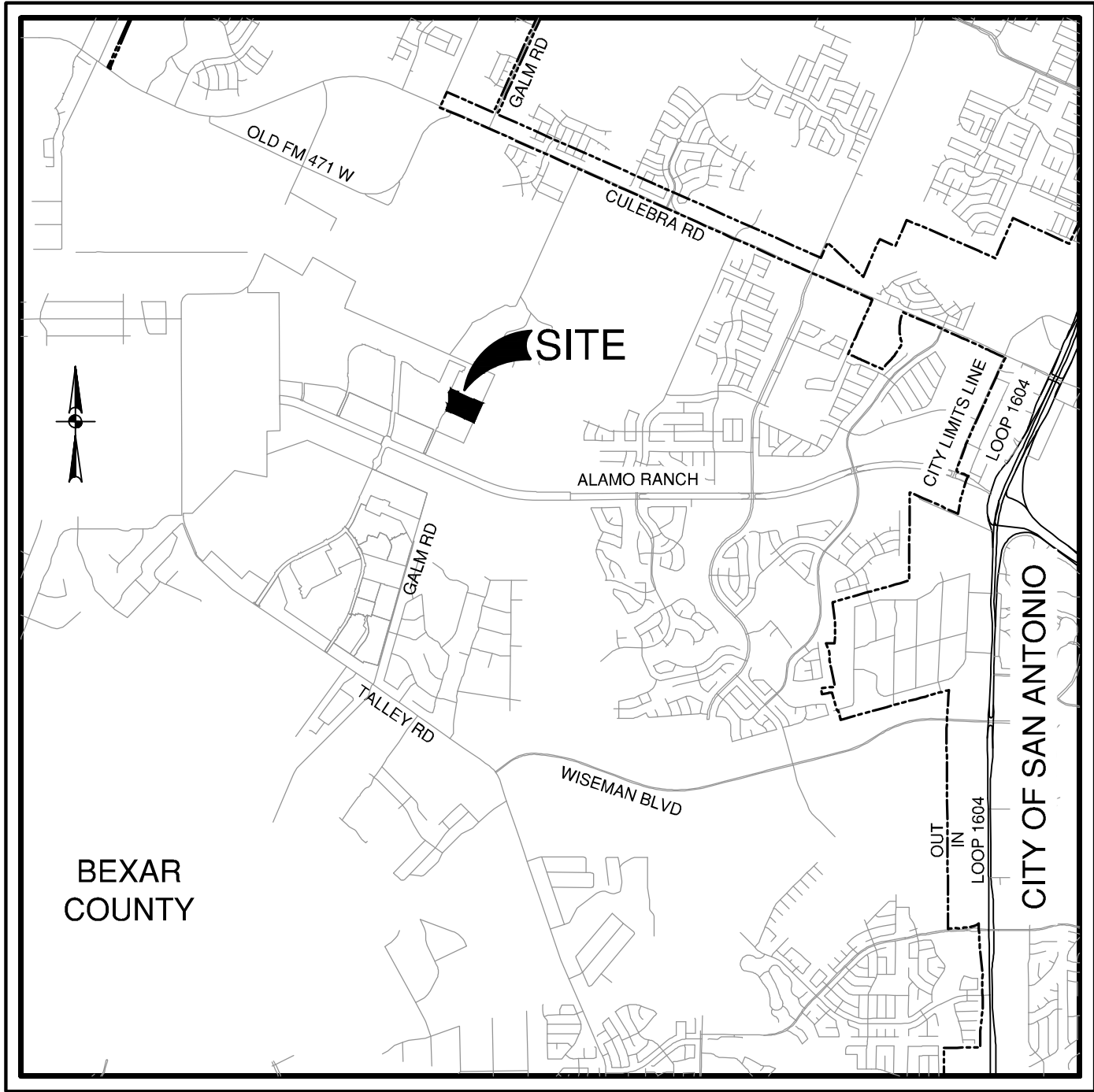


RIVERSTONE UNIT - F2

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS



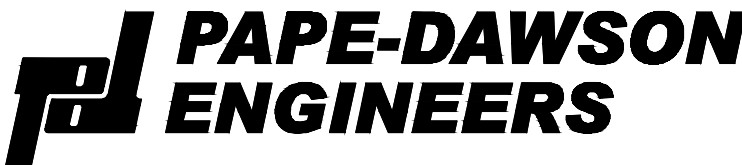
LOCATION MAP

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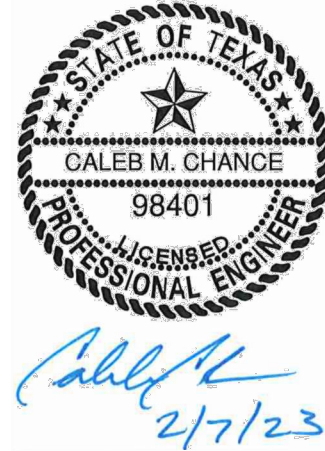
PREPARED FOR:

CONTINENTAL HOMES OF TEXAS, L.P.
5419 N LOOP E
SAN ANTONIO, TX 78218

JUNE 2022



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SHEET INDEX	
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SANITARY SEWER LINE A PLAN & PROFILE	C5.02
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SANITARY SEWER LINE C PLAN & PROFILE	C5.04
SANITARY SEWER DETAILS	C5.10
SANITARY SEWER NOTES	C5.11
OVERALL UTILITY PLAN	C6.00
OVERALL GRADING PLAN	C7.00
STORM WATER POLLUTION PREVENTION PLAN	C8.00
STORM WATER POLLUTION PREVENTION PLAN DETAILS	C8.10

SEWER: Medio Creek Watershed - Medio Creek W.R.C.

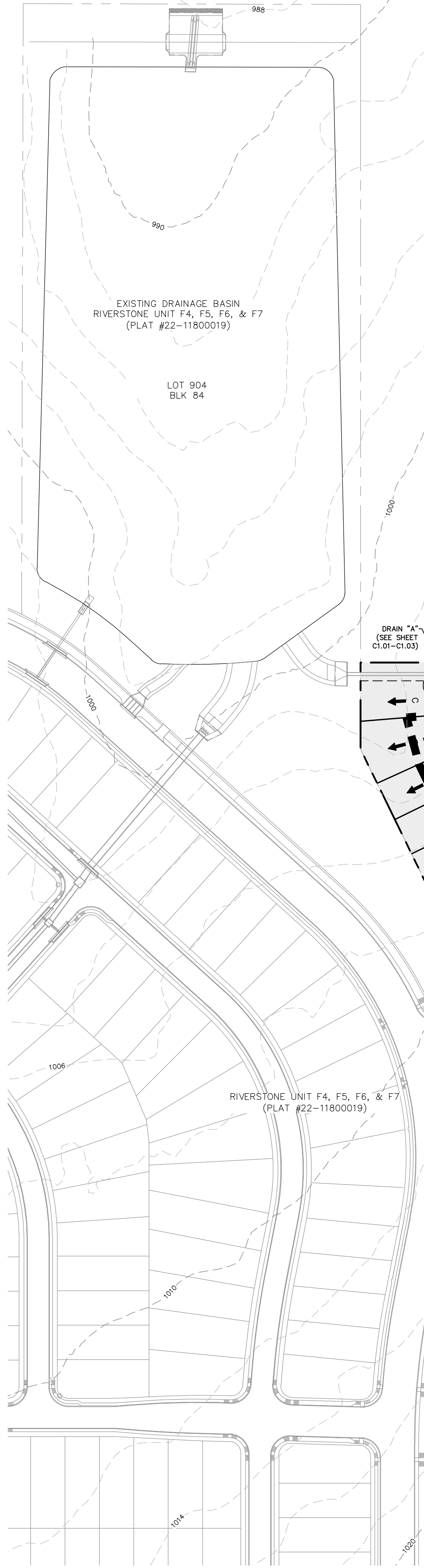
DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N LOOP E	
CITY: SAN ANTONIO, STATE: TX	ZIP: 78218
PHONE# (210)496-2668 & 08-2616	FAX# (210)496-2668
SAWS BLOCK MAP# 74802 TOTAL EDU'S 61 TOTAL ACREAGE 12.831	
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1681.19 LF PLAT NO. 22-11800371	
NUMBER OF LOTS 61	SAWS JOB NO. 22-1645

WATER (SAWS PRESSURE ZONE 8)

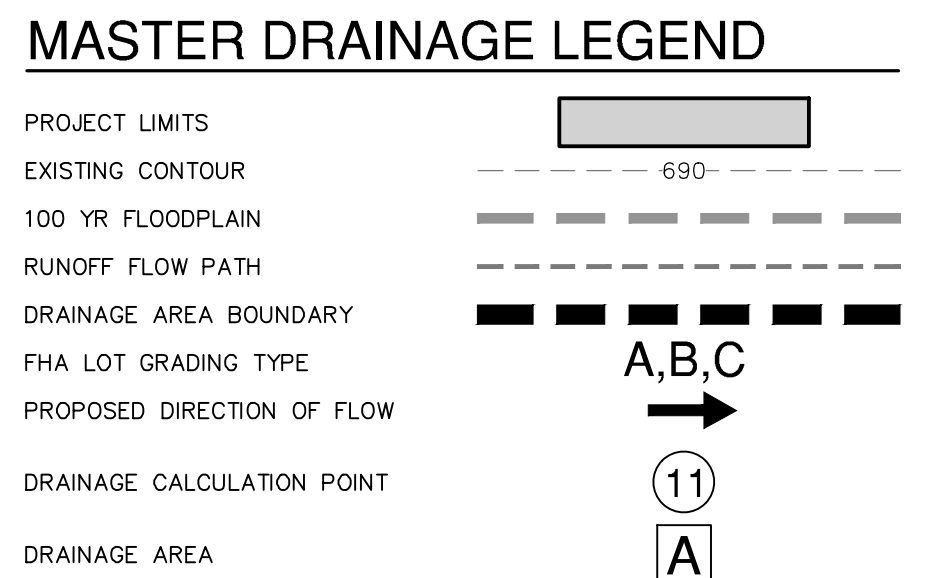
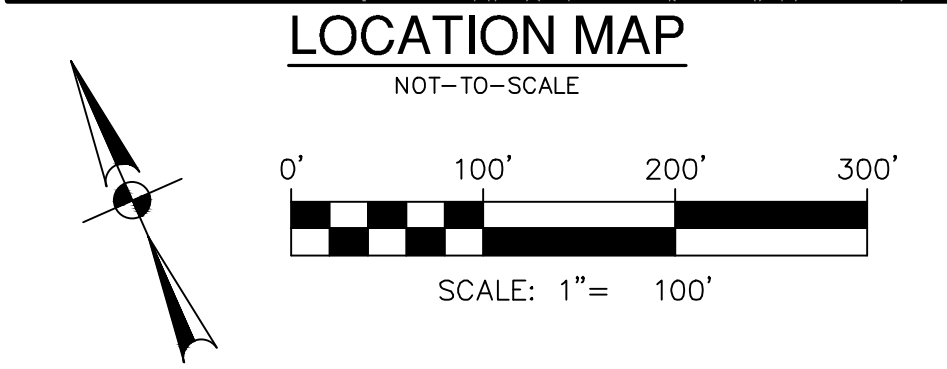
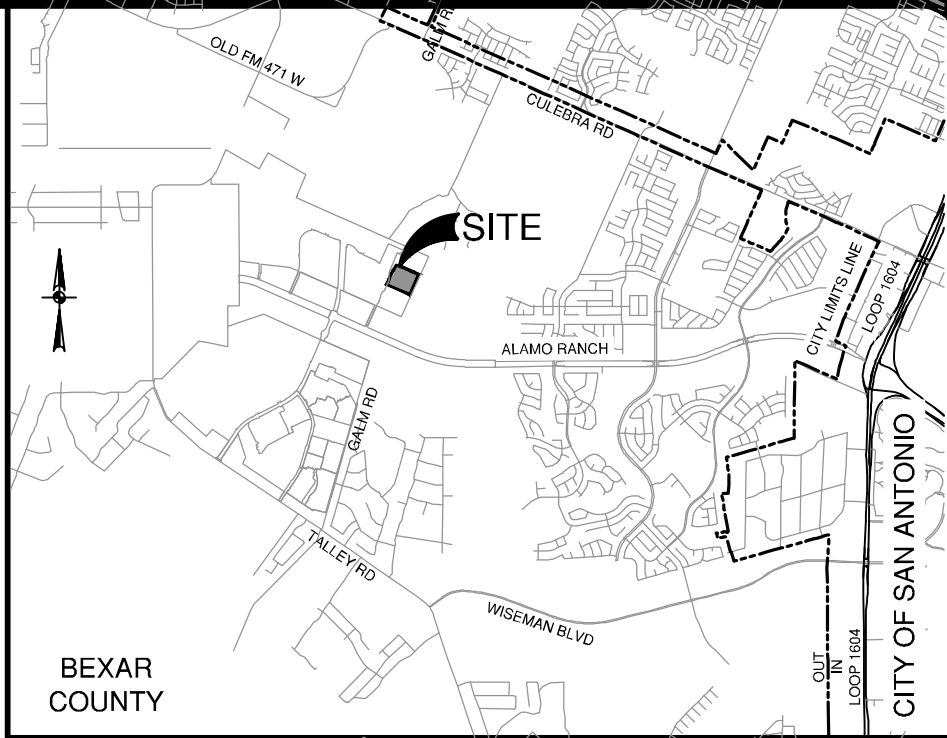
DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N LOOP E	
CITY: SAN ANTONIO, STATE: TX	ZIP: 78218
PHONE# (210)496-2668 & 08-2616	FAX# (210)496-2668
SAWS BLOCK MAP# 74802 TOTAL EDU'S 61 TOTAL ACREAGE 12.831	
TOTAL LINEAR FOOTAGE OF PIPE: 8" 12-144 LF PLAT NO. 22-11500371	
NUMBER OF LOTS 61	SAWS JOB NO. 22-1150

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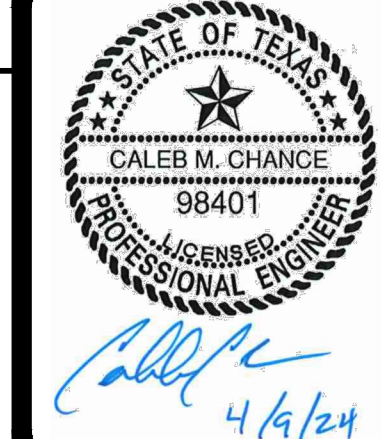
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RIVERSTONE UNIT F2 DRAINAGE SUMMARY TABLE																							
					Overland Flow				Shallow Concentrated				Channel Flow (6 fps)		Total							Curb Inlet	
Point	Structure	Area	Total Flow Length (ft)	Total Area (ac)	n-Value	Character of Ground	Slope %	L (ft)	Tc (min)	Slope %	L (ft)	Surface	Tc (min)	L (ft)	Tc (min)	Tc (min)	C	I	Q (cfs)	Frequency (yrs)	Total Q _{CS} (Q+Intercept/Bypass)	Intercept	Bypass
1	Drain A	A+B+C+D+E+F	1570	17.66	0.3	Avg. Grass	2.0	100	12	2.0	152	Unpaved	1.1	1318	3.7	16	0.72	5.10	64.8	5	Q = 89.9 - 4.14 = 85.76		
																		7.07	89.9	25			
																		8.79	111.8	100			
2	Drains A & A-2 (Curb Inlets on Grade)	A+B+C+D+E+F	1570	17.66	0.3	Avg. Grass	2.0	100	12	2.0	152	Unpaved	1.1	1318	3.7	16	0.72	5.10	64.8	5	Q = 89.9 - 23.72 - 26.78 - 16.78 = 22.62	18.48	4.14
																		7.07	89.9	25			
																		8.79	111.8	100			
3	Drain A	B+C+D+E+F	1401	15.19	0.3	Avg. Grass	2.0	100	12	2.0	152	Unpaved	1.1	1149	3.2	16	0.72	5.10	55.8	5	Q = 77.3 - 6.58 - 2.32 - 5.72 = 62.68		
																		7.07	77.3	25			
																		8.79	96.1	100			
4	Drain B-1 (Curb Inlets on Grade)	B+C	877	4.12	0.3	Avg. Grass	2.0	100	12	2.0	58	Unpaved	0.4	719	2.0	14	0.72	5.47	16.2	5		16.78	5.72
																		7.60	22.5	25			
																		9.48	28.1	100			
5	Drain A	D+E+F	1142	11.07	0.3	Avg. Grass	0.5	100	12	2.0	152	Unpaved	1.1	890	2.5	15	0.72	5.28	42.1	5	Q = 58.3 - 6.58 - 2.32 = 49.40		
																		7.32	58.3	25			
																		9.12	72.7	100			
6	Drain A-1 (Curb Inlets on Grade)	D+E	1081	5.32	0.3	Avg. Grass	2.0	100	12	2.0	41	Unpaved	0.3	940	2.6	14	0.72	5.47	21.0	5		26.78	2.32
																		7.60	29.1	25			
																		9.48	36.3	100			
7	Drain A-4 (Curb Inlets on Grade)	F	1017	5.75	0.3	Avg. Grass	2.0	100	12	2.0	152	Unpaved	1.1	765	2.1	15	0.72	5.28	21.9	5		23.72	6.58
																		7.32	30.3	25			
																		9.12	37.8	100			
8	Street Capacity Check Honey Onyx Trail & Marble River	C	388	1.31	0.3	Avg. Grass	2.0	100	12	2.0	58	Unpaved	0.4	230	0.6	13	0.72	5.66	5.3	5			
																		7.89	7.4	25			
																		9.85	9.3	100			
9	Street Capacity Check Honey Onyx Trail & Lampasas Flint	E	676	2.51	0.3	Avg. Grass	2.0	100	12	2.0	41	Unpaved	0.3	535	1.5	13	0.72	5.66	10.2	5			
																		7.89	14.3	25			
																		9.85	17.8	100			
10	Drain C (Earthen Channel)	G+H+I	1736	12.97	0.3	Avg. Grass	0.5	100	17	3.5	851	Unpaved	4.7	785	2.2	23	0.72	4.23	39.5	5			
																		5.84	54.5	25			
																		7.24	67.6	100			
11	Drain C (Earthen Channel)	G+H	1294	4.97	0.3	Avg. Grass	0.5	100	17	3.5	851	Unpaved	4.7	343	1.0	22	0.72	4.33	15.5	5			
																		5.98	21.4	25			
																		7.41	26.5	100			



NO.	REVISION	DATE
1	REVISED FLOWS	4/08/2024



PAPE-DAWSON ENGINEERS
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

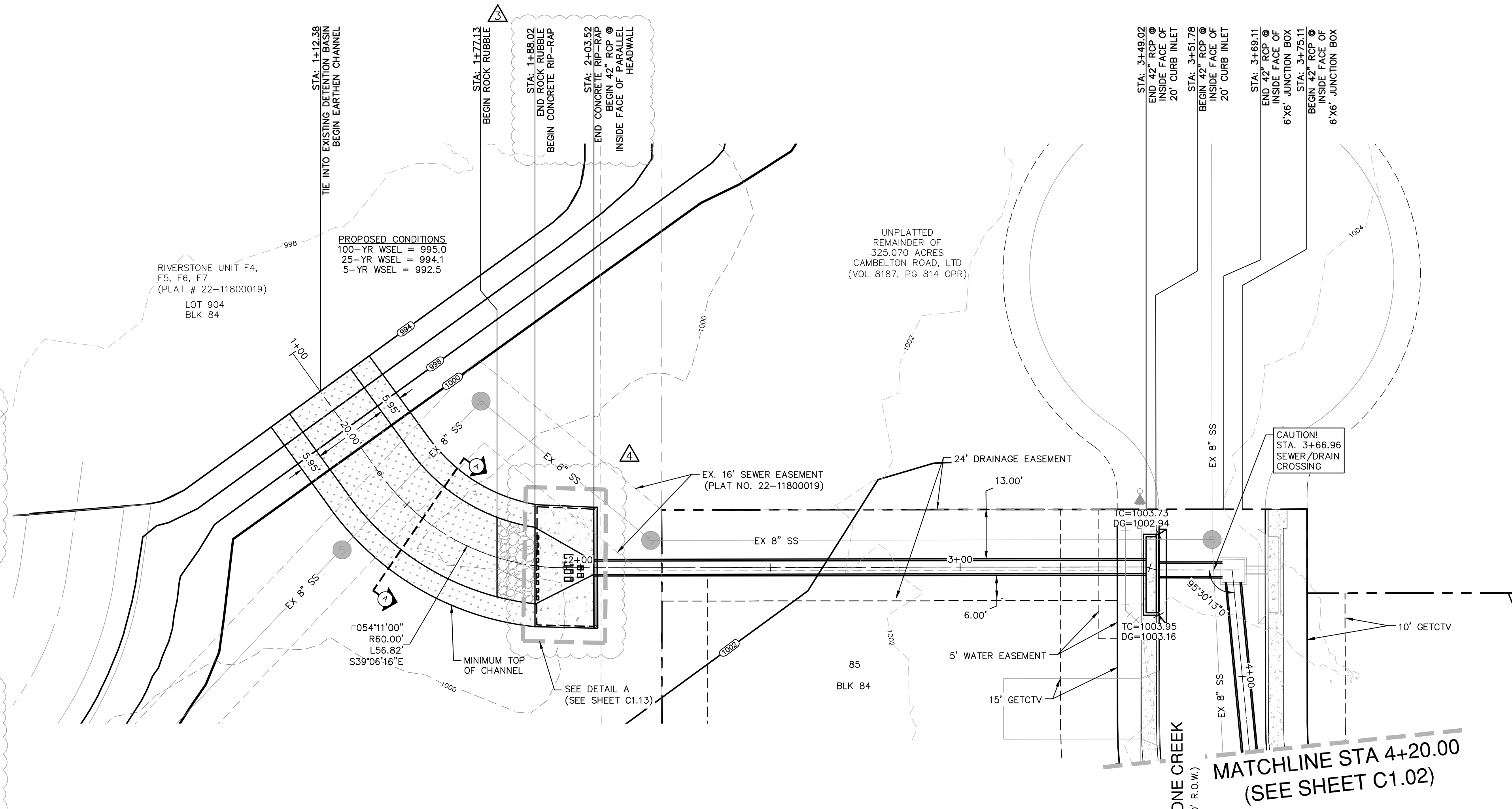
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
MASTER DRAINAGE PLAN

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL
DRAWN	CV
SHEET	C1.00

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 2+03.52 TO 3+49.02	
Q25 =	85.76 cfs
Dn =	3.33'
Sf =	0.73%
Vf =	8.91 fps
n =	0.013
D =	3.5'
S =	0.50%

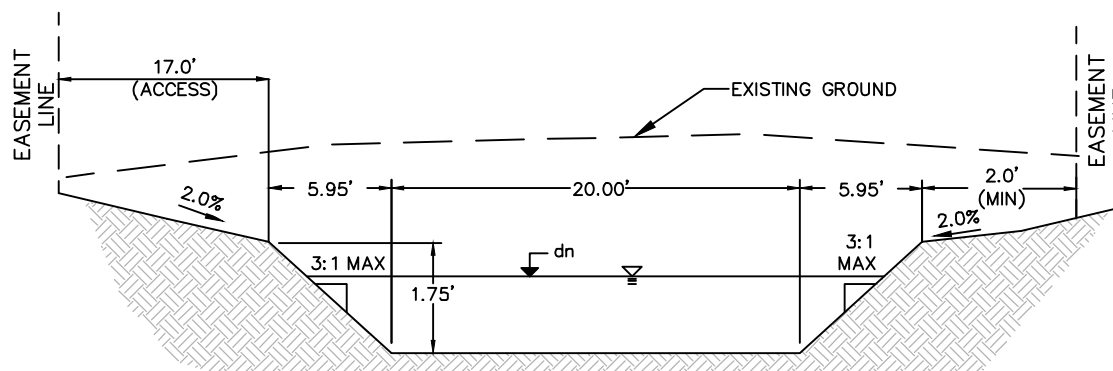
HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 3+51.78 TO 3+69.11	
Q25 =	71.92 cfs
Dn =	1.54'
Sf =	0.51%
Vf =	7.48 fps
n =	0.013
D =	3.5'
S =	3.60%

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 3+75.11 TO 4+36.79	
Q25 =	62.68 cfs
Dn =	1.65'
Sf =	0.39%
Vf =	6.51 fps
n =	0.013
D =	3.5'
S =	2.00%



DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
PROPOSED WATER	---
PROPOSED SEWER	---
PROPOSED STORM DRAIN	---
EXISTING STORM DRAIN	---
FLOW ARROW	---



SECTION "A-A"
STA. 1+12.38 TO 1+77.13

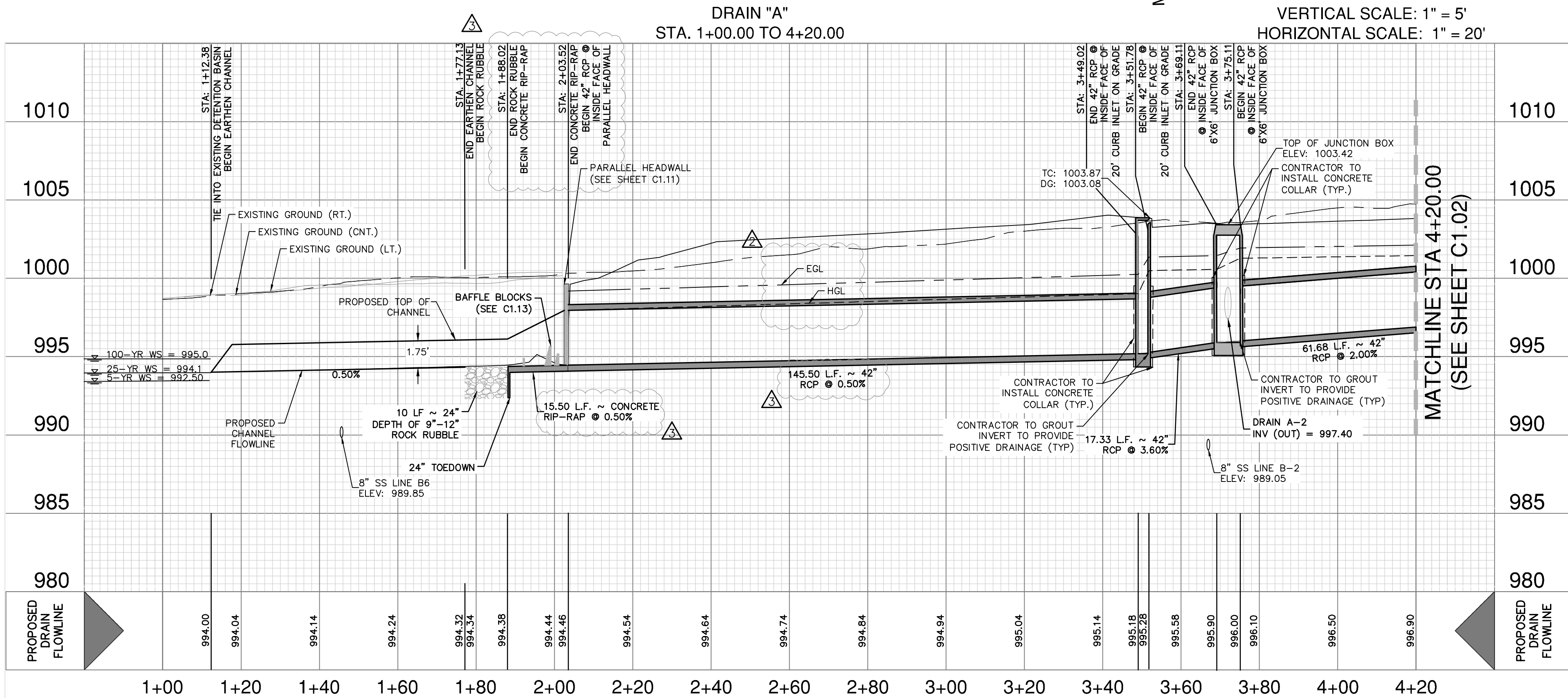
NOT TO SCALE

HYDRAULIC CALCULATIONS EARTHEN CHANNEL

Q25 =	85.76 cfs
Bw =	20'
n =	0.035'
S =	0.50%
D =	1.75'
dn =	1.19'
V =	3.05 fps

DRAIN "A"
STA. 1+00.00 TO 4+20.00

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



DRAINAGE & GRADING NOTES:

- A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
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- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

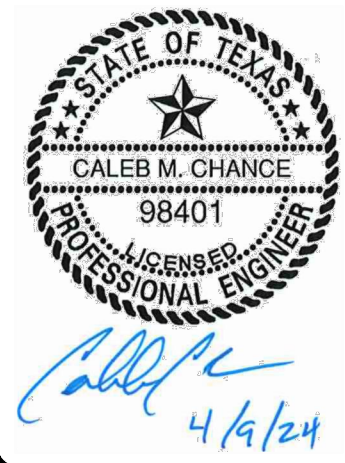
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CAUTION!!

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NO.	REVISION	DATE
1	REVISED HYDRAULIC CALCS	4/08/2024
2	REVISED HGL & EOL	4/08/2024
3	REVISED STATIONING/LENGTH	4/08/2024
4	REVISED CONCRETE STRUCTURE	4/08/2024



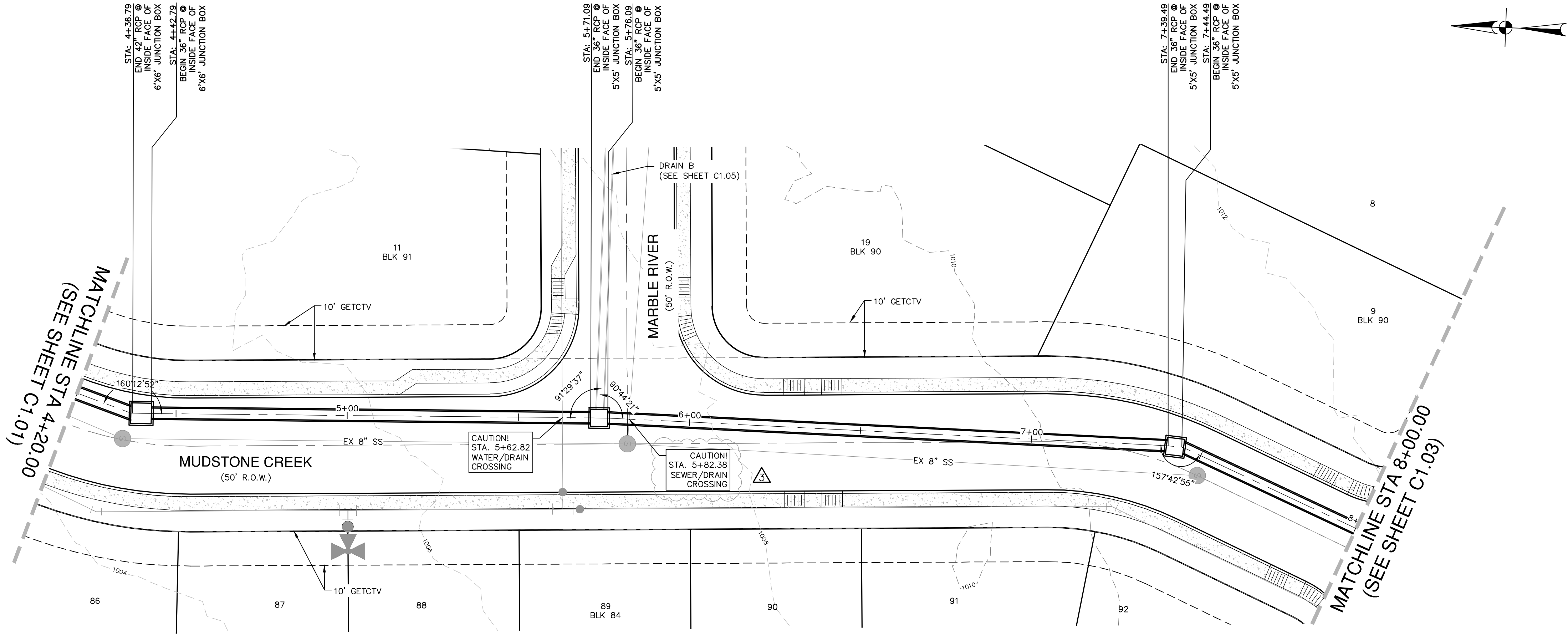
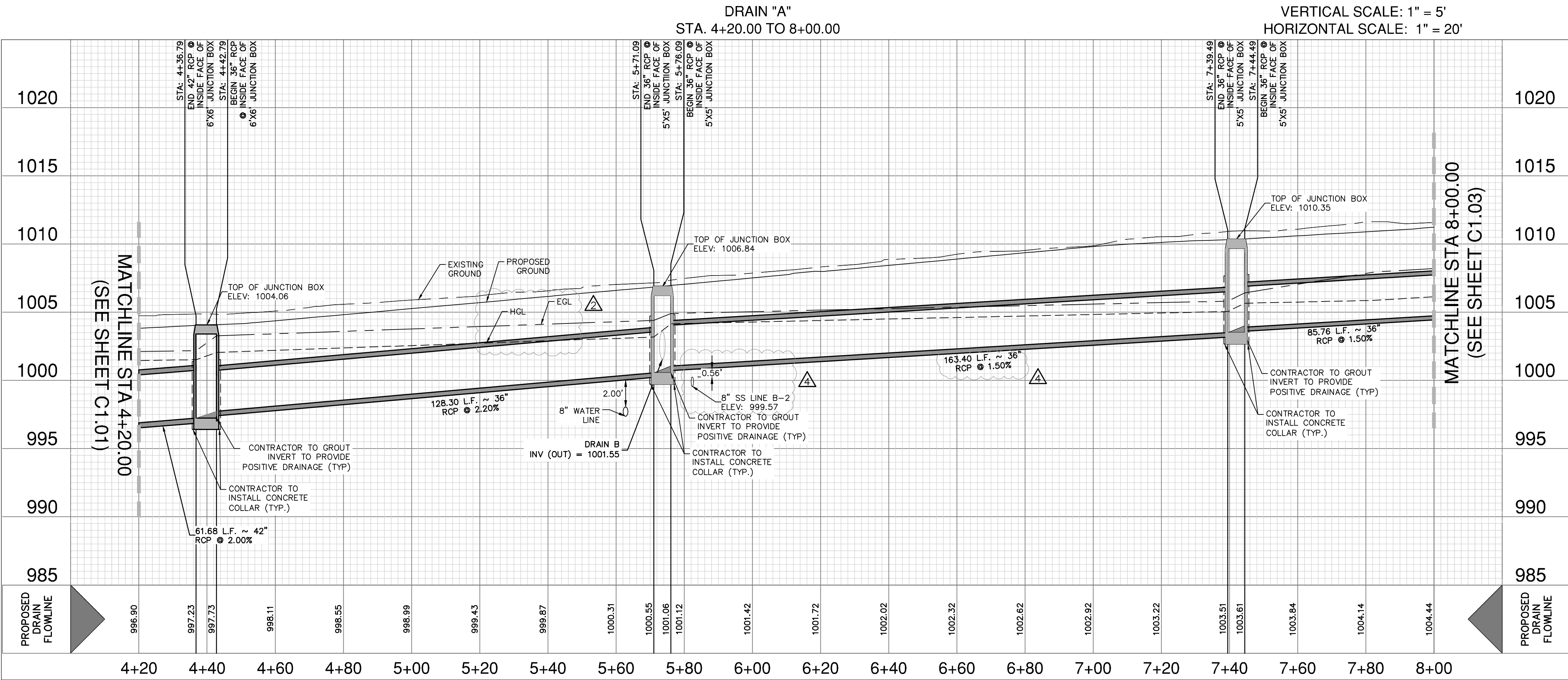
**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAIN A PLAN & PROFILE
(STA. 1+00.00 TO 4+20.00)

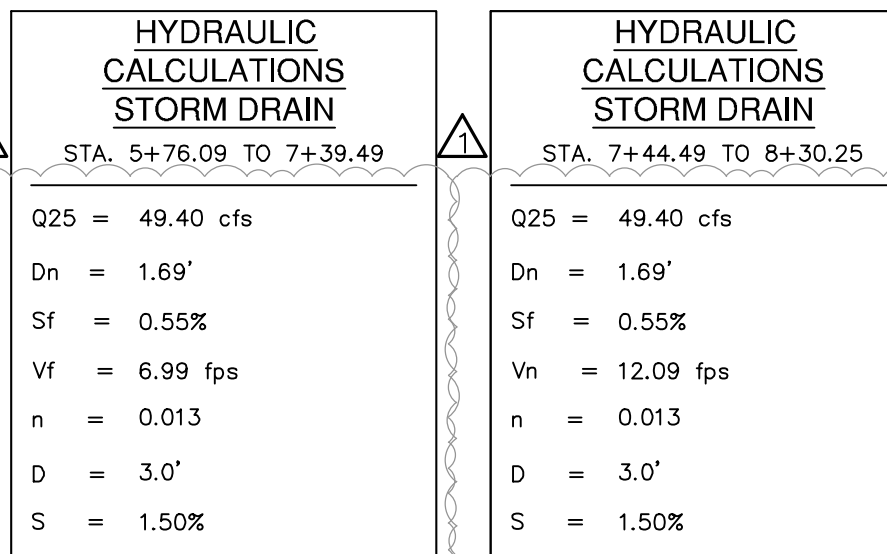
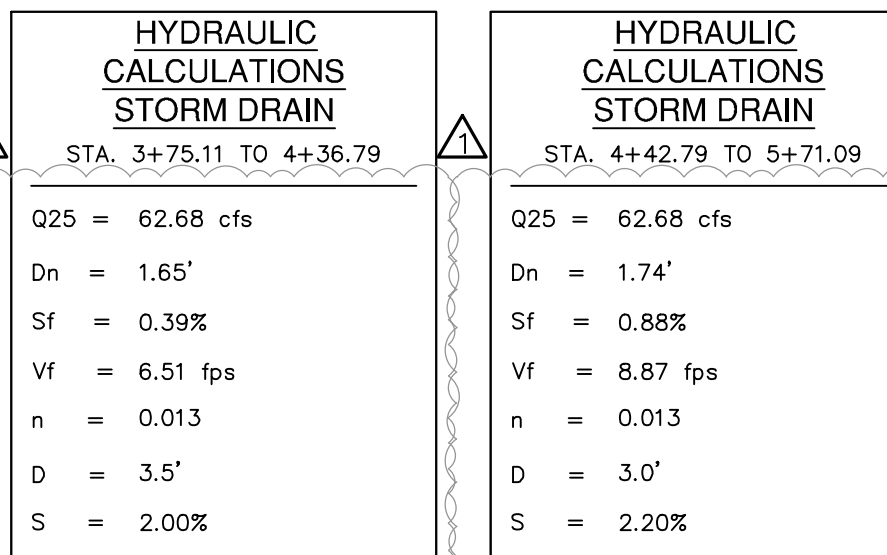
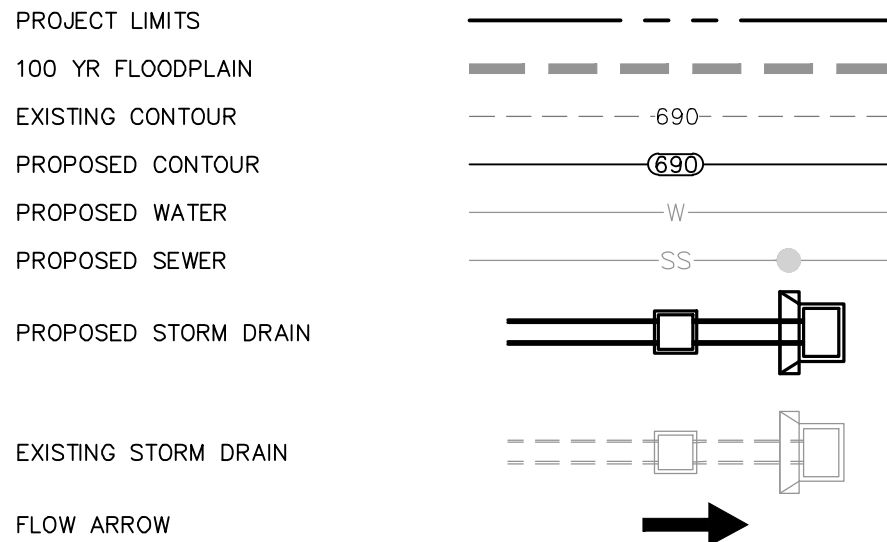
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JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C1.01

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DRAINAGE LEGEND



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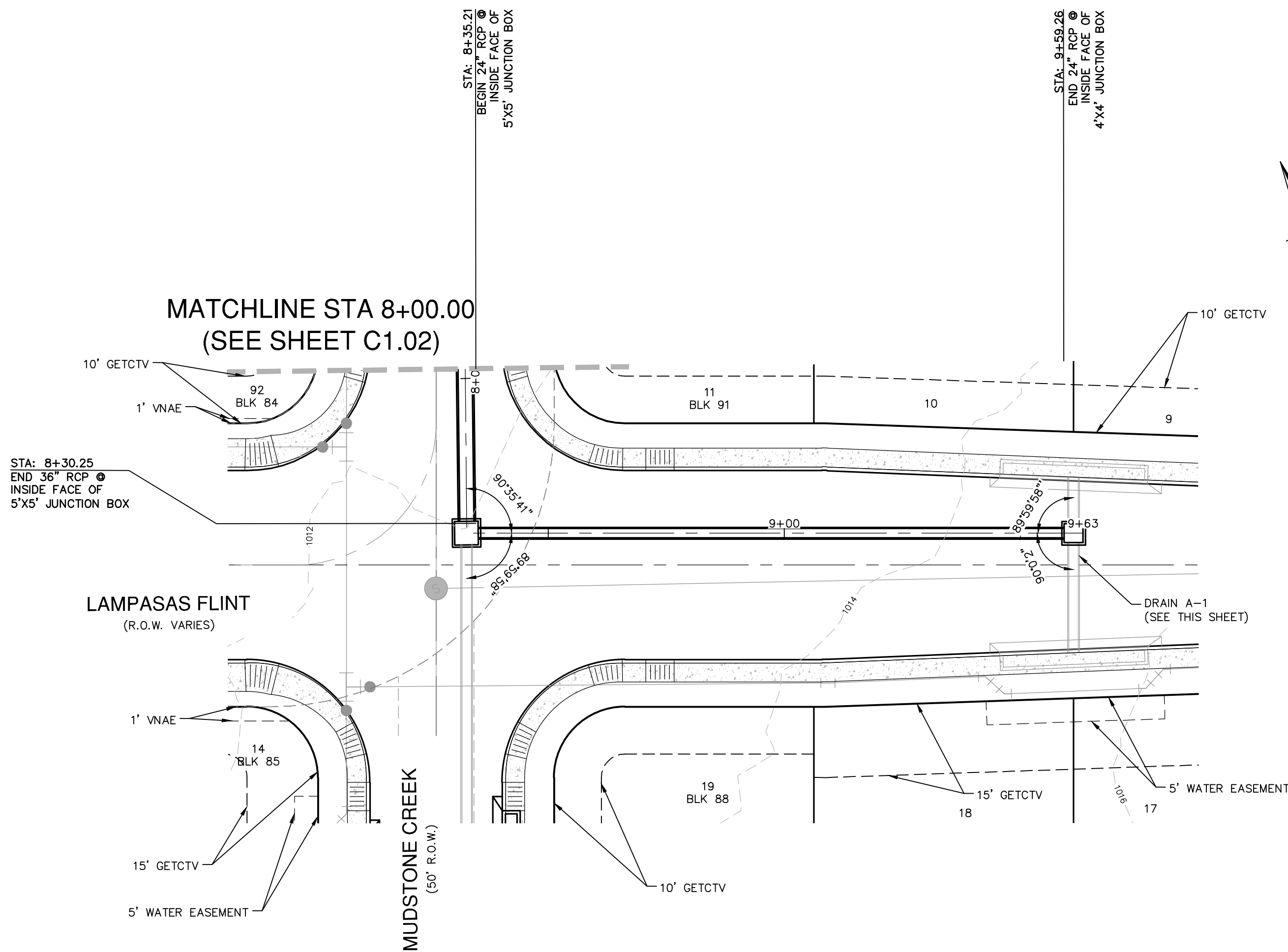
NO.	REVISION	DATE
1	REVISED HYDRAULIC CALCS	4/08/2024
2	REVISED HGL & EOL	4/08/2024
3	REVISED STATIONING	4/08/2024
4	REVISED PIPE SLOPE	4/08/2024



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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

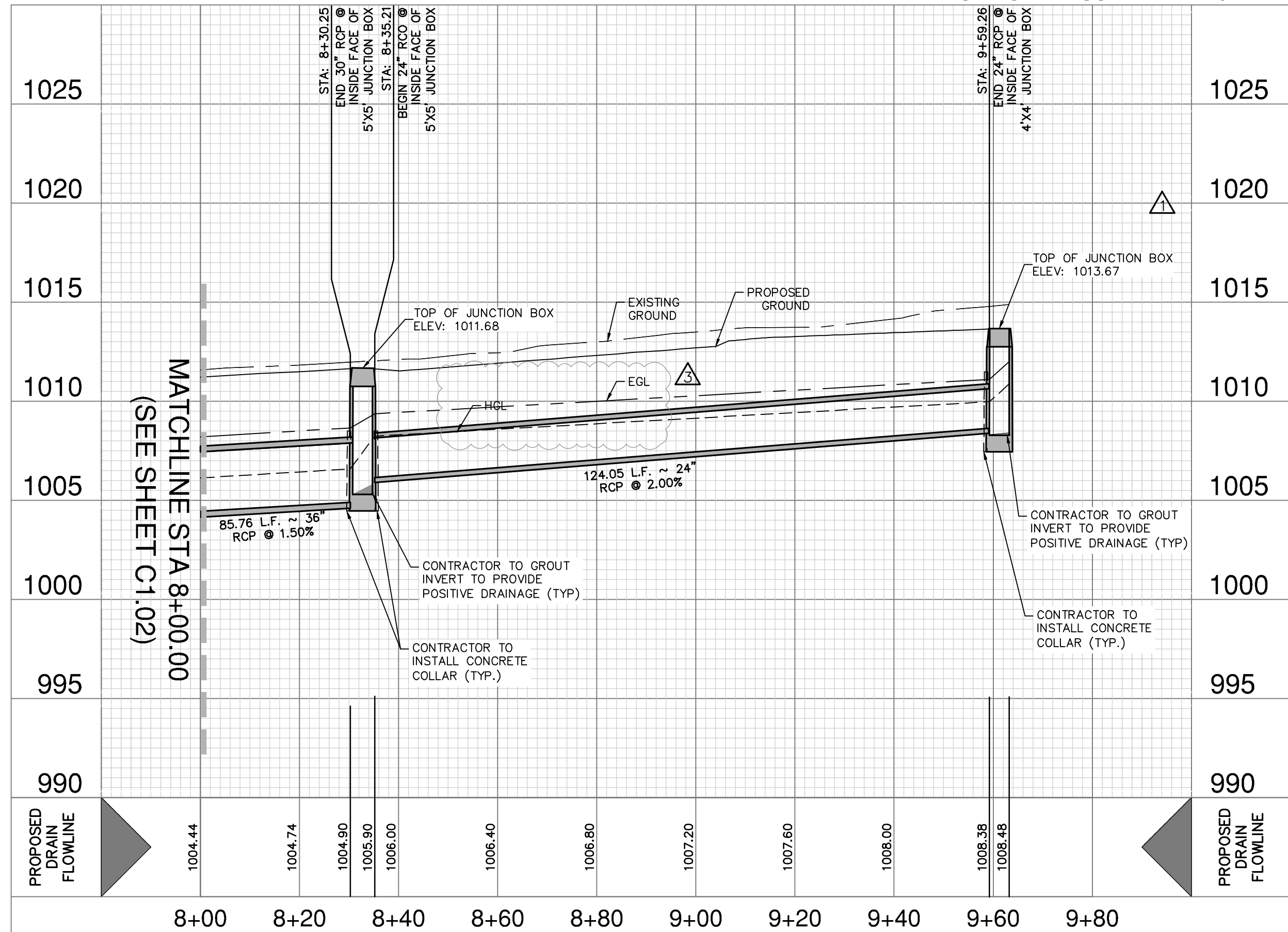
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAIN A PLAN & PROFILE
(STA. 4+20.00 TO 8+00.00)

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DRAWN BY	CV
CHECKED BY	BL
DRAWN BY	CV
SHEET	C1.02



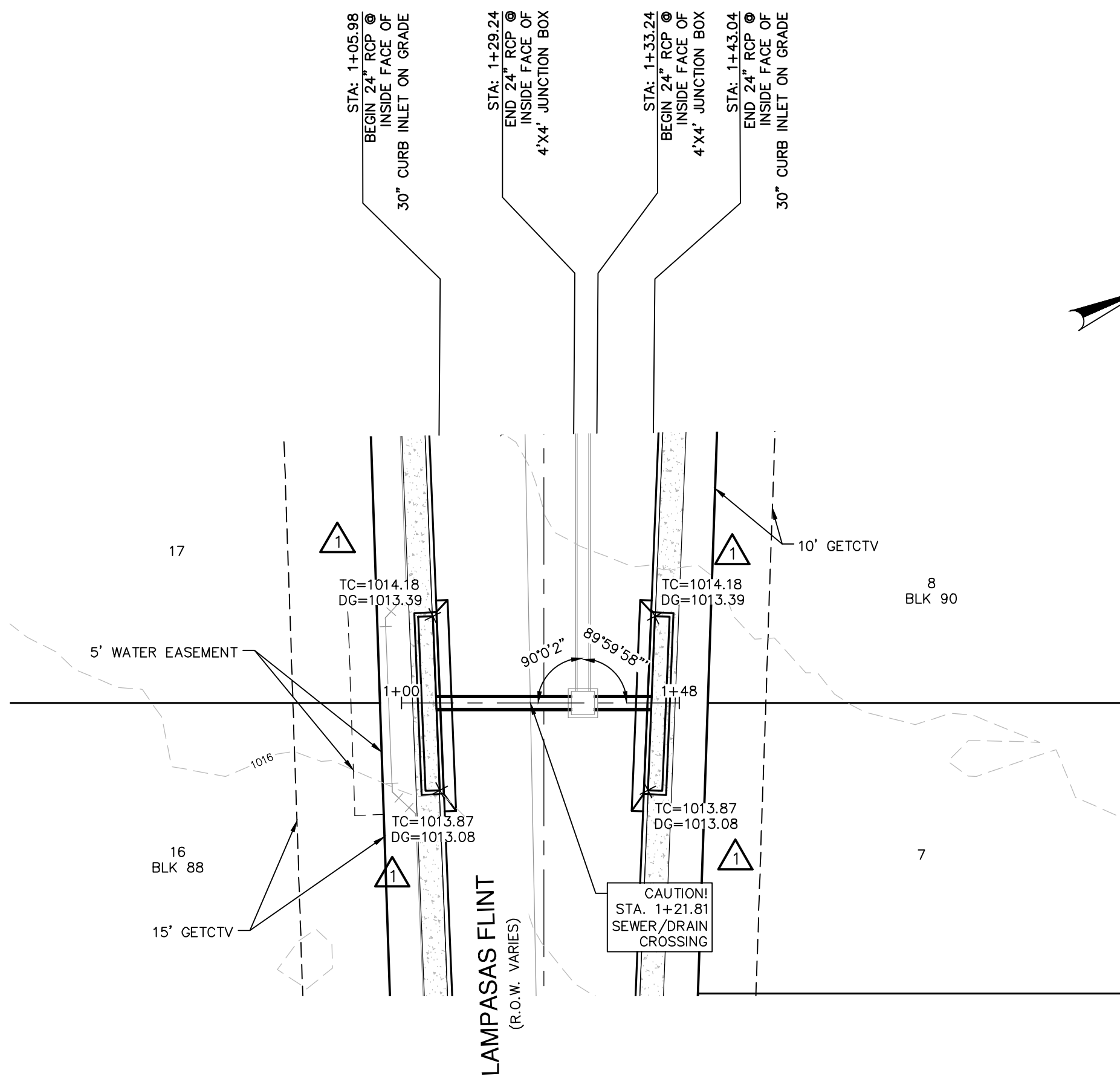
DRAIN "A"
STA. 8+00.00 TO END

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



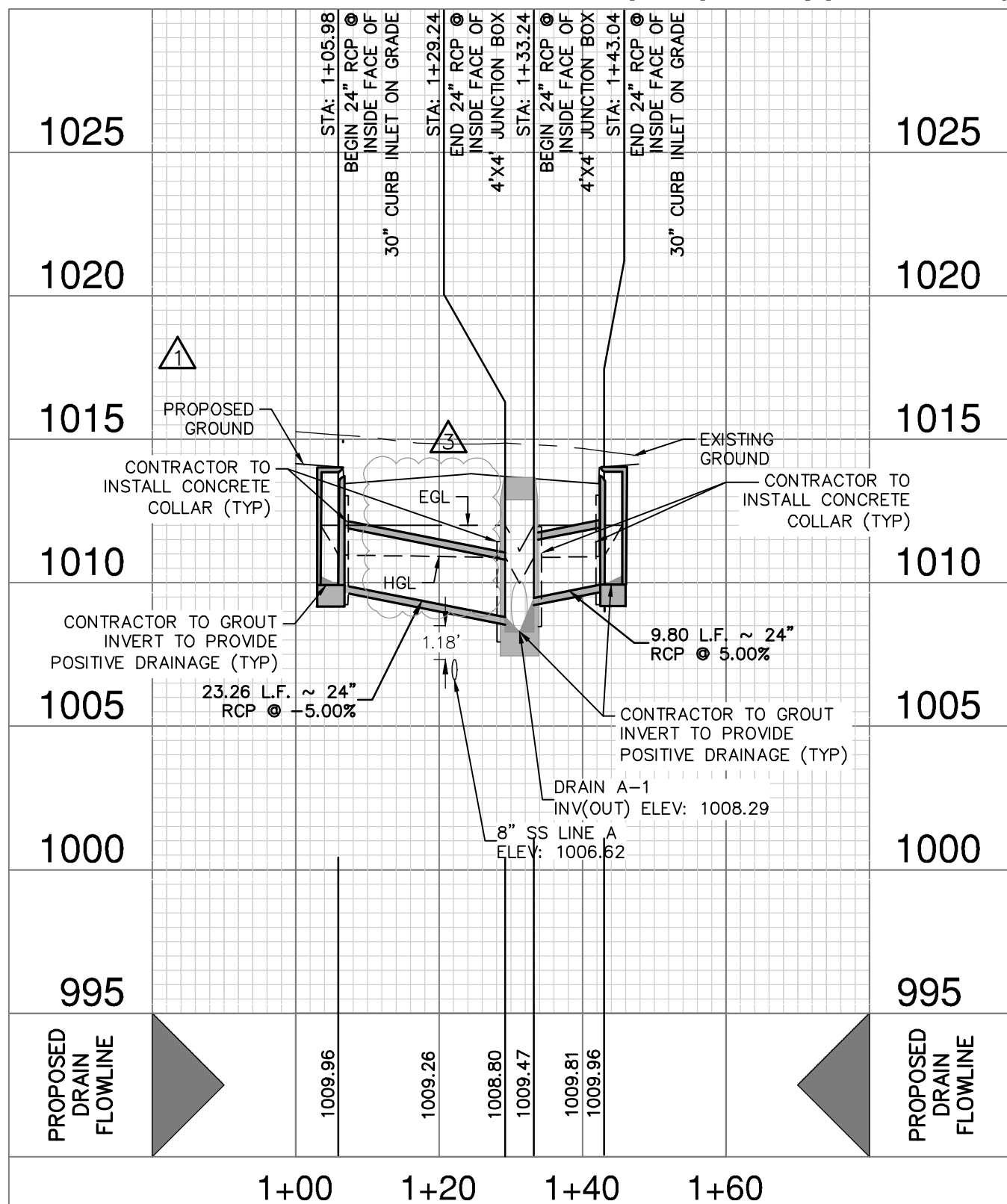
HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 7+44.49 TO 8+30.25	
Q25 = 49.40 cfs	
Dn = 1.69'	
Sf = 0.55%	
Vn = 12.09 fps	
n = 0.013	
D = 3.0'	
S = 1.50%	

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 8+35.21 TO 9+59.26	
Q25 = 26.78 cfs	
Dn = 1.41'	
Sf = 1.40%	
V = 8.52 fps	
n = 0.013	
D = 2.0'	
S = 2.00%	



DRAIN "A-1"
STA. 1+00 TO END

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



HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+05.98 TO 1+29.24	
Q25 = 13.39 cfs	
Dn = 0.73'	
Sf = 0.35%	
Vf = 4.26 fps	
n = 0.013	
D = 2.0'	
S = -5.00%	

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+33.24 TO 1+43.04	
Q25 = 13.39 cfs	
Dn = 0.73'	
Sf = 0.35%	
Vf = 4.26 fps	
n = 0.013	
D = 2.0'	
S = 5.00%	

DRAINAGE & GRADING NOTES:

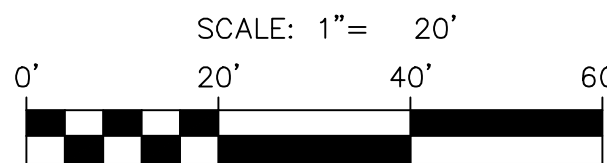
- A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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- ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION SAFETY PROTECTION:

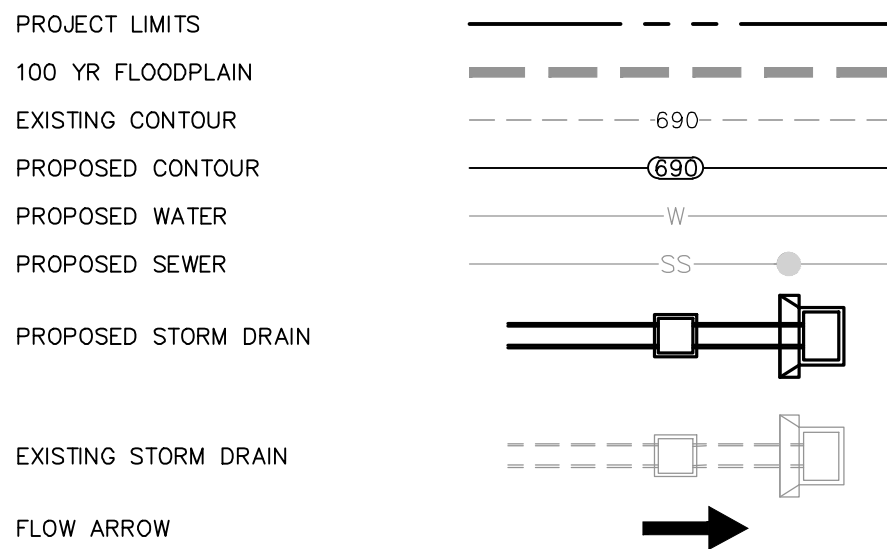
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!

