

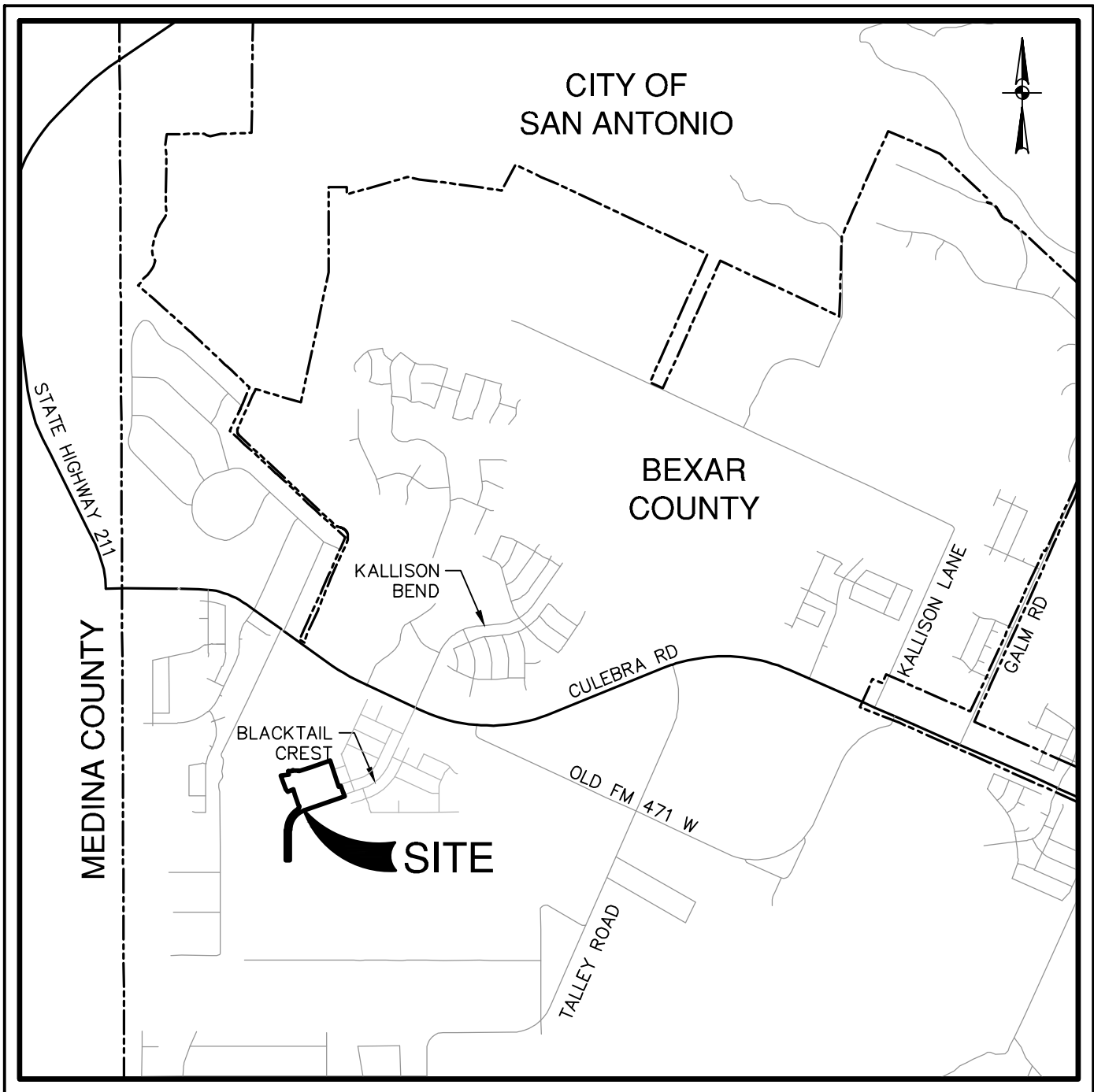
# PRESERVE AT CULEBRA-UNIT 14

## BEXAR COUNTY, TEXAS

### CIVIL CONSTRUCTION PLANS

Sheet List Table

Sheet Title	Sheet Description	Sheet Number
COVER SHEET		C0.00
MASTER DRAINAGE PLAN	(SHEET 1 OF 2)	C1.00
MASTER DRAINAGE PLAN	(SHEET 2 OF 2)	C1.01
DRAIN A	PLAN AND PROFILE	C1.02
DRAIN B	PLAN AND PROFILE	C1.03
DRAIN C	PLAN AND PROFILE (STA. 1+00.00 TO 12+50.00)	C1.04
DRAIN C	PLAN AND PROFILE (STA. 12+50.00 TO 23+50.00)	C1.05
DRAIN C	PLAN AND PROFILE (STA. 23+50.0 TO END)	C1.06
DRAINS D & E	PLAN AND PROFILE	C1.07
DRAIN G	PLAN AND PROFILE	C1.08
DRAIN H	PLAN AND PROFILE (STA. 1+00.00 TO 11+50.00)	C1.09
DRAIN H	PLAN AND PROFILE (STA. 11+50.00 TO END)	C1.10
DRAINAGE DETAILS	(SHEET 1 OF 4)	C1.20
DRAINAGE DETAILS	(SHEET 2 OF 4)	C1.30
DRAINAGE DETAILS	(SHEET 3 OF 4)	C1.40
DRAINAGE DETAILS	(SHEET 4 OF 4)	C1.50
BLACKTAIL CREST	PLAN AND PROFILE (STA. 30+46.17 TO 42+50.00)	C2.00
BLACKTAIL CREST	PLAN AND PROFILE (STA. 42+50.00 TO END)	C2.01
ROCK WREN FALL	PLAN AND PROFILE	C2.02
CANYON WREN PARK	PLAN AND PROFILE	C2.03
MARIPOSA MANOR	PLAN AND PROFILE	C2.04
BARN SWALLOW HILL	PLAN AND PROFILE	C2.05
STREET DETAILS	(SHEET 1 OF 2)	C2.10
STREET DETAILS	(SHEET 2 OF 2)	C2.20
SIGNAGE PLAN	(SHEET 1 OF 2)	C3.00
SIGNAGE PLAN	(SHEET 2 OF 2)	C3.01
SIGNAGE DETAILS	(SHEET 1 OF 4)	C3.10
SIGNAGE DETAILS	(SHEET 2 OF 4)	C3.20
SIGNAGE DETAILS	(SHEET 3 OF 4)	C3.30
SIGNAGE DETAILS	(SHEET 4 OF 4)	C3.40



LOCATION MAP  
NOT-TO-SCALE

PREPARED FOR:

KB HOME LONE STAR, INC.  
4800 FREDERICKSBURG ROAD SAN ANTONIO  
TX 78229

FEBRUARY 2024



Sheet List Table

Sheet Title	Sheet Description	Sheet Number
OVERALL SANITARY SEWER PLAN	(SHEET 1 OF 3)	C4.00
OVERALL SANITARY SEWER PLAN	(SHEET 2 OF 3)	C4.01
OVERALL SANITARY SEWER PLAN	(SHEET 3 OF 3)	C4.02
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 1+00.00 TO 11+50.00)	C4.03
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 11+50.00 TO 21+50.00)	C4.04
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 21+50.00 TO 32+50.00)	C4.05
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 32+50.00 TO 41+50.00)	C4.06
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 41+50.00 TO 48+50.00)	C4.07
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 48+50.00 TO END)	C4.08
SANITARY SEWER LINE B	PLAN AND PROFILE	C4.09
SANITARY SEWER LINES C & D	PLAN AND PROFILE	C4.10
SANITARY SEWER LINE E	PLAN AND PROFILE	C4.11
SANITARY SEWER NOTES		C4.20
SANITARY SEWER DETAILS		C4.30
OVERALL WATER DISTRIBUTION PLAN	(SHEET 1 OF 2)	C5.00
OVERALL WATER DISTRIBUTION PLAN	(SHEET 2 OF 2)	C5.01
WATER DISTRIBUTION NOTES		C5.10
WATER DISTRIBUTION DETAILS		C5.20
OVERALL UTILITY PLAN	(SHEET 1 OF 3)	C6.00
OVERALL UTILITY PLAN	(SHEET 2 OF 3)	C6.01
OVERALL UTILITY PLAN	(SHEET 3 OF 3)	C6.02
GRADING PLAN	(SHEET 1 OF 2)	C7.00
GRADING PLAN	(SHEET 2 OF 2)	C7.01
STORM WATER POLLUTION PREVENTION PLAN	(SHEET 1 OF 2)	C8.00
STORM WATER POLLUTION PREVENTION PLAN	(SHEET 2 OF 2)	C8.01
STORM WATER POLLUTION PREVENTION PLAN DETAILS		C8.10



WATER (SAWS PRESSURE ZONE 8)

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 74 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 3,294 LF ~12" PLAT NO. 23-11800218			
NUMBER OF LOTS 74 SAWS JOB NO. 23-11639			

SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 2,845 LF ~8" PLAT NO. 23-11800218			
NUMBER OF LOTS 74 SAWS JOB NO. 23-1639			

SHEET C0.00



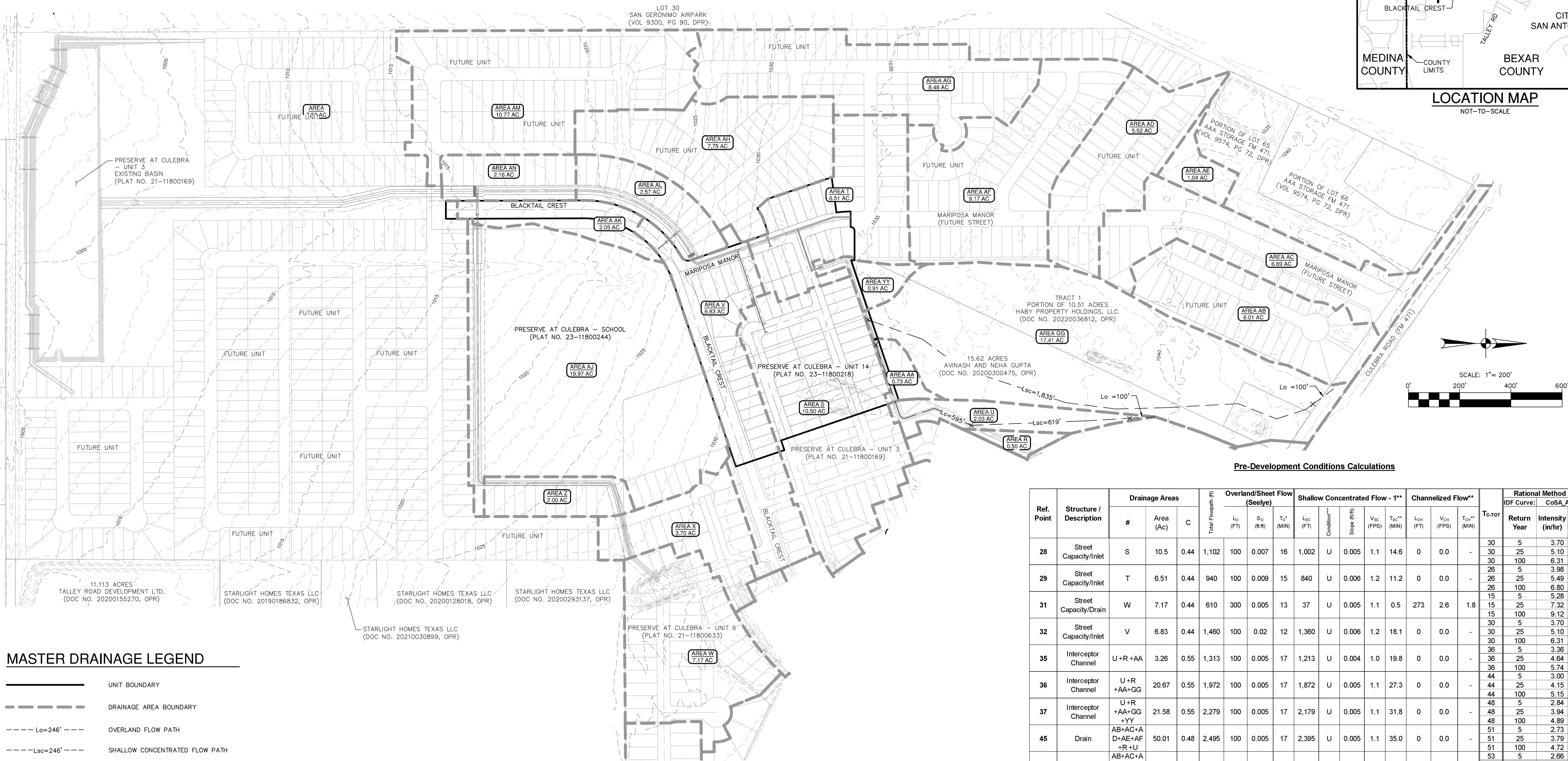
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## MASTER DRAINAGE LEGEND

- UNIT BOUNDARY  
DRAINAGE AREA BOUNDARY  
OVERLAND FLOW PATH  
SHALLOW CONCENTRATED FLOW PATH  
CONCENTRATED FLOW PATH  
EXISTING CONTOUR  
DRAINAGE CALCULATION POINT  
LOT GRADING

11  
A,B,C  
→



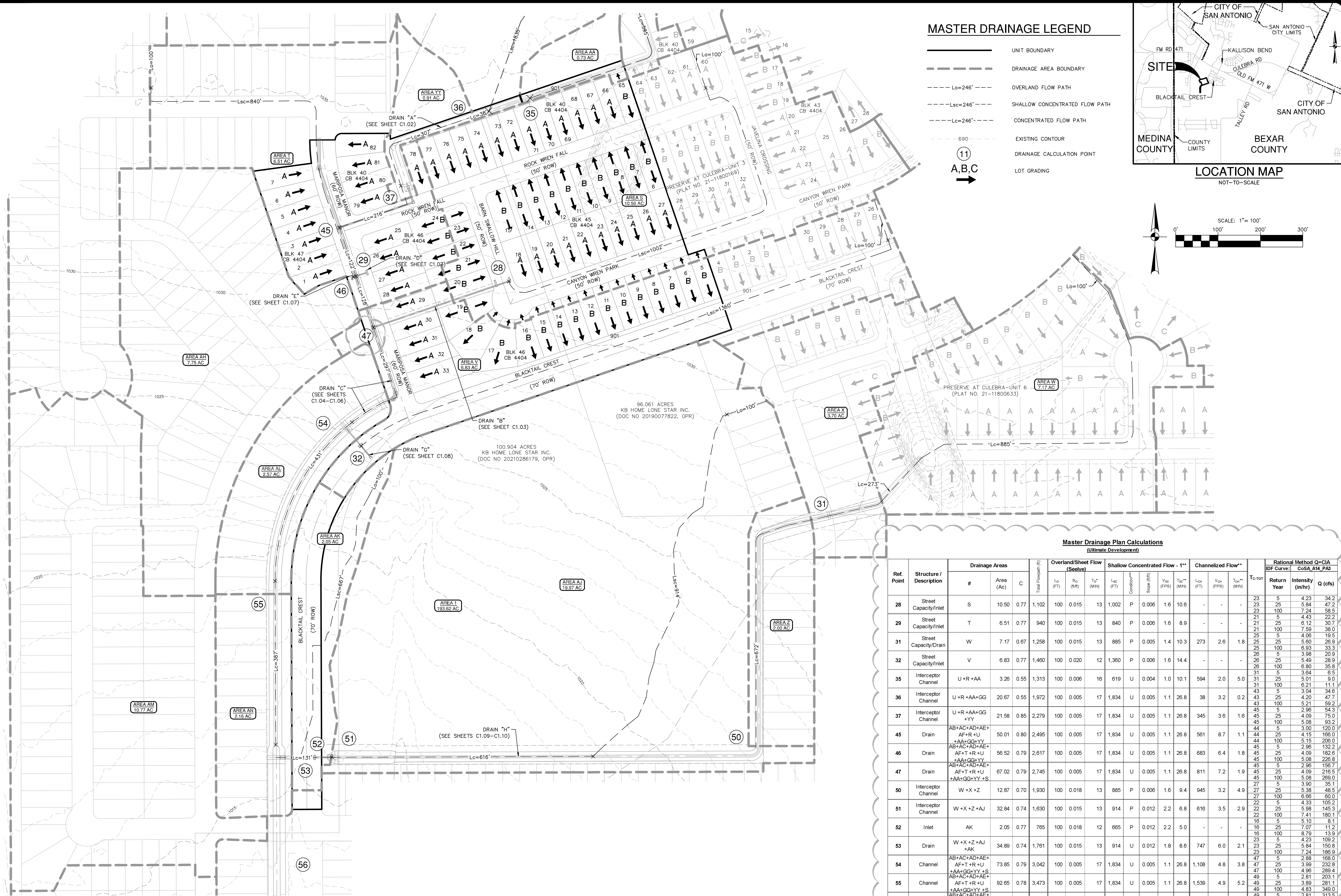
## Pre-Development Conditions Calculations

