LT
+4.68%
1.40'
PROP. TOP OF CURB
PROP. PVM'T. @ -0.75% RT
PROP. TOP OF CURB LT
-0.75% LT
PROP. ROAD STRUCTURE
PROP. TOP OF CURB
+0.75% RT
+0.75% LT
PROP. TOP OF CURB @+0.51% LT
+0.51%
PROP. PVM'T. @+0.51% RT
PROP. TOP OF CURB
PROP. ROAD STRUCTURE
PROP. TOP OF CURB @ -0.50% LT
PROP. PVM'T. @ -0.50% RT
-0.50%
GRADE TO DRAIN @ -16.67%
EX. 4" WAT. CROSSING. PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE AND VERIFY ELEVATIONS FOR EX. 4" WATER
EX. 8" WAT. CROSSING. PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE AND VERIFY ELEVATIONS FOR EX. 8" WATER
2 - 2' x 6' M.B.C. SEE DRAIN "A" SHEET 20 OF 29
COMPACTED FILL @ 95% PROCTOR
TOP OF INLET ELEV. = 597.55
2- 25' CURB INLETS 2' x 5' S.B.C. SEE DRAINS "C" & "CA" SHEET 21 OF 29
EXISTING GROUND LT
EXISTING GROUND RT
EXISTING GROUND ℄
TOP OF EX. GAS ELEV. = 593.24
COORDINATION WITH EXXONMOBIL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
COMPACTED FILL @ 95% PROCTOR
605
600
595
590
PROP. TOP OF CURB RT.
593.03 (PVMT.) 593.06 (PVMT.) 595.07 595.26 595.32 596.90 597.59 598.73 598.92 599.07 598.57 (PVMT.) 595.12 (PVMT.) 595.19 (PVMT.) 598.47 598.30 597.61 597.55 597.66 598.30 598.70 599.08 599.45 599.77 599.81 600.07 600.32 600.45 600.08 (PVMT.) 595.02 (PVMT.) 600.33 (PVMT.) 600.85 601.09 601.35 601.38 601.50 601.56 601.56 601.50 601.40 601.15 601.09 598.70 (PVMT.) 598.71 (PVMT.) 600.69 600.65 600.40 600.17
PROP. TOP OF CURB LT.
592.92 (PVMT.) 592.96 (PVMT.) 594.56 (PVMT.) 595.26 595.32 596.90 597.59 598.73 598.92 599.07 599.07 599.02 598.76 598.65 598.47 598.30 597.61 597.55 597.66 598.30 598.70 599.08 599.45 599.77 599.81 600.07 600.32 600.45 600.58 600.65 600.83 600.85 601.09 601.35 601.38 601.50 601.56 601.56 601.50 601.40 601.15 601.09 600.90 600.89 600.69 600.65 600.40 600.17
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
14+50

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "LABATT ST"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/22/2021 - UPDATED CURB RETURN AND PAVEMENT ELEVATIONS, LEGEND REVISIONS
2. 09/23/2021 - REPLACED 50' CURB INLET WITH TWO 25' CURB INLETS. REVISED SIDEWALK AROUND INLETS. REMOVED STREET WASHOUT. UPDATED PROFILE VIEW ACCORDING TO PLAN VIEW UPDATES.
3.
4.
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6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C2

ELEVATIONS:

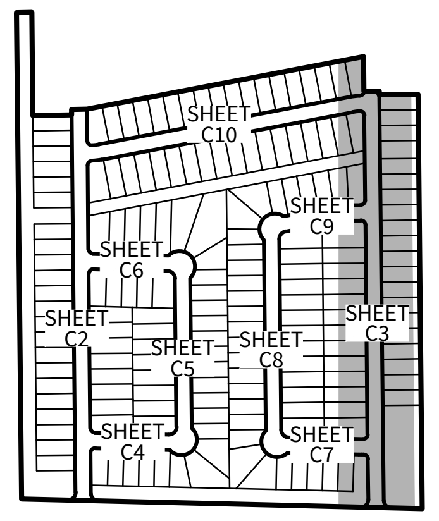
XXXX.XX	PROPOSED TOP OF CONCRETE CURB ELEVATION
XXXX.XX	PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

1. CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2. CONTRACTOR TO INSTALL MAILBOX PAD WITH INFRASTRUCTURE. COMMUNITY MAILBOX AREA SHALL BE ADA COMPLIANT.
3. BEGIN SIDEWALK
4. CONTRACTOR TO INSTALL SIDEWALK WITH INFRASTRUCTURE
5. END HEADER CURB/BEGIN CURB & GUTTER
6. BEGIN WASHOUT STA 1+11.21
7. END WASHOUT STA 1+49.91
8. BEGIN WASHOUT & 7" THICKENED CONCRETE PAVEMENT. STA 4+00.17
9. END WASHOUT & 7" THICKENED CONCRETE PAVEMENT. STA 5+50.17
10. BEGIN HEADER CURB
11. END CURB & GUTTER/BEGIN SPILL CURB
12. END SPILL CURB & BEGIN CURB/GUTTER
13. CONTRACTOR TO INSTALL DETENTION POND ACCESS DRIVEWAY AND 12' WIDE CONCRETE ACCESS DRIVE TO ACCESS GATES WITH INFRASTRUCTURE.
14. CONTRACTOR TO INSTALL 2 - 6' SWING GATES FOR DETENTION POND ACCESS.
15. CONTRACTOR TO INSTALL 6' WOODEN FENCE (SEE SHEET C28 FOR DETAILS)
16. CONTRACTOR TO INSTALL 4' WOODEN FENCE (SEE SHEET C28 FOR DETAILS)

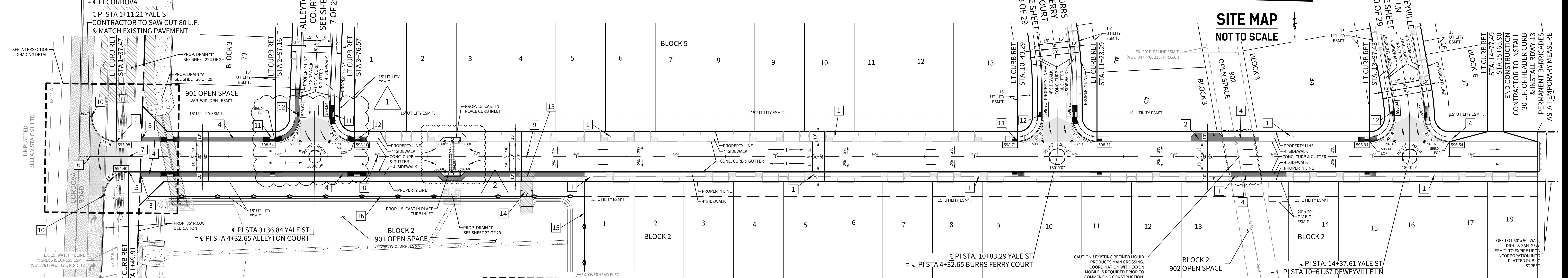
NOTES:

1. CONTRACTOR TO CONSTRUCT ALL ADA RAMPS WITH INFRASTRUCTURE.



SITE MAP

NOT TO SCALE

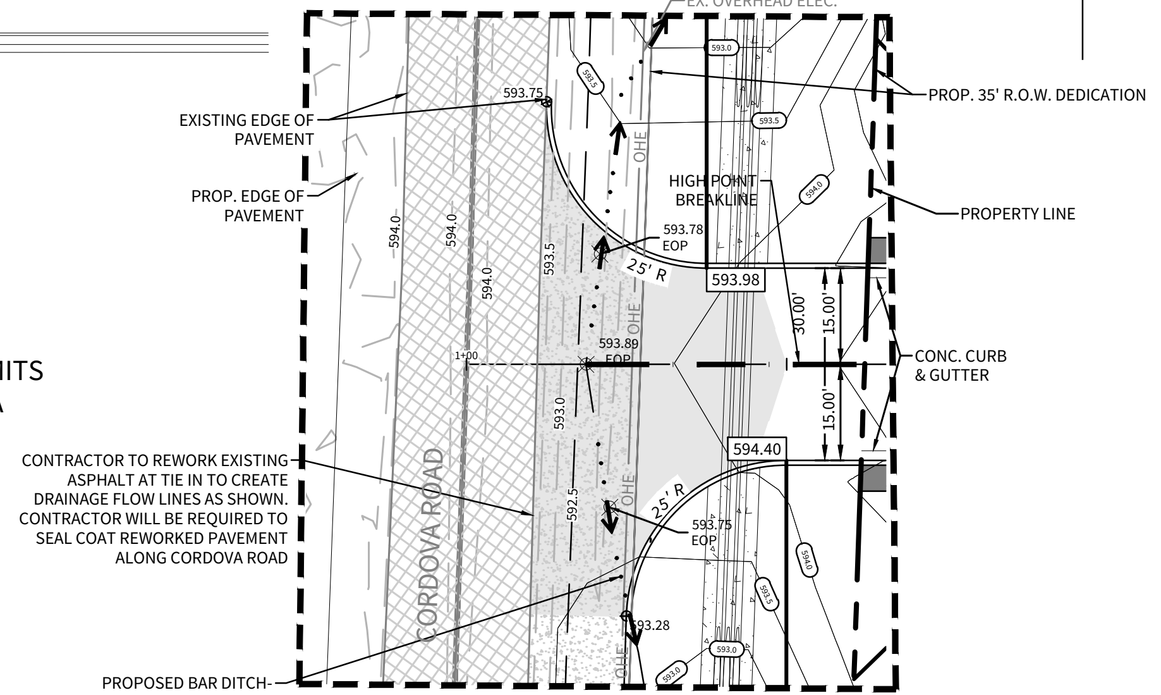

℄ PI STA 1+00.00 YALE ST
= ℄ PI CORDOVA
℄ PI STA 1+11.21 YALE ST
CONTRACTOR TO SAW CUT 80 L.F. & MATCH EXISTING PAVEMENT
ALLEYTON COURT SEE SHEET 7 OF 29
LT CURB RET STA 1+37.47
LT CURB RET STA 2+97.16
LT CURB RET STA 3+76.57
BURRS FERRY COURT SEE SHEET 9 OF 29
LT CURB RET STA. 10+43.29
LT CURB RET STA. 11+23.29
DEWEYVILLE LN SEE SHEET 10 OF 29
LT CURB RET STA. 13+97.43
LT CURB RET STA. 14+77.49
STA 15+65.90
END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & INSTALL RDWY-13 PERMANENT BARRICADES AS A TEMPORARY MEASURE
BLOCK 3
BLOCK 5
BLOCK 2
BLOCK 6
901 OPEN SPACE
VAR. WID. DRN. ESM'T.
902 OPEN SPACE
15' UTILITY ESM'T.
PROP. DRAIN "I" SEE SHEET 22C OF 29
PROP. DRAIN "A" SEE SHEET 20 OF 29
PROP. 15' CAST IN PLACE CURB INLET
PROP. DRAIN "D" SEE SHEET 22 OF 29
PROPERTY LINE
4' SIDEWALK
CONC. CURB & GUTTER
EX. 30' PIPELINE ESM'T (VOL. 347, PG. 216, P.R.G.C.)
PROP. 35' R.O.W. DEDICATION
℄ PI STA 3+36.84 YALE ST
= ℄ PI STA 4+32.65 ALLEYTON COURT
℄ PI STA. 10+83.29 YALE ST
= ℄ PI STA 4+32.65 BURRS FERRY COURT
℄ PI STA. 14+37.61 YALE ST
= ℄ PI STA 10+61.67 DEWEYVILLE LN
CAUTION!! EXISTING REFINED LIQUID PRODUCTS MAIN CROSSING. COORDINATION WITH EXXON MOBILE IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
20' x 20' G.V.E.C. ESM'T.
OFF-LOT 50' x 50' WAT., DRN., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T (VOL. 761, PG. 1174, P.G.C.T.)
EX. 15' ELEC. R.O.W. ESM'T (DOC#2017005079, P.G.C.T.)
RT CURB RET STA 1+49.91
UNPLATTED BELLA VISTA CML LTD.
CORDOVA ROAD
SEE INTERSECTION GRADING DETAIL

LEGEND:

▨	EXISTING PAVEMENT LIMITS
▨	PROPOSED UNDERGROUND STORM SEWER
■	PROPOSED SIDEWALK (TO BE CONSTRUCTED WITH INFRASTRUCTURE)
□	STREET WASHOUT (SEE SHEET C12)
▨	PROPOSED EARTHEN DRAIN
░	PROPOSED CONCRETE RIP-RAP
░	PROPOSED PAVEMENT WIDENING LIMITS FOR CORDOVA ROAD SEE SHEET C11A
	PROPOSED DRIVEWAY LOCATION

TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

△1


EXISTING EDGE OF PAVEMENT
PROP. EDGE OF PAVEMENT
EX. OVERHEAD ELEC.
PROP. 35' R.O.W. DEDICATION
HIGH POINT BREAKLINE
PROPERTY LINE
CONC. CURB & GUTTER
CONTRACTOR TO REWORK EXISTING ASPHALT AT TIE IN TO CREATE DRAINAGE FLOW LINES AS SHOWN. CONTRACTOR WILL BE REQUIRED TO SEAL COAT REWORKED PAVEMENT ALONG CORDOVA ROAD
PROPOSED BAR DITCH- REFERENCE GRADING PLANS
CORDOVA ROAD
593.98
594.40

INTERSECTION GRADING DETAIL

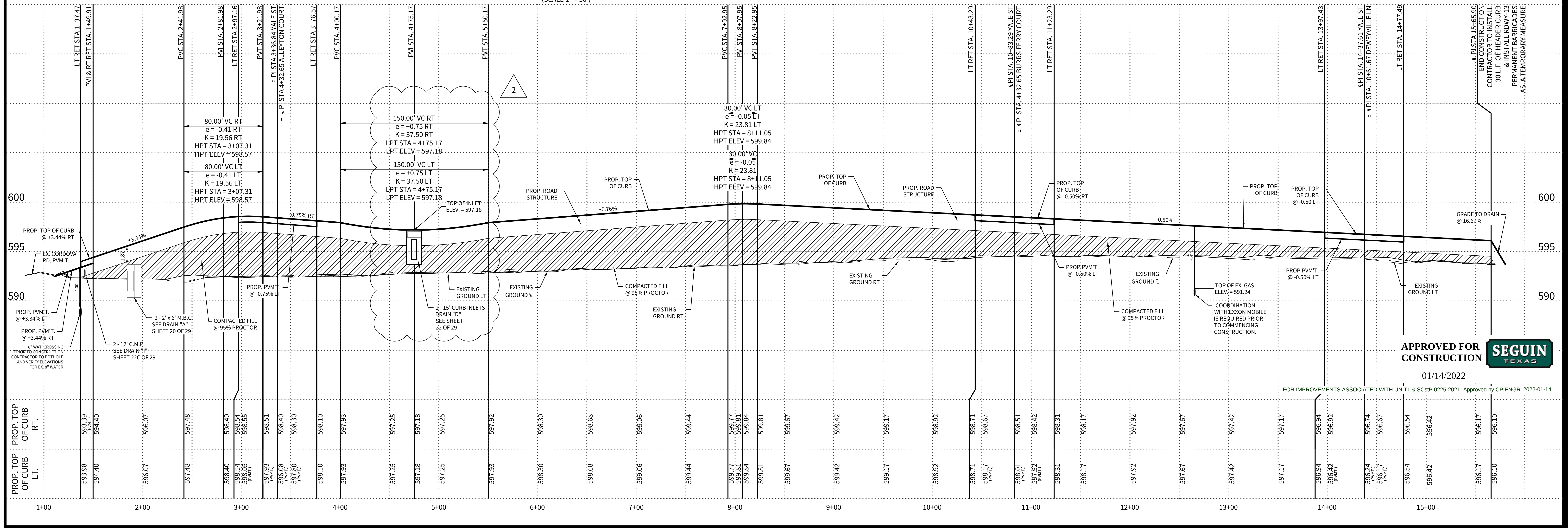
(SCALE 1" = 30')

YALE ST

STA. 1+00.00 TO STA. 15+65.90

CAUTION!!
EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC. & 8" WATER MAIN ALONG CORDOVA RD. 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.

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


LT RET STA 1+37.47
PVI & RT RET STA. 1+49.91
PVC STA. 2+41.98
PVI STA. 2+81.98
LT RET STA 2+97.16
PVT STA. 3+21.98
℄ PI STA 3+36.84 YALE ST = ℄ PI STA 4+32.65 ALLEYTON COURT
LT RET STA 3+76.57
PVC STA. 4+00.17
PVI STA. 4+75.17
PVT STA. 5+50.17
PVC STA. 7+92.95
PVI STA. 8+07.95
PVT STA. 8+22.95
LT RET STA. 10+43.29
℄PI STA. 10+83.29 YALE ST = ℄PI STA. 4+32.65 BURRS FERRY COURT
LT RET STA. 11+23.29
LT RET STA. 13+97.43
℄PI STA. 14+37.61 YALE ST = ℄PI STA. 10+61.67 DEWEYVILLE LN
LT RET STA. 14+77.49
℄ PI STA 15+65.90 END CONSTRUCTION CONTRACTOR TO INSTALL 30 L.F. OF HEADER CURB & INSTALL RDWY-13 PERMANENT BARRICADES AS A TEMPORARY MEASURE
80.00' VC RT e = -0.41 RT K = 19.56 RT HPT STA = 3+07.31 HPT ELEV = 598.57
80.00' VC LT e = -0.41 LT K = 19.56 LT HPT STA = 3+07.31 HPT ELEV = 598.57
150.00' VC RT e = +0.75 RT K = 37.50 RT LPT STA = 4+75.17 LPT ELEV = 597.18
150.00' VC LT e = +0.75 LT K = 37.50 LT LPT STA = 4+75.17 LPT ELEV = 597.18
30.00' VC LT e = -0.05 LT K = 23.81 LT HPT STA = 8+11.05 HPT ELEV = 599.84
30.00' VC e = -0.05 K = 23.81 HPT STA = 8+11.05 HPT ELEV = 599.84
△2
PROP. TOP OF CURB @ +3.44% RT
EX. CORDOVA RD. PVM'T.
PROP. PVM'T. @ +3.34% LT
PROP. PVM'T. @ +3.44% RT
8" WAT. CROSSING PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE AND VERIFY ELEVATIONS FOR EX. 8" WATER
2 - 12' C.M.P. SEE DRAIN "I" SHEET 22C OF 29
2 - 2' x 6' M.B.C. SEE DRAIN "A" SHEET 20 OF 29
PROP. PVM'T @ -0.75% LT
COMPACTED FILL @ 95% PROCTOR
-0.75% RT
+3.34%
TOP OF INLET ELEV. = 597.18
2 - 15' CURB INLETS DRAIN "D" SEE SHEET 22 OF 29
EXISTING GROUND LT
EXISTING GROUND ℄
PROP. ROAD STRUCTURE
+0.76%
PROP. TOP OF CURB
EXISTING GROUND RT
PROP. TOP OF CURB @ -0.50% RT
PROP. PVM'T. @ -0.50% LT
-0.50%
TOP OF EX. GAS ELEV. = 591.24
COORDINATION WITH EXXON MOBILE IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
PROP. TOP OF CURB @ -0.50 LT
GRADE TO DRAIN @ 16.67%
600
595
590
PROP. TOP OF CURB RT.
PROP. TOP OF CURB LT.
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "YALE ST"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

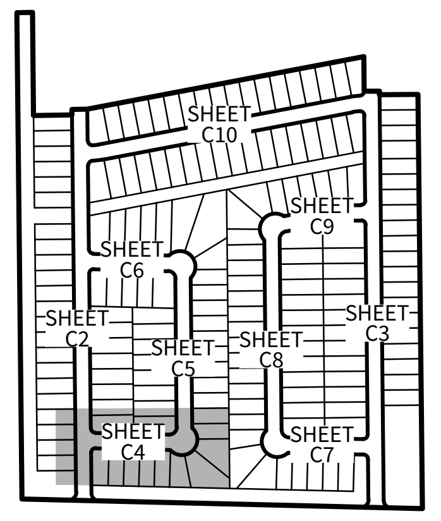
1. 07/22/2021 - UPDATED CURB RETURN AND PAVEMENT ELEVATIONS, LEGEND REVISIONS
2. 09/23/2021 - REPLACED 35' CURB INLET WITH TWO 15' CURB INLETS. REVISED SIDEWALK AROUND INLETS. REMOVED STREET WASHOUT. UPDATED PROFILE VIEW ACCORDING TO PLAN VIEW UPDATES.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

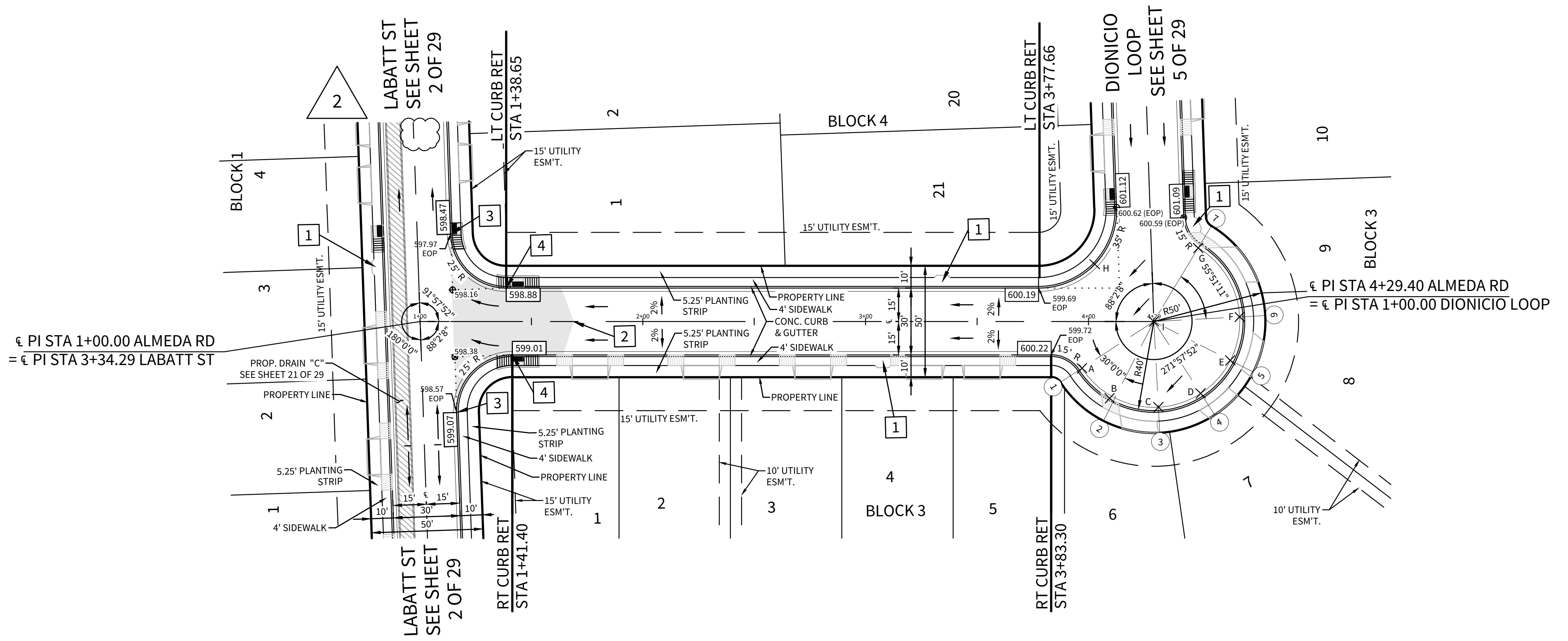
C3

P:\03480\002\2-Drawings\01_STR2_STPP.dwg 2021/09/26 8:06pm acalvillo



SITE MAP

NOT TO SCALE


LABATT ST SEE SHEET 2 OF 29
LT CURB RET STA 1+38.65
DIONICIO LOOP SEE SHEET 5 OF 29
LT CURB RET STA 3+77.66
BLOCK 4
BLOCK 1
BLOCK 3
15' UTILITY ESM'T.
5.25' PLANTING STRIP
4' SIDEWALK
PROPERTY LINE
CONC. CURB & GUTTER
PROP. DRAIN "C" SEE SHEET 21 OF 29
℄ PI STA 1+00.00 ALMEDA RD = ℄ PI STA 3+34.29 LABATT ST
℄ PI STA 4+29.40 ALMEDA RD = ℄ PI STA 1+00.00 DIONICIO LOOP
10' UTILITY ESM'T.
LABATT ST SEE SHEET 2 OF 29
RT CURB RET STA 1+41.40
RT CURB RET STA 3+83.30
BLOCK 3

NOTES:

1. CONTRACTOR TO CONSTRUCT ALL ADA RAMPS WITH INFRASTRUCTURE.
2. LOT 2 & 3, BLOCK 1 WILL HAVE REDUCED DRIVEWAYS DUE TO CURB INLET.

ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

1 CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.

2 END WASHOUT STA 1+68.71

3 END CURB & GUTTER/BEGIN SPILL CURB

4 END SPILL CURB & BEGIN CURB/GUTTER

LEGEND:

- PROPOSED DRIVEWAY LOCATION

▨ - PROPOSED UNDERGROUND STORM SEWER

- STREET WASHOUT (SEE SHEET C12)

TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

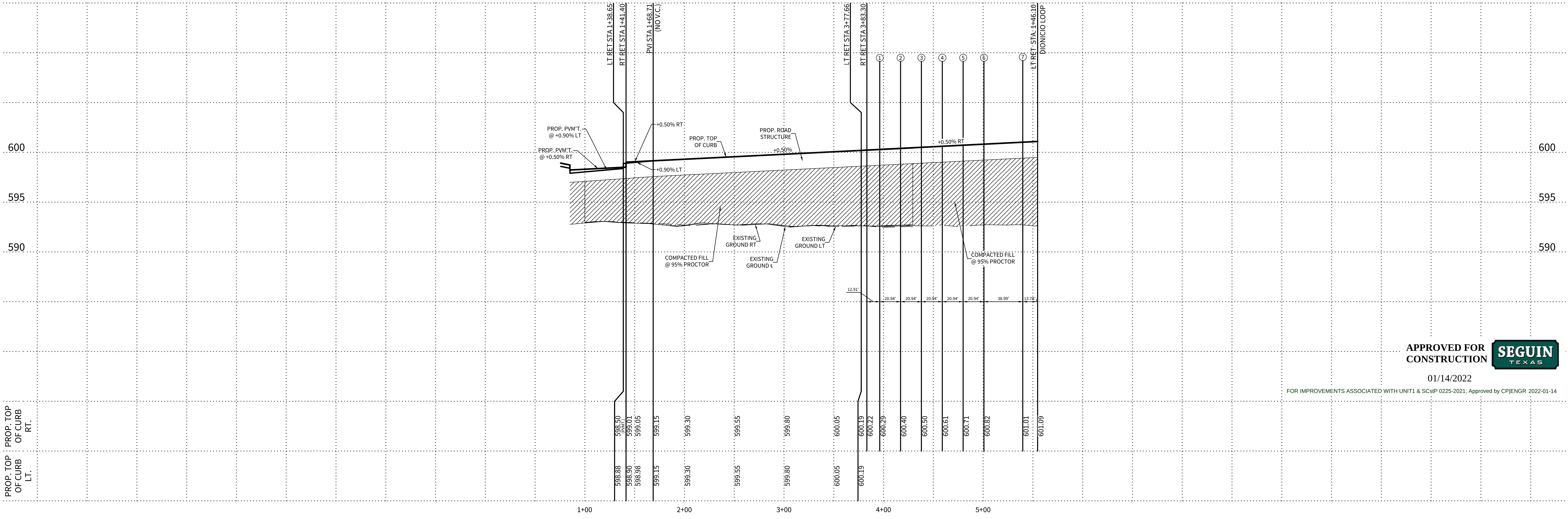
1

Point	Elevation	Description
A	599.79'	BOTTOM OF GUTTER
B	599.90'	BOTTOM OF GUTTER
C	600.00'	BOTTOM OF GUTTER
D	600.11'	BOTTOM OF GUTTER
E	600.21'	BOTTOM OF GUTTER
F	600.32'	BOTTOM OF GUTTER
G	600.51'	BOTTOM OF GUTTER
H	600.20'	BOTTOM OF GUTTER
I	600.20'	BOTTOM OF GUTTER

ALMEDA RD

STA. 1+00.00 TO STA. 4+29.40

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



APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "ALMEDA RD"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

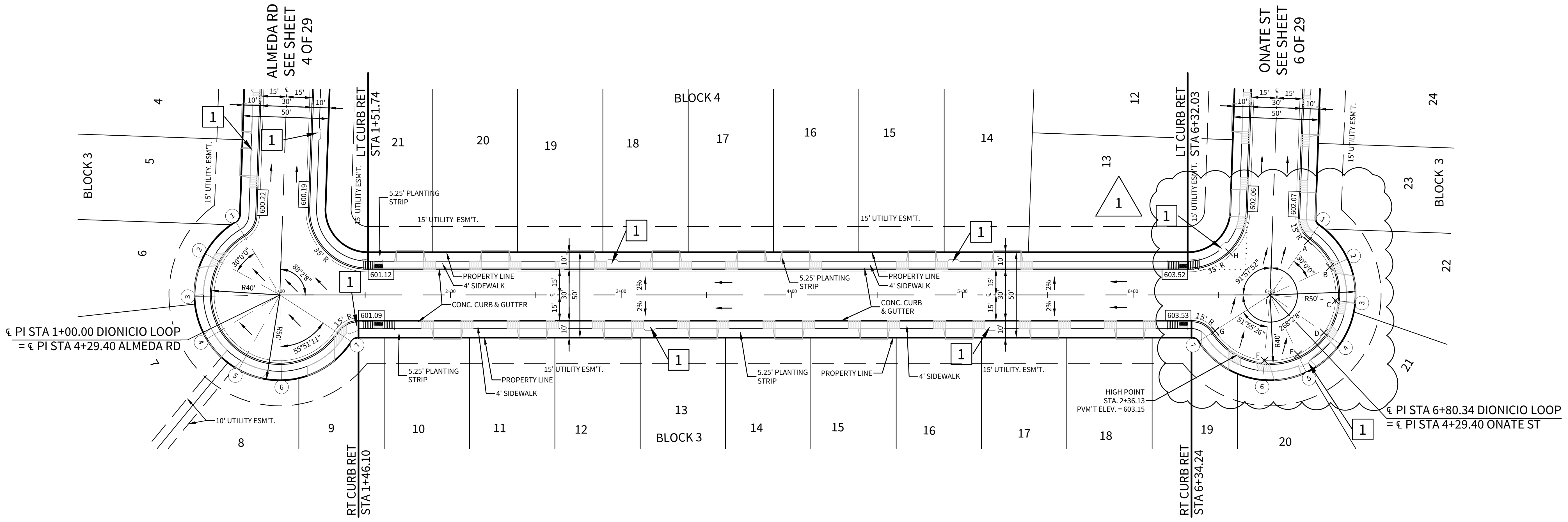
CHECKED BY
DDC/JC

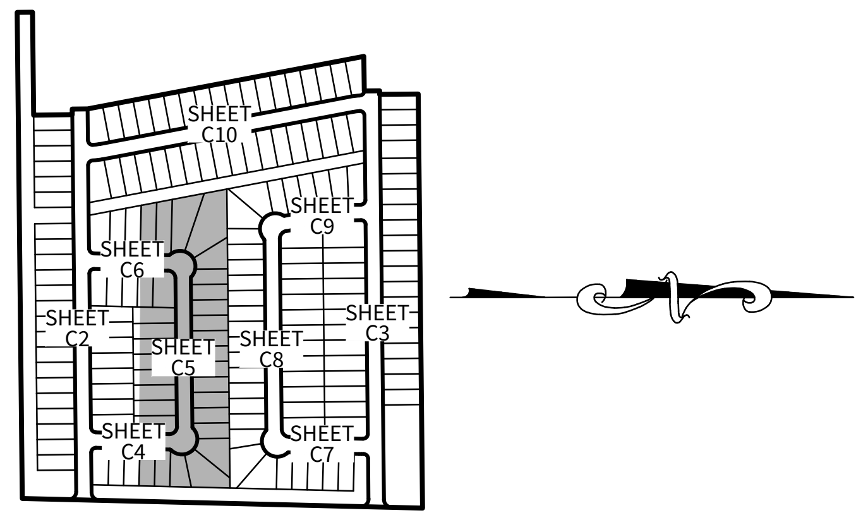
REVISIONS
1. 07/22/2021 - UPDATED CURB RETURN AND PAVEMENT ELEVATIONS, LEGEND REVISIONS
2. 09/23/2021 - REMOVED STREET WASHOUT ON ADJACENT STREET
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C4





SITE MAP
NOT TO SCALE

Point	Elevation	Description
A	601.79'	BOTTOM OF GUTTER
B	602.10'	BOTTOM OF GUTTER
C	602.41'	BOTTOM OF GUTTER
D	602.72'	BOTTOM OF GUTTER
E	602.97'	BOTTOM OF GUTTER
F	603.11'	BOTTOM OF GUTTER
G	603.10'	BOTTOM OF GUTTER
H	602.34'	BOTTOM OF GUTTER
I	602.58'	BOTTOM OF GUTTER

ELEVATIONS:

XXXX.XX	PROPOSED TOP OF CONCRETE CURB ELEVATION
XXXX.XX	PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

1	CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.

LEGEND:

- PROPOSED DRIVEWAY LOCATION

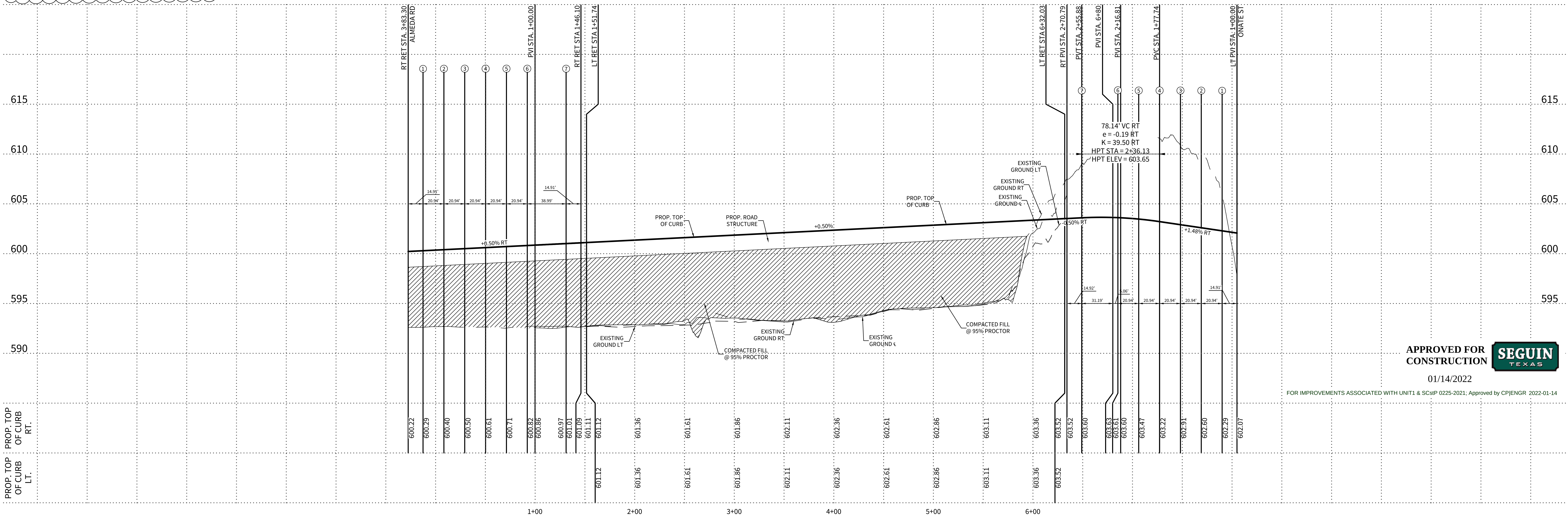
TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

△1

DIONICIO LOOP

STA. 1+00.00 TO STA. 6+80.34

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



APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "DIONICIO LOOP"

DATE
07/29/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2.
3.
4.
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DAVID D. CUPIT II
122076
07.29.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C5

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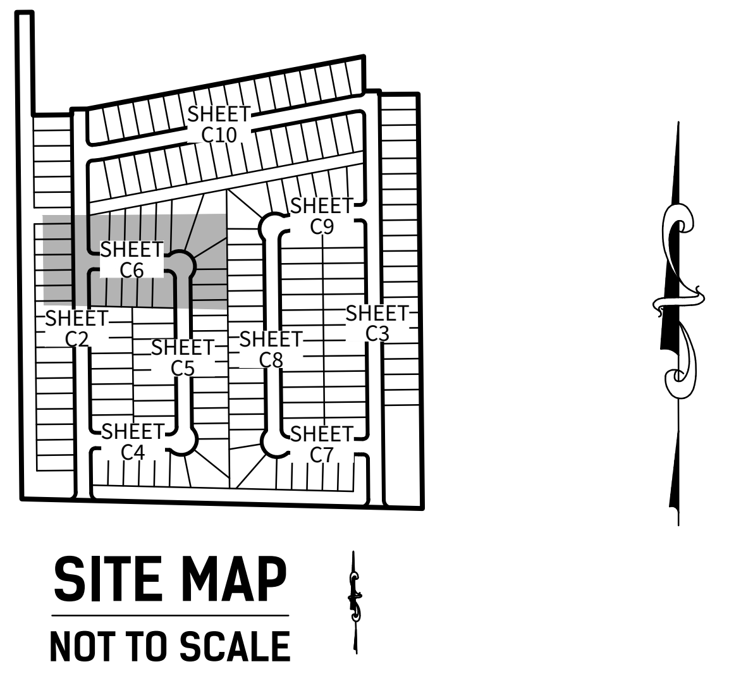


SITE MAP
NOT TO SCALE

NOTES:

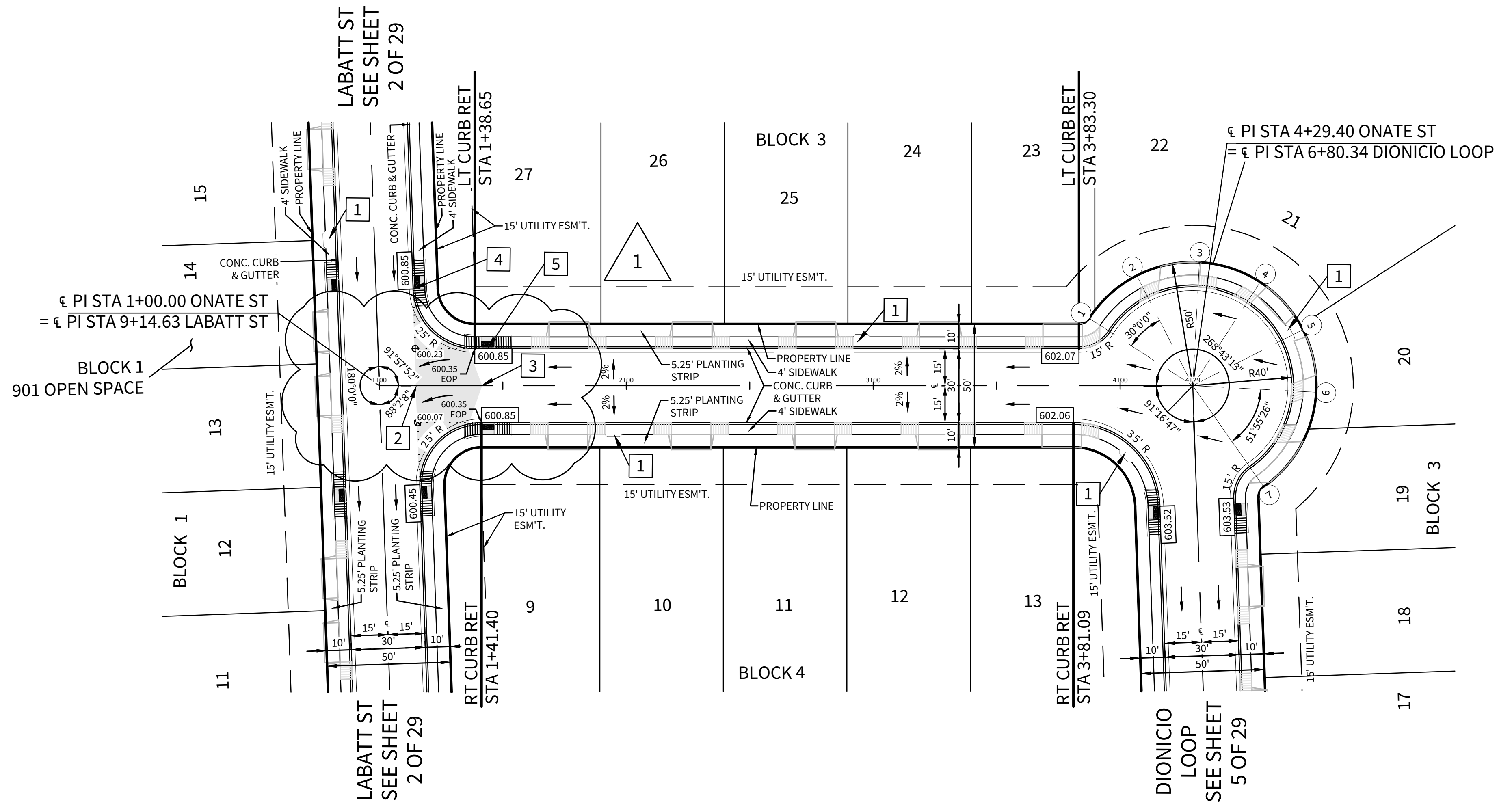
1. CONTRACTOR TO CONSTRUCT ALL ADA RAMPS WITH INFRASTRUCTURE.

ELEVATIONS:

XXXX.XX	PROPOSED TOP OF CONCRETE CURB ELEVATION
XXXX.XX	PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

1	CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2	BEGIN WASHOUT STA 1+15.01
3	END WASHOUT STA 1+41.40
4	END CURB & GUTTER/BEGIN SPILL CURB
5	END SPILL CURB/BEGIN CURB & GUTTER



LEGEND:

- PROPOSED DRIVEWAY LOCATION

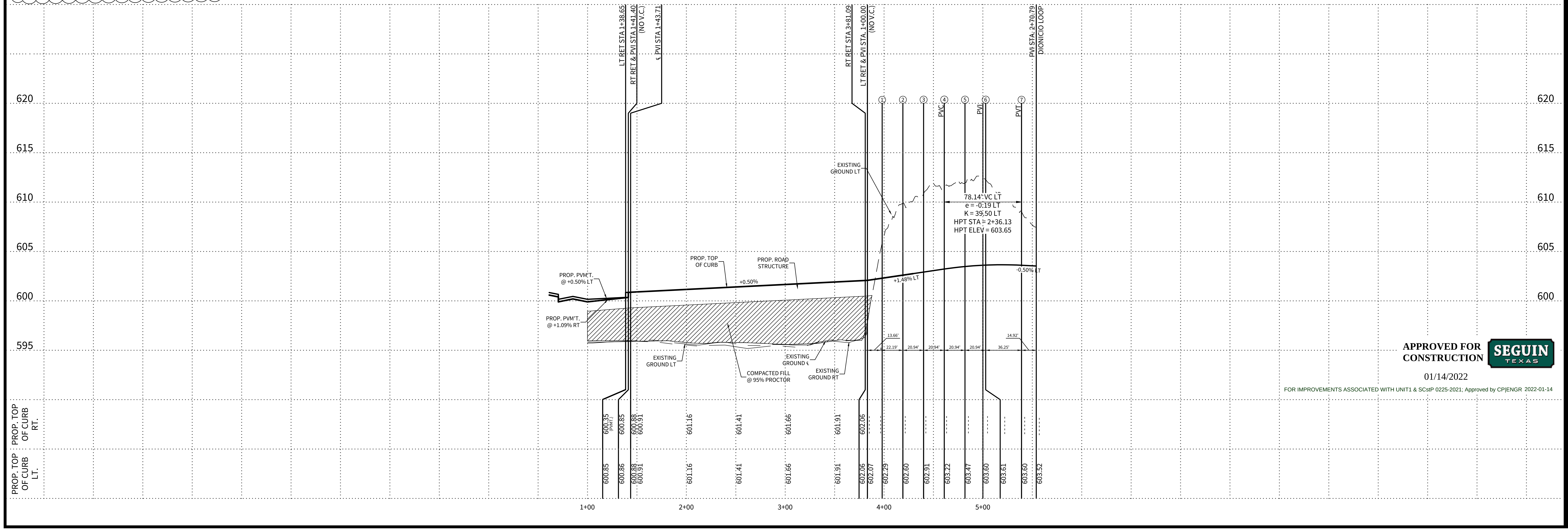
TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

1

ONATE ST

STA. 1+00.00 TO STA. 4+29.40

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



APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "ONATE ST"

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2.
3.
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9.

DAVID D. CUPIT II
122076
07.29.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C6

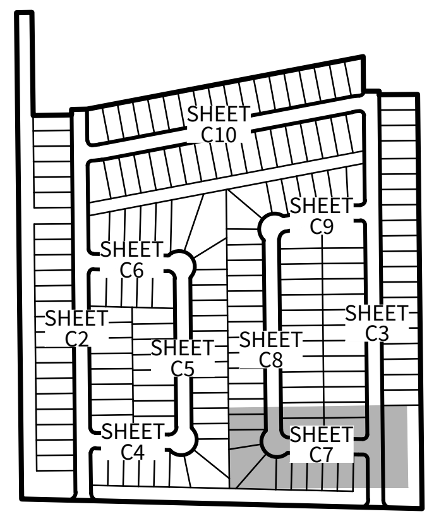
ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

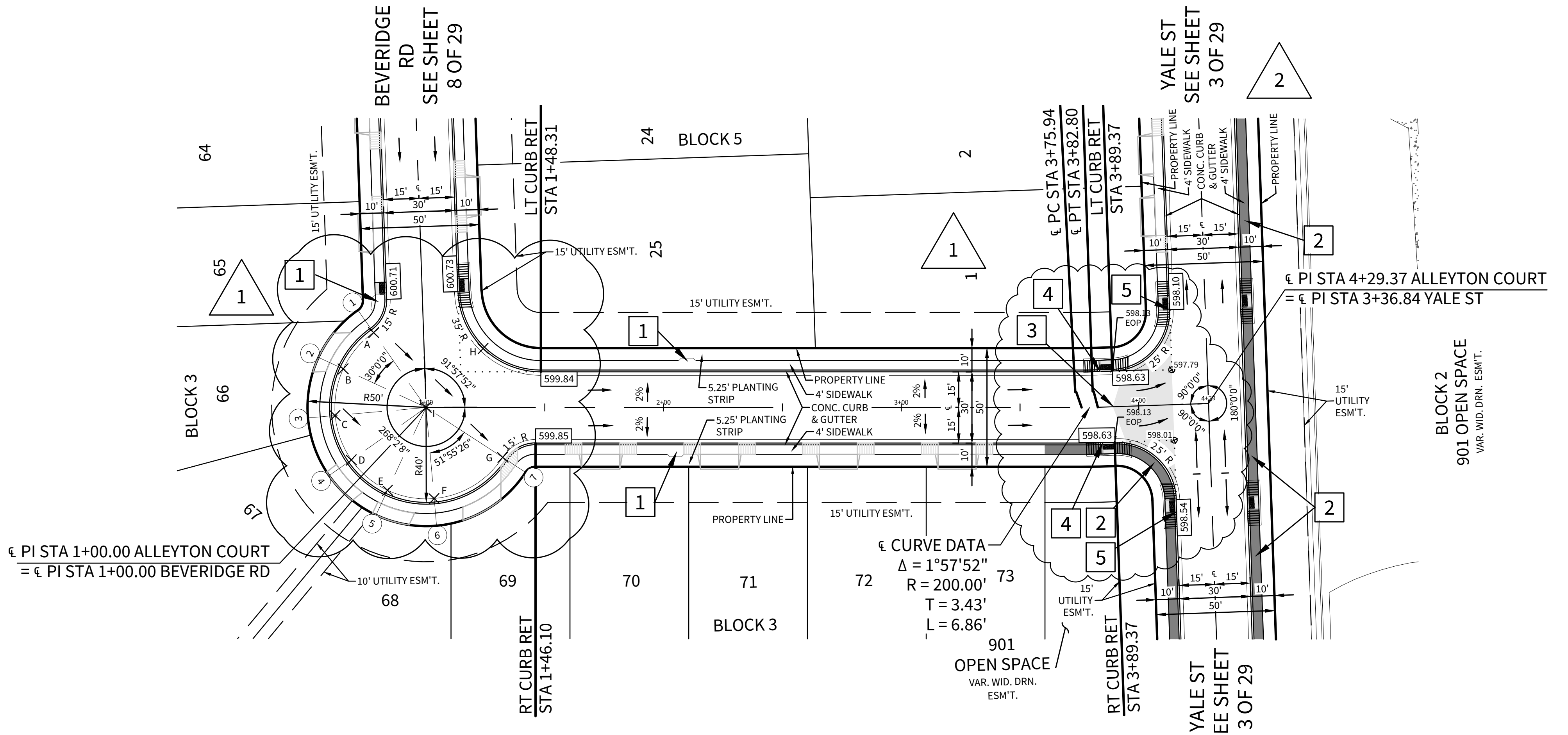
KEYNOTES:

1 CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2 CONTRACTOR TO CONSTRUCT SIDEWALK WITH INFRASTRUCTURE
3 BEGIN WASHOUT STA 3+89.37
4 END CURB & GUTTER/BEGIN SPILL CURB
5 END SPILL CURB/BEGIN CURB & GUTTER



SITE MAP
NOT TO SCALE

Point	Elevation	Description
A	600.13'	BOTTOM OF GUTTER
B	600.03'	BOTTOM OF GUTTER
C	599.92'	BOTTOM OF GUTTER
D	599.82'	BOTTOM OF GUTTER
E	599.71'	BOTTOM OF GUTTER
F	599.61'	BOTTOM OF GUTTER
G	599.43'	BOTTOM OF GUTTER
H	599.83'	BOTTOM OF GUTTER
I	599.83'	BOTTOM OF GUTTER



LEGEND:

▯ - PROPOSED DRIVEWAY LOCATION

▨ - PROPOSED EARTHEN DRAIN

░ - PROPOSED CONCRETE RIP-RAP

▨ - EXISTING PAVEMENT LIMITS

■ - PROPOSED SIDEWALK (TO BE CONSTRUCTED WITH INFRASTRUCTURE)

□ - STREET WASHOUT (SEE SHEET C12)

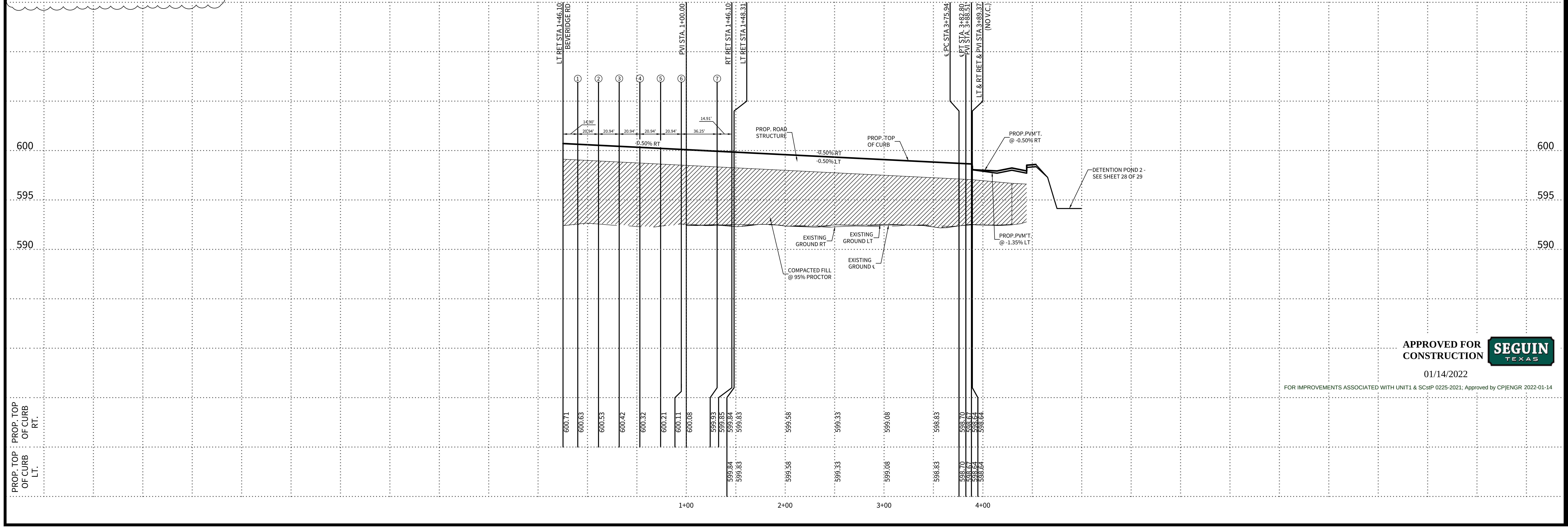
1

TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

ALLEYTON COURT

STA. 1+00.00 TO STA. 4+29.37

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



APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

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CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "ALLEYTON COURT"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2. 09/23/2021 - REMOVED STREET WASHOUT ON ADJACENT STREET
3.
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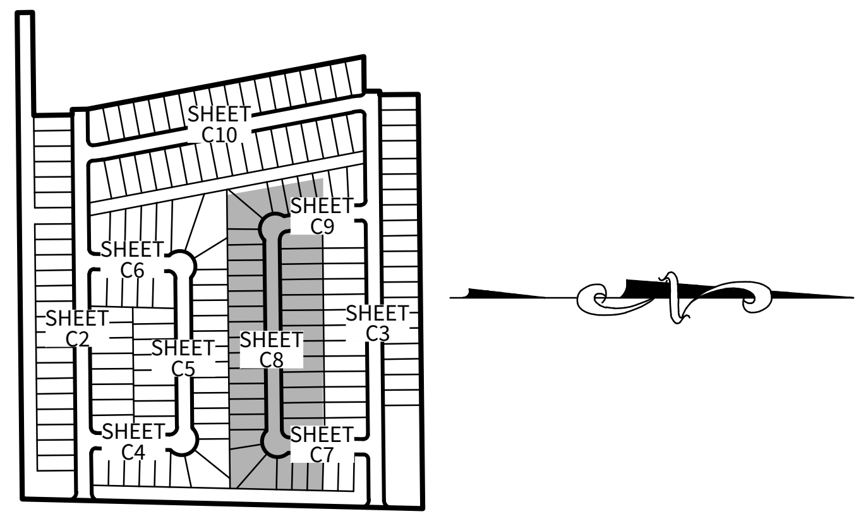
DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C7

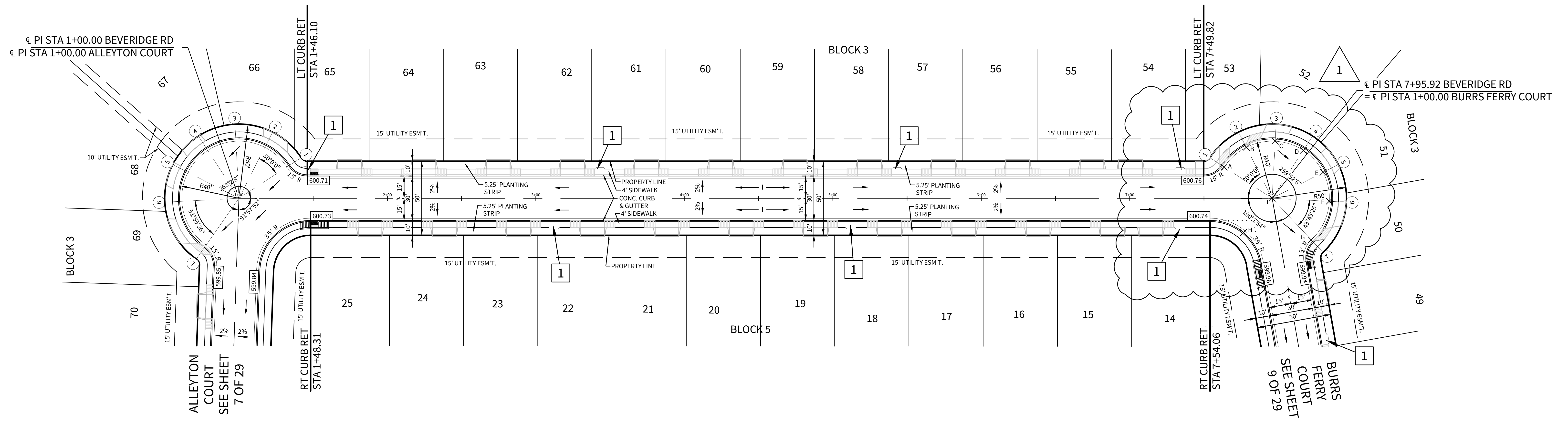
P:\03480\002\2-Drawings\01_STR6_STPP.dwg 2021/09/22 10:11am acalvillo



SITE MAP
NOT TO SCALE

Point	Elevation	Description
A	600.19'	BOTTOM OF GUTTER
B	600.09'	BOTTOM OF GUTTER
C	599.98'	BOTTOM OF GUTTER
D	599.88'	BOTTOM OF GUTTER
E	599.77'	BOTTOM OF GUTTER
F	599.67'	BOTTOM OF GUTTER
G	599.51'	BOTTOM OF GUTTER
H	599.85'	BOTTOM OF GUTTER
I	600.39'	CENTER OF CUL-DE-SAC

2



ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

1 CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.

LEGEND:

▯ - PROPOSED DRIVEWAY LOCATION

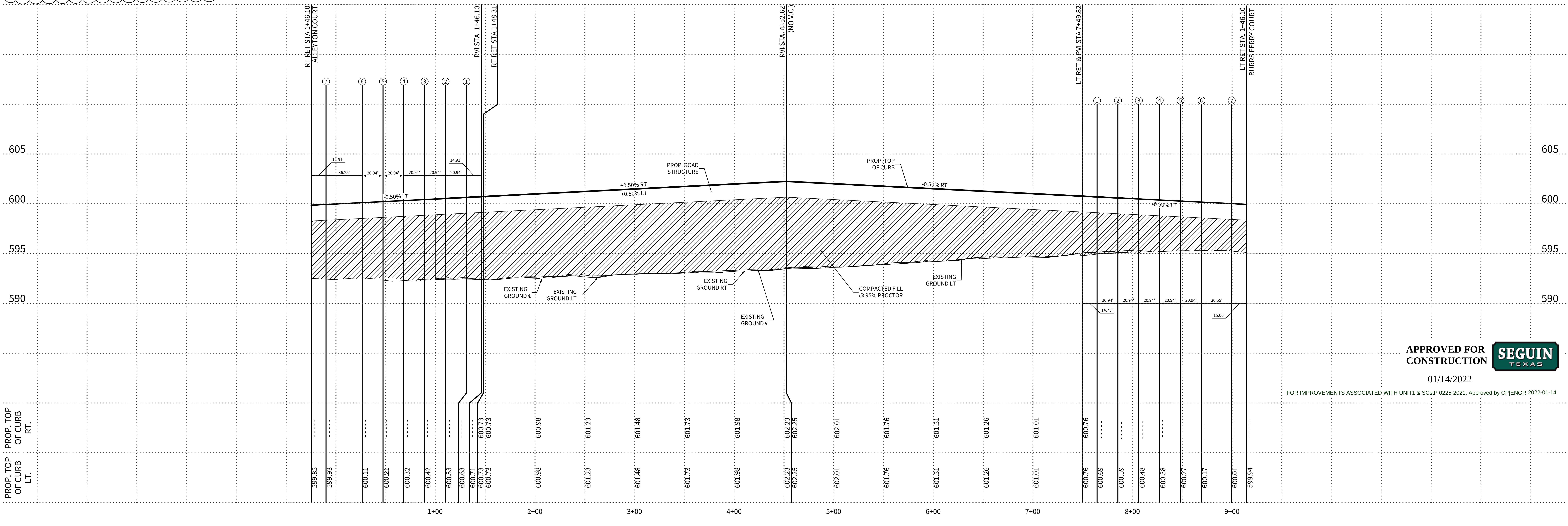
TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED
THUS "◠" UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED
THUS "◠" UNLESS OTHERWISE NOTED. (SEE SHEET C13)

1

BEVERIDGE RD

STA. 1+00.00 TO STA. 7+95.92

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



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE
EST. 1980
ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "BEVERIDGE RD"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2. 09/23/2021 - UPDATED ELEVATIONS TABLE
3.
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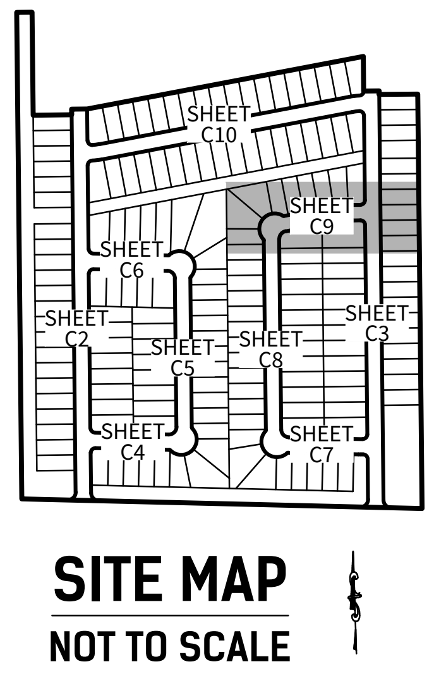
DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C8



SITE MAP
NOT TO SCALE

ELEVATIONS:

XXXX.XX PROPOSED TOP OF CONCRETE CURB ELEVATION

XXXX.XX PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

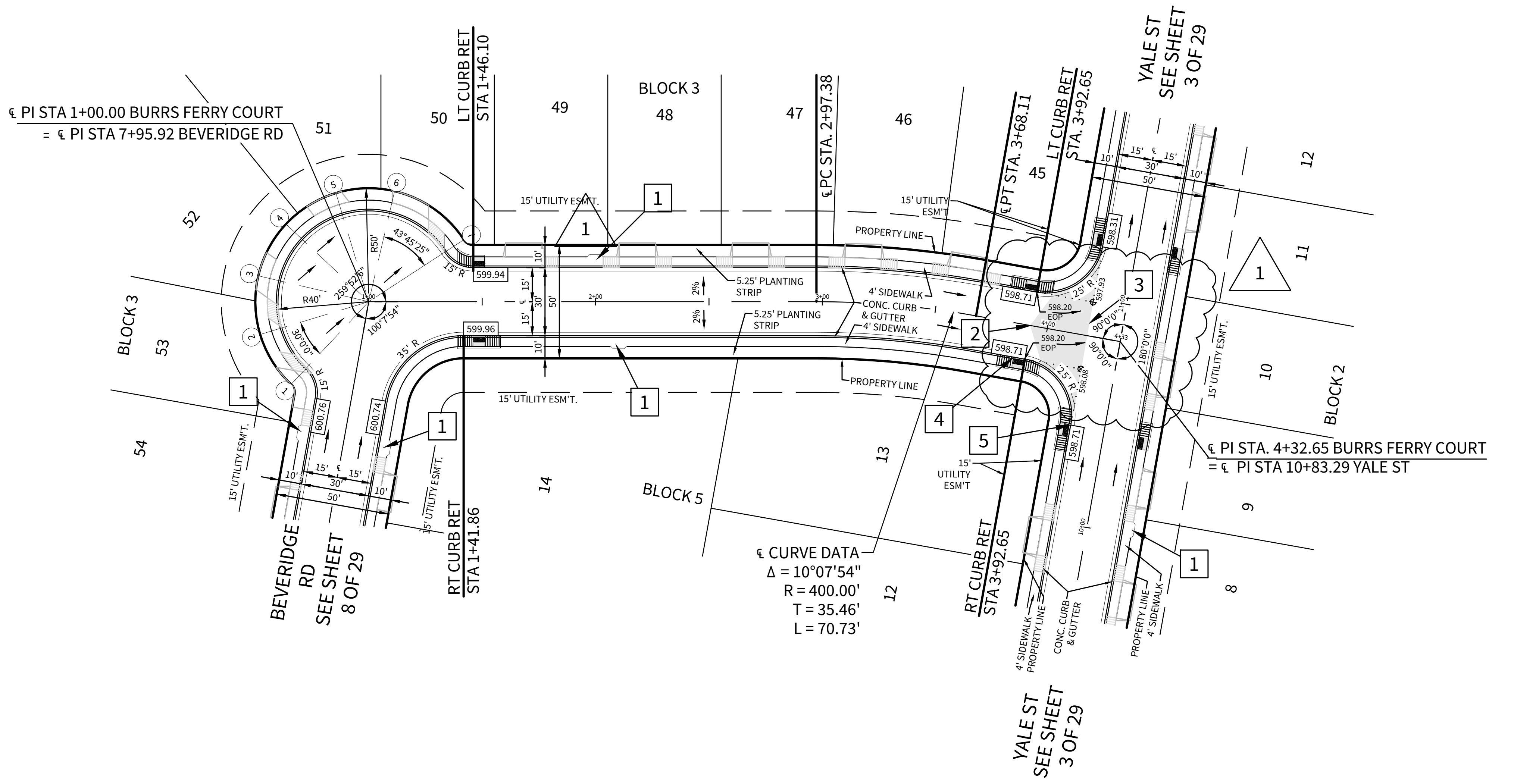
1	CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2	BEGIN WASHOUT STA 3+92.65
3	END WASHOUT STA 4+17.65
4	END CURB & GUTTER/BEGIN SPILL CURB
5	END SPILL CURB/BEGIN CURB & GUTTER

LEGEND:

- PROPOSED DRIVEWAY LOCATION
- ▩ - PROPOSED SIDEWALK (TO BE CONSTRUCTED WITH INFRASTRUCTURE)
- ▨ - STREET WASHOUT (SEE SHEET C12)

TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

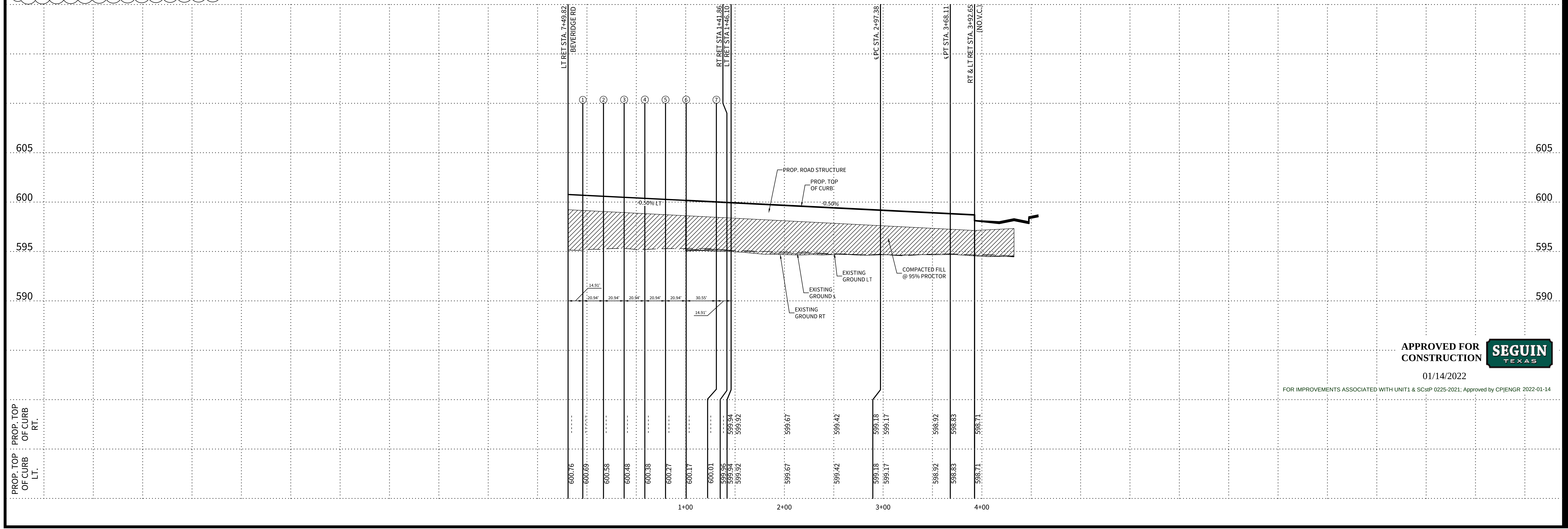
1



BURRS FERRY COURT

STA. 1+00.00 TO STA. 4+32.65

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



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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San Antonio, Texas 78231
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CORDOVA TRAILS SUBDIVISION UNIT 1

STREET PLAN & PROFILE "BURRS FERRY COURT"

DATE
07/23/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2.
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DAVID D. CUPIT II
122076
07.29.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C9

P:\03480\002\2-Drawings\01_STR8_STPP.dwg 2021/07/23 3:49pm sgonzales

NOTES:

1. CONTRACTOR TO CONSTRUCT ALL ADA RAMPS WITH INFRASTRUCTURE.

ELEVATIONS:

XXXX.XX	PROPOSED TOP OF CONCRETE CURB ELEVATION
XXXX.XX	PROPOSED ASPHALT PAVEMENT ELEVATION

KEYNOTES:

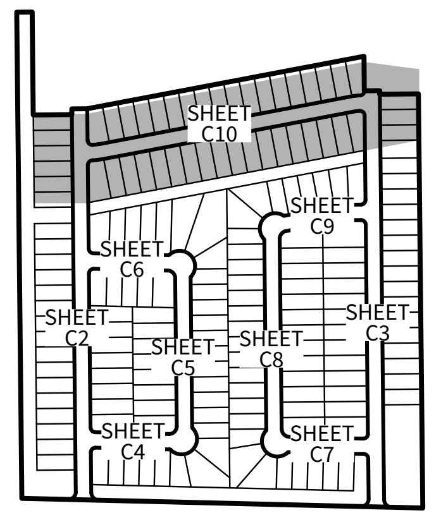
1	CONTRACTOR TO INSTALL 5' X 5' SIDEWALK PASSING SPACE WITH HOMEBUILDING.
2	CONTRACTOR TO INSTALL SIDEWALK WITH INFRASTRUCTURE.
3	BEGIN WASHOUT STA 1+15.00
4	END WASHOUT STA 1+41.94
5	BEGIN WASHOUT STA 10+19.74
6	END WASHOUT STA 10+46.67
7	END CURB & GUTTER/BEGIN SPILL CURB
8	END SPILL CURB/BEGIN CURB & GUTTER

LEGEND:

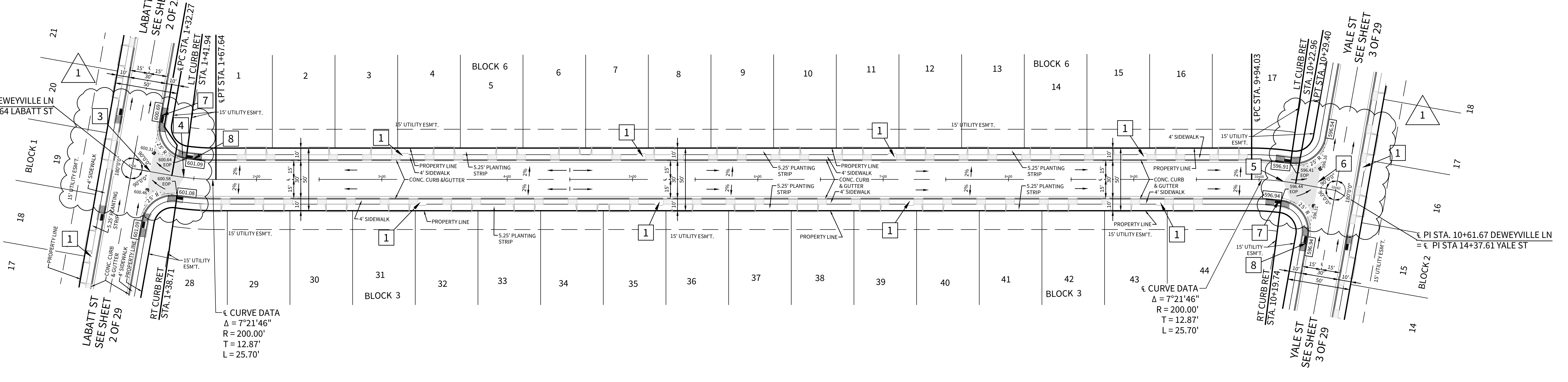
▯	- PROPOSED DRIVEWAY LOCATION
▩	- PROPOSED SIDEWALK (TO BE CONSTRUCTED WITH INFRASTRUCTURE)
▢	- STREET WASHOUT (SEE SHEET C12)

TYPE "1" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C12)
TYPE "5" WHEEL CHAIR RAMPS ARE INDICATED THUS " " UNLESS OTHERWISE NOTED. (SEE SHEET C13)

△1



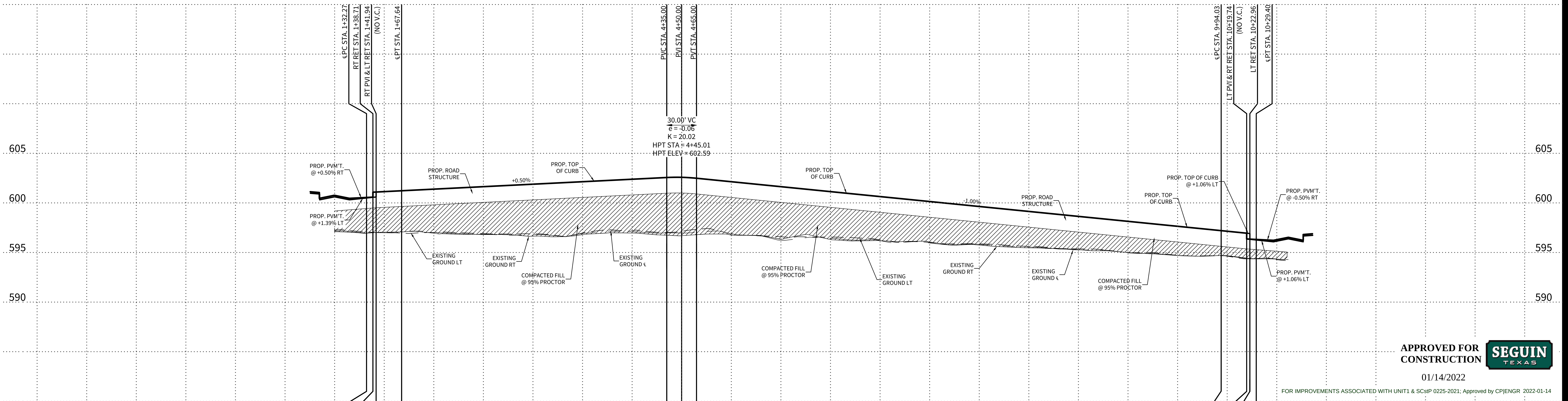
SITE MAP
NOT TO SCALE



DEWEYVILLE LN

STA. 1+00.00 TO STA. 10+61.67

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



PROP. TOP OF CURB RT.	600.55 (PVMT.)	601.08	601.09	601.13	601.22	601.38	601.63	601.88	602.13	602.38	602.56	602.58	602.49	602.14	601.64	601.14	600.64	600.14	599.64	599.14	598.64	598.14	597.64	597.20	597.14	596.94	596.43 (PVMT.)	596.39 (PVMT.)
PROP. TOP OF CURB LT.	600.07 (PVMT.)	600.11 (PVMT.)	601.09	601.13	601.22	601.38	601.63	601.88	602.13	602.38	602.56	602.58	602.49	602.14	601.64	601.14	600.64	600.14	599.64	599.14	598.64	598.14	597.64	597.20	597.14	596.94	596.91	596.34 (PVMT.)

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE EST. 1980 ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1
STREET PLAN & PROFILE "DEWEYVILLE LN"

DATE
07/25/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 07/08/2021 - UPDATED EOP ELEVATIONS & ADDED EOP BELOW TOP OF CURB ELEVATIONS
2.
3.
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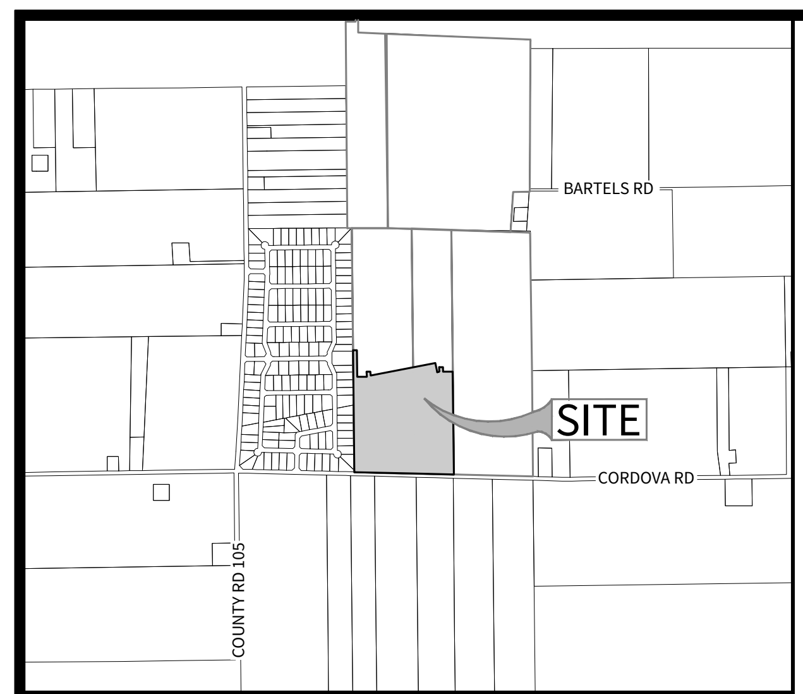
DAVID D. CUPIT II
122076
07.29.21
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C10



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

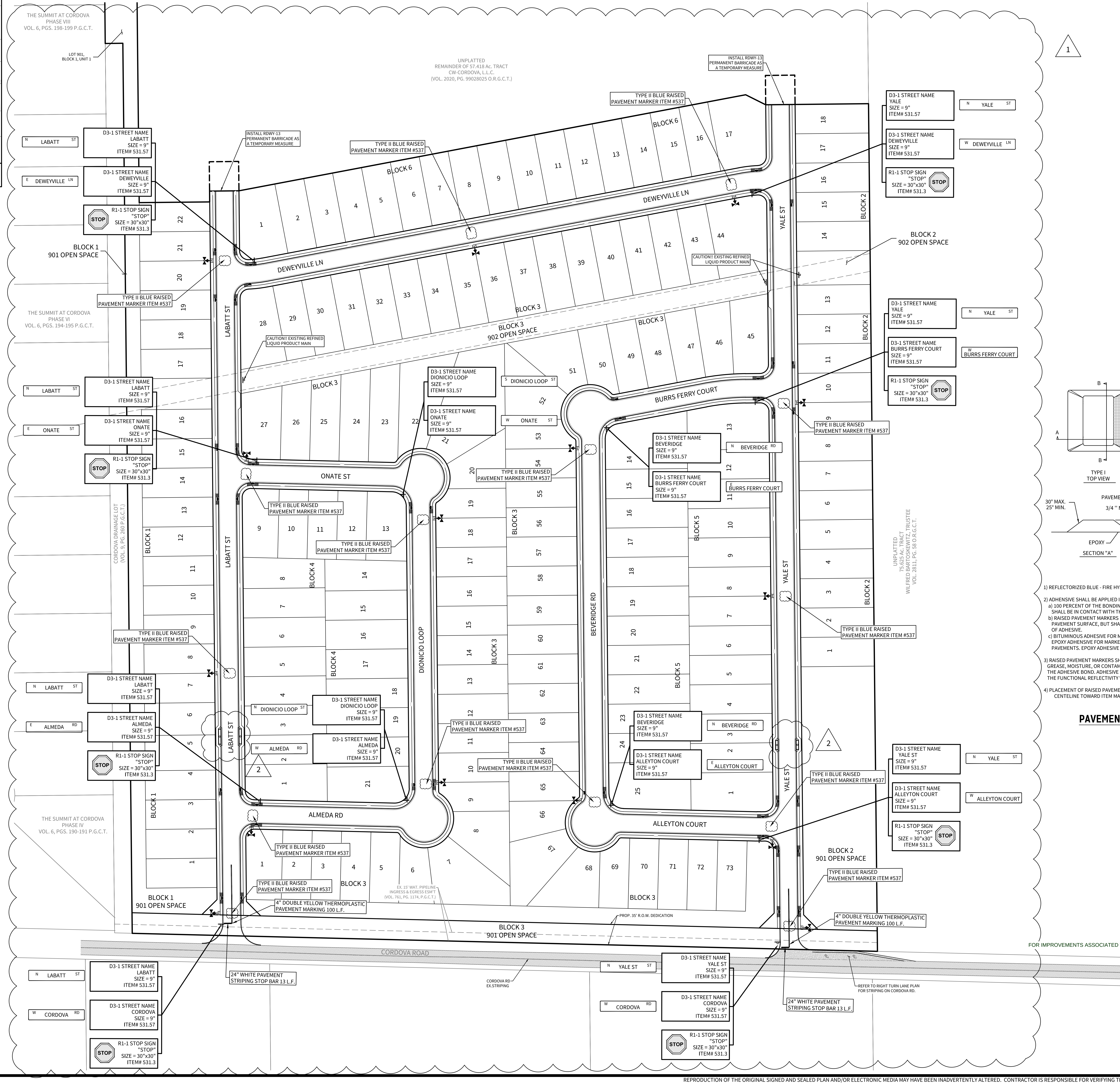
CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

1

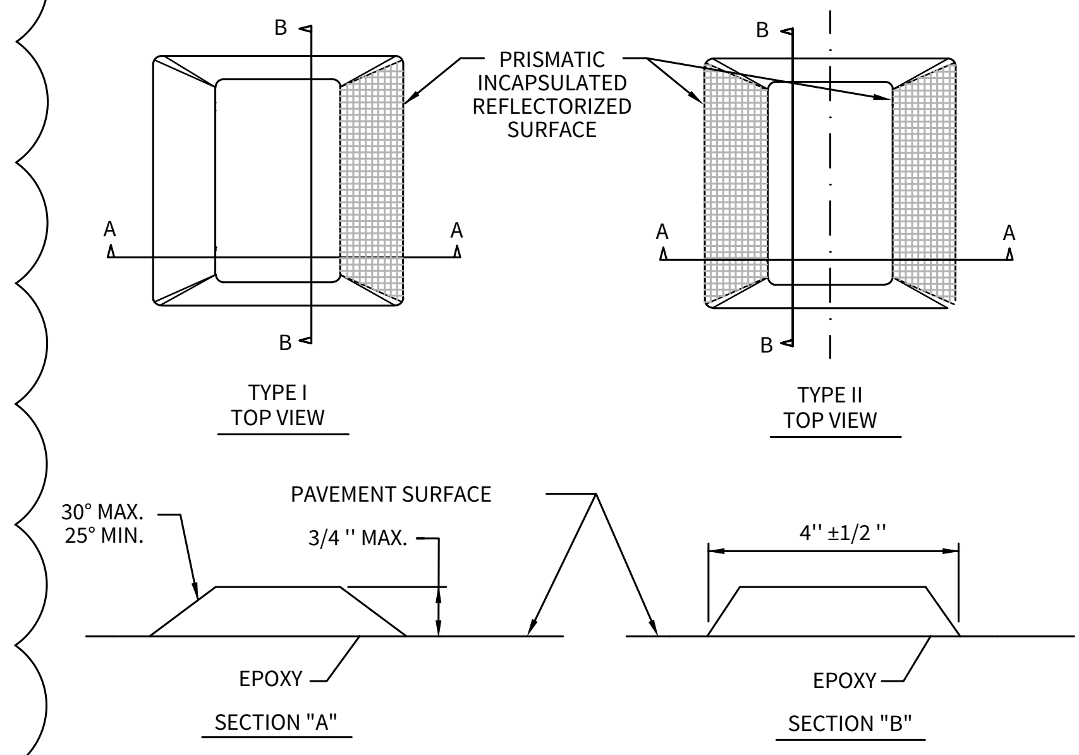
GENERAL NOTE:

CONTRACTOR TO REFERENCE "STREET NAME SIGN PLATE DETAIL, RDWY 11.2" ON SHEET C18 FOR CITY OF SEGUIN STANDARDS.



1

SCALE: 1"=80'
0 80 160



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.

PAVEMENT REFLECTORS DETAIL

N.T.S.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

TRAFFIC SIGNAGE & STRIPING PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED STREET SIGNS, ADDED GENERAL NOTE
2. 09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS
3.
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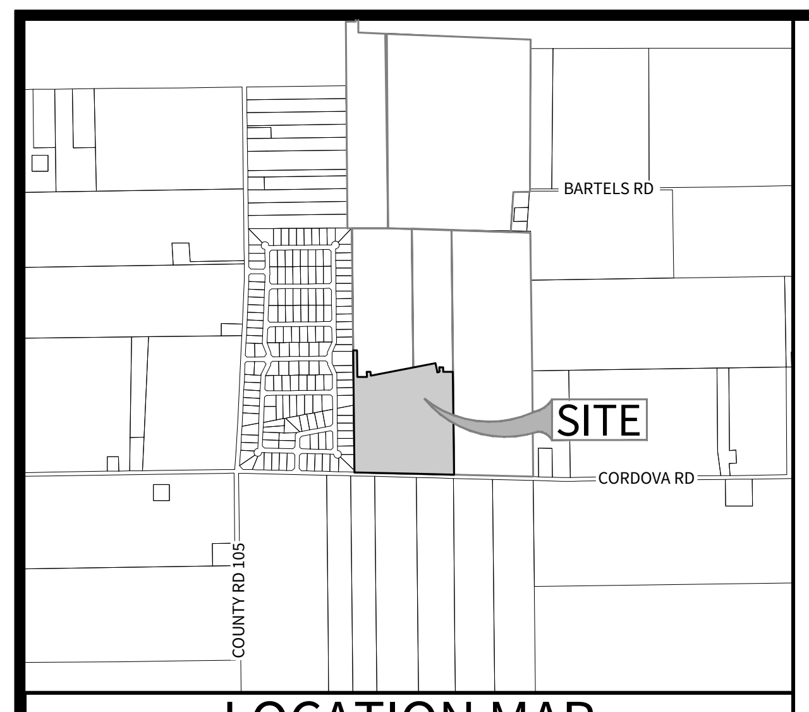
DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C11



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

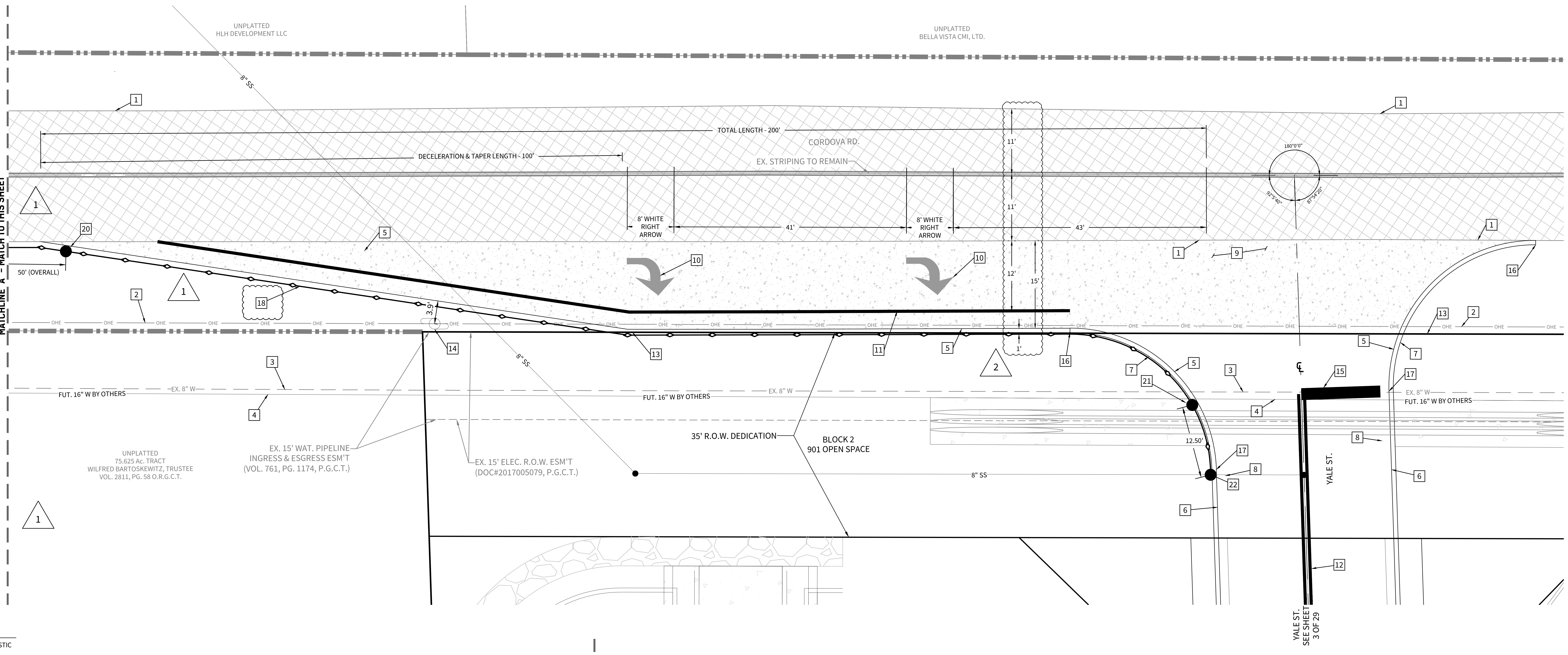
M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

SCALE: 1"=10'

0 10 20

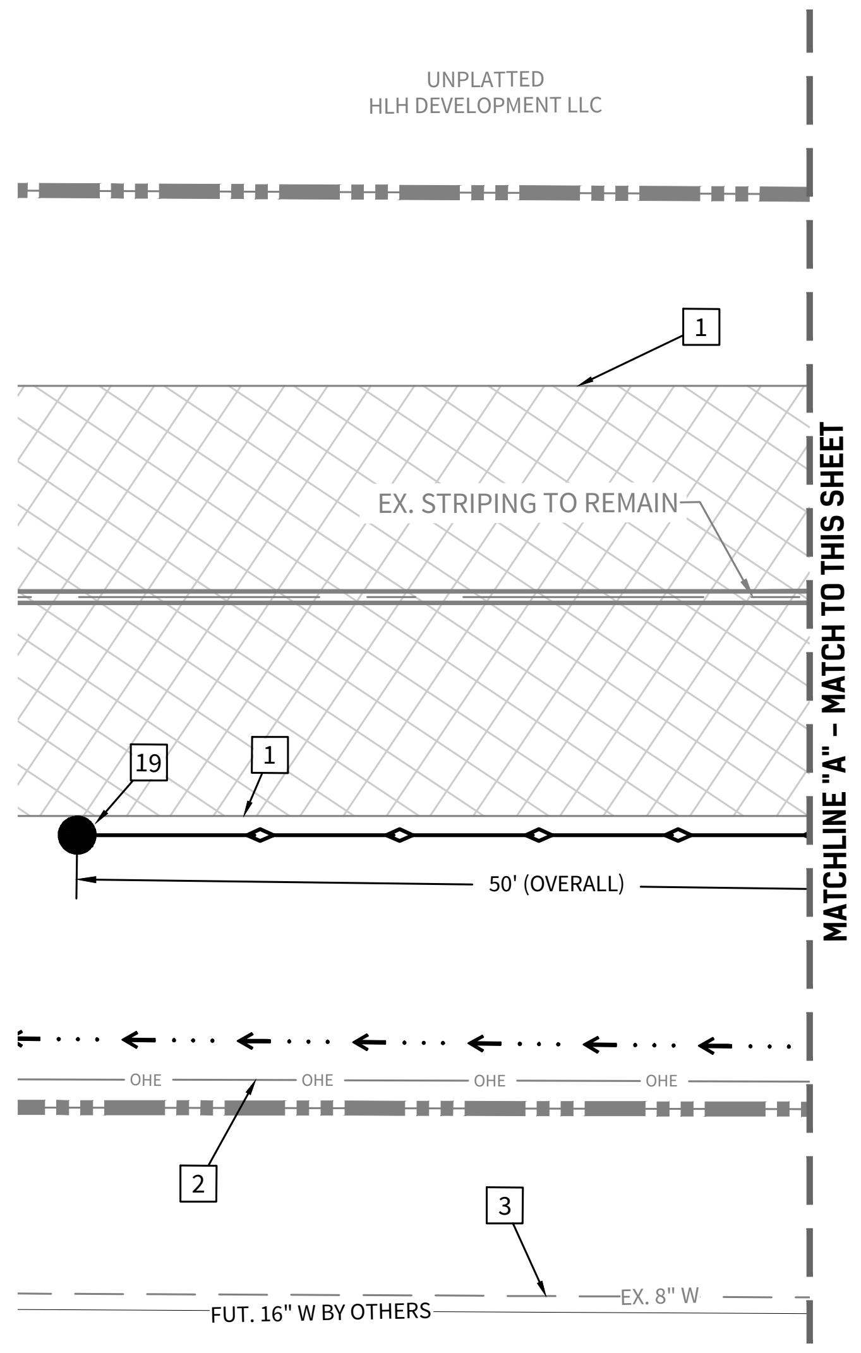
LEGEND:

EXISTING ROW LINE	— · · — · · —
PROPOSED ROW LINE	———
METAL BEAM GUARD FENCE	—◇—◇—◇—
EXISTING OVERHEAD ELECTRIC	— — OHE — —
EXISTING FIBER OPTIC MANHOLE	Ⓣ
EXISTING GUY WIRE	
EXISTING POWER POLE	
EXISTING SIGN	
EXISTING PAVEMENT	▨
PROPOSED PAVEMENT	▒
PROPOSED CONCRETE RIP-RAP	▒



KEYNOTES

1	EX. EDGE OF PAVEMENT	12	PROP. 4" DOUBLE YELLOW THERMOPLASTIC PVM'T. MARKING
2	EX. OVERHEAD ELECTRIC	13	EX. FENCING TO BE REMOVED & EX. R.O.W. LIMITS
3	EX. 8" WATER MAIN	14	EX. POWER POLE
4	FUT. 16" WATER MAIN	15	PROP. 24" WHITE PAVEMENT STRIPING STOP BAR
5	PROP. EDGE OF PAVEMENT	16	BEGIN HEADER CURB
6	PROP. CURB	17	END HEADER CURB/BEGIN CURB & GUTTER
7	PROP. HEADER CURB	18	METAL BEAM GUARD FENCE
8	PROP. GUTTER	19	BEGIN SINGLE GUARDRAIL TERMINAL
9	PROP. PAVEMENT WIDENING	20	END SINGLE GUARDRAIL TERMINAL CONTRACTOR TO INSTALL 200 L.F. OF METAL BEAM GUARD FENCE W/WOOD POSTS
10	PROP. RIGHT TURN LANE MARKER	21	END METAL BEAM GUARD FENCE & INSTALL BEGIN UPSTREAM ANCHOR TERMINAL
11	PROP. 8" WHITE THERMOPLASTIC PAVEMENT MARKING	22	END UPSTREAM ANCHOR TERMINAL



NOTES:

1. ALL PAVEMENT MARKINGS AND STRIPING SHALL BE HOT APPLIED THERMOPLASTIC PAVEMENT MARKINGS.
2. THE CONTRACTOR SHALL BE AWARE THAT EXISTING OVERHEAD ELECTRIC, 4" & 8" WATER MAINS EXIST ALONG CORDOVA ROAD. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED, POTHOLED TO VERIFY DEPTH, AND COMPARE WITH THE GEOTECH REPORT 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.
3. CONTRACTOR TO COMPLY WITH ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGULATIONS, LATEST EDITION, AND ALL CITY OF SEGUIN REQUIREMENTS.
4. CONTRACTOR TO NOTIFY THE CITY OF SEGUIN AND SPRINGS HILL WATER SUPPLY 24 HOURS PRIOR TO CONSTRUCTION COMMENCEMENT.
5. CONTRACTOR TO PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES.
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9. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
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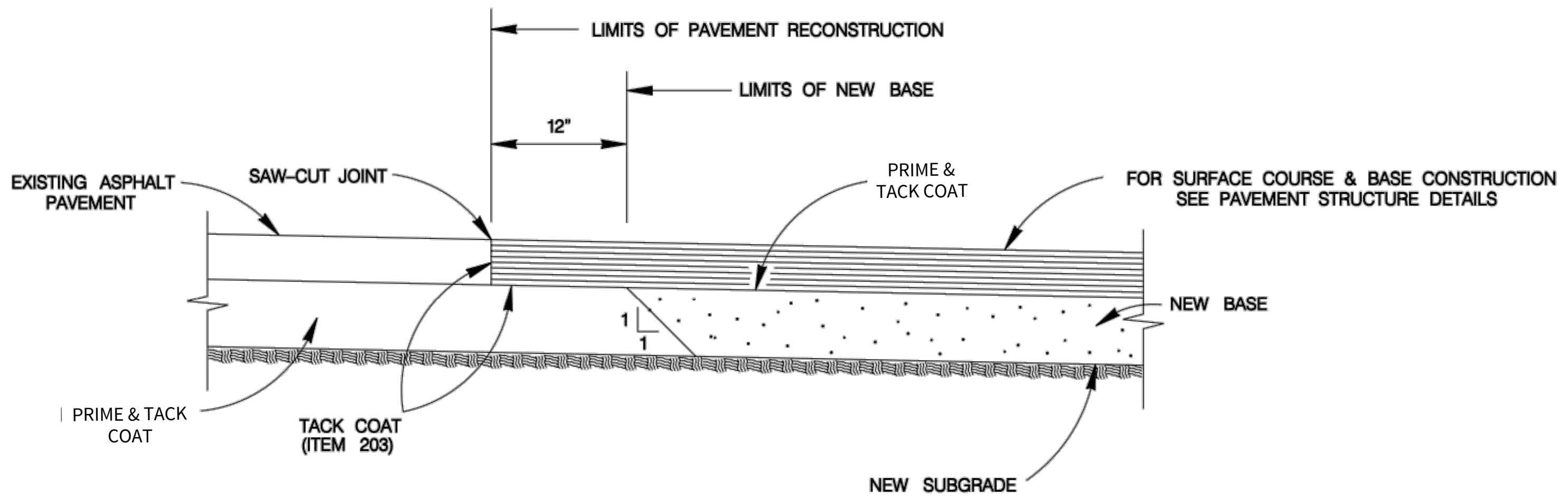
11. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DAMAGED OR REMOVED DRIVEWAYS AND FENCING TO EXISTING OR BETTER CONDITION.
12. CONTRACTOR IS RESPONSIBLE FOR SHORING POWER POLES IF AND AS NEEDED. N.S.P.I.

UPSTREAM MBGF CALCULATOR

ADT >750	Du=	4.00 ft
	Gu=	1.00 ft
	Lu=	187.50 ft
	Dd=	30.00 ft
	Gd=	34.00 ft
	Ld=	0.00 ft
	Lp=	4.00 ft
(MBGF TOTAL LENGTH) Ltotal=		191.50 ft
UPSTREAM - SINGLE GUARD TERMINAL SGT(12S)31-18		50.00 ft
DOWNSTREAM ANCHOR TERMINAL (GF (31) DAT-19) =		12.50 ft
(MBGF TOTAL LENGTH INCLUDING UPSTREAM AND DOWNSTREAM TREATMENTS) Ltotal=		254.00 ft
TOTAL LENGTH TO THE NEAREST 25' INTERVAL =		262.50 ft

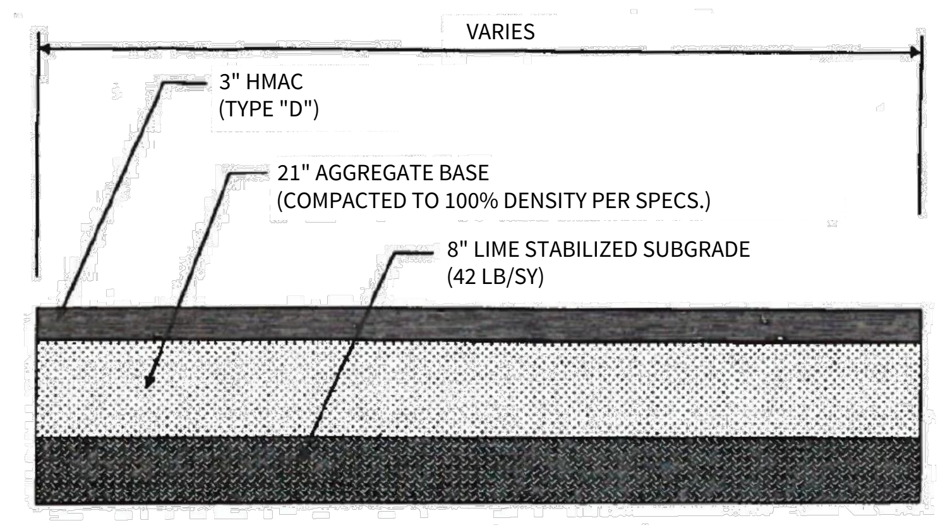
Where:

- L_u = Length of guard fence needed (upstream of area of concern), ft
- L_d = Length of guard fence needed (downstream of area of concern), ft
- D_u = Distance from edge of travel lane to far side of area of concern or to outside edge of clear zone, whichever is least, ft (for upstream direction of traffic)
- D_d = Distance from edge of travel lane to far side of area of concern or to outside edge of clear zone, whichever is least, ft (for opposing direction of traffic)
- G_u = Guard fence offset from edge of travel lane adjacent to proposed guard fence, ft
- G_d = Guard fence offset from edge of opposing direction of travel lane (centerline)


LIMITS OF PAVEMENT RECONSTRUCTION
LIMITS OF NEW BASE
12"
EXISTING ASPHALT PAVEMENT
SAW-CUT JOINT
PRIME & TACK COAT
FOR SURFACE COURSE & BASE CONSTRUCTION SEE PAVEMENT STRUCTURE DETAILS
NEW BASE
1
1
PRIME & TACK COAT
TACK COAT (ITEM 203)
NEW SUBGRADE

PAVEMENT JUNCTION DETAILS

N.T.S.


VARIES
3" HMAC (TYPE "D")
21" AGGREGATE BASE (COMPACTED TO 100% DENSITY PER SPECS.)
8" LIME STABILIZED SUBGRADE (42 LB/SY)

CORDOVA ROAD PAVEMENT STRUCTURE DETAIL

N.T.S.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CAUTION!!

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CUDEENGINEERS.COM

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

CORDOVA TRAILS SUBDIVISION UNIT 1

RIGHT TURN LANE PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/22/2021 - ADDED METAL BEAM GUARD FENCE
2. 09/23/2021 - ADDED CORDOVA ROAD DIMENSIONS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C11A

11A OF 29

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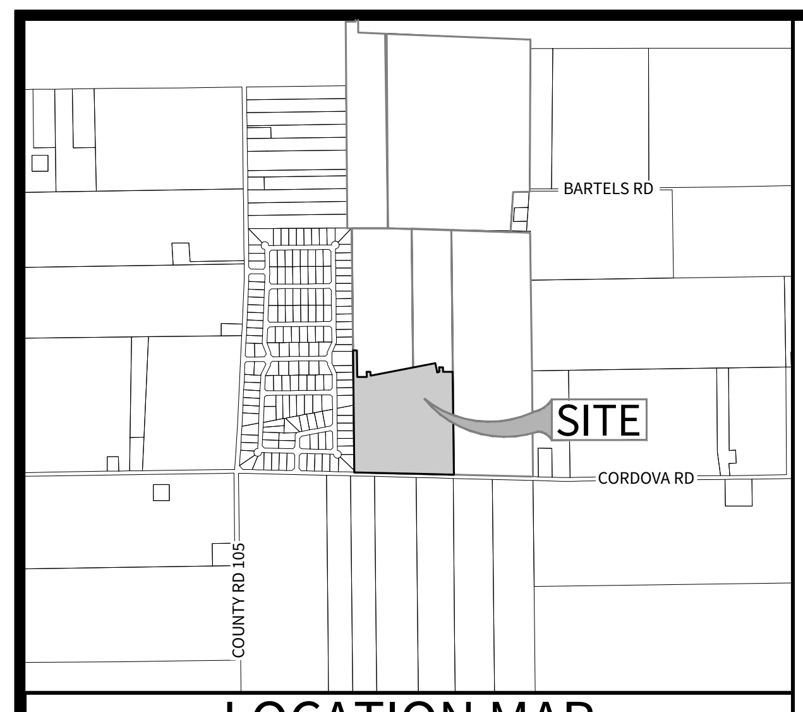
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP

N.T.S.

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

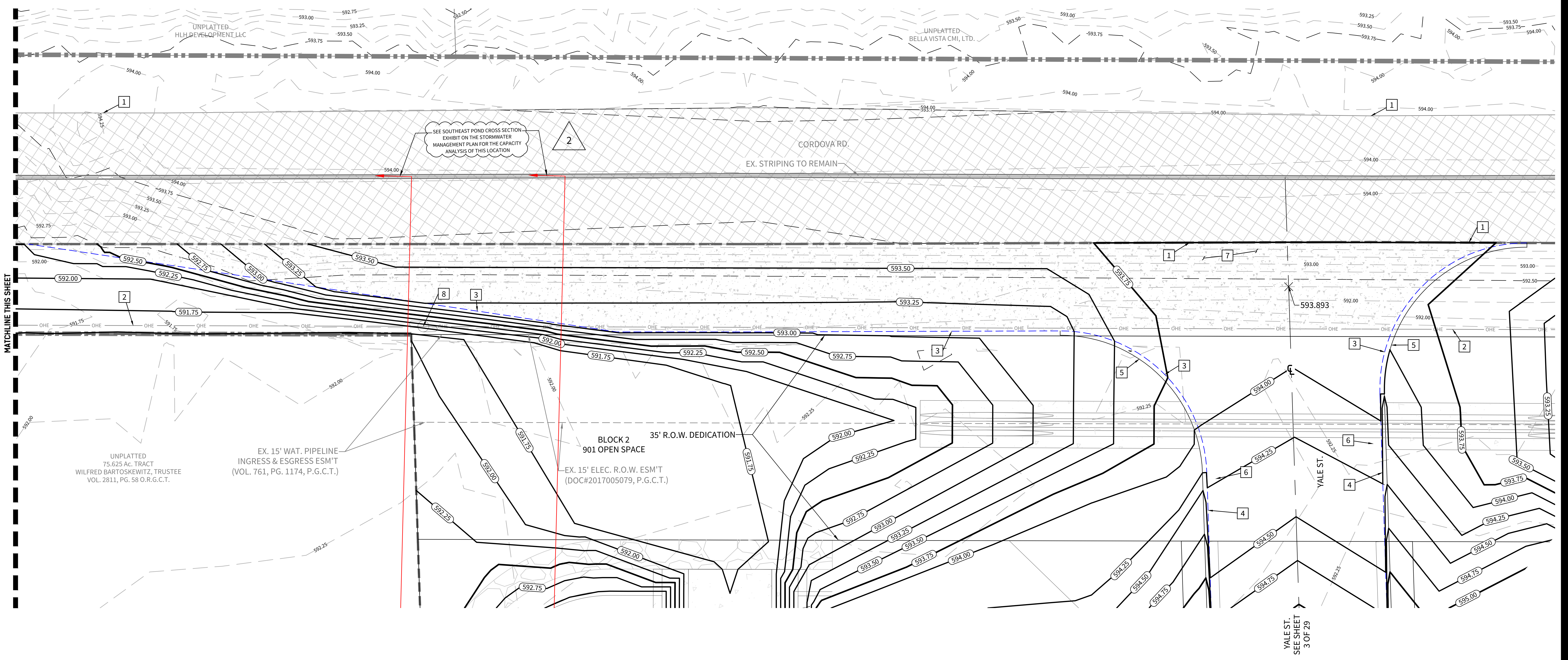
M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

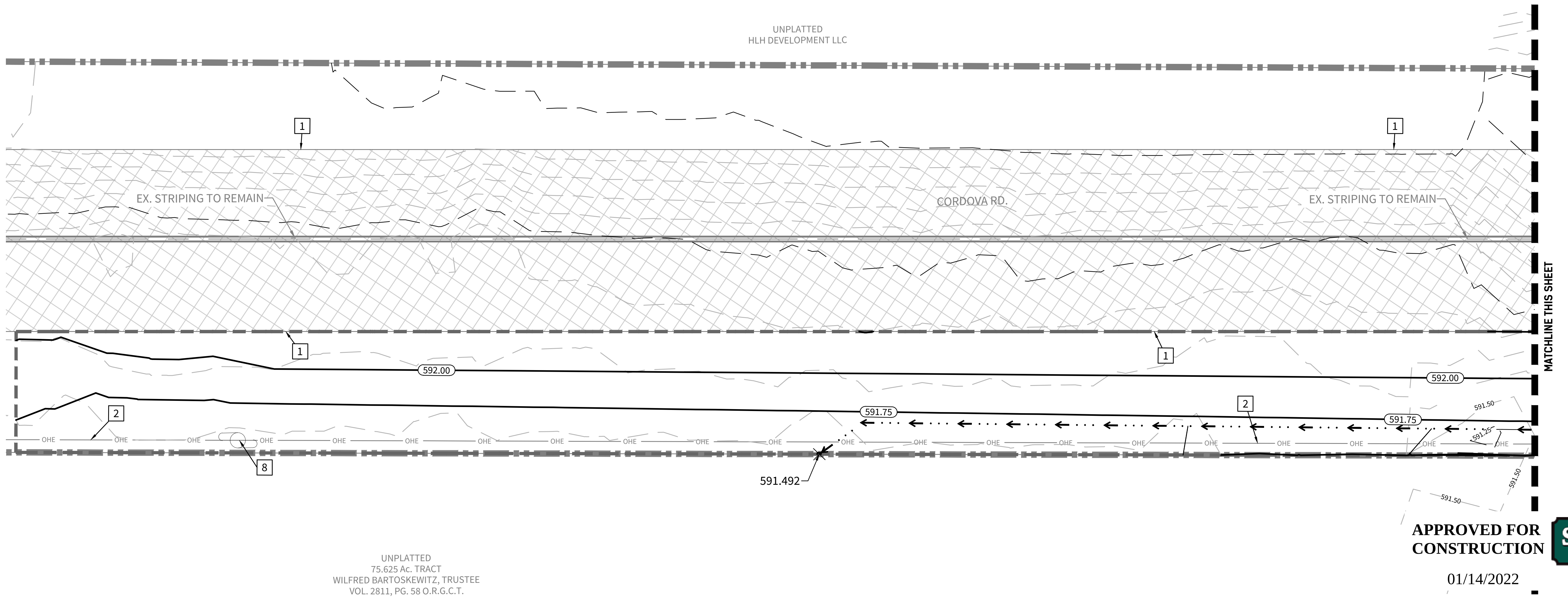
SCALE: 1"=10'

0 10 20

KEYNOTES

1	EX. EDGE OF PAVEMENT
2	EX. OVERHEAD ELECTRIC
3	PROP. EDGE OF PAVEMENT
4	PROP. CURB
5	PROP. HEADER CURB
6	PROP. GUTTER
7	PROP. PAVEMENT WIDENING
8	EX. POWER POLE





LEGEND:

EXISTING ROW LINE
PROPOSED ROW LINE
EXISTING OVERHEAD ELECTRIC — OHE —
EXISTING FIBER OPTIC MANHOLE
EXISTING GUY WIRE
EXISTING POWER POLE
EXISTING SIGN
EXISTING PAVEMENT
PROPOSED PAVEMENT
PROPOSED CONCRETE RIP-RAP
LIMITS OF GRADING
PROPOSED EDGE OF PAVEMENT

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APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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EST. 1980
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CORDOVA TRAILS SUBDIVISION UNIT 1

RIGHT TURN LANE - GRADING PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 09/23/2021 - DOWNSTREAM X-SECTION LOCATIONS, GENERAL NOTES, ADD PILOT CHANNEL AND DETAILS
2.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C11B

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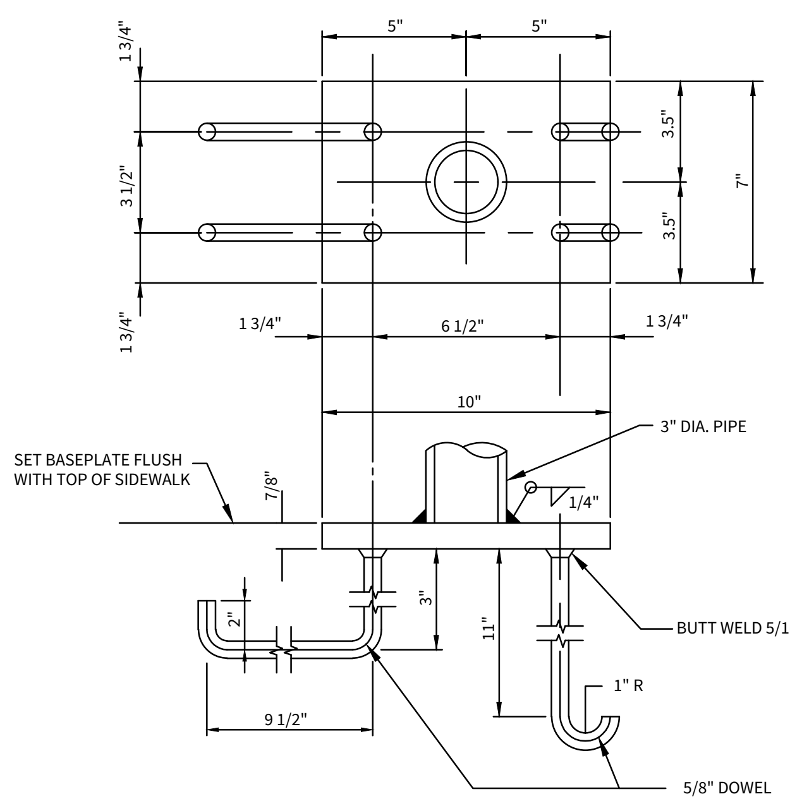
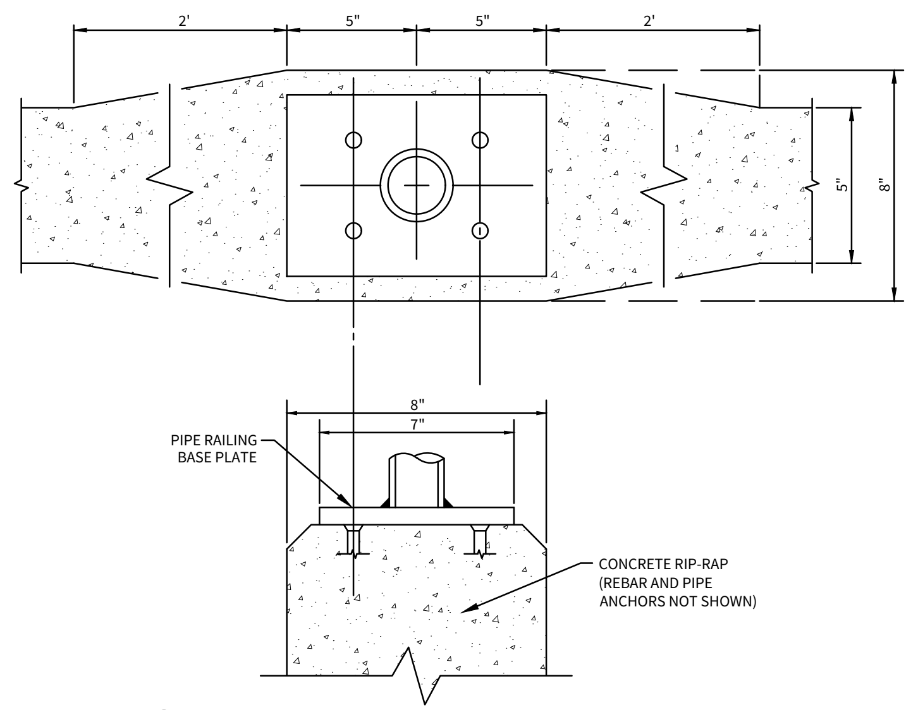


PIPE ANCHORAGE DETAILS

N.T.S.

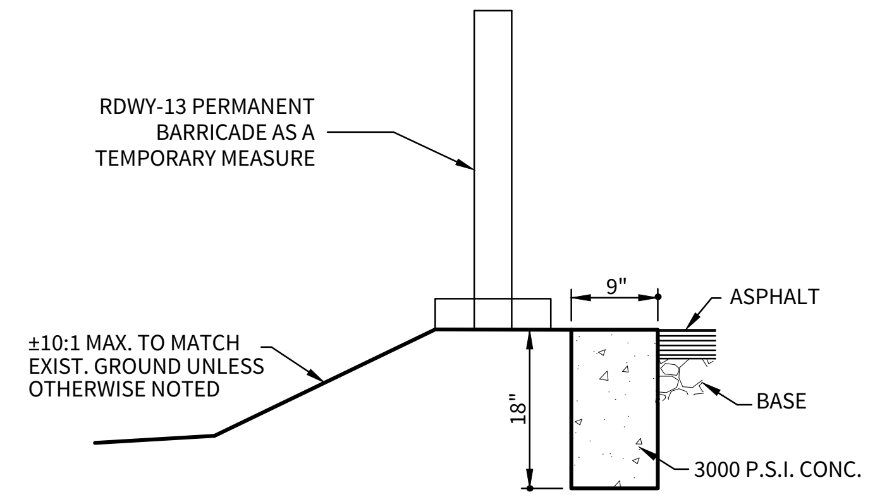


CONCRETE RIP-RAP AT PIPE RAILING BASE PLATE DETAIL

N.T.S.

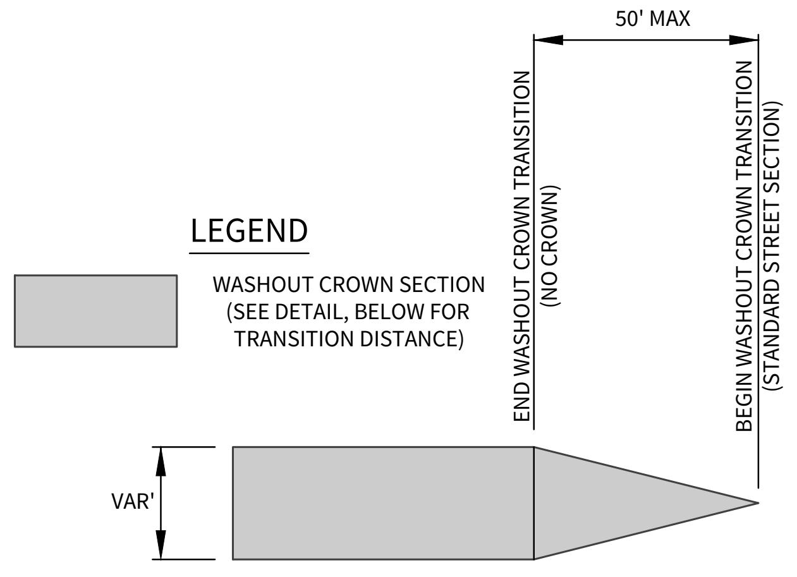
NOTES:

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


RDWY-13 PERMANENT BARRICADE AS A TEMPORARY MEASURE
±10:1 MAX. TO MATCH EXIST. GROUND UNLESS OTHERWISE NOTED
9"
ASPHALT
BASE
18"
3000 P.S.I. CONC.

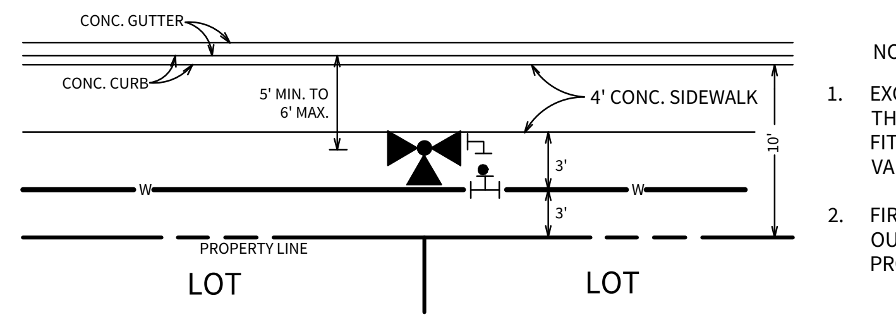
HEADER CURB DETAIL

N.T.S.


50' MAX
END WASHOUT CROWN TRANSITION (NO CROWN)
BEGIN WASHOUT CROWN TRANSITION (STANDARD STREET SECTION)
LEGEND
WASHOUT CROWN SECTION (SEE DETAIL, BELOW FOR TRANSITION DISTANCE)
VAR'

WASHOUT CROWN TRANSITION DETAIL

N.T.S.

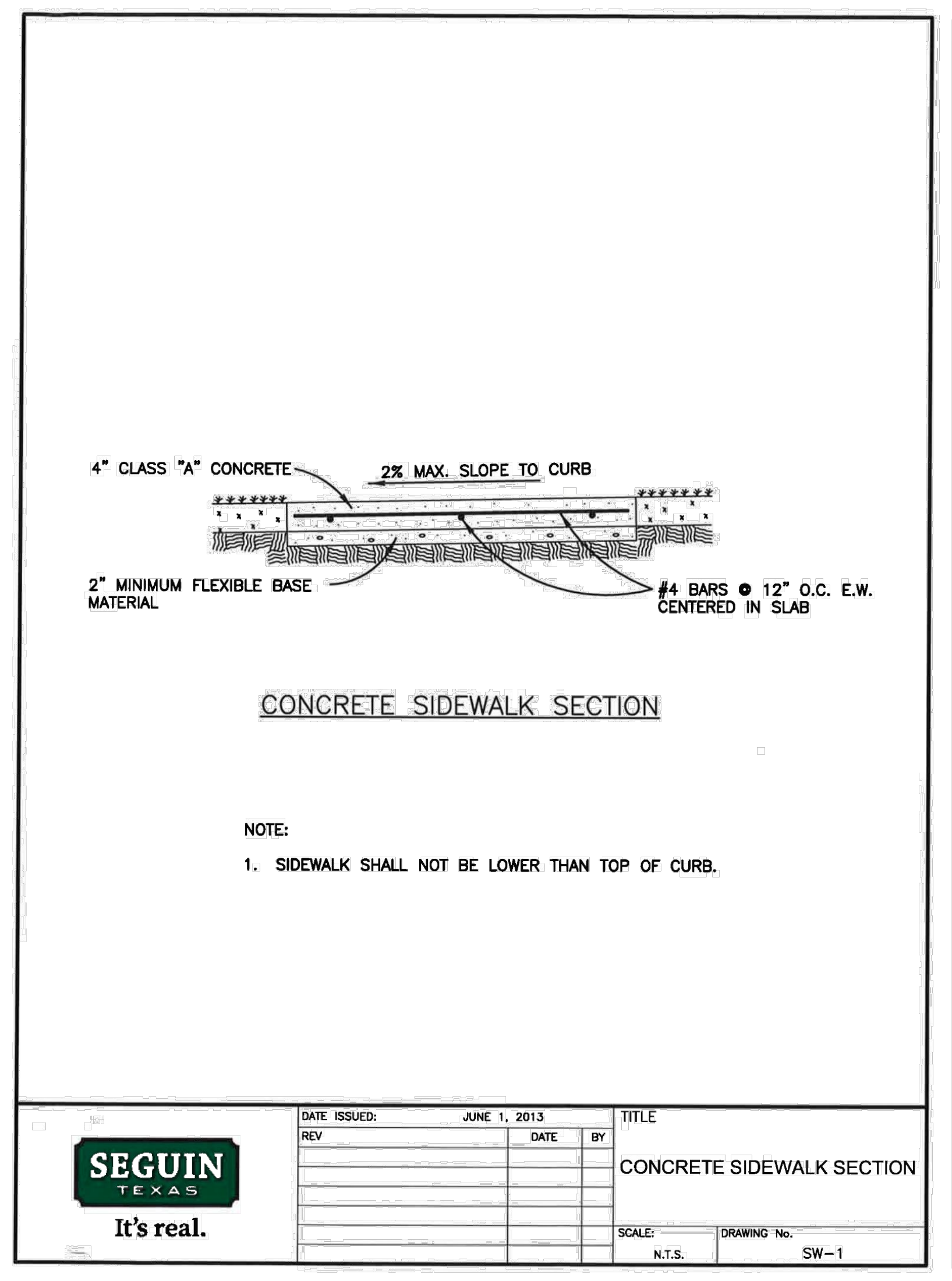


NOTE:

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.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)

N.T.S.

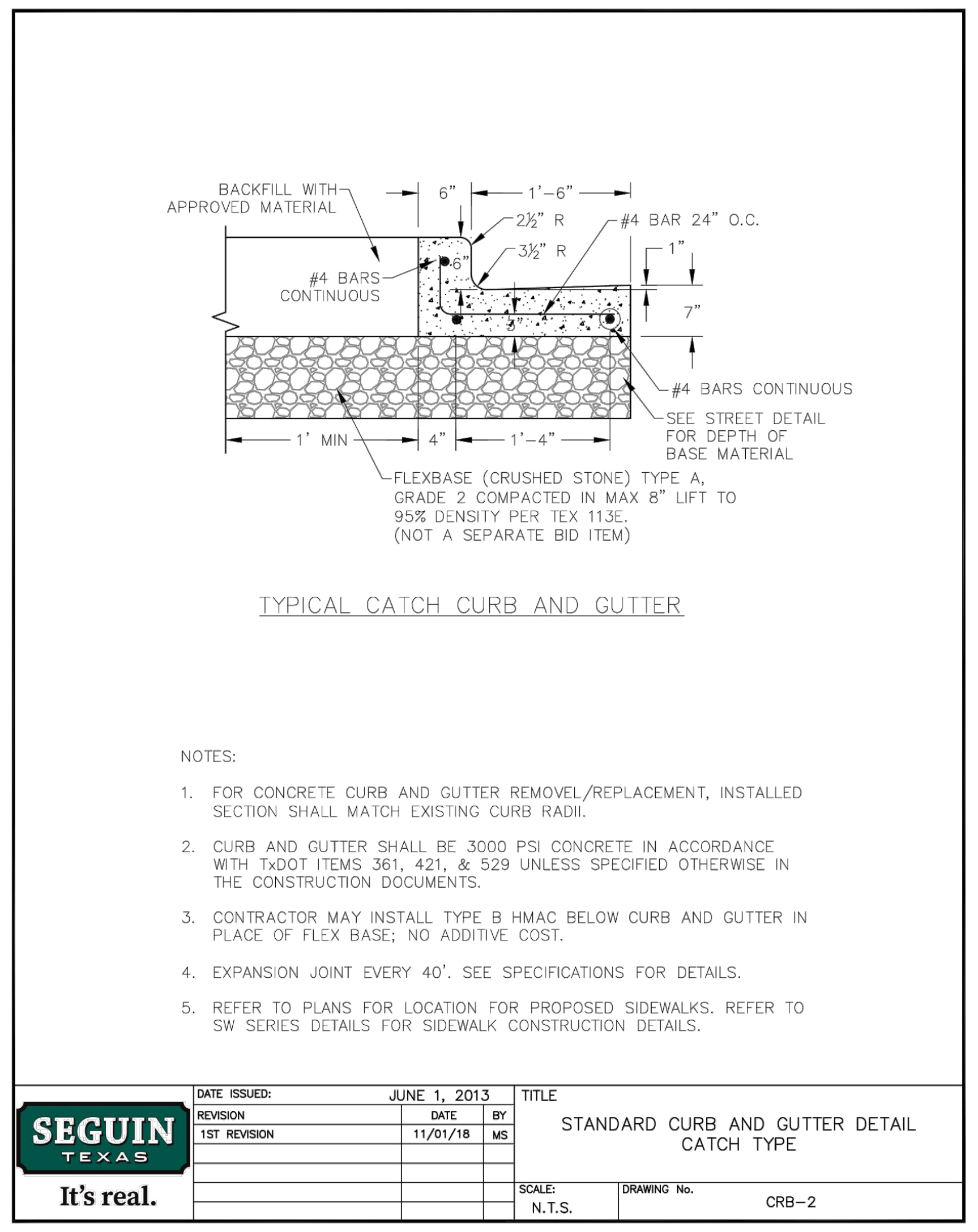

4" CLASS "A" CONCRETE
2% MAX. SLOPE TO CURB
2" MINIMUM FLEXIBLE BASE MATERIAL
#4 BARS @ 12" O.C. E.W. CENTERED IN SLAB
SEGUIN TEXAS
It's real.

CONCRETE SIDEWALK SECTION

NOTE:

1. SIDEWALK SHALL NOT BE LOWER THAN TOP OF CURB.

DATE ISSUED:	JUNE 1, 2013		TITLE
REV	DATE	BY	CONCRETE SIDEWALK SECTION
			SCALE: N.T.S.
			DRAWING No. SW-1

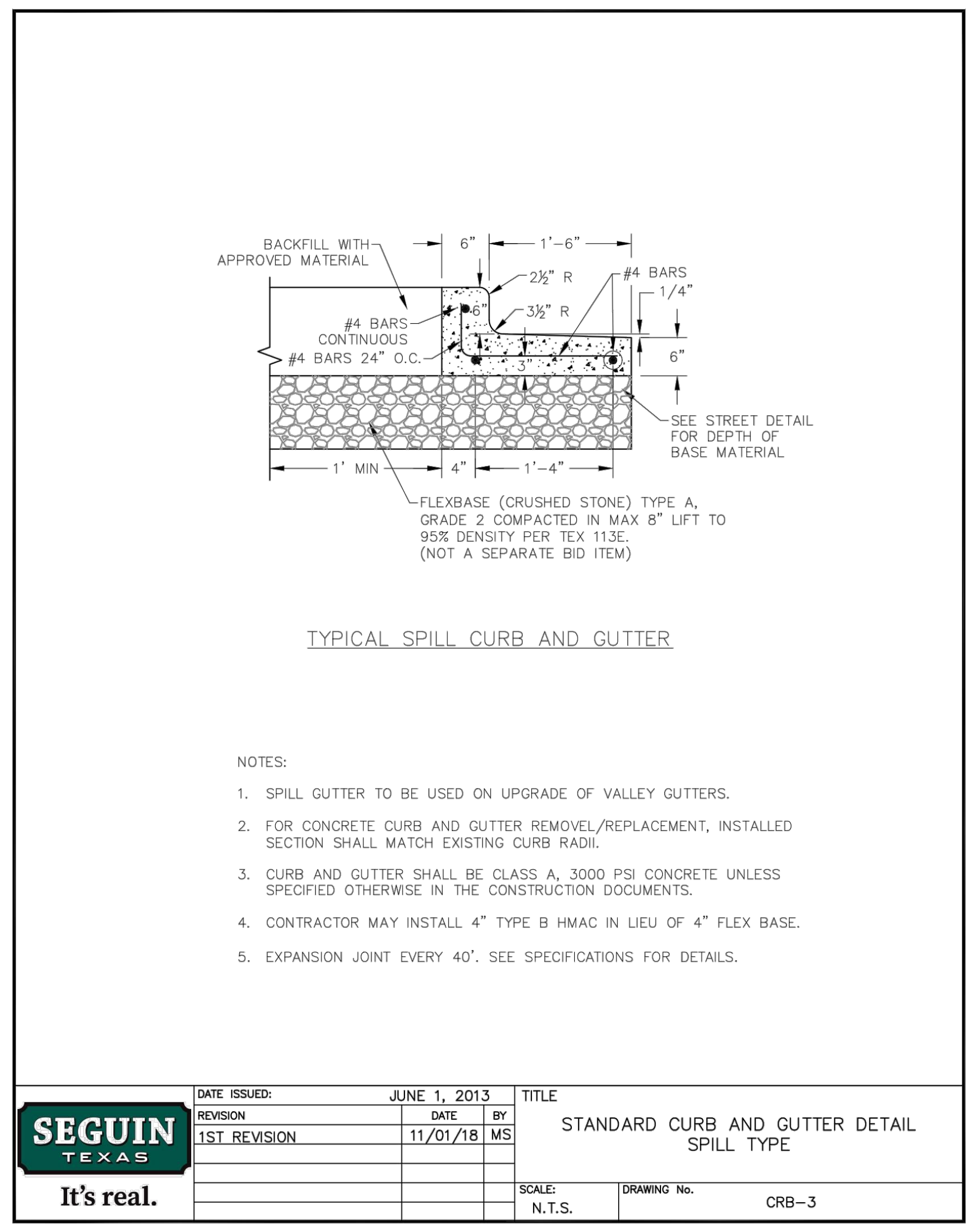

BACKFILL WITH APPROVED MATERIAL
6"
1'-6"
2½" R
3½" R
#4 BAR 24" O.C.
1"
#4 BARS CONTINUOUS
6"
3"
7"
#4 BARS CONTINUOUS
SEE STREET DETAIL FOR DEPTH OF BASE MATERIAL
1' MIN
4"
1'-4"
FLEXBASE (CRUSHED STONE) TYPE A, GRADE 2 COMPACTED IN MAX 8" LIFT TO 95% DENSITY PER TEX 113E. (NOT A SEPARATE BID ITEM)
SEGUIN TEXAS
It's real.

TYPICAL CATCH CURB AND GUTTER

NOTES:

1. FOR CONCRETE CURB AND GUTTER REMOVEL/REPLACEMENT, INSTALLED SECTION SHALL MATCH EXISTING CURB RADII.
2. CURB AND GUTTER SHALL BE 3000 PSI CONCRETE IN ACCORDANCE WITH TxDOT ITEMS 361, 421, & 529 UNLESS SPECIFIED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
3. CONTRACTOR MAY INSTALL TYPE B HMAC BELOW CURB AND GUTTER IN PLACE OF FLEX BASE; NO ADDITIVE COST.
4. EXPANSION JOINT EVERY 40'. SEE SPECIFICATIONS FOR DETAILS.
5. REFER TO PLANS FOR LOCATION FOR PROPOSED SIDEWALKS. REFER TO SW SERIES DETAILS FOR SIDEWALK CONSTRUCTION DETAILS.

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	STANDARD CURB AND GUTTER DETAIL CATCH TYPE
1ST REVISION	11/01/18	MS	
			SCALE: N.T.S.
			DRAWING No. CRB-2

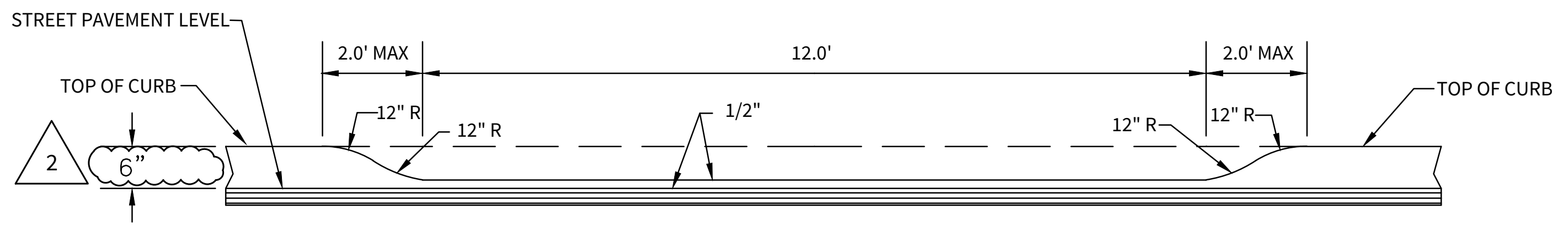

BACKFILL WITH APPROVED MATERIAL
6"
1'-6"
2½" R
3½" R
#4 BARS
1/4"
#4 BARS CONTINUOUS
#4 BARS 24" O.C.
6"
3"
6"
SEE STREET DETAIL FOR DEPTH OF BASE MATERIAL
1' MIN
4"
1'-4"
FLEXBASE (CRUSHED STONE) TYPE A, GRADE 2 COMPACTED IN MAX 8" LIFT TO 95% DENSITY PER TEX 113E. (NOT A SEPARATE BID ITEM)
SEGUIN TEXAS
It's real.