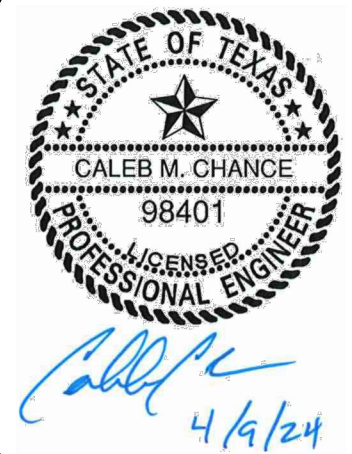
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE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



DRAINAGE LEGEND



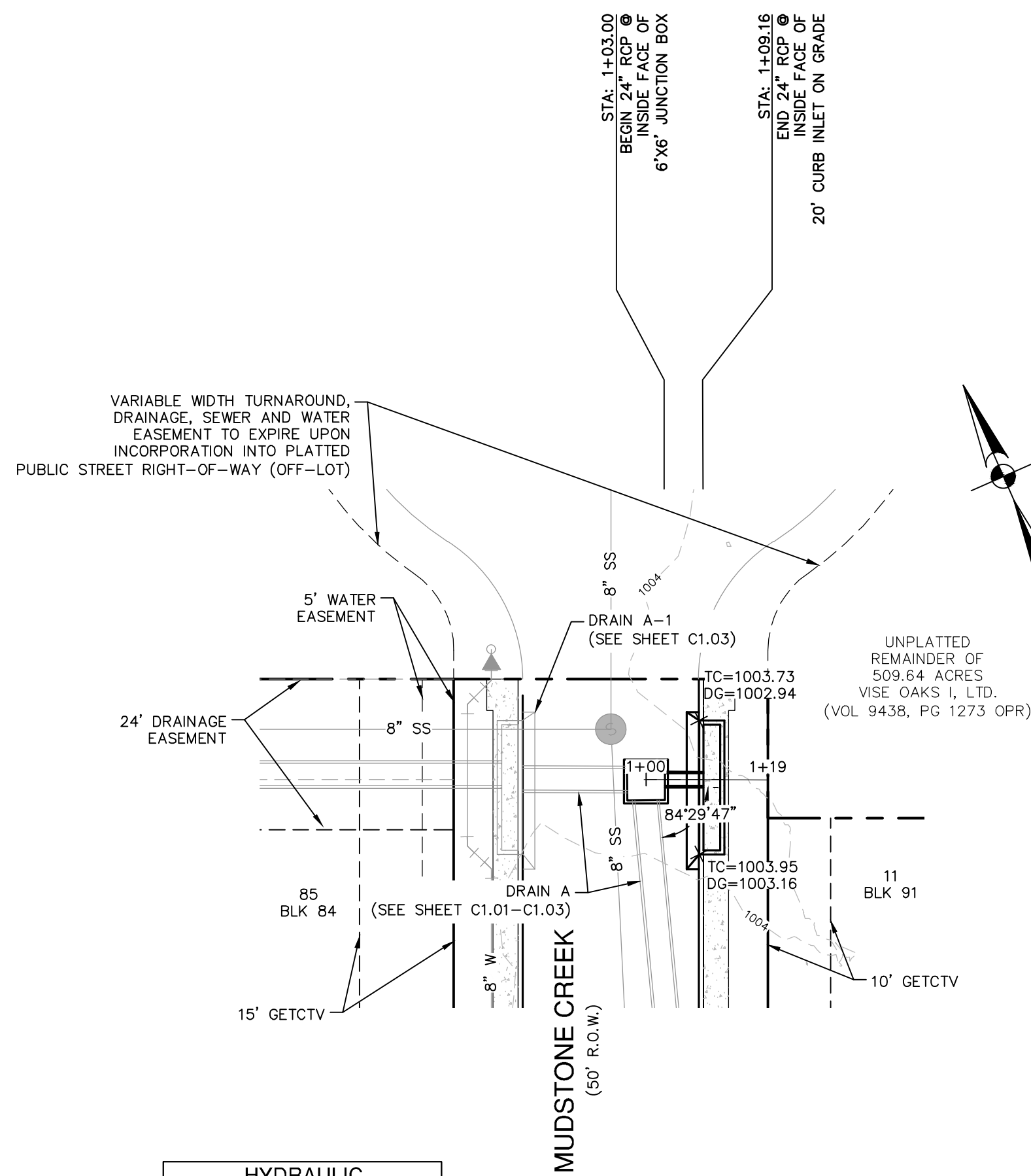
NO.	REVISION	DATE
1	REVISED PROPOSED GROUND & TOC ELEV	7/24/2023
2	REVISED HYDRAULIC CALCS	4/08/2024
3	REVISED HGL & EGL	4/08/2024



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088600

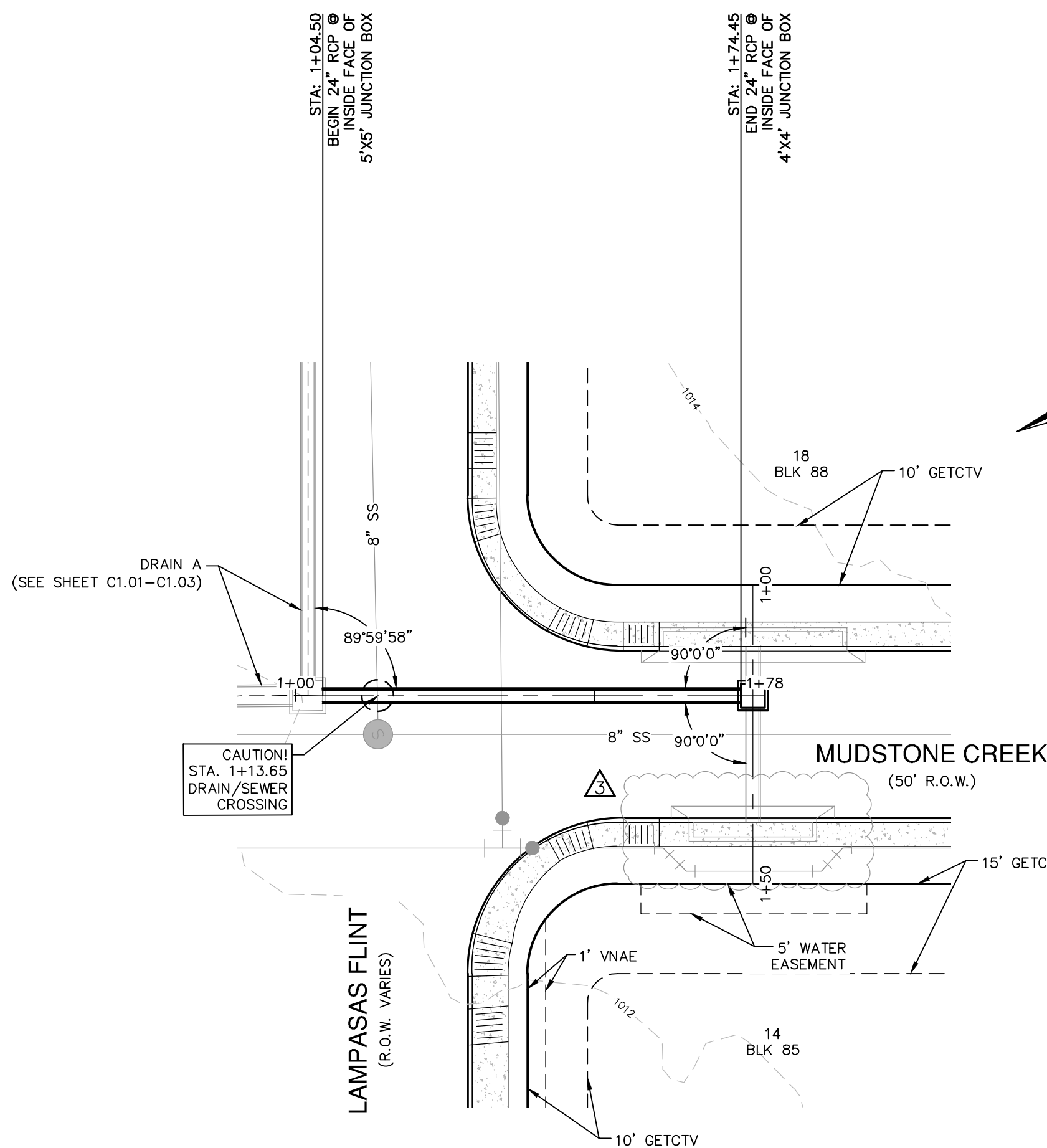
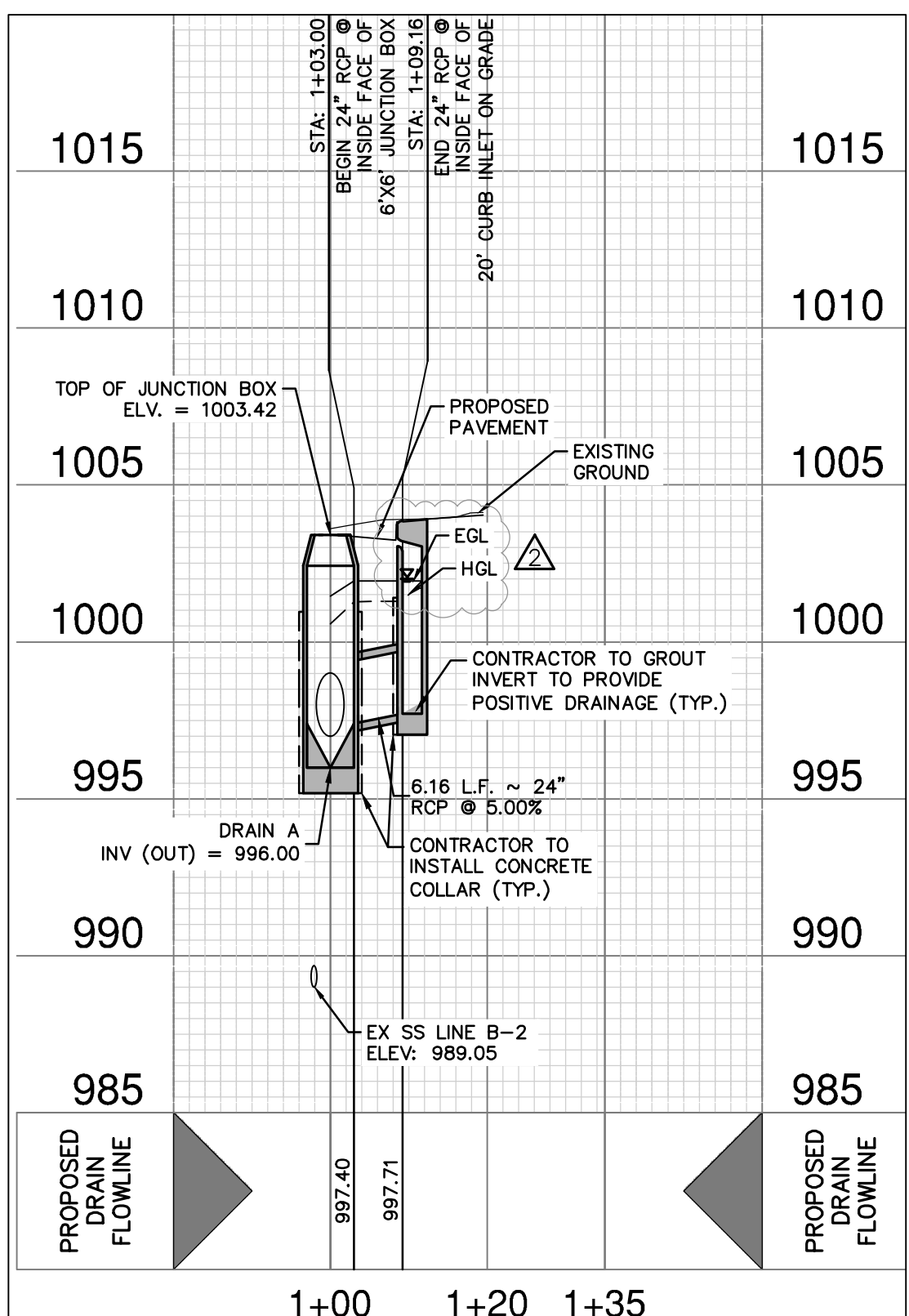
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAIN A & A-1 PLAN & PROFILE
DRAIN "A" STA. 8+00.00 TO END
DRAIN "A-1" STA. 1+00.00 TO END

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C1.03



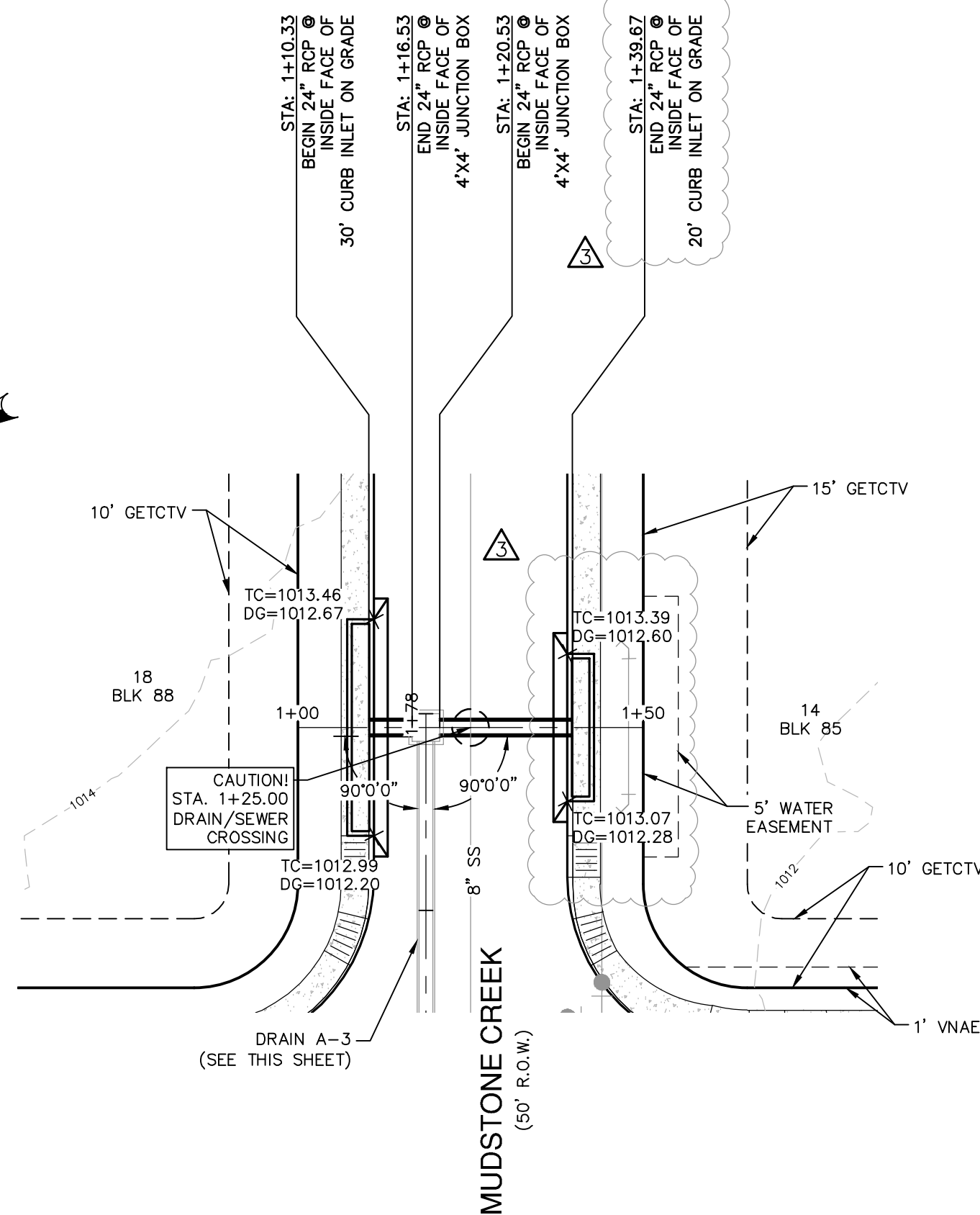
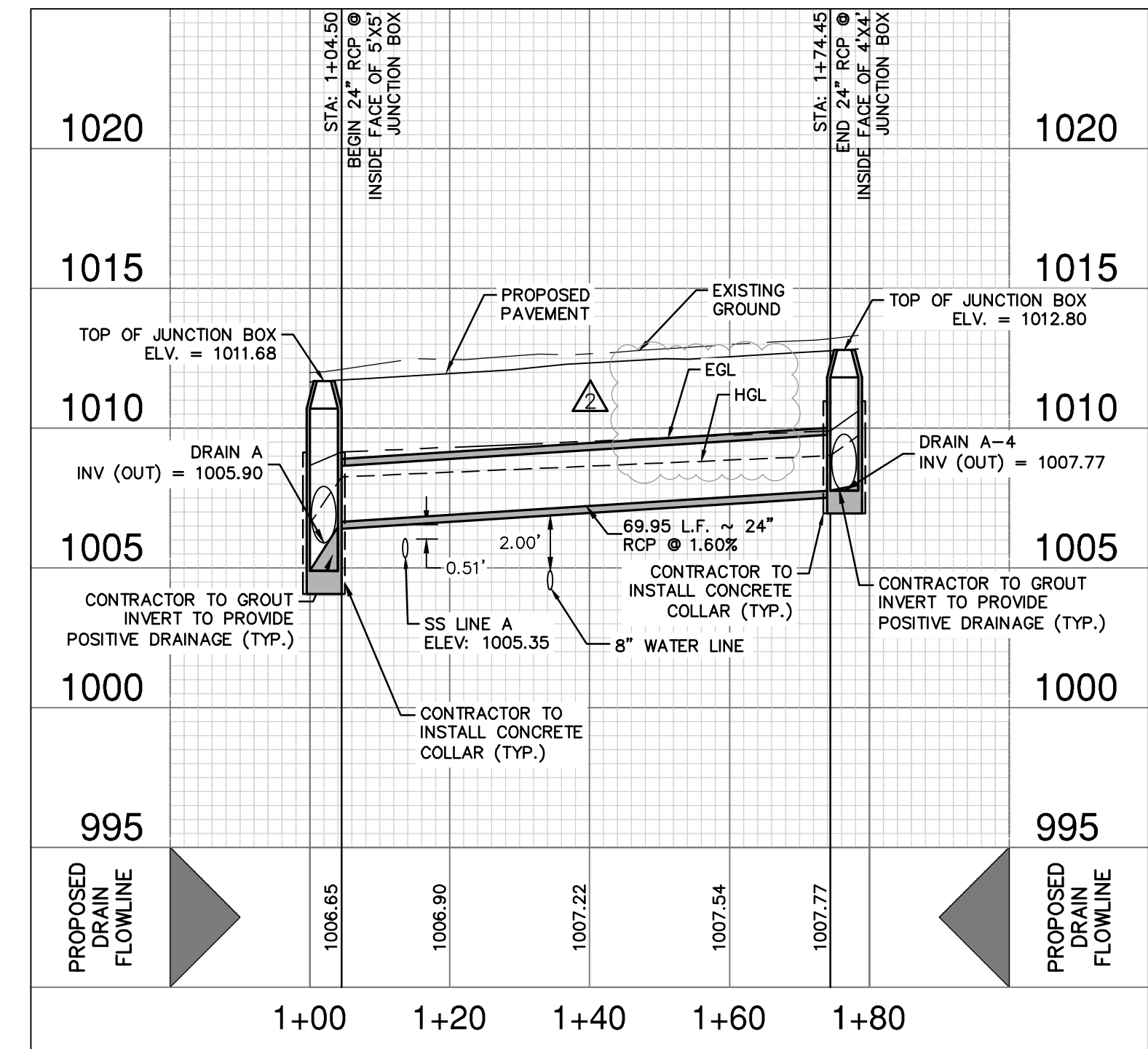
HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+03.00 TO 1+09.16	
Q25 =	9.24 cfs
Dn =	0.51'
Sf =	0.17%
Vf =	2.94 fps
n =	0.013
D =	2'
S =	5.00%

DRAIN "A-2"
STA. 1+03.00 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+04.50 TO 1+74.45	
Q25 =	23.72 cfs
Dn =	1.40'
Sf =	1.10%
Vf =	7.55 fps
n =	0.013
D =	2'
S =	1.60%

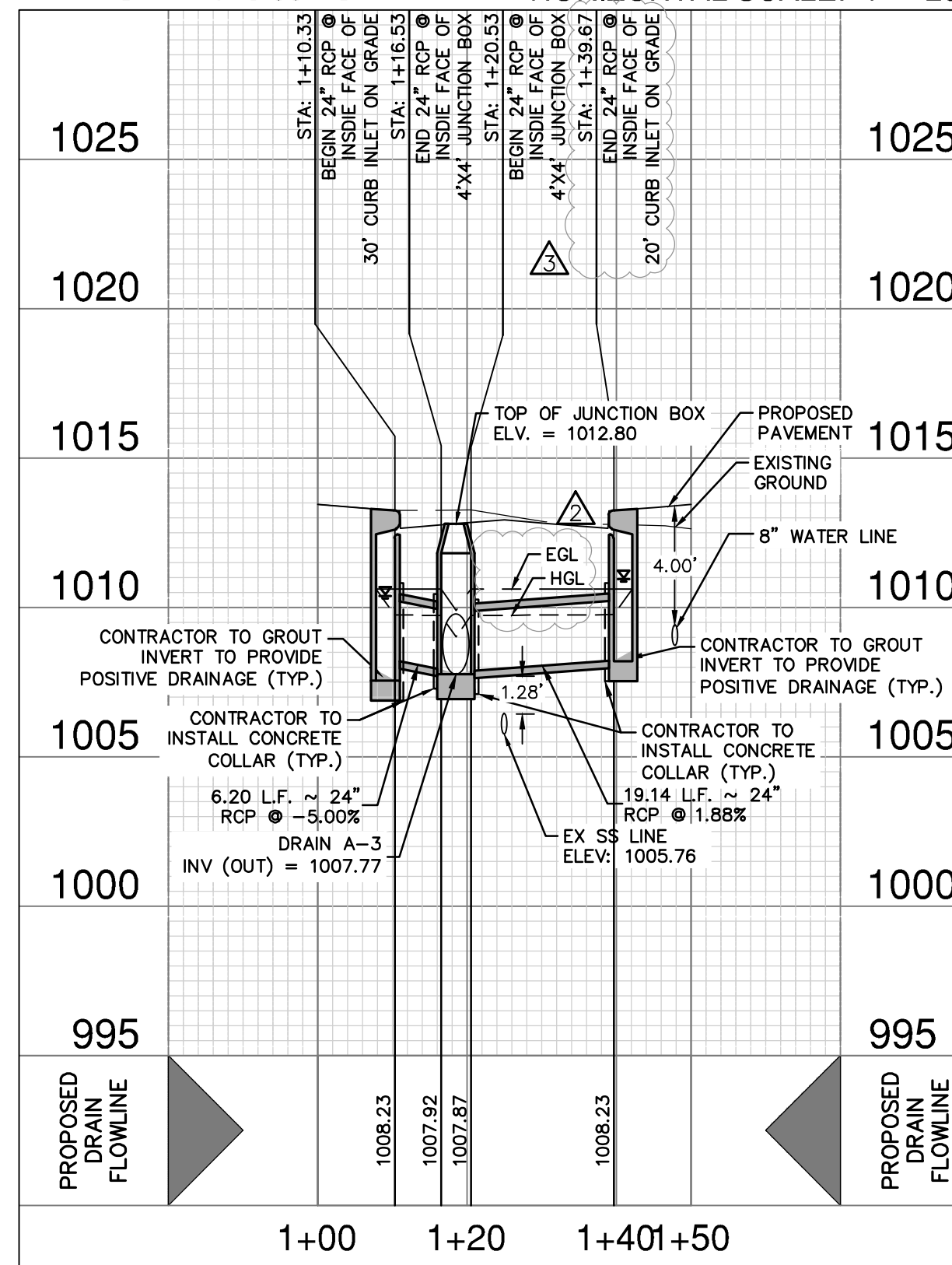
DRAIN "A-3"
STA. 1+04.50 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



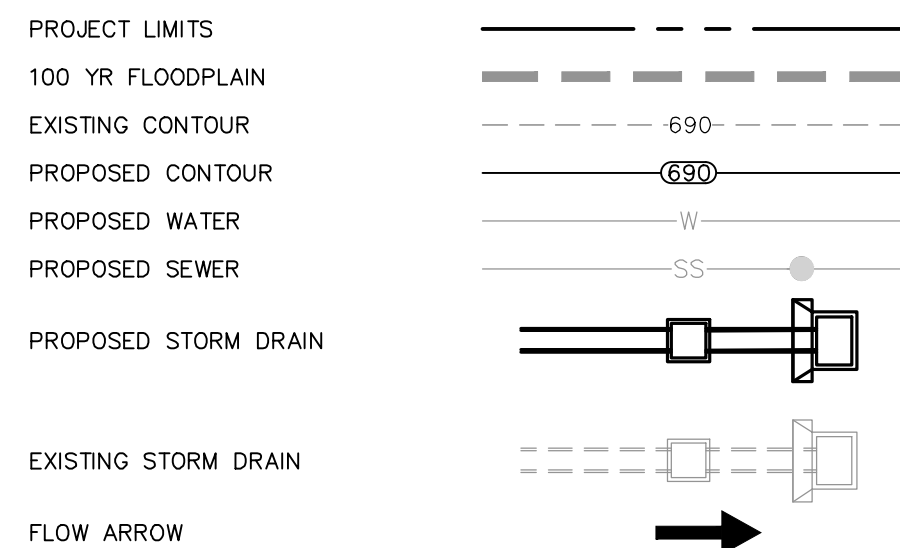
HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+10.33 TO 1+16.53	
Q25 =	14.23 cfs
Dn =	0.75'
Sf =	0.40%
Vf =	4.53 fps
n =	0.013
D =	2'
S =	5.00%

HYDRAULIC CALCULATIONS STORM DRAIN	
STA. 1+20.53 TO 1+39.67	
Q25 =	9.49 cfs
Dn =	0.79'
Sf =	0.18%
Vf =	3.02 fps
n =	0.013
D =	2'
S =	1.88%

DRAIN "A-4"
STA. 1+10.33 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



DRAINAGE LEGEND



DRAINAGE & GRADING NOTES:

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TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

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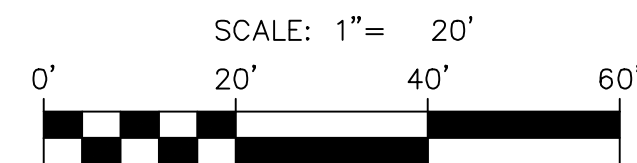
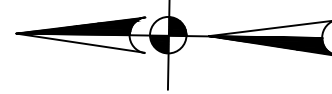
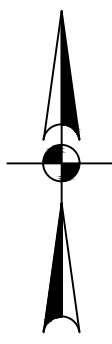
NO.	REVISION	DATE
1	REVISED HYDRAULIC CALCS	4/08/2024
2	REVISED HGL & EOL	4/08/2024
3	REVISED CURB INLETS	4/08/2024



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008890

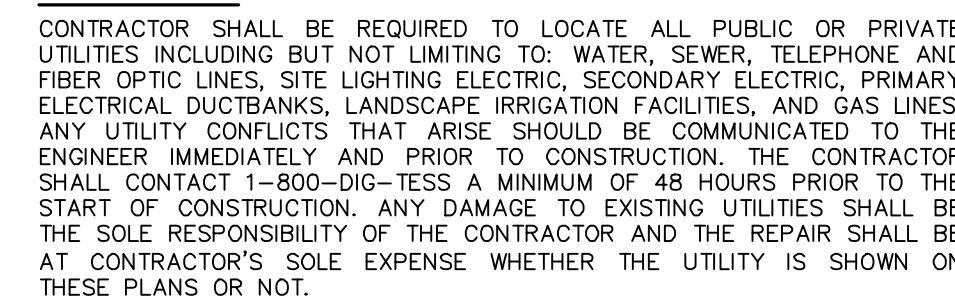
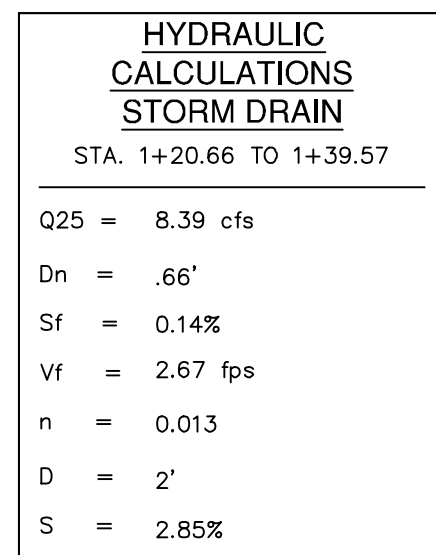
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAIN A-2 PLAN & PROFILE (STA. 1+03.00 TO END)
DRAIN A-3 PLAN & PROFILE (STA. 1+04.50 TO END)
DRAIN A-4 PLAN & PROFILE (STA. 1+10.33 TO END)

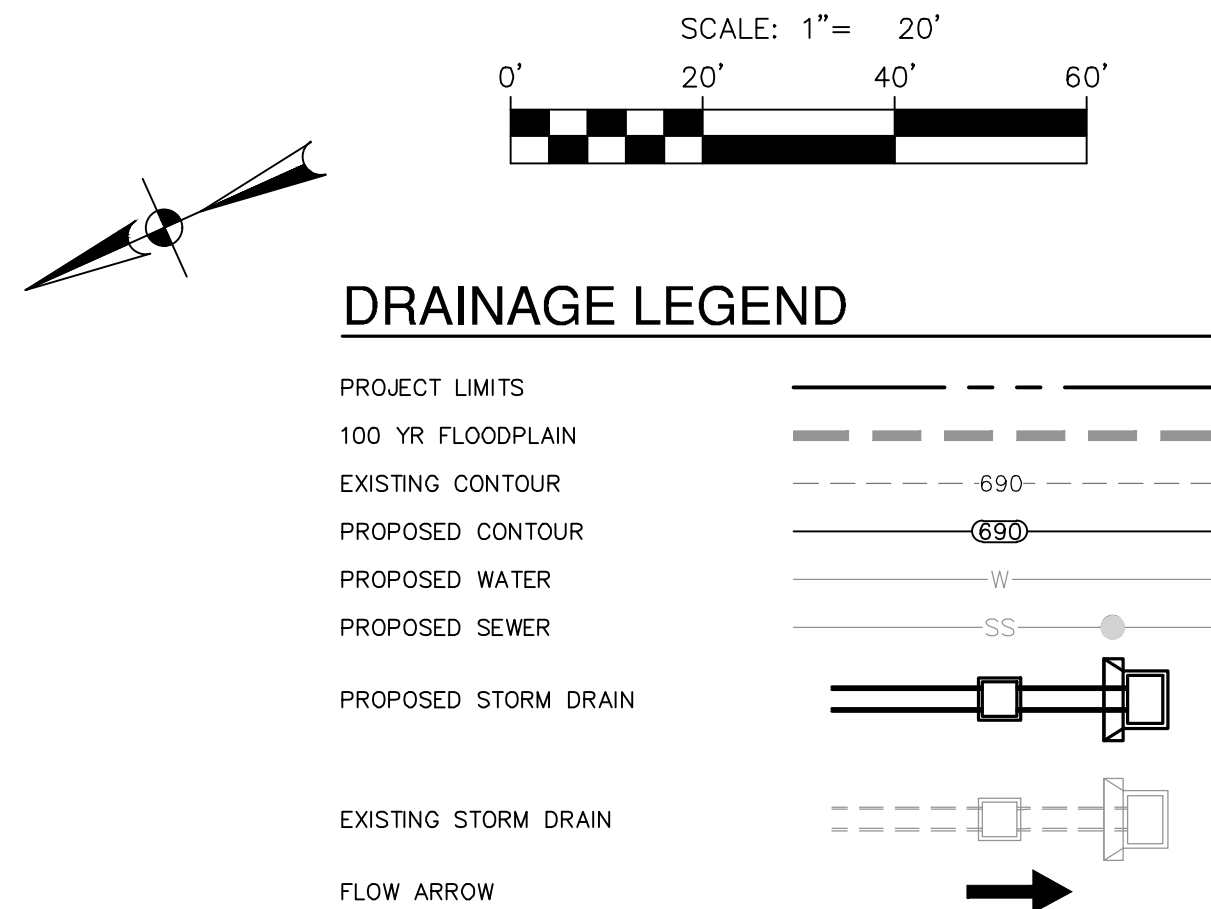
PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DRAWN	CV
CHECKED	BL
SHEET	C1.04



RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

PLAT NO. 22-1180037
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER C.V
CHECKED B.L DRAWN C.V
SHEET C1.05





**HYDRAULIC
CALCULATIONS
EARTHEN CHANNEL**

STA. 1+15.00 TO 1+50.00

Q25 = 54.5 cfs

Bw = 10'

n = 0.035

S = 1.65%

D = 1.50'

dn = 0.94'

V = 4.52 fps

**HYDRAULIC
CALCULATIONS
EARTHEN CHANNEL**

STA. 1+50.00 TO 2+50.00

Q25 = 54.5 cfs

Bw = 10'

n = 0.035

S = 2.40%

D = 1.50'

dn = 0.85'

V = 5.14 fps

**HYDRAULIC
CALCULATIONS
EARTHEN CHANNEL**

STA. 2+50.00 TO 3+50.00

Q25 = 54.5 cfs

Bw = 5'

n = 0.035

S = 1.50%

D = 2.20'

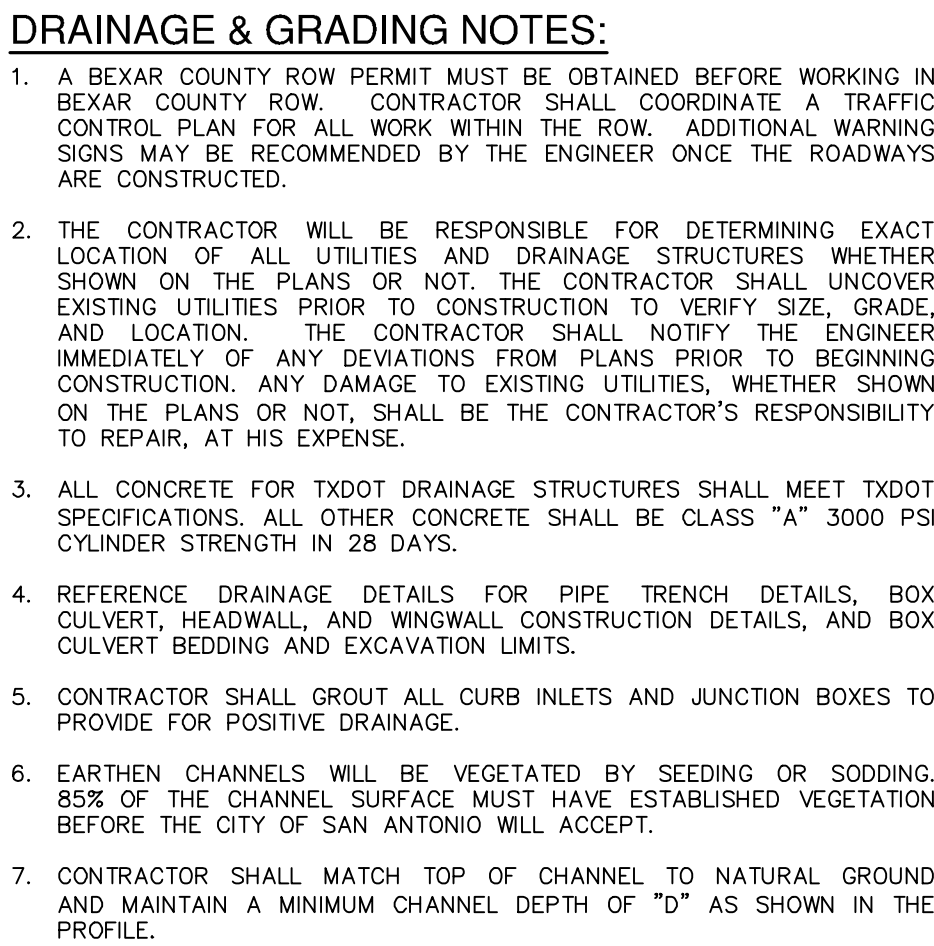
dn = 1.29'

V = 4.74 fps

**HYDRAULIC
CALCULATIONS
EARTHEN CHANNEL**

STA. 3+50.00 TO 4+00.00

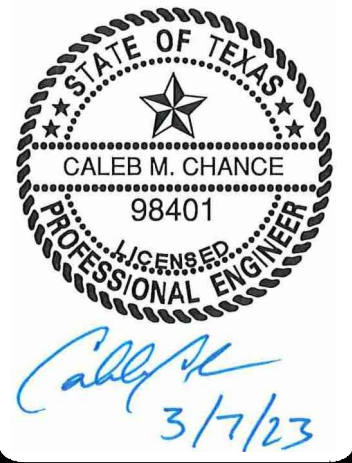
Q25 = 54.5 cfs
 Bw = 5'
 n = 0.035
 S = 1.00%
 D = 2.20'
 dn = 1.43'
 V = 4.09 fps



TRENCH EXCAVATION SAFETY PROTECTION:
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CAUTION!!

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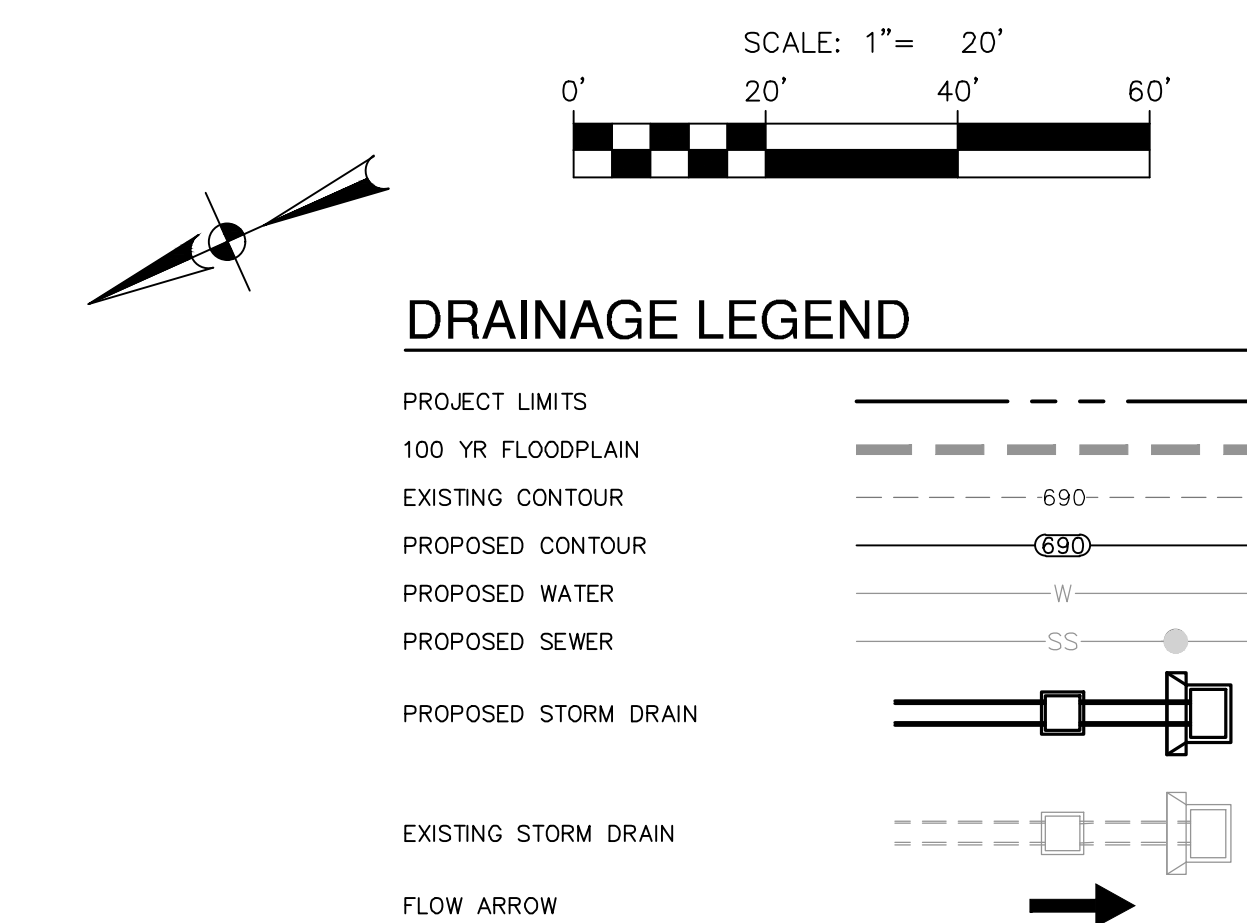
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**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAIN C PLAN & PROFILE
(STA. 1+00.00 TO 3+60.00)

PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN CV
SHEET C1.06



22-11800298)

PROPERTY LINE

15.0' (MIN)

EXISTING GROUND

6.60'

6.60'

2.0%

3:1 MAX

5.00'

2.20'

dn

3:1 MAX

2.0%

LOT LINE

CHANNEL

SECTION "B-B"

DRAIN C - STA. 2+50.00 TO 6+00.00

PROPOSED EARTHEN CHANNEL

NOT TO SCALE

PROPERTY LINE

15.0' (MIN)

EXISTING GROUND

3.60'

5.00'

3.60'

2.0%

3:1 MAX

1.20'

dn

3:1 MAX

2.0%

LOT LINE

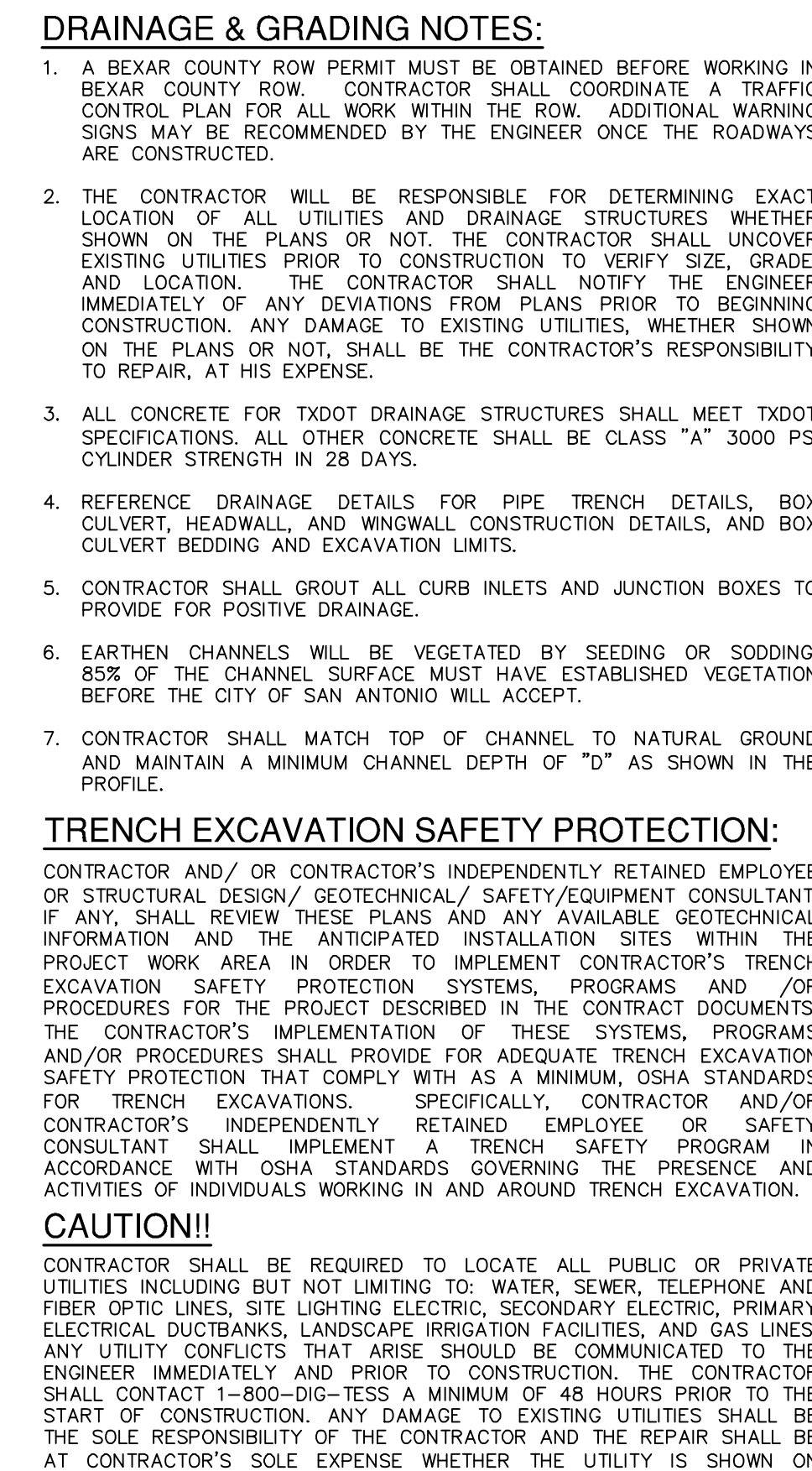
CHANNEL

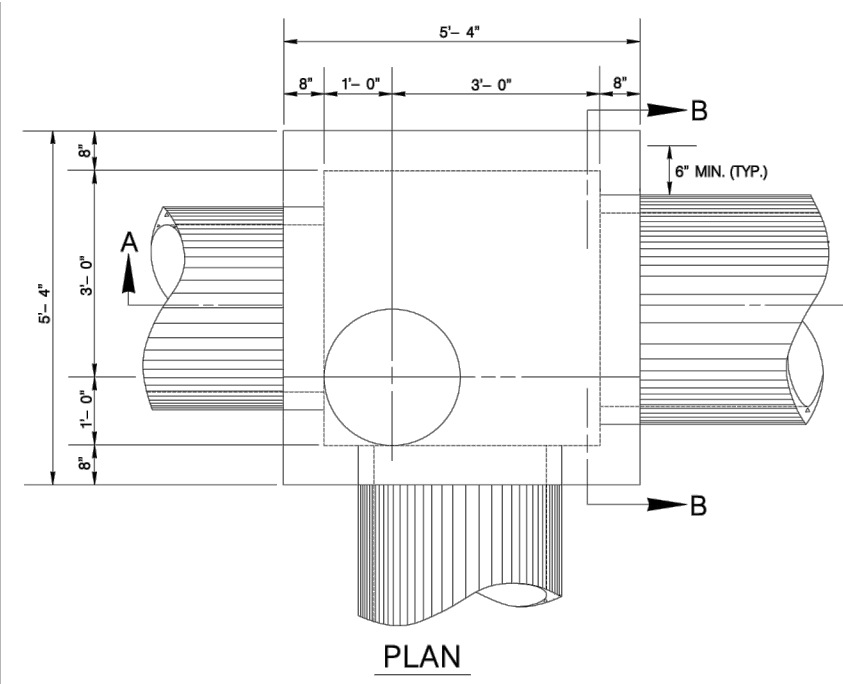
SECTION "C-C"

DRAIN C - STA. 6+00.00 TO 7+43.05

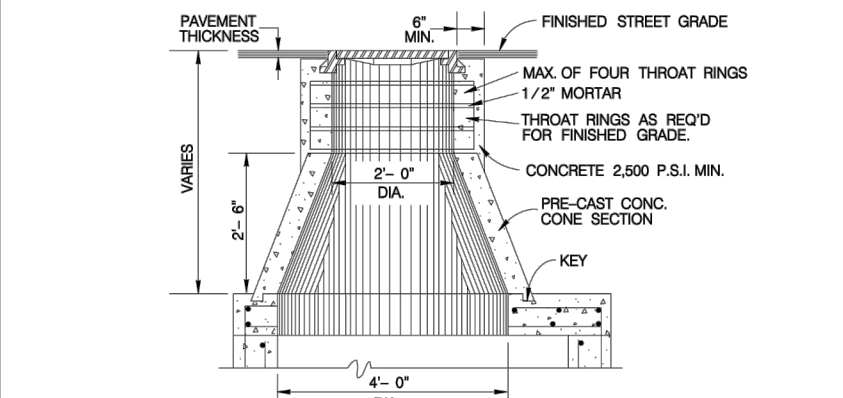
PROPOSED EARTHEN CHANNEL

NOT TO SCALE

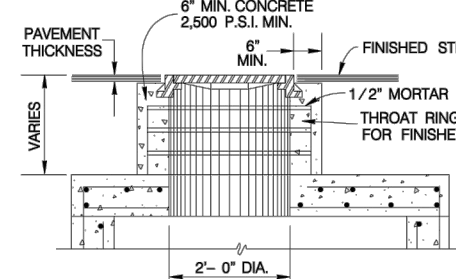
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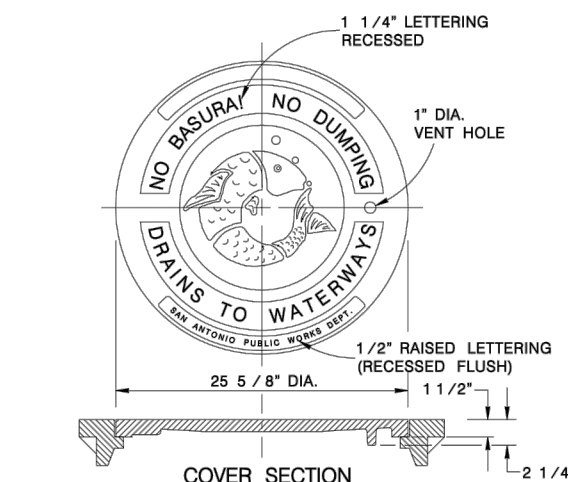
JUNCTION BOX TOP SLAB SHOWING STEEL



SECTION A-A



SECTION B-B



MANHOLE LID & RING DETAIL

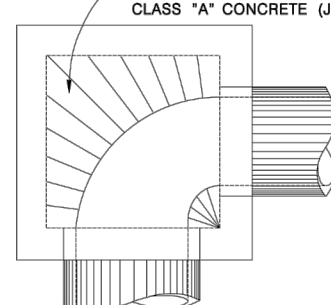
NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	16	4	9" O.C.	5'-1"	54
STRAIGHT	B	32	5	8" O.C.	6'-3"	228
STRAIGHT	C	32	5	8" O.C.	4'-3"	142
STRAIGHT	D	16	4	9" O.C.	5'-1"	54
STRAIGHT	E	16	3	12" O.C.	3'-11"	24
STRAIGHT	F	16	4	12" O.C.	5'-1"	54
STRAIGHT	G	8	4	AS SHOWN	5'-1"	27
STRAIGHT	H	20	3	12" O.C.	4'-5"	33
STRAIGHT	J	8	6	3 1/2" O.C.	2'-10"	24
TOTAL						650 LBS.

CLASS "A" CONCRETE - 3.43 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

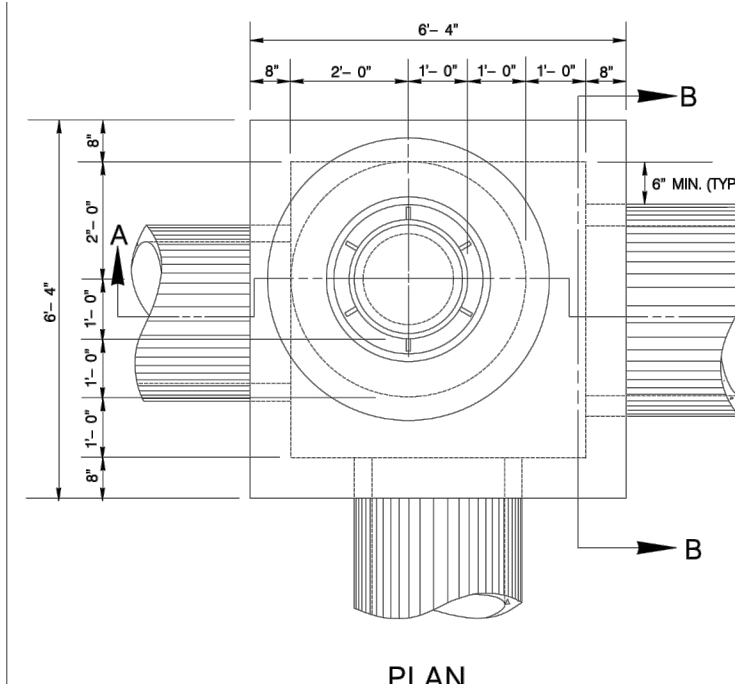
- * NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN - ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
 2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM A-36. 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 SHOWN 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".



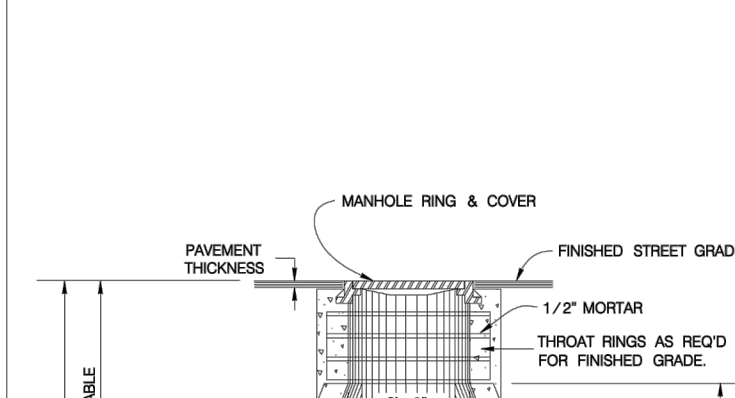
CURVED DEFLECTOR DETAIL

JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
4'x4' JUNCTION BOX STANDARDS

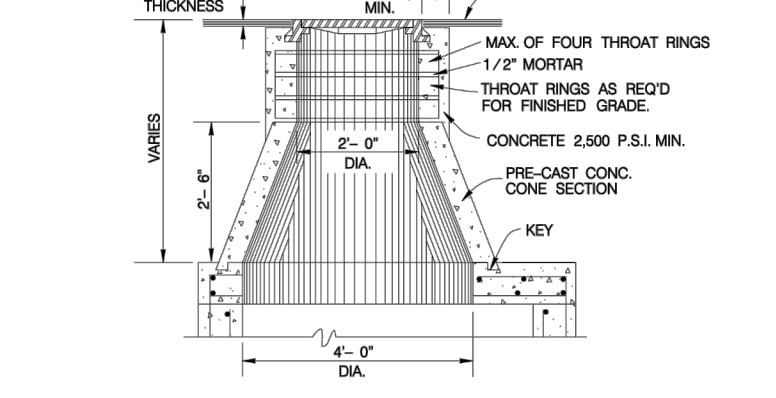
% SUBMITTAL PROJECT NO. _____ DATE _____
DRAWN BY: _____ DESIGNED BY: _____ CHECKED BY: _____ SHEET NO. _____ OF _____



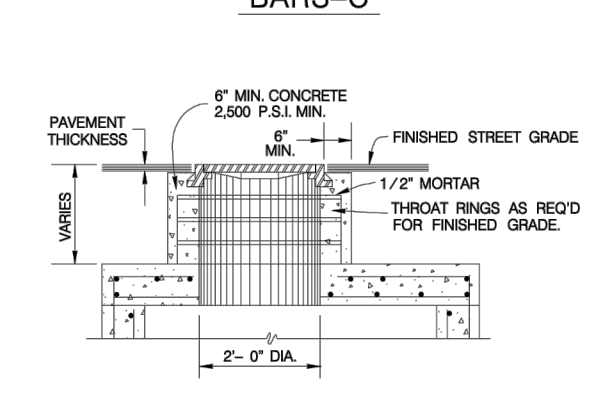
OF JUNCTION BOX TOP SLAB SHOWING STEEL



SECTION A-A



SECTION B-B



MANHOLE LID & RING DETAIL

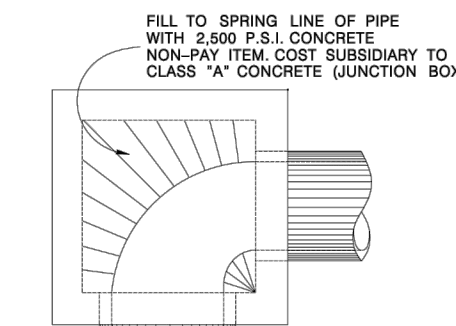
NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	16	4	9" O.C.	6'-1"	73
STRAIGHT	B	36	5	8" O.C.	7'-6"	282
STRAIGHT	C	36	5	8" O.C.	4'-3"	163
STRAIGHT	D	16	4	9" O.C.	6'-1"	73
STRAIGHT	E	20	3	12" O.C.	4'-11"	37
STRAIGHT	F	20	4	12" O.C.	6'-1"	81
STRAIGHT	G	8	4	AS SHOWN	6'-1"	33
STRAIGHT	H	24	3	12" O.C.	5'-5"	49
STRAIGHT	J	8	6	3 1/2" O.C.	4'-11"	59
TOTAL						647 lbs.

CLASS "A" CONCRETE - 5.03 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

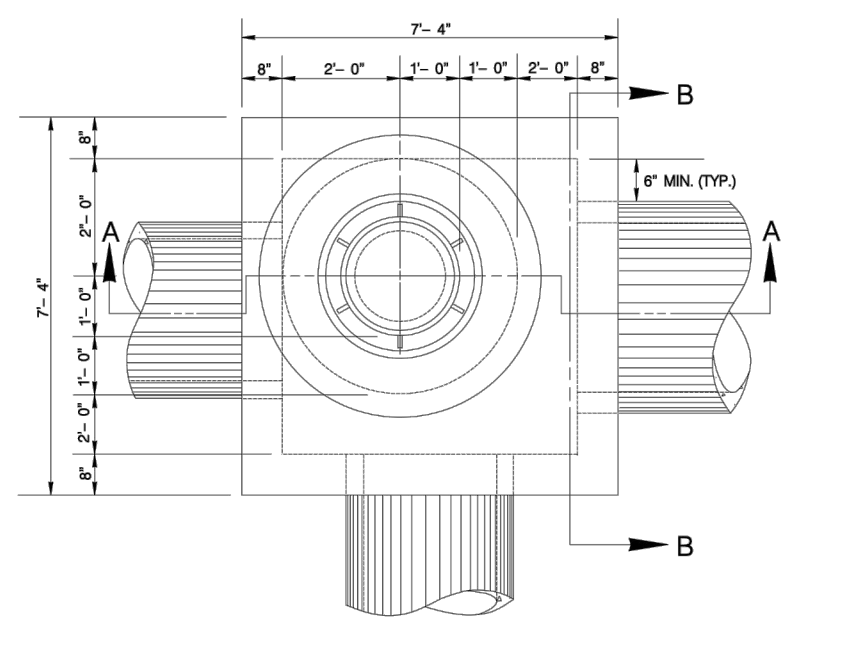
- * NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN - ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
 2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM A-36. 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 SHOWN 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".



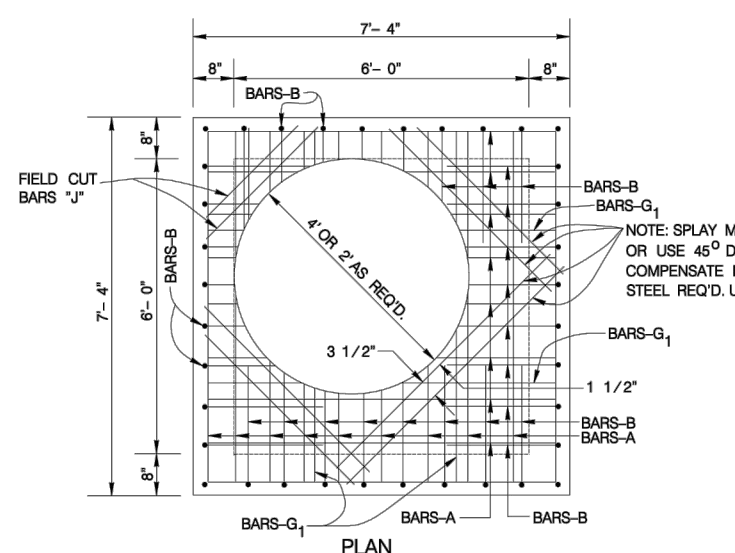
CURVED DEFLECTOR DETAIL

JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
5'x5' JUNCTION BOX STANDARDS

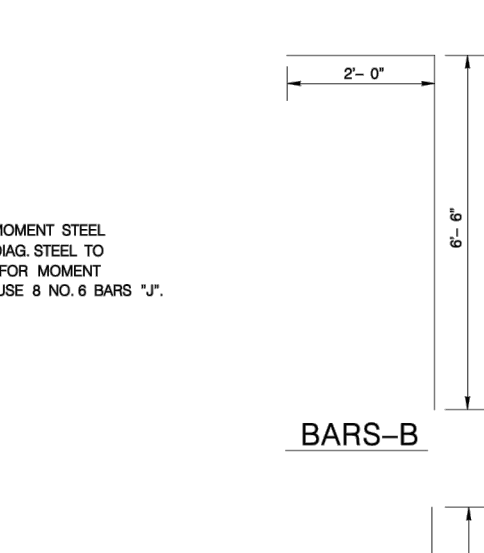
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DRAWN BY: _____ DESIGNED BY: _____ CHECKED BY: _____ SHEET NO. _____ OF _____



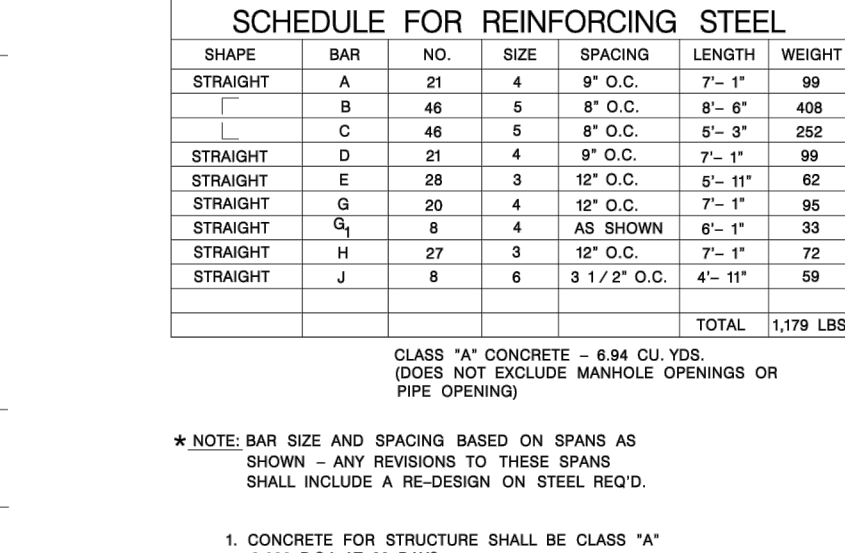
PLAN



SECTION A-A



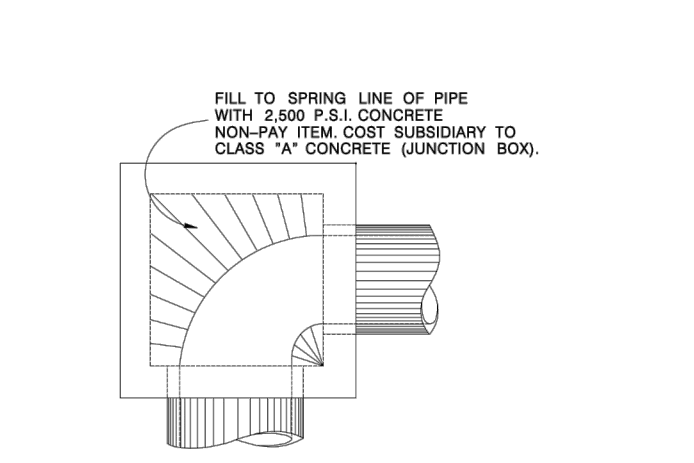
SECTION B-B



MANHOLE LID & RING DETAIL

NOTES FOR MANHOLE LID AND RING

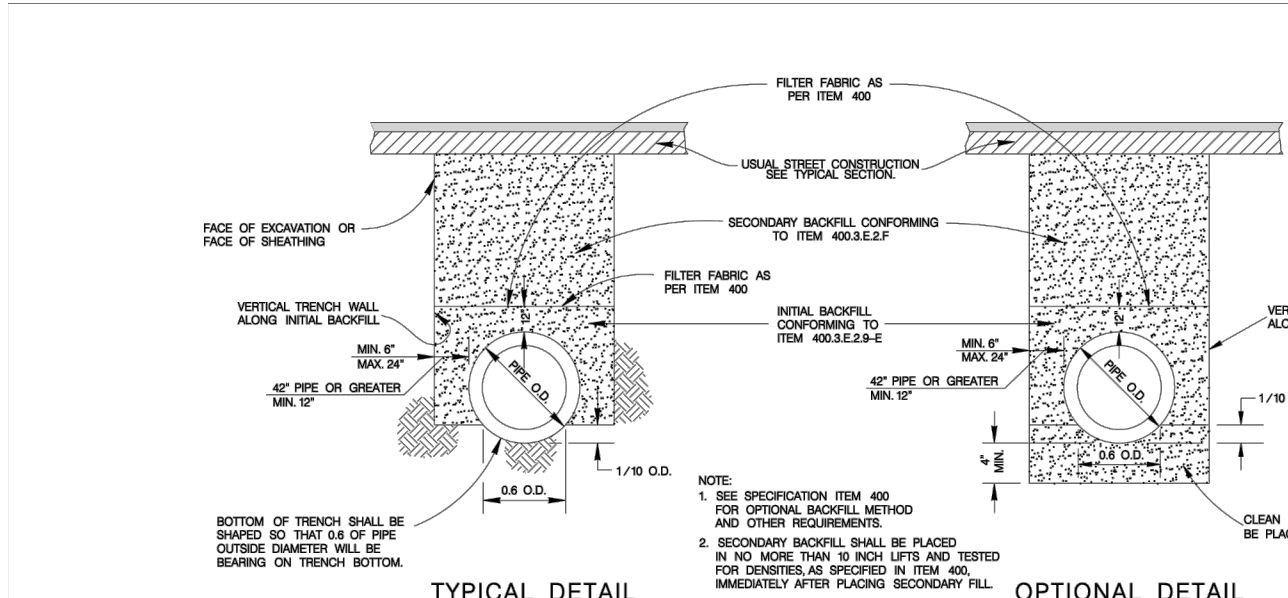
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.