Ref. Point	Structure / Description	Drainage Areas			Total Flowpath (ft)	Overland/Sheet Flow (Seelye)			Shallow Concentrated Flow - 1**			Channelized Flow**			T <sub>Cor</sub>	Rational Method Q=CIA IDF Curve: CoSA A14_P43				
		#	Area (Ac)	C		L <sub>O</sub> (FT)	S <sub>O</sub> (ft/ft)	T <sub>O</sub> ** (MIN)	L <sub>SC</sub> (FT)	Condition***	Slope (ft/ft)	V <sub>SC</sub> (FPS)	T <sub>SC</sub> ** (MIN)	L <sub>CH</sub> (FT)		V <sub>CH</sub> (FPS)	T <sub>CH</sub> ** (MIN)	Return Year	Intensity (in/hr)	Q (cfs)
28	Street Capacity/Inlet	S	10.5	0.44	1,102	100	0.007	16	1,002	U	0.005	1.1	14.6	0	0.0	-	30	5	3.70	17.1
																	30	25	5.10	23.6
																	30	100	6.31	29.2
29	Street Capacity/Inlet	T	6.51	0.44	940	100	0.009	15	840	U	0.006	1.2	11.2	0	0.0	-	26	5	3.98	11.4
																	26	25	5.49	15.7
																	26	100	6.80	19.5
31	Street Capacity/Drain	W	7.17	0.44	610	300	0.005	13	37	U	0.005	1.1	0.5	273	2.6	1.8	15	5	5.28	16.7
																	15	25	7.32	23.1
																	15	100	9.12	28.8
32	Street Capacity/Inlet	V	6.83	0.44	1,460	100	0.02	12	1,360	U	0.006	1.2	18.1	0	0.0	-	30	5	3.70	11.1
																	30	25	5.10	15.3
																	30	100	6.31	19.0
35	Interceptor Channel	U+R+AA	3.26	0.55	1,313	100	0.005	17	1,213	U	0.004	1.0	19.8	0	0.0	-	36	5	3.36	6.0
																	36	25	4.64	8.3
																	36	100	5.74	10.3
36	Interceptor Channel	U+R+AA+GG	20.67	0.55	1,972	100	0.005	17	1,872	U	0.005	1.1	27.3	0	0.0	-	44	5	3.00	34.1
																	44	25	4.15	47.2
																	44	100	5.15	58.5
37	Interceptor Channel	U+R+AA+GG	21.58	0.55	2,279	100	0.005	17	2,179	U	0.005	1.1	31.8	0	0.0	-	48	5	2.84	33.7
																	48	25	3.94	46.8
																	48	100	4.89	58.0
45	Drain	AB+AC+A D+AE+AF +R+U	50.01	0.48	2,495	100	0.005	17	2,395	U	0.005	1.1	35.0	0	0.0	-	51	5	2.73	65.5
																	51	25	3.79	91.0
																	51	100	4.72	113.3
46	Drain	AB+AC+A D+AE+AF +T+R+U	56.52	0.48	2,617	100	0.005	17	2,517	U	0.005	1.1	36.8	0	0.0	-	53	5	2.66	72.2
																	53	25	3.70	100.4
																	53	100	4.61	125.1
47	Drain	AB+AC+A D+AE+AF +T+R+U	67.02	0.47	2,745	100	0.005	17	2,645	U	0.006	1.2	35.3	0	0.0	-	52	5	2.70	85.0
																	52	25	3.74	117.8
																	52	100	4.66	146.8
50	Interceptor Channel	W+X+Z	12.87	0.44	1,282	100	0.005	17	1,182	U	0.006	1.2	15.8	0	0.0	-	32	5	3.58	20.3
																	32	25	4.93	27.9
																	32	100	6.11	34.6
51	Interceptor Channel	W+X+Z+AJ	32.84	0.44	1,630	100	0.015	13	1,530	U	0.011	1.7	15.1	0	0.0	-	28	5	3.83	55.3
																	28	25	5.28	76.3
																	28	100	6.54	94.5
52	Inlet	AK	2.05	0.44	765	100	0.018	12	665	U	0.012	1.8	6.3	0	0.0	-	18	5	4.80	4.3
																	18	25	6.63	6.0
																	18	100	8.24	7.4
53	Drain	W+X+Z+AJ+AK	34.89	0.44	1,761	100	0.015	13	1,661	U	0.01	1.6	17.2	0	0.0	-	30	5	3.70	56.8
																	30	25	5.10	78.3
																	30	100	6.31	96.9
54	Channel	AB+AC+A D+AE+AF +T+R+U	73.85	0.47	3,042	100	0.005	17	2,942	U	0.007	1.3	36.3	0	0.0	-	53	5	2.66	92.3
																	53	25	3.70	128.4
																	53	100	4.61	160.0
55	Channel	AB+AC+A D+AE+AF +T+R+U	92.65	0.46	3,473	100	0.005	17	3,373	U	0.008	1.4	39.0	0	0.0	-	55	5	2.59	110.4
																	55	25	3.61	153.9
																	55	100	4.50	191.8
56	Channel	AB+AC+A D+AE+AF +T+R+U	144.88	0.45	3,860	100	0.005	17	3,760	U	0.008	1.4	43.4	0	0.0	-	60	5	2.43	158.4
																	60	25	3.39	221.0
																	60	100	4.24	276.4



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\*Seeley Chart or TR-55 Egn. 3-3  
\*\*As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s  
 $T_o = \frac{(0.00775 + 0.000045 S_o^{1.49})}{(P_2^{-0.067} S_o^{0.78})} \times 60$   
 $v = \frac{k}{R^{2/3}} S_o^{1/2}$   
 $k = 1.486 \text{ ft}^{1/3}/s$   
From TR-55 Figure 3-1\*\*  
S: For Streets: n = 0.018, R = 0.2 (Ada R Channel Hydraulic Radius (a/Pw))  
P: For Paved: n = 0.025, R = 0.2  
U: For Unpaved: n = 0.05, R = 0.4  
D: For Default: v = 6 fps  
n: Mannings n-Value  
Sch=Channel Flow Slope

DATE: 02/02/2024  
NO. REVISION: 1  
REVISIONS: TABLE

2/2/2024  
REBECCA ANN CARROLL  
92666  
LICENSED PROFESSIONAL ENGINEER

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

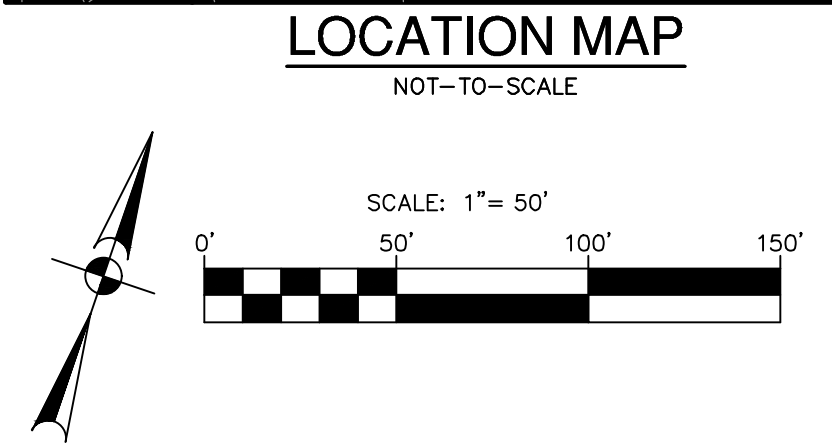
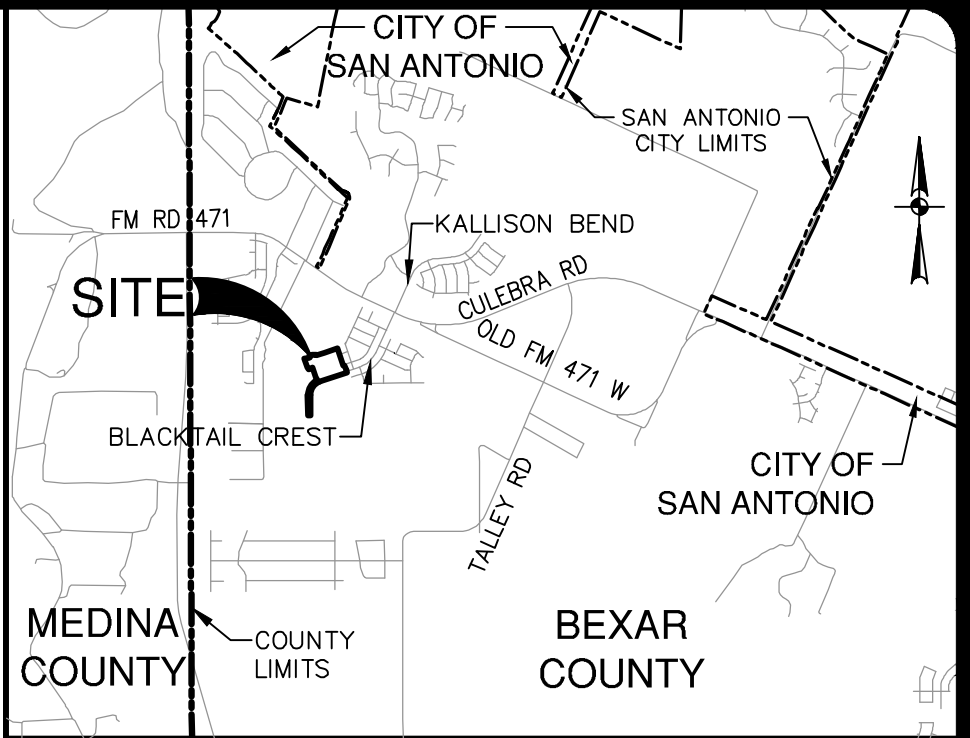
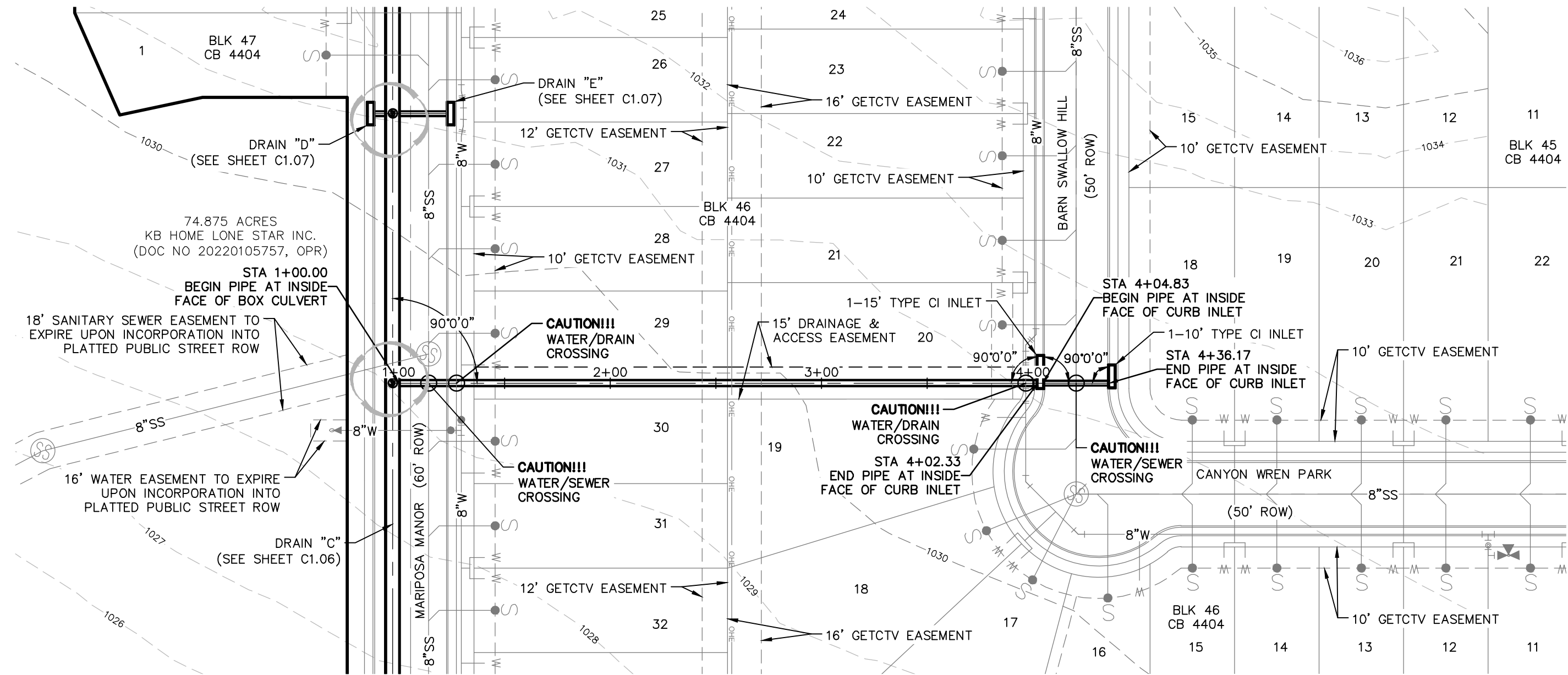
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
MASTER DRAINAGE PLAN  
(SHEET 2 OF 2)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE: FEBRUARY 2024  
DESIGNER: JB  
CHECKED: DRAWN: GK  
SHEET: C1.01

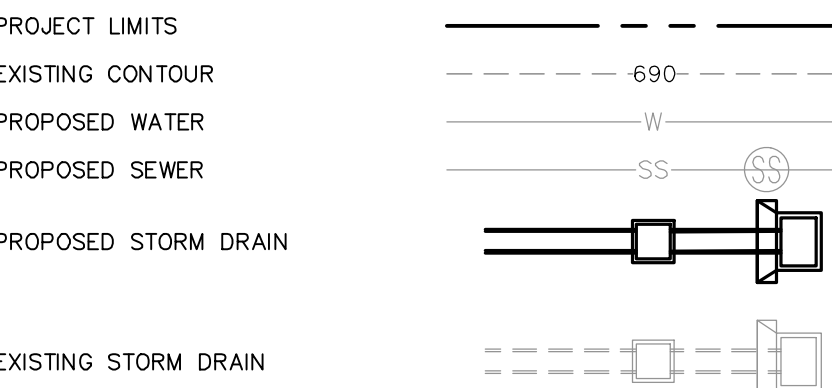








DRAINAGE LEGEND



1 - 24" RCP  
HYDRAULIC CALCULATION  
STA 4+04.83 TO 4+36.17

$Q_{25} = 47.2 \times 0.4 = 18.88 \text{ CFS}$   
 $n = 0.013$   
 $S = 1.00\%$   
 $S_f = 0.70\%$   
 $dn = 1.59'$   
 $V_n = 7.06 \text{ FPS}$