TYPICAL SPILL CURB AND GUTTER

NOTES:

1. SPILL GUTTER TO BE USED ON UPGRADE OF VALLEY GUTTERS.
2. FOR CONCRETE CURB AND GUTTER REMOVEL/REPLACEMENT, INSTALLED SECTION SHALL MATCH EXISTING CURB RADII.
3. CURB AND GUTTER SHALL BE CLASS A, 3000 PSI CONCRETE UNLESS SPECIFIED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
4. CONTRACTOR MAY INSTALL 4" TYPE B HMAC IN LIEU OF 4" FLEX BASE.
5. EXPANSION JOINT EVERY 40'. SEE SPECIFICATIONS FOR DETAILS.

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	STANDARD CURB AND GUTTER DETAIL SPILL TYPE
1ST REVISION	11/01/18	MS	
			SCALE: N.T.S.
			DRAWING No. CRB-3



TYPICAL DRIVEWAY CUT SECTION

N.T.S.

STREET TYPE	HMAC TYPE "D"	HMAC TYPE "B"	AGGREGATE BASE (TYPE A GRADE 2)	LIME STABILIZED SUBGRADE	BASE UNDER CURB	STRUCTURAL NUMBER
MINOR (FLEX BASE)	2"	-	11"	6" (31 LB/SY)	1"	2.90
LOCAL-OVER CULVERT	2"	5"	-	-	-	2.62
COLLECTOR	3"	-	21"	8" (42 LB/SY)	12"	4.90
ARTERIAL	4"	-	21"	12" (62 LB/SY)	13"	5.66

1

STREET PAVEMENT DESIGN OPTIONS (InTEC No. S201475) (DATED DECEMBER 4, 2020)

SUBGRADE NOTES:

- ANTICIPATE PAVEMENT SUBGRADE PLASTICITY INDEX VALUES TO BE GREATER THAN 20. WE RECOMMEND THEFOLLOWING OPTIONS FOR TREATING THE SUBGRADE:
  - LS: LIME STABILIZING THE SUBGRADE TO A DEPTH OF 6 OR 8 INCHES AS NOTED ABOVE. BASED ON THE LABORATORY TESTS PERFORMED WE RECOMMEND A LIME APPLICATION RATE OF 7 ½ PERCENT:
    - 6" LS: 31 LBS PER SQ YARD FOR 6-INCH DEPTH OF TREATMENT
    - 8" LS: 42 LBS PER SQ YARD FOR 8-INCH DEPTH OF TREATMENT
    - 12" LS: 62 LBS PER SQ YARD FOR 8-INCH DEPTH OF TREATMENT
    - MC: SCARIFIED AND COMPACTED TO A DEPTH OF 12 INCHES. COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MOISTURE CONTENT BETWEEN OPTIMUM PLUS 2 AND OPTIMUM PLUS 6 PERCENT OF THE OPTIMUM MOISTURE CONTENT (TXDOT 114E).
    - THE FINAL CUT SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO TREATMENT.
    - IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.0 SHOULD BE USED. THE MATERIAL SHOULD BE PLACED AS PER ALL APPLICABLE CITY GUIDELINES. THE SOIL SHOULD BE TESTED FOR SULFATE CONTENT AND THE LIME APPLICATION RATE SHOULD BE RE-EVALUATED BY THE CONTRACTOR.
    - 2 SUBMIT TESTING REPORTS TO THE CITY PROJECT ENGINEER AND CAPITAL PROJECTS INSPECTOR FOR EVALUATION AND APPROVAL.

GENERAL NOTES:

- PAVEMENT SECTION RECOMMENDATIONS ARE BASED ON THE CBR VALUE AND THE INPUT PARAMETERS. THE RECOMMENDATIONS ARE NOT BASED ON THE SHRINK / SWELL CHARACTERISTICS OF THE UNDERLYING SOILS. THE PAVEMENT CAN EXPERIENCE CRACKING AND DEFORMATION DUE TO SHRINKAGE AND SWELLING CHARACTERISTICS OF THE SOILS AS DESCRIBED IN THE VERTICAL MOVEMENTS SECTION OF THIS REPORT.
- IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MINIMIZING MOISTURE PENETRATION UNDERNEATH THE ASPHALT, SUCH AS USING A DEEPER CURB (VERTICAL MOISTURE BARRIER) EXTENDING A MINIMUM OF 6 INCHES INTO SUBGRADE, WILL LOWER PAVEMENT DISTRESS.
- THE CONTRACTOR SHALL SUBMIT THE RE-EVALUATION REPORTS TO THE CITY FOR REVIEW AND APPROVAL BEFORE ANY LIME TREATMENT.

SELECT FILL:

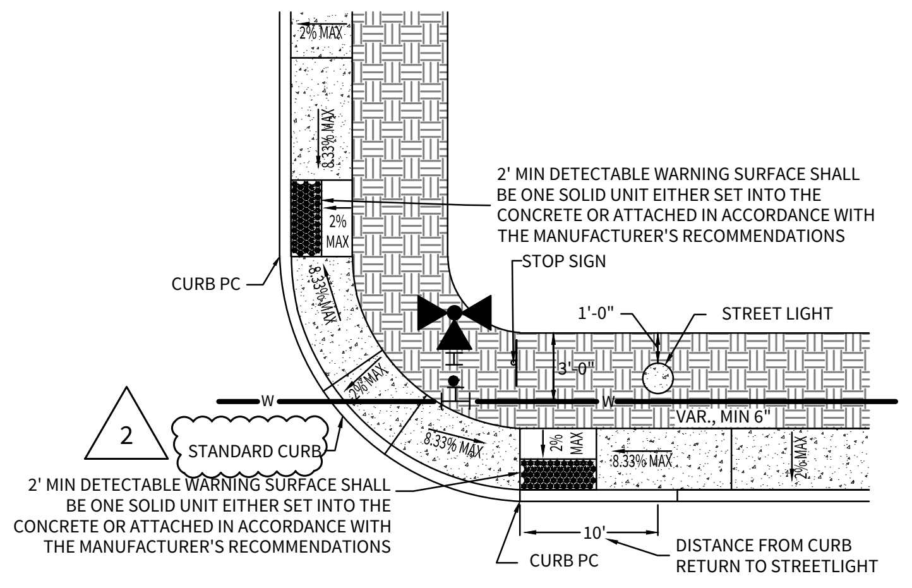
- ANY SELECT STRUCTURAL FILL USED UNDER THE BUILDING SHOULD HAVE A LIQUID LIMIT LESS THAN 40 AND A PLASTICITY INDEX IN BETWEEN 5 AND 20 AND BE CRUSHED LIMESTONE. THE FILL SHOULD CONTAIN NO PARTICLES GREATER THAN 3 INCHES IN DIAMETER. THE PERCENT PASSING U.S. STANDARD SIEVE NO. 4 SHOULD BE IN BETWEEN 40 AND 80 PERCENT AND SIEVE NO. 40 PASSING SHOULD BE IN BETWEEN 10 AND 50 PERCENT. THE PERCENT PASSING SIEVE NO. 200 SHOULD BE LESS THAN 20 PERCENT.
- CRUSHED LIMESTONE WITH SUFFICIENT FINES TO BIND THE AGGREGATE TOGETHER IS A SUITABLE SELECT STRUCTURAL FILL MATERIAL. THE FILL MATERIALS SHOULD BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES THICK (6-INCHES COMPACTED) AND COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 PROCEDURE AT A MOISTURE CONTENT WITHIN 3 PERCENT OF THE OPTIMUM WATER CONTENT.

GENERAL FILL COMPACTION

- THE GENERAL FILL MATERIALS SHOULD BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES THICK AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TEST METHOD ASTM D 698 AT A MOISTURE CONTENT WITHIN 3 PERCENT OF THE OPTIMUM WATER CONTENT. EACH LIFT SHOULD BE COMPACTED AND TESTED BY A REPRESENTATIVE OF A GEOTECHNICAL LABORATORY TO VERIFY COMPACTION COMPLIANCE AND APPROVED BEFORE PLACEMENT OF THE SUBSEQUENT LIFTS.

SUBGRADE VERIFICATION:

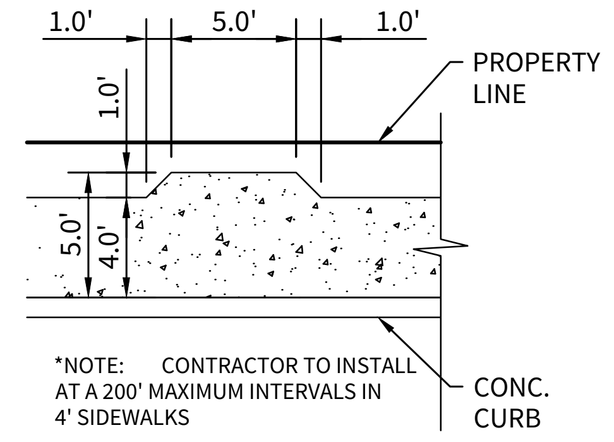
- THE FINAL SUBGRADE SHOULD BE VERIFIED BY INTEC. THE DRILLING CREWS WERE STUCK IN THE EXISTING SOILS MORE THAN ONCE. IF PUMPING IS OBSERVED DURING SUBGRADE PREPARATION, CEMENT OR LIME MAY BE USED TO CREATE A WORKING PLATFORM.


2% MAX
8.33% MAX
2' MIN DETECTABLE WARNING SURFACE SHALL BE ONE SOLID UNIT EITHER SET INTO THE CONCRETE OR ATTACHED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS
2% MAX
STOP SIGN
CURB PC
8.33% MAX
1'-0"
STREET LIGHT
2% MAX
3'-0"
W
W
VAR., MIN 6"
2
STANDARD CURB
8.33% MAX
2% MAX
8.33% MAX
2% MAX
2' MIN DETECTABLE WARNING SURFACE SHALL BE ONE SOLID UNIT EITHER SET INTO THE CONCRETE OR ATTACHED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS
10'
CURB PC
DISTANCE FROM CURB RETURN TO STREETLIGHT

ADA RAMP INTERSECTION LAYOUT DETAIL (TYPE 1 DIRECTIONAL RAMPS) N.T.S.

NOTES:

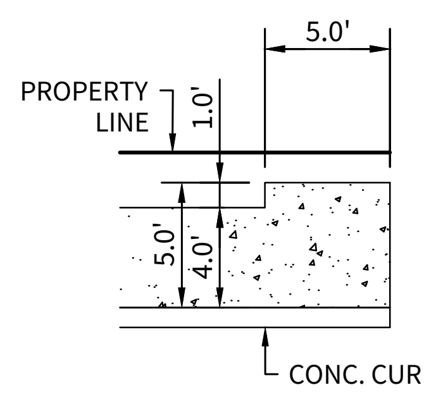
1) STREET LIGHTS SHALL BE INSTALLED 2' WITHIN R.O.W. AND A MINIMUM DISTANCE OF 6" FROM THE PROPOSED SIDEWALK, AND A MINIMUM DISTANCE OF 4' FROM FACE OF CURB.
2) A UTILITY LOCATE SHALL BE PERFORMED BEFORE INSTALLATION OF THE ELECTRIC DISTRIBUTION SYSTEM AND LIGHT STANDARDS TO ENSURE THAT NEWLY INSTALLED PUBLIC UTILITIES ARE NOT DAMAGED.



*NOTE: CONTRACTOR TO INSTALL AT A 200' MAXIMUM INTERVALS IN 4' SIDEWALKS

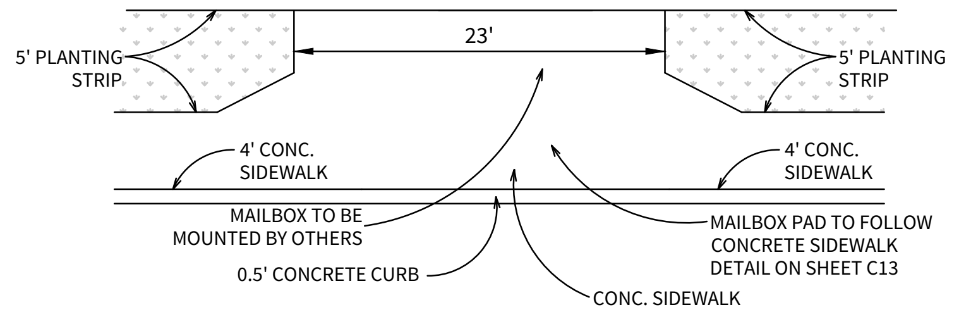
5'x5' SIDEWALK PASSING LANE

N.T.S.



SIDEWALK END TURNAROUND

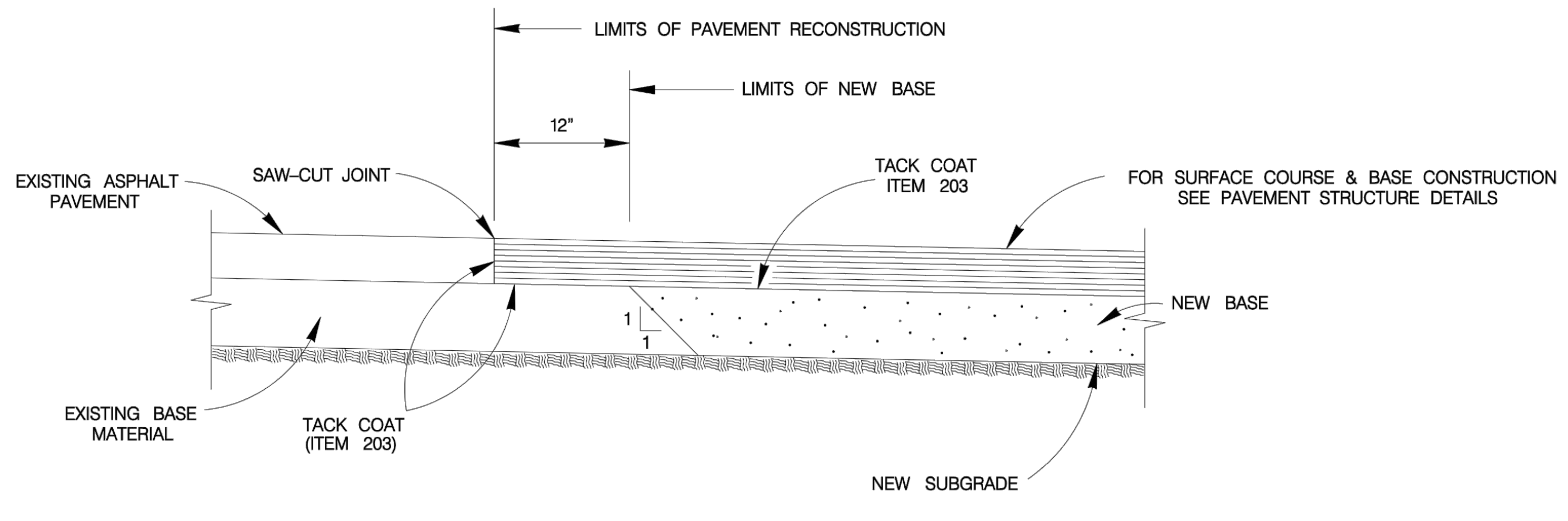
N.T.S.



MAILBOX PAD DETAIL

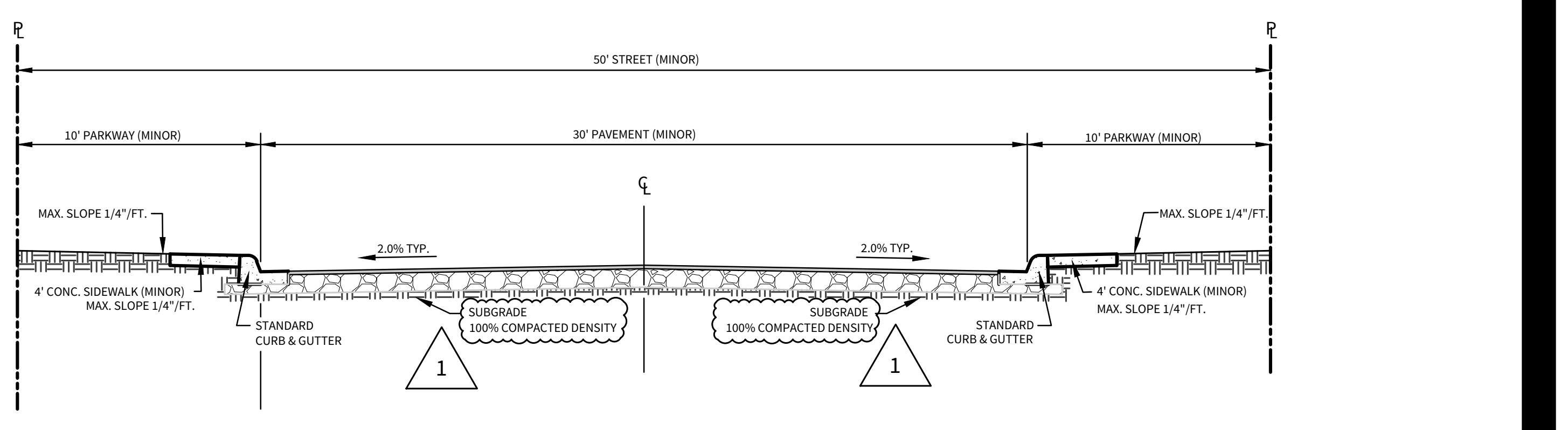
N.T.S.

NOTE:
MAILBOX PAD WITHIN ROW SHALL BE ADA COMPLIANT AND MEET USPS REQUIREMENTS


LIMITS OF PAVEMENT RECONSTRUCTION
LIMITS OF NEW BASE
12"
EXISTING ASPHALT PAVEMENT
SAW-CUT JOINT
TACK COAT ITEM 203
FOR SURFACE COURSE & BASE CONSTRUCTION SEE PAVEMENT STRUCTURE DETAILS
NEW BASE
1
1
EXISTING BASE MATERIAL
TACK COAT (ITEM 203)
NEW SUBGRADE

PAVEMENT JUNCTION DETAILS

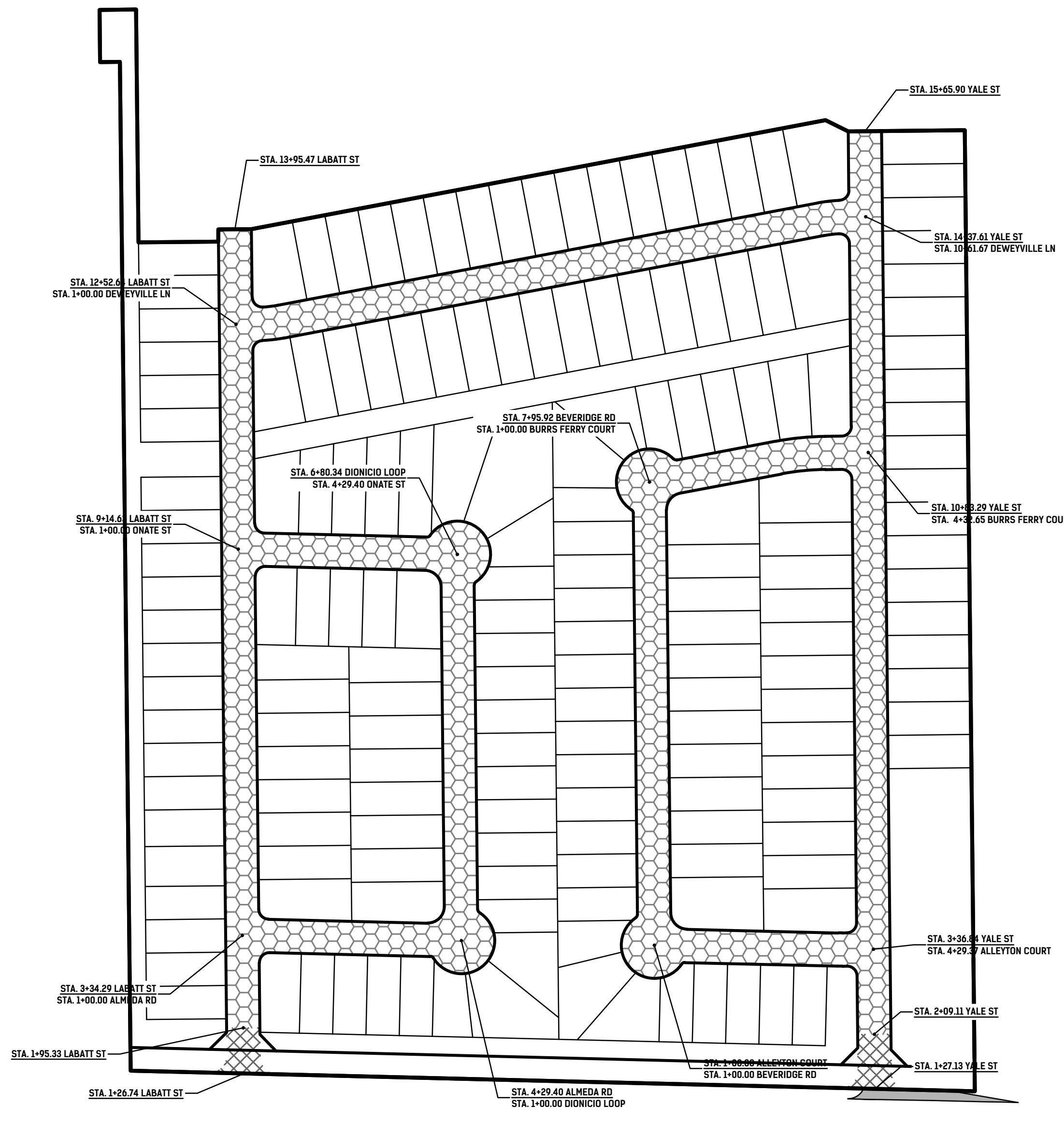
N.T.S.



MINOR STREET CROSS SECTION

N.T.S.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14



PAVEMENT DESIGN SCHEMATIC N.T.S.

NOTE:

1. REFERENCE GEOTECHNICAL REPORT (InTEC NO. S201475) FOR BORING INFORMATION AND CBR LOCATIONS.

LEGEND:

⬡	**MINOR STREET (FLEX BASE)**	
	LABATT ST	**STA. 1+95.33 – 13+95.47**
	YALE ST	**STA. 2+09.11 – 15+65.90**
	ALMEDA RD	**STA. 1+00.00 – 4+29.40**
	DIONICIO LOOP	**STA. 1+00.00 – 6+80.34**
	ONATE ST	**STA. 1+00.00 – 4+29.40**
	ALLEYTON COURT	**STA. 1+00.00 – 4+29.37**
	BEVERIDGE RD	**STA. 1+00.00 – 7+95.92**
	BURRS FERRY COURT	**STA. 1+00.00 – 4+32.65**
	DEWEYVILLE LN	**STA. 1+00.00 – 10+61.67**
▨	**MINOR STREET (BLACK BASE)**	
	LABATT ST	**STA. 1+26.74 – 1+95.33**
	YALE ST	**STA. 1+27.13 – 2+09.11**
▒	**ARTERIAL STREET**	
	CORDOVA RD STREET EXPANSION	

GENERAL NOTES

THE LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING SERVICE LATERALS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

CITY OF SEGUIN PUBLIC WORKS	1-830-401-2416
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-545-6005
G.V.E.C. INC.	"
SPRING HILLS WATER SUPPLY	1-830-379-7683

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

CORDOVA TRAILS SUBDIVISION UNIT 1

STANDARD STREET DETAILS

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED FLEX BASE COMPACTION, RENAMED A STREET TYPE
2. 09/23/2021 - REVISED ADA RAMP DETAIL AND ADDED GEOTECH NOTE
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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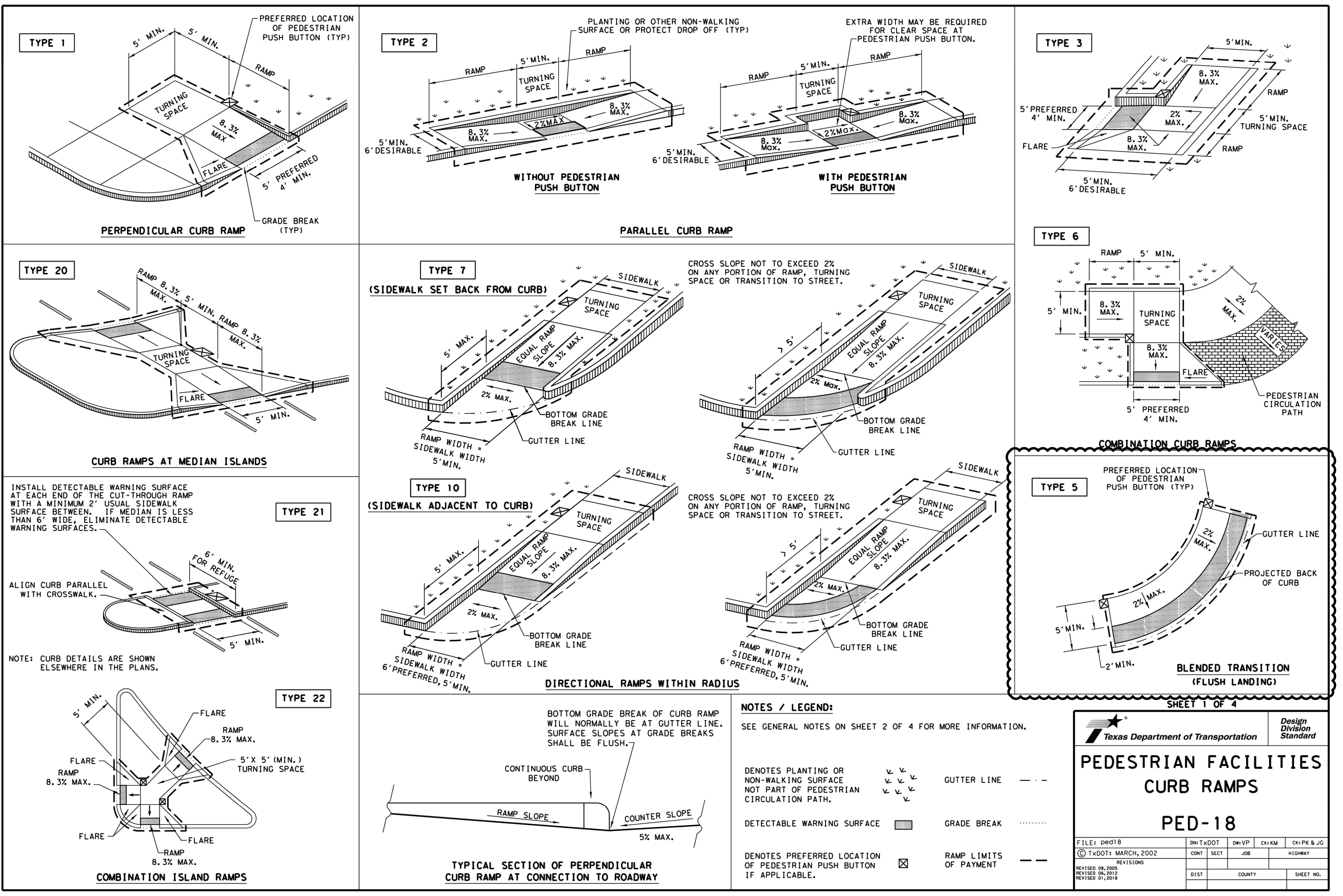
C12


TYPE 1
PERPENDICULAR CURB RAMP
TYPE 2
WITHOUT PEDESTRIAN PUSH BUTTON
WITH PEDESTRIAN PUSH BUTTON
PARALLEL CURB RAMP
TYPE 3
TYPE 6
COMBINATION CURB RAMPS
TYPE 20
CURB RAMPS AT MEDIAN ISLANDS
TYPE 7
(SIDEWALK SET BACK FROM CURB)
TYPE 10
(SIDEWALK ADJACENT TO CURB)
DIRECTIONAL RAMPS WITHIN RADIUS
TYPE 5
BLENDED TRANSITION
(FLUSH LANDING)
TYPE 21
TYPE 22
COMBINATION ISLAND RAMPS
TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY
NOTES / LEGEND:
SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.
DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.
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	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.

NOTE:

- TYPE 5 RAMP ARE ALLOWED ON A CASE BY CASE BASIS WHEN EXISTING CONSTRAINTS WILL NOT PERMIT USE OF TYPE 1, 2, OR 7 RAMPS AND REQUIRE APPROVAL BY THE CITY ENGINEER.

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

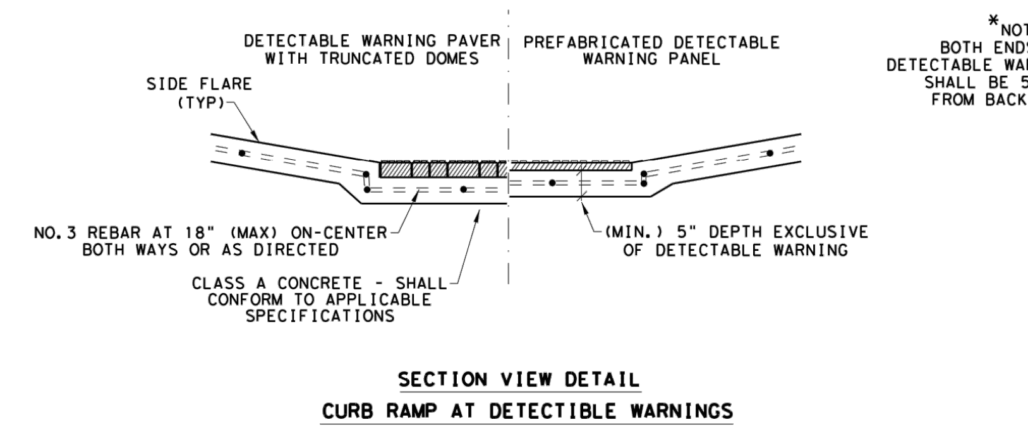
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material 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.

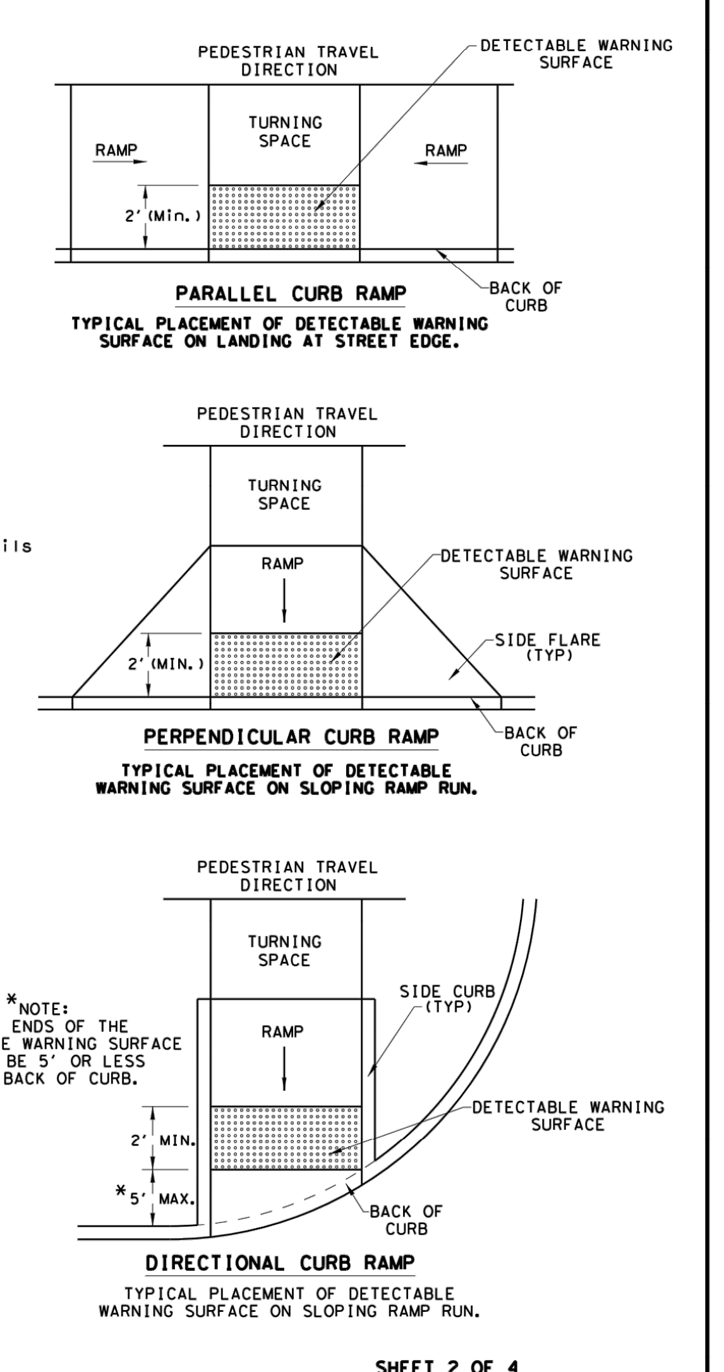
SIDEWALKS

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

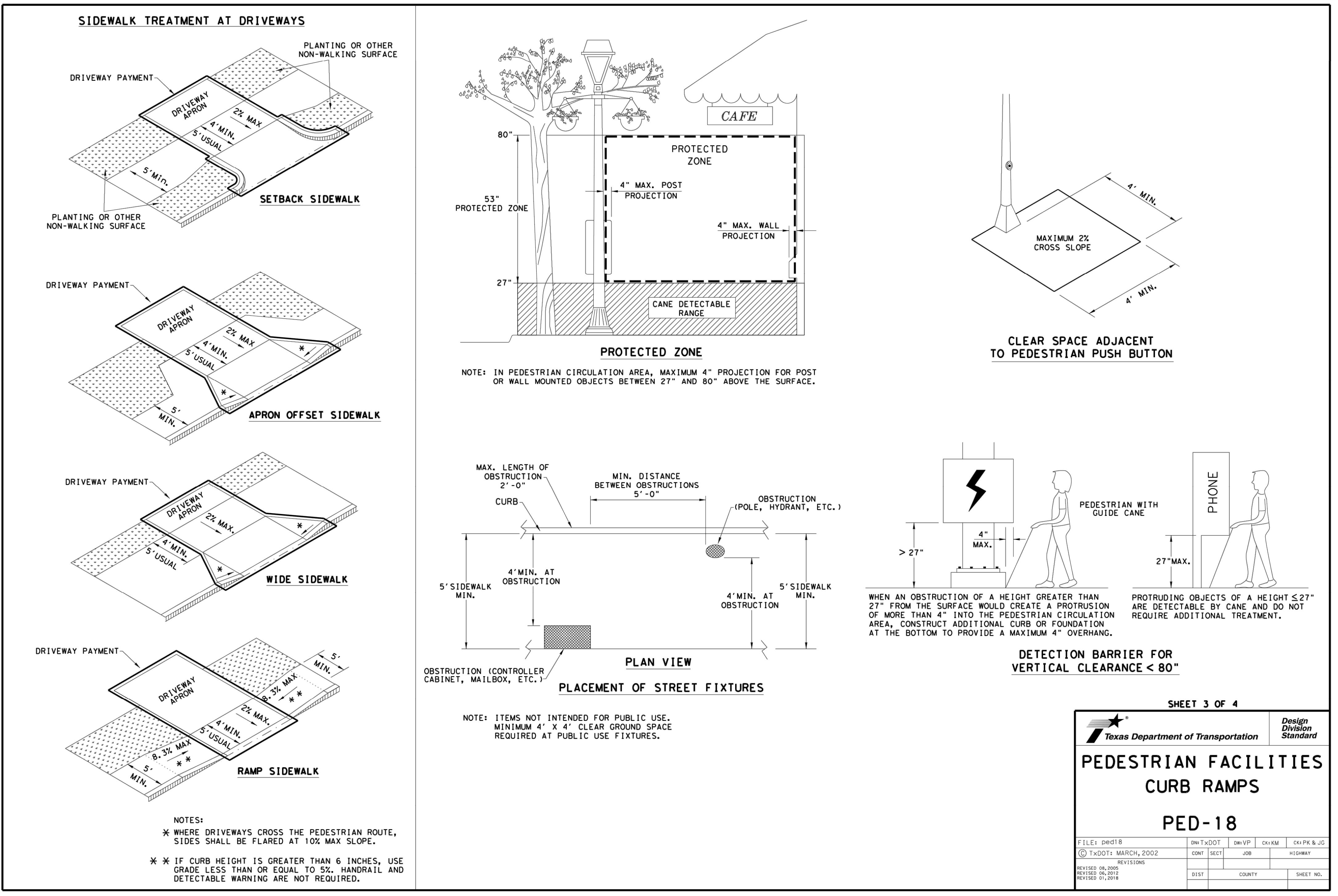

PEDESTRIAN TRAVEL DIRECTION
DETECTABLE WARNING SURFACE
TURNING SPACE
RAMP
2' (MIN.)
BACK OF CURB
PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.
SIDE FLARE (TYP)
PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.
*NOTE: BOTH ENDS OF THE DETECTABLE WARNING SURFACE SHALL BE 5' OR LESS FROM THE BACK OF CURB.
SIDE CURB (TYP)
*5' MAX.
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
DRIVEWAY PAVMENT
DRIVEWAY APRON
PLANTING OR OTHER NON-WALKING SURFACE
SETBACK SIDEWALK
APRON OFFSET SIDEWALK
WIDE SIDEWALK
RAMP SIDEWALK
CAFE
PROTECTED ZONE
4" MAX. POST PROJECTION
4" MAX. WALL PROJECTION
CANE DETECTABLE RANGE
80"
53" PROTECTED ZONE
27"
MAXIMUM 2% CROSS SLOPE
4' MIN.
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON
MAX. LENGTH OF OBSTRUCTION 2'-0"
MIN. DISTANCE BETWEEN OBSTRUCTIONS 5'-0"
OBSTRUCTION (POLE, HYDRANT, ETC.)
4' MIN. AT OBSTRUCTION
5' SIDEWALK MIN.
OBSTRUCTION (CONTROLLER CABINET, MAILBOX, ETC.)
PLAN VIEW
PLACEMENT OF STREET FIXTURES
PEDESTRIAN WITH GUIDE CANE
PHONE
DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

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.

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

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.

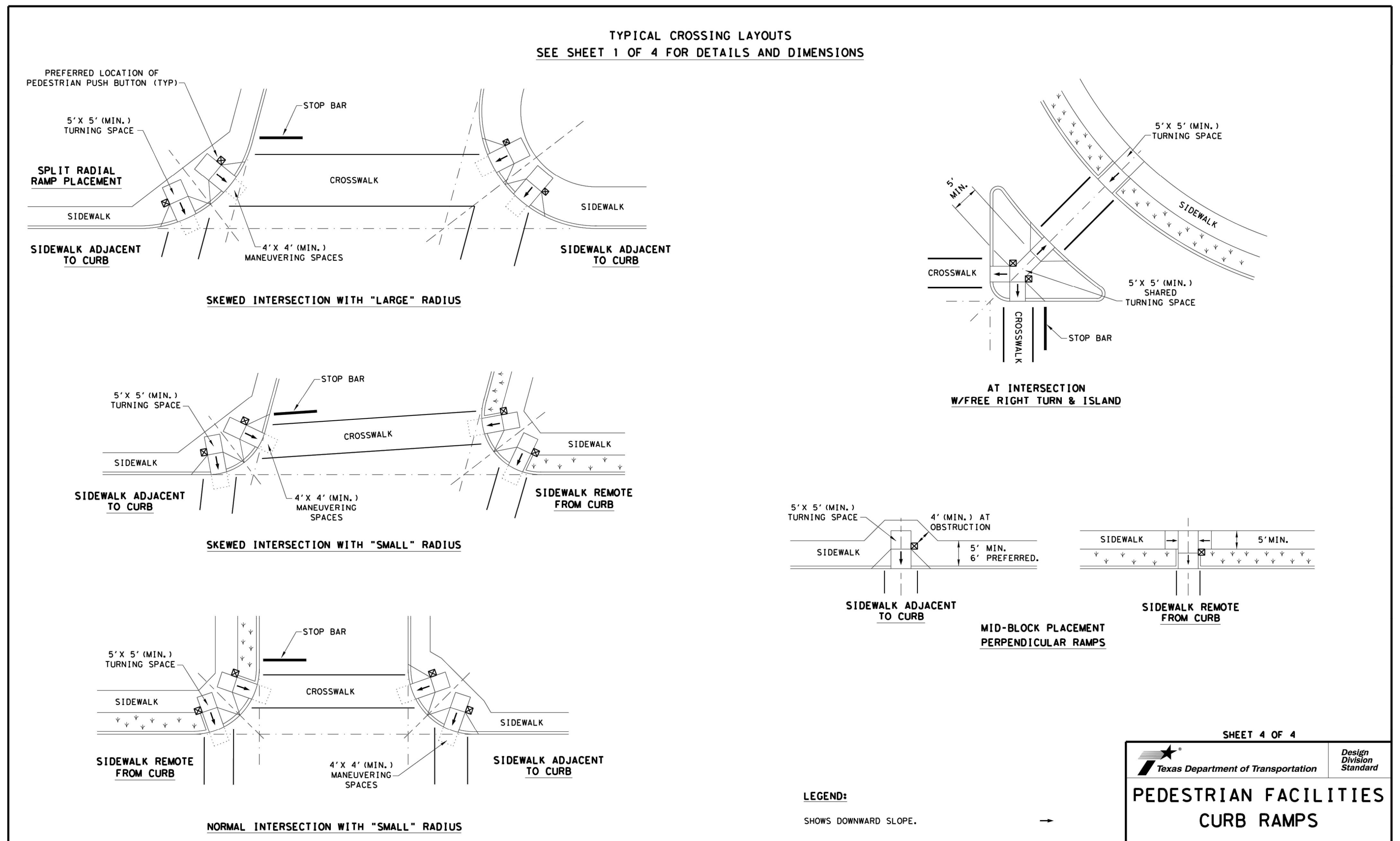
PROTRUDING OBJECTS OF A HEIGHT ≤27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

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
SKEWED INTERSECTION WITH "LARGE" RADIUS
SIDEWALK REMOTE FROM CURB
SKEWED INTERSECTION WITH "SMALL" RADIUS
NORMAL INTERSECTION WITH "SMALL" RADIUS
5'X 5' (MIN.) SHARED TURNING SPACE
AT INTERSECTION W/FREE RIGHT TURN & ISLAND
4' (MIN.) AT OBSTRUCTION
5' MIN. 6' PREFERRED.
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

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.

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DATE:
FILE:

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CUDE — EST. 1980 — ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

TXDOT PEDESTRIAN FACILITIES DETAILS CURB RAMPS

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

PLAT NO.

C13

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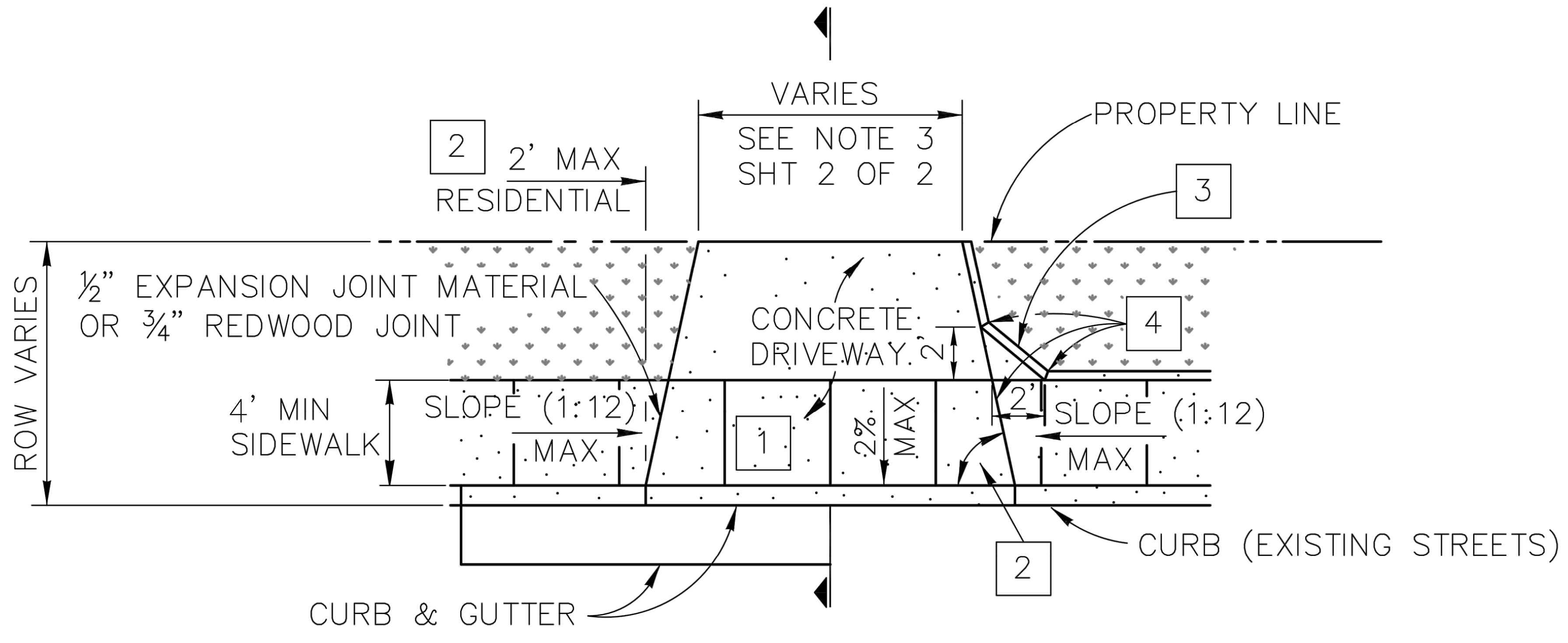
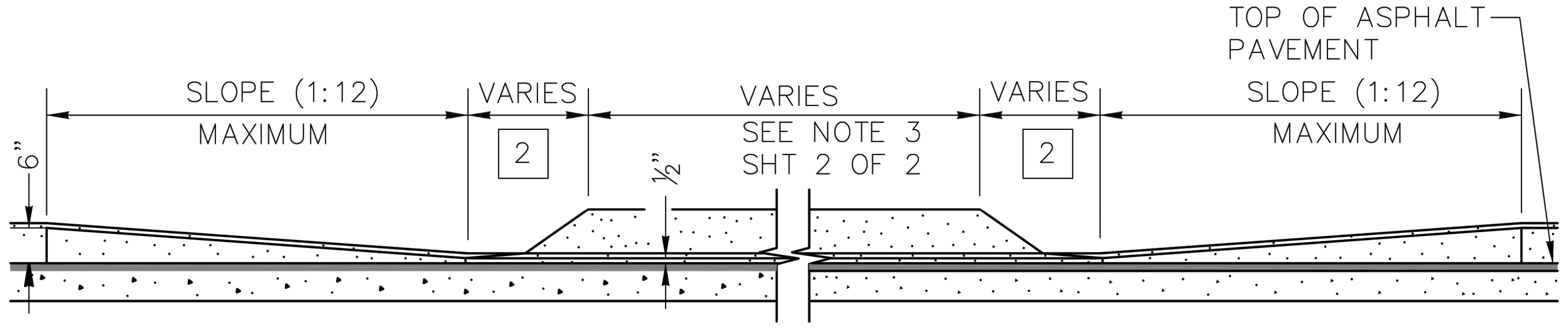


DRIVEWAY LAYOUT — TYPE 1

WITH SIDEWALK ABUTTING CURB

1	THE INITIAL 5 FEET OF DRIVEWAY APRON ADJACENT TO THE CURB IS DESIGNATED AS THE PEDESTRIAN ACCESS ROUTE. THE CROSS—SLOPE SHALL NOT EXCEED 1:48 (2%)	3	WHERE RETAINING WALL COMBINATION TYPE IS REQUIRED AT DRIVEWAYS, IT SHALL BE CONSTRUCTED AS SHOWN
2	45° FOR COMMERCIAL DRIVEWAY 2' MAX. OFFSET FOR RESIDENTIAL DRIVEWAYS	4	½" EXPANSION JOINT MATERIAL OR ¾" REDWOOD JOINT



2 45° FOR COMMERCIAL DRIVEWAY
2' MAX. OFFSET FOR RESIDENTIAL DRIVEWAYS

TYPE 1 DRIVEWAY — CURB PROFILE

WITH SIDEWALK ABUTTING CURB

SHEET 1 OF 2

SEGUIN
TEXAS
It's real.

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	DRIVEWAY LAYOUT — TYPE 1
1ST REVISION	11/01/18	MS	
			SCALE: N.T.S.
			DRAWING No. DRWY—1

APPROVED FOR CONSTRUCTION **SEGUIN** TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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

CORDOVA TRAILS SUBDIVISION UNIT 1

TYPICAL CONCRETE DRIVEWAY DETAILS

DATE
07/23/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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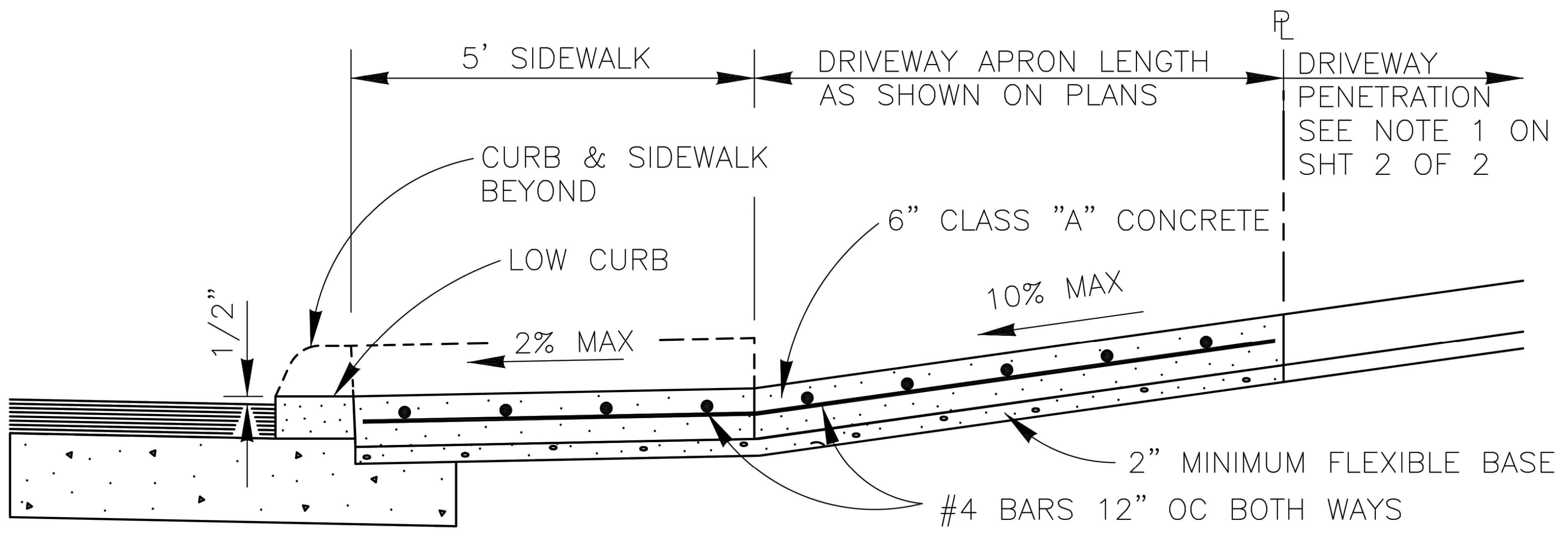
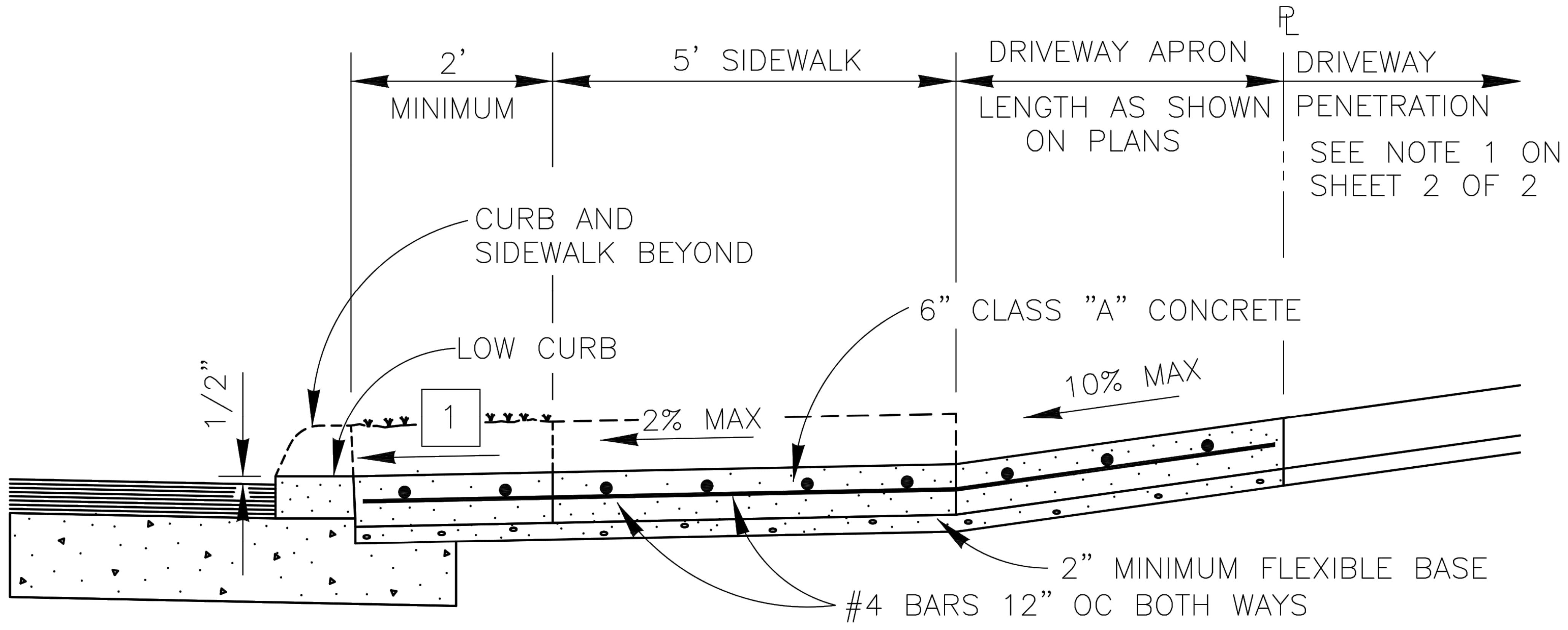


TYPICAL COMMERCIAL DRIVEWAY SECTION A

WITH SIDEWALK ABUTTING CURB (TYPE 1 APRON)



TYPICAL COMMERCIAL DRIVEWAY SECTION B

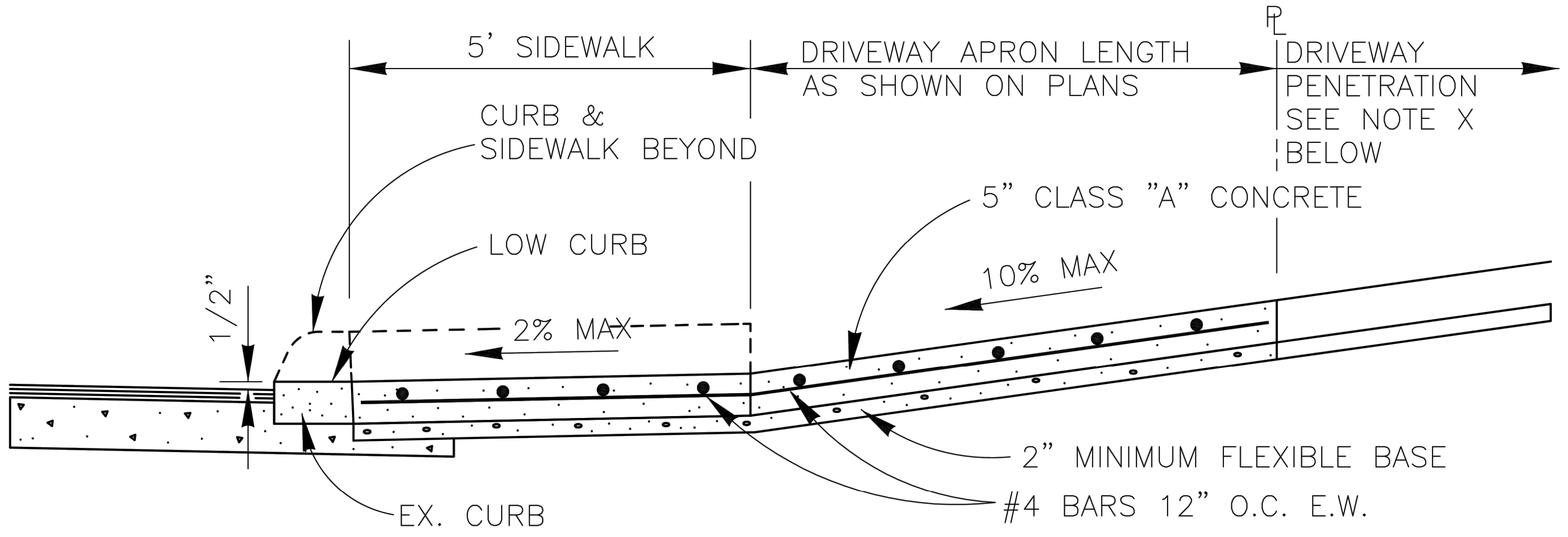
WITH SIDEWALK SEPARATED FROM CURB (TYPE 2 APRON)

1 10% MAXIMUM SLOPE ALLOWED TO THE EDGE OF THE SIDEWALK IF LANDSCAPE STRIP BETWEEN CURB AND SIDEWALK IS 4 FEET OR GREATER. 8% MAXIMUM, OTHERWISE.

SHEET 2 OF 2

SEGUIN
TEXAS
It's real.

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	COMMERCIAL DRIVEWAY SECTIONS
1ST REVISION	11/01/18	MS	
			SCALE: N.T.S.
			DRAWING No. DRWY-3



TYPICAL RESIDENTIAL DRIVEWAY SECTION A

WITH SIDEWALK ABUTTING EXISTING CURB (WITHOUT GUTTER)

NOTES:

1. THE EXISTING CURB SHALL BE REMOVED FOR THE ENTIRE LIMITS OF THE APRON WHEN A NEW DRIVEWAY IS CONSTRUCTED ON AN EXISTING STREET.
2. 24 INCH LONG CURB TRANSITIONS FOR EACH SIDE OF THE APRON WILL BE PROVIDED TO SLOPE THE STREET CURB FROM EXISTING HEIGHT TO THE 1/2 INCH EXPOSURE AT THE DRIVEWAY. NO SEPARATE PAY ITEM.
3. 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:

   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.
4. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE, UNLESS GRANTED OTHERWISE AS PART OF APPLICATION TO WORK ON CITY STREETS PERMIT.
5. 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.
6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN (1:12) 8 % MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%).
7. SIDEWALK RAMP SURFACE SHALL BE IN ACCORDANCE TO ADA SURFACE TREATMENTS.

SHEET 2 OF 2

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DATE ISSUED:	JUNE 1, 2013		TITLE
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			SCALE: N.T.S.
			DRAWING No. DRWY-4

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CORDOVA TRAILS
SUBDIVISION UNIT 1

TYPICAL CONCRETE DRIVEWAY DETAILS

DATE
07/23/2021

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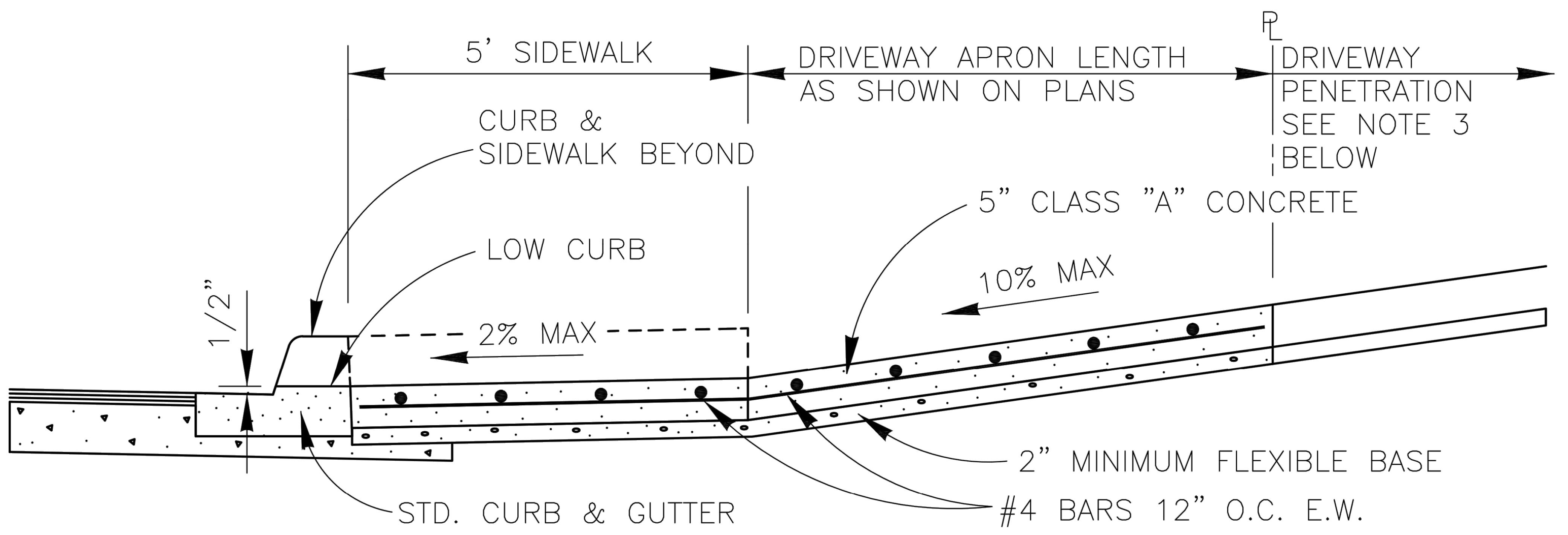

TYPICAL RESIDENTIAL DRIVEWAY SECTION B

WITH SIDEWALK ABUTTING STREET WITH CURB & GUTTER

NOTES:

1. THE CURB CAN BE CUT HORIZONTALLY TO MATCH THE DRIVEWAY PROFILE PROVIDED THE WORKMANSHIP IS CLEAN AND WITHOUT DAMAGE TO THE REMAINING CONCRETE GUTTER. THE APRON SHOULD BE POURED INDEPENDENT OF THE EXISTING CURB AND GUTTER AS NOT TO UNDERMINE THE EXISTING ROADWAY STRUCTURE.
2. 24 INCH LONG CURB TRANSITIONS FOR EACH SIDE OF THE APRON WILL BE PROVIDED TO SLOPE THE STREET CURB FROM EXISTING HEIGHT TO THE 1/2 INCH EXPOSURE AT THE DRIVEWAY. NO SEPARATE PAY ITEM.
3. 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:

   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.
4. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE, UNLESS GRANTED OTHERWISE AS PART OF APPLICATION TO WORK ON CITY STREETS PERMIT.
5. 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.
6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN (1:12) 8 % MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%).
7. SIDEWALK RAMP SURFACE SHALL BE IN ACCORDANCE TO ADA SURFACE TREATMENTS.

SHEET 2 OF 2

SEGUIN TEXAS It's real.	DATE ISSUED:	JUNE 1, 2013		TITLE RESIDENTIAL DRIVEWAY SECTION B
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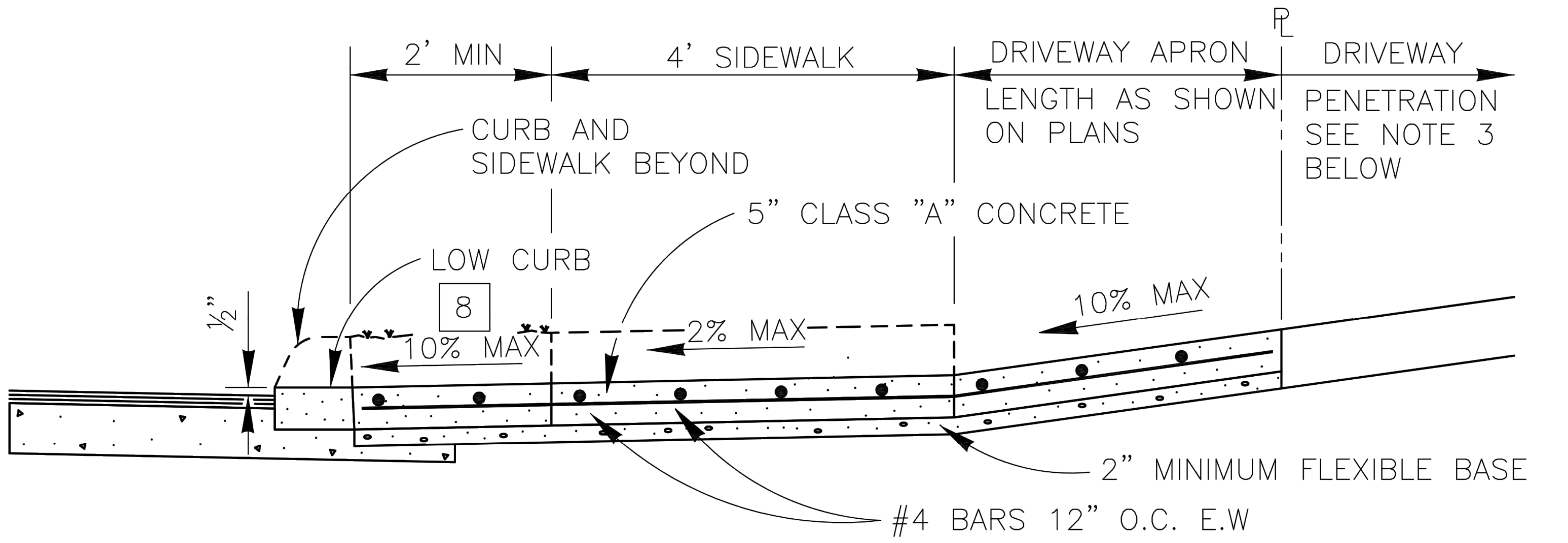
				DRAWING No. DRWY-5



TYPICAL RESIDENTIAL DRIVEWAY SECTION C

WITH SIDEWALK SEPARATED FROM CURB

NOTES:

1. THE EXISTING CURB SHALL BE REMOVED FOR THE ENTIRE LIMITS OF THE APRON WHEN A NEW DRIVEWAY IS CONSTRUCTED ON AN EXISTING STREET.
2. 24 INCH LONG CURB TRANSITIONS FOR EACH SIDE OF THE APRON WILL BE PROVIDED TO SLOPE THE STREET CURB FROM EXISTING HEIGHT TO THE 1/2 INCH EXPOSURE AT THE DRIVEWAY. NO SEPARATE PAY ITEM.
3. 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:

   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.
4. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE, UNLESS GRANTED OTHERWISE AS PART OF APPLICATION TO WORK ON CITY STREETS PERMIT.
5. 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.
6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN (1:12) 8 % MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%).
7. SIDEWALK RAMP SURFACE SHALL BE IN ACCORDANCE TO ADA SURFACE TREATMENTS.
8. 10% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

SHEET 2 OF 2

SEGUIN TEXAS It's real.	DATE ISSUED:	JUNE 1, 2013		TITLE RESIDENTIAL DRIVEWAY SECTION C
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CORDOVA TRAILS SUBDIVISION UNIT 1

TYPICAL CONCRETE DRIVEWAY DETAILS

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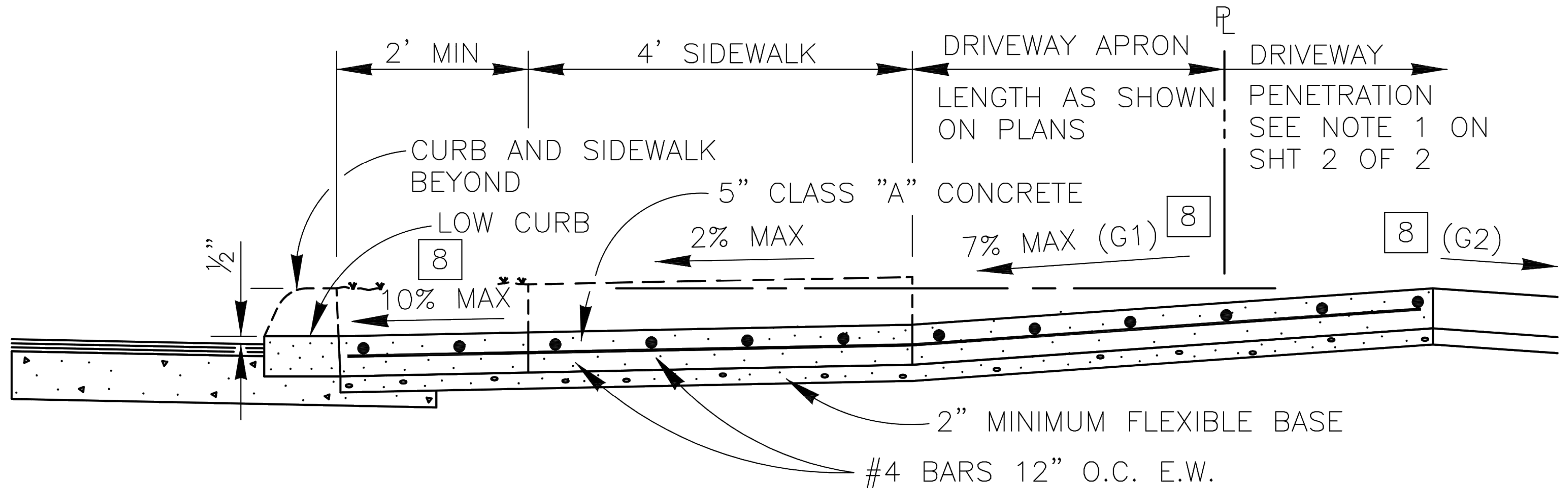

TYPICAL RESIDENTIAL DRIVEWAY SECTION D

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB

NOTES:

1. THE EXISTING CURB SHALL BE REMOVED FOR THE ENTIRE LIMITS OF THE APRON WHEN A NEW DRIVEWAY IS CONSTRUCTED ON AN EXISTING STREET.
2. 24 INCH LONG CURB TRANSITIONS FOR EACH SIDE OF THE APRON WILL BE PROVIDED TO SLOPE THE STREET CURB FROM EXISTING HEIGHT TO THE 1/2 INCH EXPOSURE AT THE DRIVEWAY. NO SEPARATE PAY ITEM.
3. 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:

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6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN (1:12) 8 % MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%).
7. SIDEWALK RAMP SURFACE SHALL BE IN ACCORDANCE TO ADA SURFACE TREATMENTS.
8. 10% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER. THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS.

SHEET 2 OF 2

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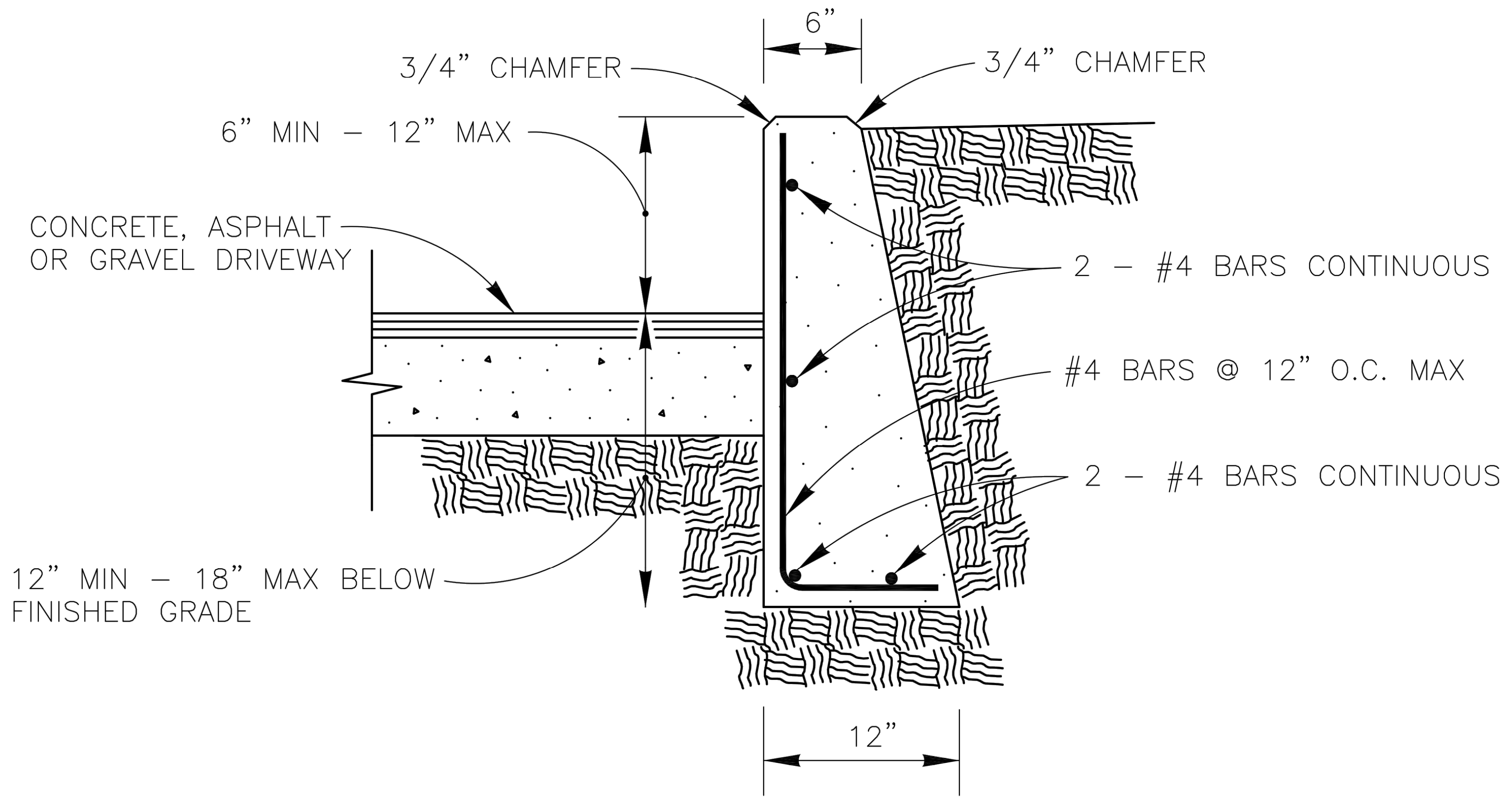

DRIVEWAY RETAINING WALL

ON COMPACTED SUBGRADE

NOTES:

1. CLASS "A" CONCRETE WITH REINFORCING AS SHOWN. REINFORCEMENT TO BE INCLUDED IN UNIT COST.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE, ASPHALT, OR GRAVEL DRIVEWAYS.
3. A STAMPED PLAN BY A PROFESSIONAL ENGINEER DULY LICENSED IN THE STATE OF TEXAS IS REQUIRED FOR WALLS EXCEEDING 12 INCHES IN HEIGHT OR VERTICAL GRADE CHANGE.

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	REVISION	DATE	BY	DRIVEWAY RETAINING WALL DETAIL
	1ST REVISION	11/01/18	MS	
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				DRAWING No. DRWY-8

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CORDOVA TRAILS
SUBDIVISION UNIT 1
TYPICAL CONCRETE DRIVEWAY DETAILS

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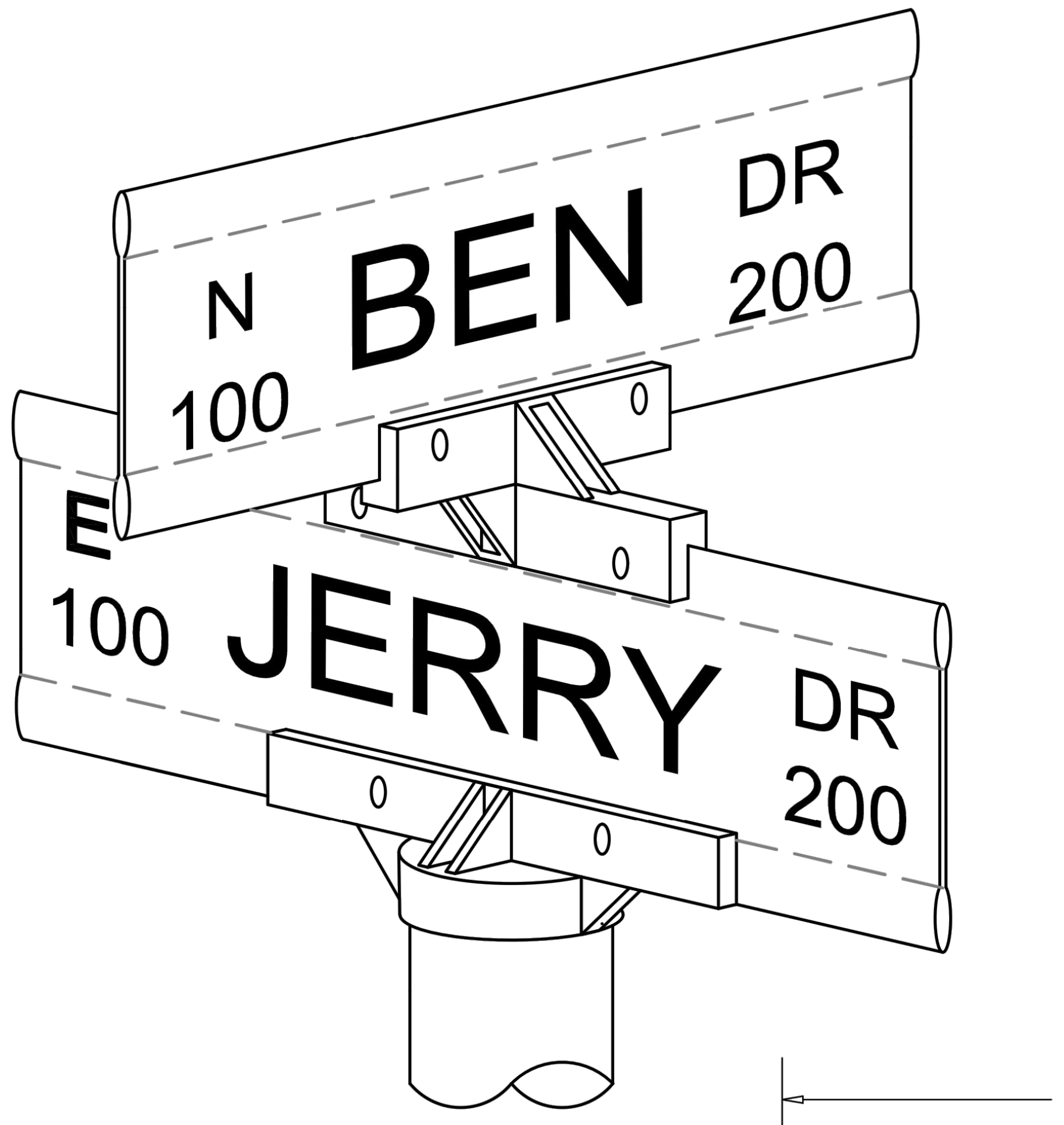

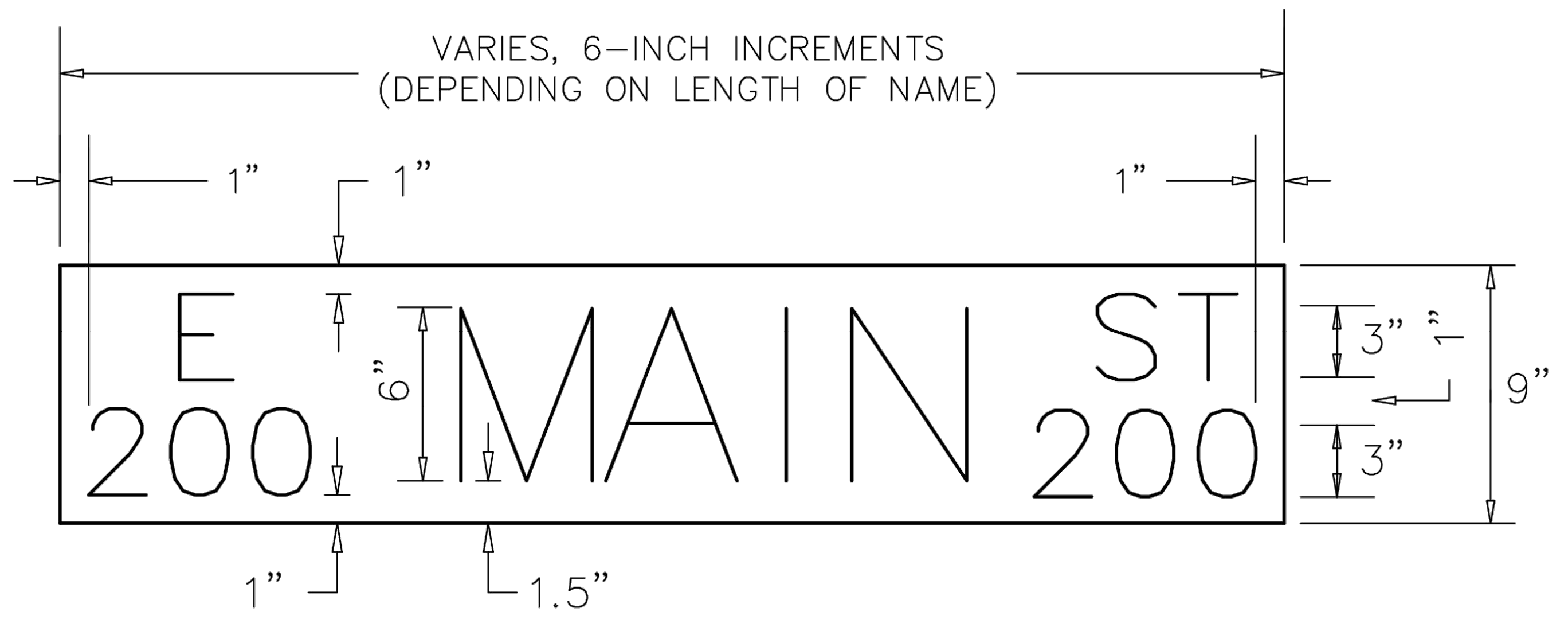

NOTES:

1. THE ALPHABETS AND LATERAL SPACING BETWEEN LETTERS AND NUMERALS SHALL CONFORM WITH THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION, AND ANY APPROVED CHANGES THERETO. LATERAL SPACING OF TEXT SHALL PROVIDE A BALANCED APPEARANCE. ALL MATERIALS SHALL CONFORM TO TXDOT DEPARTMENT SPECIFICATIONS FOR SMALL STREET SIGNS.
2. SIGN BLANKS SHALL BE 0.080" THICK AND ONE PIECE SHEET ALUMINUM ALLOY EXTRUDED BLADE CONFORMING WITH TXDOT DEPARTMENT SPECIFICATION "ALUMINUM SIGNS (TYPE A)."
3. SIGN BACKGROUND SHALL BE AVERY T–6500 (WHITE) HIGH INTENSITY PRISMATIC (HIP) REFLECTIVE SHEETING MATERIAL MEETING ASTM D4956 (AASHTO M268) TYPE III SPECIFICATIONS.

   FOREGROUND CONSISTS OF AN OVERLAY OF GREEN AVERY SERIES OL–2007 ELECTRO–CUT FILM MEETING ASTM D4956 SPECIFICATIONS. REMOVE LETTER CUTOUT FROM OVERLAY FILM TO ALLOW WHITE BACKGROUND TO SHOW THROUGH. LETTERING SHALL CONFIRM TO MUTCD/FHWA SERIES B "GOTHIC" FONT.
4. SIGN MOUNTING BRACKETS:

   POST CAP – TAPCO MODEL #037–00002 OR EQUIVALENT
   CROSS BRACKET – TAPCO MODEL #037–00008 OR EQUIVALENT
5. CONTRACTORS SHALL SUBMIT A MATERIAL SUBMITTAL TO CAPITAL PROJECTS & ENGINEER AND PUBLIC WORKS DEPARTMENTS FOR APPROVAL PRIOR TO FABRICATION OF ANY STREET SIGNS TO BE INSTALLED WITHIN THE ROW.

SHT 2 OF 2

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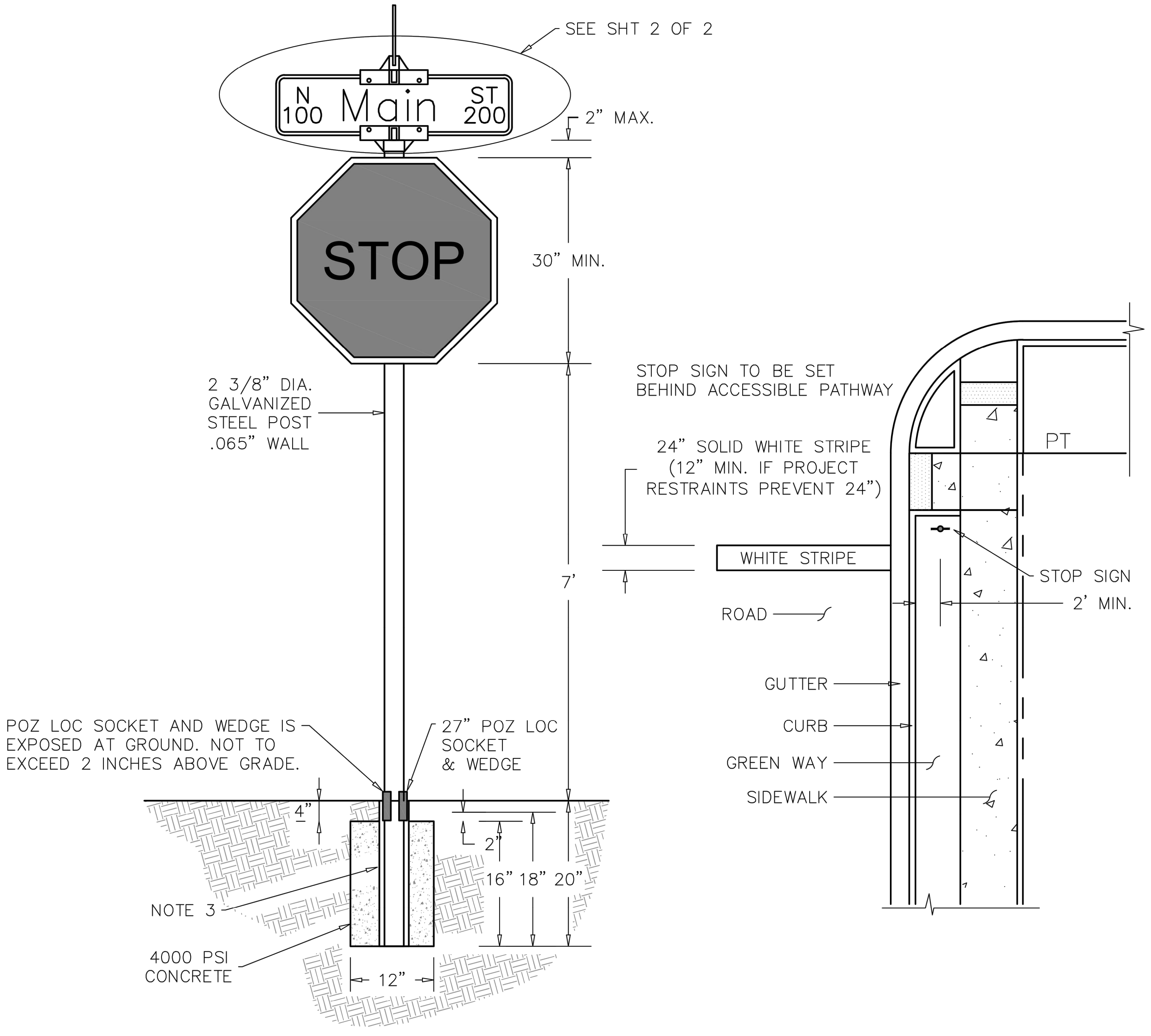
DATE ISSUED:	DECEMBER 18, 2018		TITLE
REVISION	DATE	BY	STREET NAME SIGN PLATE DETAIL
1ST REVISION	1/28/19	MS	
			SCALE: N.T.S.
			DRAWING No. RDWY–11.2



NOTES:

1. SIGNS ON STATE FACILITIES SHALL CONFORM TO TXDOT STANDARDS.
2. DISTANCE FROM THE EDGE OF THE STREET POST TO THE FACE OF THE CURB SHALL BE A MINIMUM OF 2'.
3. SLEEVE WILL BE 18" GALVANIZED STEEL PIPE WITH O.D. 2 7/8" AND I.D. 2 5/8"

SHT 1 OF 2

SEGUIN TEXAS
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DATE ISSUED:	DECEMBER 18, 2018		TITLE
REVISION	DATE	BY	STREET SIGN INSTALLATION DETAIL
1ST REVISION	1/28/19	MS	
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			DRAWING No. RDWY–11.1

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CORDOVA TRAILS
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SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS

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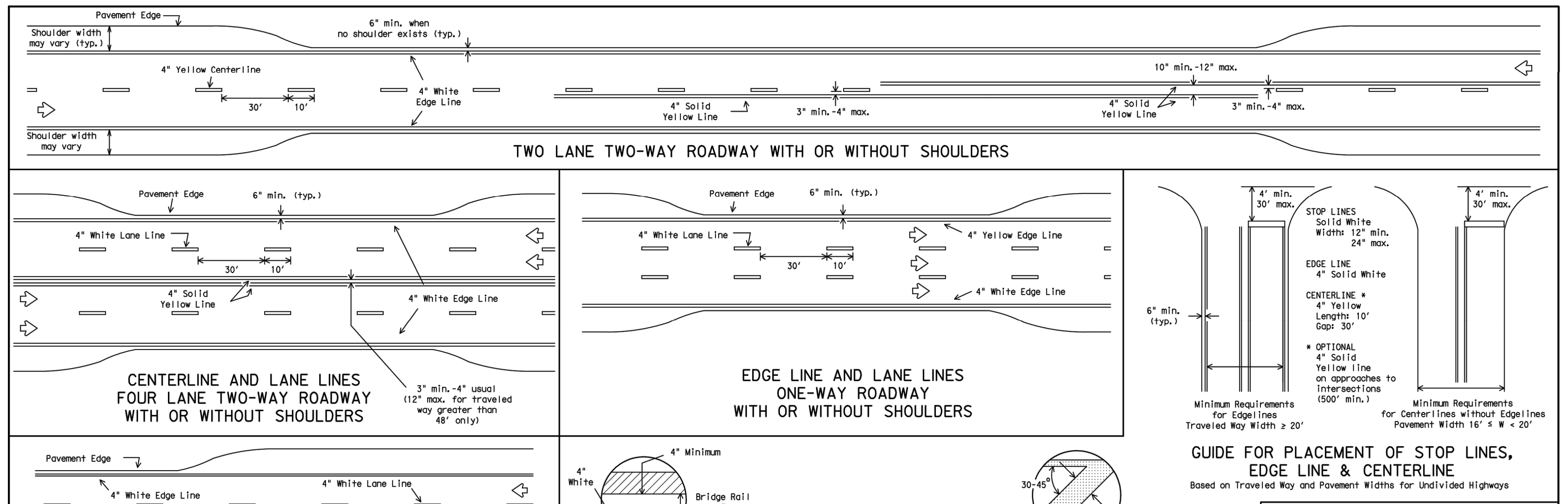

Pavement Edge
Shoulder width may vary (typ.)
6" min. when no shoulder exists (typ.)
4" Yellow Centerline
4" White Edge Line
4" Solid Yellow Line
3" min.-4" max.
10" min.-12" max.
Shoulder width may vary
4" White Lane Line
6" min. (typ.)
4" Solid Yellow Line
4" White Edge Line
3" min.-4" usual (12" max. for traveled way greater than 48' only)
4" Yellow Edge Line
STOP LINES Solid White Widths 12" min. 24" max.
EDGE LINE 4" Solid White
CENTERLINE 4" Yellow Lengths 10' Gaps 30'
OPTIONAL 4" Solid Yellow line on approaches to intersections (500' min.)
Minimum Requirements for Edgelines Traveled Way Width ≥ 20'
Minimum Requirements for Centerlines without Edgelines Pavement Width 16' ≤ W < 20'

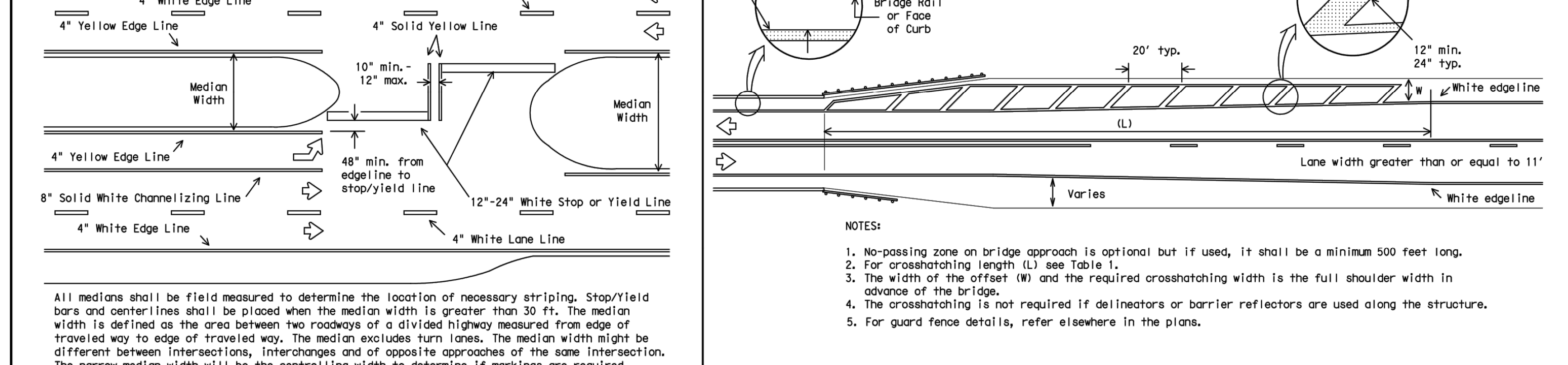
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

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

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways



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

FOUR LANE DIVIDED ROADWAY INTERSECTIONS

NOTES:

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

ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT

TABLE 1 - TYPICAL LENGTH (L)

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

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.

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

EXAMPLES:

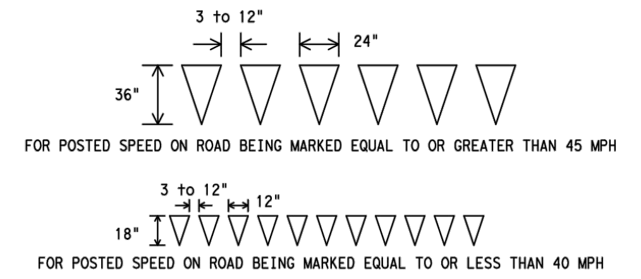
An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:
L = 8 x 70 = 560 ft.
A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:
$L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES

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

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

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



FOR POSTED SPEED ON ROAD BEING MARKED EQUAL TO OR GREATER THAN 45 MPH

FOR POSTED SPEED ON ROAD BEING MARKED EQUAL TO OR LESS THAN 40 MPH

YIELD LINES

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-12

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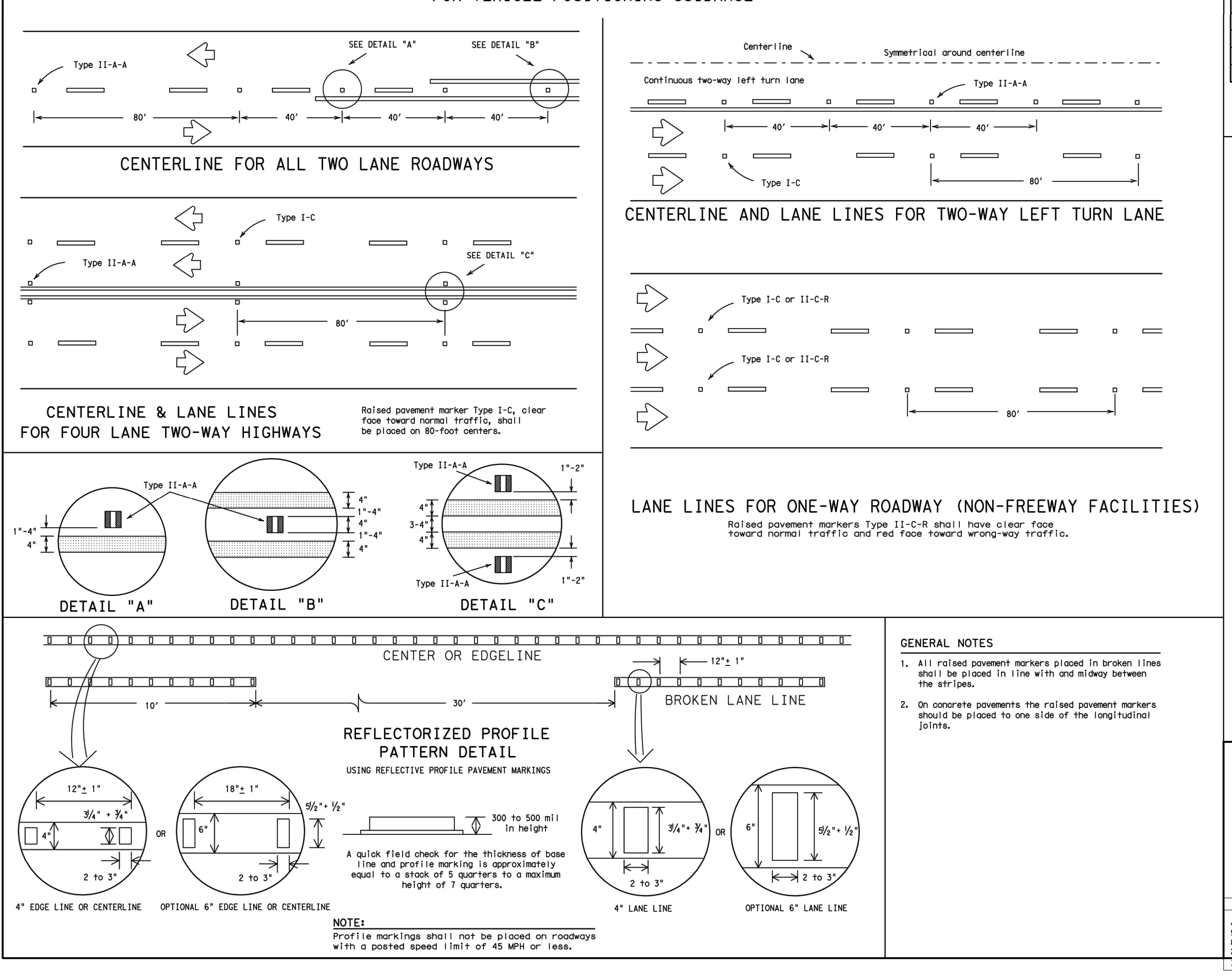
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



CENTERLINE FOR ALL TWO LANE ROADWAYS

CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.

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.

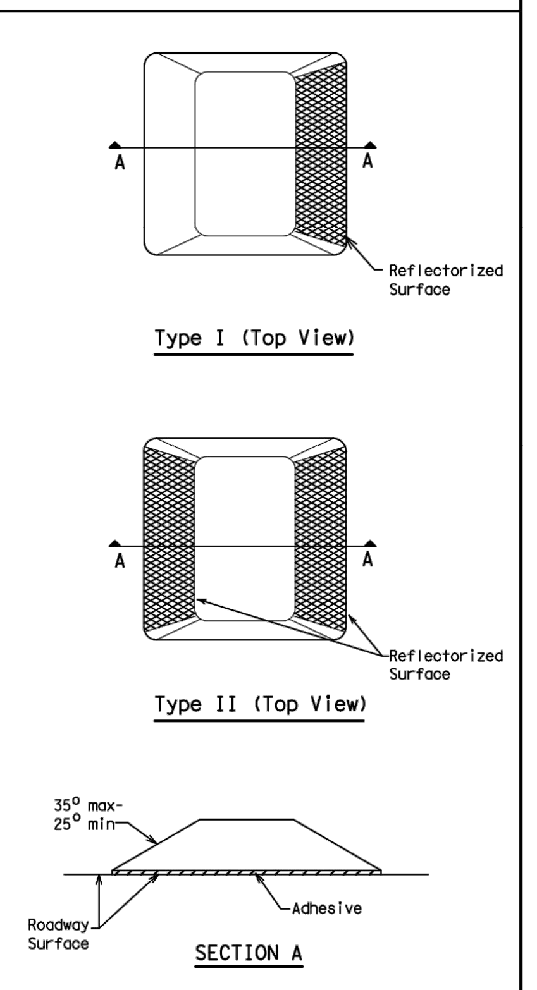
NOTE:
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

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.



Type I (Top View)

Type II (Top View)

SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation
Traffic Operations Division

POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS

PM(2)-12

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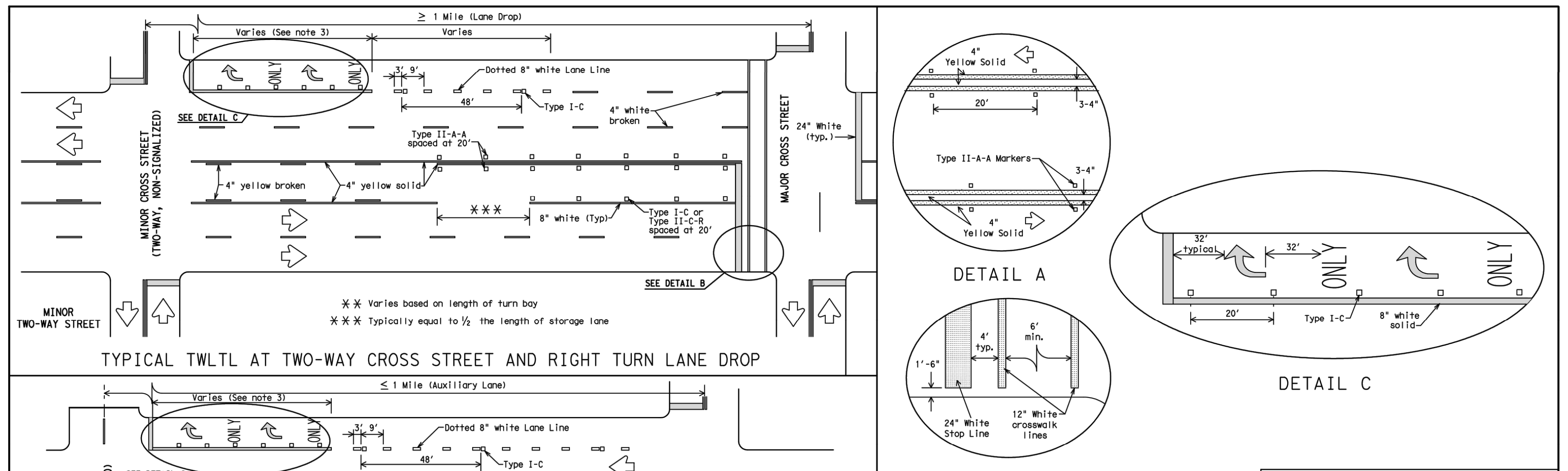
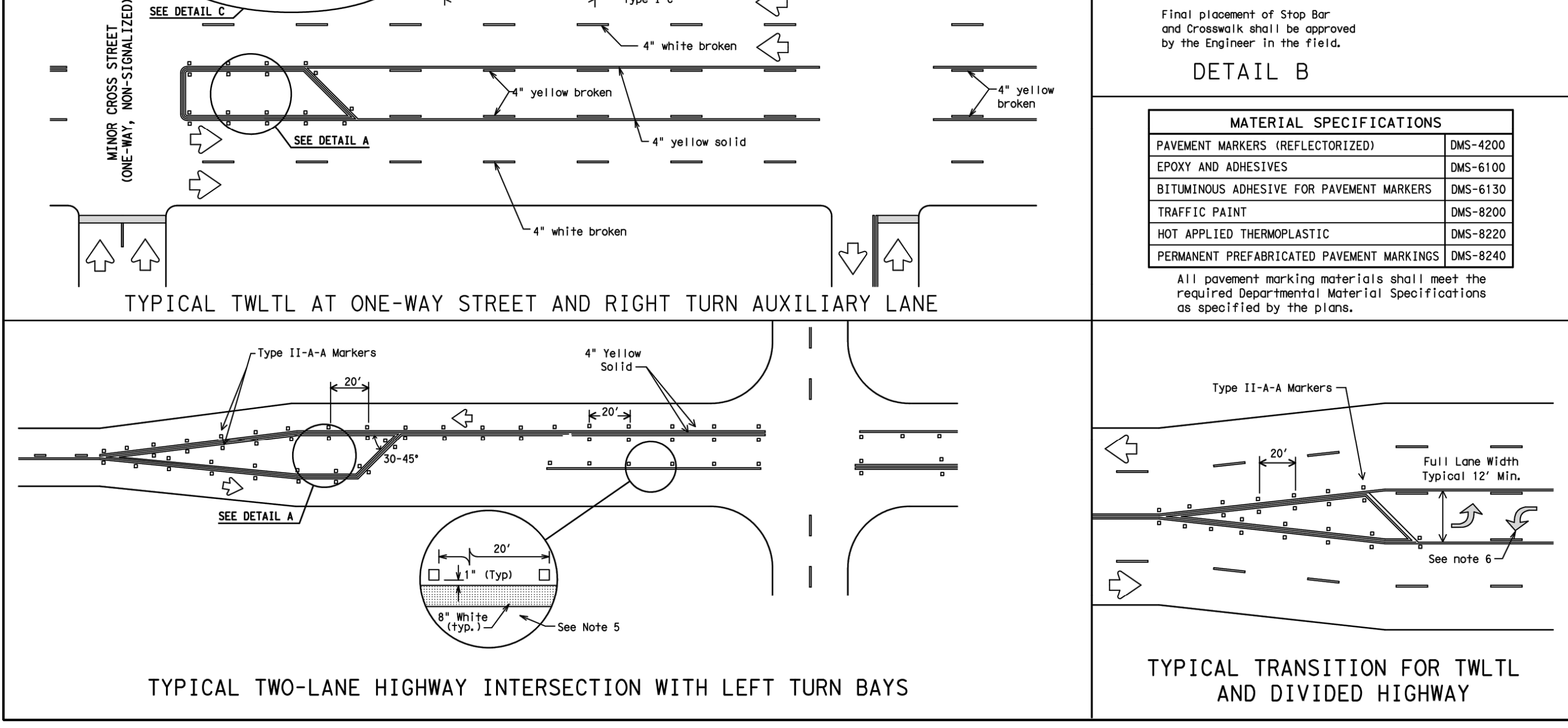


** Varies based on length of turn bay
*** Typically equal to ½ the length of storage lane

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

DETAIL A

DETAIL C



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

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

DETAIL B

TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS

TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

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

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

GENERAL NOTES

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

Texas Department of Transportation
Traffic Operations Division

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

PM(3)-12

© TxDOT April 1998	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS 5-00 2-12 8-00 3-03 2-10	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

22C

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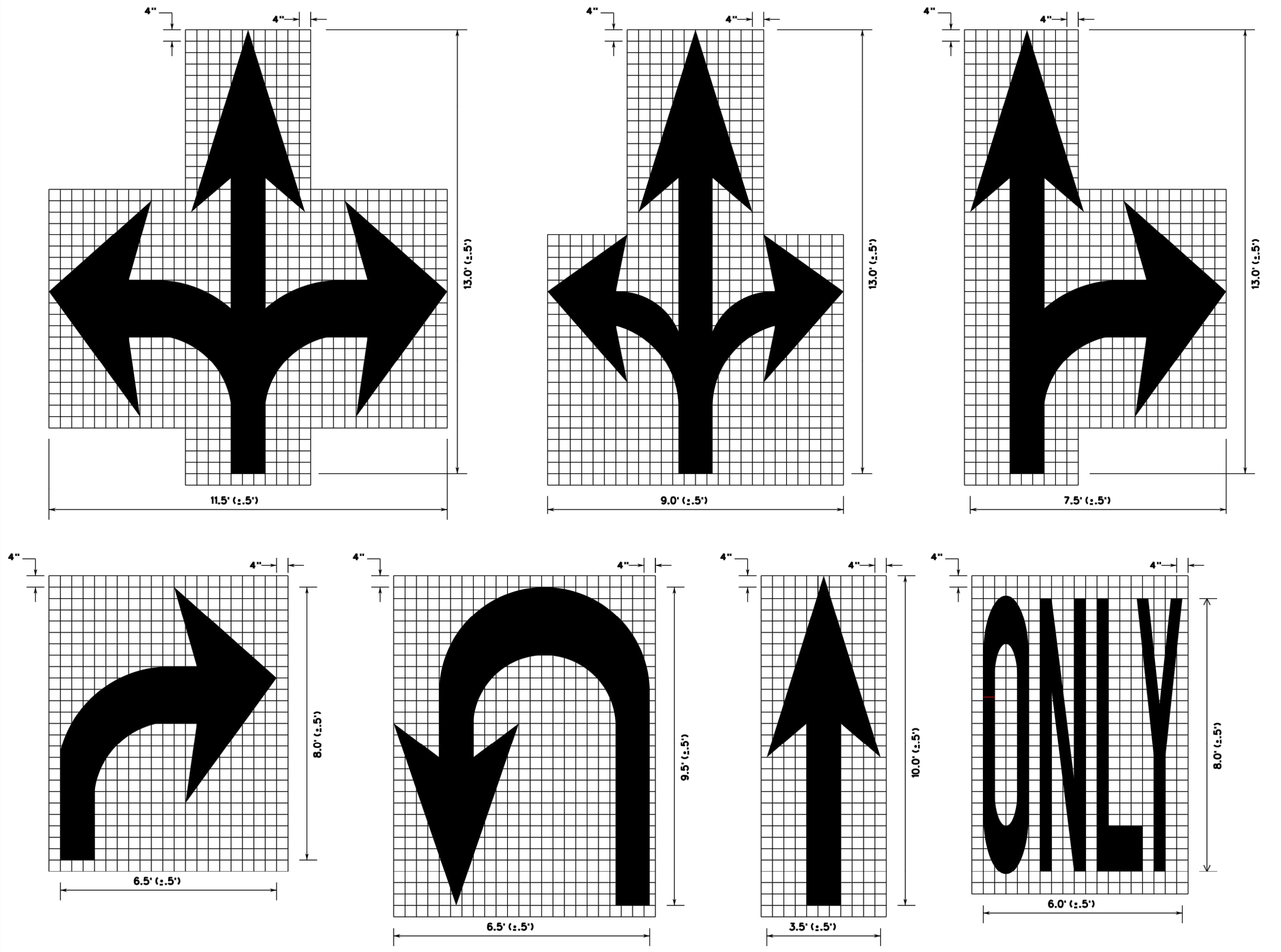

NOTES:

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

SEPTEMBER 2009
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING STANDARDS
STANDARD PAVEMENT MARKINGS
___% SU
DRWN. BY:

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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

CORDOVA TRAILS
SUBDIVISION UNIT 1

TXDOT SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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TBPLS No. 10048500

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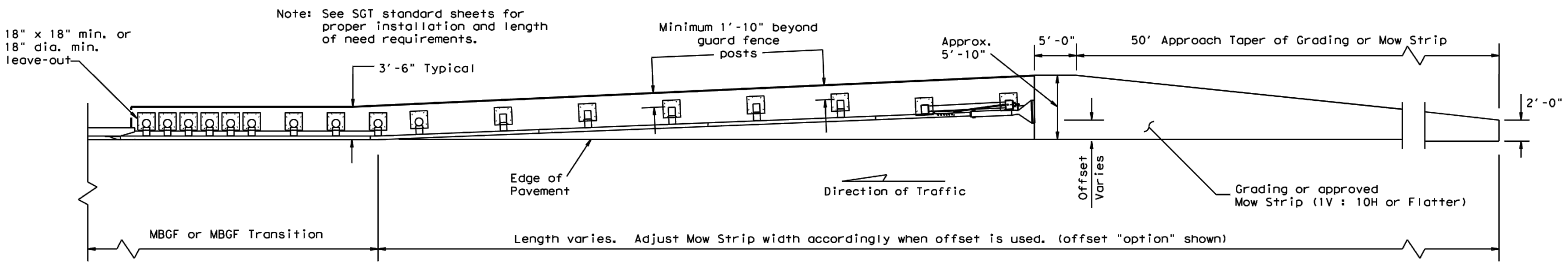
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

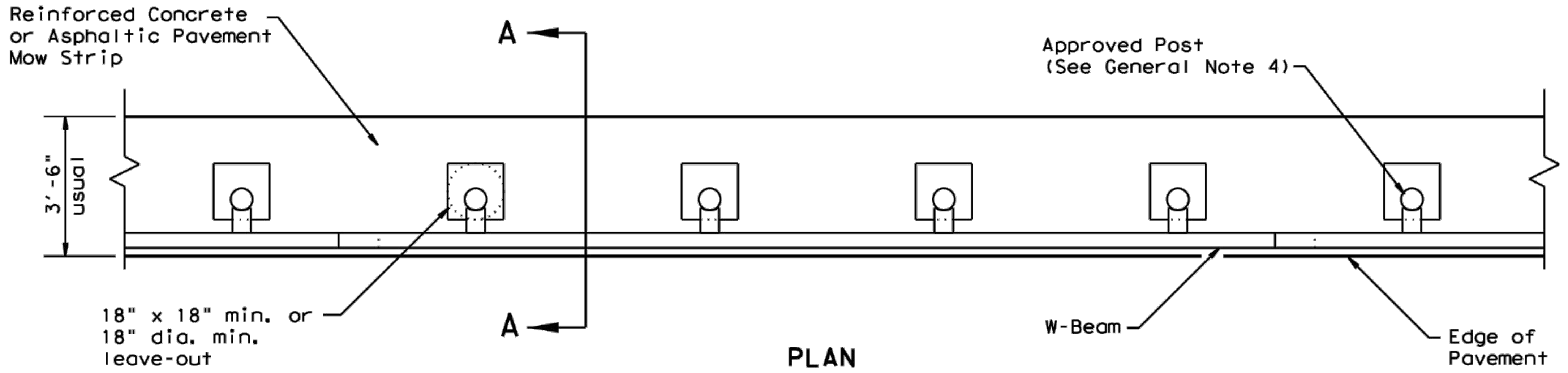

18" x 18" min. or
18" dia. min.
leave-out
Note: See SGT standard sheets for proper installation and length of need requirements.
3'-6" Typical
Minimum 1'-10" beyond guard fence posts
Approx. 5'-10"
5'-0"
50' Approach Taper of Grading or Mow Strip
2'-0"
Edge of Pavement
Direction of Traffic
Offset Varies
Grading or approved Mow Strip (1V : 10H or Flatter)
MBGF or MBGF Transition
Length varies. Adjust Mow Strip width accordingly when offset is used. (offset "option" shown)

GRADING AND MOW STRIP AT GUARDRAIL END TREATMENTS

Note: Site Condition(s)

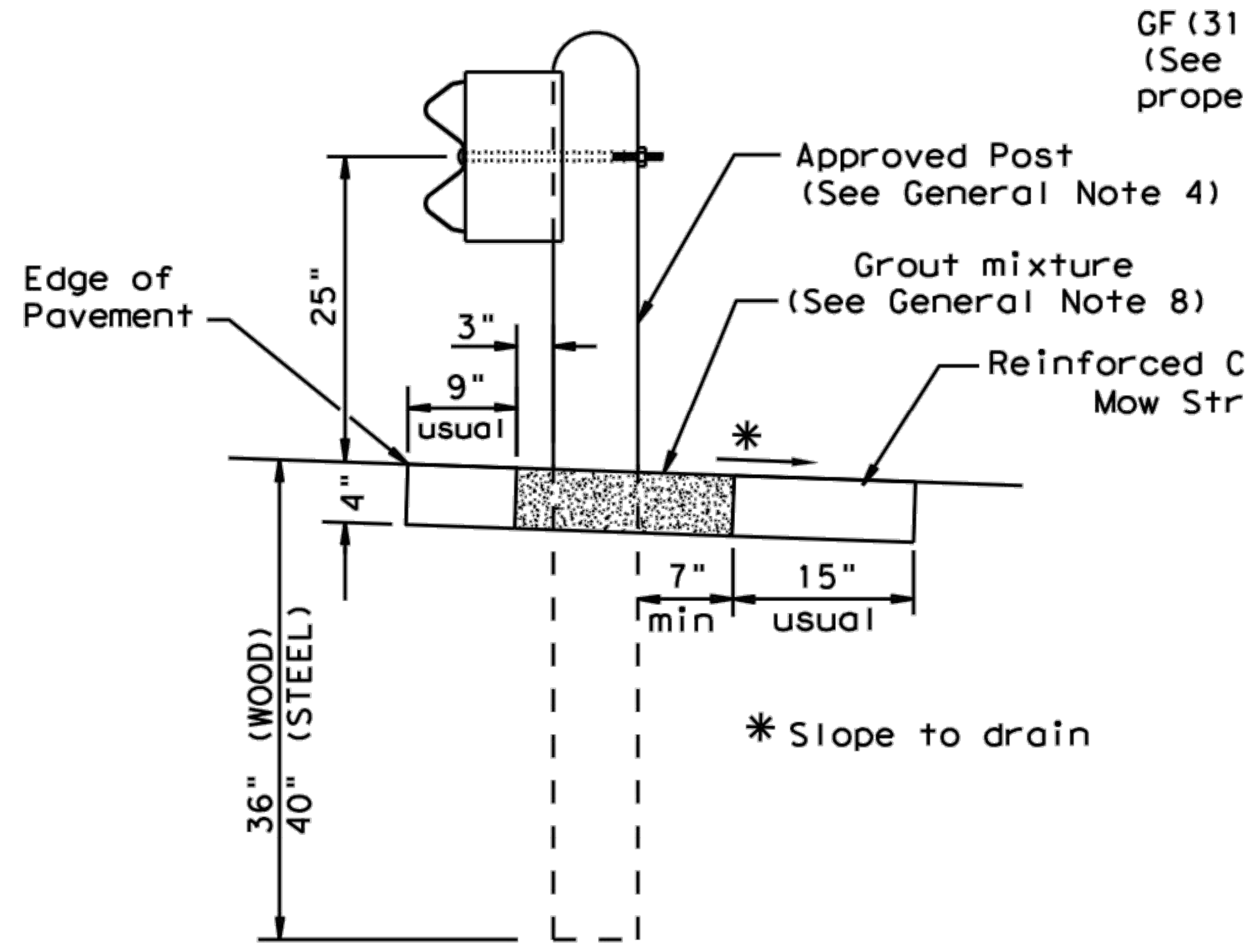
Site conditions may exist where grading is required for the proper installation of metal guard fence and end treatments.

Approach grading or mow strip may be decreased or eliminated, as directed by the Engineer.


Reinforced Concrete or Asphaltic Pavement Mow Strip
A
A
Approved Post (See General Note 4)
3'-6" usual
18" x 18" min. or 18" dia. min. leave-out
W-Beam
Edge of Pavement

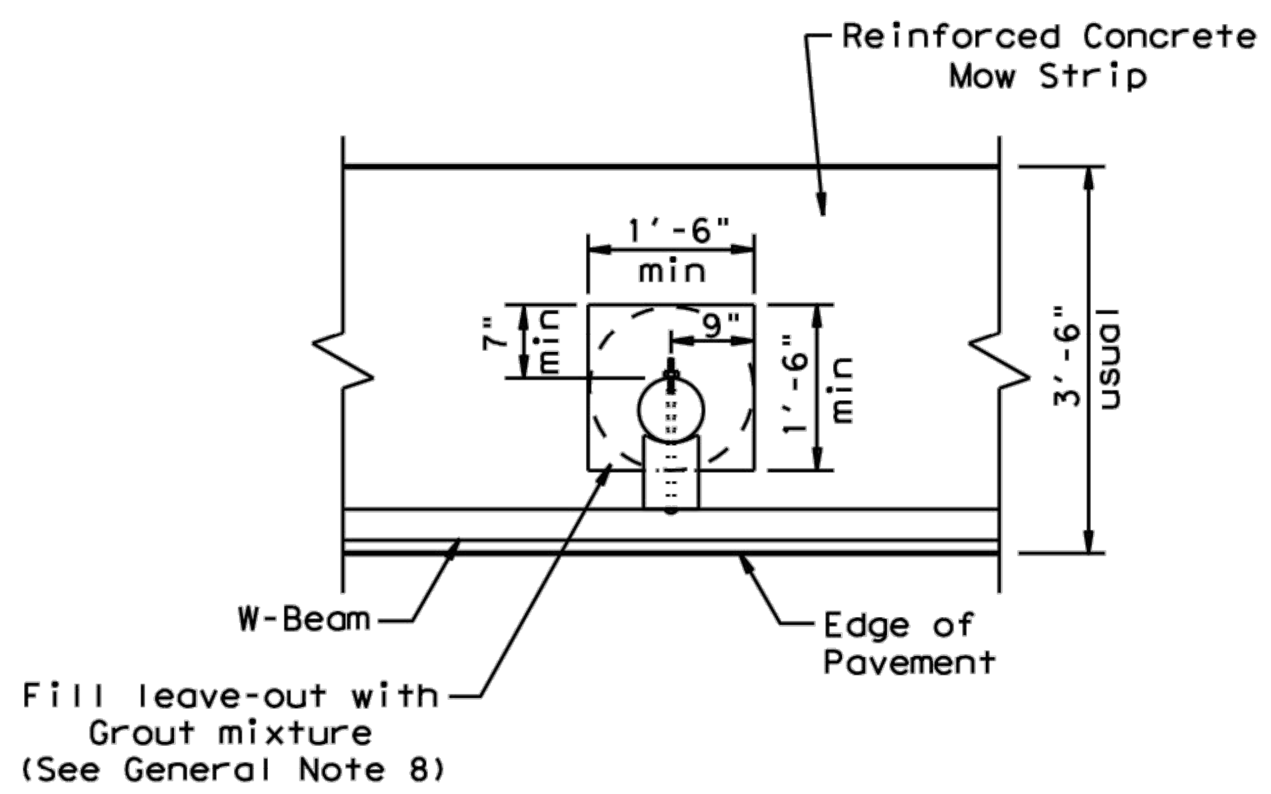
PLAN

GF(31) shown with Mow Strip
(See GF(31) standard sheet for proper installation)


Approved Post (See General Note 4)
Grout mixture (See General Note 8)
Edge of Pavement
Reinforced Concrete Mow Strip
25"
3"
9" usual
4"
*
7" min
15" usual
36" (WOOD)
40" (STEEL)
* Slope to drain

SECTION A-A

Typical

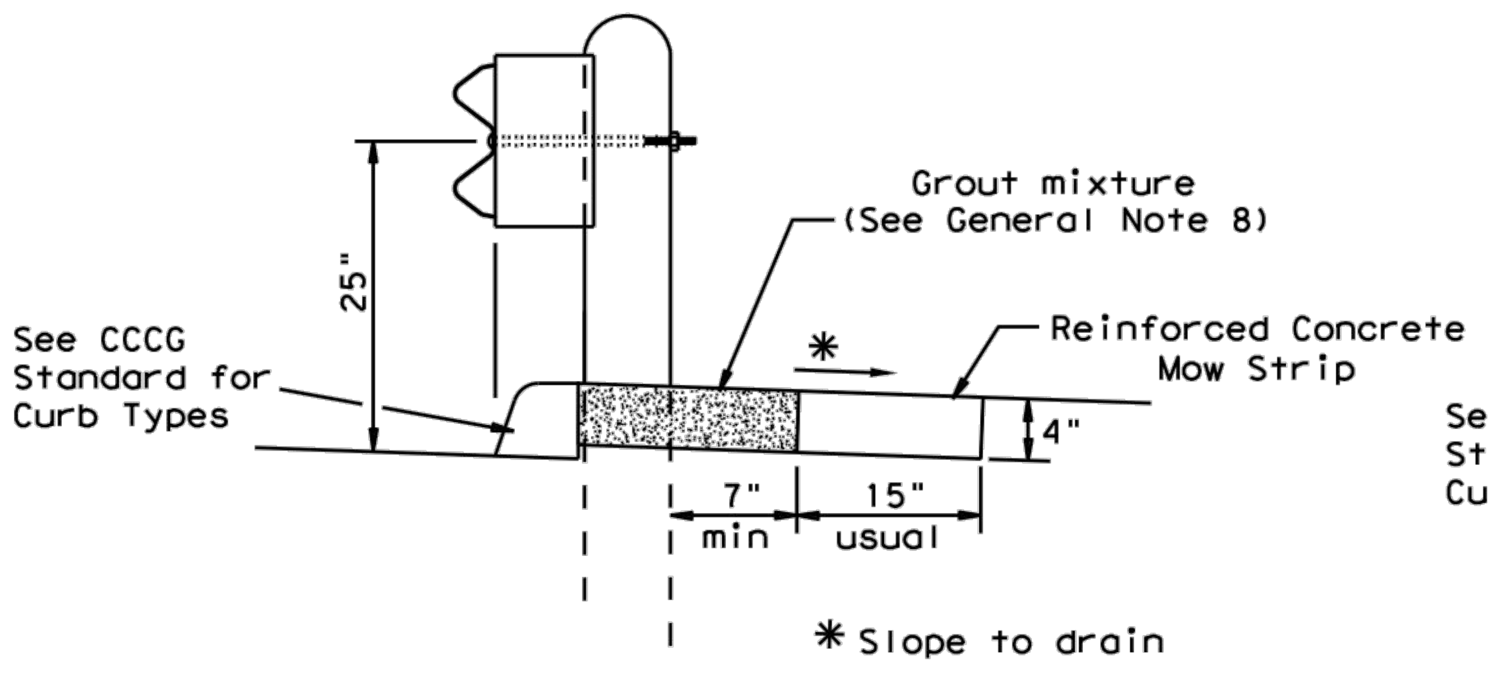

Reinforced Concrete Mow Strip
1'-6" min
7" min
9"
1'-6" min
3'-6" usual
W-Beam
Edge of Pavement
Fill leave-out with Grout mixture (See General Note 8)

MOW STRIP DETAIL

Reinforced Concrete Mow Strip with 18" x 18" Square or 18" Dia. minimum leave-out.

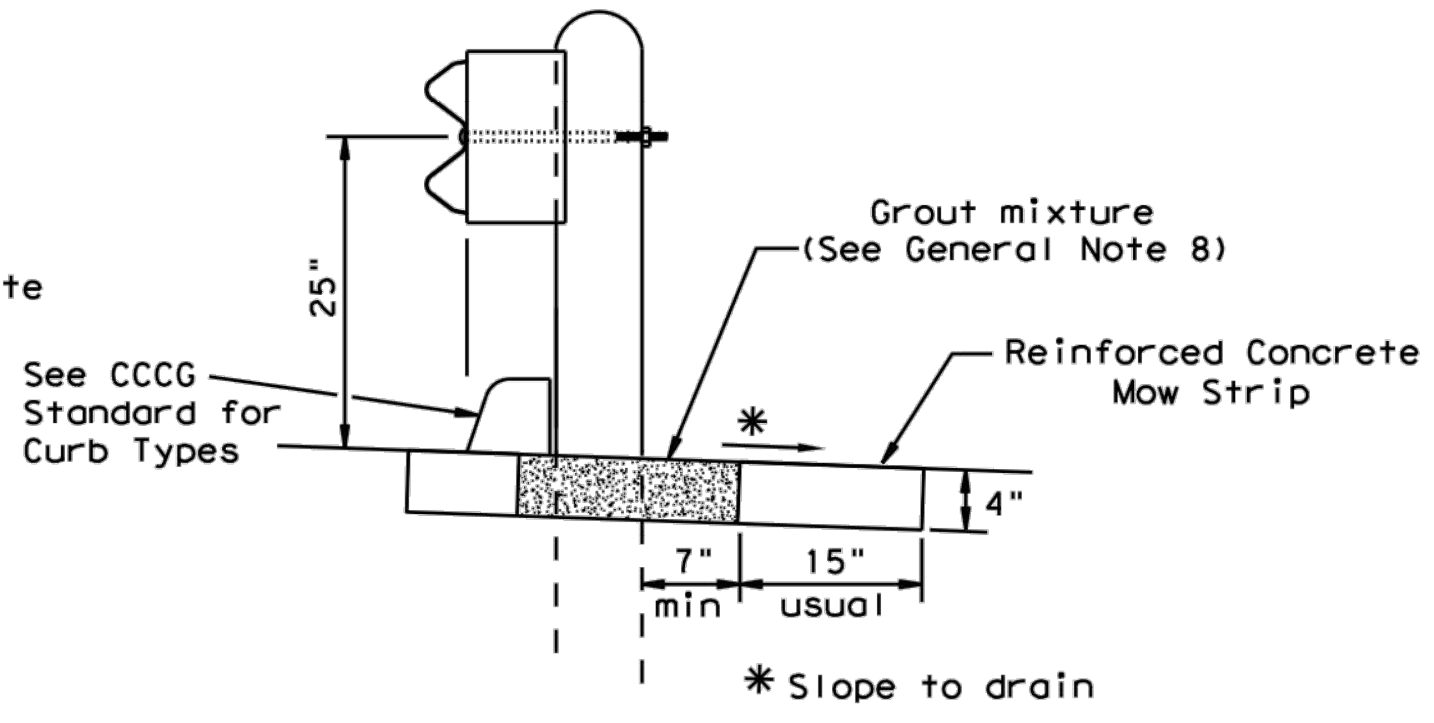
GENERAL NOTES

1. This mow strip design is for use with metal beam guard fence, guard fence transitions, and guard fence end treatments. See applicable GF(31) MBGF or GF(31) Transition Standard sheet for additional information.
2. Mow strips shall be reinforced concrete with (wire mesh or synthetic fiber), as shown on the plans and will be paid for under the pertinent bid item. Reinforced concrete shall be placed in accordance with Item 432, "Riprap." The use of the synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Material Producer List (MPL), maintained by TxDOT, Construction Division.
3. The leave-out behind the post shall be a minimum of 7".
4. Only steel (W6 x 8.5 or W6 x 9.0), or 7 ½" Dia. round wood posts are acceptable for use in the mow strip. See GF(31) Standard for additional details.
5. ~~Other curb placement options may be used. Curbs are not considered part of the mow strip and will be paid for under other pertinent bid item.~~
6. Thickness of the mow strip will be 4".
7. The limits of payment for reinforced concrete will include leave-outs for the posts.
8. The leave-outs shall be filled with a Grout mixture consisting of: 2719 pounds sand, 188 pounds Type 1 or II cement, and 550 pounds of water per cubic yard, with a 28-day compressive strength of approximately 230 psi or less. Provide grout with a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (Suggested Maximum leave-out of 20"). Payment for furnishing and placing the grout mixture will be subsidiary to the pay item of riprap mow strip.


Grout mixture (See General Note 8)
See CCCG Standard for Curb Types
Reinforced Concrete Mow Strip
25"
4"
*
7" min
15" usual
* Slope to drain

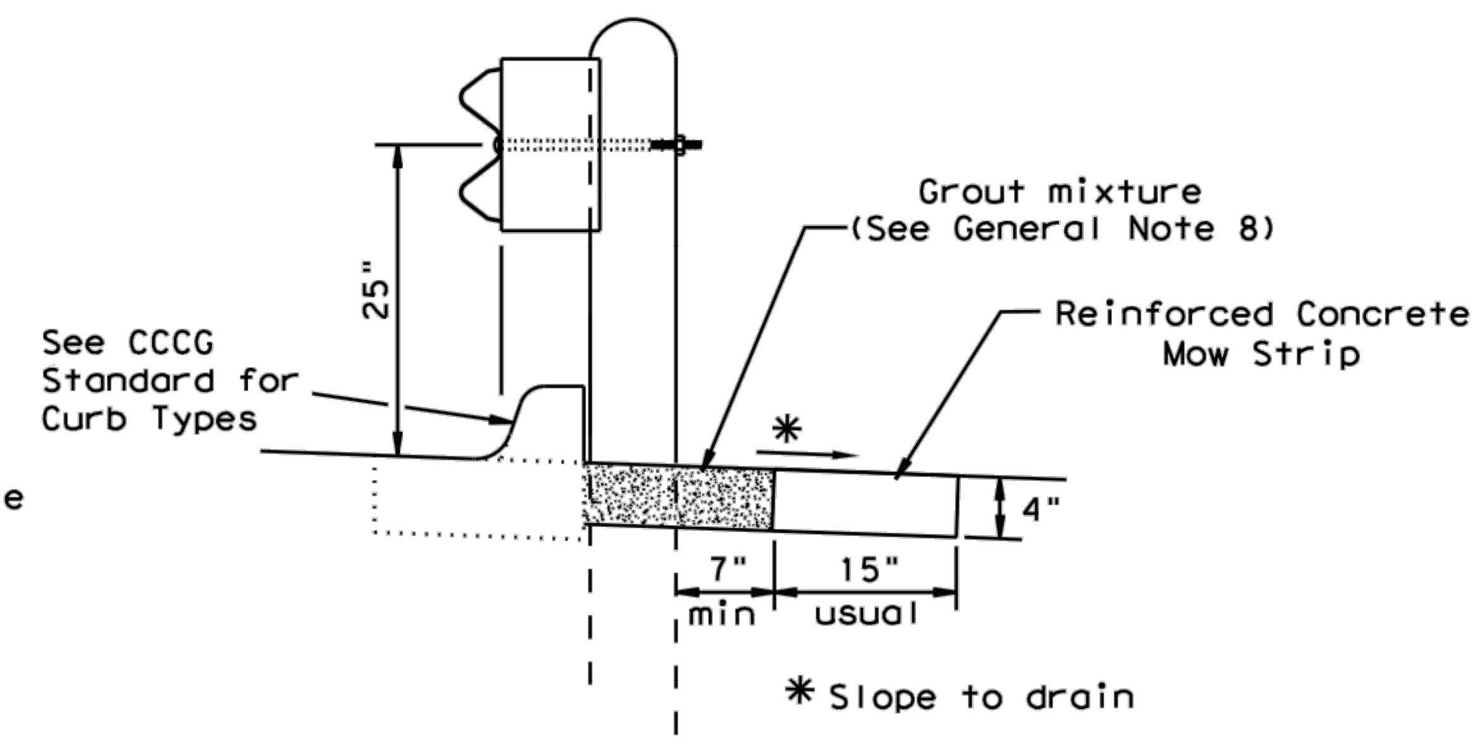
CURB OPTION (1)

This option will increase the post embedment throughout the system.