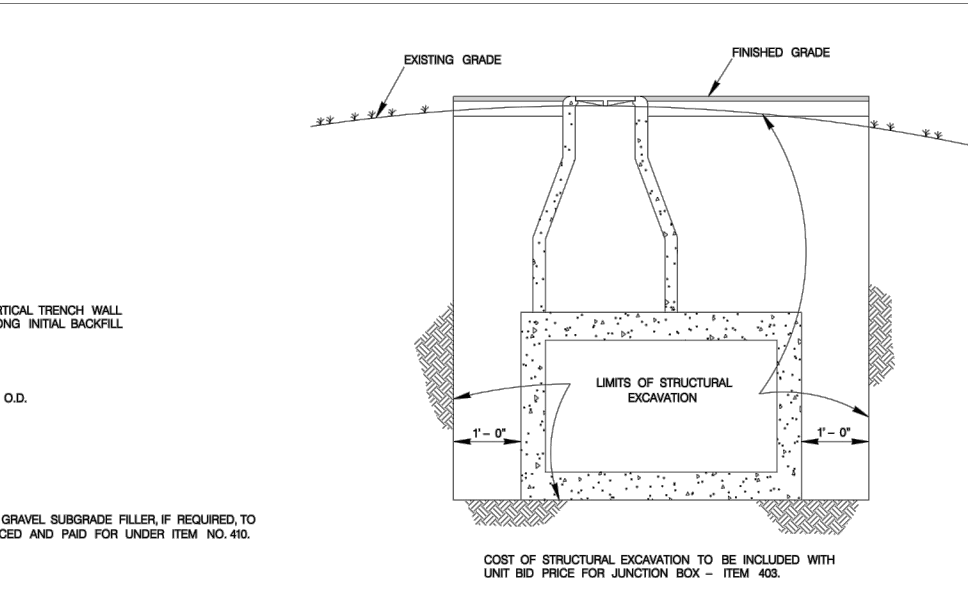
CURVED DEFLECTOR DETAIL

JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
6'x6' JUNCTION BOX STANDARDS

% SUBMITTAL PROJECT NO. _____ DATE _____
DRAWN BY: _____ DESIGNED BY: _____ CHECKED BY: _____ SHEET NO. _____ OF _____

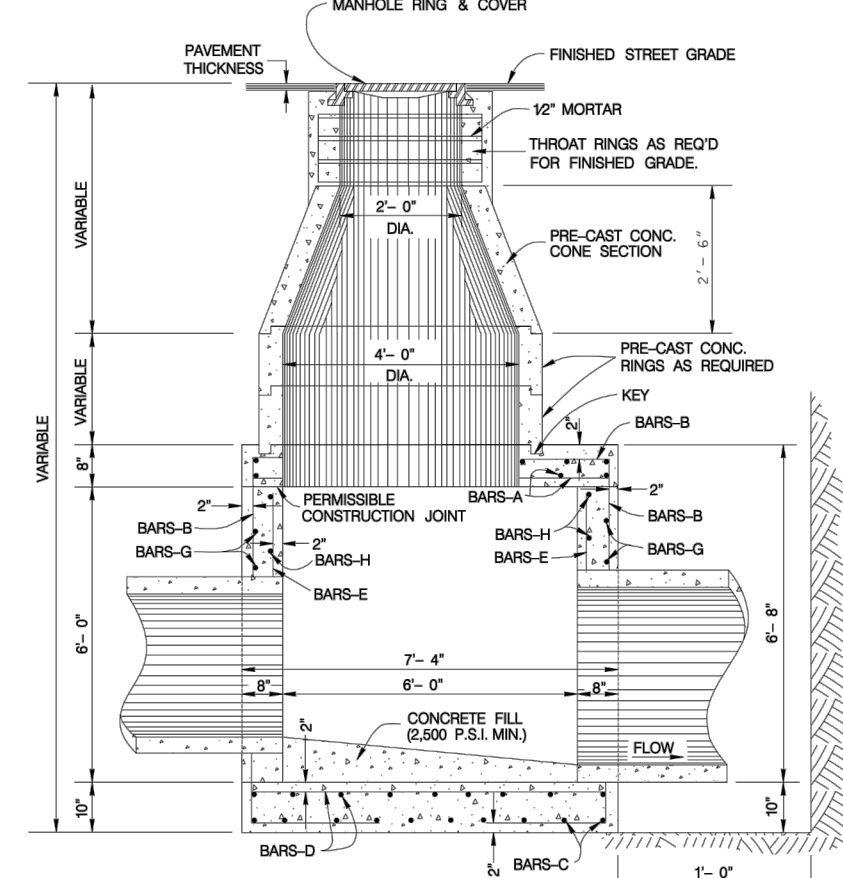


PIPE BEDDING & BACKFILL DETAILS

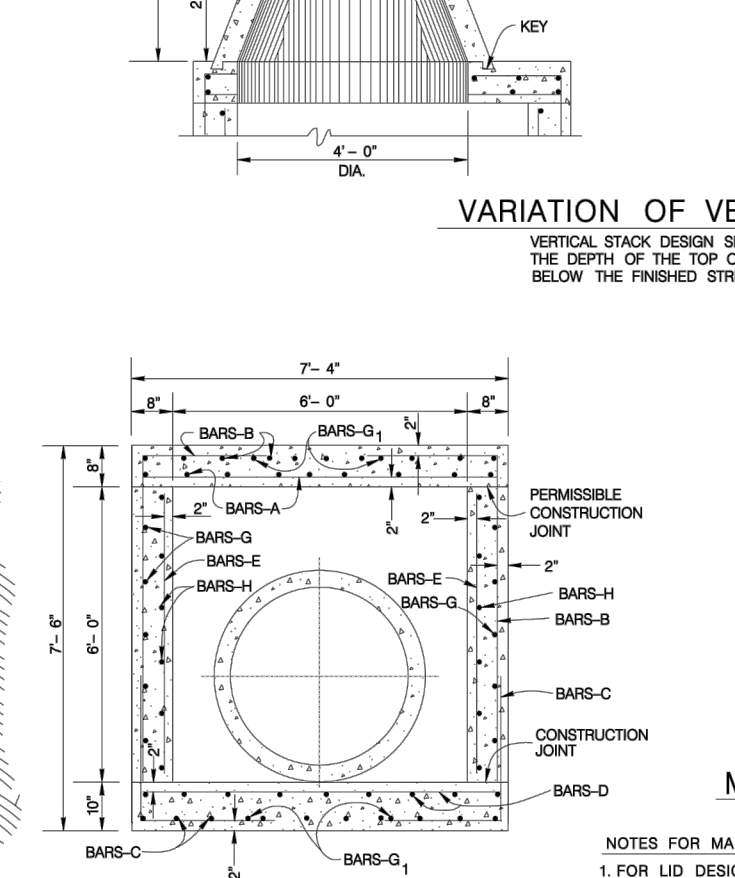


OPTIONAL DETAIL

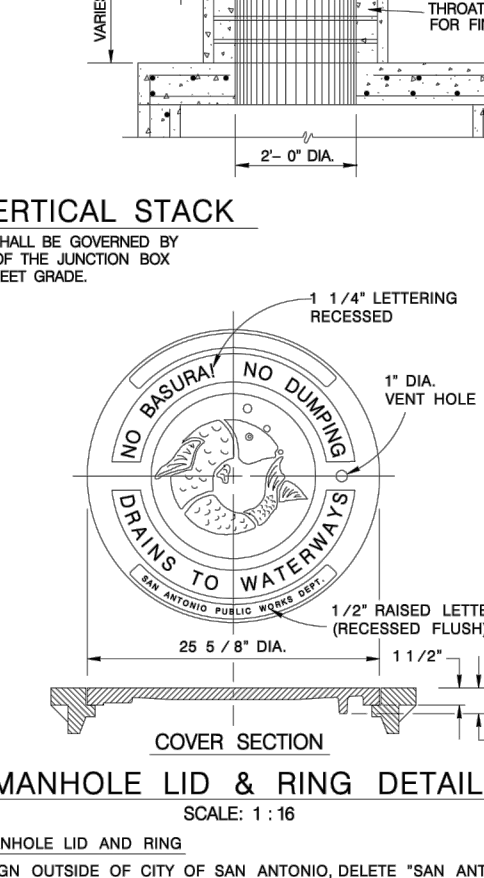
STRUCTURAL EXCAVATION AT JUNCTION BOXES



SECTION A-A



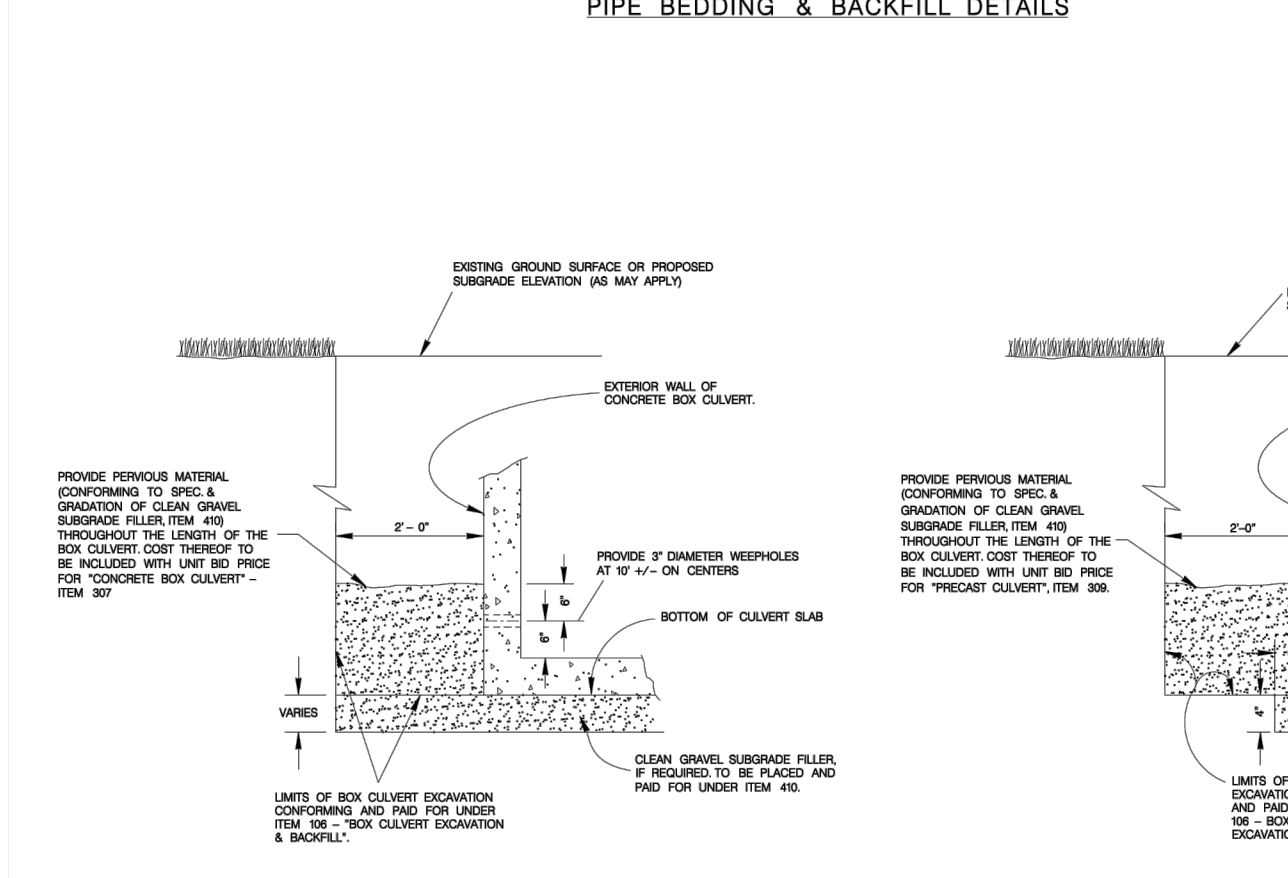
SECTION B-B



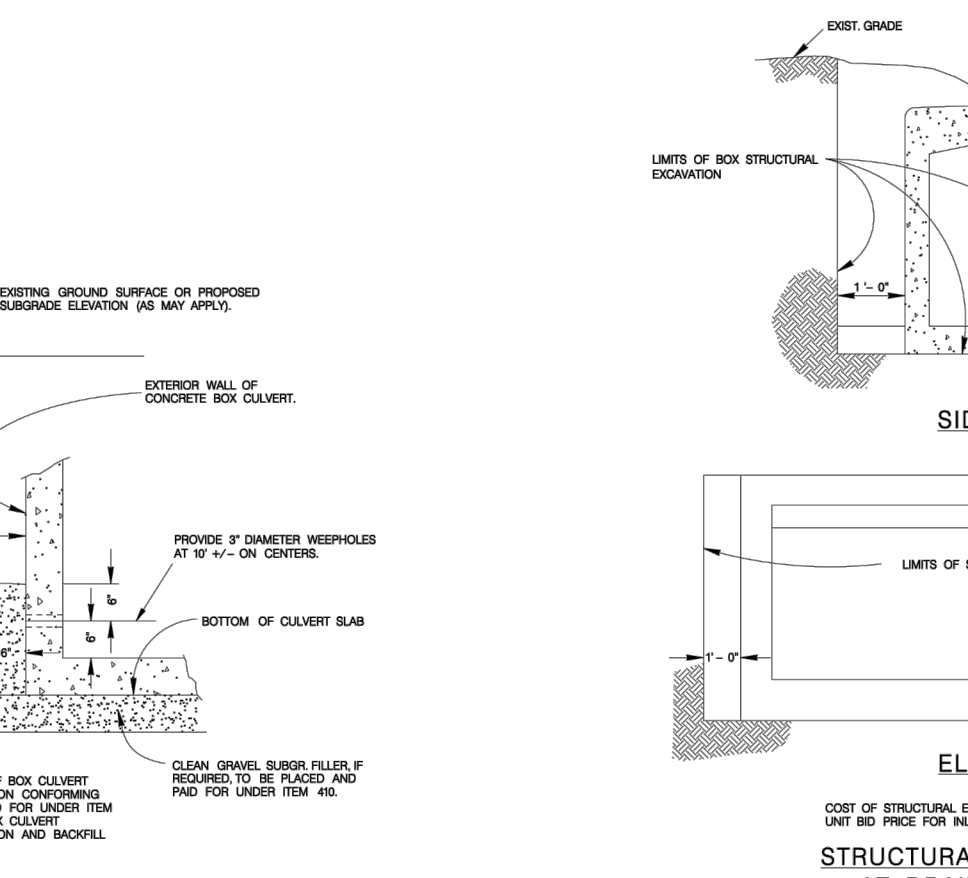
MANHOLE LID & RING DETAIL

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
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4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.

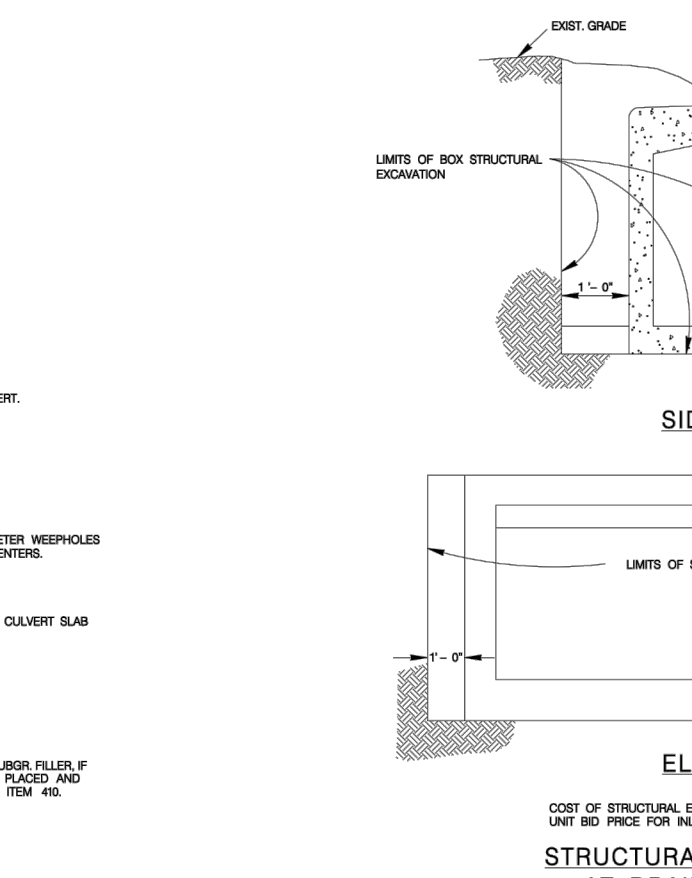


CAST-IN-PLACE BOX CULVERT



PRECAST BOX CULVERT

CONCRETE BOX CULVERT



SIDE VIEW



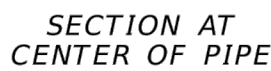
ELEVATION

STRUCTURAL EXCAVATIONS AT DRAINAGE INLETS

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS

% SUBMITTAL PROJECT NO. _____ DATE _____
DRAWN BY: _____ DESIGNED BY: _____ CHECKED BY: _____ SHEET NO. _____ OF _____

Order of the series	Order of the series	Values for One Rein			Values To Be Added for Each Rein		
		W	Rein (152)	Canc (7)	W	Rein (152)	Canc (7)
2-1	12°	9° 0'	125	1	1° 9'	15	0.2
	15°	10° 3'	136	1.3	2° 28'	16	0.2
	18°	11° 6'	163	1.5	2° 8'	19	0.3
	21°	12° 6'	200	1.8	3° 1'	31	0.4
	24°	14° 0'	241	2.1	3° 1'	31	0.4
	27°	15° 3'	254	2.4	3° 11'	37	0.5
	30°	16° 6'	272	2.7	4° 4'	40	0.6
	33°	18° 0'	314	3.1	4° 4'	40	0.6
	36°	19° 0'	371	3.9	5° 0'	41	0.6
	39°	21° 6'	442	4.9	5° 10'	52	1.0
3-1	48°	22° 0'	569	6.4	6° 7'	59	1.3
	51°	23° 0'	701	7.5	6° 7'	59	1.3
	60°	30° 0'	794	8.8	8° 3'	90	1.8
	66°	32° 6'	894	10.2	8° 9'	96	2.0
	72°	35° 0'	1,055	11.9	9° 54'	103	2.3
	78°	37° 0'	1,191	13.6	9° 54'	103	2.3
	81°	14° 9'	193	1.9	2° 8'	17	0.2
	84°	16° 6'	228	2.2	2° 8'	19	0.3
	87°	18° 0'	259	2.6	3° 1'	31	0.4
	90°	20° 0'	323	3.0	3° 1'	31	0.4
4-1	27°	21° 9'	371	3.5	3° 11'	37	0.5
	30°	23° 0'	415	4.0	4° 4'	40	0.5
	33°	25° 6'	469	4.6	4° 4'	40	0.5
	36°	27° 0'	556	5.2	4° 4'	40	0.5
	39°	35° 0'	837	9.2	6° 7'	59	1.3
	48°	38° 0'	1,015	11.0	7° 6'	84	1.6
	51°	41° 0'	1,171	12.9	8° 9'	96	2.0
	60°	46° 0'	1,268	14.9	8° 9'	98	2.0
	72°	49° 6'	1,561	17.1	9° 54'	103	2.3
	78°	51° 0'	1,729	20.0	9° 54'	103	2.3
5-1	15°	15° 0'	96	2.0	1° 9'	15	0.2
	18°	16° 6'	96	2.0	2° 8'	19	0.3
	21°	21° 6'	380	2.9	2° 8'	19	0.3
	24°	23° 0'	382	3.5	3° 1'	31	0.5
	27°	24° 6'	430	3.7	3° 1'	31	0.5
	30°	25° 6'	458	4.7	3° 11'	37	0.5
	33°	29° 0'	603	6.0	4° 4'	40	0.6
	36°	31° 0'	660	6.8	4° 4'	40	0.6
	39°	36° 0'	881	9.3	5° 10'	52	1.0
	48°	46° 0'	1,102	12.1	6° 7'	61	1.3
6-1	54°	50° 6'	1,364	14.8	7° 6'	84	1.6
	57°	52° 0'	1,547	16.9	8° 9'	96	2.0
	60°	55° 0'	1,741	19.5	8° 9'	98	2.0
	72°	64° 0'	2,077	22.4	9° 54'	103	2.3
	78°	72° 0'	2,376	26.1	9° 54'	103	2.3
	81°	34° 0'	384	3.6	3° 1'	34	0.4
	84°	31° 6'	452	4.2	3° 6'	38	0.4
	87°	34° 9'	581	5.1	3° 11'	31	0.4
	90°	38° 0'	644	5.8	3° 1'	34	0.4
	93°	41° 0'	717	6.6	3° 1'	34	0.4
7-1	30°	44° 0'	807	7.7	4° 4'	39	0.5
	33°	47° 9'	918	8.9	4° 4'	40	0.6
	36°	51° 0'	1,102	11.9	4° 4'	40	0.6
	39°	54° 6'	1,318	13.7	5° 10'	54	1.0
	48°	67° 6'	1,682	17.9	6° 7'	59	1.3
	54°	73° 0'	2,072	21.3	7° 6'	83	1.6
	60°	80° 0'	2,531	24.9	8° 3'	89	1.8
	66°	84° 0'	2,643	26.8	8° 9'	96	2.0
	72°	93° 0'	3,121	33.1	9° 54'	101	2.3

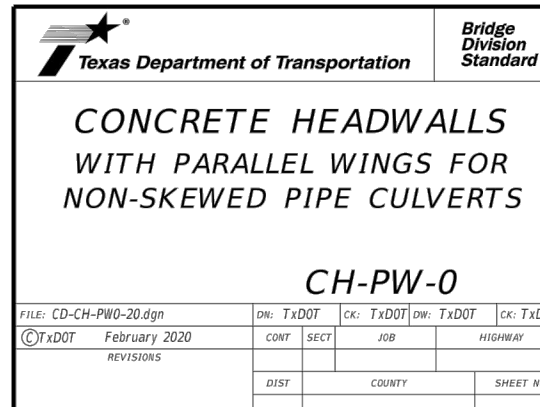


- ① Total quantities include one 3'-1" lap for bars over 60' in length.
- ② Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- ③ Indicated slope is perpendicular to centerline pipe or pipes.
- ④ For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ⑤ Dimensions shown are usual and maximum.
- ⑥ Quantities shown are for one structure end only (one headwall).

TABLE OF
REINFORCING STEEL

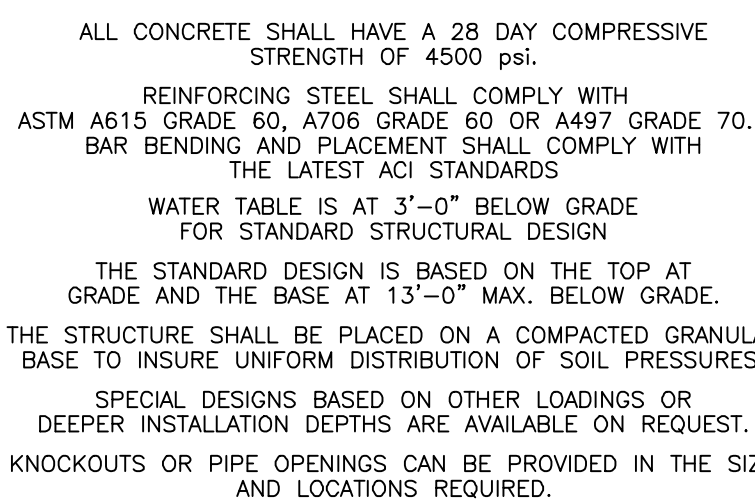
MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete ($f'_c = 3,600$ psi).

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



NOTES:

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 (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST OF CONSIDERED TO CLASS "A" CONCRETE (JUNCTION BOXES).



NOT-TO-SCALE



NOT-TO-SCALE



NOT-TO-SCALE



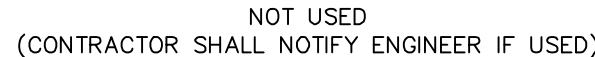
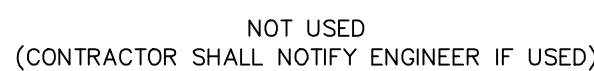
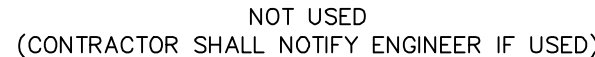
**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

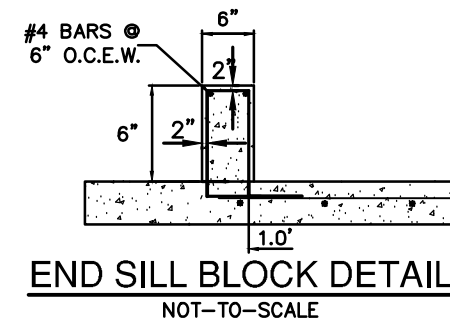
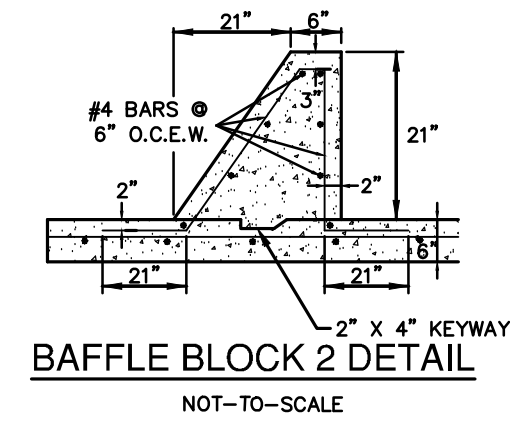
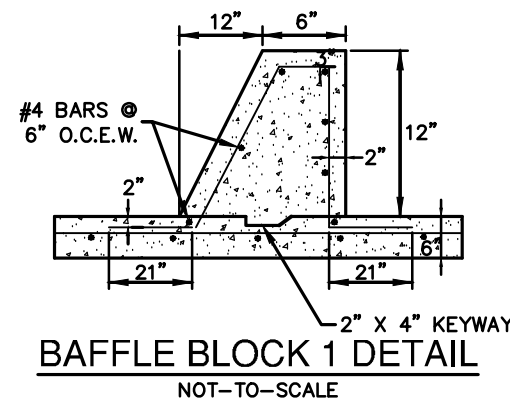
DRAINAGE DETAILS

PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN CV
SHEET **C1.11**

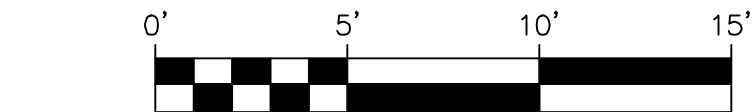
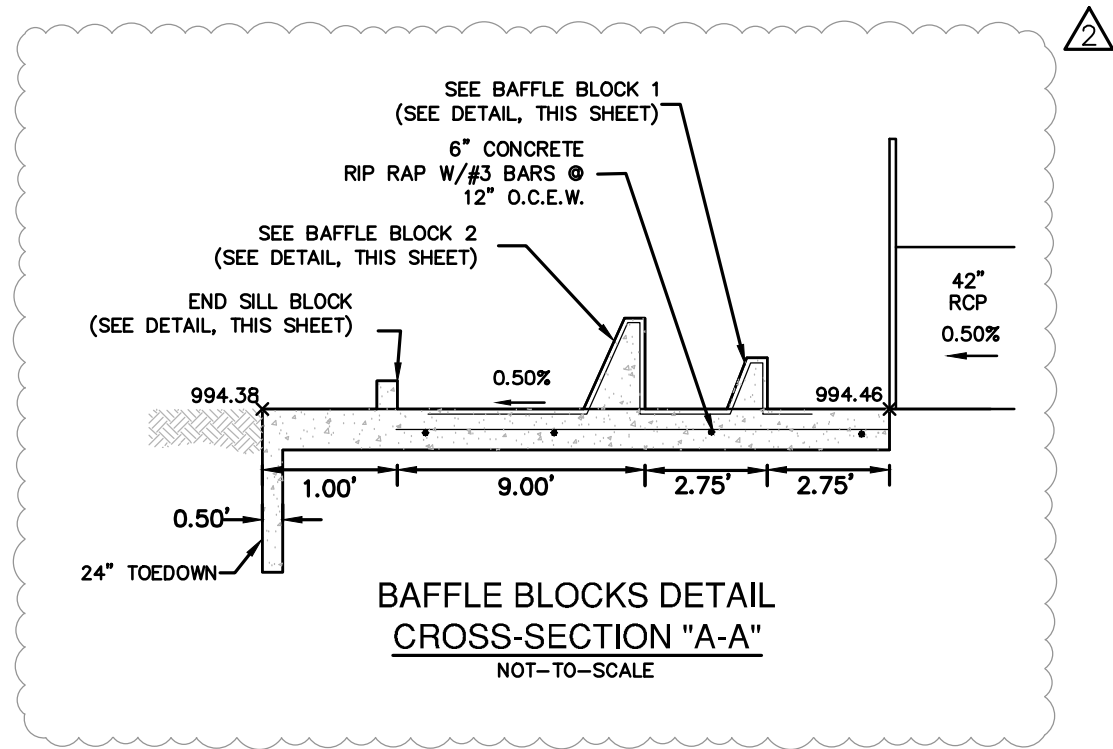
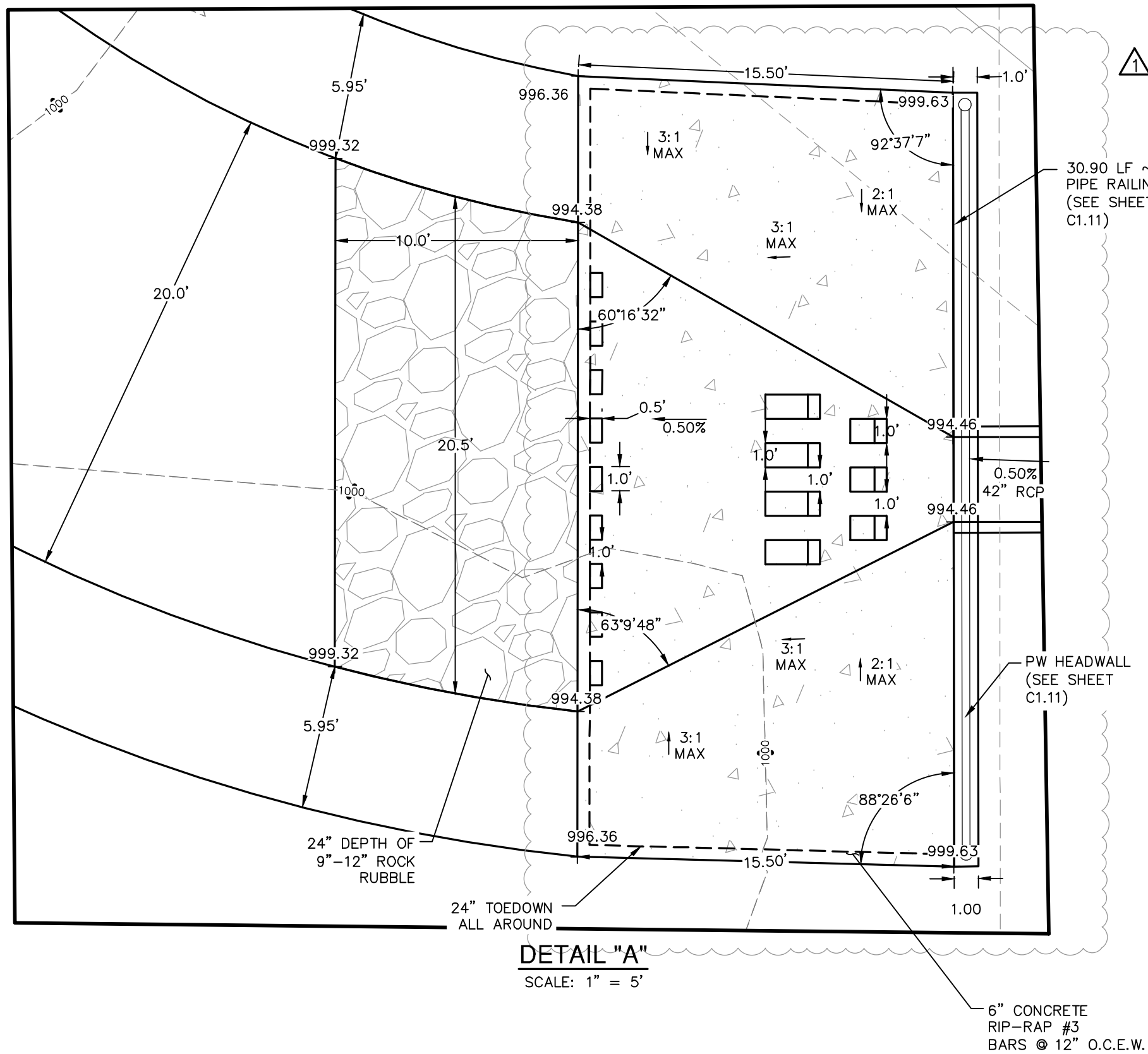


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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED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

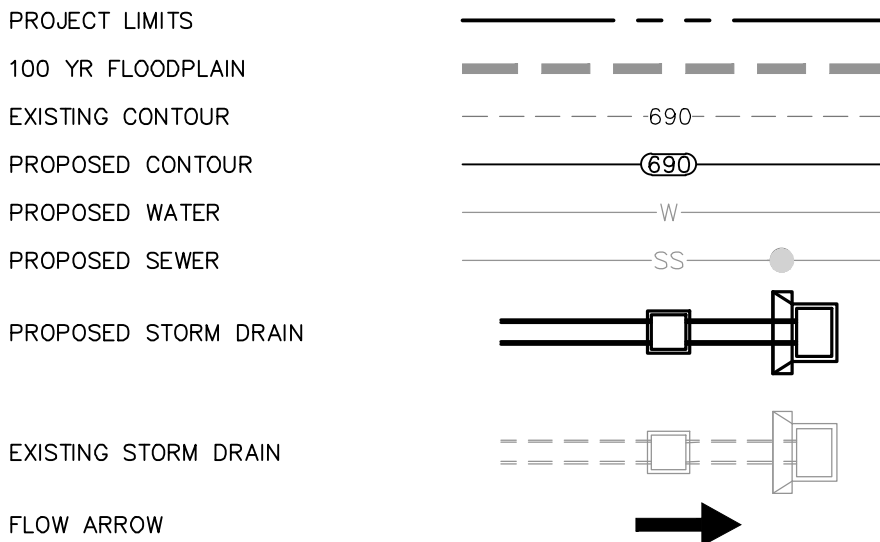


NOTE:
1. PLEASE REFER TO STORM WATER MANAGEMENT PLAN FOR BAFFLE BLOCK CALCULATIONS.

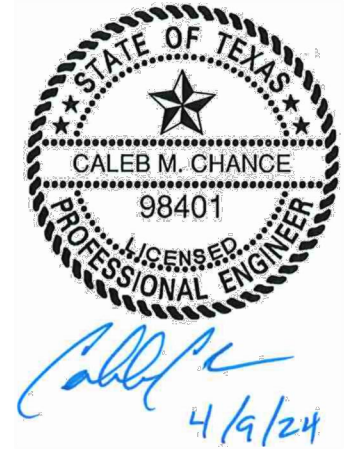


SCALE: 1"= 5'

DRAINAGE LEGEND



NO.	REVISION	DATE
1	REVISED CONCRETE STRUCTURE	1/08/2024
2	REVISED BAFFLE BLOCKS	4/08/2024



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008890

DRAINAGE & GRADING NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION SAFETY PROTECTION:

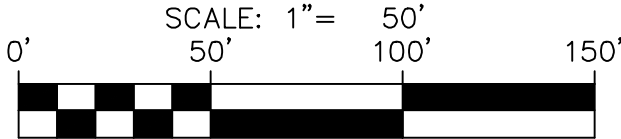
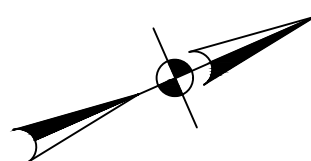
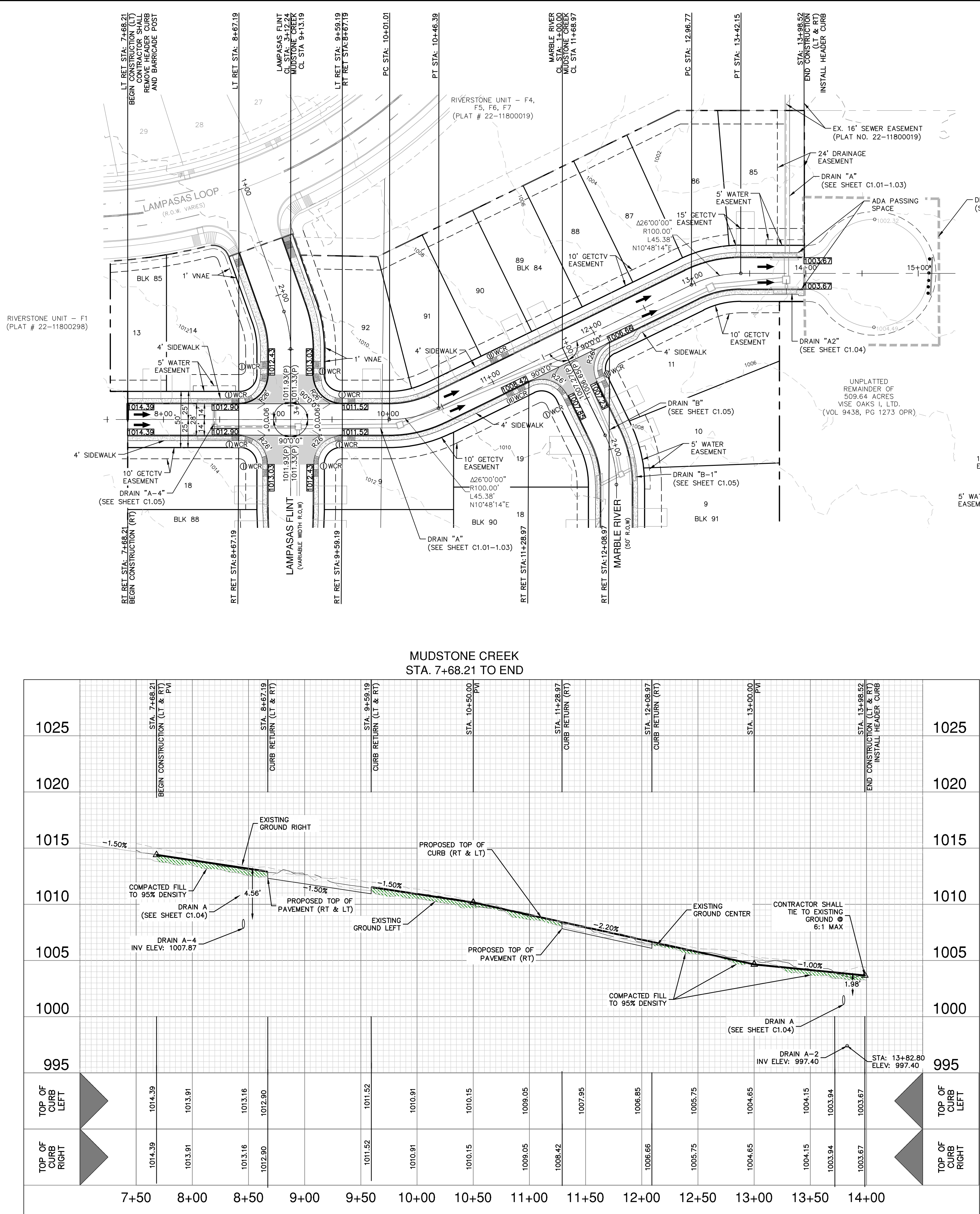
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!

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

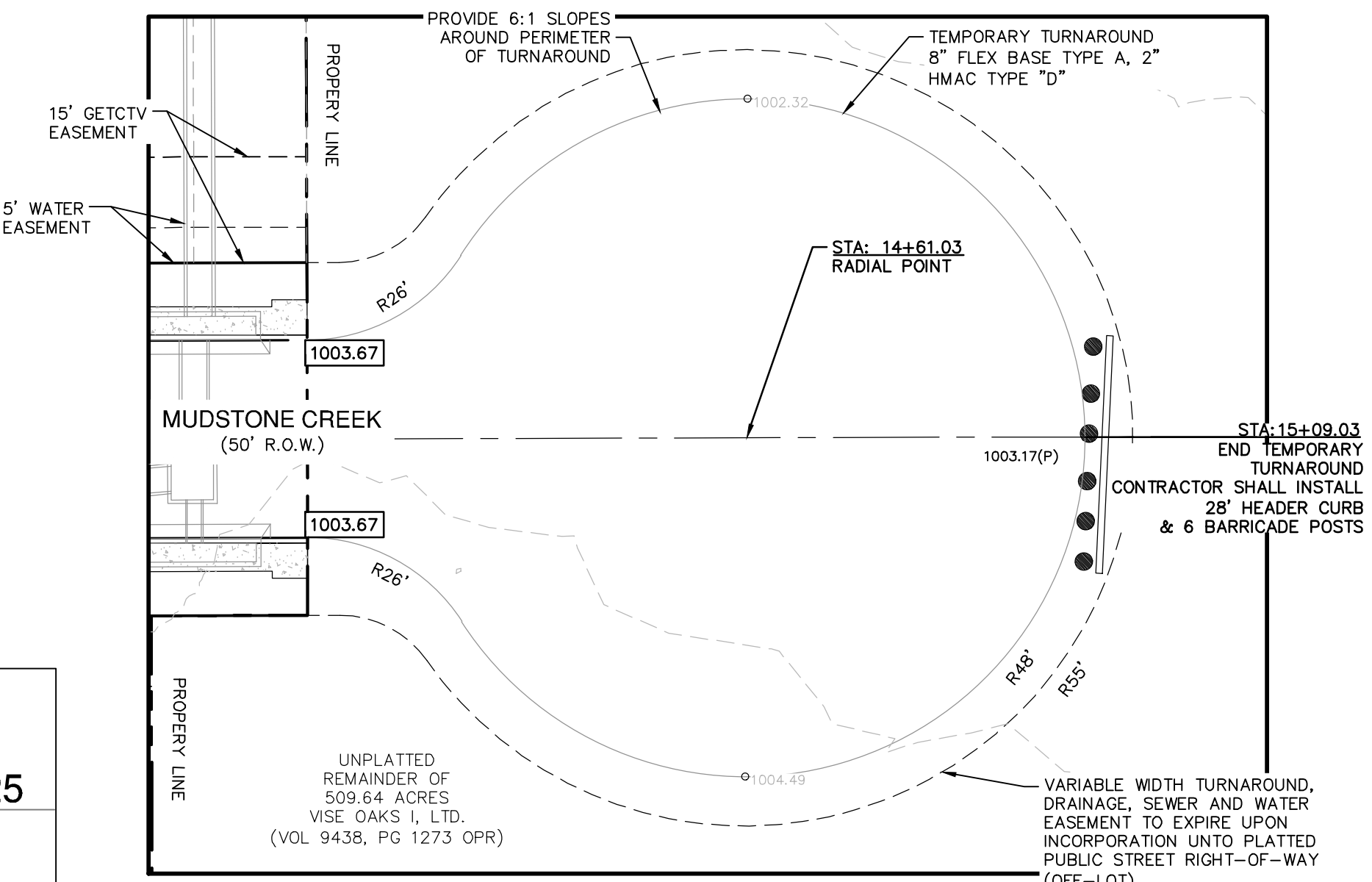
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
DRAINAGE DETAILS

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C1.13



STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	→
EXISTING CONTOUR	970 -
WHEELCHAIR RAMP	⊙
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RET	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	[857.30]
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	
5'x5' ADA PASSING SPACE (HOMEOWNER'S RESPONSIBILITY)	
5'x5' ADA PASSING SPACE (DEVELOPER'S RESPONSIBILITY)	

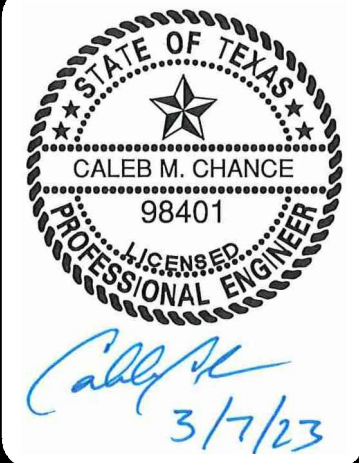


DETAIL "B"
SCALE: 1" = 20'

STREET NOTES:

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

DATE	
NO.	REVISION



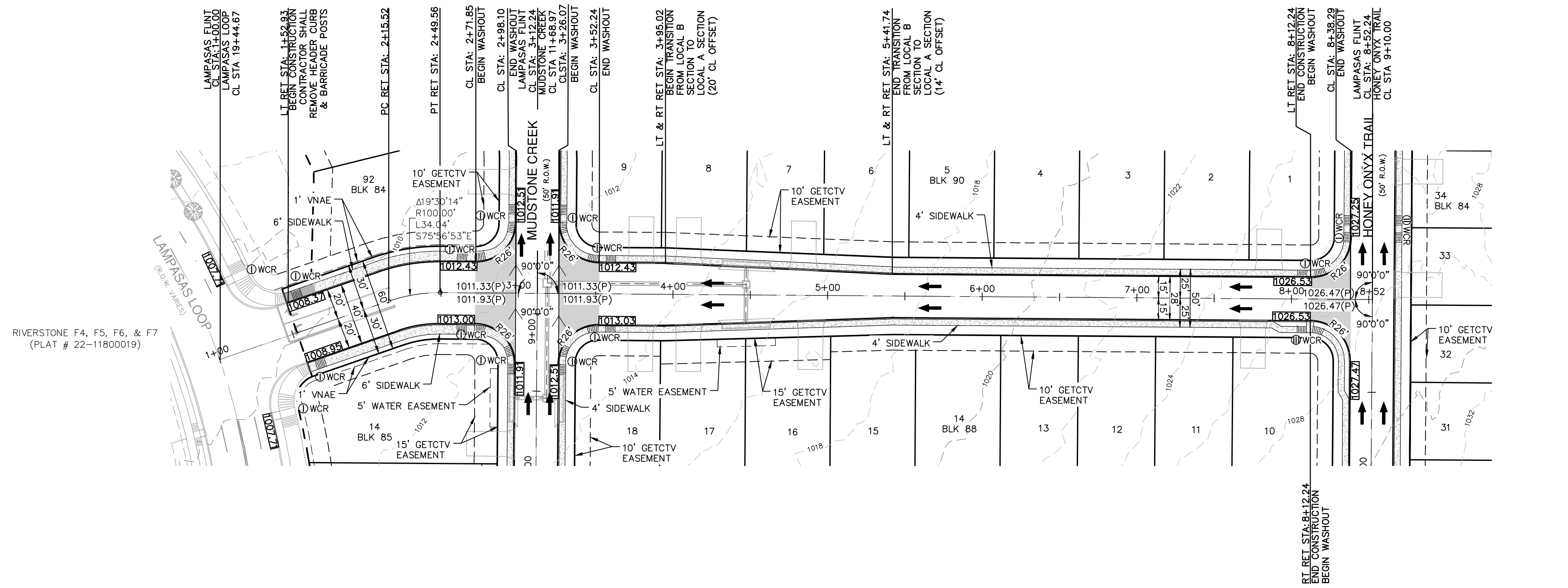
**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
MUDSTONE CREEK PLAN & PROFILE
STA. 7+68.21 TO END

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C2.00

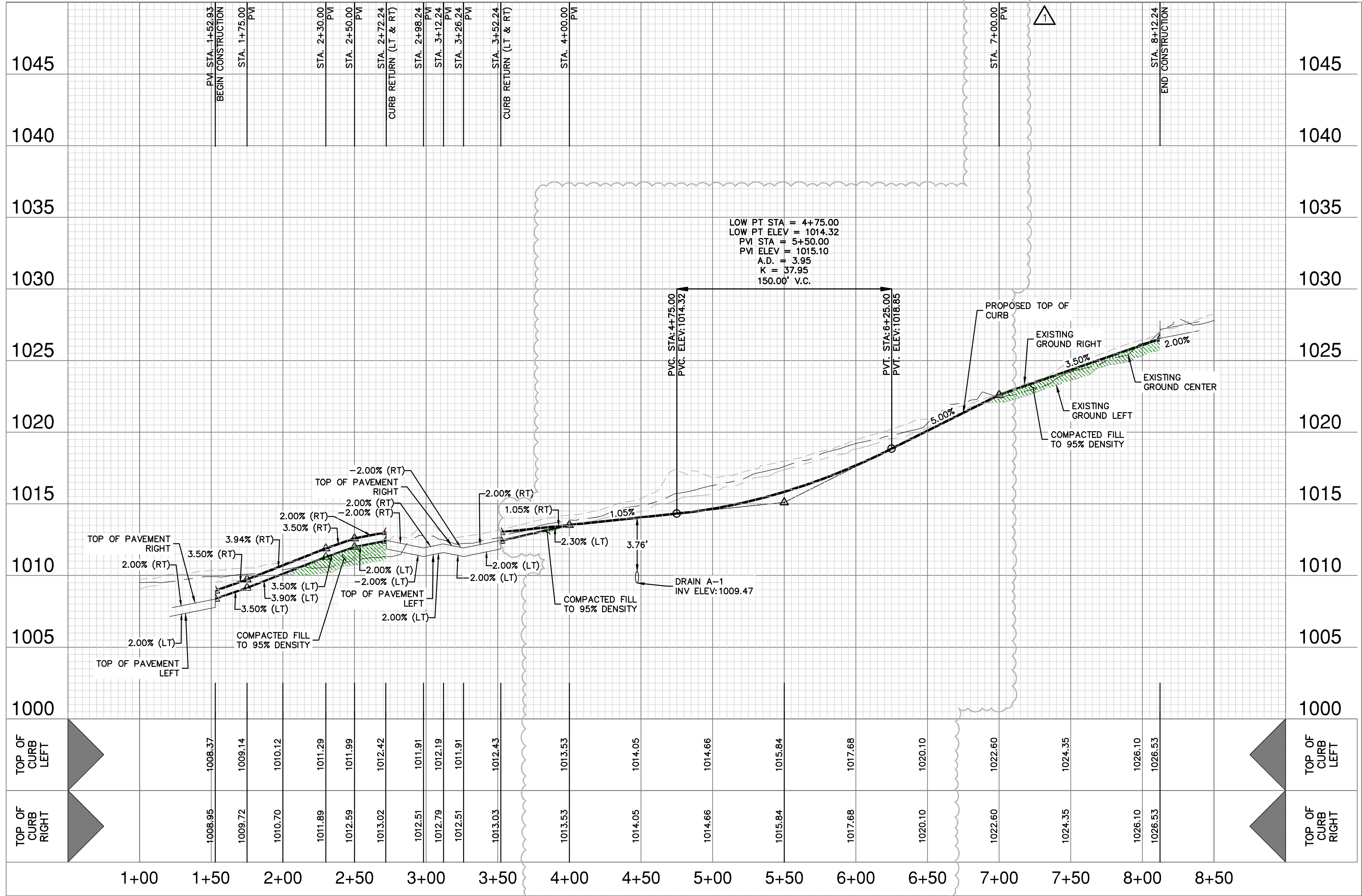
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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED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



LAMPASAS FLINT
STA. 1+52.93 TO END

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



STREET NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
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STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	---
EXISTING CONTOUR	970 -
WHEELCHAIR RAMP	⊙
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	[857.30]
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	
5'x5' ADA PASSING SPACE (HOMEOWNER'S RESPONSIBILITY)	
5'x5' ADA PASSING SPACE (DEVELOPER'S RESPONSIBILITY)	

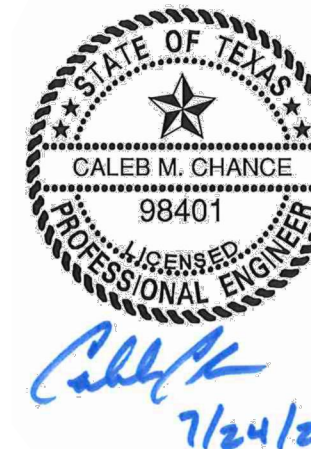
**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

LAMPASAS FLINT PLAN & PROFILE
STA. 1+52.93 TO END

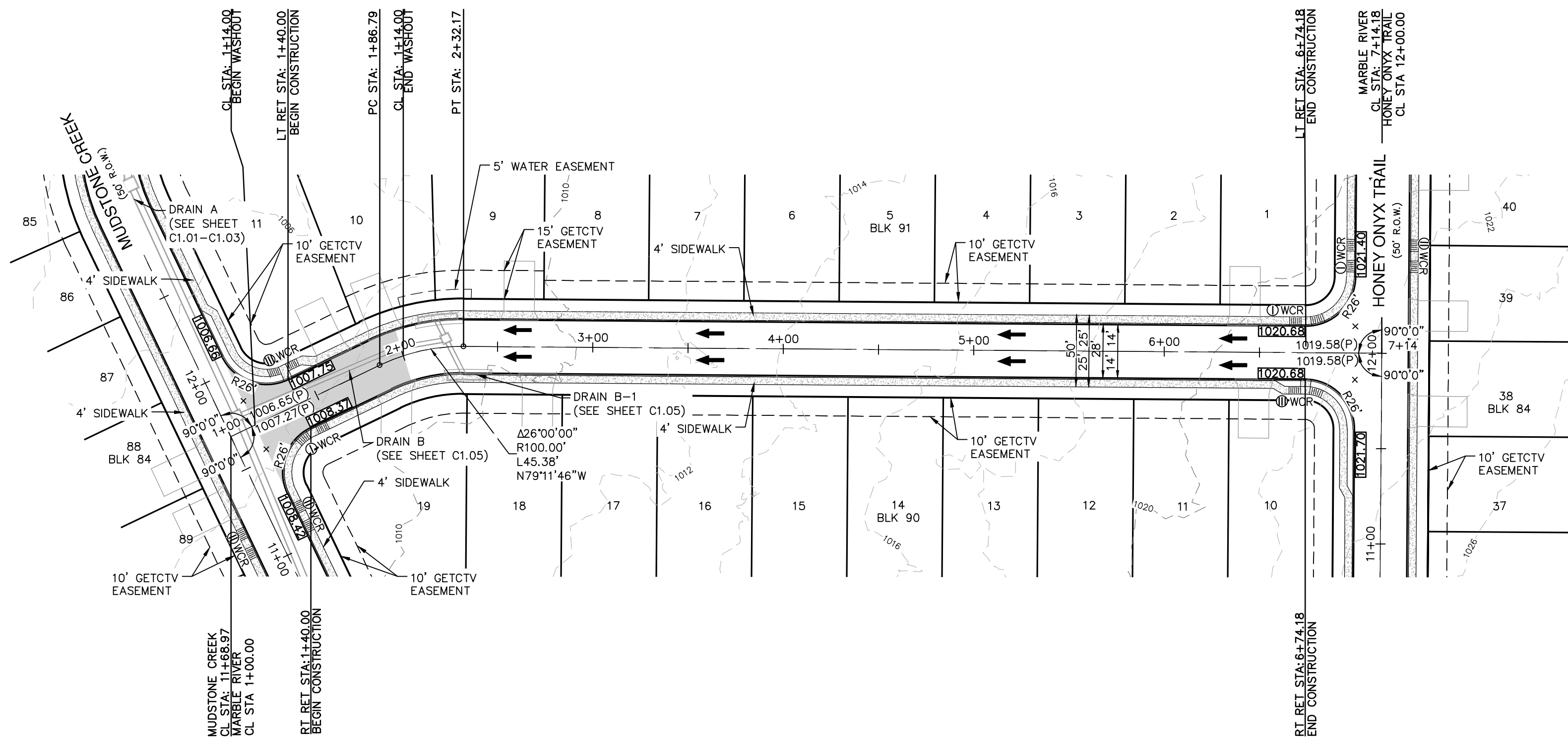
PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN EG
SHEET C2.01

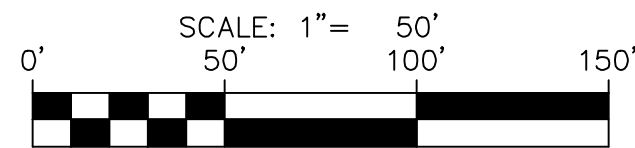
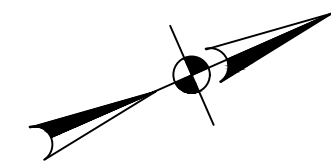


NO.	REVISION	DATE
1	REVISED STREET PROFILE	7/24/2023

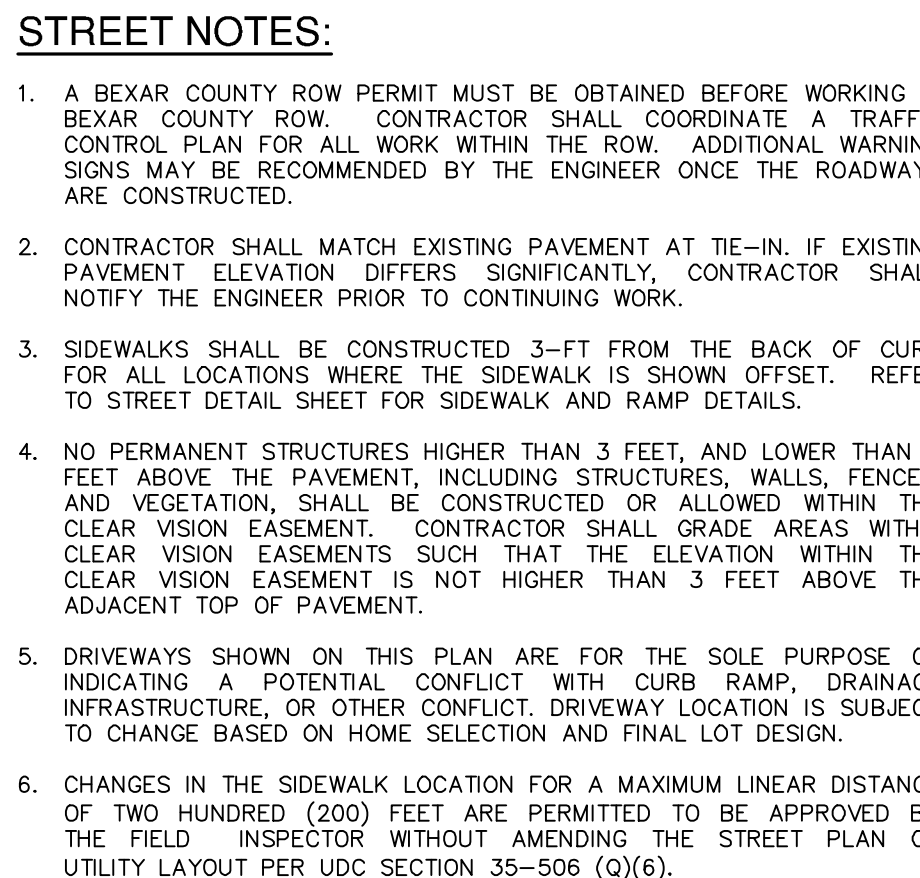
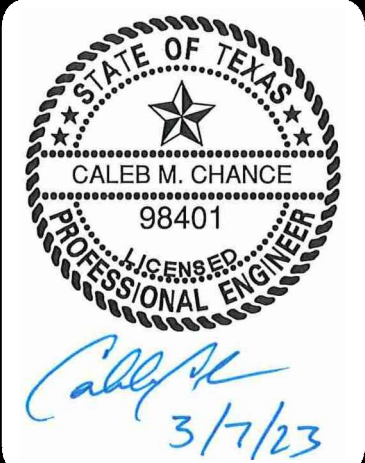
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PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	
WHEELCHAIR RAMP	
CENTERLINE	
RADIUS POINT	
POINT OF CURVATURE	
POINT OF TANGENCY	
RETURN	
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	
PAVEMENT ELEVATION	
WASHOUT CROWN SECTION	
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	
DRIVEWAY	
5'x5' ADA PASSING SPACE (HOMEOWNER'S RESPONSIBILITY)	
5'x5' ADA PASSING SPACE (DEVELOPER'S RESPONSIBILITY)	

[illegible]

**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.0000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
HONEY ONYX PLAN & PROFILE
STA. 7+56.67 TO 13+56.67

PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN CV
SHEET C2.03

PAVEMENT SECTION DETAIL							
STREET NAME	STATION	TYPE "D" HMAC	CRUSHED LIMESTONE BASE	SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL NUMBER
HONEY ON'YX TRAIL	7+56.67 TO 13+56.67	2"	10"	*	NO	4	2.28
MARBLE RIVER	1+40.00 TO 6+74.18	2"	10"	*	NO	4	2.28
LAMPASAS FLINT	1+52.93 TO 5+41.74	3"	19"	*	NO	4	3.98
LAMPASAS FLINT	5+41.74 TO END	2"	10"	*	NO	4	2.28
MUDSTONE CREEK	7+68.21 TO END	2"	10"	*	NO	4	2.28

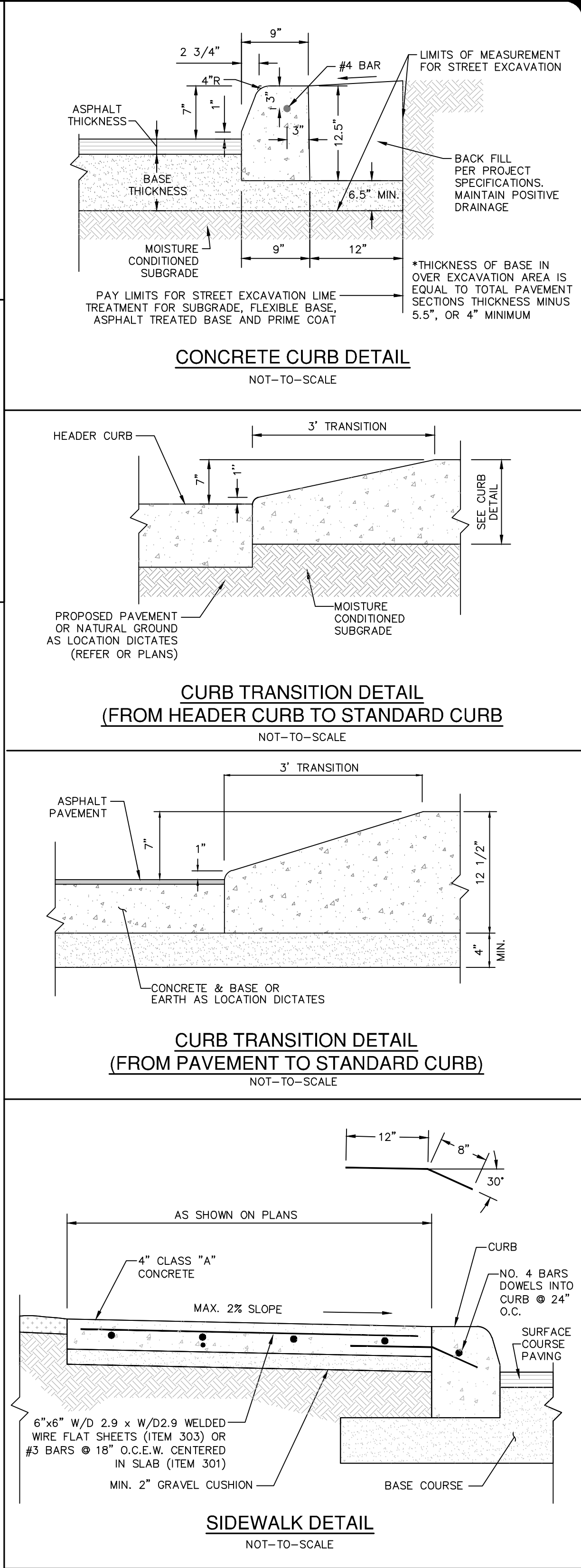
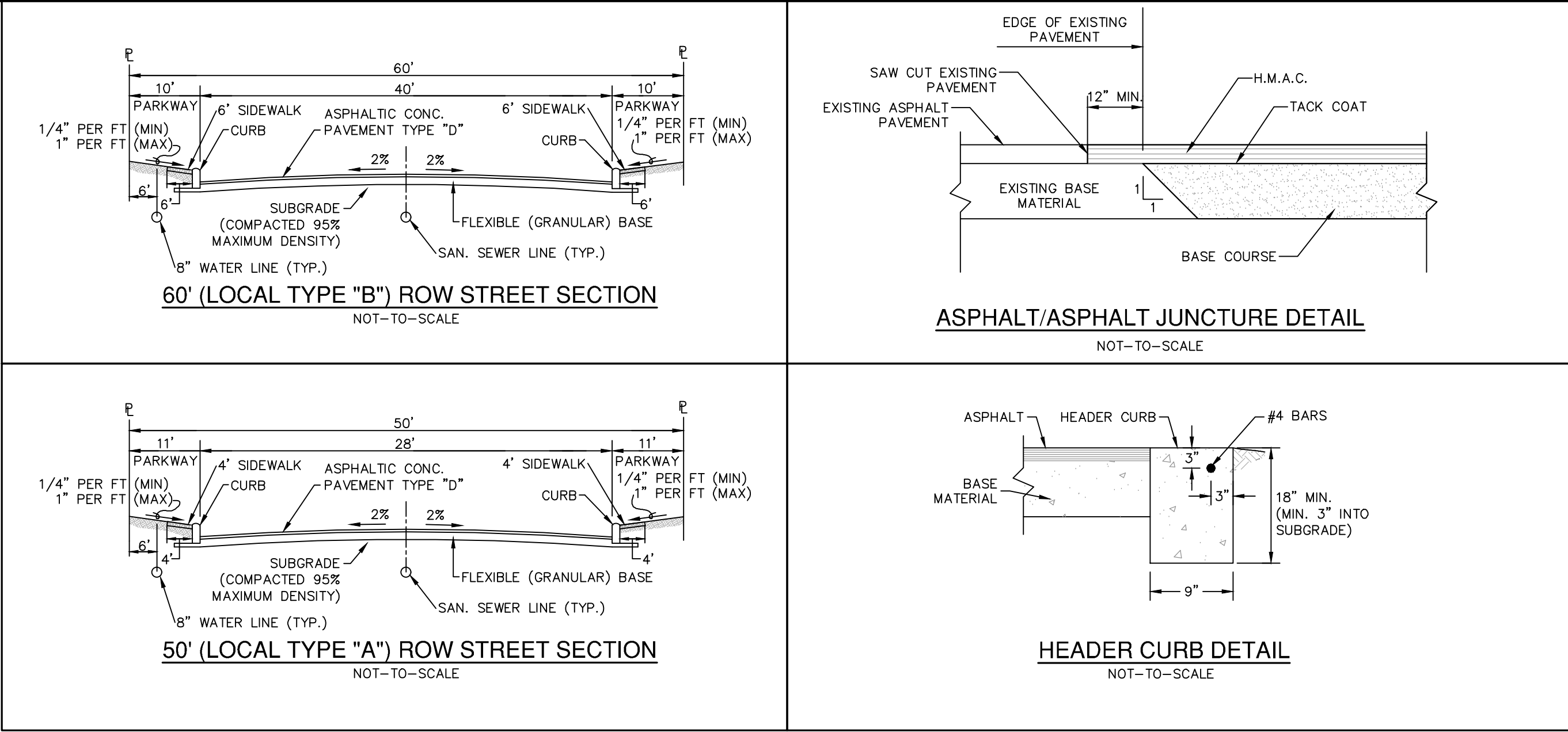
SUBGRADE NOTES (*):

- CUT AND FILL DATA ARE NOT AVAILABLE AT THIS TIME
- BASED ON THE REVIEW OF GEOLOGIC AND SOILS MAP, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX VALUE TO BE LESS THAN OR EQUAL TO 20.
- IF THE SUBGRADE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20, AS PER CITY OF SAN ANTONIO OR BEXAR COUNTY REQUIREMENTS, SUBGRADE STABILIZATION IS NOT NEEDED.
- IF FILL IS USED TO RAISE THE GRADE, FILL MATERIAL UNDERNEATH THE PAVEMENT SHOULD BE APPROVED FILL MATERIAL, FREE OF DELETERIOUS MATERIAL AND WITH A MINIMUM CBR VALUE OF 4.0 AND A MAXIMUM PLASTICITY INDEX VALUE OF 20. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES
- HOWEVER, IF THE FINAL STREET SUBGRADE PLASTICITY INDEX VALUES ARE GREATER THAN 20, THEN ONE OF THE FOLLOWING OPTIONS MAY BE FOLLOWED:
 - REMOVE THE CLAYS SOILS (WITH PLASTICITY INDEX VALUES GREATER THAN 20) AND REPLACE WITH FILL MATERIAL WITH PLASTICITY INDEX VALUES LESS THAN OR EQUAL TO 20. IF SUBGRADE STABILIZATION IS REQUIRED, THE FOLLOWING SPECIFICATIONS MUST BE MET. THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER IN THE FIELD FOR SUBGRADE TREATMENT.
 - TREAT THE SUBGRADE:
 - THE SUBGRADE SHOULD BE TREATED TO A DEPTH OF 6 INCHES USING 6 ½ PERCENT LIME CONTENT
 - THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO TREATMENT. IF THE SOIL SULFATE CONTENT IS OVER 3000 PPM, AN ALTERNATE PROCEDURE WILL BE REQUIRED.
 - THE SUBGRADE MAY ALSO BE TREATED USING CEMENT.
 - APPLICATION RATES SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION.
 - LIME APPLICATION RATE OF 27 LBS PER SQ YARD FOR 6- INCH DEPTH OF TREATMENT MAY BE USED FOR PLANNING AND BUDGETING PURPOSES. THE LIME/CEMENT APPLICATION RATES SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION.