1 - 30" RCP  
HYDRAULIC CALCULATION  
STA 1+00.00 TO 4+02.33

$Q_{25} = 47.2 \text{ CFS}$   
 $n = 0.013$   
 $S = 1.33\%$   
 $dn = 2.50'$   
 $V_n = 9.62 \text{ FPS}$

HYDRAULIC CALCULATIONS--DRAIN "B"

TOTAL  $Q_{25} = 47.2 \text{ CFS}$   
 $Q_{25} = 47.2 \text{ CFS}$   
 $n = 0.013$   
 $S = 1.00\%$   
 $S_f = 0.70\%$   
 $dn = 1.59'$   
 $V_n = 7.06 \text{ FPS}$   
 $L = 22.85 \text{ FT}$  USE 1 ~ 10 FT AND 1 ~ 15 FT CURB INLET  
 $h = 0.72 < 0.79 \text{ OK}$

DRAINAGE & GRADING NOTES:

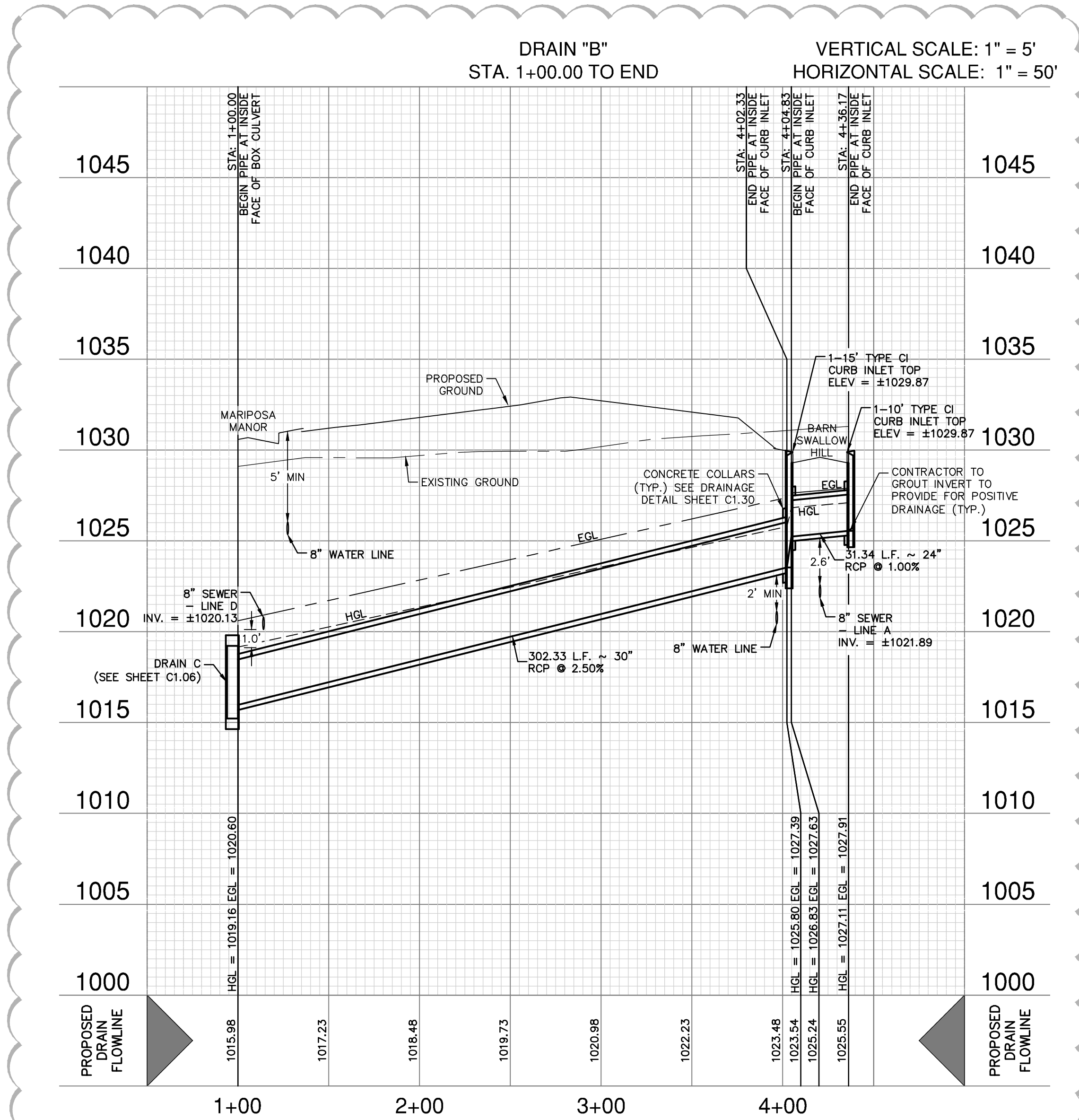
- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING 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 CHANNEL THAT SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



NO.	REVISION	DATE
1.	REVISED FLOW AND HYDRAULICS	01/05/2024
2.	REVISED 30" RCP SLOPE & ADDED MANHOLES	02/02/2024

2/16/2024

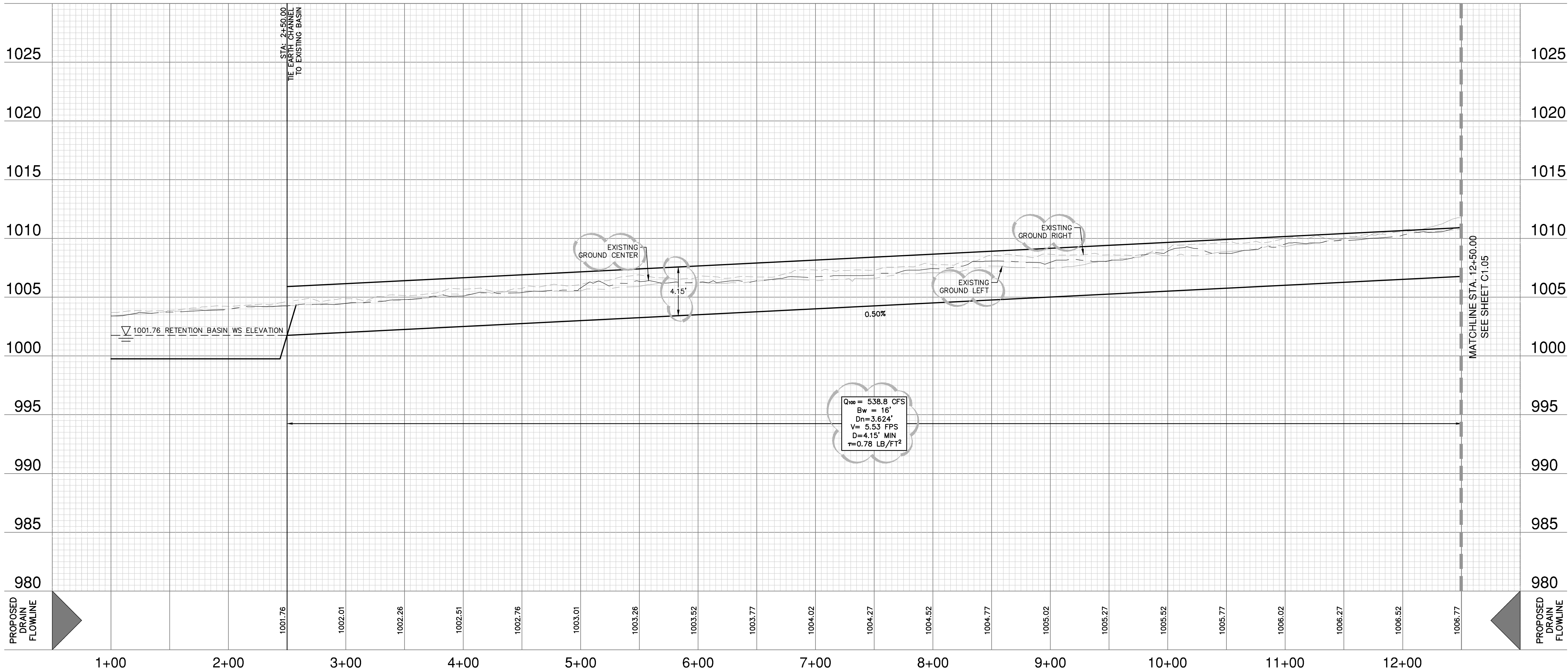
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**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**DRAIN B**  
PLAN AND PROFILE

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DRAWN	JB
CHECKED	DRAWN_GK
SHEET	C1.03





EXISTING BASIN  
PRESERVE AT CULEBRA - UNIT 3  
(PLAT NO. 21-11800169)

STA 2+50.00  
TIE EARTH CHANNEL  
TO EXISTING BASIN

100.904 ACRES  
KB HOME LONE STAR INC.  
(DOC NO 20210286179, OPR)

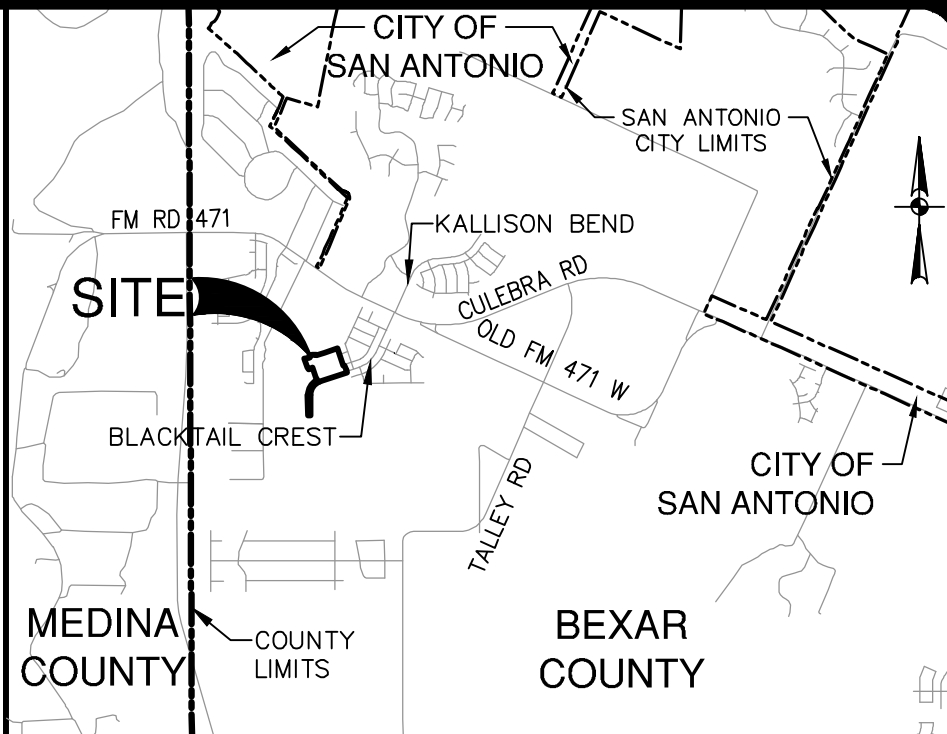
VARIABLE WIDTH DRAINAGE EASEMENT  
(PLAT NO. 21-11800169)

PT STA 12+06.54

PC STA 11+96.18

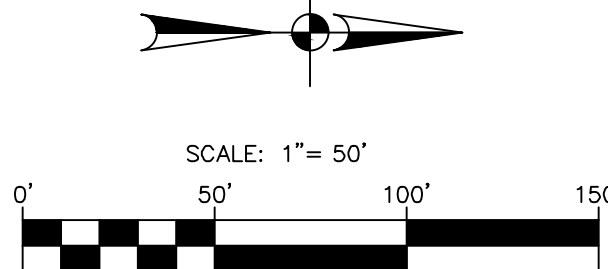
MATCHLINE STA. 12+50.00  
SEE SHEET C1.05

VARIABLE WIDTH DRAINAGE,  
MAINTENANCE, AND ACCESS EASEMENT  
TO EXPIRE UPON INCORPORATION INTO  
PLATTED PUBLIC STREET ROW  
(PLAT NO. 21-11800169)



LOCATION MAP

NOT-TO-SCALE



### DRAINAGE LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	---
PROPOSED WATER	---
PROPOSED SEWER	---
PROPOSED STORM DRAIN	---
EXISTING STORM DRAIN	---

### DRAINAGE & GRADING NOTES:

1. 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.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

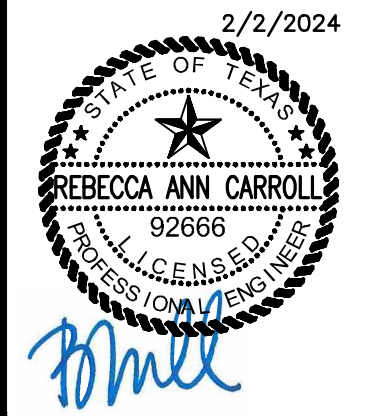
### TRENCH EXCAVATION SAFETY PROTECTION:

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

### CAUTION!!

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

NO.	REVISION	DATE
1.	REVISED CHANNEL SECTION	02/02/2024



**PAPE-DAWSON  
ENGINEERS**

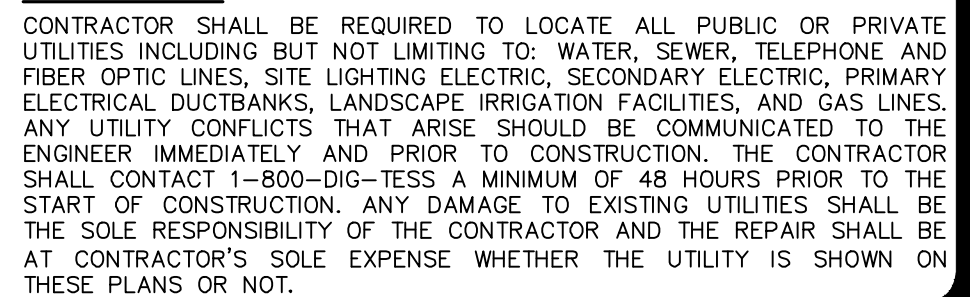
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028800

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

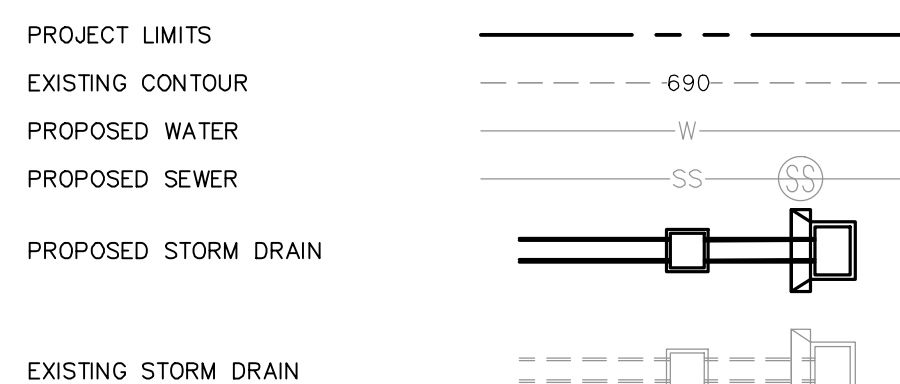
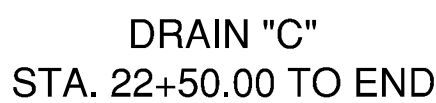
**DRAIN C**  
**PLAN AND PROFILE (STA. 1+00.00 TO 12+50.00)**