Grout mixture (See General Note 8)
Reinforced Concrete Mow Strip
See CCCG Standard for Curb Types
25"
4"
*
7" min
15" usual
* Slope to drain

CURB OPTION (2)

Curb shown on top of mow strip


Grout mixture (See General Note 8)
Reinforced Concrete Mow Strip
See CCCG Standard for Curb Types
25"
4"
*
7" min
15" usual
* Slope to drain

CURB OPTION (3)

Texas Department of Transportation | Design Division Standard

METAL BEAM GUARD FENCE
(MOW STRIP)
TL-3 MASH COMPLIANT

GF(31)MS-19

FILE: gf31ms19.dgn	DN: TxDOT		CK: KM	DW: VP	CK: CGL/AG
© TxDOT: NOVEMBER 2019	CONT	SECT	JOB		HIGHWAY
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CORDOVA TRAILS SUBDIVISION UNIT 1

METAL BEAM GUARD FENCE DETAILS

DATE
07/29/2021

PROJECT NO.
03480.002

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AC

CHECKED BY
DDC/JC

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TBPLS No. 10048500

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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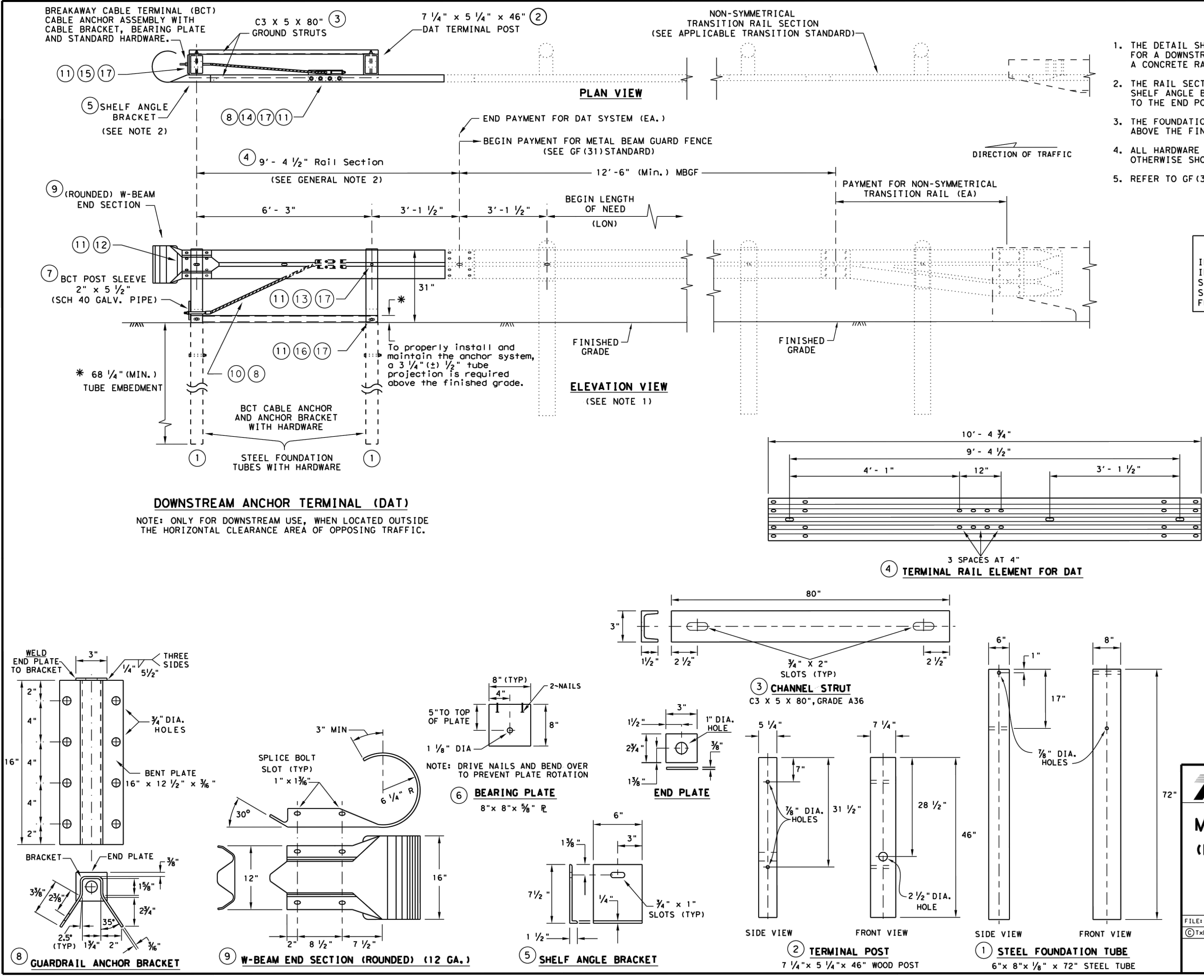
PLAN VIEW
ELEVATION VIEW
(SEE NOTE 1)
DOWNSTREAM ANCHOR TERMINAL (DAT)
NOTE: ONLY FOR DOWNSTREAM USE, WHEN LOCATED OUTSIDE THE HORIZONTAL CLEARANCE AREA OF OPPOSING TRAFFIC.
④ TERMINAL RAIL ELEMENT FOR DAT
③ CHANNEL STRUT
C3 X 5 X 80", GRADE A36
⑥ BEARING PLATE
8"x 8"x ⅝"
END PLATE
② TERMINAL POST
7 ¼"x 5 ¼"x 46" WOOD POST
① STEEL FOUNDATION TUBE
6"x 8"x ⅛" x 72" STEEL TUBE
⑧ GUARDRAIL ANCHOR BRACKET
⑨ W-BEAM END SECTION (ROUNDED) (12 GA.)
⑤ SHELF ANGLE BRACKET

GENERAL NOTES

1. THE DETAIL SHOWN IS THE MINIMUM LENGTH OF NEED (LON) FOR A DOWNSTREAM ANCHOR TERMINAL (DAT) CONNECTED TO A CONCRETE RAIL.
2. THE RAIL SECTION AT THE END POST IS SUPPORTED BY THE SHELF ANGLE BRACKET. THE RAIL ELEMENT IS NOT ATTACHED TO THE END POST.
3. THE FOUNDATION TUBES SHALL NOT PROJECT MORE THAN 3 ¾" ABOVE THE FINISHED GRADE.
4. ALL HARDWARE FOR DAT SHALL BE ASTM A307 UNLESS OTHERWISE SHOWN.
5. REFER TO GF(31) SHEET FOR TERMINAL CONNECTION DETAILS.

MOW STRIP INSTALLATION

IF A MOW STRIP IS REQUIRED WITH THE DAT INSTALLATION THE LEAVE-OUT AREA AROUND THE STEEL FOUNDATION TUBES AND THE TWO CHANNEL STRUTS MAY BE OMITTED. THIS WILL REQUIRE A FULL POUR AT THE FOUNDATION TUBES.

#	(DAT) PARTS LIST	QTY
①	STEEL FOUNDATION TUBE	2
②	DAT TERMINAL POST	2
③	CHANNEL STRUT	2
④	TERMINAL RAIL ELEMENT	1
⑤	SHELF ANGLE BRACKET	1
⑥	BCT BEARING PLATE	1
⑦	BCT POST SLEEVE	1
⑧	GUARDRAIL ANCHOR BRACKET	1
⑨	(ROUNDED) W-BEAM END SECTION	1
⑩	BCT CABLE ANCHOR	1
⑪	RECESSED NUT, GUARDRAIL	20
⑫	1 ¼" BUTTON HEAD BOLT	4
⑬	10" BUTTON HEAD BOLT	2
⑭	⅝" X 2" HEX HEAD BOLT	8
⑮	⅝" X 8" HEX HEAD BOLT	4
⑯	⅝" X 10" HEX HEAD BOLT	2
⑰	⅝" FLAT WASHER	18

Texas Department of Transportation
Design Division Standard

METAL BEAM GUARD FENCE
(DOWNSTREAM ANCHOR TERMINAL)
TL-3 MASH COMPLIANT

GF(31)DAT-19

FILE: gf31dat19.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CGL/AG
© TxDOT: NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
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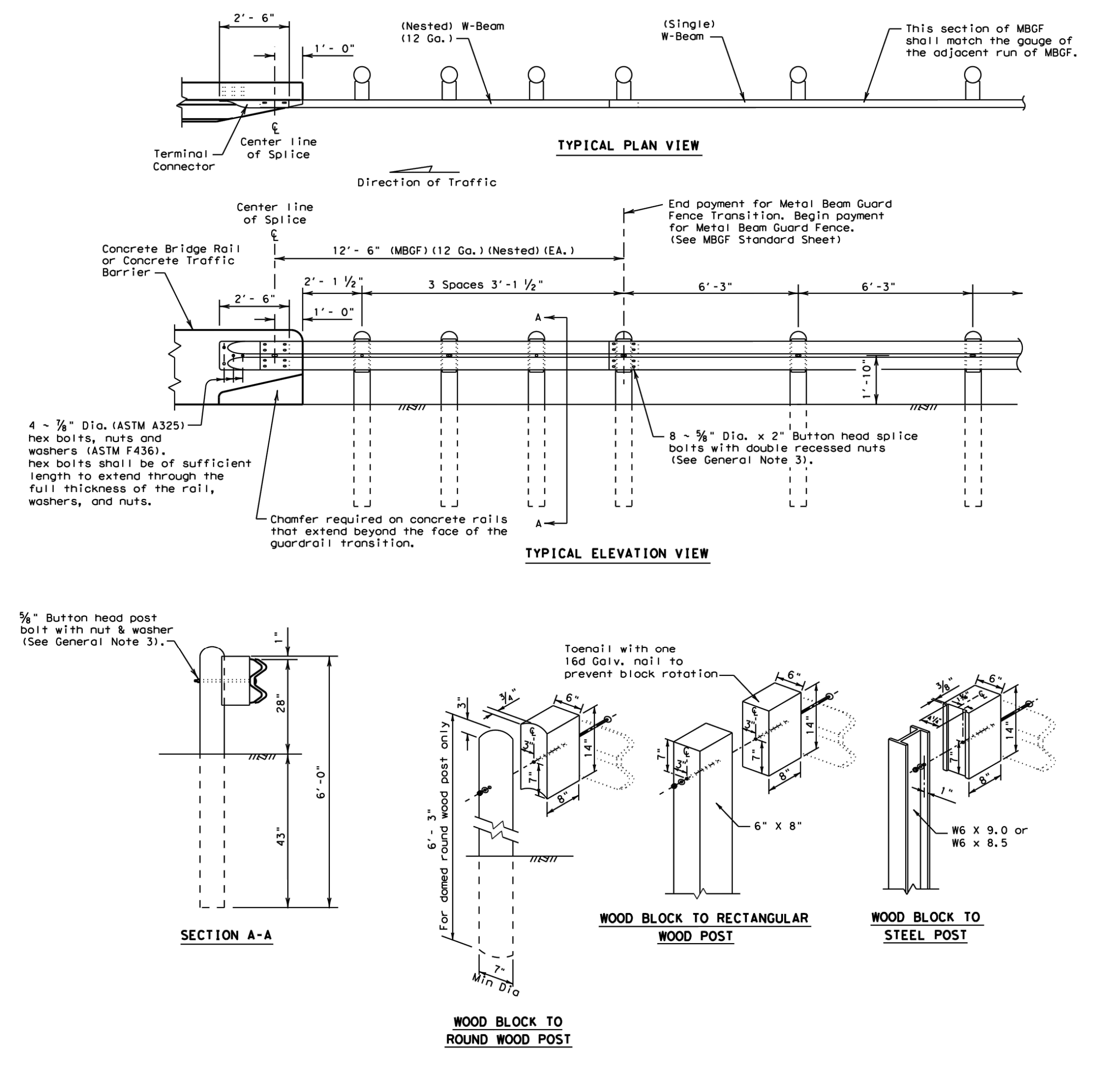
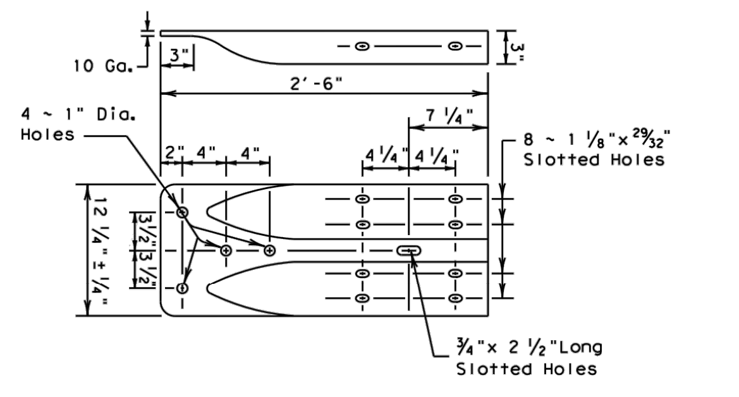


GENERAL NOTES

1. The type of post (round wood post, rectangular wood post, or steel post) will be shown elsewhere in the plans. The exact position of transitions shall be shown elsewhere in the plans or as directed by the Engineer.
2. Rail element shall meet the requirements of Item 540, "Metal Beam Guard Fence" except as modified on the plans.
3. Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut and Type A 1 ¾" O.D. washer and not more than 1" beyond it. Button head "splice" bolts (ASTM A307) are ⅝" x 2" (at triple rail splices) with ⅝" double recessed nuts (ASTM A563).
4. Fittings (bolts, nuts, and washers) shall be galvanized in accordance with Item 445, "Galvanizing." Fittings shall be subsidiary to the bid item requiring construction of the transition.
5. Crown will be widened to accommodate transitions.
6. If solid rock is encountered. See the MBGF standard sheet for the proper installation guidance.
7. Posts shall not be set in concrete.
8. Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT, maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL can furnish composite material posts and/or blocks.
9. Refer to MBGF standard sheet for additional details.



TERMINAL CONNECTOR

FOR USE WITH MBGF CONNECTIONS TO CONCRETE BRIDGE RAILS AND TRAFFIC BARRIERS

ONLY FOR USE IN MAINTENANCE REPAIRS.

Texas Department of Transportation
Design Division Standard

METAL BEAM GUARD FENCE
TRANSITION (TL2)
(Low Speed Transition)

MBGF(TL2)-19

FILE: mbgftl219.dgn	DN: TxDOT	CK: KM	DW: BD	CK: VP
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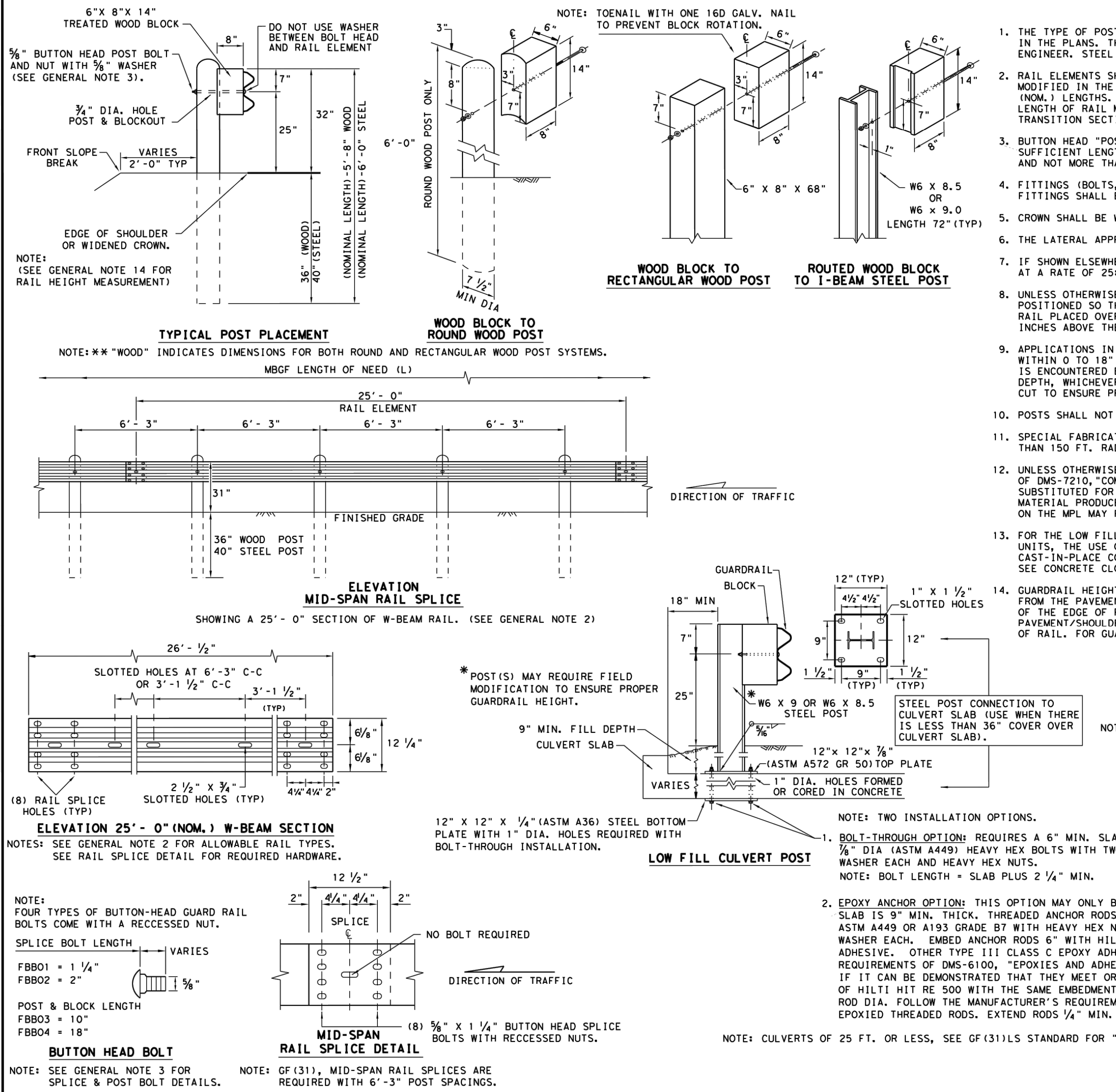

TYPICAL POST PLACEMENT
WOOD BLOCK TO ROUND WOOD POST
WOOD BLOCK TO RECTANGULAR WOOD POST
ROUTED WOOD BLOCK TO I-BEAM STEEL POST
ELEVATION MID-SPAN RAIL SPLICE
SHOWING A 25'-0" SECTION OF W-BEAM RAIL. (SEE GENERAL NOTE 2)
ELEVATION 25'-0" (NOM.) W-BEAM SECTION
LOW FILL CULVERT POST
BUTTON HEAD BOLT
MID-SPAN RAIL SPLICE DETAIL

GENERAL NOTES

1. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
2. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'- 0", OR 12'- 6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 ½" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND ⅝" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
4. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
5. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
6. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
7. IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
8. UNLESS OTHERWISE SHOWN IN THE PLANS, GUARD FENCE PLACED IN THE VICINITY OF CURBS SHALL BE POSITIONED SO THAT THE FACE OF CURB IS LOCATED DIRECTLY BELOW OR BEHIND THE FACE OF THE RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
9. APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
10. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
11. SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
12. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TXDOT MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210 ONLY PRODUCERS ON THE MPL MAY FURNISH COMPOSITE MATERIAL BLOCKS.
13. FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MD.
14. GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.

NOTE: TRANSISTIONS TO BRIDGE RAILS OR TRAFFIC BARRIERS.
SEE GF(31)TL3 TR STANDARD FOR HIGH-SPEED TL-3 TRANSITIONS.
SEE GF(31)TL2 TR STANDARD FOR LOW-SPEED TL-2 TRANSITIONS.

STEEL POST CONNECTION TO CULVERT SLAB (USE WHEN THERE IS LESS THAN 36" COVER OVER CULVERT SLAB).

NOTE: TWO INSTALLATION OPTIONS.

1. BOLT-THROUGH OPTION: REQUIRES A 6" MIN. SLAB THICKNESS. ⅞" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS.
   NOTE: BOLT LENGTH = SLAB PLUS 2 ¼" MIN.
2. EPOXY ANCHOR OPTION: THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE ⅞" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS ¼" MIN. BEYOND NUT.

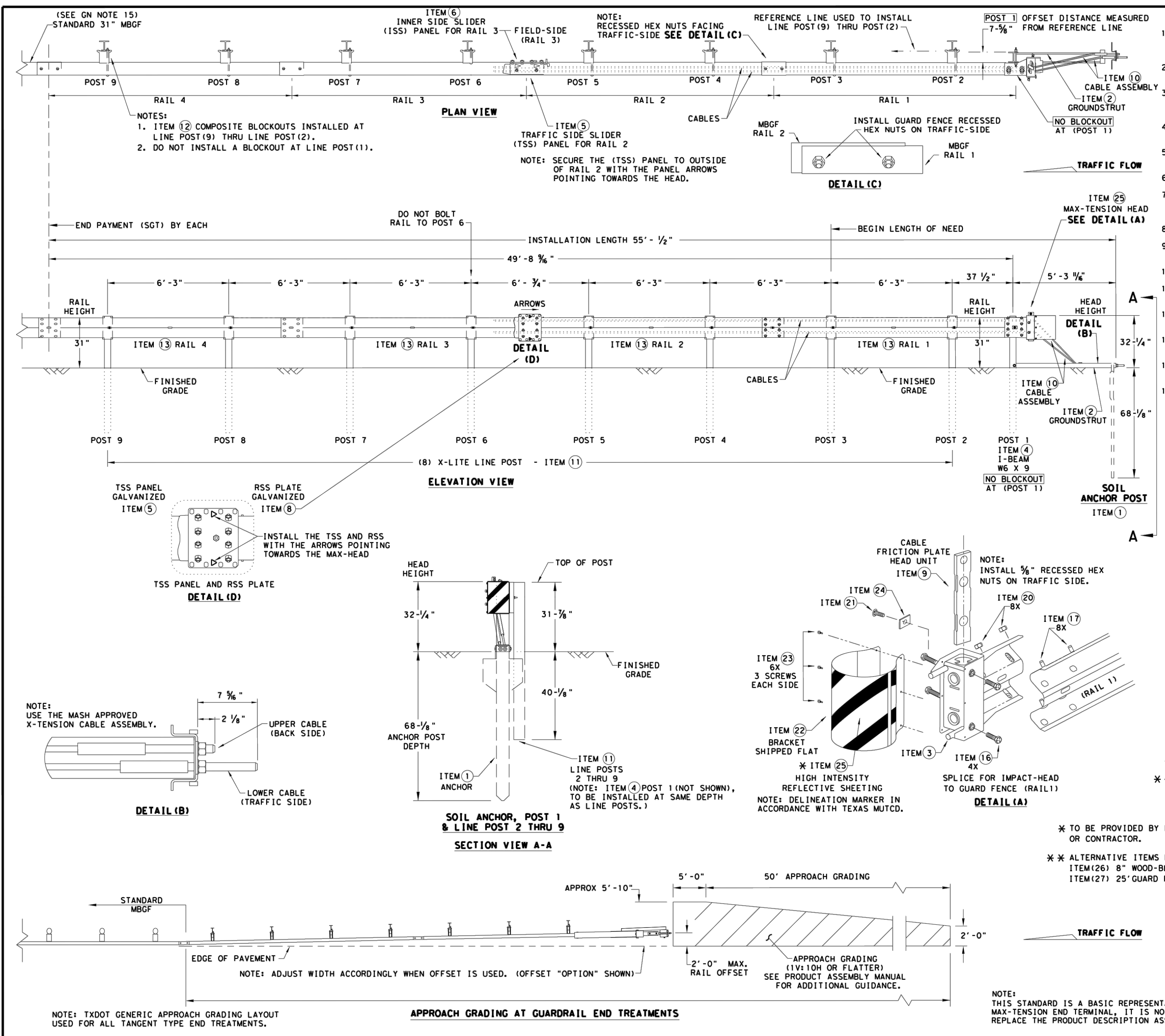
NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF(31)LS STANDARD FOR "LONG SPAN" OPTION.

Texas Department of Transportation
Design Division Standard

METAL BEAM GUARD FENCE
TL-3 MASH COMPLIANT

GF(31)-19

FILE: gf3119.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CGL/AG
© TxDOT: NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.



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

* 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.

Texas Department of Transportation
Design Division Standard

MAX-TENSION END TERMINAL
MASH - TL-3

SGT(11S)31-18

FILE: sgt11s3118.dgn	DN: TxDOT	CK: KM	DW: TxDOT	CK: CL
© TxDOT: FEBRUARY 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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

CORDOVA TRAILS SUBDIVISION UNIT 1

METAL BEAM GUARD FENCE DETAILS

DATE
07/29/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 2020-07-13 - REPLACED & ADDED MBGF DETAILS, ADDED PLAT NUMBER
2.
3.
4.
5.
6.
7.
8.
9.

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

19B

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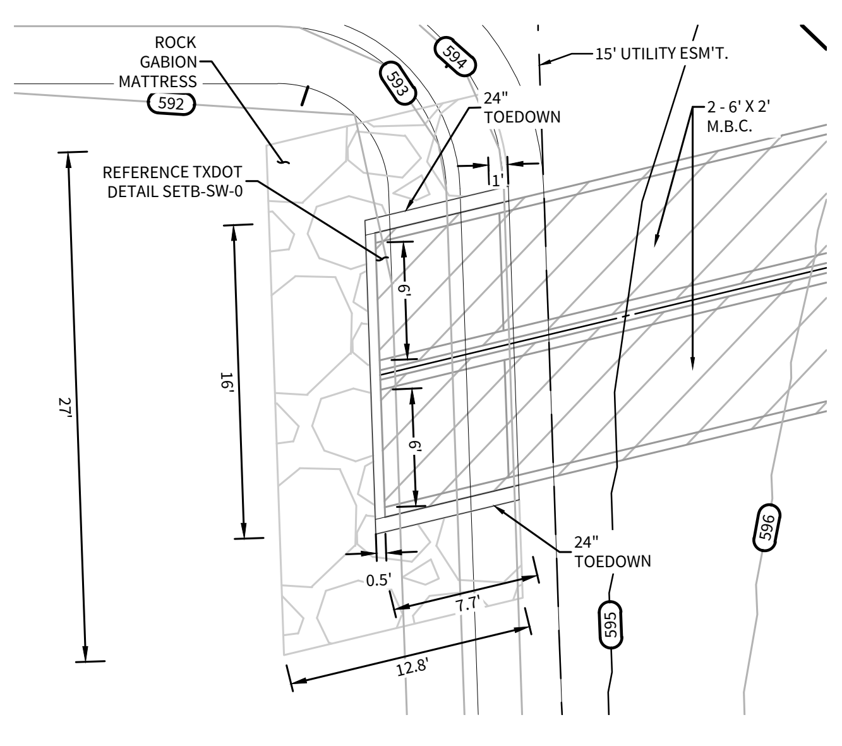
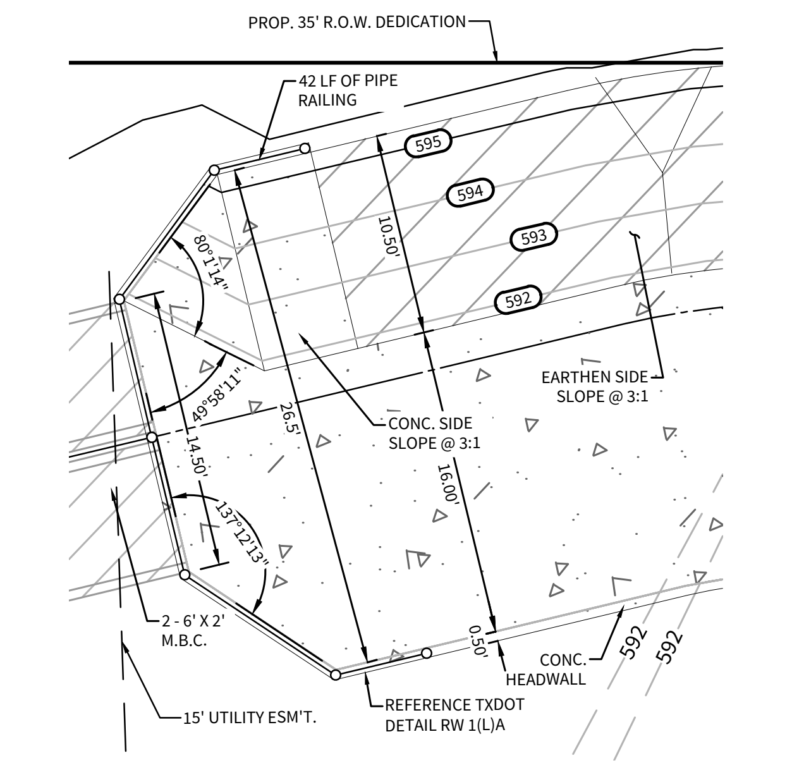


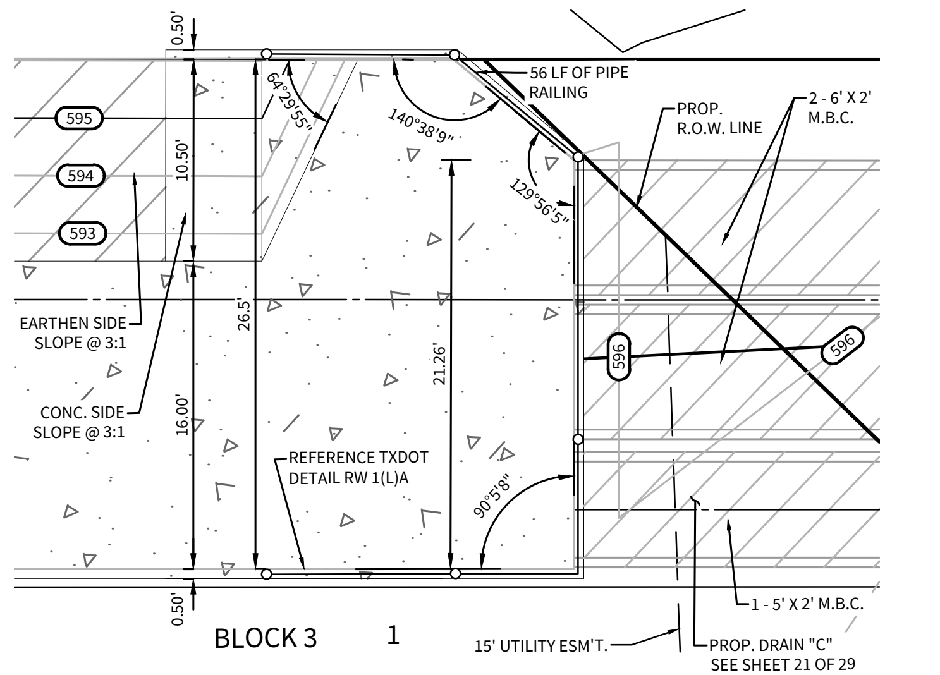
DRAIN "A" DOWNSTREAM OUTFALL DETAIL

(SCALE 1" = 10')



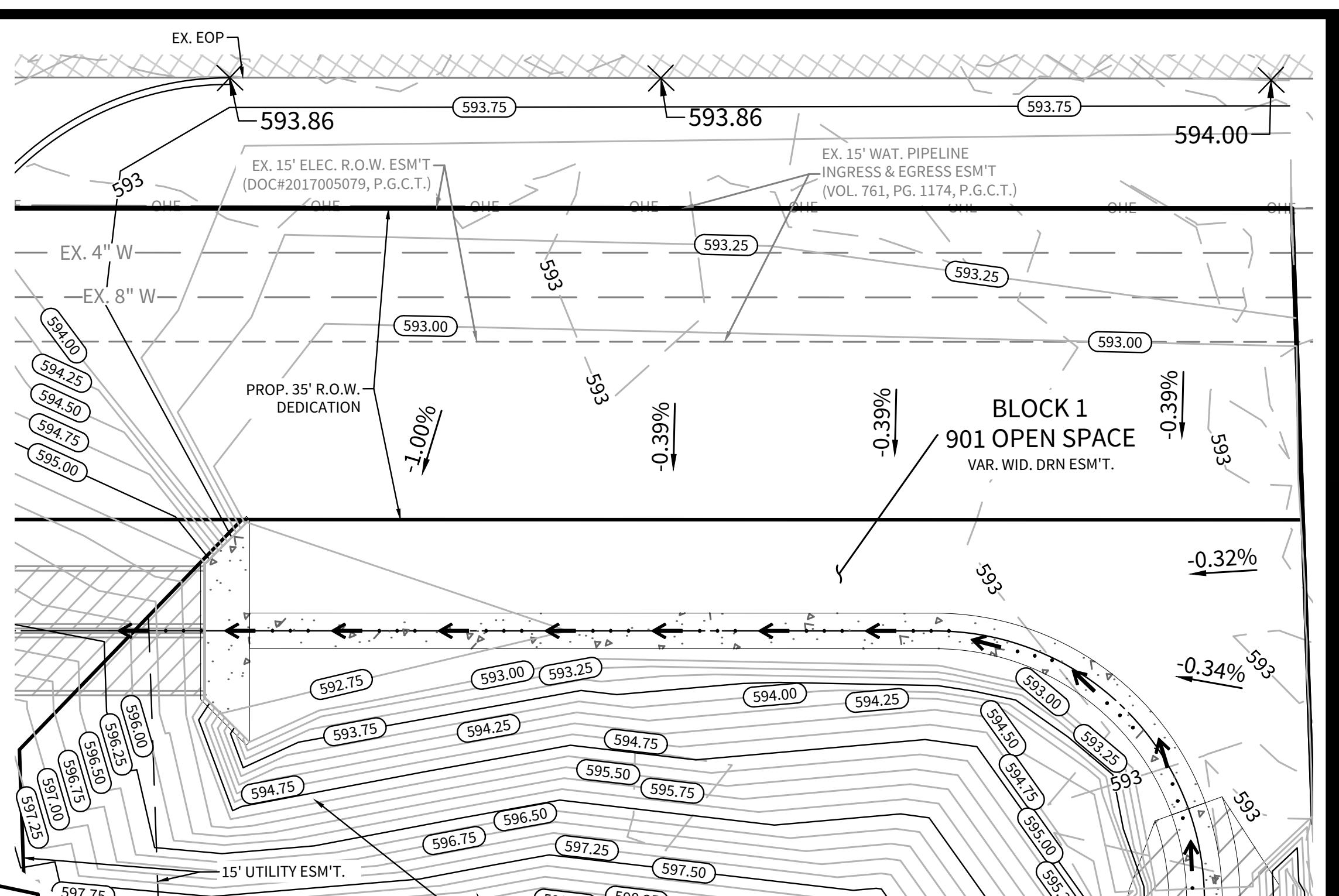
DRAIN "A" DOWNSTREAM HEADWALL DETAIL

(SCALE 1" = 10')



DRAIN "A" UPSTREAM OUTFALL DETAIL

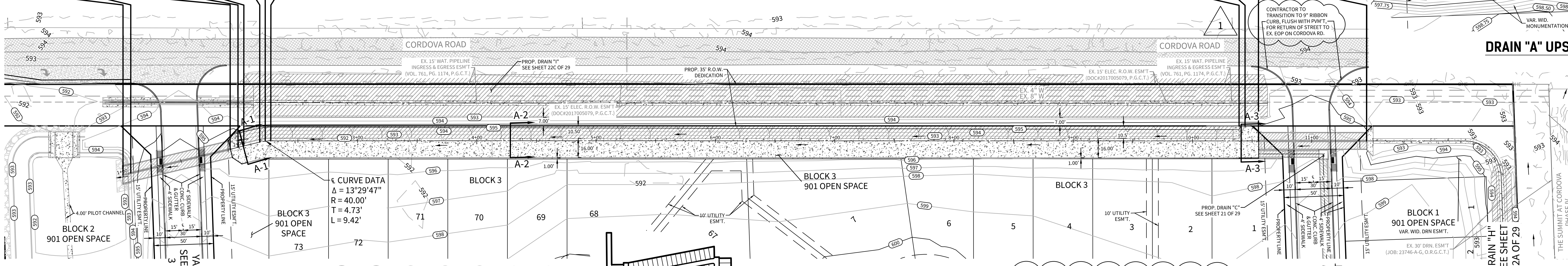
(SCALE 1" = 10')


EX. EOP
593.86
593.86
594.00
EX. 15' ELEC. R.O.W. ESM'T (DOC#2017005079, P.G.C.T.)
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T (VOL. 761, PG. 1174, P.G.C.T.)
EX. 4" W
EX. 8" W
PROP. 35' R.O.W. DEDICATION
-1.00%
-0.39%
-0.39%
-0.39%
-0.32%
-0.34%
BLOCK 1
901 OPEN SPACE
VAR. WID. DRN ESM'T.
15' UTILITY ESM'T.
VAR. WID. MONUMENTATION ESM'T.

DRAIN "A" UPSTREAM GRADING DETAIL

(SCALE 1" = 20')

DRAIN "H" SEE SHEET 22A OF 29



LEGEND

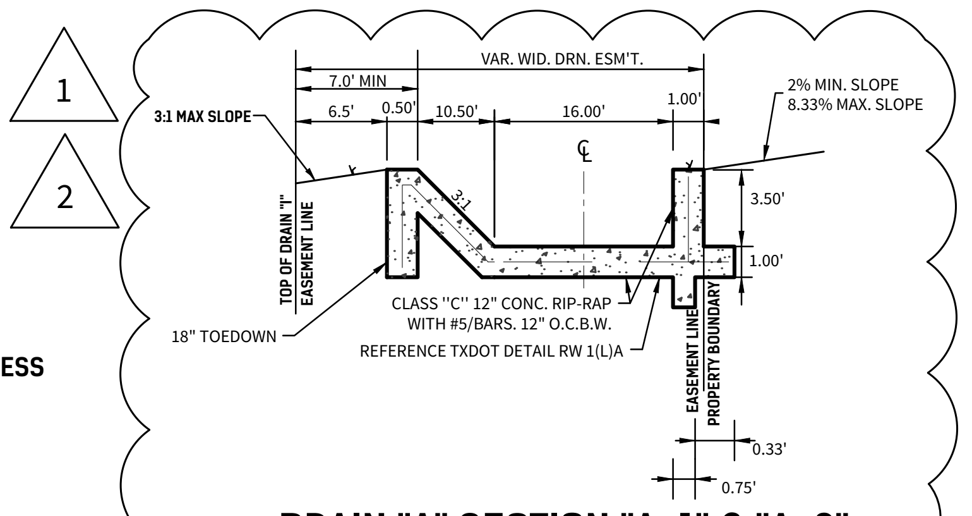
▩	PROPOSED BOX CULVERT
░	PROPOSED CONCRETE RIP-RAP
▨	PROPOSED EARTHEN DRAIN WITH TURF REINFORCEMENT
▦	EXISTING PAVEMENT
░	PROPOSED PROPOSED PAVEMENT
▩	PROPOSED ROCK GABBION MATTRESS

NOTES:

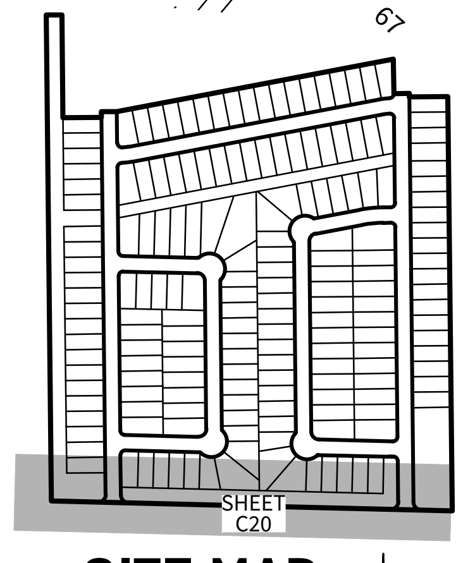
1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SEGUIN. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION. THE 3:1 EARTHEN SLOPE SHALL BE STABILIZED WITH A TURF REINFORCEMENT MAT TO REDUCE LOSS OF MATERIAL AND PROMOTE VEGETATIVE COVER.

1

2


3:1 MAX SLOPE
VAR. WID. DRN. ESM'T.
7.0' MIN
6.5'
0.50'
10.50'
16.00'
1.00'
2% MIN. SLOPE 8.33% MAX. SLOPE
3.50'
1.00'
CLASS "C" 12" CONC. RIP-RAP WITH #5/BARS, 12" O.C.B.W.
REFERENCE TXDOT DETAIL RW 1(L)A
18" TOEDOWN
TOP OF DRAIN "I" EASEMENT LINE
EASEMENT LINE PROPERTY BOUNDARY
0.33'
0.75'

(N.T.S.) **DRAIN "A" SECTION "A-1" & "A-3"**



SITE MAP

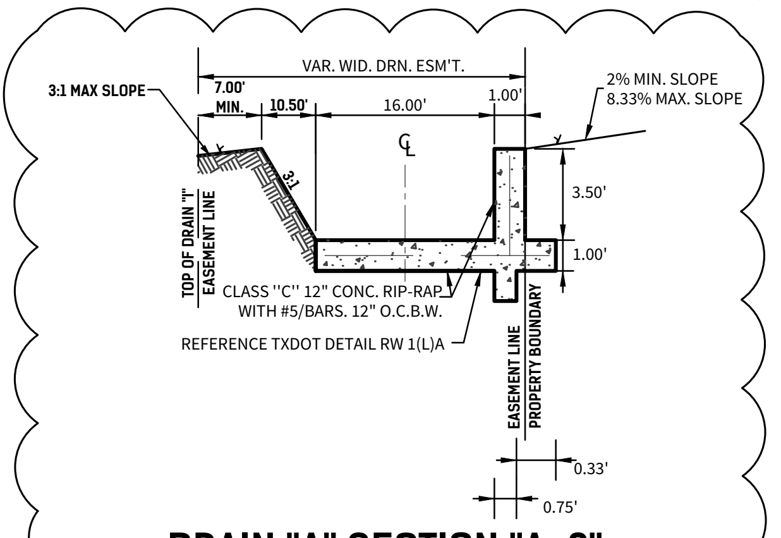
NOT TO SCALE

DRAIN "A"

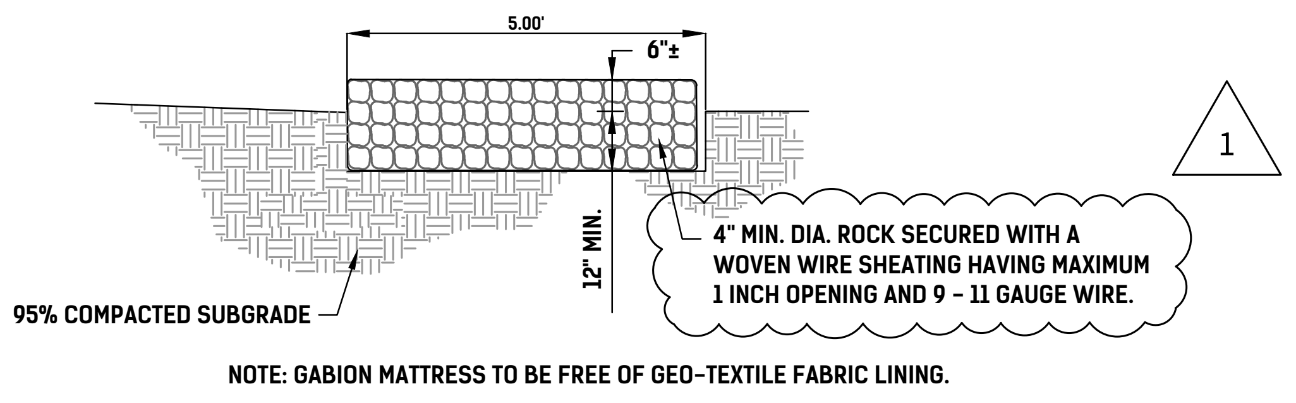
STA. 1+00.00 TO STA. 12+77.93

1

2


3:1 MAX SLOPE
VAR. WID. DRN. ESM'T.
7.00' MIN
10.50'
16.00'
1.00'
2% MIN. SLOPE 8.33% MAX. SLOPE
3.50'
1.00'
CLASS "C" 12" CONC. RIP-RAP WITH #5/BARS, 12" O.C.B.W.
REFERENCE TXDOT DETAIL RW 1(L)A
TOP OF DRAIN "I" EASEMENT LINE
EASEMENT LINE PROPERTY BOUNDARY
0.33'
0.75'

DRAIN "A" SECTION "A-2" (N.T.S.)

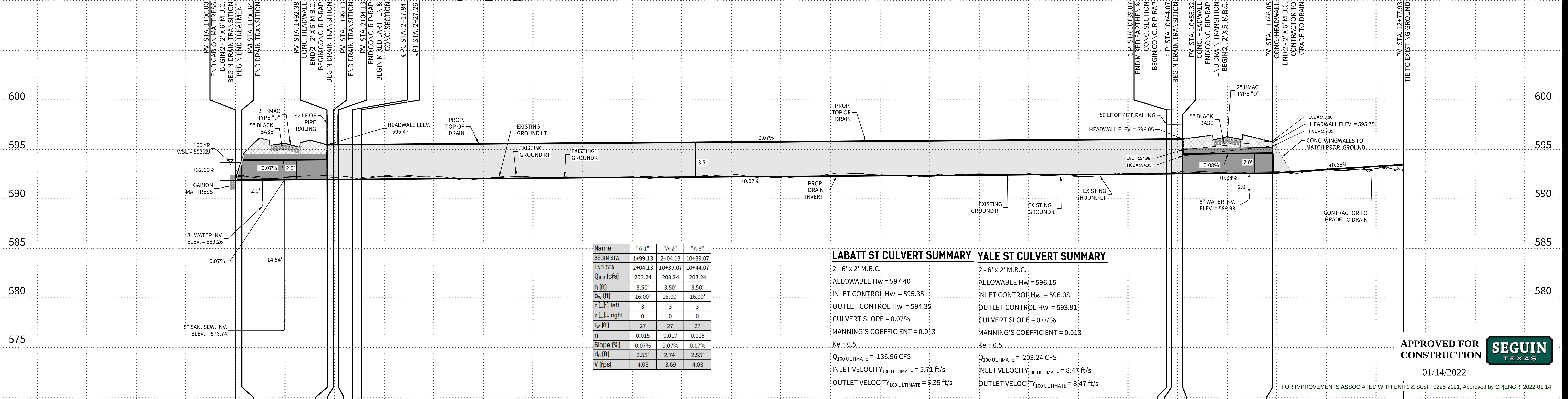

5.00'
6"±
12" MIN.
95% COMPACTED SUBGRADE
4" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND 9 - 11 GAUGE WIRE.
1

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

GABION STYLE ROCK EROSION CONTROL MATTRESS DETAIL

N.T.S.

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



Name	"A-1"	"A-2"	"A-3"
BEGIN STA	1+99.13	2+04.13	10+39.07
END STA	2+04.13	10+39.07	10+44.07
Q_{100} (cfs)	203.24	203.24	203.24
h (ft)	3.50'	3.50'	3.50'
b_w (ft)	16.00'	16.00'	16.00'
z (_):1 left	3	3	3
z (_):1 right	0	0	0
t_w (ft)	27	27	27
n	0.015	0.017	0.015
Slope (%)	0.07%	0.07%	0.07%
d_n (ft)	2.55'	2.74'	2.55'
V (fps)	4.03	3.69	4.03

LABATT ST CULVERT SUMMARY

2 - 6' x 2' M.B.C.

ALLOWABLE Hw = 597.40

INLET CONTROL Hw = 595.35

OUTLET CONTROL Hw = 594.35

CULVERT SLOPE = 0.07%

MANNING'S COEFFICIENT = 0.013

Ke = 0.5

$Q_{100\ ULTIMATE}$ = 136.96 CFS

INLET VELOCITY$_{100\ ULTIMATE}$ = 5.71 ft/s

OUTLET VELOCITY$_{100\ ULTIMATE}$ = 6.35 ft/s

YALE ST CULVERT SUMMARY

2 - 6' x 2' M.B.C.

ALLOWABLE Hw = 596.15

INLET CONTROL Hw = 596.08

OUTLET CONTROL Hw = 593.91

CULVERT SLOPE = 0.07%

MANNING'S COEFFICIENT = 0.013

Ke = 0.5

$Q_{100\ ULTIMATE}$ = 203.24 CFS

INLET VELOCITY$_{100\ ULTIMATE}$ = 8.47 ft/s

OUTLET VELOCITY$_{100\ ULTIMATE}$ = 8.47 ft/s

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

PROP. TOP OF DRAIN	PROP. DRAIN INVERT
591.91	591.91
593.91	591.91
593.94	591.94
593.97	591.97
595.47	591.97
595.47	591.97
595.47	591.97
595.48	591.98
595.49	591.99
595.50	592.00
595.54	592.04
595.57	592.07
595.60	592.10
595.64	592.14
595.67	592.17
595.70	592.20
595.74	592.24
595.77	592.27
595.80	592.30
595.83	592.33
595.87	592.37
595.90	592.40
595.93	592.43
595.97	592.47
596.00	592.50
596.02	592.52
596.03	592.53
596.03	592.53
596.04	592.54
594.58	592.57
594.62	592.61
592.63	592.63
592.96	592.96
593.28	593.28
593.46	593.46

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00

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CORDOVA TRAILS SUBDIVISION UNIT 1

DRAINAGE PLAN & PROFILE DRAIN "A"

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/24/2021 - UPDATED X-SECTIONS, GABION & GRADING DETAILS
2. 09/23/2021 - REVISED DRAIN "A" CROSS SECTIONS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C20

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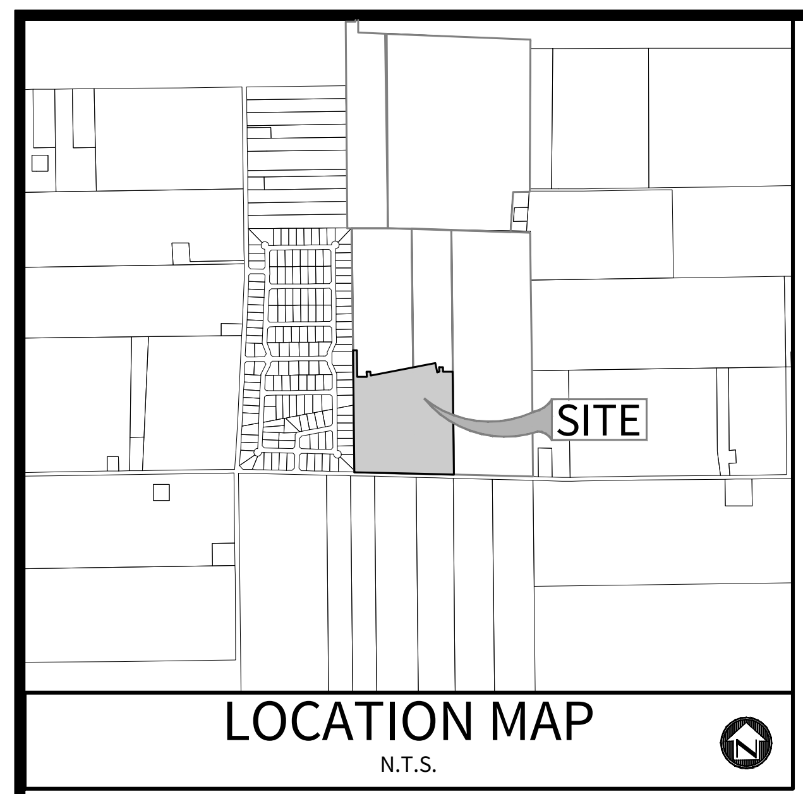
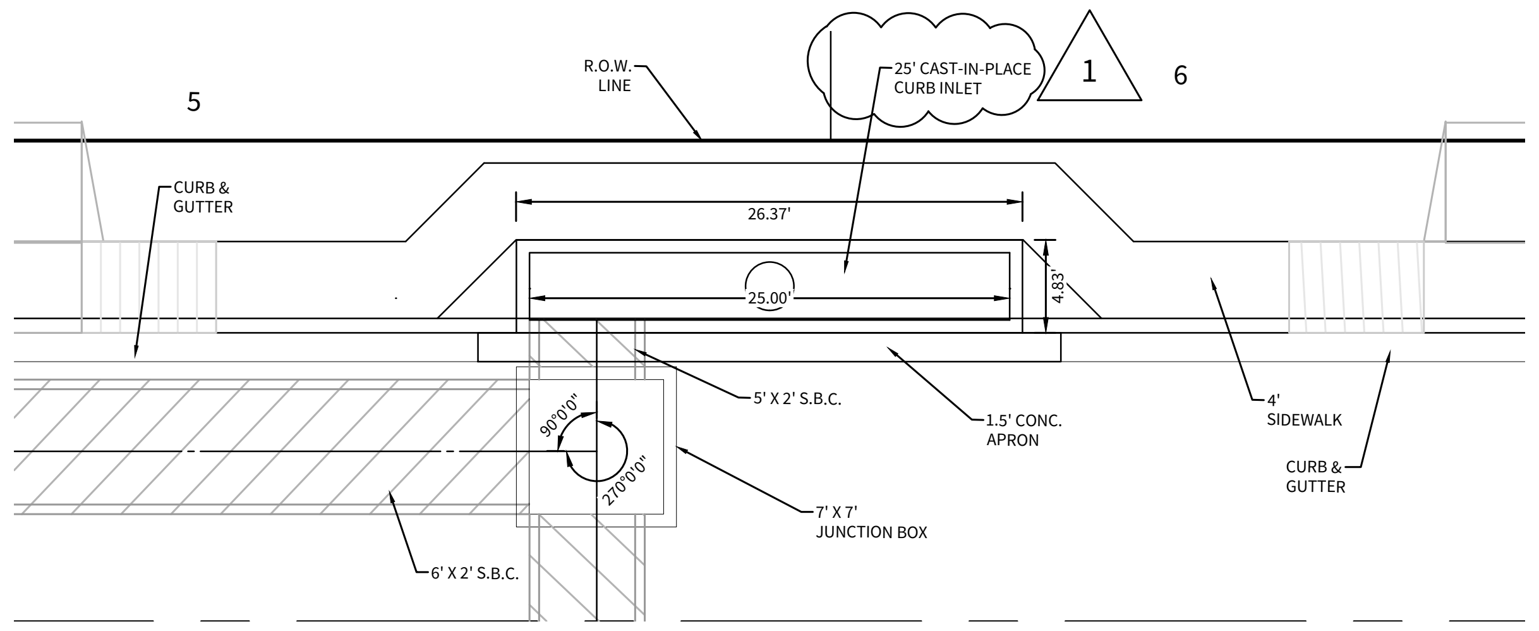
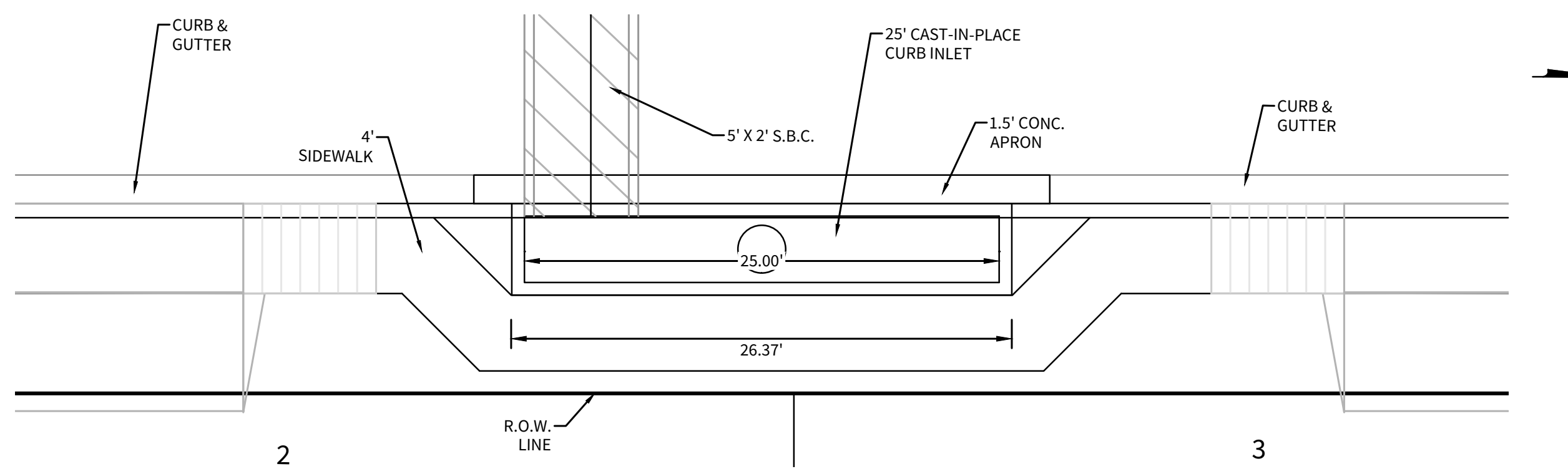


LOCATION MAP
N.T.S.



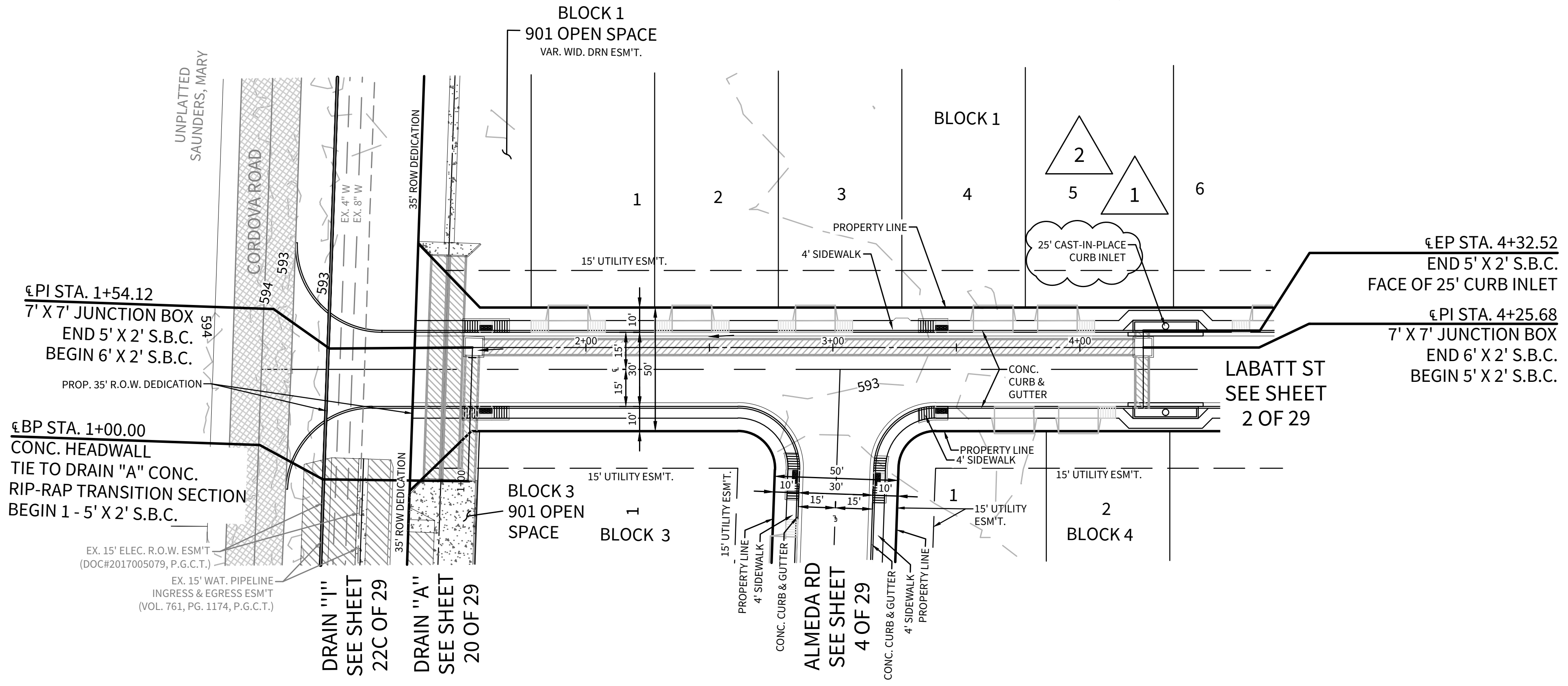
DRAIN " C" 25' INLET DETAIL
(SCALE 1" = 10')

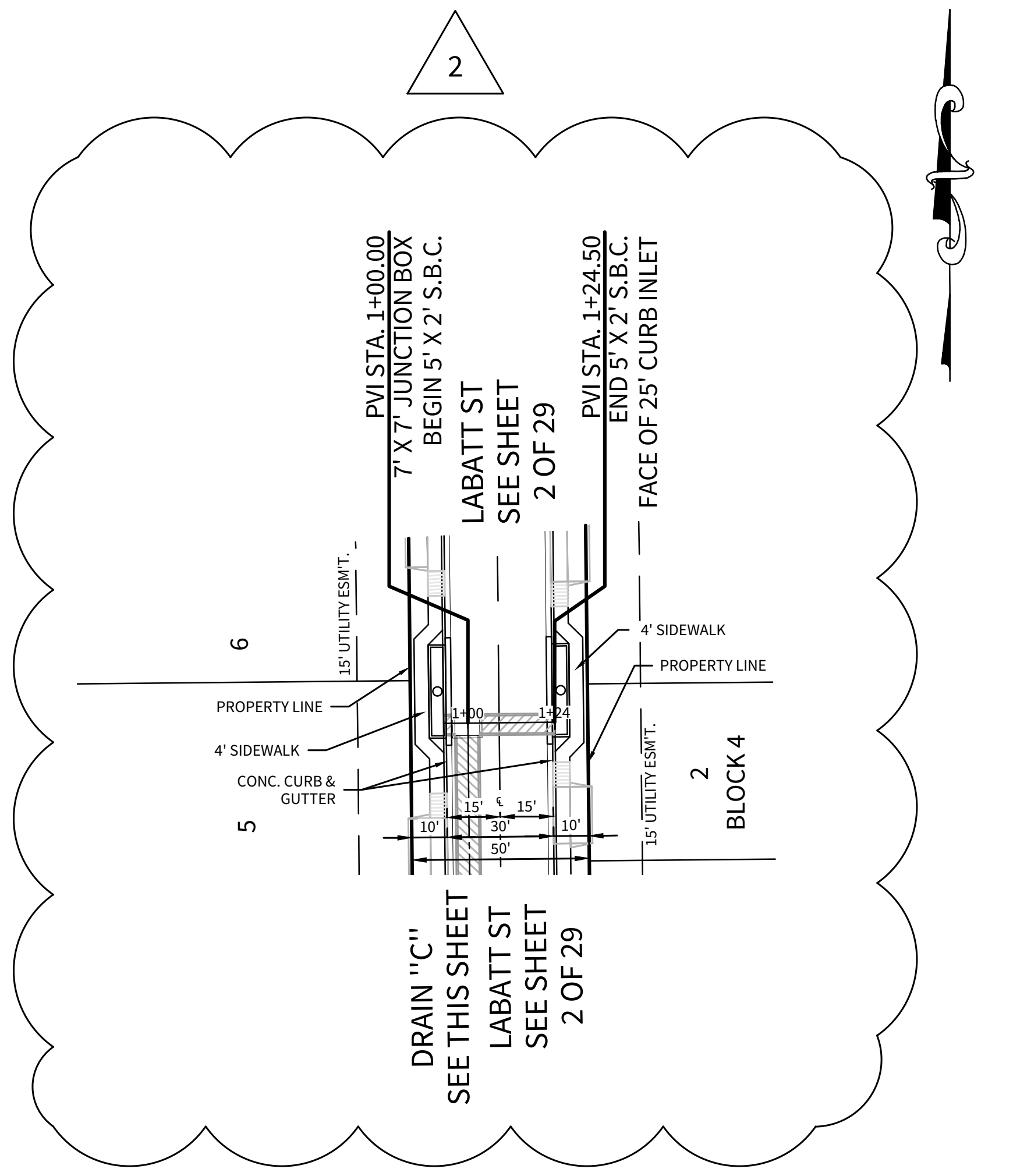


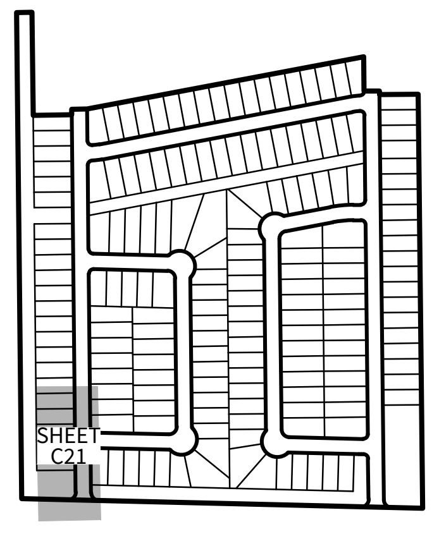
DRAIN "CA" 25' INLET DETAIL
(SCALE 1" = 10')

LEGEND

▨	PROPOSED BOX CULVERT
▨	PROPOSED CONCRETE RIP-RAP
▨	PROPOSED EARTHEN DRAIN
▨	EXISTING PAVEMENT
▨	PROPOSED PROPOSED PAVEMENT
▨	PROPOSED ROCK GABBION MATTRESS





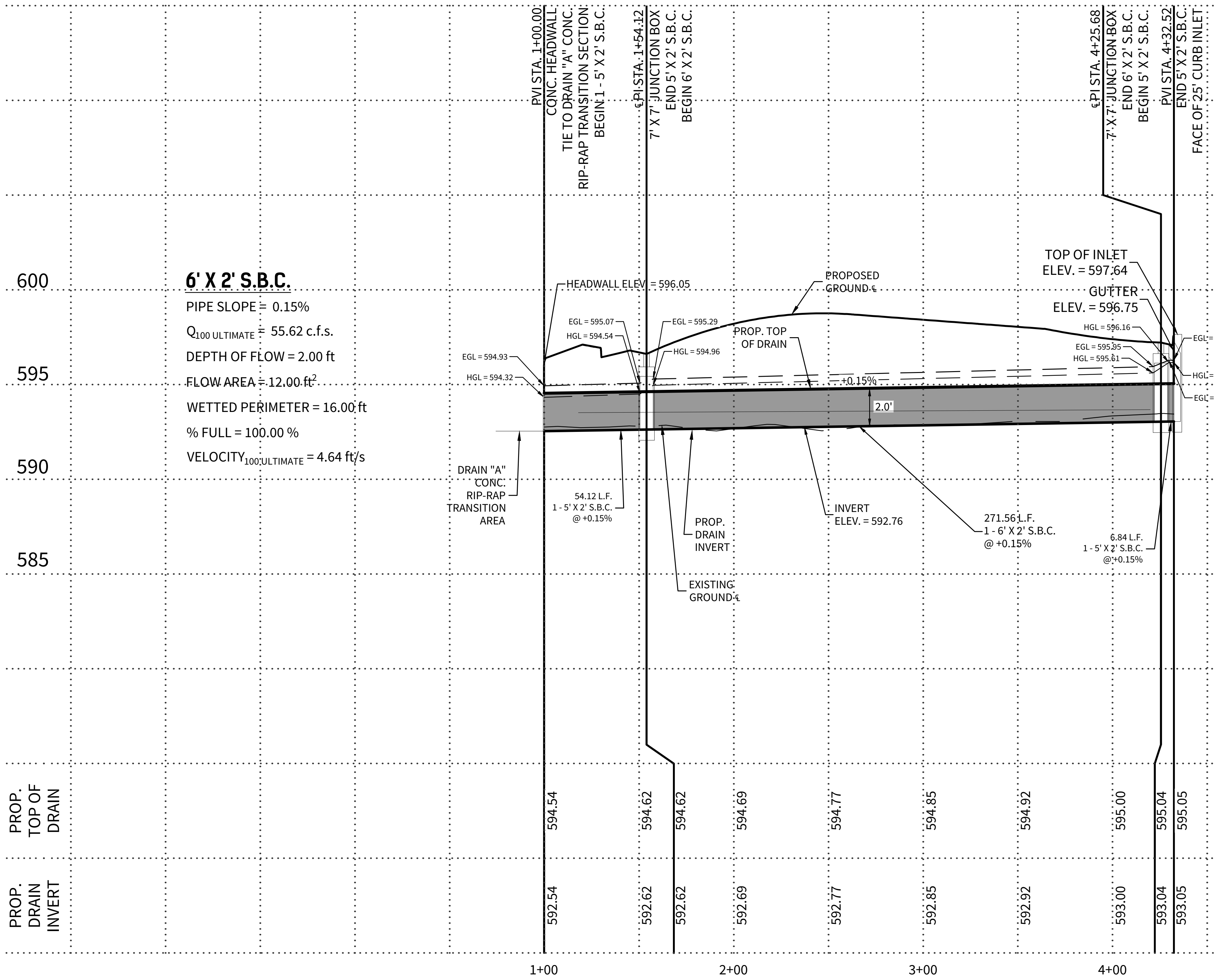


SITE MAP
NOT TO SCALE

DRAIN "C"
STA. 1+00.00 TO STA. 4+32.52

DRAIN "CA"
STA. 1+00.00 TO STA. 1+24.50

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



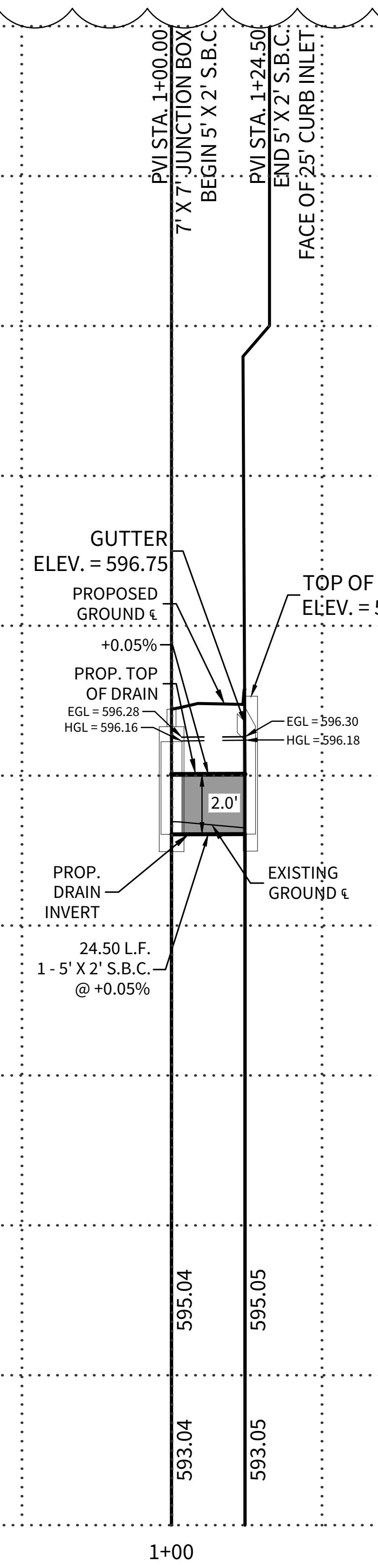
6' X 2' S.B.C.
PIPE SLOPE = 0.15%
$Q_{100\ ULTIMATE}$ = 55.62 c.f.s.
DEPTH OF FLOW = 2.00 ft
FLOW AREA = 12.00 ft^2
WETTED PERIMETER = 16.00 ft
% FULL = 100.00 %
VELOCITY$_{100\ ULTIMATE}$ = 4.64 ft/s

2

25' CURB INLET OPENING
DRAIN "C"
$Q_{100\ PROJECT}$ = 27.81 c.f.s.
$Q_{100\ ULTIMATE}$: 27.81 c.f.s.

$$L = Q/(C^*(h)^{\wedge 3/2}) = \frac{27.81}{3.087^*(0.58)^{\wedge}½}$$

L = 20.22' INLET REQ'D.
USED - 25' INLET
A = 12.00 s.f. (1 - 6'x2' OPENING(S))
V = 2.32 f.p.s.
Hv = 0.08'
1.5Hv = 0.13'
Hw = z + y + 1.5Hv
Hw = 593.05+2.0+0.13
Hw = 595.18
GUTTER = 596.76



2

25' CURB INLET OPENING
DRAIN "CA"
$Q_{100\ PROJECT}$ = 27.81 c.f.s.
$Q_{100\ ULTIMATE}$: 27.81 c.f.s.

$$L = Q/(C^*(h)^{\wedge 3/2}) = \frac{27.81}{3.087^*(0.58)^{\wedge}½}$$

L = 20.22' INLET REQ'D.
USED - 25' INLET
A = 12.00 s.f. (1 - 6'x2' OPENING(S))
V = 2.32 f.p.s.
Hv = 0.08'
1.5Hv = 0.13'
Hw = z + y + 1.5Hv
Hw = 593.05+2.0+0.13
Hw = 595.18
GUTTER = 596.76

5' X 2' S.B.C.
PIPE SLOPE = 0.05%
$Q_{100\ ULTIMATE}$ = 27.81 c.f.s.
DEPTH OF FLOW = 2.00 ft
FLOW AREA = 10.00 ft^2
WETTED PERIMETER = 14.00 ft
% FULL = 100.00 %
VELOCITY$_{100\ ULTIMATE}$ = 2.78 ft/s

600
595
590
585

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CUDE EST. 1980 ENGINEERS

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

CORDOVA TRAILS
SUBDIVISION UNIT 1
DRAINAGE PLAN & PROFILE DRAIN "C" & "CA"

DATE
12/05/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 07/12/2021 - UPDATED CURB INLET CALLOUT
2. 09/23/2021 - UPDATED CURB INLET CALLOUT ADDED DRAIN PROFILE VIEW FOR DRAIN "CA". UPDATED 50' INLET TO 2 - 25' INLETS.
3.
4.
5.
6.
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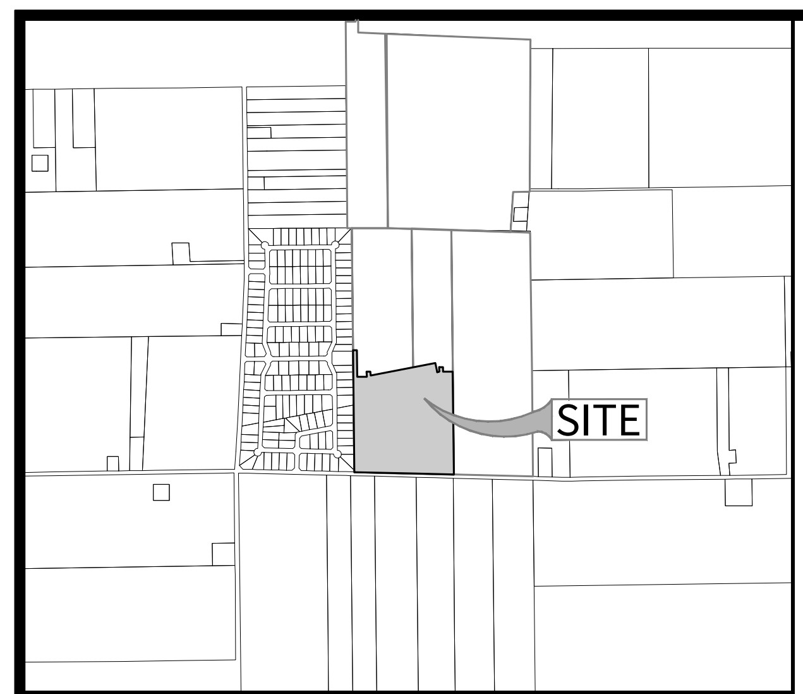
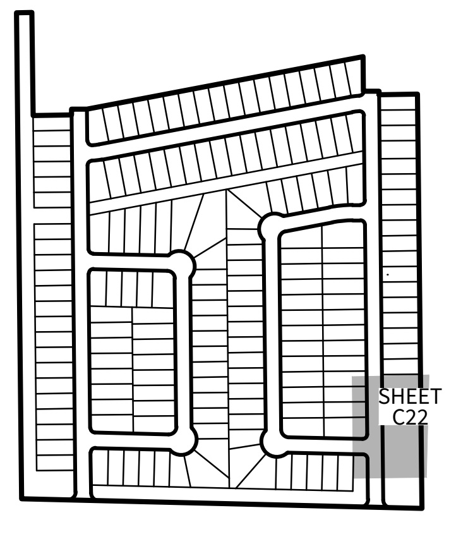
DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

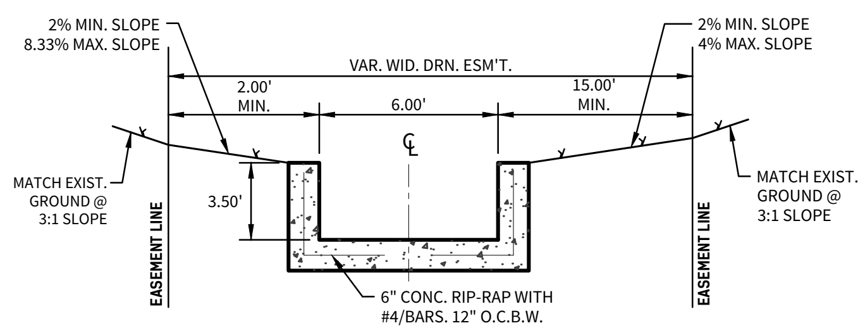
C21



LOCATION MAP
N.T.S.



SITE MAP
NOT TO SCALE



DRAIN "D" SECTION (N.T.S.)
"D-1"

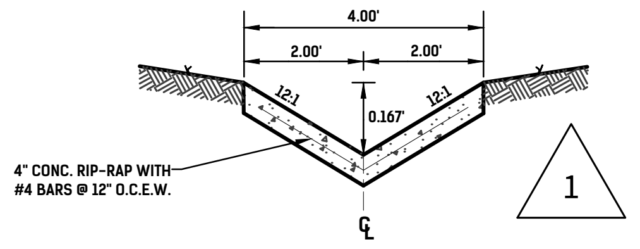
Name	"D-1"
BEGIN STA	1+16.52
END STA	1+23.85
Q_{100} (cfs)	31.28
h (ft)	3.50'
b_w (ft)	6.00'
z (_):1 left	0
z (_):1 right	0
t_w (ft)	6
n	0.015
Slope (%)	0.50%
d_n (ft)	0.93'
V (fps)	5.60

LEGEND

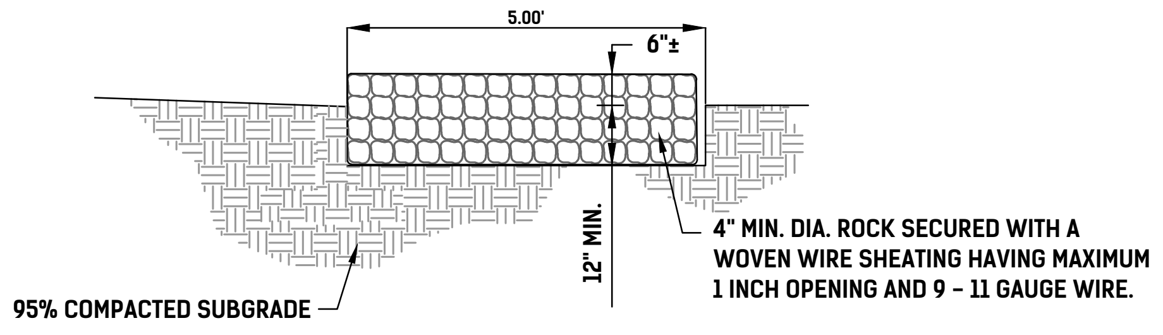
▨	PROPOSED EARTHEN DRAIN	▨	EXISTING PAVEMENT
▨	PROPOSED CONCRETE RIP-RAP	▨	PROPOSED PROPOSED PAVEMENT
▨	PROPOSED HYDROTURF MATTING	▨	PROPOSED ROCK GABBION MATTRESS

NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SEGUIN & GUADALUPE COUNTY. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.



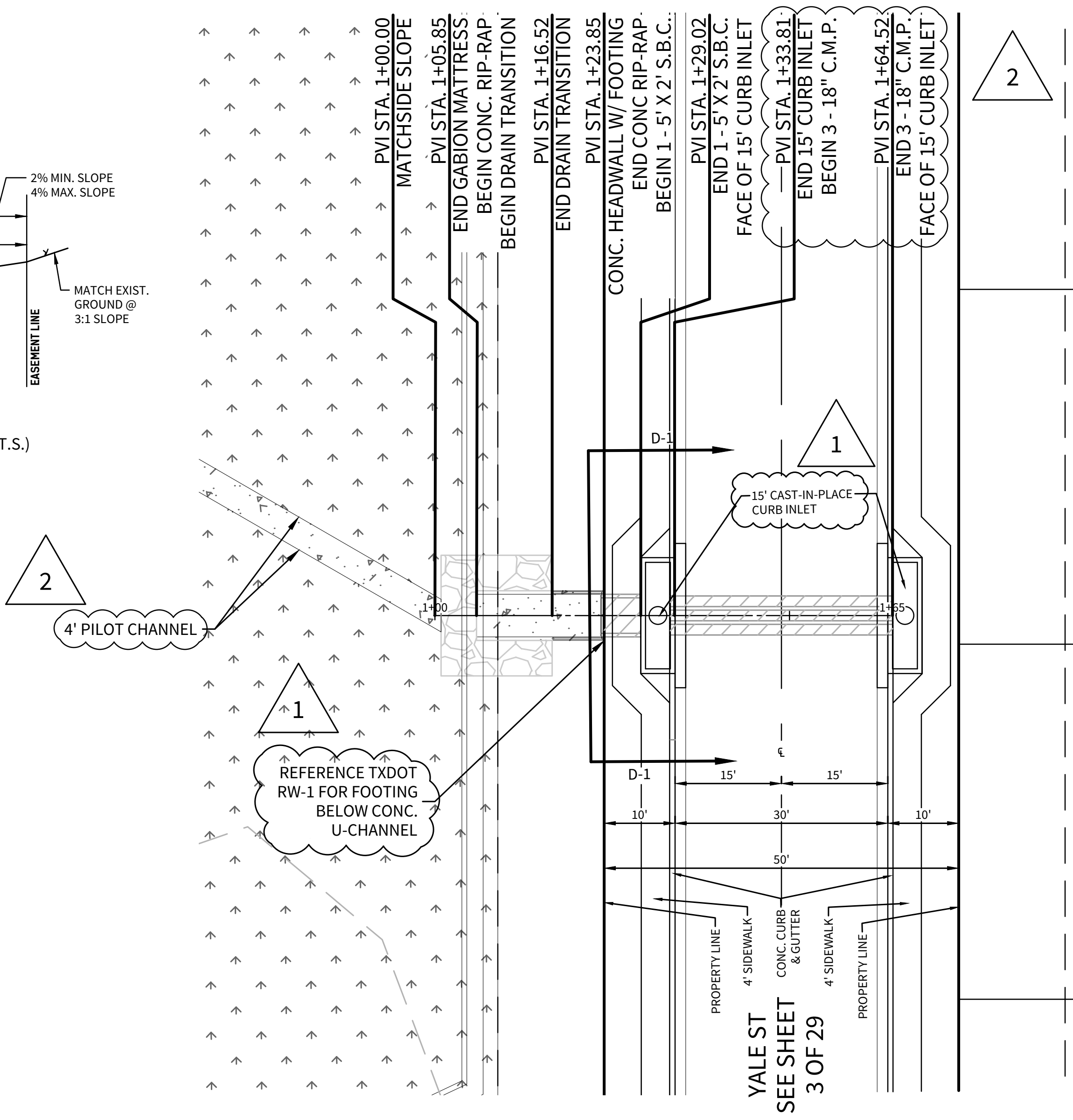
PILOT CHANNEL DETAIL
(N.T.S.)

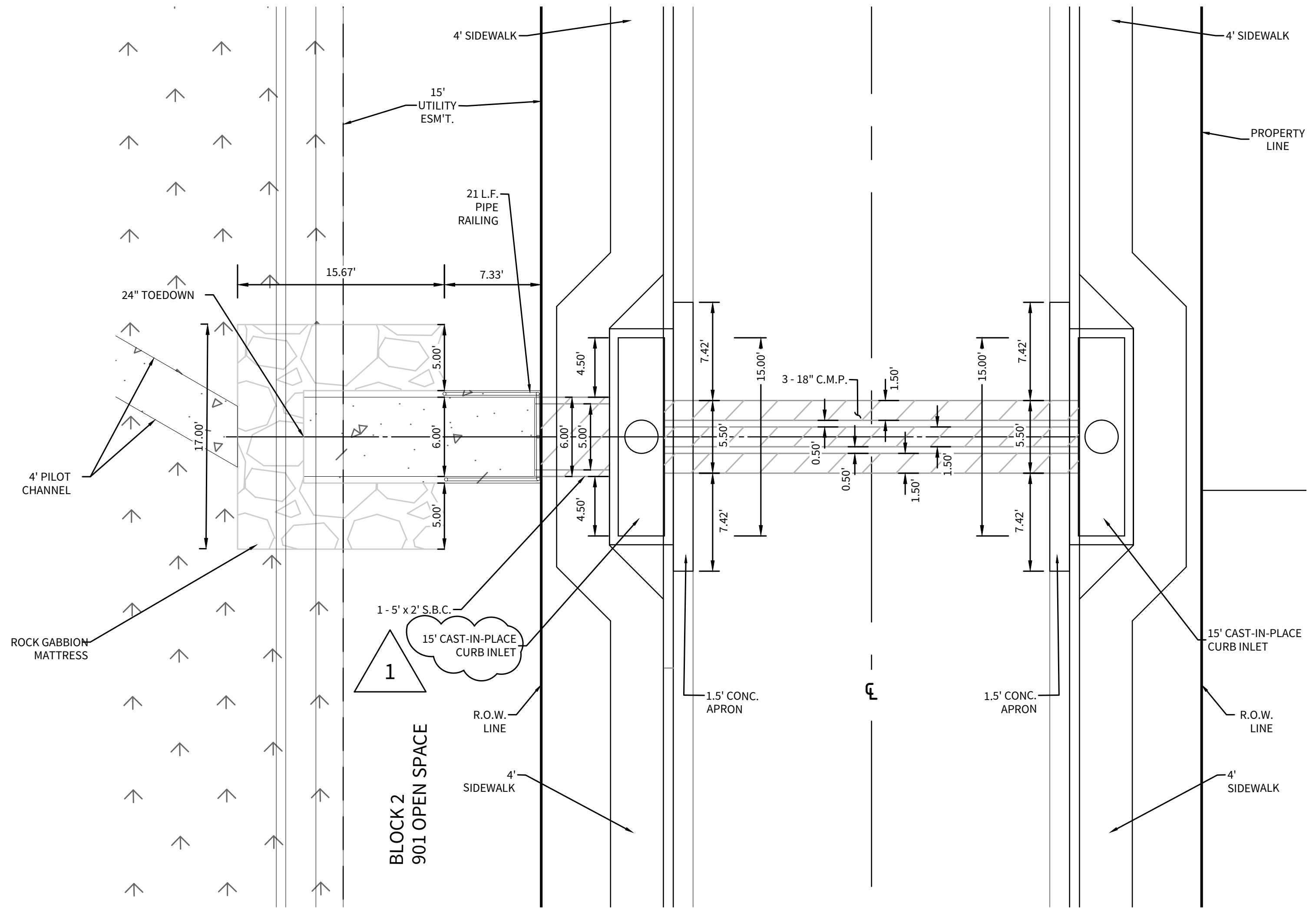

5.00'
6"±
12" MIN.
4" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND 9 – 11 GAUGE WIRE.
95% COMPACTED SUBGRADE

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

GABION STYLE ROCK EROSION CONTROL MATTRESS DETAIL
N.T.S.

1





15' INLETS DETAIL
(SCALE 1" = 10')

2

DRAIN "D"
STA. 1+00.00 TO STA. 1+64.52

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

2

3 – 18" C.M.P.

PIPE SLOPE = 0.82%

$Q_{100\ ULTIMATE}$ = 15.64 c.f.s.

DEPTH OF FLOW = 1.50 ft

FLOW AREA = 1.77 ft^2

WETTED PERIMETER = 4.71 ft

% FULL = 100.00 %

$VELOCITY_{100\ ULTIMATE}$ = 2.95 ft/s

5' X 2' S.B.C.

PIPE SLOPE = 0.50%

$Q_{100\ ULTIMATE}$ = 31.28 c.f.s.

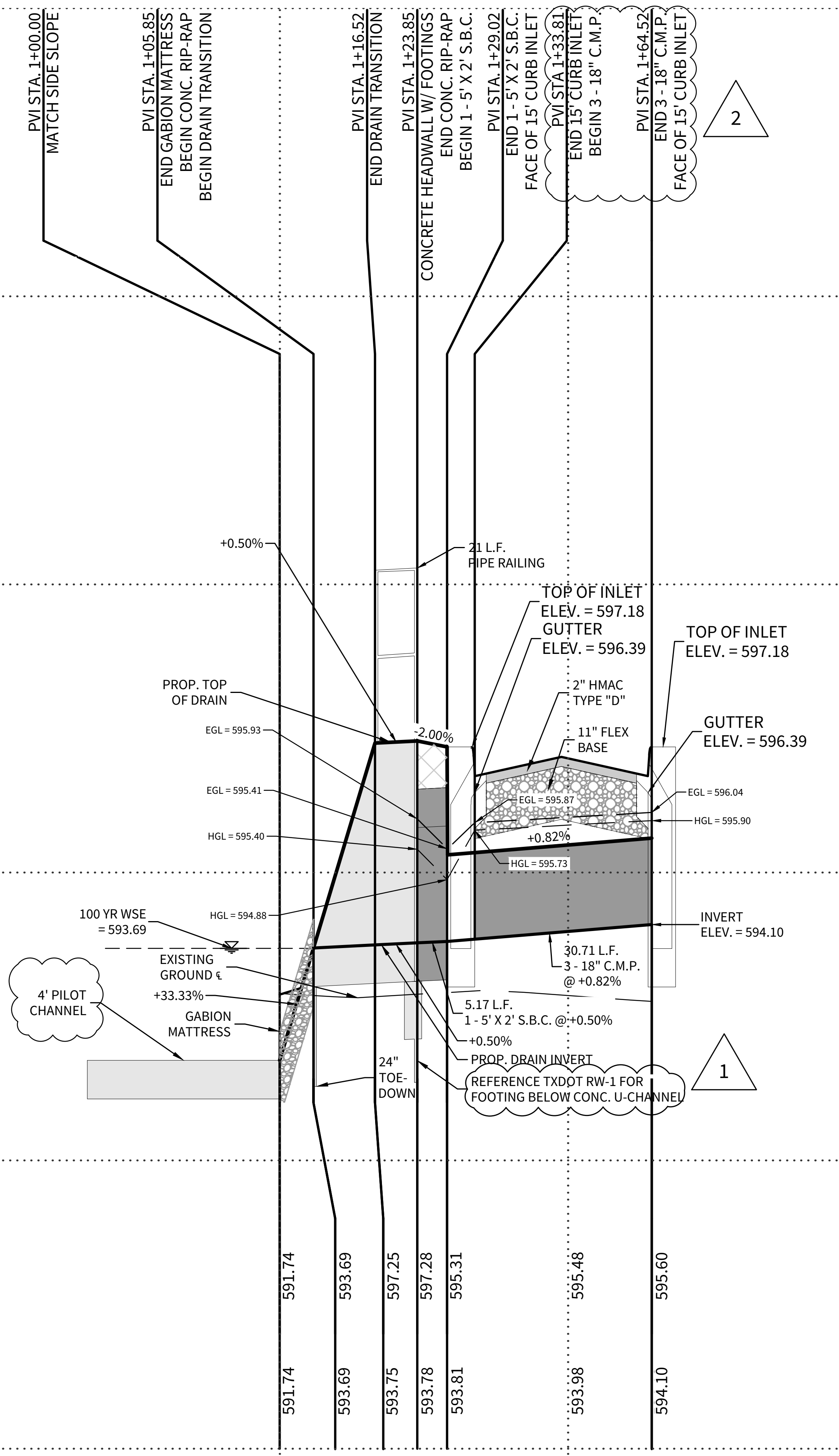
DEPTH OF FLOW = 1.62 ft

FLOW AREA = 8.10 ft^2

WETTED PERIMETER = 13.24 ft

% FULL = 81.00 %

$VELOCITY_{100\ ULTIMATE}$ = 3.86 ft/s



PROP. TOP OF DRAIN	591.74	593.69	597.25	597.28	595.31	595.48	595.60
PROP. DRAIN INVERT	591.74	593.69	593.75	593.78	593.81	593.98	594.10

2

15' CURB INLET OPENING
DRAIN ''D'' (EACH)

$Q_{100\ PROJECT}$ = 15.64 c.f.s.

$Q_{100\ ULTIMATE}$: 15.64 c.f.s.

$$L = Q/(C^*(h)^{\wedge 3/2}) = \frac{15.64}{3.087^*(0.58)^{\wedge}½}$$

L = 11.37' INLET REQ'D.

USED - 15' INLET

A = 10.00 s.f. (1 - 5'x2' OPENING(S))

V = 1.56 f.p.s.

Hv = 0.04'

1.5Hv = 0.06'

Hw = z + y + 1.5Hv

Hw = 593.81+2.0+0.06

Hw = 595.87

GUTTER = 596.39

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

CORDOVA TRAILS SUBDIVISION UNIT 1

DRAINAGE PLAN & PROFILE DRAIN "D"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/12/2021 - UPDATED CURB INLET AND HEADWALL CALLOUTS, ADDED GABION DETAIL
2. 09/23/2021 - UPDATED CURB INLET CALLOUT, ADDED DRAIN PROFILE VIEW FOR 3 - 18" CMP, UPDATED 35' INLET TO 2 - 15' INLETS.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

PLAT NO.

C22

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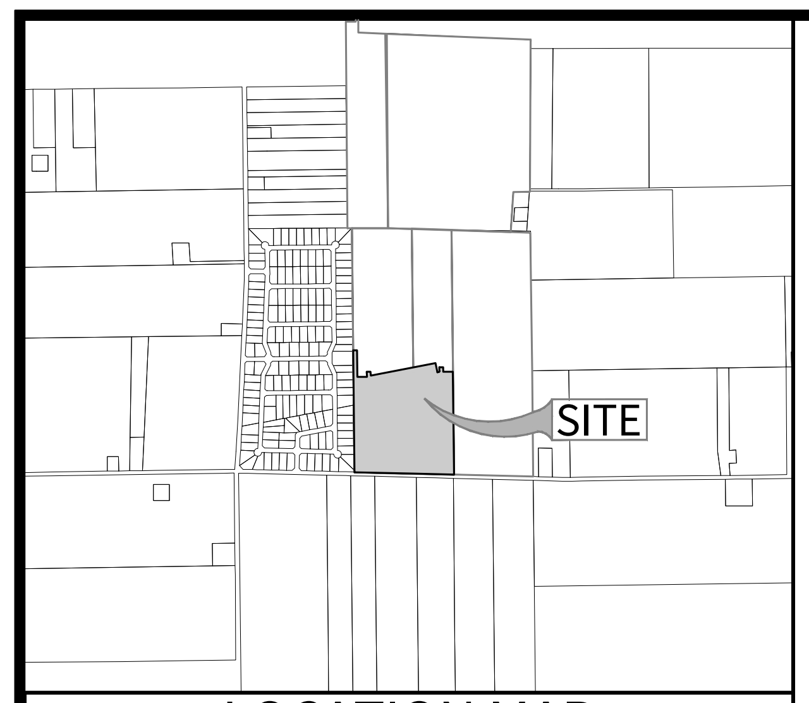
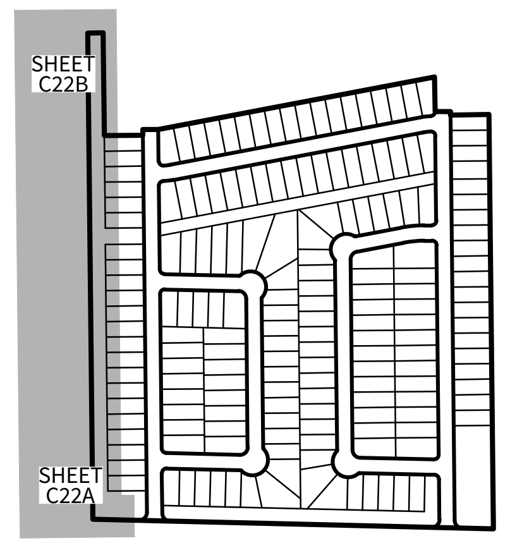
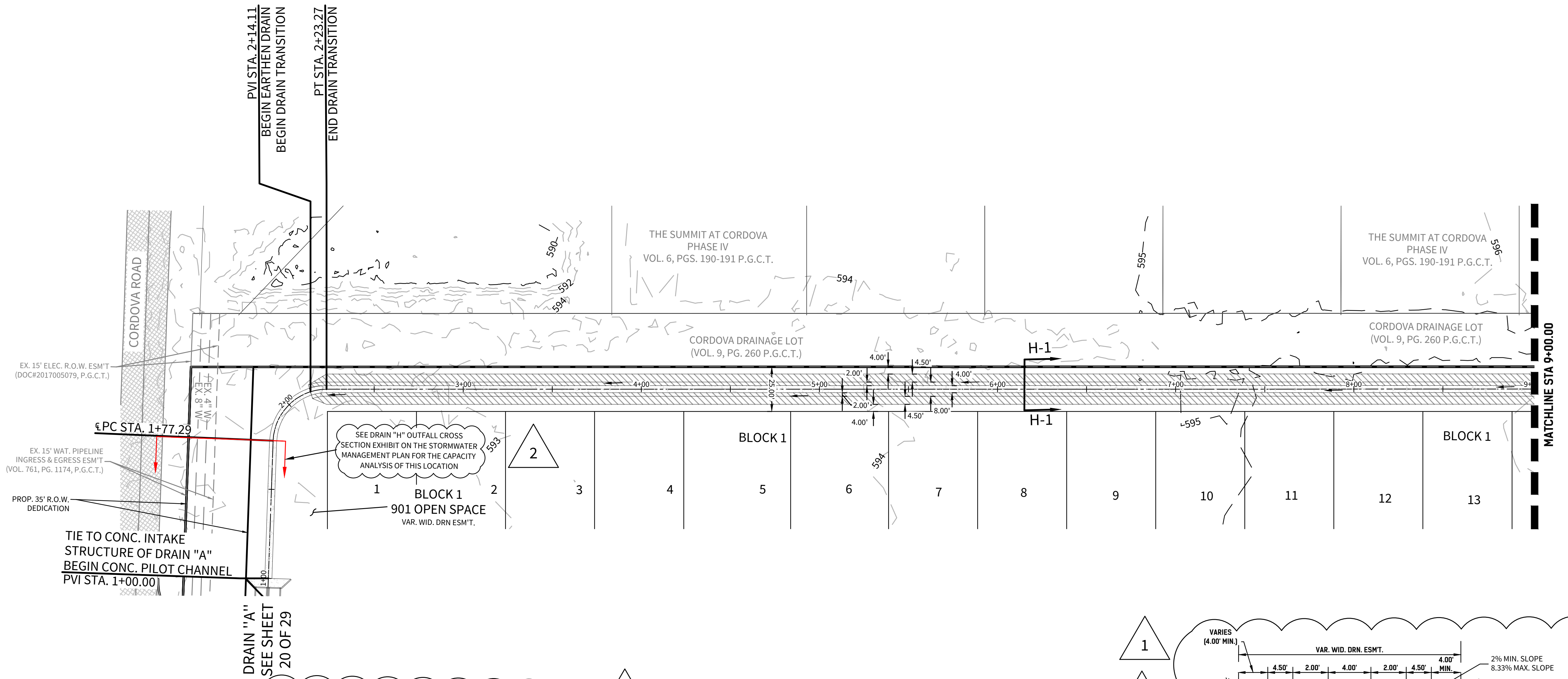


LOCATION MAP
N.T.S.



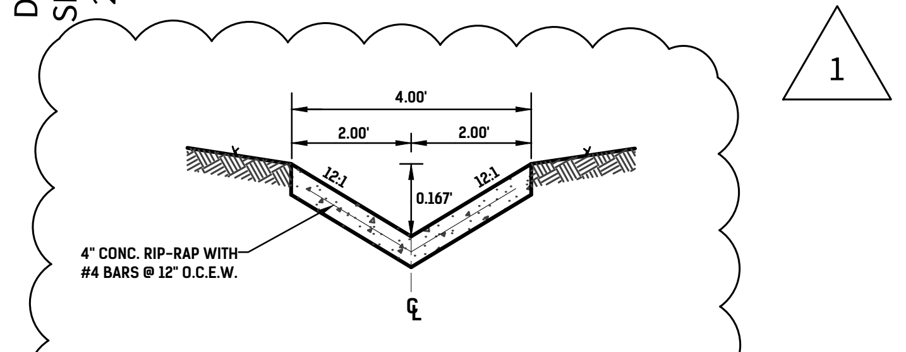
SITE MAP
NOT TO SCALE



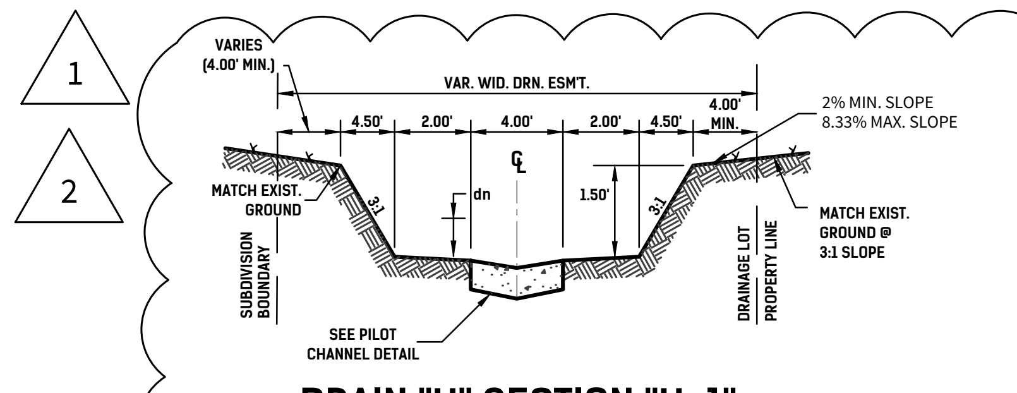
Name	"H-1"	"H-2"
BEGIN STA	2+23.27	17+32.00
END STA	17+22.00	17+36.98
Q_{100} (cfs)	24.50	8.93
h (ft)	1.50'	1.50'
b_w (ft)	8.00'	4.00'
z (_):1 left	3	3
z (_):1 right	3	3
t_w (ft)	17	13
n	0.035	0.035
Slope (%)	0.25%	0.25%
d_n (ft)	1.13'	0.88'
V (fps)	1.91	1.53

LEGEND

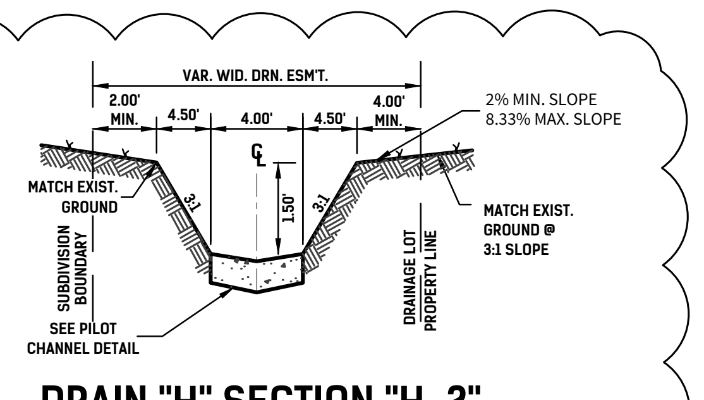
▨	PROPOSED CONCRETE RIP-RAP
▨	EXISTING PAVEMENT
▨	PROPOSED EARTHEN DRAIN



PILOT CHANNEL DETAIL
(N.T.S.)



DRAIN "H" SECTION "H-1" (N.T.S.)



DRAIN "H" SECTION "H-2" (N.T.S.)

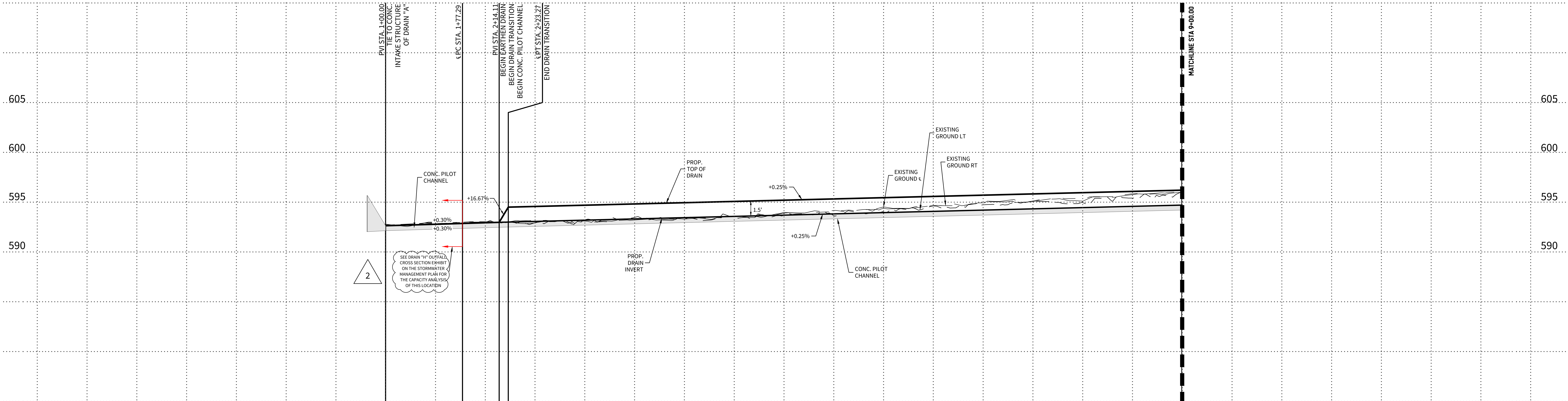
NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SEGUIN. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.

DRAIN "H"

STA. 1+00.00 TO STA. 9+00.00

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



PROP. TOP OF DRAIN	592.63	592.78	592.86	592.93	592.97	594.50	594.57	594.69	594.82	594.95	595.07	595.20	595.32	595.45	595.58	595.70	595.83	595.95	596.08
PROP. DRAIN INVERT	592.63	592.78	592.86	592.93	592.97	593.00	593.07	593.19	593.32	593.45	593.57	593.70	593.82	593.95	594.08	594.20	594.33	594.45	594.58

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

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

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

CORDOVA TRAILS
SUBDIVISION UNIT 1

DRAINAGE PLAN & PROFILE DRAIN "H"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 07-12-2021 UPDATED DRAIN SECTIONS, UPDATED DRAIN DETAIL
2. 09-23-2021 UPDATED DRAIN SECTIONS,
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C22A

22A OF 29

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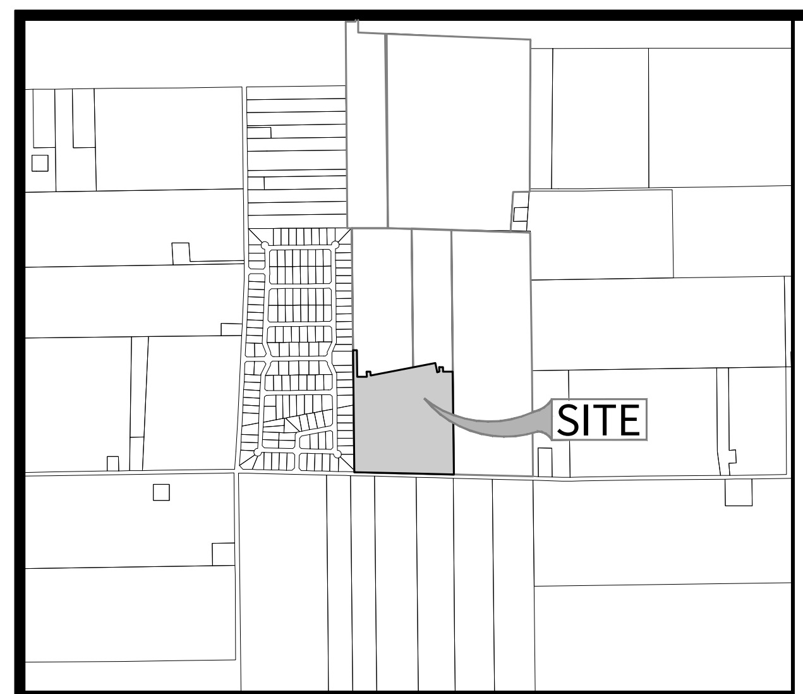
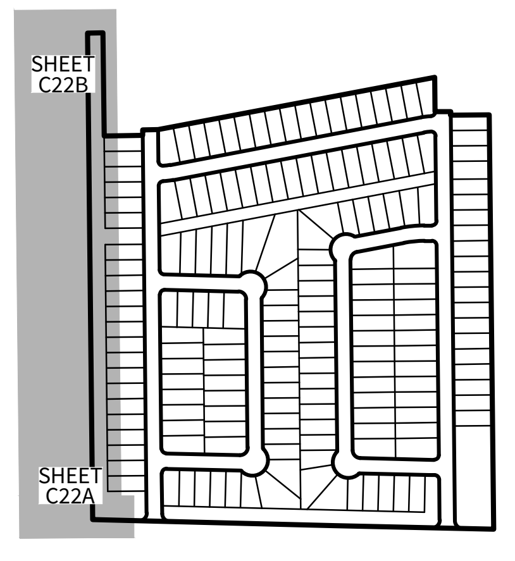
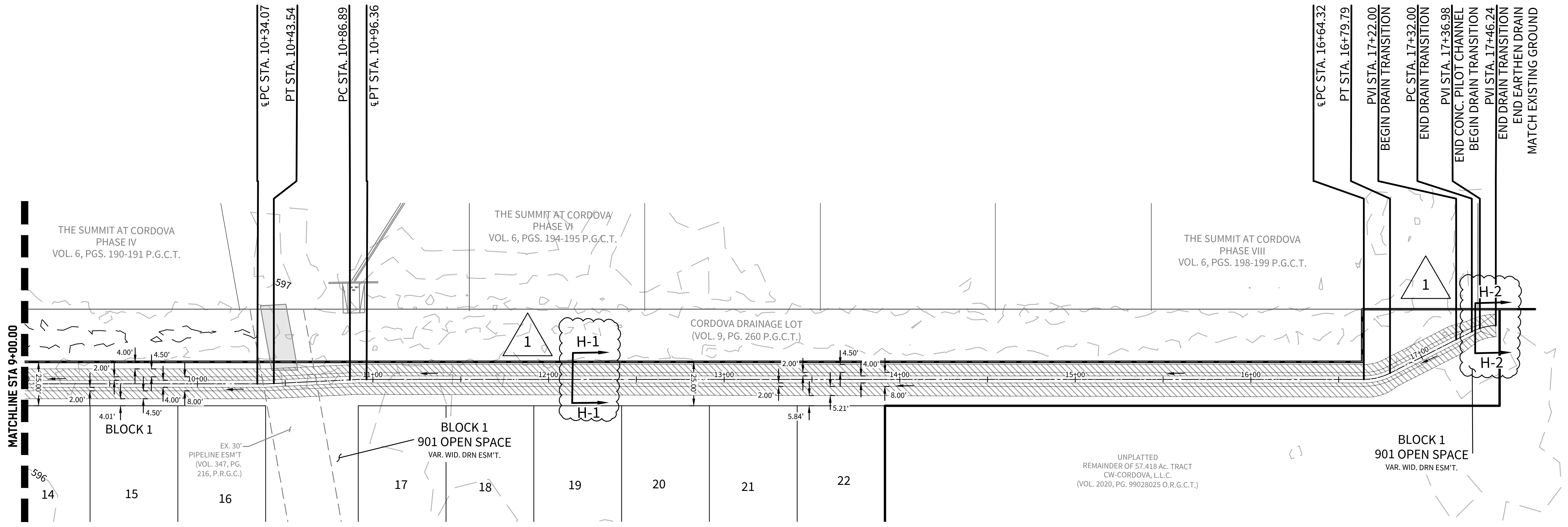


LOCATION MAP
N.T.S.



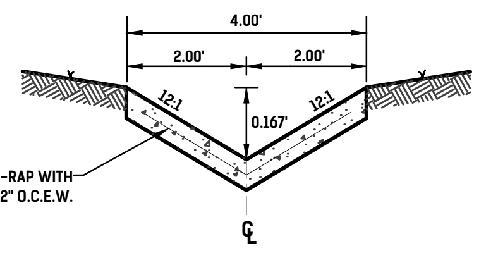
SITE MAP
NOT TO SCALE



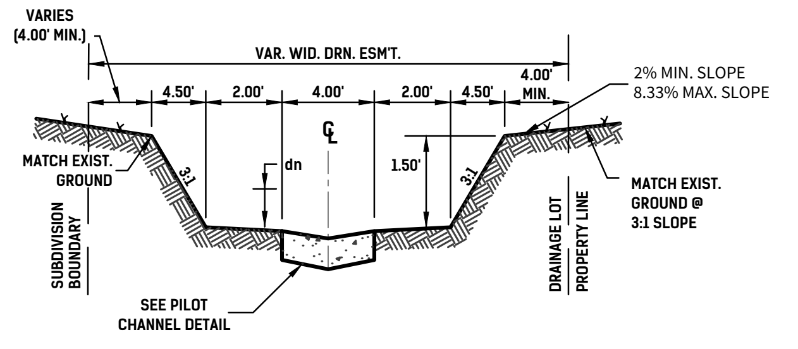
Name	"H-1"	"H-2"
BEGIN STA	2+23.27	17+32.00
END STA	17+22.00	17+36.98
Q_{100} (cfs)	24.50	8.93
h (ft)	1.50'	1.50'
b_w (ft)	8.00'	4.00'
z (_):1 left	3	3
z (_):1 right	3	3
t_w (ft)	17	13
n	0.035	0.035
Slope (%)	0.25%	0.25%
d_n (ft)	1.13'	0.88'
V (fps)	1.91	1.53

LEGEND

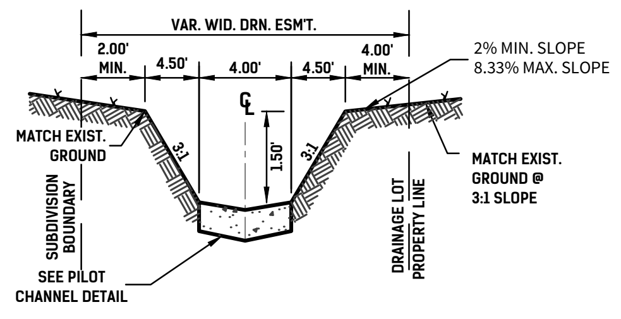
⁘	PROPOSED CONCRETE RIP-RAP
▨	PROPOSED EARTHEN DRAIN
▩	EXISTING PAVEMENT



PILOT CHANNEL DETAIL
(N.T.S.)



DRAIN "H" SECTION "H-1" (N.T.S.)



DRAIN "H" SECTION "H-2" (N.T.S.)

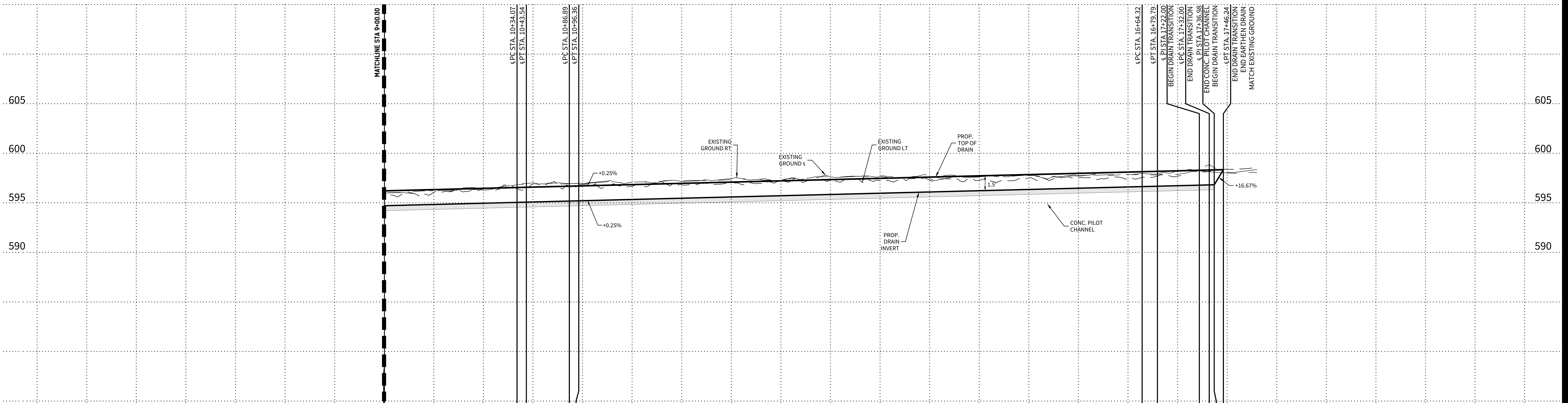
NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SEGUIN. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.

DRAIN "H"

STA. 9+00.00 TO STA. 17+46.24

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



PROP. TOP OF DRAIN	PROP. DRAIN INVERT
596.21	594.71
596.33	594.83
596.46	594.96
596.54	595.04
596.57	595.07
596.58	595.08
596.68	595.18
596.70	595.20
596.71	595.21
596.84	595.34
596.96	595.46
597.09	595.59
597.21	595.71
597.34	595.84
597.47	595.97
597.59	596.09
597.72	596.22
597.84	596.35
597.97	596.47
598.10	596.60
598.13	596.63
598.17	596.67
598.22	596.72
596.78	595.28
598.30	596.80
598.31	596.82
598.34	596.84

APPROVED FOR CONSTRUCTION
SEGUIN
TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CPJENGR 2022-01-14

CUDEENGINEERS.COM

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

CORDOVA TRAILS SUBDIVISION UNIT 1

DRAINAGE PLAN & PROFILE DRAIN "H"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07-12-2021 UPDATED DRAIN SECTIONS, UPDATED DRAIN DETAIL
2. 09-23-2021 UPDATED DRAIN SECTIONS,
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C22B

22B OF 29

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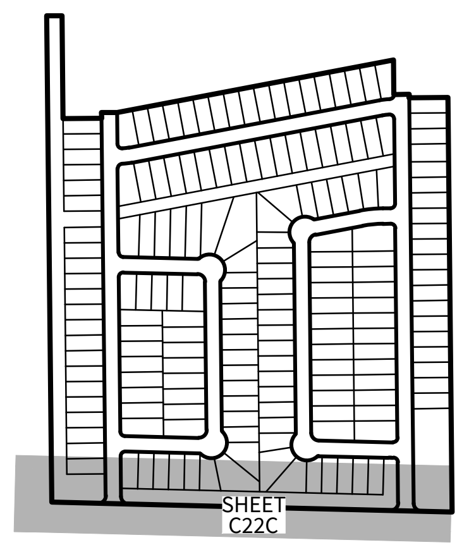
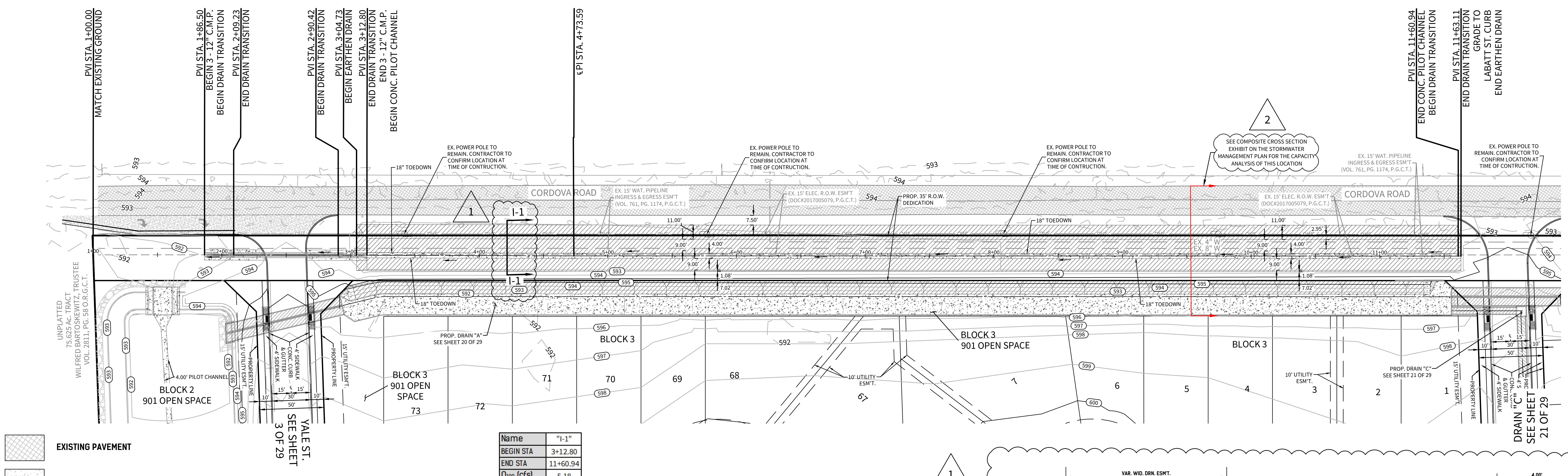
CORDOVA TRAILS SUBDIVISION UNIT 1

DRAINAGE PLAN & PROFILE BAR DITCH DRAIN "I"



SITE MAP
NOT TO SCALE



LEGEND

PROPOSED BOX CULVERT	EXISTING PAVEMENT
PROPOSED CONCRETE RIP-RAP	PROPOSED PROPOSED PAVEMENT
PROPOSED EARTHEN DRAIN	PROPOSED ROCK GABBION MATTRESS

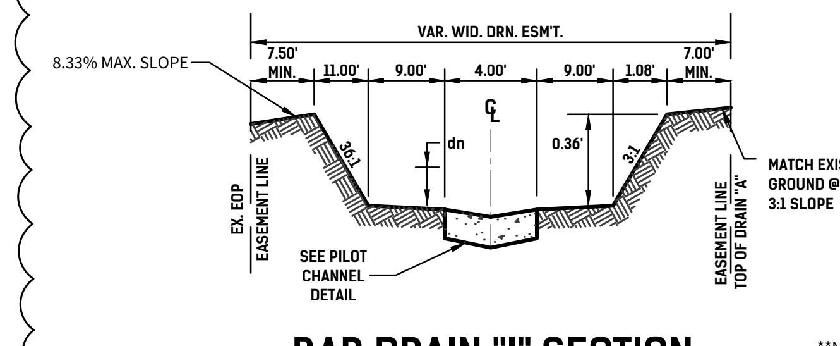
NOTES:

1. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. 85% OF CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION PRIOR TO ACCEPTANCE OF THE CHANNEL BY THE CITY OF SEGUIN. HYDROMULCH PAY ITEM TO INCLUDE SOIL, SEEDING, OR SODDING & WATERING FOR THE TIME PERIOD NEEDED TO ACHIEVE 85% VEGETATION.

Name	"I-1"
BEGIN STA	3+12.80
END STA	11+60.94
Q_{100} (cfs)	5.18
h (ft)	0.36'
b_w (ft)	22.00'
z (_):1 left	36
z (_):1 right	3
t_w (ft)	36
n	0.035
Slope (%)	0.12%
d_n (ft)	0.31'
V (fps)	0.59

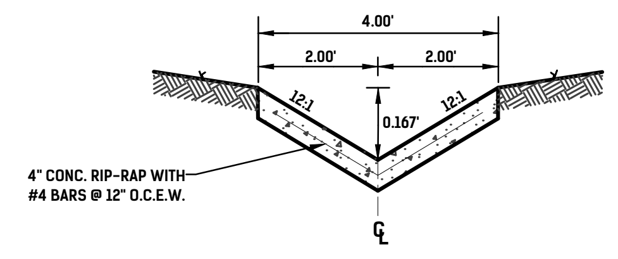
BAR DITCH DRAIN "I"

STA. 1+00.00 TO STA. 11+31.84



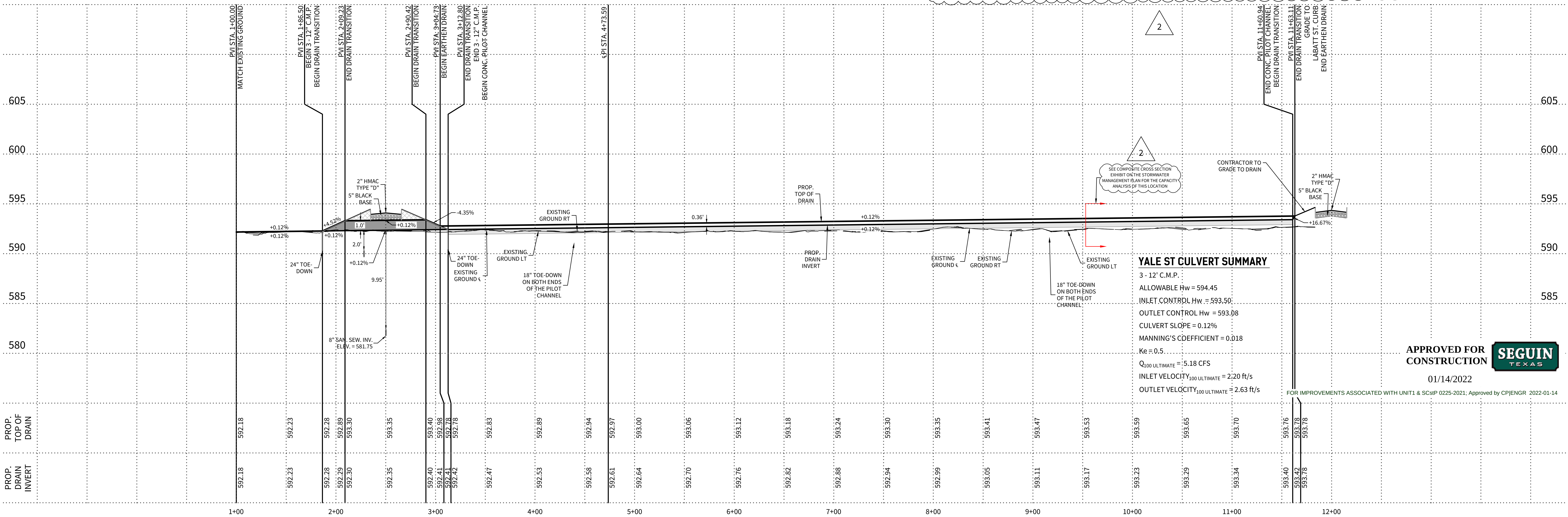
BAR DRAIN "I" SECTION (N.T.S.)
"I-1" **

**NOTE: SEE COMPOSITE CROSS SECTION EXHIBIT ON THE STORMWATER MANAGEMENT PLAN FOR THE TIE-IN INFORMATION BETWEEN DRAIN "I", DRAIN "A", AND CORDOVA RD.



PILOT CHANNEL DETAIL
(N.T.S.)

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



YALE ST CULVERT SUMMARY

3 - 12' C.M.P.
ALLOWABLE Hw = 594.45
INLET CONTROL Hw = 593.50
OUTLET CONTROL Hw = 593.08
CULVERT SLOPE = 0.12%
MANNING'S COEFFICIENT = 0.018
Ke = 0.5
$Q_{100\ ULTIMATE}$ = 5.18 CFS
INLET VELOCITY$_{100\ ULTIMATE}$ = 2.20 ft/s
OUTLET VELOCITY$_{100\ ULTIMATE}$ = 2.63 ft/s

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

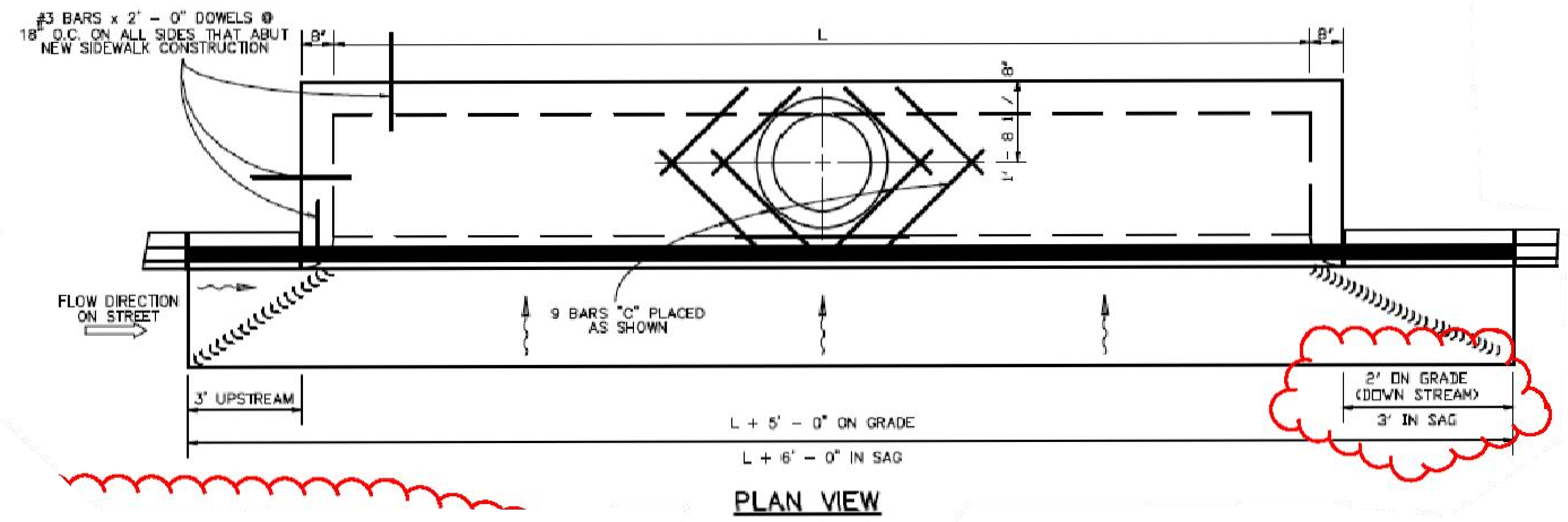
1. 07-12-2021 UPDATED DRAIN SECTIONS, UPDATED DRAIN DETAIL
2. 09-23-2021 UPDATED DRAIN SECTIONS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

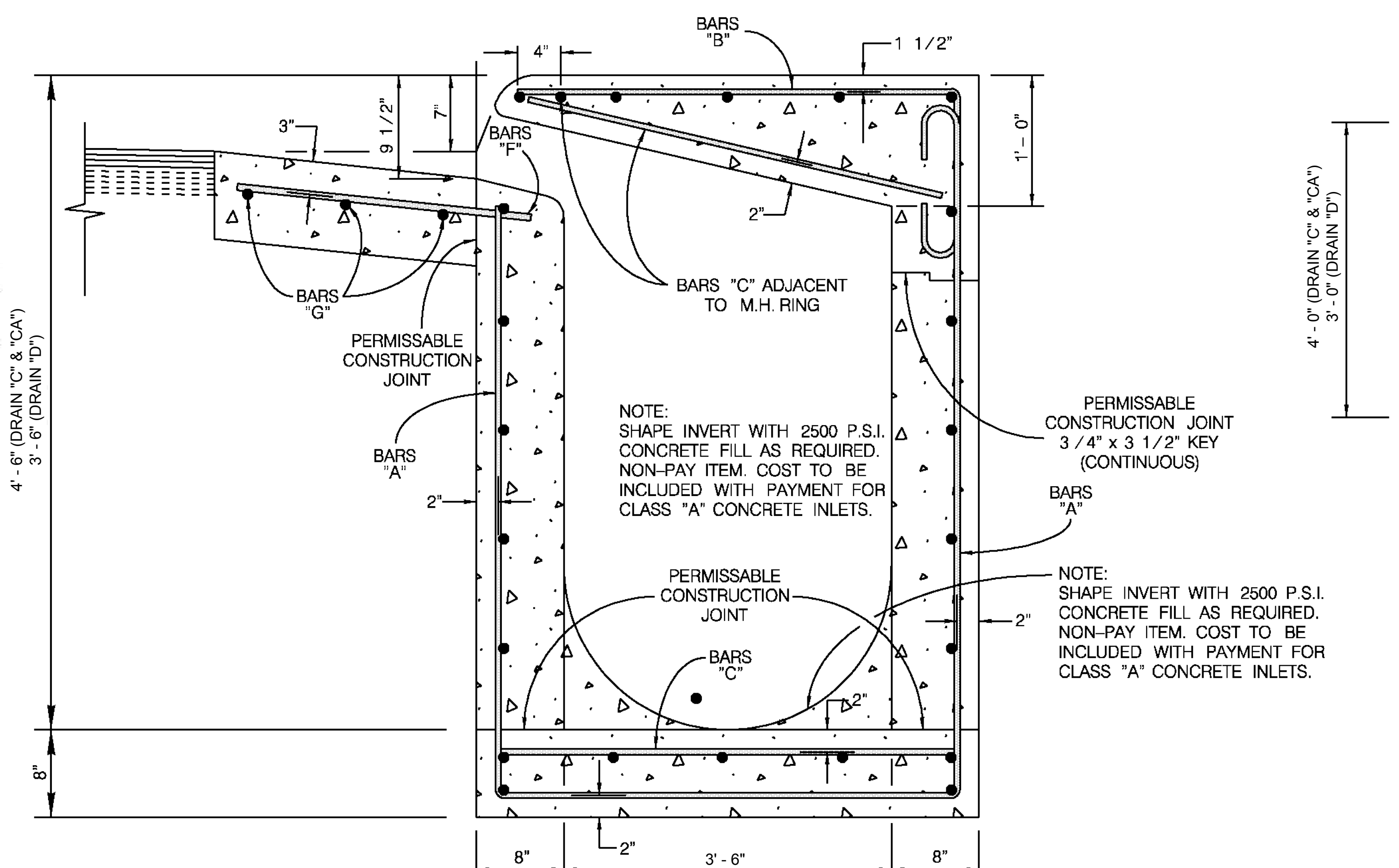
RPP.dwg 2021/12/05 9:19pm jguerrero

C22C


#3 BARS x 2' – 0" DOWELS @ 18" O.C. ON ALL SIDES THAT ABUT NEW SIDEWALK CONSTRUCTION
8"
L
8"
1' – 8 1/8"
FLOW DIRECTION ON STREET
9 BARS "C" PLACED AS SHOWN
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
L + 5' – 0" ON GRADE
L + 6' – 0" IN SAG

PLAN VIEW

SCALE : 1" = 2'

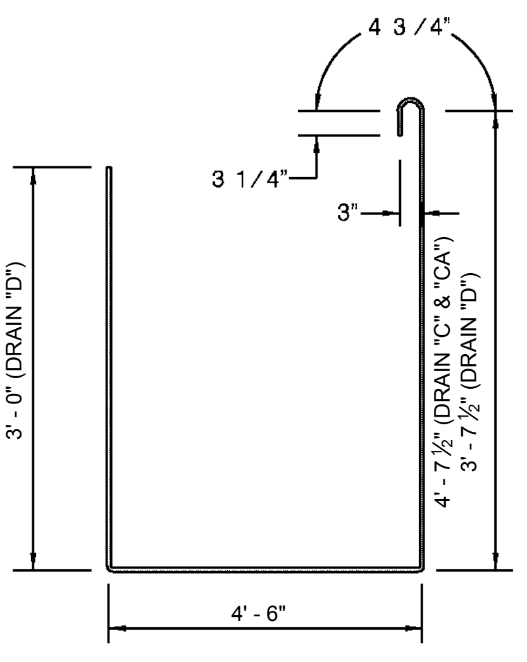

BARS "B"
4"
1 1/2"
3"
9 1/2"
7"
1' – 0"
BARS "F"
2"
BARS "G"
PERMISSABLE CONSTRUCTION JOINT
BARS "C" ADJACENT TO M.H. RING
4' - 6" (DRAIN "C" & "CA")
3' - 6" (DRAIN "D")
BARS "A"
2"
PERMISSABLE CONSTRUCTION JOINT 3 / 4" x 3 1/2" KEY (CONTINUOUS)
BARS "A"
PERMISSABLE CONSTRUCTION JOINT
BARS "C"
2"
8"
8"
2"
8"
3' - 6"
8"
4' - 10"
SECTION STREET TO MATCH CROSS-SLOPE

NOTE:
SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON–PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.

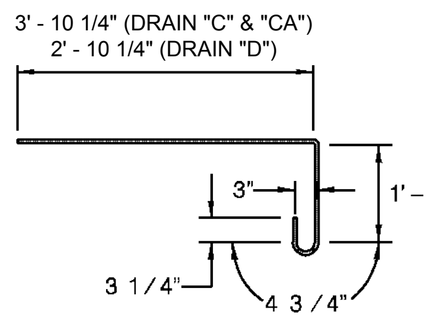
NOTE:
SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON–PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.