GENERAL NOTES:

- CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT NO. **S191159-P-R1** PREPARED BY **INTEC** DATED **5/20/21**
- CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
- GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
- THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
- IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
- WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2- FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.

NOTE:
PAVEMENT DESIGN IS IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT PREPARED FOR RIVERSTONE SUBDIVISION BY INTEC. PROJECT NUMBER: **S191159-P-R1** DATED: **5/20/21**



DATE

NO. REVISION

CALEB M. CHANCE
98401
PROFESSIONAL ENGINEER

Caleb M. Chance
2/7/23

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

STREET DETAILS

PLAT NO. 22-11800371

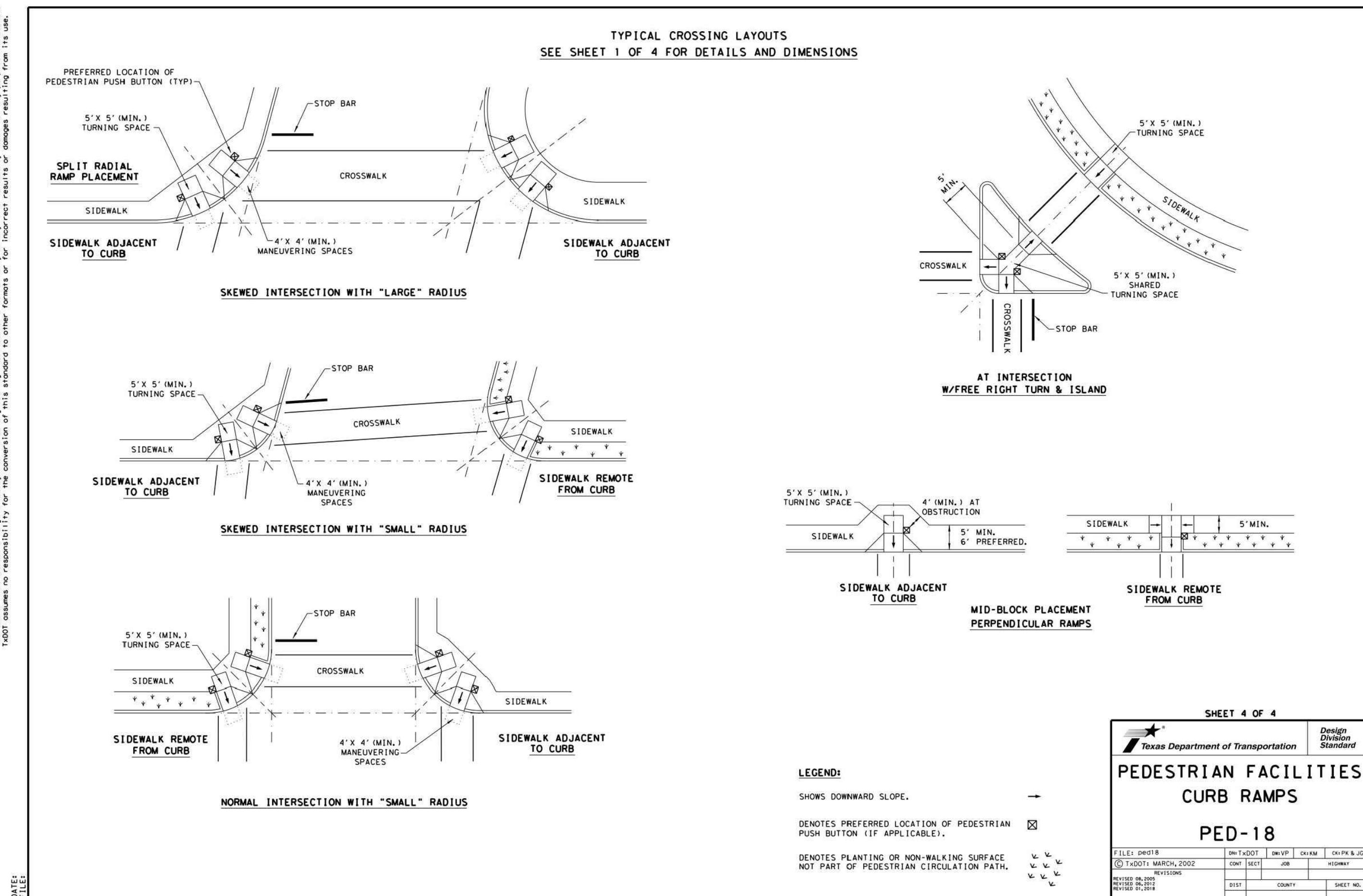
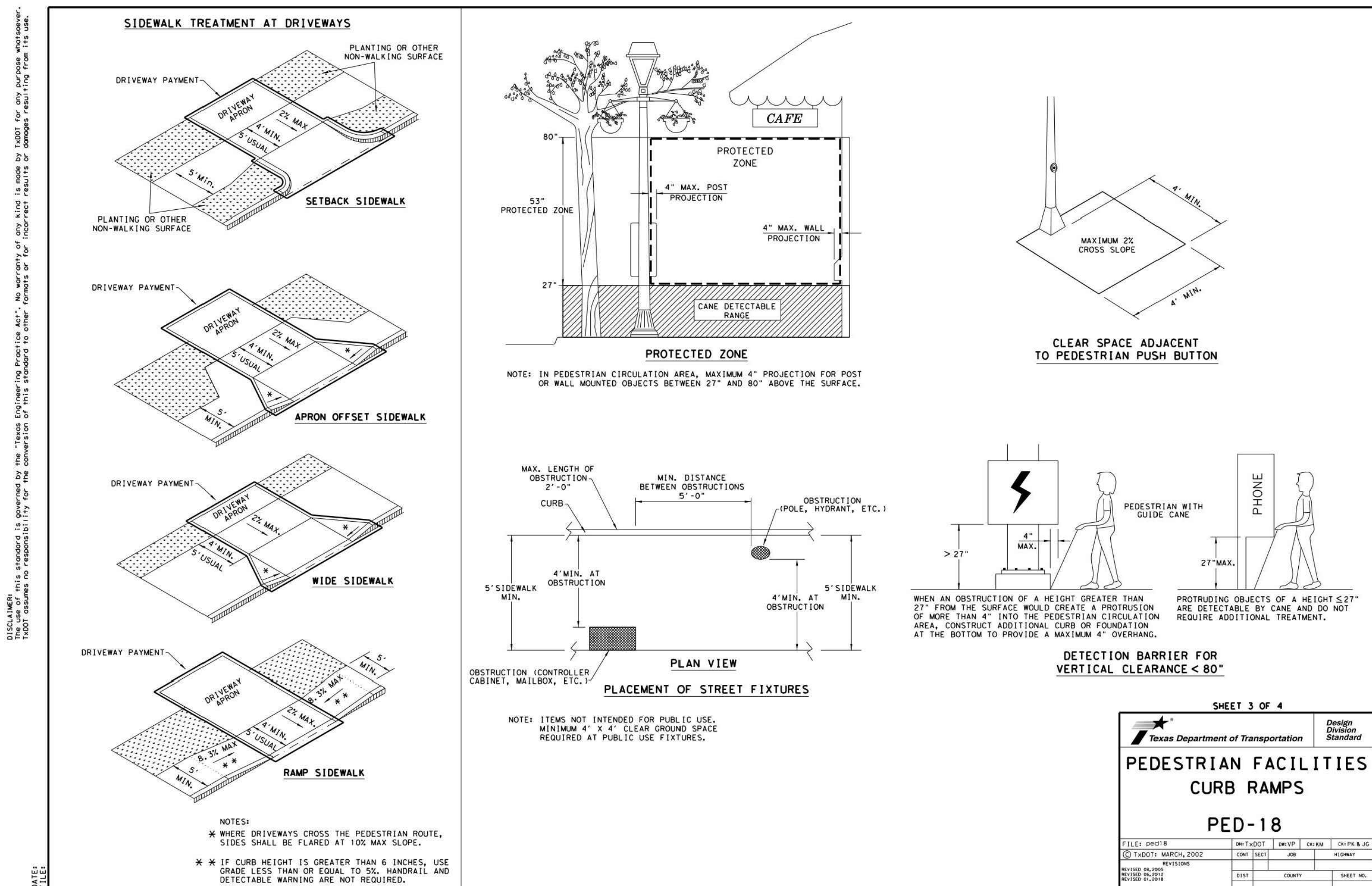
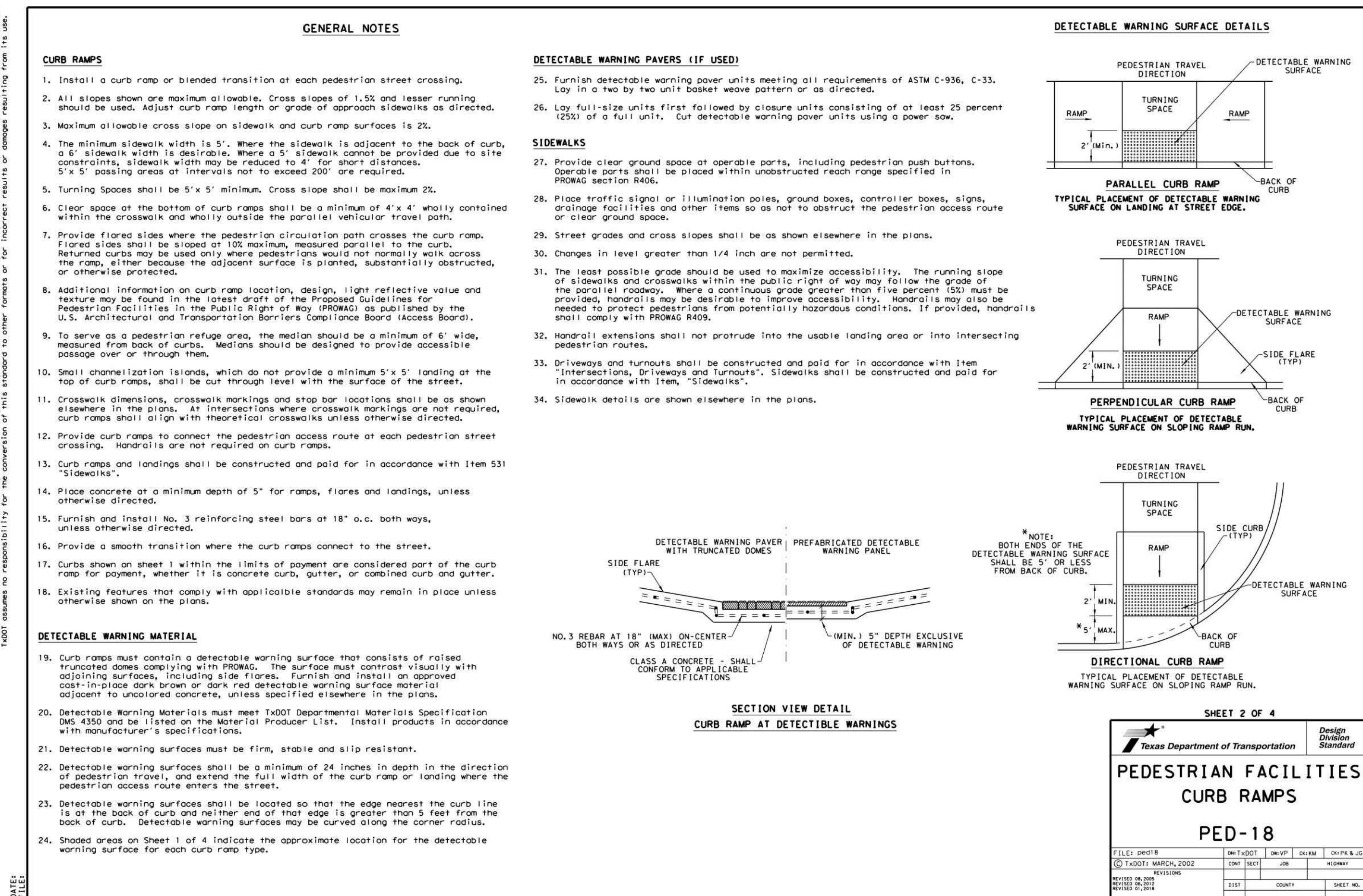
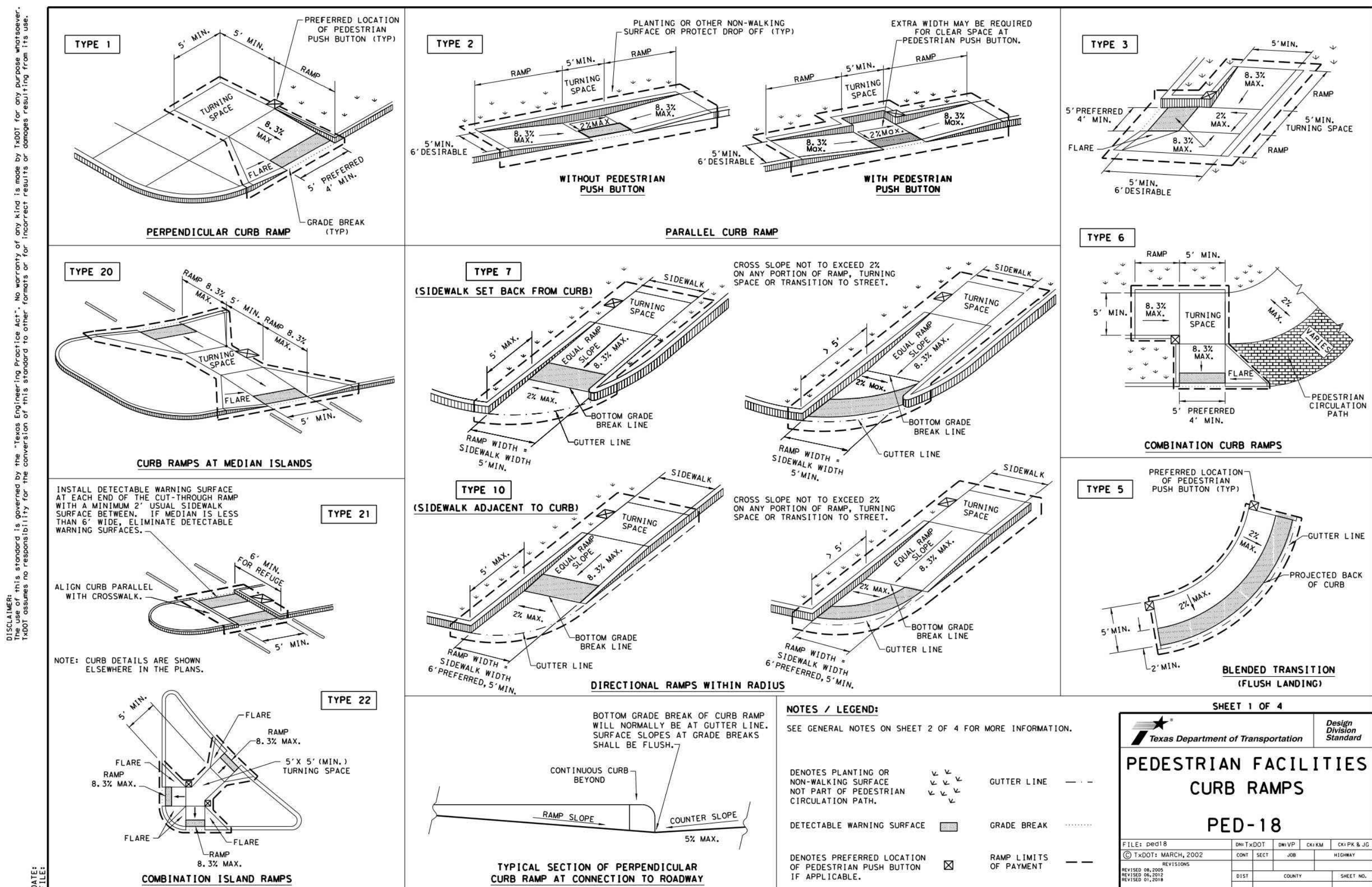
JOB NO. 11680-53

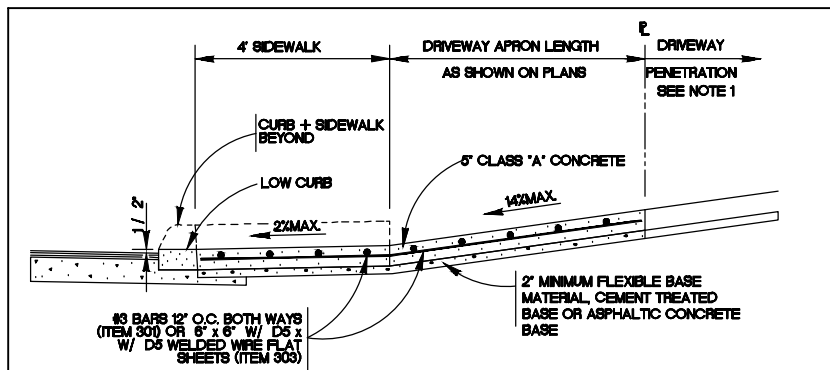
DATE JUNE 2022

DESIGNER CV

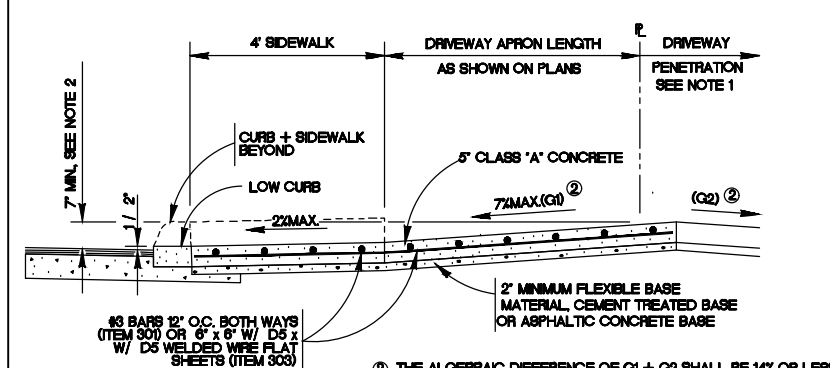
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SHEET C2.10

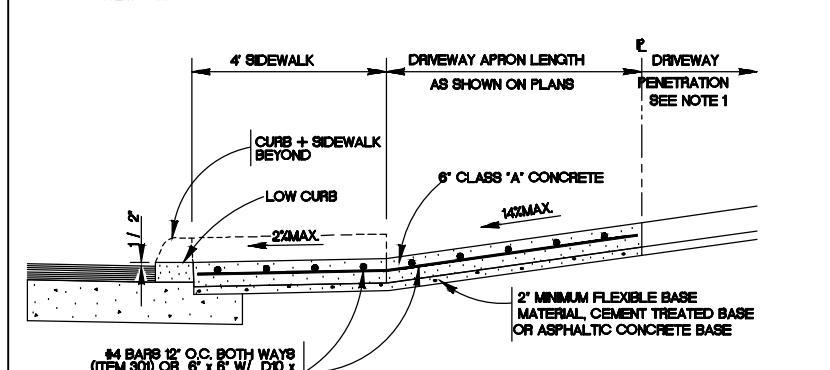




TYPICAL RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 5001

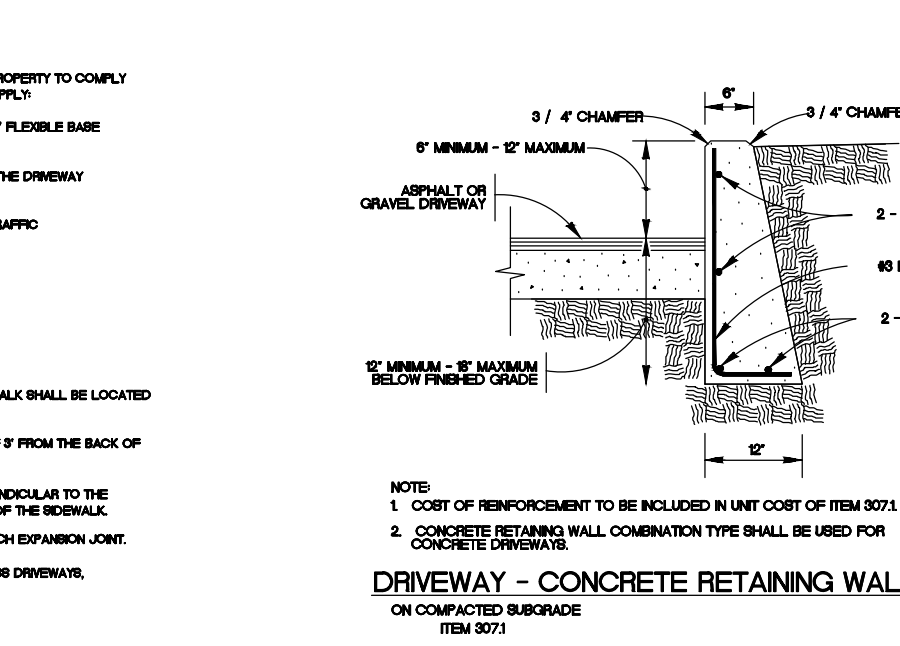


TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE PROPERTY IS LOWER THAN STREET + SIDEWALK IS ABUTTING CURB
ITEM 5001

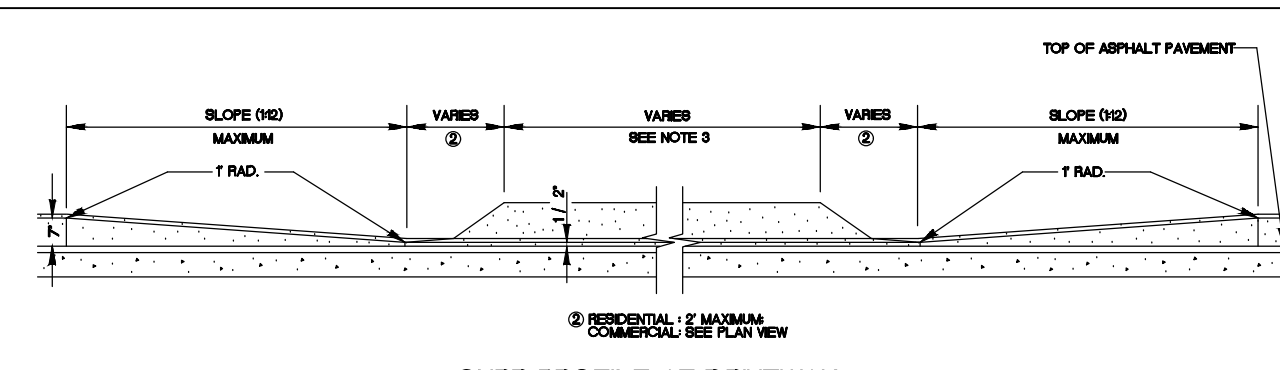


TYPICAL COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB
ITEM 5001

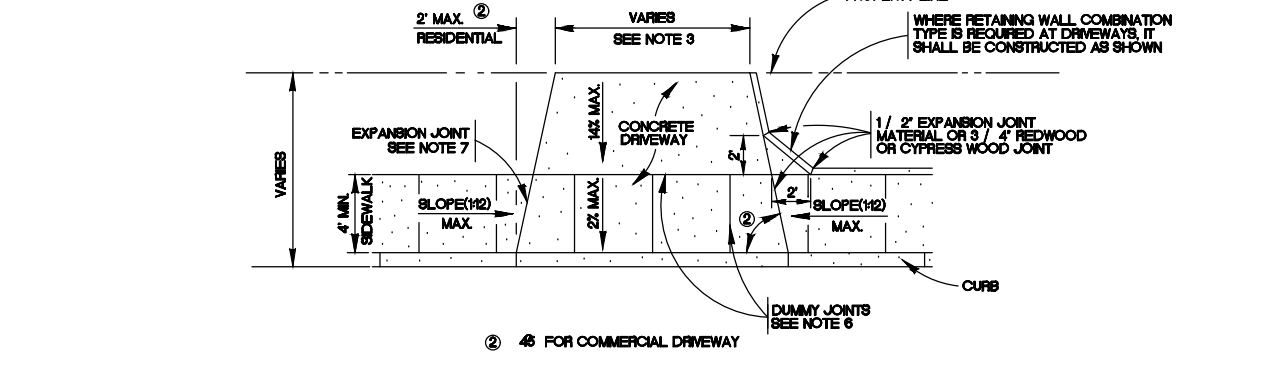
- CONCRETE DRIVEWAY NOTES
1. DRIVEWAY PENETRATION REFERS TO A JOINT OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THE POSITION OF THE DRIVEWAY SHALL BE SHOWN ON PLANS.
 2. MINIMUM DRIVEWAY SLOPE SHALL BE 1% MINIMUM.
 3. DRIVEWAY SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE AND SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE.
 4. DRIVEWAY SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE AND SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE.
 5. DRIVEWAY SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE AND SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE.
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 10. DRIVEWAY SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE AND SHALL BE CONSTRUCTED WITHIN THE PROPERTY LINE.



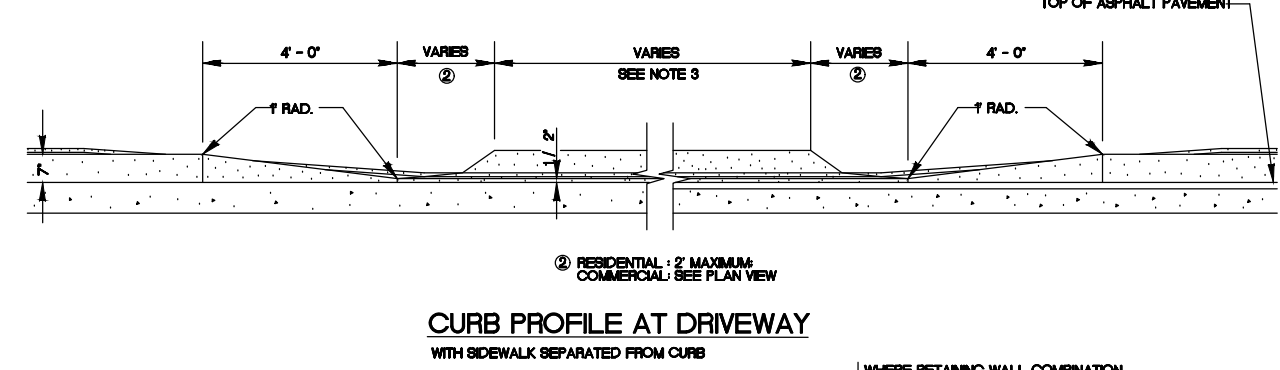
DRIVEWAY - CONCRETE RETAINING WALL
ITEM 5001



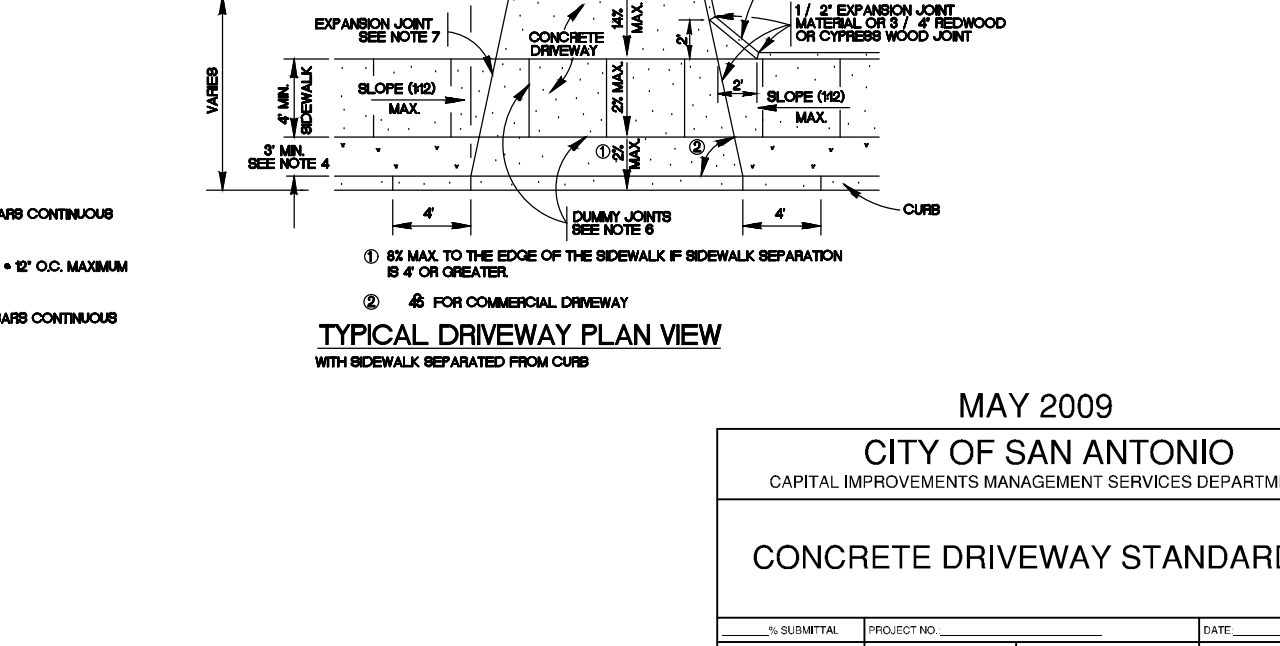
CURB PROFILE AT DRIVEWAY
WITH SIDEWALK ABUTTING CURB



TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK ABUTTING CURB



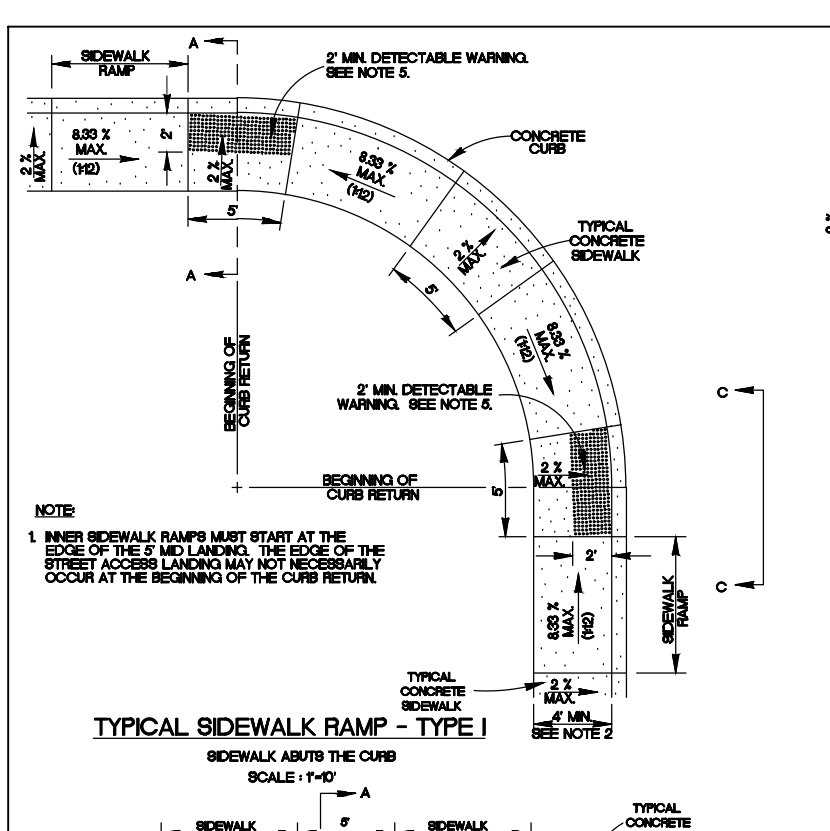
CURB PROFILE AT DRIVEWAY
WITH SIDEWALK SEPARATED FROM CURB



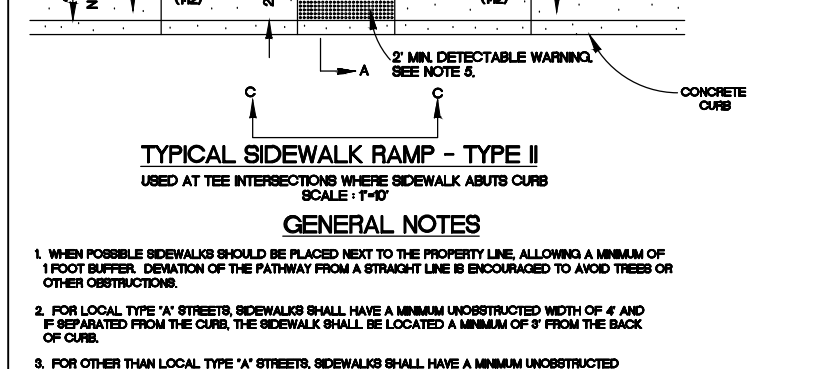
TYPICAL DRIVEWAY PLAN VIEW
WITH SIDEWALK SEPARATED FROM CURB

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
CONCRETE DRIVEWAY STANDARDS

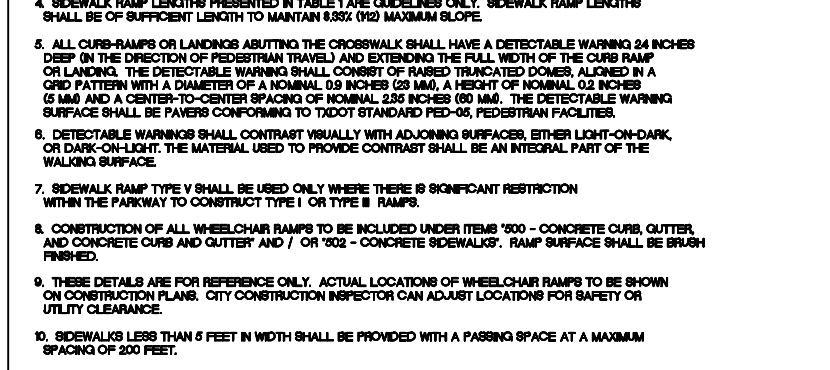
PROJECT NO. _____ DATE _____
DRAWN BY: J. L. GONZALEZ CHECKED BY: J. L. GONZALEZ P.E. SHEET NO. _____ OF _____



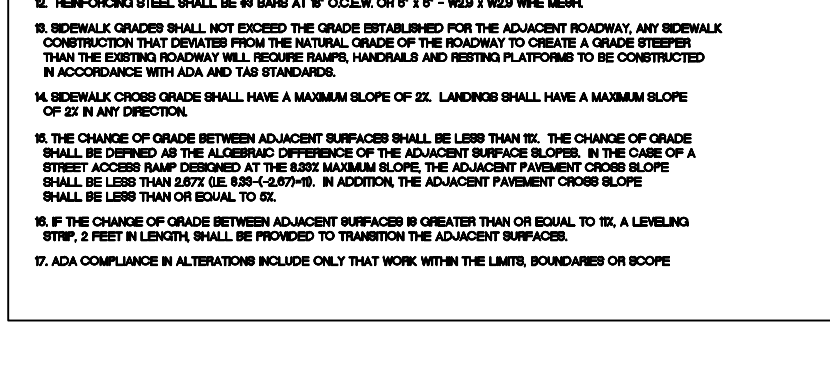
TYPICAL SIDEWALK RAMP - TYPE I
SCALE: 1"=4'



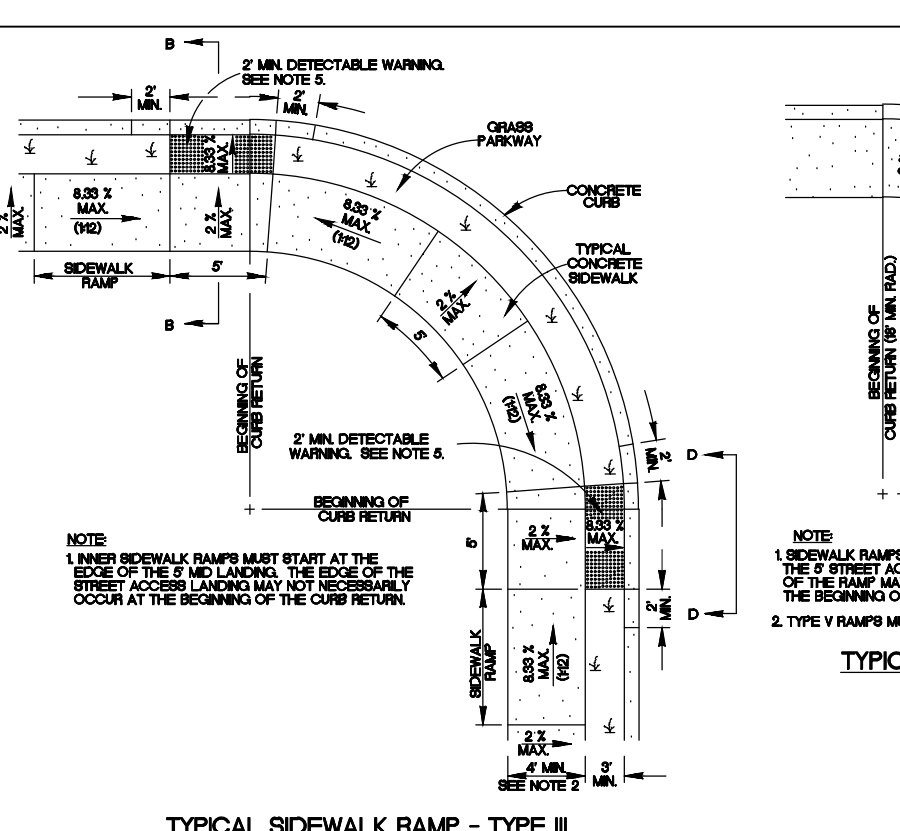
TYPICAL SIDEWALK RAMP - TYPE II
SCALE: 1"=4'



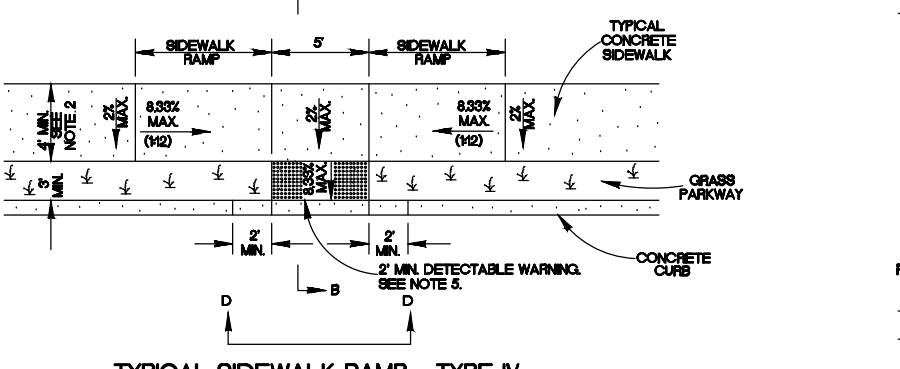
TYPICAL SIDEWALK RAMP - TYPE III
SCALE: 1"=4'



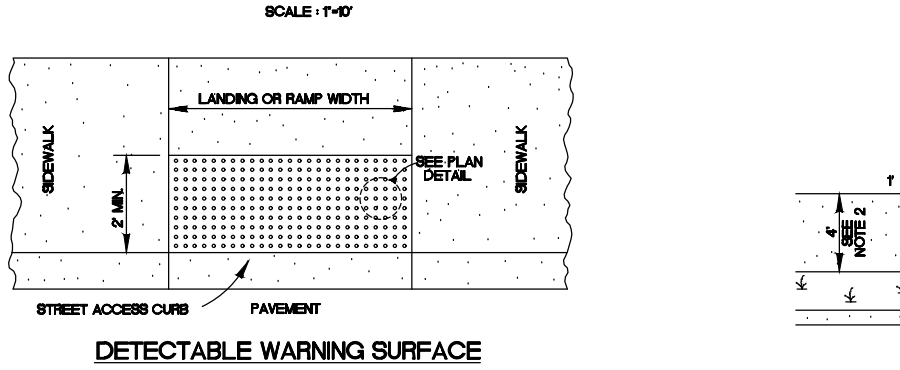
TYPICAL SIDEWALK RAMP - TYPE IV
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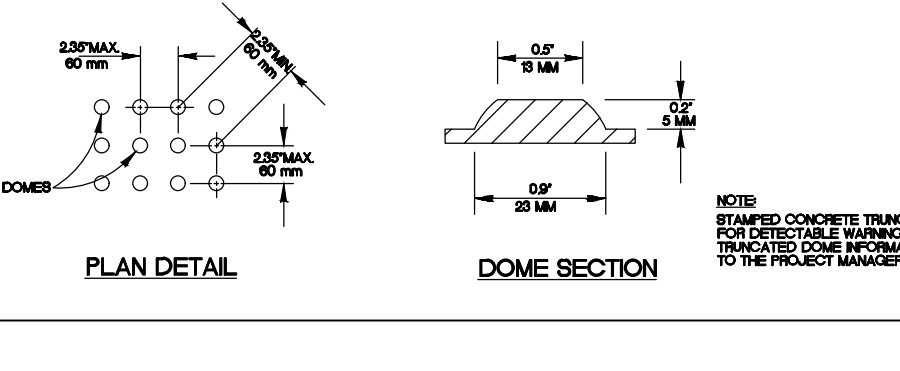
TYPICAL SIDEWALK RAMP - TYPE V
SCALE: 1"=4'



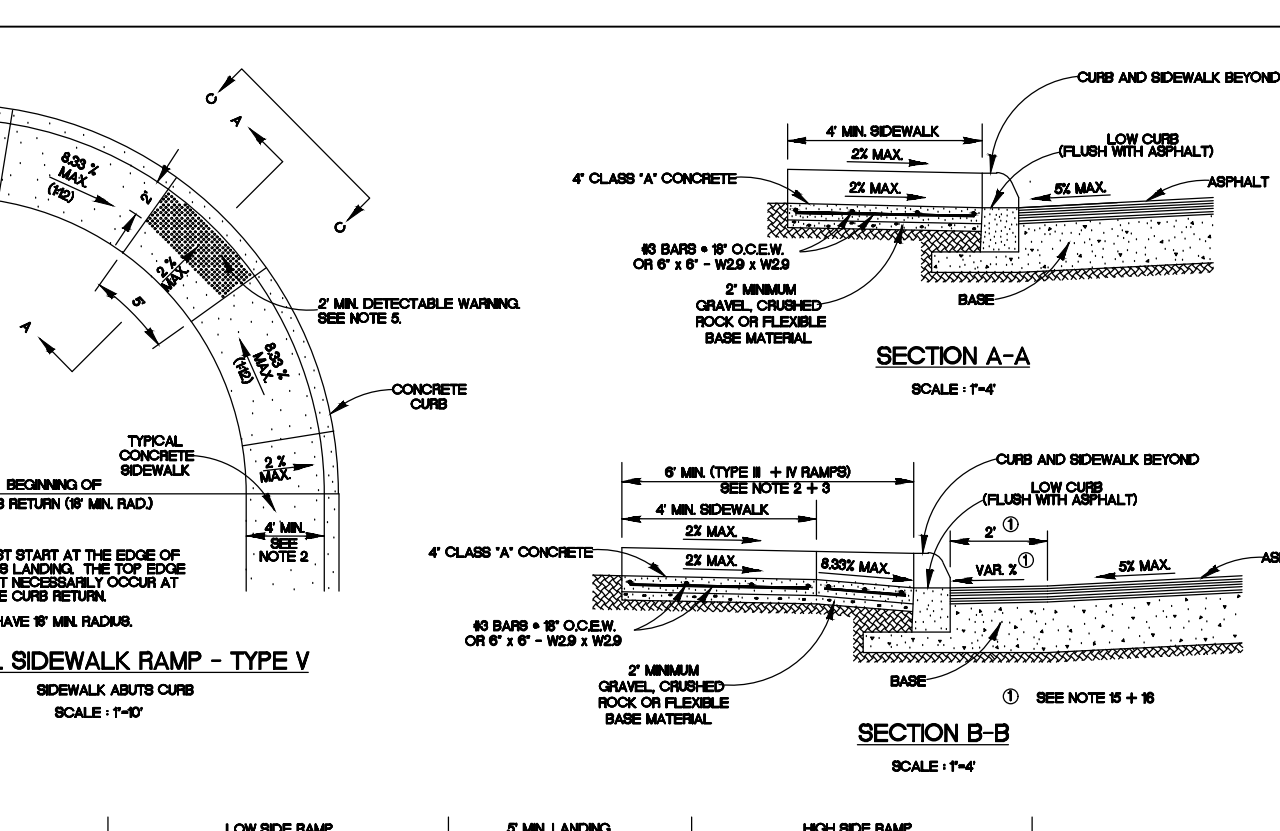
TYPICAL SIDEWALK RAMP - TYPE VI
SCALE: 1"=4'



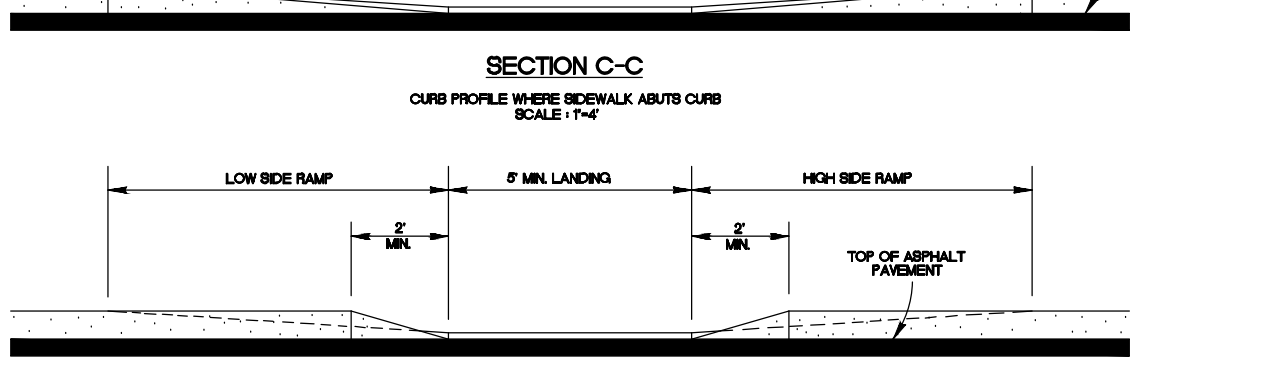
TYPICAL SIDEWALK RAMP - TYPE VII
SCALE: 1"=4'



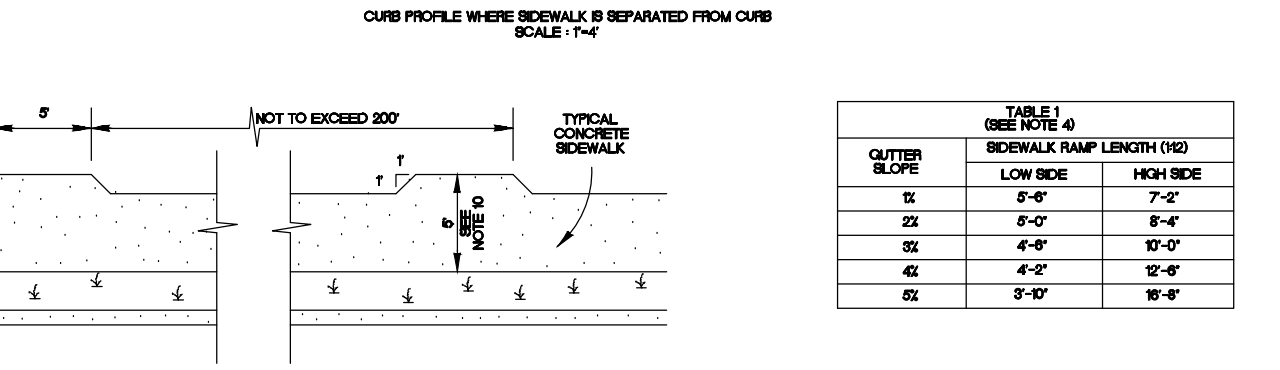
TYPICAL SIDEWALK RAMP - TYPE VIII
SCALE: 1"=4'



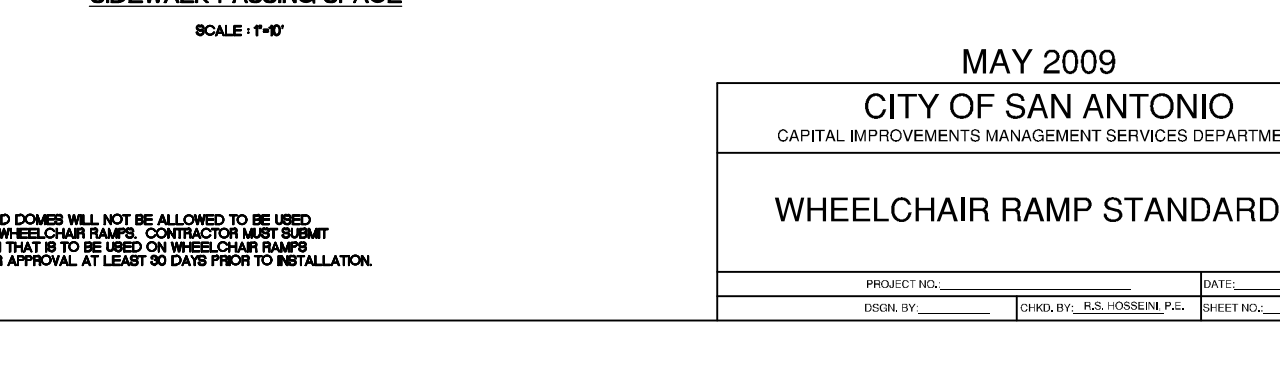
TYPICAL SIDEWALK RAMP - TYPE IX
SCALE: 1"=4'



TYPICAL SIDEWALK RAMP - TYPE X
SCALE: 1"=4'



TYPICAL SIDEWALK RAMP - TYPE XI
SCALE: 1"=4'



TYPICAL SIDEWALK RAMP - TYPE XII
SCALE: 1"=4'

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS

PROJECT NO. _____ DATE _____
DRAWN BY: J. L. GONZALEZ CHECKED BY: J. L. GONZALEZ P.E. SHEET NO. _____ OF _____

DATE

NO. REVISION

STATE OF TEXAS
CALEB M. CHANCE
98401
PROFESSIONAL ENGINEER

Cal M. Chance
6/24/22

PAPE-DAWSON
ENGINEERS

SAN ANTONIO • AUSTIN • HOUSTON • FORT WORTH • DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

STREET DETAILS

PLAT NO. 22-11800371

JOB NO. 11680-53

DATE JUNE 2022

DRAWN BY CV

CHECKED BY BL

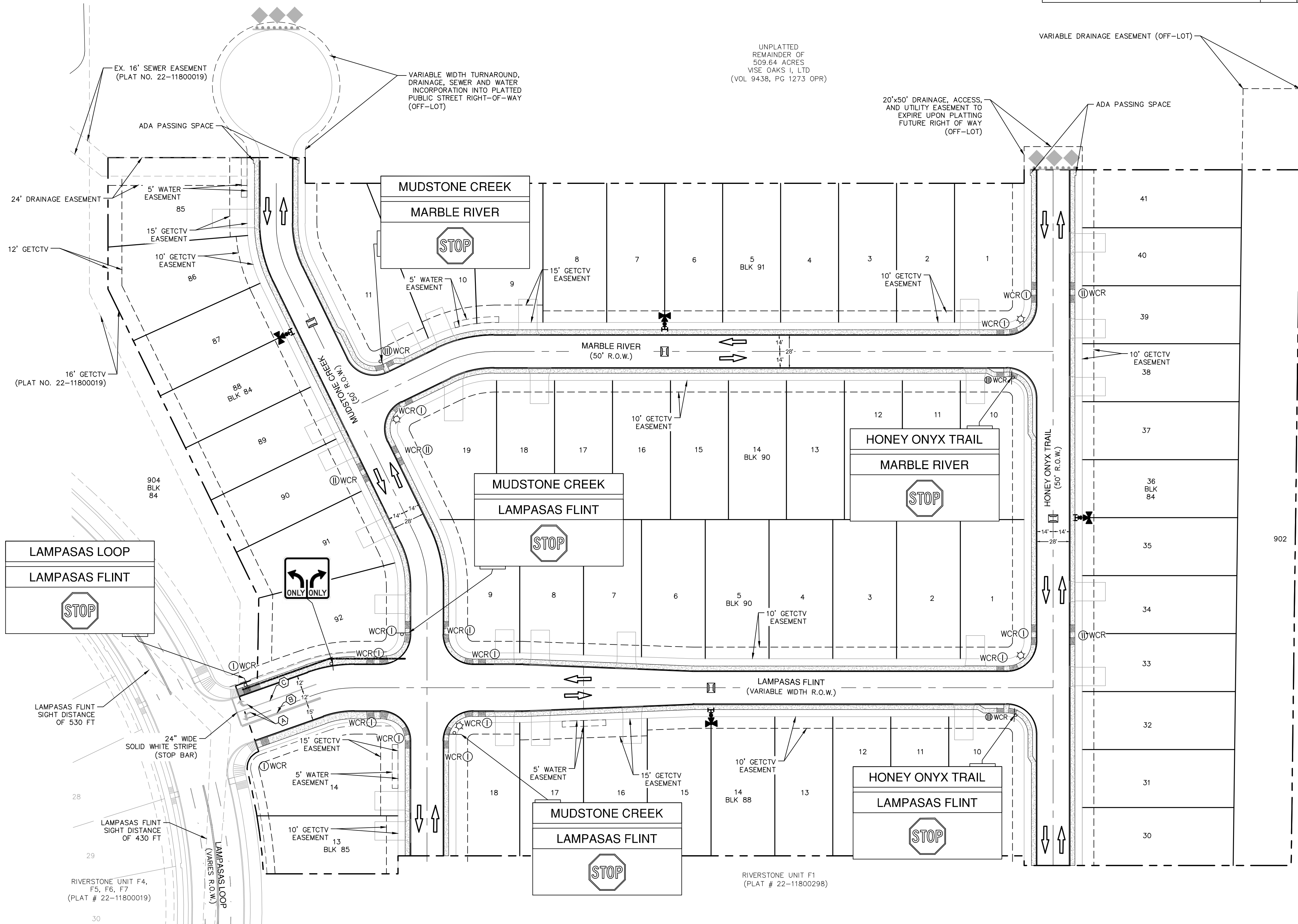
SHEET C2.12

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS

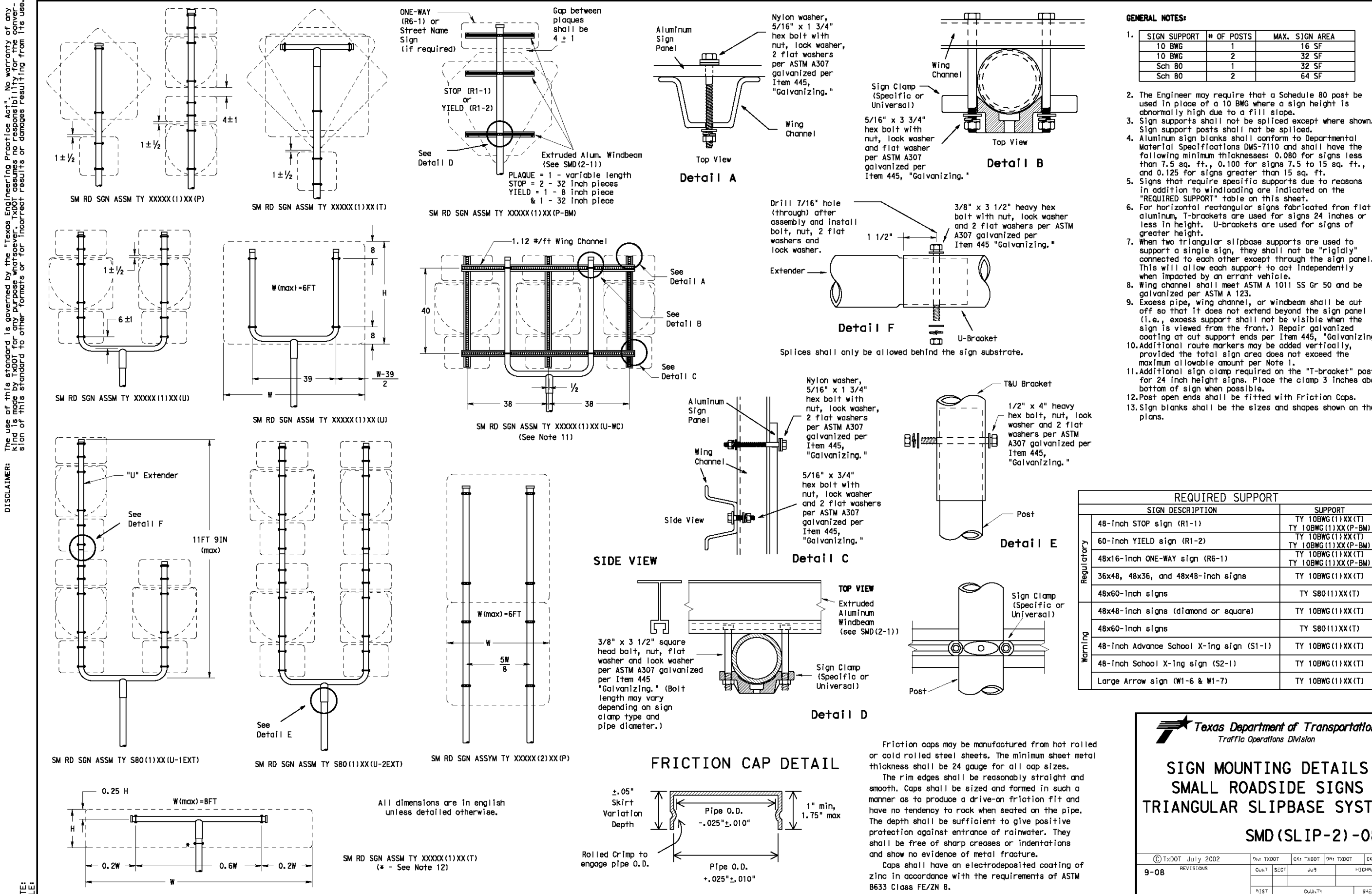
PROJECT NO. _____ DATE _____
DRAWN BY: J. L. GONZALEZ CHECKED BY: J. L. GONZALEZ P.E. SHEET NO. _____ OF _____

Date: Mar 08, 2023, 11:12am User: ID: drcncto
File: P:\16180033\Riverstone Unit F2\16180033.dwg

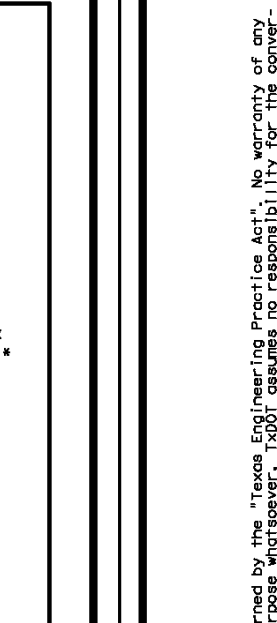
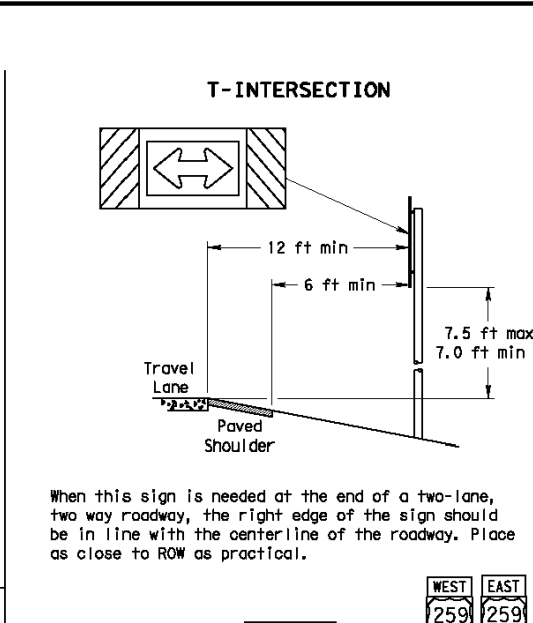
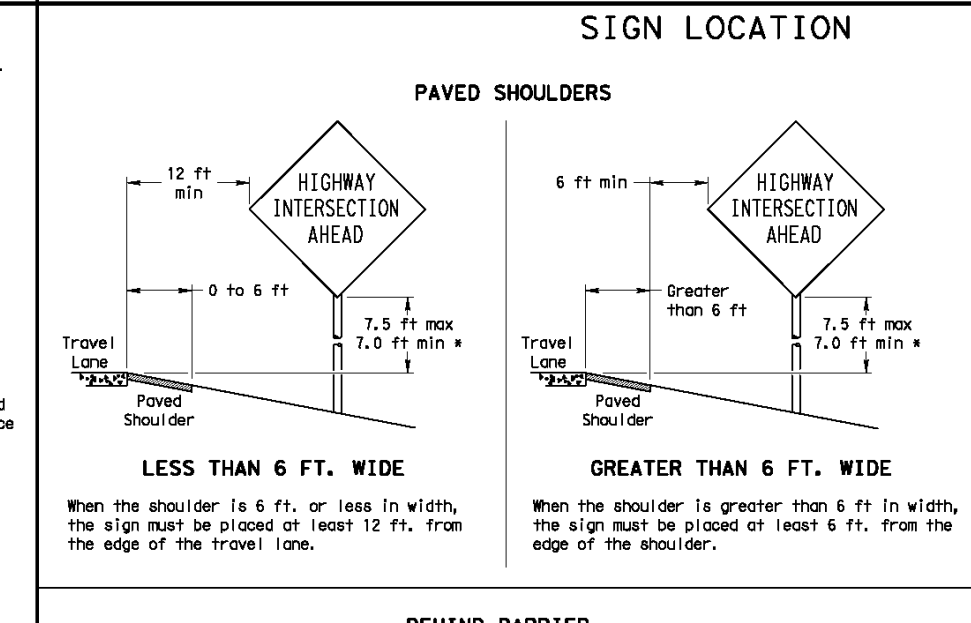
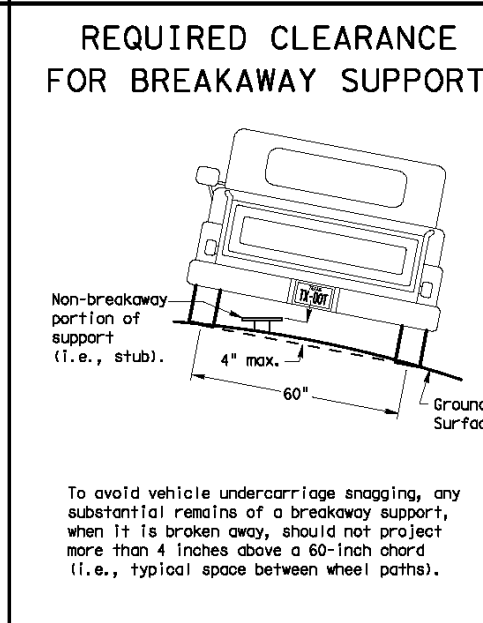
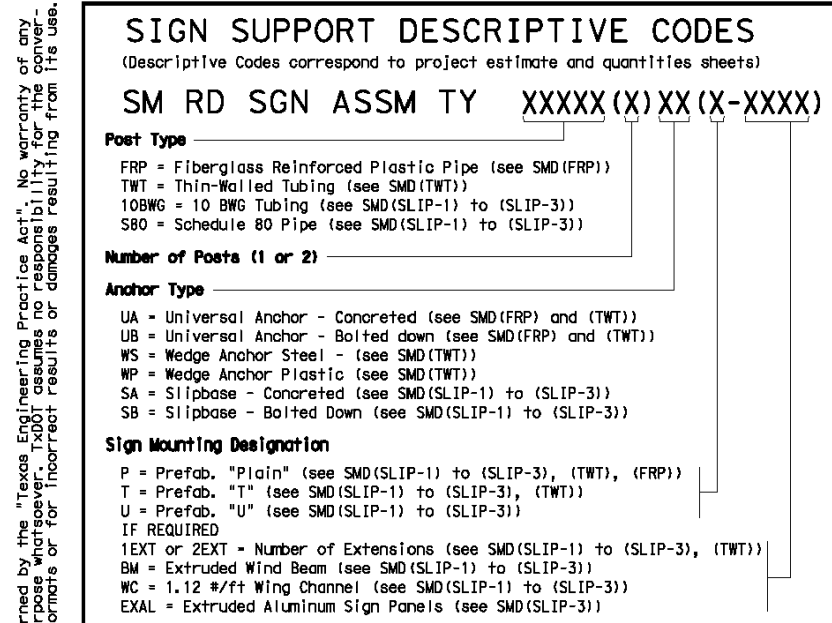
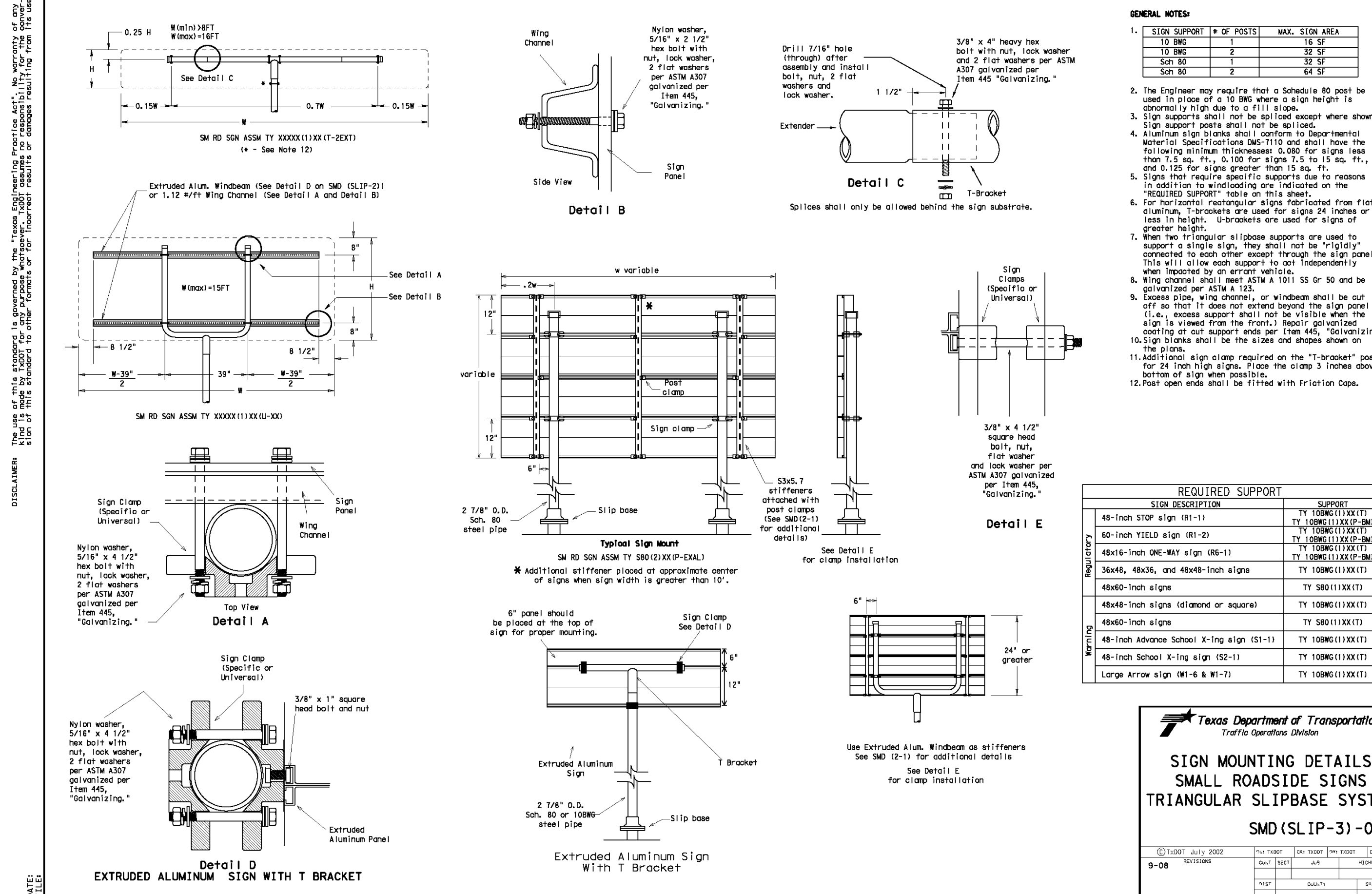
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE/UNLESS OTHERWISE NOTED. Imagery © 2016/CAPCO/Digital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



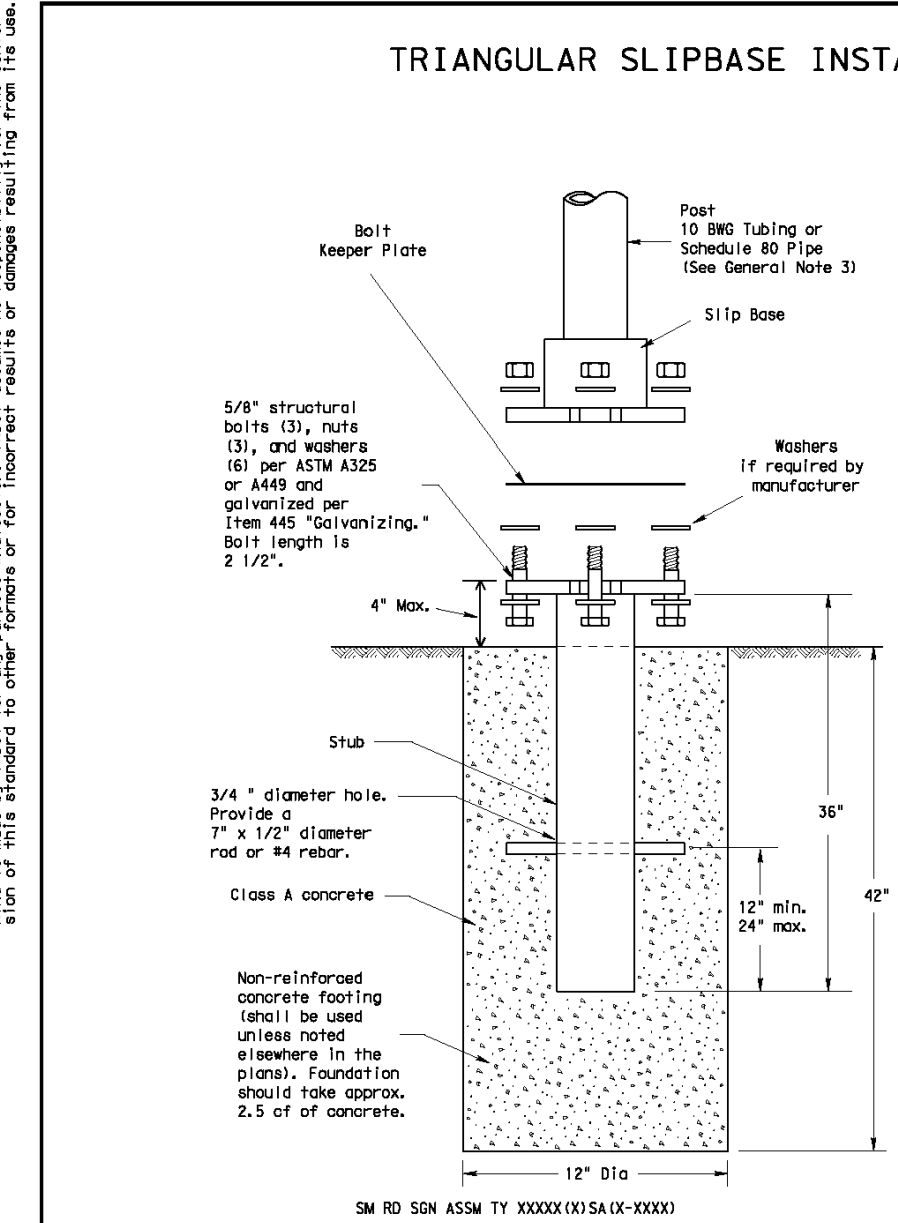
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy or completeness of any information or data provided herein. It is the responsibility of the user to ensure that the information and data provided herein are accurate and complete for the intended purpose.



DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy or completeness of any information or data provided herein. It is the responsibility of the user to ensure that the information and data provided herein are accurate and complete for the intended purpose.

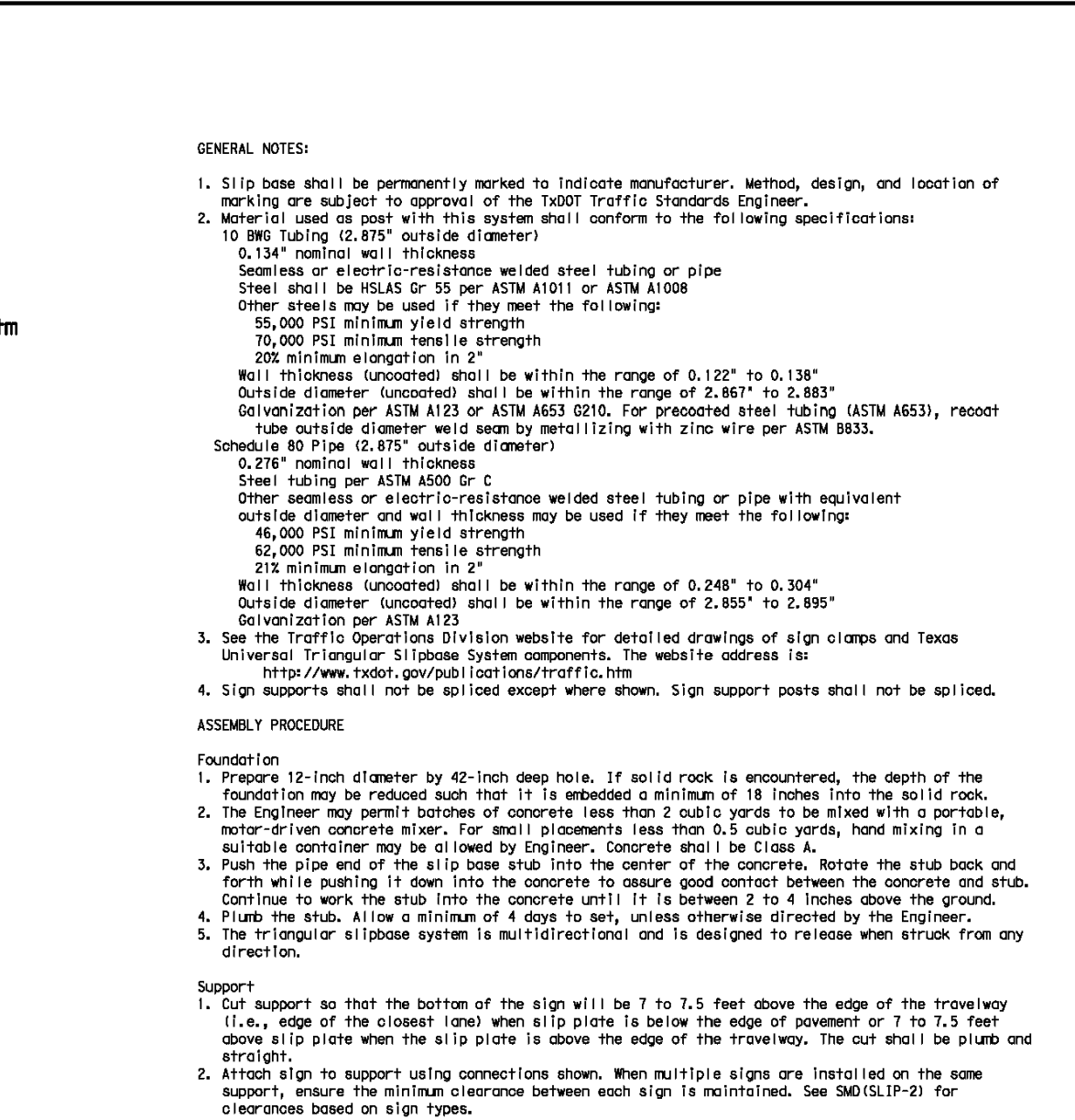


DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy or completeness of any information or data provided herein. It is the responsibility of the user to ensure that the information and data provided herein are accurate and complete for the intended purpose.



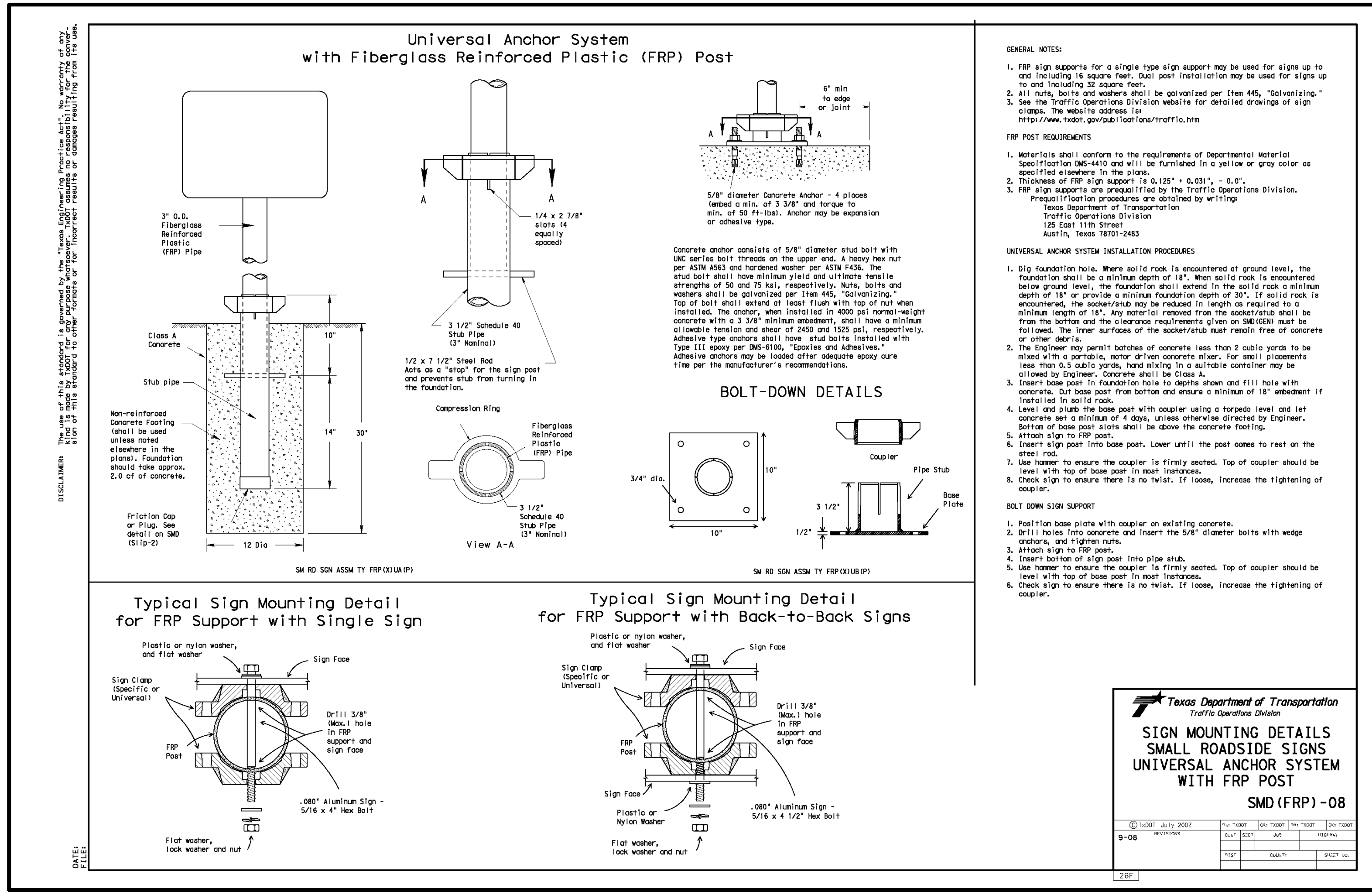
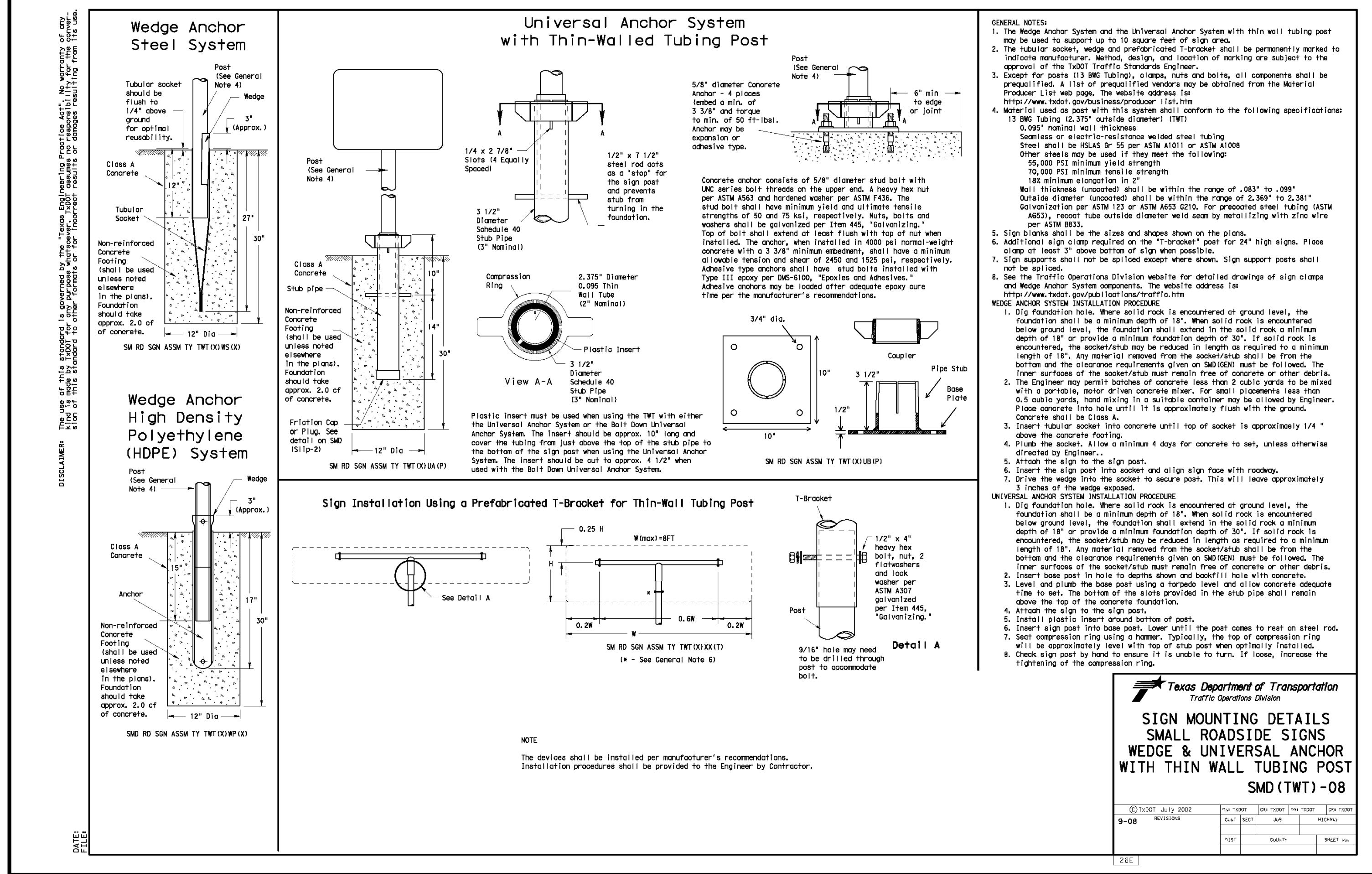
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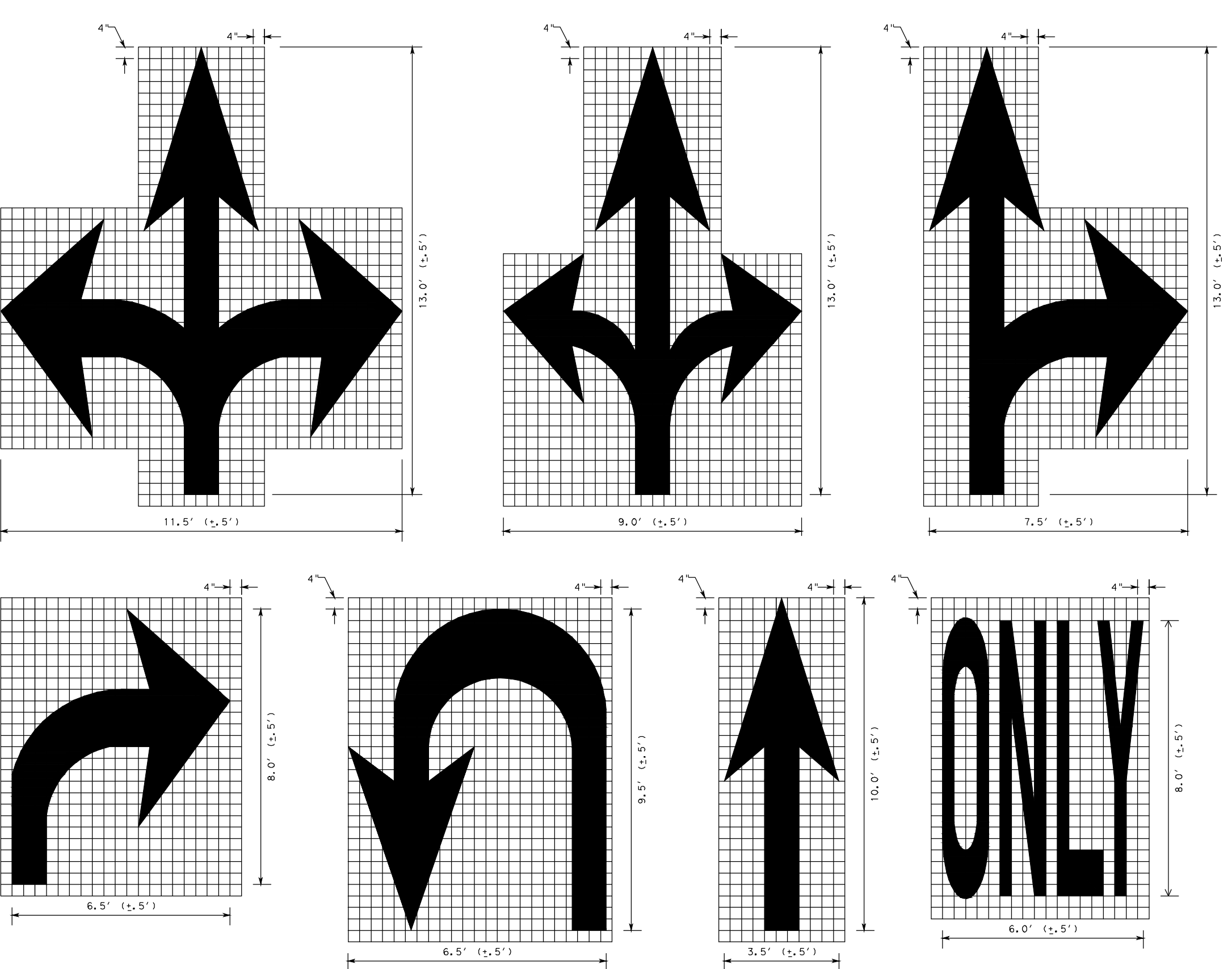
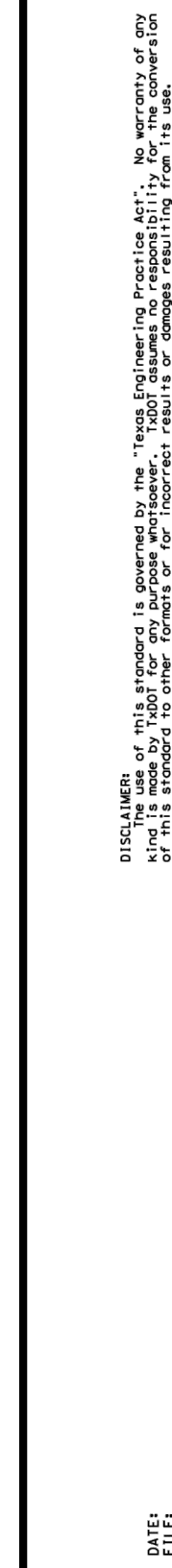
There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.



DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy or completeness of any information or data provided herein. It is the responsibility of the user to ensure that the information and data provided herein are accurate and complete for the intended purpose.

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**SIGN FACE MATERIALS
SHALL CONFORM TO:**

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-03 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 09e1

Street Name Sign Details

SHEET ____

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78243 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

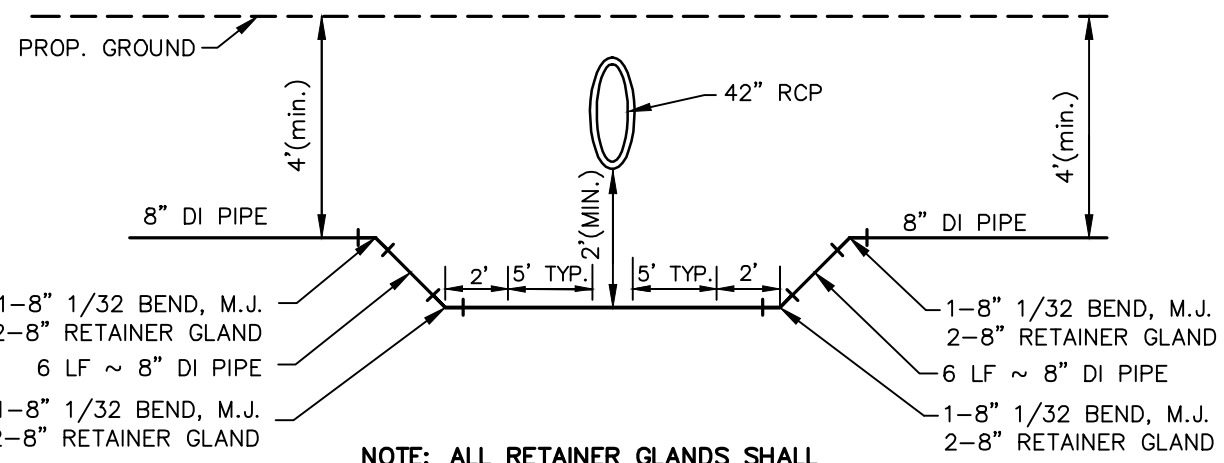
RIVERSTONE UNIT - F2

SAN ANTONIO, TEXAS

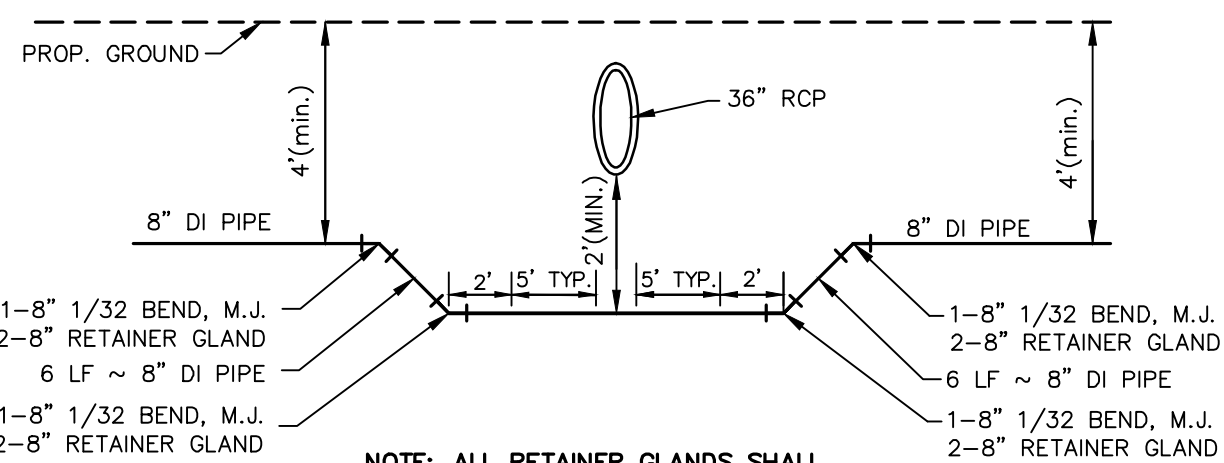
SIGNAGE DETAILS

SIGNAGE DETAILS

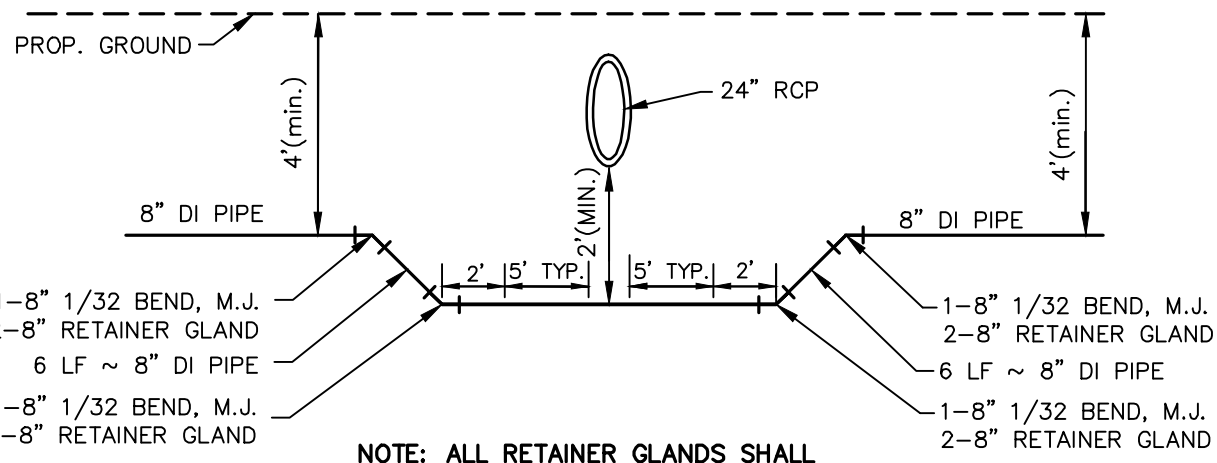
PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN EG
SHEET C3.12



WATER/DRAIN CROSSING DETAIL "E"
NOT TO SCALE



WATER/DRAIN CROSSING DETAIL "F"
NOT TO SCALE



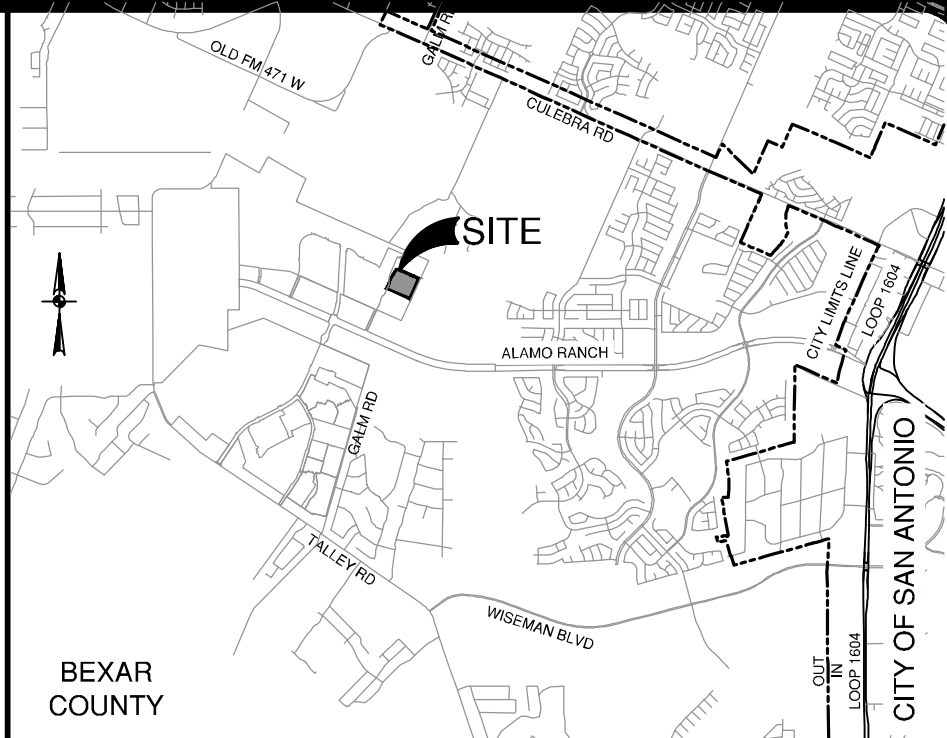
WATER/DRAIN CROSSING DETAIL "G"
NOT TO SCALE

FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

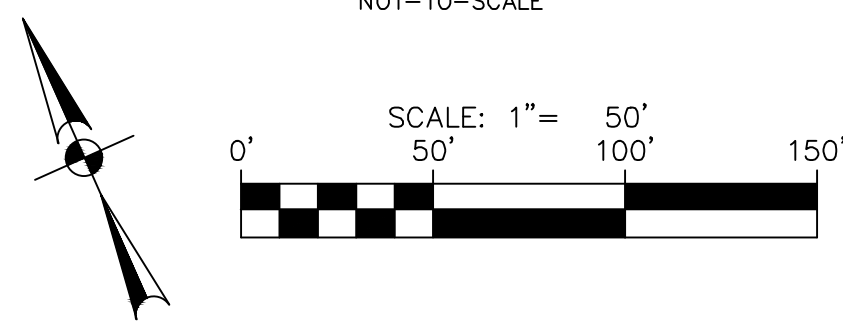
ROW PERMIT NOTE:

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



LOCATION MAP

NOT-TO-SCALE



KEYED NOTES

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

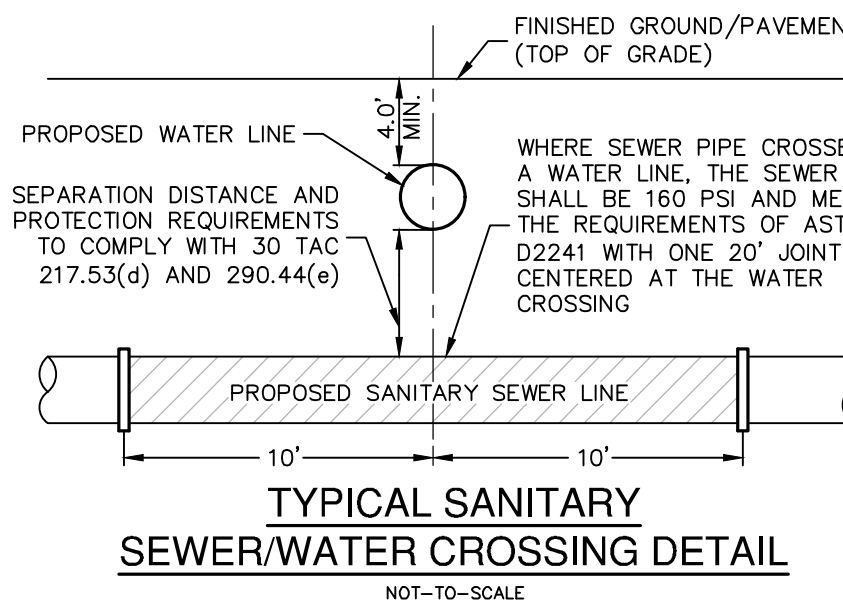
- FOR CHLORINATION INJECTION
- 2 - 1" CORPORATION STOP, C.C.X.I.P.
 - 1 - 1" COPPER TUBING, CUT AS REQUIRED
 - 2 - 1" COMP. 1 1/4" COUPLING, CORP. STOP
 - 2 - 1 1/4" THD. SOLID CAPS, THR.

- 12" VALVE CONSTRUCTED WITH SAWS JOB NUMBER 22-1100 SHALL REMAIN CLOSED UNTIL NEW MAINS HAVE BEEN DISINFECTED BY CONTRACTOR AND ACCEPTED BY SAWS
- CONTRACTOR SHALL TIE TO EXISTING 12" STUBOUT (SAWS JOB NO. 22-1100) AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY SAWS
- 2" TEMPORARY BLOWOFF ASSEMBLY SEE SAWS DWG DD-844-01 SHEET 1 OF 4
- 1-12" SOLID SLEEVE, MJ

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

- 8" VALVE CONSTRUCTED WITH SAWS JOB NUMBER 22-1143 SHALL REMAIN CLOSED UNTIL NEW MAINS HAVE BEEN DISINFECTED BY CONTRACTOR AND ACCEPTED BY SAWS

- CONTRACTOR SHALL TIE TO EXISTING 8" STUBOUT (SAWS JOB NO. 22-1143) AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY SAWS
- 2" TEMPORARY BLOWOFF ASSEMBLY SEE SAWS DWG DD-844-01 SHEET 1 OF 4
- 1-8" SOLID SLEEVE, MJ



PRESSURE REDUCING VALVE NOTE:

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

PRESSURE NOTE:

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

JOINT RESTRAINT NOTE:

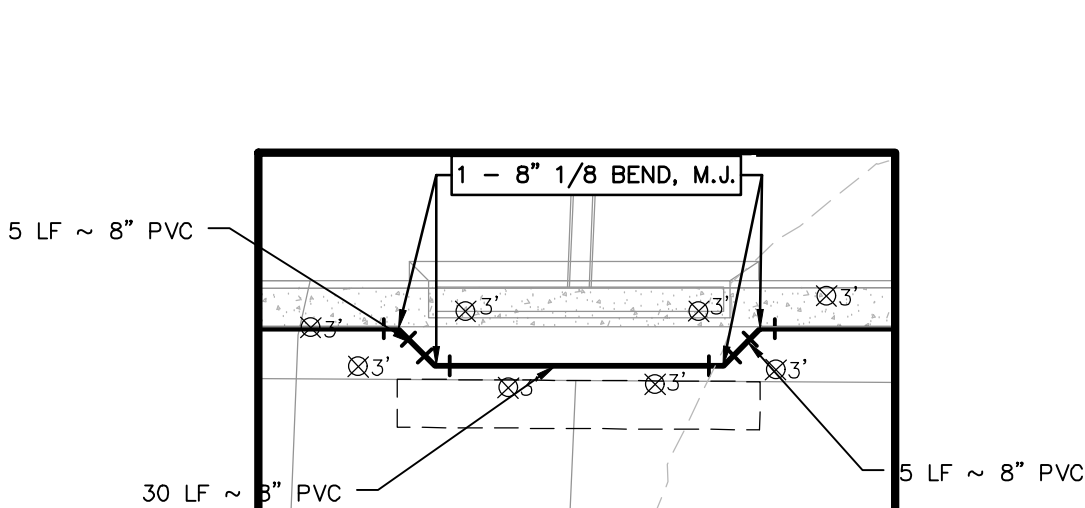
CONTRACTOR SHALL INSTALL RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS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

TRENCH EXCAVATION SAFETY PROTECTION:

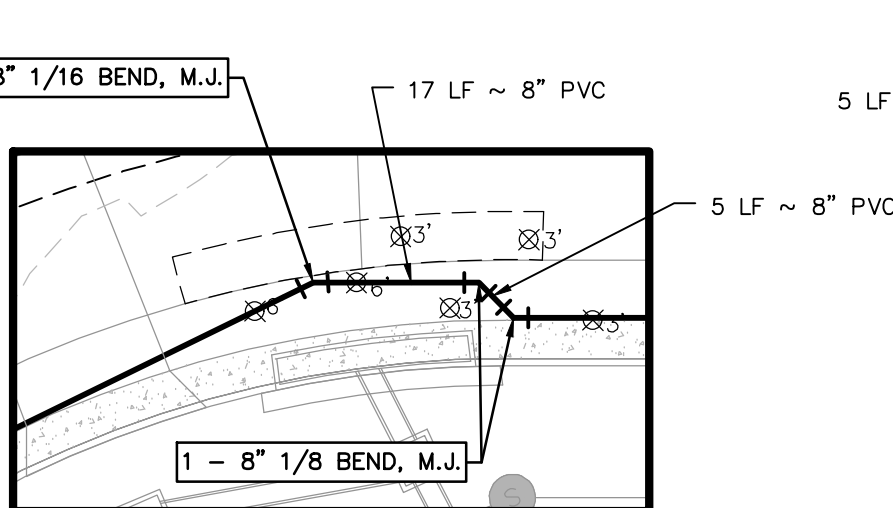
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

WATER (SAWS PRESSURE ZONE 8)

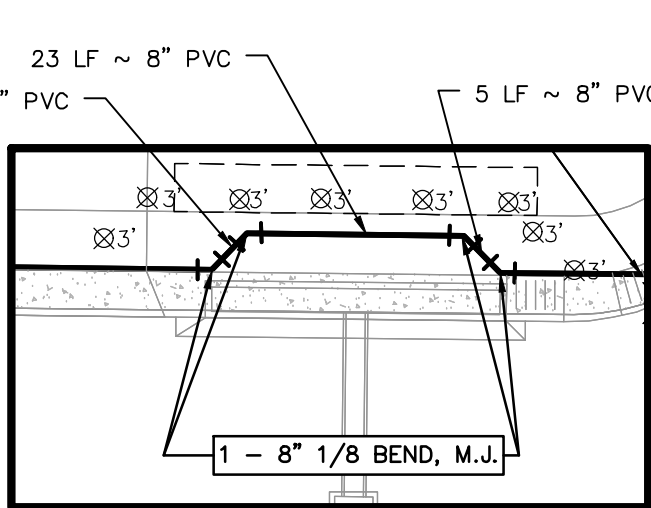
DEVELOPER'S NAME:	CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS:	5419 N LOOP E
CITY:	SAN ANTONIO, STATE: TX ZIP: 78218
PHONE#	(210)496-2668 FAX# (210)496-2668
SAWS BLOCK MAP#	08-2616 & 12-144 L
TOTAL EDU'S	61
TOTAL ACREAGE	12.83
TOTAL LINEAR FOOTAGE OF PIPE	8'-2,484 LF
PLAT NO.	22-11500327
NUMBER OF LOTS	61
SAWS JOB NO.	22-1150



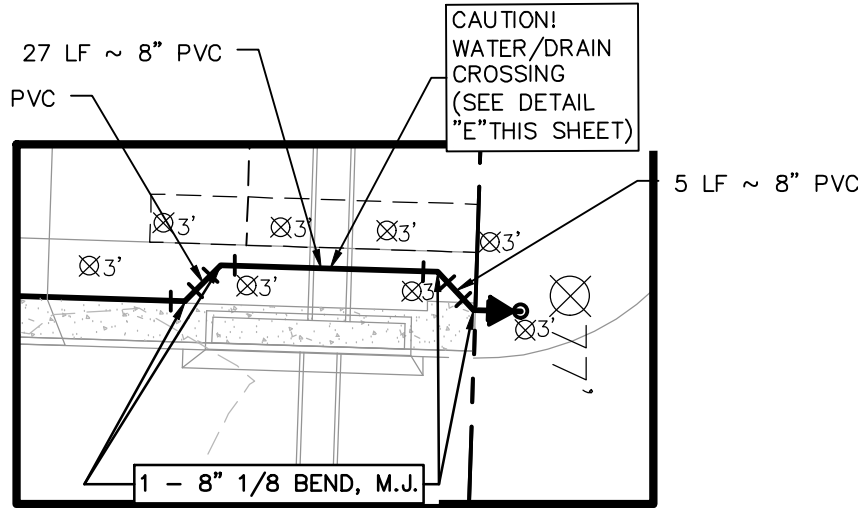
DETAIL "A"
SCALE: 1" = 20'



DETAIL "B"
SCALE: 1" = 20'



DETAIL "C"
SCALE: 1" = 20'



DETAIL "D"
SCALE: 1" = 20'

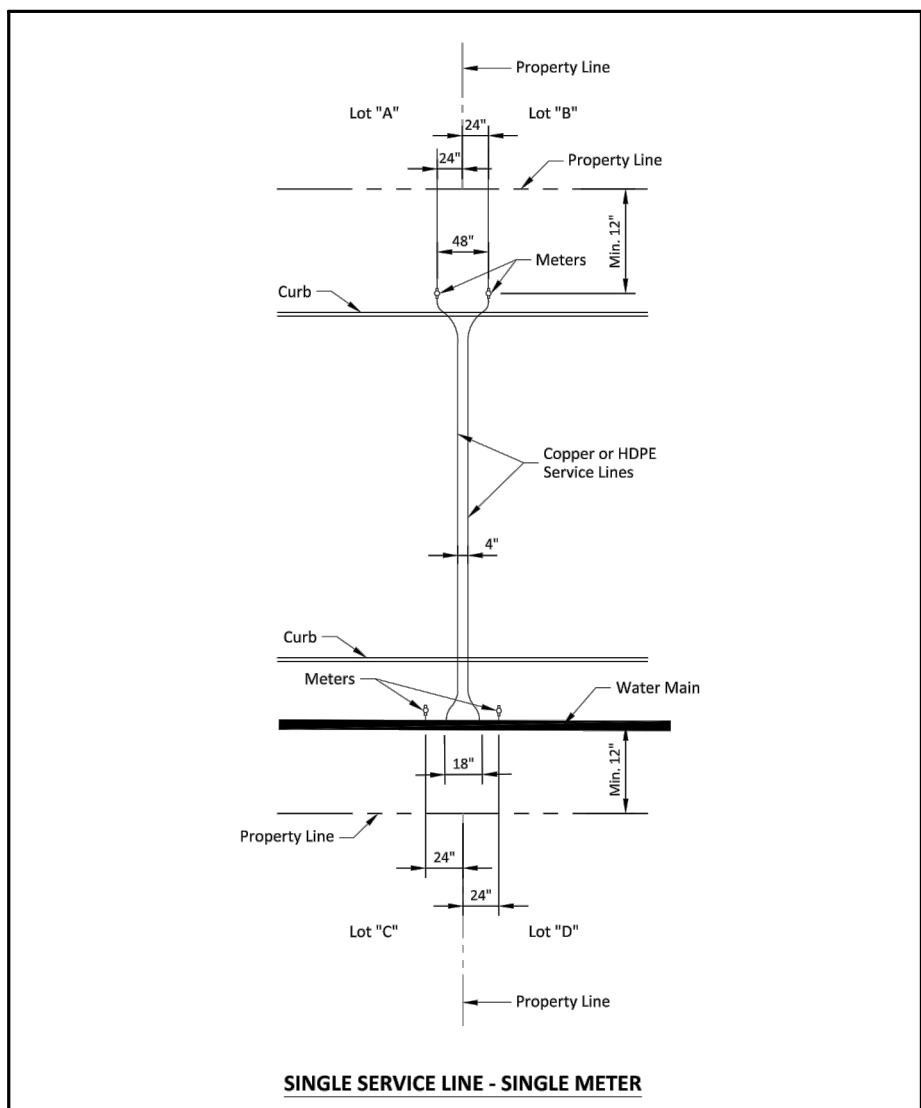
PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

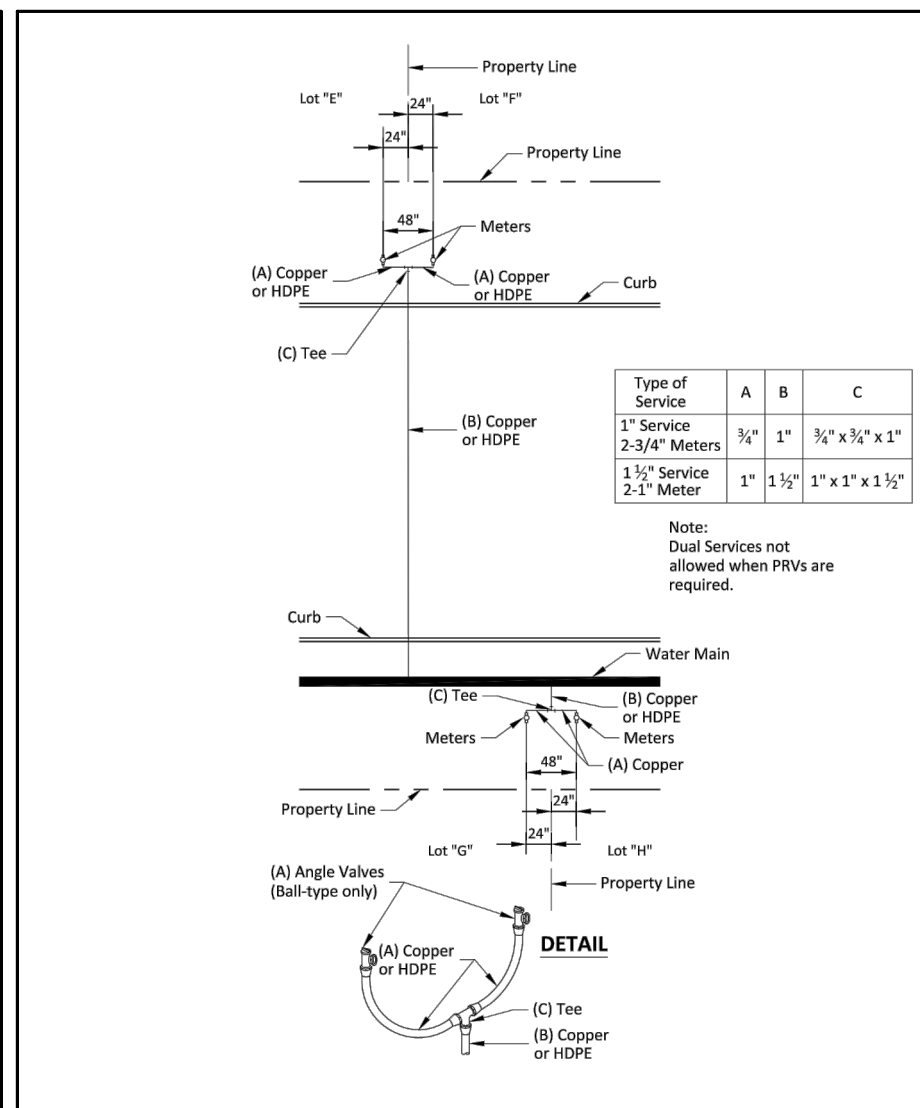
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

OVERALL WATER DISTRIBUTION PLAN

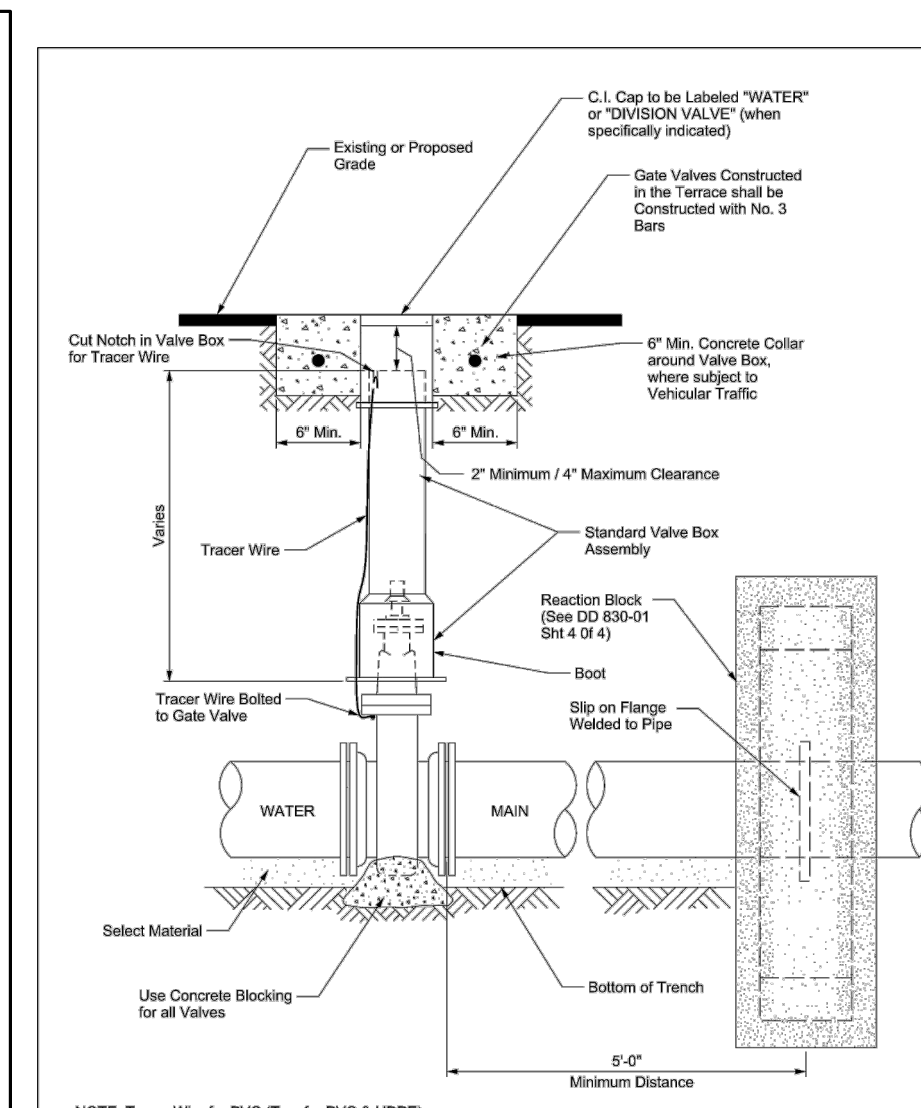
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JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL
DRAWN	CV
SHEET	C4.00



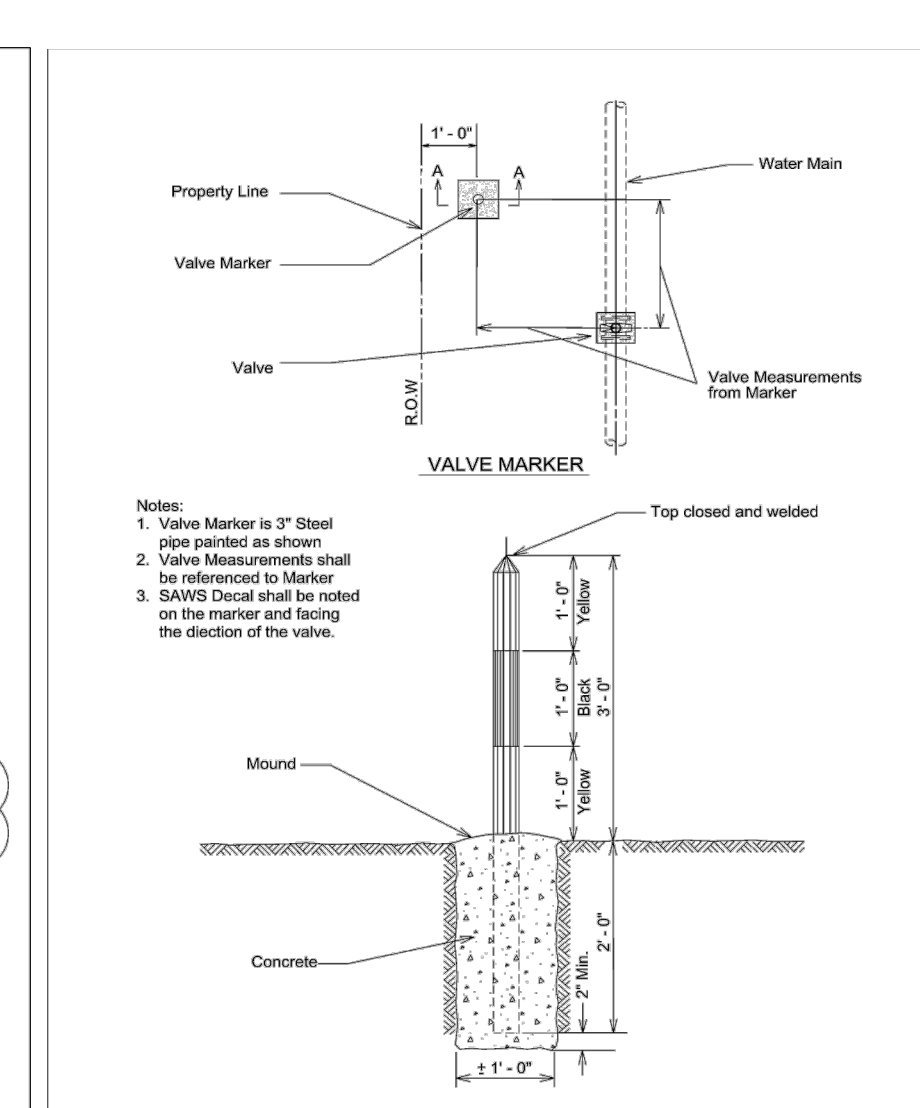
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SAN ANTONIO WATER SYSTEM	NEW DEVELOPMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-824-05	SHEET 1 OF 3



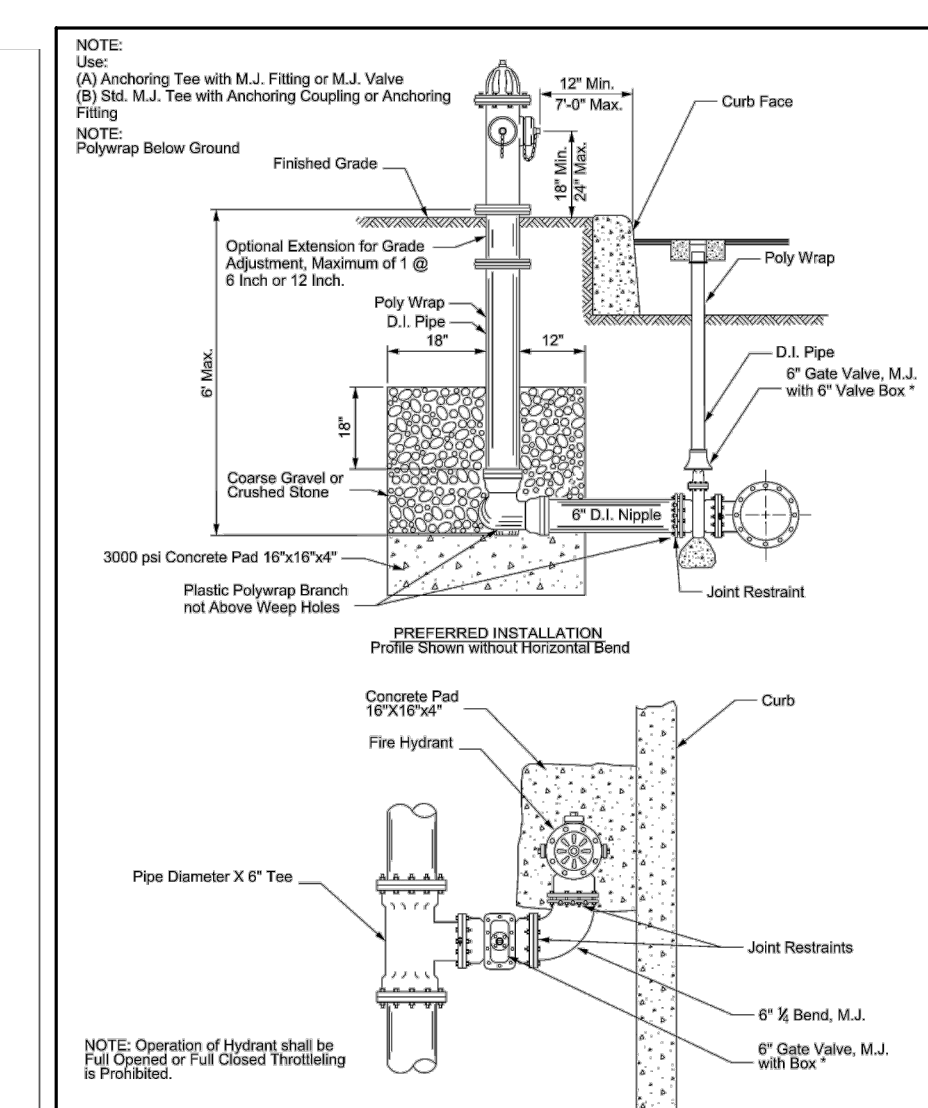
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-824-05	SHEET 1 OF 3



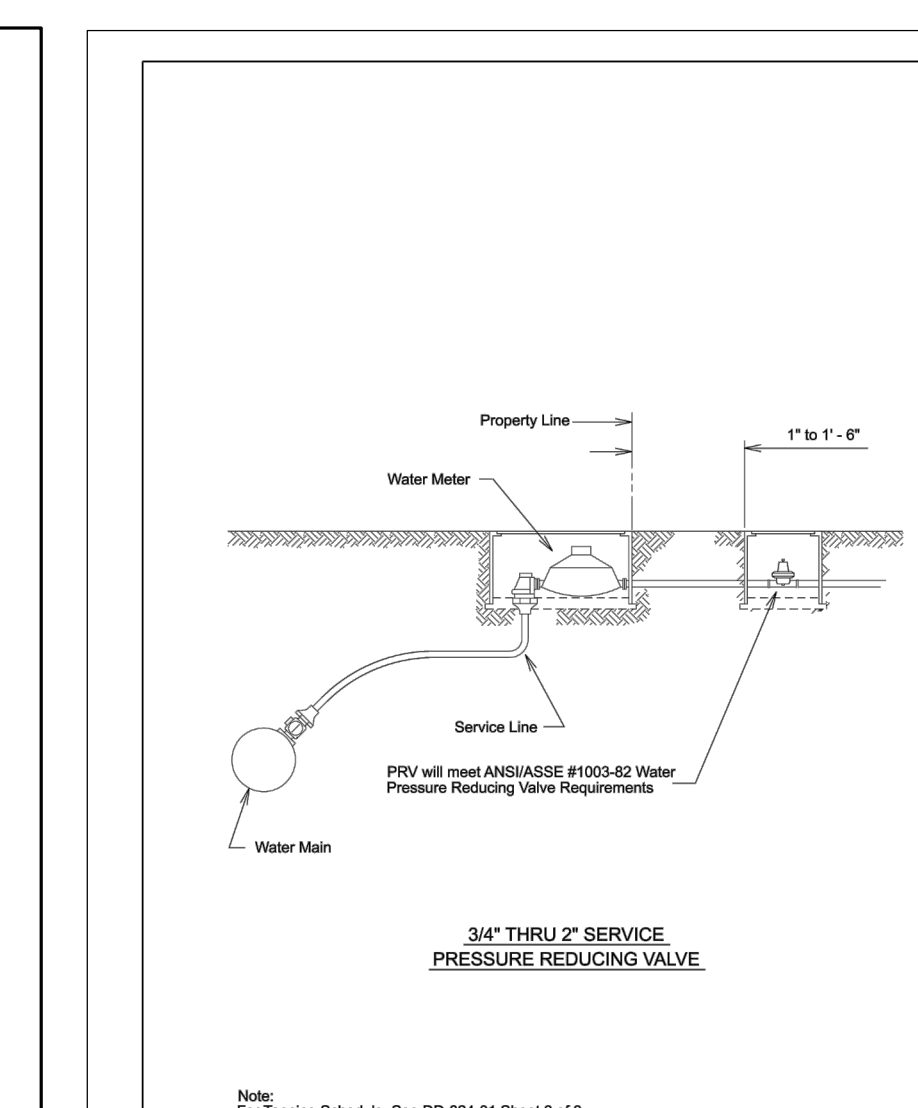
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-828-01	SHEET 1 OF 3



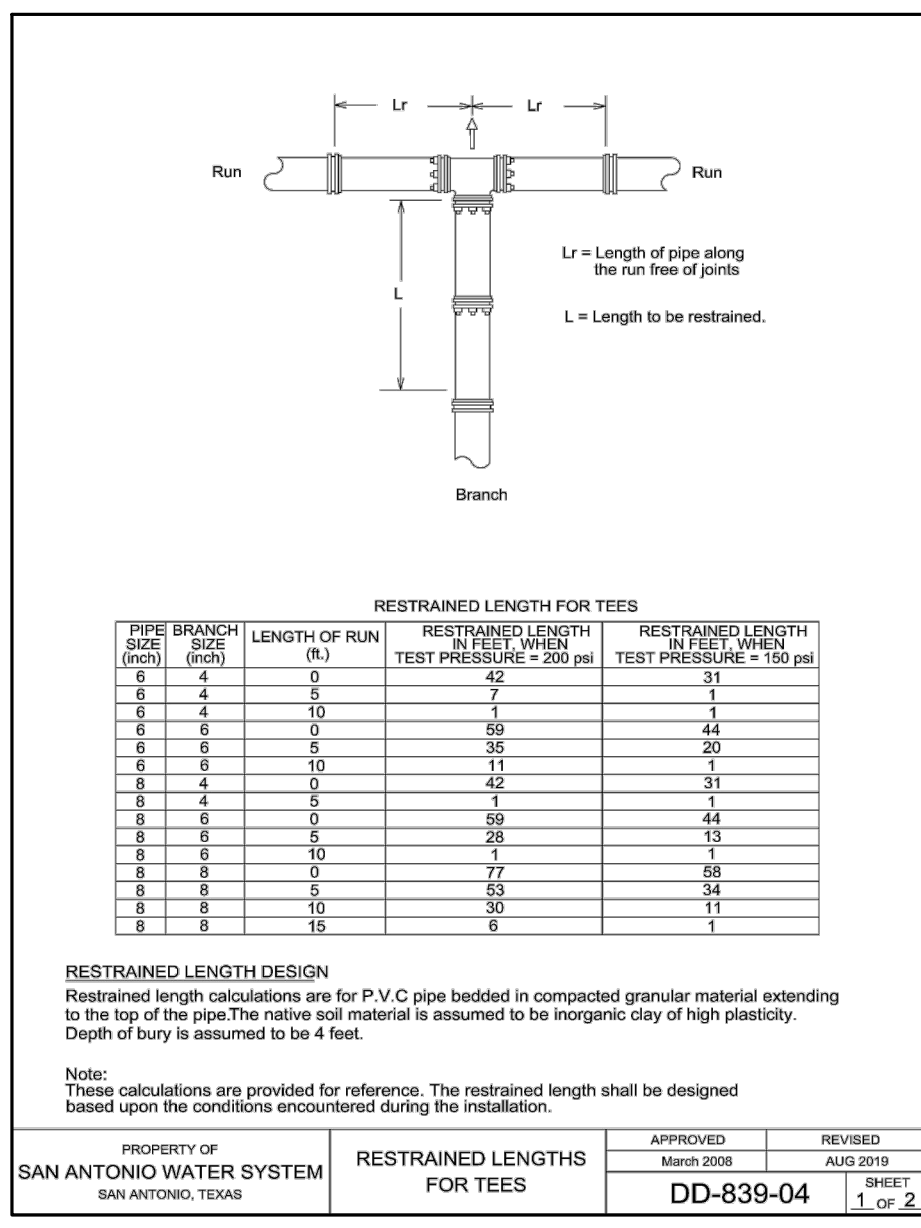
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-828-04	SHEET 1 OF 3