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DRAWN	JB
CHECKED	DRAWN_GK
SHEET	C1.04









Q<sup>25</sup> = 216.5 CFS  
n = 0.013  
S = 0.50%  
Sf = 0.49%  
dn = 3.30'  
Vn = 10.93 FPS

Q<sub>25</sub> = 166.0 CFS  
n = 0.013  
S = 0.50%  
S<sub>f</sub> = 0.29%  
d<sub>n</sub> = 4.00'  
V<sub>n</sub> = 6.92 FPS

$Q^{25} = 182.6 \text{ CFS}$   
 $n = 0.013$   
 $S = 0.50\%$   
 $S_f = 0.35\%$   
 $dn = 4.00'$   
 $V_n = 7.61 \text{ FPS}$

$Q^{25} = 108.3 \text{ CFS}$   
 $n = 0.013$   
 $S = 0.50\%$   
 $S_f = 0.20\%$   
 $d_n = 4.00'$   
 $V_n = 5.42 \text{ FPS}$

DRAINAGE &amp; GRADING NOTES:

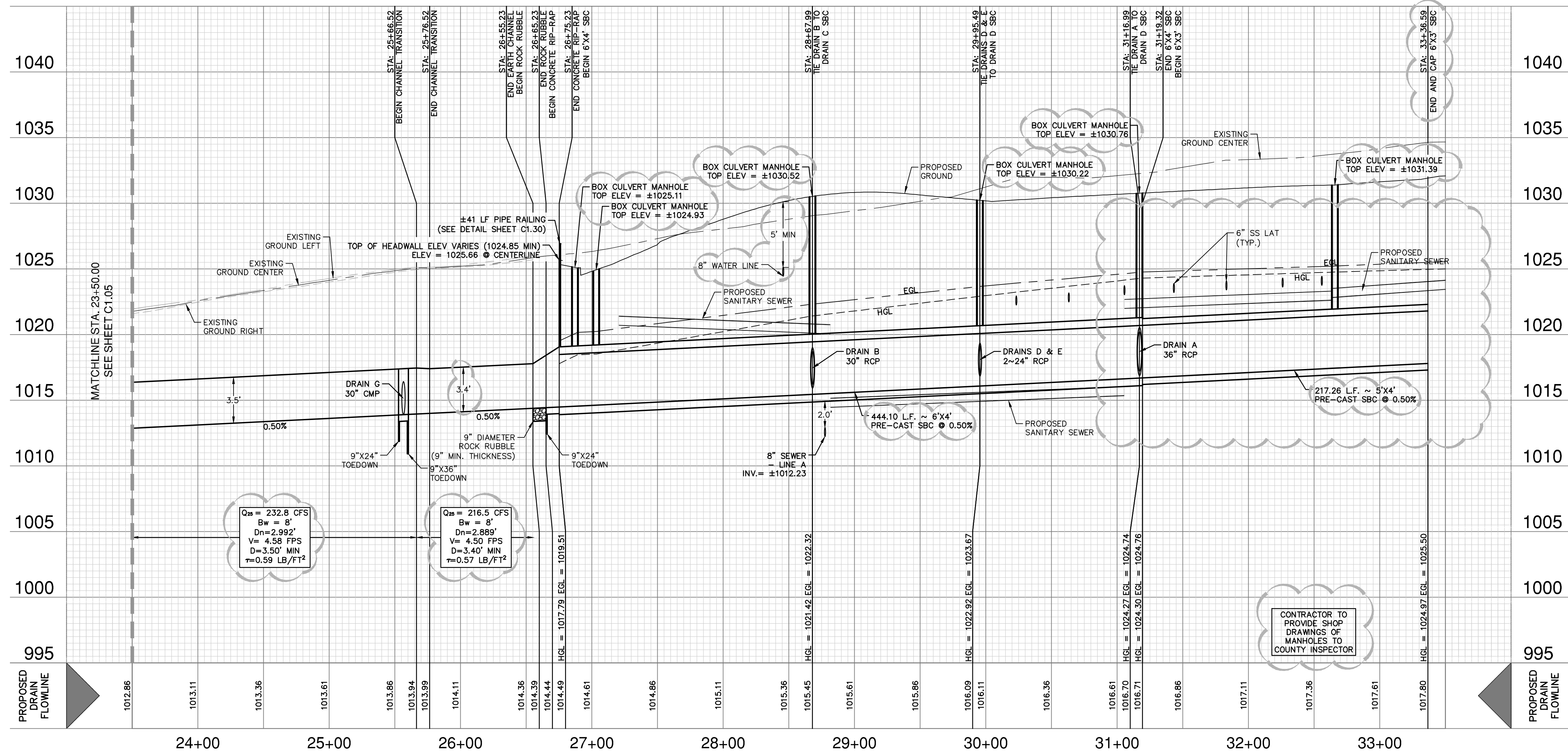
1. A BEARX COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN A BEARX COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS SHALL BE REQUIRED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXISTING LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER ALL UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ACCESS TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
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7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND SURFACE. 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 SITE WITHIN THE  
WORKING AREA TO DETERMINE THE APPROPRIATE GEOTECHNICAL  
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 BE FOR ADEQUATE PROTECTION OF THE  
SAFETY PROTECTION THAT COMPLY WITH THE 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 PERTAINING TO PREVENTING  
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 EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

[illegible]

2/16/2024

This document is released  
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ONLY under the authorization  
of Rebecca Carroll, P.E.  
#92666 on 2/16/2024  
This document is not to be  
used for CONSTRUCTION.



**PAPE-DAWSON  
ENGINEERS**

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

**PRESERVE AT CULEBRA-UNIT 14**  
**BEXAR COUNTY, TEXAS**

DRAIN C  
PLAN AND PROFILE (STA. 23+50.0 TO END)

PLAT NO. 23-11800218

JOB NO. 11668-14

DATE FEBRUARY 2024

DESIGNER J.B.

CHECKED \_\_\_\_\_ DRAWN GK

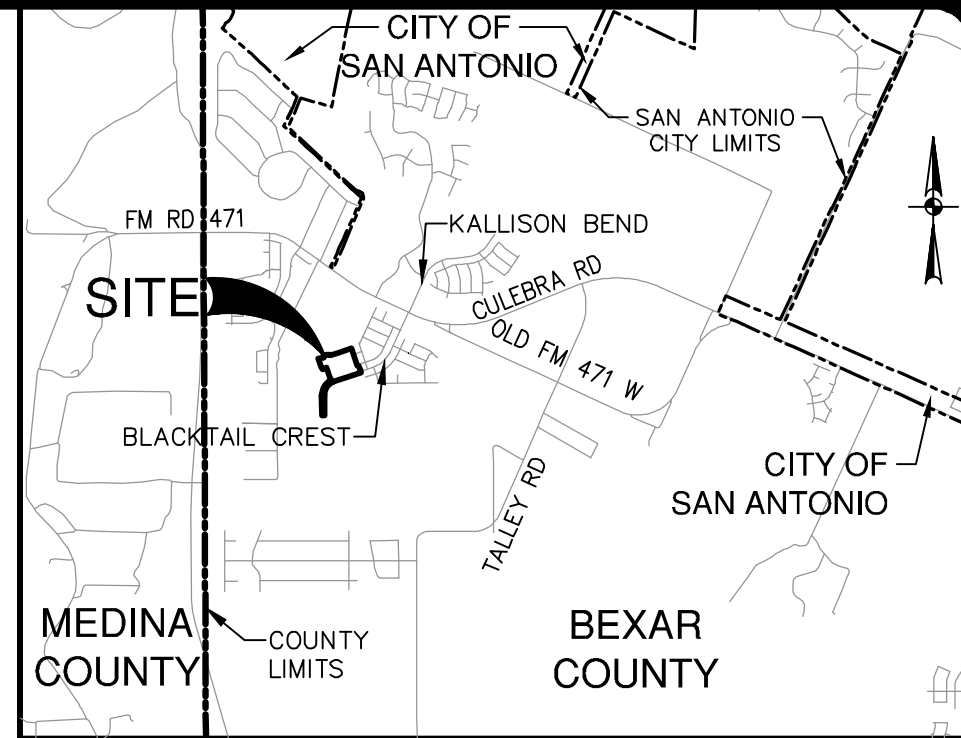
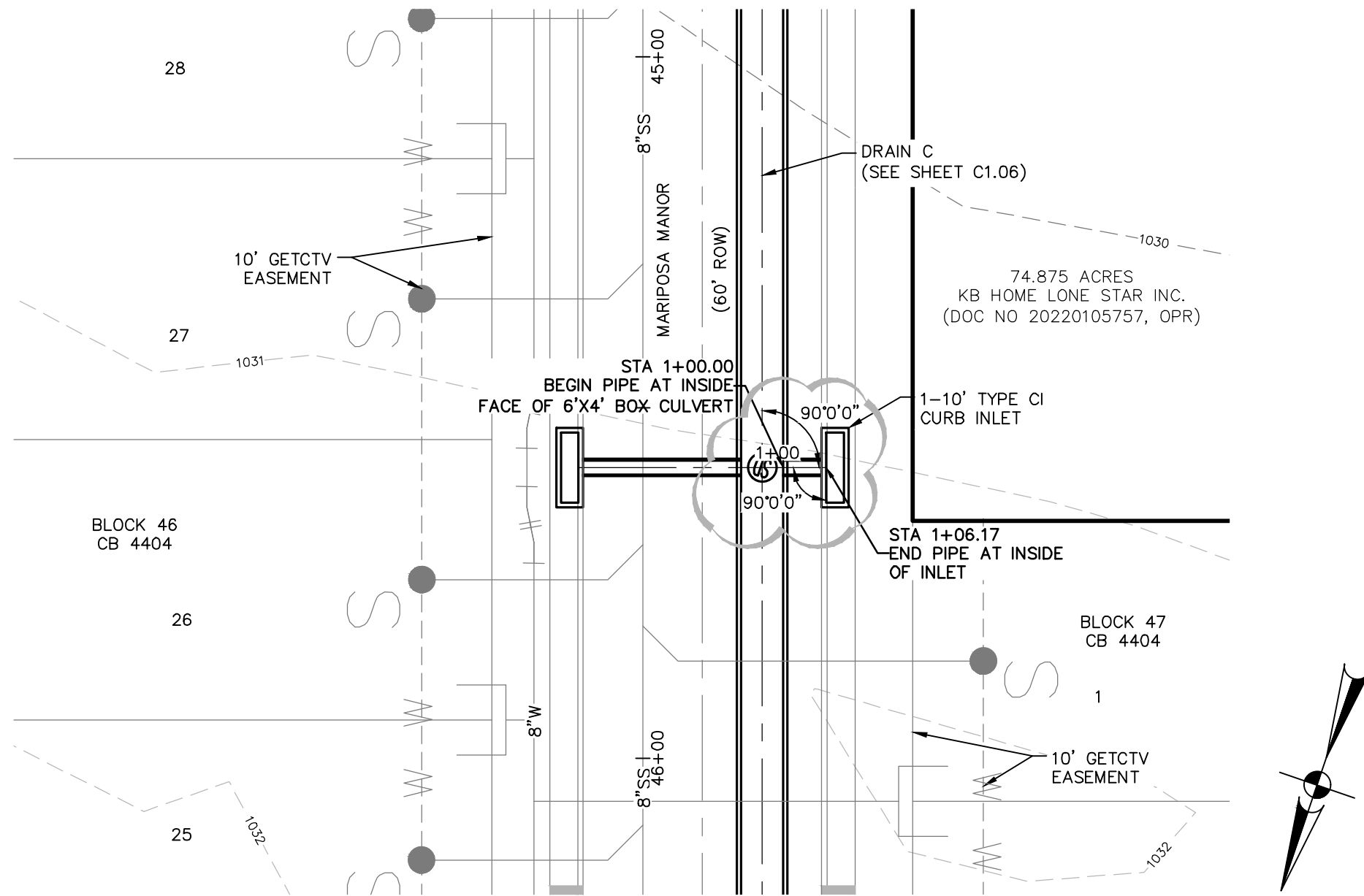
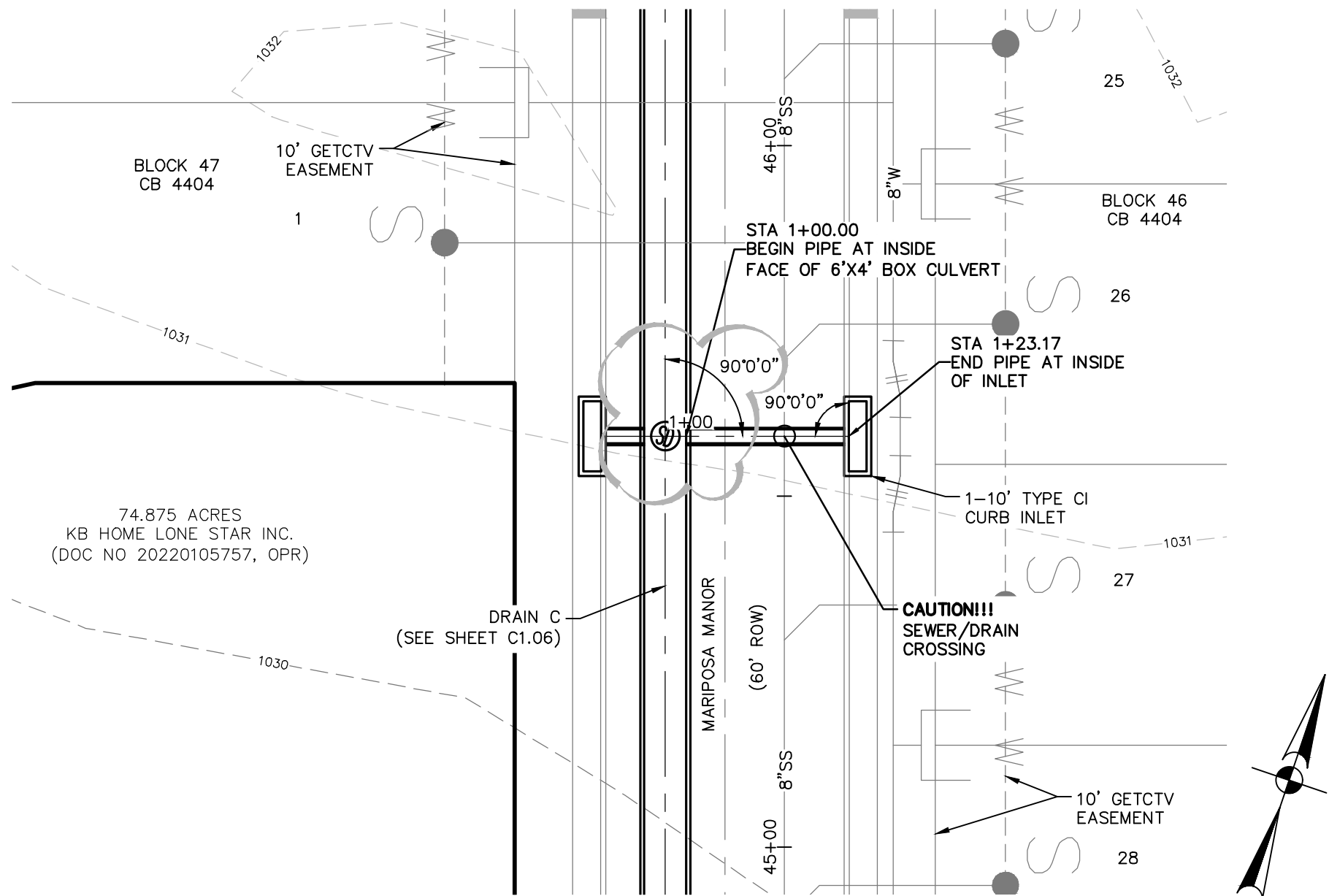
CHECKED \_\_\_\_\_ DRAIN \_\_\_\_\_ OK \_\_\_\_\_