SECTION "A–A"

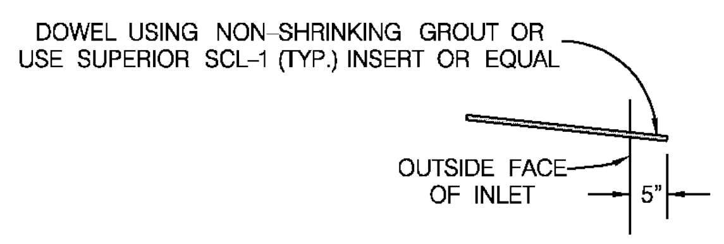
SCALE : 1" = 1'



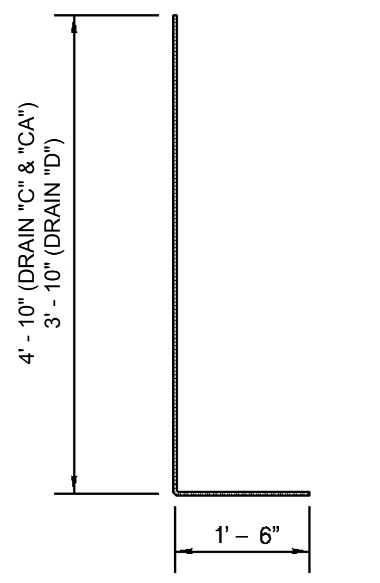
BAR "A"



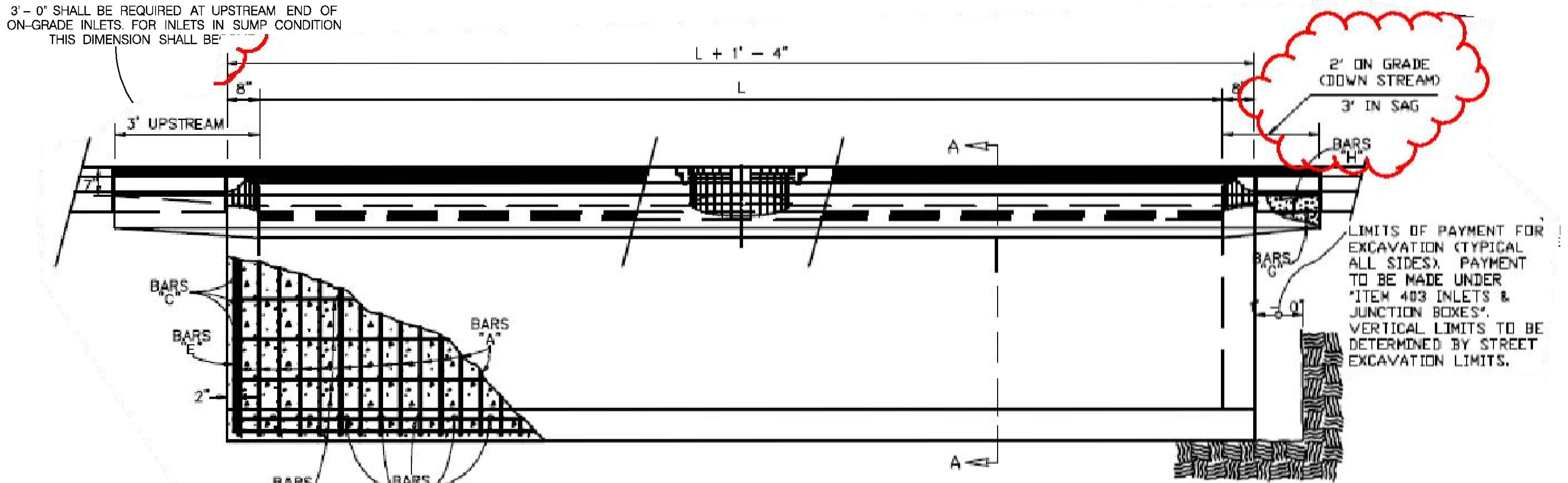
BAR "B"


DOWEL USING NON–SHRINKING GROUT OR USE SUPERIOR SCL–1 (TYP.) INSERT OR EQUAL
OUTSIDE FACE OF INLET
5"

BAR "F"

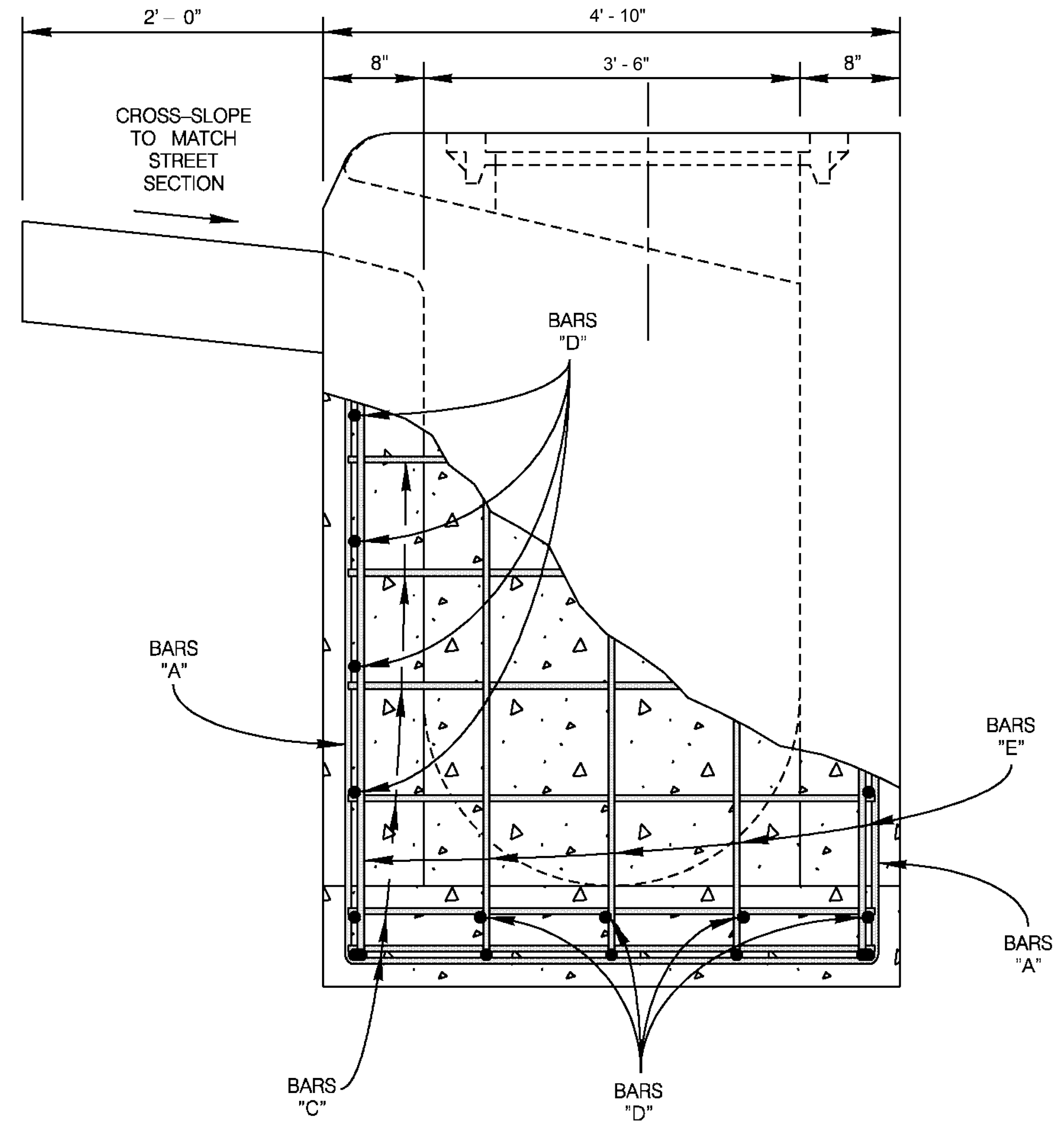


BAR "E"


3' – 0" SHALL BE REQUIRED AT UPSTREAM END OF ON–GRADE INLETS. FOR INLETS IN SUMP CONDITION THIS DIMENSION SHALL BE
L + 1' – 4"
8"
L
8"
3' UPSTREAM
2' ON GRADE (DOWN STREAM)
3' IN SAG
BARS "H"
A
A
7"
BARS "C"
BARS "E"
BARS "A"
2"
BARS "D"
BARS "C"
BARS "G"
1' – 0"
LIMITS OF PAYMENT FOR EXCAVATION (TYPICAL ALL SIDES). PAYMENT TO BE MADE UNDER "ITEM 403 INLETS & JUNCTION BOXES". VERTICAL LIMITS TO BE DETERMINED BY STREET EXCAVATION LIMITS.

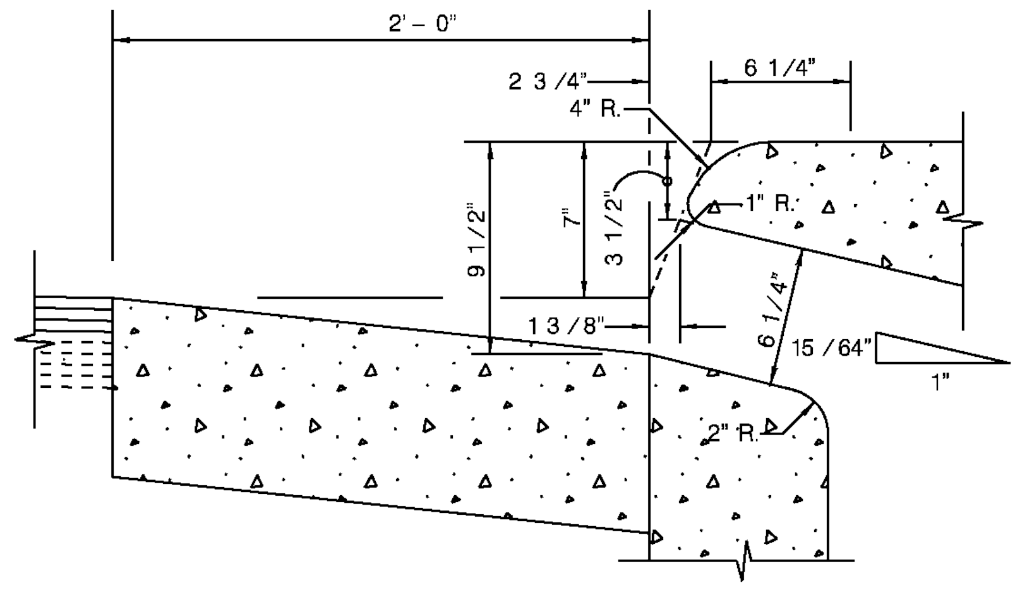
FRONT VIEW

SCALE : 1" = 2'



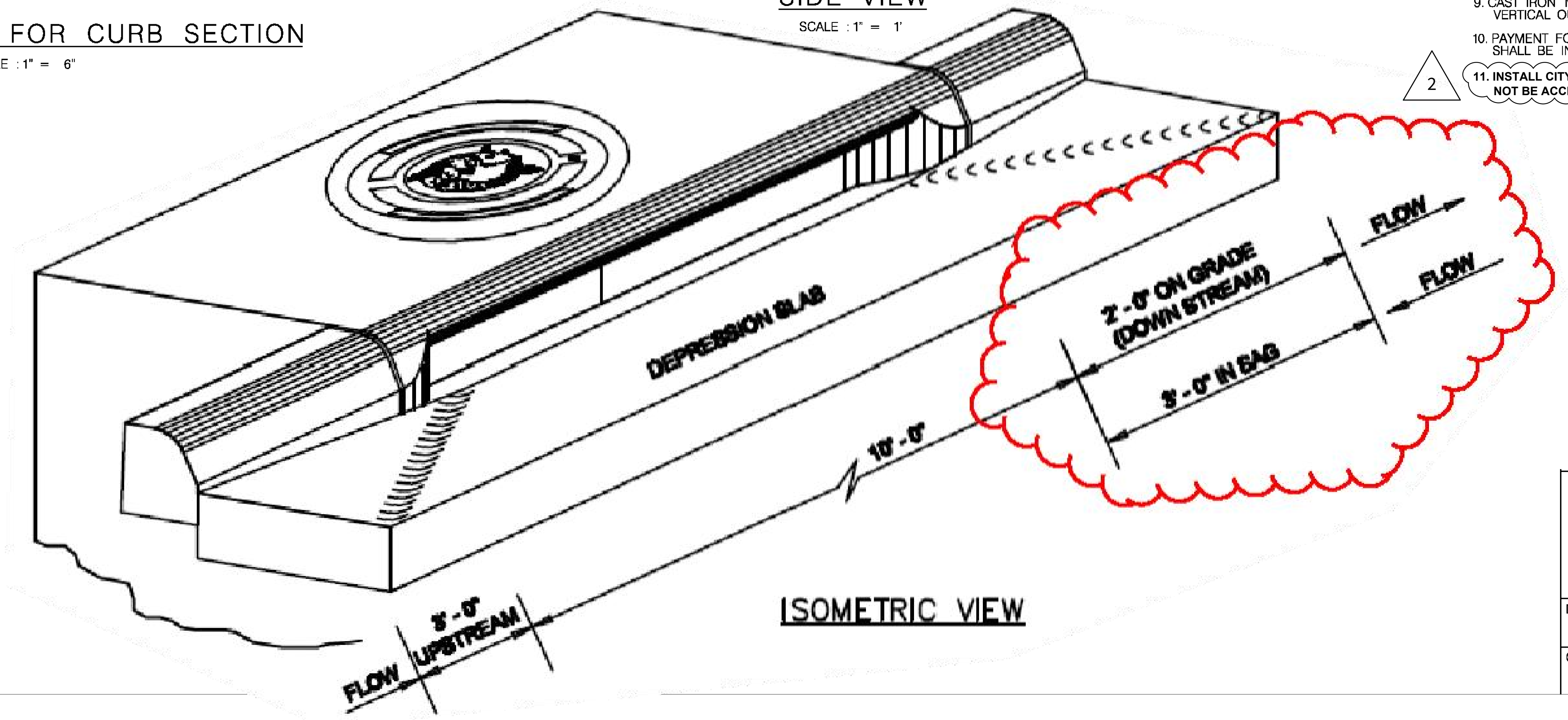
SIDE VIEW

SCALE : 1" = 1'



OPENING DETAIL FOR CURB SECTION

SCALE : 1" = 6"

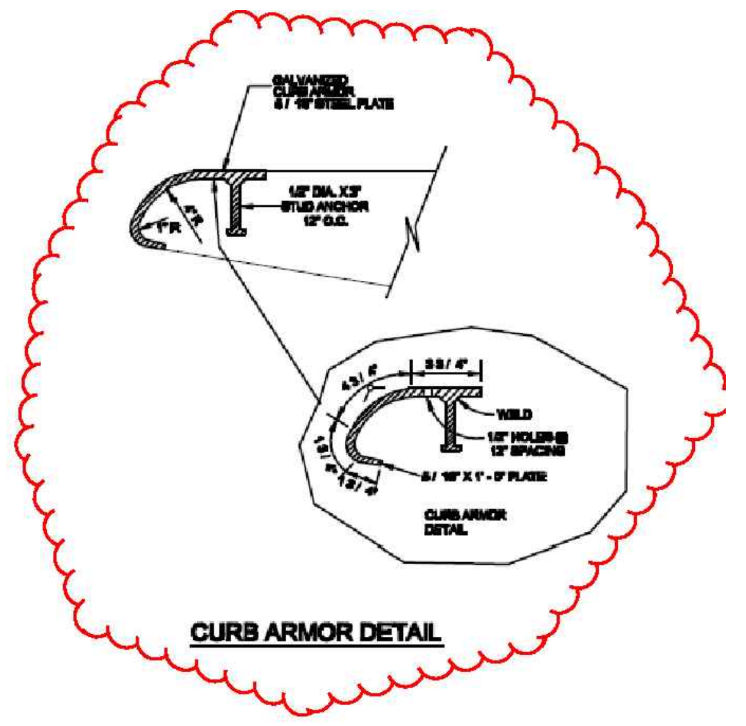


ISOMETRIC VIEW

INLET LENGTH		REINFORCING STEEL SCHEDULE					
		BAR	No.	Size	Spa.	Length	Weight lbs.
		A	63	4	5" o.c.	13' 9 1/2"	580.41
DRAIN	"C"	B	63	4	5"	5' 7 3/4"	237.60
L=	25'	C	56	4	9"	4' 6"	168.34
DEPTH=	4.5'	D	23	4	10"	26' 1"	400.74
		E	12	4	10 1/2"	6' 4"	50.77
		F	27	5	12"	2' 3"	63.36
		G	3	4	12"	29' 8"	59.45
		H	5	5	12"	1' 8"	8.69
*Concrete Total =	12.87 C.Y.	Manhole Casting = 260 lbs.			Steel Total =	1829.36 lbs.	

INLET LENGTH		REINFORCING STEEL SCHEDULE					
		BAR	No.	Size	Spa.	Length	Weight lbs.
		A	63	4	5" o.c.	13' 9 1/2"	580.41
DRAIN	"CA"	B	63	4	5"	5' 7 3/4"	237.60
L=	25'	C	56	4	9"	4' 6"	168.34
DEPTH=	4.5'	D	23	4	10"	26' 1"	400.74
		E	12	4	10 1/2"	6' 4"	50.77
		F	27	5	12"	2' 3"	63.36
		G	3	4	12"	29' 8"	59.45
		H	5	5	12"	1' 8"	8.69
*Concrete Total =	12.87 C.Y.	Manhole Casting = 260 lbs.			Steel Total =	1829.36 lbs.	

INLET LENGTH (EACH)		REINFORCING STEEL SCHEDULE					
		BAR	No.	Size	Spa.	Length	Weight lbs.
		A	39	4	5" o.c.	11' 9 1/2"	307.20
DRAIN	"D"	B	39	4	5"	4' 7 3/4"	121.03
L=	15'	C	40	4	9"	4' 6"	120.24
DEPTH=	3.5'	D	21	4	10"	16' 1"	225.62
		E	12	4	10 1/2"	5' 4"	42.75
		F	17	5	12"	2' 3"	39.89
		G	3	4	12"	19' 8"	39.41
		H	5	5	12"	1' 8"	8.69
*Concrete Total =	7.23 C.Y.	Manhole Casting = 260 lbs.			Steel Total =	1164.84 lbs.	


GALVANIZED CURB ARMOR 5 / 16" STEEL PLATE
1/2" DIA. X 3" STUD ANCHOR 12" O.C.
1" R.
CURB ARMOR DETAIL

CURB ARMOR DETAIL

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY MANHOLE AND REINFORCED CONC

* INCLUDES CONCRETE GUTTER FOR ON GRADE INLET. REDUCE BY .05 C.Y. FOR INLETS IN SUMP.

GENERAL NOTES

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3 / 4"
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCRETION. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A–615, GRADE 60 REQUIREMENTS.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO OUTLET PIPE.
8. DELETE 4 "C" BARS FROM SCHEDULE QUANTITIES IF MANHOLE RING AND COVER ARE PLACED AT END OF INLET.
9. 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.
10. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".

2

11. INSTALL CITY OF SEGUIN MANHOLE COVERS FOR ALL INLETS WITHIN THIS DEVELOPMENT. TXDOT COVERS WILL NOT BE ACCEPTED AT TIME OF SUBSTANTIAL COMPLETION OF THE UNIT 1 PUBLIC IMPROVEMENTS.

2

TYPE "C" INLET DETAILS

DRAWN BY:	DATE	REVISIONS	SCALE: SEE ABOVE
V. VASQUEZ			
CHECKED BY:			
NAT HARDY, P.E.			

APPROVED FOR CONSTRUCTION

SEGUIN
TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

MISCELLANEOUS DRAINAGE DETAILS

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - REPLACED CAST-IN-PLACE DETAIL & ADD MANHOLE RING AND COVER NOTE
2.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C23

P:\03480\002\2-Drawings\01_DRDP0.dwg 2021/09/22 1:14pm acalvillo ci102DAL.dgn

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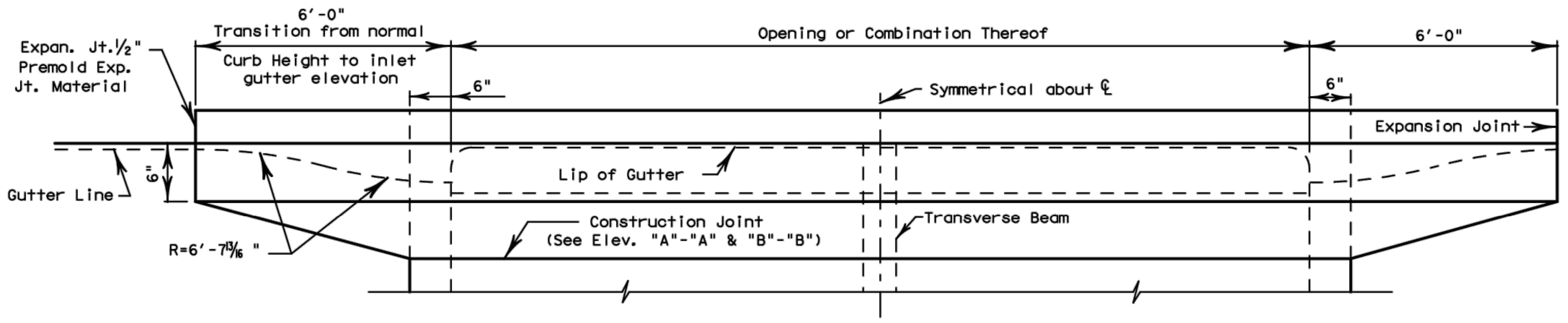
BILL OF REINFORCING STEEL

Depth "D"	All Widths and Lengths Bars C	Bars D	Bars E	Bars J	Opening Length "L"= 5 ft Widths "W" 3ft Bars F	4ft Bars F	5ft Bars F	Bars A	Bars B	Bars G	Opening Length "L"= 10 ft Widths "W" 3ft Bars F	4ft Bars F	5ft Bars F	Bars A	Bars B	Bars G	Opening Length "L"= 15 ft Widths "W" 3ft Bars F	4ft Bars F	5ft Bars F	Bars A	Bars B	Bars G	Bars M	Bars N	Opening Length "L"= 20 ft Widths "W" 3ft Bars F	4ft Bars F	5ft Bars F	Bars A	Bars B	Bars G	Bars M	Bars N	Steps
3'-6"	17	3	2	4	20	24	28	10	10	20	28	32	36	18	18	28	36	40	44	26	26	36	2	2	44	48	52	34	34	44	2	2	1
3'-9"	18	"	"	"	"	"	"	"	"	20	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"	1
4'-0"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"	1
4'-3"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"	1
4'-6"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"	2
4'-9"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"	2
5'-0"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"	2
5'-3"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"	2
5'-6"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"	2
5'-9"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"	2
6'-0"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"	3
7'-0"	29	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"	3
8'-0"	31	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"	4
9'-0"	35	"	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	56	"	"	"	"	"	"	"	64	"	"	5
10'-0"	38	"	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	58	"	"	"	"	"	"	"	66	"	"	5

SUMMARY OF QUANTITIES FOR STREET INLETS

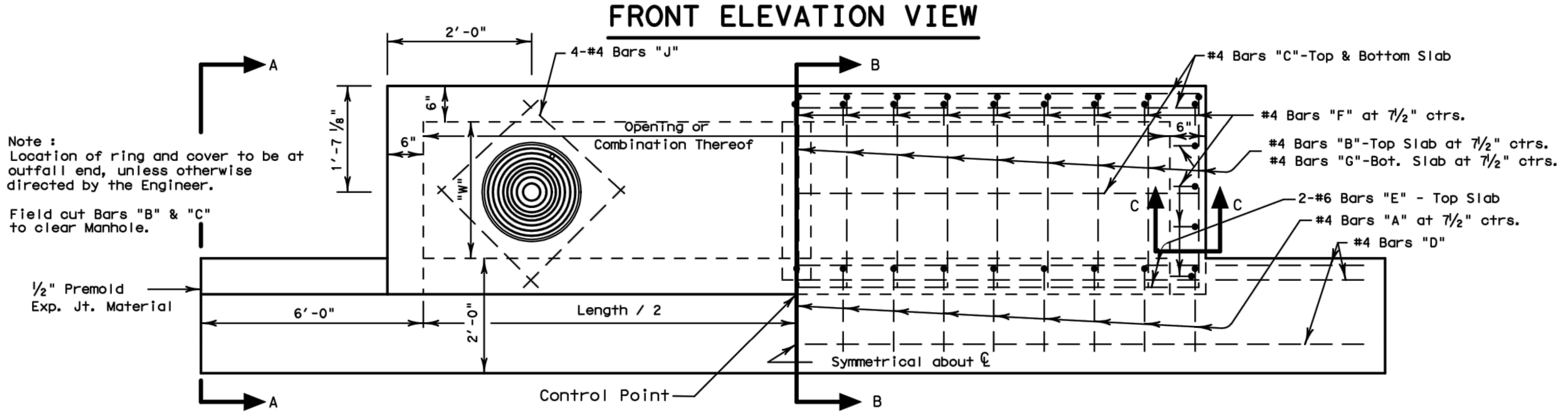
Depth "D"	5'-0" Opening "L" Width 3'-0" Conc. C.Y.	Steel Lbs.	Width 4'-0" Conc. C.Y.	Steel Lbs.	Width 5'-0" Conc. C.Y.	Steel Lbs.	10'-0" Opening "L" Width 3'-0" Conc. C.Y.	Steel Lbs.	Width 4'-0" Conc. C.Y.	Steel Lbs.	Width 5'-0" Conc. C.Y.	Steel Lbs.	15'-0" Opening "L" Width 3'-0" Conc. C.Y.	Steel Lbs.	Width 4'-0" Conc. C.Y.	Steel Lbs.	Width 5'-0" Conc. C.Y.	Steel Lbs.	20'-0" Opening "L" Width 3'-0" Conc. C.Y.	Steel Lbs.	Width 4'-0" Conc. C.Y.	Steel Lbs.	Width 5'-0" Conc. C.Y.	Steel Lbs.
3'-6"	2.62	306	2.95	332	3.28	373	4.12	479	4.64	521	5.20	564	5.69	667	6.40	721	7.10	775	7.20	846	8.11	909	9.03	976
3'-9"	2.70	309	3.04	341	3.39	373	4.25	494	4.78	536	5.34	579	5.87	687	6.58	741	7.30	796	7.42	874	8.34	937	9.27	1010
4'-0"	2.78	328	3.14	364	3.49	399	4.38	518	4.92	565	5.49	610	6.05	718	6.77	776	7.49	835	7.64	909	8.58	976	9.51	1046
4'-3"	2.87	334	3.23	370	3.59	406	4.51	526	5.06	573	5.64	619	6.22	729	6.95	787	7.69	847	7.87	922	8.81	990	9.75	1061
4'-6"	2.95	356	3.32	394	3.69	431	4.64	558	5.20	607	5.79	656	6.40	770	7.14	830	7.88	891	8.09	973	9.04	1043	9.99	1115
4'-9"	3.03	361	3.41	410	3.79	438	4.77	566	5.34	616	5.94	665	6.57	780	7.32	841	8.07	903	8.31	986	9.27	1056	10.23	1129
5'-0"	3.12	367	3.51	416	3.90	445	4.90	574	5.47	624	6.09	674	6.75	791	7.51	853	8.27	915	8.53	999	9.50	1070	10.47	1144
5'-3"	3.20	383	3.60	424	4.00	465	5.03	600	5.61	652	6.23	704	6.93	827	7.69	890	8.46	955	8.76	1044	9.73	1118	10.71	1194
5'-6"	3.28	389	3.69	430	4.10	472	5.16	608	5.75	661	6.38	713	7.11	837	7.88	901	8.66	967	8.98	1057	9.97	1131	10.95	1208
5'-9"	3.37	405	3.78	451	4.20	495	5.29	635	5.89	690	6.53	744	7.28	874	8.07	940	8.85	1007	9.20	1102	10.20	1178	11.19	1258
6'-0"	3.45	415	3.88	460	4.30	504	5.42	646	6.03	702	6.68	757	7.45	888	8.25	954	9.05	1022	9.42	1119	10.43	1196	11.43	1276
7'-0"	3.78	460	4.25	510	4.71	560	5.94	716	6.59	777	7.27	837	8.16	981	8.99	1053	9.82	1126	10.31	1237	11.35	1319	12.40	1404
8'-0"	4.12	496	4.62	550	5.12	604	6.46	770	7.14	834	7.86	899	8.86	1051	9.73	1129	10.60	1205	11.20	1325	12.28	1412	13.36	1510
9'-0"	4.45	545	4.99	605	5.53	664	6.97	842	7.70	912	8.46	982	9.56	1148	10.47	1231	11.38	1313	12.09	1447	13.21	1539	14.32	1631
10'-0"	4.78	582	5.36	645	5.93	708	7.49	900	8.11	974	9.05	1048	10.27	1227	11.21	1312	12.16	1399	12.98	1546	14.13	1642	15.29	1739


6'-0"
Transition from normal
Opening or Combination Thereof
6'-0"
Expan. Jt. ½" Premold Exp. Jt. Material
Curb Height to inlet gutter elevation
6"
Symmetrical about ℄
6"
Expansion Joint
Gutter Line
6"
Lip of Gutter
Construction Joint (See Elev. "A"-"A" & "B"-"B")
Transverse Beam
R=6'-7⁹⁄₁₆"

FRONT ELEVATION VIEW

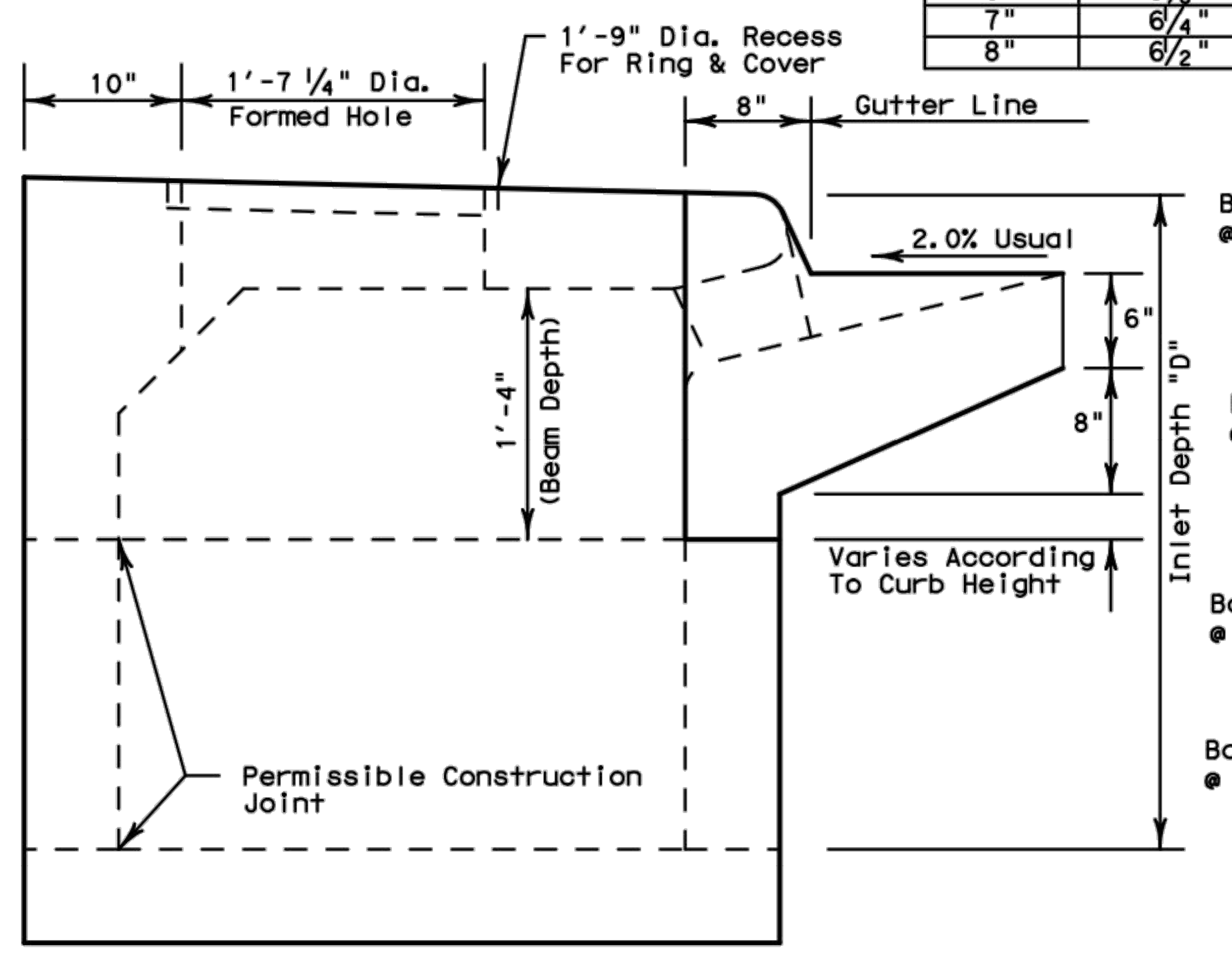
Note : Location of ring and cover to be at outfall end, unless otherwise directed by the Engineer.

Field cut Bars "B" & "C" to clear Manhole.

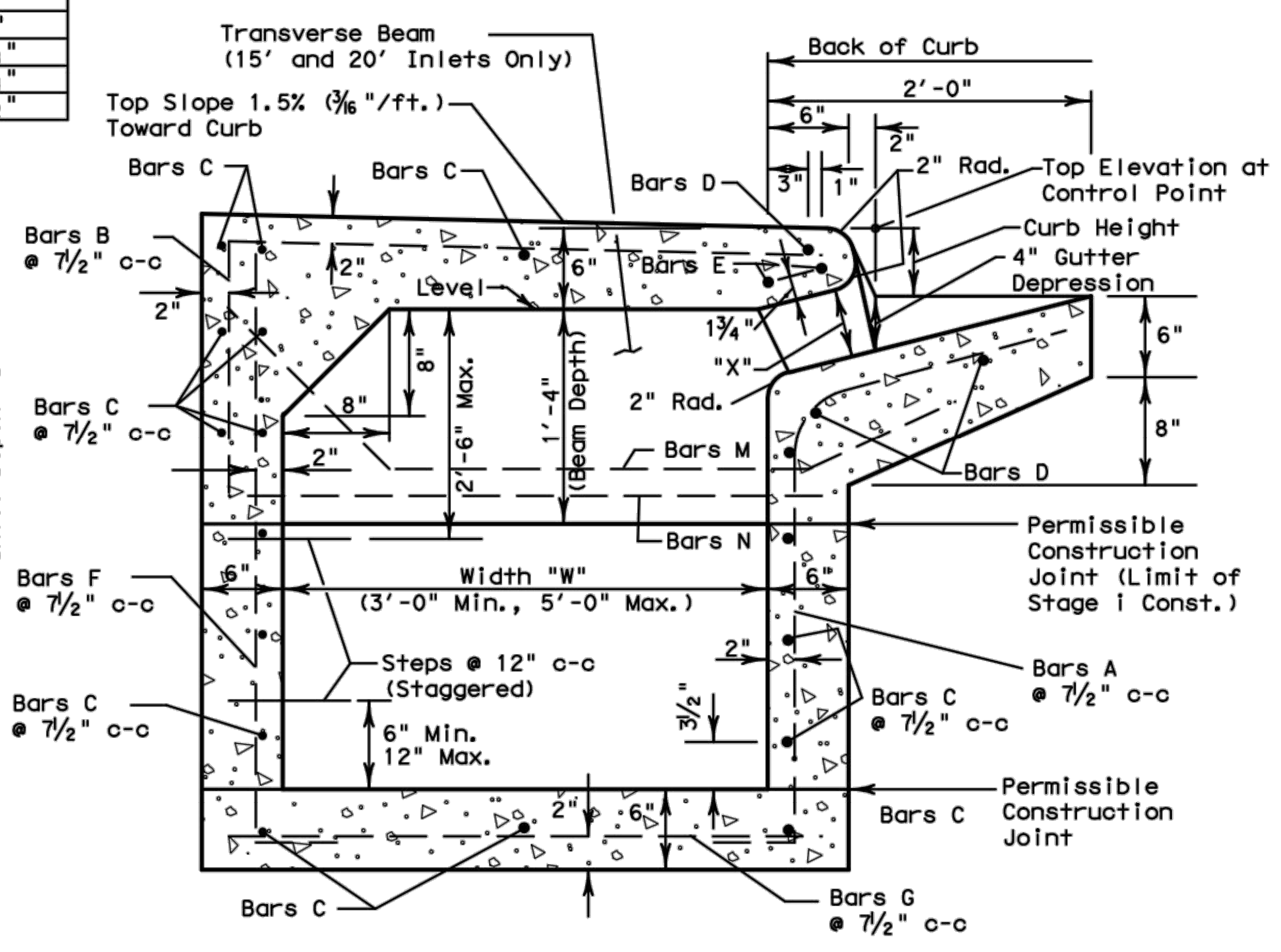


PLAN VIEW

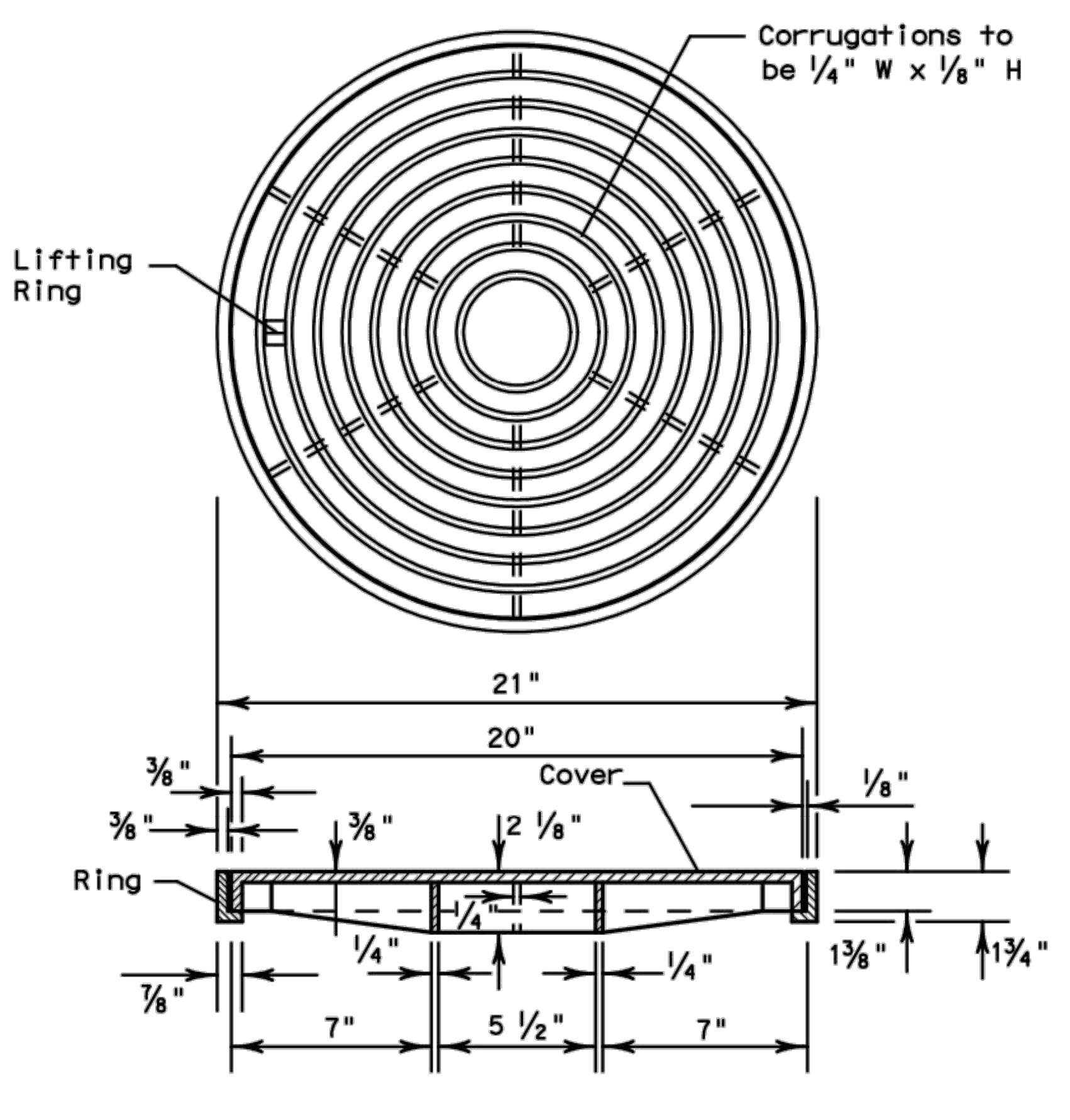
THROAT DIMENSION	
CURB HEIGHT	"X"
5"	5"
6"	5⅞"
7"	6¼"
8"	6½"


10"
1'-7¼" Dia. Formed Hole
1'-9" Dia. Recess For Ring & Cover
8"
Gutter Line
2.0% Usual
6"
8"
1'-4" (Beam Depth)
Varies According To Curb Height
Inlet Depth "D"
Permissible Construction Joint

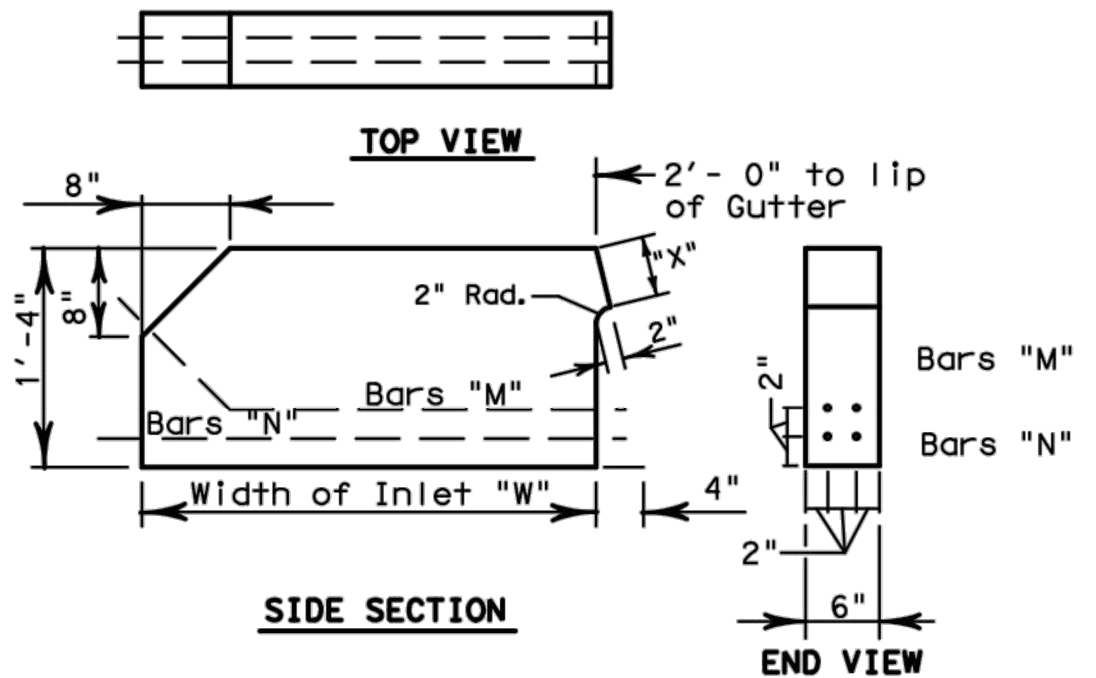
SIDE ELEVATION "A-A"



SECTION "B-B"

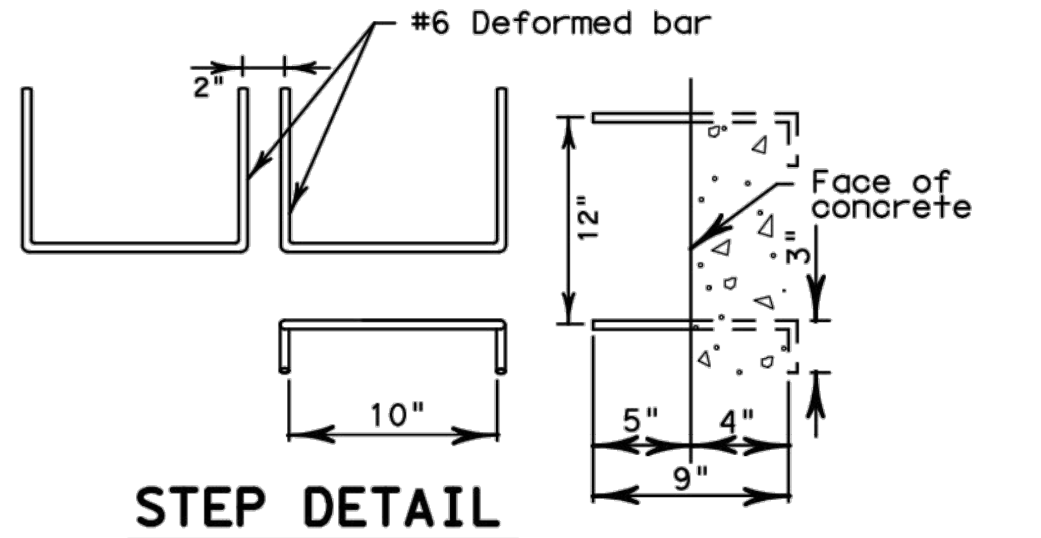


CAST IRON RING & COVER DETAIL



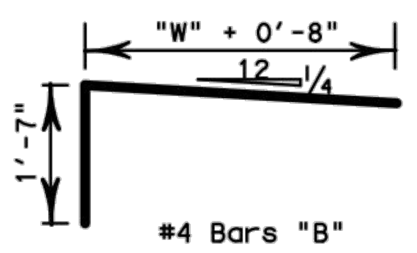
TRANSVERSE BEAM DETAIL

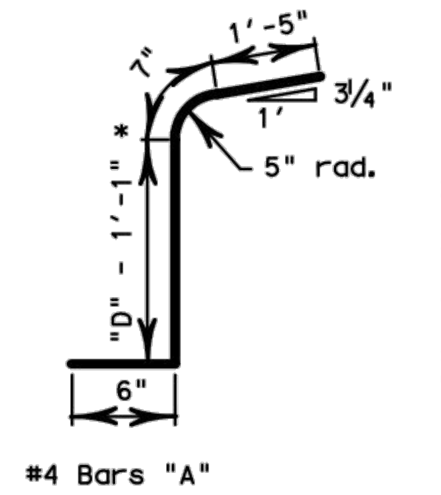
(For Use With 15' & 20' Inlets)



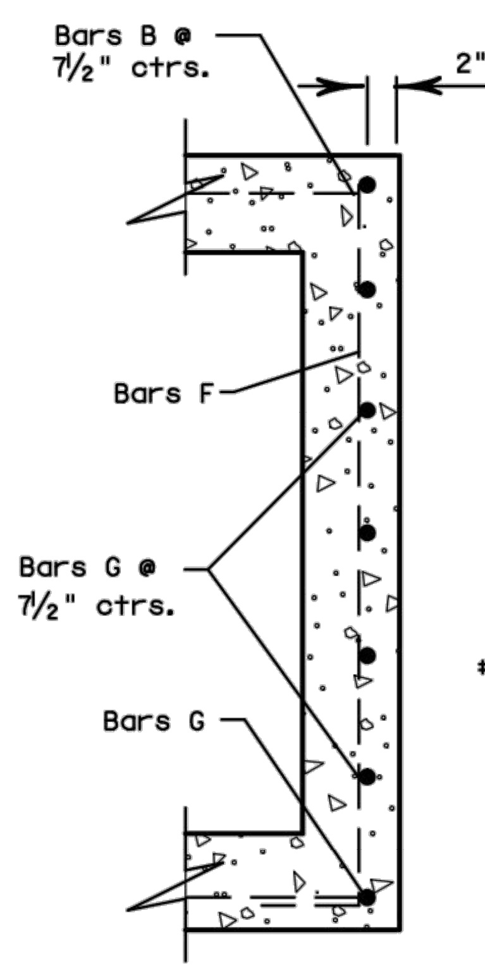
STEP DETAIL

CONCRETE QUANTITY REDUCTION TABLE	
Pipe Diameter	Reduction One Pipe C.U. Yd.
15"	0.04
18"	0.05
21"	0.08
24"	0.09
27"	0.11
30"	0.14
33"	0.17
36"	0.20
39"	0.23
42"	0.26
45"	0.30
48"	0.35

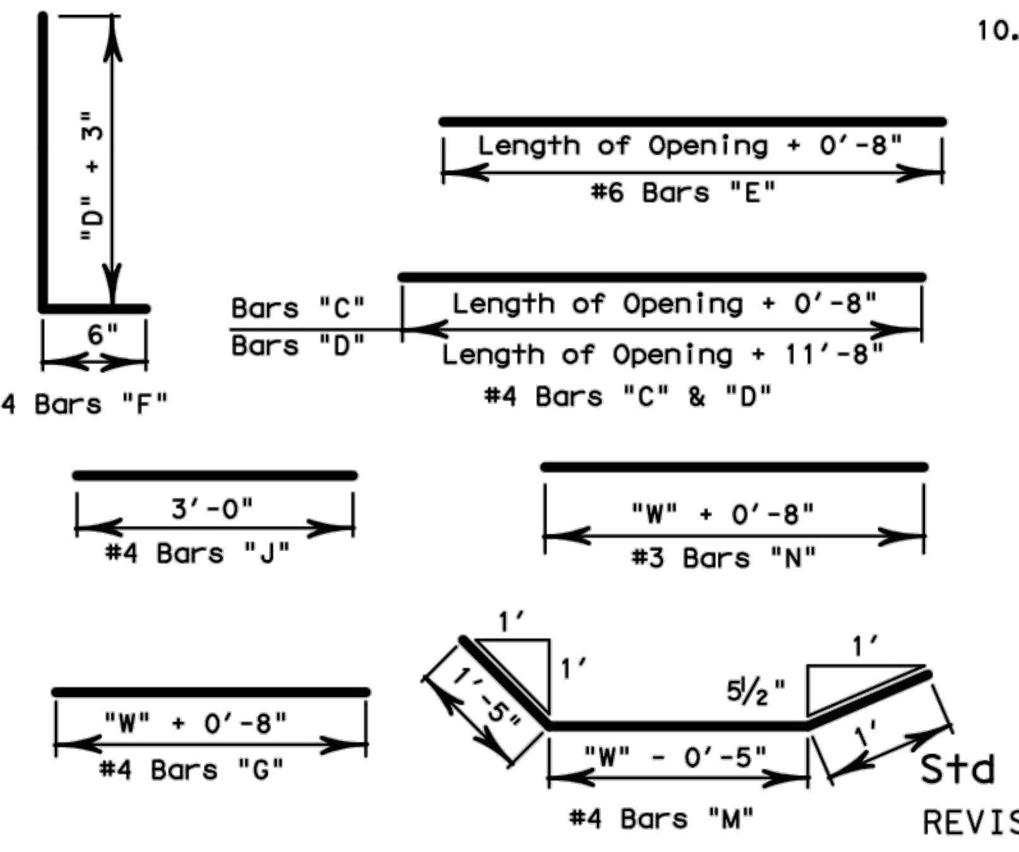




* Note: Dimension shown for 5" curb. Increase length by 1" for each additional 1" of curb height.



SECTION "C-C"



GENERAL NOTES

1. All concrete shall be Class "A".
2. Chamfer all exposed corners ¾" except where otherwise noted.
3. Dimensions related to reinforcing steel are to the centers of bars.
4. Field cut and bend bars as necessary to accommodate storm drain pipe.
5. Cast iron ring and cover shall conform to Item 471.
6. Depths other than those shown may be used whenever necessary, up to a maximum of 10'. Quantities for other depths limits may be found by interpolation.
7. During Stage 1 construction, inlets will not be constructed above subgrade elevation unless permission is granted by the Engineer.
8. A temporary wood cover shall be installed after Stage 1 is completed, and will remain in place until Stage 2 begins.
9. The location of inlet as shown in the plans refers to the control point at the face of curb and mid-point of the inlet.
10. A sealed ½" expansion joint shall be placed along all vertical faces abutting concrete pavement. Class 3,4,5 or 7 joint sealant shall be used to seal joint.

Std 1

REVISED ON 9/10/08

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Texas Department of Transportation
DALLAS DISTRICT
TYPE 1
CURB INLET
FOR USE W/ 5" TO 8" BARRIER CURB
5',10',15' & 20' OPENINGS
3'-6" TO 10'-0" DEPTHS &
3',4' & 5' WIDTHS
CI(1)-02(DAL)

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			
STATE	DIST.	COUNTY	
TEXAS	DAL		
CONT.	SECT.	JOB	HIGHWAY NO.

LEVELS DISPLAYED
1 2 3 7 9 10 11 12 13 14 15

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

1 NOTE: INSTALL CITY OF SEGUIN MANHOLE COVERS FOR ALL INLETS WITHIN THIS DEVELOPMENT. TXDOT COVERS WILL NOT BE ACCEPTED AT TIME OF SUBSTANTIAL COMPLETION OF THE UNIT 1 PUBLIC IMPROVEMENTS.

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San Antonio, Texas 78231
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CORDOVA TRAILS SUBDIVISION UNIT 1
MISCELLANEOUS DRAINAGE DETAILS

DATE
12/05/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - ADD MANHOLE RING AND COVER NOTE
2.
3.
4.
5.
6.
7.
8.
9.

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C24

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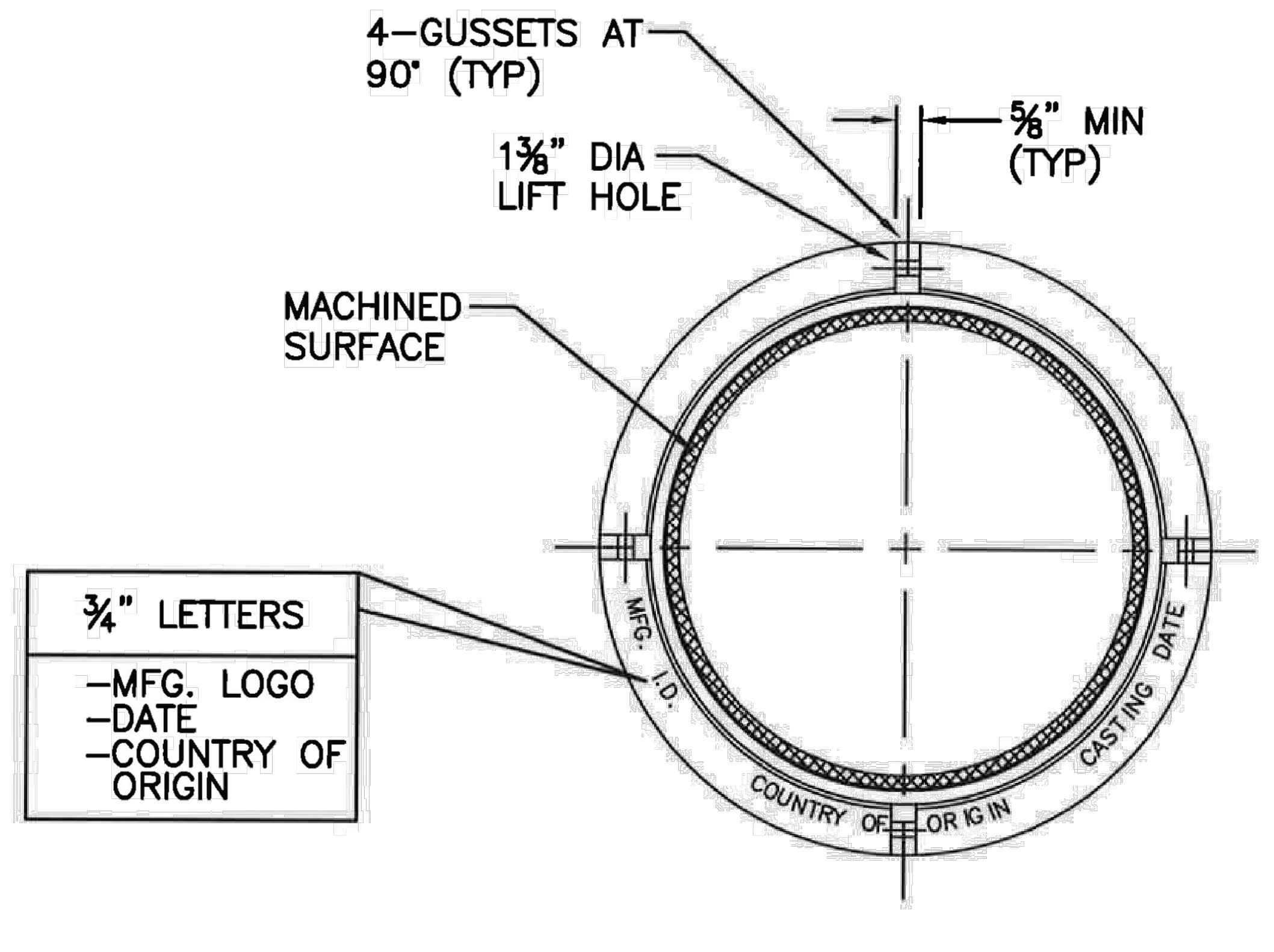
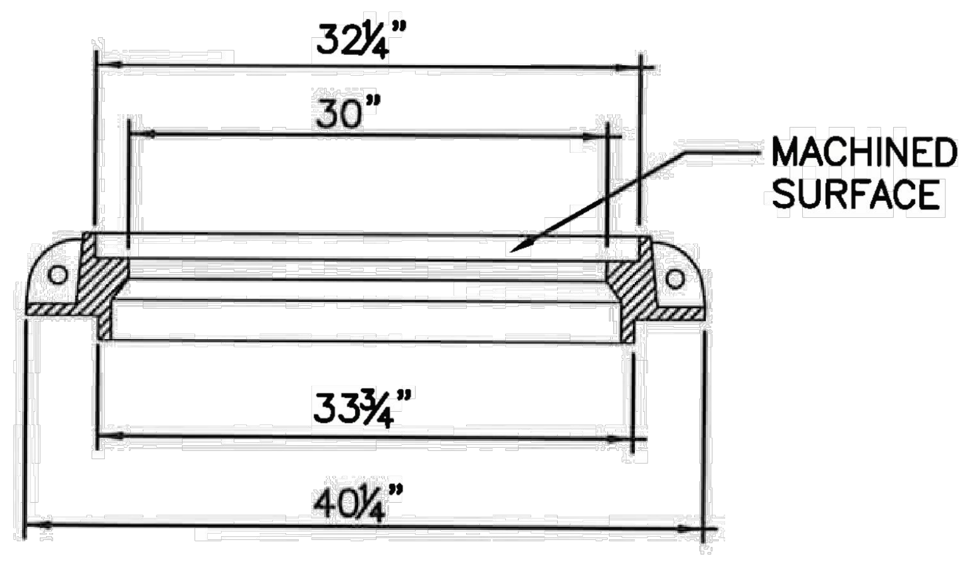


MANHOLE RING



RING SECTION

DATE ISSUED:	JUNE 1, 2013		TITLE
REV	DATE	BY	STORM SEWER MANHOLE RING AND COVER SHEET 2 OF 3
SCALE: N.T.S.	DRAWING No. STM–5		

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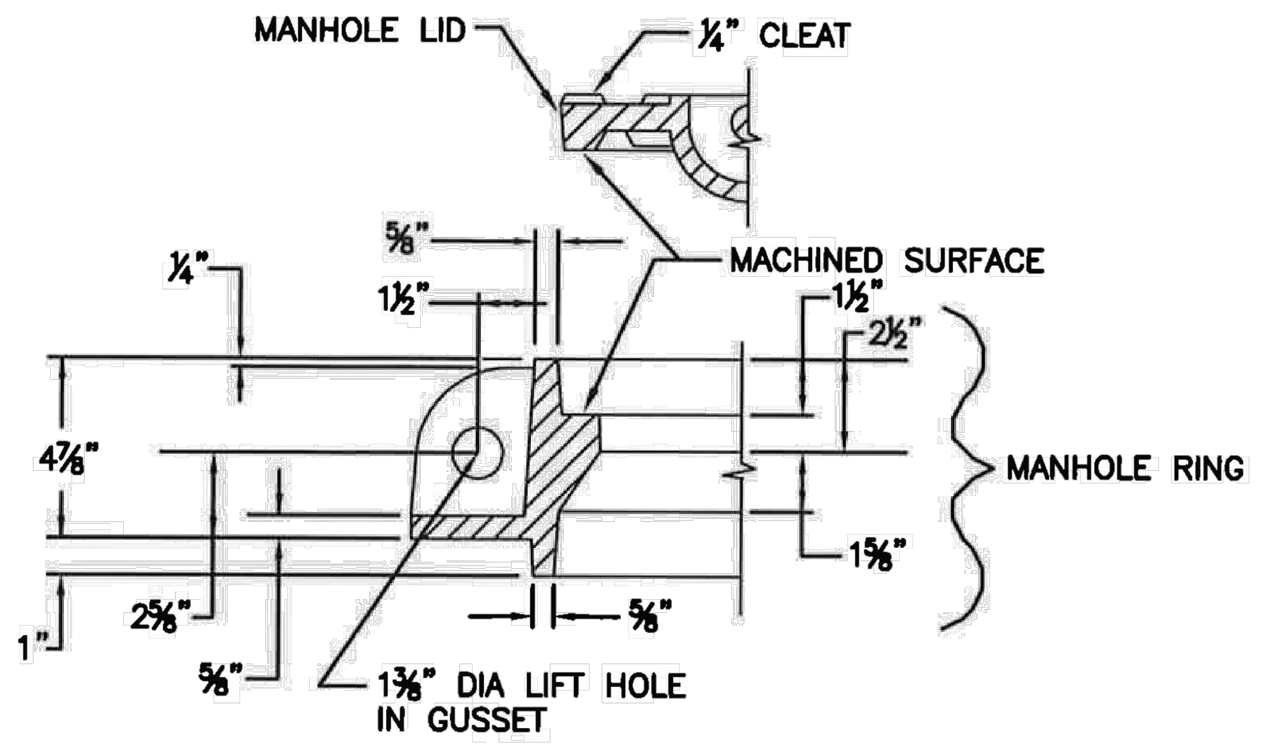
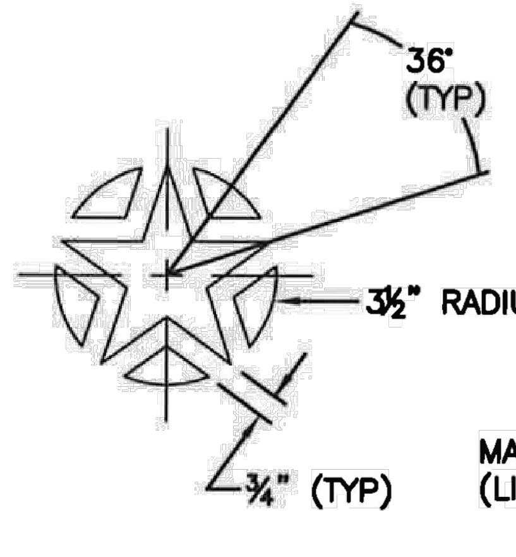
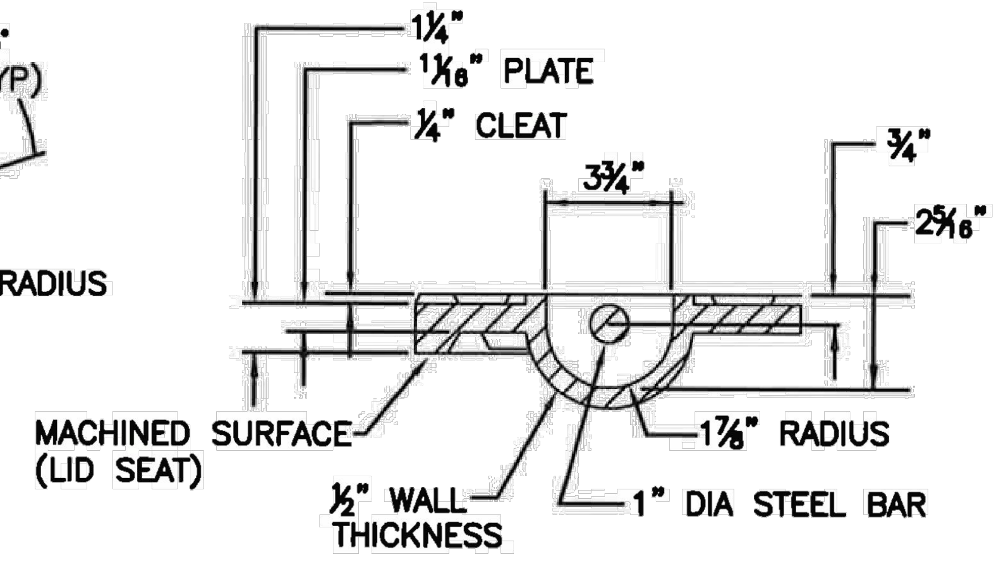


LIFT HOLE DETAIL



STAR LAYOUT



PICK BAR DETAIL

NOTES:

1. ALL CORNERS AND EDGES SHALL HAVE A ⅟₁₆" MINIMUM RADIUS.
2. LIDS SHALL BE CAST WITH TWO 1" DIA STEEL PICK BARS.
3. LID WEIGHTS SHALL BE 210 LBS FOR CAST IRON OR 175 LBS FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF LID.
4. MANUFACTURER SHALL PROVIDE INDEPENDENT TESTING LABORATORY REPORT ON 25,000 POUND PROOF LOAD TEST CONDUCTED ACCORDING TO AASHTO M–306.
5. FILLETS SHALL BE ¼" RADIUS UNLESS OTHERWISE SPECIFIED.
6. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.

DATE ISSUED:	JUNE 1, 2013		TITLE
REV	DATE	BY	STORM SEWER MANHOLE RING AND COVER SHEET 3 OF 3
SCALE: N.T.S.	DRAWING No. STM–6		

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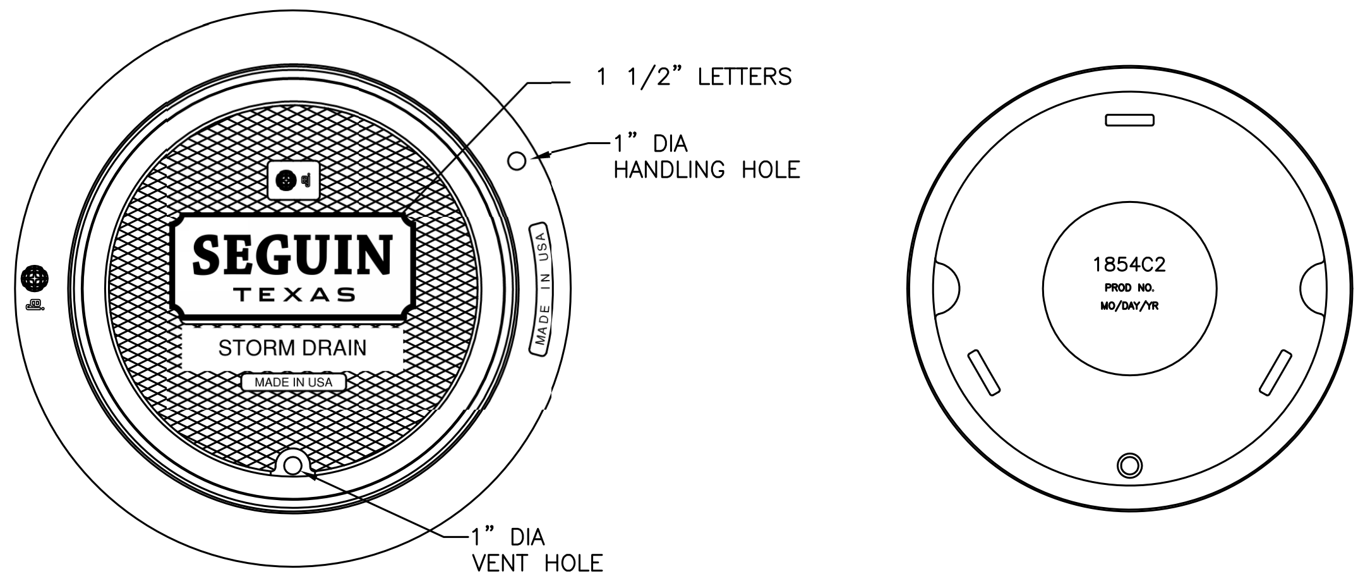
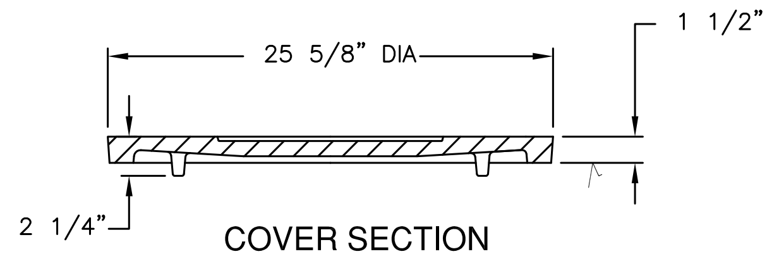
01/14/2022

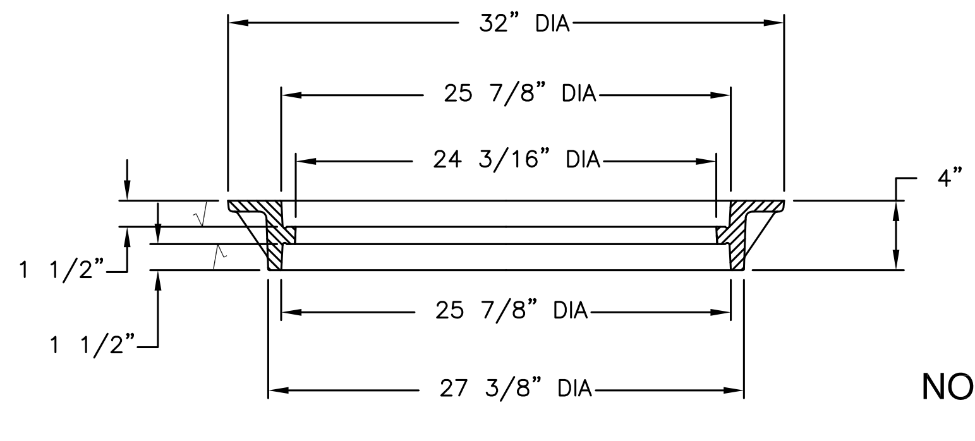
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

1854C2 1854Z Assembly





COVER SECTION



FRAME SECTION

NOTE: FRAME IS REVERSIBLE.
√ MACHINED SURFACE

Product Number
00185401

Design Features
-Materials
Cover
Gray Iron (CL35B)
Frame
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
- ASTM A48
-
-
-Country of Origin: USA

Major Components
00185423
00185411

Drawing Revision
09/22/2001 Designer: TCL
12/17/2014 Revised By: DVD

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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1

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CORDOVA TRAILS SUBDIVISION UNIT 1

MISCELLANEOUS DRAINAGE DETAILS

DATE
09/23/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - ADD MANHOLE RING AND COVER NOTE, AND ADDED ASSEMBLY DETAIL
2.
3.
4.
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8.
9.

DAVID D. CUPIT II
122076
09.27.21

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TBPE No. 455
TBPLS No. 10048500

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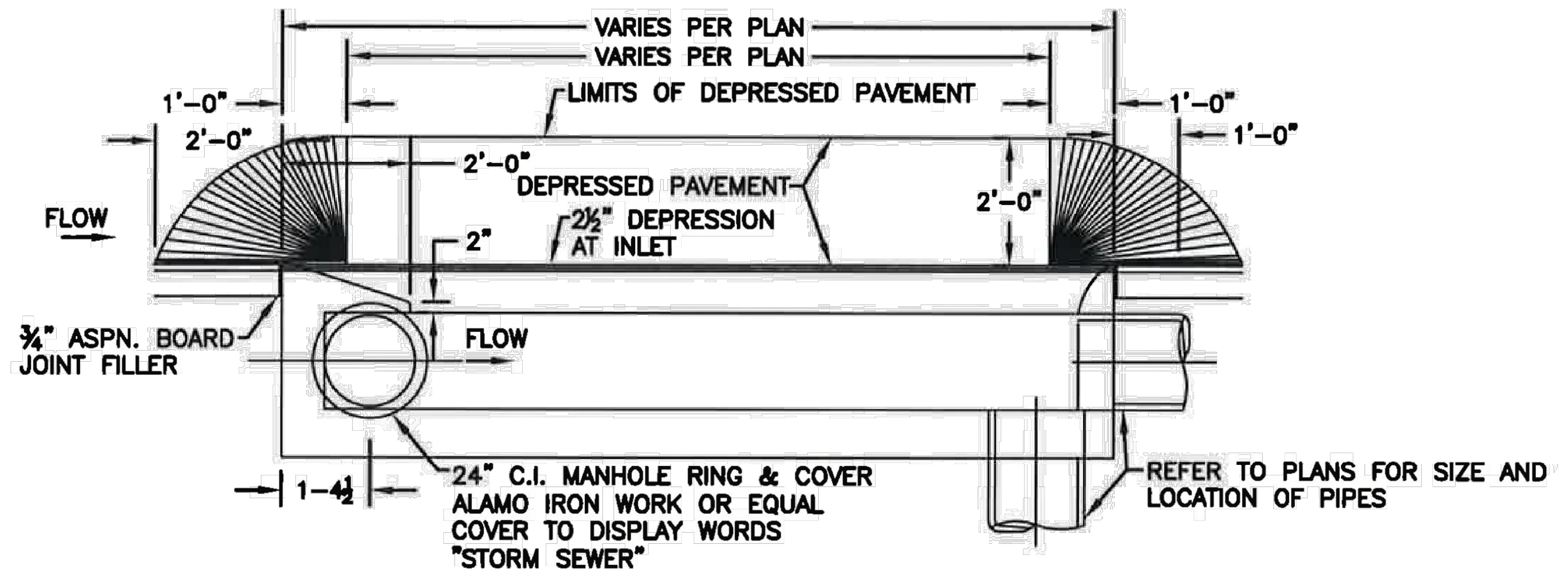
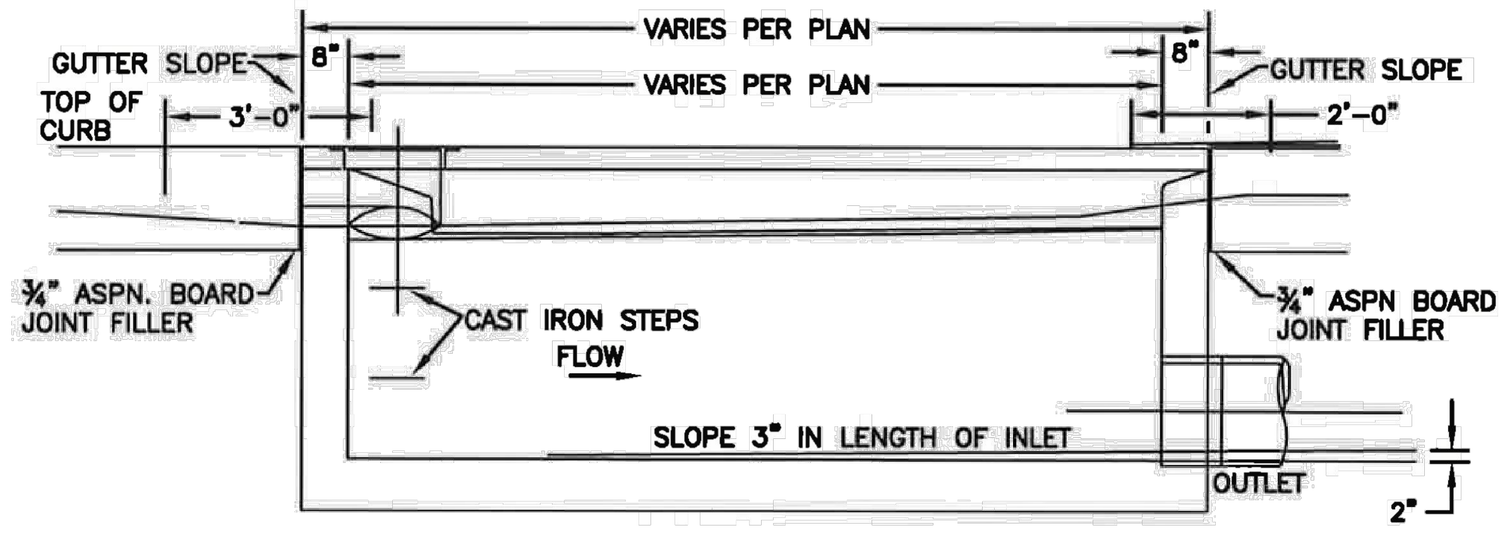

VARIES PER PLAN
VARIES PER PLAN
LIMITS OF DEPRESSED PAVEMENT
1'-0"
2'-0"
1'-0"
1'-0"
2'-0"
DEPRESSED PAVEMENT
2½" DEPRESSION AT INLET
2'-0"
2"
FLOW
¾" ASPN. BOARD JOINT FILLER
FLOW
1-4½
24" C.I. MANHOLE RING & COVER ALAMO IRON WORK OR EQUAL COVER TO DISPLAY WORDS "STORM SEWER"
REFER TO PLANS FOR SIZE AND LOCATION OF PIPES

PLAN STORM SEWER CURB INLET DETAIL
SUGGESTED CONFIGURATION



ELEVATION STORM SEWER CURB INLET DETAIL
SUGGESTED CONFIGURATION

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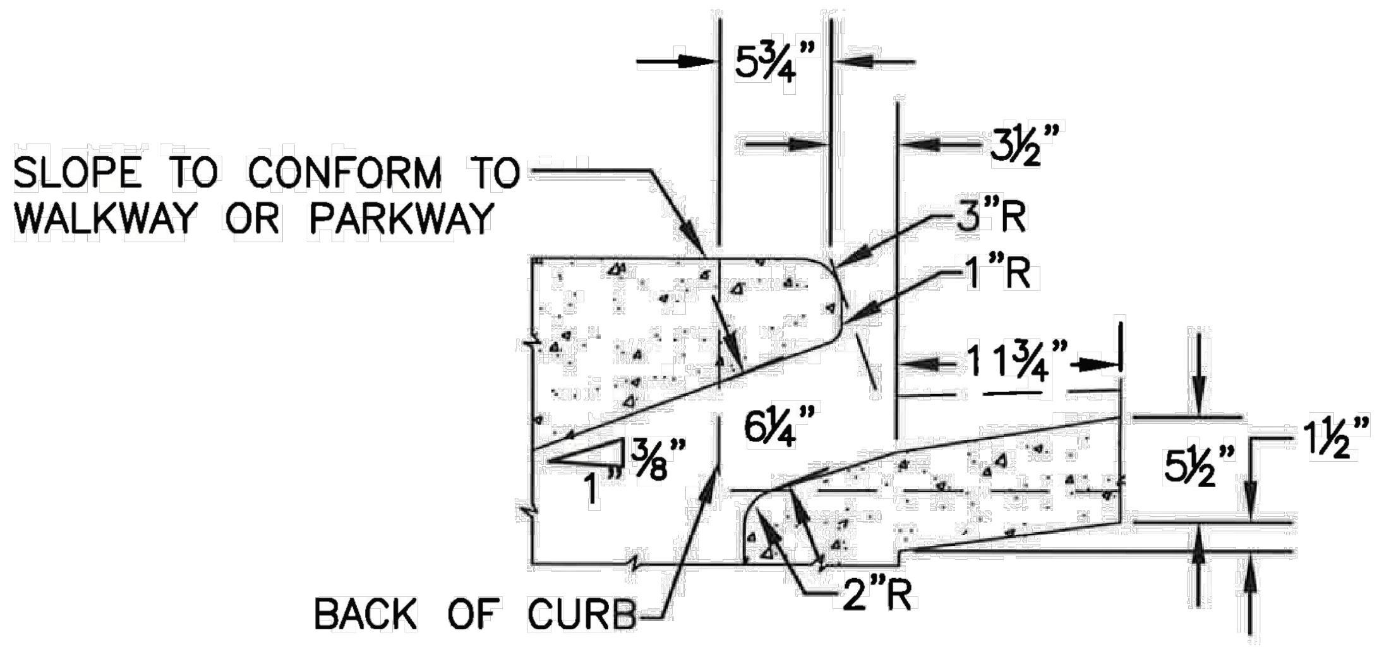
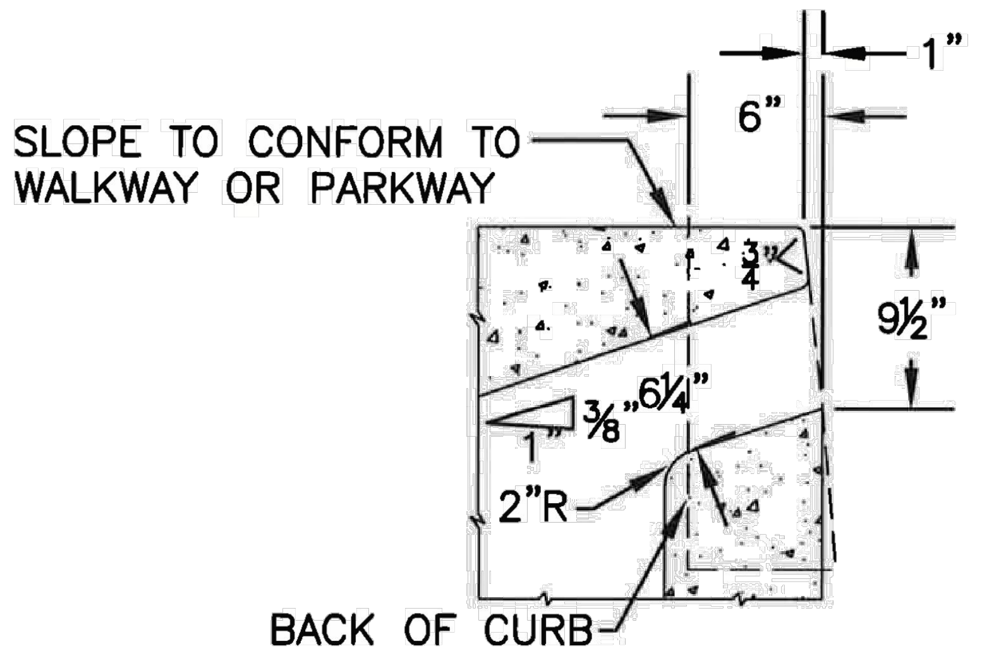
DATE ISSUED:	JUNE 1, 2013		TITLE
REV	DATE	BY	STORM SEWER CURB INLET
SCALE: N.T.S.			DRAWING No. STM-1



OPENING DETAIL FOR CURB AND GUTTER SECTION



OPENING DETAIL FOR CURB SECTION

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DATE ISSUED:	JUNE 1, 2013		TITLE
REV	DATE	BY	OPENING DETAIL FOR CURB AND GUTTER SECTION
SCALE: N.T.S.			DRAWING No. STM-2

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01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS SUBDIVISION UNIT 1
MISCELLANEOUS DRAINAGE DETAILS

DATE
07/23/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
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TBPLS No. 10048500

C25A

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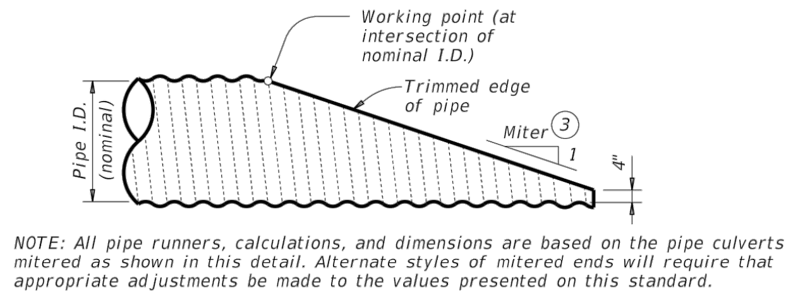
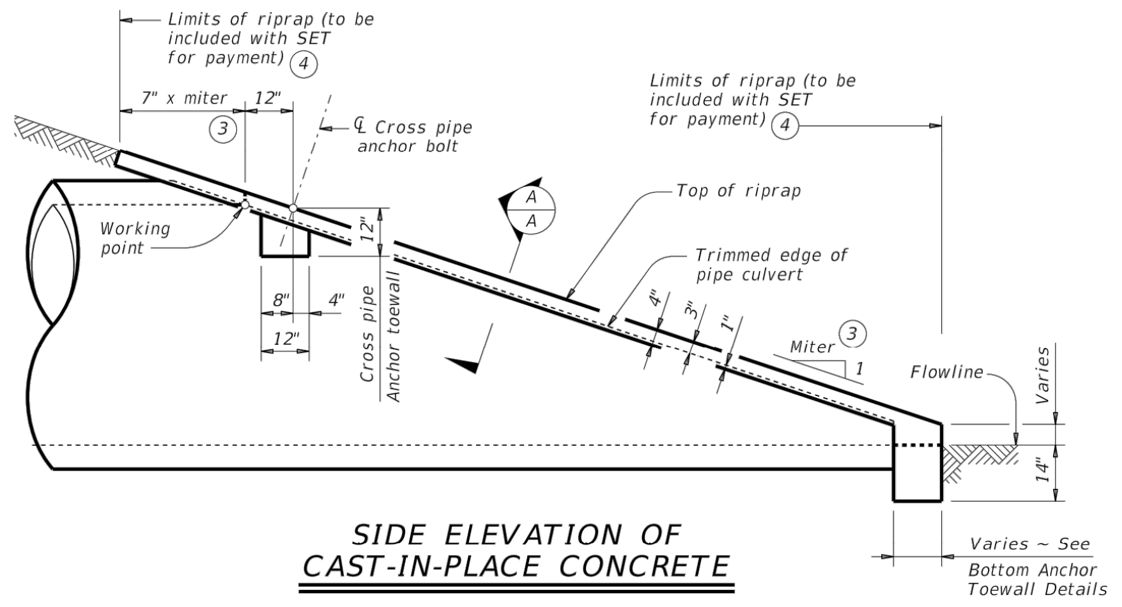


NOTE: All pipe runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

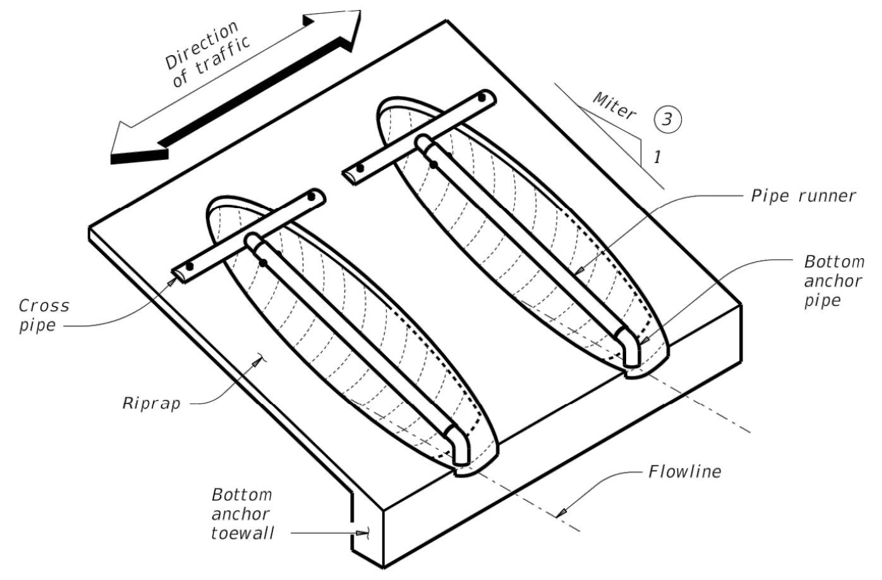
(Showing corrugated metal pipe (CMP) culvert. Details of reinforced concrete pipe (RCP) culvert are similar.)



Limits of riprap (to be included with SET for payment) ④
7" x miter ③
12"
℄ Cross pipe anchor bolt
Limits of riprap (to be included with SET for payment) ④
A
A
Top of riprap
Working point
Trimmed edge of pipe culvert
12"
8"
4"
12"
Cross pipe
Anchor toewall
4"
3"
1"
Miter ③
1
Flowline
Varies
14"
Varies ~ See Bottom Anchor Toewall Details

SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing reinforced concrete pipe (RCP) culvert. Details of corrugated metal pipe (CMP) culvert are similar. Pipe runners not shown for clarity)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

DATE:
FILE:

CROSS PIPE LENGTHS AND PIPE RUNNER LENGTHS ① ②

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
			3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
			0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
24"	1' - 7"	3' - 5"	N/A	N/A	N/A	5' - 10"	N/A	N/A	N/A	8' - 1"	N/A	N/A	N/A	12' - 9"
27"	1' - 8"	3' - 8"	N/A	N/A	5' - 5"	6' - 11"	N/A	N/A	7' - 7"	9' - 7"	N/A	N/A	11' - 11"	14' - 11"
30"	1' - 10"	3' - 11"	N/A	N/A	6' - 4"	8' - 0"	N/A	N/A	8' - 9"	11' - 0"	N/A	N/A	13' - 8"	17' - 0"
33"	1' - 11"	4' - 2"	6' - 2"	6' - 5"	7' - 3"	9' - 1"	8' - 6"	8' - 10"	10' - 0"	12' - 5"	13' - 3"	13' - 9"	15' - 5"	19' - 2"
36"	2' - 1"	4' - 5"	6' - 11"	7' - 3"	8' - 2"	10' - 2"	9' - 6"	9' - 11"	11' - 2"	13' - 10"	14' - 9"	15' - 3"	17' - 2"	21' - 3"
42"	2' - 4"	4' - 11"	8' - 6"	8' - 10"	9' - 11"	12' - 4"	11' - 7"	12' - 0"	13' - 6"	16' - 8"	17' - 9"	18' - 5"	20' - 8"	25' - 7"
48"	2' - 7"	5' - 5"	10' - 1"	10' - 5"	11' - 9"	N/A	13' - 7"	14' - 2"	15' - 10"	N/A	20' - 9"	21' - 6"	24' - 2"	N/A
54"	3' - 0"	5' - 11"	11' - 8"	12' - 1"	N/A	N/A	15' - 8"	16' - 3"	N/A	N/A	23' - 10"	24' - 8"	N/A	N/A
60"	3' - 3"	6' - 5"	13' - 3"	N/A	N/A	N/A	17' - 9"	N/A	N/A	N/A	26' - 10"	N/A	N/A	N/A

TYPICAL PIPE CULVERT MITERS ③

Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED ②

Nominal Culvert I.D.	Single Pipe Culvert	Multiple Pipe Culverts
12" thru 21"	Skews thru 45°	Skews thru 45°
24"	Skews thru 45°	Skews thru 30°
27"	Skews thru 30°	Skews thru 15°
30"	Skews thru 15°	Skews thru 15°
33"	Skews thru 15°	Always required
36"	Normal (no skew)	Always required
42" thru 60"	Always required	Always required

STANDARD PIPE SIZES AND MAX PIPE RUNNER LENGTHS ①

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10' - 0"
4" STD	4.500"	4.026"	19' - 8"
5" STD	5.563"	5.047"	34' - 2"

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) ⑤

Nominal Culvert I.D.	3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A

① Provide pipe runner of the size shown in the tables. Provide cross pipe of the same size as the pipe runner. Provide cross pipe stub out and bottom anchor pipe of the next smaller size pipe as shown in the Standard Pipe Sizes and Max Pipe Runner Lengths table.

② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°.
For 54" culvert pipes, the skew must not exceed 15°.
For 48" culvert pipes, the skew must not exceed 30°.
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT Roadway Design Manual.

③ Miter = slope of mitered end of pipe culvert.

④ Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

⑤ Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

SHEET 1 OF 2

Texas Department of Transportation | **Bridge Division Standard**

SAFETY END TREATMENT
FOR 12" DIA TO 60" DIA
PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

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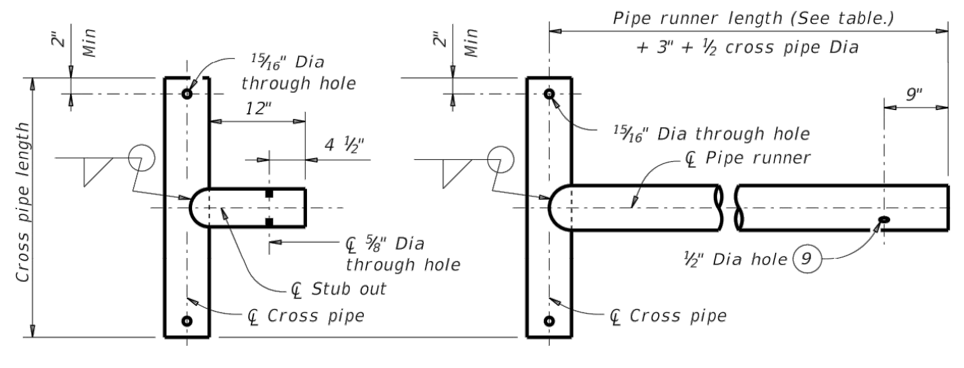
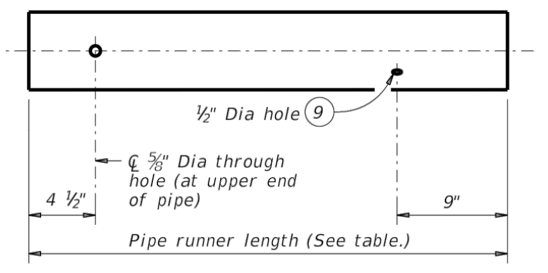


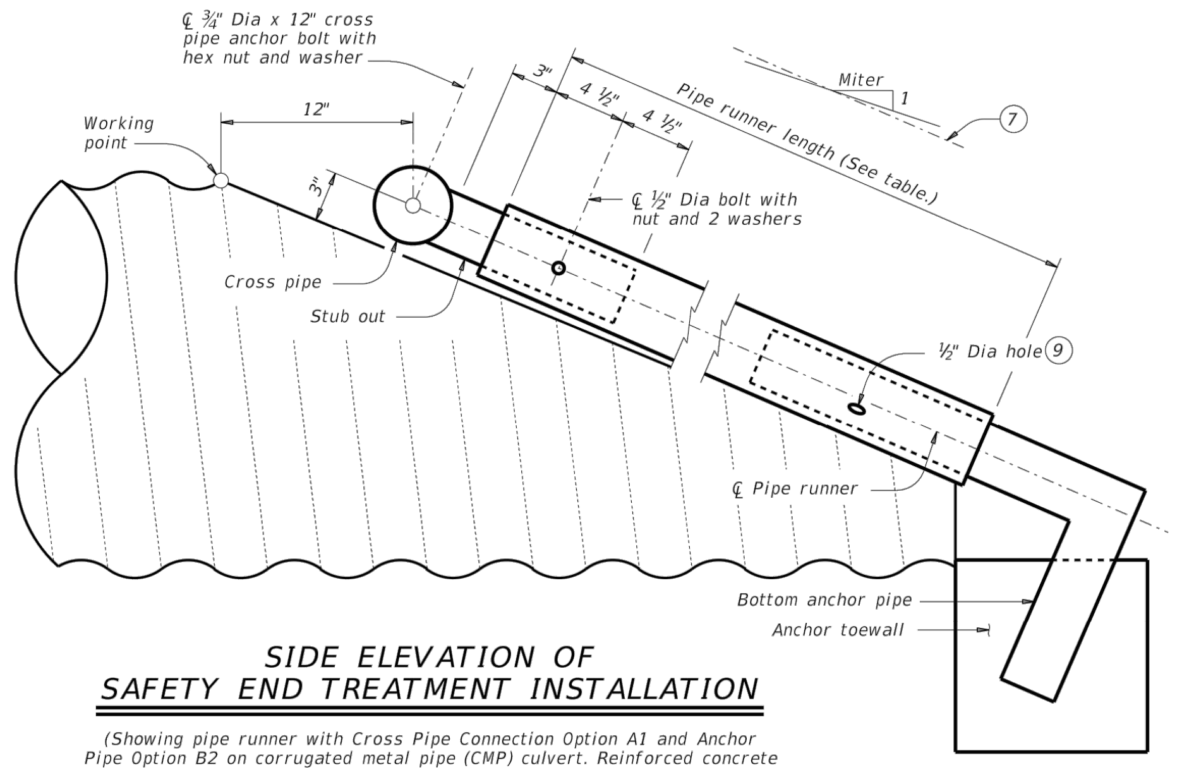
CROSS PIPE AND CONNECTIONS DETAILS



½" Dia hole ⑨
℄ ⅝" Dia through hole (at upper end of pipe)
4 ½"
9"
Pipe runner length (See table.)

NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.

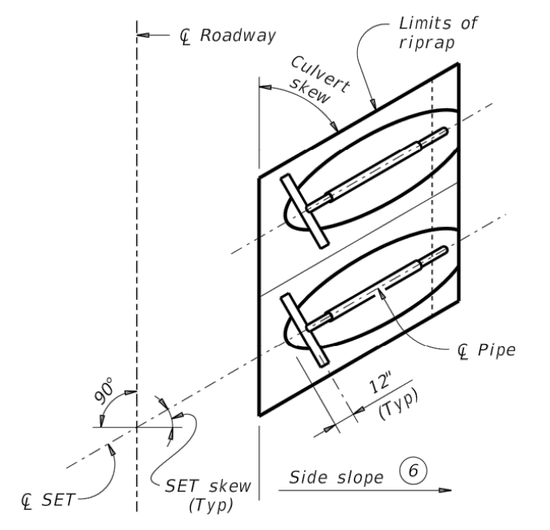
PIPE RUNNER DETAILS



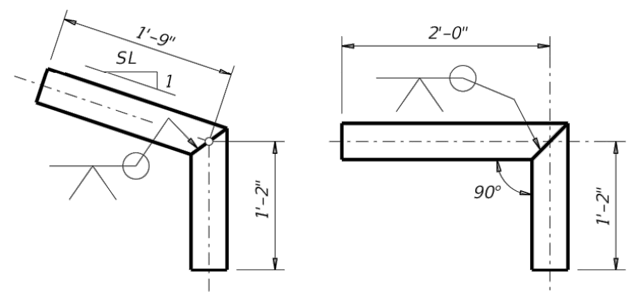
℄ ⅝" Dia x 12" cross pipe anchor bolt with hex nut and washer
Working point
12"
3"
4 ½"
4 ½"
Pipe runner length (See table.)
Miter
1
⑦
℄ ½" Dia bolt with nut and 2 washers
Cross pipe
Stub out
½" Dia hole ⑨
℄ Pipe runner
Bottom anchor pipe
Anchor toewall

SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

(Showing pipe runner with Cross Pipe Connection Option A1 and Anchor Pipe Option B2 on corrugated metal pipe (CMP) culvert. Reinforced concrete pipe culvert (RCP) details are similar. Riprap not shown for clarity)

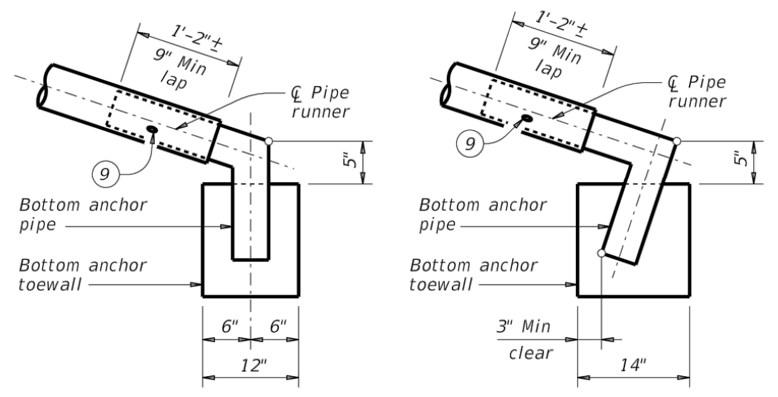


PLAN OF SKEWED INSTALLATION



OPTION B1
OPTION B2

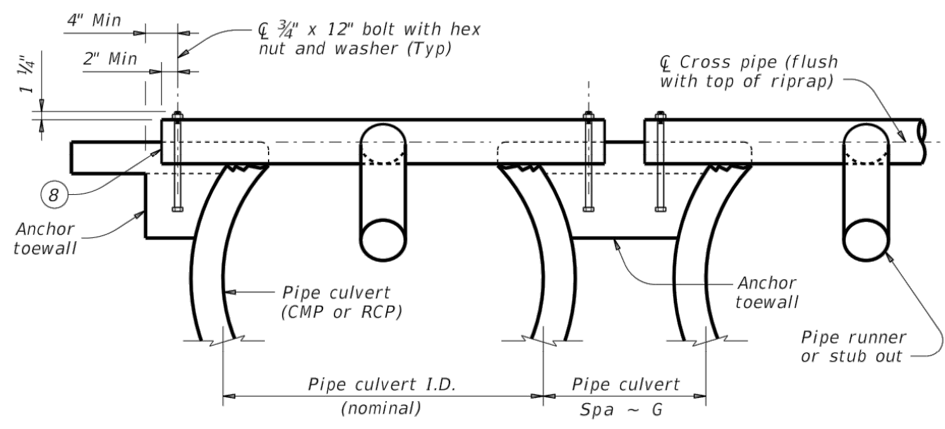
BOTTOM ANCHOR PIPE DETAILS ⑩



OPTION B1
OPTION B2

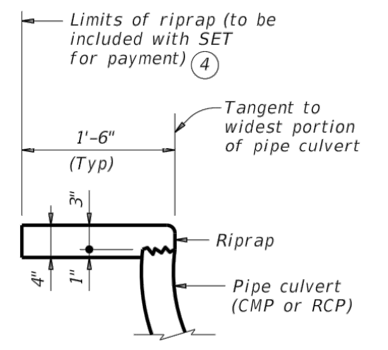
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert and riprap not shown for clarity.)



4" Min
2" Min
1 ½"
℄ ⅝" x 12" bolt with hex nut and washer (Typ)
℄ Cross pipe (flush with top of riprap)
⑧
Anchor toewall
Pipe culvert (CMP or RCP)
Anchor toewall
Pipe runner or stub out
Pipe culvert I.D. (nominal)
Pipe culvert Spa ~ G

SHOWING CROSS PIPE AND ANCHOR TOEWALL



Limits of riprap (to be included with SET for payment) ④
Tangent to widest portion of pipe culvert
1'-6" (Typ)
Riprap
Pipe culvert (CMP or RCP)

SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SECTION A-A

④ Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

⑥ Recommended values of side slope are 3:1, 4:1, and 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

⑦ Note that actual slope of pipe runner may vary slightly from side slope of riprap and trimmed culvert pipe edge.

⑧ Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

⑨ After installation, inspect the ½" hole to ensure that the lap of the pipe runner with the bottom anchor pipe is adequate.

⑩ At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide pipe runners, cross pipes, and anchor pipes conforming to the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication.

Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the pipe runners.

Payment for riprap and toewall is included in the price bid for each safety end treatment.

Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

DATE:
FILE:

SHEET 2 OF 2

Texas Department of Transportation | **Bridge Division Standard**

SAFETY END TREATMENT
FOR 12" DIA TO 60" DIA
PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

CORDOVA TRAILS SUBDIVISION UNIT 1

MISCELLANEOUS DRAINAGE DETAILS

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1.
2.
3.
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5.
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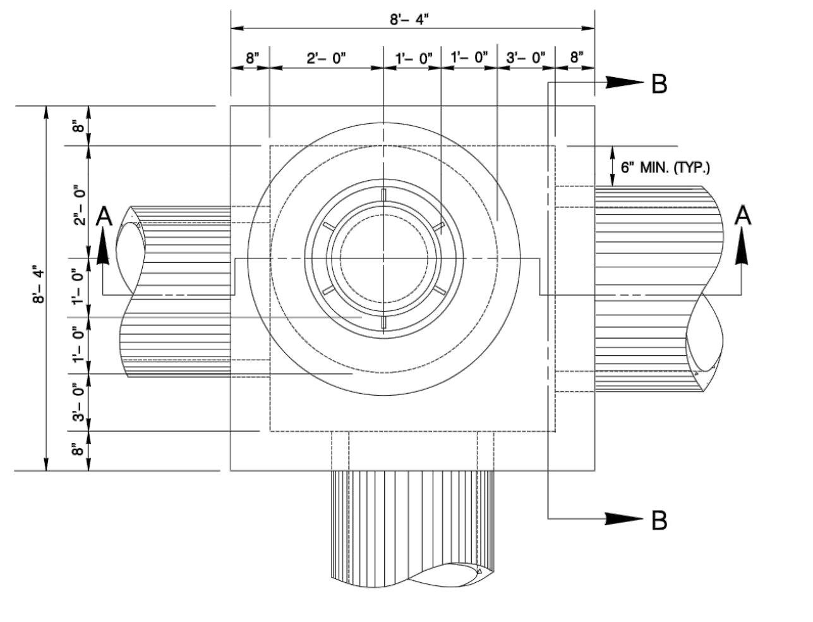
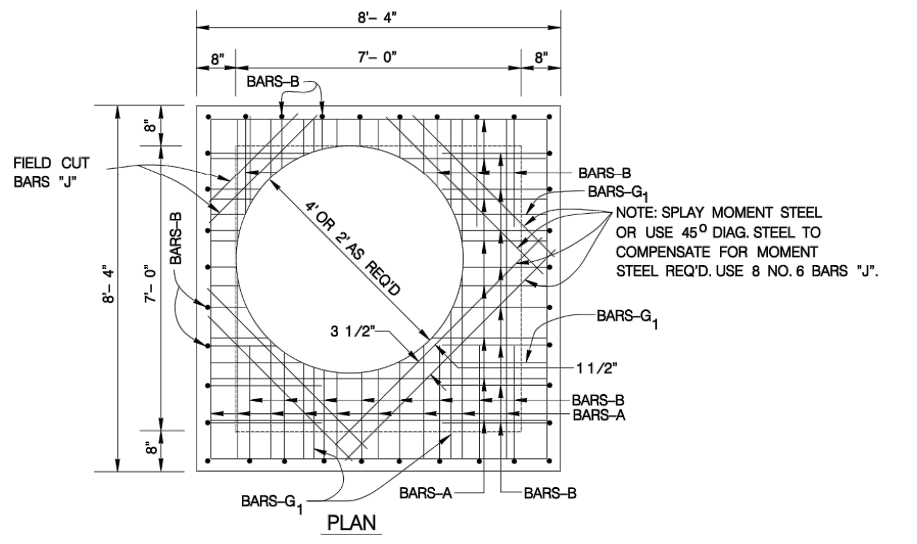
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C25B

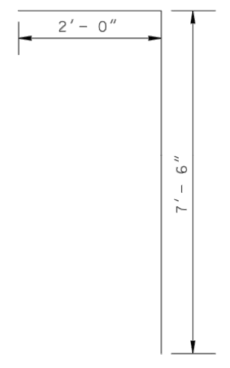
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



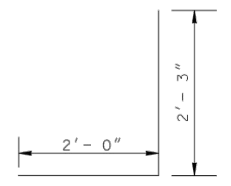
PLAN


8'- 4"
7'- 0"
FIELD CUT BARS "J"
BARS-B
BARS-G1
NOTE: SPLAY MOMENT STEEL OR USE 45° DIAG. STEEL TO COMPENSATE FOR MOMENT STEEL REQ'D. USE 8 NO. 6 BARS "J".
4'-0" TO 7' AS REQ'D
3 1/2"
1 1/2"
BARS-G
BARS-A
BARS-D
PLAN

JUNCTION BOX TOP SLAB SHOWING STEEL



BARS–B



BARS–C

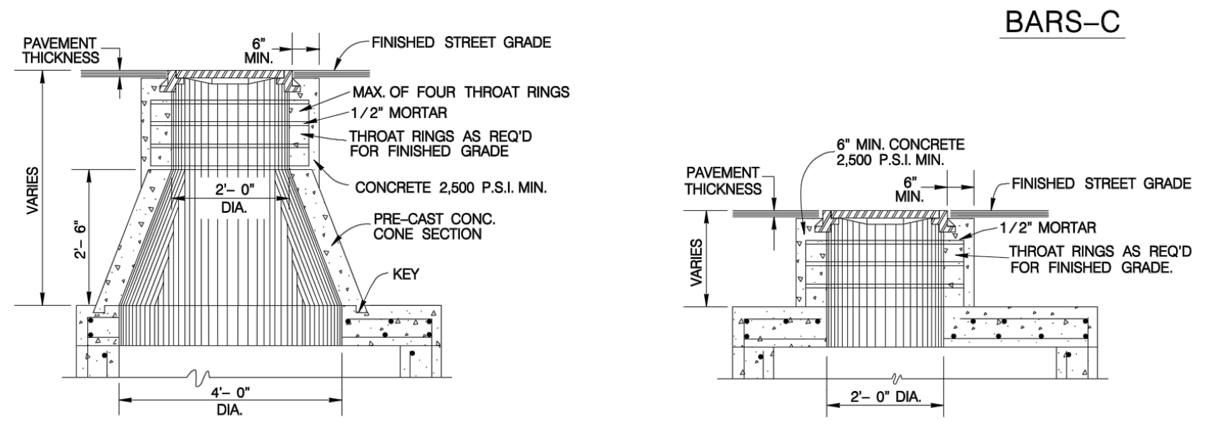
SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	24	4	9" O.C.	8'– 1"	130
┌	B	48	5	8" O.C.	9'– 6"	476
└	C	48	5	8" O.C.	4'– 3"	213
STRAIGHT	D	24	4	9" O.C.	8'– 1"	130
STRAIGHT	E	28	3	12" O.C.	6'– 11"	73
STRAIGHT	G	28	4	12" O.C.	8'– 6"	151
STRAIGHT	G_1	8	4	AS SHOWN	8'– 1"	43
STRAIGHT	H	32	3	12" O.C.	7'– 5"	89
STRAIGHT	J	8	6	3 1/2" O.C.	4'– 11"	59
					TOTAL	1,364 LBS.

CLASS "A" CONCRETE – 9.16 C.U. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

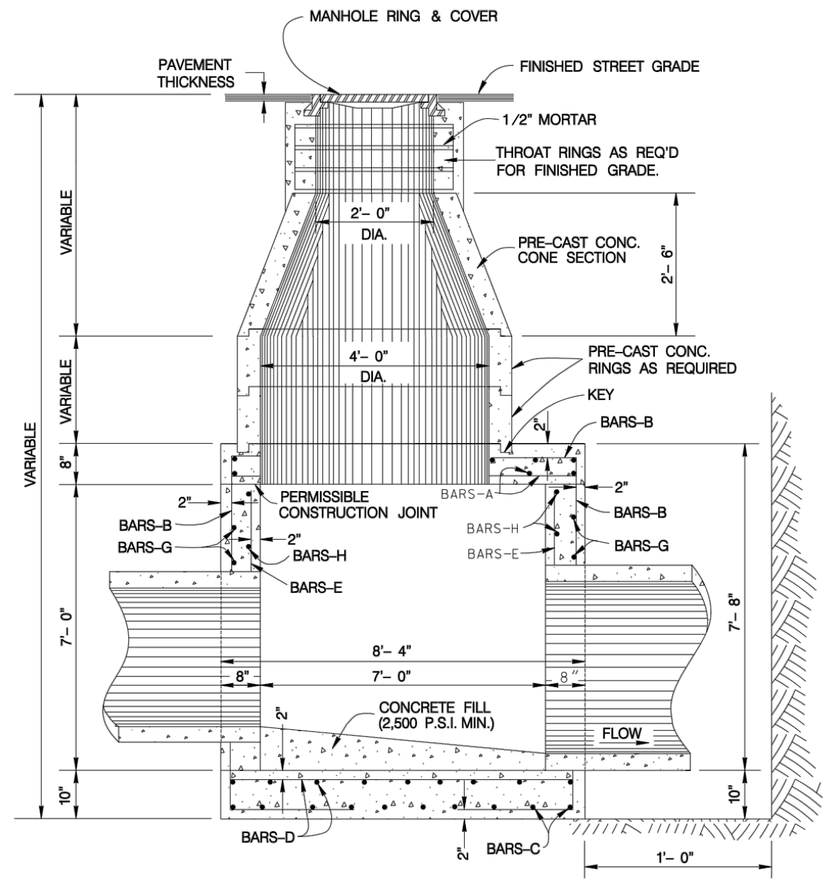
★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3⁄4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM A–15. THE DEFORMATION SHALL CONFORM TO ASTM A–305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD–CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 – "STORM SEWER JUNCTION BOXES AND INLETS".

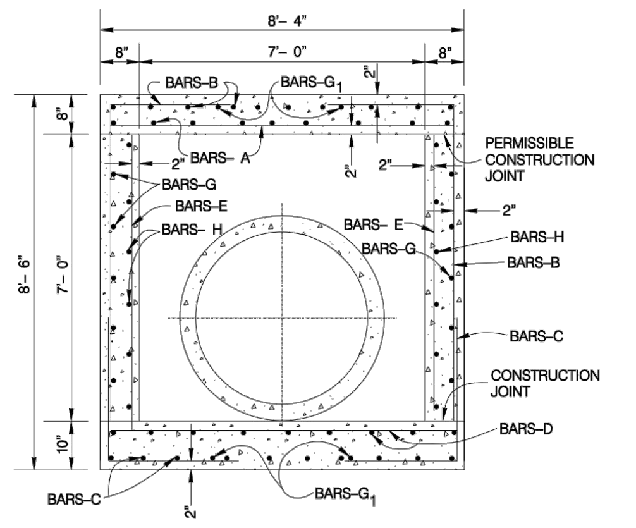

PAVEMENT THICKNESS
6" MIN.
FINISHED STREET GRADE
MAX. OF FOUR THROAT RINGS
1/2" MORTAR
THROAT RINGS AS REQ'D FOR FINISHED GRADE
CONCRETE 2,500 P.S.I. MIN.
PRE-CAST CONC. CONE SECTION
KEY
VARIES
4'- 0" DIA.
6" MIN. CONCRETE 2,500 P.S.I. MIN.
2'- 0" DIA.

VARIATION OF VERTICAL STACK

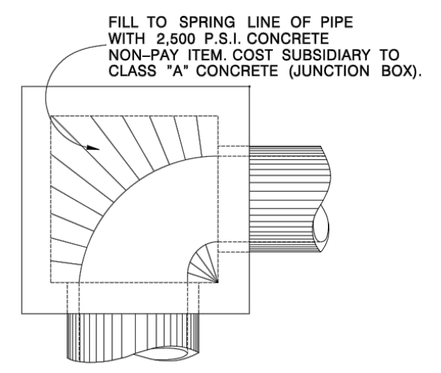
VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.


MANHOLE RING & COVER
PAVEMENT THICKNESS
FINISHED STREET GRADE
1/2" MORTAR
THROAT RINGS AS REQ'D FOR FINISHED GRADE.
2'- 0" DIA.
PRE-CAST CONC. CONE SECTION
4'- 0" DIA.
PRE-CAST CONC. RINGS AS REQUIRED
KEY
BARS-B
BARS-G
BARS-H
BARS-E
PERMISSIBLE CONSTRUCTION JOINT
VARIABLE
8'- 4"
7'- 0"
CONCRETE FILL (2,500 P.S.I. MIN.)
FLOW
BARS-D
1'- 0"

SECTION A–A



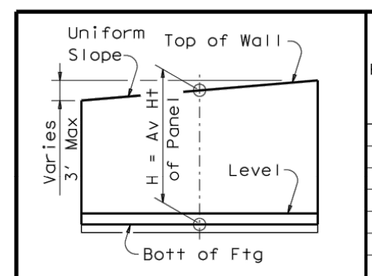
SECTION B– B


FILL TO SPRING LINE OF PIPE WITH 2,500 P.S.I. CONCRETE NON-PAY ITEM. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOX).

CURVED DEFLECTOR DETAIL

7'x7'x7' JUNCTION BOX STANDARDS

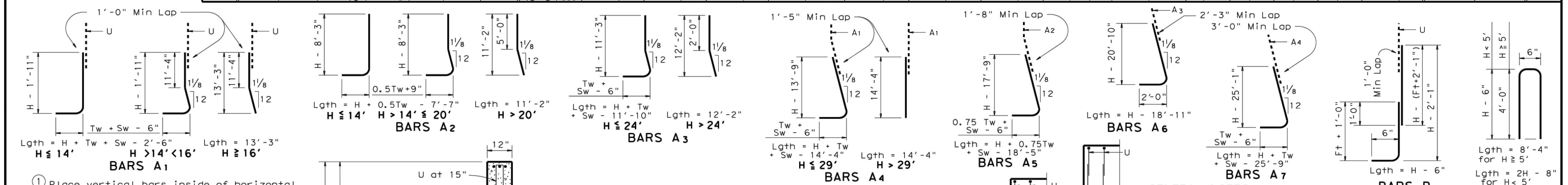
% SUBMITTAL | PROJECT NO. | DATE
DRAWN BY | DESN. BY | CHKD. BY | SHEET NO. OF



H DEFINITION

PROPERTIES / REINFORCING STEEL FOR ONE 32' PANEL (DESIGN A)

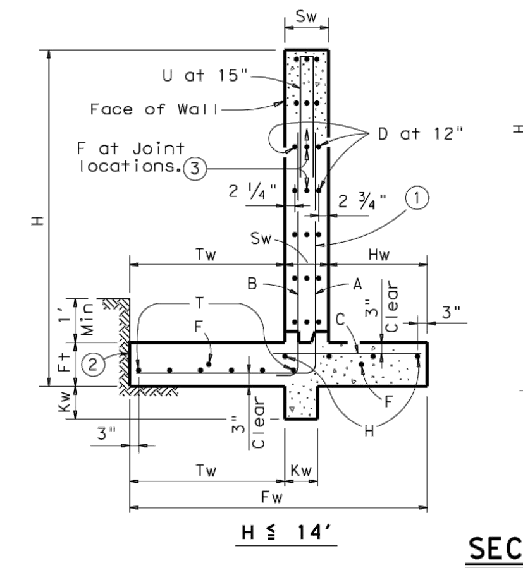
Wall Height "H"	Fw	Tw	Sw	Hw	Ft	Kw	Max Soil Press	A1 ~ 26 #5 at 15" c-c		A2 ~ 25 #6 at 15" c-c		A3 ~ 25 #7 at 15" c-c		A4 ~ 26 #8 at 15" c-c		A5 ~ 25 #9 at 15" c-c		A6 ~ 25 #11 at 15" c-c		A7 ~ 26 #11 at 15" c-c		B ~ 26 #5 at 15" c-c		C					D (#5) at 12" c-c		Dowel F at 12" c-c		H (#5) at 12" c-c		T (#5) at 12" c-c		U ~ 26 #5 at 15" c-c		QUANTITY FOR ONE 32' PANEL CONC	REINF	Wall Height "H"
(Ft)	Fw	Tw	Sw	Hw	Ft	Kw	T/SF	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Size	No	Spa	Lgth	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Lgth	Wt	(CY)	(LB)	(Ft)
2	1'-8"	8"	1'-0"	0	9"	9"	0.11																						4	131	3	24			2	66	3'-4"	90	3.6	312	2
3	2'-0"	1'-0"	1'-0"	0	9"	9"	0.15																						6	197	4	32	2	66	2	66	5'-4"	145	5.1	506	3
4	2'-8"	1'-4"	1'-0"	4"	1'-0"	9"	0.21	3'-10"	104													3'-6"	95	#4	26	15"	1'-10"	32	8	263	6	48	2	66	2	66	7'-4"	199	7.4	873	4
5	3'-6"	1'-9"	1'-0"	9"	1'-0"	9"	0.23	5'-3"	142													4'-6"	122	#4	26	15"	2'-3"	39	10	329	7	56	2	66	3	99	8'-4"	226	9.6	1079	5
6	4'-3"	2'-2"	1'-0"	1'-1"	1'-0"	9"	0.24	6'-8"	181													5'-6"	149	#4	26	15"	2'-8"	46	12	394	8	64	3	99	3	99	8'-4"	226	11.6	1259	6
7	5'-0"	2'-6"	1'-0"	1'-6"	1'-0"	9"	0.27	8'-0"	217													6'-6"	176	#4	26	15"	3'-0"	52	14	460	9	72	3	99	3	99	8'-4"	226	13.7	1401	7
8	5'-8"	2'-10"	1'-0"	1'-10"	1'-0"	9"	0.30	9'-4"	253													7'-6"	203	#4	26	15"	3'-4"	58	16	526	10	80	3	99	4	131	8'-4"	226	15.7	1575	8
9	6'-4"	3'-2"	1'-0"	2'-2"	1'-0"	9"	0.33	10'-8"	284													8'-6"	231	#4	26	15"	3'-8"	64	18	591	11	88	3	99	4	131	8'-4"	226	17.7	1714	9
10	7'-0"	3'-6"	1'-0"	2'-6"	1'-0"	9"	0.36	12'-0"	325	4'-2"	156											9'-6"	258	#4	38	10"	4'-0"	102	20	657	12	96	4	131	4	131	8'-4"	226	19.6	2082	10
11	7'-9"	3'-10"	1'-0"	2'-11"	1'-0"	9"	0.39	13'-4"	362	5'-4"	200											10'-6"	285	#6	38	10"	4'-4"	247	22	723	13	104	4	131	5	164	8'-4"	226	21.7	2436	11
12	8'-6"	4'-3"	1'-0"	3'-3"	1'-0"	9"	0.40	14'-9"	400	6'-7"	247											11'-6"	312	#6	38	10"	4'-9"	271	24	789	14	112	4	131	5	164	8'-4"	226	23.8	2651	12
13	9'-2"	4'-7"	1'-0"	3'-7"	1'-0"	9"	0.43	16'-1"	436	7'-8"	288	6'-9"	345									12'-6"	339	#7	38	10"	5'-1"	395	26	854	15	120	5	164	6	197	8'-4"	226	25.8	3364	13
14	9'-10"	4'-11"	1'-0"	3'-11"	1'-0"	1'-0"	0.47	17'-5"	472	8'-11"	335	8'-1"	413									13'-6"	366	#8	38	10"	5'-5"	550	28	920	16	128	5	164	6	197	8'-4"	226	28.2	3771	14
15	10'-6"	5'-3"	1'-1 1/8"	4'-1 7/8"	1'-0"	1'-0"	0.50	18'-10"	511	10'-1"	379	9'-6"	485									14'-6"	393	#9	38	10"	5'-9"	743	30	986	17	136	6	197	6	197	8'-4"	226	30.3	4253	15
16	11'-2"	5'-7"	1'-2"	4'-5"	1'-3"	1'-3"	0.55	13'-3"	359	11'-2"	419	10'-11"	558	8'-5"	584							15'-6"	420	#9	38	10"	6'-1"	786	32	1051	18	144	6	197	7	230	8'-4"	226	36.0	4974	16
17	11'-10"	5'-11"	1'-3 1/8"	4'-7 7/8"	1'-3"	1'-3"	0.58	13'-3"	359	12'-5"	466	12'-4"	630	9'-10"	683							16'-6"	447	#9	38	10"	6'-5"	829	34	1117	19	152	7	230	7	230	8'-4"	226	38.5	5369	17
18	12'-6"	6'-3"	1'-4"	4'-11"	1'-6"	1'-3"	0.63	13'-3"	359	13'-7"	510	13'-9"	703	11'-2"	775							17'-6"	475	#9	38	10"	6'-9"	872	34	1117	19	152	7	230	8	263	8'-4"	226	44.3	5682	18
19	13'-3"	6'-7"	1'-5"	5'-3"	1'-6"	1'-6"	0.66	13'-3"	359	14'-9"	554	15'-2"	775	12'-8"	879							18'-6"	502	#9	38	10"	7'-2"	926	36	1183	20	160	7	230	8	263	8'-4"	226	48.1	6057	19
20	13'-10"	6'-11"	1'-6 1/4"	5'-4 3/4"	1'-6"	1'-6"	0.70	13'-3"	359	15'-11"	598	16'-7"	847	14'-1	978							19'-6"	529	#10	38	10"	7'-5"	1213	38	1248	21	168	8	263	8	263	8'-4"	226	50.9	6692	20
21	14'-6"	7'-3"	1'-7"	5'-8"	1'-9"	1'-6"	0.75	13'-3"	359	11'-2"	419	18'-0"	920	15'-5"	1070	9'-7"	815					20'-6"	556	#10	38	10"	7'-9"	1267	40	1314	22	176	8	263	9	296	8'-4"	226	57.7	7681	21
22	15'-2"	7'-7"	1'-8 1/8"	5'-10 7/8"	1'-9"	1'-6"	0.78	13'-3"	359	11'-2"	419	19'-5"	992	16'-11"	1174	10'-11"	928					21'-6"	583	#10	38	10"	8'-1"	1322	42	1380	23	184	8	263	9	296	8'-4"	226	61.0	8126	22
23	16'-0"	8'-0"	1'-9 1/4"	6'-2 3/4"	1'-9"	1'-6"	0.79	13'-3"	359	11'-2"	419	20'-11"	1069	18'-5"	1278	12'-4"	1048					22'-6"	610	#8	76	5"	8'-6"	1725	44	1446	24	192	9	296	10	329	8'-4"	226	64.8	8997	23
24	16'-6"	8'-3"	1'-10 1/8"	6'-4 7/8"	2'-0"	1'-6"	0.86	13'-3"	359	11'-2"	419	22'-3"	1137	19'-9"	1371	13'-7"	1155					23'-6"	637	#8	76	5"	8'-9"	1776	46	1511	25	200	9	296	10	329	8'-4"	226	72.4	9416	24
25	17'-3"	8'-7"	1'-11 1/4"	6'-8 3/4"	2'-0"	1'-6"	0.89	13'-3"	359	11'-2"	419	12'-2"	622	21'-2"	1469	15'-0"	1275	6'-1"	808			24'-6"	664	#8	76	5"	9'-2"	1860	48	1577	26	208	9	296	10	329	8'-4"	226	76.4	10112	25
26	18'-0"	9'-0"	2'-0 1/8"	6'-11 7/8"	2'-3"	1'-6"	0.93	13'-3"	359	11'-2"	419	12'-2"	622	22'-8"	1574	16'-4"	1388	7'-1"	941			25'-6"	692	#8	76	5"	9'-6"	1928	50	1643	27	217	10	329	11	361	8'-4"	226	85.2	10698	26
27	18'-6"	9'-4"	2'-1 1/4"	7'-0 3/4"	2'-3"	1'-6"	0.97	13'-3"	359	11'-2"	419	12'-2"	622	24'-1"	1672	17'-8"	1502	8'-1"	1074			26'-6"	719	#9	76	5"	9'-10"	2541	52	1708	28	225	10	329	11	361	8'-4"	226	89.0	11757	27
28	19'-3"	9'-7"	2'-2 3/8"	7'-5 5/8"	2'-3"	1'-9"	1.00	13'-3"	359	11'-2"	419	12'-2"	622	25'-5"	1764	19'-0"	1615	9'-1"	1206			27'-6"	746	#9	76	5"	10'-1"	2606	54	1774	29	233	10	329	12	394	8'-4"	226	94.5	12293	28
29	20'-0"	10'-0"	2'-3 1/2"	7'-8 1/2"	2'-3"	1'-9"	1.02	13'-3"	359	11'-2"	419	12'-2"	622	27'-0"	1874	20'-5"	1735	10'-1"	1339			28'-6"	773	#9	76	5"	10'-5"	2692	56	1840	30	241	11	361	12	394	8'-4"	226	99.2	12874	29
30	20'-6"	10'-4"	2'-4 5/8"	7'-9 3/8"	2'-3"	1'-9"	1.06	13'-3"	359	11'-2"	419	12'-2"	622	14'-4"	995	21'-9"	1849	11'-1"	1472	17'-0"	2348	29'-6"	800	#10	76	5"	10'-9"	3516	58	1906	31	249	11	361	12	394	8'-4"	226	103.3	15515	30
31	21'-3"	10'-7"	2'-5 3/4"	8'-2 1/4"	2'-3"	1'-9"	1.09	13'-3"	359	11'-2"	419	12'-2"	622	14'-4"	995	23'-0"	1955	12'-1"	1605	18'-4"	2533	30'-6"	827	#10	76	5"	11'-2"	3652	60	1971	32	257	11	361	13	427	8'-4"	226	108.2	16209	31
32	22'-0"	11'-0"	2'-6 1/2"	8'-5 1/2"	2'-6"	1'-9"	1.13	13'-3"	359	11'-2"	419	12'-2"	622	14'-4"	995	24'-5"	2075	13'-1"	1738	19'-10"	2740	31'-6"	854	#10	76	5"	11'-6"	3761	60	1971	32	257	12	394	13	427	8'-4"	226	118.9	16837	32



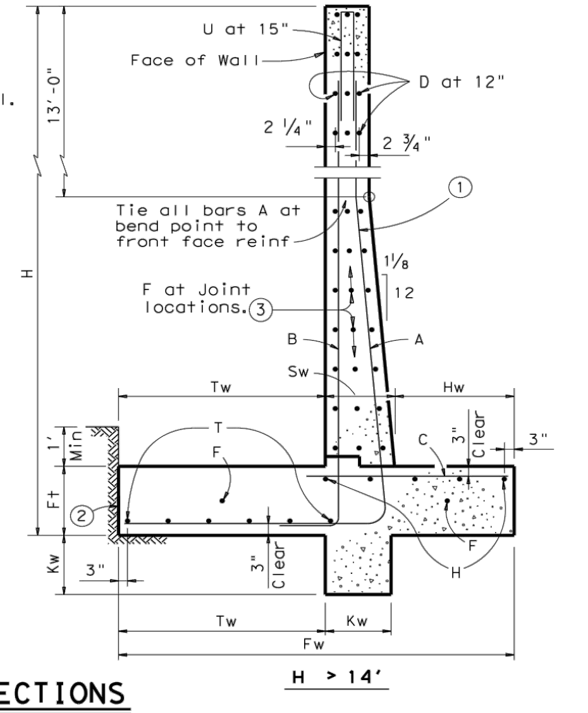
① Place vertical bars inside of horizontal bars (Typ both faces).

② Place footing toe against undisturbed soil.

③ See standard RW 2 for size.

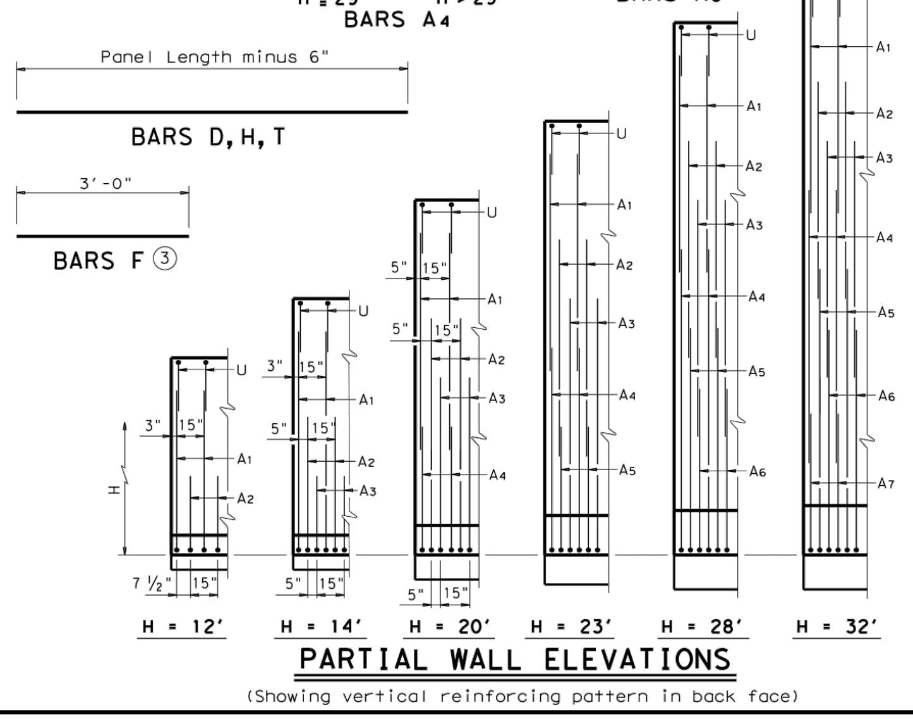


H ≦ 14'



H > 14'

SECTIONS



PARTIAL WALL ELEVATIONS
(Showing vertical reinforcing pattern in back face)

GENERAL NOTES:
All concrete to be Class "C".
All reinforcing steel to be Grade 60.
For notes and details not shown on this sheet see sheet RW2.
Quantities are based on "H" being average height of panel.
Retaining Walls are designed to be coded as follows on Retaining Wall Layout Sheets.
HC - 21 - 28
LA - 28 - 32
Panel Length ~ 32' is standard; 28' requires special quantities
Average Height "H" of panel
Design - A = no surcharge or slope above wall
B = slopes up to 4:1
C = traffic surcharge and/or slopes up to 2.5:1
Footing pressure design ~ L = low, H = high

Texas Department of Transportation | Bridge Division Standard

RETAINING WALLS

RW 1(L)A

FILE: rwstde05.dgn	DN: TxDOT	CK: TxDOT	DW: GHO	CK: MPM
©TxDOT March 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

1 NOTE: INSTALL CITY OF SEGUIN MANHOLE COVERS FOR ALL INLETS WITHIN THIS DEVELOPMENT. TXDOT COVERS WILL NOT BE ACCEPTED AT TIME OF SUBSTANTIAL COMPLETION OF THE UNIT 1 PUBLIC IMPROVEMENTS.

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

CORDOVA TRAILS SUBDIVISION UNIT 1

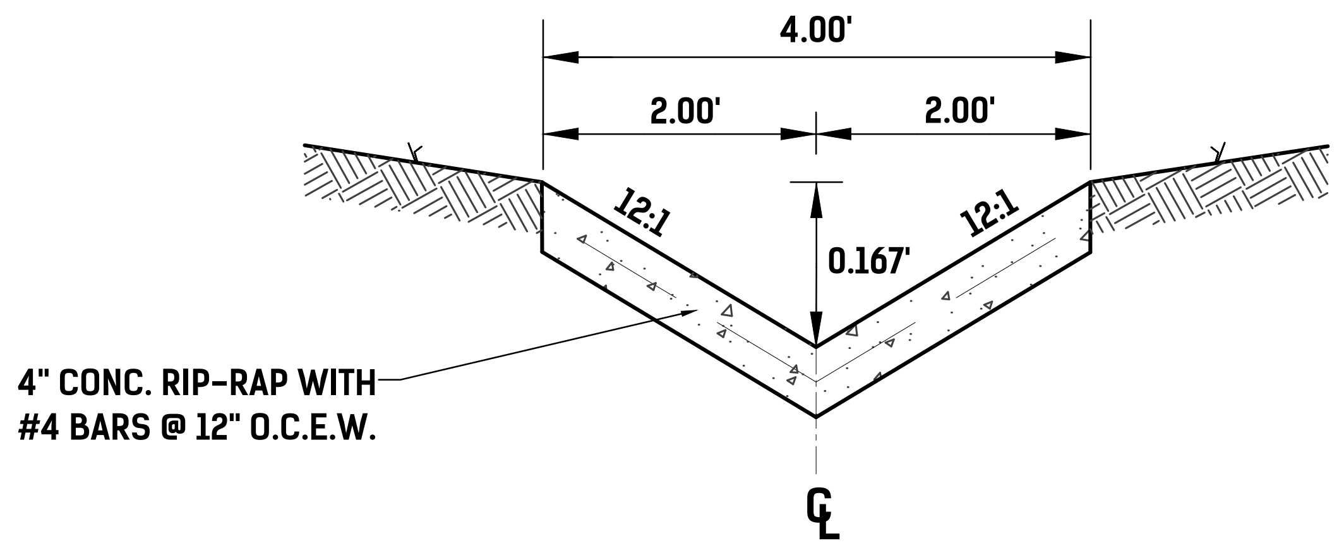
MISCELLANEOUS DRAINAGE DETAILS

DATE
12/06/2021
PROJECT NO.
03480.002
DRAWN BY
AC
CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - ADD MANHOLE RING AND COVER NOTE
2.
3.
4.
5.
6.
7.
8.
9.

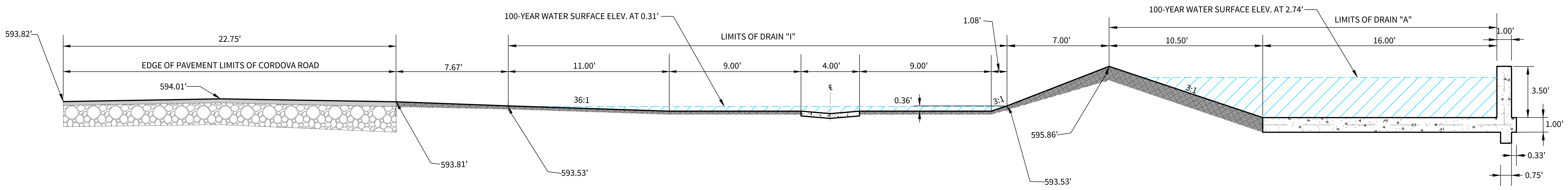
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C26



PILOT CHANNEL DETAIL

(N.T.S.)



NOTES:

- SEE SHEET 22C OF 29 FOR THE LOCATION OF THE COMPOSITE CROSS-SECTION SHOWN ON THIS SHEET.