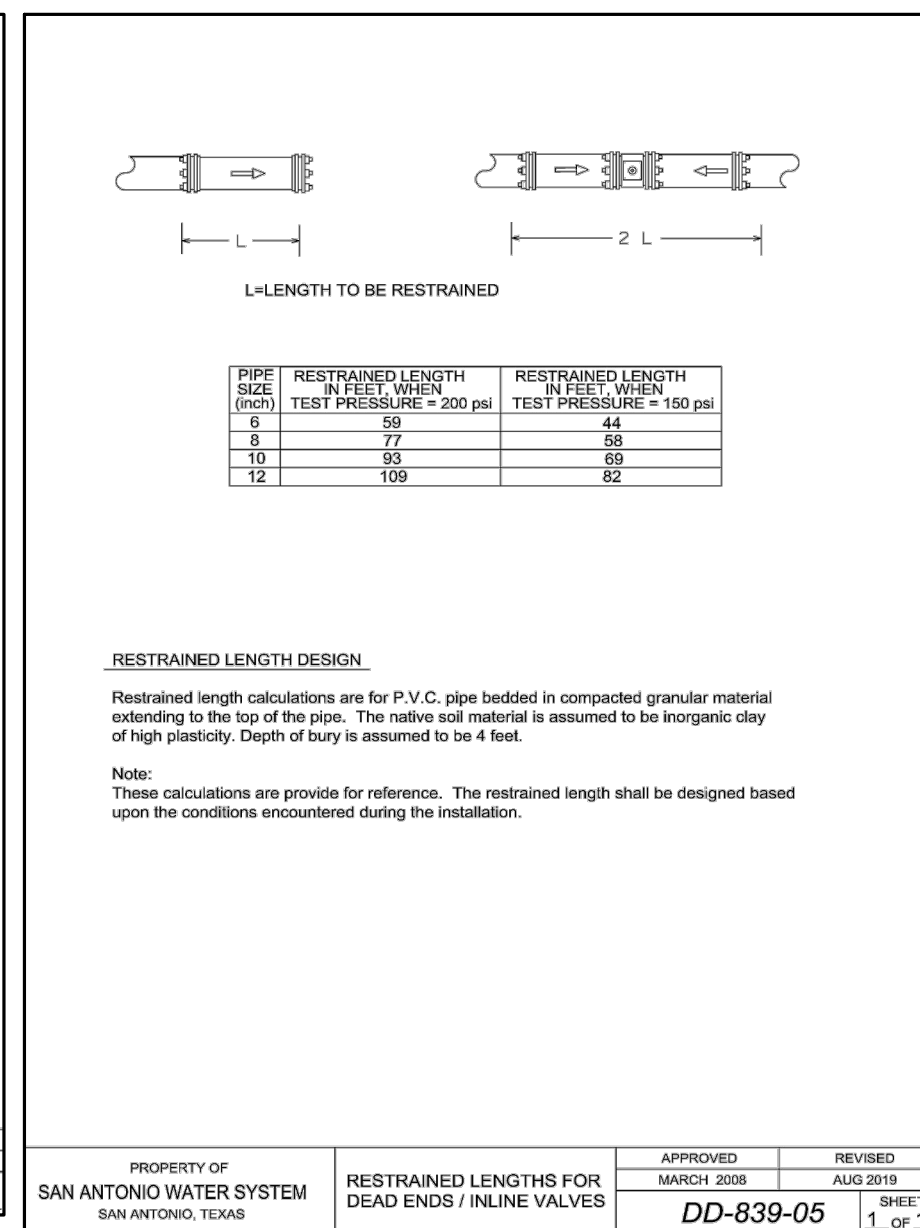
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-834-01	SHEET 1 OF 3



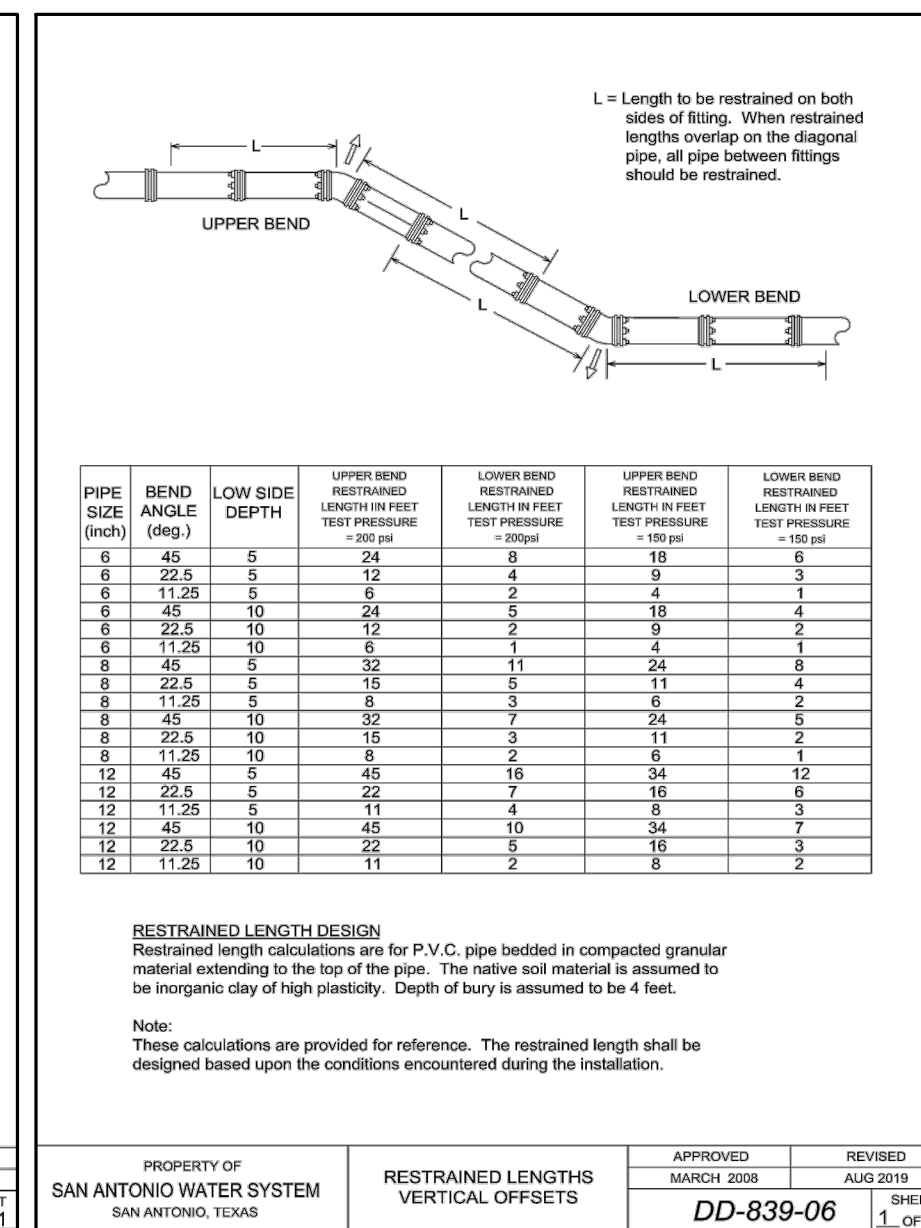
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-833-03	SHEET 1 OF 3



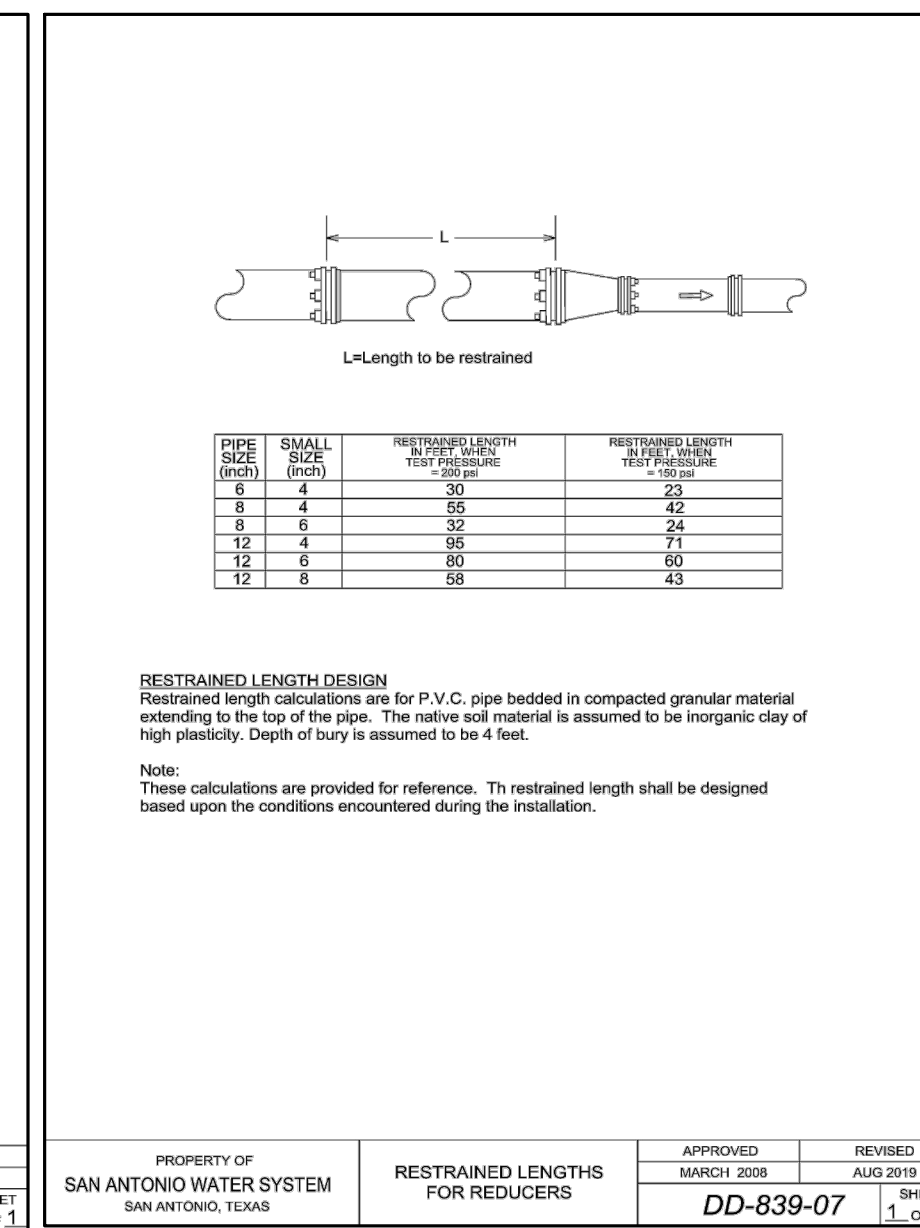
PROPERTY OF	TYPICAL	APPROVED	REVISED
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-839-04	SHEET 1 OF 3



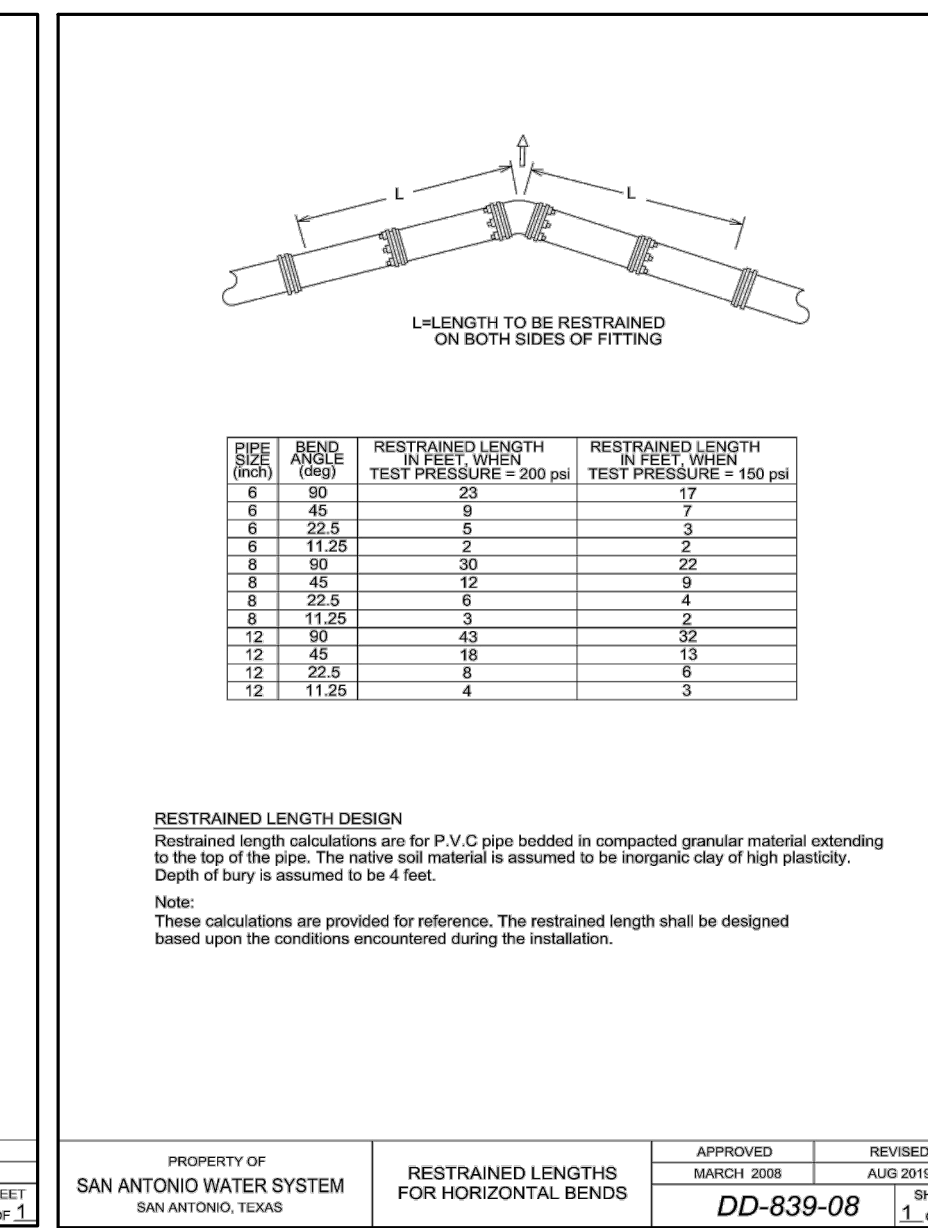
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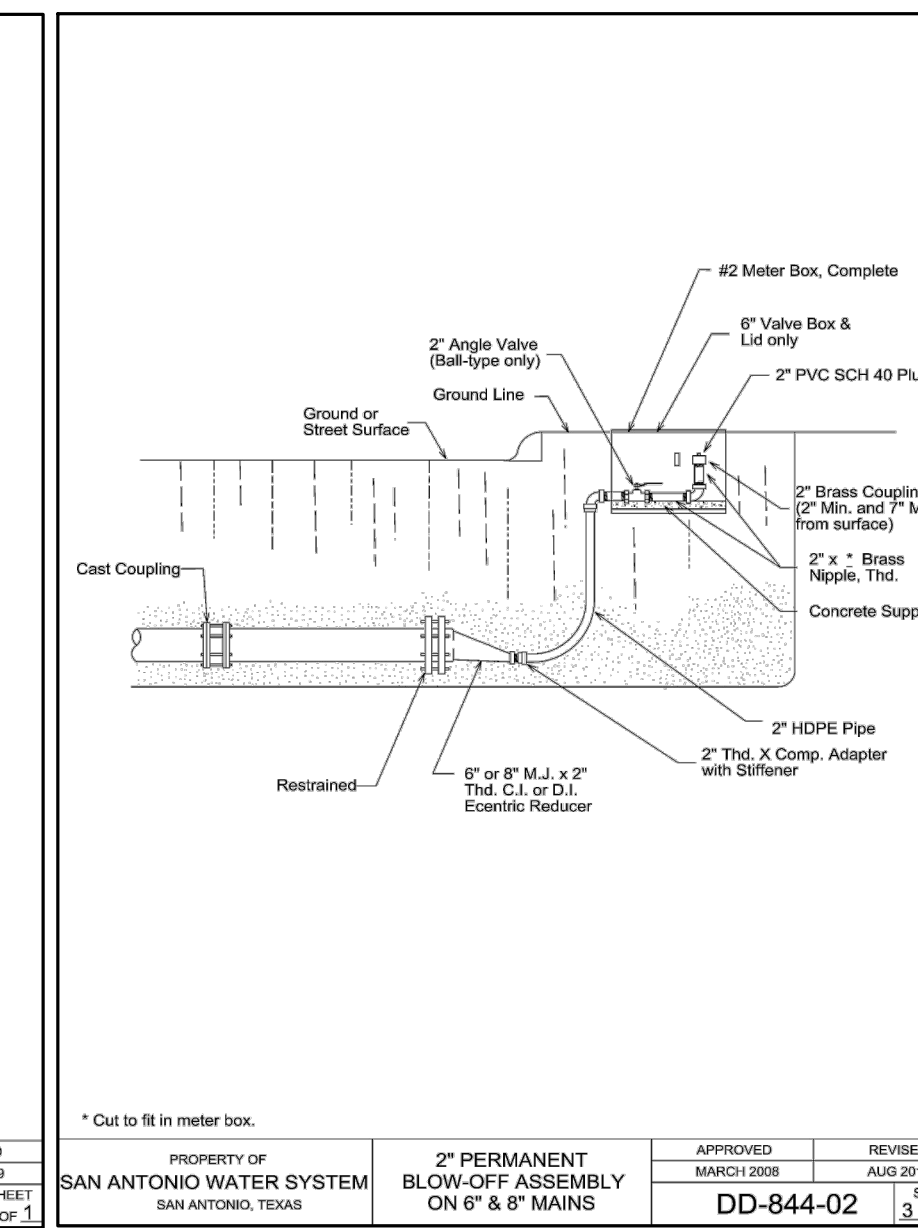
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-839-06	SHEET 1 OF 3



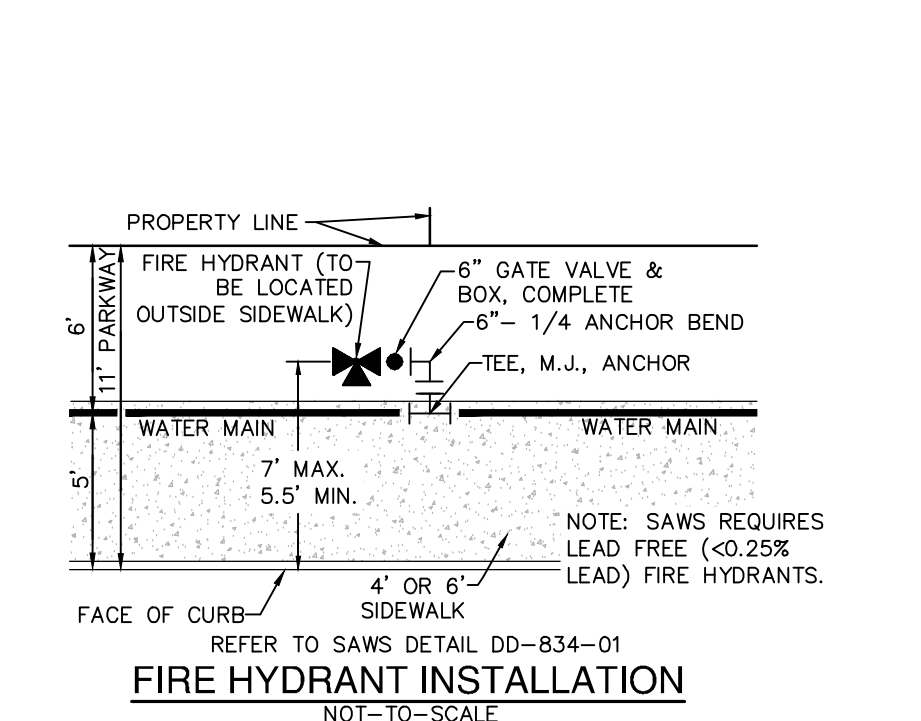
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-839-07	SHEET 1 OF 3



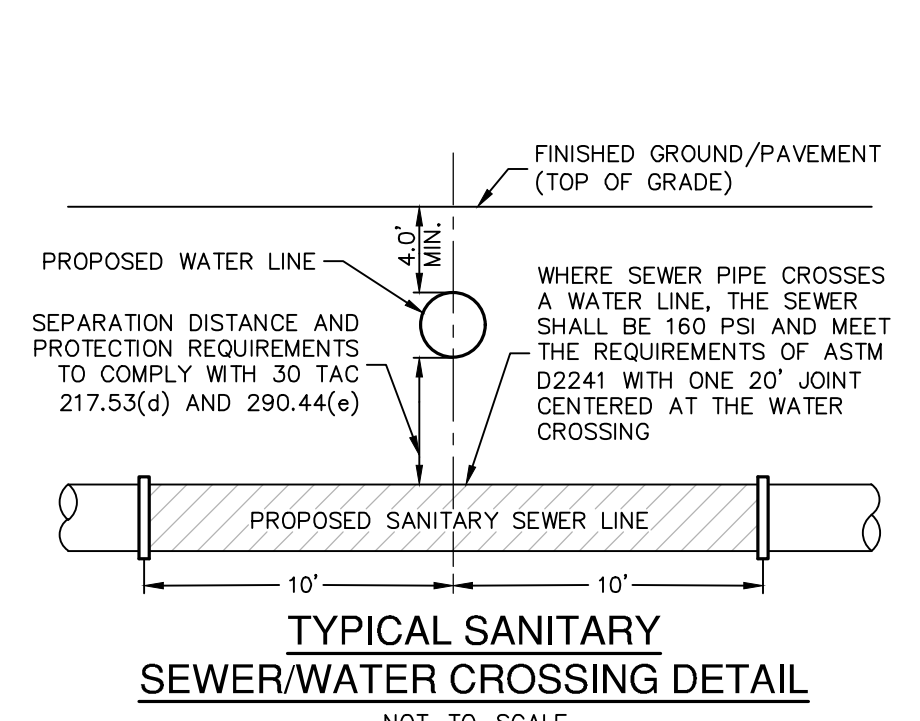
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-839-08	SHEET 1 OF 3



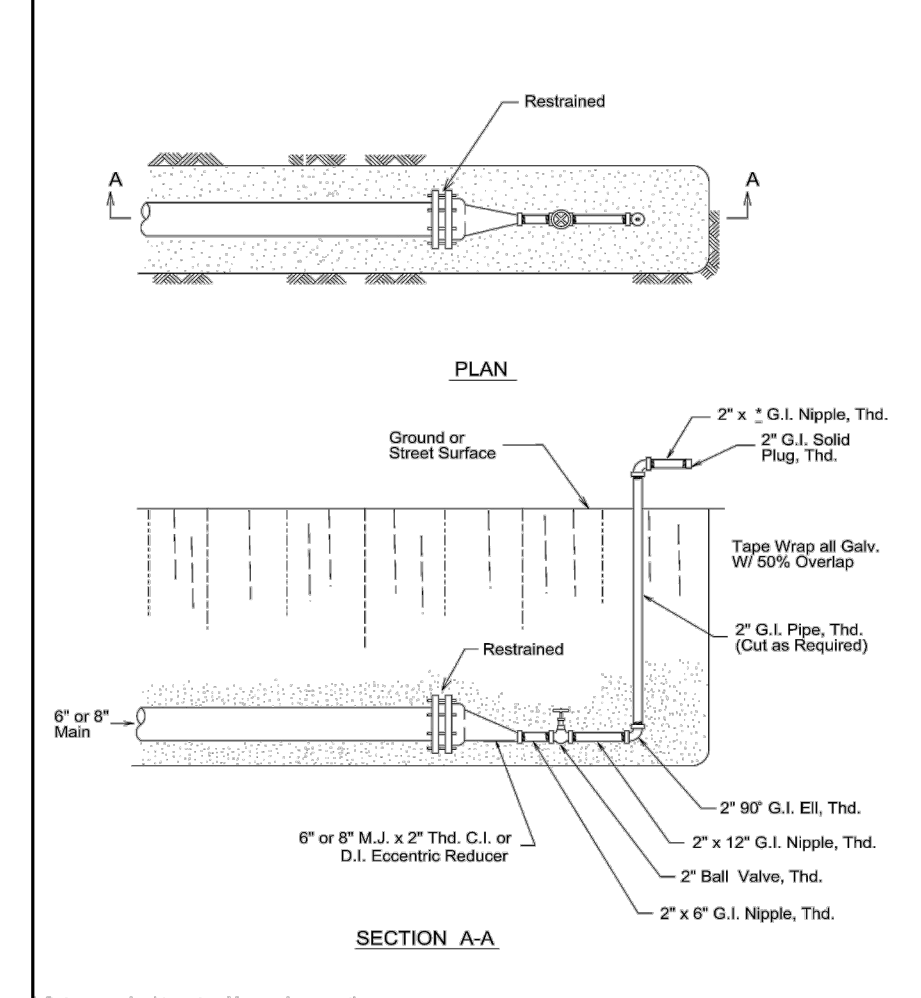
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SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-02	SHEET 1 OF 3



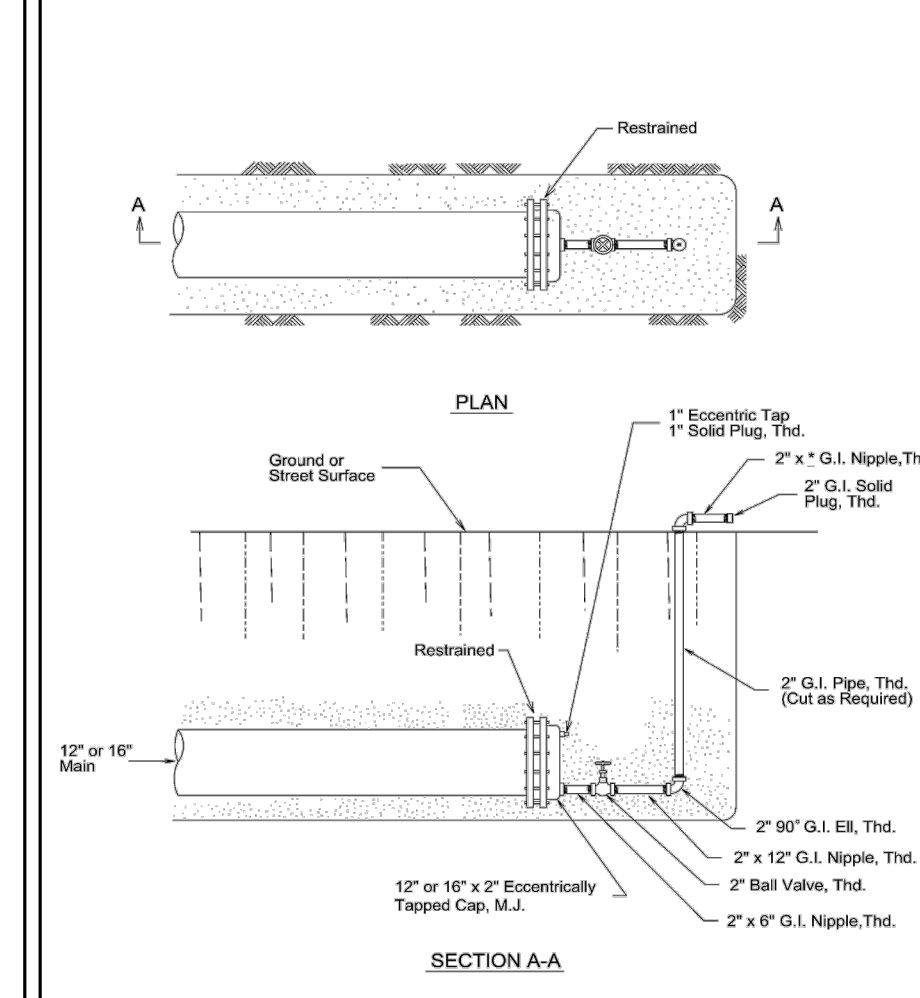
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SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-834-01	SHEET 1 OF 3



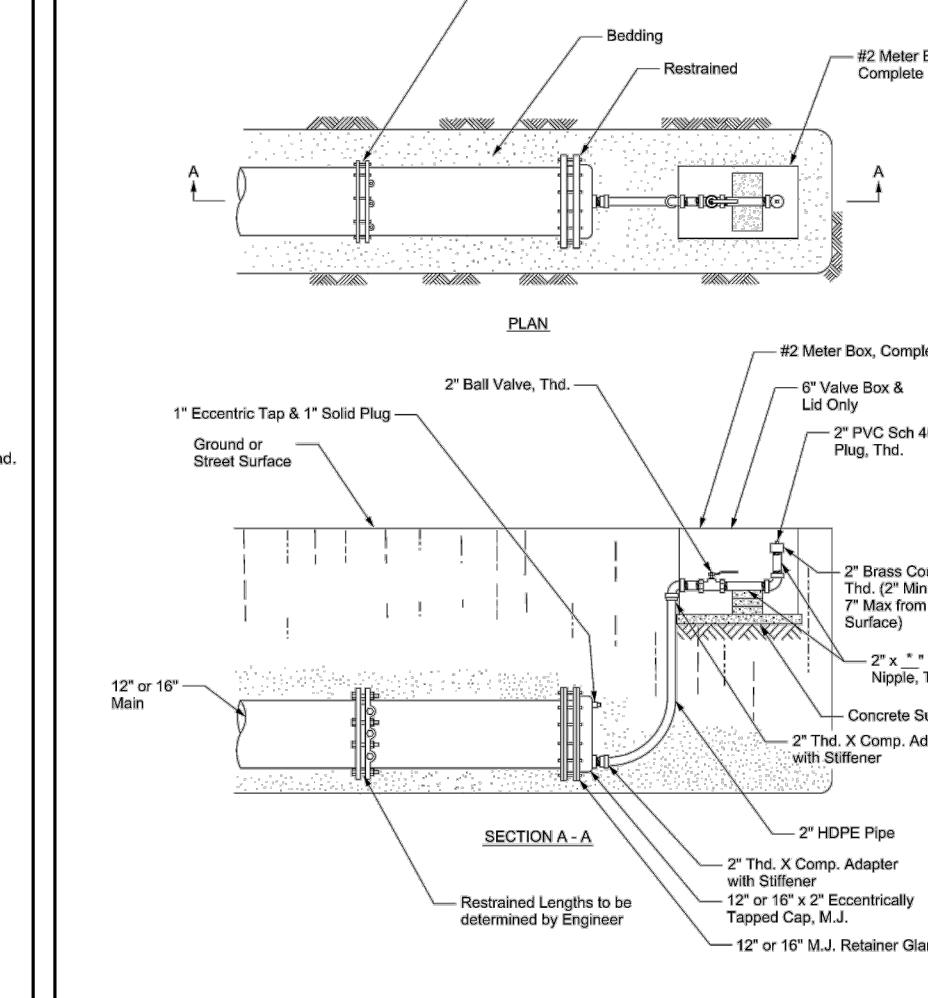
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SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-01	SHEET 1 OF 3



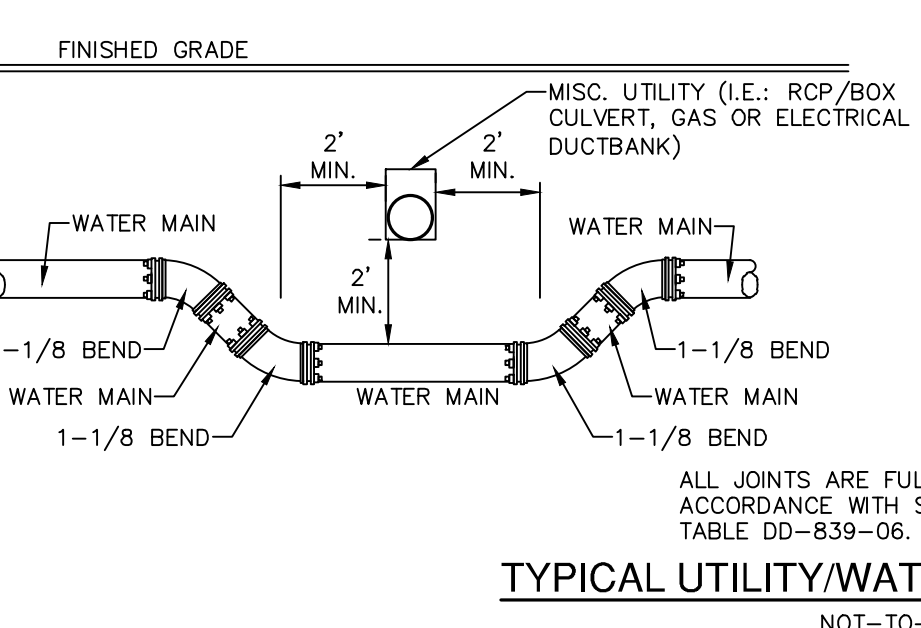
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SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-01	SHEET 1 OF 3



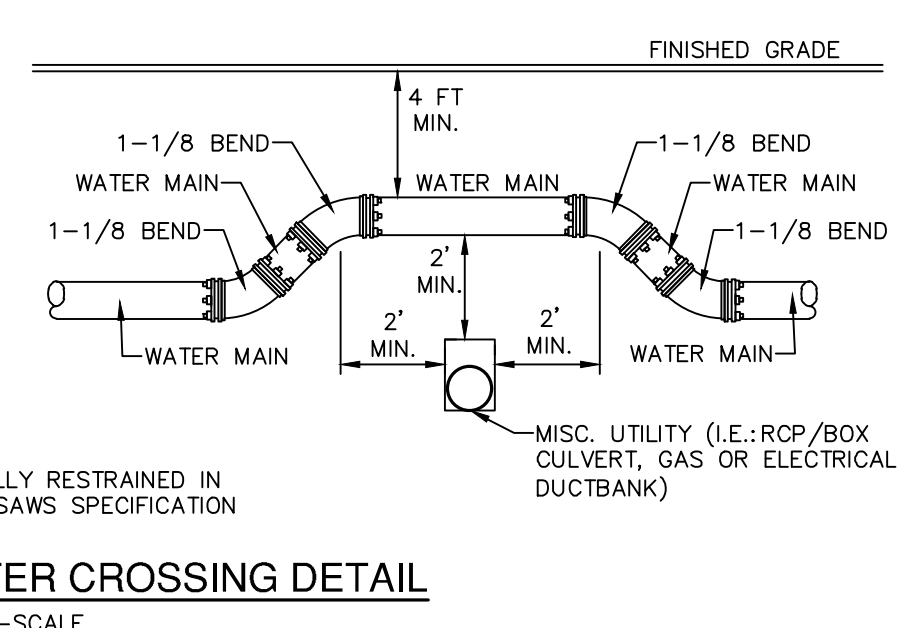
PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-01	SHEET 1 OF 3



PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-02	SHEET 1 OF 3



PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-01	SHEET 1 OF 3



PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-01	SHEET 1 OF 3

PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2019
SAN ANTONIO, TEXAS	SERVICE ARRANGEMENT	DD-844-02	SHEET 1 OF 3

DATE

NO.

REVISION

STATE OF TEXAS

CALEB M. CHANCE

98401

PROFESSIONAL ENGINEER

2/7/23

PAPE-DAWSON

ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

RIVERSTONE UNIT - F2

SAN ANTONIO, TEXAS

WATER DISTRIBUTION DETAILS

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.

ADDRESS: 5419 N LOOP E

CITY: SAN ANTONIO, STATE: TX ZIP: 78218

PHONE: (210)496-2668 FAX: (210)496-2668

SAWS BLOCK MAP: 08-2616 & 12-144 L

TOTAL LINEAR FOOTAGE OF PIPE: 8'-2,484 LF PLAT NO. 22-11500371

NUMBER OF LOTS: 61 SAWS JOB NO. 22-1150

PLAT NO. 22-11800371

JOB NO. 11680-53

DATE JUNE 2022

DESIGNER CV

CHECKED BL DRAWN CV

SHEET C4.10

Date: Feb 08, 2023, 7:07am User: bchuckr
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SAWS CONSTRUCTION NOTES
(LAST REVISED JULY 2017)

SAWS GENERAL SECTION

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

SAWS WATER NOTES

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

PROJECT WATER NOTES

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

WATER (SAWS PRESSURE ZONE 8)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N LOOP E	
CITY: SAN ANTONIO, STATE: TX ZIP: 78218	
PHONE# (210)496-2668 FAX# (210)496-2668	
SAWS BLOCK MAP# 74602 TOTAL EDU'S 61 TOTAL ACREAGE 12.83	
TOTAL LINEAR FOOTAGE OF PIPE: 8"-2,484 LF PLAT NO. 22-11500371	
NUMBER OF LOTS 61	SAWS JOB NO. 22-1150

DATE	NO.	REVISION



Caleb M. Chance
2/7/23

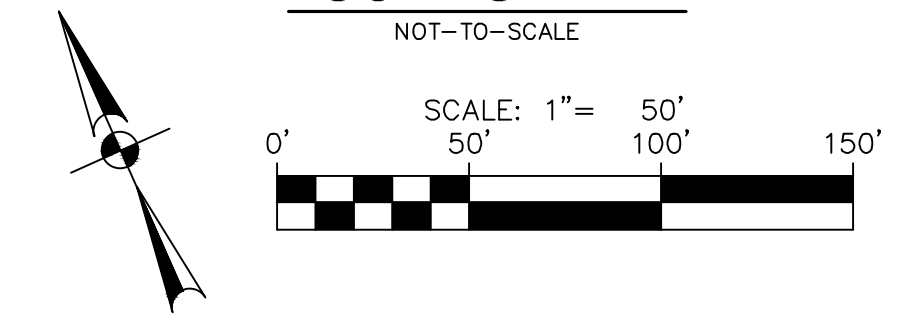
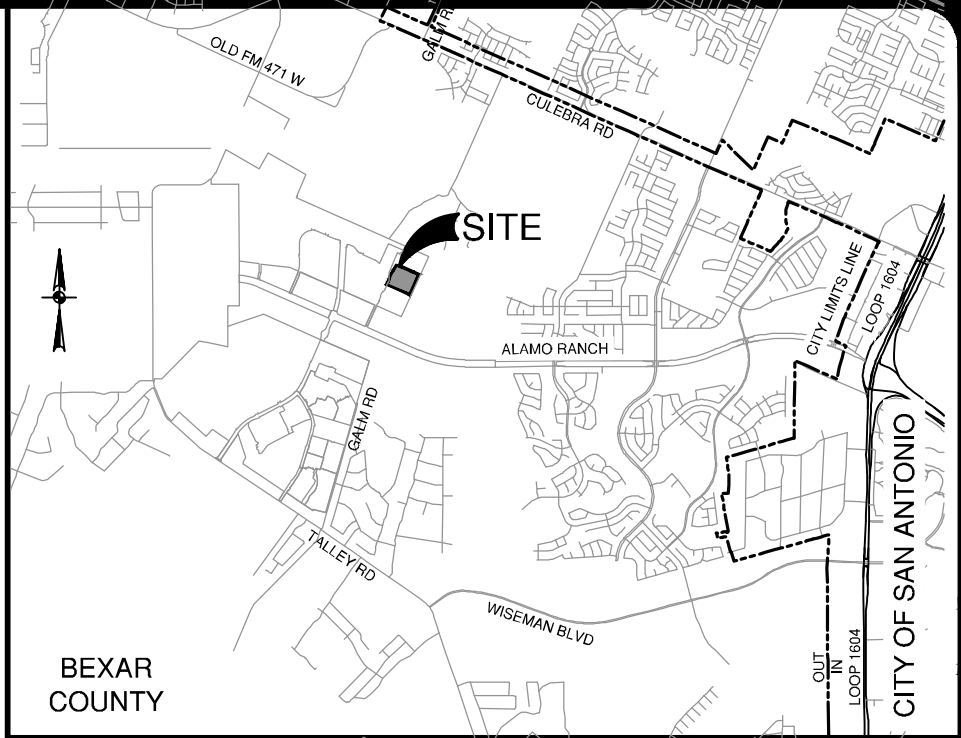
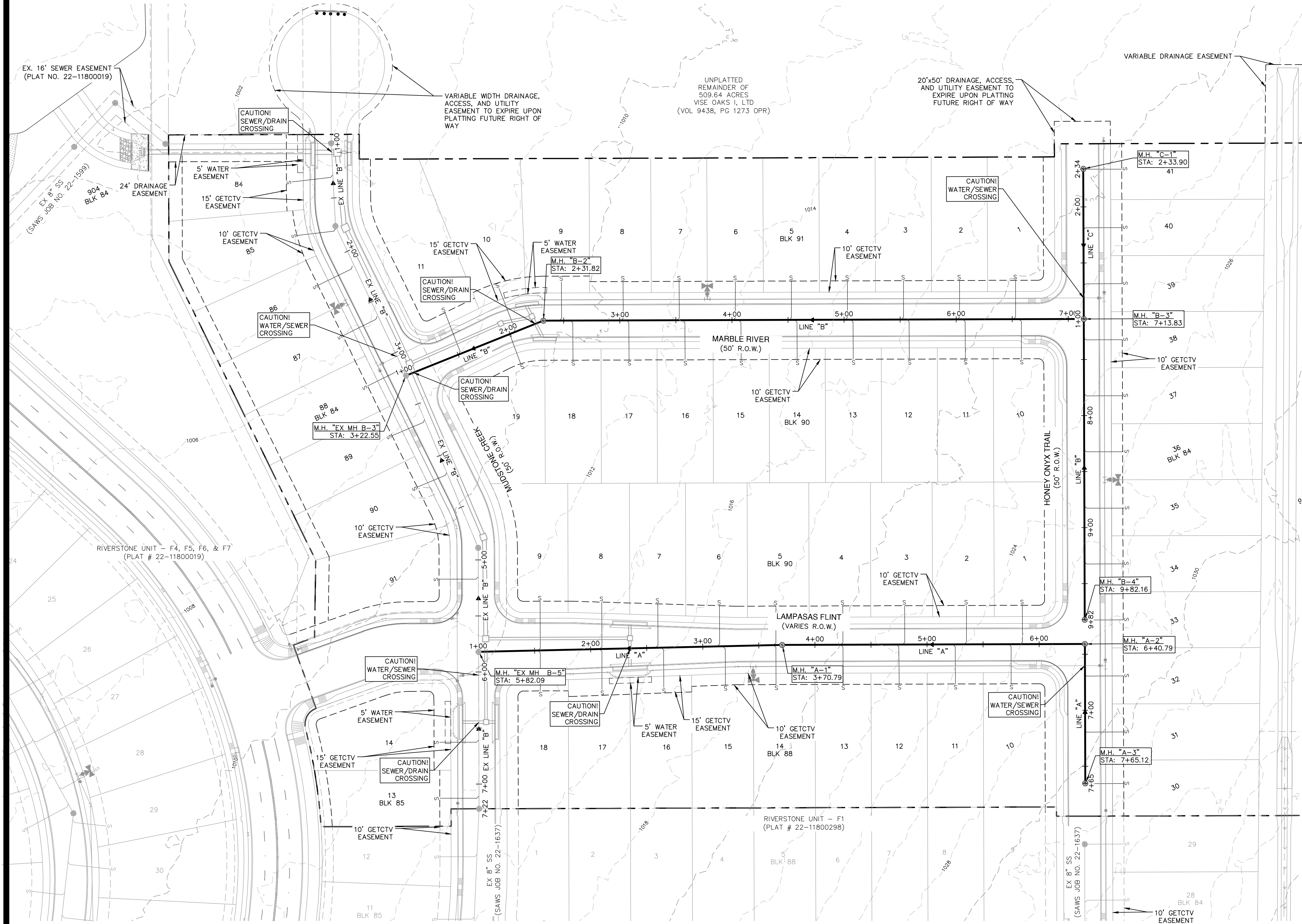


SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

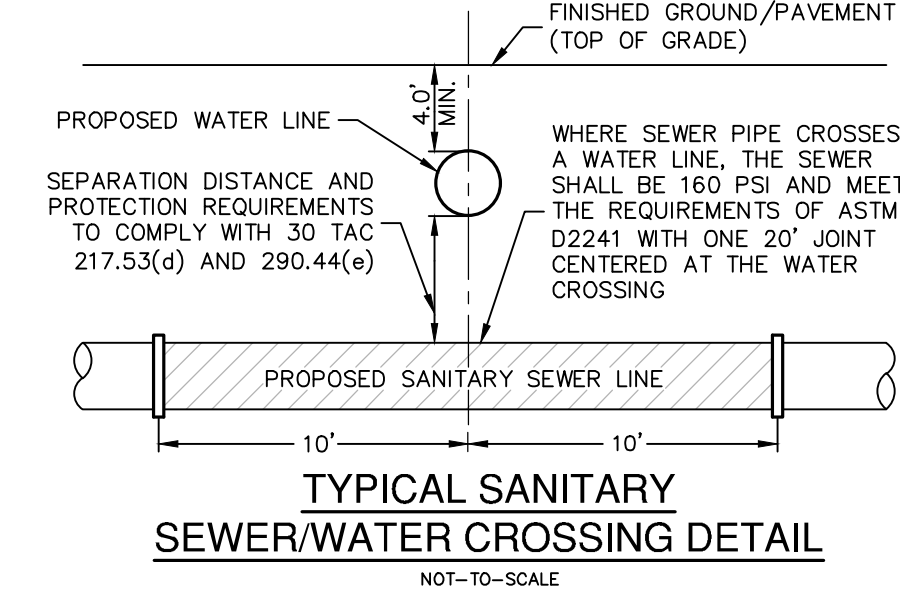
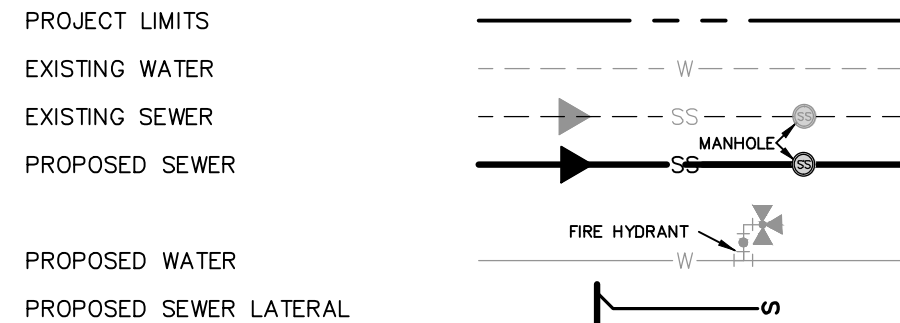
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

WATER DISTRIBUTION PLAN NOTES

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C4.11



SEWER LEGEND



- CAUTION!!**
- CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DISTRIBUTION, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.
- FINISHED FLOOR NOTES:**
- THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
 - THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.
- ROW PERMIT NOTE:**
- A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.
- TRENCH EXCAVATION SAFETY PROTECTION:**
- CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- SEWER: Medio Creek Watershed - Medio Creek W.R.C.**

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N LOOP E			
CITY: SAN ANTONIO,	STATE: TX	ZIP: 78218	
PHONE# (210)496-2668	FAX# (210)496-2668	DATE: 06-26-16	
SAWS BLOCK MAP# 74602 TOTAL EDU'S .61 TOTAL ACREAGE 12.831			
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1681.19 LF PLAT NO. 22-11800371			
NUMBER OF LOTS .61 SAWS JOB NO. 22-1645			

NO.	REVISION	DATE

2/7/23

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

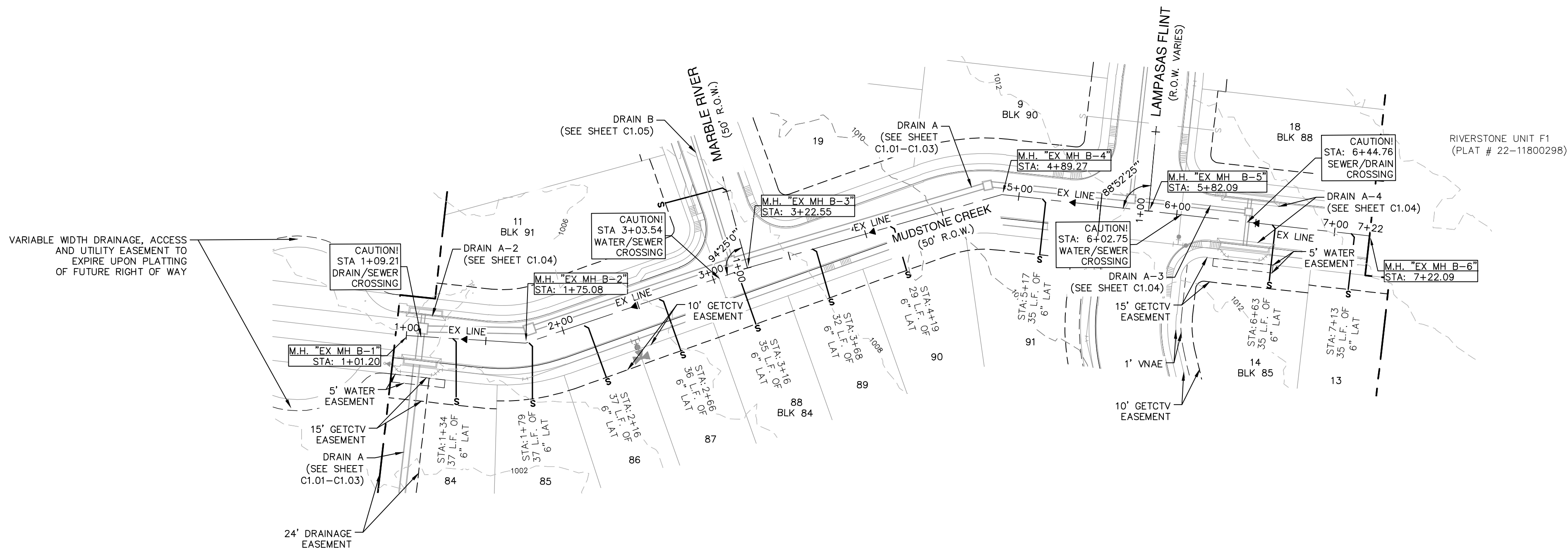
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C5.00

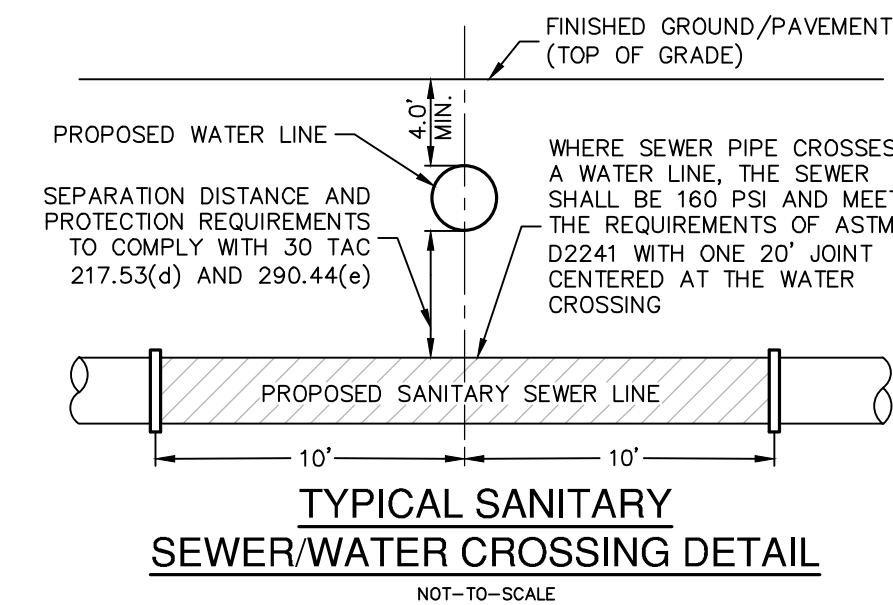
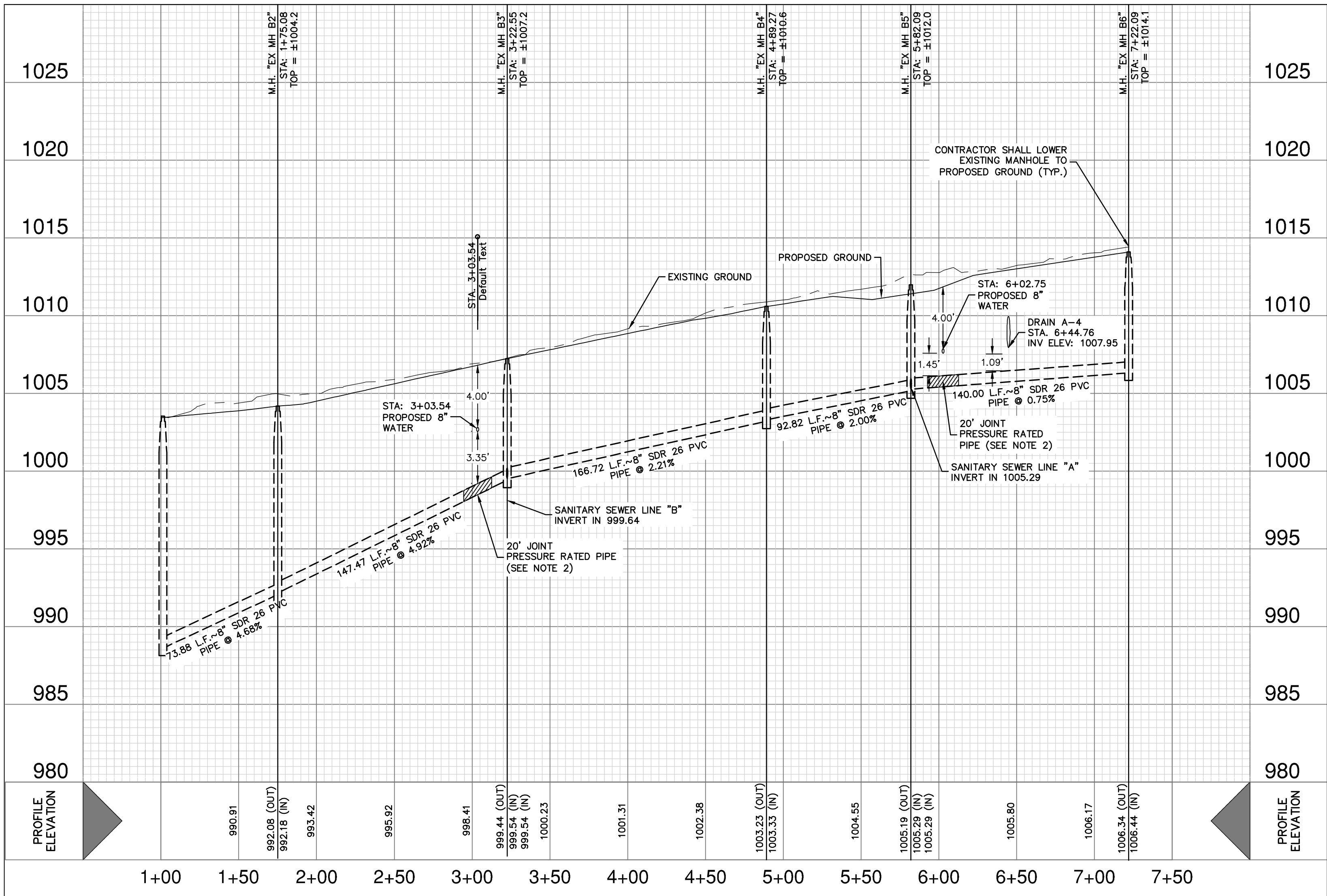
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EXISTING SANITARY SEWER
STA. 1+00.00 TO END

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



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

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

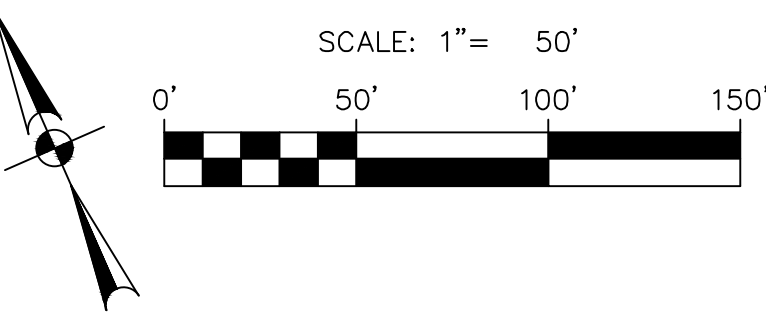
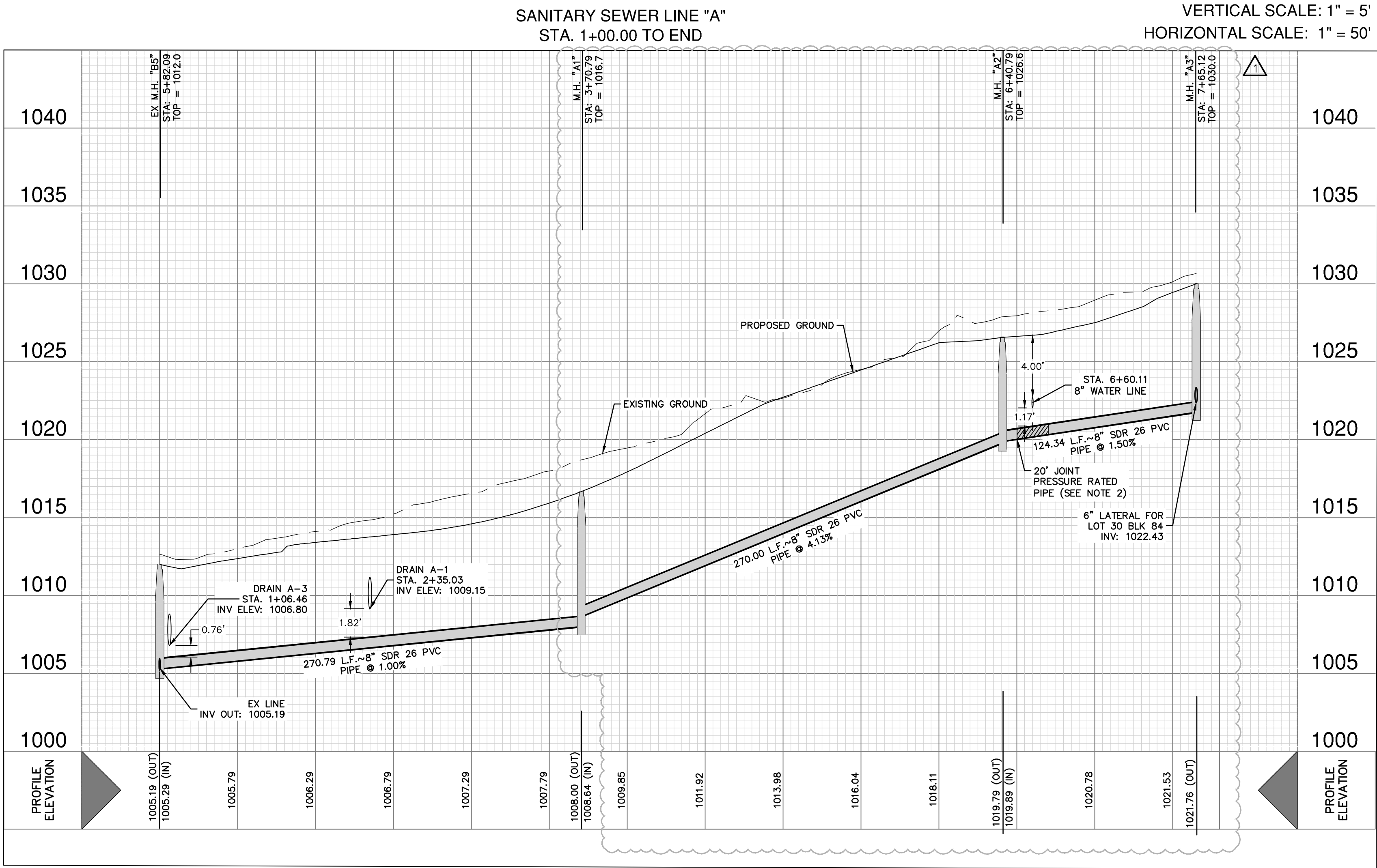
SEWER: Medio Creek Watershed - Medio Creek W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N LOOP E			
CITY: SAN ANTONIO,	STATE: TX	ZIP: 78218	
PHONE# (210)496-2668	FAX# (210)496-2668	06-2616 & 74602	
SAWS BLOCK MAP# 74602 TOTAL EDU'S 61 TOTAL ACREAGE 12.831			
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1681.19 LF PLAT NO. 22-11800371			
NUMBER OF LOTS 61 SAWS JOB NO. 22-1645			

**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
EXISTING SANITARY SEWER PLAN & PROFILE
STA. 1+00.00 TO END

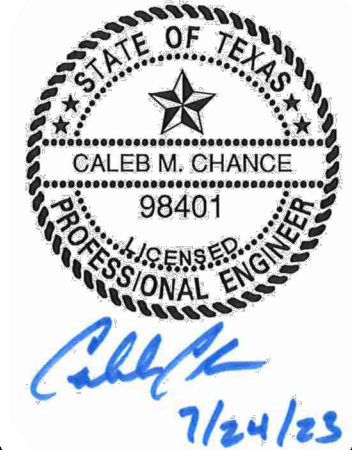
PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN CV
SHEET C5.01



SEWER LEGEND

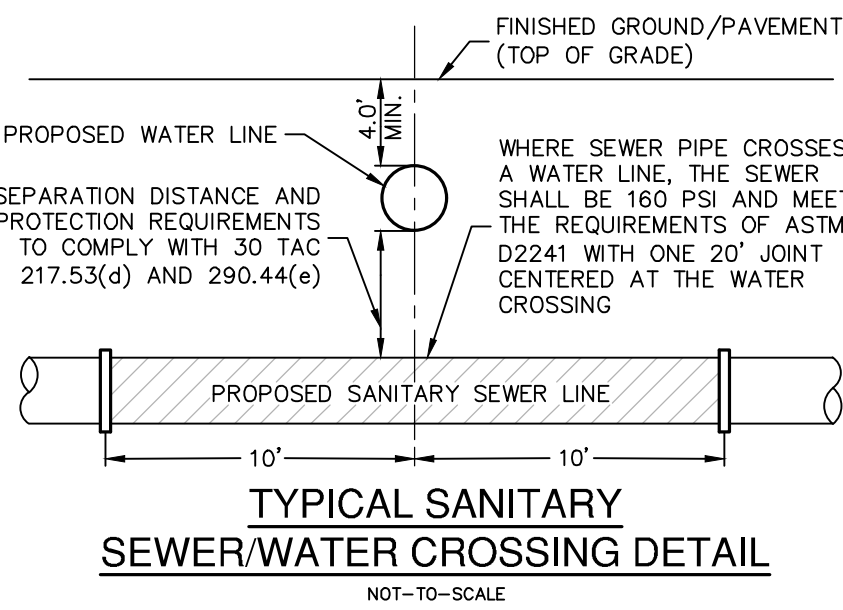
PROJECT LIMITS	
EXISTING WATER	
EXISTING SEWER	
PROPOSED SEWER	
PROPOSED WATER	
PROPOSED SEWER LATERAL	
FINISHED FLOOR ELEVATION FOR SEWER	
FIRE HYDRANT	

NO.	REVISION	DATE
1	REVISED PG. & SEWER PROFILE	7/24/2023



**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088600



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

TRENCH EXCAVATION SAFETY PROTECTION:
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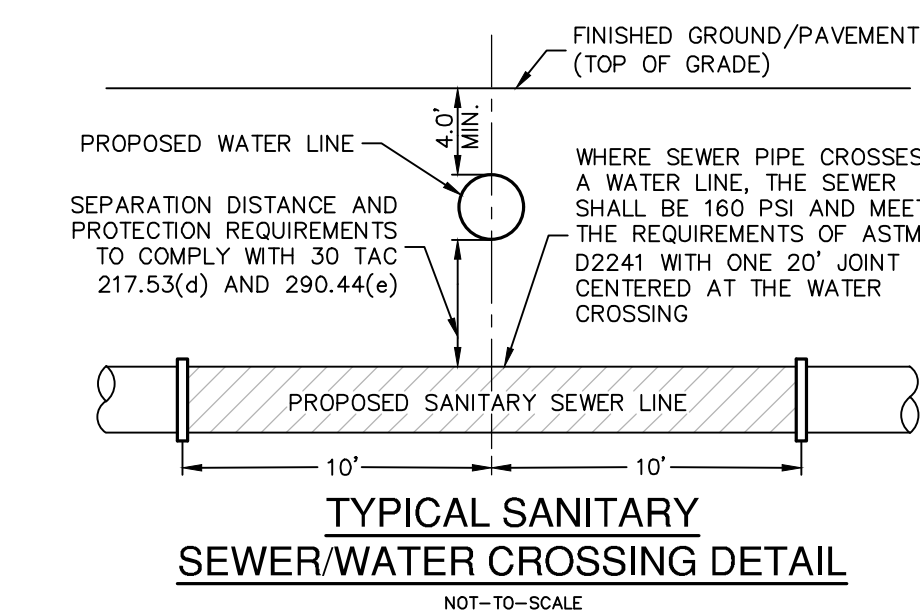
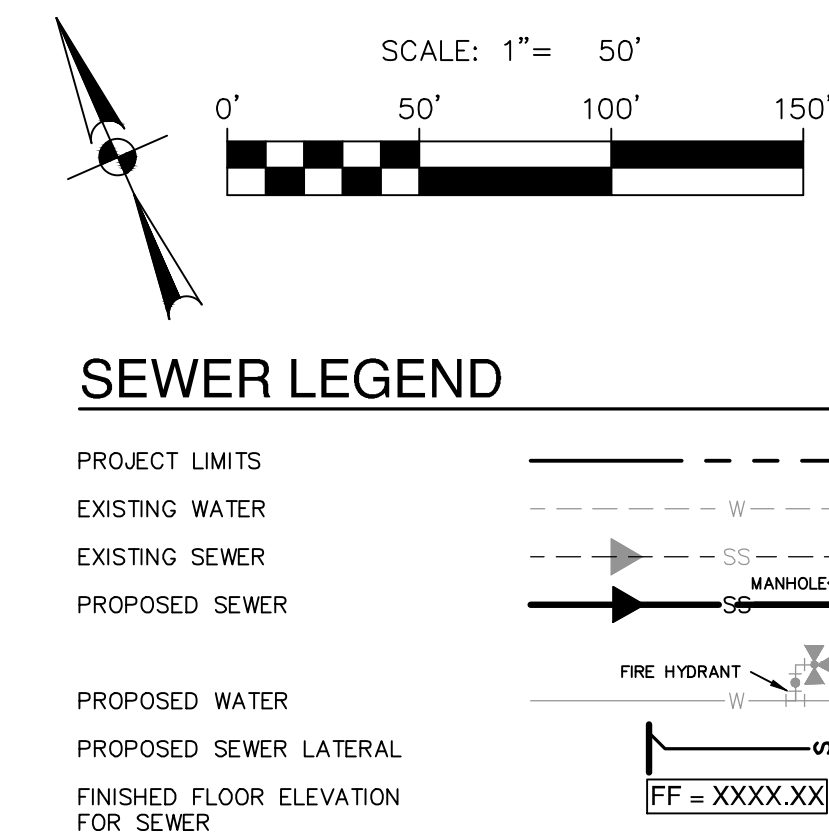
SEWER: Medio Creek Watershed - Medio Creek W.R.C.