SHEET C1.06



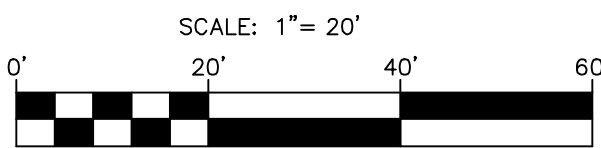
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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED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

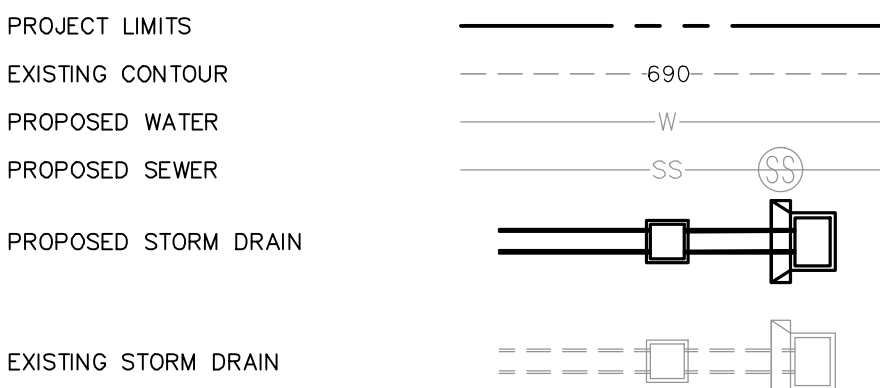


### LOCATION MAP

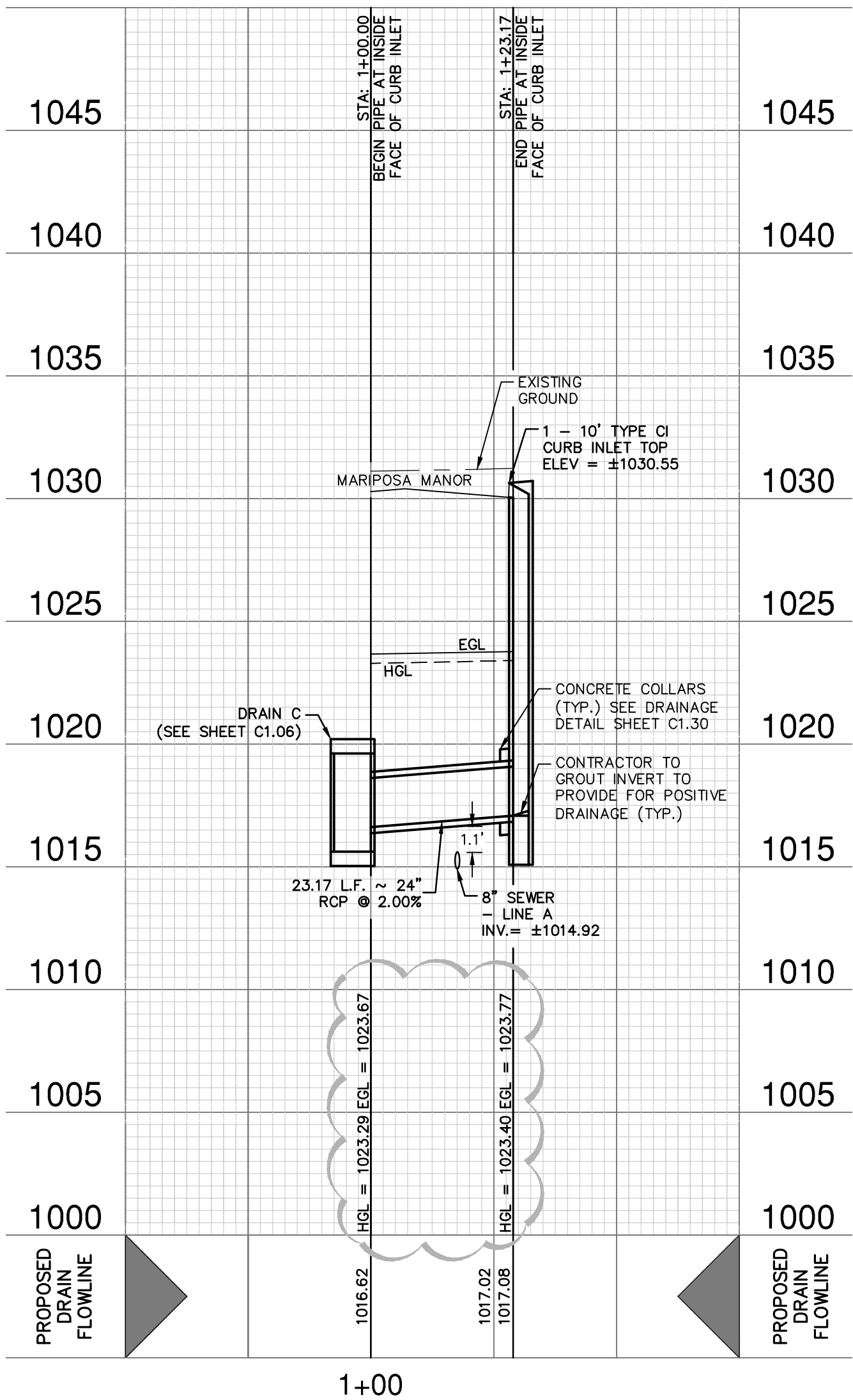
NOT-TO-SCALE



### DRAINAGE LEGEND



DRAIN "D"  
STA. 1+00.00 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 20'



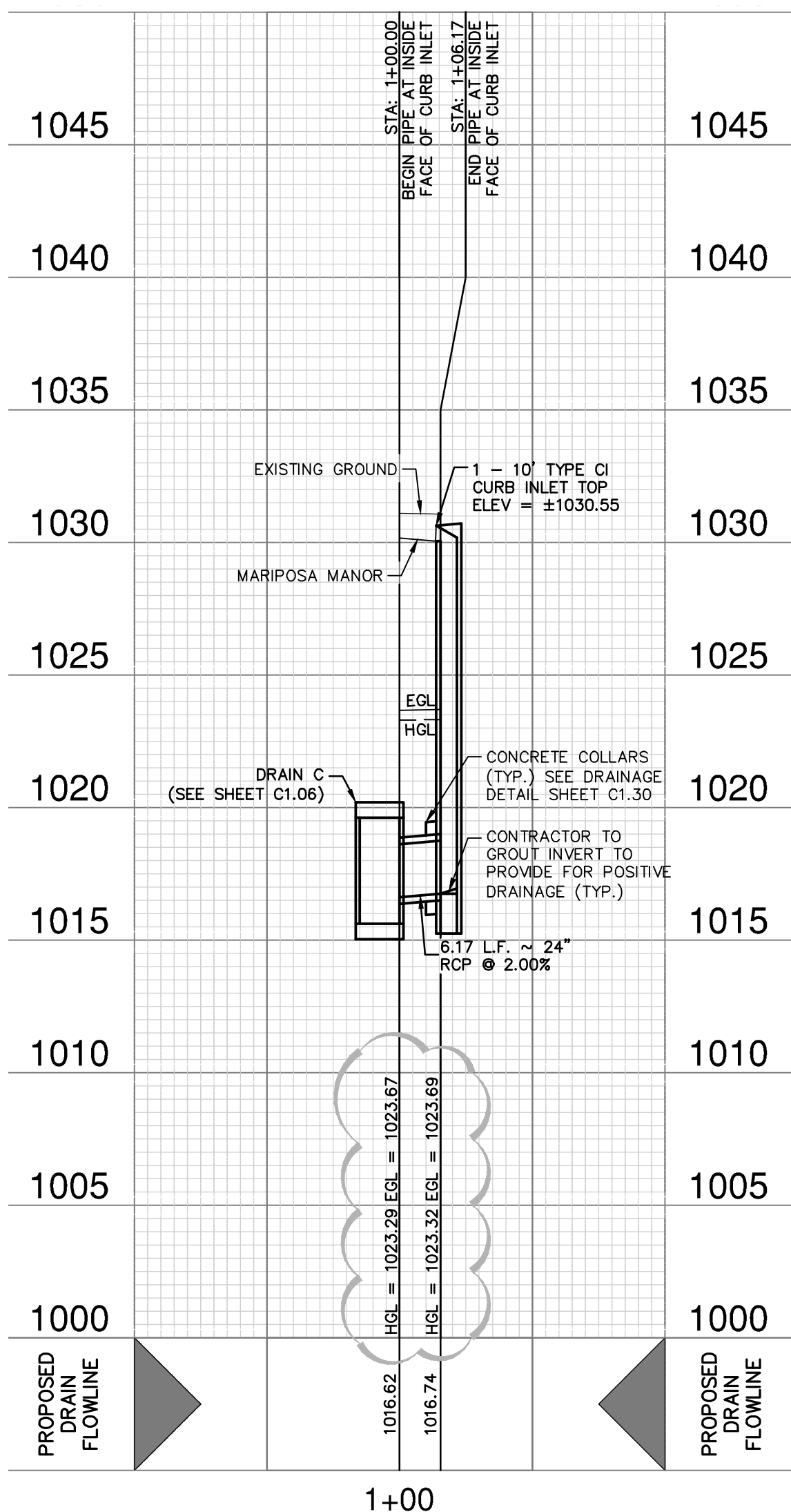
#### HYDRAULIC CALCULATIONS—DRAIN "D"

TOTAL  $Q_{25} = 30.7 \text{ CFS}/2 = 15.35 \text{ CFS}$   
 $Q_{25} = 15.35 \text{ CFS}$   
 $Q_{25} = CA\sqrt{2gh}$  (ORIFICE FLOW EQN.)  
 $A = L(0.52)$ ,  $h = 0.50$ ,  $g = 32.2$ ,  $c = 0.70$   
 $L = \frac{15.35 \text{ CFS}}{(0.70)(0.52)\sqrt{2(32.2)(0.50)}}$   
 $L = 7.43 \text{ FT}$  USE 1 ~ 10 FT CURB INLET  
CHECK WITH WEIR FORMULA  
 $h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{15.35}{(3.087)(10)}\right)^{2/3} = 0.63 \text{ FT.}$   
 $h = 0.63 < 0.79$  OK

#### 1 - 24" RCP HYDRAULIC CALCULATION STA 1+00.00 TO 1+23.17

$Q_{25} = 15.35 \text{ CFS}$   
 $n = 0.013$   
 $S = 2.00\%$   
 $Sf = 0.46\%$   
 $dn = 2.00'$   
 $Vn = 4.89 \text{ FPS}$

DRAIN "E"  
STA. 1+00.00 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 20'



#### HYDRAULIC CALCULATIONS—DRAIN "E"

TOTAL  $Q_{25} = 31.0 \text{ CFS}/2 = 15.35 \text{ CFS}$   
 $Q_{25} = 15.35 \text{ CFS}$   
 $Q_{25} = CA\sqrt{2gh}$  (ORIFICE FLOW EQN.)  
 $A = L(0.52)$ ,  $h = 0.50$ ,  $g = 32.2$ ,  $c = 0.70$   
 $L = \frac{15.35 \text{ CFS}}{(0.70)(0.52)\sqrt{2(32.2)(0.50)}}$   
 $L = 7.43 \text{ FT}$  USE 1 ~ 10 FT CURB INLET  
CHECK WITH WEIR FORMULA  
 $h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{15.35}{(3.087)(10)}\right)^{2/3} = 0.63 \text{ FT.}$   
 $h = 0.63 < 0.79$  OK

#### 1 - 24" RCP HYDRAULIC CALCULATION STA 1+00.00 TO 1+06.17

$Q_{25} = 15.35 \text{ CFS}$   
 $n = 0.013$   
 $S = 2.00\%$   
 $Sf = 0.46\%$   
 $dn = 2.00'$   
 $Vn = 4.89 \text{ FPS}$

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### CAUTION!!

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NO.	REVISION	DATE
1.	ADDED MANHOLES	02/02/2024