APPROVED FOR CONSTRUCTION

SEGUIN
TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

HORIZONTAL SCALE: 1" = 4'
VERTICAL SCALE: 1" = 4'

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San Antonio, Texas 78231
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CORDOVA TRAILS SUBDIVISION UNIT 1

MISCELLANEOUS DRAINAGE DETAILS

DATE	12/06/2021
PROJECT NO.	03480.002
DRAWN BY	AC
CHECKED BY	DDC/JC

REVISIONS

1.
2.
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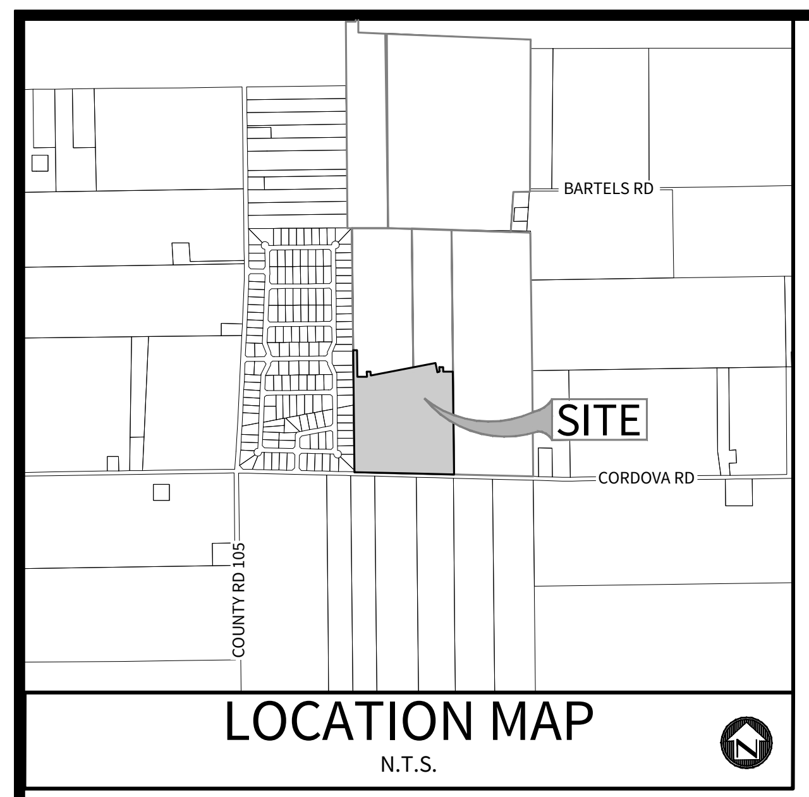
DAVID D. CUPIT II
122076
12.11.21

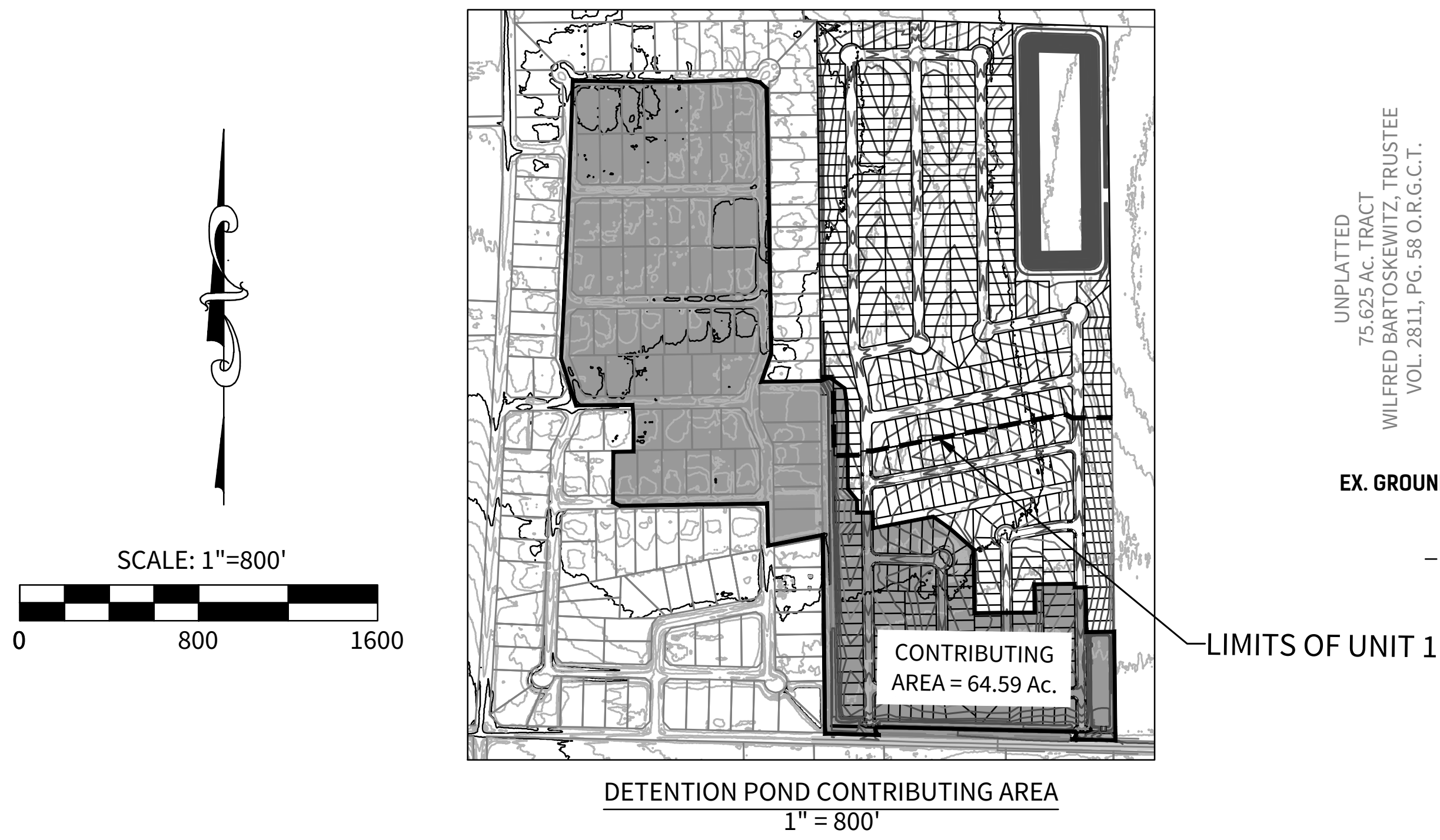
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C27



LOCATION MAP

N.T.S.



DETENTION POND CONTRIBUTING AREA
1" = 800'

Cordova Pond2 Outfall Structure Details:

14.25' TRAP. WEIR @ ELEV. = 591.74
177.1' TRAP. WEIR @ ELEV. = 593.24 TOP OF POND ELEV. = 594.69

Pond Characteristics Table:

2 YR Storm Event				
Peak Inflow:	92.0	CFS		
Peak Discharge:	90.5	CFS		
Maximum Pond WSE:	593.27	FT	1.42	FT from top of pond
Storage Provided:	0.64	AC-FT		
10 YR Storm Event				
Peak Inflow:	166.00	CFS		
Peak Discharge:	167.20	CFS		
Maximum Pond WSE:	593.48	FT	2.53	FT from top of pond
Storage Provided:	0.81	AC-FT		
25 YR Storm Event				
Peak Inflow:	209.9	CFS		
Peak Discharge:	211.8	CFS		
Maximum Pond WSE:	593.56	FT	1.13	FT from top of pond
Storage Provided:	0.88	AC-FT		
50 YR Storm Event				
Peak Inflow:	252.2	CFS		
Peak Discharge:	254.8	CFS		
Maximum Pond WSE:	593.63	FT	1.06	FT from top of pond
Storage Provided:	0.94	AC-FT		
100 YR Storm Event				
Peak Inflow:	285.4	CFS		
Peak Discharge:	288.6	CFS		
Maximum Pond WSE:	593.69	FT	1.00	FT from top of pond
Storage Provided:	0.98	AC-FT		

Overall Site Discharge Summary

Discharge at Property Line

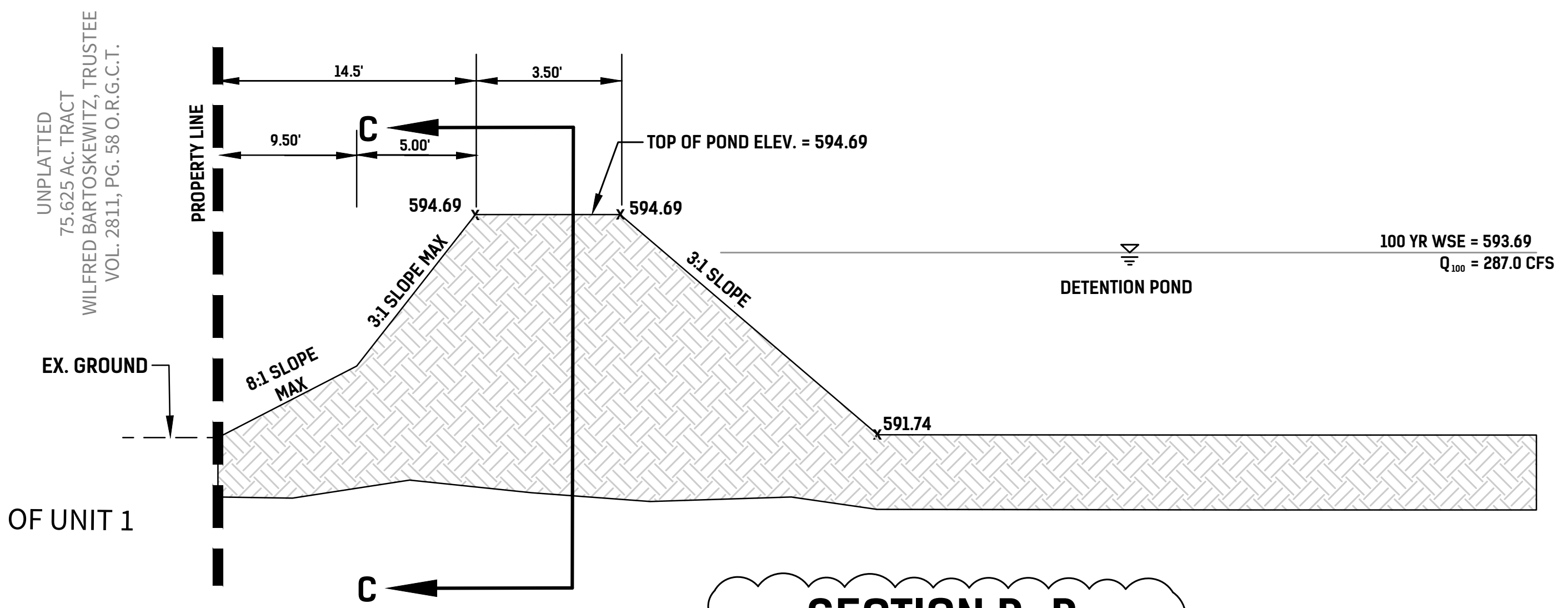
2 YR Storm Event				
Pre-Development Rate:	92.00	CFS		
Post-Development Rate:	91.70	CFS	0.30	CFS less than allowable
10 YR Storm Event				
Pre-Development Rate:	175.00	CFS		
Post-Development Rate:	169.80	CFS	5.20	CFS less than allowable
25 YR Storm Event				
Pre-Development Rate:	224.20	CFS		
Post-Development Rate:	215.00	CFS	9.20	CFS less than allowable
50 YR Storm Event				
Pre-Development Rate:	271.50	CFS		
Post-Development Rate:	258.70	CFS	12.80	CFS less than allowable
100 YR Storm Event				
Pre-Development Rate:	308.60	CFS		
Post-Development Rate:	292.90	CFS	15.70	CFS less than allowable

Note: *Post-development discharge rates above account for the detention facility.*

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 AS PART OF ACCEPTANCE OF THE UNIT 1 PUBLIC IMPROVEMENTS.
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 SEGUIN & GUADALUPE COUNTY.
3. 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.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF SEGUIN PUBLIC WORKS DEPARTMENT.
5. 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.
6. ALL CONCRETE SHALL BE A MINIMUM OF 3500 PSI @ 28 DAYS COMPRESSIVE STRENGTH UNLESS OTHERWISE SPECIFIED HEREIN ON THESE DOCUMENTS.
7. EXCAVATION AND STORMWATER ROUTING OF DETENTION/RETENTION PONDS MUST BE COMPLETED PRIOR TO THE INSTALLATION OF ANY IMPERVIOUS COVER ON SITE AS NECESSARY TO MITIGATE INCREASES IN RUNOFF.
8. A GEOTECHNICAL ENGINEER SHALL ASSESS THE NATIVE MATERIAL AND PROVIDE THE FINAL RECOMMENDATION TO THE CONTRACTOR. THE CONTRACTOR IS REQUIRED FOR PROVIDING SUCH DOCUMENTATION TO THE ENGINEER OF RECORD AND CITY OF SEGUIN PUBLIC WORKS DEPARTMENT PRIOR TO COMPLETION OF THE POND.

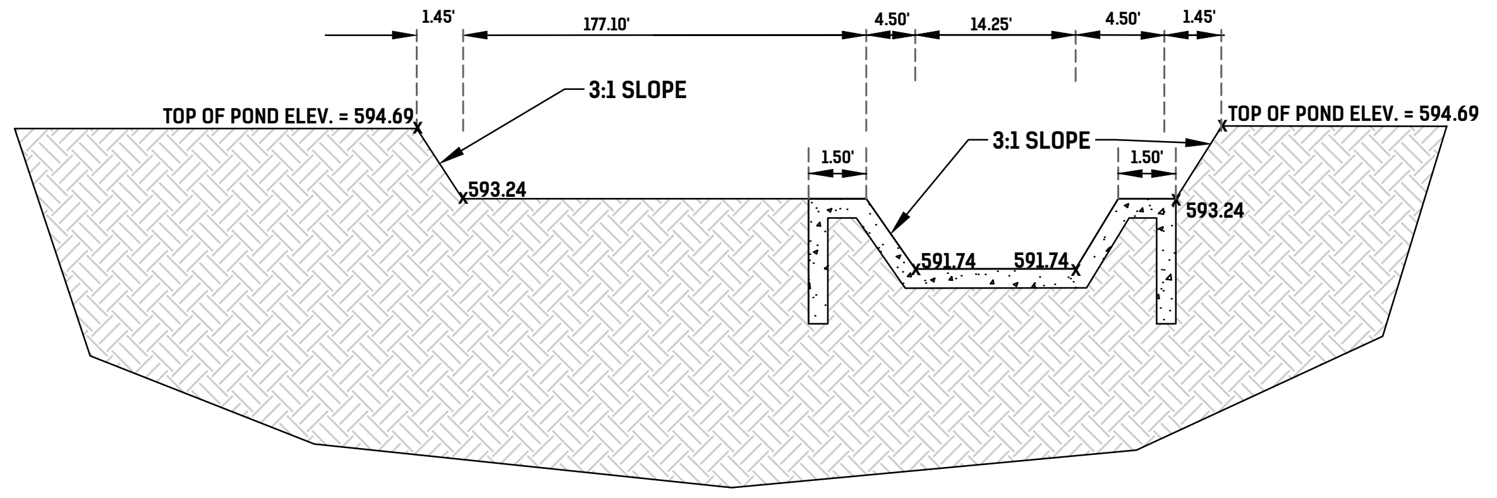
2



SECTION B–B

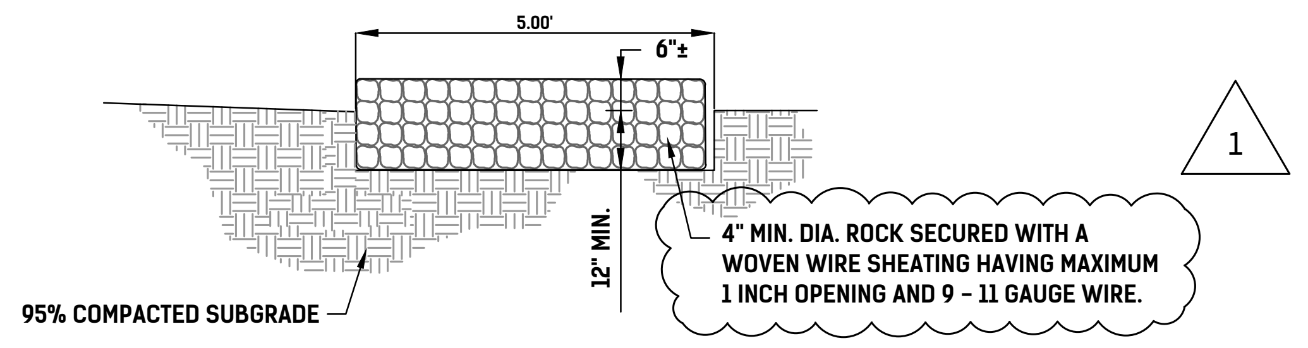
N.T.S.

1



SECTION C–C

N.T.S.

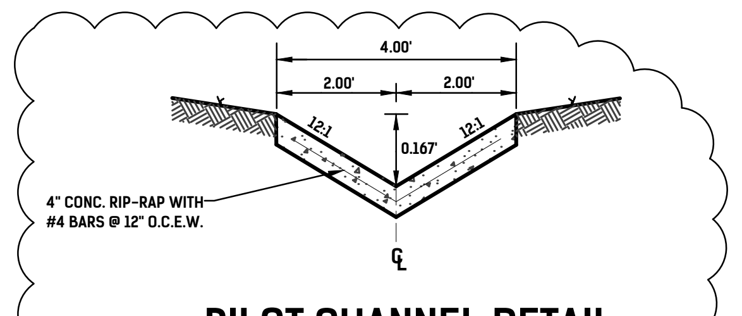

5.00'
6"±
12" MIN.
95% COMPACTED SUBGRADE
4" MIN. DIA. ROCK SECURED WITH A WOVEN WIRE SHEATING HAVING MAXIMUM 1 INCH OPENING AND 9 – 11 GAUGE WIRE.

1

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

GABION STYLE ROCK EROSION CONTROL MATTRESS DETAIL

N.T.S.



PILOT CHANNEL DETAIL

(N.T.S.)

2

LINE TABLE	
LINE	LENGTH
L1	245.26'
L2	4.00'
L3	245.26'
L4	64.59'
L5	390.09'
L6	26.60'
L7	4.00'

CURVE TABLE		
CURVE	RADIUS	LENGTH
C1	13.85'	21.76'
C2	13.85'	21.76'
C3	13.85'	21.28'

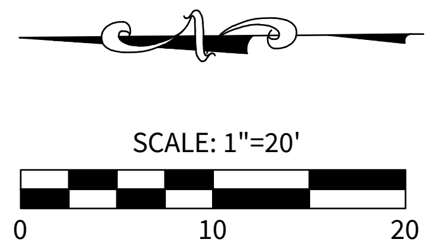
APPROVED FOR CONSTRUCTION SEGUIN TEXAS

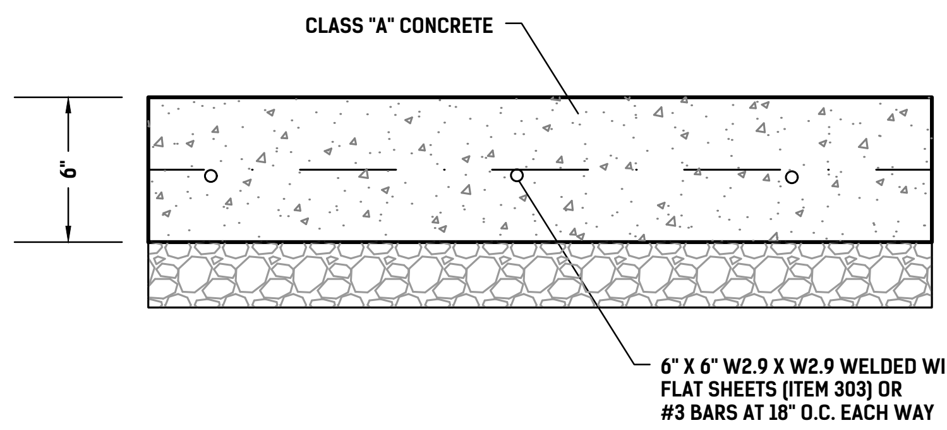
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

LEGEND

▨	EARTHEN VEGETATION
710	PROPOSED CONTOUR
710	EXISTING CONTOUR
▨	CONC. RIP RAP

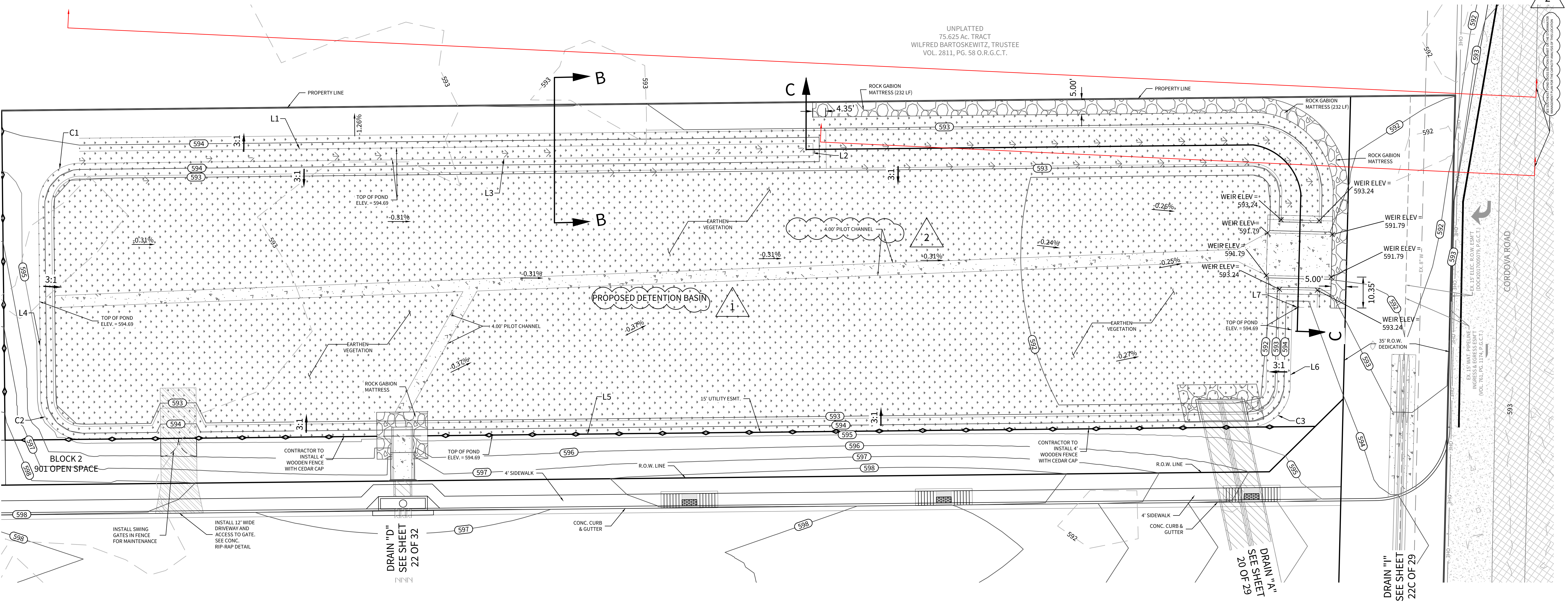



CLASS "A" CONCRETE
6"
6" X 6" W2.9 X W2.9 WELDED WIRE FLAT SHEETS (ITEM 303) OR #3 BARS AT 18" O.C. EACH WAY (ITEM 301)

CONCRETE RIP-RAP DETAIL

N.T.S.

1


UNPLATTED
75.625 Ac. TRACT
WILFRED BARTOSKEWITZ, TRUSTEE
VOL. 2811, PG. 58 O.R.G.C.T.
PROPERTY LINE
B
B
C
C
L1
L2
L3
L4
L5
L6
L7
C1
C2
C3
4.35'
5.00'
10.35'
ROCK GABION MATTRESS (232 LF)
ROCK GABION MATTRESS
TOP OF POND ELEV. = 594.69
EARTHEN VEGETATION
4.00' PILOT CHANNEL
PROPOSED DETENTION BASIN
WEIR ELEV = 593.24
WEIR ELEV = 591.79
WEIR ELEV = 591.79
WEIR ELEV = 593.24
15' UTILITY ESMT.
35' R.O.W. DEDICATION
CONTRACTOR TO INSTALL 4' WOODEN FENCE WITH CEDAR CAP
INSTALL SWING GATES IN FENCE FOR MAINTENANCE
INSTALL 12' WIDE DRIVEWAY AND ACCESS TO GATE. SEE CONC. RIP-RAP DETAIL
4' SIDEWALK
CONC. CURB & GUTTER
R.O.W. LINE
BLOCK 2
901 OPEN SPACE
CORDOVA ROAD
DRAIN "D" SEE SHEET 22 OF 32
DRAIN "A" SEE SHEET 20 OF 29
DRAIN "I" SEE SHEET 22C OF 29
SEE SOUTHEAST POND CROSS SECTION EXHIBIT ON THE STORMWATER MANAGEMENT PLAN FOR THE CAPACITY ANALYSIS OF THIS LOCATION
2
1
2
3:1
0.31%
0.24%
0.25%
0.27%
0.37%
1.26%
593
594
595
596
597
598
592

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CORDOVA TRAILS SUBDIVISION UNIT 1

DETENTION POND PLAN "SOUTHERN POND"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/26/2021 - UPDATED SECTIONS B-B & C-C, ADDED DETAILS, UPDATED BASE DESIGN
2. 09/20/2021 - DOWNSTREAM X-SECTION LOCATIONS, GENERAL NOTES, ADD PILOT CHANNEL AND DETAILS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

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TBPE No. 455
TBPLS No. 10048500

C28

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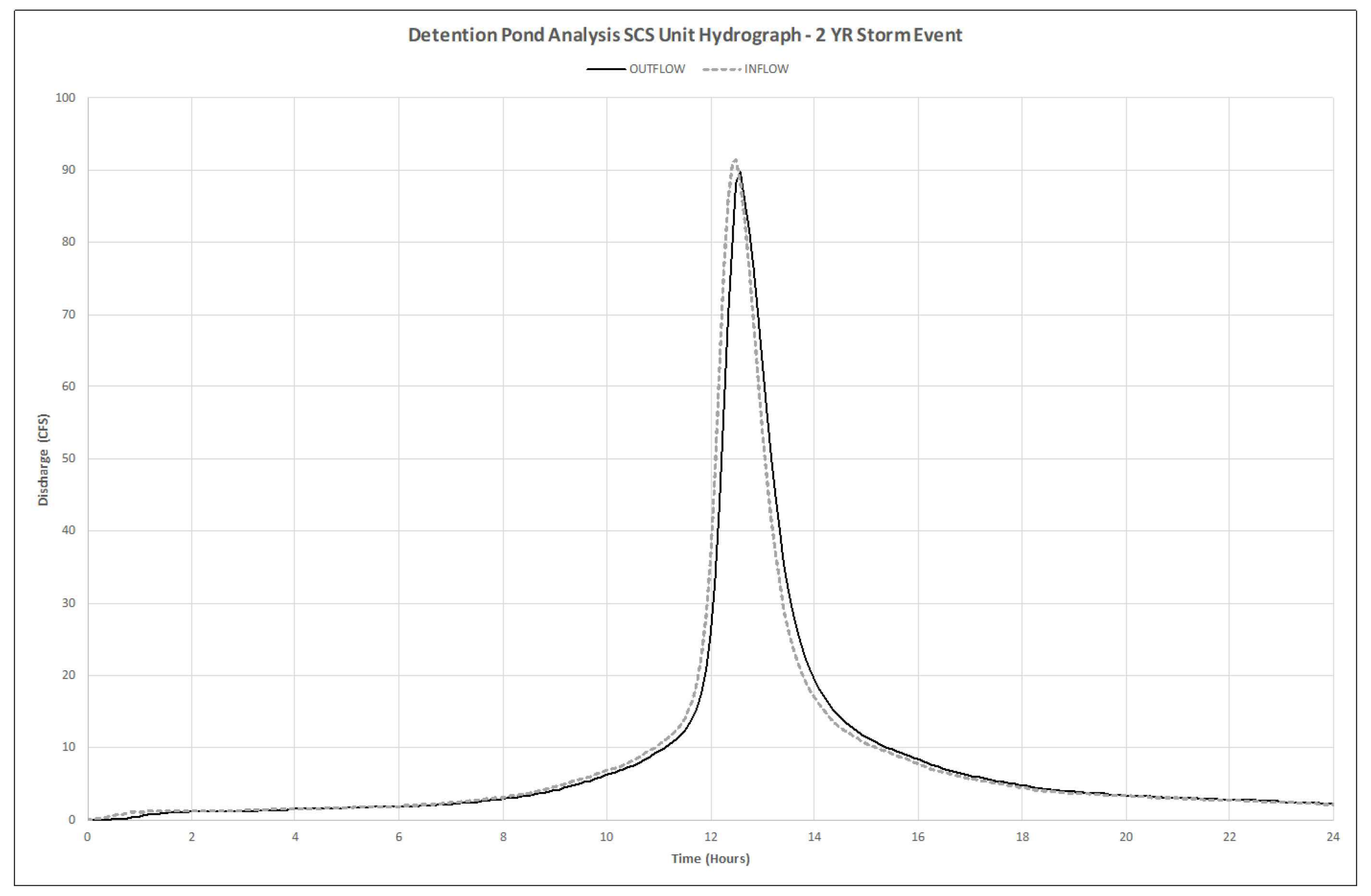
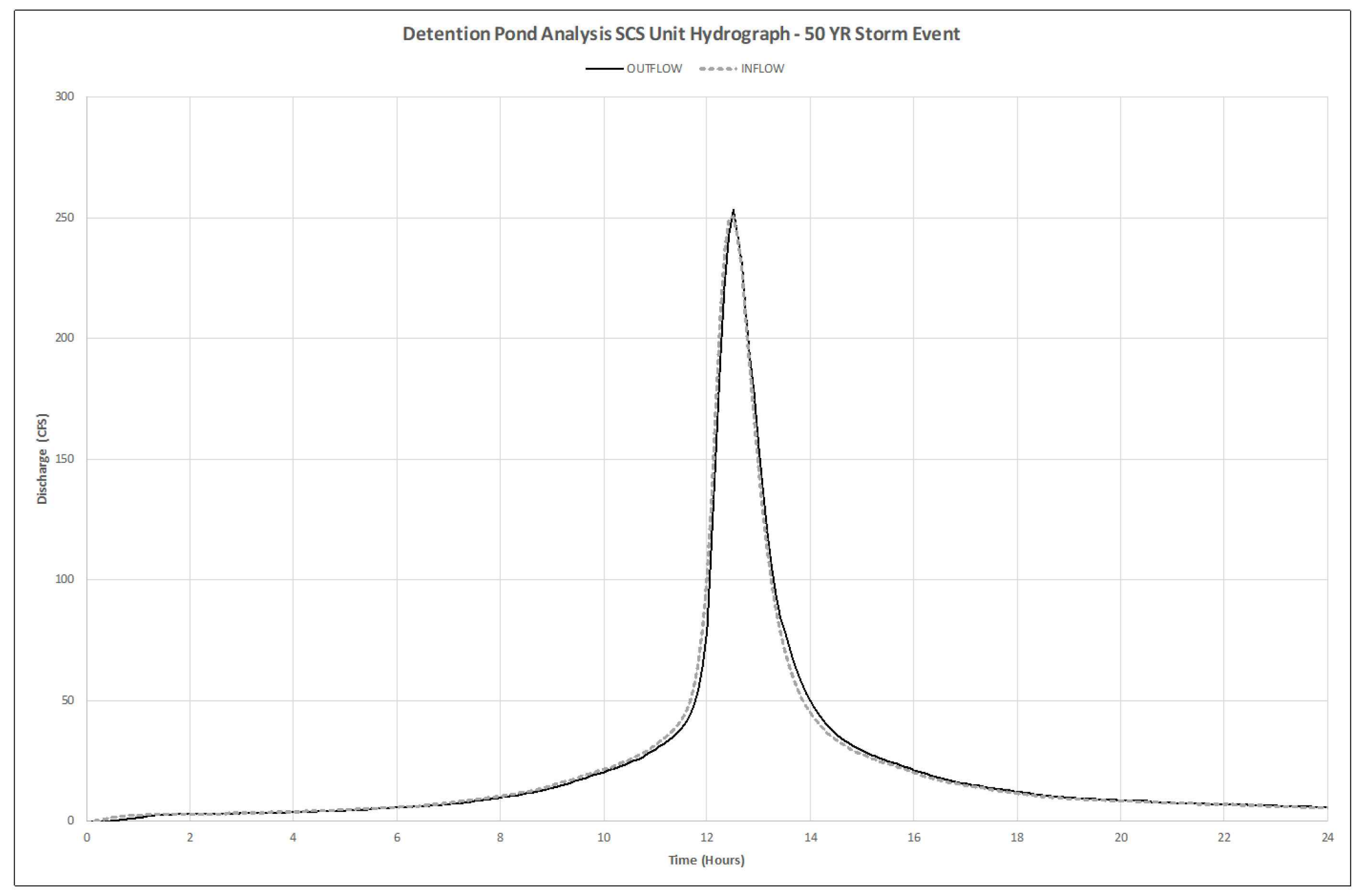
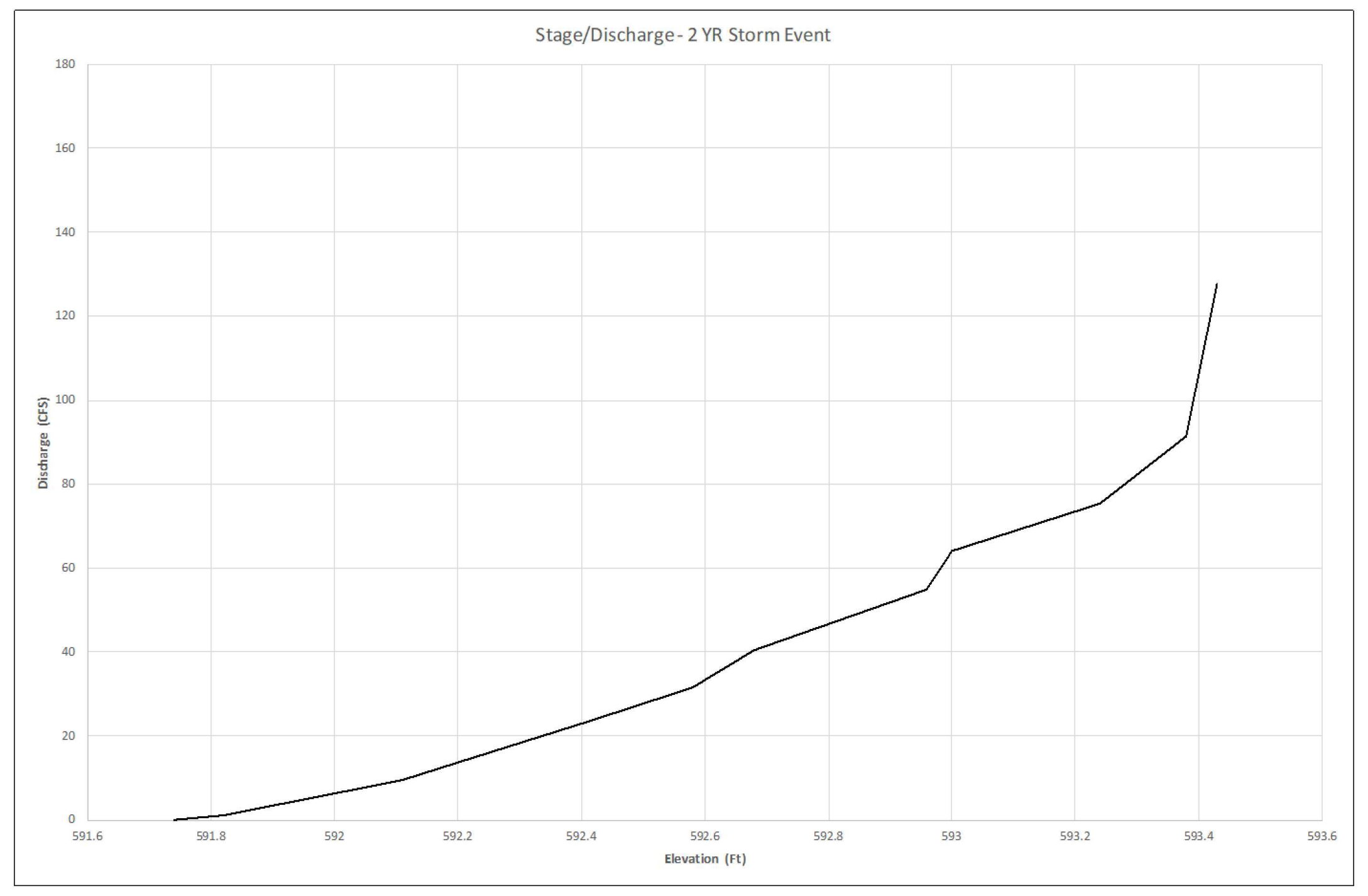
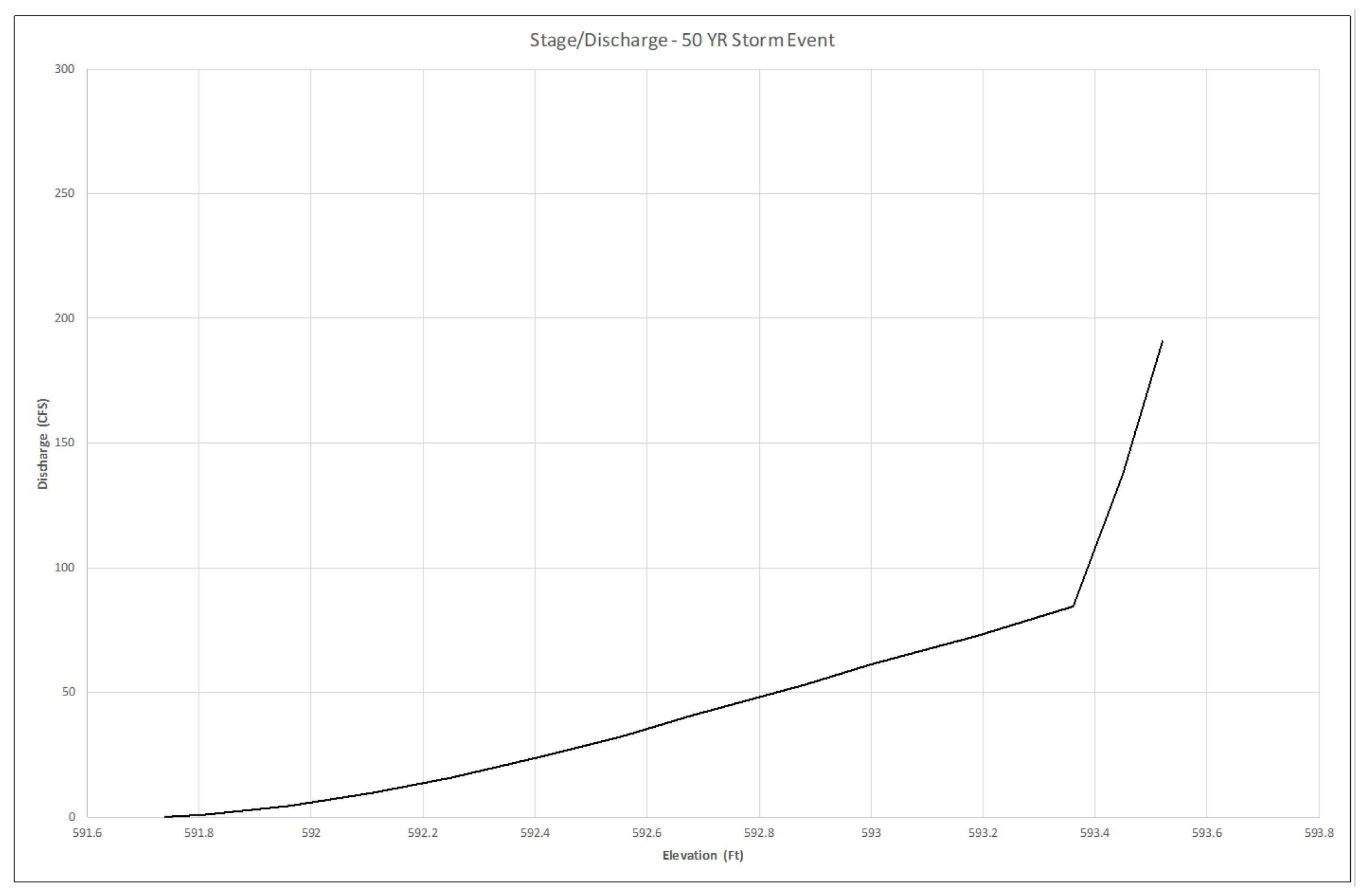
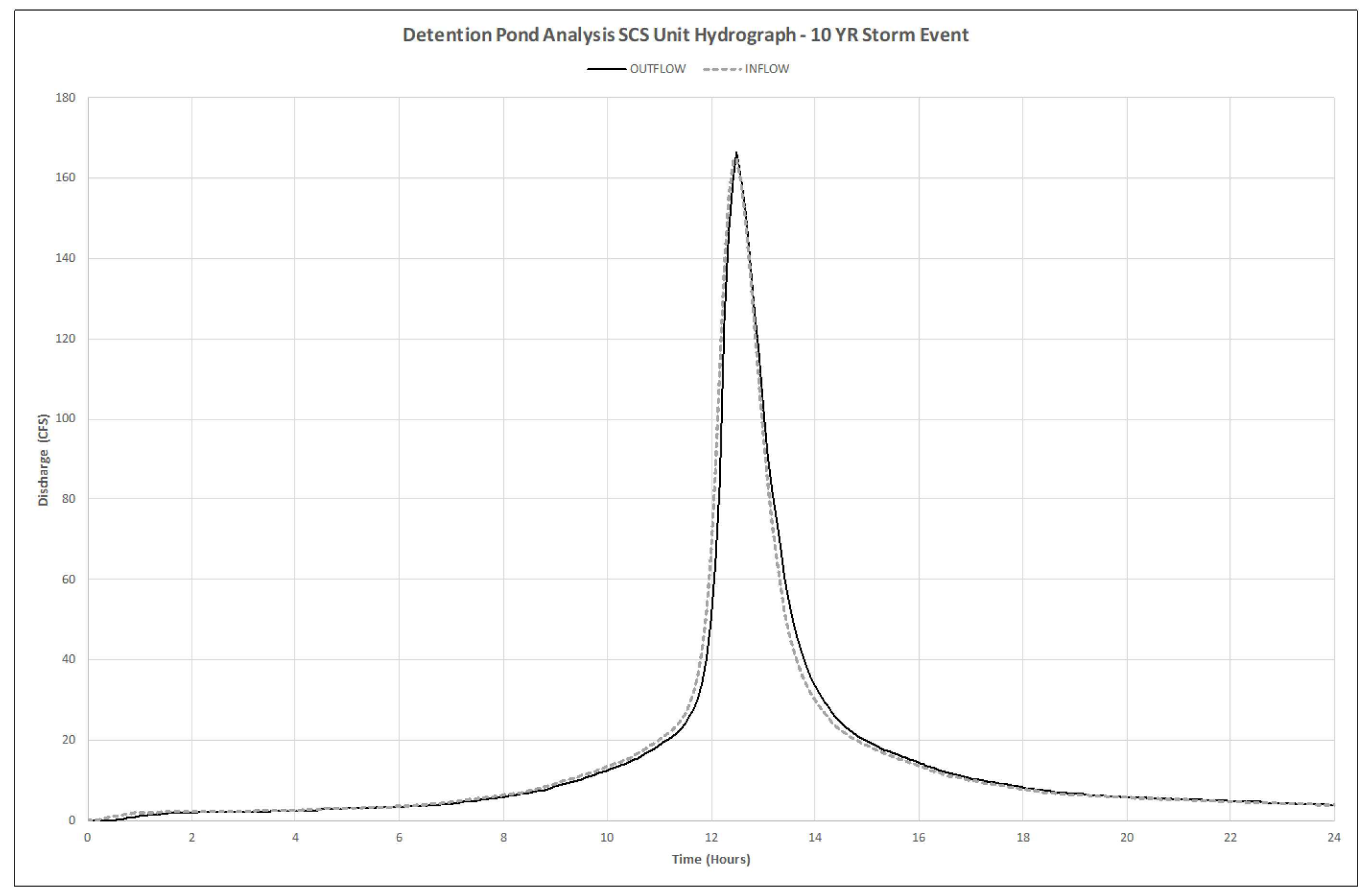
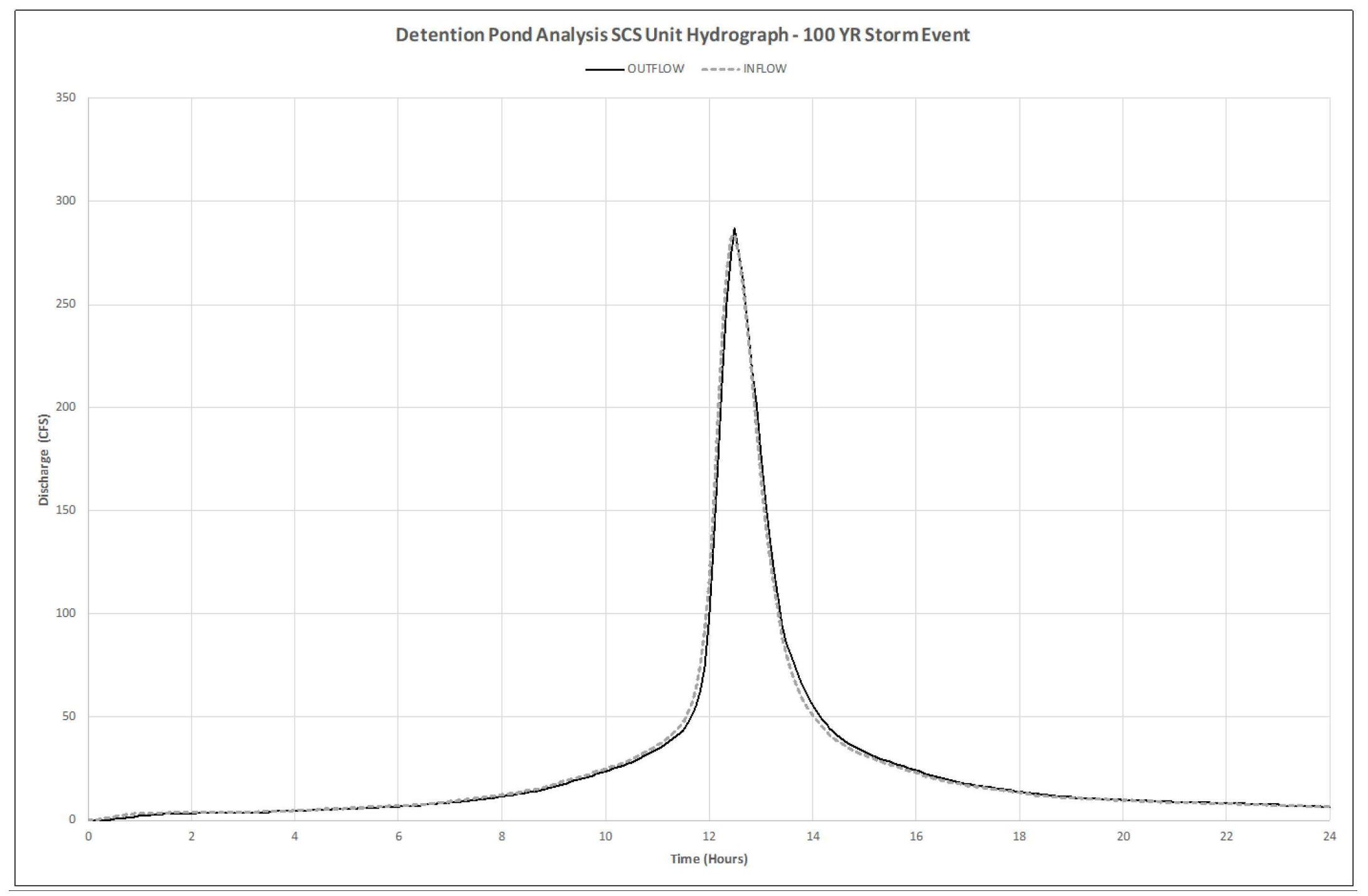

Detention Pond Analysis SCS Unit Hydrograph - 2 YR Storm Event

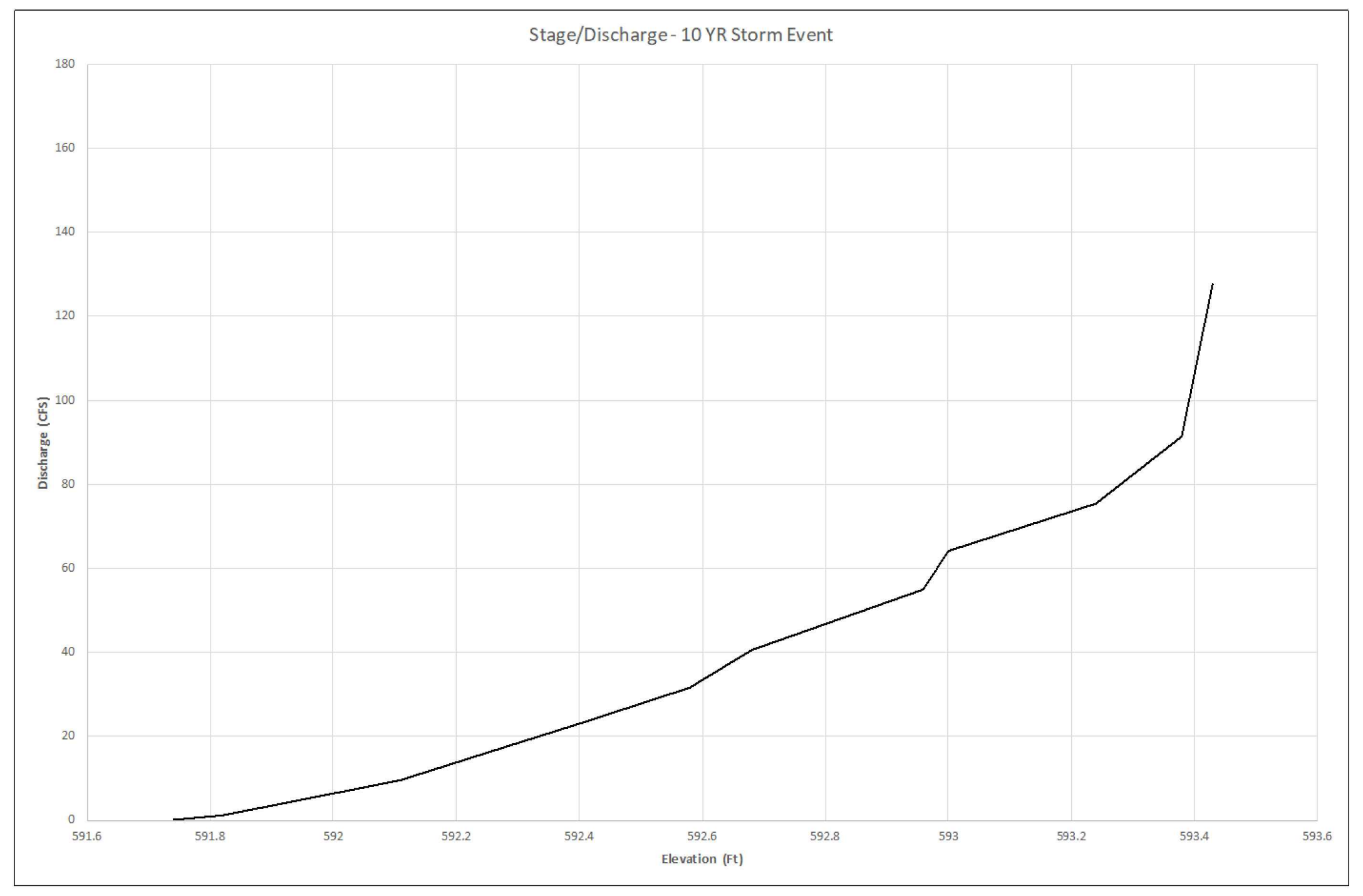

Detention Pond Analysis SCS Unit Hydrograph - 50 YR Storm Event

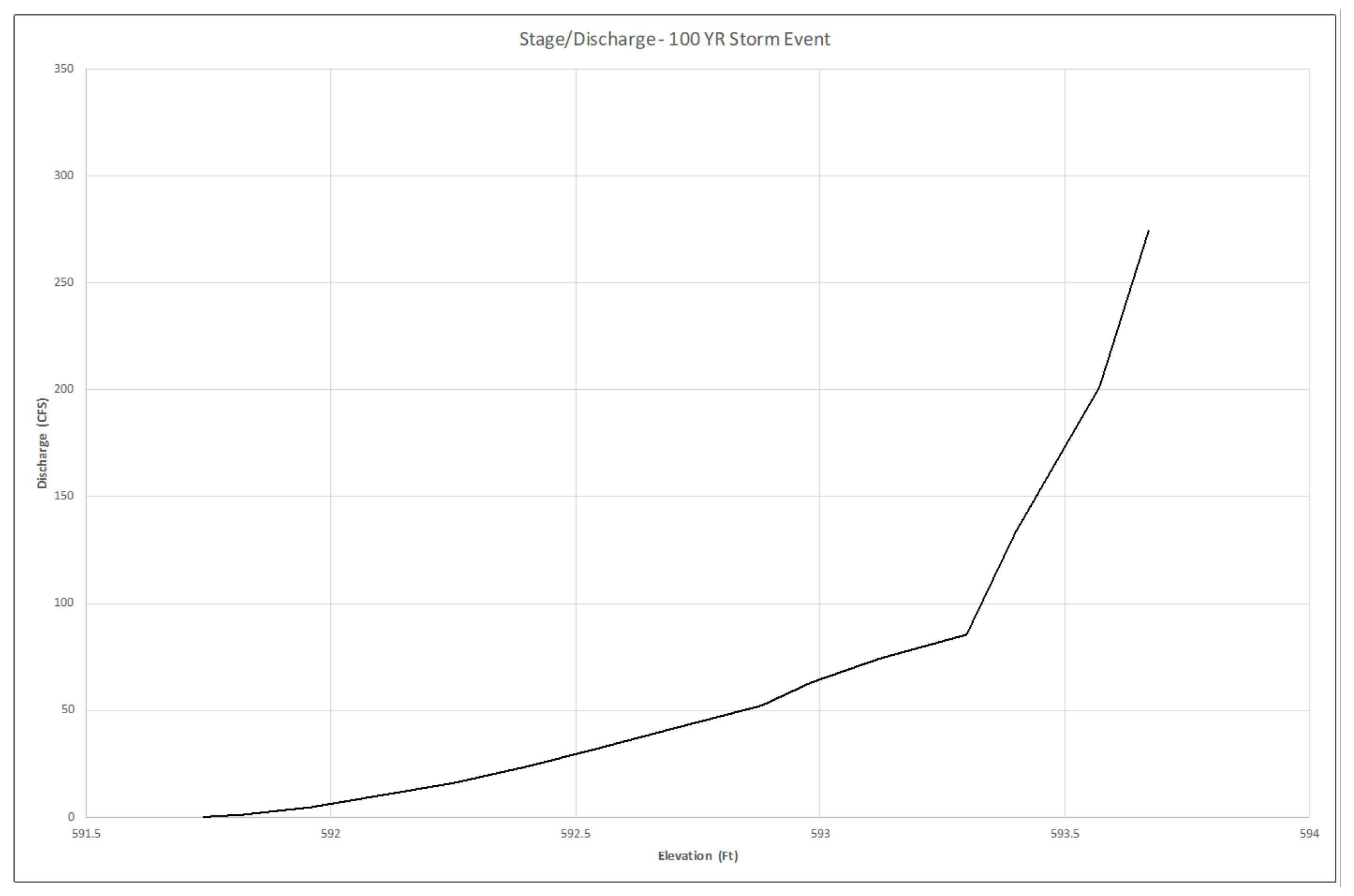

Stage/Discharge - 2 YR Storm Event

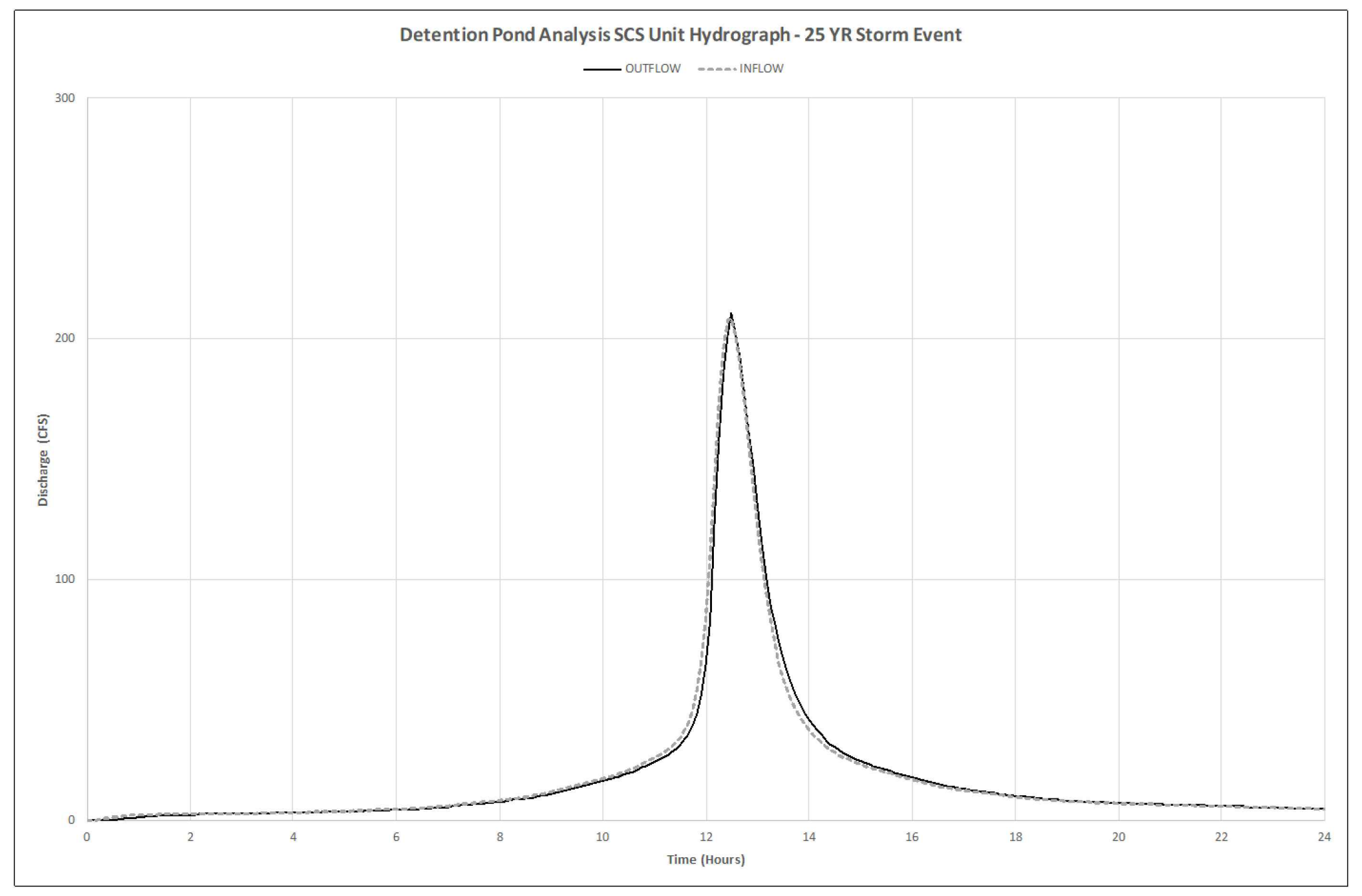

Stage/Discharge - 50 YR Storm Event

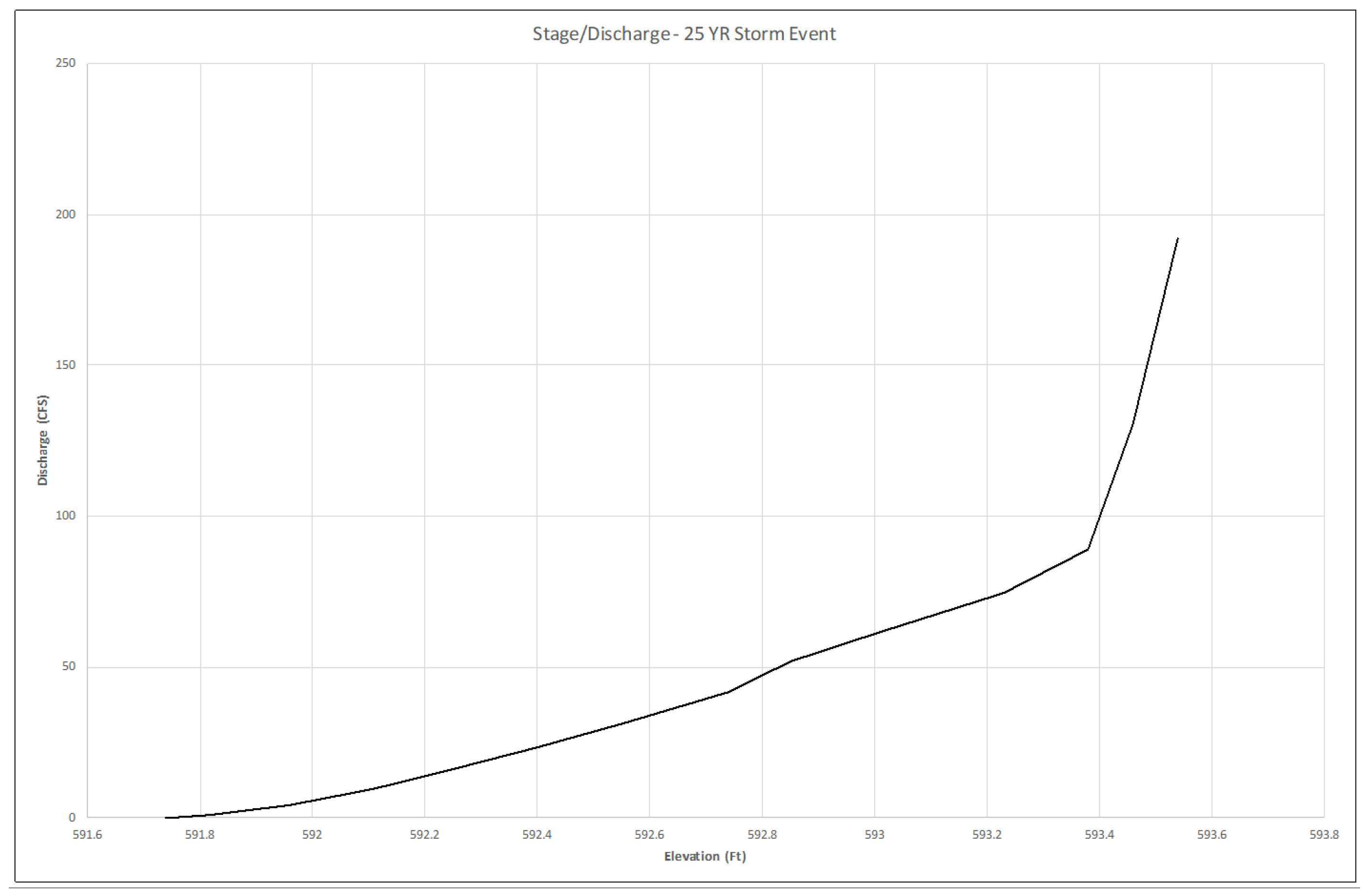

Detention Pond Analysis SCS Unit Hydrograph - 10 YR Storm Event

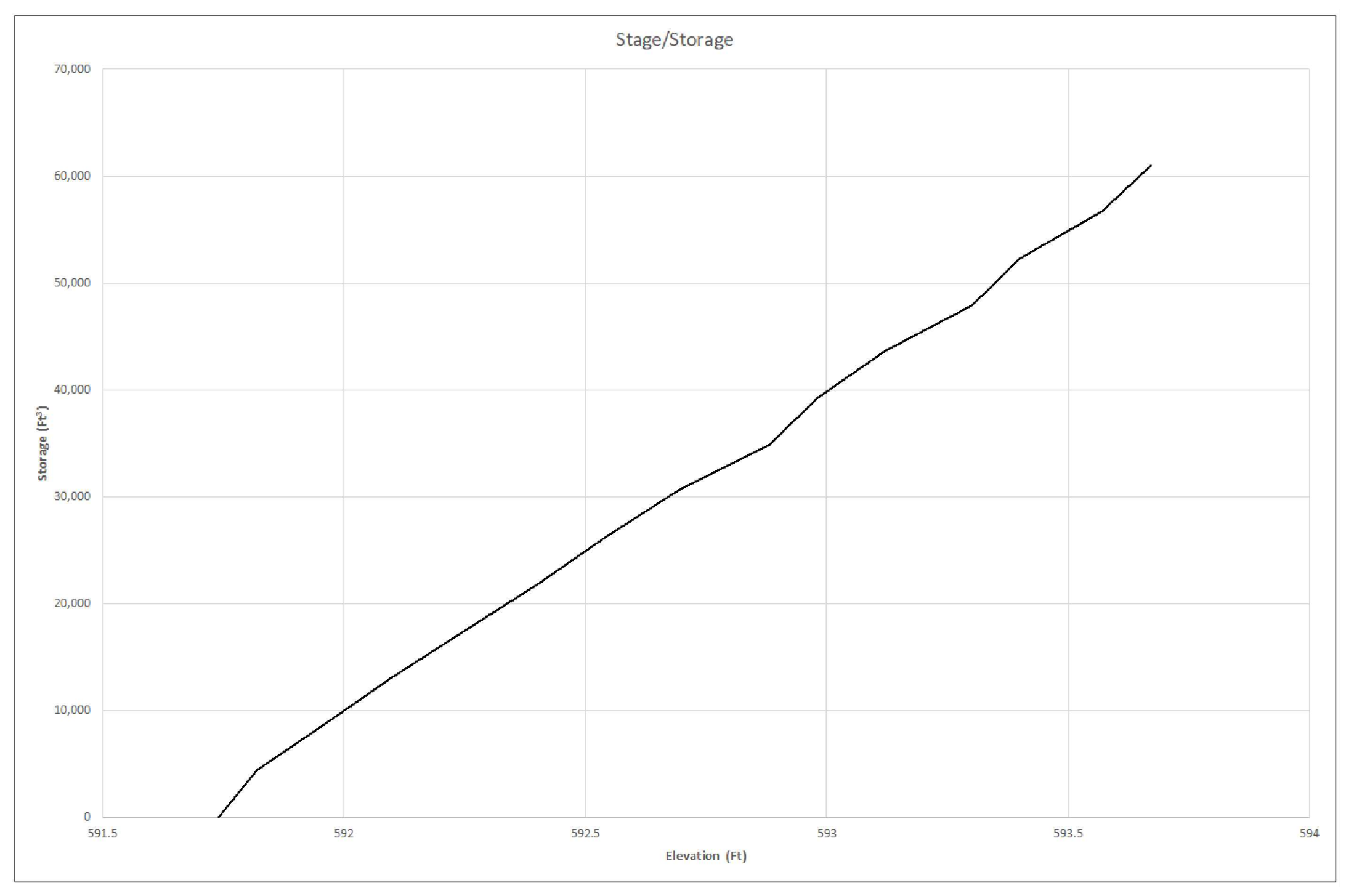

Detention Pond Analysis SCS Unit Hydrograph - 100 YR Storm Event


Stage/Discharge - 10 YR Storm Event


Stage/Discharge - 100 YR Storm Event


Detention Pond Analysis SCS Unit Hydrograph - 25 YR Storm Event


Stage/Discharge - 25 YR Storm Event


Stage/Storage

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS
SUBDIVISION UNIT 1

DETENTION POND PLAN DETAIL "SOUTHERN POND"

DATE
07/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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DAVID D. CUPIT II
122076
07.29.21

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TBPE No. 455
TBPLS No. 10048500

C29

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CONSTRUCTION PLANS

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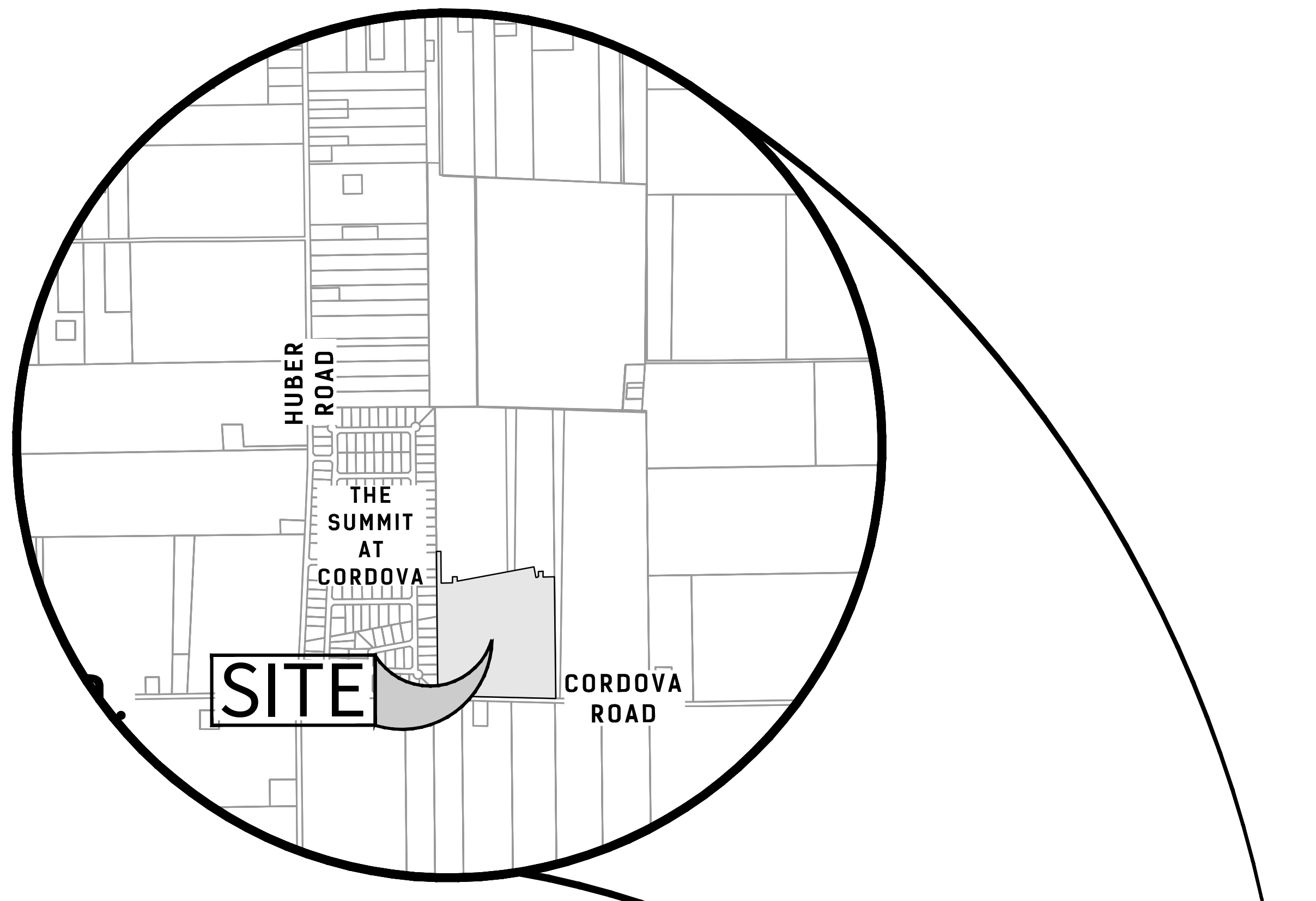
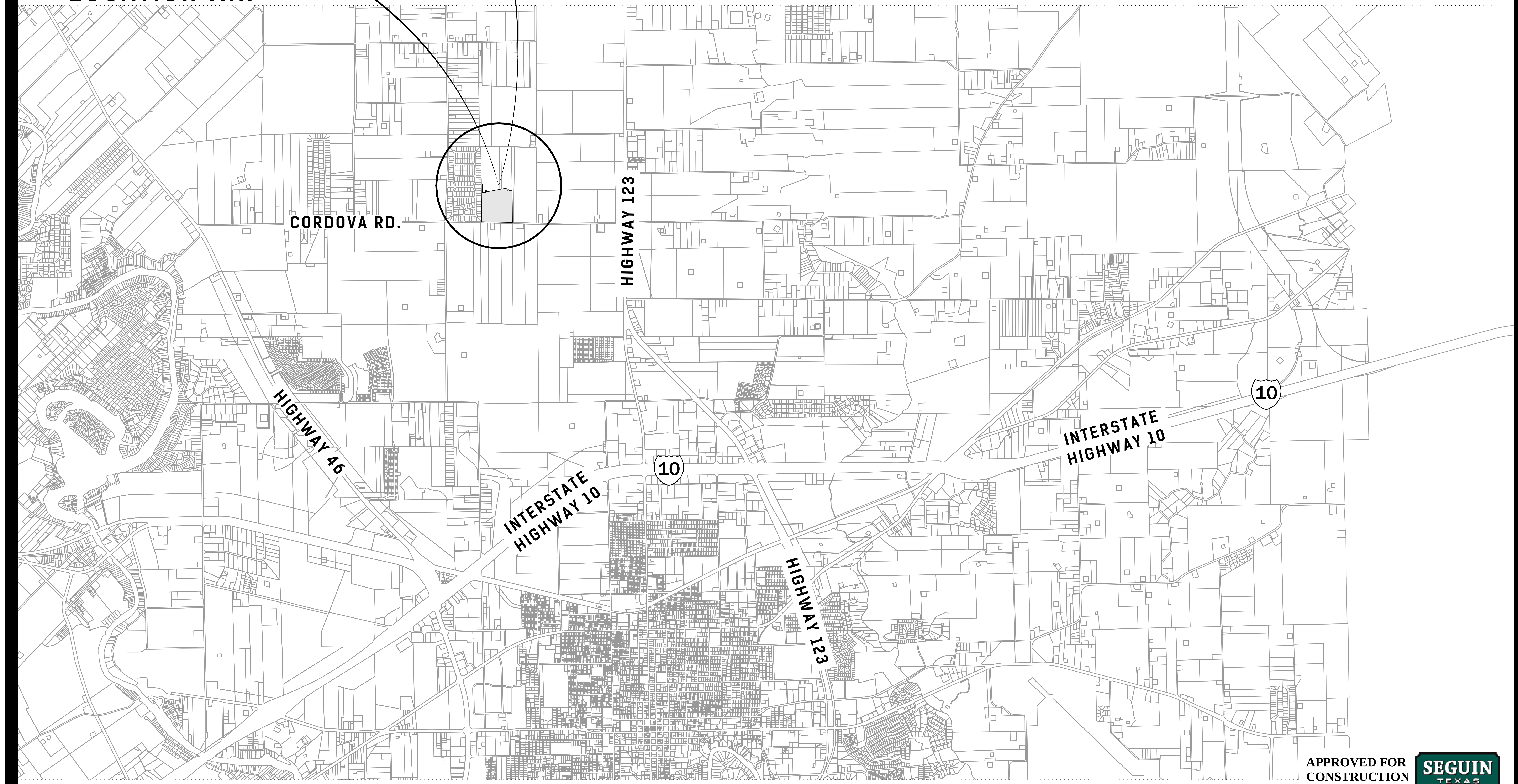
SANITARY SEWER CONSTRUCTION PLANS

- C30 - OVERALL SANITARY SEWER PLAN
- C31 - SANITARY SEWER GENERAL NOTES
- C32 - SANITARY SEWER PLAN & PROFILE LINE "A"
- C33 - SANITARY SEWER PLAN & PROFILE LINE "A"
- C34 - SANITARY SEWER PLAN & PROFILE LINE "B"
- C35 - SANITARY SEWER PLAN & PROFILE LINE "C"
- C36 - SANITARY SEWER PLAN & PROFILE LINE "D"
- C37 - SANITARY SEWER PLAN & PROFILE LINES "E" & "K"
- C38 - SANITARY SEWER PLAN & PROFILE LINE "F"
- C39 - SANITARY SEWER PLAN & PROFILE LINE "G"
- C40 - SANITARY SEWER DETAILS



LOCATION MAP



VICINITY MAP

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

EST. 1980
CUDE
ENGINEERS

CORDOVA TRAILS SUBDIVISION
UNIT 1

SANITARY SEWER CONSTRUCTION PLANS

ASHTON WOODS

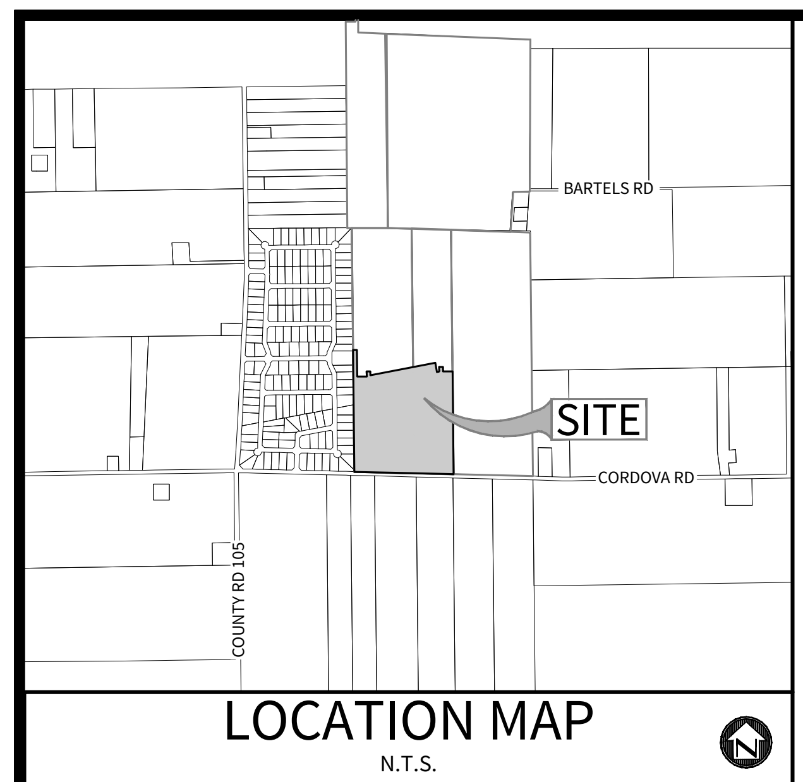
DEVELOPER:
ASHTON WOODS SAN ANTONIO
RESIDENTIAL, LLC
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO AVE., SUITE 140
SAN ANTONIO, TX 78232
TEL: (210) 632-0753

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

DRAWN BY AC	**DATE** 12/06/2021	**PLAT NO.**
CHECKED BY DDC/CD	**PROJECT NO.** 03480.002	

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455



LOCATION MAP

N.T.S.

LEGEND

PROPOSED SEWER LINE	—— XXX LF XX" SS ——
EXISTING SEWER LINE	— — EX. XXX LF XX" SS — —
PROPOSED WATER LINE	—— XX" W ——
PROPOSED MANHOLE	●
EXISTING MANHOLE	●
MILL & OVERLAY HATCH	▨
OPEN TRENCH	▨

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

SCALE: 1"=80'

0 80 160

NOTES:

1. 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 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 CITY OF SEGUIN WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
2. CONTRACTOR TO MAINTAIN A MINIMUM 2' VERTICAL SEPARATION DISTANCE BETWEEN OF THE BOTTOM EXISTING WATER MAIN AND TOP OF PROPOSED SANITARY SEWER MAIN AT WATER AND SANITARY SEWER CROSSINGS.
3. ALL SANITARY SEWER PIPE SHALL BE P.V.C. THAT MEETS ASTM SPECIFICATION D-3034, SDR-26 UNLESS OTHERWISE NOTED.
4. ALL LATERALS TO BE INSTALLED @ MIN. 2.0% SLOPE. UNLESS OTHERWISE NOTED.
5. LATERALS TO BE BUILT TO FRONT UTILITY EASEMENT LINE OR SANITARY SEWER EASEMENT LINE.
6. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
7. THE LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING SERVICE LATERALS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.
8. ALL SANITARY SEWER MANHOLES SHALL BE 4' UNLESS OTHERWISE NOTED ON THE PLANS.
9. SANITARY SEWER CLEANOUTS SHALL NOT BE LOCATED WITHIN SIDEWALKS AND/OR DRIVEWAYS.
10. CONTRACTOR IS RESPONSIBLE FOR SHORING AS DEEMED NECESSARY.
11. THE CONTRACTOR SHALL BE AWARE THAT EXISTING OVERHEAD ELECTRIC, 4" & 8" WATER MAINS EXIST ALONG CORDOVA ROAD. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED, POTHOLED TO VERIFY DEPTH, AND COMPARE WITH THE GEOTECH REPORT 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.
12. CONTRACTOR TO NOTIFY THE CITY OF SEGUIN AND SPRINGS HILL WATER SUPPLY 24 HOURS PRIOR TO CONSTRUCTION COMMENCEMENT.
13. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITTING.
14. CONTRACTOR TO PERFORM CONSTRUCTION ONLY DURING THE WORKING HOURS SET BY THE CITY OF SEGUIN.
15. CONTRACTOR IS RESPONSIBLE TO REVEGETATING ALL DISTURBED LIMITS OF THE EXISTING CORDOVA ROAD RIGHT OF WAY UPON COMPLETION OF GRADING AND IMPROVEMENTS.
16. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
17. CONTRACTOR IS REQUIRED TO PROVIDE ACCESS TO ADJACENT PROPERTY AND HOMEOWNERS AT ALL TIMES.
18. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DAMAGED OR REMOVED DRIVEWAYS AND FENCING TO EXISTING OR BETTER CONDITION.
19. CONTRACTOR IS RESPONSIBLE FOR SHORING POWER POLES IF AND AS NEEDED. N.S.P.I.
20. WATER METERS SHALL BE SET OUTSIDE THE LIMITS OF THE SIDEWALK AND WITHIN THE P.U.E. IF REQUIRED TO MAINTAIN SEPARATION.

2

BENCHMARK BM-1

BENCHMARK TO BE SET BY ENGINEER PRIOR TO CONSTRUCTION.

SEWER/WATER LINE CROSSINGS	
LINE	STATION
"A"	9+52.49
"A"	17+44.66
"A"	20+60.70
"E"	1+23.35
"E"	4+16.00
"E"	9+99.57

SEWER/DRAIN CROSSINGS	
DRAIN	STATION
A	LINE "A" 8+30.99
A	LINE "A" 11+14.54
CA	LINE "E" 8+95.56

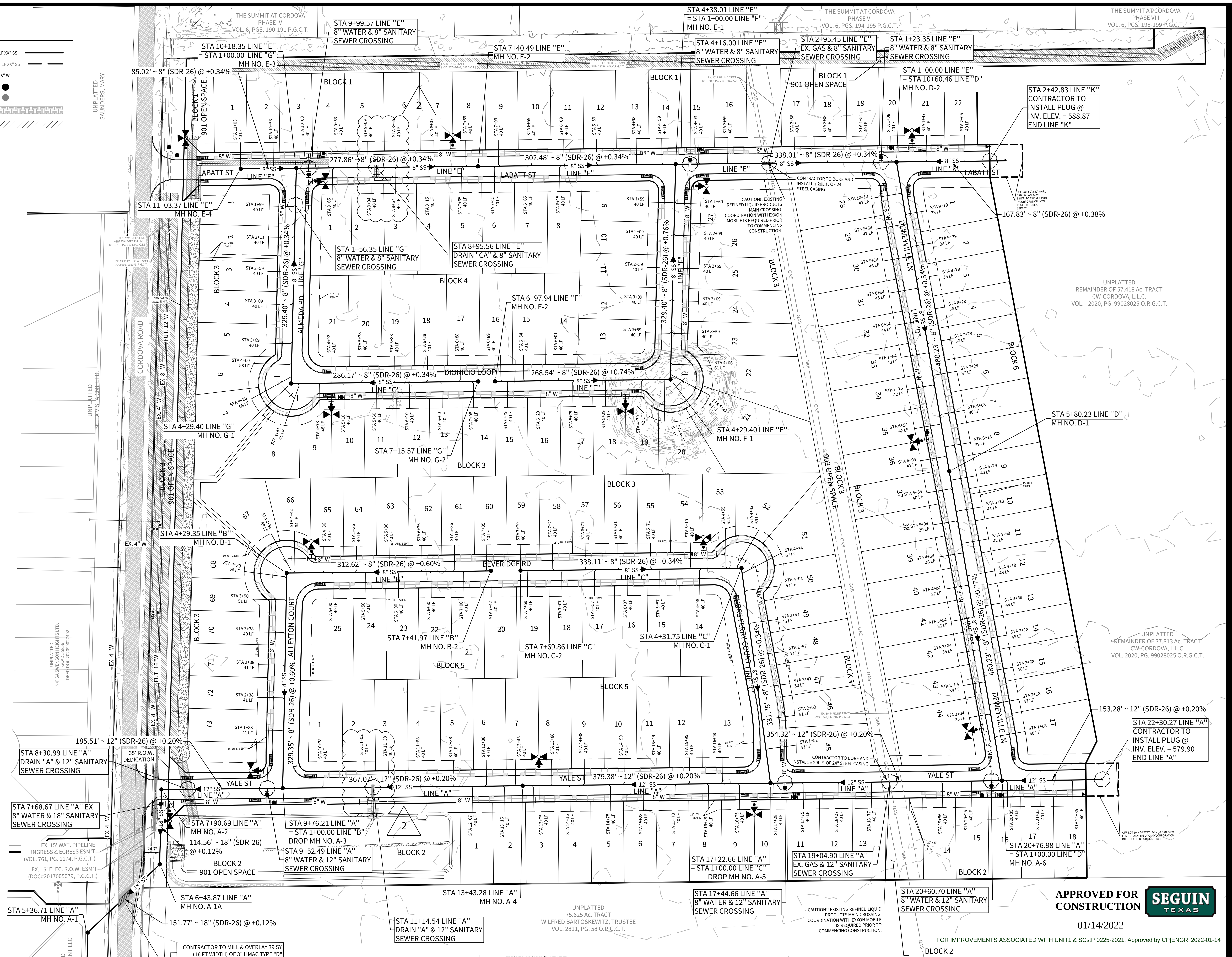
SEWER/GAS CROSSINGS	
LINE	STATION
"A"	19+04.90
"E"	2+95.45

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.

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.


THE SUMMIT AT CORDOVA PHASE IV VOL. 6, PGS. 190-191 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VI VOL. 6, PGS. 194-195 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VIII VOL. 6, PGS. 198-199 P.G.C.T.
UNPLATTED SAUNDERS, MARY
STA 10+18.35 LINE "E" = STA 1+00.00 LINE "G" MH NO. E-3
STA 9+99.57 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 7+40.49 LINE "E" MH NO. E-2
STA 4+38.01 LINE "E" = STA 1+00.00 LINE "F" MH NO. E-1
STA 4+16.00 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 2+95.45 LINE "E" EX. GAS & 8" SANITARY SEWER CROSSING
STA 1+23.35 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 1+00.00 LINE "E" = STA 10+60.46 LINE "D" MH NO. D-2
STA 2+42.83 LINE "K" CONTRACTOR TO INSTALL PLUG @ INV. ELEV. = 588.87 END LINE "K"
85.02' ~ 8" (SDR-26) @ +0.34%
277.86' ~8" (SDR-26) @ +0.34%
302.48' ~ 8" (SDR-26) @ +0.34%
338.01' ~ 8" (SDR-26) @ +0.34%
167.83' ~ 8" (SDR-26) @ +0.38%
BLOCK 1
BLOCK 1 901 OPEN SPACE
LABATT ST
LINE "E"
STA 11+03.37 LINE "E" MH NO. E-4
STA 1+56.35 LINE "G" 8" WATER & 8" SANITARY SEWER CROSSING
STA 8+95.56 LINE "E" DRAIN "CA" & 8" SANITARY SEWER CROSSING
CAUTION! EXISTING REFINED LIQUID PRODUCTS MAIN CROSSING. COORDINATION WITH EXXON MOBILE IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
CONTRACTOR TO BORE AND INSTALL ± 20 L.F. OF 24" STEEL CASING
329.40' ~ 8" (SDR-26) @ +0.34%
329.40' ~ 8" (SDR-26) @ +0.76%
ALAMEDA RD
LINE "G"
LINE "F"
BLOCK 4
BLOCK 3
BLOCK 6
DENEVILLE LN
LINE "D"
STA 6+97.94 LINE "F" MH NO. F-2
286.17' ~ 8" (SDR-26) @ +0.34%
268.54' ~ 8" (SDR-26) @ +0.74%
DIONICIO LOOP
STA 4+29.40 LINE "G" MH NO. G-1
STA 7+15.57 LINE "G" MH NO. G-2
STA 4+29.40 LINE "F" MH NO. F-1
STA 5+80.23 LINE "D" MH NO. D-1
UNPLATTED REMAINDER OF 57.418 Ac. TRACT CW-CORDOVA, L.L.C. VOL. 2020, PG. 99028025 O.R.G.C.T.
BLOCK 2 901 OPEN SPACE
BLOCK 3 902 OPEN SPACE
CORDOVA ROAD
FUT. 12"W
EX. 8" W
EX. 4" W
STA 4+29.35 LINE "B" MH NO. B-1
312.62' ~ 8" (SDR-26) @ +0.60%
338.11' ~ 8" (SDR-26) @ +0.34%
BEVERIDGE RD
LINE "B"
LINE "C"
STA 7+41.97 LINE "B" MH NO. B-2
STA 7+69.86 LINE "C" MH NO. C-2
STA 4+31.75 LINE "C" MH NO. C-1
BLOCK 5
ALLEYTON COURT
329.35' ~ 8" (SDR-26) @ +0.60%
331.75' ~ 8" (SDR-26) @ +0.34%
UNPLATTED REMAINDER OF 37.813 Ac. TRACT CW-CORDOVA, L.L.C. VOL. 2020, PG. 99028025 O.R.G.C.T.
153.28' ~ 12" (SDR-26) @ +0.20%
354.32' ~ 12" (SDR-26) @ +0.20%
STA 22+30.27 LINE "A" CONTRACTOR TO INSTALL PLUG @ INV. ELEV. = 579.90 END LINE "A"
185.51' ~ 12" (SDR-26) @ +0.20%
35' R.O.W. DEDICATION
STA 8+30.99 LINE "A" DRAIN "A" & 12" SANITARY SEWER CROSSING
367.07' ~ 12" (SDR-26) @ +0.20%
379.38' ~ 12" (SDR-26) @ +0.20%
YALE ST
LINE "A"
STA 7+68.67 LINE "A" EX 8" WATER & 18" SANITARY SEWER CROSSING
STA 7+90.69 LINE "A" MH NO. A-2
114.56' ~ 18" (SDR-26) @ +0.12%
STA 9+76.21 LINE "A" = STA 1+00.00 LINE "B" DROP MH NO. A-3
STA 9+52.49 LINE "A" 8" WATER & 12" SANITARY SEWER CROSSING
BLOCK 2 901 OPEN SPACE
BLOCK 2
STA 17+22.66 LINE "A" = STA 1+00.00 LINE "C" DROP MH NO. A-5
STA 19+04.90 LINE "A" EX. GAS & 12" SANITARY SEWER CROSSING
STA 20+76.98 LINE "A" = STA 1+00.00 LINE "D" MH NO. A-6
20' x 20' UTIL. ESM'T.
OFF-LOT 50' x 50' WAT., DRN., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T (VOL. 761, PG. 1174, P.G.C.T.)
EX. 15' ELEC. R.O.W. ESM'T (DOC#2017005079, P.G.C.T.)
STA 6+43.87 LINE "A" MH NO. A-1A
STA 13+43.28 LINE "A" MH NO. A-4
STA 17+44.66 LINE "A" 8" WATER & 12" SANITARY SEWER CROSSING
STA 20+60.70 LINE "A" 8" WATER & 12" SANITARY SEWER CROSSING
STA 11+14.54 LINE "A" DRAIN "A" & 12" SANITARY SEWER CROSSING
CAUTION!! EXISTING REFINED LIQUID PRODUCTS MAIN CROSSING. COORDINATION WITH EXXON MOBILE IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
BLOCK 2 902 OPEN SPACE
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
2

STA 5+36.71 LINE "A"
MH NO. A-1

151.77' ~ 18" (SDR-26) @ +0.12%

CONTRACTOR TO MILL & OVERLAY 39 SY (16 FT WIDTH) OF 3" HMAC TYPE "D"

CONTRACTOR TO REPAIR UTILITY TRENCH WITH 48 CY OF SECONDARY BACKFILL & 18 SY OF 21" FLEX BASE

CONTRACTOR TO OPEN CUT UTILITY TRENCH & REMOVE 18 SY (7 FT WIDTH) OF EXISTING ASPHALT PAVEMENT

FUTURE R.O.W. DEDICATION

UNPLATTED HLH DEVELOPMENT LLC

FUT. 16"W

360.97' ~ 18" (SDR-26) @ + 0.12%

STA 1+63.38 LINE "A"
MH NO. A-0

STA 1+51.92 LINE "A"
FUT. 8" WATER & 18" SANITARY SEWER CROSSING

36.74' ~ 18" (SDR-26) @ + 0.12%

EX. SWENSON SUBDIVISION, UNIT 1, MH A17 (STA. 52+63.34). CONTRACTOR TO REMOVE EX. SEWER PLUG, 39.34 L.F. OF 18" PVC PIPE (SDR-26 PS-115) AND TIE IN AT ELEV. = 575.25 CONTRACTOR TO VERIFY SEWER ELEVATION PRIOR TO COMMENCING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES

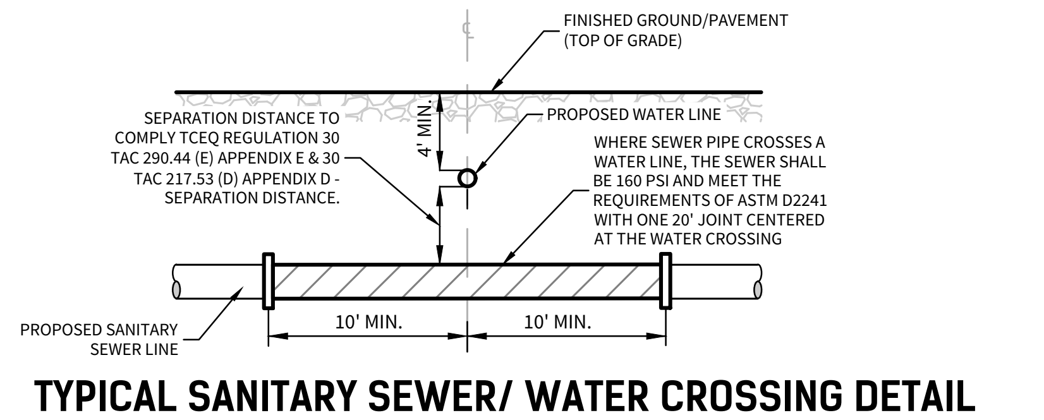
141.62' ~ 18" (SDR-26) @ +0.12%

APPROVED FOR CONSTRUCTION

SEGUIN TEXAS

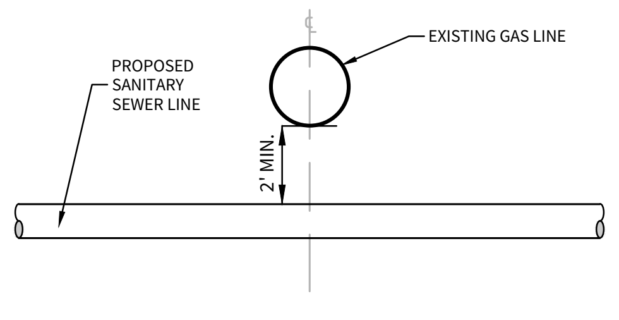
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
4' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

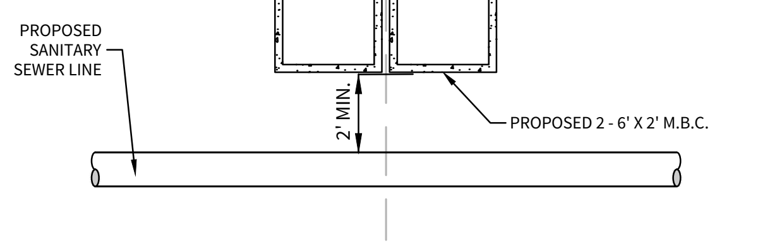
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.



SANITARY SEWER/ GAS CROSSING DETAIL

N.T.S.



SANITARY SEWER/ DRAIN "A" CROSSINGS DETAIL

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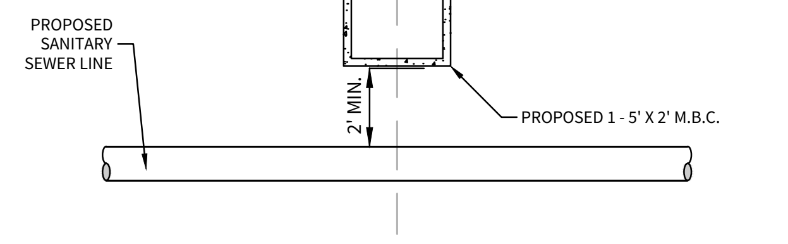

SANITARY SEWER/ DRAIN "CA" CROSSINGS DETAIL

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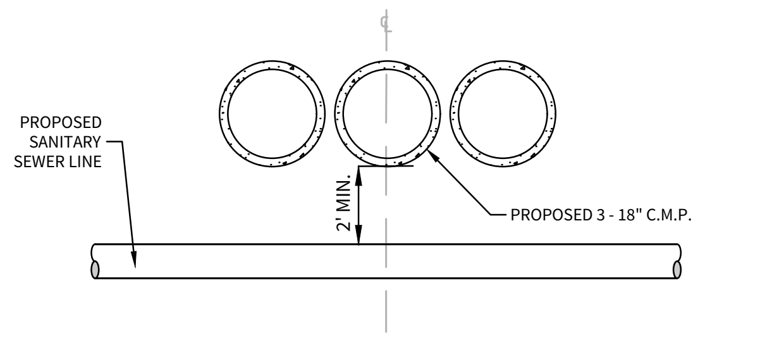

SANITARY SEWER/ DRAIN "A" CROSSINGS DETAIL

N.T.S.

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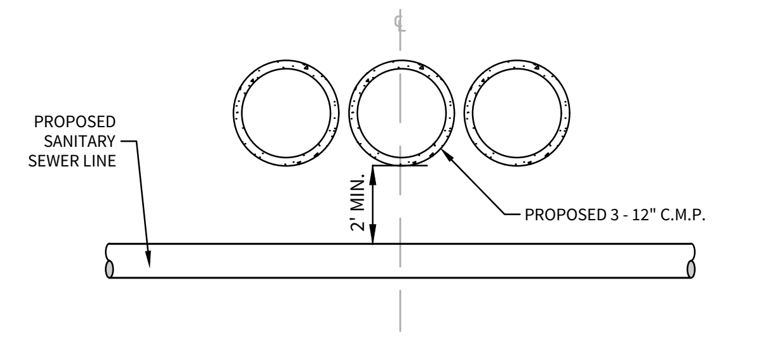

SANITARY SEWER/ DRAIN "I" CROSSINGS DETAIL

N.T.S.

CUDEENGINEERS.COM

CUDE ENGINEERS EST. 1980

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

CORDOVA TRAILS SUBDIVISION UNIT 1

OVERALL SANITARY SEWER PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/26/2021 - ADDED FLOW ARROWS
2. 09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS, ADDED NOTE, REVISED X-ING DETAILS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C30

P:\03480\002\2-Drawings\01_XX_OSSP.dwg 2021/12/05 9:33pm jguerrero

GENERAL NOTES

1. All materials and construction procedures within the scope of this contract shall be approved by the City of Seguin 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 “City of Seguin Design Standards”.

2. The Contractor shall obtain the City of Seguin Design Standards from the City of Seguin website, https://www.seguintexas.gov/departments/public_works/design_standards.php. Unless otherwise noted within the design plans.

3. The Contractor is to make arrangements with the City of Seguin Public Works at 830-401-2421, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.

4. 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 the City of Seguin.

5. 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 City of Seguin facilities. The following contact information are supplied for verification purposes:

City of Seguin Water/Wastewater Utilities Department 830-401-2404

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 Guadalupe County right-of-way shall be done in accordance with respective construction specifications and permit requirements.

9. The Contractor shall comply with City of Seguin 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 CIty of Seguin work on City of Seguin recognized holidays.

Weekend Work: Contractors are required to notify the City of Seguin Project Inspector 48 hours in advance to request weekend work. Any and all City of Seguin 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 City of Seguin 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.

SEWER NOTES

1. The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:

A. Identify the source of the SSO and notify City of Seguin Water/Wastewater Utilities Department immediately at 830-401-2421. Provide the address of the spill and an estimated volume or flow.

B. Attempt to eliminate the source of the SSO.

C. Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.

D. Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.

E. Clean the affected sewer mains and remove any debris.
F. Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at the City of Seguins direction) within 24 hours.

-Should the Contractor fail to address an SSO immediately and to the City of Seguin satisfaction, they will be responsible for all costs incurred by the City of Seguin including any fines from EPA, TCEQ and/or any other Federal, State or Local Agencies. -No separate measurement or payment shall be made for this work. All work shall be done according to guidelines set by the TCEQ and the Seguin.

2. If bypass pumping is required, the Contractor shall perform such work in accordance with the City of Seguin Design Standards.

3. Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the City of Seguin Water/Wastewater Utilities Department at 830-401-2404 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 the City of Seguin Water/Wastewater Utilities Department or the project and it is the responsibility of the Contractor to sequence the work accordingly.

4. Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(e)(4)(B). Contractor shall center a 20’ joint of 160 psi pressure rated PVC at the proposed water crossing.

5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: It shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project’s improvements. (NSPI)

6. Spills, Overflows, or Discharges of Wastewater: All spills, overflows, or discharges of wastewater, recycled water, petroleum products, or chemicals must be reported immediately to the City of Seguin Inspector assigned to the Construction Plans approval. This requirement applies to every spill, overflow, or discharge regardless of size.

7. Manhole and all pipe testing (including the TV inspection) must be performed and passed prior to Final Field Acceptance by the City of Seguin Capital Projects and Engineering Department, as per the City of Seguin Design Standards.

8. All PVC pipe over 14 feet of cover shall be extra strength with minimum pipe stiffness of 115 psi.

9. All excavated material shall be placed on the upgradient side of the sewer trench thus allowing the trench to intercept any silt contaminated runoff.

10. All sanitary sewer pipe shall be p.v.c. that meets astm specification d-3034, sdr-26 unless otherwise noted.

11. All laterals to be installed @ min. 2.0% slope. unless otherwise noted.

12. Laterals to be built to front utility easement line or sanitary sewer easement line.

13. The locations and depths of all existing utilities, including service laterals and drainage structures shown on the plans are approximate only. the contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction.

City of Seguin Utilities	830-401-2404
Springs Hill Water Supply Corp.	830-379-7683
Texas State Wide One Call Locator	1-800-545-6005
Guadalupe Valley Electric Cooperative	"
Guadalupe-Blanco River Authority	"
AT&T	"
Time Warner Cable	"
Valero Energy Co.	"

14. Sewer clean out for each lot to be installed at the time of home building.

SUPPLEMENTARY

No extra-payment shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.

The Developer dedicates the sanitary sewer mains upon completion by the Developer and acceptance by the City of Seguin. The City of Seguin will own and maintain said sanitary sewer mains which are located within this particular subdivision. (As applicable)

All PVC Sewer Pipe with over 14 feet of cover shall be extra strength pipe, Minimum Stiffness of 115 PSI.

WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED WITH THE SPRINGS HILL WATER SYSTEM CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

The Contractor is responsible to ensure that no overflows of sewage occurs. Should this occur the Contractor shall:

A. Identify the source of the spill and attempt to eliminate any additional spillage. Notify the City of Seguin Water/Wastewater Utilities Department at 830-401-2421.

B. Contain the spill in place and prevent contamination of streams.

C. Clean up the spill and dispose of contaminated materials.

D. Disinfect the area of the spill with a mixture of HTH chlorine and water.

E. Identify and train personnel responsible for spillage prevention and control.

No separate measurement or payment shall be made for this work. All work shall be done in according to guidelines set by the Texas Natural Resource Contamination Commission (TNRCC) and the City of Seguin.

Service Lateral Connections:

A. The exact location and elevation of the service laterals and manholes shall be field verified by the Contractor (NSPI).

B. A minimum of 3 feet of cover is to be maintained over the sanitary sewer laterals or subgrade.

C. All sewer lateral services for future connections as identified on plan and profiles, shall be capped and sealed.

D. The Contractor shall be responsible for disconnecting each existing service line from the existing water main and re-connecting the service to the new service main. The Contractor shall be responsible for maintaining continuous service (NSPI).

E. Laterals shall be constructed to serve all existing houses and vacant lots.

The Contractor shall provide by-pass pumping of sewage around each segment of pipe to be replaced, in accordance with Springs Hill special specification "Sanitary Sewer". Payment for such work will be made under the bid item "Sanitary Sewer (By-Pass Pumping)" as per Springs Hill special specification "Sanitary Sewer".

Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the City of Seguin Utilities (830.401.2404) inspection and/or production groups at least one week or more 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 the City of Seguin or the project and it is the responsibility of the Contractor to sequence the work accordingly.

CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS

I. For separation distance requirements between sewer mains & water mains, see the 30 TAC §217.53 Pipe Design notes included on this sheet.

II. Corrosion protected mechanical coupling devices of a cast iron or ductile iron material shall be used.

III. Plan & profile must show type of crossing and material to use.

TCEQ – 30 TAC290.44(e)

(e) Location of waterlines. The following rules apply to installations of waterlines, wastewater mains or laterals, and other conveyances/appurtenances identified as potential sources of contamination. Furthermore, all ratings specified shall be defined by ASTM or AWWA standards unless stated otherwise. New mains, service lines, or laterals are those that are installed where no main, service line, or lateral previously existed, or where existing mains, service lines, or laterals are replaced with pipes of different size or material.
(1) When new potable water distribution lines are constructed, they shall be installed no closer than nine feet in all directions to wastewater collection facilities. All separation distances shall be measured from the outside surface of each of the respective pieces.
(2) Potable water distribution lines and wastewater mains or laterals that form parallel utility lines shall be installed in separate trenches.
(3) No physical connection shall be made between a drinking water supply and a sewer line. Any appurtenance shall be designed and constructed so as to prevent any possibility of sewage entering the drinking water system.
(4) Where the nine-foot separation distance cannot be achieved, the following criteria shall apply.
(A) New waterline installation - parallel lines.
(i) Where a new potable waterline parallels an existing, non-pressure or pressure rated wastewater main or lateral and the licensed professional engineer licensed in the State of Texas is able to determine that the existing wastewater main or lateral is not leaking, the new potable waterline shall be located at least two feet above the existing wastewater main or lateral, measured vertically, and at least four feet away, measured horizontally, from the existing wastewater main or lateral. Every effort shall be exerted not to disturb the bedding and backfill of the existing wastewater main or lateral.
(ii) Where a new potable waterline parallels an existing pressure-rated wastewater main or lateral and it cannot be determined by the licensed professional engineer if the existing line is leaking, the existing wastewater main or lateral shall be replaced with at least 150 psi pressure-rated pipe. The new potable waterline shall be located at least two feet above the new wastewater line, measured vertically, and at least four feet away, measured horizontally, from the replaced wastewater main or lateral.
(iii) Where a new potable waterline parallels a new wastewater main, the wastewater main or lateral shall be constructed of at least 150 psi pressure-rated pipe. The new potable waterline shall be located at least two feet above the wastewater main or lateral, measured vertically, and at least four feet away, measured horizontally, from the wastewater main or lateral.
(B) New waterline installation - crossing lines.
(i) Where a new potable waterline crosses above a wastewater main or lateral, the segment of the waterline pipe shall be centered over and must be perpendicular to the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. When crossing an existing wastewater main or lateral and it is disturbed or shows signs of leaking, the wastewater main or lateral shall be replaced for at least nine feet in both directions (18 feet total) with at least 150 psi pressure-rated pipe embedded in cement stabilized sand (see clause (v) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end.
(I) The potable waterline shall be at least two feet above an existing, non-pressure rated wastewater main or lateral.
(II) The potable waterline shall be at least six inches above an existing, pressure-rated wastewater main or lateral.
(ii) Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral, the segment of the waterline pipe shall be centered over and shall be perpendicular to the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. The potable waterline shall be at least two feet above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pipe stiffness of 115 psi at 5.0% deflection. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (v) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end. The materials and method of installation shall conform to one of the following options:
(I) Within nine feet horizontally of either side of the waterline, the wastewater pipe and joints shall be constructed with pipe material having a minimum pressure rating of at least 150 psi. An absolute minimum vertical separation distance of two feet shall be provided. The wastewater main or lateral shall be located below the waterline.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

SEWER CAPACITY CALCULATIONS

Design Parameters	
Avg. Flow per EDU =	**300 gpd**
Peaking Factor=	**3**
Infiltration/Inflow (I/I) =	**300 gpd/ac**
n (Roughness Coefficient) =	**0.013**
Percent Full Design =	**90%**

Line	Manhole	Manhole Section		Contributing EDU's	Contributing Area (Ac.)	Average Dry Weather Flow (gpd)	Peak Dry Weather Flow(PDFW)	Infiltration/Inflow (gpd)	Peak Wet Weather Flow(PWWF)	Peak Wet Weather Flow (cfs)	Length of Pipe (ft)	Pipe Slope Invert (ft)		Δ	Slope (%)	Rim Elevation (ft)		Pipe Size I.D. (in)	Velocity @ PWWF Capacity (fps)	100% of Design Q (full flow-min. slope)(cfs)	100% of Design Capacity (full flow-design. Slope) (gpd)	90% of Design Capacity (gpd)	PDWF:Qfull(Not to exceed 90% (gpd)
		From	To									Elev. US	Elev. DS			Elev. US	Elev. DS						
Line A	MH A- 00 to A- 00	STA. 00 + 99.45	STA. 02 + 34.05	408	71.64 Ac	122,400 gpd	367,200 gpd	21,492 gpd	**388,692 gpd**	0.60 cfs	134.60 '	575.40 '	575.25 '	0.15	0.1%	593.48 '	592.13 '	18 "	0.340 fps	3.52 cfs	2,272,505 gpd	2,045,254 gpd	**367,200 gpd**
Line A	MH A- 00 to A- 01	STA. 02 + 34.05	STA. 02 + 66.82	408	71.64 Ac	122,400 gpd	367,200 gpd	21,492 gpd	**388,692 gpd**	0.60 cfs	32.77 '	575.54 '	575.50 '	0.04	0.1%	592.03 '	593.48 '	18 "	0.340 fps	3.68 cfs	2,378,337 gpd	2,140,504 gpd	**367,200 gpd**
Line A	MH A- 01 to A- 01	STA. 02 + 66.82	STA. 05 + 12.03	408	71.26 Ac	122,400 gpd	367,200 gpd	21,378 gpd	**388,578 gpd**	0.60 cfs	245.21 '	575.92 '	575.64 '	0.28	0.1%	591.93 '	592.03 '	18 "	0.340 fps	3.56 cfs	2,300,338 gpd	2,070,304 gpd	**367,200 gpd**
Line A	MH A- 01 to A- 02	STA. 05 + 12.03	STA. 07 + 57.23	408	71.64 Ac	122,400 gpd	367,200 gpd	21,492 gpd	**388,692 gpd**	0.60 cfs	245.20 '	576.30 '	576.02 '	0.28	0.1%	593.17 '	591.93 '	18 "	0.340 fps	3.56 cfs	2,300,385 gpd	2,070,346 gpd	**367,200 gpd**
Line A	MH A- 02 to A- 03	STA. 07 + 57.23	STA. 09 + 76.21	408	71.26 Ac	122,400 gpd	367,200 gpd	21,378 gpd	**388,578 gpd**	0.60 cfs	218.98 '	577.68 '	576.94 '	0.74	0.3%	595.83 '	593.17 '	12 "	0.765 fps	2.08 cfs	1,342,204 gpd	1,207,984 gpd	**367,200 gpd**
Line A	MH A- 03 to A- 04	STA. 09 + 76.21	STA. 13 + 43.28	388	70.30 Ac	116,400 gpd	349,200 gpd	21,090 gpd	**370,290 gpd**	0.57 cfs	367.07 '	579.04 '	577.78 '	1.26	0.3%	598.92 '	595.83 '	12 "	0.729 fps	2.09 cfs	1,352,745 gpd	1,217,470 gpd	**349,200 gpd**
Line A	MH A- 04 to A- 05	STA. 13 + 43.28	STA. 17 + 22.76	378	68.29 Ac	113,400 gpd	340,200 gpd	20,487 gpd	**360,687 gpd**	0.56 cfs	379.48 '	580.44 '	579.14 '	1.3	0.3%	598.54 '	598.92 '	12 "	0.711 fps	2.09 cfs	1,351,395 gpd	1,216,255 gpd	**340,200 gpd**
Line A	MH A- 05 to A- 06	STA. 17 + 22.76	STA. 20 + 76.98	343	61.90 Ac	102,900 gpd	308,700 gpd	18,570 gpd	**327,270 gpd**	0.51 cfs	354.22 '	581.74 '	580.54 '	1.2	0.3%	596.57 '	598.54 '	12 "	0.645 fps	2.08 cfs	1,343,876 gpd	1,209,488 gpd	**308,700 gpd**
Line A	MH A- 06 to A- 00	STA. 20 + 76.98	STA. 22 + 05.27	234	45.18 Ac	70,200 gpd	210,600 gpd	13,554 gpd	**224,154 gpd**	0.35 cfs	128.29 '	582.25 '	581.84 '	0.41	0.3%	596.57 '	596.57 '	12 "	0.442 fps	2.02 cfs	1,305,270 gpd	1,174,743 gpd	**210,600 gpd**
Line B	MH A- 03 to B- 01	STA. 01 + 00.00	STA. 04 + 29.35	20	2.42 Ac	6,000 gpd	18,000 gpd	726 gpd	**18,726 gpd**	0.03 cfs	329.35 '	588.82 '	586.83 '	1.99	0.6%	597.88 '	595.83 '	8 "	0.083 fps	0.94 cfs	608,732 gpd	547,859 gpd	**18,000 gpd**
Line B	MH B- 01 to B- 02	STA. 04 + 29.35	STA. 07 + 41.97	14	2.03 Ac	4,200 gpd	12,600 gpd	609 gpd	**13,209 gpd**	0.02 cfs	312.62 '	590.81 '	588.92 '	1.89	0.6%	599.96 '	597.88 '	8 "	0.059 fps	0.94 cfs	608,907 gpd	548,016 gpd	**12,600 gpd**
Line C	MH A- 05 to C- 01	STA. 01 + 00.00	STA. 04 + 31.57	21	4.36 Ac	6,300 gpd	18,900 gpd	1,308 gpd	**20,208 gpd**	0.03 cfs	331.57 '	589.76 '	588.65 '	1.11	0.3%	599.86 '	598.34 '	8 "	0.090 fps	0.7 cfs	453,108 gpd	407,798 gpd	**18,900 gpd**
Line C	MH C- 01 to C- 02	STA. 04 + 31.57	STA. 07 + 69.86	14	3.04 Ac	4,200 gpd	12,600 gpd	912 gpd	**13,512 gpd**	0.02 cfs	338.29 '	591.02 '	589.86 '	1.16	0.3%	600.19 '	599.86 '	8 "	0.060 fps	0.71 cfs	458,577 gpd	412,720 gpd	**12,600 gpd**
Line D	MH A- 06 to D- 01	STA. 01 + 00.00	STA. 05 + 80.23	104	16.33 Ac	31,200 gpd	93,600 gpd	4,899 gpd	**98,499 gpd**	0.15 cfs	480.23 '	583.45 '	581.84 '	1.61	0.3%	600.80 '	596.57 '	8 "	0.437 fps	0.7 cfs	453,437 gpd	408,093 gpd	**93,600 gpd**
Line D	MH D- 01 to D- 02	STA. 05 + 80.23	STA. 10 + 60.46	87	13.60 Ac	26,100 gpd	78,300 gpd	4,080 gpd	**82,380 gpd**	0.13 cfs	480.23 '	585.17 '	583.55 '	1.62	0.3%	600.03 '	600.80 '	8 "	0.365 fps	0.7 cfs	454,843 gpd	409,358 gpd	**78,300 gpd**
Line E	MH D- 02 to E- 01	STA. 01 + 00.00	STA. 04 + 38.01	68	10.29 Ac	20,400 gpd	61,200 gpd	3,087 gpd	**64,287 gpd**	0.10 cfs	338.01 '	586.40 '	585.27 '	1.13	0.3%	598.34 '	600.03 '	8 "	0.285 fps	0.7 cfs	452,796 gpd	407,517 gpd	**61,200 gpd**
Line E	MH E- 01 to E- 02	STA. 04 + 38.01	STA. 07 + 40.49	62	10.04 Ac	18,600 gpd	55,800 gpd	3,012 gpd	**58,812 gpd**	0.09 cfs	302.48 '	587.51 '	586.50 '	1.01	0.3%	596.83 '	598.34 '	8 "	0.261 fps	0.7 cfs	452,523 gpd	407,271 gpd	**55,800 gpd**
Line E	MH E- 02 to E- 03	STA. 07 + 40.49	STA. 10 + 18.35	32	6.18 Ac	9,600 gpd	28,800 gpd	1,854 gpd	**30,654 gpd**	0.05 cfs	277.86 '	588.48 '	587.61 '	0.87	0.3%	594.88 '	596.83 '	8 "	0.136 fps	0.68 cfs	438,203 gpd	394,382 gpd	**28,800 gpd**
Line E	MH E- 03 to E- 04	STA. 10 + 18.35	STA. 11 + 03.37	21	4.39 Ac	6,300 gpd	18,900 gpd	1,317 gpd	**20,217 gpd**	0.03 cfs	85.02 '	588.87 '	588.58 '	0.29	0.3%	595.61 '	594.88 '	8 "	0.090 fps	0.71 cfs	457,369 gpd	411,632 gpd	**18,900 gpd**
Line K	MH D- 02 to K- 00	STA. 01 + 00.00	STA. 02 + 42.83	2	0.61 Ac	600 gpd	1,800 gpd	183 gpd	**1,983 gpd**	0.00 cfs	142.83 '	585.75 '	585.27 '	0.48	0.3%	600.03 '	600.03 '	8 "	0.009 fps	0.7 cfs	453,983 gpd	408,584 gpd	**1,800 gpd**
Line F	MH E- 01 to F- 01	STA. 01 + 00.00	STA. 04 + 29.40	21	3.42 Ac	6,300 gpd	18,900 gpd	1,026 gpd	**19,926 gpd**	0.03 cfs	329.40 '	590.88 '	586.50 '	4.38	1.3%	599.57 '	598.34 '	8 "	0.088 fps	1.4 cfs	903,033 gpd	812,730 gpd	**18,900 gpd**
Line F	MH F- 01 to F- 02	STA. 04 + 29.40	STA. 06 + 97.94	9	1.47 Ac	2,700 gpd	8,100 gpd	441 gpd	**8,541 gpd**	0.01 cfs	268.54 '	592.91 '	590.98 '	1.93	0.7%	599.05 '	599.57 '	8 "	0.038 fps	1.03 cfs	663,900 gpd	597,510 gpd	**8,100 gpd**
Line G	MH E- 03 to G- 01	STA. 01 + 00.00	STA. 04 + 29.40	19	2.04 Ac	5,700 gpd	17,100 gpd	612 gpd	**17,712 gpd**	0.03 cfs	329.40 '	589.69 '	588.58 '	1.11	0.3%	596.97 '	594.88 '	8 "	0.079 fps	0.7 cfs	454,598 gpd	409,139 gpd	**17,100 gpd**
Line G	MH G- 01 to G- 02	STA. 04 + 29.40	STA. 07 + 15.57	12	1.65 Ac	3,600 gpd	10,800 gpd	495 gpd	**11,295 gpd**	0.02 cfs	286.17 '	590.77 '	589.79 '	0.98	0.3%	598.92 '	596.97 '	8 "	0.050 fps	0.71 cfs	458,278 gpd	412,450 gpd	**10,800 gpd**

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

CORDOVA TRAILS SUBDIVISION UNIT 1

SANITARY SEWER GENERAL NOTES

DATE
07/26/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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5.
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9.

DAVID D. CUPIT II
122076
07.29.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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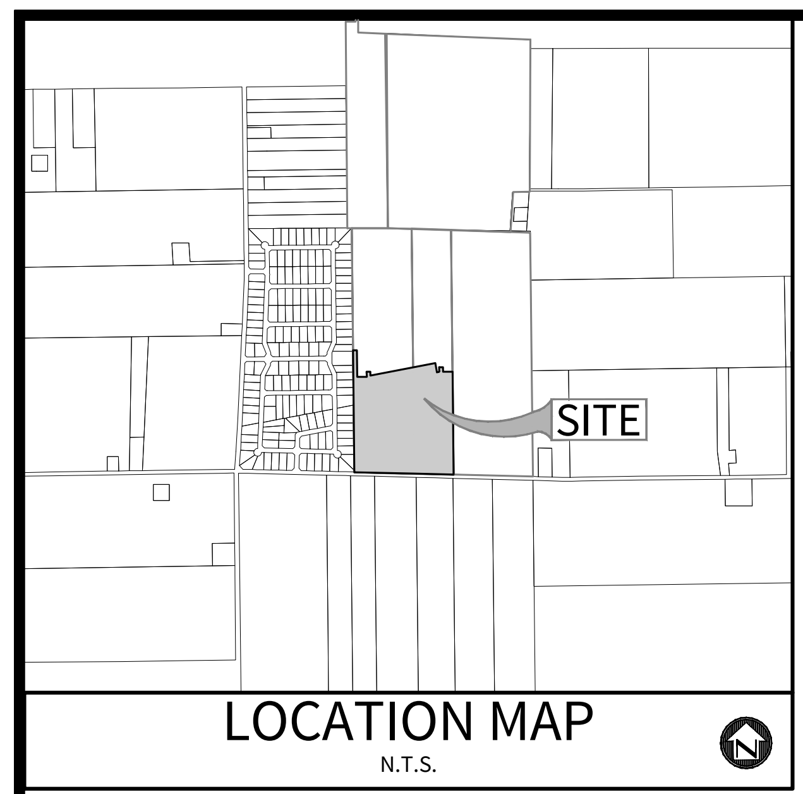


LOCATION MAP
N.T.S.

NOTES:
1. ALL SANITARY SEWER MANHOLES SHALL BE 4' UNLESS OTHERWISE NOTED ON THE PLANS.
2. SANITARY SEWER CLEANOUTS SHALL NOT BE LOCATED WITHIN SIDEWALKS AND/OR DRIVEWAYS.
3. CONTRACTOR IS RESPONSIBLE FOR SHORING AS DEEMED NECESSARY.
4. THE CONTRACTOR SHALL BE AWARE THAT EXISTING OVERHEAD ELECTRIC, 4" & 8" WATER MAINS EXIST ALONG CORDOVA ROAD. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED, POTHOLED TO VERIFY DEPTH, AND COMPARE WITH THE CIVIL PLANS 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.
5. CONTRACTOR TO NOTIFY THE CITY OF SEGUIN AND SPRINGS HILL WATER SUPPLY WITH A 5 DAY ADVANCE NOTIFICATION FOR WORK WHICH AFFECTS USE OF AN EXISTING STREET WHICH CURRENTLY RECEIVES TRAFFIC.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITTING.
7. CONTRACTOR TO PERFORM CONSTRUCTION ONLY DURING THE WORKING HOURS SET BY THE CITY OF SEGUIN.
8. CONTRACTOR IS RESPONSIBLE TO REVEGETATING ALL DISTURBED LIMITS OF THE EXISTING CORDOVA ROAD RIGHT OF WAY UPON COMPLETION OF GRADING AND IMPROVEMENTS.
9. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
10. CONTRACTOR IS REQUIRED TO PROVIDE ACCESS TO ADJACENT PROPERTY AND HOMEOWNERS AT ALL TIMES.
11. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DAMAGED OR REMOVED DRIVEWAYS AND FENCING TO EXISTING OR BETTER CONDITION.
12. CONTRACTOR IS RESPONSIBLE FOR SHORING POWER POLES IF AND AS NEEDED. N.S.P.I.
13. ALL SEWER MAINS 18 IN OR GREATER REQUIRE A 60 IN INTERNAL DIAMETER MANHOLE STRUCTURE.
14. CONTRACTOR WILL BE REQUIRED TO REGRADE ROW BETWEEN SWENSON HEIGHTS AND CORDOVA ROAD PER THE APPROVED CONSTRUCTION PLANS, REESTABLISH GRADES TO MAINTAIN DRAINAGE, PROVIDE TOP SOIL, INSTALL CONCRETE PILOT CHANNEL IF DAMAGED, AND ESTABLISH VEGETATION/GRASS COVER FOR WORK WITHIN THE ROW AS PART OF THE SEWER EXTENSION.
15. ALL DAMAGED TREES, LANDSCAPING, AND/OR RESIDENTIAL FENCING WILL BE REPLACED AT THE EXPENSE OF THE GC AND CORDOVA TRAILS DEVELOPER.

2

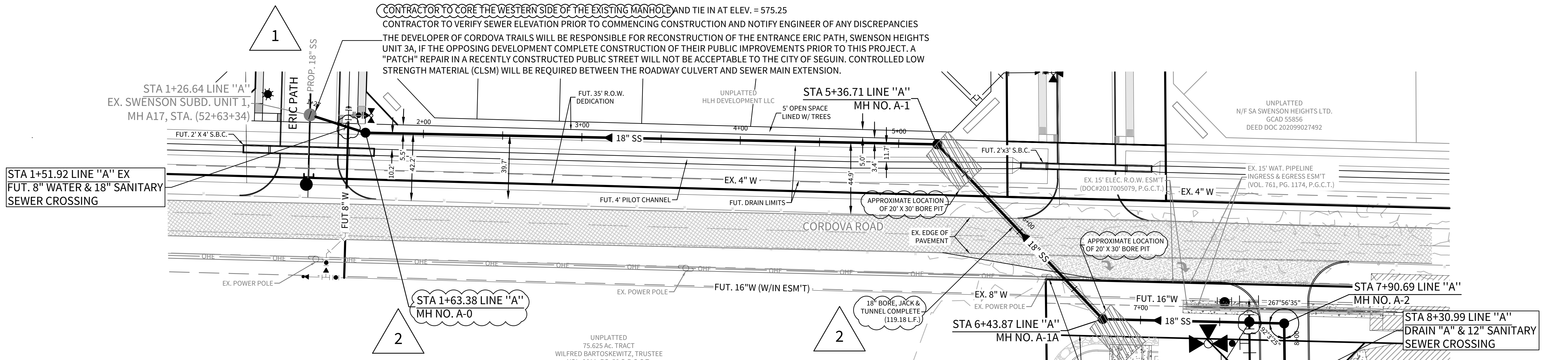
CAUTION!!
EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC., 4" & 8" WATER MAIN ALONG CORDOVA RD.. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IF CONFLICT IS FOUND.

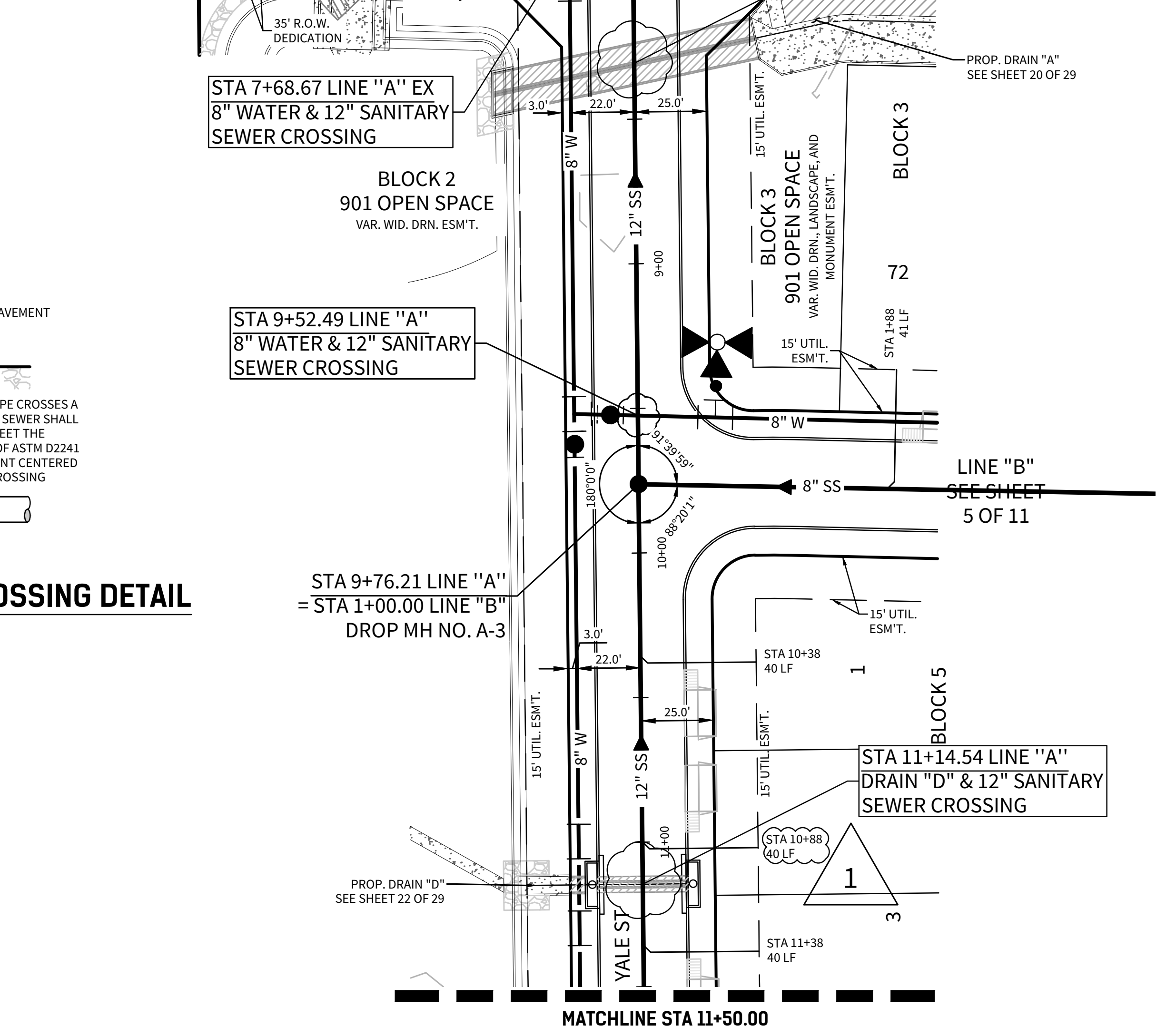
TRENCH EXCAVATION PROTECTION
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER 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.

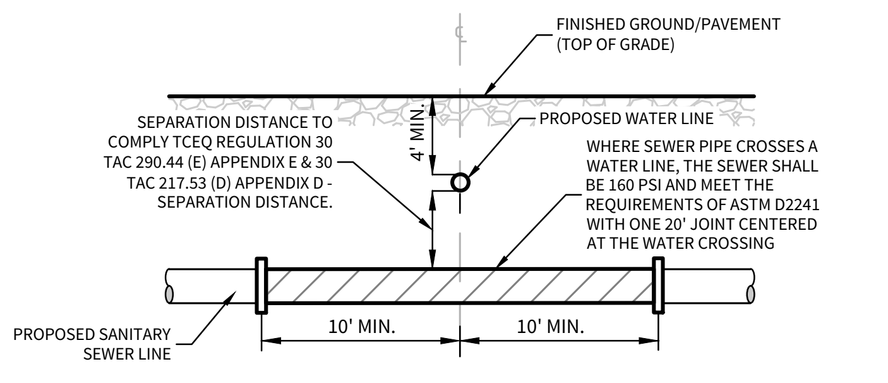
CONTRACTOR TO CORE THE WESTERN SIDE OF THE EXISTING MANHOLE AND TIE IN AT ELEV. = 575.25

CONTRACTOR TO VERIFY SEWER ELEVATION PRIOR TO COMMENCING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES

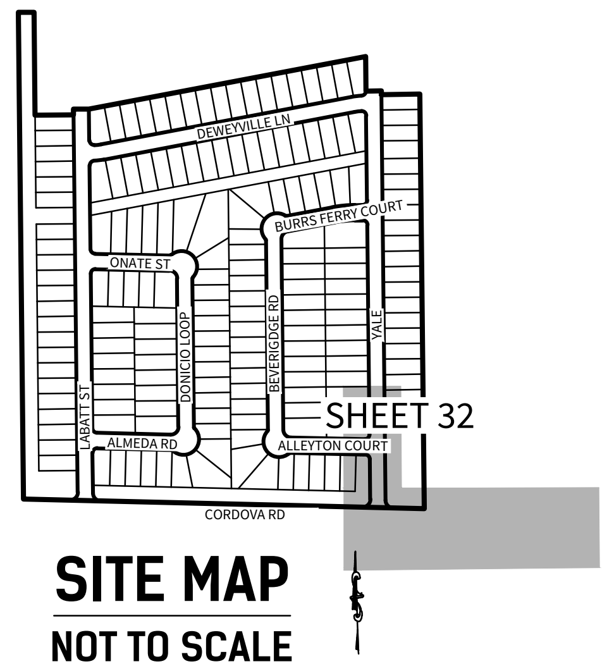
THE DEVELOPER OF CORDOVA TRAILS WILL BE RESPONSIBLE FOR RECONSTRUCTION OF THE ENTRANCE ERIC PATH, SWENSON HEIGHTS UNIT 3A, IF THE OPPOSING DEVELOPMENT COMPLETE CONSTRUCTION OF THEIR PUBLIC IMPROVEMENTS PRIOR TO THIS PROJECT. A "PATCH" REPAIR IN A RECENTLY CONSTRUCTED PUBLIC STREET WILL NOT BE ACCEPTABLE TO THE CITY OF SEGUIN. CONTROLLED LOW STRENGTH MATERIAL (CLSM) WILL BE REQUIRED BETWEEN THE ROADWAY CULVERT AND SEWER MAIN EXTENSION.






FINISHED GROUND/PAVEMENT
(TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.