DEVELOPER'S NAME:	CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS:	5419 N LOOP E
CITY:	SAN ANTONIO, STATE: TX ZIP: 78218
PHONE#	(210)496-2668 FAX# (210)496-2668
SAWS BLOCK MAP#	08-2616 & 74602 TOTAL EDU'S .61 TOTAL ACREAGE 12.831
TOTAL LINEAR FOOTAGE OF PIPE:	8" 1681.19 LF PLAT NO. 22-11800371
NUMBER OF LOTS	61 SAWS JOB NO. 22-1645

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

SANITARY SEWER LINE A PLAN & PROFILE
STA. 1+00.00 TO END

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	C.V
CHECKED	B.L. DRAWN C.V
SHEET	C5.02



SEWER: Medio Creek Watershed - Medio Creek W.R.C.

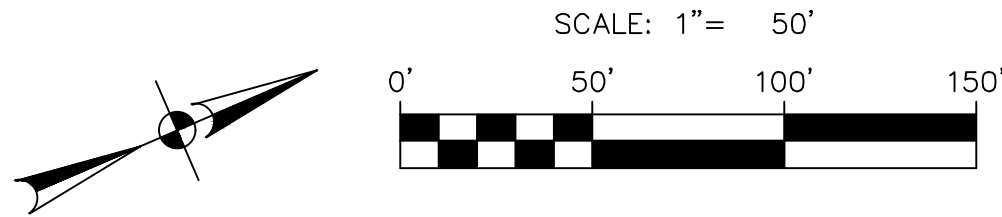
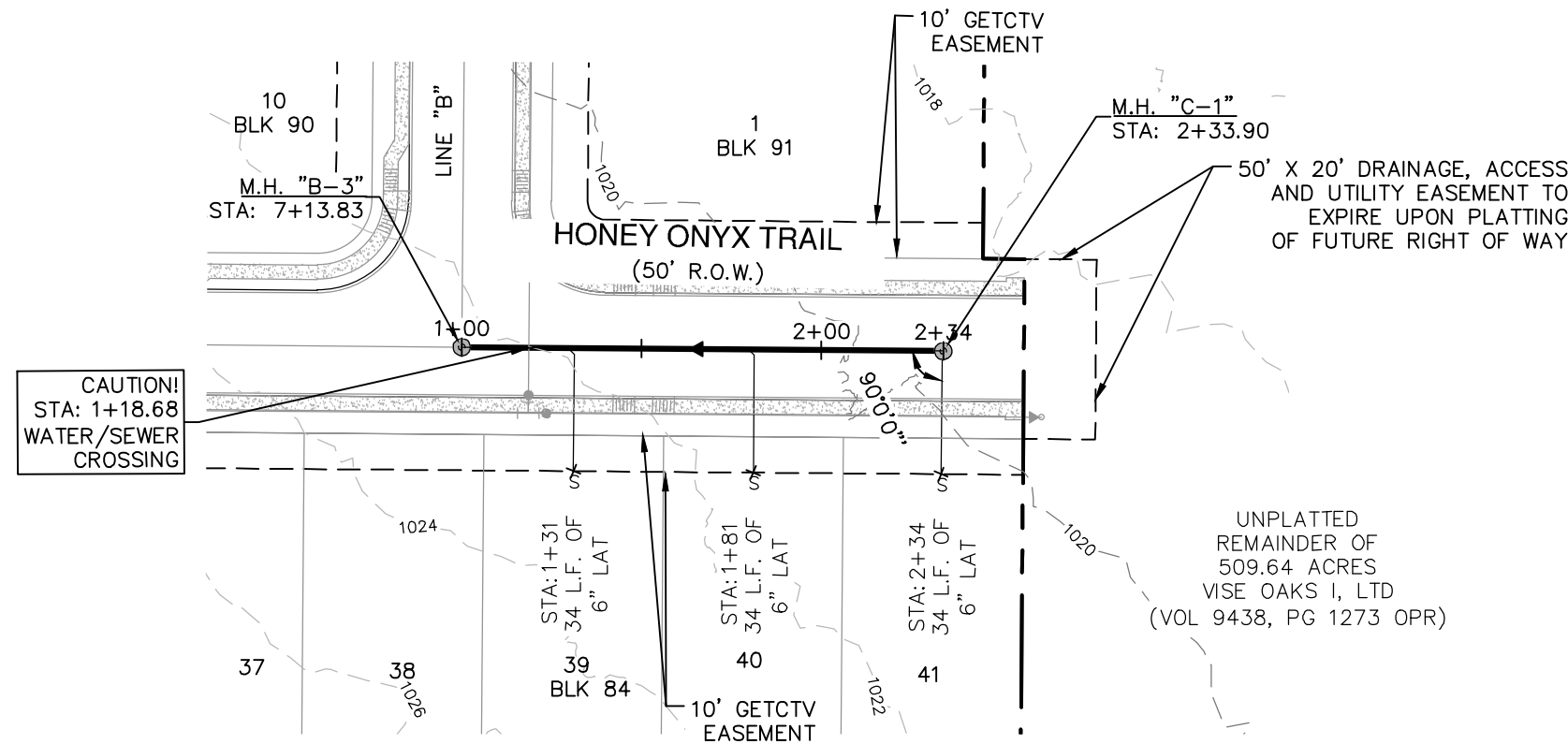
DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N LOOP E	
CITY: SAN ANTONIO,	STATE: TX ZIP: 78218
PHONE# (210)496-2668	FAX# (210)496-2668
08-2618 &	
SAWS BLOCK MAP# 74602	TOTAL EDU# 61 TOTAL ACREAGE 12.83
TOTAL LINEAR FOOTAGE OF PIPE: 8' 1681.19 LF PLAT NO.22-11800373	
NUMBER OF LOTS 61	SAWS JOB NO. 22-1845

STATE OF TEXAS
CALEB M. CHANCE
98401
LICENSED
PROFESSIONAL ENGINEER

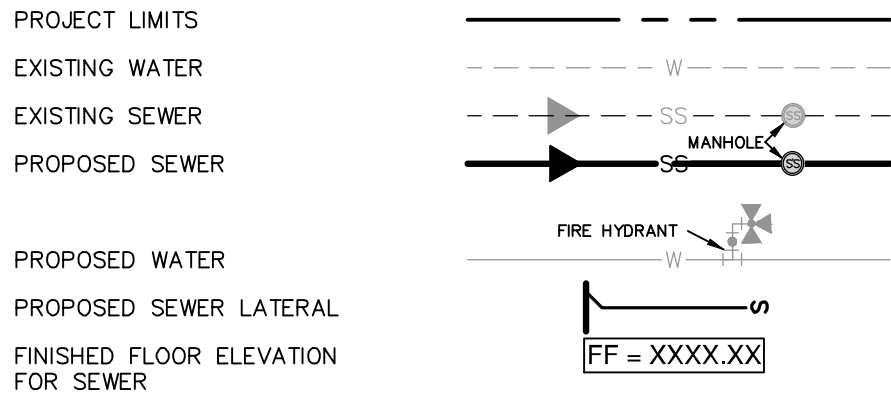
Caleb M. Chance
4/9/24

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

PLAT NO. 22-11800371
JOB NO. 11680-53
DATE JUNE 2022
DESIGNER CV
CHECKED BL DRAWN CV
SHEET C5.03



SEWER LEGEND



NO.	REVISION	DATE

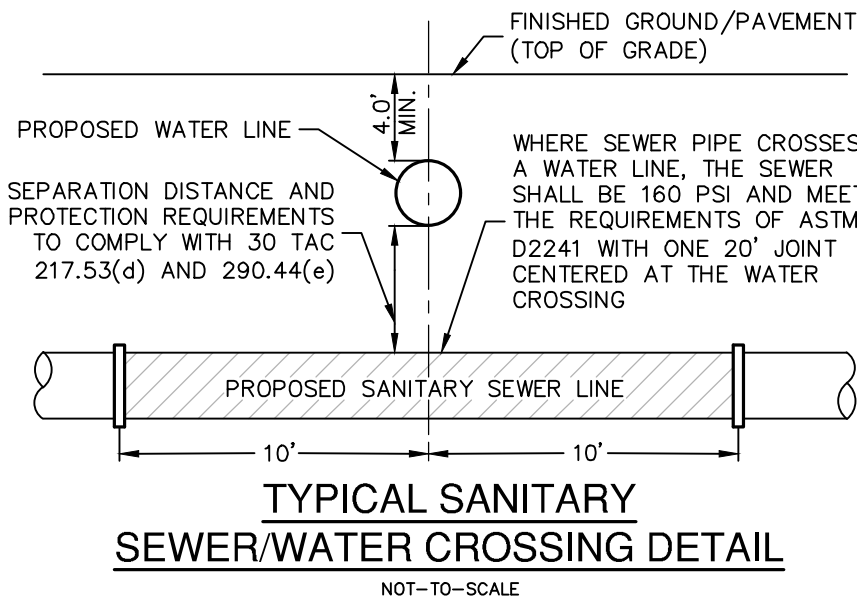
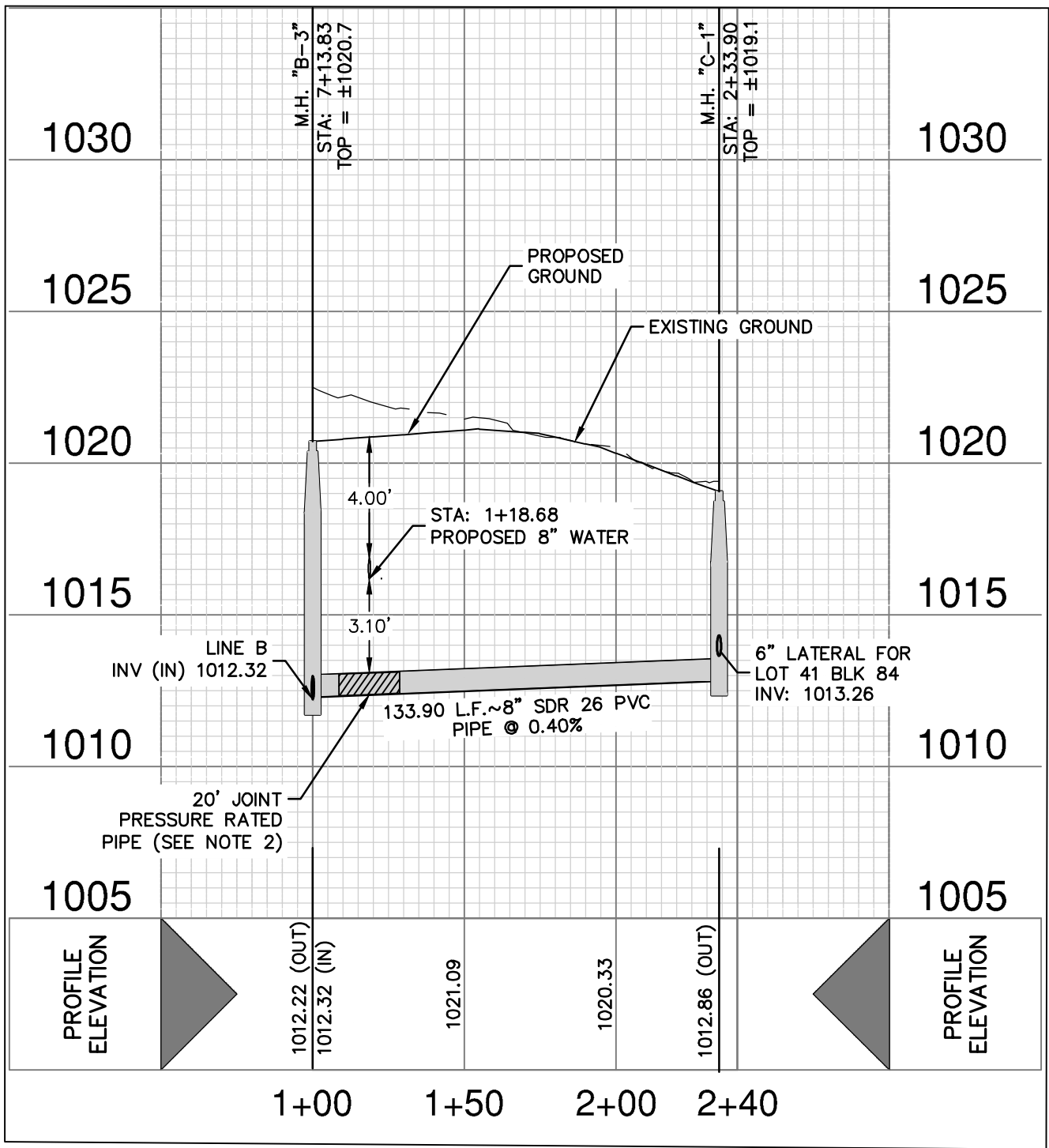
Caleb M. Chance
2/7/23

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

SANITARY SEWER LINE "C"
STA. 1+00.00 TO END

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



CAUTION!!

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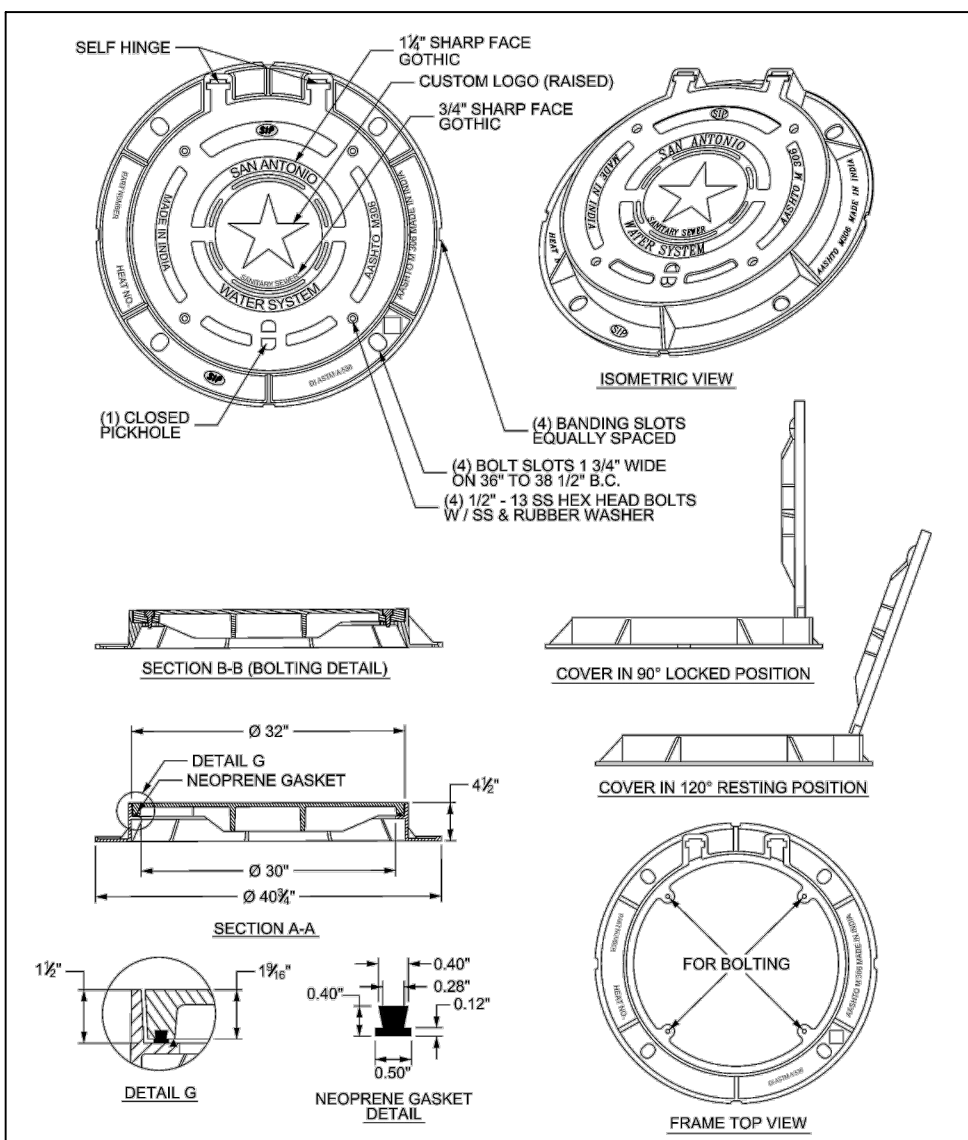
SEWER: Medio Creek Watershed - Medio Creek W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.			
ADDRESS: 5419 N LOOP E			
CITY: SAN ANTONIO,	STATE: TX	ZIP: 78218	
PHONE# (210)496-2668	FAX# (210)496-2668	06-2616 & 74602	
SAWS BLOCK MAP# 74602 TOTAL EDU'S .61 TOTAL ACREAGE 12.831			
TOTAL LINEAR FOOTAGE OF PIPE: 8" 1681.19 LF PLAT NO. 22-11800371			
NUMBER OF LOTS 61 SAWS JOB NO. 22-1645			

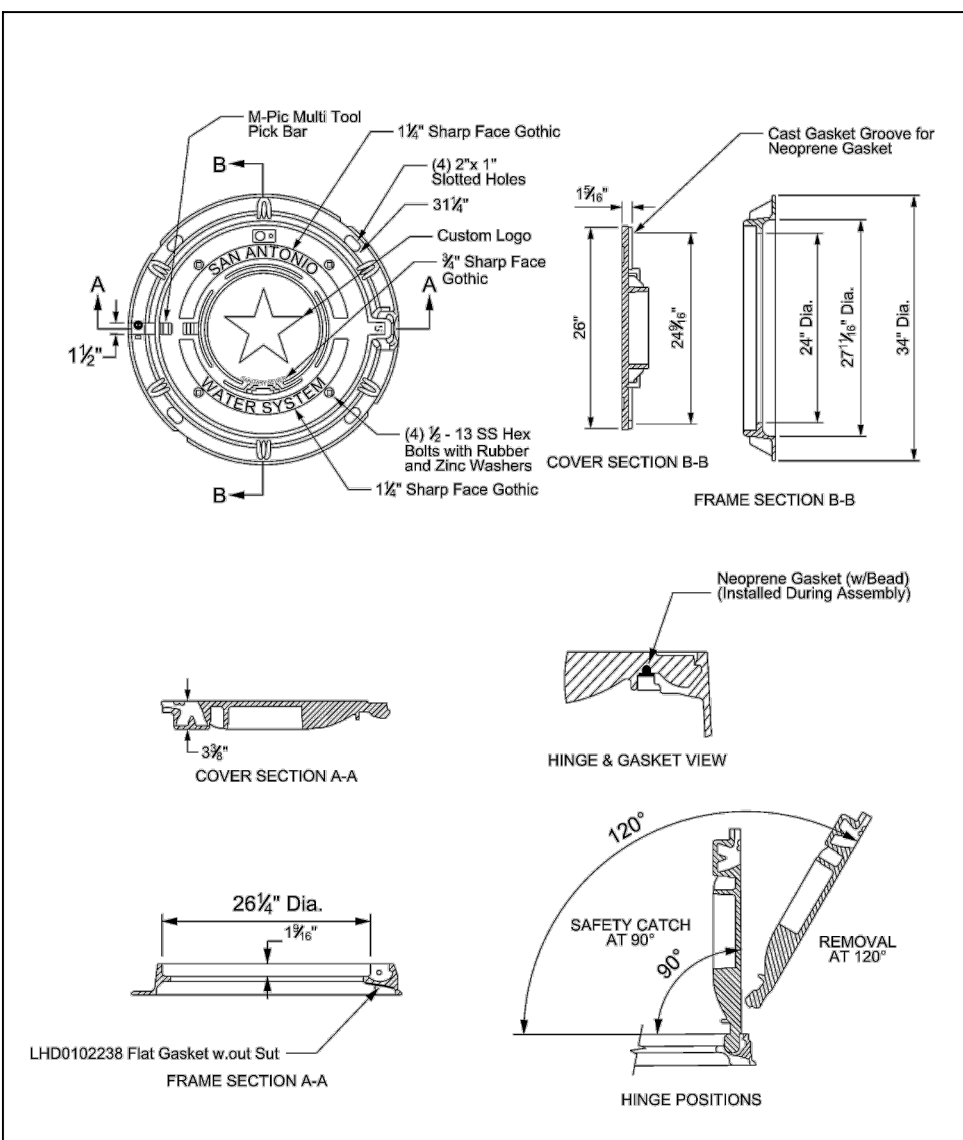
RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

SANITARY SEWER LINE C PLAN & PROFILE
STA. 1+00.00 TO END

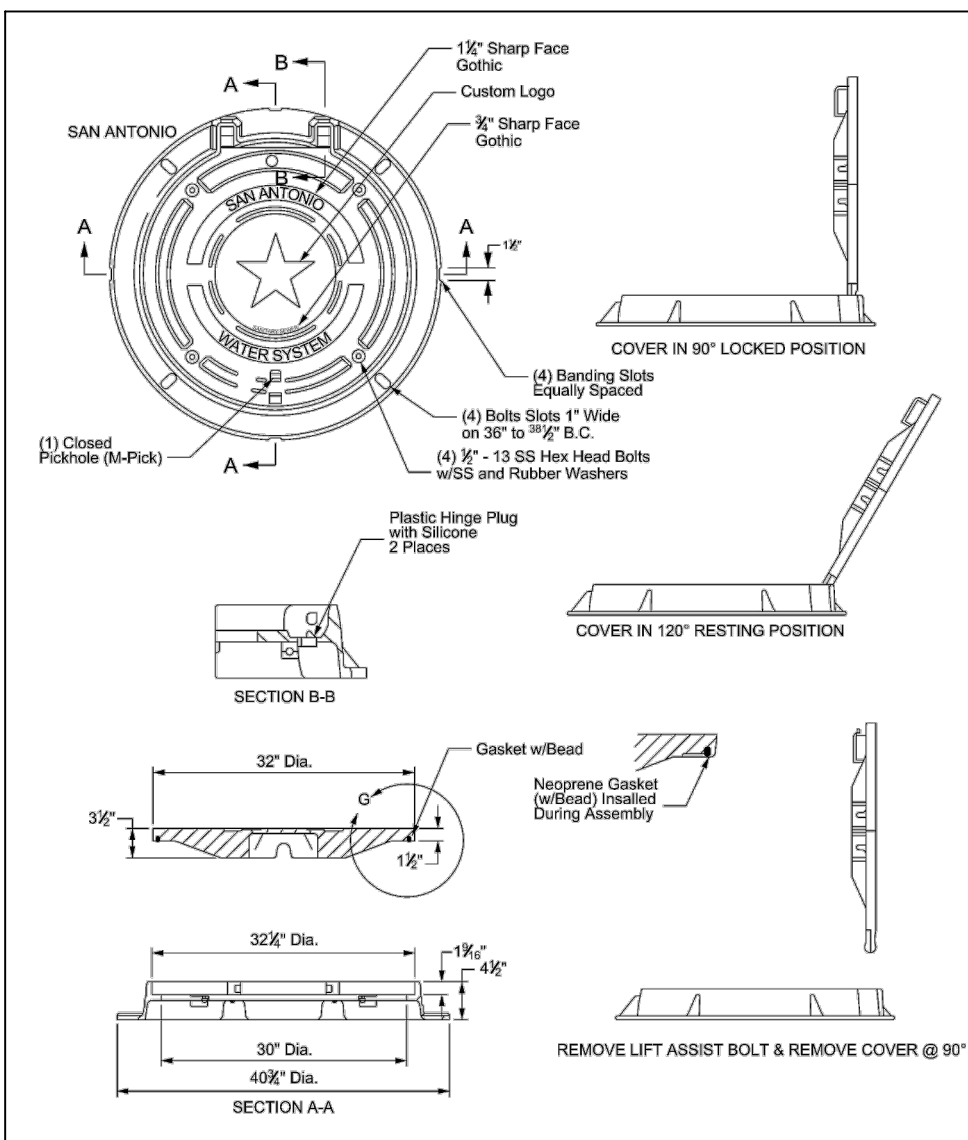
PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	C.V
CHECKED	B.L. DRAWN C.V
SHEET	C5.04



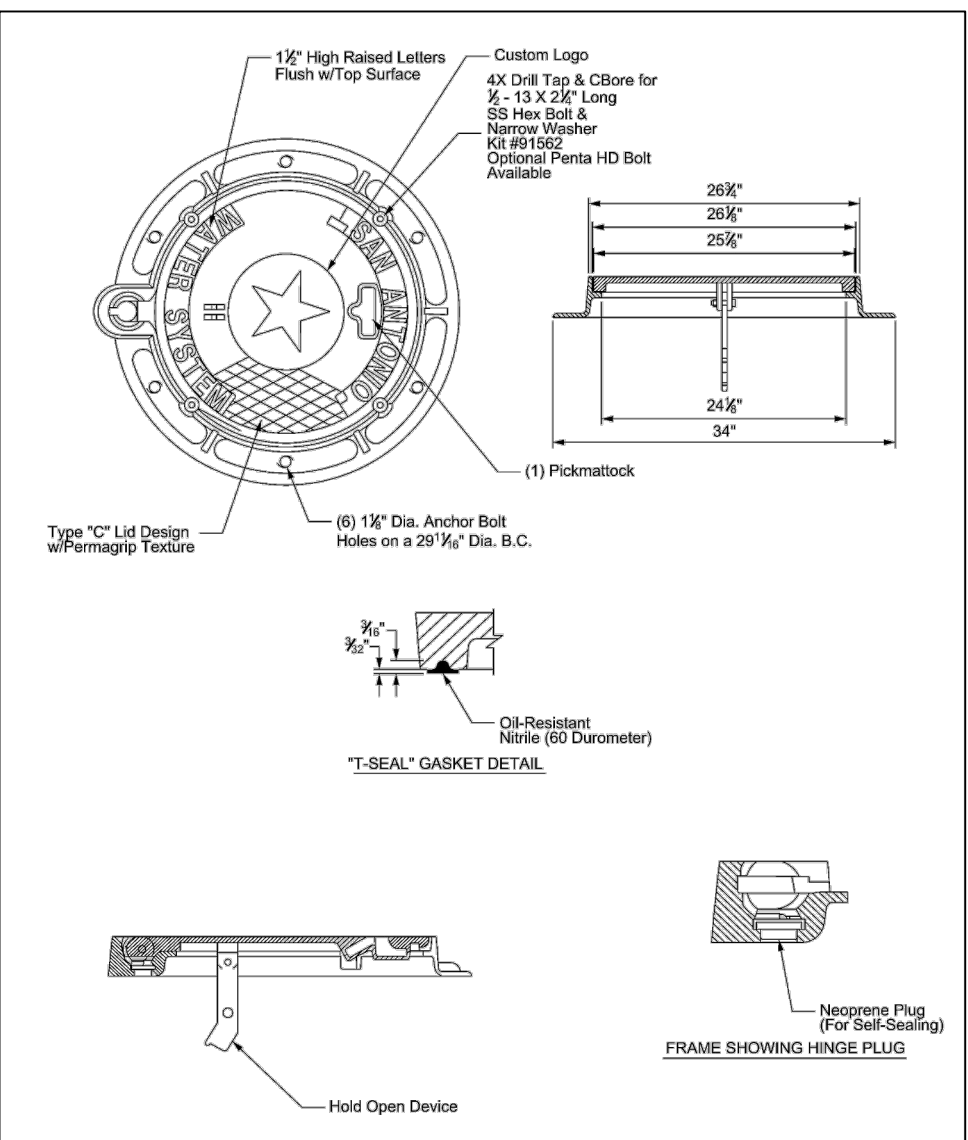
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	30" MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008 DD 852-07	REVISED AUG 2019 SHEET 1 OF 5
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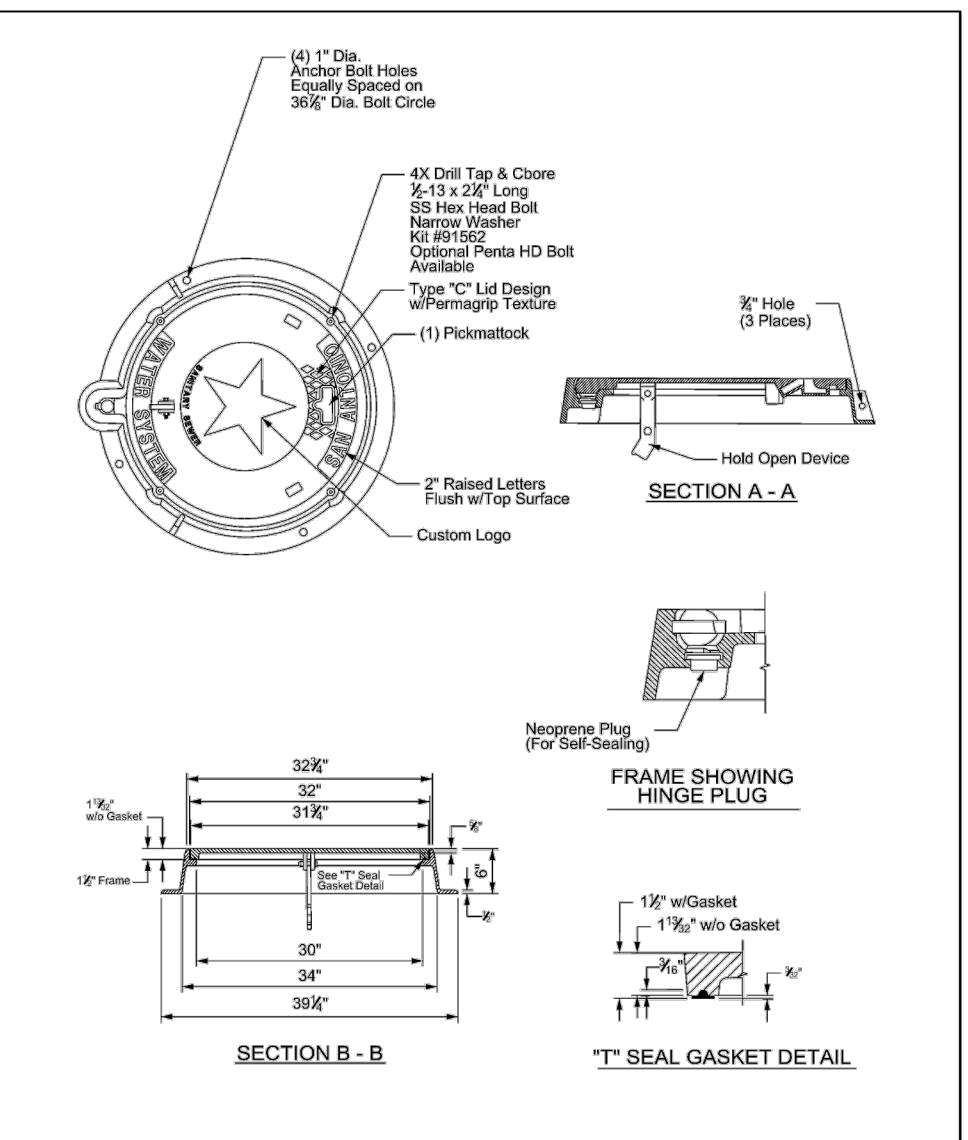
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008 DD 852-07	REVISED AUG 2019 SHEET 2 OF 5
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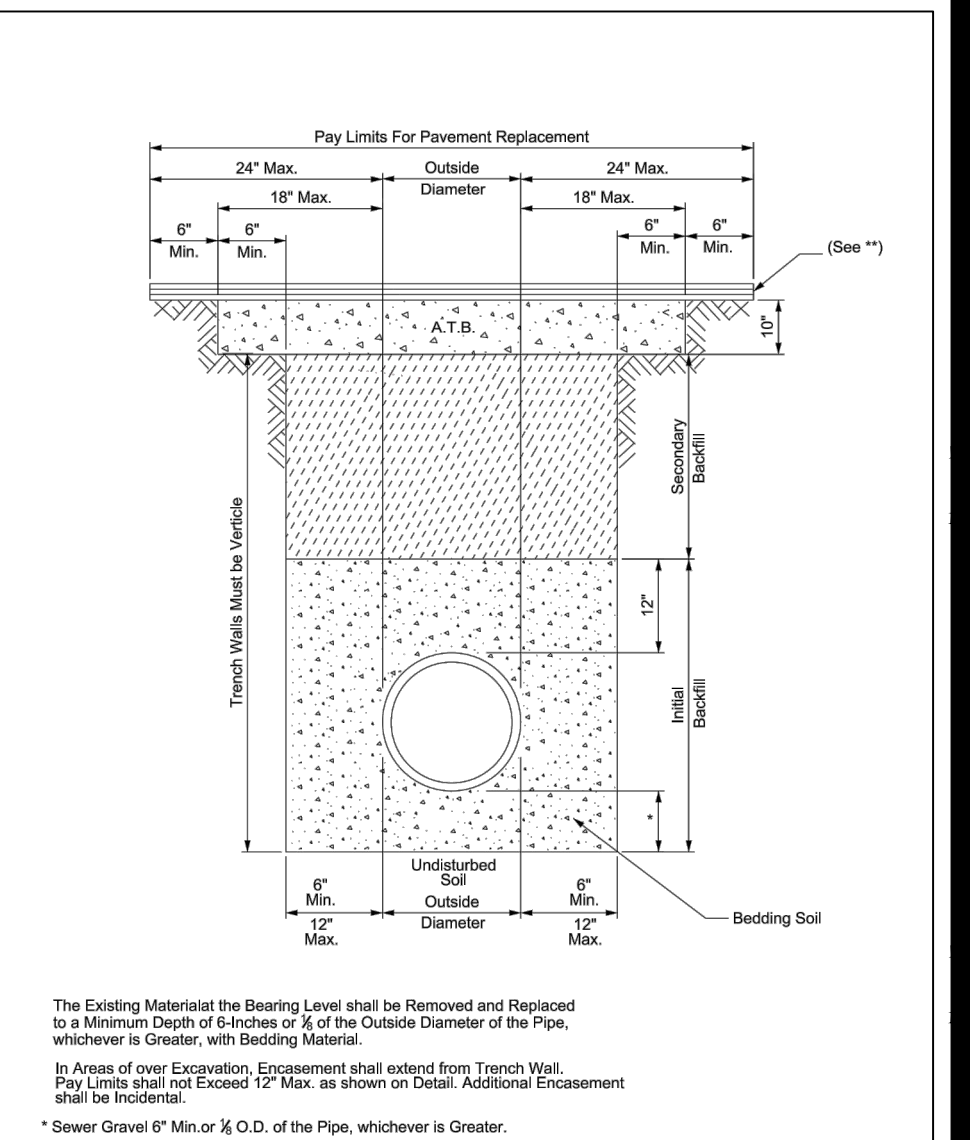
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008 DD 852-07	REVISED AUG 2019 SHEET 3 OF 5
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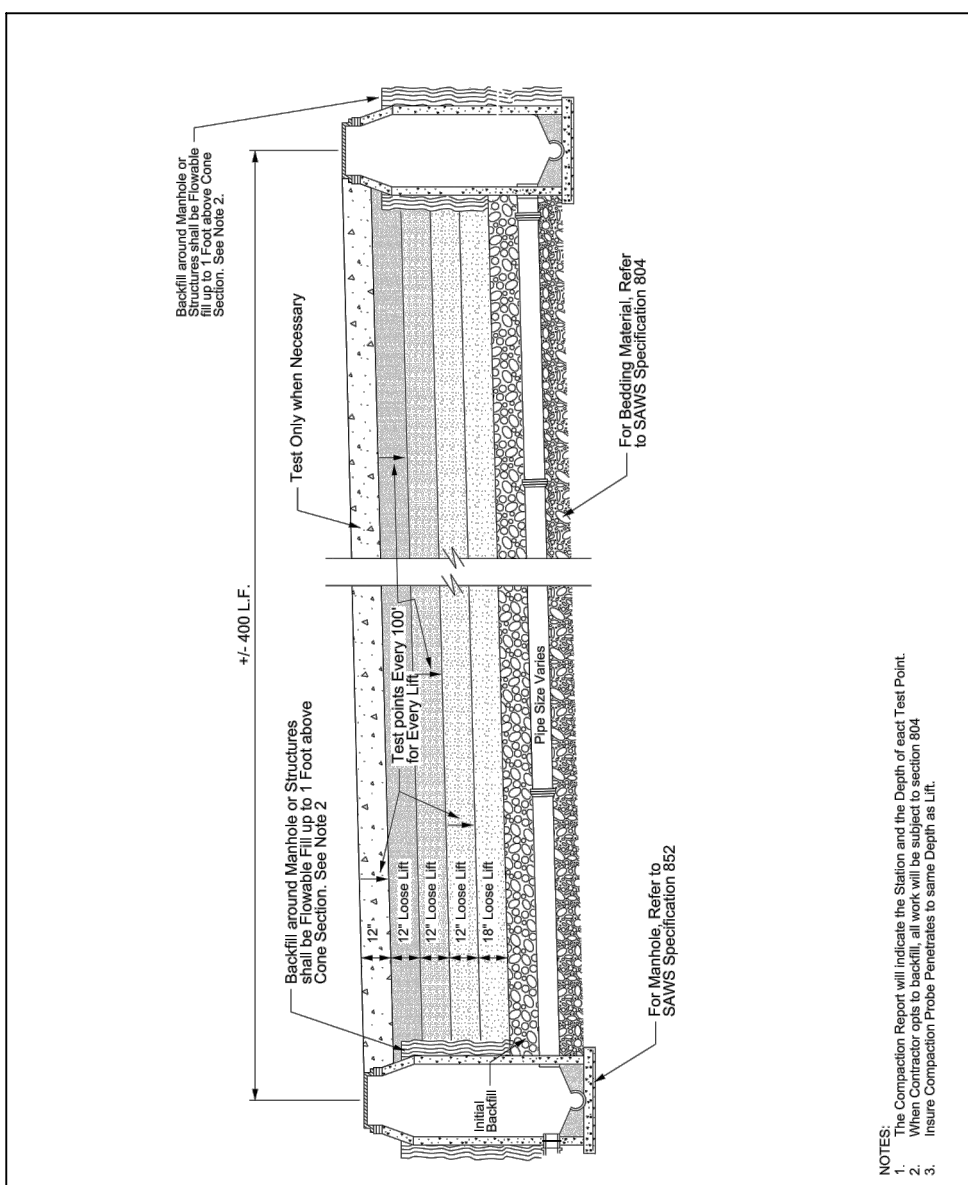
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008 DD 852-07	REVISED AUG 2019 SHEET 4 OF 5
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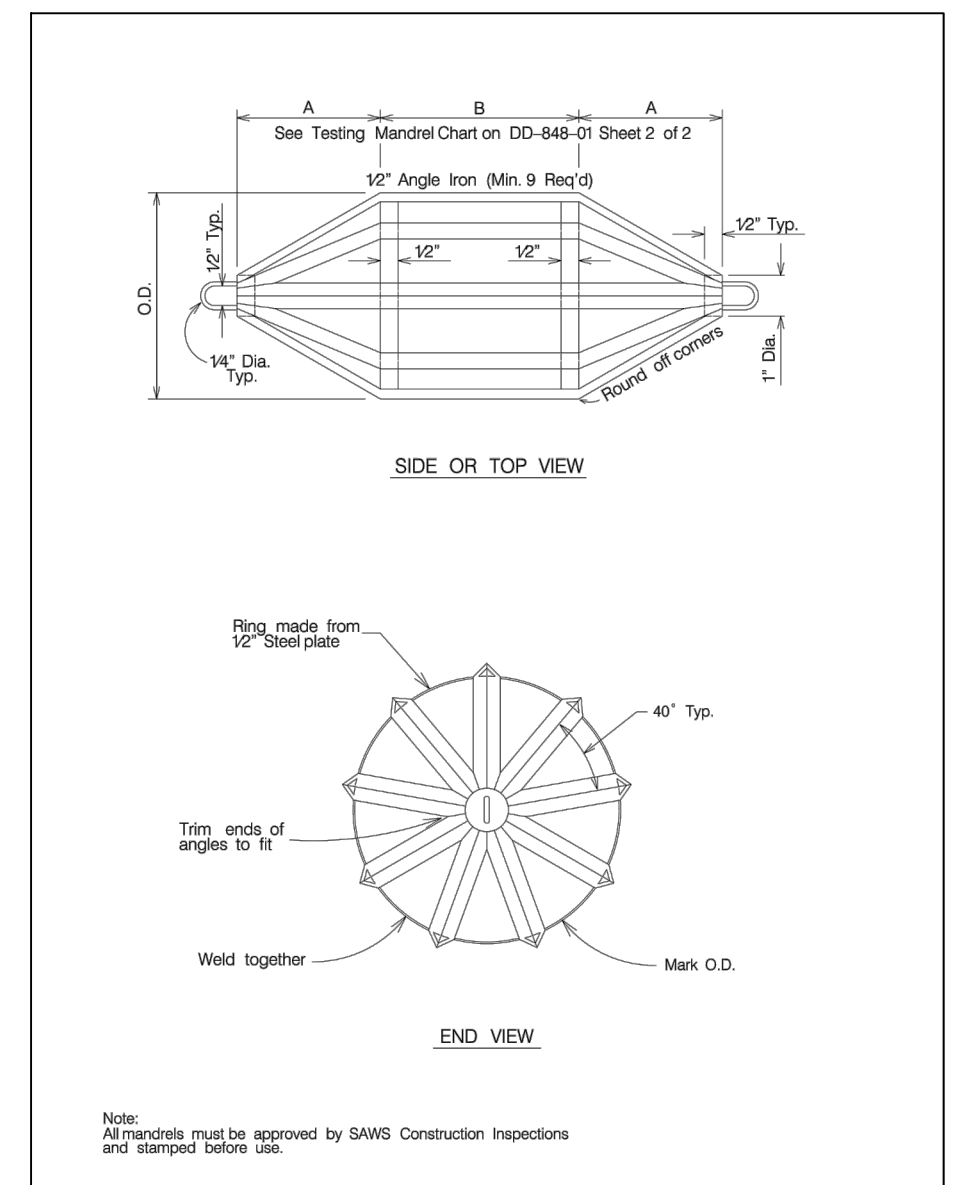
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008 DD 852-07	REVISED AUG 2019 SHEET 5 OF 5
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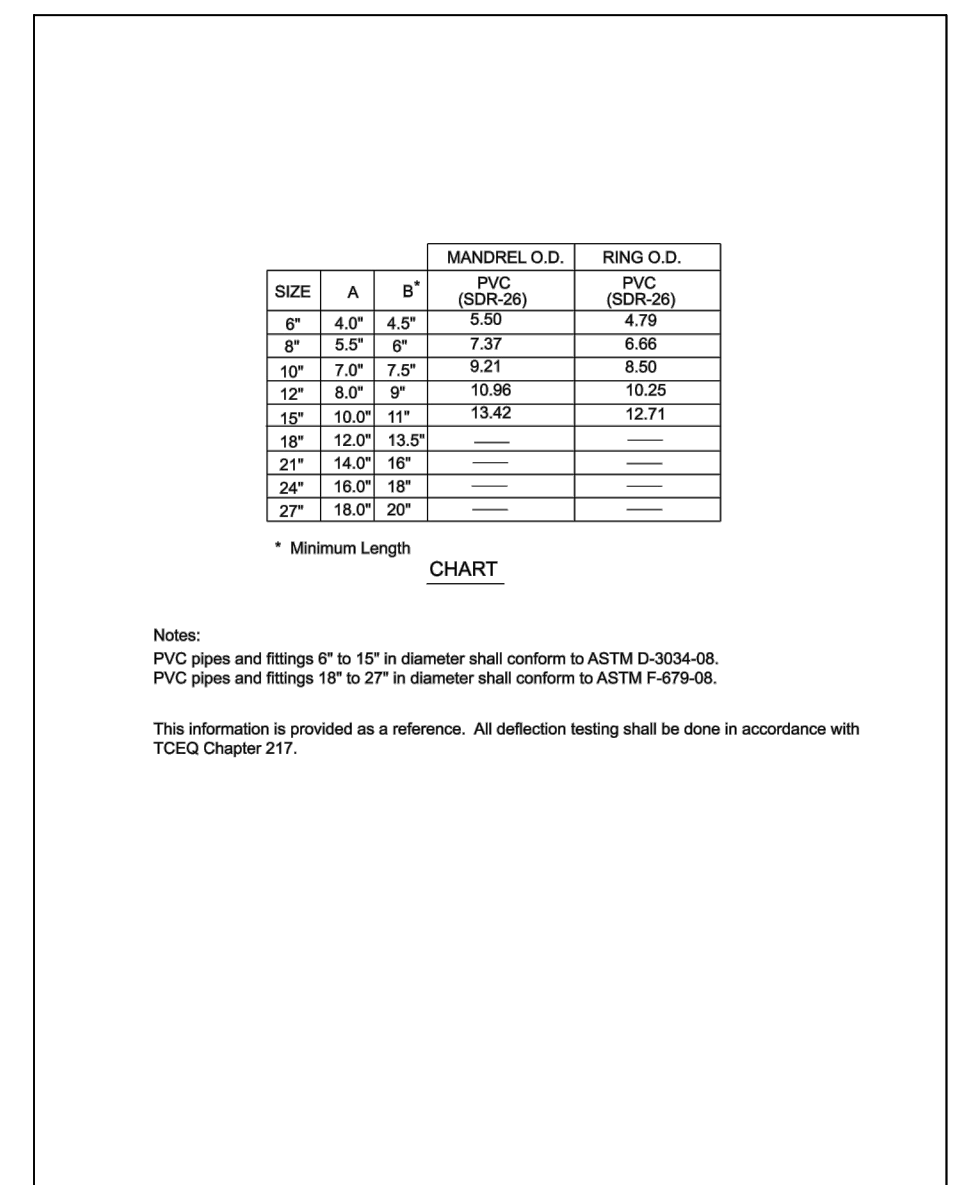
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE Laid IN TRENCH	APPROVED MARCH 2008 DD-804-01	REVISED DEC 2018 SHEET 1 OF 1
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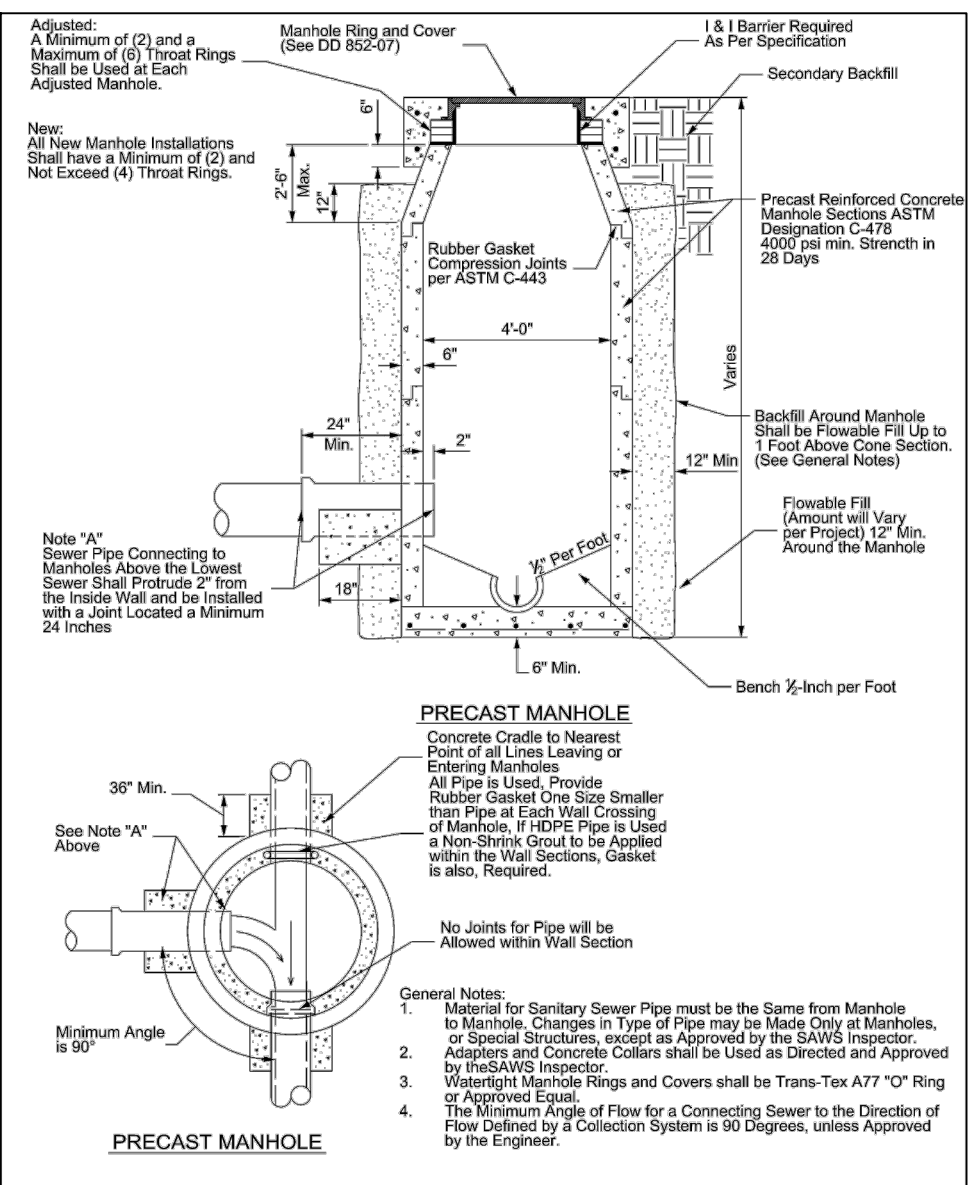
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TRENCH COMPACTION DETAIL	APPROVED MARCH 2008 DD 804-02	REVISED DEC 2018 SHEET 1 OF 1
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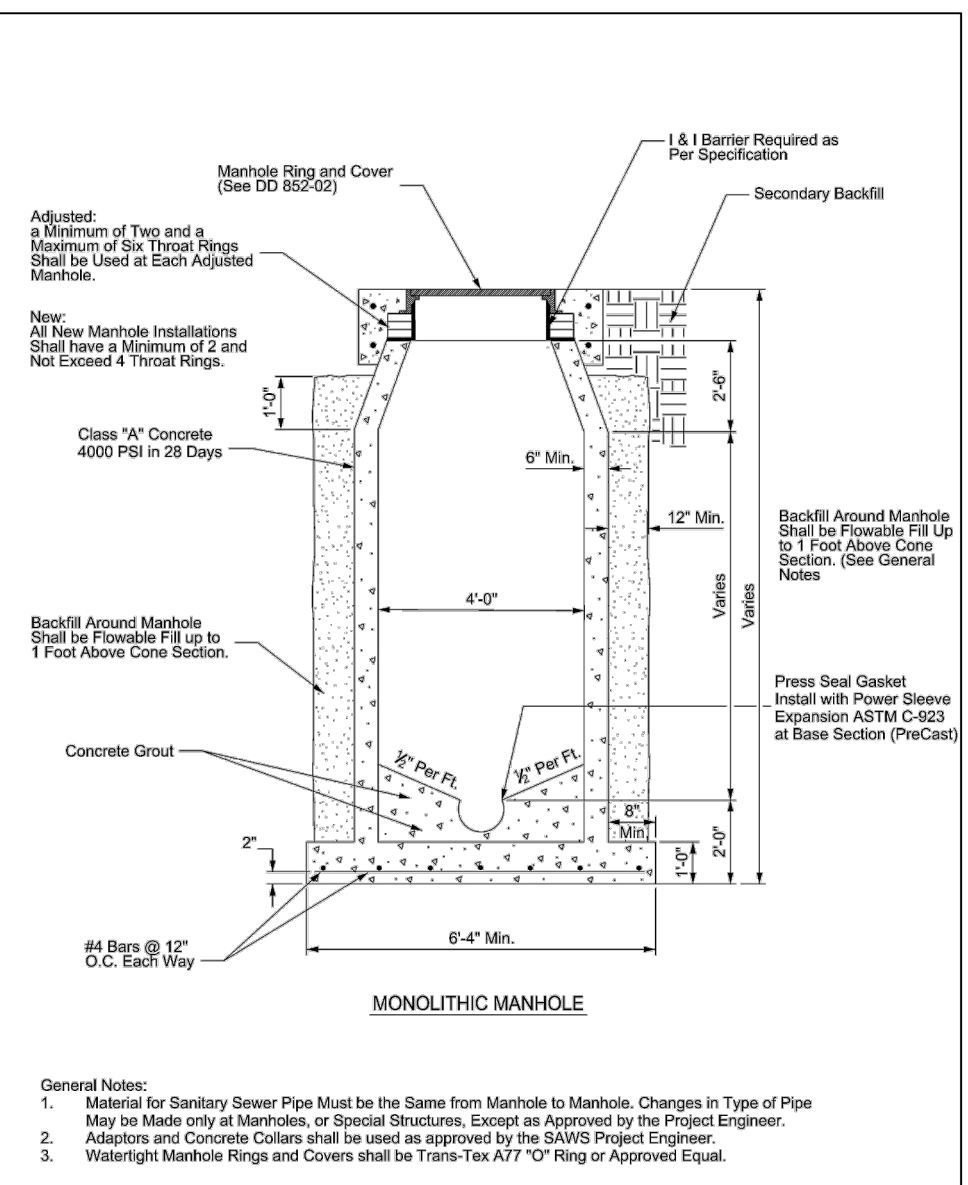
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	GO, NO GO DEFLECTION TESTING MANDREL CHART	APPROVED MARCH 2008 DD-848-01	REVISED APRIL 2014 SHEET 1 OF 2
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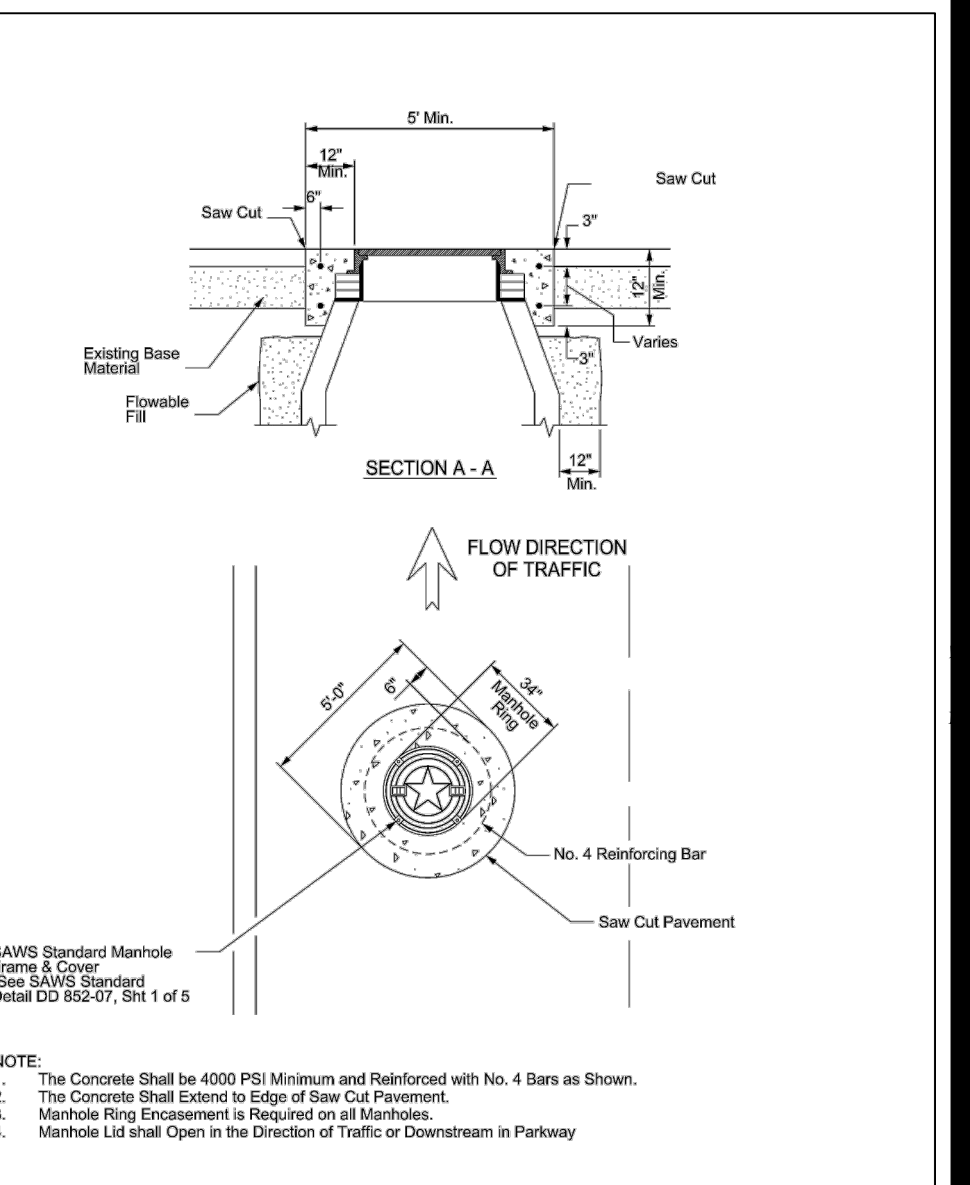
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	GO, NO GO DEFLECTION TESTING MANDREL CHART	APPROVED MARCH 2008 DD-848-01	REVISED APRIL 2014 SHEET 2 OF 2
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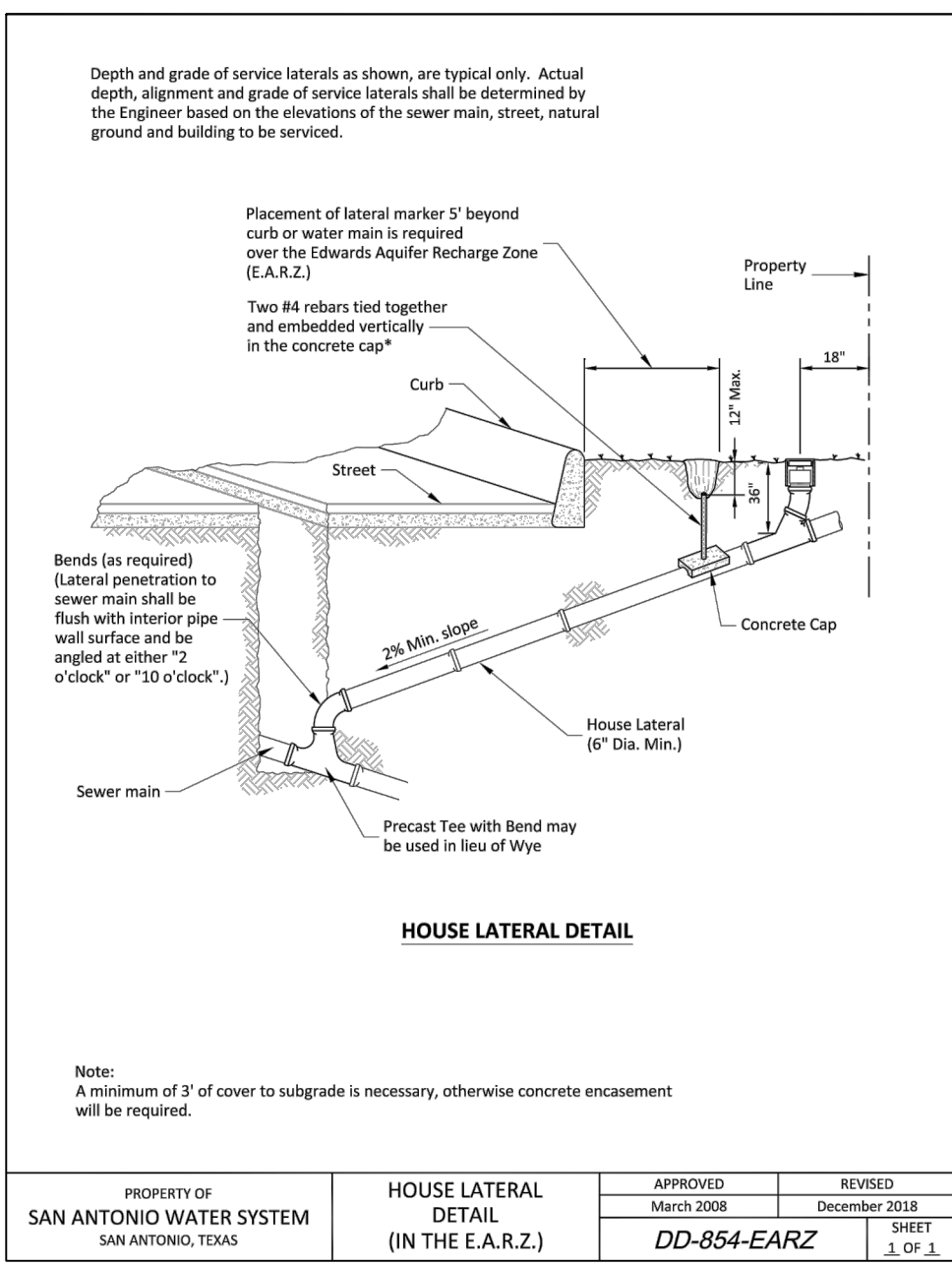
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD PRECAST MANHOLE	APPROVED MARCH 2008 DD-852-01	REVISED AUG 2019 SHEET 1 OF 2
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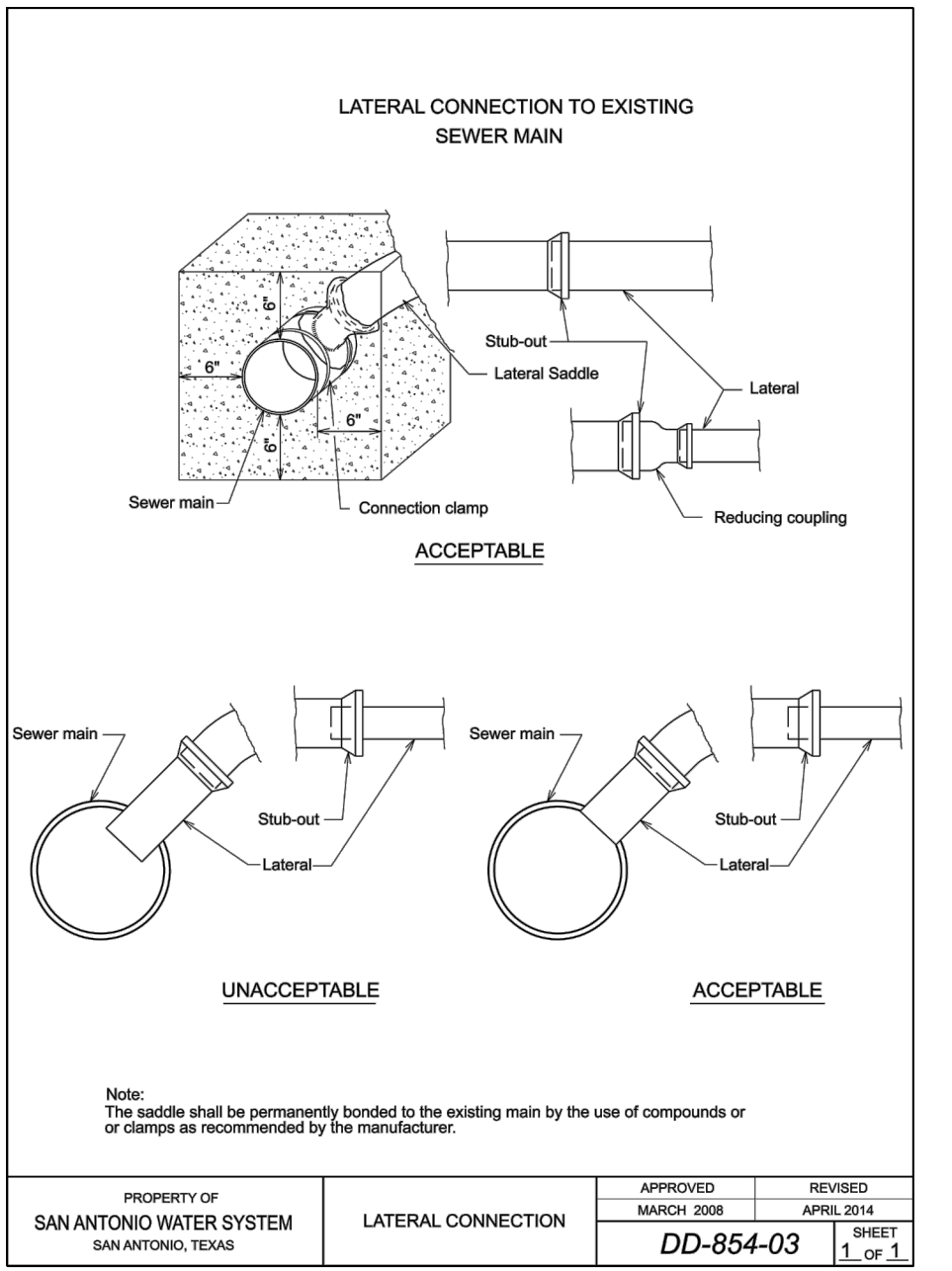
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD MONOLITHIC MANHOLE	APPROVED MARCH 2008 DD 852-01	REVISED AUG 2019 SHEET 2 OF 2
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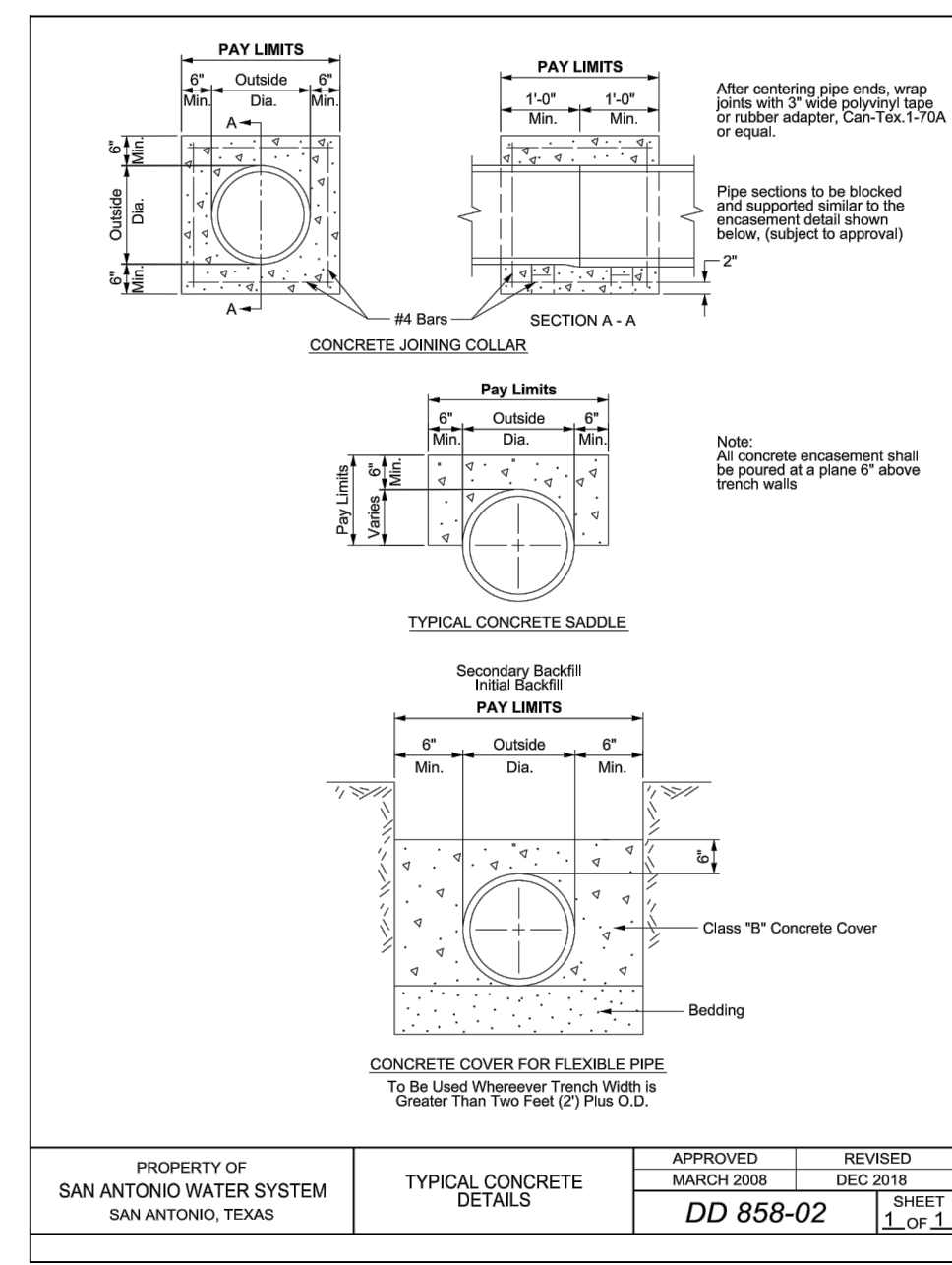
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING ENCASEMENT DETAIL	APPROVED MARCH 2008 DD 852-03	REVISED AUG 2019 SHEET 1 OF 2
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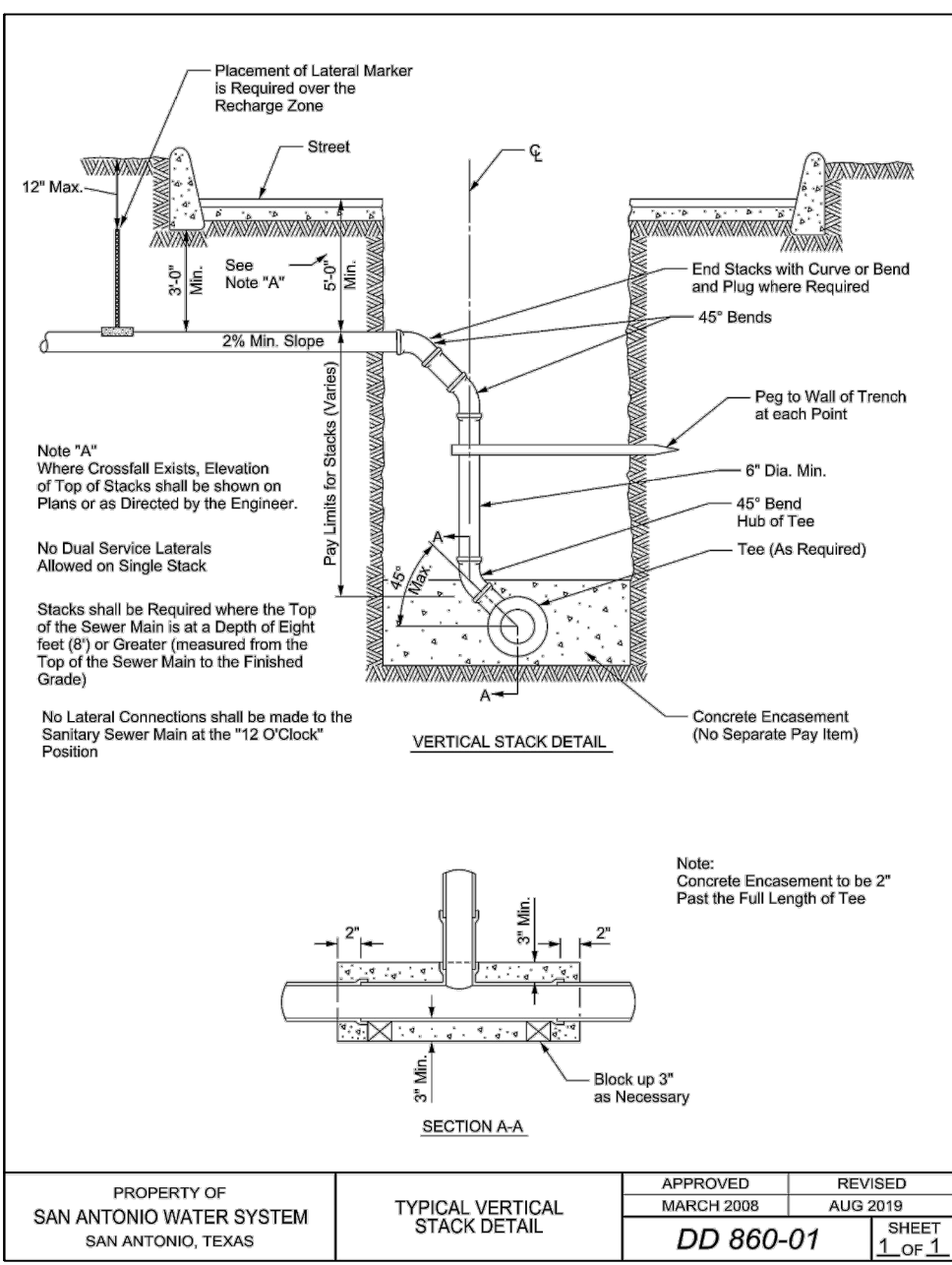
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)	APPROVED MARCH 2008 DD-854-EARZ	REVISED DECEMBER 2018 SHEET 1 OF 1
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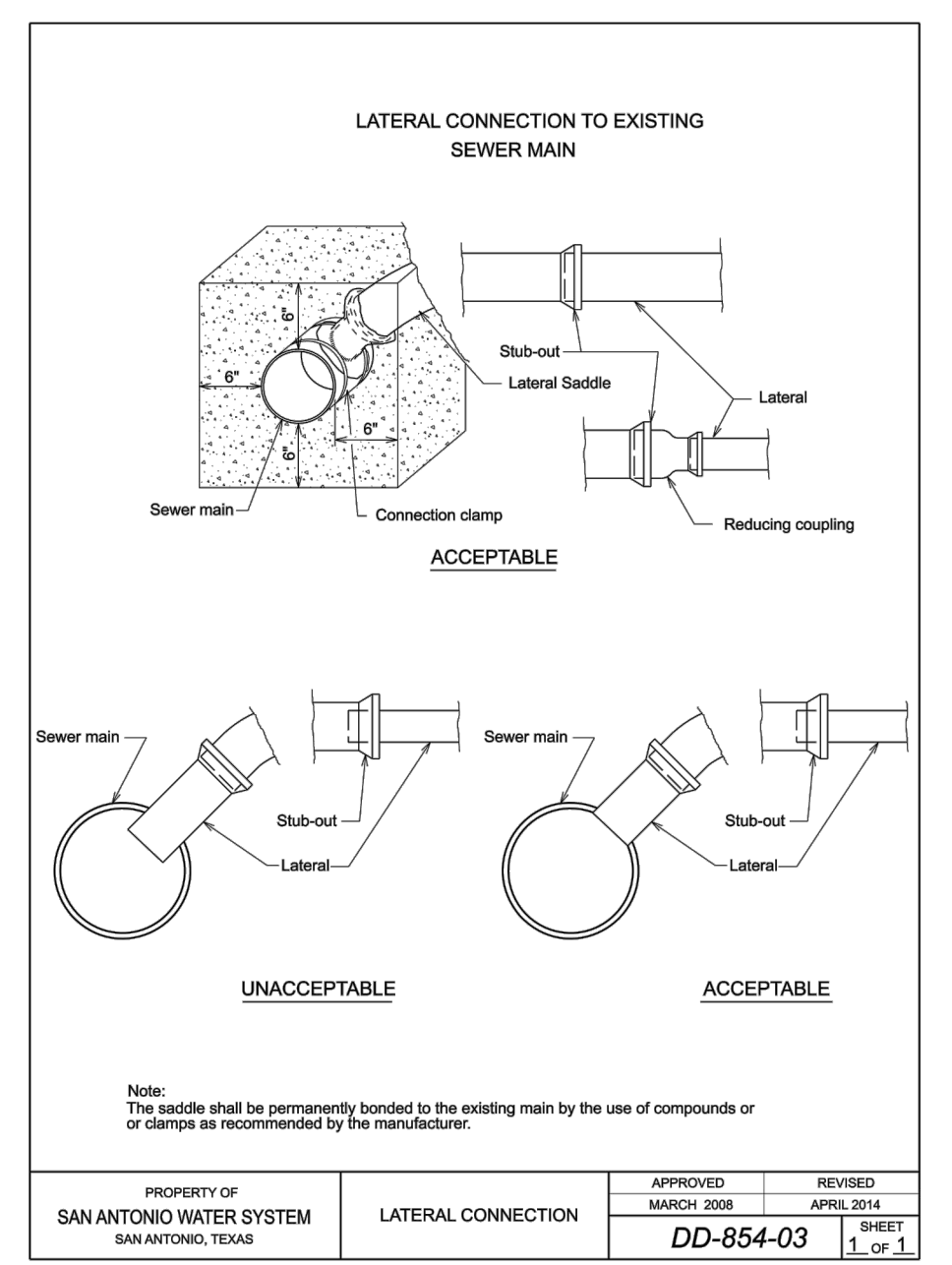
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	LATERAL CONNECTION	APPROVED MARCH 2008 DD-854-03	REVISED APRIL 2014 SHEET 1 OF 1
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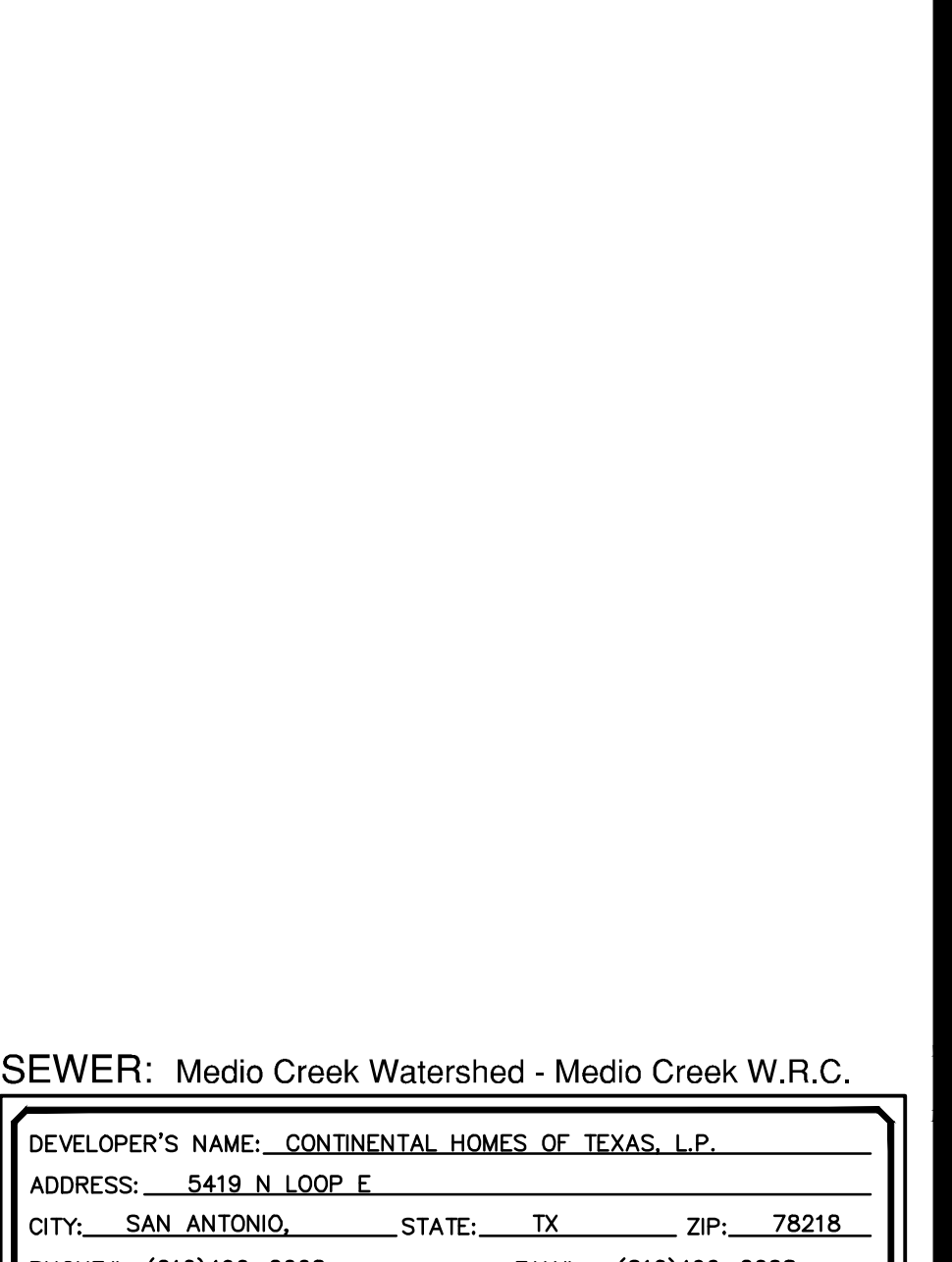
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE DETAILS	APPROVED MARCH 2008 DD 858-02	REVISED DEC 2018 SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL VERTICAL STACK DETAIL	APPROVED MARCH 2008 DD 860-01	REVISED AUG 2019 SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	LATERAL CONNECTION	APPROVED MARCH 2008 DD-854-03	REVISED APRIL 2014 SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SEWER: Medio Creek Watershed - Medio Creek W.R.C.	APPROVED MARCH 2008 DD-854-03	REVISED APRIL 2014 SHEET 1 OF 1
---	---	-------------------------------------	--