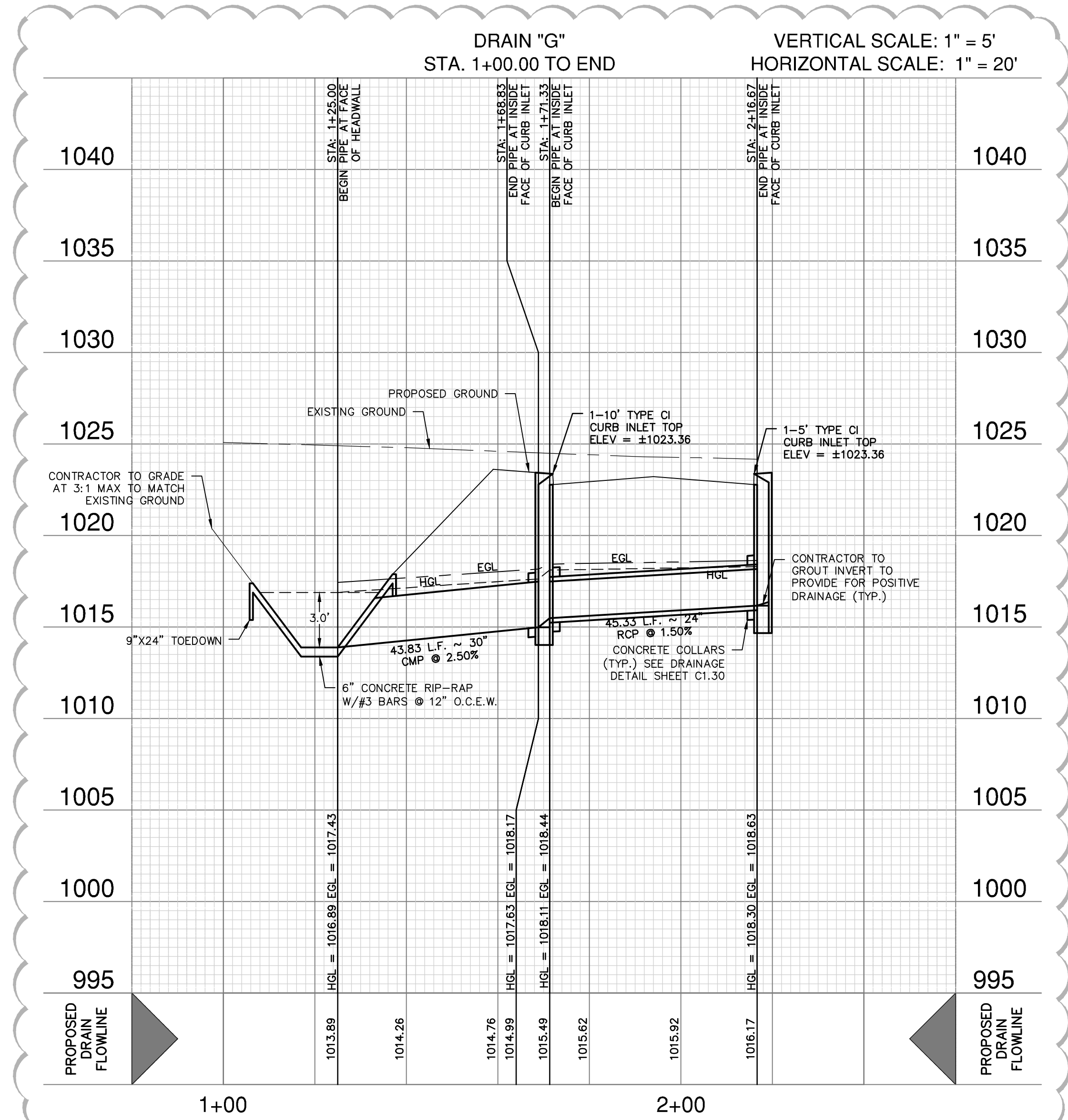
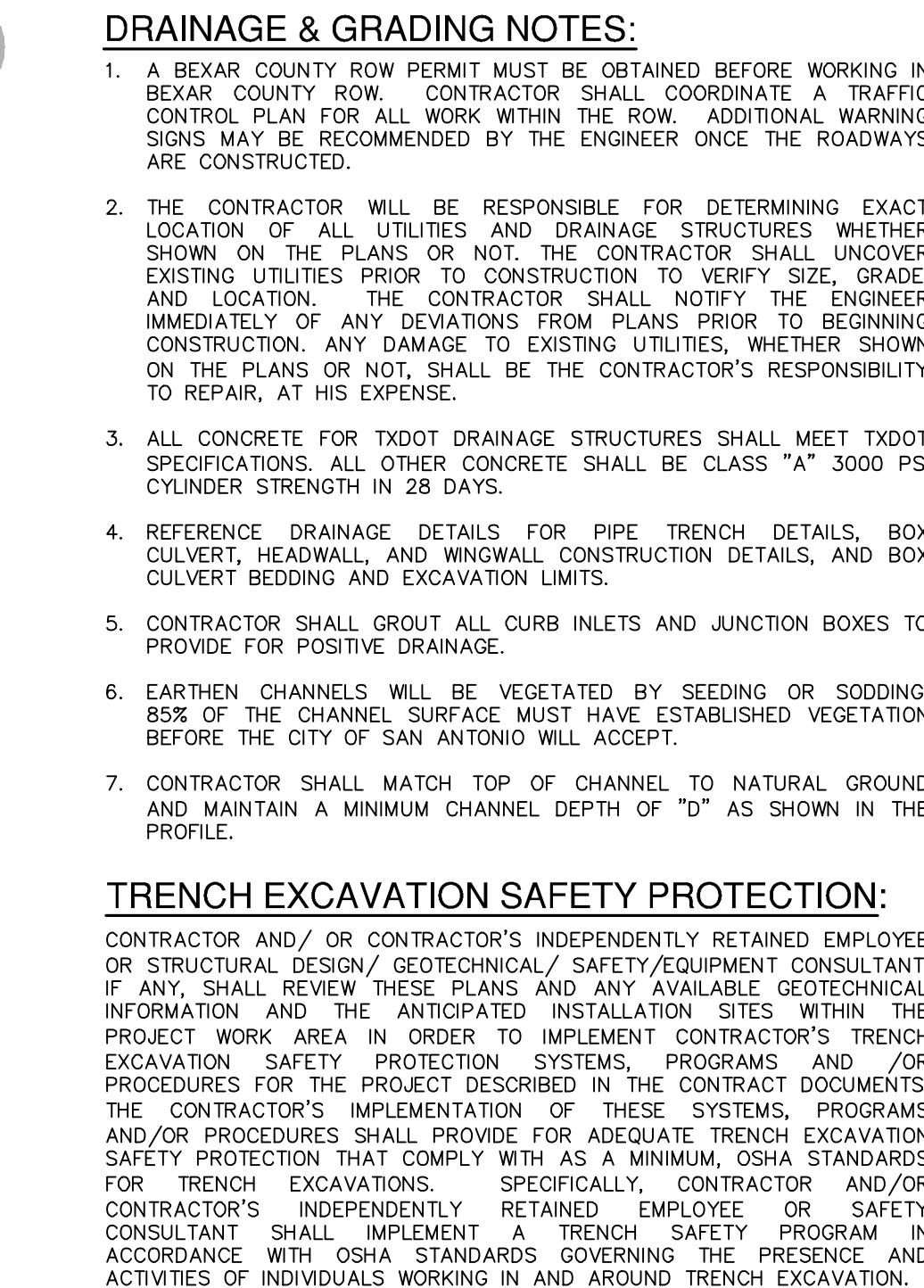
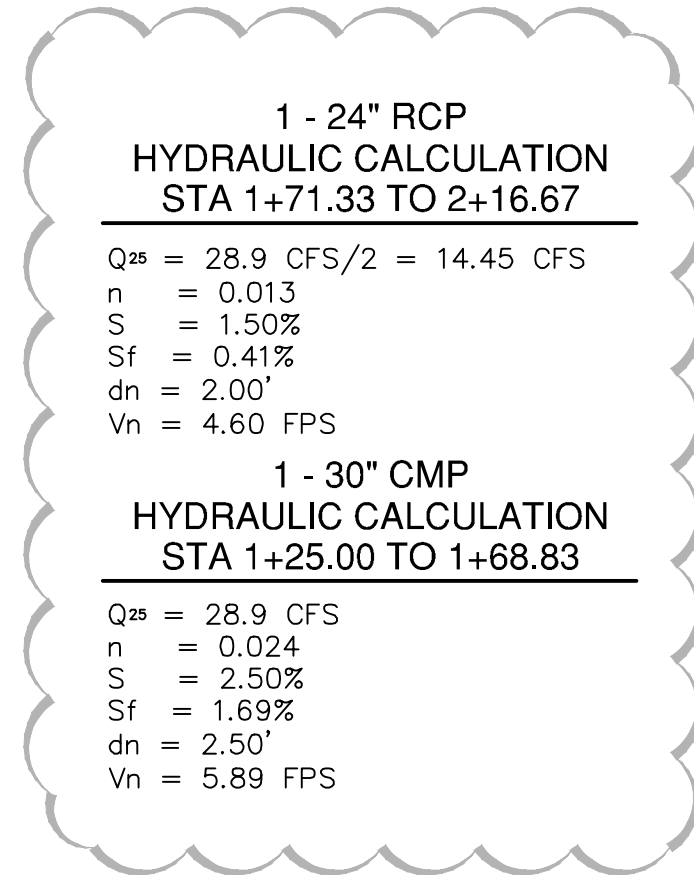
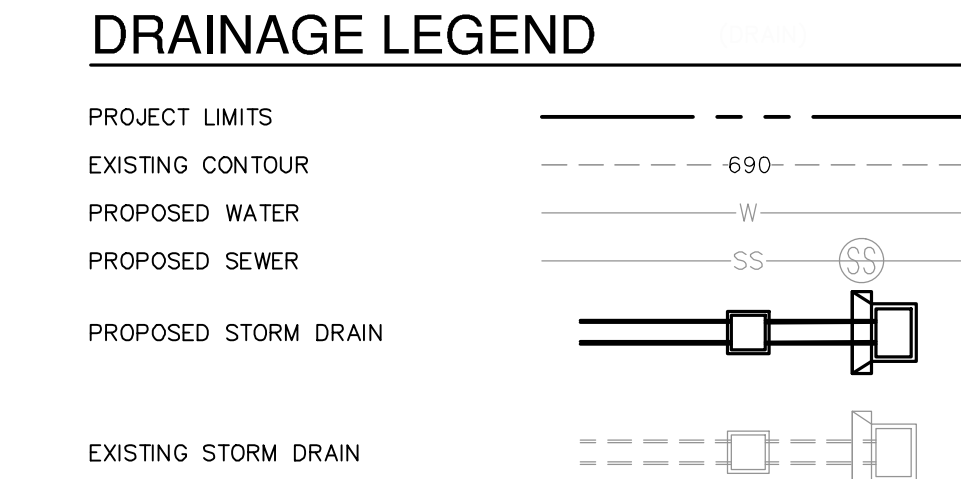
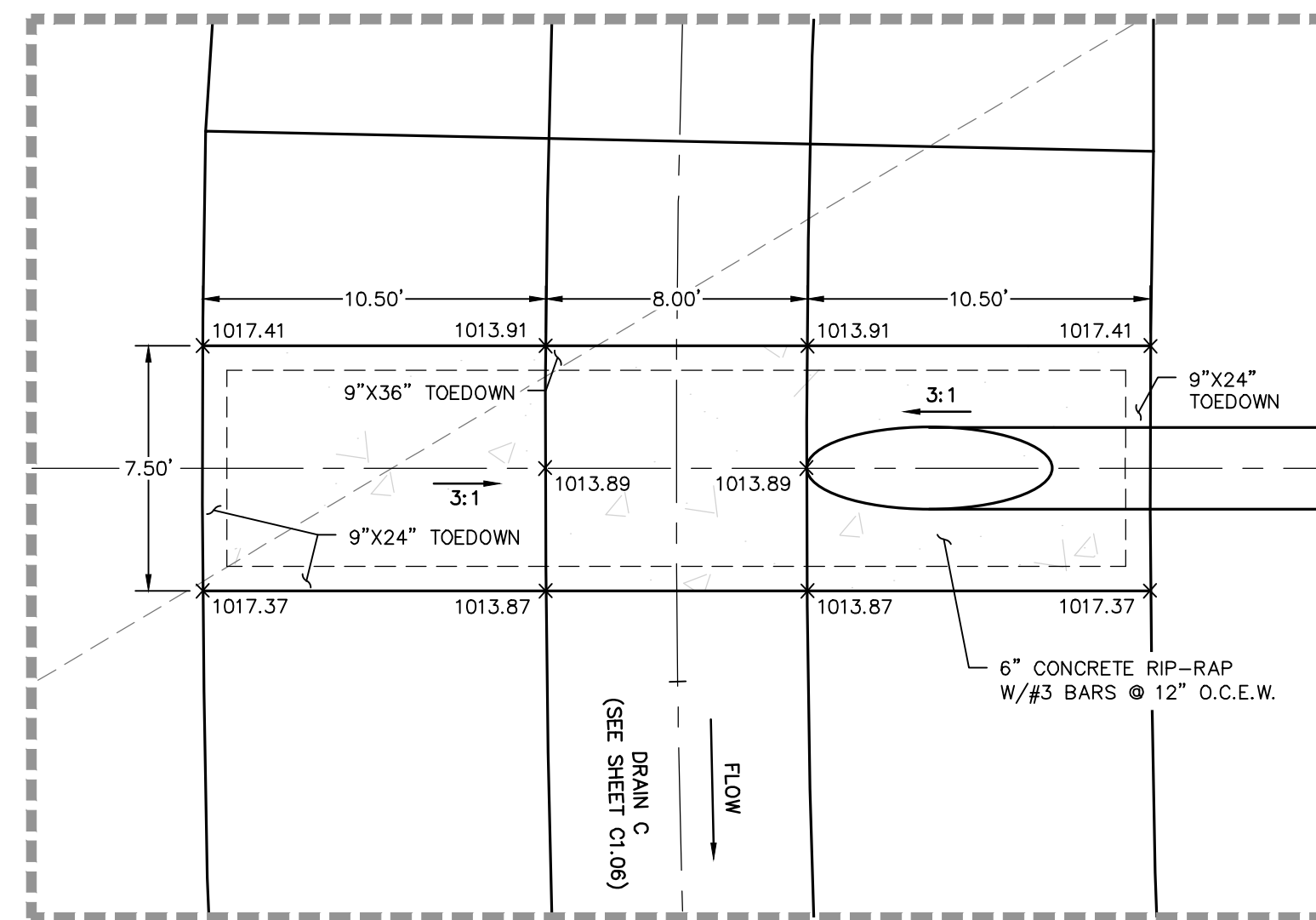
**PAPE-DAWSON  
ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