SITE MAP
NOT TO SCALE

SCALE: 1"=50'

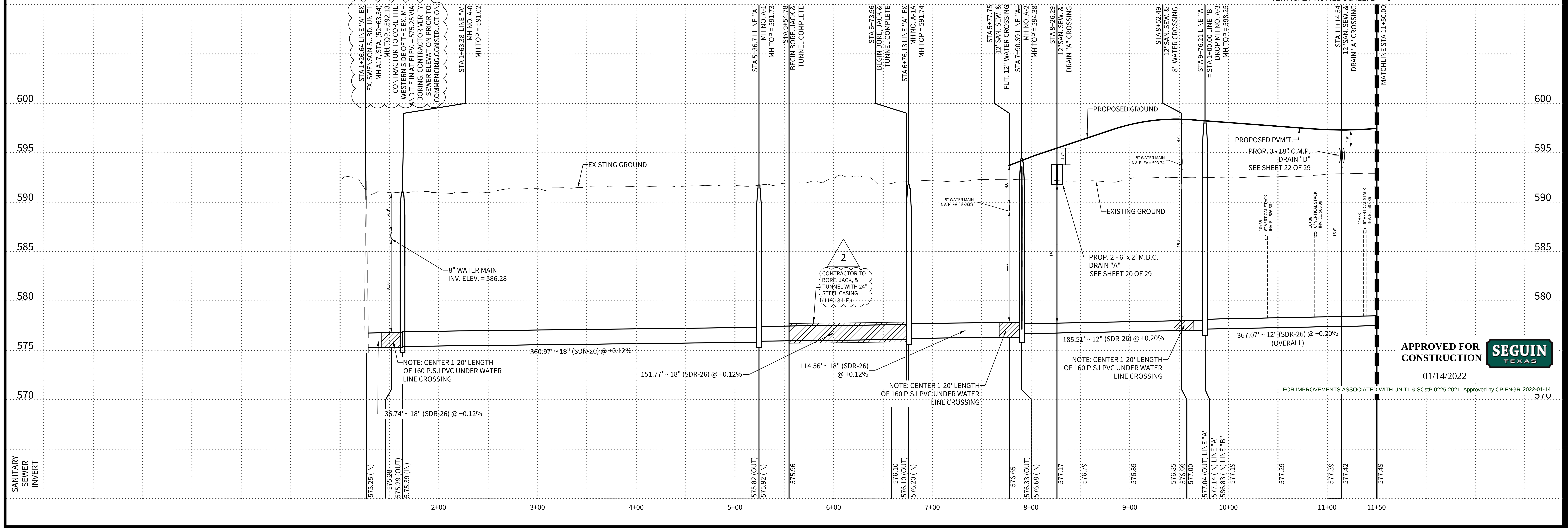
0 50 100

LEGEND

PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
EXISTING OVERHEAD ELECTRIC	OHE
FUTURE WATER LINE	FUT. XX" W
EXISTING WATER LINE	EX. XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●
EXISTING POWER POLE	
EXISTING PAVEMENT	▨
PROPOSED PAVEMENT	▨
DRIVEWAYS	
MILL & OVERLAY HATCH	▨
OPEN TRENCH	▨

LINE "A"
STA. 0+99.45 TO STA. 11+50.00

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



APPROVED FOR CONSTRUCTION

SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

CUDE
EST. 1980
ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1
SANITARY SEWER PLAN & PROFILE LINE "A"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 07/26/2021 - REVISED MH STYLE AND TIE-IN NOTES
2. 09/23/2021 - REMOVED TCP NOTES, JACK & BORE
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C32

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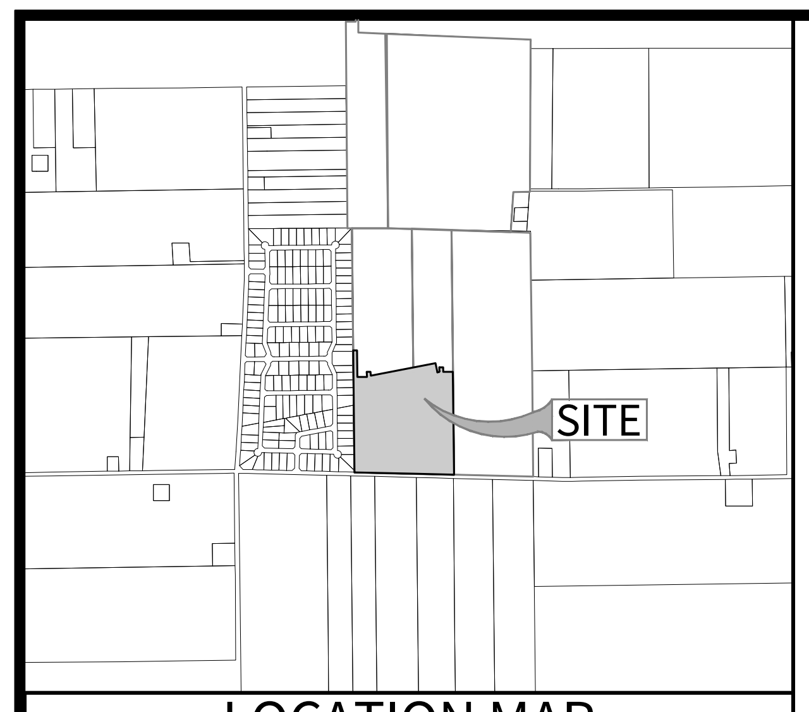
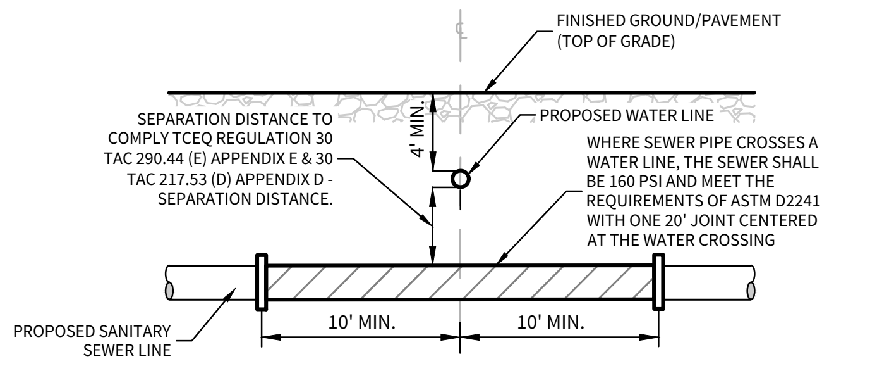


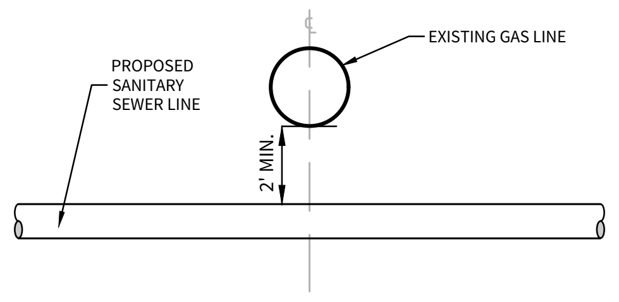
LOCATION MAP

N.T.S.


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.



SANITARY SEWER/ GAS CROSSING DETAIL

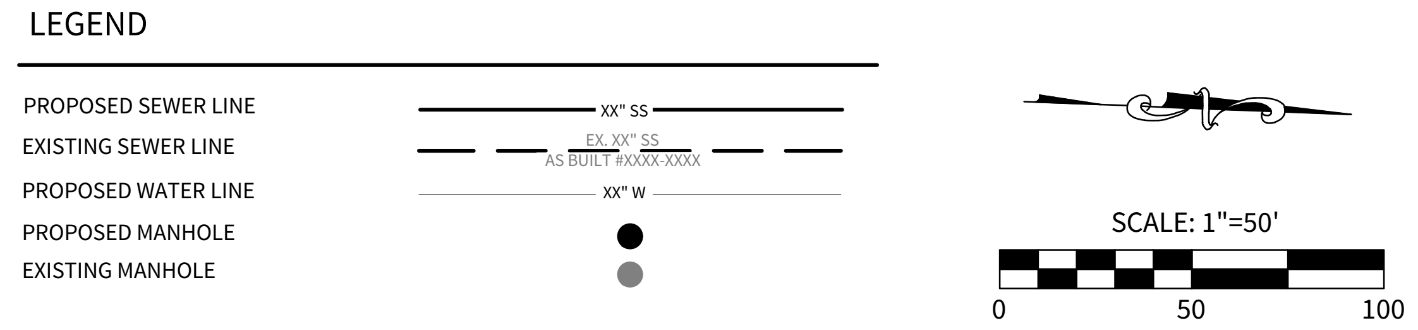
N.T.S.

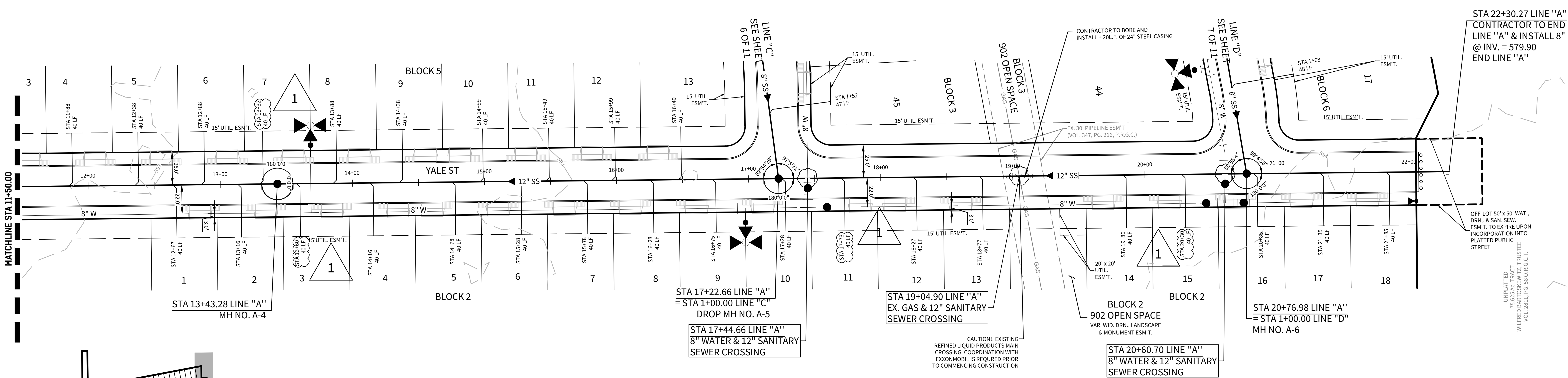
CAUTION!!

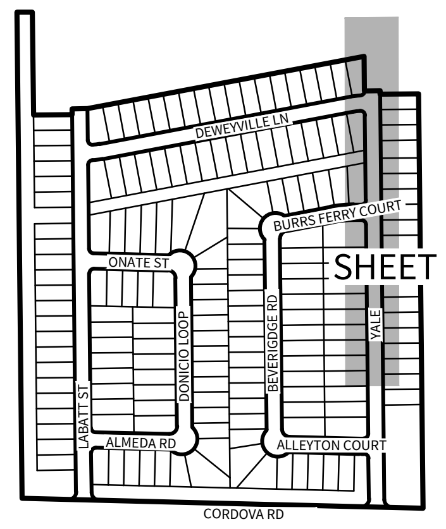
EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER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

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.







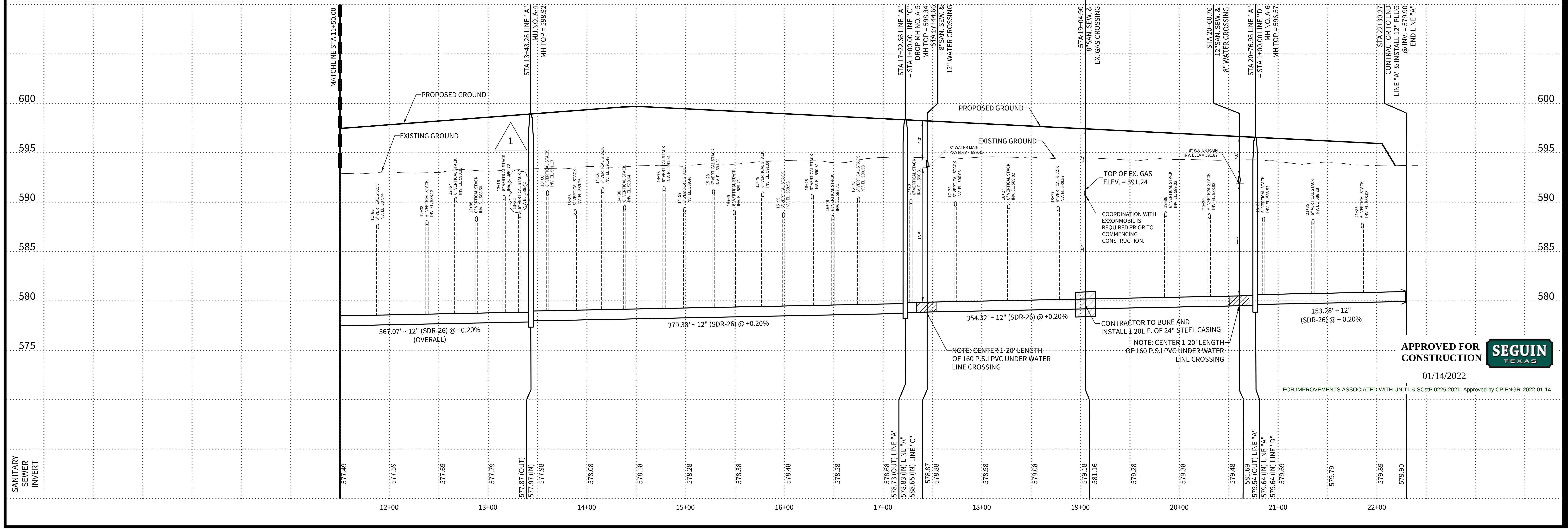
SITE MAP

NOT TO SCALE

LINE "A"

STA. 11+50.00 TO STA. 22+05.27

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


MATCHLINE STA 11+50.00
STA 13+43.28 LINE "A"
MH NO. A-4
MH TOP = 598.92
STA 17+22.66 LINE "A"
= STA 1+00.00 LINE "C"
DROP MH NO. A-5
MH TOP = 598.34
STA 17+44.66
8" SAN. SEW. &
12" WATER CROSSING
STA 19+04.90
8" SAN. SEW. &
EX. GAS CROSSING
STA 20+60.70
12" SAN. SEW. &
8" WATER CROSSING
STA 20+76.98 LINE "A"
= STA 1+00.00 LINE "D"
MH NO. A-6
MH TOP = 596.57
STA 22+30.27
CONTRACTOR TO END
LINE "A" & INSTALL 12" PLUG
@ INV. = 579.90
END LINE "A"
600
595
590
585
580
575
PROPOSED GROUND
EXISTING GROUND
1
8" WATER MAIN INV. ELEV = 593.45
8" WATER MAIN INV. ELEV = 591.87
4.0'
13.5'
6.2'
10.4'
11.3'
11+88 6" VERTICAL STACK INV. EL. 587.74
12+38 6" VERTICAL STACK INV. EL. 588.12
12+67 6" VERTICAL STACK INV. EL. 590.35
12+88 6" VERTICAL STACK INV. EL. 588.50
13+16 6" VERTICAL STACK INV. EL. 590.72
13+32 6" VERTICAL STACK INV. EL. 588.42
13+60 6" VERTICAL STACK INV. EL. 591.17
13+88 6" VERTICAL STACK INV. EL. 589.26
14+16 6" VERTICAL STACK INV. EL. 591.48
14+38 6" VERTICAL STACK INV. EL. 589.64
14+78 6" VERTICAL STACK INV. EL. 591.61
14+99 6" VERTICAL STACK INV. EL. 589.46
15+28 6" VERTICAL STACK INV. EL. 591.31
15+49 6" VERTICAL STACK INV. EL. 589.21
15+78 6" VERTICAL STACK INV. EL. 591.06
15+99 6" VERTICAL STACK INV. EL. 588.96
16+28 6" VERTICAL STACK INV. EL. 590.81
16+49 6" VERTICAL STACK INV. EL. 588.71
16+75 6" VERTICAL STACK INV. EL. 590.58
17+28 6" VERTICAL STACK INV. EL. 590.31
17+73 6" VERTICAL STACK INV. EL. 590.08
18+27 6" VERTICAL STACK INV. EL. 589.82
18+77 6" VERTICAL STACK INV. EL. 589.57
19+86 6" VERTICAL STACK INV. EL. 589.02
20+30 6" VERTICAL STACK INV. EL. 588.83
20+85 6" VERTICAL STACK INV. EL. 588.53
21+35 6" VERTICAL STACK INV. EL. 588.28
21+85 6" VERTICAL STACK INV. EL. 588.03
TOP OF EX. GAS ELEV. = 591.24
COORDINATION WITH EXXONMOBIL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
367.07' ~ 12" (SDR-26) @ +0.20% (OVERALL)
379.38' ~ 12" (SDR-26) @ +0.20%
354.32' ~ 12" (SDR-26) @ +0.20%
153.28' ~ 12" (SDR-26) @ + 0.20%
NOTE: CENTER 1-20' LENGTH OF 160 P.S.I PVC UNDER WATER LINE CROSSING
CONTRACTOR TO BORE AND INSTALL ± 20L.F. OF 24" STEEL CASING
NOTE: CENTER 1-20' LENGTH OF 160 P.S.I PVC UNDER WATER LINE CROSSING
SANITARY SEWER INVERT
577.49
577.59
577.69
577.79
577.87 (OUT)
577.97 (IN)
577.98
578.08
578.18
578.28
578.38
578.48
578.58
578.68
578.73 (OUT) LINE "A"
578.83 (IN) LINE "A"
588.65 (IN) LINE "C"
578.87
578.88
578.98
579.08
579.18
581.16
579.28
579.38
579.48
581.69
579.54 (OUT) LINE "A"
579.64 (IN) LINE "A"
579.69 (IN) LINE "D"
579.69
579.79
579.89
579.90
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

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

CORDOVA TRAILS SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "A"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2. 09/23/2021 - REVISED LATERAL LOCATION
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C33

4 OF 11

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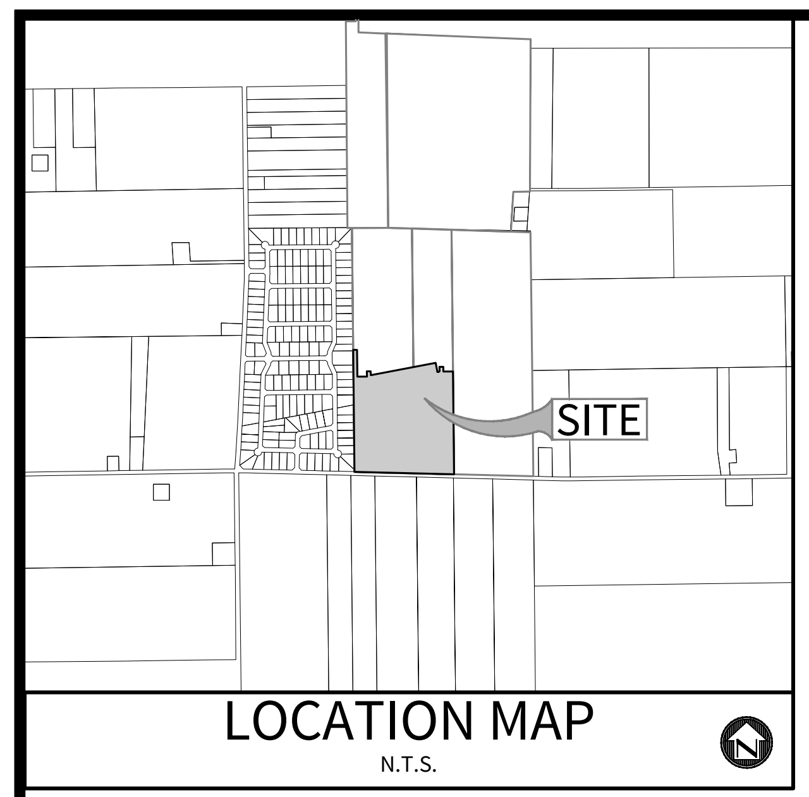
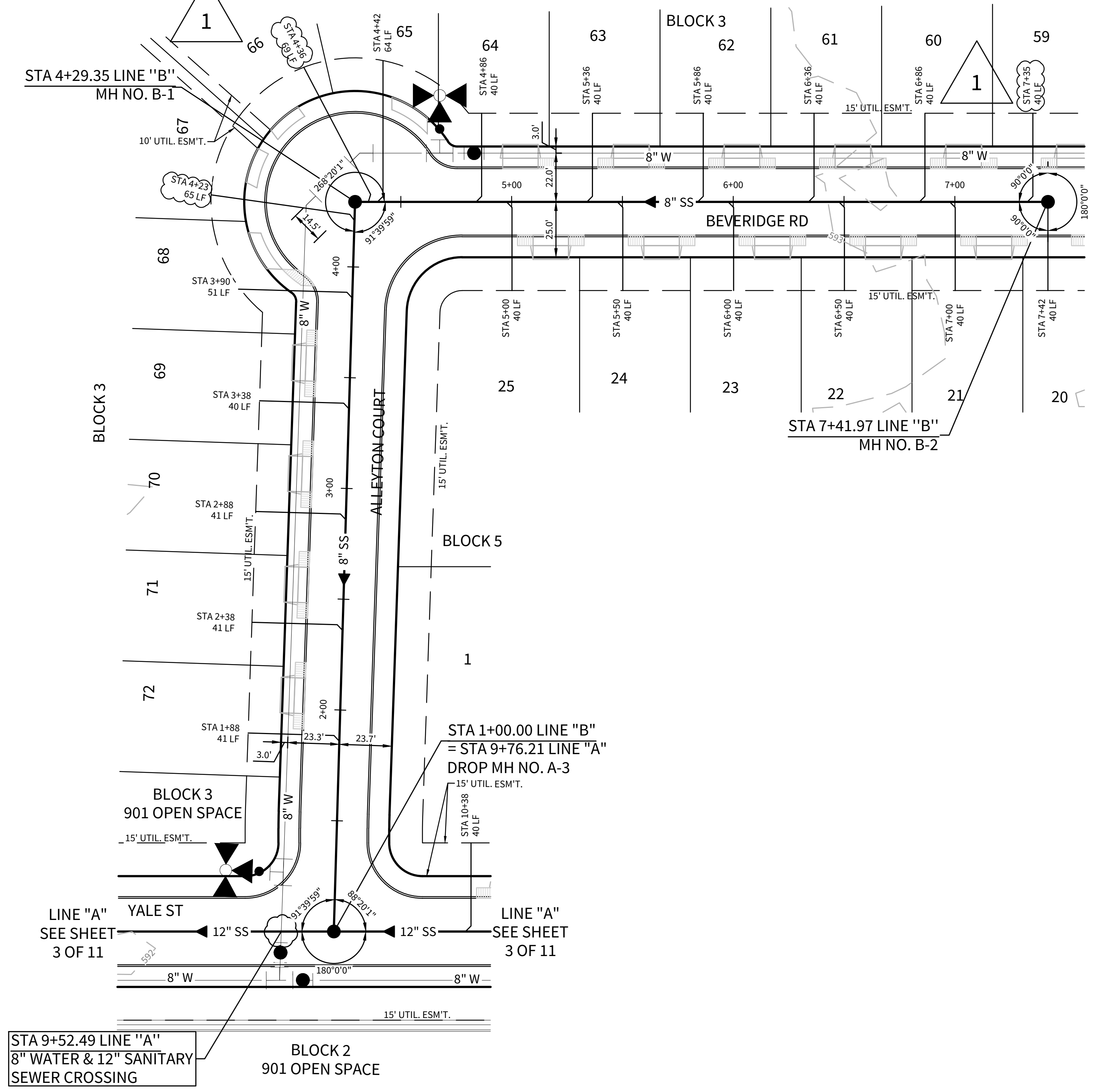


LOCATION MAP
N.T.S.

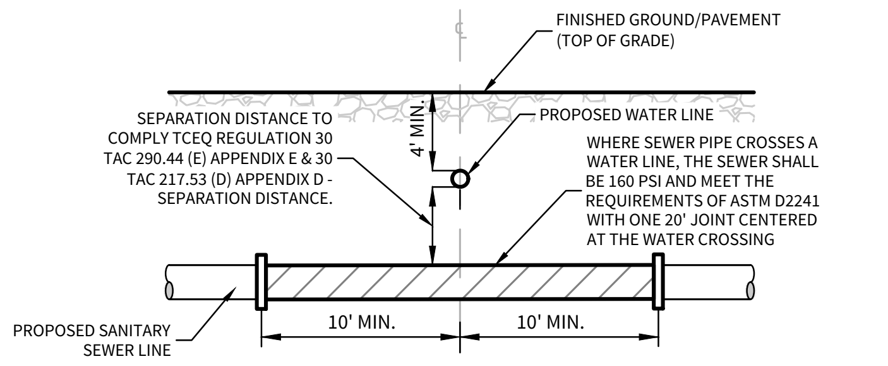


SCALE: 1"=50'

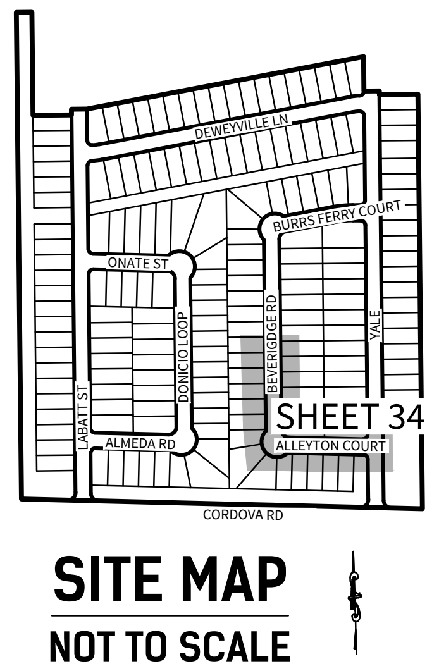
0 50 100

LEGEND

PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
4' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.



SITE MAP
NOT TO SCALE

CAUTION!!

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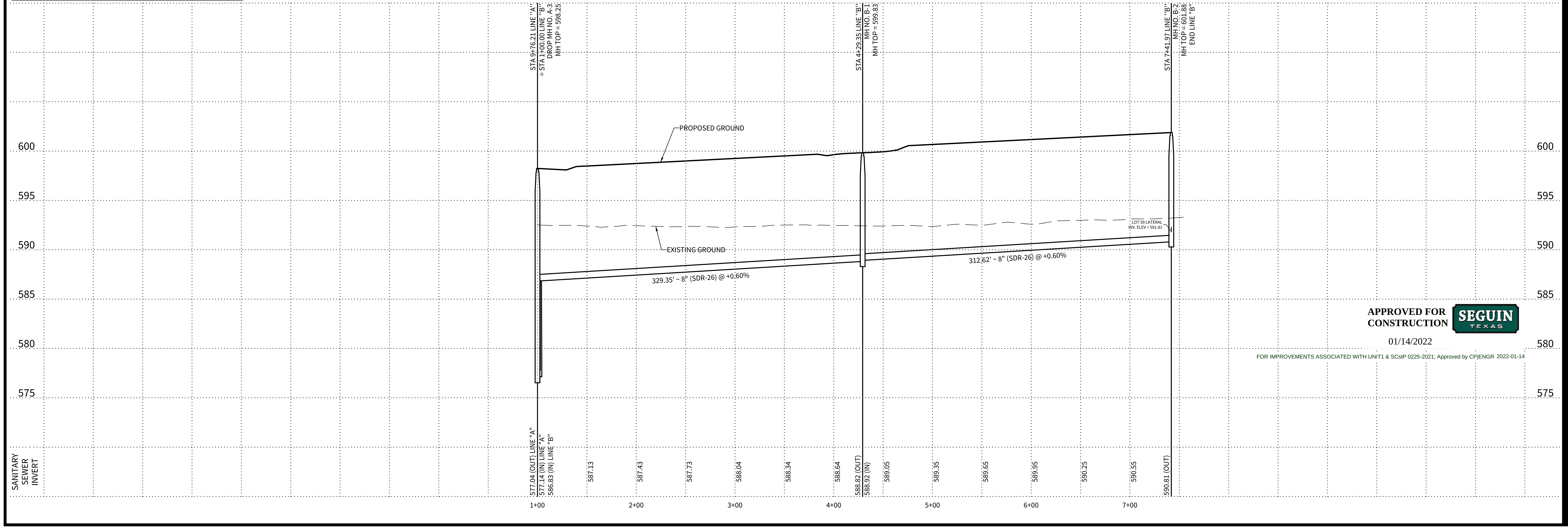
LINE "B"

STA. 1+00.00 TO STA. 7+41.97

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



APPROVED FOR CONSTRUCTION
SEGUIN
TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

4122 Pond Hill Road, Suite 101
San Antonio, Texas 78231
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CORDOVA TRAILS
SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "B"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2.
3.
4.
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DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C34

5 OF 11

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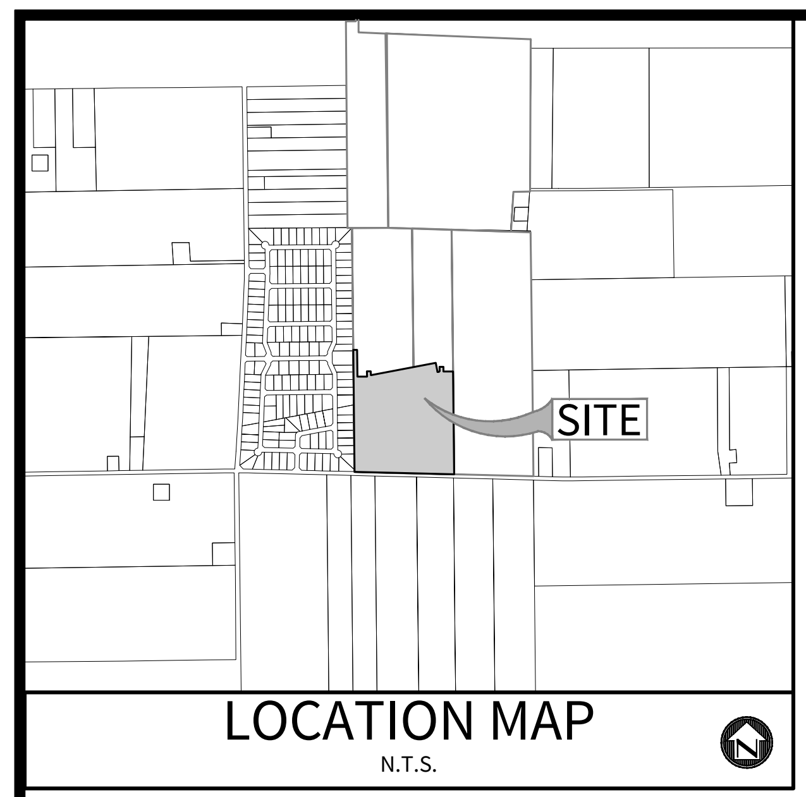
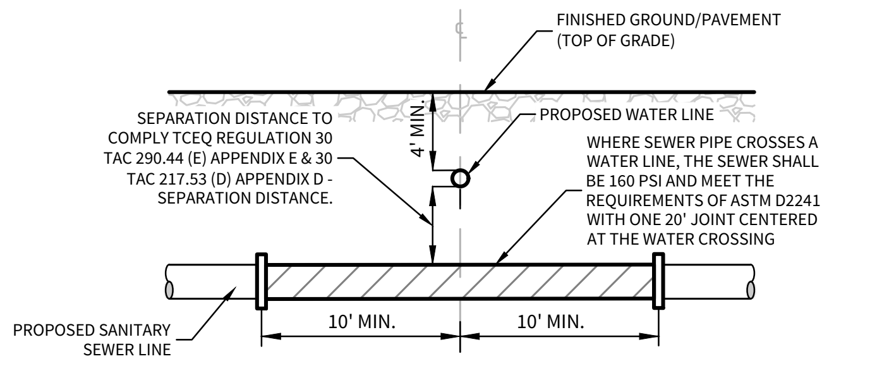


LOCATION MAP
N.T.S.


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
4' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

TRENCH EXCAVATION PROTECTION

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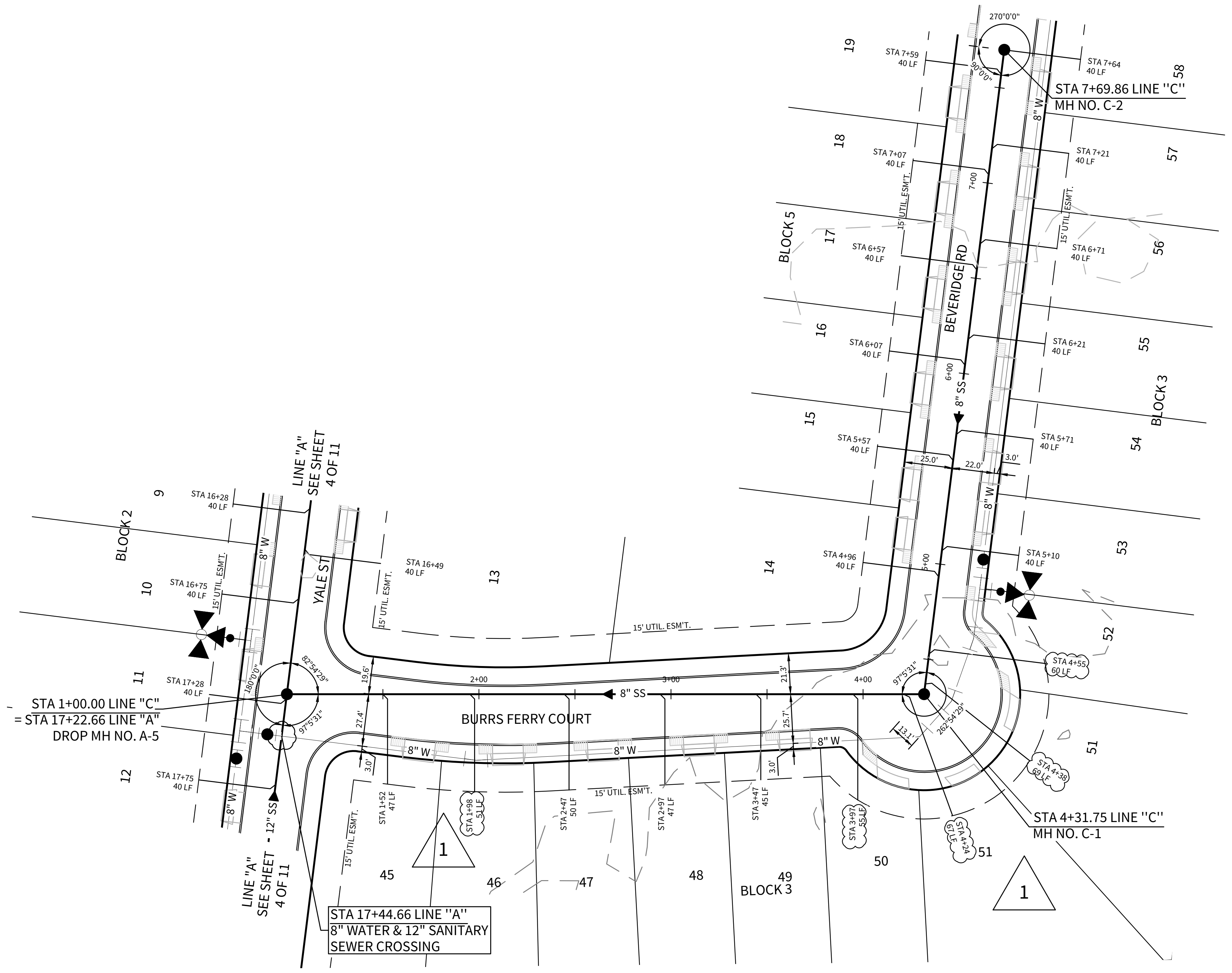
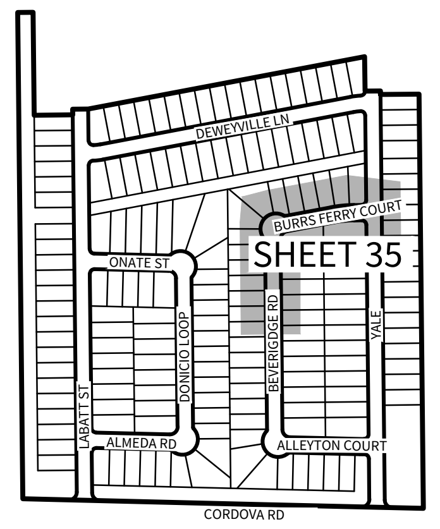


SCALE: 1"=50'
0 50 100

LEGEND

PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●

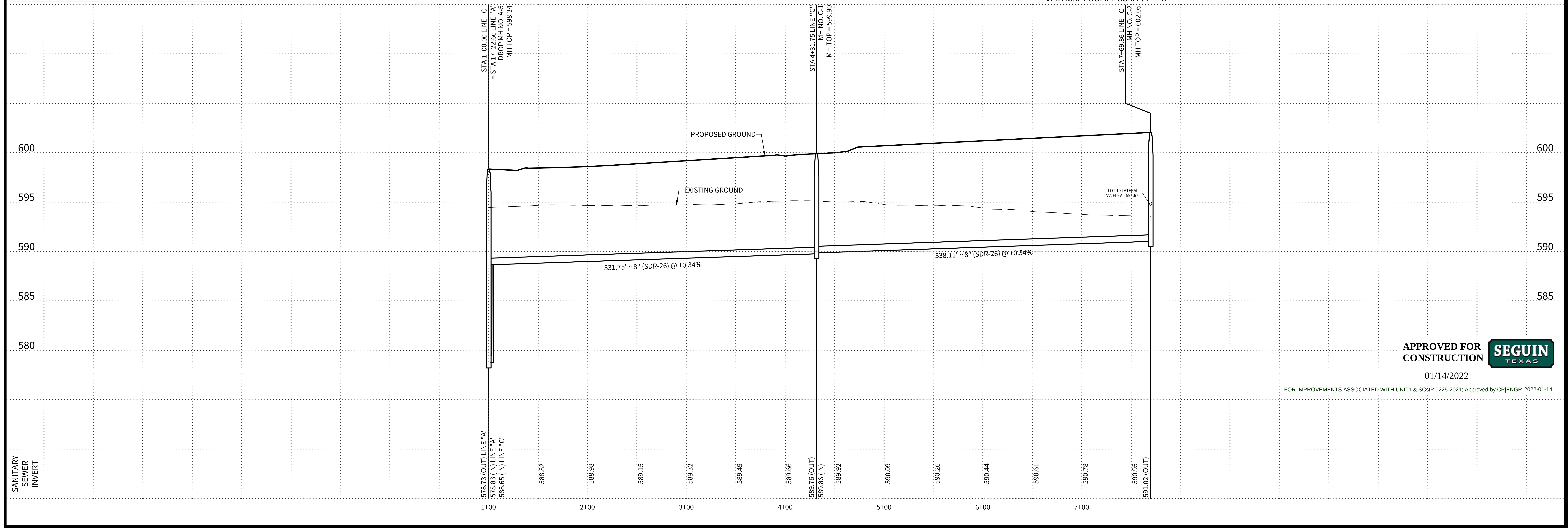


SITE MAP
NOT TO SCALE

LINE "C"

STA. 1+00.00 TO STA. 7+69.86

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



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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EST. 1980
CUDE
ENGINEERS

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

CORDOVA TRAILS
SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "C"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2.
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DAVID D. CUPIT II
122076
12.11.21

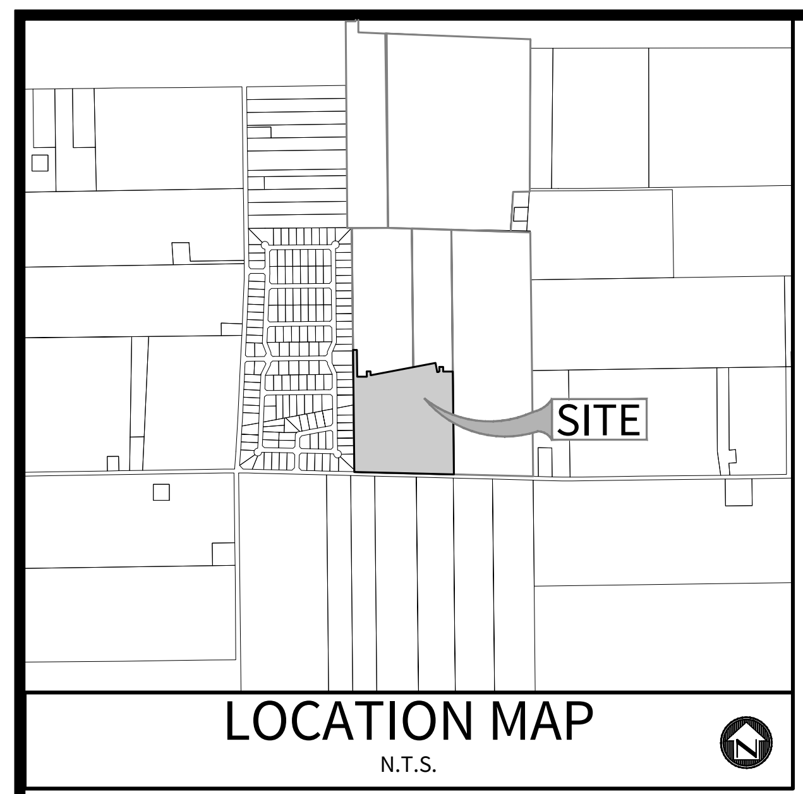
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C35

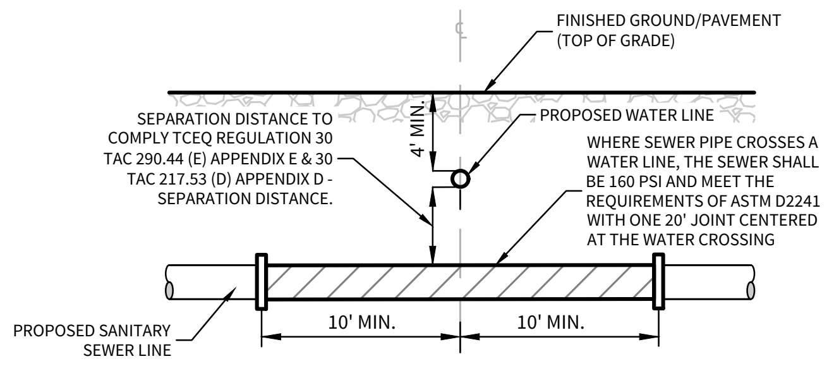
6 OF 11

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.

P:\03480\002\2-Drawings\01_XX_SSPP_C.dwg 2021/12/05 9:43pm jguerrero



LOCATION MAP
N.T.S.

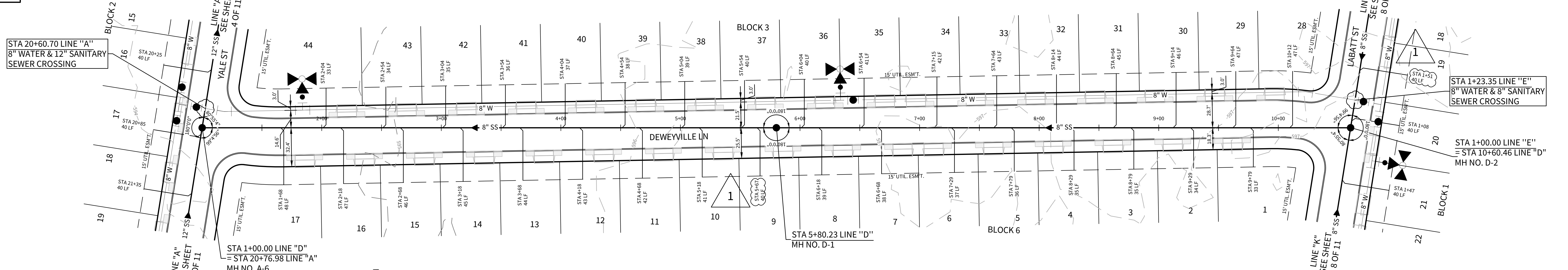

FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.

LEGEND

PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●

SCALE: 1"=50'
0 50 100

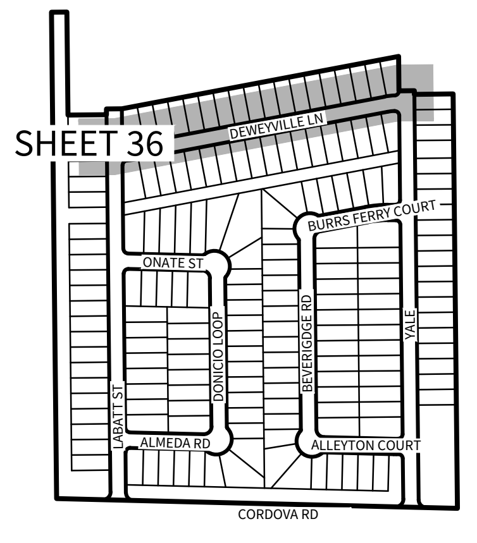


CAUTION!!

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.

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.

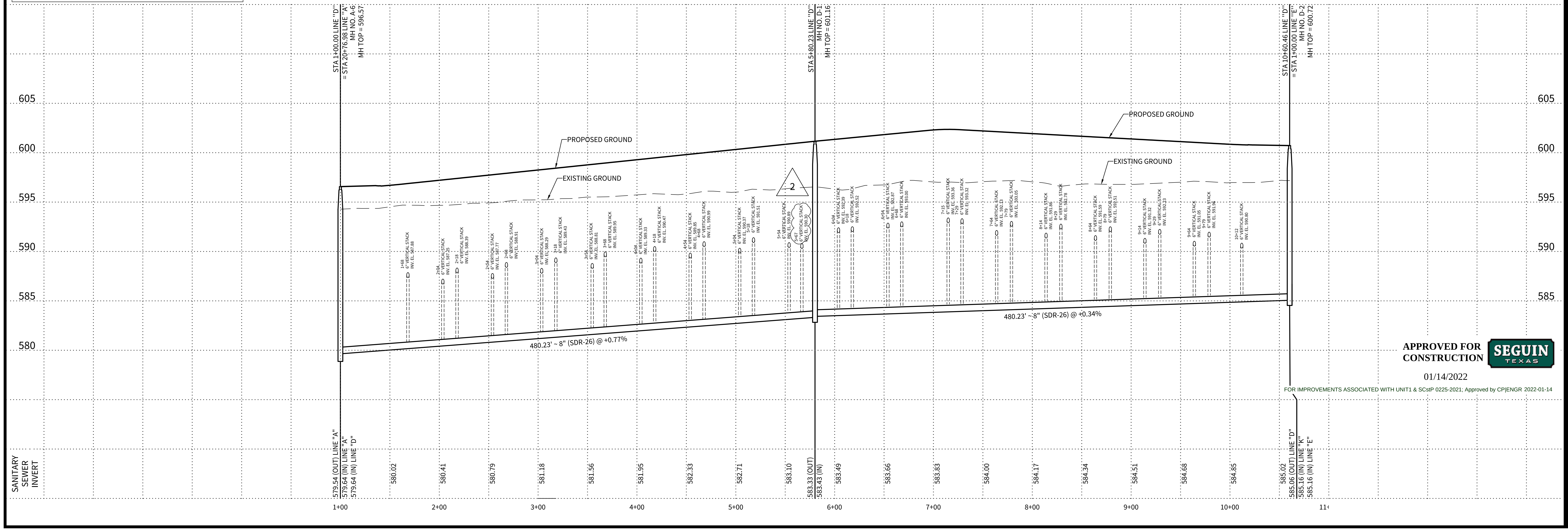


SITE MAP
NOT TO SCALE

LINE "D"

STA. 1+00.00 TO STA. 10+60.46

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


STA 1+00.00 LINE "D"
= STA 20+76.98 LINE "A"
MH NO. A-6
MH TOP = 596.57
STA 5+80.23 LINE "D"
MH NO. D-1
MH TOP = 601.16
STA 10+60.46 LINE "D"
= STA 1+00.00 LINE "E"
MH NO. D-2
MH TOP = 600.72
605
600
595
590
585
580
PROPOSED GROUND
EXISTING GROUND
2
1+68 6" VERTICAL STACK INV. EL. 587.88
2+04 6" VERTICAL STACK INV. EL. 587.25
2+18 6" VERTICAL STACK INV. EL. 588.39
2+54 6" VERTICAL STACK INV. EL. 587.77
2+68 6" VERTICAL STACK INV. EL. 588.91
3+04 6" VERTICAL STACK INV. EL. 588.29
3+18 6" VERTICAL STACK INV. EL. 589.43
3+54 6" VERTICAL STACK INV. EL. 588.81
3+68 6" VERTICAL STACK INV. EL. 589.95
4+04 6" VERTICAL STACK INV. EL. 589.33
4+18 6" VERTICAL STACK INV. EL. 590.47
4+54 6" VERTICAL STACK INV. EL. 589.85
4+68 6" VERTICAL STACK INV. EL. 590.99
5+04 6" VERTICAL STACK INV. EL. 590.37
5+18 6" VERTICAL STACK INV. EL. 591.51
5+54 6" VERTICAL STACK INV. EL. 590.89
5+67 6" VERTICAL STACK INV. EL. 590.30
6+04 6" VERTICAL STACK INV. EL. 592.39
6+18 6" VERTICAL STACK INV. EL. 592.52
6+54 6" VERTICAL STACK INV. EL. 592.87
6+68 6" VERTICAL STACK INV. EL. 593.00
7+15 6" VERTICAL STACK INV. EL. 593.36
7+29 6" VERTICAL STACK INV. EL. 593.32
7+64 6" VERTICAL STACK INV. EL. 592.13
7+79 6" VERTICAL STACK INV. EL. 593.05
8+14 6" VERTICAL STACK INV. EL. 591.86
8+29 6" VERTICAL STACK INV. EL. 592.78
8+64 6" VERTICAL STACK INV. EL. 591.59
8+79 6" VERTICAL STACK INV. EL. 592.51
9+14 6" VERTICAL STACK INV. EL. 591.32
9+29 6" VERTICAL STACK INV. EL. 592.23
9+64 6" VERTICAL STACK INV. EL. 591.05
9+79 6" VERTICAL STACK INV. EL. 591.96
10+12 6" VERTICAL STACK INV. EL. 590.80
480.23' ~ 8" (SDR-26) @ +0.77%
480.23' ~ 8" (SDR-26) @ +0.34%
SANITARY SEWER INVERT
579.54 (OUT) LINE "A"
579.64 (IN) LINE "A"
579.64 (IN) LINE "D"
580.02
580.41
580.79
581.18
581.56
581.95
582.33
582.71
583.10
583.33 (OUT)
583.43 (IN)
583.49
583.66
583.83
584.00
584.17
584.34
584.51
584.68
584.85
585.02
585.06 (OUT) LINE "D"
585.16 (IN) LINE "K"
585.16 (IN) LINE "E"
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS
SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "D"

DATE	12/05/2021
PROJECT NO.	03480.002
DRAWN BY	AC
CHECKED BY	DDC/JC

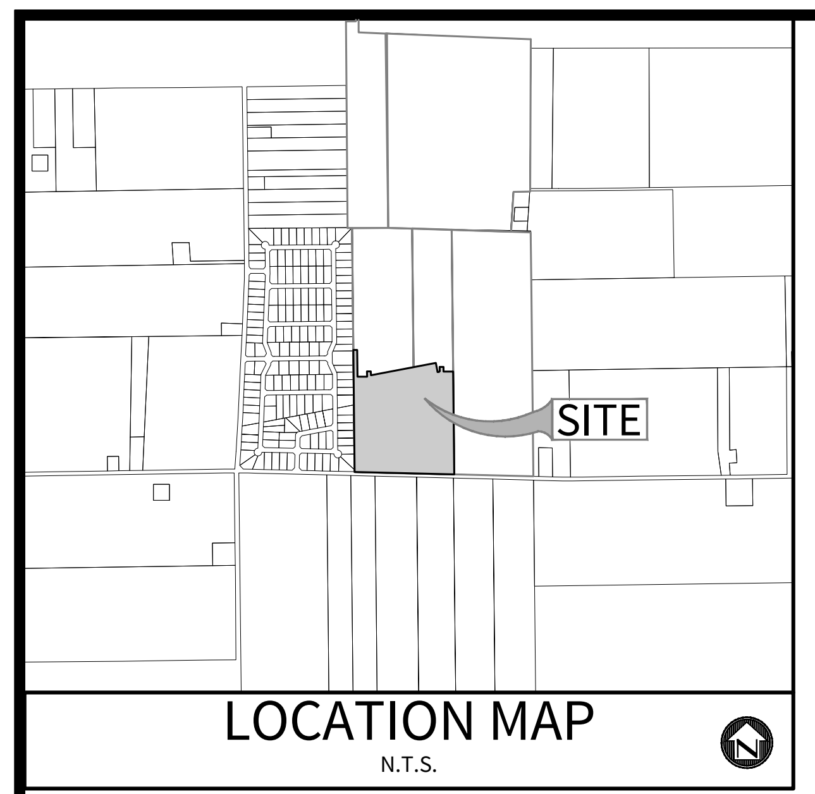
REVISIONS
1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2. 09/23/2021 - REVISED LATERAL LOCATION
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

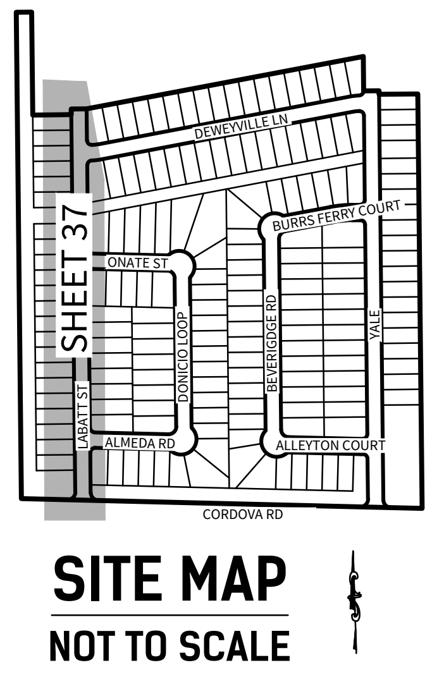
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C36

P:\03480\002\2-Drawings\01_XX_SSPP_D.dwg 2021/12/05 9:44pm jguerrero



LOCATION MAP
N.T.S.

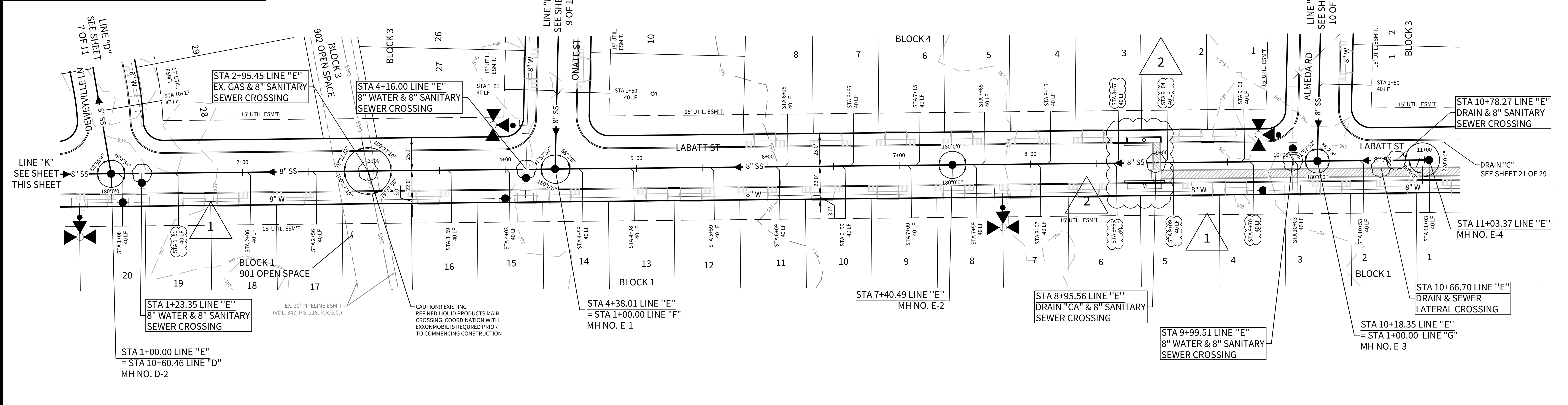


SITE MAP
NOT TO SCALE

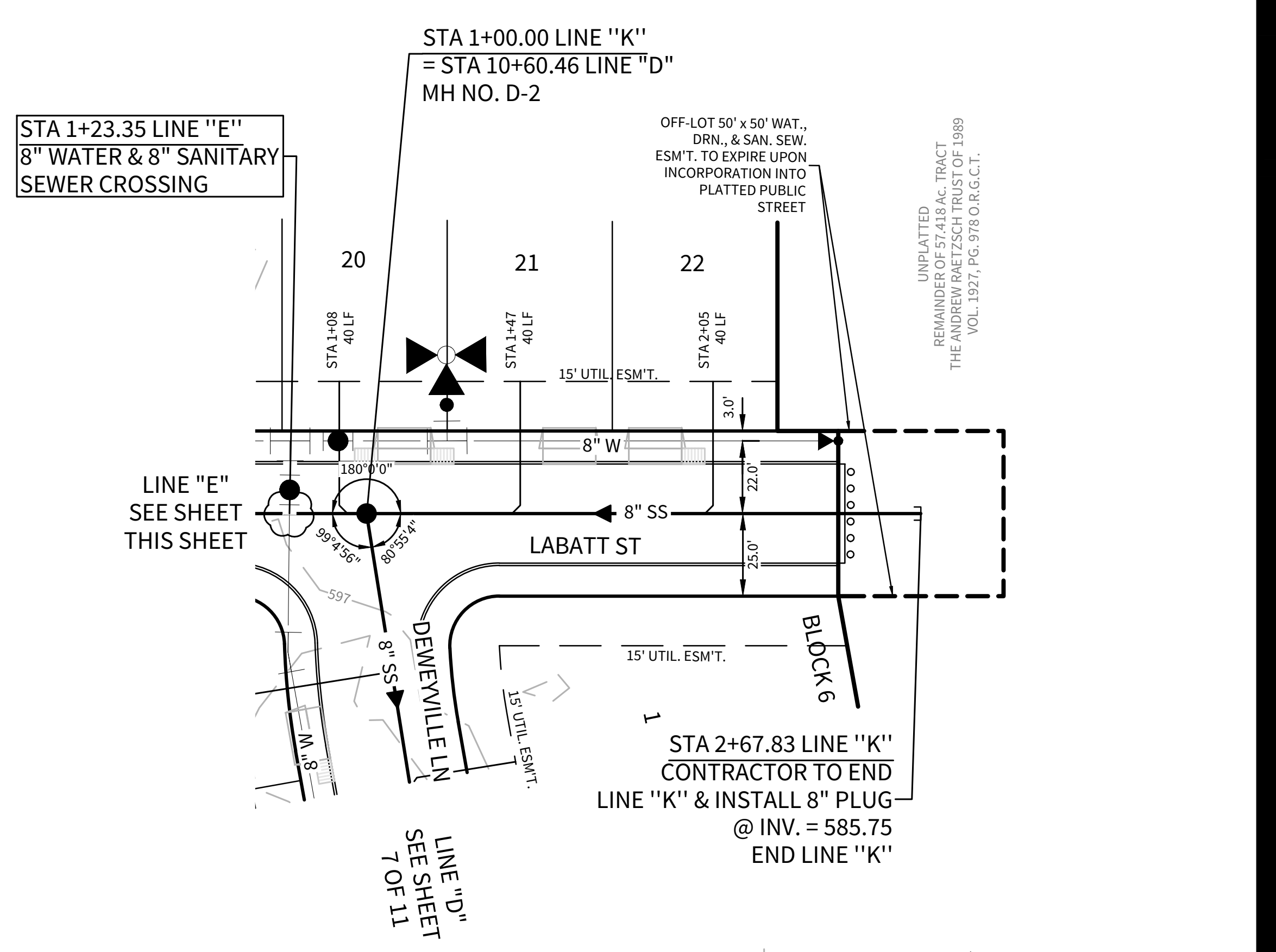
LEGEND

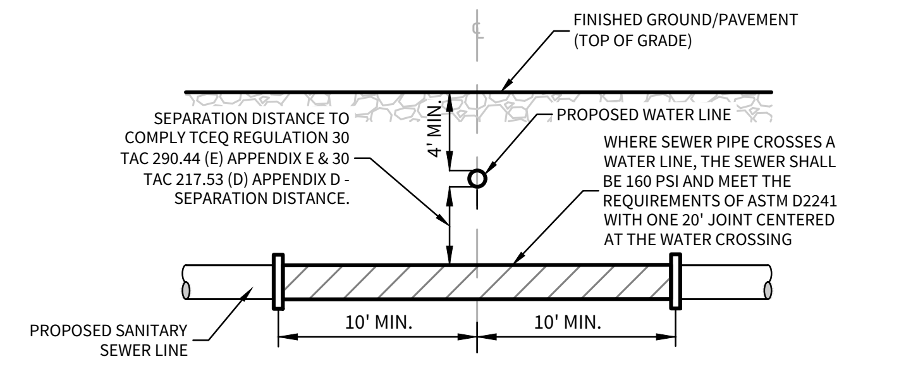
PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●

SCALE: 1"=50'
0 50 100


LINE "D" SEE SHEET 7 OF 11
DEWEYVILLE LN
LINE "K" SEE SHEET THIS SHEET
8" SS
8" W
STA 1+23.35 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 1+00.00 LINE "E" = STA 10+60.46 LINE "D" MH NO. D-2
STA 2+95.45 LINE "E" EX. GAS & 8" SANITARY SEWER CROSSING
BLOCK 3 902 OPEN SPACE
BLOCK 1 901 OPEN SPACE
EX. 30' PIPELINE ESMT (VOL. 347, PG. 216, P.R.G.C.)
CAUTION! EXISTING REFINED LIQUID PRODUCTS MAIN CROSSING. COORDINATION WITH EXXONMOBIL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION
STA 4+16.00 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 4+38.01 LINE "E" = STA 1+00.00 LINE "F" MH NO. E-1
LINE "F" SEE SHEET 9 OF 11
ONATE ST
LABATT ST
15' UTIL. ESM'T.
BLOCK 4
STA 7+40.49 LINE "E" MH NO. E-2
STA 8+95.56 LINE "E" DRAIN "CA" & 8" SANITARY SEWER CROSSING
STA 9+99.51 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
LINE "G" SEE SHEET 10 OF 11
ALMEDA RD
STA 10+18.35 LINE "E" = STA 1+00.00 LINE "G" MH NO. E-3
STA 10+66.70 LINE "E" DRAIN & SEWER LATERAL CROSSING
STA 10+78.27 LINE "E" DRAIN & 8" SANITARY SEWER CROSSING
STA 11+03.37 LINE "E" MH NO. E-4
DRAIN "C" SEE SHEET 21 OF 29
BLOCK 1
BLOCK 3

SCALE: 1"=50'
0 50 100


STA 1+00.00 LINE "K" = STA 10+60.46 LINE "D" MH NO. D-2
STA 1+23.35 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
OFF-LOT 50' x 50' WAT., DRN., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET
LINE "E" SEE SHEET THIS SHEET
LABATT ST
DEWEYVILLE LN
BLOCK 6
8" W
8" SS
STA 2+67.83 LINE "K" CONTRACTOR TO END LINE "K" & INSTALL 8" PLUG @ INV. = 585.75 END LINE "K"
LINE "D" SEE SHEET 7 OF 11


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
4' MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
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.

NOTES:

1. ALL SANITARY SEWER MANHOLES SHALL BE 4' UNLESS OTHERWISE NOTED ON THE PLANS.
2. SANITARY SEWER CLEANOUTS SHALL NOT BE LOCATED WITHIN SIDEWALKS AND/OR DRIVEWAYS

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC., 4" & 8" WATER MAIN ALONG CORDOVA RD.. 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.

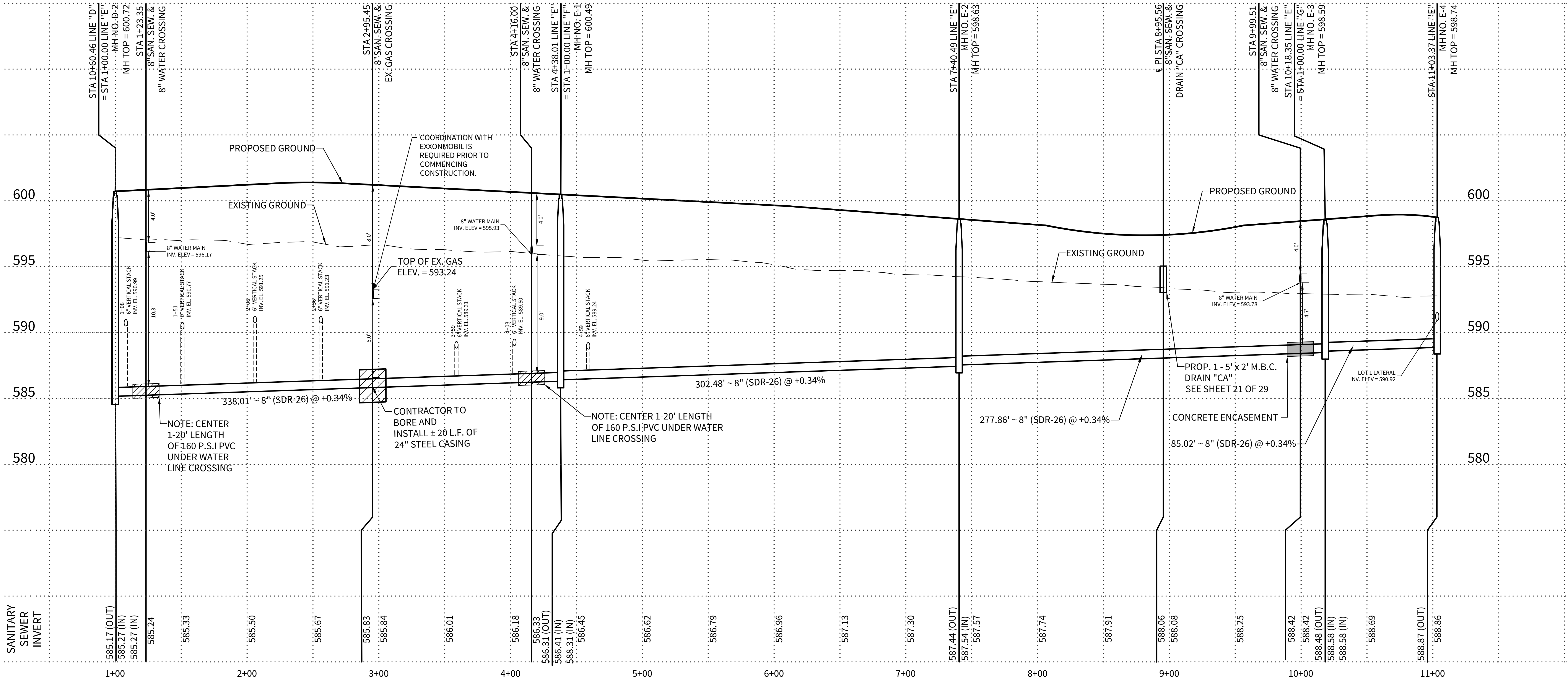
LINE "E"

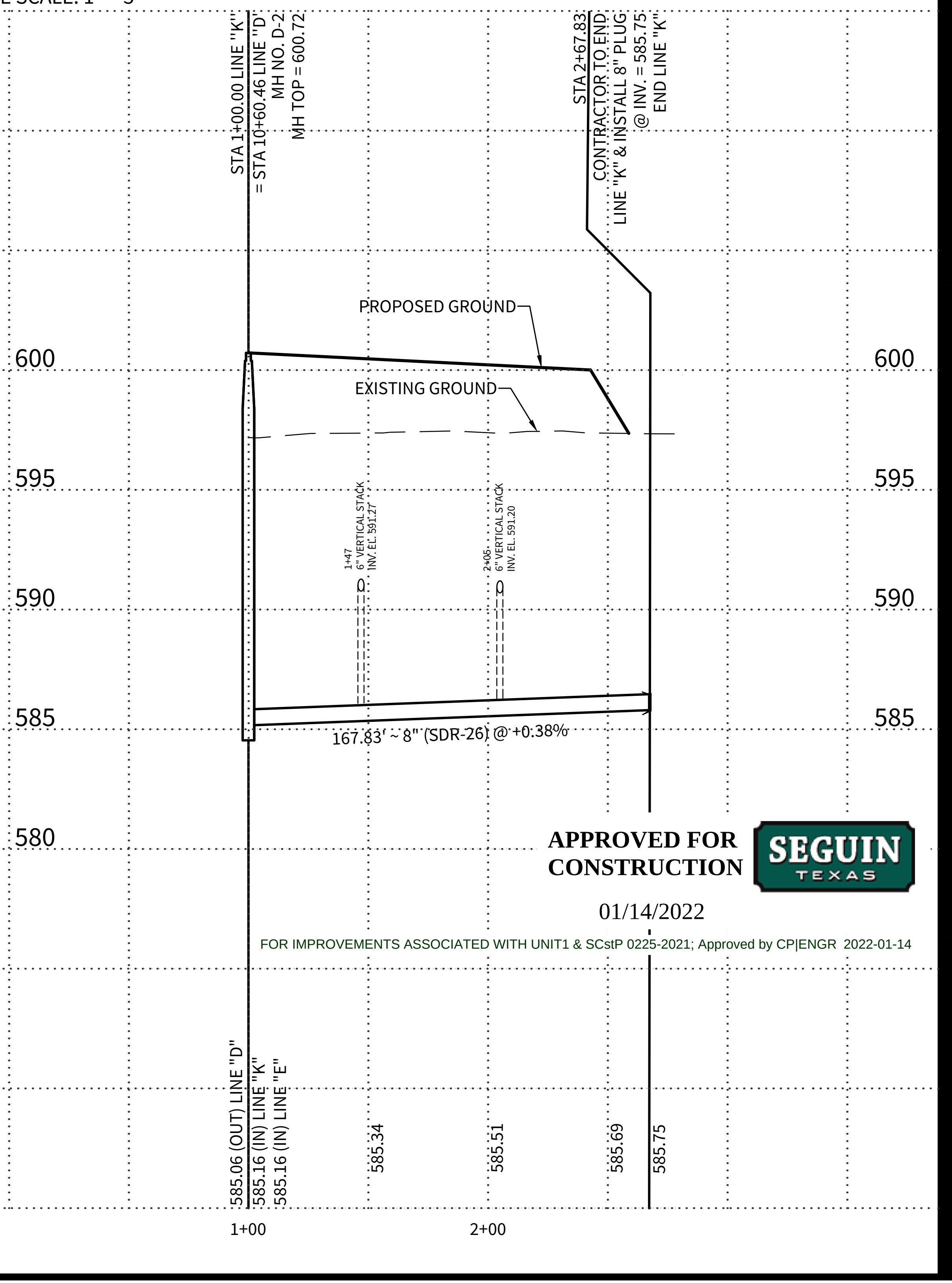
STA. 1+00.00 TO STA. 11+03.37

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

LINE "K"

STA. 1+00.00 TO STA. 2+42.83


STA 10+60.46 LINE "D" = STA 1+00.00 LINE "E" MH NO. D-2 MH TOP = 600.72
STA 1+23.35 8" SAN. SEW. & 8" WATER CROSSING
STA 2+95.45 8" SAN. SEW. & EX. GAS CROSSING
STA 4+16.00 8" SAN. SEW. & 8" WATER CROSSING
STA 4+38.01 LINE "E" = STA 1+00.00 LINE "F" MH NO. E-1 MH TOP = 600.49
STA 7+40.49 LINE "E" MH NO. E-2 MH TOP = 598.63
PI STA 8+95.56 8" SAN. SEW. & DRAIN "CA" CROSSING
STA 9+99.51 8" SAN. SEW. & 8" WATER CROSSING
STA 10+18.35 LINE "E" = STA 1+00.00 LINE "G" MH NO. E-3 MH TOP = 598.59
STA 11+03.37 LINE "E" MH NO. E-4 MH TOP = 598.74
PROPOSED GROUND
EXISTING GROUND
COORDINATION WITH EXXONMOBIL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION.
8" WATER MAIN INV. ELEV = 596.17
TOP OF EX. GAS ELEV. = 593.24
8" WATER MAIN INV. ELEV = 595.93
8" WATER MAIN INV. ELEV = 593.78
LOT 1 LATERAL INV. ELEV = 590.92
338.01' ~ 8" (SDR-26) @ +0.34%
302.48' ~ 8" (SDR-26) @ +0.34%
277.86' ~ 8" (SDR-26) @ +0.34%
85.02' ~ 8" (SDR-26) @ +0.34%
NOTE: CENTER 1-20' LENGTH OF 160 P.S.I PVC UNDER WATER LINE CROSSING
CONTRACTOR TO BORE AND INSTALL ± 20 L.F. OF 24" STEEL CASING
NOTE: CENTER 1-20' LENGTH OF 160 P.S.I PVC UNDER WATER LINE CROSSING
PROP. 1 - 5' x 2' M.B.C. DRAIN "CA" SEE SHEET 21 OF 29
CONCRETE ENCASEMENT
600
595
590
585
580
SANITARY SEWER INVERT
585.17 (OUT)
585.27 (IN)
585.27 (IN)
585.24
585.33
585.50
585.67
585.83
585.84
586.01
586.18
586.33
586.31 (OUT)
586.41 (IN)
586.45
586.62
586.79
586.96
587.13
587.30
587.44 (OUT)
587.57
587.74
587.91
588.06
588.08
588.25
588.42
588.42
588.48 (OUT)
588.58 (IN)
588.58 (IN)
588.69
588.87 (OUT)
588.86
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00


STA 1+00.00 LINE "K" = STA 10+60.46 LINE "D" MH NO. D-2 MH TOP = 600.72
STA 2+67.83 CONTRACTOR TO END LINE "K" & INSTALL 8" PLUG @ INV. = 585.75 END LINE "K"
PROPOSED GROUND
EXISTING GROUND
167.83' ~ 8" (SDR-26) @ +0.38%
600
595
590
585
580
585.06 (OUT) LINE "D"
585.16 (IN) LINE "K"
585.16 (IN) LINE "E"
585.34
585.51
585.69
585.75
1+00
2+00

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM
EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1
SANITARY SEWER PLAN & PROFILE LINES "E" & "K"

DATE	12/05/2021
PROJECT NO.	03480.002
DRAWN BY	AC
CHECKED BY	DDC/JC

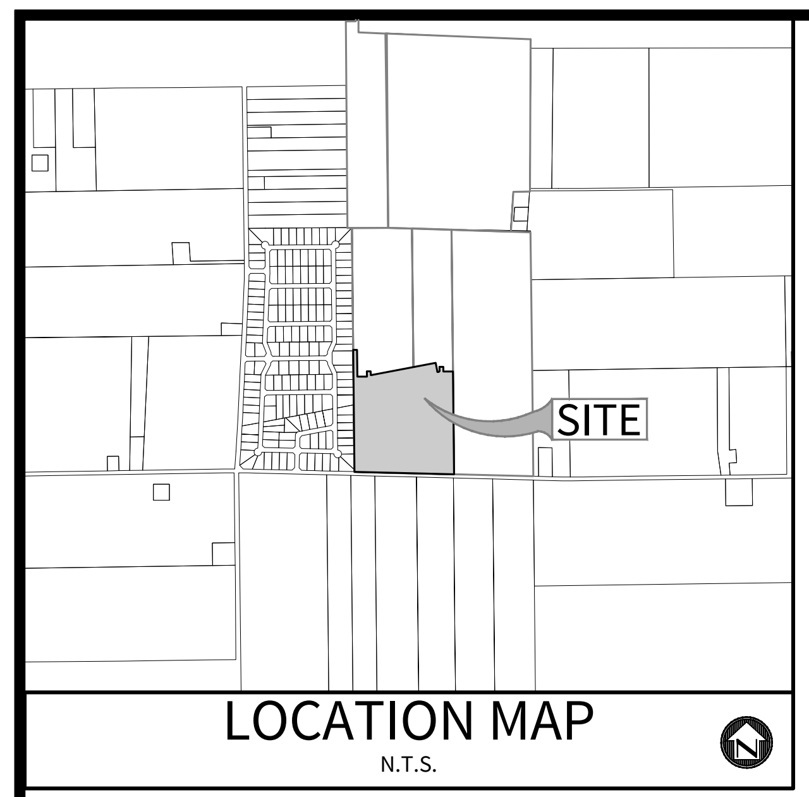
REVISIONS
1. 07/26/2021 - REVISED MH STYLE, SHIFTED LATERALS
2. 09/23/2021 - UPDATED CURB INLETS, SIDEWALKS & LATERAL LOCATIONS
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

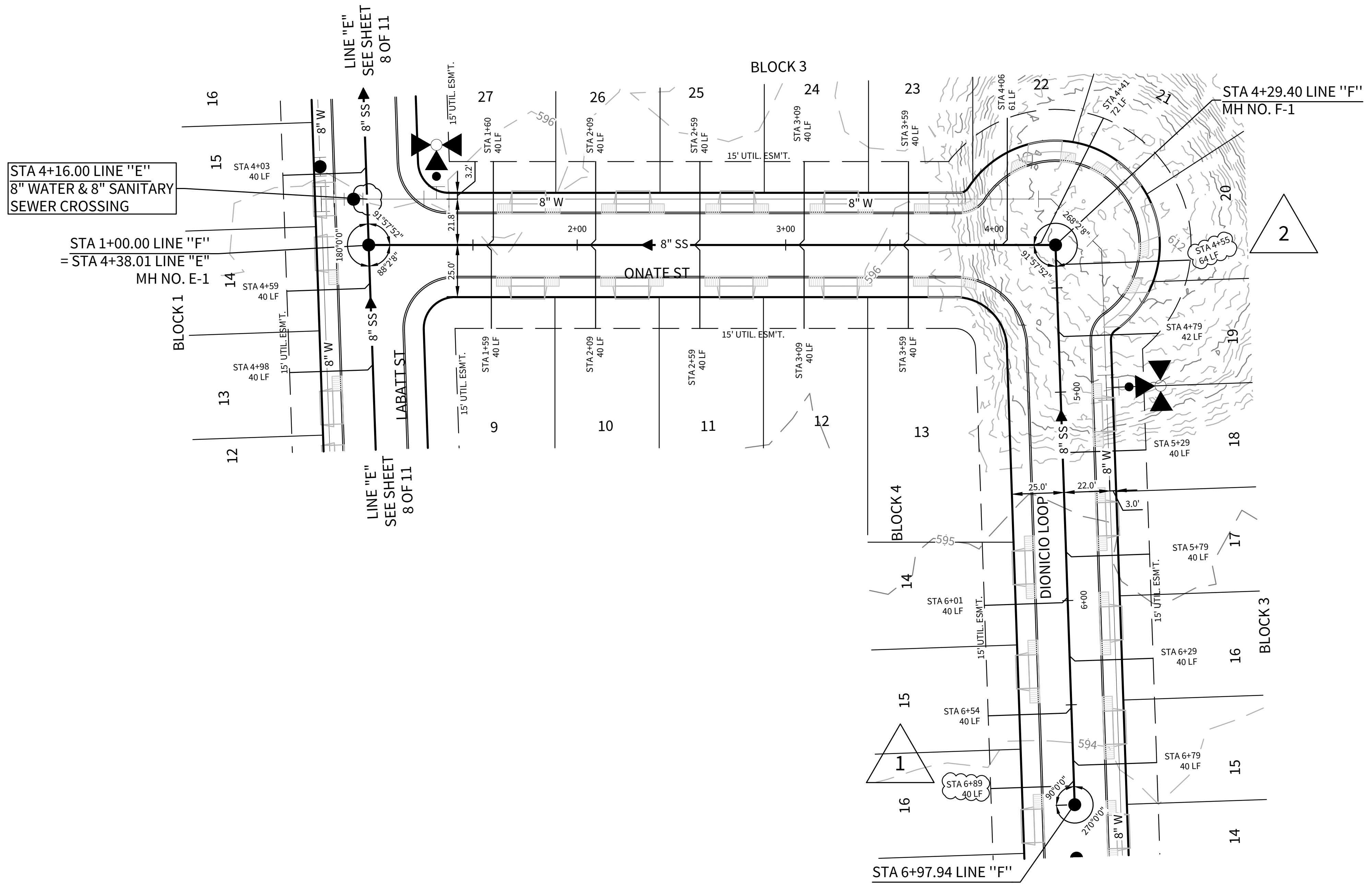
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C37

P:\03480\002\2-Drawings\01_XX_SSPP_E.dwg 2021/12/05 9:45pm jguerrero



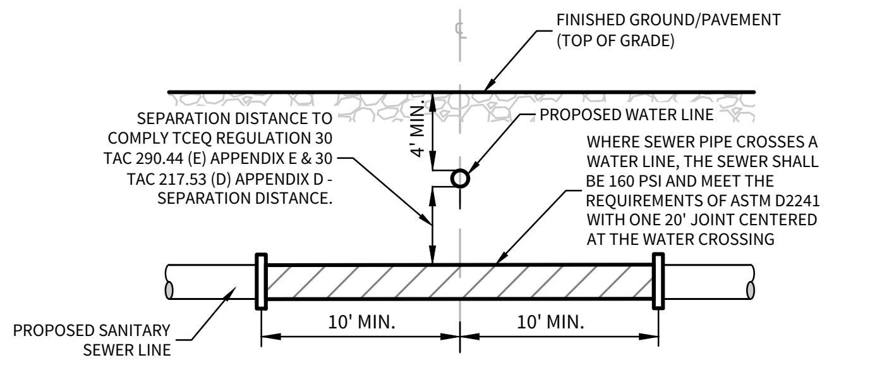
LOCATION MAP
N.T.S.



SCALE: 1"=50'
0 50 100

LEGEND

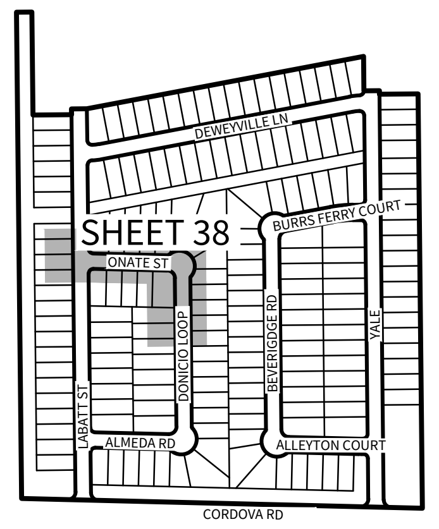
PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
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.

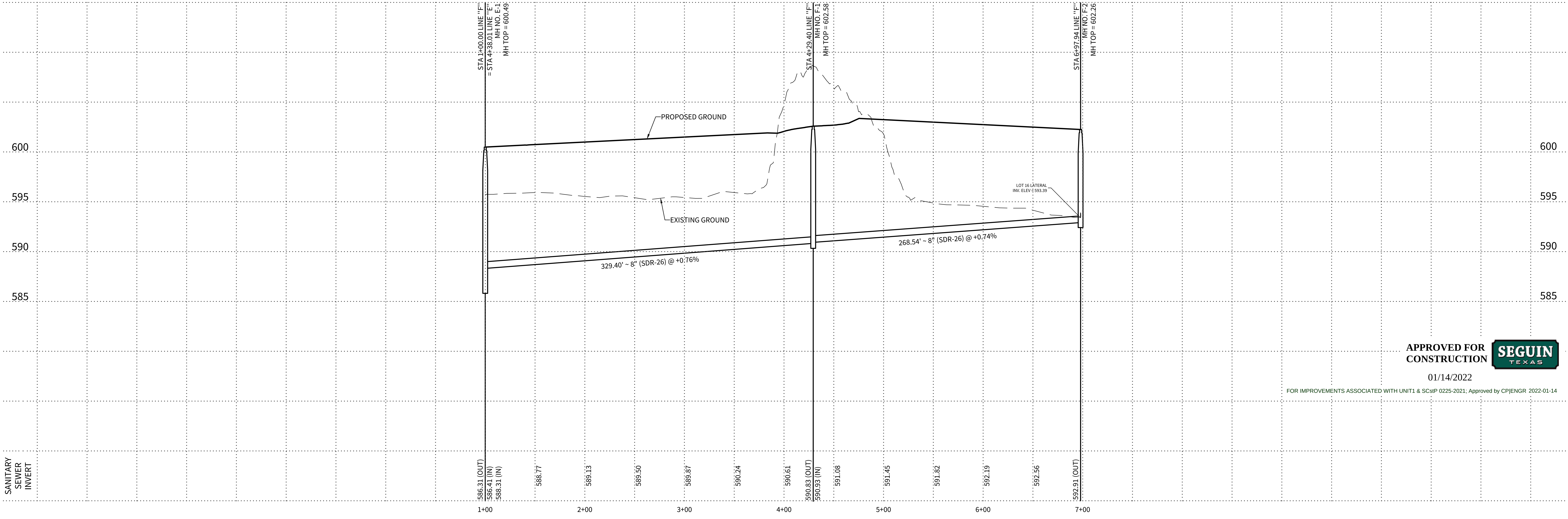


SITE MAP
NOT TO SCALE

LINE "F"

STA. 1+00.00 TO STA. 6+97.94

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



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

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

CORDOVA TRAILS SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "F"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

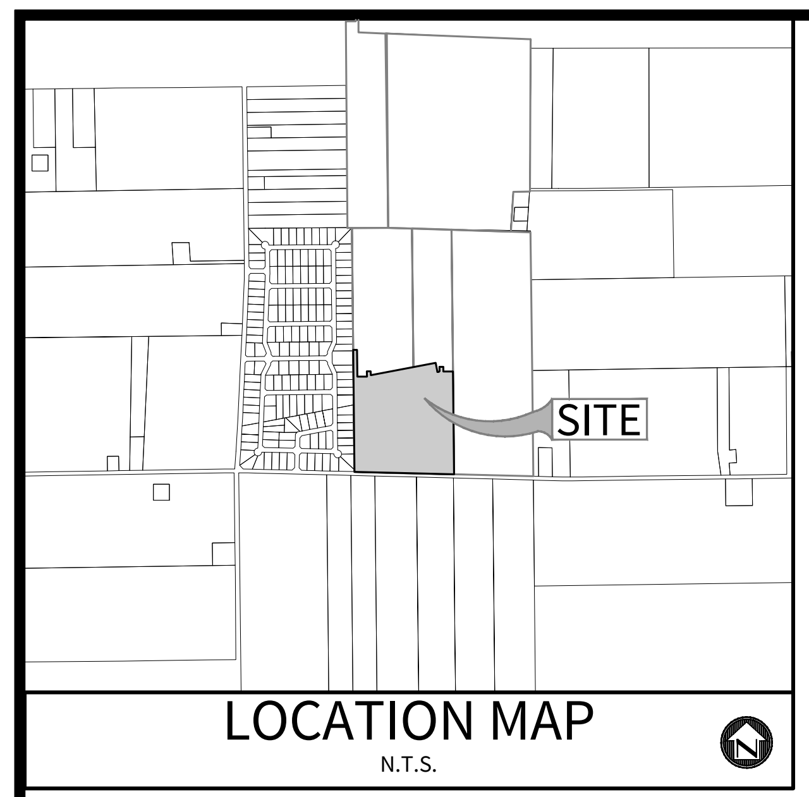
REVISIONS

1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2. 09/23/2021 - REVISED LATERAL LOCATIONS
3.
4.
5.
6.
7.
8.
9.

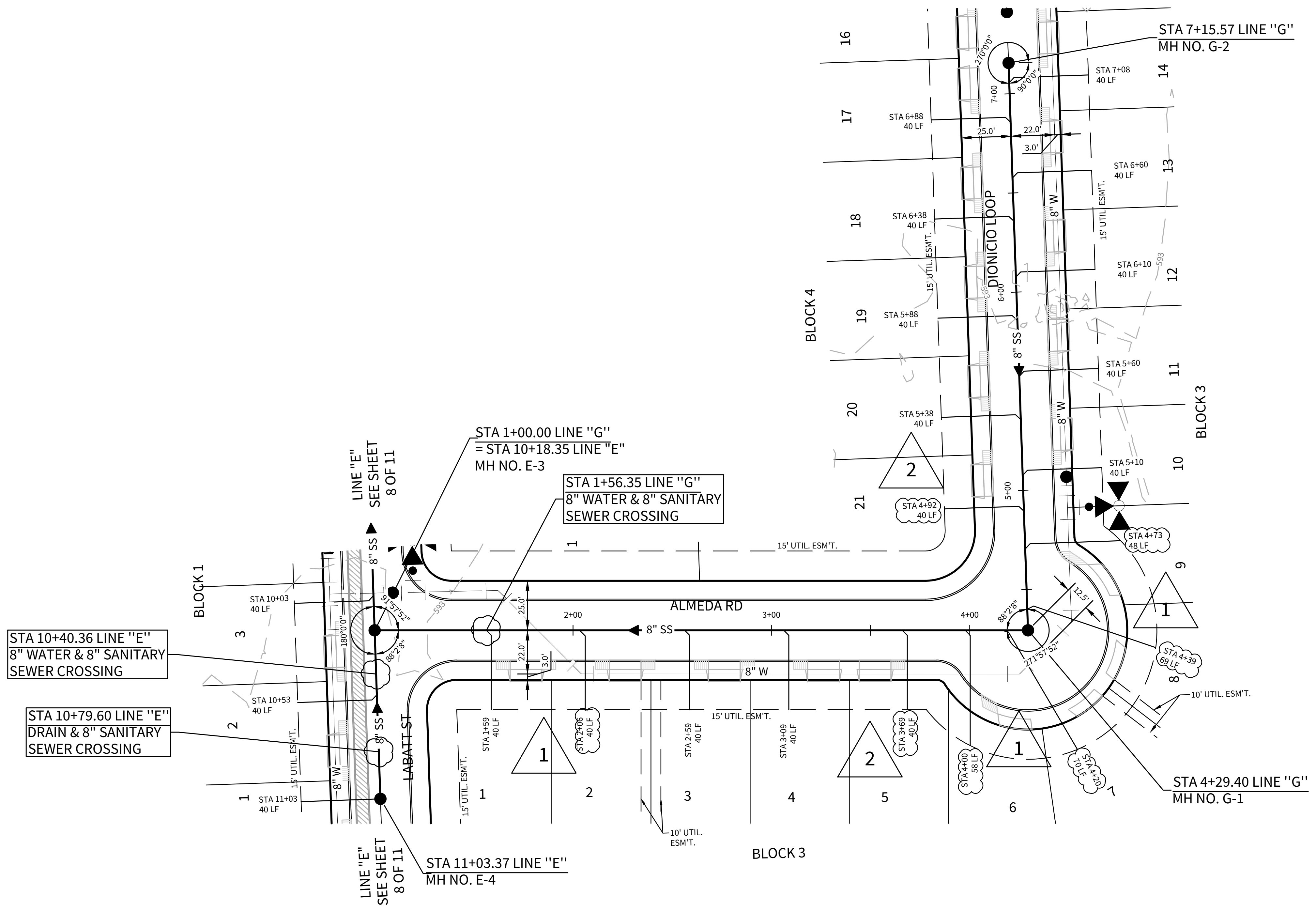
DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C38



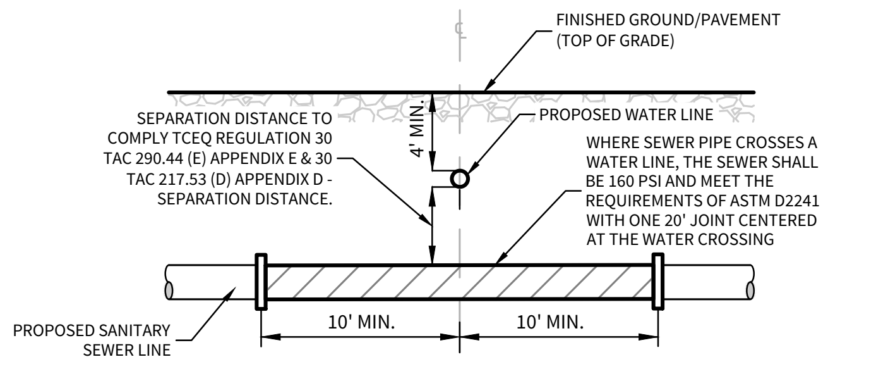
LOCATION MAP
N.T.S.



SCALE: 1"=50'
0 50 100

LEGEND

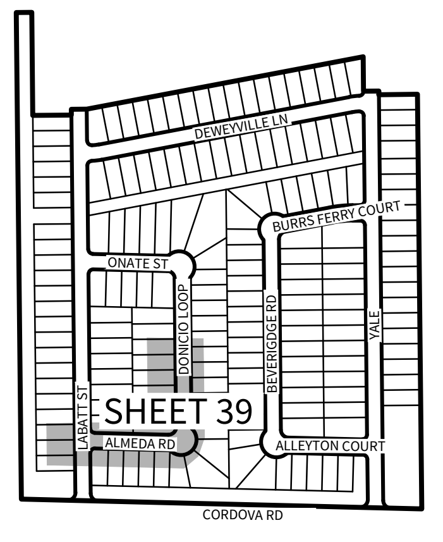
PROPOSED SEWER LINE	XX" SS
EXISTING SEWER LINE	EX. XX" SS AS BUILT #XXXX-XXXX
PROPOSED WATER LINE	XX" W
PROPOSED MANHOLE	●
EXISTING MANHOLE	●


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
4' MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
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.

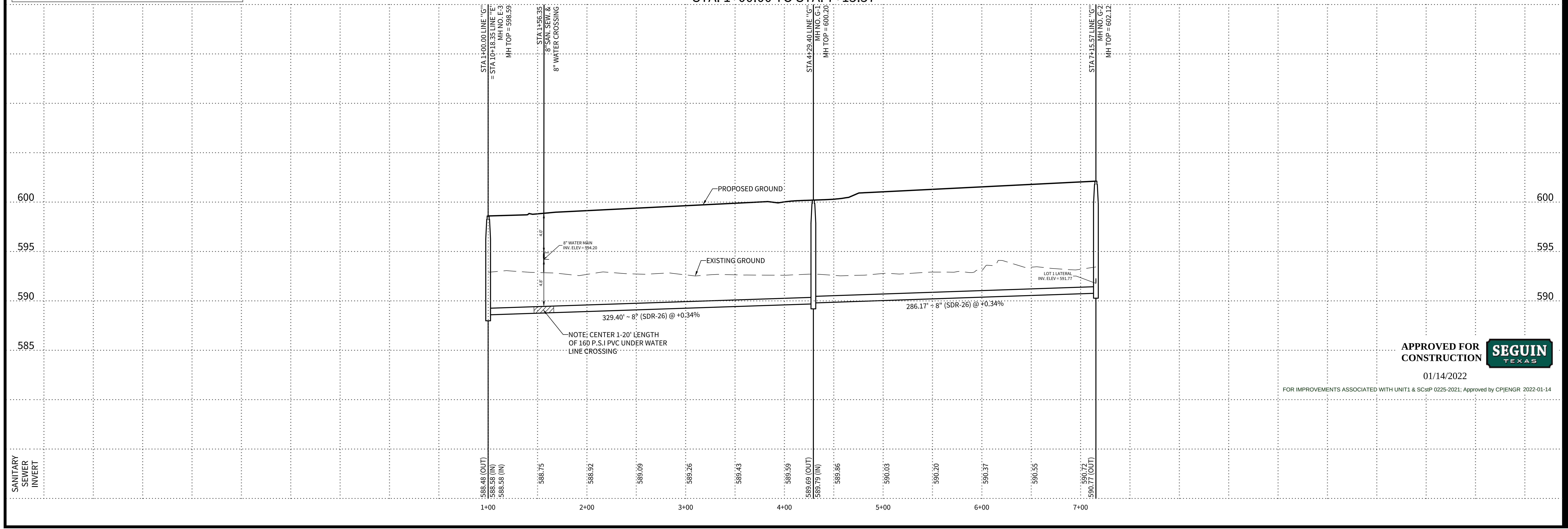


SITE MAP
NOT TO SCALE

LINE "G"

STA. 1+00.00 TO STA. 7+15.57

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



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS SUBDIVISION UNIT 1

SANITARY SEWER PLAN & PROFILE LINE "G"

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 07/26/2021 - REVISED MH SYTLE, SHIFTED LATERALS
2. 09/23/2021 - REVISED LATERAL LOCATION
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
12.11.21

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TBPE No. 455
TBPLS No. 10048500

C39

10 OF 11

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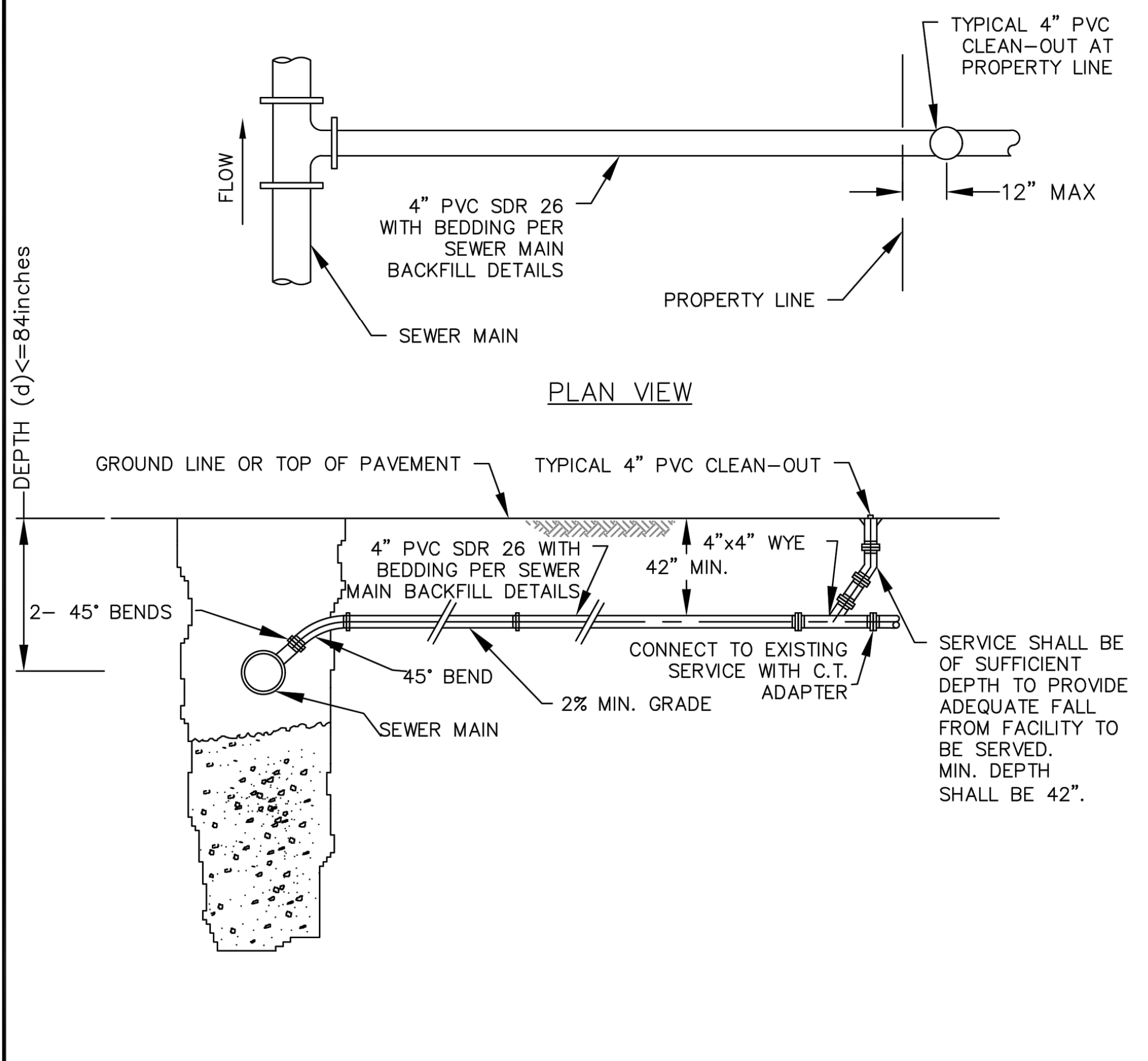
TYPICAL 4" PVC CLEAN-OUT AT PROPERTY LINE
FLOW
4" PVC SDR 26 WITH BEDDING PER SEWER MAIN BACKFILL DETAILS
12" MAX
PROPERTY LINE
SEWER MAIN
DEPTH (d)<=84inches
PLAN VIEW
GROUND LINE OR TOP OF PAVEMENT
TYPICAL 4" PVC CLEAN-OUT
4" PVC SDR 26 WITH BEDDING PER SEWER MAIN BACKFILL DETAILS
4"x4" WYE
42" MIN.
2- 45° BENDS
CONNECT TO EXISTING SERVICE WITH C.T. ADAPTER
45° BEND
2% MIN. GRADE
SEWER MAIN
SERVICE SHALL BE OF SUFFICIENT DEPTH TO PROVIDE ADEQUATE FALL FROM FACILITY TO BE SERVED. MIN. DEPTH SHALL BE 42".

SHALLOW SANITARY SEWER RESIDENTIAL SERVICE CONNECTION

NOTE:

1. SEWER SERVICE LINE BACKFILL SHALL BE IDENTICAL TO SEWER MAIN (WW-8).
2. CITY INSPECTOR SHALL APPROVE DEPTHS UNDER 42" (MIN.)
3. LATERAL DEPTH TO BE 42" MINIMUM TO ENSURE POSITIVE FLOW.
4. SDR 26 PRESSURE RATED PIPE SHALL BE USED IF TRENCH DEPTH IS OVER 15'.

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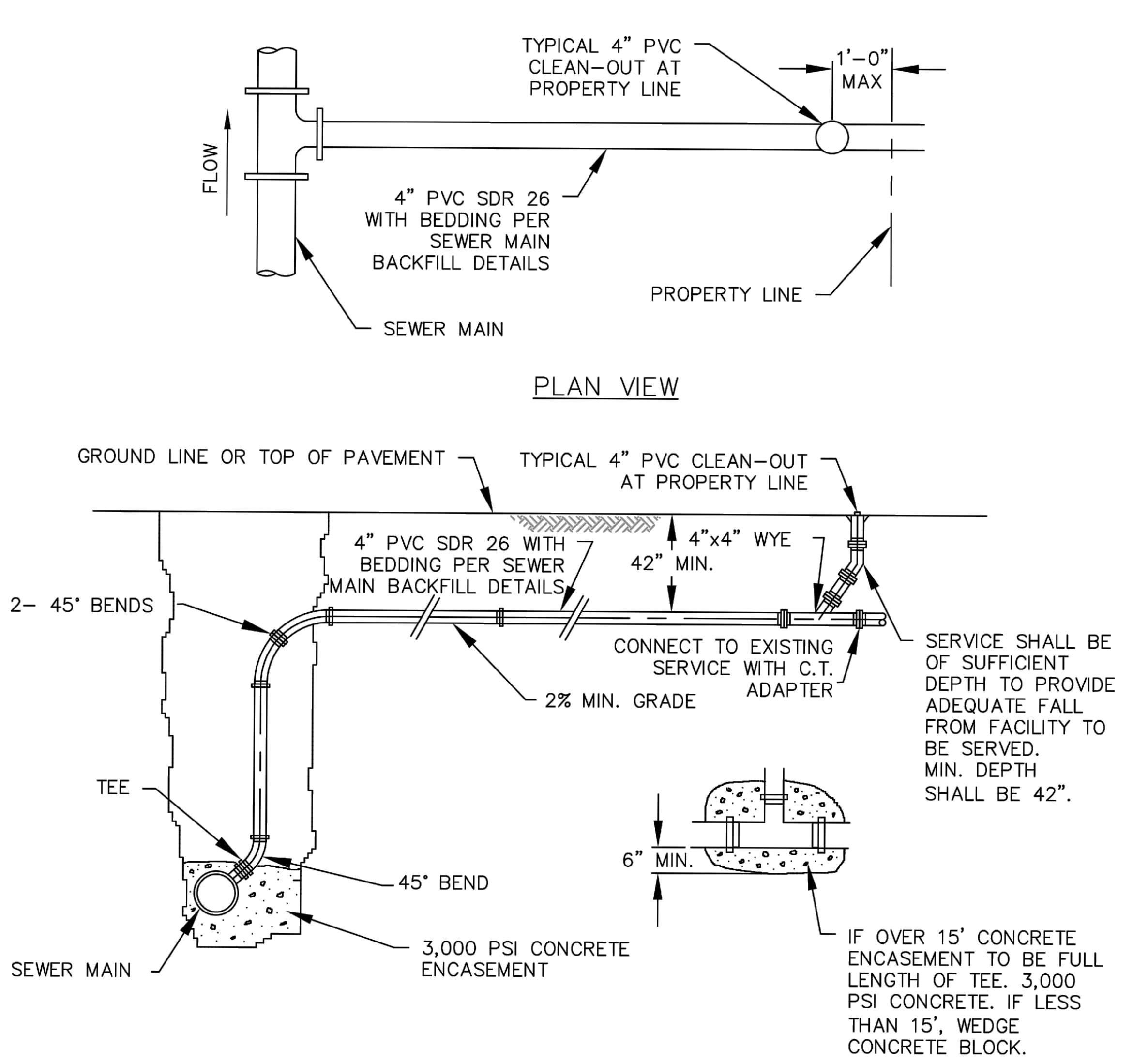
DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	06/12/15	TN
2ND REVISION	12/02/15	AM
3RD REVISION	8/10/18	DB

TITLE
SHALLOW SANITARY SEWER RESIDENTIAL SERVICE CONNECTION
SCALE: N.T.S.
DRAWING No. WW-1


TYPICAL 4" PVC CLEAN-OUT AT PROPERTY LINE
1'-0" MAX
FLOW
4" PVC SDR 26 WITH BEDDING PER SEWER MAIN BACKFILL DETAILS
PROPERTY LINE
SEWER MAIN
PLAN VIEW
GROUND LINE OR TOP OF PAVEMENT
TYPICAL 4" PVC CLEAN-OUT AT PROPERTY LINE
4" PVC SDR 26 WITH BEDDING PER SEWER MAIN BACKFILL DETAILS
4"x4" WYE
42" MIN.
2- 45° BENDS
CONNECT TO EXISTING SERVICE WITH C.T. ADAPTER
2% MIN. GRADE
SERVICE SHALL BE OF SUFFICIENT DEPTH TO PROVIDE ADEQUATE FALL FROM FACILITY TO BE SERVED. MIN. DEPTH SHALL BE 42".
TEE
45° BEND
6" MIN.
SEWER MAIN
3,000 PSI CONCRETE ENCASEMENT
IF OVER 15' CONCRETE ENCASEMENT TO BE FULL LENGTH OF TEE. 3,000 PSI CONCRETE. IF LESS THAN 15', WEDGE CONCRETE BLOCK.

SANITARY SEWER RESIDENTIAL SERVICE CONNECTION

NOTE:

1. SEWER SERVICE LINE BACKFILL SHALL BE IDENTICAL TO SEWER MAIN (WW-8).
2. CITY INSPECTOR SHALL APPROVE DEPTHS UNDER 42" (MIN.)
3. LATERAL DEPTH TO BE 42" MINIMUM TO ENSURE POSITIVE FLOW.
4. SDR 26 PRESSURE RATED PIPE SHALL BE USED IF TRENCH DEPTH IS OVER 15'.

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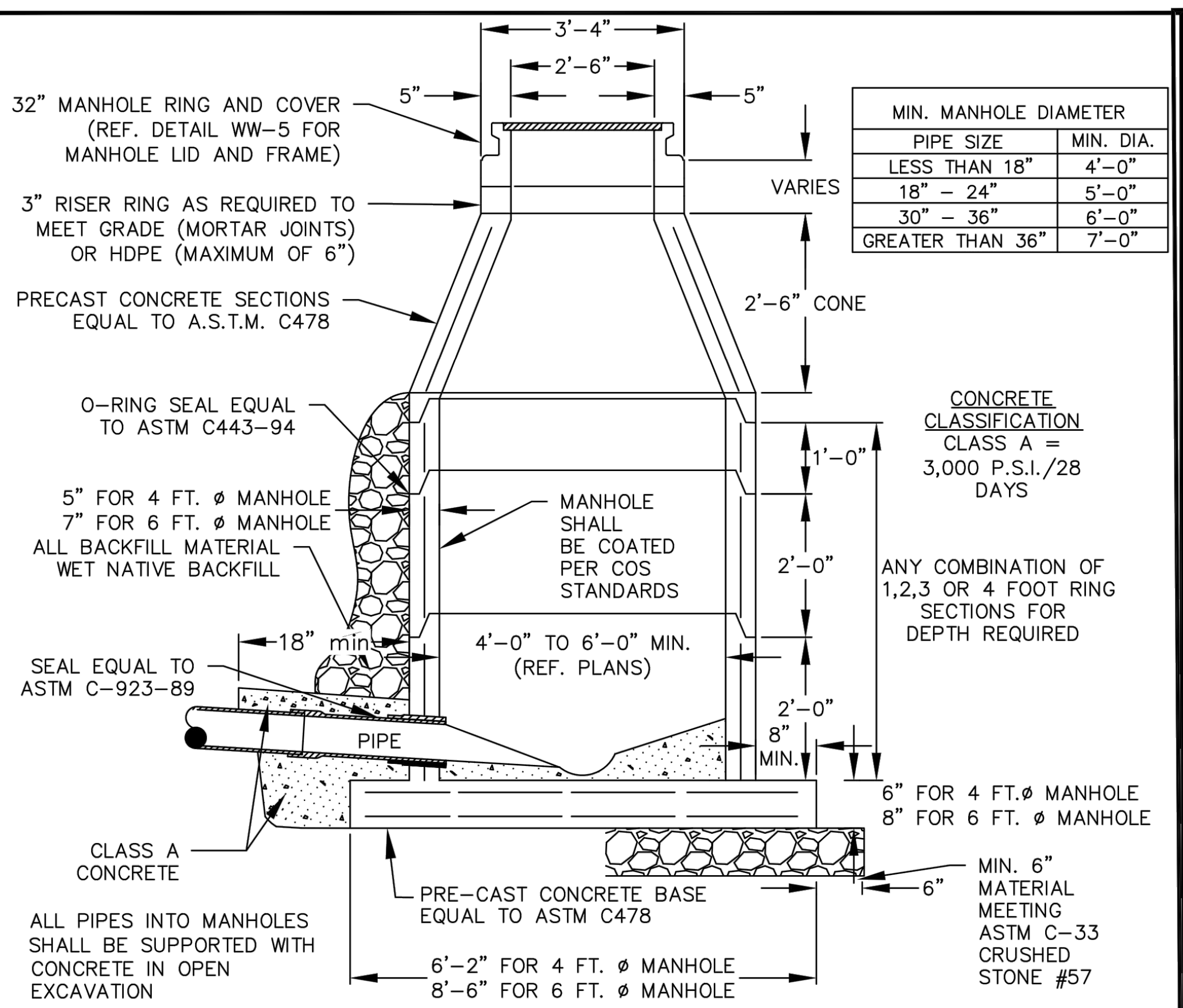
DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	06/12/15	TN
2ND REVISION	12/02/15	AM

TITLE
SANITARY SEWER RESIDENTIAL SERVICE CONNECTION
SCALE: N.T.S.
DRAWING No. WW-1


3'-4"
2'-6"
5"
5"
32" MANHOLE RING AND COVER (REF. DETAIL WW-5 FOR MANHOLE LID AND FRAME)
3" RISER RING AS REQUIRED TO MEET GRADE (MORTAR JOINTS) OR HDPE (MAXIMUM OF 6")
VARIES
PRECAST CONCRETE SECTIONS EQUAL TO A.S.T.M. C478
2'-6" CONE
O-RING SEAL EQUAL TO ASTM C443-94
CONCRETE CLASSIFICATION CLASS A = 3,000 P.S.I./28 DAYS
1'-0"
5" FOR 4 FT. ø MANHOLE
7" FOR 6 FT. ø MANHOLE
ALL BACKFILL MATERIAL WET NATIVE BACKFILL
MANHOLE SHALL BE COATED PER COS STANDARDS
2'-0"
ANY COMBINATION OF 1,2,3 OR 4 FOOT RING SECTIONS FOR DEPTH REQUIRED
18" min.
4'-0" TO 6'-0" MIN. (REF. PLANS)
SEAL EQUAL TO ASTM C-923-89
2'-0"
PIPE
8" MIN.
6" FOR 4 FT.ø MANHOLE
8" FOR 6 FT. ø MANHOLE
CLASS A CONCRETE
PRE-CAST CONCRETE BASE EQUAL TO ASTM C478
6"
MIN. 6" MATERIAL MEETING ASTM C-33 CRUSHED STONE #57
6'-2" FOR 4 FT. ø MANHOLE
8'-6" FOR 6 FT. ø MANHOLE
ALL PIPES INTO MANHOLES SHALL BE SUPPORTED WITH CONCRETE IN OPEN EXCAVATION

MIN. MANHOLE DIAMETER	
PIPE SIZE	MIN. DIA.
LESS THAN 18"	4'-0"
18" - 24"	5'-0"
30" - 36"	6'-0"
GREATER THAN 36"	7'-0"

NOTES:

1. MANHOLE INVERTS: THE BOTTOM OF THE MANHOLE SHALL BE PROVIDED WITH A "U" SHAPED CHANNEL THAT IS AS MUCH AS POSSIBLE A SMOOTH CONTINUATION OF THE INLET AND OUTLET PIPES. FOR MANHOLES CONNECTED TO PIPES LESS THAN 15 INCHES IN DIAMETER THE CHANNEL DEPTH SHALL BE AT LEAST HALF THE LARGEST PIPE DIAMETER. FOR MANHOLES CONNECTED TO PIPES 15 TO 24 INCHES IN DIAMETER THE CHANNEL DEPTH SHALL BE AT LEAST THREE FOURTHS THE LARGEST PIPE DIAMETER. IN MANHOLES WITH PIPES OF DIFFERENT SIZES, THE TOES OF THE PIPES SHALL BE PLACED AT THE SAME ELEVATION AND FLOW CHANNELS IN THE INVERT SLOPED ON AN EVEN SLOPE FROM PIPE TO PIPE. THE BENCH PROVIDED ABOVE THE CHANNEL SHALL BE SLOPED AT A MINIMUM OF 0.5 INCH PER FOOT.
2. CONTRACTOR SHALL GROUT THE INTERNAL AND EXTERNAL JOINTS FOR EACH RING SECTION.
3. 0.1' DROP SHALL BE PROVIDED WITHIN THE MANHOLE.
4. MANHOLE SHALL BE COATED PER APPROVED MANUFACTURER'S SPECIFICATIONS OUTLINED IN COS STANDARD PRODUCTS LIST.
5. MANHOLE OUTSIDE OF PAVEMENT SHALL HAVE BOLTED COVERS.

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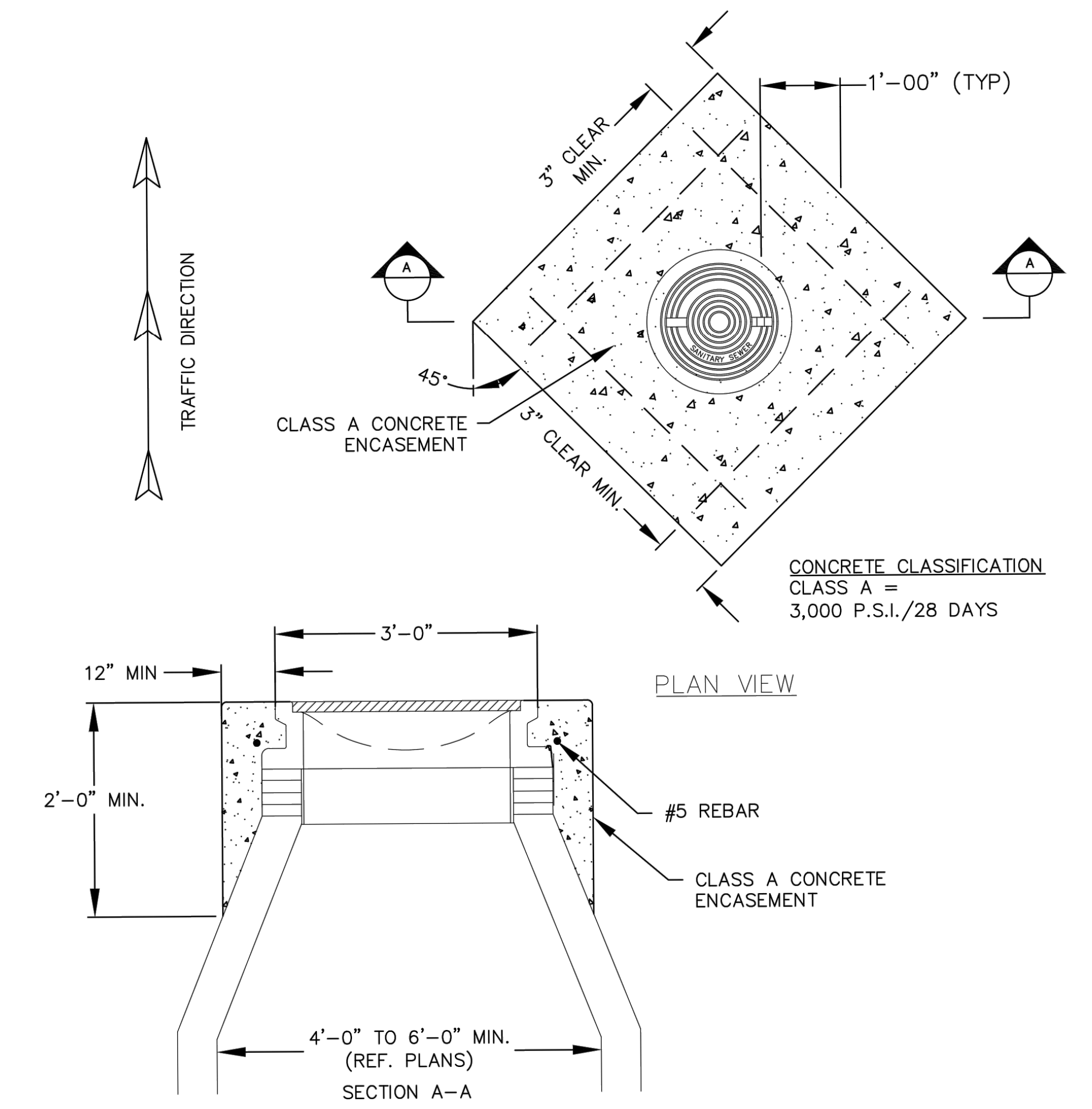
DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	7/29/15	TN
2ND REVISION	8/10/18	DB
3RD REVISION	12/08/20	DB

TITLE
1
SANITARY SEWER PRECAST CONCRETE MANHOLE
SCALE: N.T.S.
DRAWING No. WW-2



CONCRETE CLASSIFICATION
CLASS A = 3,000 P.S.I./28 DAYS

NOTES:

1. CONCRETE ENCASEMENT SHALL BE INSTALLED AFTER FINAL PAVEMENT HAS BEEN INSTALLED.
2. MANHOLES SHALL BE LOCATED BY GPS AND PROVIDED TO THE CITY IN TEXAS STATE PLANE COORDINATES, NAD 83 (93), SOUTH CENTRAL ZONE.
3. CONCRETE ENCASEMENT SHALL ALSO BE INSTALLED IN MANHOLES LOCATED IN NATURAL GROUND.

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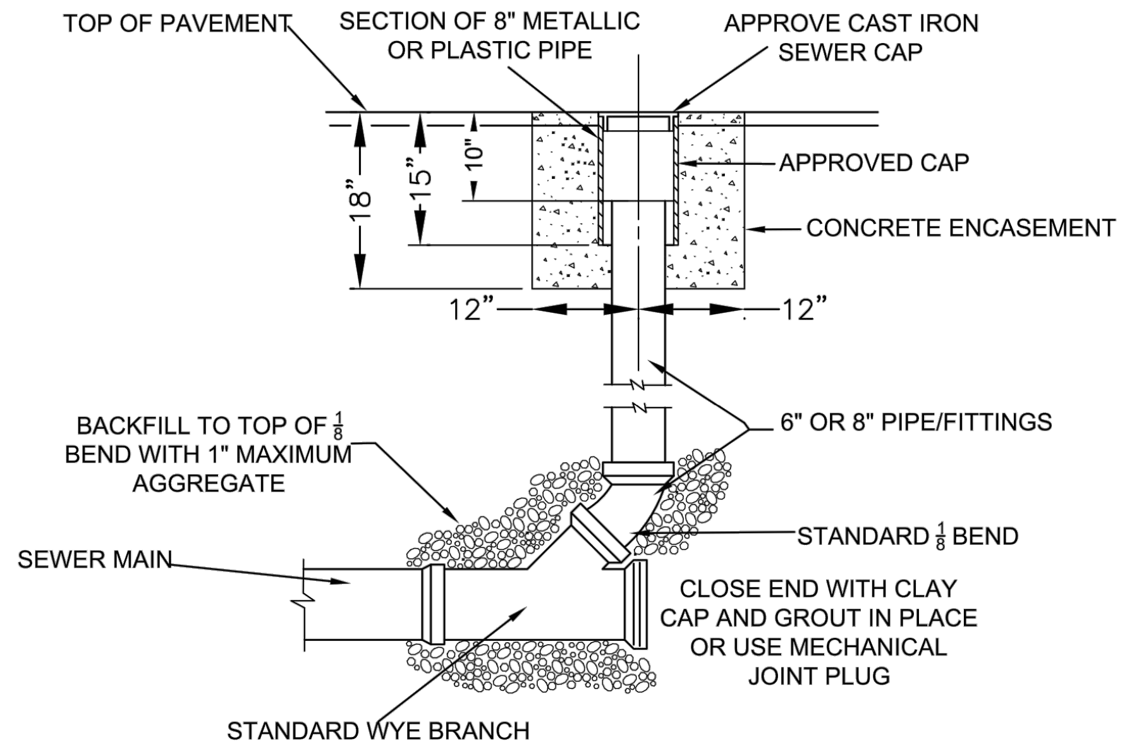
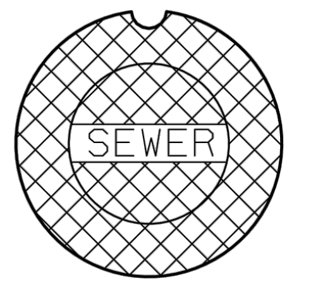
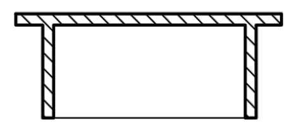
DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	7/29/15	TN
2ND REVISION	12/24/15	AM
3RD REVISION	5/24/18	DB

TITLE
MANHOLE RING ENCASEMENT DETAILS
SCALE: N.T.S.
DRAWING No. WW-6


TOP OF PAVEMENT
SECTION OF 8" METALLIC OR PLASTIC PIPE
APPROVE CAST IRON SEWER CAP
APPROVED CAP
CONCRETE ENCASEMENT
18"
15"
10"
12"
12"
BACKFILL TO TOP OF ⅛ BEND WITH 1" MAXIMUM AGGREGATE
6" OR 8" PIPE/FITTINGS
STANDARD ⅛ BEND
SEWER MAIN
CLOSE END WITH CLAY CAP AND GROUT IN PLACE OR USE MECHANICAL JOINT PLUG
STANDARD WYE BRANCH




*APPROVED GATE CAP
(HEAVY DUTY)

NOTES:

1. DEPENDING UPON THE TYPE OF SERVICE THAT AN 8 INCH LATERAL (ON A DEAD END MAIN) IS PROVIDING, A STANDARD MANHOLE IN LIEV OF IS CLEANOUT MAY BE REQUIRED. CONSULT WITH THE INSPECTOR.

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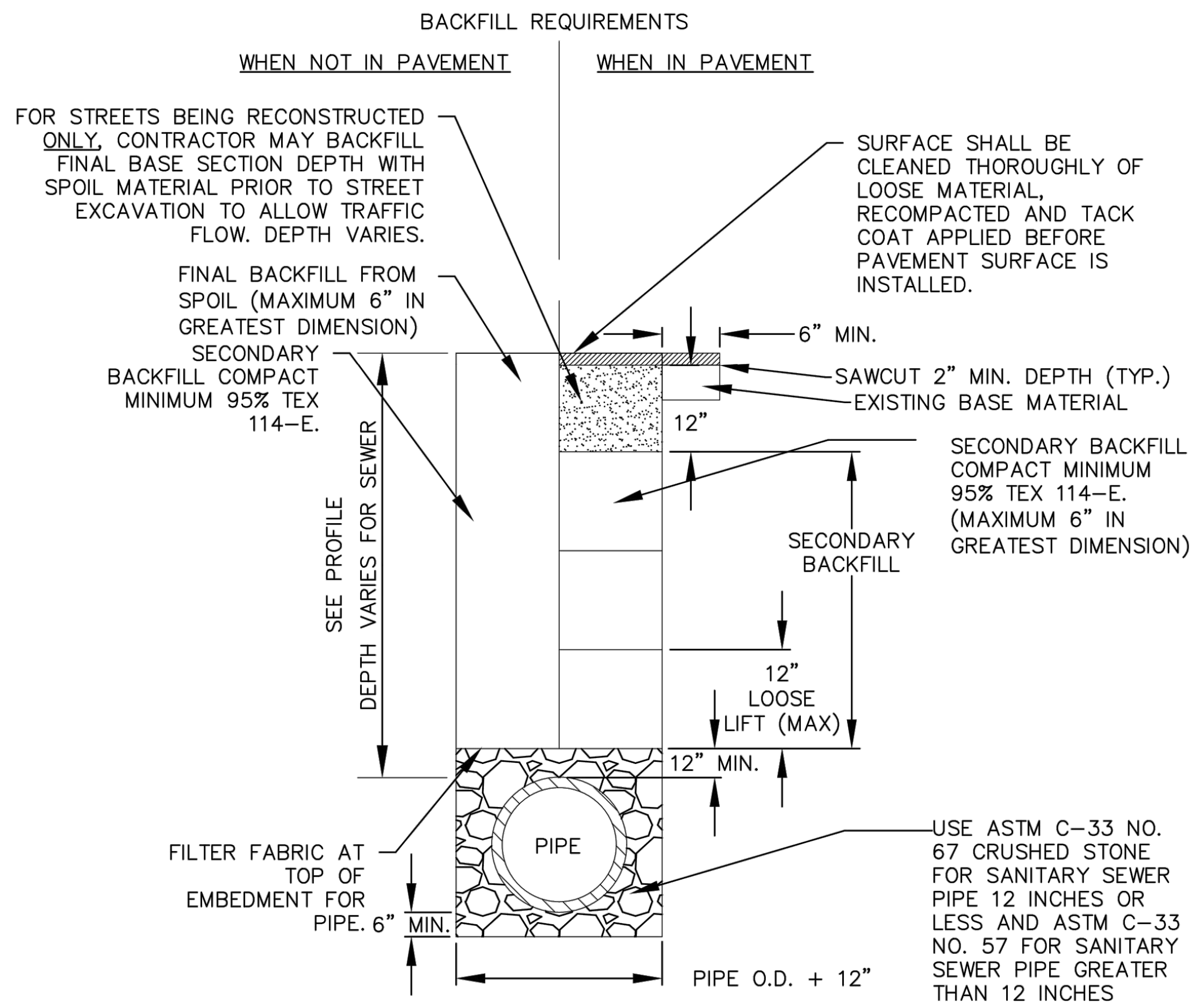
DATE ISSUED:	FEBRUARY 1, 2019	
REVISION	DATE	BY

TITLE
TYPICAL 6" TO 8" CLEANOUT DETAIL (ON DEAD-END MAIN)
SCALE: N.T.S.
DRAWING No. WW-20


BACKFILL REQUIREMENTS
WHEN NOT IN PAVEMENT
WHEN IN PAVEMENT
FOR STREETS BEING RECONSTRUCTED ONLY, CONTRACTOR MAY BACKFILL FINAL BASE SECTION DEPTH WITH SPOIL MATERIAL PRIOR TO STREET EXCAVATION TO ALLOW TRAFFIC FLOW. DEPTH VARIES.
SURFACE SHALL BE CLEANED THOROUGHLY OF LOOSE MATERIAL, RECOMPACTED AND TACK COAT APPLIED BEFORE PAVEMENT SURFACE IS INSTALLED.
FINAL BACKFILL FROM SPOIL (MAXIMUM 6" IN GREATEST DIMENSION)
6" MIN.
SECONDARY BACKFILL COMPACT MINIMUM 95% TEX 114-E.
SAWCUT 2" MIN. DEPTH (TYP.)
EXISTING BASE MATERIAL
12"
SECONDARY BACKFILL COMPACT MINIMUM 95% TEX 114-E. (MAXIMUM 6" IN GREATEST DIMENSION)
SEE PROFILE
DEPTH VARIES FOR SEWER
SECONDARY BACKFILL
12" LOOSE LIFT (MAX)
12" MIN.
FILTER FABRIC AT TOP OF EMBEDMENT FOR PIPE.
6" MIN.
PIPE
USE ASTM C-33 NO. 67 CRUSHED STONE FOR SANITARY SEWER PIPE 12 INCHES OR LESS AND ASTM C-33 NO. 57 FOR SANITARY SEWER PIPE GREATER THAN 12 INCHES
PIPE O.D. + 12"

SEWER BACKFILL DETAILS

NOTES:

1. FOR ASPHALT OR CONCRETE STREET REPAIRS WHERE THE SAW-CUT PAVEMENT EDGE WILL BE WITHIN 3' OF EDGE OF EXISTING PAVEMENT OR LIP OF GUTTER, THE EXISTING PAVEMENT SURFACE BETWEEN THE DITCH LINE AND EDGE OF PAVEMENT OR LIP OF GUTTER SHALL BE REMOVED AND REPLACED WITH MATERIAL SPECIFIED.
2. FOR STREETS NOT BEING RECONSTRUCTED, SURFACE MATERIALS SHALL BE EQUAL TO MATERIAL REMOVED—MINIMUM AMOUNTS; 2" HMAC (TxDOT ITEM 340, TYPE D); FLEX (CRUSHED STONE) BASE (TxDOT ITEM 247, TYPE A, GRADE 2) COMPACTED IN 6" LIFTS TO 100% DENSITY BY TEX 113E. EXISTING ASPHALT TO BE SAW CUT.
3. SECONDARY BACKFILL SHALL CONSIST OF 12" LIFTS COMPRISED OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE OF BRUSH, DEBRIS AND TRASH. MAXIMUM 6" IN GREATEST DIMENSION.
4. A DENSITY TEST SHALL BE PERFORMED ON EACH 12" LIFT, EVERY 200 FEET.
5. INDUCTIVE TRACER DETECTION TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF ALL NON-METALLIC PIPE A MINIMUM OF 12" BELOW SUBGRADE OR, IN AREAS OUTSIDE THE LIMITS OF PAVEMENT, A MINIMUM OF 18" BELOW FINISHED GRADE. THE TRACER TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED ACCORDING TO THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM COLOR CODE. EXCEPT FOR MINIMUM DEPTH OF COVER, THE TRACER TAPE SHALL BE PLACED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.

SEGUIN TEXAS
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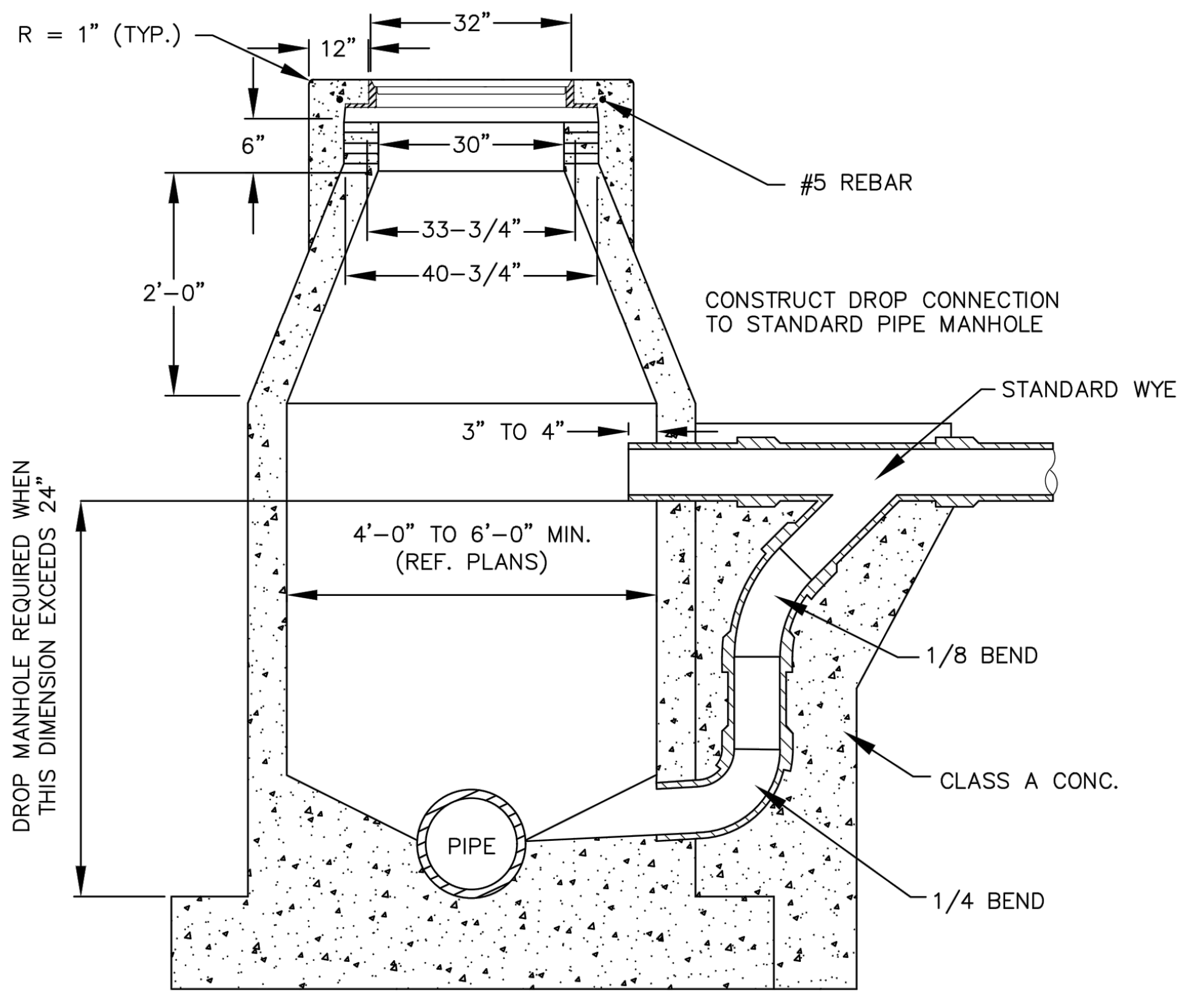
DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	6/12/15	TN
2ND REVISION	12/11/15	AM
3RD REVISION	5/25/18	DB

TITLE
SEWER BACKFILL DETAIL
SCALE: N.T.S.
DRAWING No. WW-8


R = 1" (TYP.)
12"
32"
6"
30"
#5 REBAR
33-3/4"
40-3/4"
2'-0"
CONSTRUCT DROP CONNECTION TO STANDARD PIPE MANHOLE
STANDARD WYE
3" TO 4"
DROP MANHOLE REQUIRED WHEN THIS DIMENSION EXCEEDS 24"
4'-0" TO 6'-0" MIN. (REF. PLANS)
1/8 BEND
CLASS A CONC.
PIPE
1/4 BEND

NOTES:

1. CONTRACTOR SHALL GROUT THE INTERNAL AND EXTERNAL JOINTS FOR EACH RING SECTION.
2. DROP SECTION OF PIPE SHALL BE SAME DIAMETER AS SEWER MAIN.
3. PER TCEQ, CHAPTER 217, SECTION 55.L.2.H., "A WASTEWATER COLLECTION SYSTEM PIPE ENTERING A MANHOLE MORE THAN 24 INCHES ABOVE AN INVERT MUST HAVE A DROP PIPE."

SEGUIN TEXAS
It's real.

DATE ISSUED:	JUNE 1, 2013	
REVISION	DATE	BY
1ST REVISION	7/29/15	TN
2ND REVISION	12/24/15	AM
3RD REVISION	5/24/18	DB

TITLE
SANITARY SEWER DROP MANHOLE
SCALE: N.T.S.
DRAWING No. WW-3

APPROVED FOR CONSTRUCTION **SEGUIN** TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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

CORDOVA TRAILS SUBDIVISION UNIT 1

SANITARY SEWER DETAILS

DATE
09/23/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 09/23/2021 - REVISED MANHOLE DETAIL
2.
3.
4.
5.
6.
7.
8.
9.