DATE

NO.

REVISION

STATE OF TEXAS

CALEB M. CHANCE

98401

PROFESSIONAL ENGINEER

2/7/23

RIVERSTONE UNIT - F2

SAN ANTONIO, TEXAS

PAPE-DAWSON

ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10088600

SEWER: Medio Creek Watershed - Medio Creek W.R.C.

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.

ADDRESS: 5419 N LOOP E

CITY: SAN ANTONIO, STATE: TX ZIP: 78218

PHONE: (210)496-2668 FAX: (210)496-2668

SAWS BLOCK MAP: 08-2616 & 74602 TOTAL EDU'S: 61 TOTAL ACREAGE: 12.831

TOTAL LINEAR FOOTAGE OF PIPE: 8" 1681.19 LF PLAT NO. 22-11800371

NUMBER OF LOTS: 61 SAWS JOB NO. 22-1645

PLAT NO. 22-11800371

JOB NO. 11680-53

DATE JUNE 2022

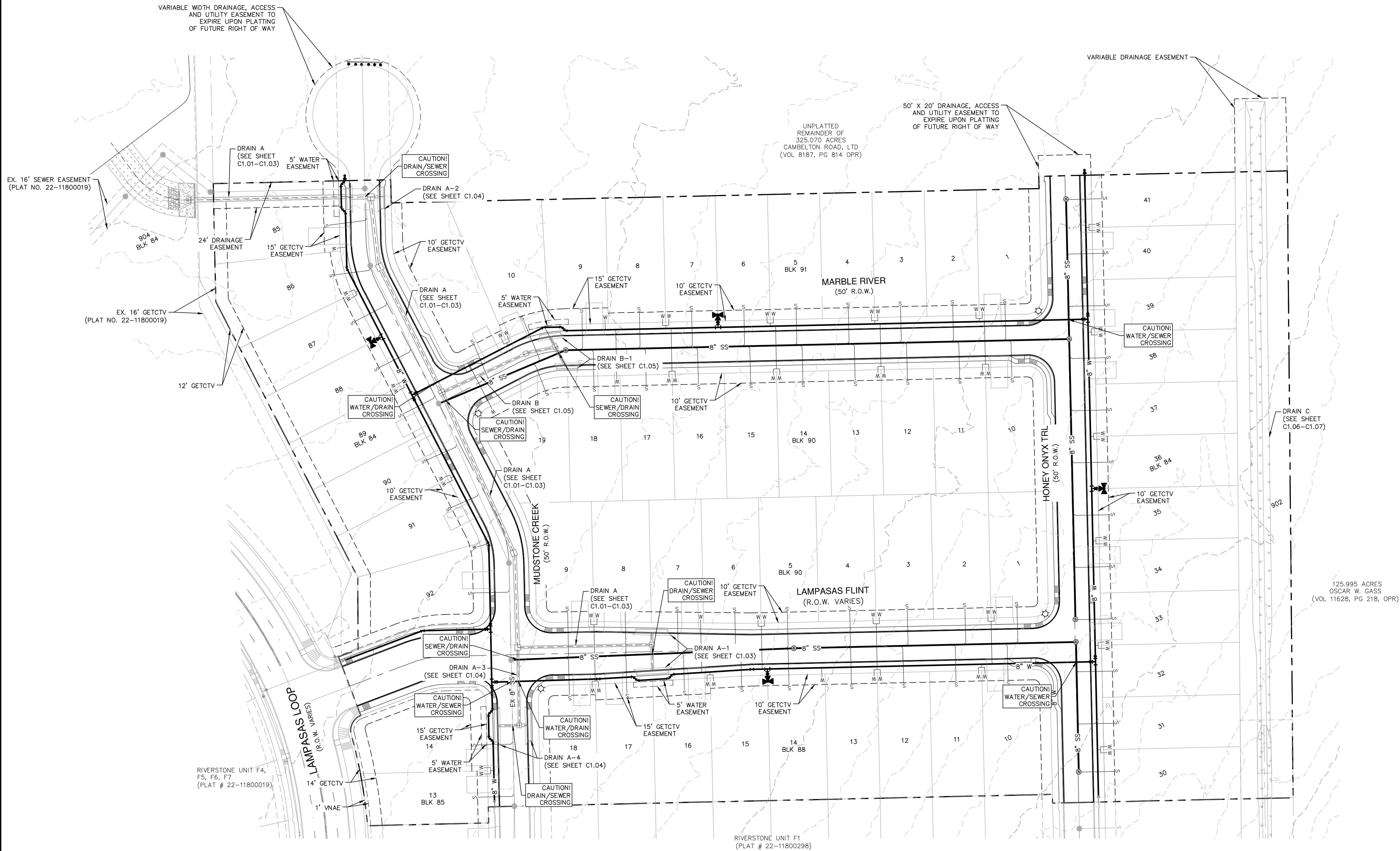
DESIGNER CV

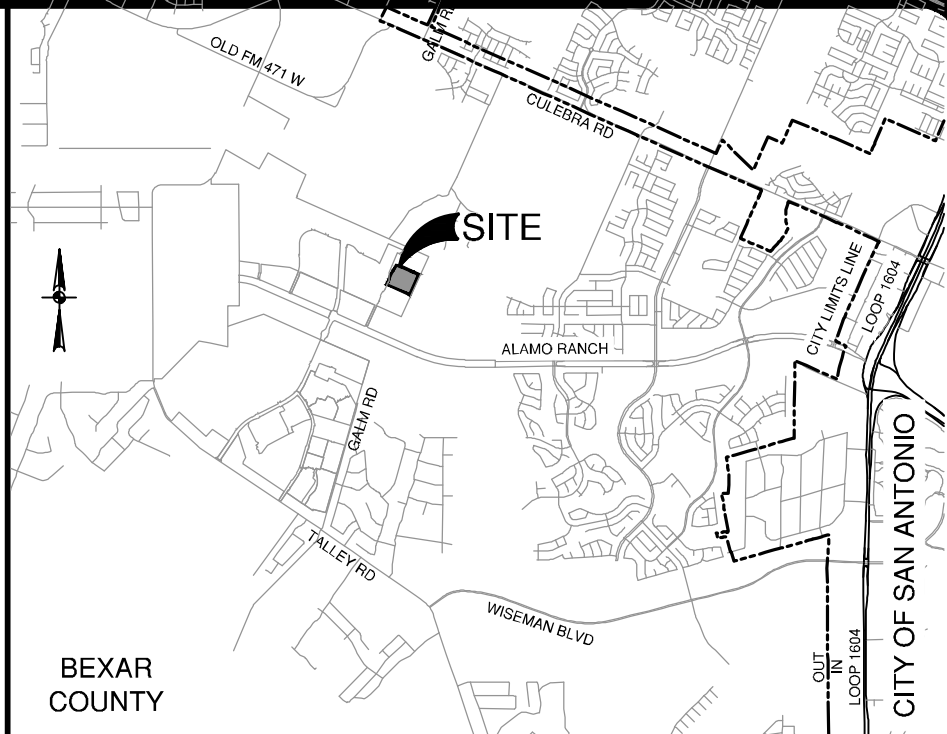
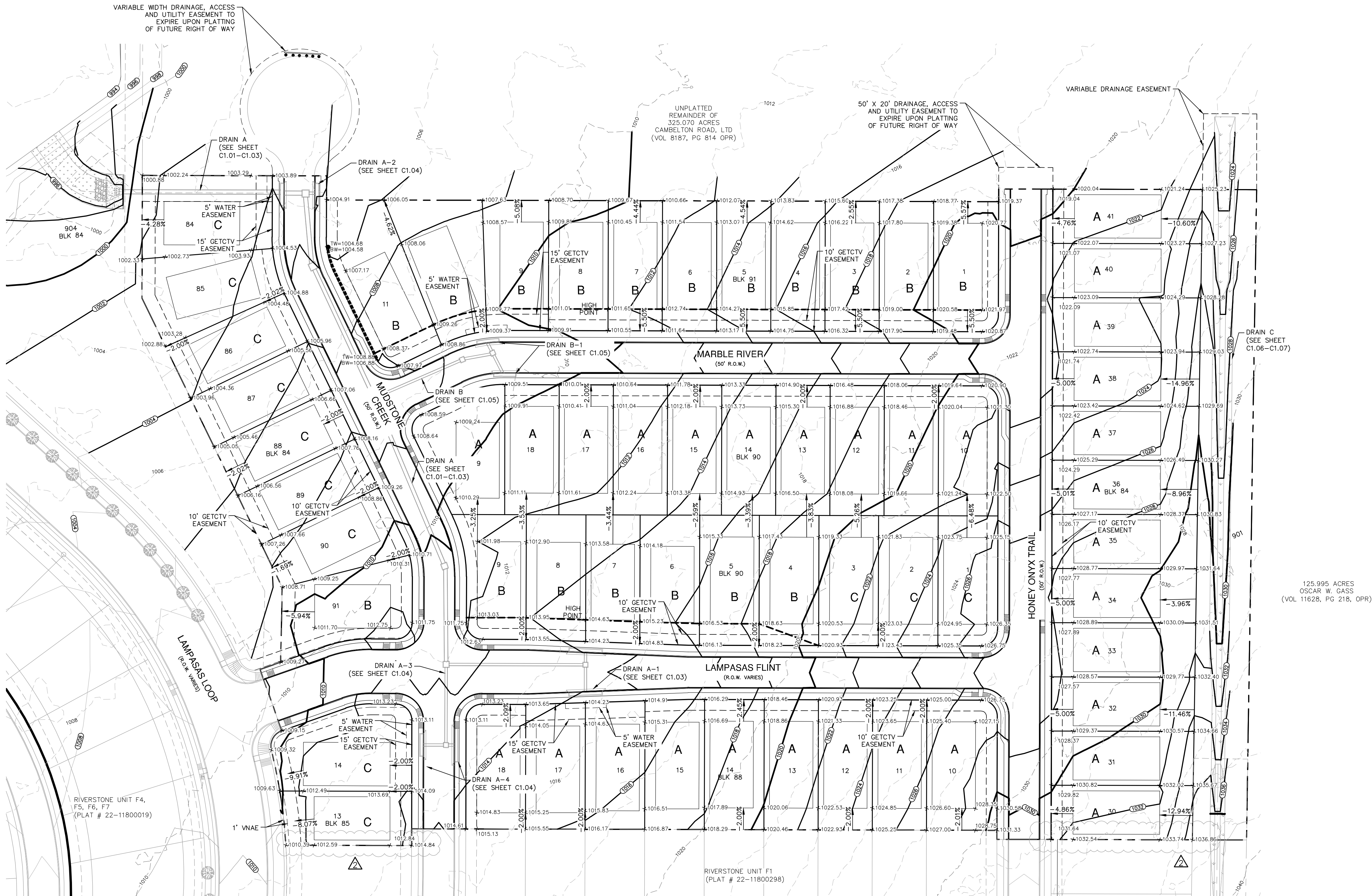
CHECKED BL DRAWN CV

SHEET C5.10

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





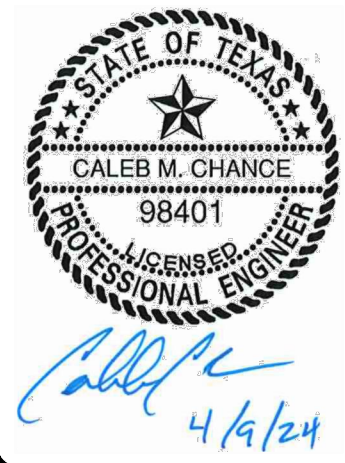
GRADING LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
MINIMUM FINISHED FLOOR ELEVATION	FF = XXXX.XX
TREES TO REMAIN	⊗
PROPOSED WALL	---

GRADING NOTES:

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
- ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION, ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SMPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
- THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
- IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
- THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
- UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
- POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
- FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

NO.	REVISION	DATE
1	REVISED STREET & LOT GRADING	7/24/2023
2	REVISED LOT GRADING	4/08/2024



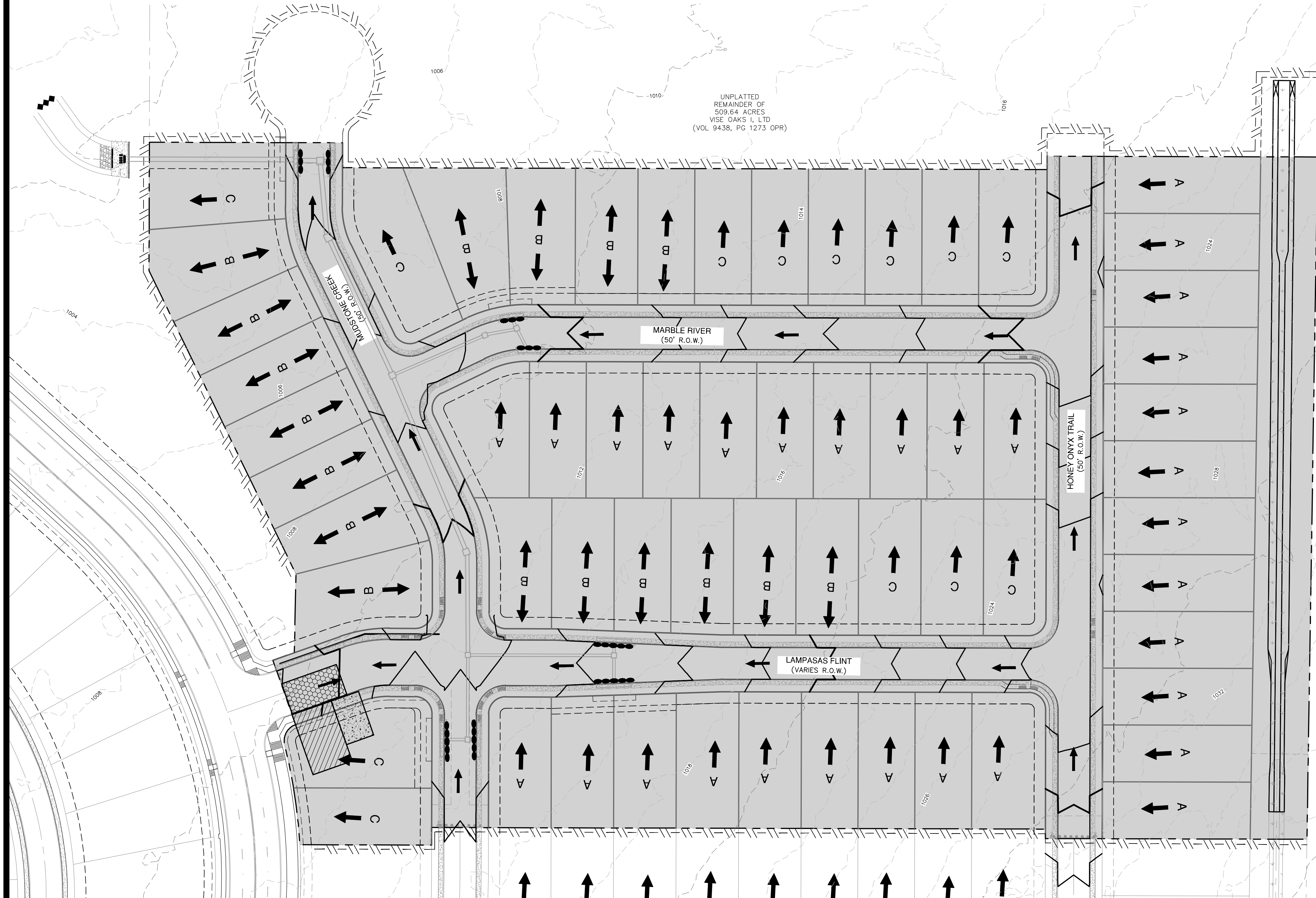
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008890

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
OVERALL GRADING PLAN

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CB
CHECKED	BL DRAWN CB
SHEET	C7.00

Notes: Apr. 24, 2022, 5:54pm, User: JB, bapchman
File: P:\16180\3\1\Drawings\Civil\SWP3-1168033.dwg

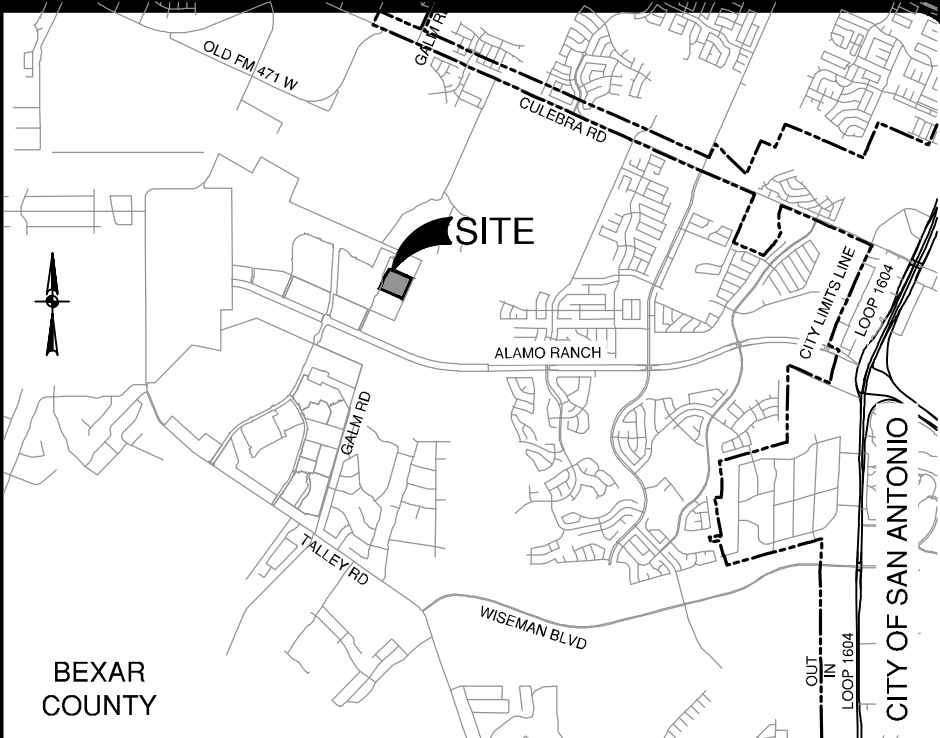
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UNPLATTED
REMAINDER OF
509.64 ACRES
WISE OAKS I, LTD
(VOL 9438, PG 1273 OPR)

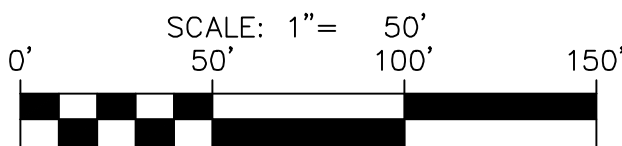
SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION



LOCATION MAP

NOT-TO-SCALE



SWPPP LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	
ROCK BERM	
GRAVEL FILTER BAGS	
GRATE INLET PROTECTION	
SEDIMENT CONTROL ROLLS	
LIMITS OF DISTURBED AREA (12.831 ACRES)	
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	

GENERAL NOTES

- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
- CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
- STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
- RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
- ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
- FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
- STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
- AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
- BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
- BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
- UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
- WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
- SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.
- CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

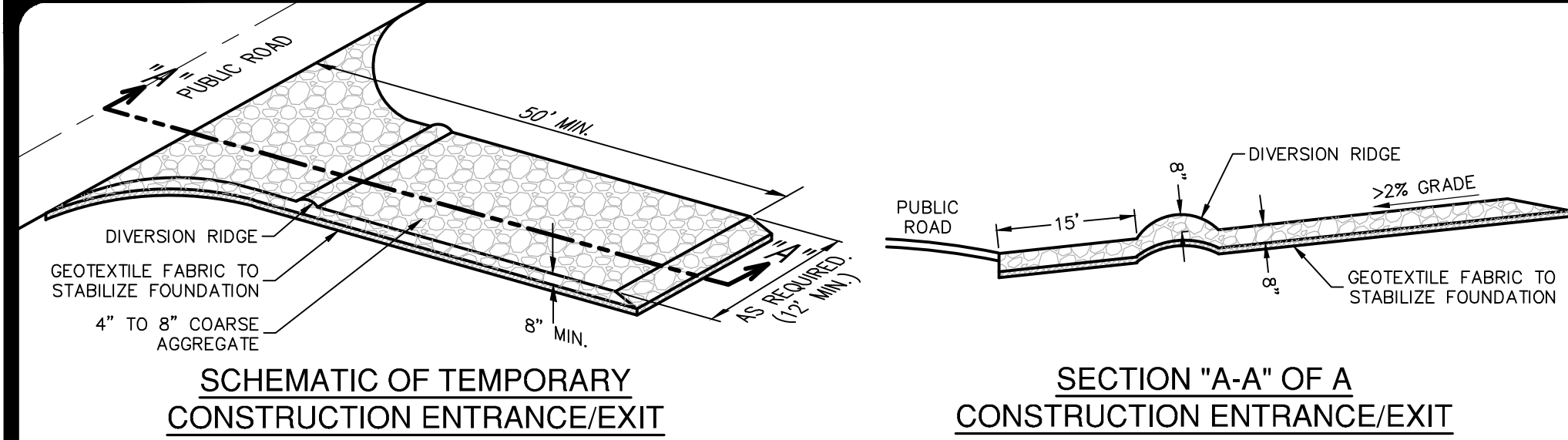
NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS
STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL DRAWN CV
SHEET	C8.00

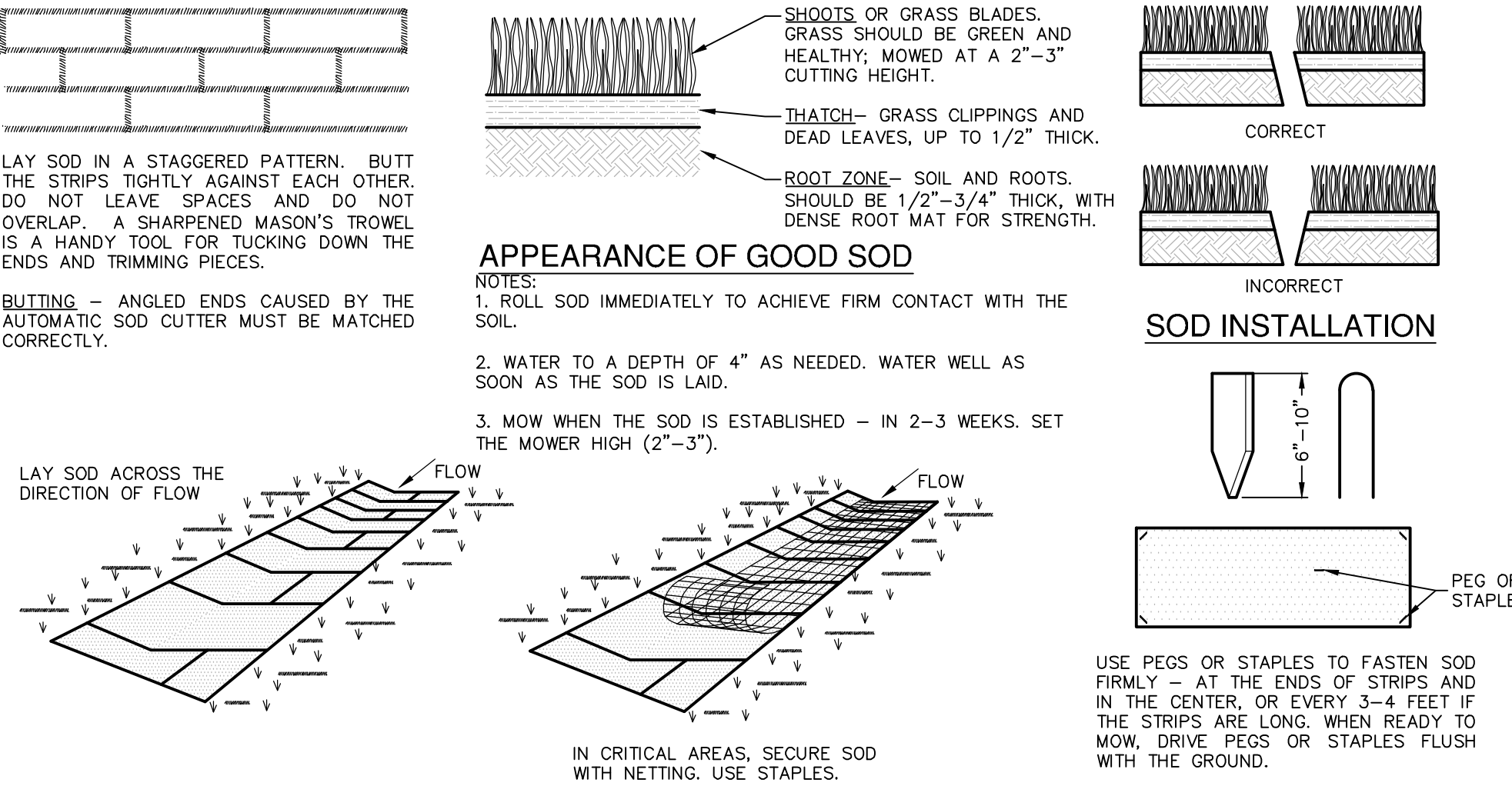


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
 4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

- INSTALLATION**
1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
 2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
 3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
 4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
 6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
 7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
 8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



- MATERIALS**
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
 2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIRECTION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.
 3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT, THEIR SIZE AND SHAPE WHEN SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).
 4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOD PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).
2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

SOD INSTALLATION DETAIL

NOT-TO-SCALE

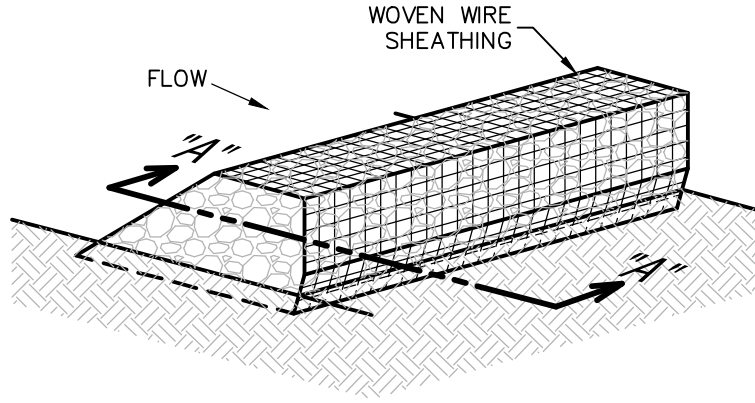
COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.
5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

ISOMETRIC PLAN VIEW



ROCK BERMS

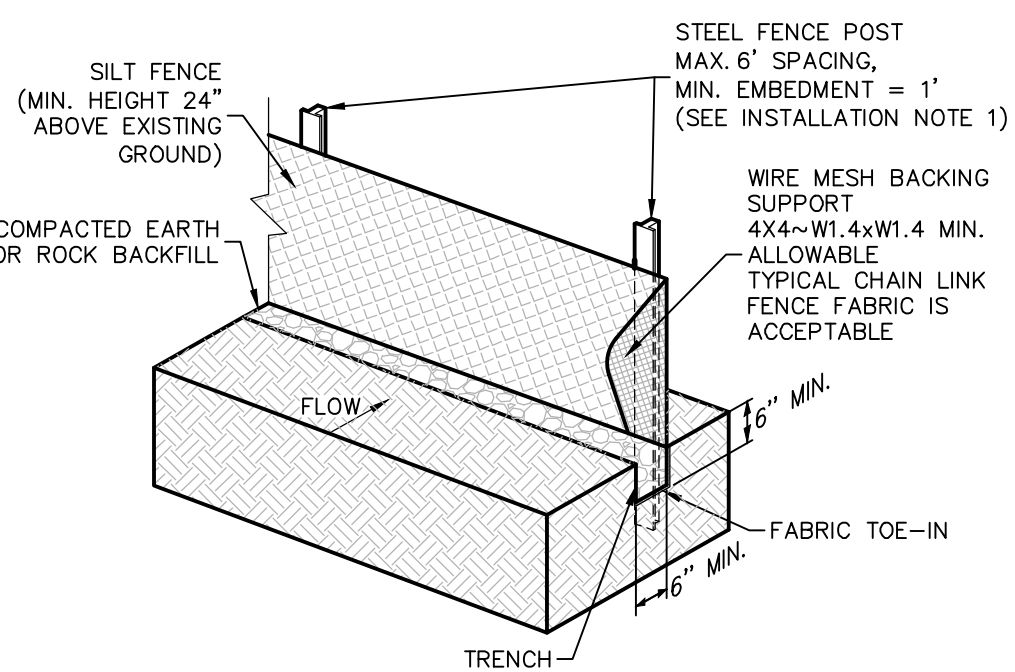
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE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

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
3. REPAIR ANY LOOSE WIRE SHEATHING.
4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

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

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

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

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

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

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

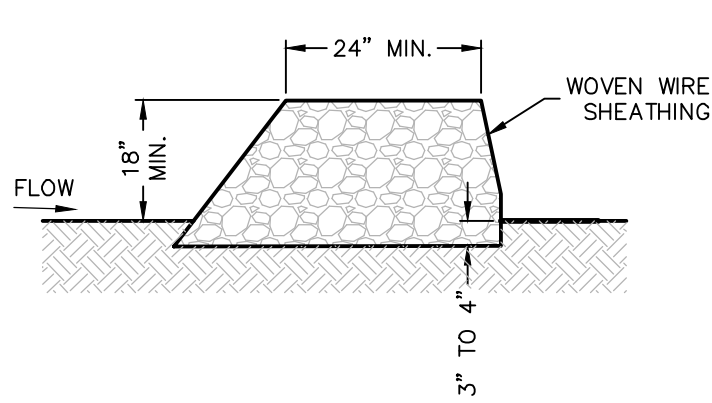
INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

SILT FENCE DETAIL

NOT-TO-SCALE



SECTION "A-A"

MATERIALS

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

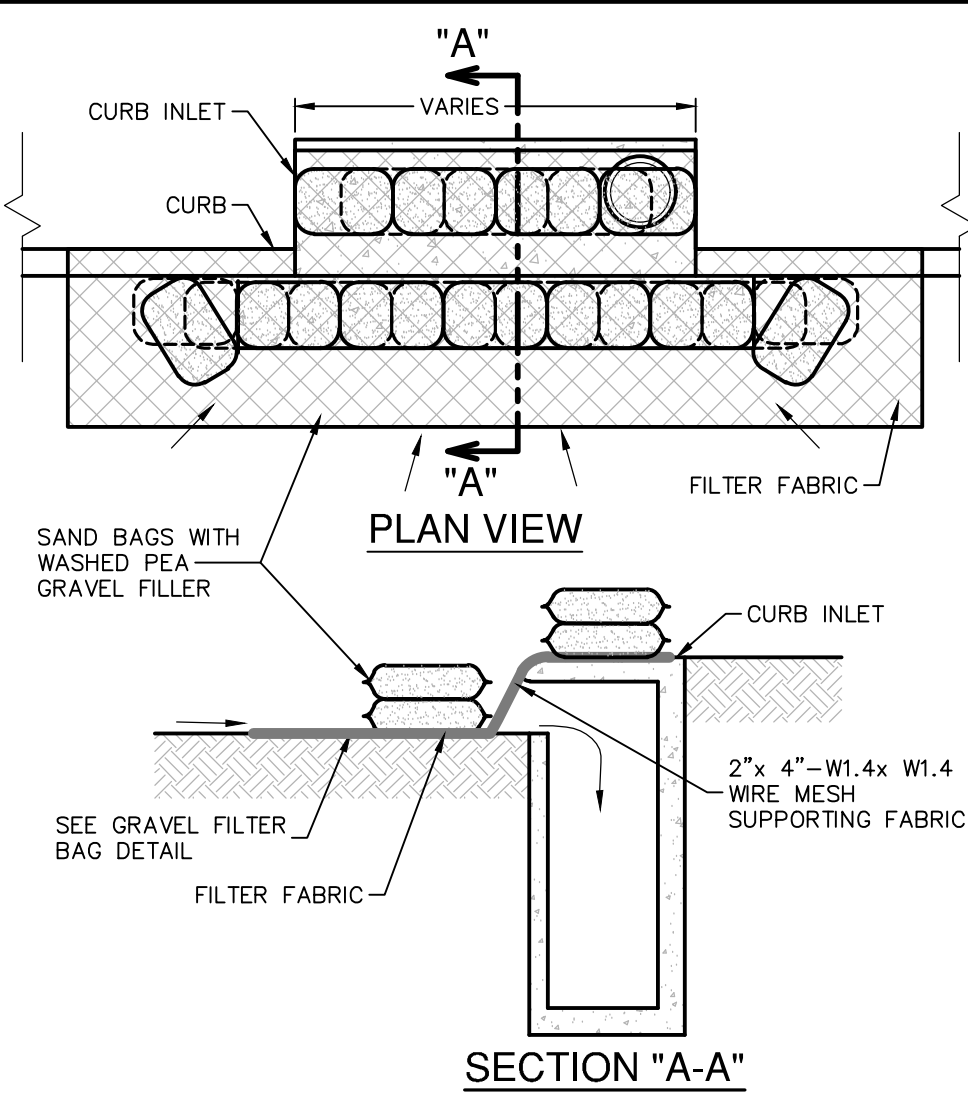
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

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

COMMON TROUBLE POINTS

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



GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

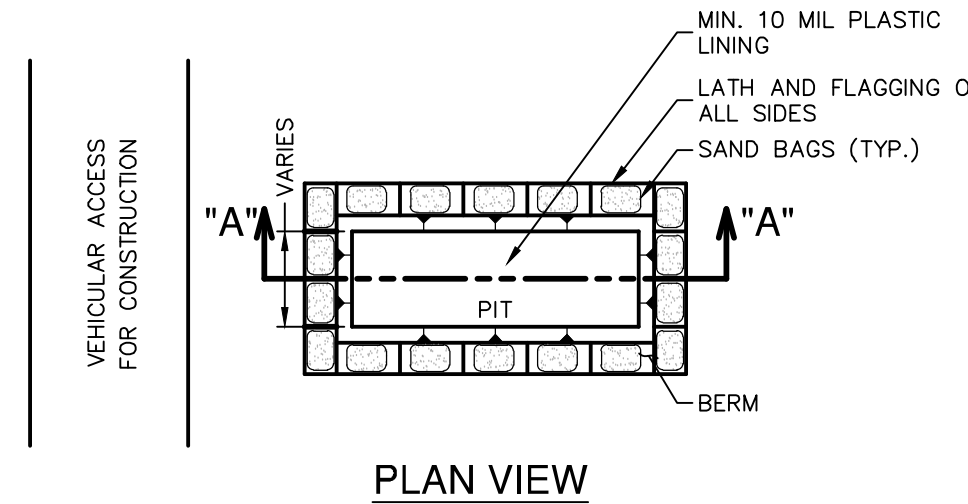
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AROUND EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

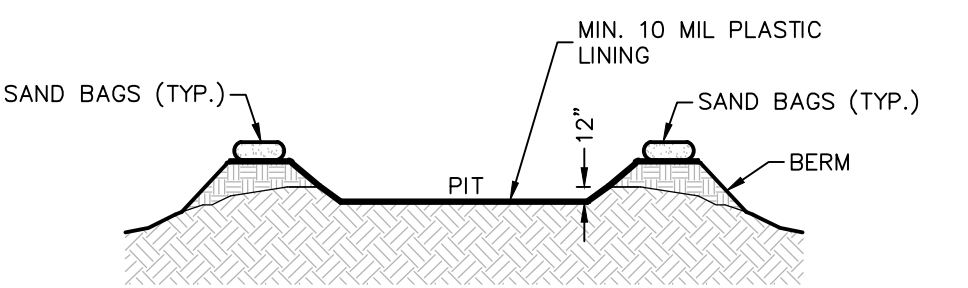
1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

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

MATERIALS

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

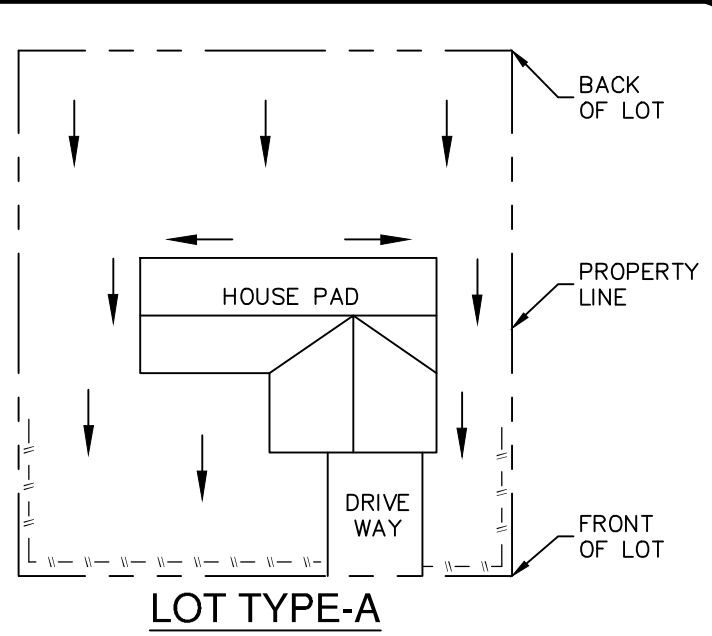
MAINTENANCE

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

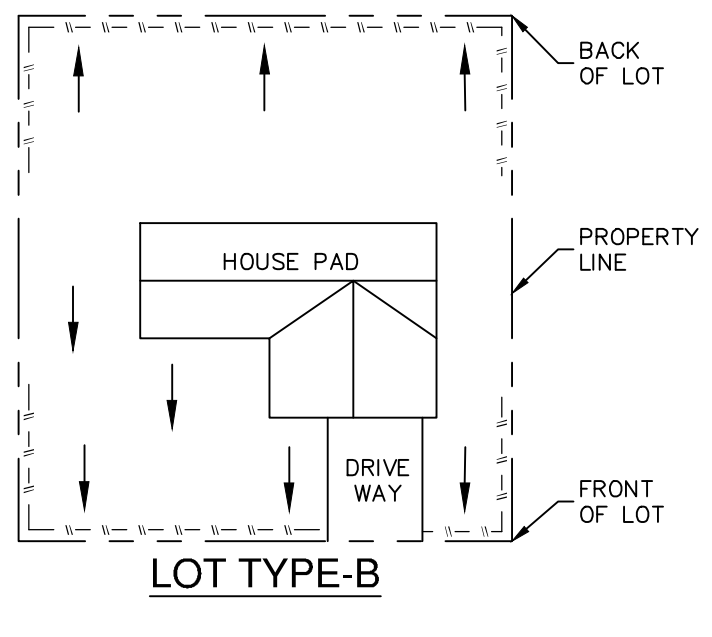
CONCRETE TRUCK WASHOUT

PIT DETAIL

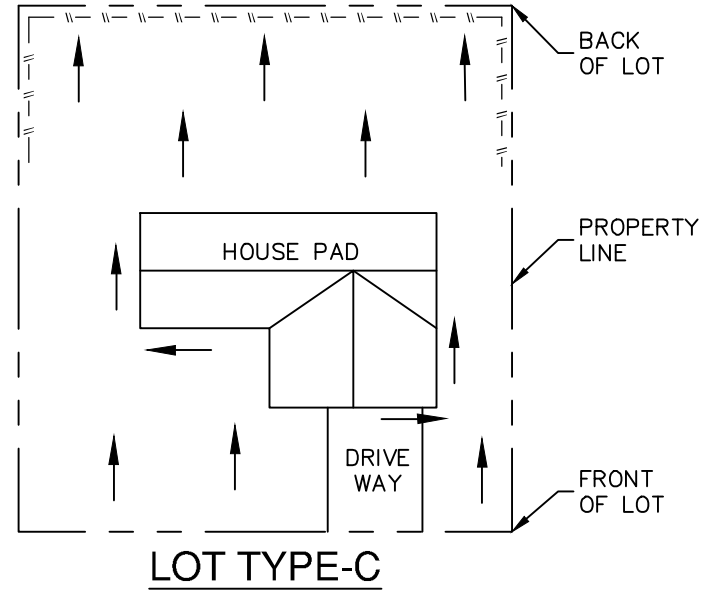
NOT-TO-SCALE



LOT TYPE-A



LOT TYPE-B



LOT TYPE-C

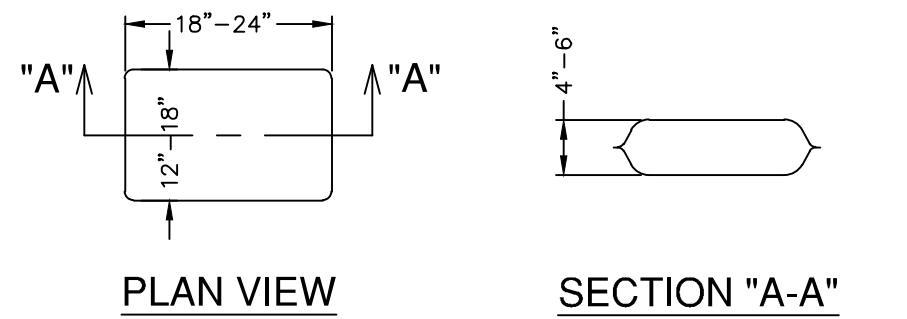
NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNDRAIN SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

LEGEND

--- SILT FENCE DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE



PLAN VIEW

SECTION "A-A"

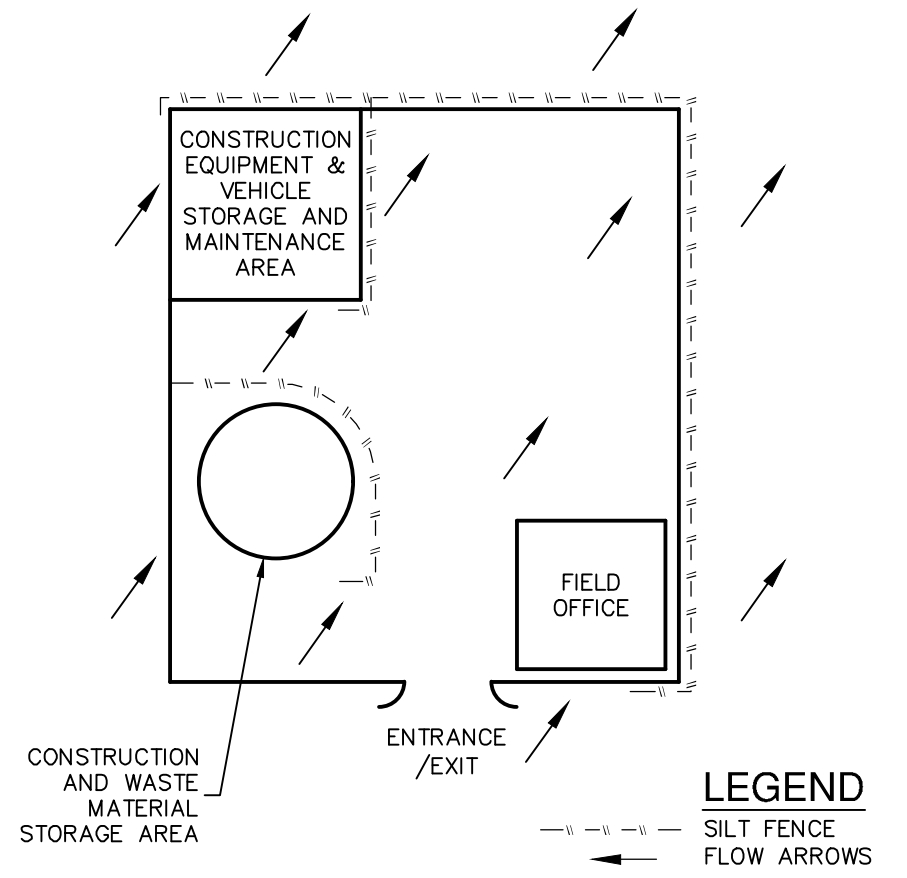
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



LEGEND

--- SILT FENCE FLOW ARROWS

CONSTRUCTION STAGING AREA

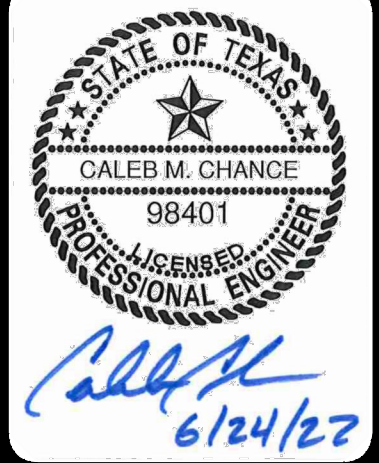
NOT-TO-SCALE

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 3

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028860

RIVERSTONE UNIT - F2
SAN ANTONIO, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO.	22-11800371
JOB NO.	11680-53
DATE	JUNE 2022
DESIGNER	CV
CHECKED	BL
DRAWN	CV
SHEET	C8.10