**DRAINS D & E  
PLAN AND PROFILE**

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE FEBRUARY 2024
DRAWN JB
CHECKED DRAWN GK
SHEET C1.07

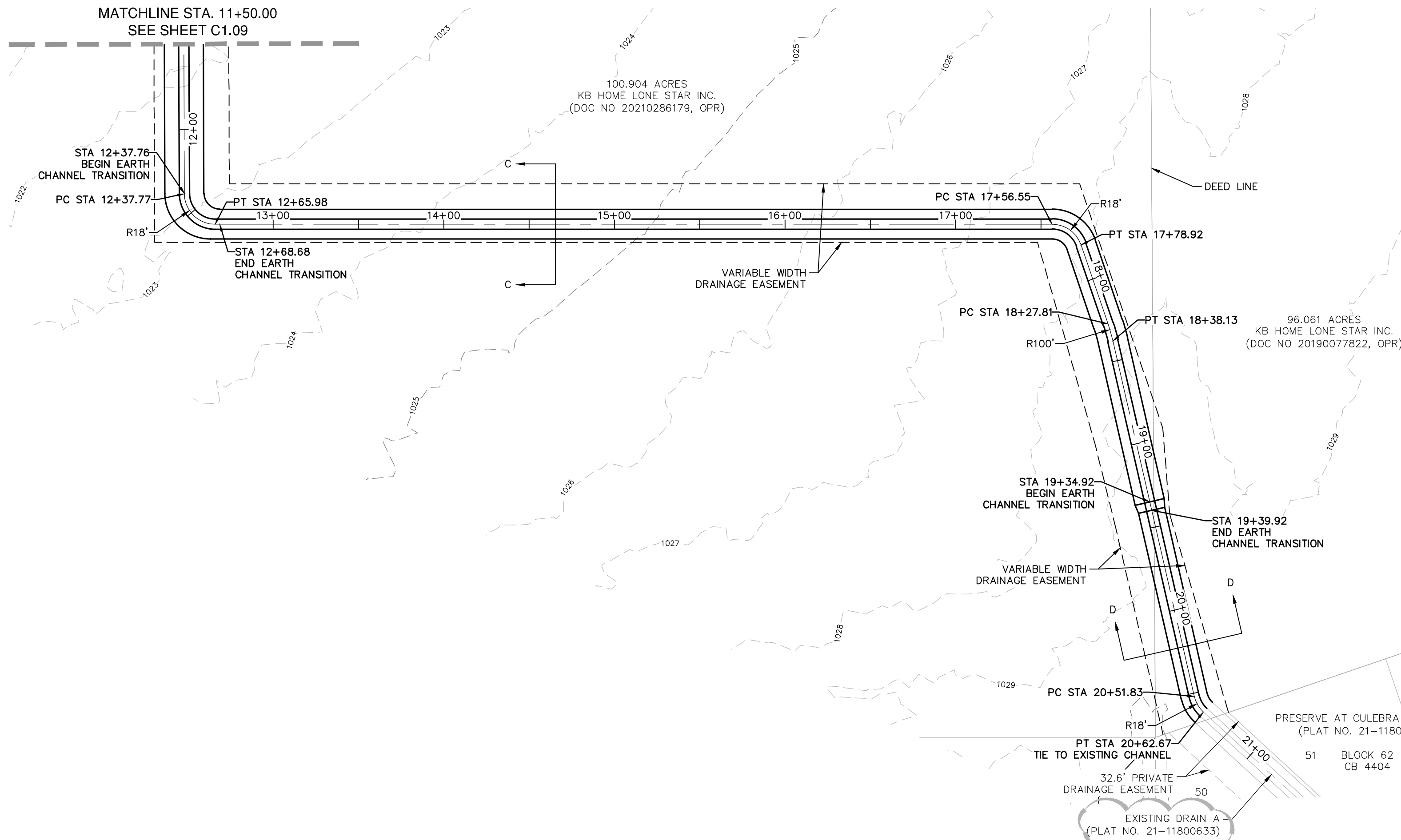




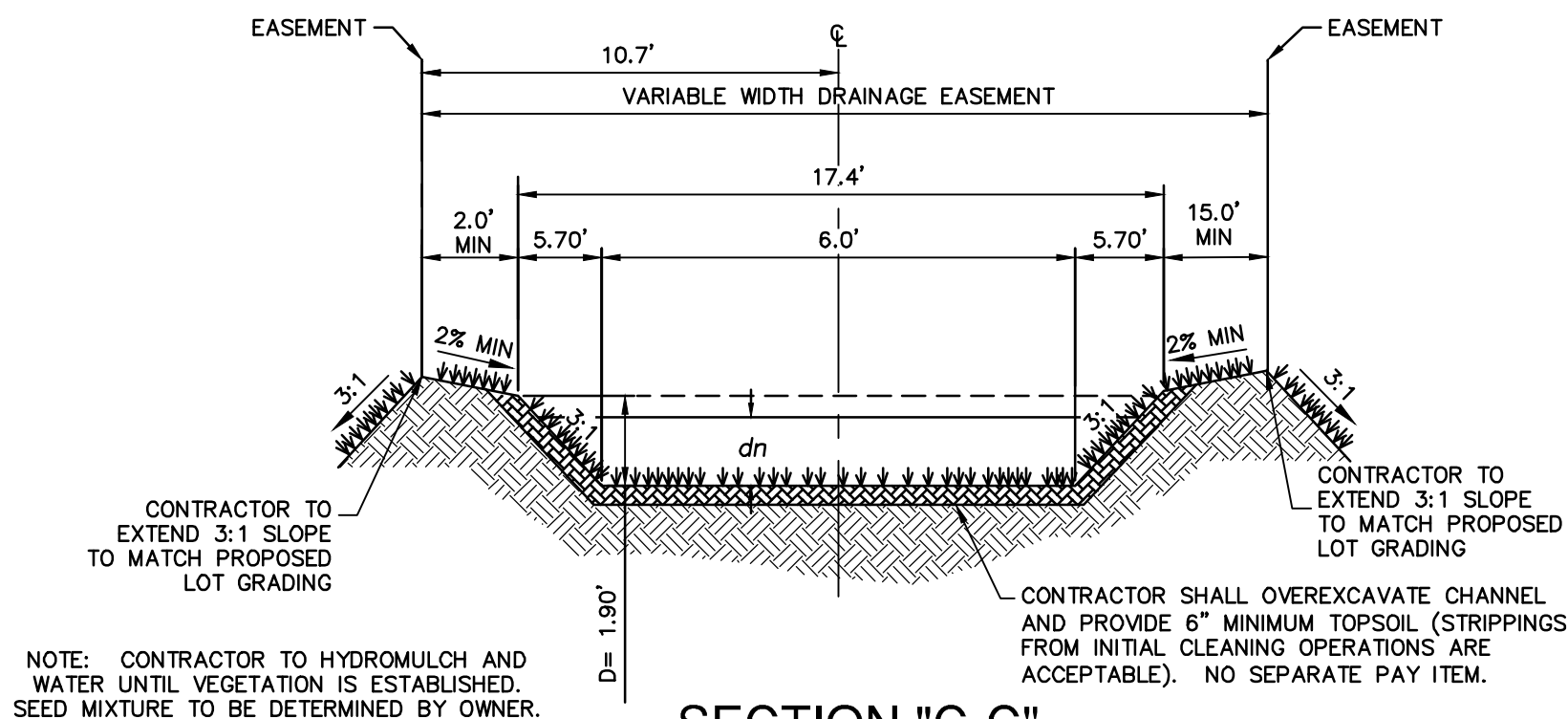
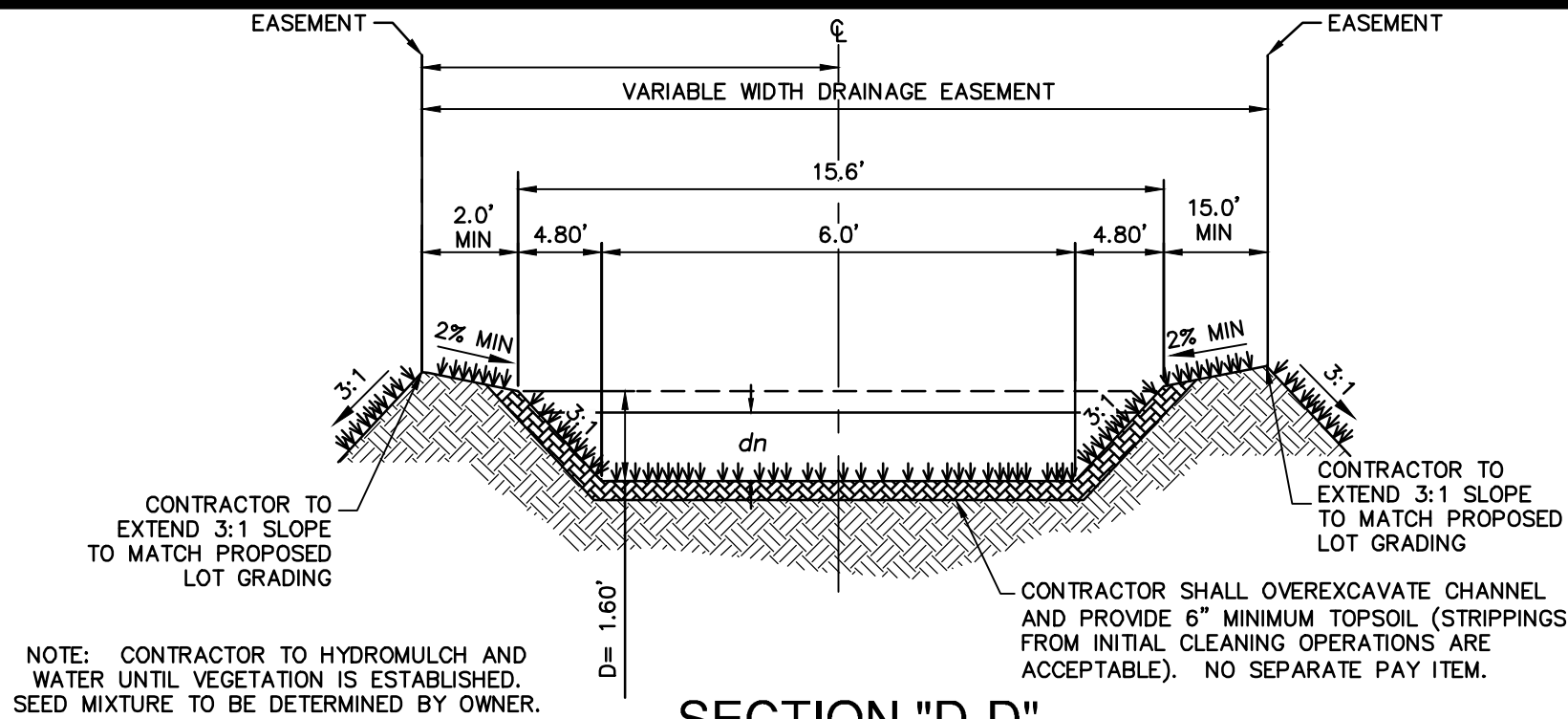




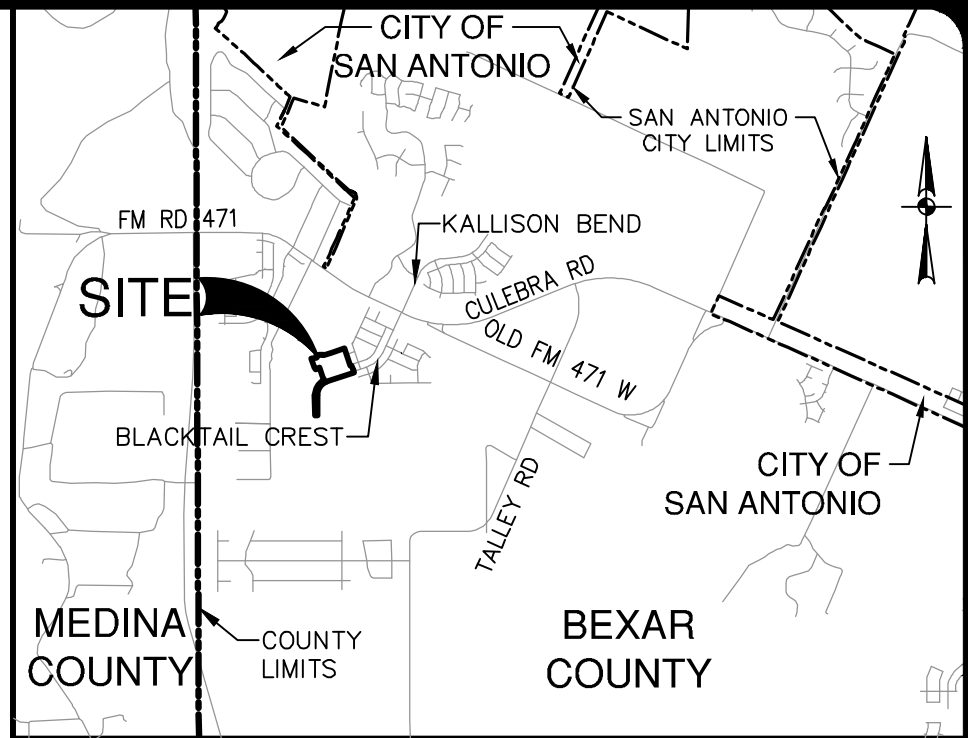




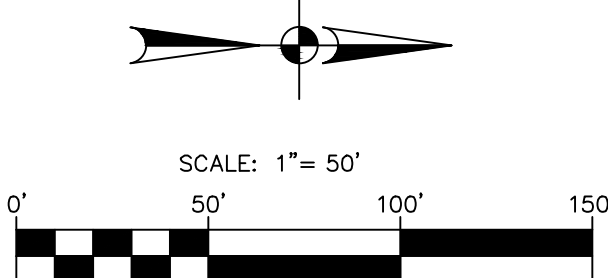
DRAIN "H"  
STA. 11+50.00 TO END



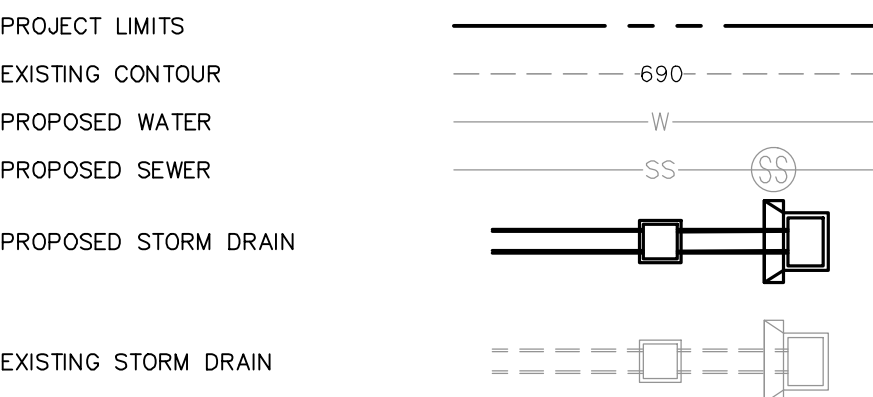
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



DRAINAGE LEGEND



DRAINAGE & GRADING NOTES:

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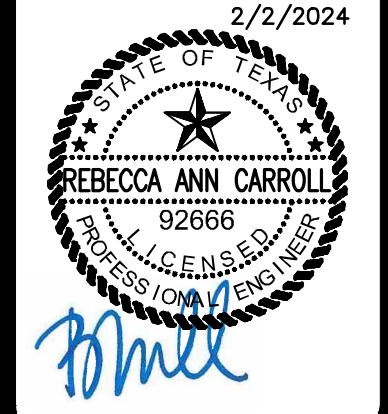
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CAUTION!!

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NO.	REVISION	DATE
1.	ADDED SHEAR STRESSES	02/02/2024