DAVID D. CUPIT II
122076
09.27.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C40

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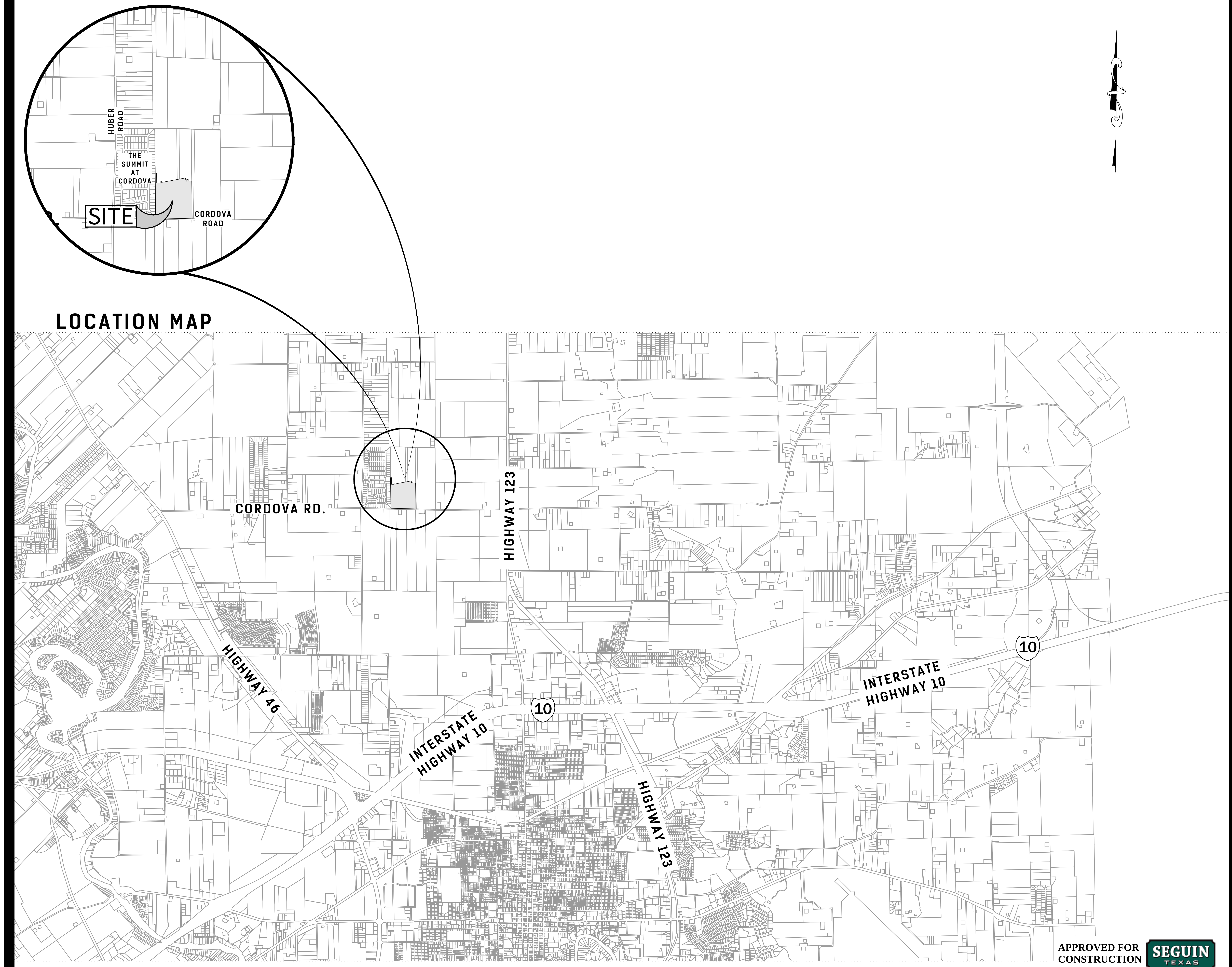
WATER DISTRIBUTION CONSTRUCTION PLANS

- C41 - WATER DISTRIBUTION PLANS
- C42 - WATER DISTRIBUTION PLANS
- C43 - WATER DISTRIBUTION PLANS
- C44 - WATER DETAILS
- C45 - WATER DETAILS
- C45A - WATER DETAILS



LOCATION MAP

VICINITY MAP

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CUDE
ENGINEERS

CORDOVA TRAILS SUBDIVISION
UNIT 1

WATER DISTRIBUTION CONSTRUCTION PLANS

ASHTON WOODS™

DEVELOPER:

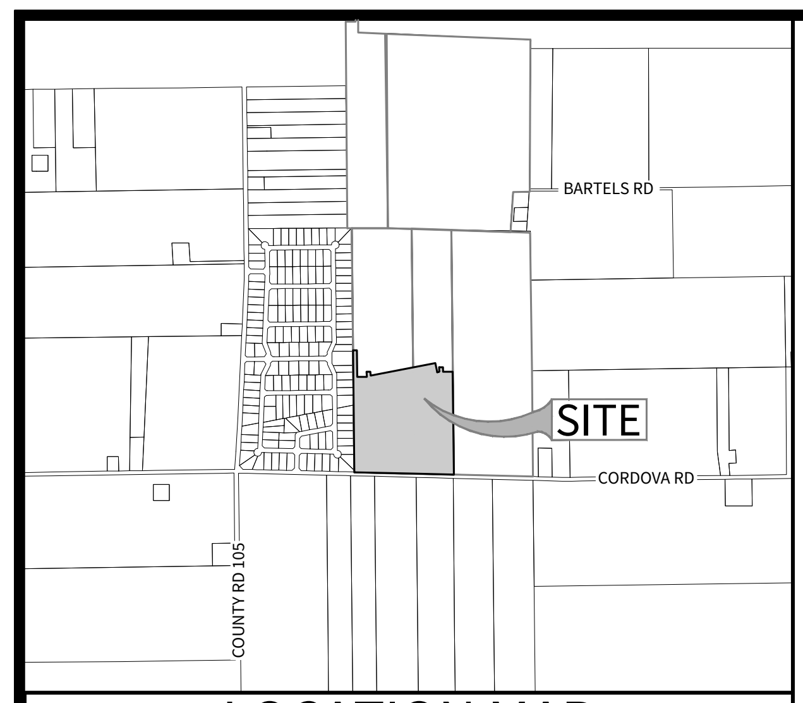
ASHTON WOODS SAN ANTONIO
RESIDENTIAL, LLC
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO AVE., SUITE 140
SAN ANTONIO, TX 78232
TEL: (210) 632-0753

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

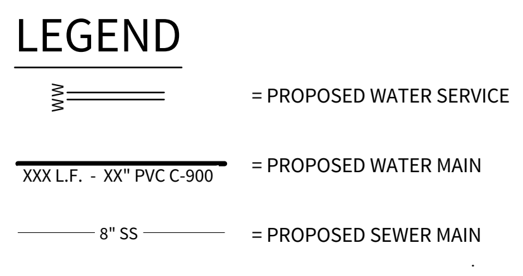
DRAWN BY	**DATE**
AC	12/06/2021
CHECKED BY	**PROJECT NO.**
DDC/CD	03480.002

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455



LOCATION MAP
N.T.S.

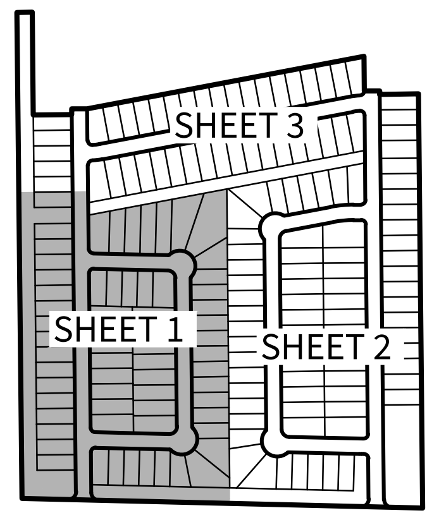

LEGEND
= PROPOSED WATER SERVICE
XXX L.F. - XX" PVC C-900 = PROPOSED WATER MAIN
8" SS = PROPOSED SEWER MAIN

OWNER/DEVELOPER:

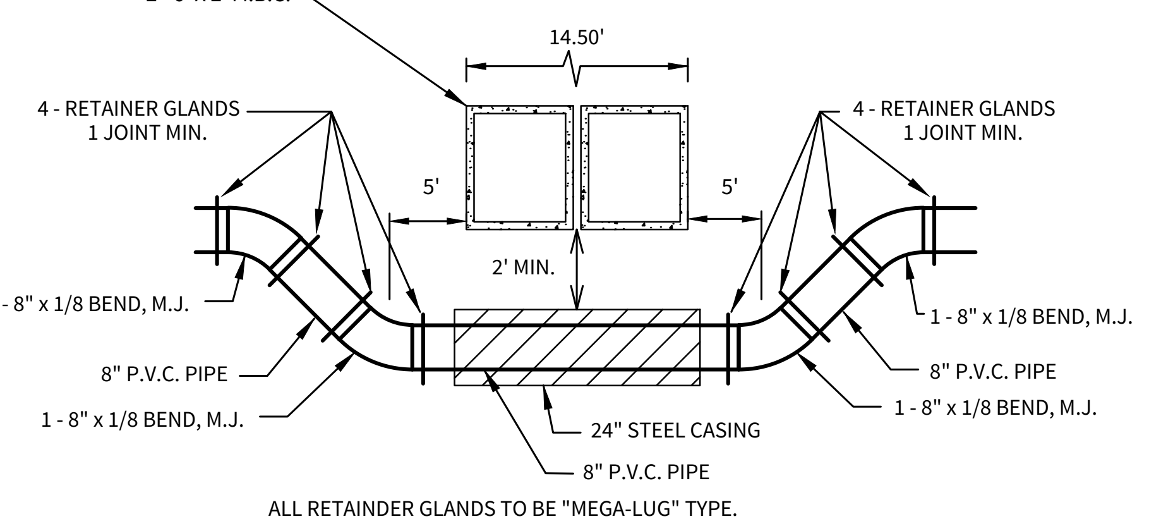
ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

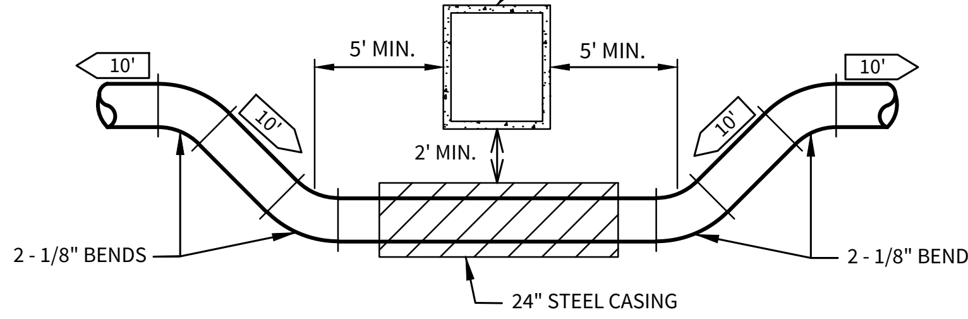
M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



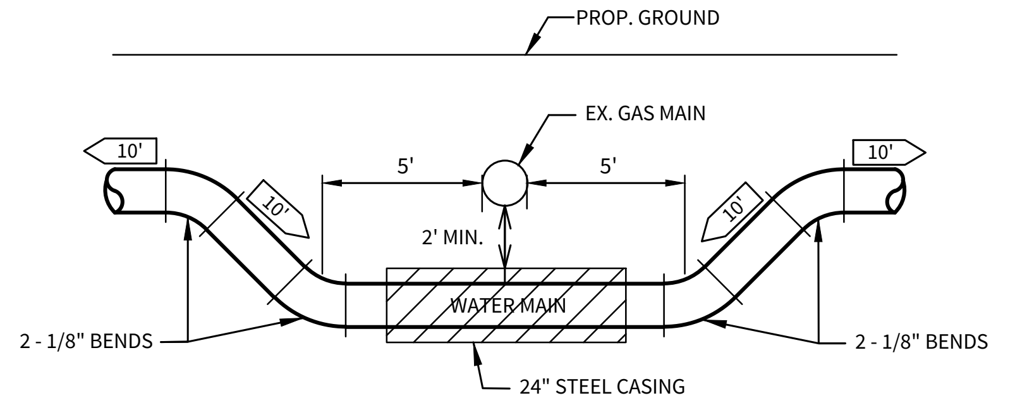
SITE MAP
NOT TO SCALE



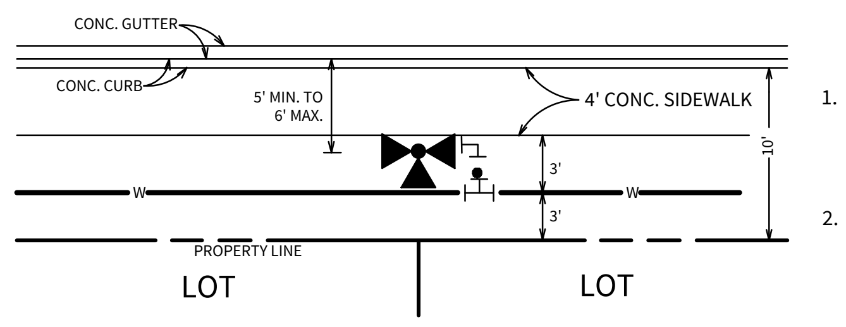
WATER / DRAIN "A" CROSSING
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)



WATER / DRAIN "C" CROSSING DETAIL
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)
(N.T.S.)



WATER / GAS CROSSINGS DETAIL
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)
(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.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)
N.T.S.

CAUTION!!

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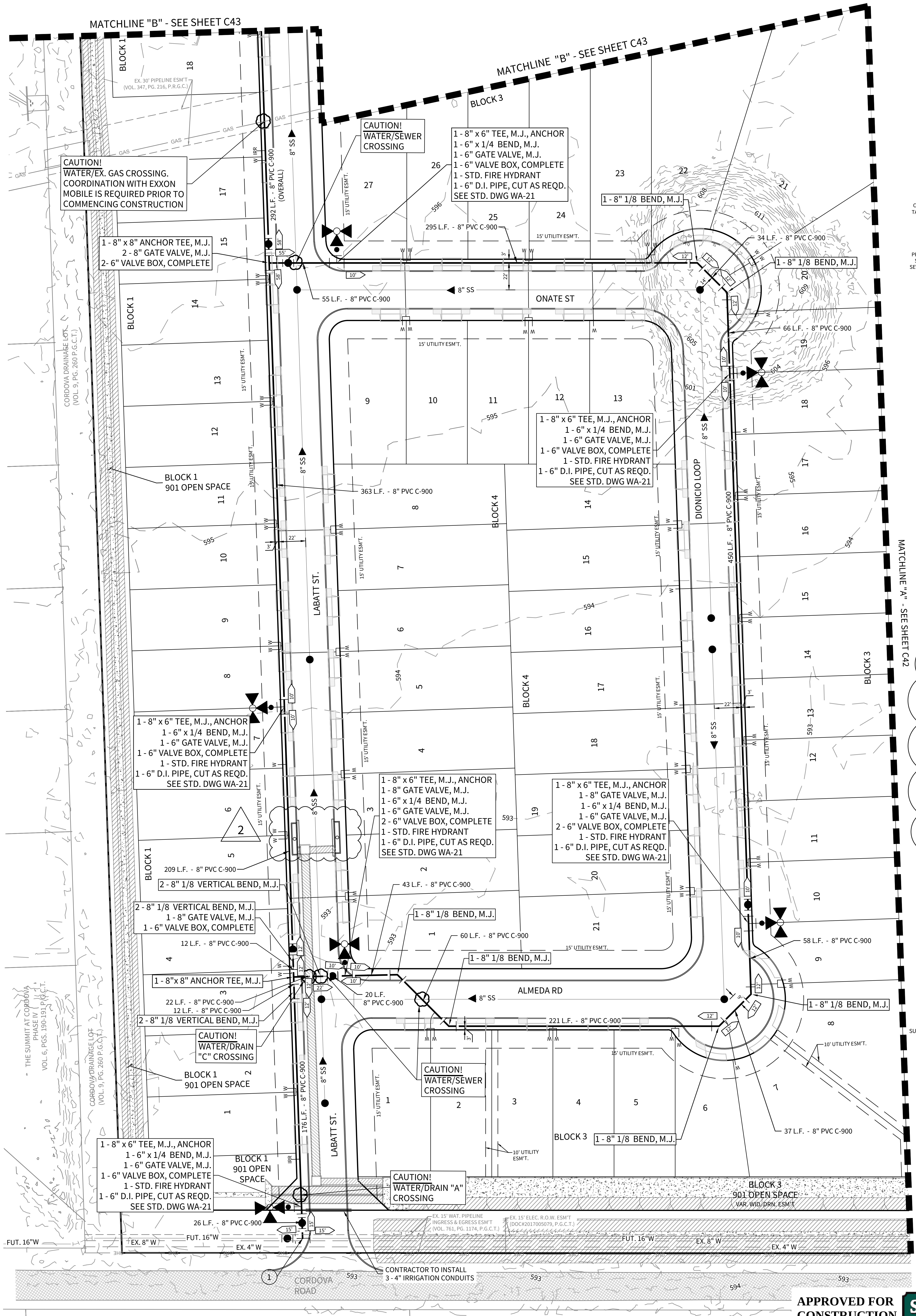
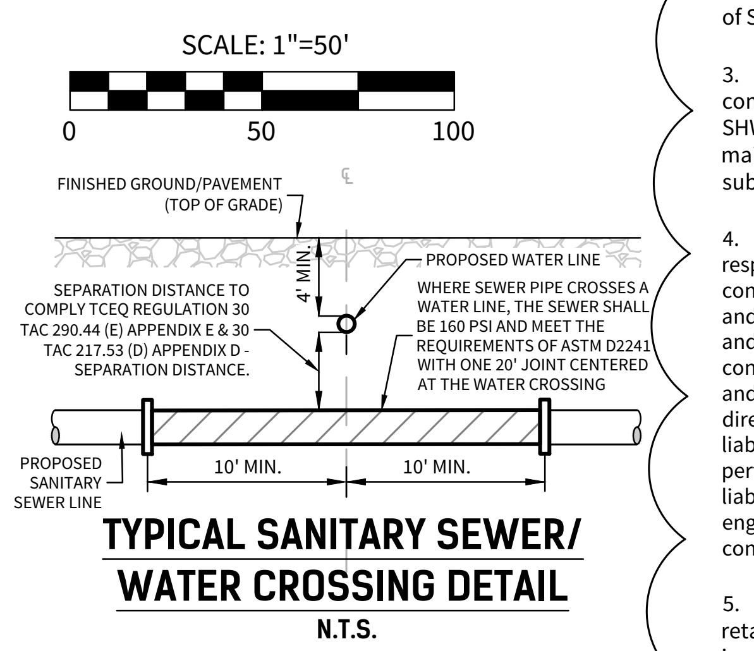
TRENCH EXCAVATION PROTECTION

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.


MATCHLINE "B" - SEE SHEET C43
MATCHLINE "B" - SEE SHEET C43
MATCHLINE "A" - SEE SHEET C42
CAUTION! WATER/EX. GAS CROSSING. COORDINATION WITH EXXON MOBILE IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION
CAUTION! WATER/SEWER CROSSING
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQD.
SEE STD. DWG WA-21
1 - 8" x 8" ANCHOR TEE, M.J.
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - 8" 1/8 BEND, M.J.
292 L.F. - 8" PVC C-900 (OVERALL)
295 L.F. - 8" PVC C-900
55 L.F. - 8" PVC C-900
34 L.F. - 8" PVC C-900
66 L.F. - 8" PVC C-900
363 L.F. - 8" PVC C-900
450 L.F. - 8" PVC C-900
209 L.F. - 8" PVC C-900
43 L.F. - 8" PVC C-900
60 L.F. - 8" PVC C-900
58 L.F. - 8" PVC C-900
12 L.F. - 8" PVC C-900
22 L.F. - 8" PVC C-900
12 L.F. - 8" PVC C-900
20 L.F. 8" PVC C-900
221 L.F. - 8" PVC C-900
174 L.F. - 8" PVC C-900
37 L.F. - 8" PVC C-900
26 L.F. - 8" PVC C-900
ONATE ST
ALMEDA RD
LABATT ST.
DIONICIO LOOP
CORDOVA RD
BLOCK 1
BLOCK 1 901 OPEN SPACE
BLOCK 3
BLOCK 3 901 OPEN SPACE
BLOCK 4
2 - 8" 1/8 VERTICAL BEND, M.J.
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 8" x 8" ANCHOR TEE, M.J.
2 - 6" VALVE BOX, COMPLETE
CAUTION! WATER/DRAIN "C" CROSSING
CAUTION! WATER/DRAIN "A" CROSSING
CAUTION! WATER/SEWER CROSSING
8" SS
15' UTILITY ESM'T.
CORDOVA DRAINAGE LOT
THE SUMMIT AT CORDOVA PHASE IV VOL. 6, PGS. 190-191 P.G.C.T.
FUT. 16"W
EX. 8" W
EX. 4" W
CONTRACTOR TO INSTALL 3 - 4" IRRIGATION CONDUITS
EX. 30' PIPELINE ESM'T
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T
EX. 15' ELEC. R.O.W. ESM'T
1
2


SCALE: 1"=50'
0 50 100
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
N.T.S.

KEYNOTE ①

AFTER RELEASE FOR SERVICE, CONTRACTOR TO TIE NEW 8" MAIN INTO EXIST. 16" WATER MAIN WITH ±5 L.F. OF 16" WATER MAIN, CUT AS REQUIRED.

8" VALVE TO REMAIN CLOSED UNTIL AFTER DISINFECTION & ACCEPTANCE BY SPRINGS HILL WATER SUPPLY

CONTRACTOR SHALL FIELD LOCATE & VERIFY DEPTH OF EXISTING 16" MAIN & FITTINGS PRIOR TO COMMENCING CONSTRUCTION

FOR CHLORINATION INJECTION
2 – 1" CORPORATION STOP C.C. X I.P.
2 – 1" COPPER TUBING, CUT AS REQ'D
2 – 1 1/4" THD. SOLID CAPS, THR.
2 – 1" COMP. x 1 $\frac{1}{4}$" COUPLING, CURB STOP
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN

1 – 16" x 8" TEE
1 – 8" SOLID SLEEVE
1 – 2" BLOWOFF ASSEMBLY (TEMP.)
1 – 8"x2" THR. DI. ECCENTRICALLY TAPPED CAP, M.J. (TEMP.)

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.

SHWSC GENERAL NOTES

GENERAL SECTION

1. All materials and construction procedures within the scope of the project shall be approved by SHWSC and comply with all applicable standards and regulations.

2. Contractor shall not proceed with any work until written approval is obtained from SHWSC. Work completed by the contractor, which has not received an approval will be subject to removal and replacement by and at the expense of the contractor at the prerogative of SHWSC.

3. The developer dedicates the water mains upon completion by the developer and acceptance by SHWSC. SHWSC will own and maintain said water mains which are located within said particular subdivision. (as applicable).

4. Contractor agrees to assume sole and complete responsibility for job site conditions during the construction of the project, including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours. The contractor shall defend, indemnify and hold the owners and the engineer and his employees, partners officers, directors, or consultants harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting from liability arising from sole negligence of the owner or engineer, engineer's directors, officers, employees, or consultants.

5. 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.

6. Contractor shall be responsible for restoring to its original or better condition, any damages done to existing fences, curbs, streets, driveways, landscaping and structures, and existing utilities (not adjusted on plans). Cost of restorations, if any, shall be the contractor's entire expense.

7. The contractor shall avoid cutting roots larger than one inch in diameter when excavating near existing trees. Excavation in vicinity of trees shall proceed with caution.

8. Contractor shall procure all permits and licenses, pay all charges, fees and taxes and give all notices necessary and incidental to the due and lawful prosecution of the work.

9. No extra payment shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.

10. Contractor is responsible for removal of all waste materials upon project completion. The contractor shall not permanently place any waste materials in the 100-year flood plain without first obtaining an approved flood plain development permit.

11. The contractor shall not place any materials on the recharge zone of the Edwards Aquifer without an approved Water Pollution Abatement Plan from the TCEQ 31 TAC 313.4 and 31 TAC 313.9.

12. Barricades and warning signs shall conform to the "texas manual on uniform traffic control devices" and shall be located to provide maximum protection to the public as well as construction personnel and equipment while providing continuous traffic flow at all times during construction. The contractor is responsible for maintaining all devices during construction.

13. Contractor is required to verify project elevations. The term "match existing" shall be understood to signify both horizontal and vertical alignment.

14. The location of utilities, either underground or overhead, shown within the right of way are approximate and shall be verified by the contractor before beginning construction operations.

15. OSHA regulations prohibit operations that will bring persons or equipment within 10 feet of an energized line. Where workmen and/or equipment have to work close to an energized electrical line, the contractor shall notify the electrical power company involved and make whatever adjustments necessary to ensure the safety of those workmen.

16. It shall be the contractor's responsibility to locate utility service lines as required for construction. Utility companies are also previously mentioned in "utility company notification".

17. Due to federal regulations title 49, part 192 (8), gas companies must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.

18. The contractor is fully responsible for the traffic control and will be responsible for furnishing all traffic control devices, and flaggers. The construction methods shall be conducted to provide the least possible interference to traffic so as to permit the continuous movement of the traffic in one direction at all times. The contractor shall clean up and remove from the work area any loose material resulting from contract operations at the end of each workday.

19. Prior to ordering materials to be used in construction, contractor shall provide SHWSC with four (4) copies of the source, type, gradation, material specification data and / or shop drawings, as applicable, to satisfy the requirements of the following items and all material items referred to in these listed items:

A. Water mains and services

20. No meter boxes to be set in driveways. Any meter boxes set in driveways will be relocated at contractor's and/or developer's expense.

21. Where the minimum 9 foot separation distance between sewer lines and water lines / mains cannot be maintained, the installation of water lines shall be in strict accordance with TCEQ.

22. 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. The contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation safety protection that complies 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.

23. Utility trench compaction with street r.o.w.

A. All utility trench compaction test within the street pavement section shall be the responsibility of the developer's geo-technical engineer.

B. Fill material shall be placed in uniform layers not to exceed twelve inches (12") loose.

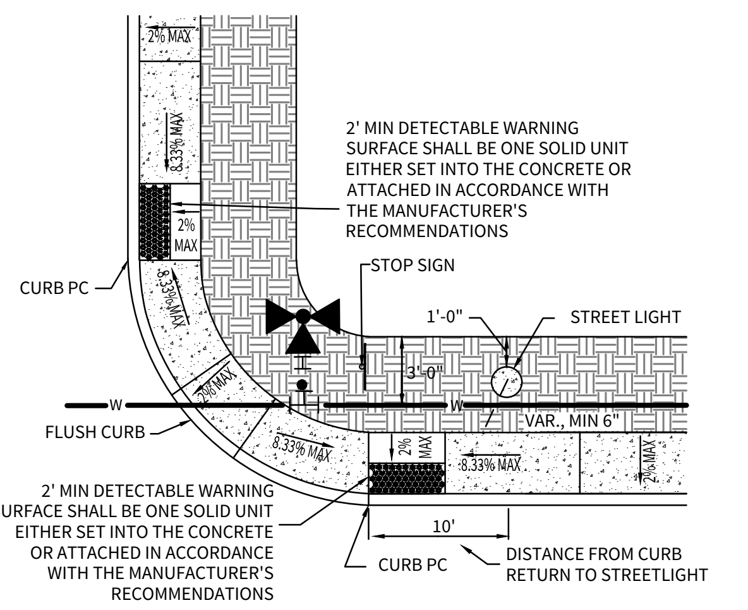
C. Each layer of material shall be compacted as specified and tested for density and moisture in accordance with test methods tex-113-e, tex-114-e, tex-115-e.

D. The number and location of required tests shall be determined by the geo-technical engineer and approved by SHWSC.

E. Upon completion of testing the geo-technical engineer shall provide SHWSC street inspector with all testing documentation and a certification stating that the placement of fill material has been completed in accordance with the plans.

PRESSURE REDUCING VALVE NOTE:

Pressure reducing valve to be installed on customer's side of meter by homebuilder.

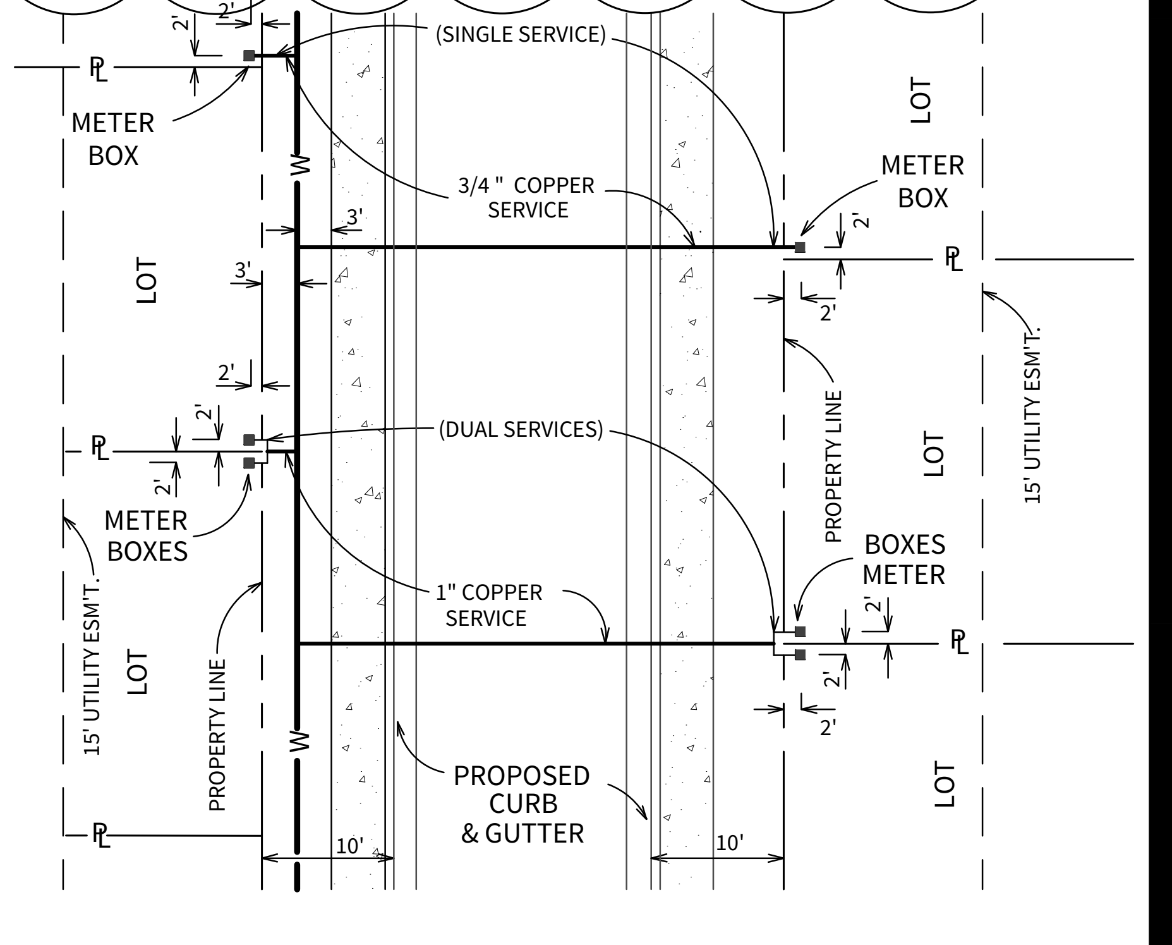

2' MIN DETECTABLE WARNING SURFACE SHALL BE ONE SOLID UNIT EITHER SET INTO THE CONCRETE OR ATTACHED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS
STOP SIGN
CURB PC
1'-0"
STREET LIGHT
3'-0"
FLUSH CURB
VAR., MIN 6"
8.33% MAX
2% MAX
10'
CURB PC
DISTANCE FROM CURB RETURN TO STREETLIGHT

FIRE HYDRANT LOCATION ON RETURNS DETAIL
N.T.S.

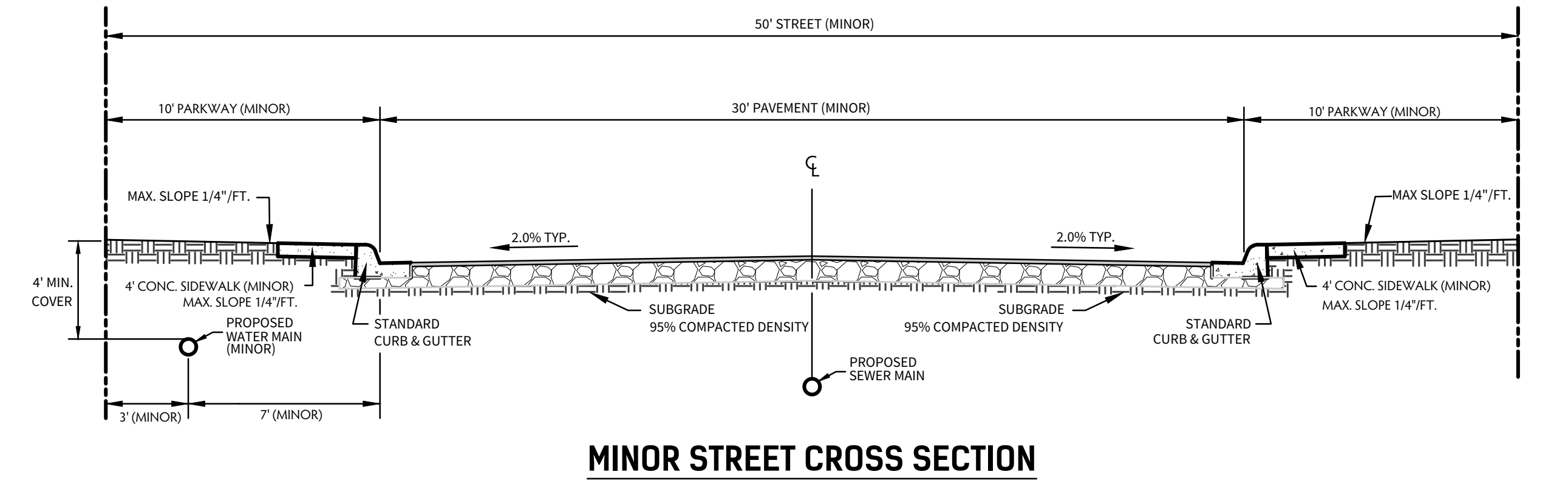
NOTES:

1) STREET LIGHTS SHALL BE INSTALLED 2' WITHIN R.O.W. AND A MINIMUM DISTANCE OF 6" FROM THE PROPOSED SIDEWALK, AND A MINIMUM DISTANCE OF 5' FROM FACE OF CURB.

2) FIRE HYDRANTS (AS APPLICABLE) SHALL BE INSTALLED WITHIN THE R.O.W. A MINIMUM OF 1' FROM THE BACK OF THE CURB AND A MINIMUM OF 1' AWAY FROM THE PROPOSED SIDEWALK.



WATER METER BOX LOCATION (50' R.O.W. / 4' SDWK)
N.T.S.



MINOR STREET CROSS SECTION
N.T.S.

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980
CUDE
ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1
WATER DISTRIBUTION PLANS

DATE	12/05/2021
PROJECT NO.	03480.002
DRAWN BY	AC
CHECKED BY	DDC/JC

REVISIONS

1.	07/08/2021 - UPDATED SHWSC GENERAL NOTES
2.	09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS
3.	
4.	
5.	
6.	
7.	
8.	
9.	

DAVID D. CUPIT II
122076
12.11.21

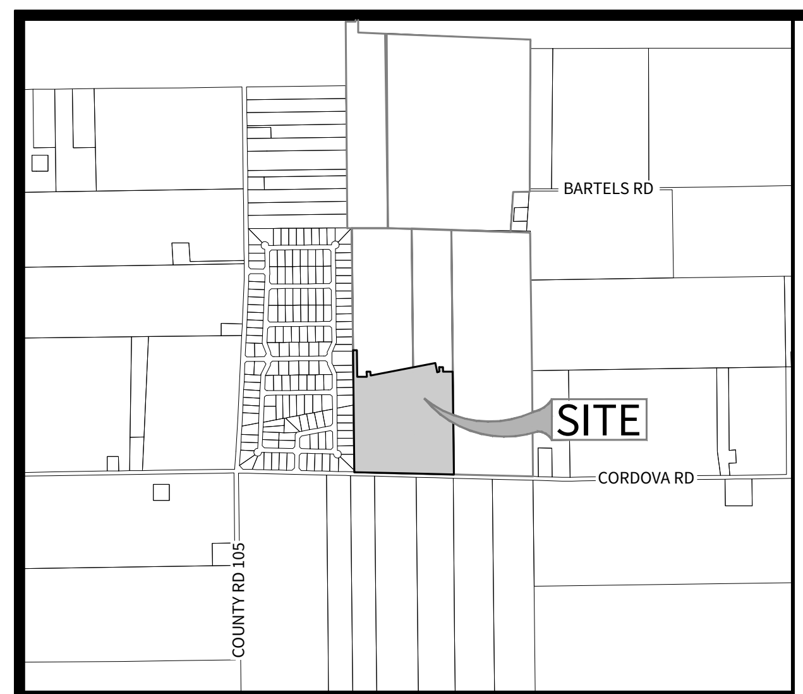
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C41

1 OF 6

P:\03480\002\2-Drawings\01_XX_WAT.dwg

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP

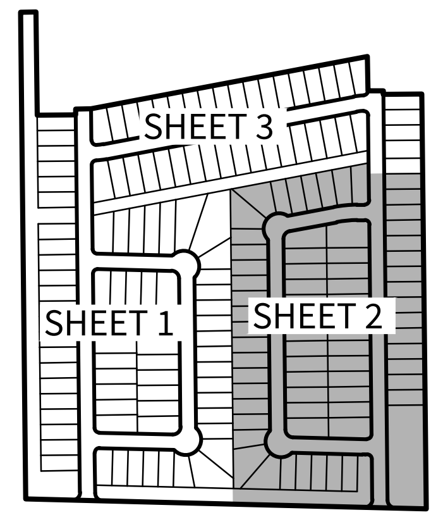
N.T.S.

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

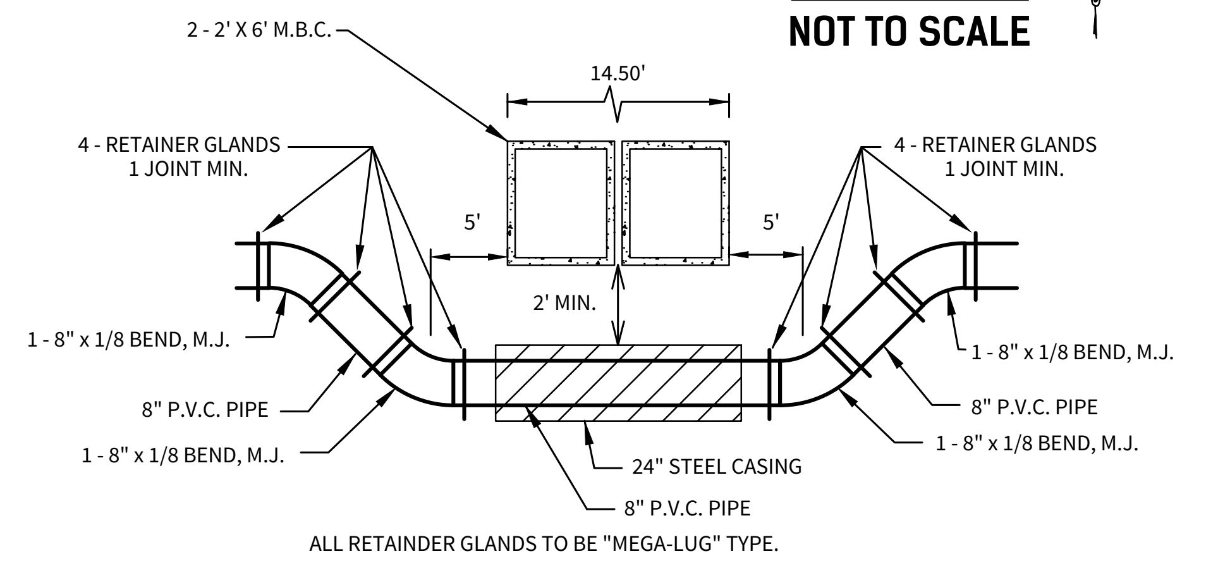
CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112



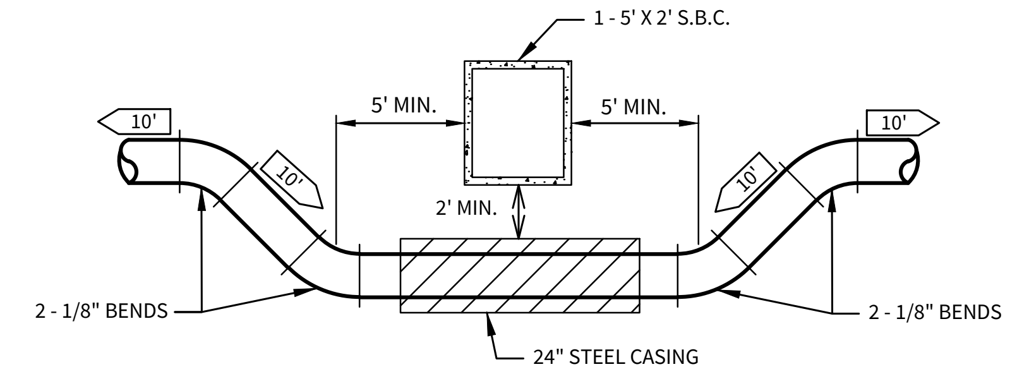
SITE MAP

NOT TO SCALE



WATER / DRAIN "A" CROSSING

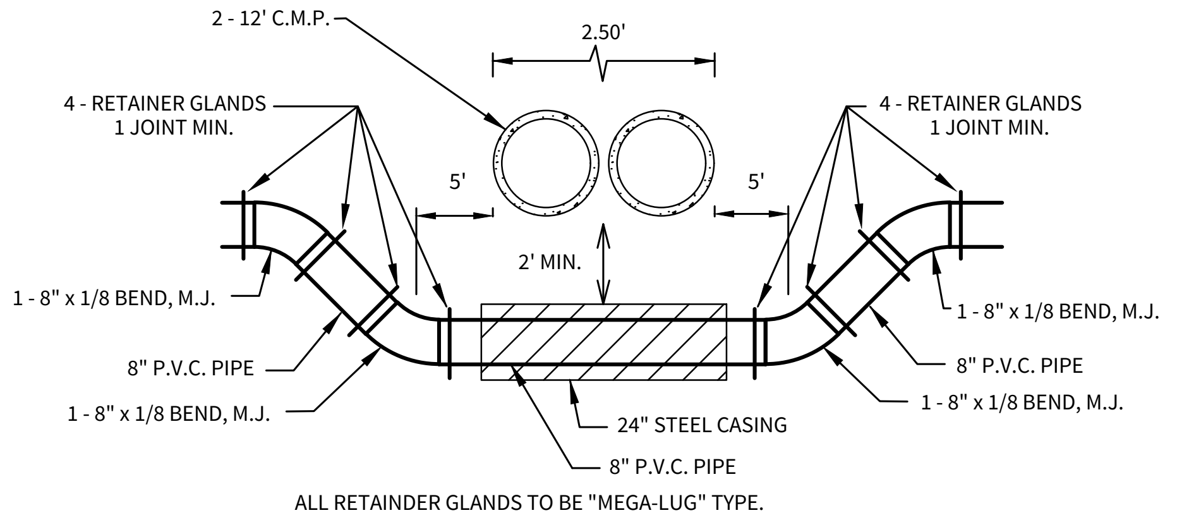
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)



WATER / DRAIN "D" CROSSING DETAIL

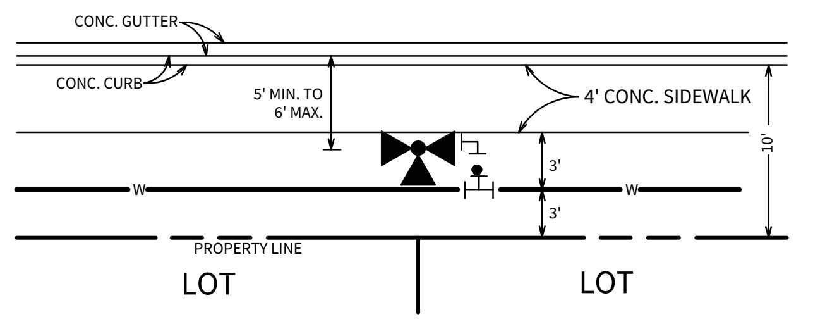
SIDE VIEW (THIS DETAIL IS VERTICAL ONLY, NOT HORIZONTAL.)

(N.T.S.)



WATER / DRAIN "I" CROSSING

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



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.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)

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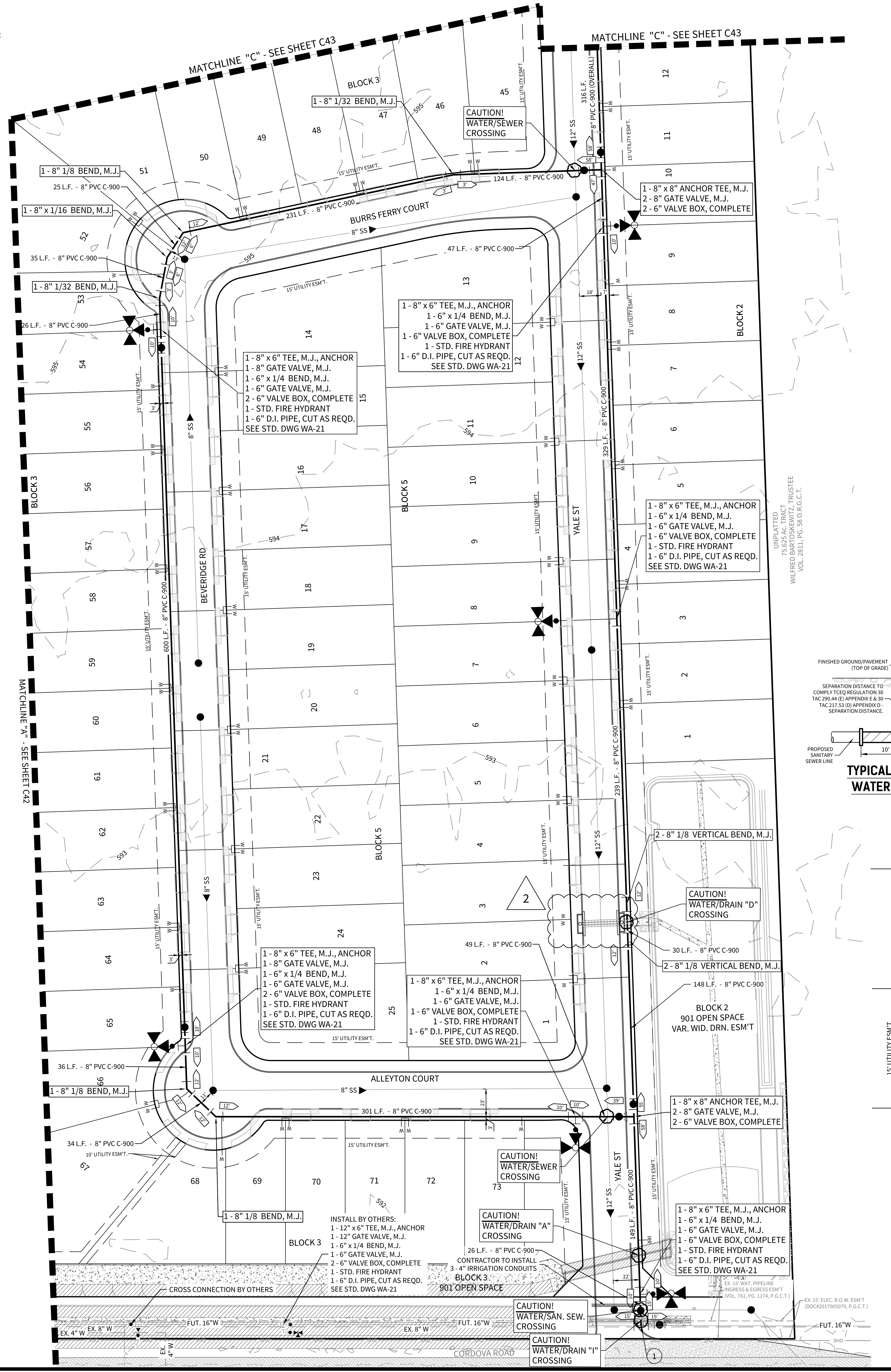
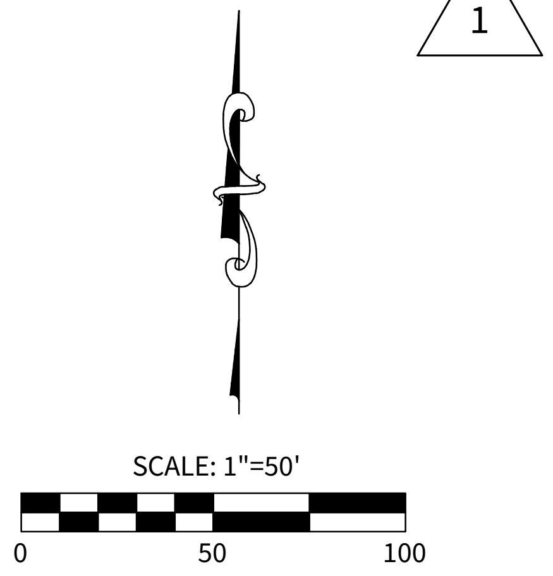
LEGEND

= PROPOSED WATER SERVICE
XXX L.F. - XX" PVC C-900 = PROPOSED WATER MAIN
8" SS = PROPOSED SEWER MAIN





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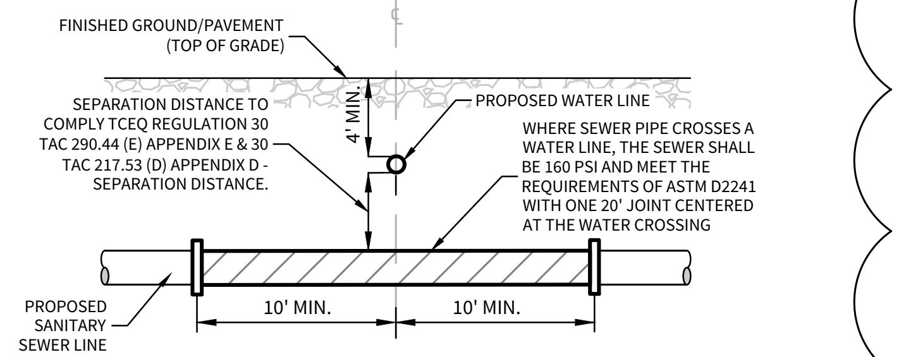
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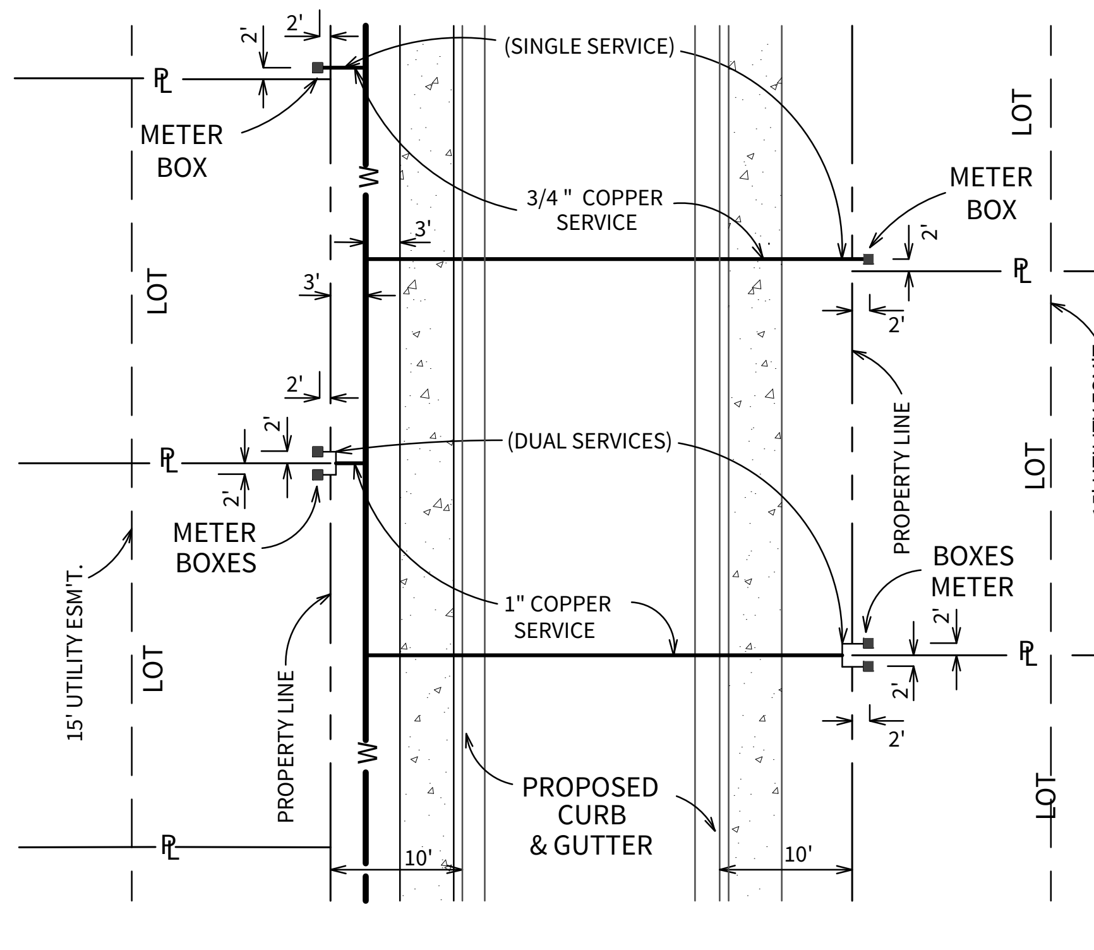

WATER METER BOX LOCATION (50' R.O.W. / 4' SDWK)

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16. It shall be the contractor's responsibility to locate utility service lines as required for construction. Utility companies are also previously mentioned in "utility company notification".

17. Due to federal regulations title 49, part 192 (8), gas companies must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.

18. The contractor is fully responsible for the traffic control and will be responsible for furnishing all traffic control devices, and flaggers. The construction methods shall be conducted to provide the least possible interference to traffic so as to permit the continuous movement of the traffic in one direction at all times. The contractor shall clean up and remove from the work area any loose material resulting from contract operations at the end of each workday.

19. Prior to ordering materials to be used in construction, contractor shall provide SHWSC with four (4) copies of the source, type, gradation, material specification data and / or shop drawings, as applicable, to satisfy the requirements of the following items and all material items referred to in these listed items:

A. Water mains and services

20. No meter boxes to be set in driveways. Any meter boxes set in driveways will be relocated at contractor's and/or developer's expense.

21. Where the minimum 9 foot separation distance between sewer lines and water lines / mains cannot be maintained, the installation of water lines shall be in strict accordance with TCEQ.

22. 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. The contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation safety protection that complies 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.

23. Utility trench compaction with street r.o.w.

A. All utility trench compaction test within the street pavement section shall be the responsibility of the developer's geo-technical engineer.

B. Fill material shall be placed in uniform layers not to exceed twelve inches (12") loose.

C. Each layer of material shall be compacted as specified and tested for density and moisture in accordance with test methods tex-113-e, tex-114-e, tex-115-e.

D. The number and location of required tests shall be determined by the geo-technical engineer and approved by SHWSC.

E. Upon completion of testing the geo-technical engineer shall provide SHWSC street inspector with all testing documentation and a certification stating that the placement of fill material has been completed in accordance with the plans.

PRESSURE REDUCING VALVE NOTE:

Pressure reducing valve to be installed on customer's side of meter by homebuilder.

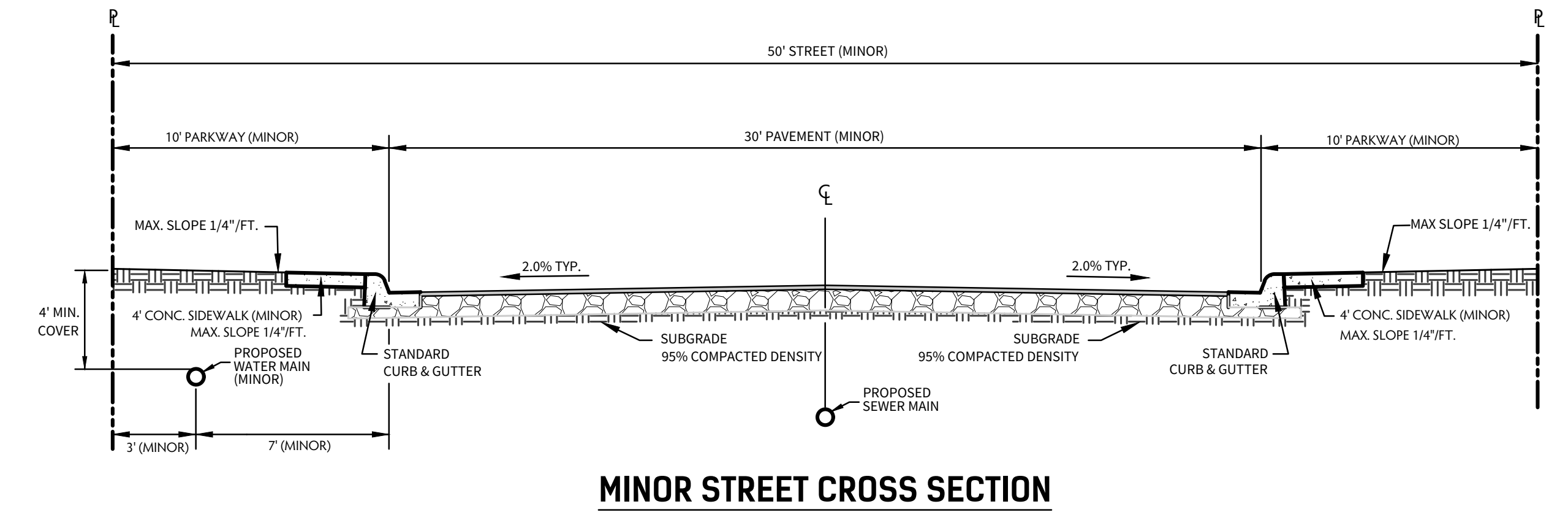
TRENCH EXCAVATION PROTECTION

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.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14



MINOR STREET CROSS SECTION

N.T.S.

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

WATER DISTRIBUTION PLANS

DATE	12/05/2021
PROJECT NO.	03480.002
DRAWN BY	AC
CHECKED BY	DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED SHWSC GENERAL NOTES
2. 09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS
3.
4.
5.
6.
7.
8.
9.

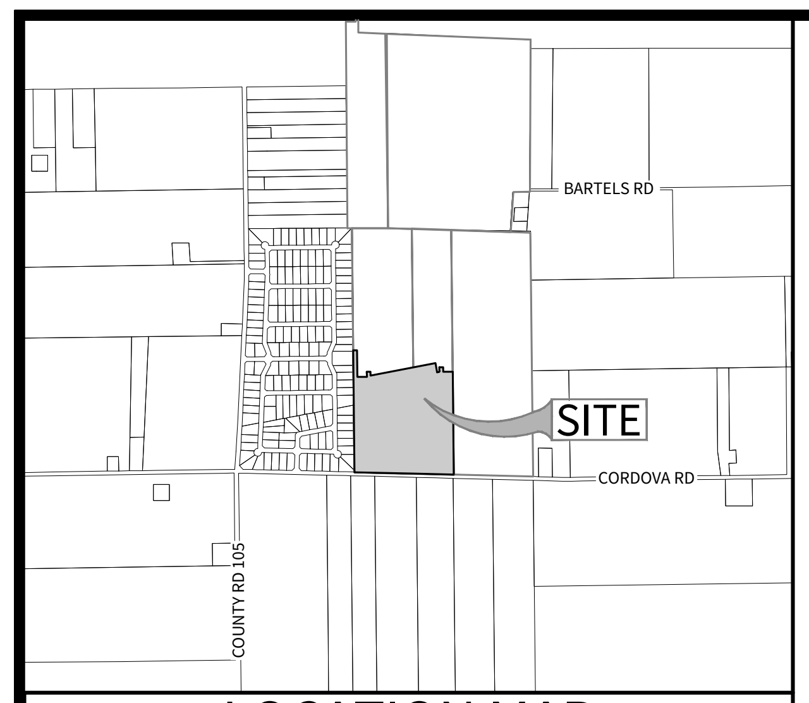
DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C42

2 OF 6

P:\03480\002\2-Drawings\01_XX_WAT.dwg 2021/12/05 10:12pm jguerrero



LOCATION MAP

N.T.S.

LEGEND

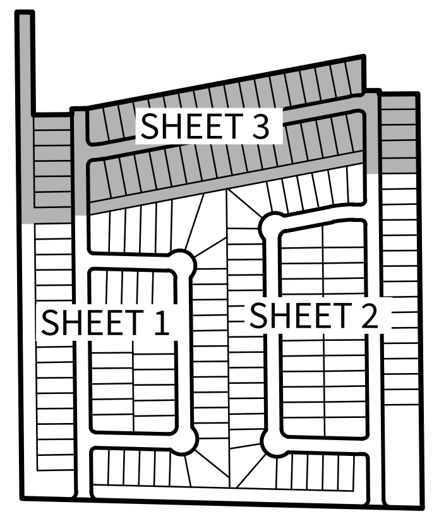
= PROPOSED WATER SERVICE
XXX L.F. - XX" PVC C-900 = PROPOSED WATER MAIN
8" SS = PROPOSED SEWER MAIN

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112

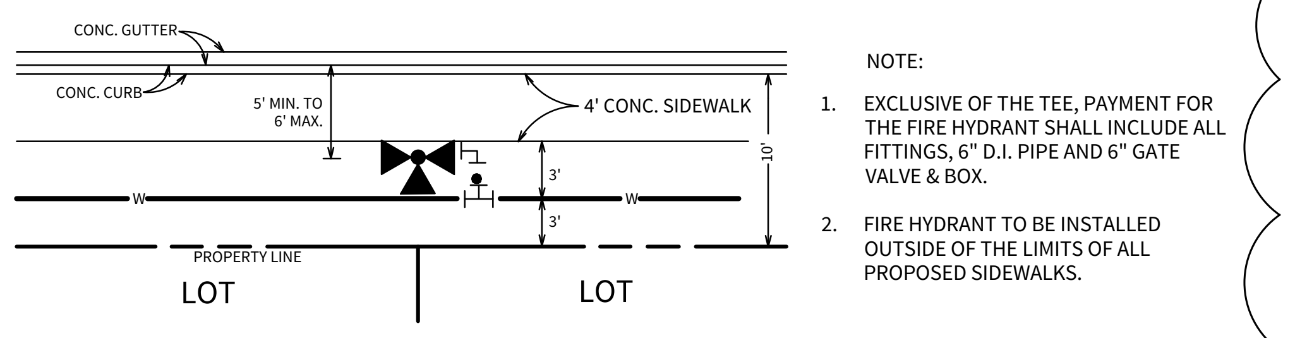


SITE MAP

NOT TO SCALE

SCALE: 1"=50'

0 50 100

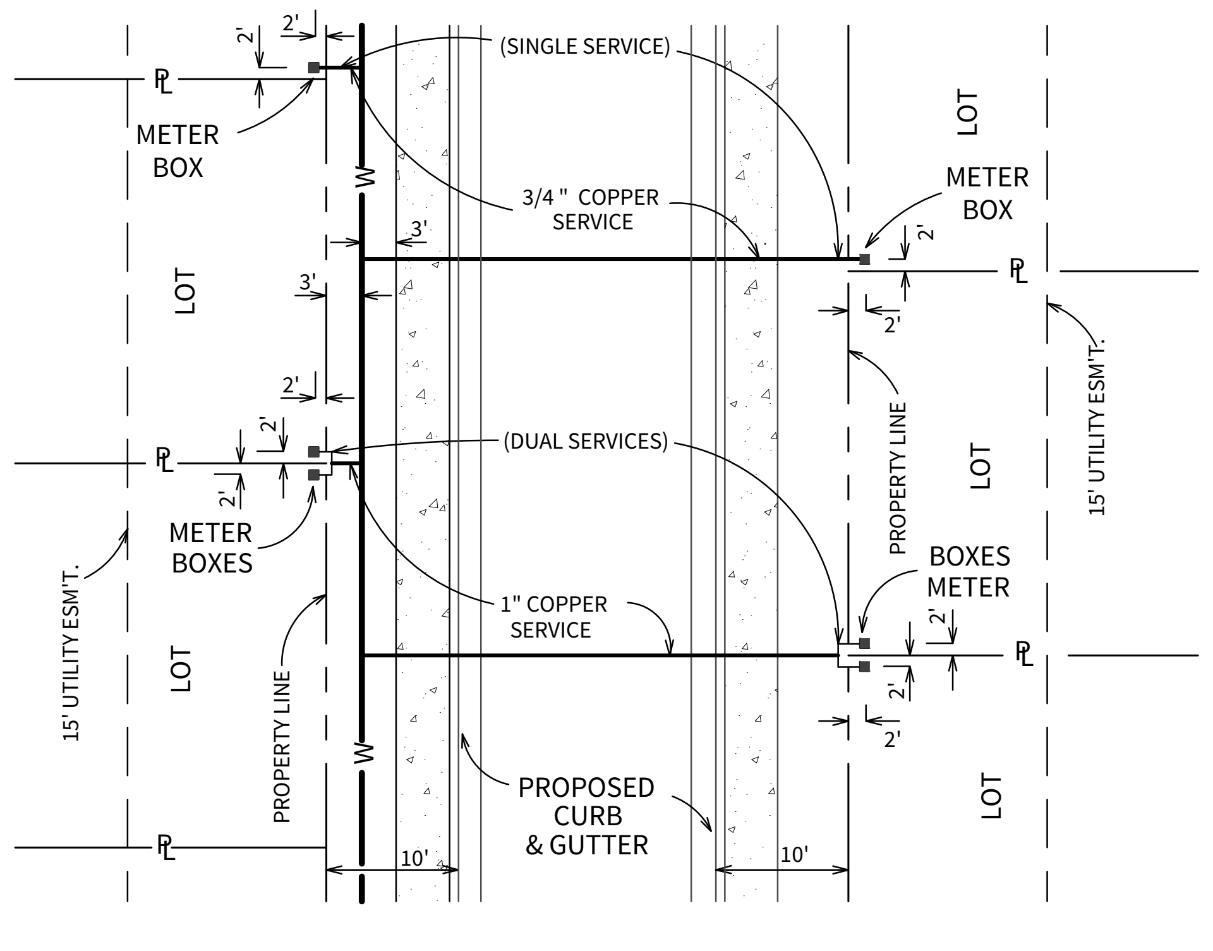


NOTE:

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.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)

N.T.S.



WATER METER BOX LOCATION (50' R.O.W. / 4' SDWK)

N.T.S.

SHWSC GENERAL NOTES

GENERAL SECTION

1. All materials and construction procedures within the scope of the project shall be approved by SHWSC and comply with all applicable standards and regulations.

2. Contractor shall not proceed with any work until written approval is obtained from SHWSC. Work completed by the contractor, which has not received an approval will be subject to removal and replacement by and at the expense of the contractor at the prerogative of SHWSC.

3. The developer dedicates the water mains upon completion by the developer and acceptance by SHWSC. SHWSC will own and maintain said water mains which are located within said particular subdivision. (as applicable).

4. Contractor agrees to assume sole and complete responsibility for job site conditions during the construction of the project, including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours. The contractor shall defend, indemnify and hold the owners and the engineer and his employees, partners officers, directors, or consultants harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting from liability arising from sole negligence of the owner or engineer, engineer's directors, officers, employees, or consultants.

5. 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.

6. Contractor shall be responsible for restoring to its original or better condition, any damages done to existing fences, curbs, streets, driveways, landscaping and structures, and existing utilities (not adjusted on plans). Cost of restorations, if any, shall be the contractor's entire expense.

7. The contractor shall avoid cutting roots larger than one inch in diameter when excavating near existing trees. Excavation in vicinity of trees shall proceed with caution.

8. Contractor shall procure all permits and licenses, pay all charges, fees and taxes and give all notices necessary and incidental to the due and lawful prosecution of the work.

9. No extra payment shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.

10. Contractor is responsible for removal of all waste materials upon project completion. The contractor shall not permanently place any waste materials in the 100-year flood plain without first obtaining an approved flood plain development permit.

11. The contractor shall not place any materials on the recharge zone of the Edwards Aquifer without an approved Water Pollution Abatement Plan from the TCEQ 31 TAC 313.4 and 31 TAC 313.9.

12. Barricades and warning signs shall conform to the "texas manual on uniform traffic control devices" and shall be located to provide maximum protection to the public as well as construction personnel and equipment while providing continuous traffic flow at all times during construction. The contractor is responsible for maintaining all devices during construction.

13. Contractor is required to verify project elevations. The term "match existing" shall be understood to signify both horizontal and vertical alignment.

14. The location of utilities, either underground or overhead, shown within the right of way are approximate and shall be verified by the contractor before beginning construction operations.

15. OSHA regulations prohibit operations that will bring persons or equipment within 10 feet of an energized line. Where workmen and/or equipment have to work close to an energized electrical line, the contractor shall notify the electrical power company involved and make whatever adjustments necessary to ensure the safety of those workmen.

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PRESSURE REDUCING VALVE NOTE:

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TRENCH EXCAVATION PROTECTION

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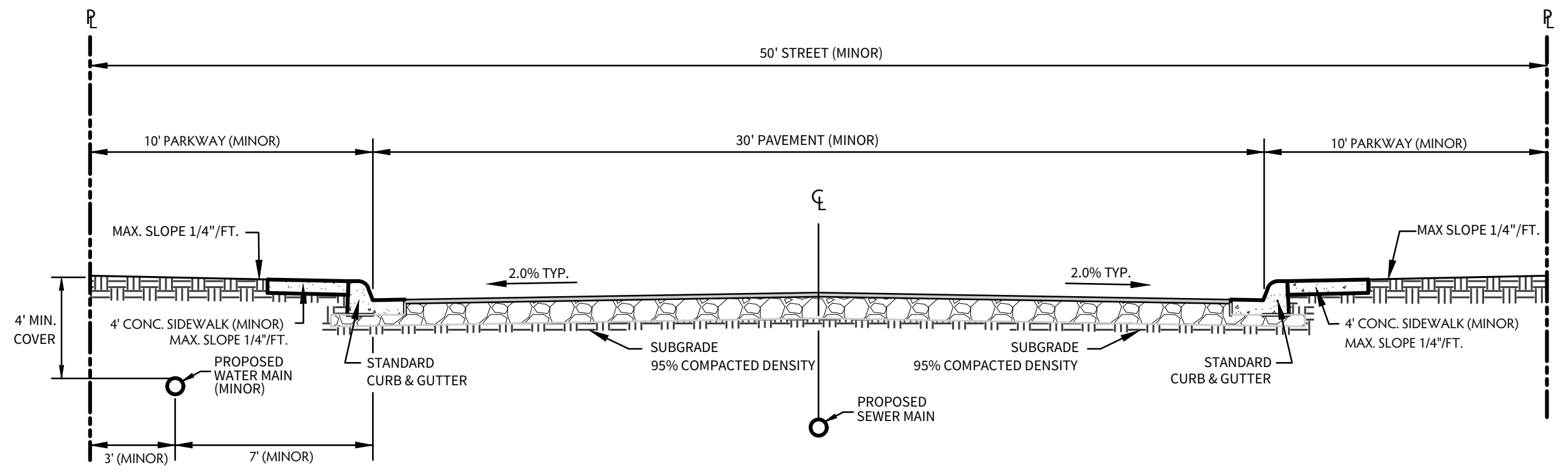
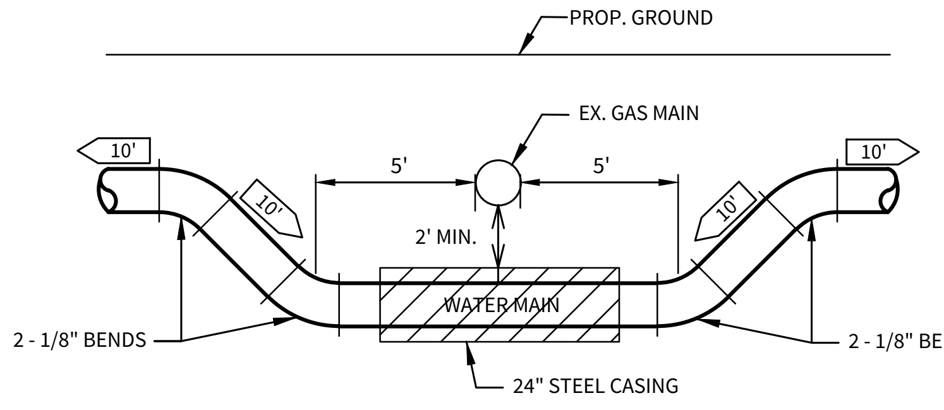


MINOR STREET CROSS SECTION

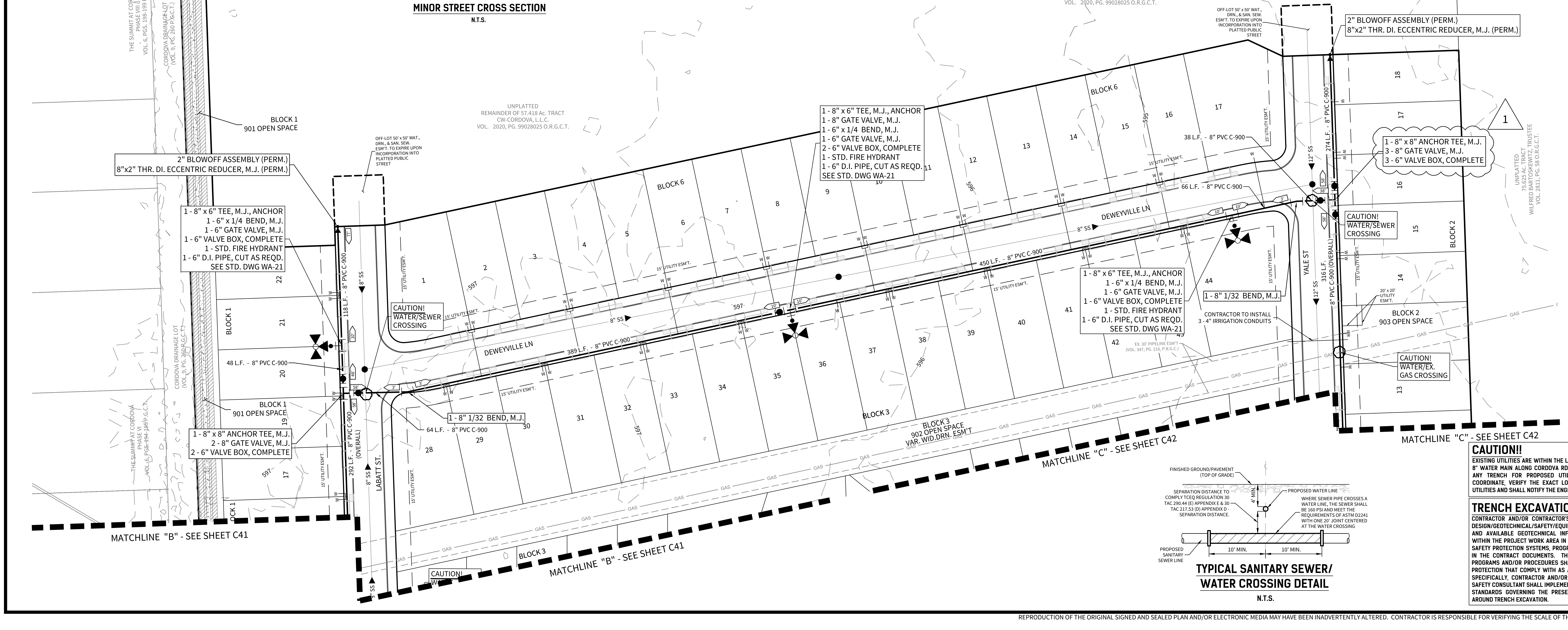
N.T.S.



WATER / GAS CROSSINGS DETAIL

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

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CPJENGR 2022-01-14


THE SUMMIT AT CORDOVA PHASE VI
CORDOVA DRAINAGE LOT
BLOCK 1 901 OPEN SPACE
UNPLATTED REMAINDER OF 57.418 Ac. TRACT CW-CORDOVA, L.L.C. VOL. 2020, PG. 99028025 O.R.G.C.T.
OFF-LOT 50' x 50' WAT., DRN., & SAN. SEW. ESM'T. TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET
2" BLOWOFF ASSEMBLY (PERM.)
8"x2" THR. DI. ECCENTRIC REDUCER, M.J. (PERM.)
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQD.
SEE STD. DWG WA-21
1 - 8" x 6" TEE, M.J., ANCHOR
1 - 8" GATE VALVE, M.J.
1 - 6" x 1/4 BEND, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - STD. FIRE HYDRANT
1 - 6" D.I. PIPE, CUT AS REQD.
SEE STD. DWG WA-21
1 - 8" x 8" ANCHOR TEE, M.J.
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - 8" x 8" ANCHOR TEE, M.J.
3 - 8" GATE VALVE, M.J.
3 - 6" VALVE BOX, COMPLETE
1 - 8" 1/32 BEND, M.J.
1 - 8" 1/32 BEND, M.J.
CONTRACTOR TO INSTALL 3 - 4" IRRIGATION CONDUITS
CAUTION! WATER/SEWER CROSSING
CAUTION! WATER/SEWER CROSSING
CAUTION! WATER/EX. GAS CROSSING
CAUTION! W
118' L.F. - 8" PVC C-900
48 L.F. - 8" PVC C-900
292 L.F. - 8" PVC C-900 (OVERALL)
64 L.F. - 8" PVC C-900
389 L.F. - 8" PVC C-900
450 L.F. - 8" PVC C-900
66 L.F. - 8" PVC C-900
38 L.F. - 8" PVC C-900
274 L.F. - 8" PVC C-900
316 L.F. 8" PVC C-900 (OVERALL)
8" SS
12" SS
DEWEYVILLE LN
LABATT ST.
YALE ST
BLOCK 1
BLOCK 2
BLOCK 2 903 OPEN SPACE
BLOCK 3
BLOCK 3 902 OPEN SPACE VAR. WID.DRN. ESM'T
BLOCK 6
15' UTILITY ESM'T.
20' x 20' UTILITY ESM'T.
EX. 30' PIPELINE ESM'T (VOL. 347, PG. 216, P.R.G.C.)
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSZEWITZ, TRUSTEE
GAS
MATCHLINE "B" - SEE SHEET C41
MATCHLINE "B" - SEE SHEET C41
MATCHLINE "C" - SEE SHEET C42
MATCHLINE "C" - SEE SHEET C42
1
FINISHED GROUND/PAVEMENT (TOP OF GRADE)
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
4' MIN.
10' MIN.
10' MIN.

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC., 4" & 8" WATER MAIN ALONG CORDOVA RD. 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.

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

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

CORDOVA TRAILS SUBDIVISION UNIT 1

WATER DISTRIBUTION PLANS

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 07/08/2021 - UPDATED SHWSC GENERAL NOTES & ADDED ANOTHER GATE VALVE
2.
3.
4.
5.
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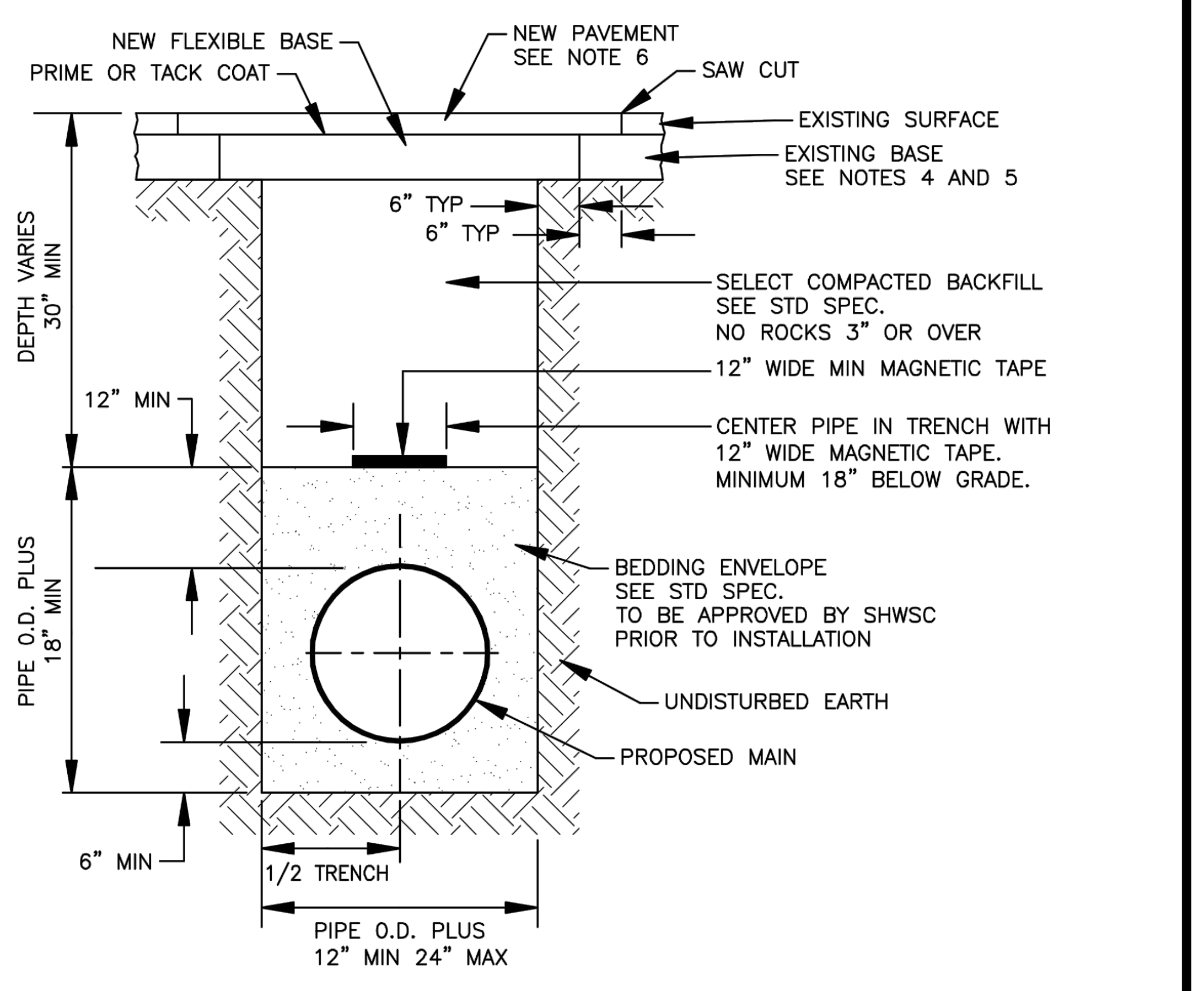
8.
9.

DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C43

3 OF 6



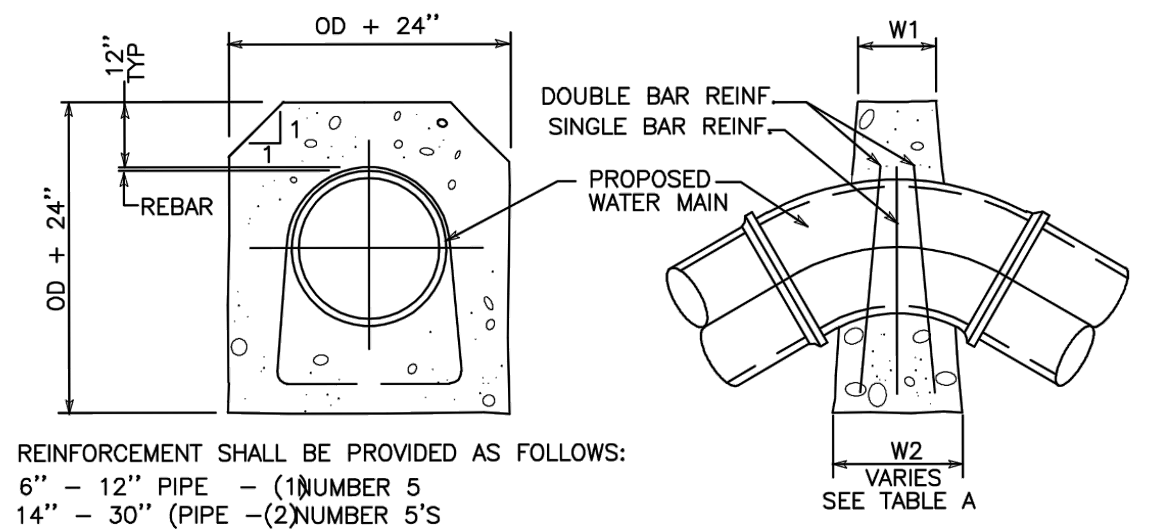
NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12 INCHES WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTERLINE OF THE EXCAVATION.
2. ANY CONCRETE PAVING SHALL BE CUT 6 INCHES WIDER THAN THE UNDISTURBED SIDES OF THE EXCAVATION.
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND, OF EQUAL THICKNESS, OR WITH MINIMUM BASE THICKNESS OF 10 INCHES WHICHEVER IS GREATER.
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT AREA SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 8 INCHES OF BASE OR MATCH EXISTING, WHICHEVER IS GREATER.
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 2 INCHES, WHICHEVER IS GREATER.
7. ALL WATER LINES SHALL HAVE A MINIMUM PRESSURE CLASS OF 200 PSI.

SPRINGS HILL WATER SUPPLY CORPORATION

TRENCH WITH PAVED SURFACE

DATE:	REVISIONS:	STANDARD NO.
07/26/2010		WA-4



REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS:
6'' – 12'' PIPE – (1)NUMBER 5
14'' – 30'' (PIPE –(2)NUMBER 5'S
36''– 48'' PIPE –(3) NUMBER 7'S

VERTICAL DOWN BEND

TABLE A
UPWARD THRUST GRAVITY BLOCKS

PIPE DIA.	MIN. TOP WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH– W2 (in)
6''	6''	0–5	NOTE 2
		5–15	24
		15–25	48
		➢ 25	NOTE 1
8''	6''	0–5	NOTE 2
		5–9	30
		9–15	36
		➢ 15	NOTE 1
12''	6''	0–5	NOTE 2
		5–15	48
		➢ 15	NOTE 1
16''	12''	0–5	NOTE 2
		5–10	60
		10–15	96
		➢ 15	NOTE 1
24'' THRU 36"		➢ 5.0	NOTE 1
42'' THRU 48"		➢ 3.0	NOTE 1

NOTES:

1. FOR ANGLES GREATER THAN THOSE INDICATED RESTRAINT JOINTS SHALL BE INSTALLED
2. FOR JOINT DEFLECTIONS LESS THAN 5 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42'' IN DIAMETER.

THRUST BLOCK DESIGN AS FOLLOWS
A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50 % SURGE ALLOWANCE
B. MAXIMIM SOIL BEARING SEE TABLE BELOW

SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1500 Lb/Sq.Ft.
UNDISTURBED SOIL, CALICHE	2000 Lb/Sq.Ft.
LIMESTONE ROCK	4000 Lb/Sq.Ft.

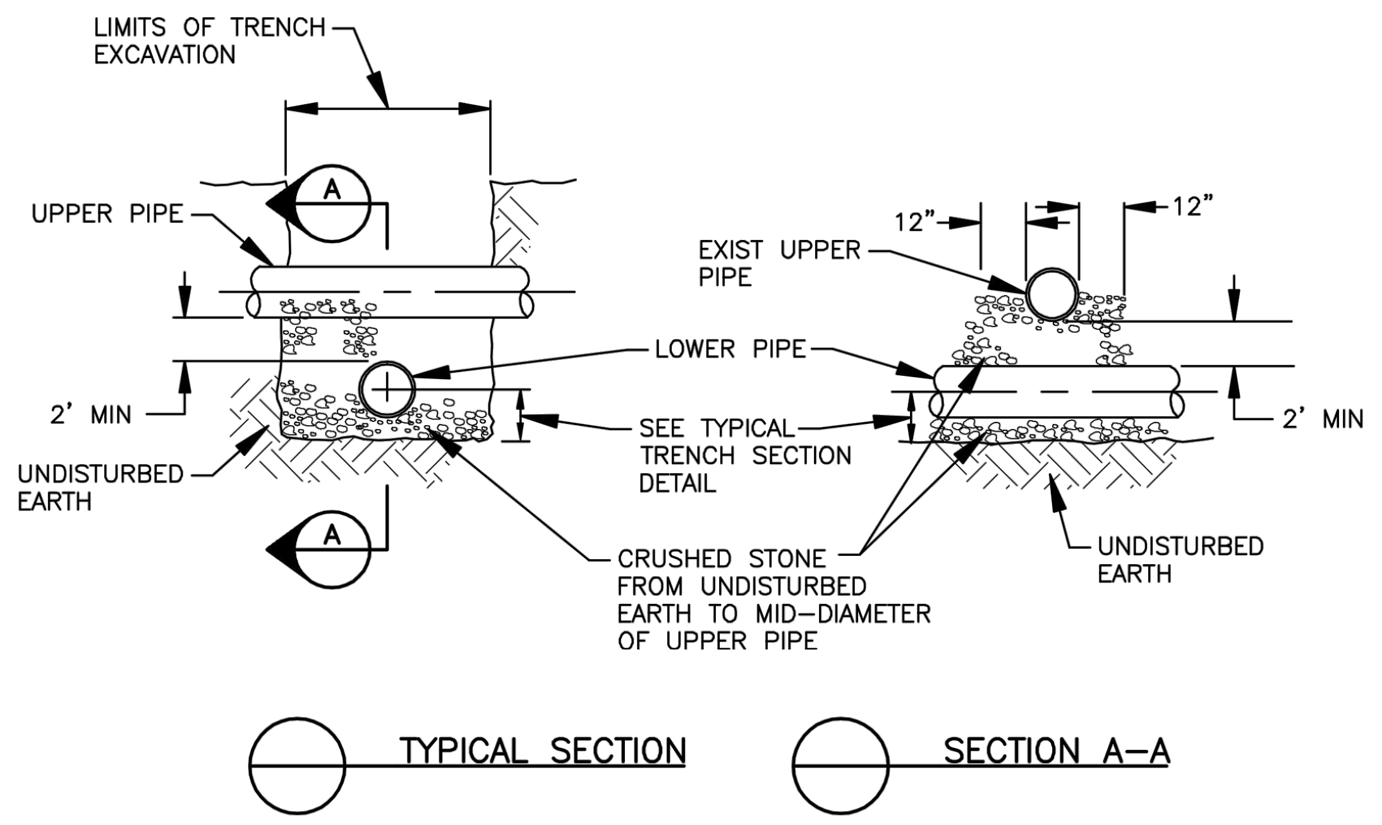
NOTES:

1. THE EARTH BEARING SURFACE SHALL BE UNDISTURBED MATERIAL, IF NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND THE UNDISTURBED SOIL MUST BE COMPACTED TO TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ADEQUATE THRUST BLOCKING. THE CONTRACTOR SHALL MAKE THE DETERMINATION IN THE FIELD AS TO TYPE OF SOIL AND USE THE "THRUST BLOCKING DESIGN" TO ADJUST THE AMOUNTS OF THRUST BLOCKING REQUIRED AT EACH PLACE OF USE.
3. ALL FITTINGS SHALL BE BLOCKED REGARDLESS OF THE ANGLE OF DIRECTION.
4. ALL JOINTS WITHIN 30' OF BEND MUST BE RESTRAINED.

SPRINGS HILL WATER SUPPLY CORPORATION

THRUST BLOCK DETAILS
SHT 1 OF 2

DATE:	REVISIONS:	STANDARD NO.
03/03/2010		WA-6



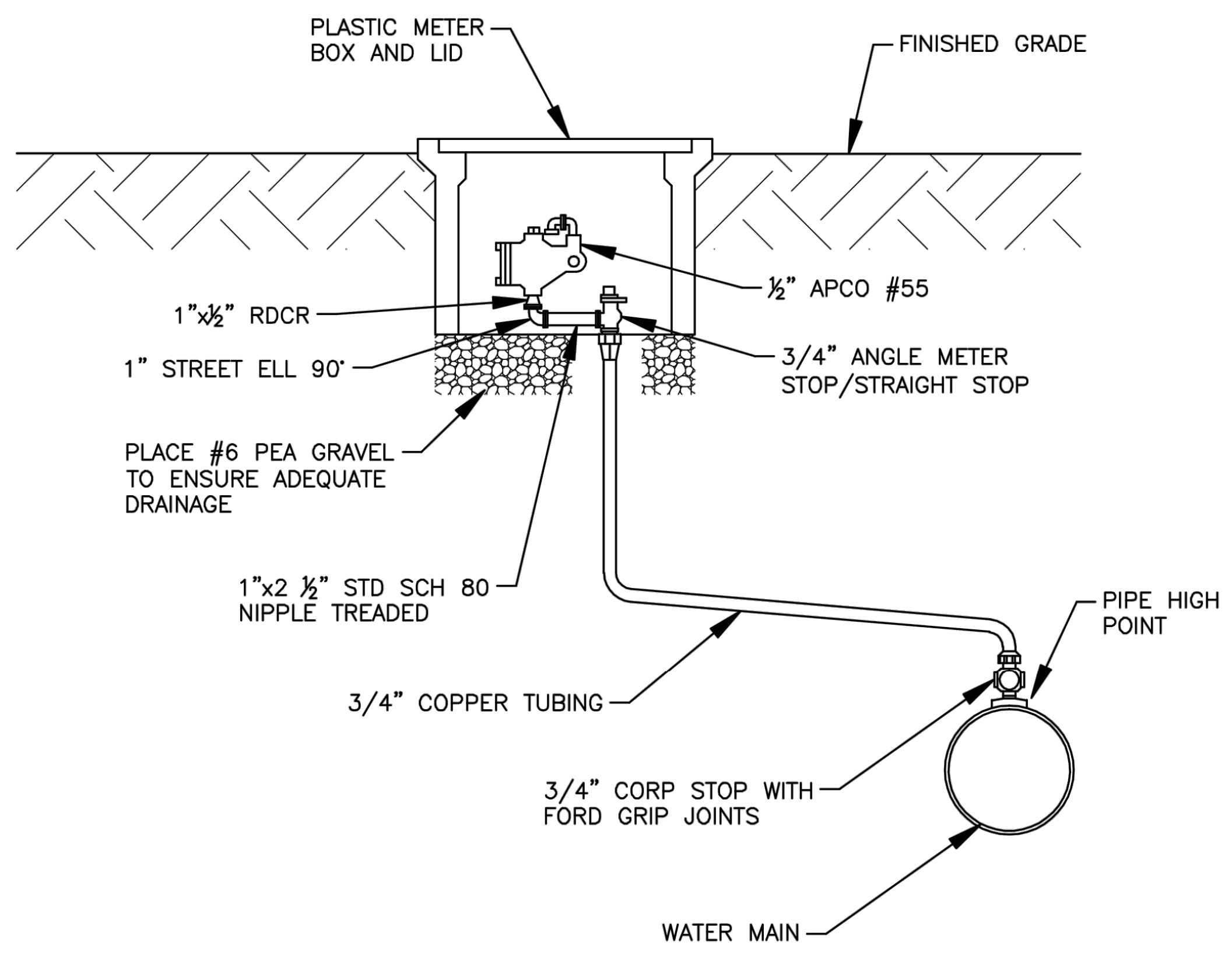
NOTES:

1. T.C.E.Q. RULES AND REGULATIONS ON SANITARY SEWER, STORM SEWER AND WATER MAIN CROSSINGS AND SEPARATIONS SHALL BE STRICTLY ENFORCED, 30 TAC CHAPTER 290, SUBCHAPTER D.
2. ALL OTHER UTILITIES TO MAINTAIN 5 FOOT SEPARATION FROM WATER MAINS AND SERVICES, GAS, ELECTRIC, CABLE (ETC.) TO BE LOCATED OPPOSITE SIDES OF PROPERTY.
3. UTILITY CROSSINGS SEPARATED BY LESS THAN 12 INCHES, PIPES SHALL BE ENCASED WITH 6 INCHES OF CONCRETE ALL AROUND AND CENTERED TO CROSSING FOR A MINIMUM LENGTH OF 20 FEET TOTAL.
4. SPECIFICATIONS, BEDDING MATERIAL MUST BE APPROVED BY AUTHORIZED S.H.W.S.C. PERSONNEL, BEFORE START OF JOB.
5. AT ANY CREEK CROSSING THE MAIN SHALL BE STEEL ENCASED AND/OR 6" CONCRETE ENCASEMENT TO WITHIN 10 FEET OUTSIDE OF CREEK OR DRAINAGE DITCH AREA.

SPRINGS HILL WATER SUPPLY CORPORATION

UTILITY CROSSING

DATE:	REVISIONS:	STANDARD NO.
06/15/2010		WA-7



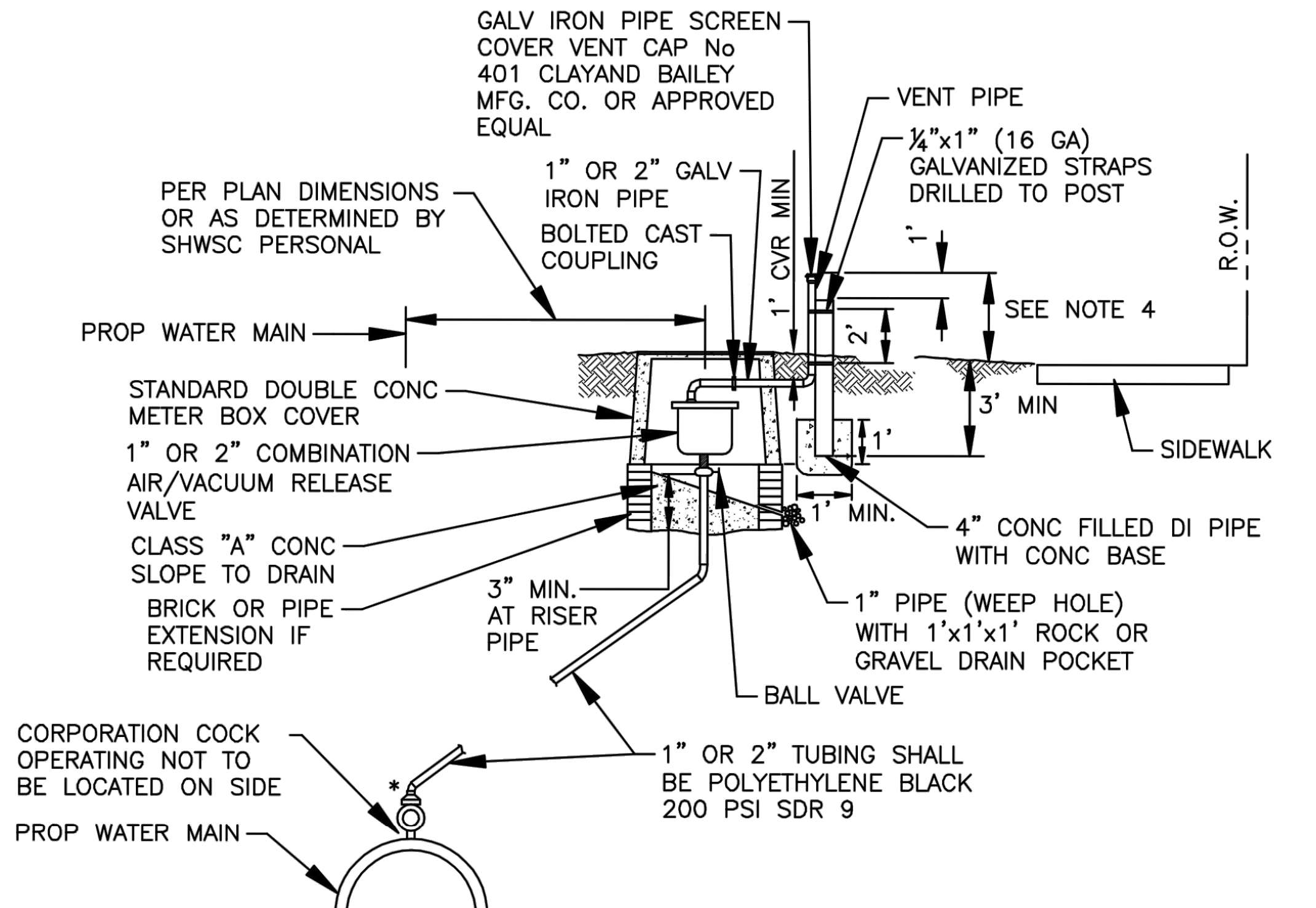
NOTES:

1. ALL CORPS AND ANGLE STOPS TO BE LEFT OPEN.
2. BLOW OFF MAIN BEFORE INSTALLING AIR VALVE.

SPRINGS HILL WATER SUPPLY CORPORATION

STANDARD 1/2" AIR RELEASE
VALVE INSTALLATION

DATE:	REVISIONS:	STANDARD NO.
07/26/2010		WA-8



* THREAD TO COMPRESSION BRASS ELBOW ALLOWED IF NECESSARY DUE TO DEPTH LIMITATIONS.

GALVANIZED IRON PIPE			
PIPE SIZE	AUTOMATIC COMBINATION AIR/RELEASE VALVE	BALL VALVE	VENT PIPE
UP TO 10"	1"	1"	1"
12" AND OVER	2"	2"	2"

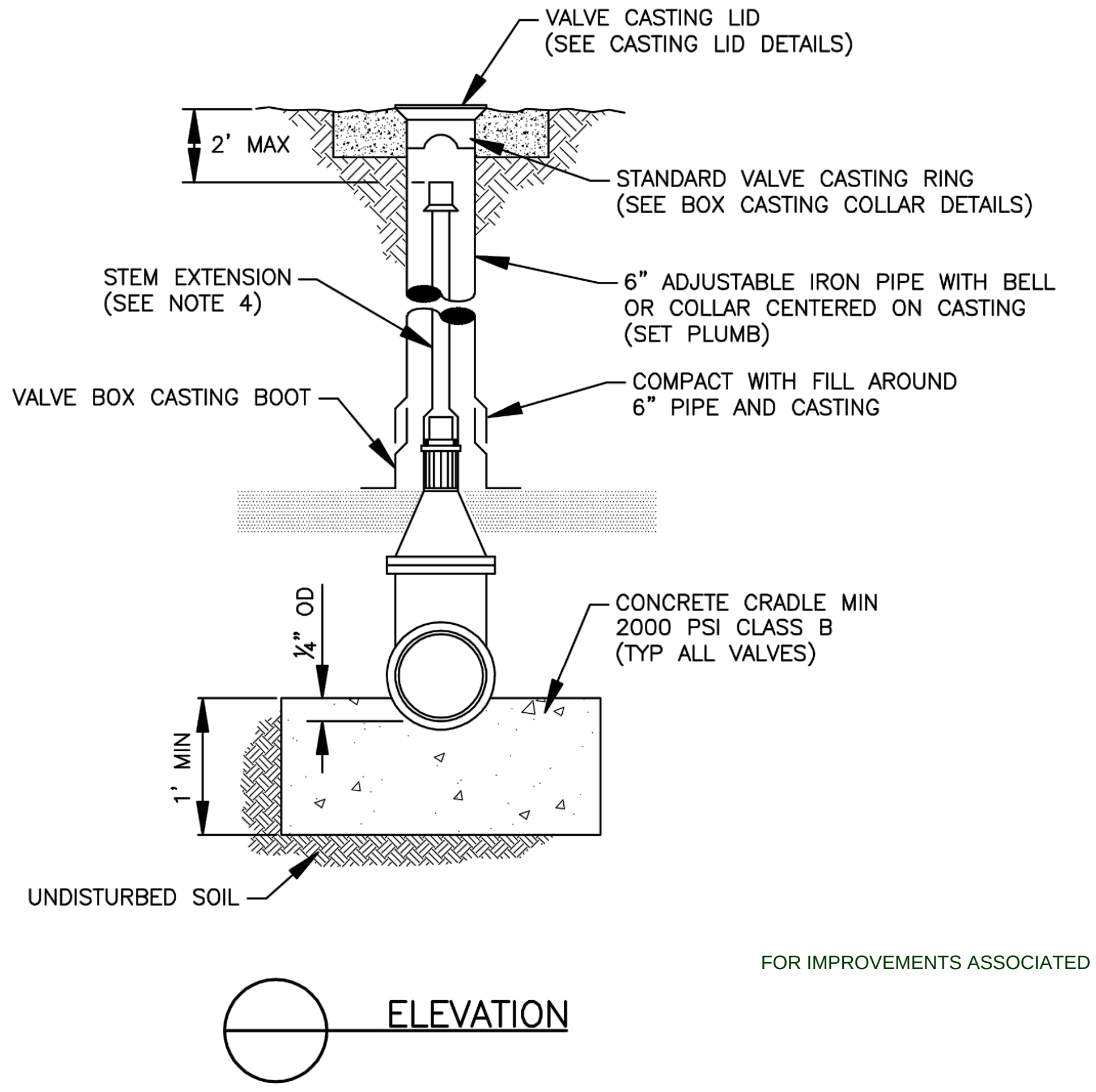
NOTES:

1. EXTERIOR SURFACES OF EXPOSED AIR VENT PIPE AND D.I. SUPPORT PIPE SHALL BE PAINTED WITH RUST–OLEUM ACRYLIC 5225 (SAFETY BLUE), OR EQUAL, PER COATING MANUFACTURER INSTRUCTIONS PRIOR TO INSTALLATION.
2. AIR VENT PIPE INSTALLATION SHALL BE AS NEAR AS PRACTICAL TO RIGHT–OF–WAY LINE OR EASEMENT LINE AS INDICATED ON PLANS (VERIFY LOCATION WITH SHWSC PERSONNEL
3. CONCRETE METER BOX PENETRATION SHALL BE CORE BIT DRILLED. VOID SHALL BE FILLED BY PRESS–SEAL GASKET CORP. PSX RESILIENT CONNECTOR MEETING ASTM C923 OR APPROVED EQUAL.
4. IN UNDEVELOPED AND DEVELOPED AREAS, THE AIR RELEASE SHALL BE 5 FEET IN HEIGHT SUPPORTED BY 4" STEEL PIPE WHICH HAS BEEN PAINTED BLUE AND FILLED WITH CONCRETE. IN DEVELOPED AREAS THE AIR RELEASE SHALL BE 8" TO 12" IN HEIGHT AND LOCATED NOT TO CONFLICT WITH SIDEWALK.
5. AUTOMATIC COMBINATION AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF THE CONCRETE METER BOX.

SPRINGS HILL WATER SUPPLY CORPORATION

1" OR 2" VENTED AUTOMATIC COMBINATION
AIR/VACUUM RELEASE VALVE

DATE:	REVISIONS:	STANDARD NO.
06/15/2010		WA-9



APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

NOTES:

1. WELD SOCKET 2½" X 2" DEEP TO 1" (SCH. 40) ROUND STEM EXTENSION. FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 10'.
2. STANDARD VALVE CASTING RING AND METAL LID IN UNPAVED AREAS.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3 FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18 TO 24 INCHES FROM FINISHED GRADE.

SPRINGS HILL WATER SUPPLY CORPORATION

4" TO 24" VERTICAL GATE VALVE
WITH BOX ASSEMBLY

DATE:	REVISIONS:	STANDARD NO.
06/15/2010		WA-19

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CORDOVA TRAILS SUBDIVISION UNIT 1

WATER DETAILS

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

PLAT NO.
20-XXXXXXXX

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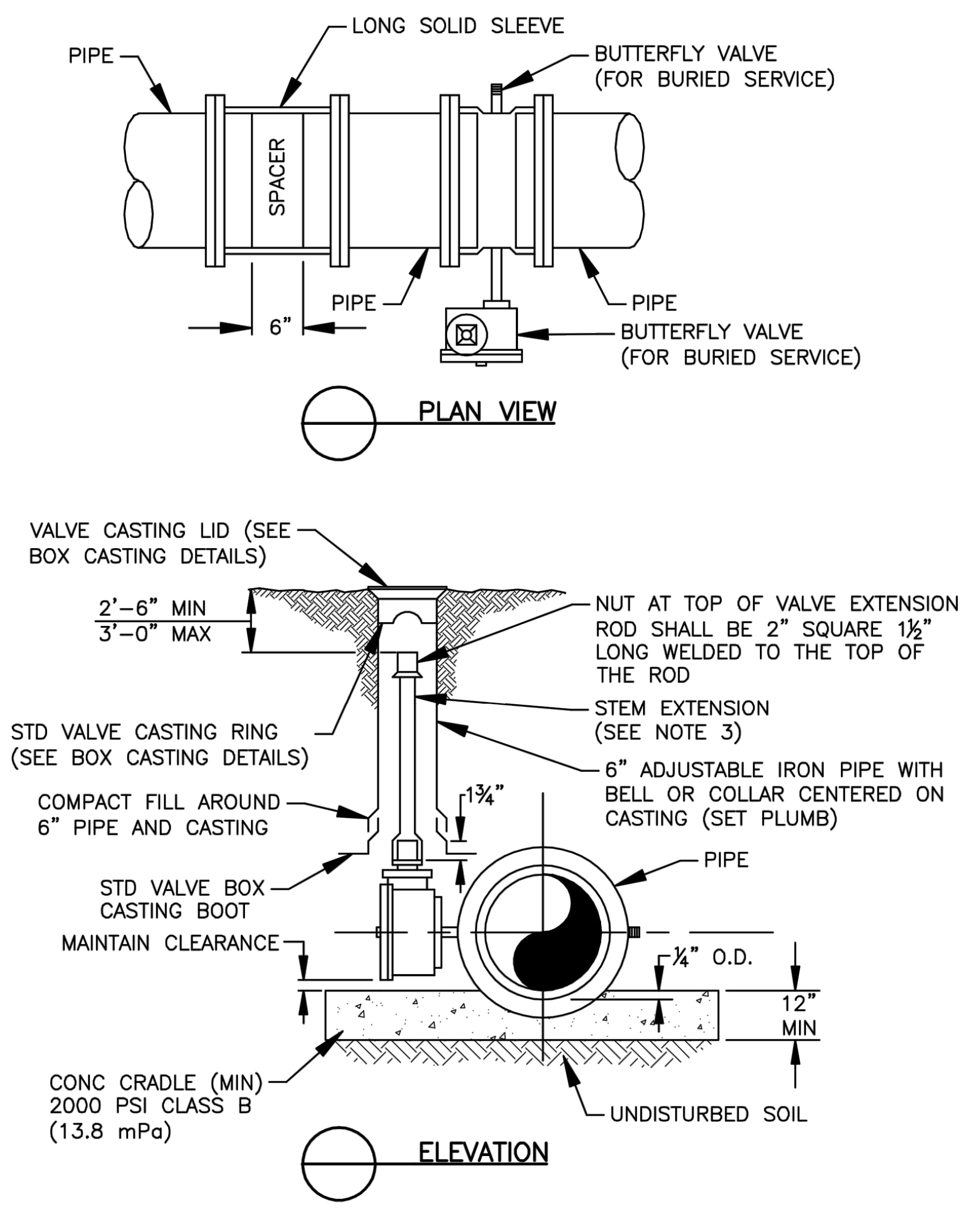
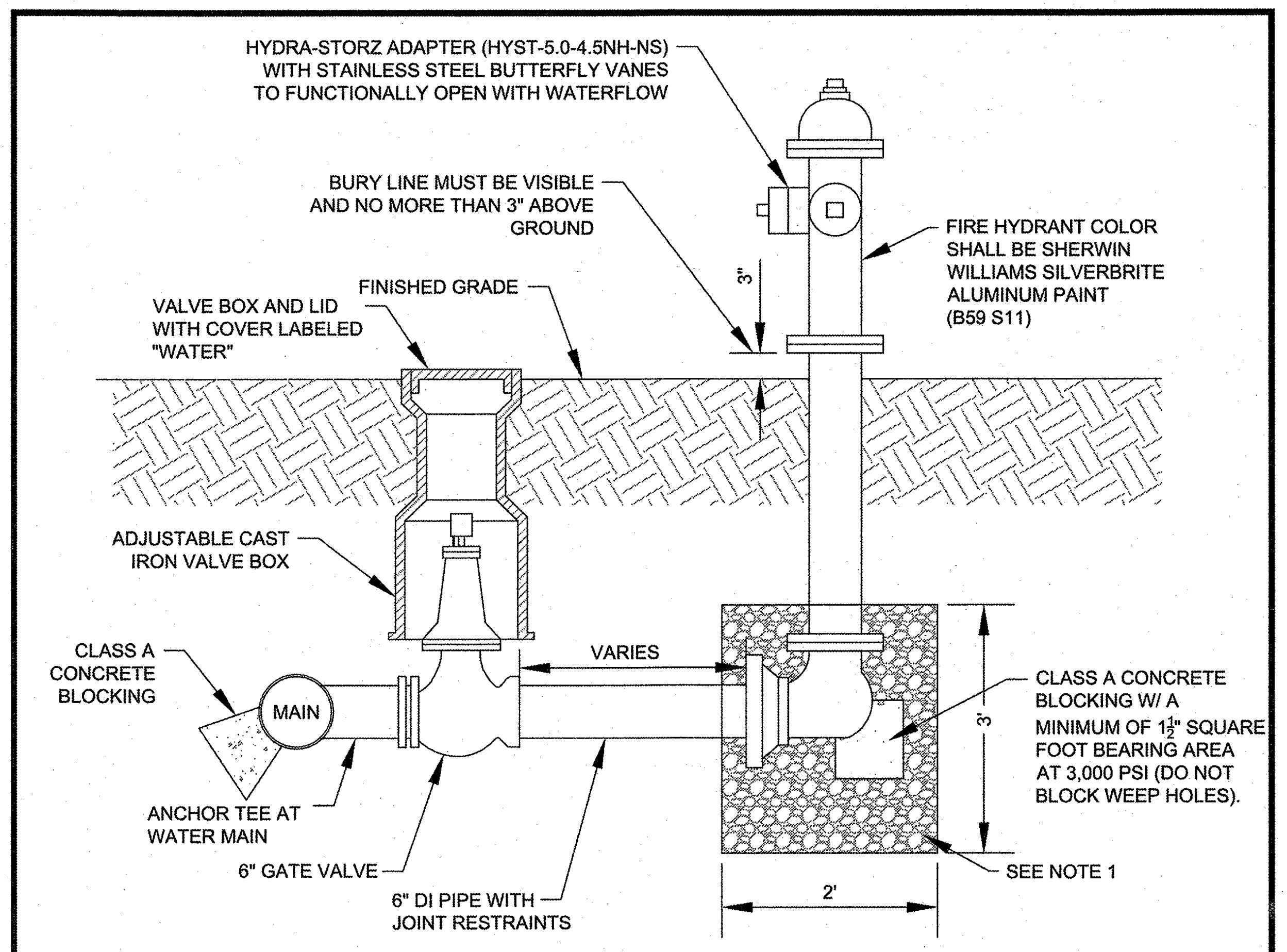

PIPE
LONG SOLID SLEEVE
BUTTERFLY VALVE (FOR BURIED SERVICE)
SPACER
6"
PIPE
PIPE
BUTTERFLY VALVE (FOR BURIED SERVICE)
PLAN VIEW
VALVE CASTING LID (SEE BOX CASTING DETAILS)
2'–6" MIN
3'–0" MAX
NUT AT TOP OF VALVE EXTENSION ROD SHALL BE 2" SQUARE 1½" LONG WELDED TO THE TOP OF THE ROD
STEM EXTENSION (SEE NOTE 3)
STD VALVE CASTING RING (SEE BOX CASTING DETAILS)
6" ADJUSTABLE IRON PIPE WITH BELL OR COLLAR CENTERED ON CASTING (SET PLUMB)
COMPACT FILL AROUND 6" PIPE AND CASTING
1¾"
PIPE
STD VALVE BOX CASTING BOOT
MAINTAIN CLEARANCE
¼" O.D.
12" MIN
CONC CRADLE (MIN) 2000 PSI CLASS B (13.8 mPa)
UNDISTURBED SOIL
ELEVATION

NOTES:

1. WELD SOCKET 2⅝"x1¼" DEEP TO 1⅛" SOLID ROUND STEM EXTENSION.
2. SPRINGS HILL WATER SUPPLY CORPORATION STANDARD VALVE CASING RING AND LID. (TRAFFIC BEARING IN PAVED AREAS).
3. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3 FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION WITH BOX ASSEMBLY IS NOT BETWEEN 18 TO 24 INCHES FROM FINISHED GRADE.

SPRINGS HILL WATER SUPPLY CORPORATION	36" AND UP BUTTERFLY VALVE WITH BOX ASSEMBLY		
	DATE: 06/15/2010	REVISIONS:	STANDARD NO. WA–20

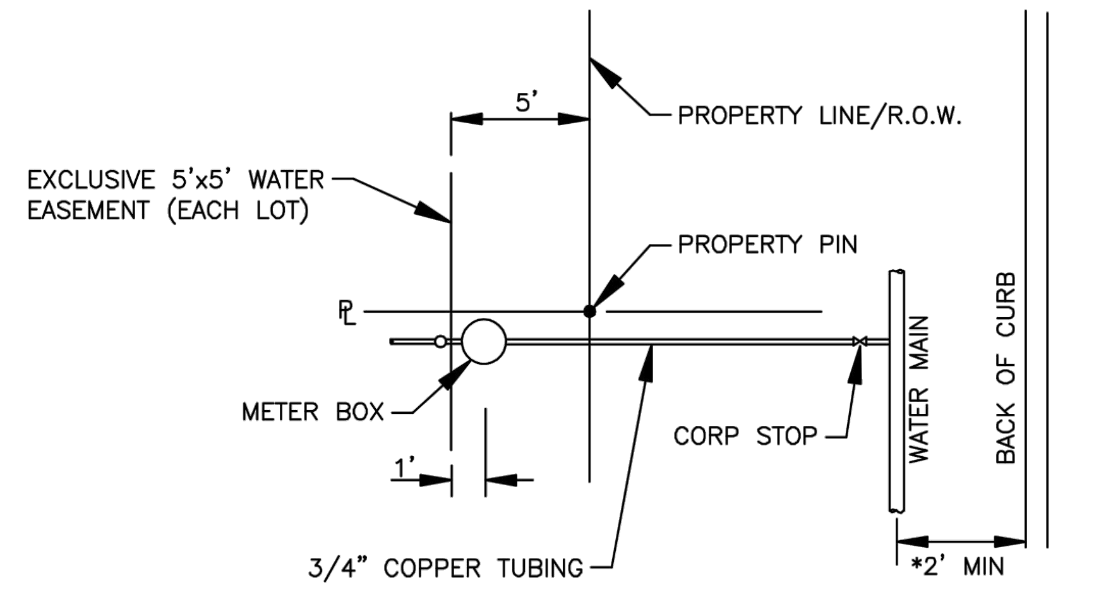

HYDRA-STORZ ADAPTER (HYST-5.0-4.5NH-NS) WITH STAINLESS STEEL BUTTERFLY VANES TO FUNCTIONALLY OPEN WITH WATERFLOW
BURY LINE MUST BE VISIBLE AND NO MORE THAN 3" ABOVE GROUND
FIRE HYDRANT COLOR SHALL BE SHERWIN WILLIAMS SILVERBRITE ALUMINUM PAINT (B59 S11)
3"
FINISHED GRADE
VALVE BOX AND LID WITH COVER LABELED "WATER"
ADJUSTABLE CAST IRON VALVE BOX
CLASS A CONCRETE BLOCKING
MAIN
VARIES
CLASS A CONCRETE BLOCKING W/ A MINIMUM OF 1½" SQUARE FOOT BEARING AREA AT 3,000 PSI (DO NOT BLOCK WEEP HOLES).
3'
ANCHOR TEE AT WATER MAIN
6" GATE VALVE
6" DI PIPE WITH JOINT RESTRAINTS
SEE NOTE 1
2'

NOTES:

1. A MINIMUM OF 2 CUBIC FEET OF 1" TO 2" CLEAN, ASTM C-33 CRUSHED STONE #67 SHALL BE PLACED AROUND THE BOTTOM OF THE HYDRANT FOR A RADIUS OF AT LEAST 10" AND EXTEND 10" ABOVE THE OUTLET. DO NOT BLOCK DRAIN HOLES.
2. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
3. ALL FITTINGS AND FITTING JOINTS MUST BE WRAPPED WITH THREE LAYERS OF 8-MIL POLYETHYLENE IN ACCORDANCE WITH AWWA C105-10, OR LATEST VERSIONS THERE OF.
4. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLYTAPE.
5. THE FIRE HYDRANT SHALL BE PLACED A MINIMUM OF 5 FEET FROM ALL OBSTRUCTIONS.
6. ALL NEW FIRE HYDRANTS SHALL BE MARKED WITH A FOUR-INCH BY FOUR-INCH BY THREE-FOURTHS-INCH TALL, BLUE REFLECTIVE PAVEMENT MARKER (BLUE REFLECTIVE EYE) LOCATED THREE FEET OFF-CENTER OF THE STREET TOWARDS THE HYDRANT. ALL MARKERS MUST BE APPROVED BY FIRE AND UTILITIES DEPARTMENT.
7. FIRE FLOW SHALL BE TESTED WITH THE FLOWS AND PRESSURES PROVIDED TO SHWSC.
8. ALL VALVES AND FIRE HYDRANTS SHALL BE LOCATED BY GPS AND PROVIDED TO SHWSC IN TEXAS STATE PLANE COORDINATES, NAD 83 (93) SOUTH CENTRAL ZONE.
9. INSTALL ONE INLINE GATE VALVE AT EACH SIDE OF TEE THAT CONNECTS FIRE HYDRANT ASSEMBLY TO WATER MAIN.

SPRINGS HILL WATER SUPPLY CORPORATION	STANDARD FIRE HYDRANT INSTALLATION		
	DATE: 8/20/2021	REVISIONS:	STANDARD NO. WA-21

UPDATED SHWSC DETAIL AS PART OF SCstP 0225-2021; Approved by CP|ENGR 2022-01-03

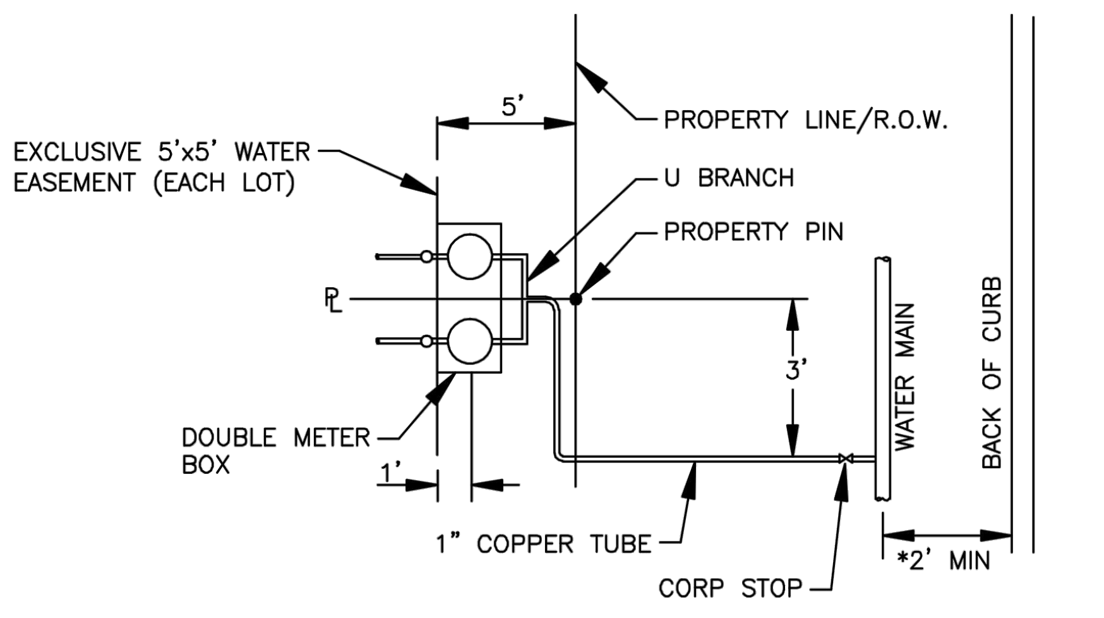


*THIS DIMENSION MAY BE INCREASED BY WIDTH OF SIDEWALK, IF SIDEWALK IS LOCATED AT CURB.

NOTES:

1. INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY S.H.W.S.C. CONSTRUCTION INSPECTION PERSONNEL.
2. CUSTOMER ALSO INSTALLS WATER LINES INCLUDING FITTINGS AND VALVES ON BOTH SIDES OF METER, INSTALL METER BOXES AND COVERS. ALL IN ACCORDANCE WITH INFORMATION ON APPLICABLE STANDARD DRAWING. A VENTED SPACER MAY BE USED TO ASSURE PROPER SPACING AND ALIGNMENT OF METER FITTINGS.
3. CUSTOMER IS RESPONSIBLE FOR METER BOX AND PIPING SYSTEM UNTIL METER IS INSTALLED AND WATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO S.H.W.S.C. SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL VALVES AND STOPS, METER BOX AND REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.
4. S.H.W.S.C. ACTIVITY IS LIMITED TO INSTALLATION OF THE WATER METER AND INSPECTION OF CONNECTIONS TO S.H.W.S.C. WATER SYSTEMS. FOR MAINTENANCE PURPOSES, S.H.W.S.C. RESPONSIBILITY ENDS AT THE CUSTOMER'S WATER CUT–OFF VALVE.
5. NO METER BOX SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM S.H.W.S.C.
6. PIPING AND TUBING IN STREET RIGHT–OF–WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIAL AS REQUIRED IN THE SPECIFICATIONS. SERVICE LINES SHALL HAVE A MINIMUM COVER BELOW FINAL GRADE OF 42–INCHES.

SPRINGS HILL WATER SUPPLY CORPORATION	SINGLE WATER SERVICE CONNECTION		
	DATE: 06/16/2010	REVISIONS:	STANDARD NO. WA–22

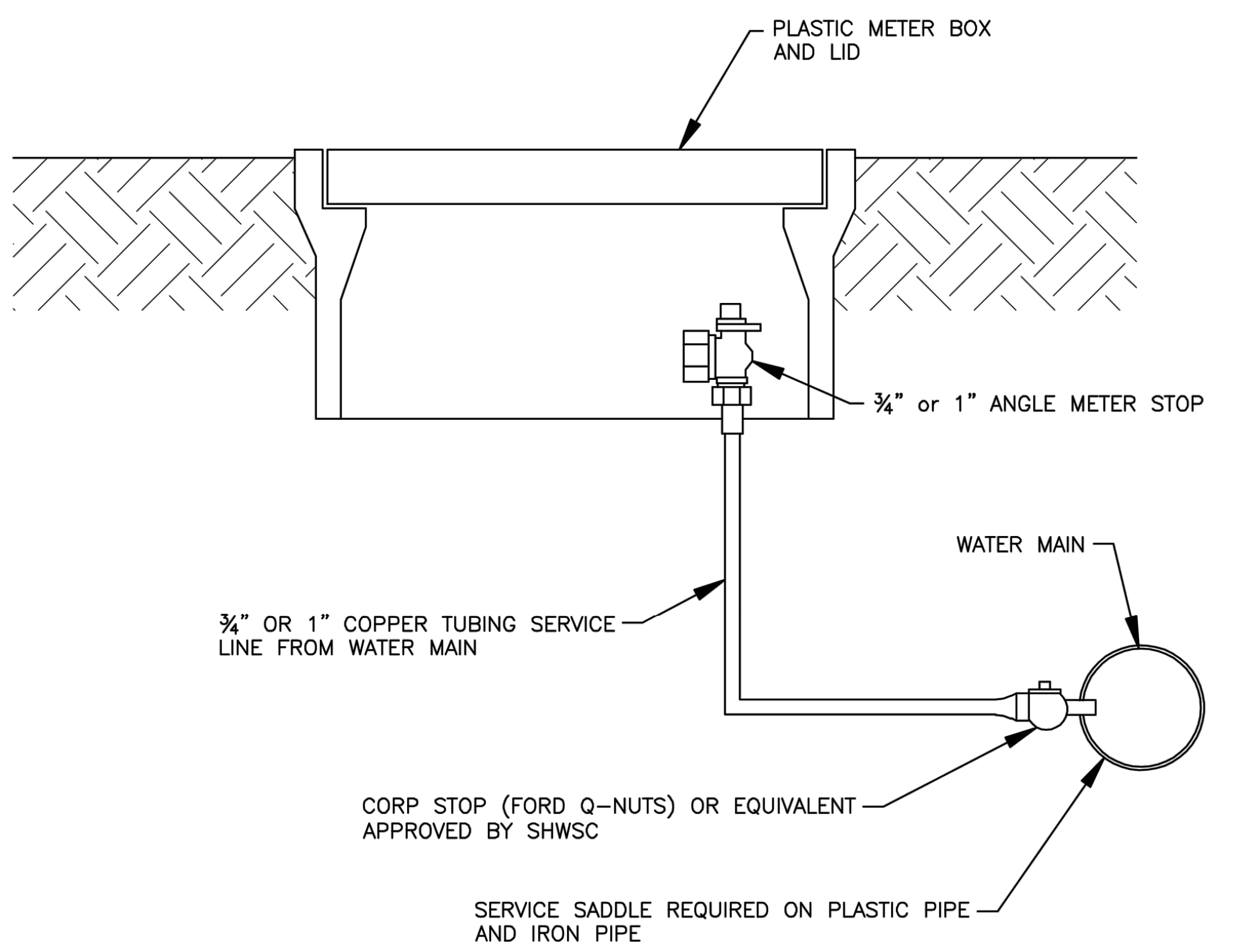


*THIS DIMENSION MAY BE INCREASED BY WIDTH OF SIDEWALK, IF SIDEWALK IS LOCATED AT CURB.

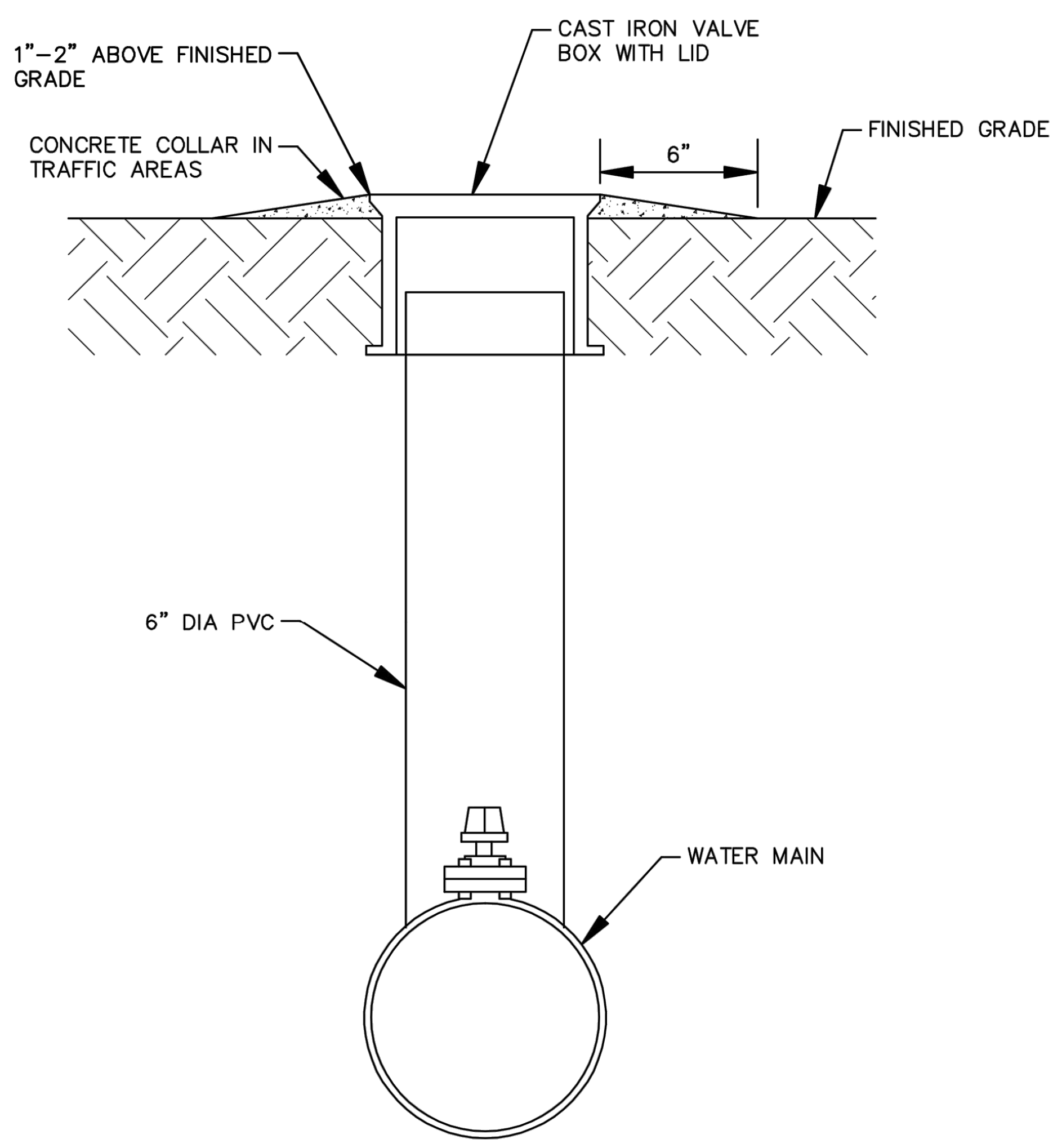
NOTES:

1. INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY SHWSC CONSTRUCTION INSPECTION PERSONNEL.
2. CUSTOMER ALSO INSTALLS WATER LINES INCLUDING FITTINGS AND VALVES ON BOTH SIDES OF METER, INSTALL METER BOXES AND COVERS. ALL IN ACCORDANCE WITH INFORMATION ON APPLICABLE STANDARD DRAWING. A VENTED SPACER MAY BE USED TO ASSURE PROPER SPACING AND ALIGNMENT OF METER FITTINGS.
3. CUSTOMER IS RESPONSIBLE FOR METER BOX AND PIPING SYSTEM UNTIL METER IS INSTALLED AND WATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO SHWSC SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL VALVES AND STOPS, METER BOX AND REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.
4. SHWSC ACTIVITY IS LIMITED TO INSTALLATION OF THE WATER METER AND INSPECTION OF CONNECTIONS TO S.H.W.S.C. WATER SYSTEMS. FOR MAINTENANCE PURPOSES, SHWSC RESPONSIBILITY ENDS AT THE CUSTOMER'S WATER CUT–OFF VALVE.
5. NO METER BOX SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM SHWSC
6. PIPING AND TUBING IN STREET RIGHT–OF–WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIAL AS REQUIRED IN THE SPECIFICATIONS. SERVICE LINES SHALL HAVE A MINIMUM COVER BELOW FINAL GRADE OF 42 INCHES.

SPRINGS HILL WATER SUPPLY CORPORATION	DOUBLE WATER SERVICE CONNECTION		
	DATE: 07/23/2010	REVISIONS:	STANDARD NO. WA–23


PLASTIC METER BOX AND LID
¾" or 1" ANGLE METER STOP
WATER MAIN
¾" OR 1" COPPER TUBING SERVICE LINE FROM WATER MAIN
CORP STOP (FORD Q–NUTS) OR EQUIVALENT APPROVED BY SHWSC
SERVICE SADDLE REQUIRED ON PLASTIC PIPE AND IRON PIPE

SPRINGS HILL WATER SUPPLY CORPORATION	3/4" AND 1" SERVICE INSTALLATION		
	DATE: 11/24/2009	REVISIONS:	STANDARD NO. WA–24


1"–2" ABOVE FINISHED GRADE
CAST IRON VALVE BOX WITH LID
CONCRETE COLLAR IN TRAFFIC AREAS
6"
FINISHED GRADE
6" DIA PVC
WATER MAIN

SPRINGS HILL WATER SUPPLY CORPORATION	STANDARD VALVE BOX INSTALLATION		
	DATE: 11/24/2009	REVISIONS:	STANDARD NO. WA–27

APPROVED FOR CONSTRUCTION
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TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS SUBDIVISION UNIT 1

WATER DETAILS

DATE
12/05/2021

PROJECT NO.
03480.002

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AC

CHECKED BY
DDC/JC

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DAVID D. CUPIT II
122076
12.11.21

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TBPLS No. 10048500

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5 OF 6

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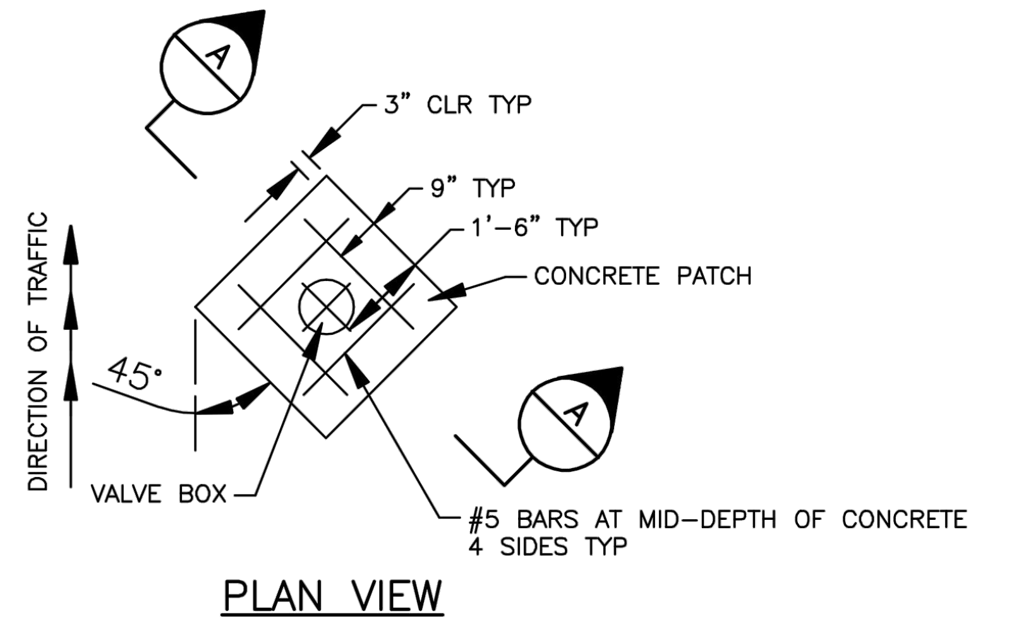
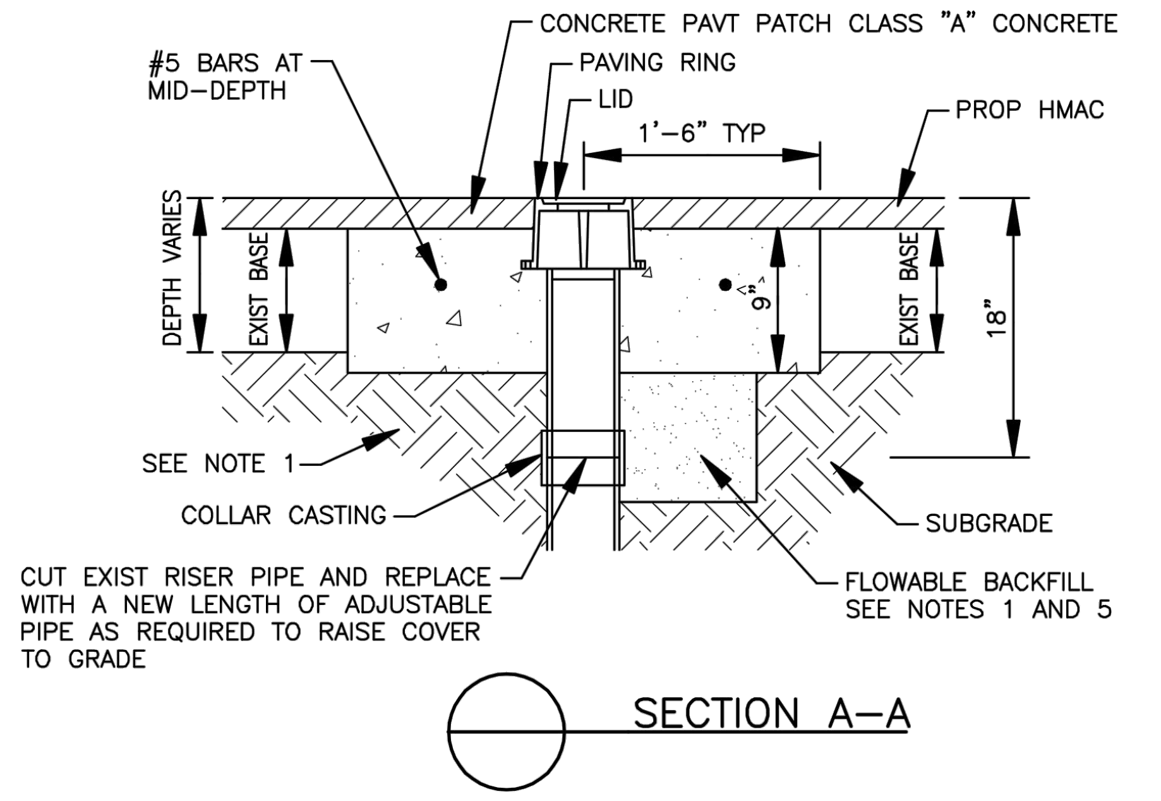



CONCRETE PAVT PATCH CLASS "A" CONCRETE
PAVING RING
#5 BARS AT MID-DEPTH
LID
1'-6" TYP
PROP HMAC
DEPTH VARIES
EXIST BASE
9"
EXIST BASE
18"
SEE NOTE 1
COLLAR CASTING
SUBGRADE
CUT EXIST RISER PIPE AND REPLACE WITH A NEW LENGTH OF ADJUSTABLE PIPE AS REQUIRED TO RAISE COVER TO GRADE
FLOWABLE BACKFILL SEE NOTES 1 AND 5
SECTION A-A

NOTES:

1. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
4. REMOVE EXISTING RISER PIPE DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW ADJUSTABLE PIPE AND A CASTING.
5. WHERE CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP. CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPECIFICATIONS FOR REINFORCING STEEL.

SPRINGS HILL WATER SUPPLY CORPORATION	VALVE BOX TO GRADE WITH CONCRETE AND HOT MIX ASPHALT CONCRETE		
	DATE: 08/12/2010	REVISIONS:	STANDARD NO. WA-29

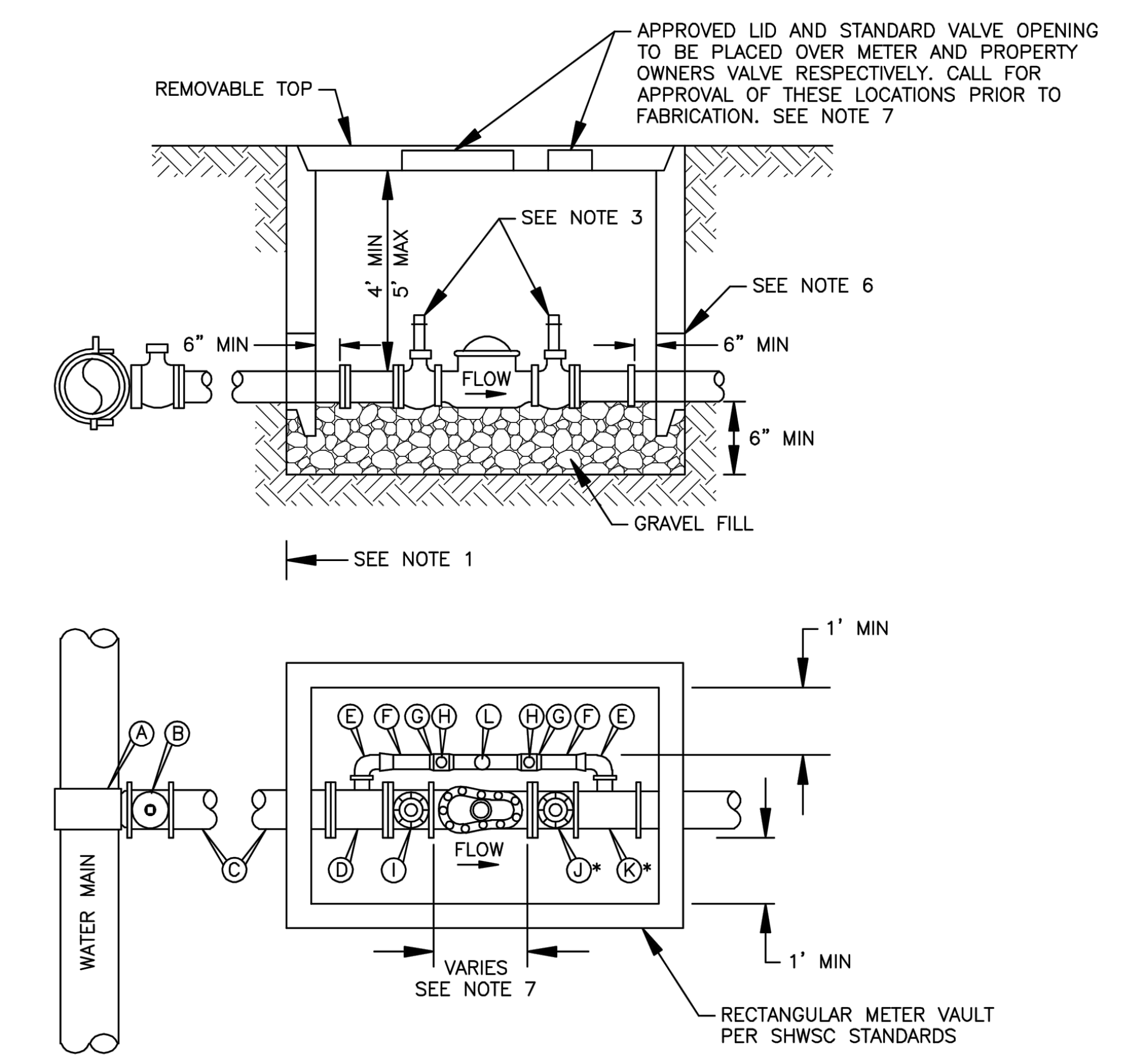
MATERIALS:

A. APPROVED TAPPING SLEEVE
B. TAPPING VALVE (GATE) IRON BODY WITH M.J. OUTLET
C. DUCTILE IRON OR CAST IRON PIPE NOT LESS THAN 4" DIAMETER
D, TAPPED CAST IRON TEE – M.J. x SPIGOT
*E. COPPER TO MALE IRON PIPE QUARTER BEND COUPLINGS.
F. 2" COPPER PIPE
G. COPPER TO MALE IRON PIPE FITTING
H. 2" BRASS BALL VALVE
I. SHUT OFF VALVE (GATE) CAST IRON MIN 4" FLANGED x M.J.
*J. CUSTOMER'S VALVE (GATE) CAST IRON FLANGED
*K. TAPPED CAST IRON TEE
L. METER ON 2" COPPER BY-PASS LINE
* VALVE AND FITTING TO BE FURNISHED AND INSTALLED BY CUSTOMER.
ITEMS D & K MAY BE LOCATED OUTSIDE THE BOX

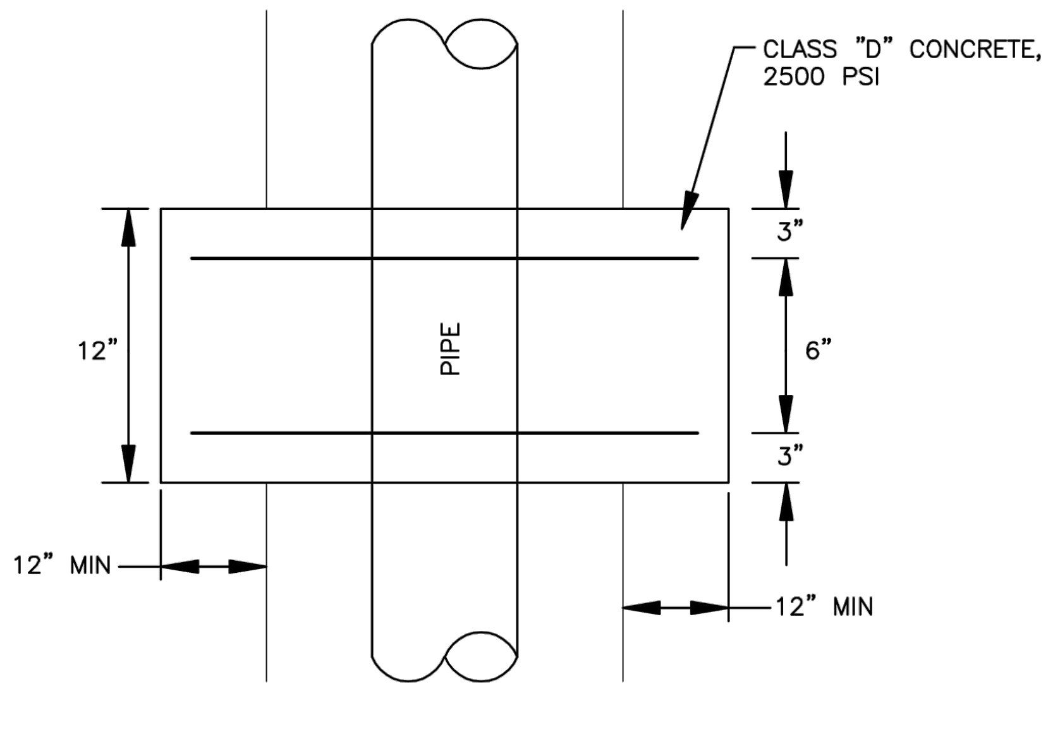
NOTES:

1. BOX MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
2. PIPE AND FITTINGS TO BE DUCTILE IRON OR CAST IRON EXCEPT AS NOTED. NO PLASTIC PIPE. NO SOLDERED JOINTS.
3. NO RISING STEM OR WHEEL OPERATED VALVES EXCEPT ON 2" BY-PASS VALVES.
4. ROD RESTRAINT IS REQUIRED AT ALL MECHANICAL OR PUSH ON TYPE JOINTS.
5. TOP OF BOX MUST BE 1" ABOVE GROUND OR FLUSH WITH PAVEMENT SURFACE.
6. METER BOX TO BE SET AFTER METER IS INSTALLED. SIDE NOTCHES IN BOX TO BE FILLED WITH MORTAR AFTER INSTALLATION OF PIPE.
7. CONTACT SHWSC FOR METER LENGTH, APPROVED TYPE OF LID AND LOCATION OF OPENINGS IN TOP OF BOX.
8. ANY WORK BY CUSTOMER ON THE CITY SIDE OF THE METER REQUIRES PLANS BY A TEXAS REGISTERED/LICENSED PROFESSIONAL ENGINEER.
9. WHERE THERE IS A LOOPED SYSTEM WITH MORE THAN ONE METER, APPROVED CHECK VALVES SHALL BE INSTALLED DOWNSTREAM OF THE PROPERTY OWNERS GATE VALVE (J) AT EACH METER. BACKFLOW PREVENTERS MAY BE REQUIRED WITHIN THE SYSTEM BY THE BUILDING INSPECTION DEPARTMENT.

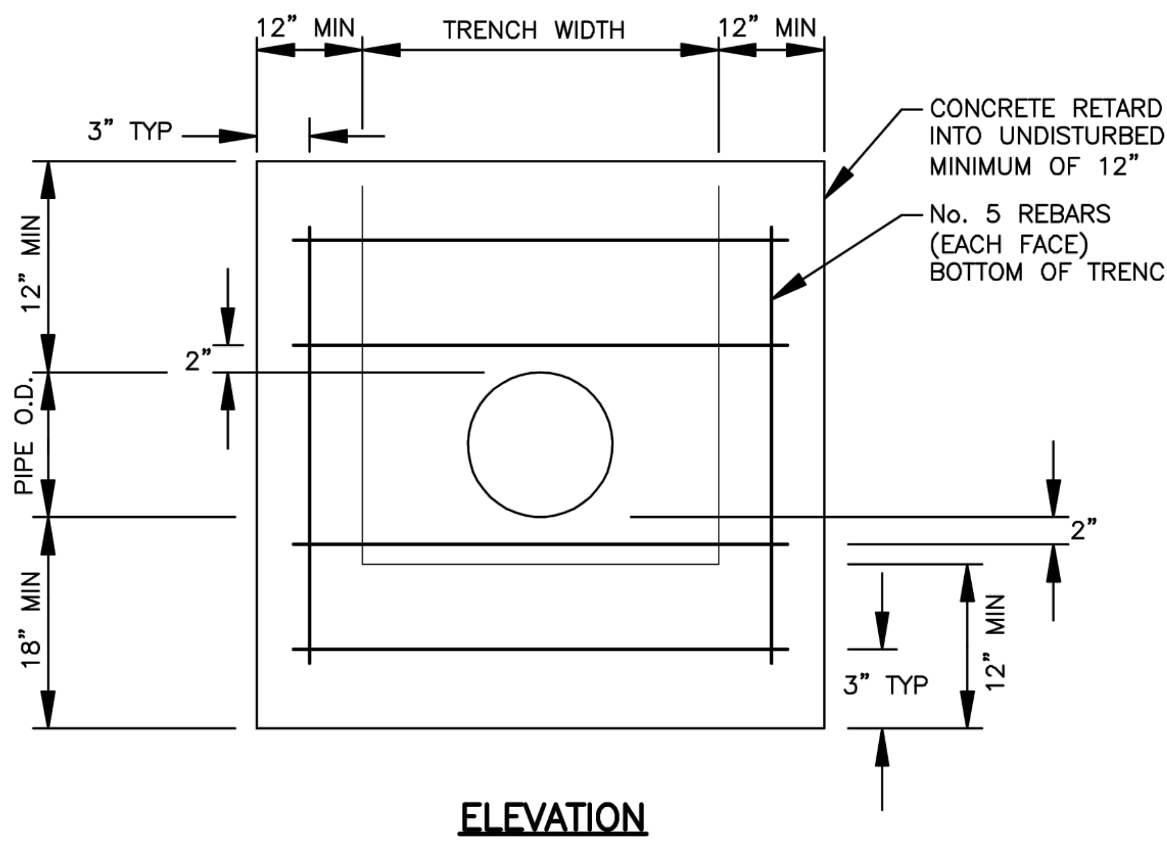
SPRINGS HILL WATER SUPPLY CORPORATION	INSTALLATION DETAILS FOR 3", 4" AND 6" COMPOUND METERS SHEET 2 OF 2		
	DATE: 07/26/2010	REVISIONS:	STANDARD NO. WA-30


REMOVABLE TOP
APPROVED LID AND STANDARD VALVE OPENING TO BE PLACED OVER METER AND PROPERTY OWNERS VALVE RESPECTIVELY. CALL FOR APPROVAL OF THESE LOCATIONS PRIOR TO FABRICATION. SEE NOTE 7
4' MIN
5' MAX
SEE NOTE 3
SEE NOTE 6
6" MIN
6" MIN
FLOW
6" MIN
GRAVEL FILL
SEE NOTE 1
1' MIN
A
B
E F G H L H G F E
WATER MAIN
C
D
I
FLOW
J*
K*
VARIES
SEE NOTE 7
1' MIN
RECTANGULAR METER VAULT PER SHWSC STANDARDS

SPRINGS HILL WATER SUPPLY CORPORATION	INSTALLATION DETAILS FOR 3", 4" AND 6" COMPOUND METERS SHEET 1 OF 2		
	DATE: 07/26/2010	REVISIONS:	STANDARD NO. WA-30



TOP VIEW

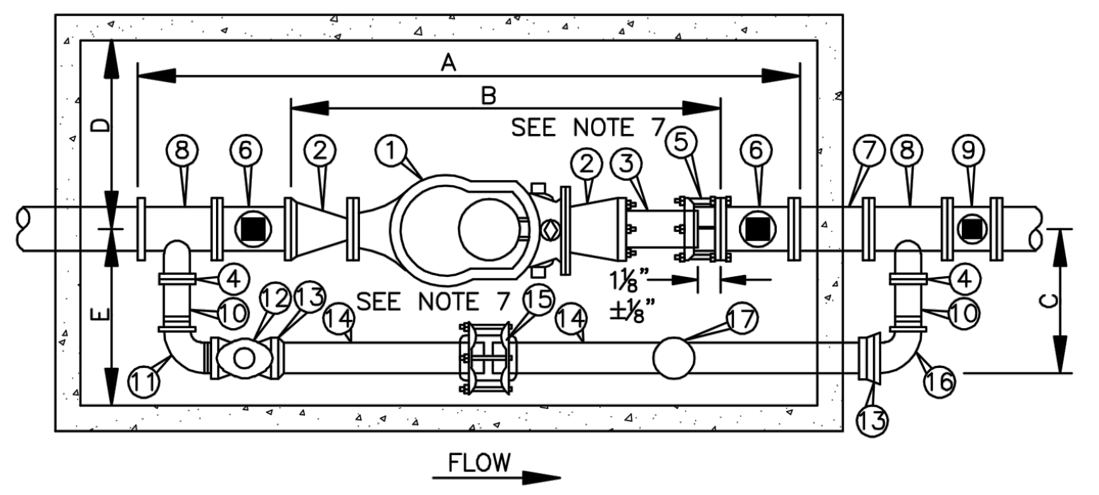

12" MIN
TRENCH WIDTH
12" MIN
CONCRETE RETARD KEYED INTO UNDISTURBED SOIL A MINIMUM OF 12"
3" TYP
No. 5 REBARS (EACH FACE) BOTTOM OF TRENCH
12" MIN
2"
PIPE O.D.
2"
18" MIN
3" TYP
12" MIN

ELEVATION

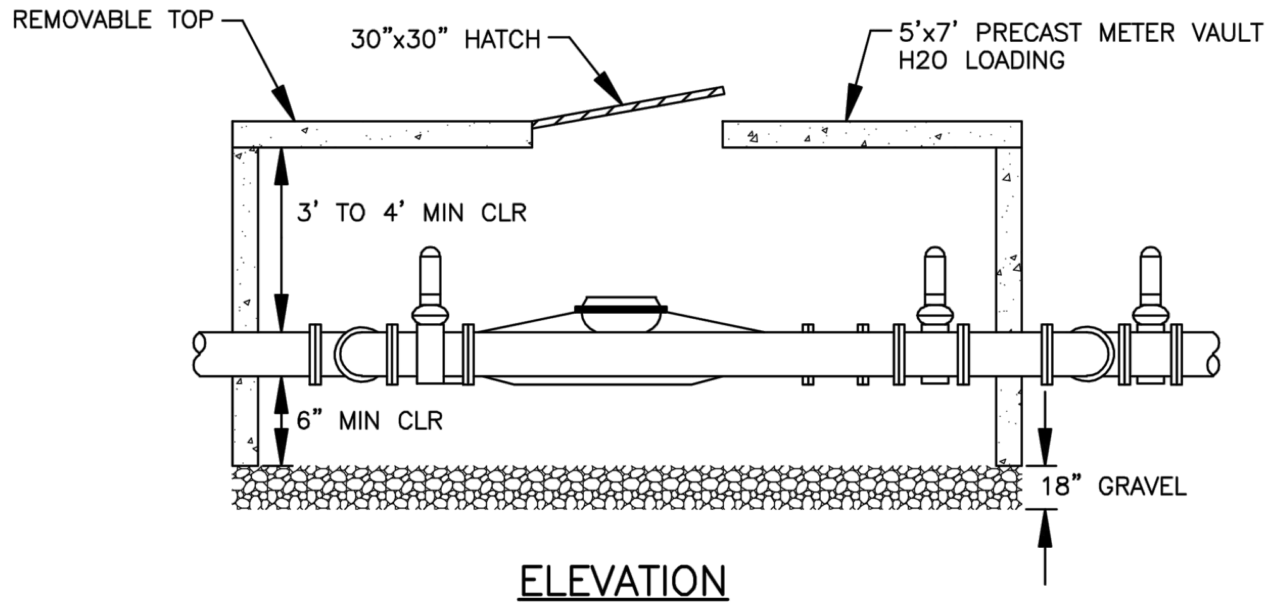
NOTE:

1. RETARDS ARE TO BE USED AT ALL GRADES 10 PERCENT OR OVER. (MINIMUM 20 FOOT SPACING)

SPRINGS HILL WATER SUPPLY CORPORATION	CONCRETE RETARD		
	DATE: 07/26/2010	REVISIONS:	STANDARD NO. WA-33



PLAN VIEW



ELEVATION

No	NAME	LENGTH
A	OVERALL LENGTH	76"
B	METER + SPOOL + FCA	44½"
C	CENTERLINE OF MAIN TO OUTSIDE OF BYPASS	15"
D	CENTERLINE OF MAIN TO INSIDE OF VAULT	30"
E	CENTERLINE OF MAIN TO INSIDE OF VAULT	30"

SPRINGS HILL WATER SUPPLY CORPORATION	3" METER INSTALATION SHT 1 OF 2		
	DATE: 08/12/2010	REVISIONS:	STANDARD NO. WA-36

No	NAME	LENGTH
1	3" METER	*17"
2	4"x3" FLANGED REDUCER	7"
3	4" FLANGED x PLAIN END	12"
4	4" COMPANION FLANGE	
5	4" FLANGED COUPLING ADAPTER	5"
6	4" GATE VALVE SQUARE NUT	9"
7	4" FLANGED SPOOL	12" MIN
8	4"x4"x2" FLANGED TEE	13"
9	PROPERTY OWNER'S 4" GATE VALVE SQUARE NUT	9"
10	2"x8" BRASS NIPPLE	8"
11	2" STREET ELBOW 90°	
12	2" BRASS GATE VALVE	
13	COPPER TO IRON PIPE FITTING	
14	2" COPPER OR BRASS PIPE	
15	2" COUPLING	
16	2" ELBOW 90° BRASS	
17	BYPASS METER (SIZE PER SHWSC)	

* DIMENSIONS SUBJECT TO CHANGE. CHECK WITH INSPECTOR

NOTES:

1. PIPE AND METER SIZE SHALL BE AS DETERMINED BY OWNER. APPROVAL BY SHWSC AND FIRE DEPARTMENT. PLANS MUST BE PREPARED BY A LICENSED ENGINEER IF INSTALLATION IN RIGHT-OF-WAY IS BY OTHER THAN CITY FORCES.
2. METER VAULT MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
3. MAIN LINE AND BYPASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BANDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE SQUARE OPERATING NUTS. BYPASS VALVE WILL HAVE A HANDWHEEL. PROPERTY OWNER'S VALVE MUST BE LOCATED OUTSIDE THE SHWSC METER VAULT.
4. APPROVAL WILL BE NEEDED IF HEIGHT OF VAULT EXCEEDS 72". METER MUST BE MODIFIED TO READ FROM TOP OF VAULT.
5. HATCH OPENING WILL BE 30"x30".
6. IRON PIPE TAPPING SLEEVE IN STREET RIGHT-OF-WAY SHALL BE IMBEDDED IN GRANULAR MATERIALS AS REQUIRED BY SHWSC STANDARD SPECIFICATIONS. BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED.
7. DOUBLE HARNESS MJ WITH TIE RODS. ALL OTHER FITTINGS INSIDE VAULT WILL BE FLANGED.
8. CONTACT SHWSC OFFICE PRIOR TO INSTALLATION OF COMPOUND METERS FOR PROPER DOMESTIC DEMANDS.
9. NOTCHES WHERE PIPING GOES THROUGH VAULT SHALL BE FILLED WITH MORTAR.
10. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.

SPRINGS HILL WATER SUPPLY CORPORATION	3" METER INSTALATION SHT 2 OF 2		
	DATE: 08/12/2010	REVISIONS:	STANDARD NO. WA-36

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SEGUIN TEXAS
01/14/2022

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ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

WATER DETAILS

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1.
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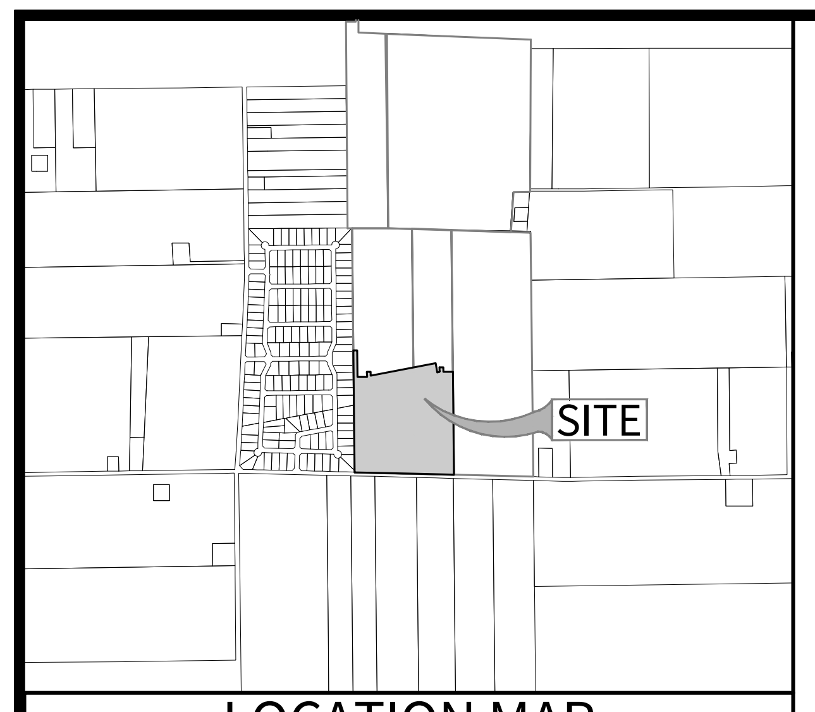
DAVID D. CUPIT II
122676
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

PLAT NO.
20-XXXXXXXX

C45A

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14



LOCATION MAP

N.T.S.

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 SAWS 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 SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

CAUTION!!

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION INCLUDING OVERHEAD ELEC. & 8" WATER MAIN ALONG CORDOVA RD. 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.

TRENCH EXCAVATION PROTECTION

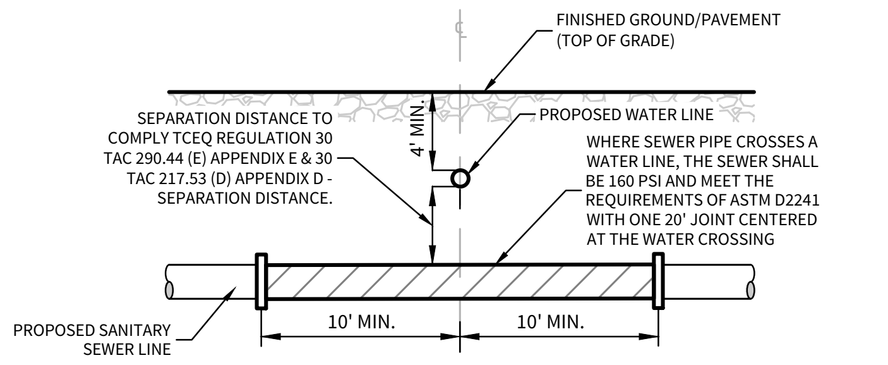
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

OWNER/DEVELOPER:

ASHTON WOODS HOMES
CONTACT PERSON: KYLE LENTS
17319 SAN PEDRO, SUITE 140
SAN ANTONIO,TX 78232
TEL: (210) 632-0753

CIVIL ENGINEER:

M.W. CUDE ENGINEERS, L.L.C.
CONTACT PERSON: DAVID CUPIT, P.E.
4122 POND HILL ROAD, SUITE 101
SAN ANTONIO, TX 78231
TEL: (210) 681-2951
FAX: (210) 523-7112


FINISHED GROUND/PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4' MIN.
SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10' MIN.
10' MIN.

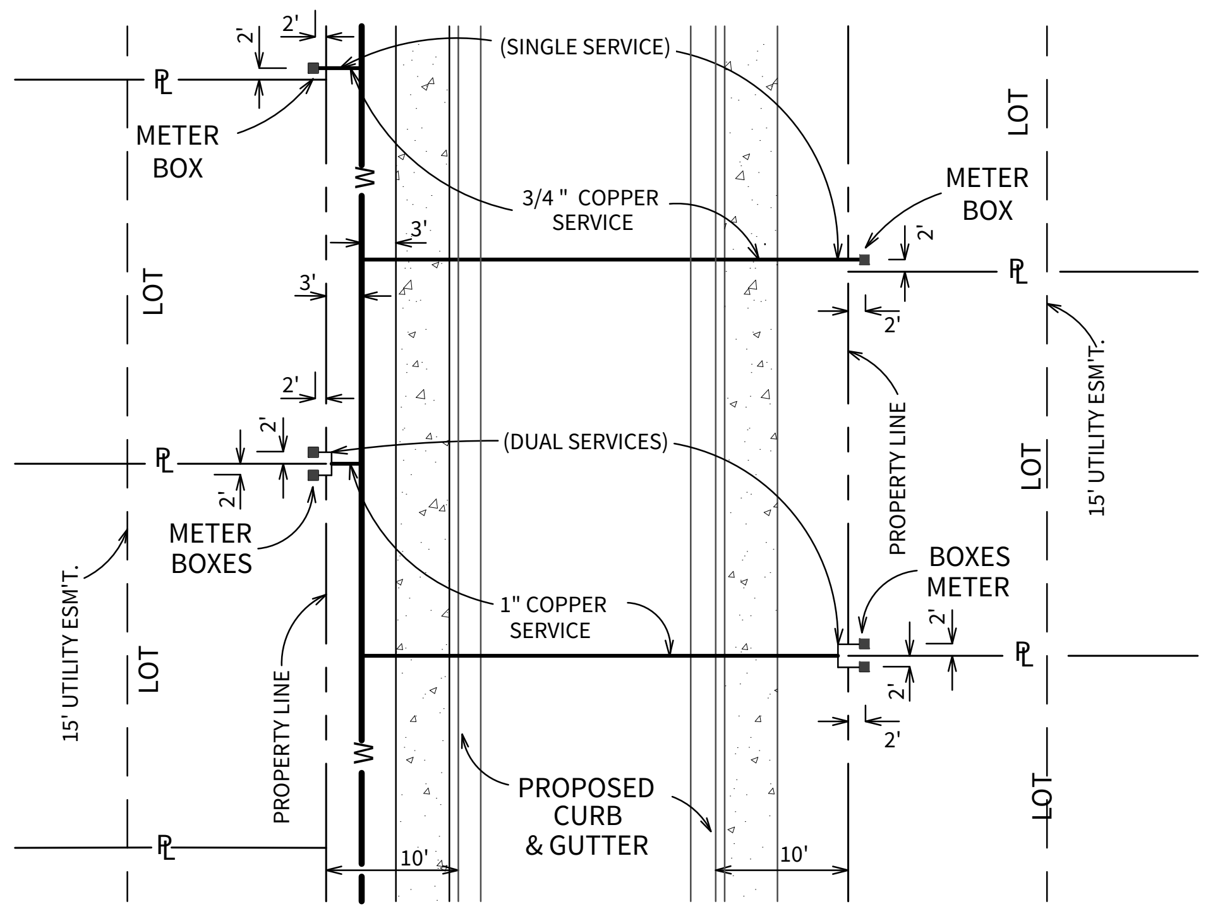
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

N.T.S.

LEGEND

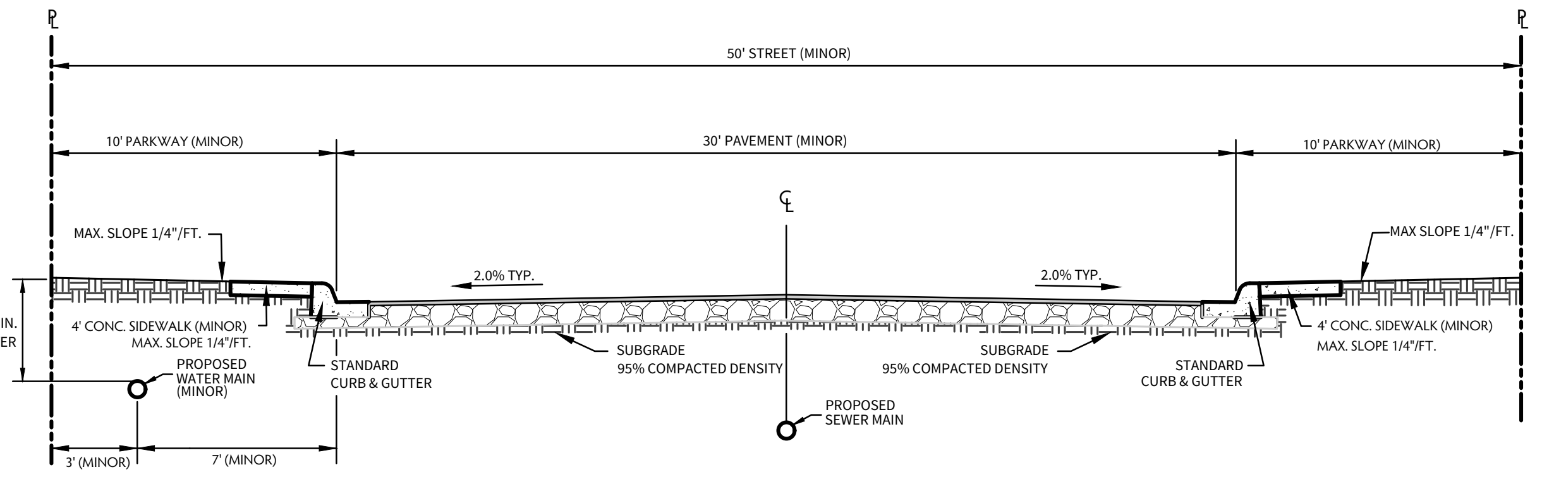
EXISTING SANITARY SEWER	— — EX.8"SS — —
PROPOSED SANITARY SEWER	—— 8"SS ——
EXISTING SANITARY SEWER MANHOLE	— —●— —
PROPOSED SANITARY SEWER MANHOLE	——●——
PROPOSED WATER MAIN	—— 8"W ——
PROPOSED STANDARD FIRE HYDRANT	⧓
PROPOSED STANDARD GATE VALVE	——•——
PROPOSED LIGHT POLE	◉
UTILITY ESM'T.	— — UTILITY ESM'T. — —
EXISTING WATER MAIN	— — EX. 8"W — —
EXISTING OVERHEAD ELECTRIC	—— OHE ——
PROPOSED OVERHEAD ELECTRIC	——○——
PROPOSED TRANSFORMER	△
PROPOSED SECTIONALIZING BOX	▭
PROPOSED SECONDARY PEDESTAL	▫
EXISTING POWER POLE	○

SCALE: 1"=80'
0 80 160



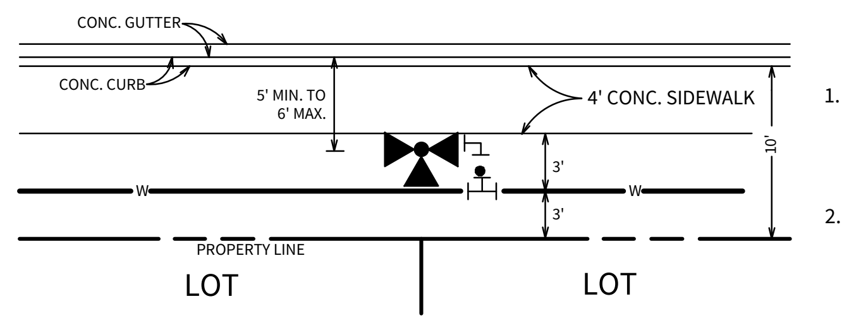
WATER METER BOX LOCATION (50' R.O.W. / 4' SDWK)

N.T.S.



MINOR STREET CROSS SECTION

N.T.S.

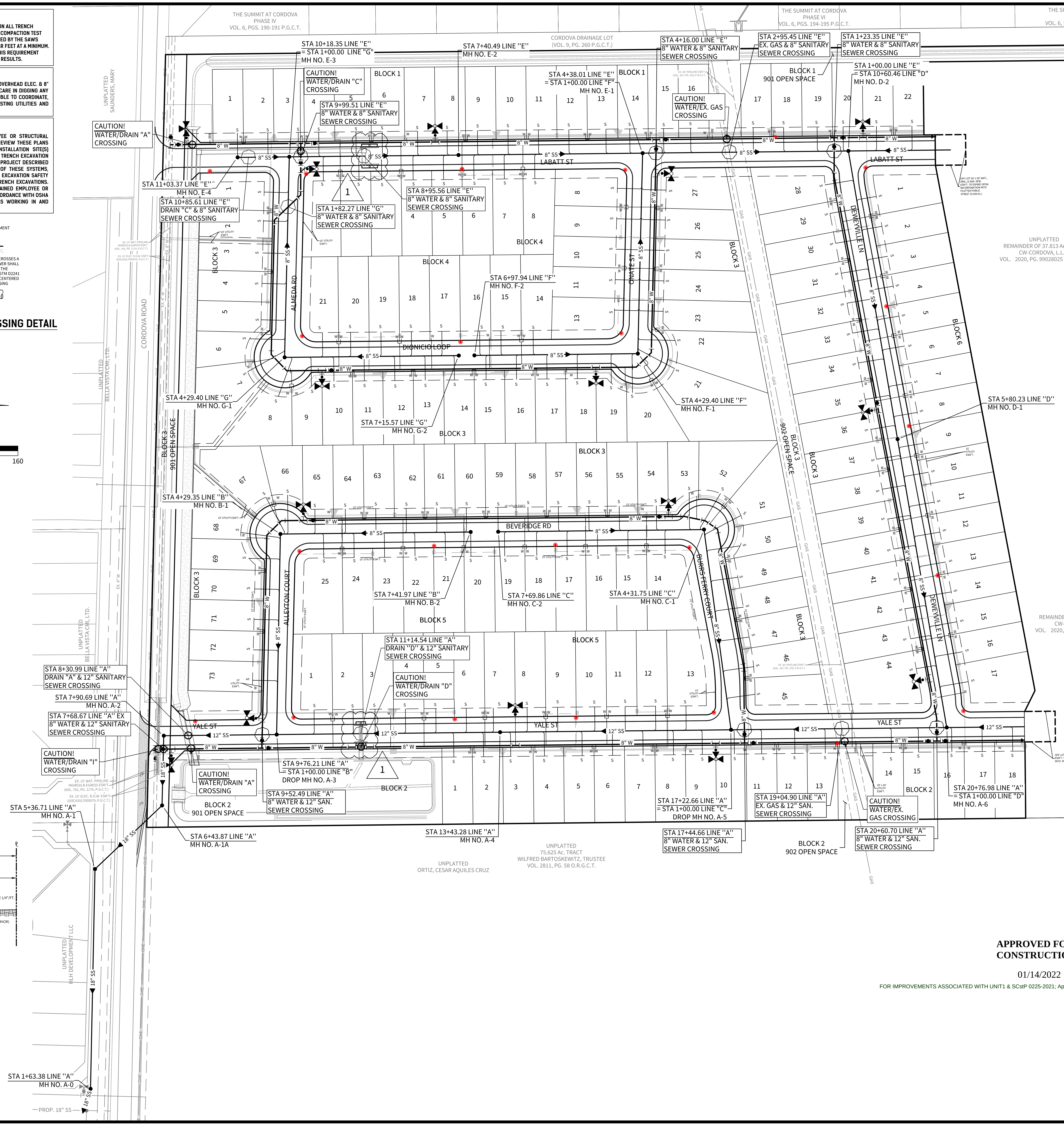


NOTE:

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.

TYPICAL FIRE HYDRANT DETAIL (4' SIDEWALK / 50' ROW)

N.T.S.


THE SUMMIT AT CORDOVA PHASE IV VOL. 6, PGS. 190-191 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VI VOL. 6, PGS. 194-195 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VIII VOL. 6, PGS. 198-199 P.G.C.T.
CORDOVA DRAINAGE LOT (VOL. 9, PG. 260 P.G.C.T.)
UNPLATTED SAUNDERS, MARY
STA 10+18.35 LINE "E" = STA 1+00.00 LINE "G" MH NO. E-3
STA 7+40.49 LINE "E" MH NO. E-2
STA 4+16.00 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 2+95.45 LINE "E" EX. GAS & 8" SANITARY SEWER CROSSING
STA 1+23.35 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 4+38.01 LINE "E" = STA 1+00.00 LINE "F" MH NO. E-1
BLOCK 1 901 OPEN SPACE
STA 1+00.00 LINE "E" = STA 10+60.46 LINE "D" MH NO. D-2
CAUTION! WATER/DRAIN "C" CROSSING
CAUTION! WATER/EX. GAS CROSSING
CAUTION! WATER/DRAIN "A" CROSSING
STA 9+99.51 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
STA 11+03.37 LINE "E" MH NO. E-4
STA 10+85.61 LINE "E" DRAIN "C" & 8" SANITARY SEWER CROSSING
STA 1+82.27 LINE "G" 8" WATER & 8" SANITARY SEWER CROSSING
STA 8+95.56 LINE "E" 8" WATER & 8" SANITARY SEWER CROSSING
LABATT ST
ALMEDA RD
ONATE ST
DIONICIO LOOP
DEWEYVILLE LN
CORDOVA ROAD
BEVERIDGE RD
ALLEYTON COURT
BURNS FERRY COURT
YALE ST
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
BLOCK 6
STA 6+97.94 LINE "F" MH NO. F-2
STA 4+29.40 LINE "G" MH NO. G-1
STA 7+15.57 LINE "G" MH NO. G-2
STA 4+29.40 LINE "F" MH NO. F-1
STA 5+80.23 LINE "D" MH NO. D-1
BLOCK 3 902 OPEN SPACE
BLOCK 2 901 OPEN SPACE
UNPLATTED REMAINDER OF 37.813 Ac. TRACT CW-CORDOVA, L.L.C. VOL. 2020, PG. 99028025 O.R.G.C.T.
UNPLATTED BELLA VISTA CMI, LTD.
UNPLATTED HLH DEVELOPMENT LLC
STA 4+29.35 LINE "B" MH NO. B-1
STA 7+41.97 LINE "B" MH NO. B-2
STA 7+69.86 LINE "C" MH NO. C-2
STA 4+31.75 LINE "C" MH NO. C-1
STA 11+14.54 LINE "A" DRAIN "D" & 12" SANITARY SEWER CROSSING
CAUTION! WATER/DRAIN "D" CROSSING
STA 8+30.99 LINE "A" DRAIN "A" & 12" SANITARY SEWER CROSSING
STA 7+90.69 LINE "A" MH NO. A-2
STA 7+68.67 LINE "A" EX 8" WATER & 12" SANITARY SEWER CROSSING
CAUTION! WATER/DRAIN "I" CROSSING
CAUTION! WATER/DRAIN "A" CROSSING
STA 9+76.21 LINE "A" = STA 1+00.00 LINE "B" DROP MH NO. A-3
STA 9+52.49 LINE "A" 8" WATER & 12" SAN. SEWER CROSSING
STA 5+36.71 LINE "A" MH NO. A-1
STA 6+43.87 LINE "A" MH NO. A-1A
STA 13+43.28 LINE "A" MH NO. A-4
STA 17+22.66 LINE "A" = STA 1+00.00 LINE "C" DROP MH NO. A-5
STA 17+44.66 LINE "A" 8" WATER & 12" SAN. SEWER CROSSING
STA 19+04.90 LINE "A" EX. GAS & 12" SAN. SEWER CROSSING
CAUTION! WATER/EX. GAS CROSSING
STA 20+60.70 LINE "A" 8" WATER & 12" SAN. SEWER CROSSING
STA 20+76.98 LINE "A" = STA 1+00.00 LINE "D" MH NO. A-6
BLOCK 2 902 OPEN SPACE
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
UNPLATTED ORTIZ, CESAR AQUILES CRUZ
STA 1+63.38 LINE "A" MH NO. A-0
PROP. 18" SS
8" W
8" SS
12" SS
18" SS
GAS

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CUDE EST. 1980 ENGINEERS

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CORDOVA TRAILS SUBDIVISION UNIT 1

UTILITY PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

1. 09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS
2.
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4.
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7.
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9.

DAVID D. CUPIT II
122076
12.11.21

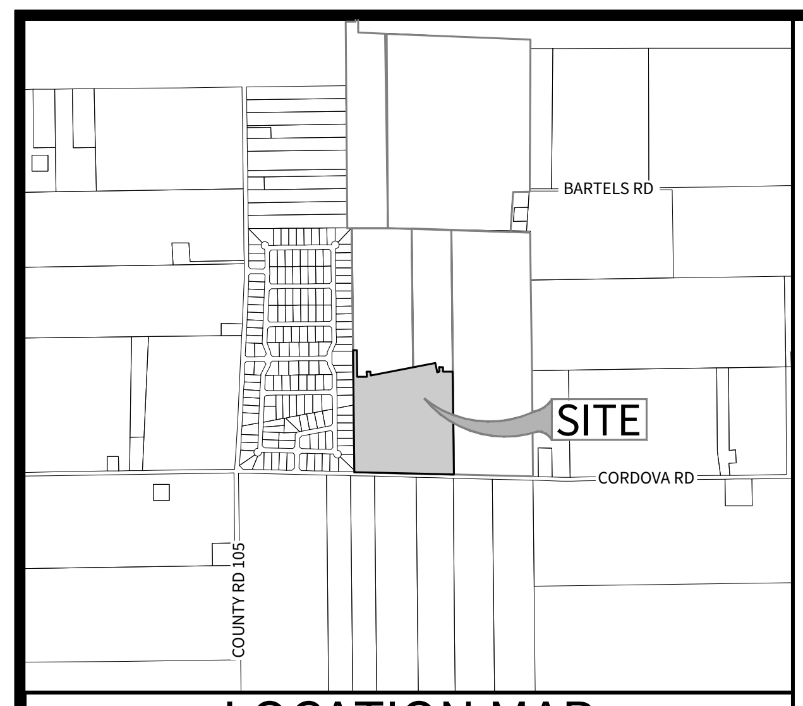
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C46

1 OF 1

P:\03480\002\2-Drawings\C46 UTILITY PLAN.dwg 2021/12/05 10:32pm jguerrero

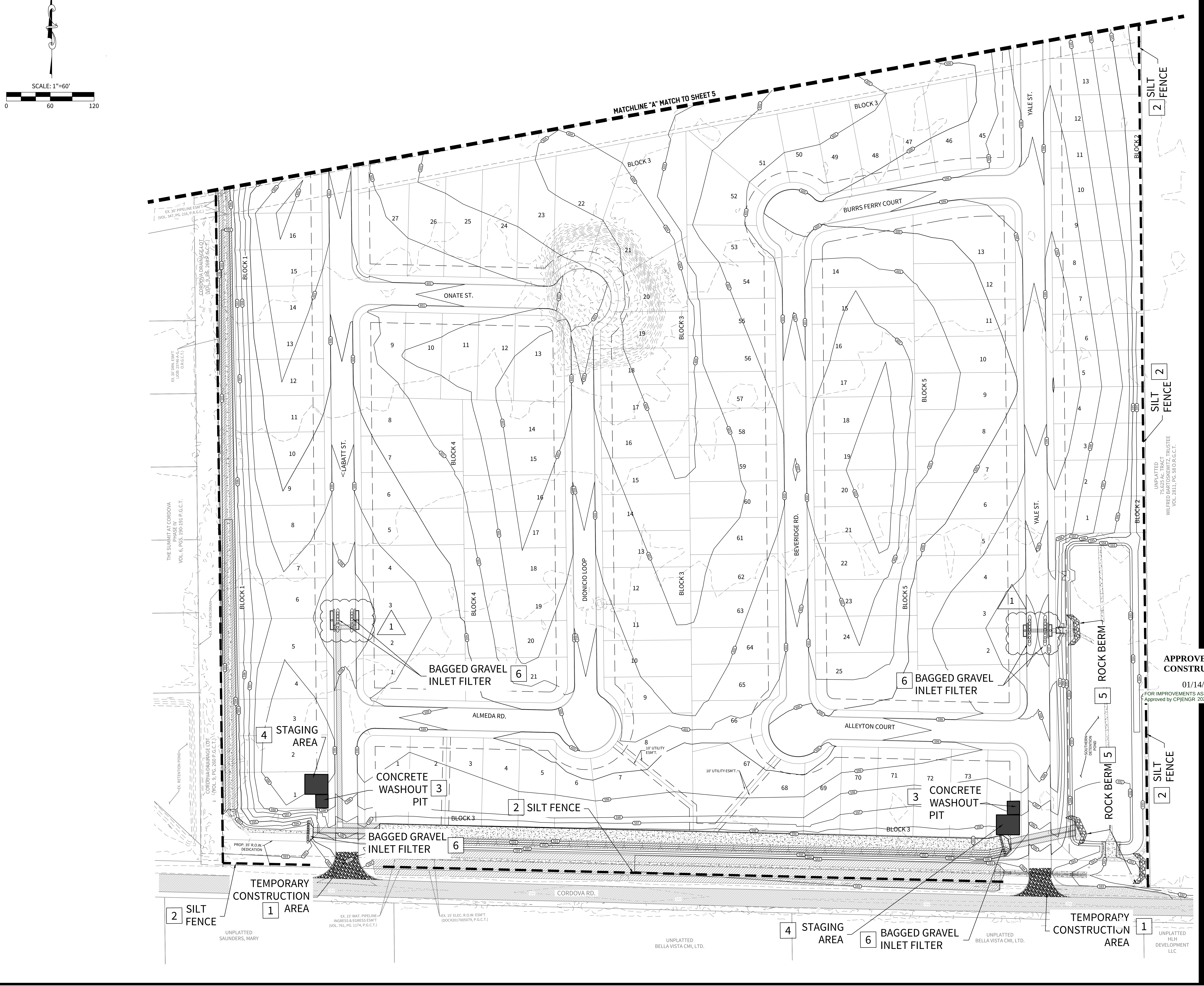
REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



LOCATION MAP
N.T.S.

LEGEND

TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
ROCK BERM	▨
SILT FENCE	— — —
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■
BAGGED INLET FILTER	○○○○○○○○
PROPERTY LINE	——
EXISTING CONTOURS	— —930 — —
TEMPORARY CONSTRUCTION ENTRANCE/EXIT ITEM NO.	1
SILT FENCE ITEM NO.	2
CONCRETE WASHOUT PIT ITEM NO.	3
STAGING AREA ITEM NO.	4
ROCK BERM ITEM NO.	5
BAGGED INLET FILTER ITEM NO.	6


SCALE: 1"=60'
0
60
120
MATCHLINE "A" MATCH TO SHEET 5
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
ONATE ST.
LABATT ST.
DIONICIO LOOP
BEVERIDGE RD.
YALE ST.
BURRS FERRY COURT
ALMEDA RD.
ALLEYTON COURT
CORDOVA RD.
EX. 30' PIPELINE ESM'T (VOL. 347, PG. 216, P.R.G.C.)
CORDOVA DRAINAGE LOT (VOL. 9, PG. 268 P.G.C.T.)
THE SUMMIT AT CORDOVA PHASE IV VOL. 6, PGS. 190-191 P.G.C.T.
EX. RETENTION POND
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
SOUTHERN DETENTION POND
10' UTILITY ESM'T.
PROP. 35' R.O.W. DEDICATION
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESM'T (VOL. 761, PG. 1174, P.G.C.T.)
EX. 15' ELEC. R.O.W. ESM'T (DOC#2017005079, P.G.C.T.)
UNPLATTED SAUNDERS, MARY
UNPLATTED BELLA VISTA CMI, LTD.
UNPLATTED BELLA VISTA CMI, LTD.
UNPLATTED HLH DEVELOPMENT LLC
2 SILT FENCE
2 SILT FENCE
2 SILT FENCE
2 SILT FENCE
2 SILT FENCE
1 TEMPORARY CONSTRUCTION AREA
1 TEMPORARY CONSTRUCTION AREA
3 CONCRETE WASHOUT PIT
3 CONCRETE WASHOUT PIT
4 STAGING AREA
4 STAGING AREA
5 ROCK BERM
5 ROCK BERM
6 BAGGED GRAVEL INLET FILTER
6 BAGGED GRAVEL INLET FILTER
6 BAGGED GRAVEL INLET FILTER
6 BAGGED GRAVEL INLET FILTER
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1

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CORDOVA TRAILS SUBDIVISION UNIT 1

STORMWATER POLLUTION PREVENTION PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1. 09/23/2021 - UPDATED CURB INLETS AND SIDEWALKS. ADDED BAGGED GRAVEL INLET FILTER
6.
7.
8.
9.

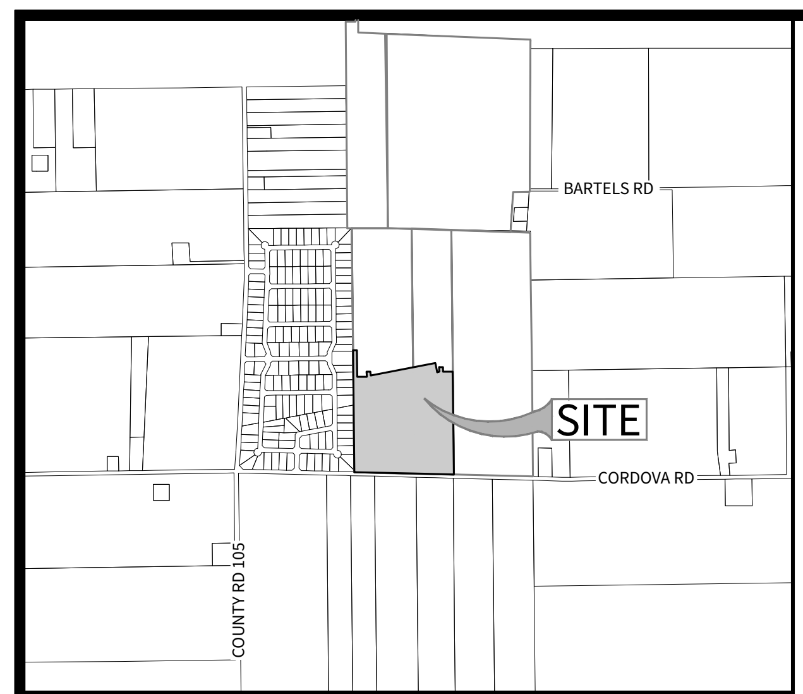
APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

DAVID D. CUPIT II
122076
12.11.21

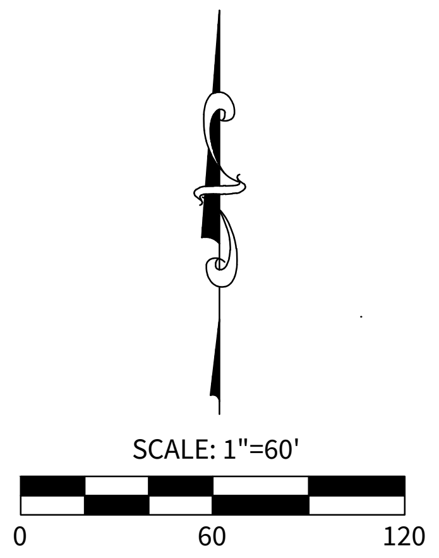
CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C47

P:\03480\002\2-Drawings\C49 STORMWATER POLLUTION PREVENTION PLAN.dwg 2021/12/05 10:41pm jguerrero

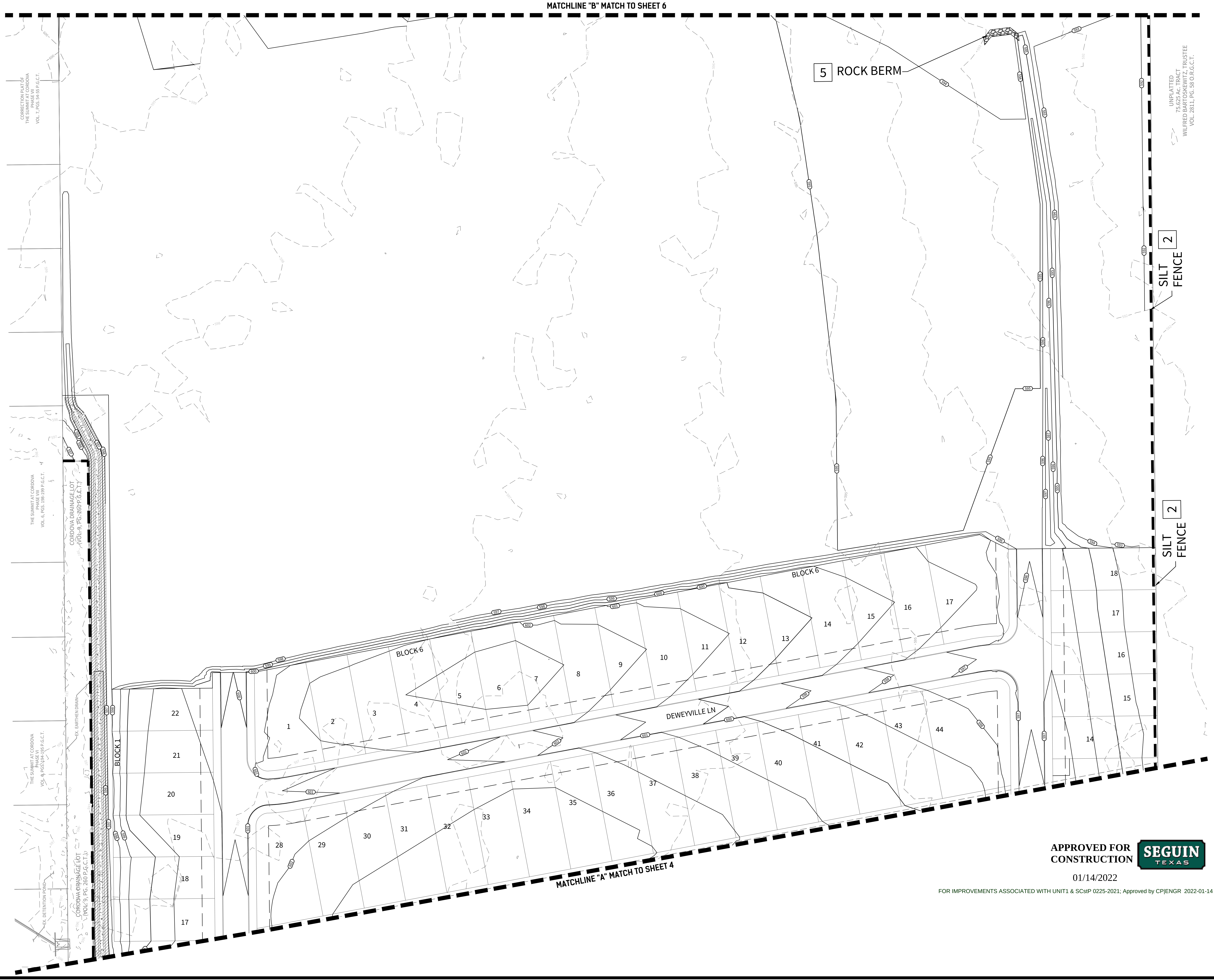


LOCATION MAP
N.T.S.



LEGEND

TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
ROCK BERM	⌒
SILT FENCE	▬ ▬ ▬
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	■
BAGGED INLET FILTER	○○○○○○○○○
PROPERTY LINE	───
EXISTING CONTOURS	— — 930 — —
TEMPORARY CONSTRUCTION ENTRANCE/EXIT ITEM NO.	1
SILT FENCE ITEM NO.	2
CONCRETE WASHOUT PIT ITEM NO.	3
STAGING AREA ITEM NO.	4
ROCK BERM ITEM NO.	5
BAGGED INLET FILTER ITEM NO.	6


MATCHLINE "B" MATCH TO SHEET 6
MATCHLINE "A" MATCH TO SHEET 4
5 ROCK BERM
2 SILT FENCE
2 SILT FENCE
CORRECTION PLAT OF THE SUMMIT AT CORDOVA PHASE VII VOL. 7, PGS. 54-55 P.G.C.T.
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
THE SUMMIT AT CORDOVA PHASE VIII VOL. 6, PGS. 198-199 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VI VOL. 6, PGS. 194-195 P.G.C.T.
CORDOVA DRAINAGE LOT (VOL. 9, PG. 260 P.G.C.T.)
CORDOVA DRAINAGE LOT (VOL. 9, PG. 260 P.G.C.T.)
EX. EARTHEN DRAIN
EX. DETENTION POND
BLOCK 1
BLOCK 6
BLOCK 6
DEWEYVILLE LN
600
599
598
597
596
592
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APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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San Antonio, Texas 78231
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CORDOVA TRAILS SUBDIVISION UNIT 1

STORMWATER POLLUTION PREVENTION PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1.
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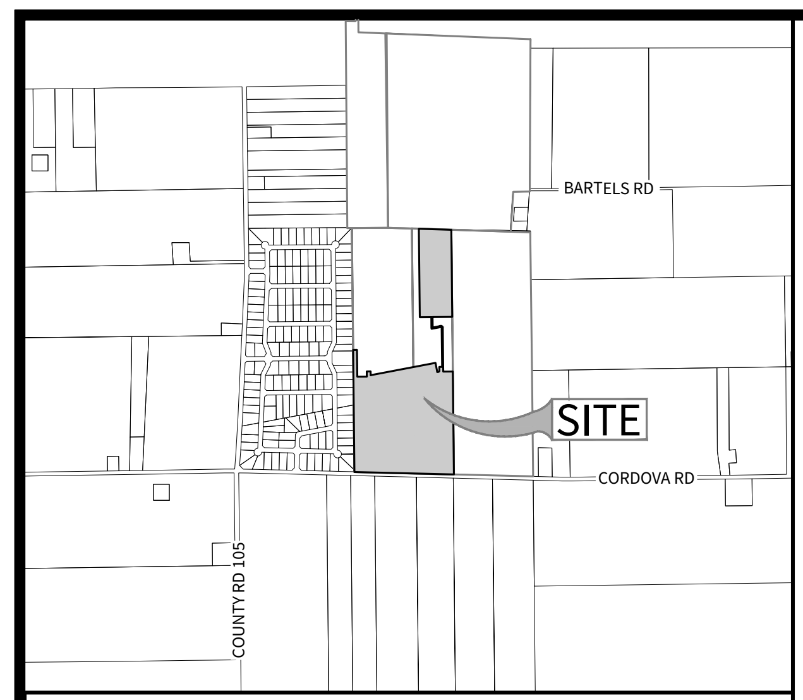
DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C48



LOCATION MAP

N.T.S.

LEGEND

TEMPORARY CONSTRUCTION ENTRANCE/EXIT	▨
ROCK BERM	▨
SILT FENCE	▬ ▬ ▬
FLOW ARROW	→
STAGING AREA	■
CONCRETE WASHOUT PIT	▪
BAGGED INLET FILTER	○○○○○○○○○○
PROPERTY LINE	―
EXISTING CONTOURS	— —930— —
TEMPORARY CONSTRUCTION ENTRANCE/EXIT ITEM NO.	1
SILT FENCE ITEM NO.	2
CONCRETE WASHOUT PIT ITEM NO.	3
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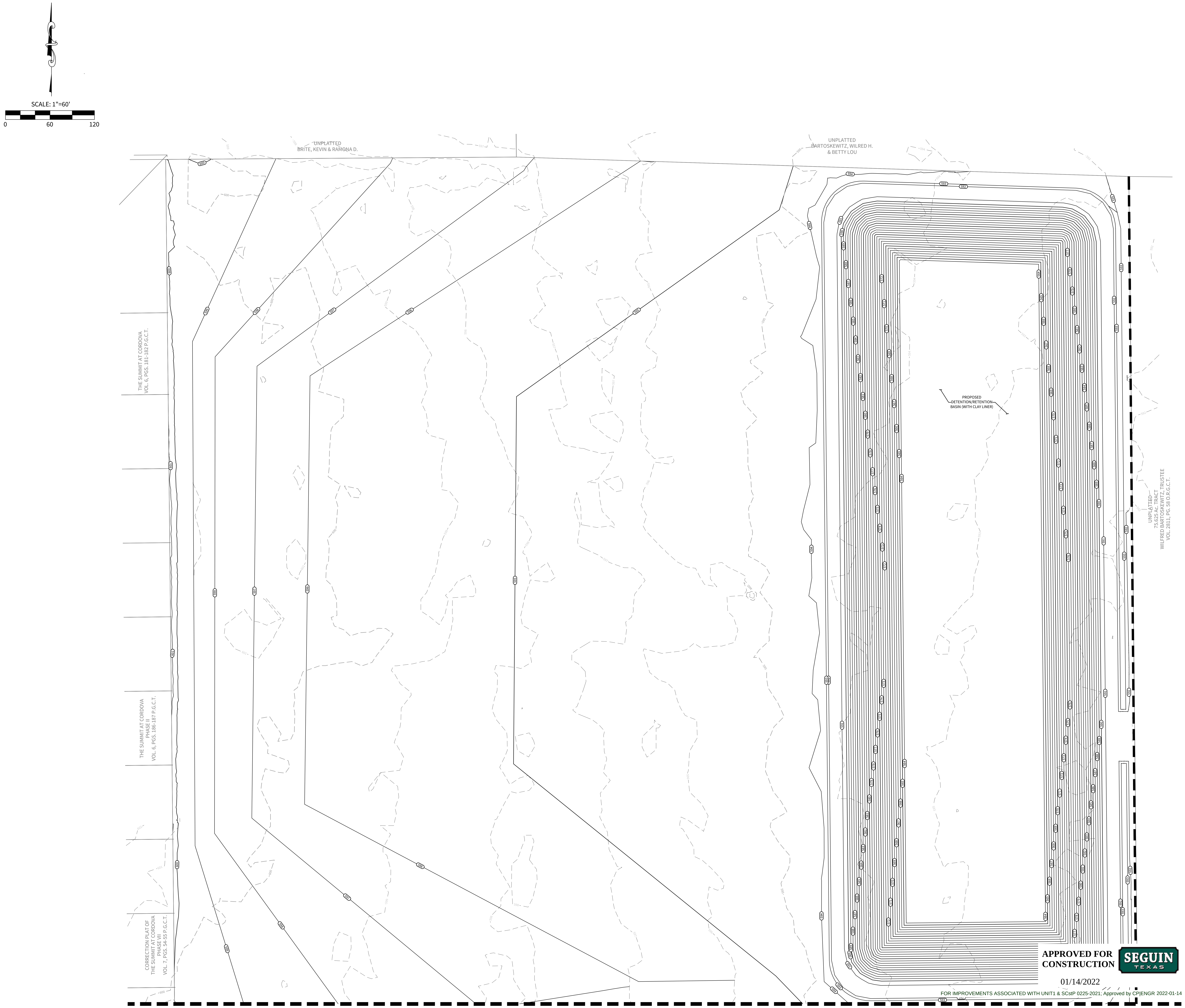

APPROVED FOR CONSTRUCTION

SEGUIN
TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS
SUBDIVISION UNIT 1

STORMWATER POLLUTION PREVENTION PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1.
2.
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DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C49

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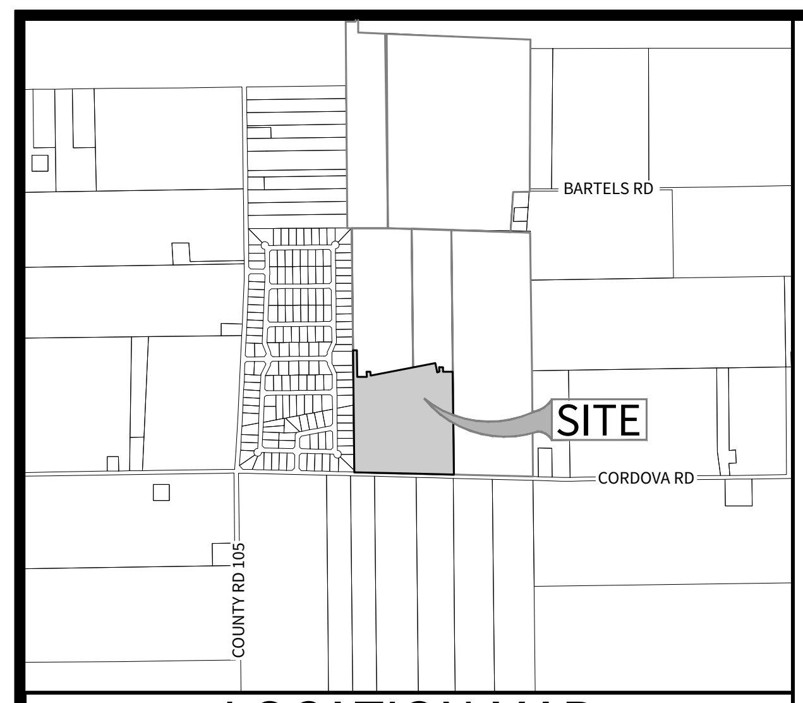


LOCATION MAP
N.T.S.

GENERAL NOTES:

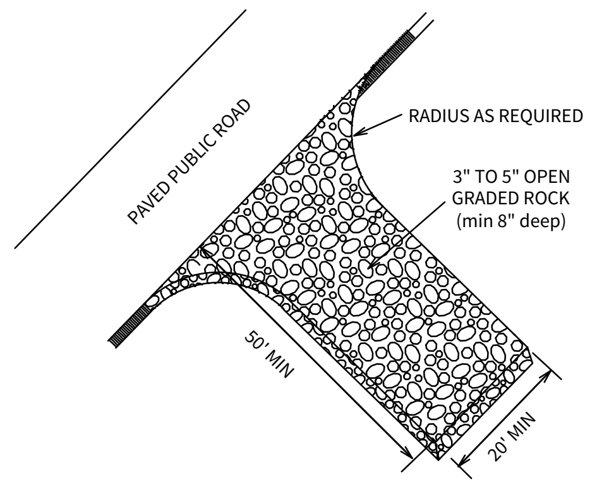
1. THE CONTROL MEASURES CONTAINED HEREON (AND AS FURTHER DESCRIBED BY THE STANDARD SPECIFICATIONS) SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION CONTRACT TO ASSURE EFFECTIVE AND CONTINUOUS WATER POLLUTION CONTROL DURING CONSTRUCTION AND POST CONSTRUCTION PERIODS.
2. A RAIN GAUGE SHALL BE PROVIDED BY THE CONTRACTOR AND LOCATED AT THE PROJECT SITE. WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE (AS MEASURED BY THE PROJECT SITE GAUGE) THE CONTRACTOR AND INSPECTOR WILL INSPECT THE ENTIRE PROJECT TO DETERMINE THE CONDITION OF THE CONTROL MEASURES. SEDIMENT WILL BE REMOVED AND DEVICES REPAIRED AS SOON AS PRACTICABLE BUT NO LATER THAN 7 DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE BEING CAUSED BY REPAIR OPERATIONS.
3. THE CONTRACTOR SHALL CLEAN PAVED SURFACES (ADJACENT TO THE CONSTRUCTION AREAS) AS NECESSARY TO REMOVE SEDIMENT WHICH HAS ACCUMULATED ON THE ROADWAY DUE TO STORMWATER FLOWS AND VEHICULAR TRAFFIC THROUGH AND ACROSS THE CONSTRUCTION SITE.
4. IN CASE OF FAILURE ON THE PART OF THE CONTRACTOR TO PREVENT AND CONTROL SOIL EROSION, SEDIMENTATION AND WATER POLLUTION WHICH MAY DEGRADE RECEIVING WATERS, THE DEVELOPER/OWNER RESERVES THE RIGHT TO EMPLOY OUTSIDE ASSISTANCE OR USE OTHER FORCES TO PROVIDE THE NECESSARY CORRECTIVE MEASURES. ALL COST (INCLUDING ENGINEERING) COST WILL BE DEDUCTED FROM ANY MONEYS DUE TO OR TO BECOME DUE TO THE CONTRACTOR.
5. UPON COMPLETION OF CONSTRUCTION AND THE INSTALLATION OF PERMANENT EROSION CONTROL METHODS, A FINAL EROSION CONTROL INSPECTION WILL BE PERFORMED AS PART OF ACCEPTANCE OF THE PROJECT BY THE DEVELOPER/OWNER. IN THE EVENT THAT THE PERMANENT EROSION CONTROL IS INADEQUATE DUE TO IMPROPER DESIGN OR INSTALLATION. THE PERMANENT EROSION CONTROL MEASURES MUST BE CORRECTED OR REDESIGNED TO FUNCTION PROPERLY.
6. THE NPDES NOTICE OF INTENT (N.0.I.) SHALL BE SIGNED AND SUBMITTED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO THE CONTRACTOR MOVING ONTO THE SITE.
7. THE CONTRACTOR SHALL SUBMIT A SIGNED NOTICE OF TERMINATION (N.O.T.). CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (N.O.T.).

SOIL STABILIZATION NOTE:

1. PER TPDES REQUIREMENTS, ALL DISTURBED SOILS SHOULD BE SEEDED OR OTHERWISE STABILIZED WITH 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.

SEQUENCE OF CONSTRUCTION:

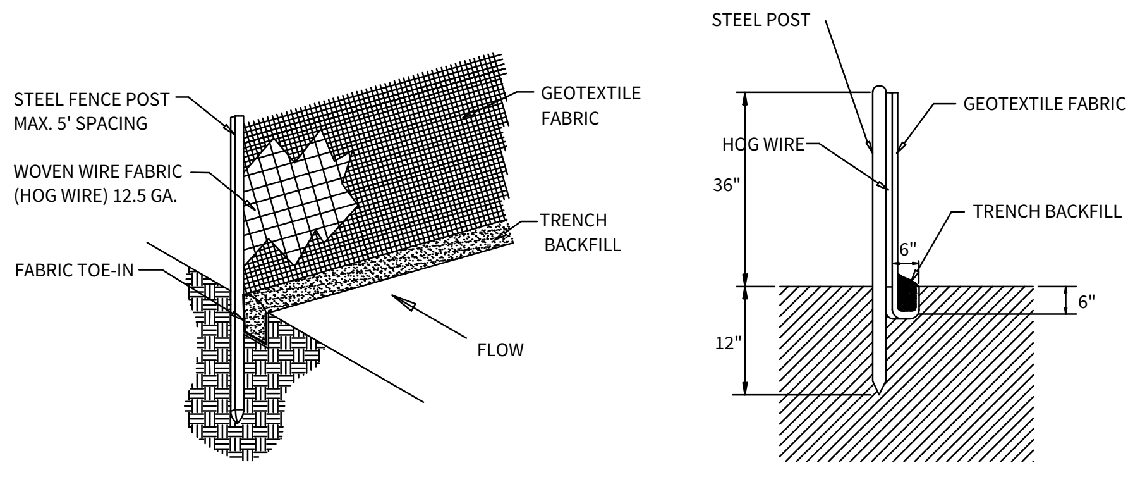
1. OBTAIN CITY APPROVED SITE PREPARATION PLANS, AND TPDES PERMIT (NOT A COPY OF TPDES APPLICATION TO TCEQ), IF APPLICABLE.
2. INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
3. BEGIN DEMOLITION ACTIVITIES, IF APPLICABLE.
4. BEGIN SITE CLEARING AND GRADING.
5. RESTORE AND RE-VEGETATE ALL DISTURBED AREAS NOT UNDER IMPERMEABLE IMPROVEMENTS.
6. COMPLETE ANY REMAINING "PUNCH LIST" ITEMS.
7. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROLS AFTER PERMANENT STABILIZATION IS AT LEAST 70% EVENLY ESTABLISHED. RYE IS NOT ACCEPTED.



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.



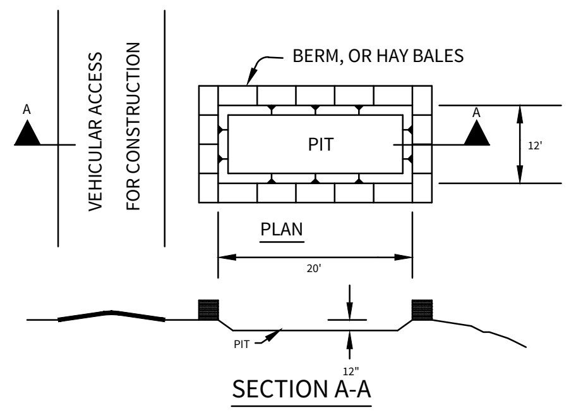
SILT FENCE DETAIL

SECTION DETAIL

2 STANDARD SILT FENCE
N.T.S.

NOTE:

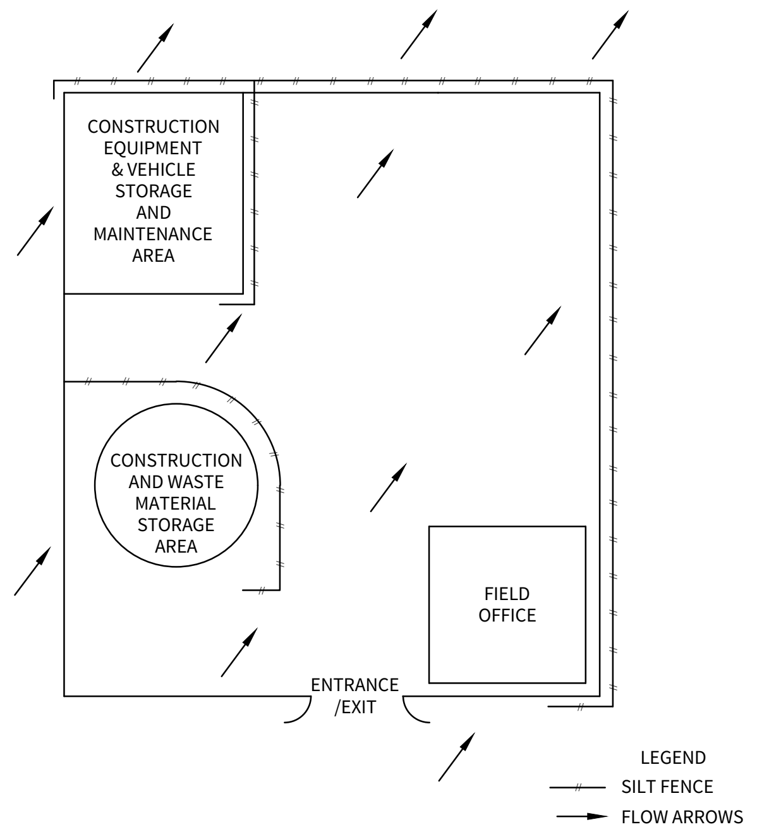
1. ALL SILT FENCES AND/OR ROCK BERMS AND TEMPORARY CONSTRUCTION ENTRANCES/EXITS SHALL BE PLACED AT THE MOST DOWN-GRADIENT POINT OF CONSTRUCTION AS SHOWN ON THIS SITE PLAN. CONTRACTOR SHALL TAKE INTO CONSIDERATION ANY PROPOSED CONSTRUCTION THAT MAY TAKE PLACE AT THESE LOCATIONS. ANY RELOCATION OF THE 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. THERE WILL BE NO STORMWATER DISCHARGES INTO THE FEMA FLOOD PLAIN.
4. THE CONTRACTOR IS REQUIRED TO MAINTAIN EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.
5. 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.



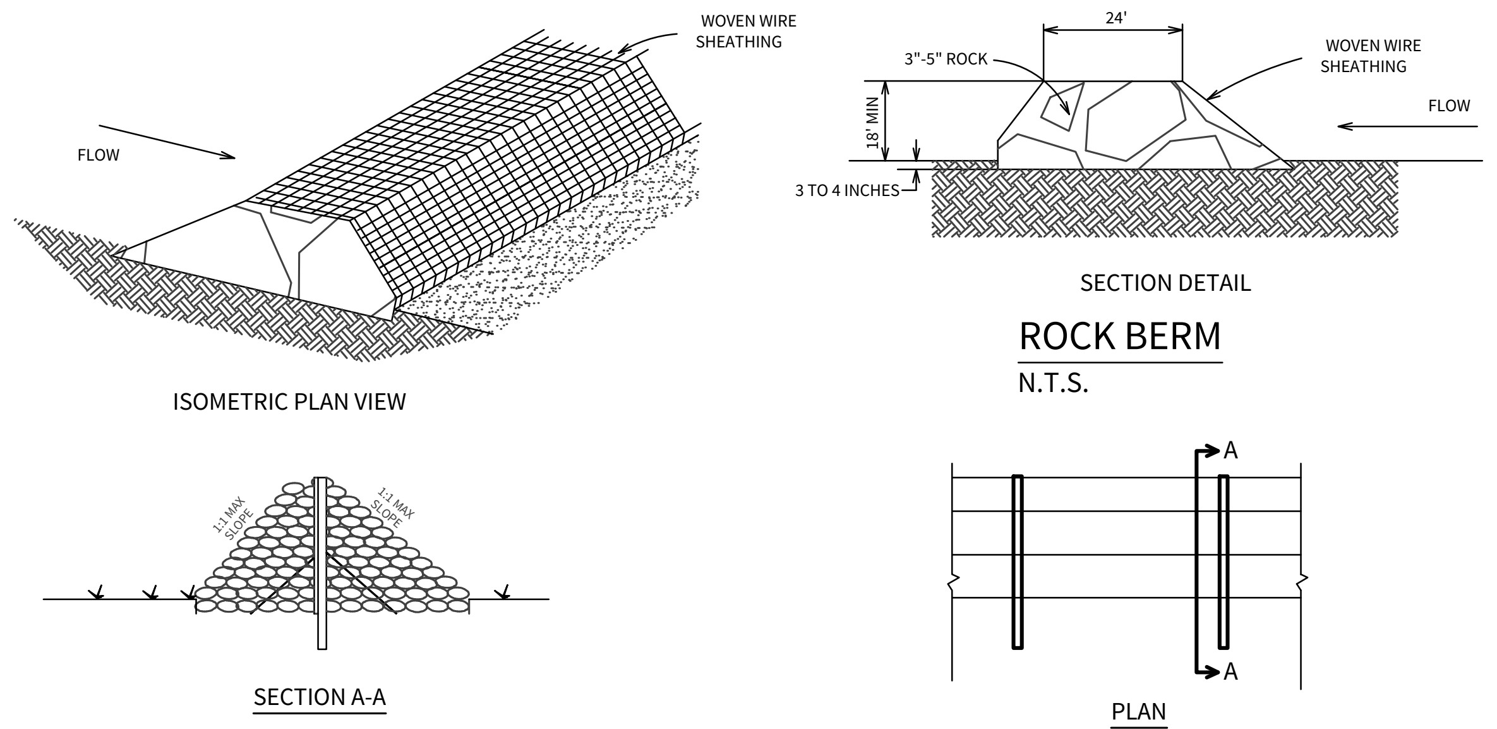
GENERAL NOTES:

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

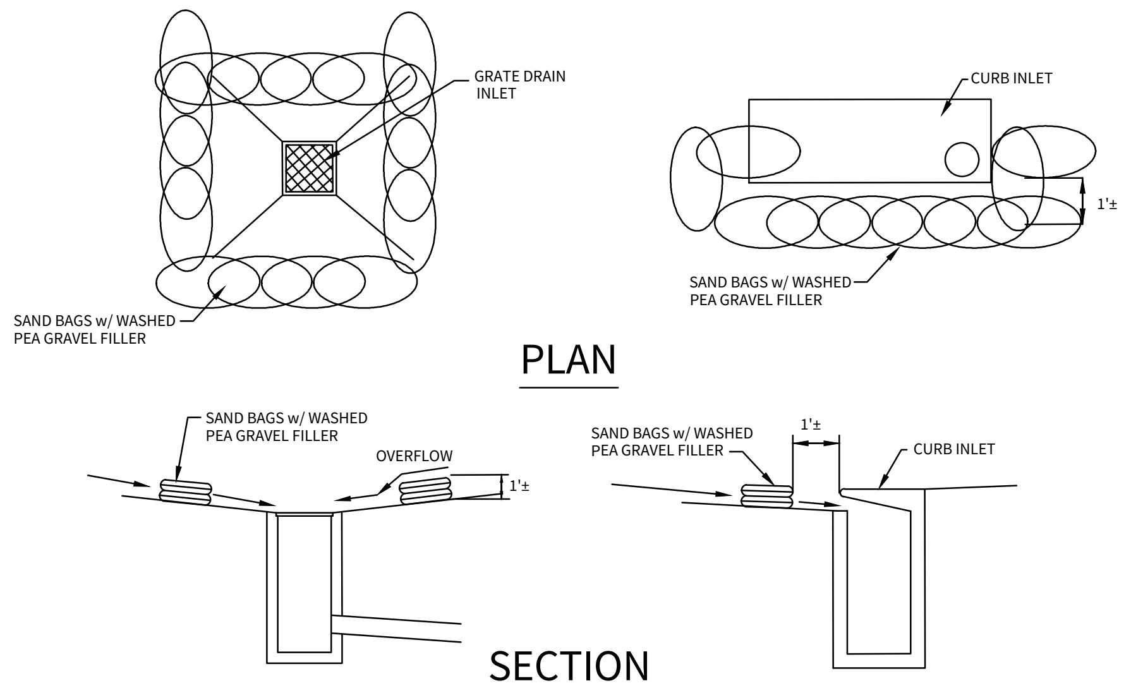
4 TYP. CONSTRUCTION STAGING AREA
N.T.S.



General Notes

1. The rock berm shall be inspected weekly or after each rain and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation, washout, etc.
2. When silt reaches a depth of 12", the silt shall be removed and disposed of at an approved site.

5 ROCK BERM W/ SILT FENCE DETAIL
N.T.S.

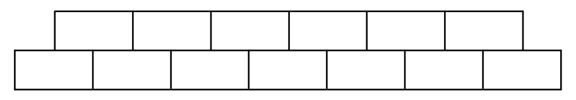

GRATE DRAIN INLET
SAND BAGS w/ WASHED PEA GRAVEL FILLER
CURB INLET
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
SAND BAGS w/ WASHED PEA GRAVEL FILLER
OVERFLOW
1'±
SAND BAGS w/ WASHED PEA GRAVEL FILLER
1'±
CURB INLET

PLAN

SECTION

GENERAL 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.



ELEVATION

6 BAGGED GRAVEL INLET FILTER DETAIL
N.T.S.

APPROVED FOR CONSTRUCTION SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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CORDOVA TRAILS
SUBDIVISION UNIT 1

STORMWATER POLLUTION PREVENTION PLAN DETAIL

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
1.
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DAVID D. CUPIT II
122076
12.11.21

CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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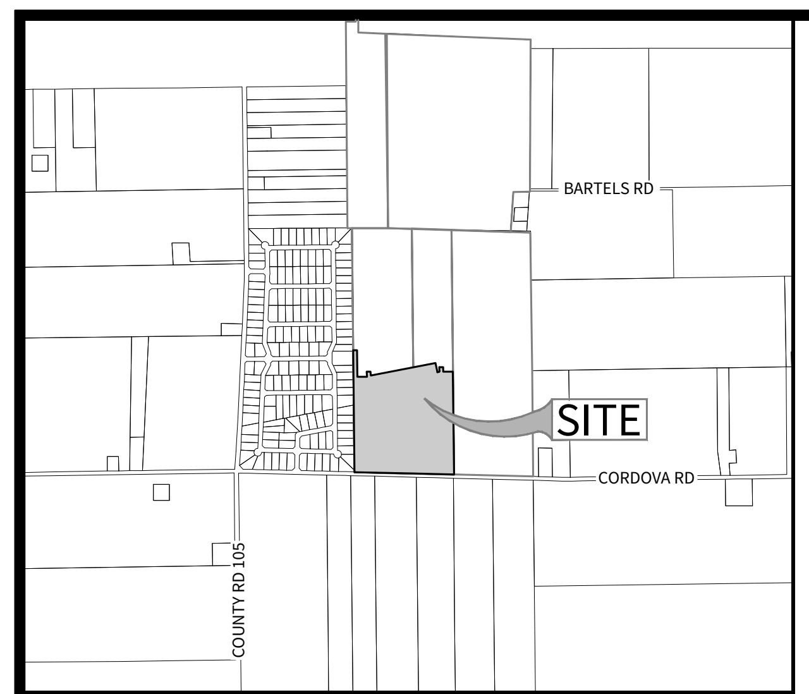
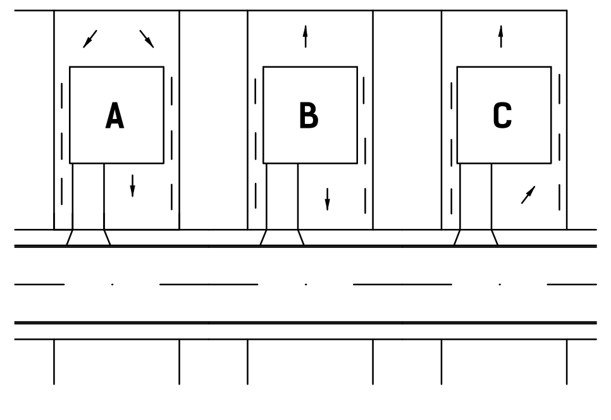


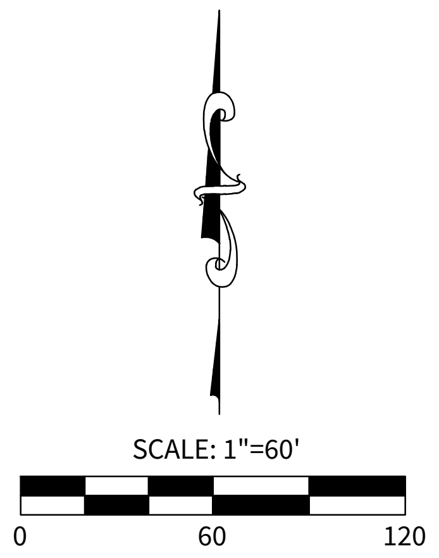
LOCATION MAP
N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	— — 1000 — —
PROPOSED ELEVATION	× 1000.00
TYPE OF LOT GRADING	A, B, OR C
SWALE FLOW LINE (ONLY LOT FOR PRIVATE LOT GRADING)	— · · · → · · · →
BLOCK RETAINING WALL	▬ ▬ ▬
LIMITS OF GRADING	— — —
GRADE BREAK	▬ ▬ ▬
BUILDING PAD (65'-74')	🟧
BUILDING PAD (75'-79')	🟦
BUILDING PAD (LESS THAN 65')	🟩



TYPICAL LOT SITE PLAN
N.T.S.



NOTES:

1. STREET PAVEMENT CONTOURS SHOWN. REFERENCE GEOTECH REPORT FOR PAVEMENT SECTIONS.
2. HOUSE PADS SHALL HAVE A MINIMUM 20' FRONTAGE, 15' REAR AND 5' SIDE SETBACK UNLESS NOTED OTHERWISE. CONTRACTOR SHALL REFER TO THE SUBDIVISION PLAT TO VERIFY ALL SETBACKS PRIOR TO CONSTRUCTION.
3. MINIMUM SLAB EXPOSURE IS 1.0'.
4. TYPICAL PAD SIZES IS 40' X 80' UNLESS NOTED OTHERWISE ON PLAN.
5. MAXIMUM REAR SETBACK SLOPE = 15%
6. HOUSE PAD SWALES TO BE CONSTRUCTED WITH HOME BUILDING.
7. CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED AWAY FROM ALL HOUSE PADS. NO WATER PONDING SHALL BE ALLOWED.

Cut FillTable

Unit	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
1	377,677.30	349,374.32	28,302.99 (Cut)

GENERAL SPECIFICATIONS FOR SITE PREPARATION

1. GENERAL DESCRIPTION
THIS ITEM SHALL CONSIST OF ALL CLEARING AND GRUBBING, DEMOLITION, PREPARATION OF LAND TO BE FILLED, FILLING OF THE LAND, SPREADING, COMPACTION TESTING AND INSPECTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES AND SLOPES AS SHOWN ON THE APPROVED PLANS.

2. CLEARING THE AREA TO BE FILLED
ALL TIMBER, LOGS, TREES, BRUSH AND RUBBISH SHALL BE REMOVED FROM THE SITE.

3. SCARIFYING THE AREA TO BE FILLED
ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND THE SURFACE SHALL THEN BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"), ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING. WHERE FILLS ARE MADE ON HILLSIDES OR SLOPES, THE SLOPE OF THE ORIGINAL GROUND UPON WHICH THE FILL IS TO BE PLACED SHALL BE DISKED OR SCARIFIED. WHERE THE SLOPE RATIO OF THE ORIGINAL GROUND IS STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL, THE BANK SHALL BE STEPPED OR BENCHED. GROUND SLOPES WHICH ARE FLATTER THAN 5 TO 1 SHALL BE BENCHED WHEN CONSIDERED NECESSARY BY THE GEOTECHNICAL ENGINEER.

4. COMPACTING THE AREA TO BE FILLED
FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.

5. FILL MATERIALS
THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

6. DEPTH AND MIXING OF FILL LAYERS
THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO THAT STIPULATED ABOVE. EACH LAYER SHALL BE THOROUGHLY MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS MAY VARY DEPENDING ON THE COMPACTION EQUIPMENT OF DEMONSTRATED CAPABILITY. THE MAXIMUM LOOSE DEPTH FOR ANY MATERIAL SHALL NOT EXCEED TWELVE INCHES (12"). FOR TESTING REQUIREMENTS OF FILL MATERIAL, SEE DENSITY TESTING.

7. ROCK
WHEN FILL MATERIAL INCLUDES ROCK, THE MAXIMUM ROCK SIZE SHALL BE AS APPROVED BY THE GEOTECHNICAL ENGINEER AND THE CITY OF SEGUIN THROUGH THE CONSTRUCTION PHASE SUBMITTAL PROCESS. NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE FILLED WITH SMALL STONES OR SOIL AND ADEQUATELY COMPACTED. NO LARGE ROCKS WILL BE PERMITTED WITHIN EIGHTEEN INCHES (18") OF THE FINISHED GRADE.

8. COMPACTION OF FILL LAYER
COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTION SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

9. COMPACTION OF SLOPES
THE FACES OF FILL SLOPES SHALL BE COMPACTED. COMPACTING OPERATIONS SHALL BE CONTINUED UNTIL THE SLOPE FACES ARE STABLE BUT NOT TOO DENSE FOR PLANTING ON THE SLOPES. COMPACTION OF THE SLOPE FACES MAY BE DONE PROGRESSIVELY IN INCREMENTS OF THREE TO FIVE FEET (3' TO 5') IN FILL HEIGHT AS THIS FILL PROGRESSES OR AFTER THE FILL HAS BEEN BROUGHT TO ITS TOTAL HEIGHT.

10. MOISTURE CONTENT
THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

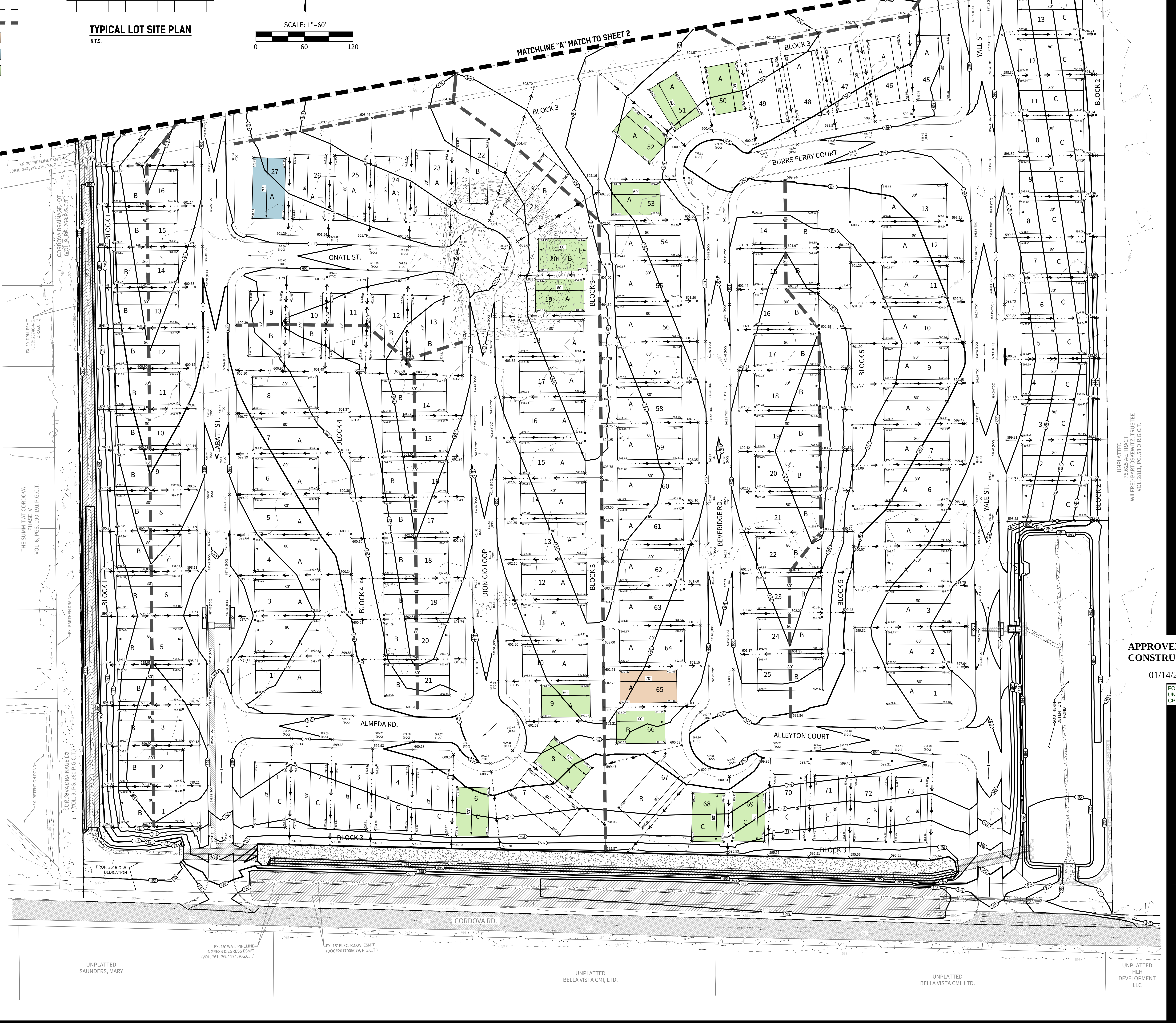
11. DENSITY TESTS
FIELD DENSITY TESTS SHALL BE PERFORMED ON LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE 16 INCHES LOOSE OR 12" COMPACTED PER TXDOT ITEM 132,EMBANKMENT, DENSITY CONTROL. ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. NOTIFICATION BY THE CONTRACTOR TO CONDUCT TESTS SHALL BE AT LEAST THE DAY BEFORE. THIS NOTIFICATION SHALL INCLUDE THE FILL AREA LOCATION (LOT AND BLOCK), THE LIFT OR HEIGHT OF FILL AND APPROXIMATE DESIRED TIME OF TESTING. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED AND RETESTED AT THE EXPENSE OF THE CONTRACTOR UNLESS THE CONTRACTOR CAN SHOW EVIDENCE THAT CIRCUMSTANCES BEYOND HIS CONTROL REQUIRED THE RETESTING. GENERALLY, THE SPECIFIC TESTING WILL BE AS FOLLOWS AND CONDUCTED BY GEOTECHNICAL ENGINEER.

A. THE LAND TO BE FILLED (PREPARED SUBGRADE) SHALL BE PREPARED AND TESTED AT A FREQUENCY AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
B. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8 TO 12-IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
C. FILLS SHALL BE TESTED IN ACCORDANCE WITH TXDOT ITEM 132 3.4.2.
D. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR WHEN POSSIBLE; HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL TEST RESULTS AND TEST RESULTS SHALL BE PROVIDED TO THE CITY OF SEGUIN THROUGHOUT THE PROJECT AS REPORTS ARE COMPLETED, NOT AT END OF PROJECT/ACCEPTANCE PHASE.

12. CUT/FILL LOTS
AREAS INVOLVING CUT ON ONE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6-IN. AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. A MINIMUM OF TWO (2) FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES.

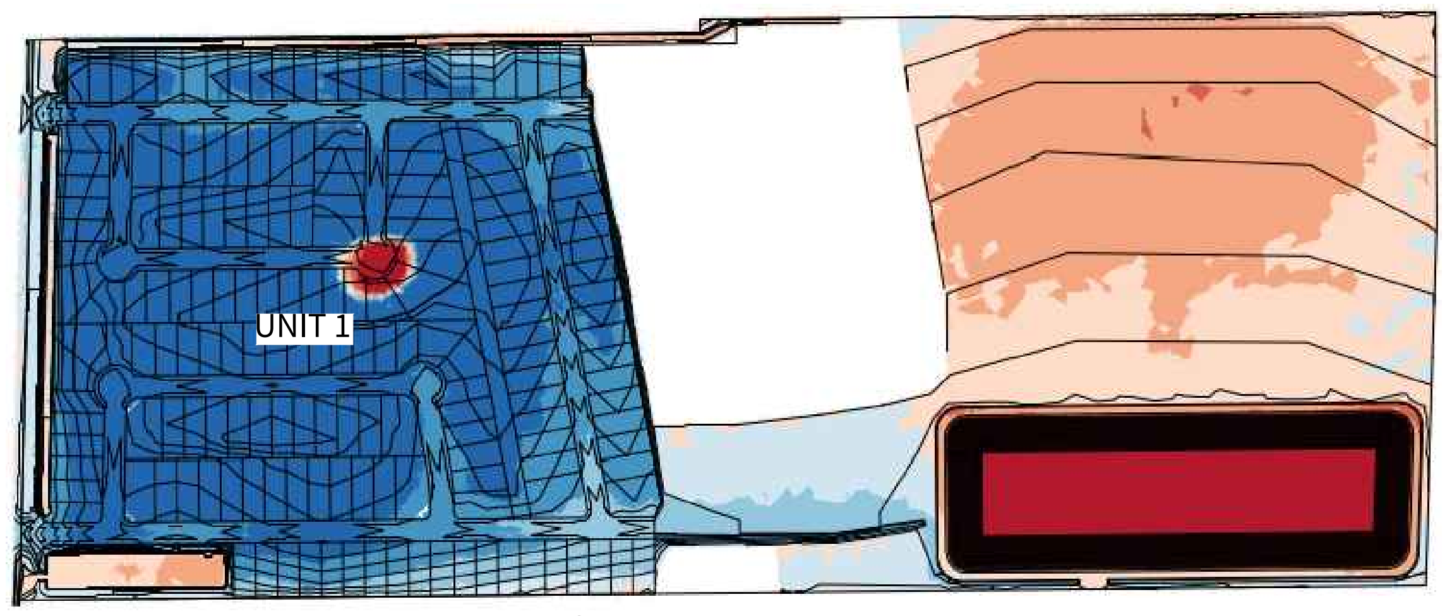
13. DRAINAGE IMPROVEMENTS
ALL PERIMETER DRAINS PROPOSED FOR MASS GRADING OF THE DEVELOPMENT ARE SUBJECT TO FINAL APPROVAL OF THE CONSTRUCTION PLANS FOR EACH UNIT. ADDITIONAL GRADING MAY BE REQUIRED AS PART OF EACH UNIT APPROVAL.

14. FENCING
THE DEVELOPER/CIVIL ENGINEER/GENERAL CONTRACTOR WILL BE LIABLE TO DAMAGE TO EXISTING FENCES WHERE GRADING IS SHOWN IN CLOSE PROXIMITY TO THE SUBDIVISION BOUNDARY.


MATCHLINE "A" MATCH TO SHEET 2
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
ONATE ST.
LABATT ST.
ALMEDA RD.
DIONICIO LOOP
BEVERIDGE RD.
BURRS FERRY COURT
ALLEYTON COURT
YALE ST.
CORDOVA RD.
PROP. 35' R.O.W. DEDICATION
EX. 15' WAT. PIPELINE INGRESS & EGRESS ESMT (VOL. 761, PG. 1174, P.G.C.T.)
EX. 15' ELEC. R.O.W. ESMT
UNPLATTED SAUNDERS, MARY
UNPLATTED BELLA VISTA CMI, LTD.
UNPLATTED BELLA VISTA CMI, LTD.
UNPLATTED HLH DEVELOPMENT LLC
UNPLATTED 75.625 Ac. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
THE SUMMIT AT CORDOVA PHASE IV VOL. 6, PGS. 190-191 P.G.C.T.
CORDOVA DRAINAGE LOT (VOL. 9, PG. 260 P.G.C.T.)
EX. RETENTION POND
SOUTHERN DETENTION POND

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-30.000	-5.000	🟥
2	-5.000	-3.000	🟥
3	-3.000	-1.000	🟧
4	-1.000	0.000	🟧
5	0.000	1.000	🟦
6	1.000	3.000	🟦
7	3.000	5.000	🟦
8	5.000	11.000	🟦



CUT & FILL HEAT MAP
N.T.S.

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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CORDOVA TRAILS SUBDIVISION UNIT 1

UNIT 1 ONLY
GRADING PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS

APPROVED FOR CONSTRUCTION SEGUIN TEXAS
01/14/2022
FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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8.
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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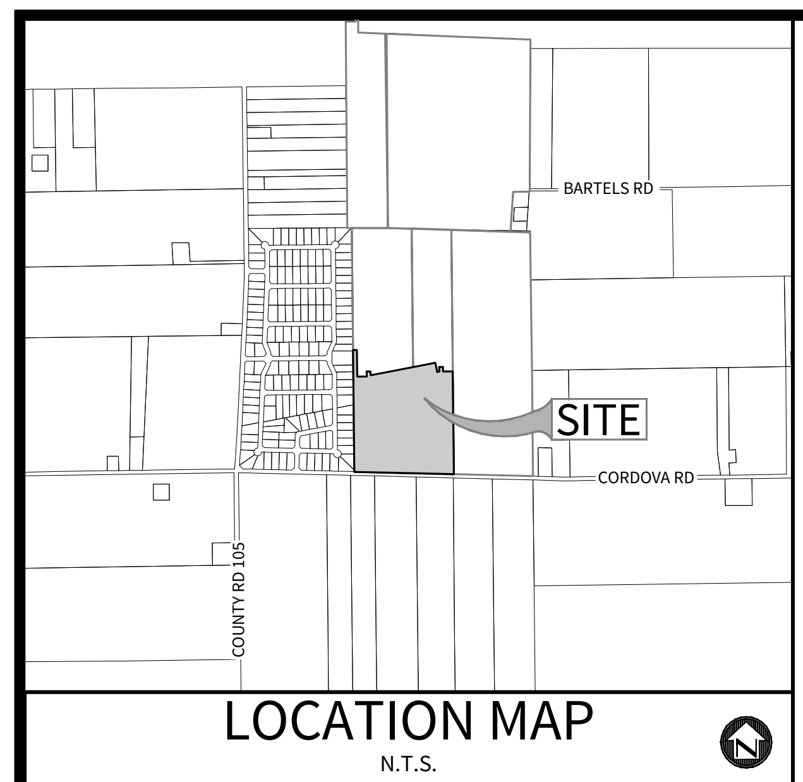
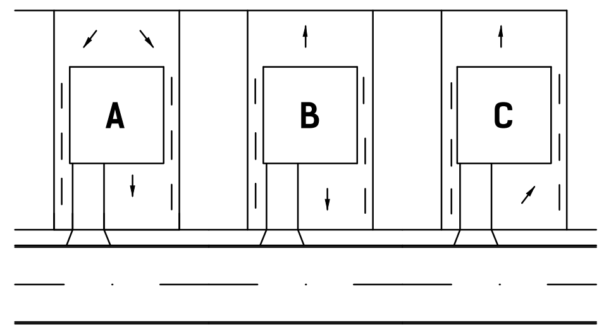


LOCATION MAP

N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	1000
PROPOSED ELEVATION	× 1000.00
TYPE OF LOT GRADING	A, B, OR C
SWALE FLOW LINE (ONLY LOT FOR PRIVATE LOT GRADING)	- · - ▸ - · - ▸
BLOCK RETAINING WALL	▬ ▬ ▬
LIMITS OF GRADING	— — —
GRADE BREAK	▬ ▬ ▬
BUILDING PAD (65'-74')	🟧
BUILDING PAD (75'-79')	🟦
BUILDING PAD (LESS THAN 65')	🟩



TYPICAL LOT SITE PLAN

N.T.S.

SCALE: 1"=60'

0 60 120

Cut FillTable			
Unit	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
1	377,677.30	349,374.32	28,302.99 (Cut)

NOTES:

1. STREET PAVEMENT CONTOURS SHOWN. REFERENCE GEOTECH REPORT FOR PAVEMENT SECTIONS.
2. HOUSE PADS SHALL HAVE A MINIMUM 20' FRONTAGE, 15' REAR AND 5' SIDE SETBACK UNLESS NOTED OTHERWISE. CONTRACTOR SHALL REFER TO THE SUBDIVISION PLAT TO VERIFY ALL SETBACKS PRIOR TO CONSTRUCTION.
3. MINIMUM SLAB EXPOSURE IS 1.0'.
4. TYPICAL PAD SIZES IS 40' X 80' UNLESS NOTED OTHERWISE ON PLAN.
5. MAXIMUM REAR SETBACK SLOPE = 15%
6. HOUSE PAD SWALES TO BE CONSTRUCTED WITH HOME BUILDING.
7. CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED AWAY FROM ALL HOUSE PADS. NO WATER PONDING SHALL BE ALLOWED.

GENERAL SPECIFICATIONS FOR SITE PREPARATION

1. GENERAL DESCRIPTION

THIS ITEM SHALL CONSIST OF ALL CLEARING AND GRUBBING, DEMOLITION, PREPARATION OF LAND TO BE FILLED, FILLING OF THE LAND, SPREADING, COMPACTION TESTING AND INSPECTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES AND SLOPES AS SHOWN ON THE APPROVED PLANS.

2. CLEARING THE AREA TO BE FILLED

ALL TIMBER, LOGS, TREES, BRUSH AND RUBBISH SHALL BE REMOVED FROM THE SITE.

3. SCARIFYING THE AREA TO BE FILLED

ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND THE SURFACE SHALL THEN BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"), ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING. WHERE FILLS ARE MADE ON HILLSIDES OR SLOPES, THE SLOPE OF THE ORIGINAL GROUND UPON WHICH THE FILL IS TO BE PLACED SHALL BE DISKED OR SCARIFIED. WHERE THE SLOPE RATIO OF THE ORIGINAL GROUND IS STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL, THE BANK SHALL BE STEPPED OR BENCHED. GROUND SLOPES WHICH ARE FLATTER THAN 5 TO 1 SHALL BE BENCHED WHEN CONSIDERED NECESSARY BY THE GEOTECHNICAL ENGINEER.

4. COMPACTING THE AREA TO BE FILLED

FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.

5. FILL MATERIALS

THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

6. DEPTH AND MIXING OF FILL LAYERS

THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO THAT STIPULATED ABOVE. EACH LAYER SHALL BE THOROUGHLY MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS MAY VARY DEPENDING ON THE COMPACTION EQUIPMENT OF DEMONSTRATED CAPABILITY. THE MAXIMUM LOOSE DEPTH FOR ANY MATERIAL SHALL NOT EXCEED TWELVE INCHES (12"). FOR TESTING REQUIREMENTS OF FILL MATERIAL, SEE DENSITY TESTING.

7. ROCK

WHEN FILL MATERIAL INCLUDES ROCK, THE MAXIMUM ROCK SIZE SHALL BE AS APPROVED BY THE GEOTECHNICAL ENGINEER AND THE CITY OF SEGUIN THROUGH THE CONSTRUCTION PHASE SUBMITTAL PROCESS. NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE FILLED WITH SMALL STONES OR SOIL AND ADEQUATELY COMPACTED. NO LARGE ROCKS WILL BE PERMITTED WITHIN EIGHTEEN INCHES (18") OF THE FINISHED GRADE.

8. COMPACTION OF FILL LAYER

COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTION SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

9. COMPACTION OF SLOPES

THE FACES OF FILL SLOPES SHALL BE COMPACTED. COMPACTING OPERATIONS SHALL BE CONTINUED UNTIL THE SLOPE FACES ARE STABLE BUT NOT TOO DENSE FOR PLANTING ON THE SLOPES. COMPACTION OF THE SLOPE FACES MAY BE DONE PROGRESSIVELY IN INCREMENTS OF THREE TO FIVE FEET (3' TO 5') IN FILL HEIGHT AS THIS FILL PROGRESSES OR AFTER THE FILL HAS BEEN BROUGHT TO ITS TOTAL HEIGHT.

10. MOISTURE CONTENT

THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

11. DENSITY TESTS

FIELD DENSITY TESTS SHALL BE PERFORMED ON LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE 16 INCHES LOOSE OR 12" COMPACTED PER TXDOT ITEM 132,EMBANKMENT, DENSITY CONTROL. ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. NOTIFICATION BY THE CONTRACTOR TO CONDUCT TESTS SHALL BE AT LEAST THE DAY BEFORE. THIS NOTIFICATION SHALL INCLUDE THE FILL AREA LOCATION (LOT AND BLOCK), THE LIFT OR HEIGHT OF FILL AND APPROXIMATE DESIRED TIME OF TESTING. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED AND RETESTED AT THE EXPENSE OF THE CONTRACTOR UNLESS THE CONTRACTOR CAN SHOW EVIDENCE THAT CIRCUMSTANCES BEYOND HIS CONTROL REQUIRED THE RETESTING. GENERALLY, THE SPECIFIC TESTING WILL BE AS FOLLOWS AND CONDUCTED BY GEOTECHNICAL ENGINEER.

A. THE LAND TO BE FILLED (PREPARED SUBGRADE) SHALL BE PREPARED AND TESTED AT A FREQUENCY AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
B. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8 TO 12-IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
C. FILLS SHALL BE TESTED IN ACCORDANCE WITH TXDOT ITEM 132 3.4.2.
D. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR WHEN POSSIBLE; HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL TEST RESULTS AND TEST RESULTS SHALL BE PROVIDED TO THE CITY OF SEGUIN THROUGHOUT THE PROJECT AS REPORTS ARE COMPLETED, NOT AT END OF PROJECT/ACCEPTANCE PHASE.

12. CUT/FILL LOTS

AREAS INVOLVING CUT ON ONE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6-IN. AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. A MINIMUM OF TWO (2) FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES.

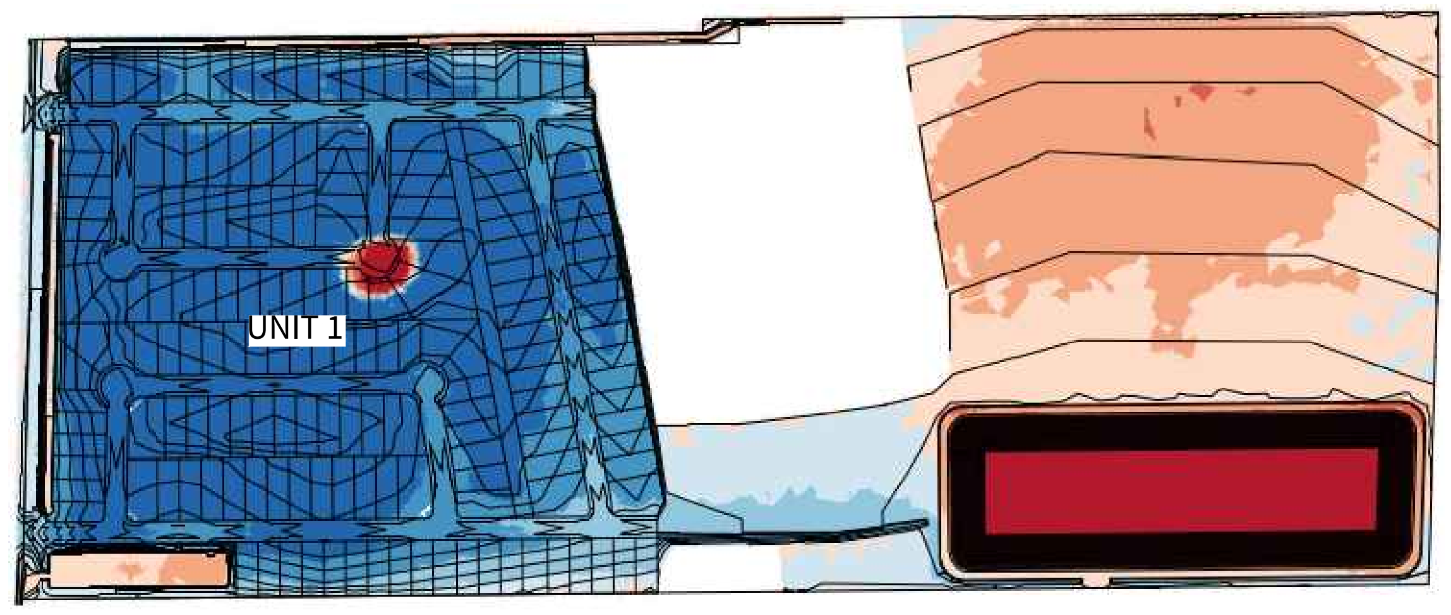
13. DRAINAGE IMPROVEMENTS

ALL PERIMETER DRAINS PROPOSED FOR MASS GRADING OF THE DEVELOPMENT ARE SUBJECT TO FINAL APPROVAL OF THE CONSTRUCTION PLANS FOR EACH UNIT. ADDITIONAL GRADING MAY BE REQUIRED AS PART OF EACH UNIT APPROVAL.

14. FENCING

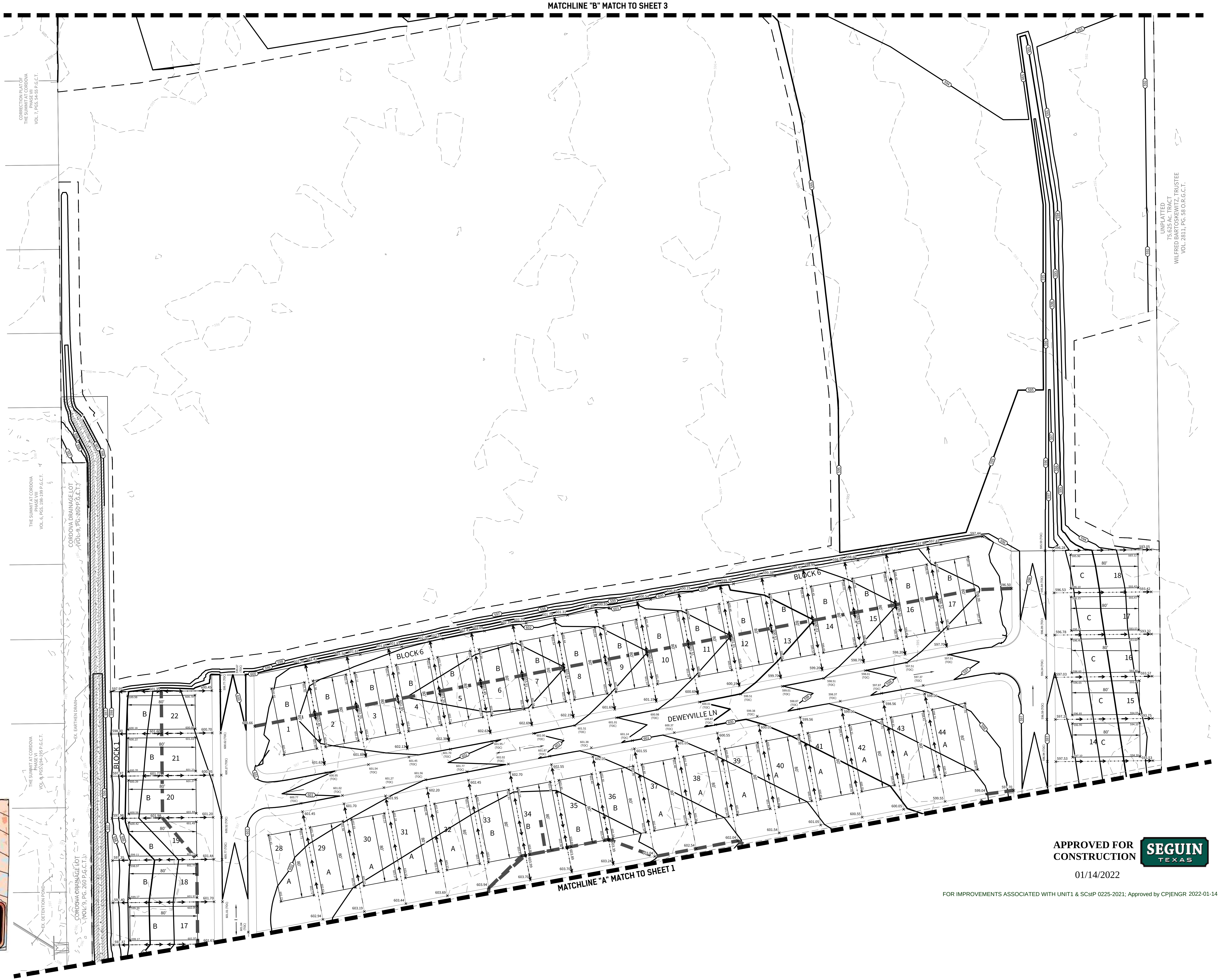
THE DEVELOPER/CIVIL ENGINEER/GENERAL CONTRACTOR WILL BE LIABLE TO DAMAGE TO EXISTING FENCES WHERE GRADING IS SHOWN IN CLOSE PROXIMITY TO THE SUBDIVISION BOUNDARY.

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-30.000	-5.000	🟥
2	-5.000	-3.000	🟥
3	-3.000	-1.000	🟧
4	-1.000	0.000	🟧
5	0.000	1.000	🟦
6	1.000	3.000	🟦
7	3.000	5.000	🟦
8	5.000	11.000	🟦



CUT & FILL HEAT MAP

N.T.S.


MATCHLINE "B" MATCH TO SHEET 3
MATCHLINE "A" MATCH TO SHEET 1
CORRECTION PLAT OF THE SUMMIT AT CORDOVA PHASE VIII VOL. 7, PGS. 52-53 P.G.C.T.
THE SUMMIT AT CORDOVA PHASE VIII VOL. 6, PG. 198-199 P.G.C.T.
CORDOVA DRAINAGE LOT (VOL. 9, PG. 260 P.G.C.T.)
EX. EARTHEN DRAIN
EX. DETENTION POND
UNPLATTED 74.625 AC. TRACT WILFRED BARTOSKEWITZ, TRUSTEE VOL. 2811, PG. 58 O.R.G.C.T.
BLOCK 1
BLOCK 6
DEWEYVILLE LN
80'

APPROVED FOR CONSTRUCTION

SEGUIN TEXAS

01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

CUDEENGINEERS.COM

EST. 1980 CUDE ENGINEERS

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

CORDOVA TRAILS SUBDIVISION UNIT 1

UNIT 1 ONLY
GRADING PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

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2 OF 3

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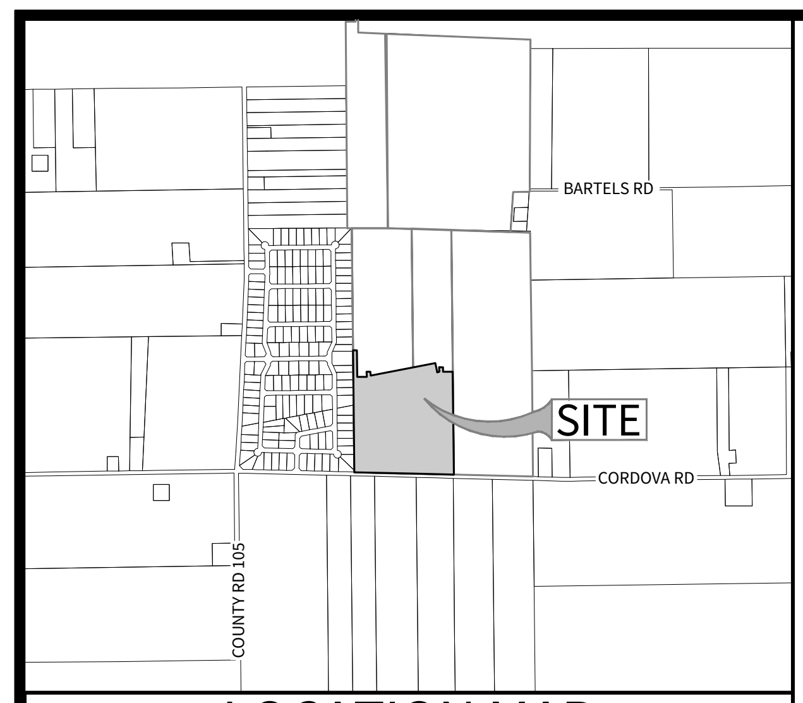

LOCATION MAP

N.T.S.

LEGEND

PROPOSED CONTOUR	1000
EXISTING CONTOUR	— — 1000 — —
PROPOSED ELEVATION	× 1000.00
TYPE OF LOT GRADING	A, B, OR C
SWALE FLOW LINE (ONLY LOT FOR PRIVATE LOT GRADING)	— · · · → · · · →
BLOCK RETAINING WALL	▬ ▬ ▬
LIMITS OF GRADING	— — —
GRADE BREAK	▬ ▬ ▬
BUILDING PAD (65'-74')	🟧
BUILDING PAD (75'-79')	🟦
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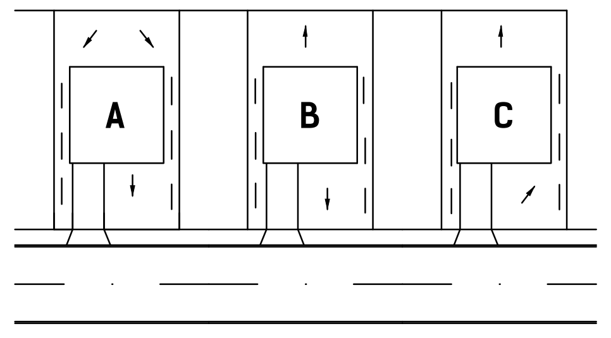

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Elevations Table			
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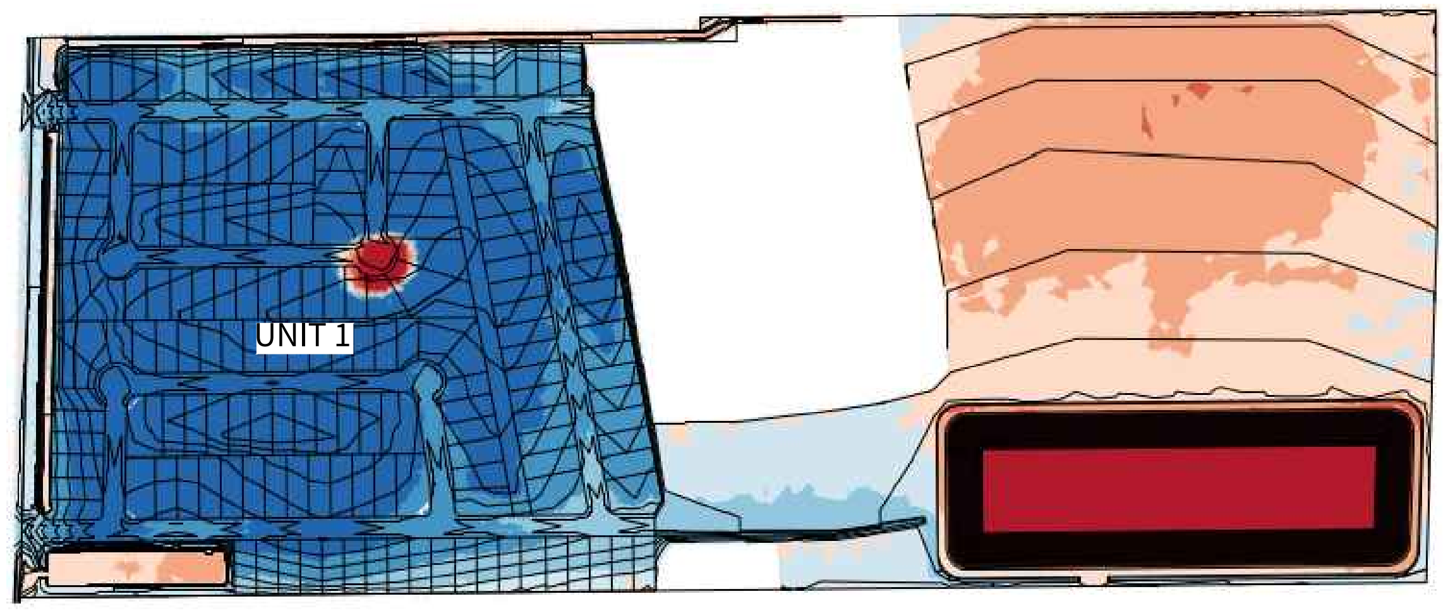
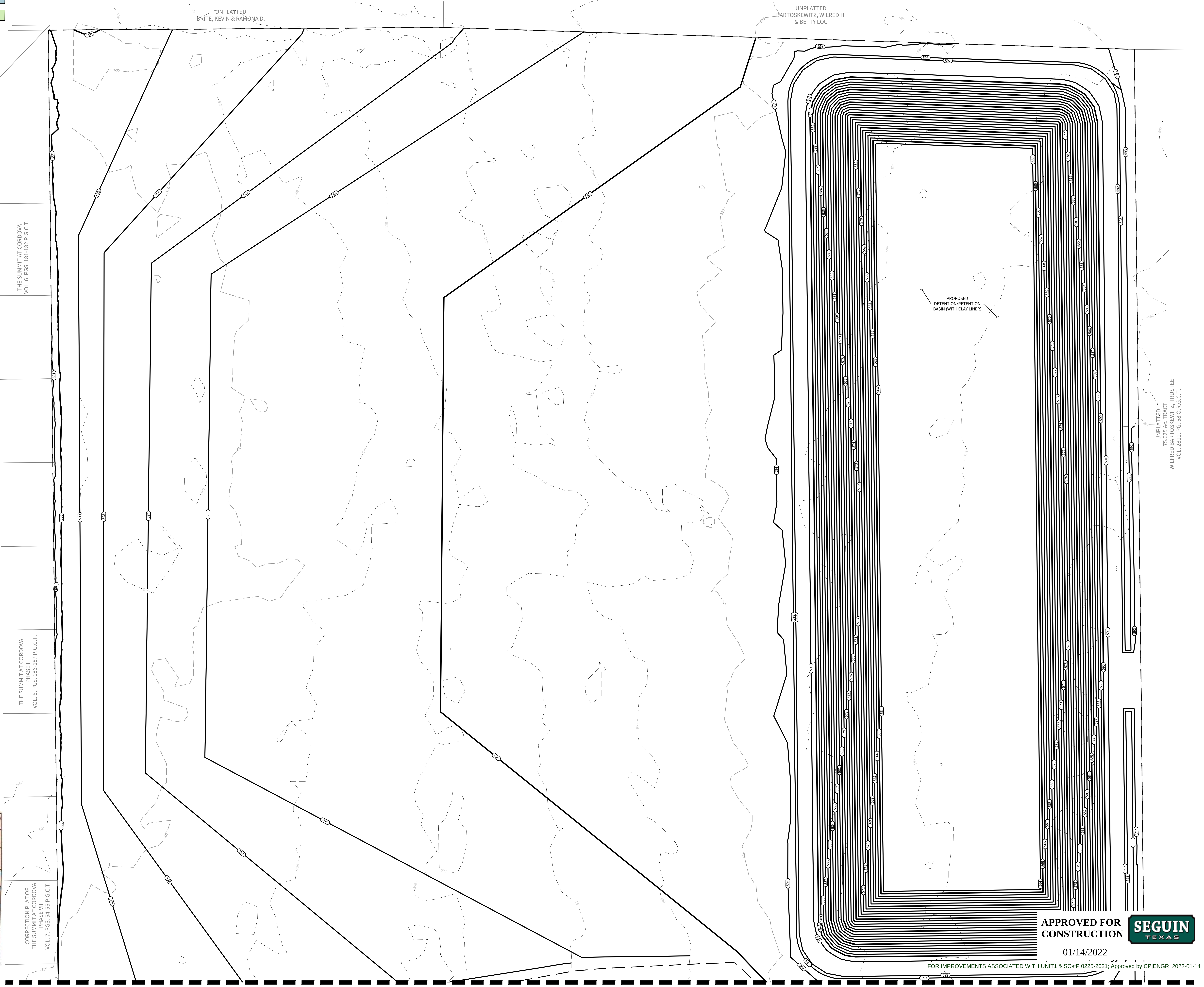
7	3.000	5.000	🟦
8	5.000	11.000	🟦



CUT & FILL HEAT MAP

N.T.S.



MATCHLINE "B" MATCH TO SHEET 2

APPROVED FOR CONSTRUCTION
SEGUIN TEXAS
01/14/2022

FOR IMPROVEMENTS ASSOCIATED WITH UNIT1 & SCstP 0225-2021; Approved by CP|ENGR 2022-01-14

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

CORDOVA TRAILS SUBDIVISION UNIT 1

UNIT 1 ONLY GRADING PLAN

DATE
12/05/2021

PROJECT NO.
03480.002

DRAWN BY
AC

CHECKED BY
DDC/JC

REVISIONS
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CUDE ENGINEERS
TBPE No. 455
TBPLS No. 10048500

C53