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

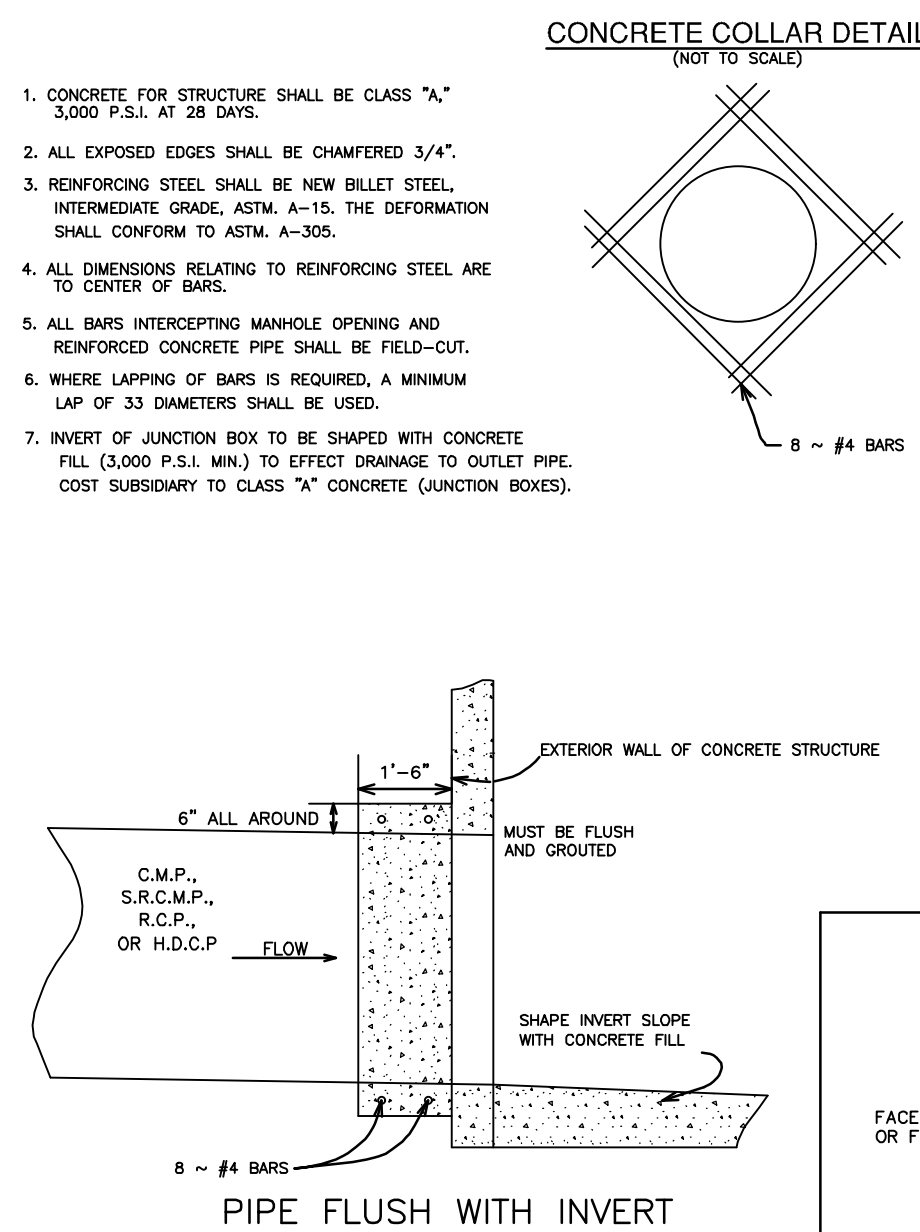
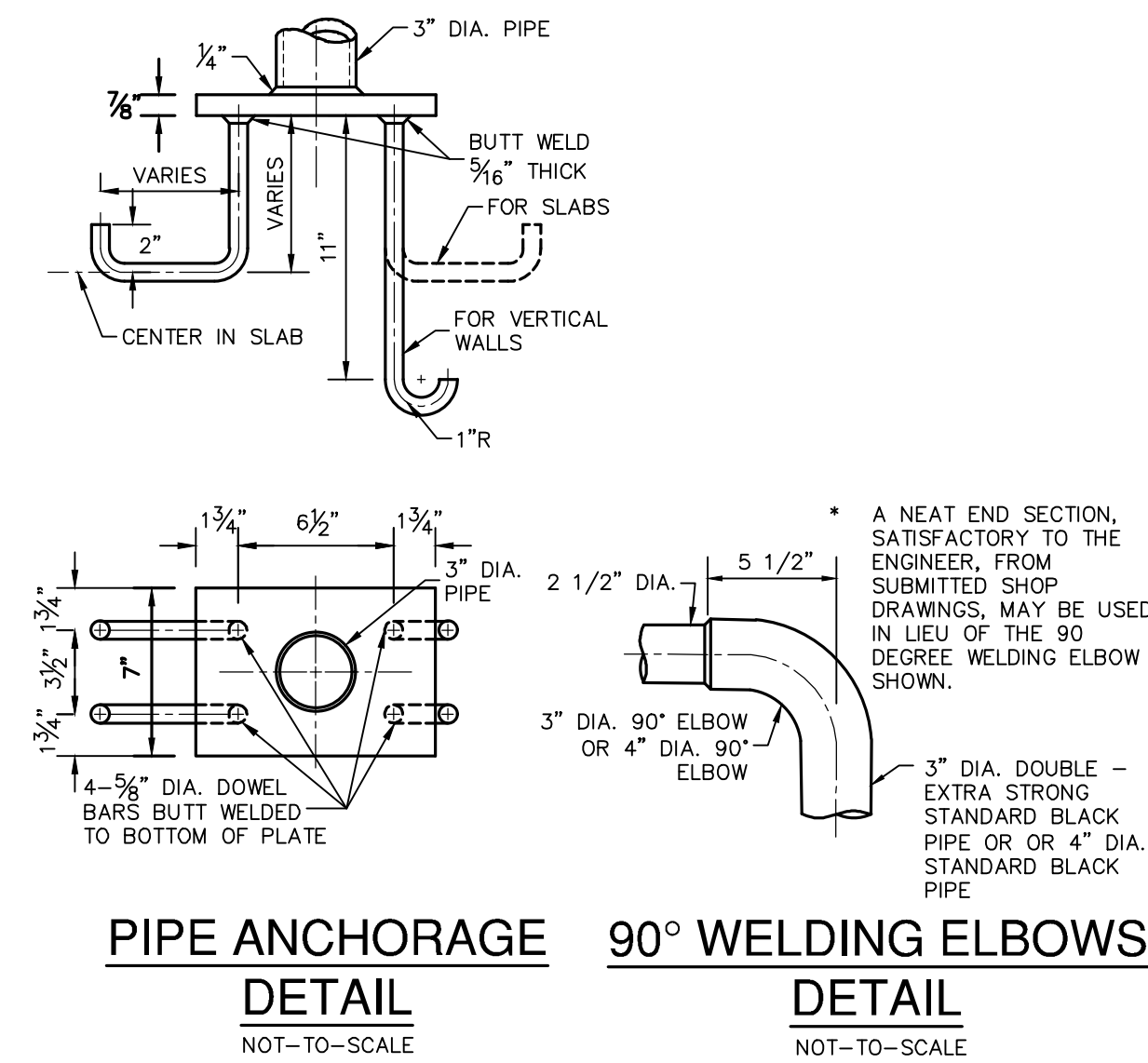
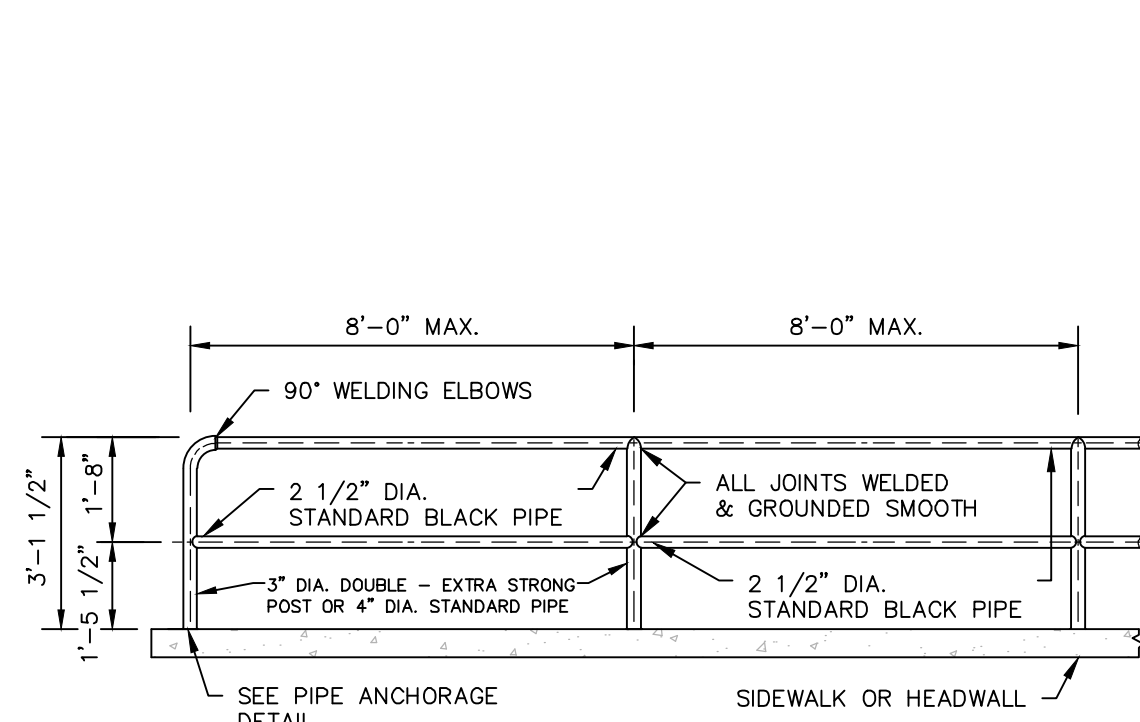
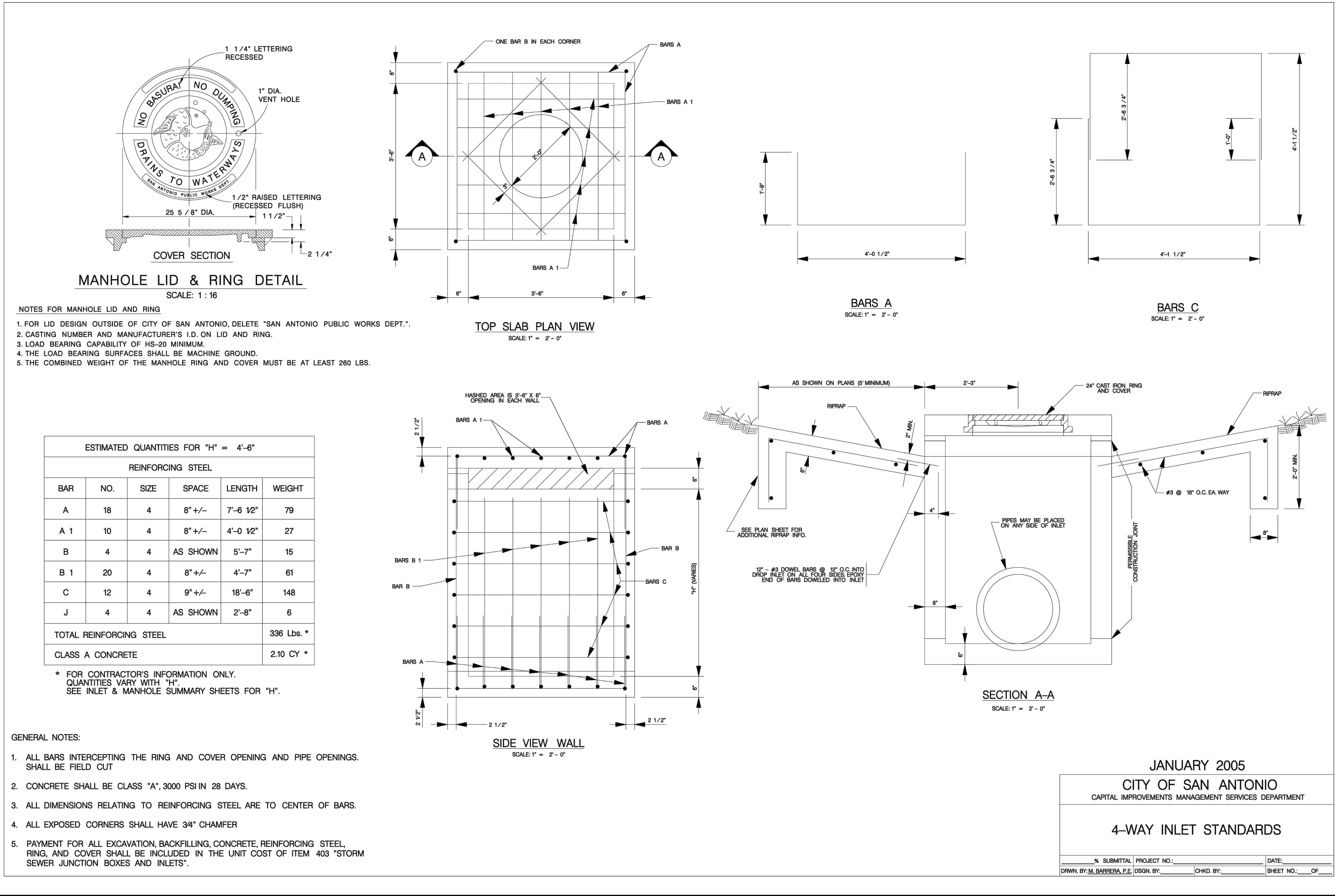
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**DRAIN H**  
**PLAN AND PROFILE (STA. 11+50.00 TO END)**

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE FEBRUARY 2024
DRAWN JB
CHECKED DRAWN GK
SHEET C1.10







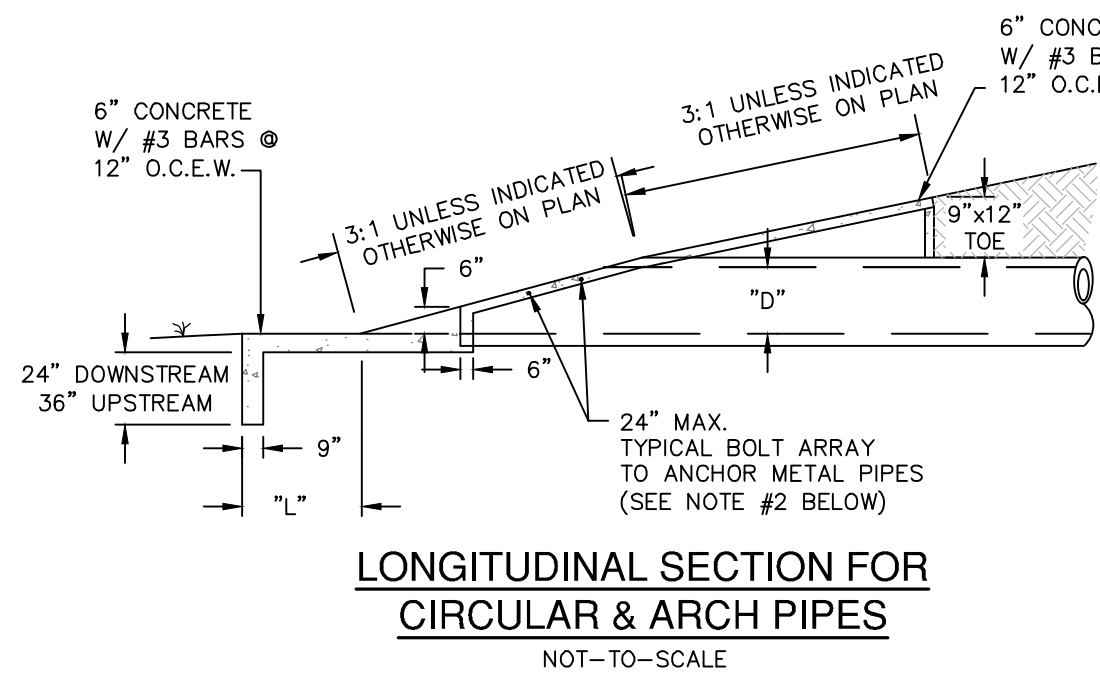
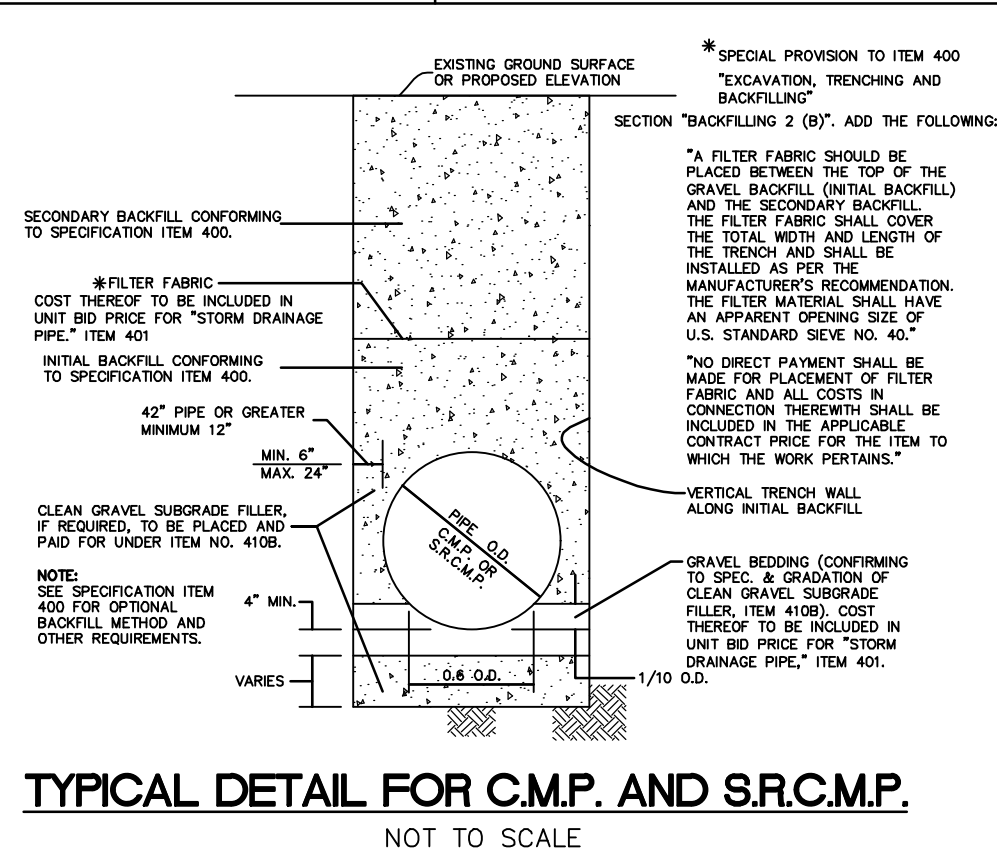
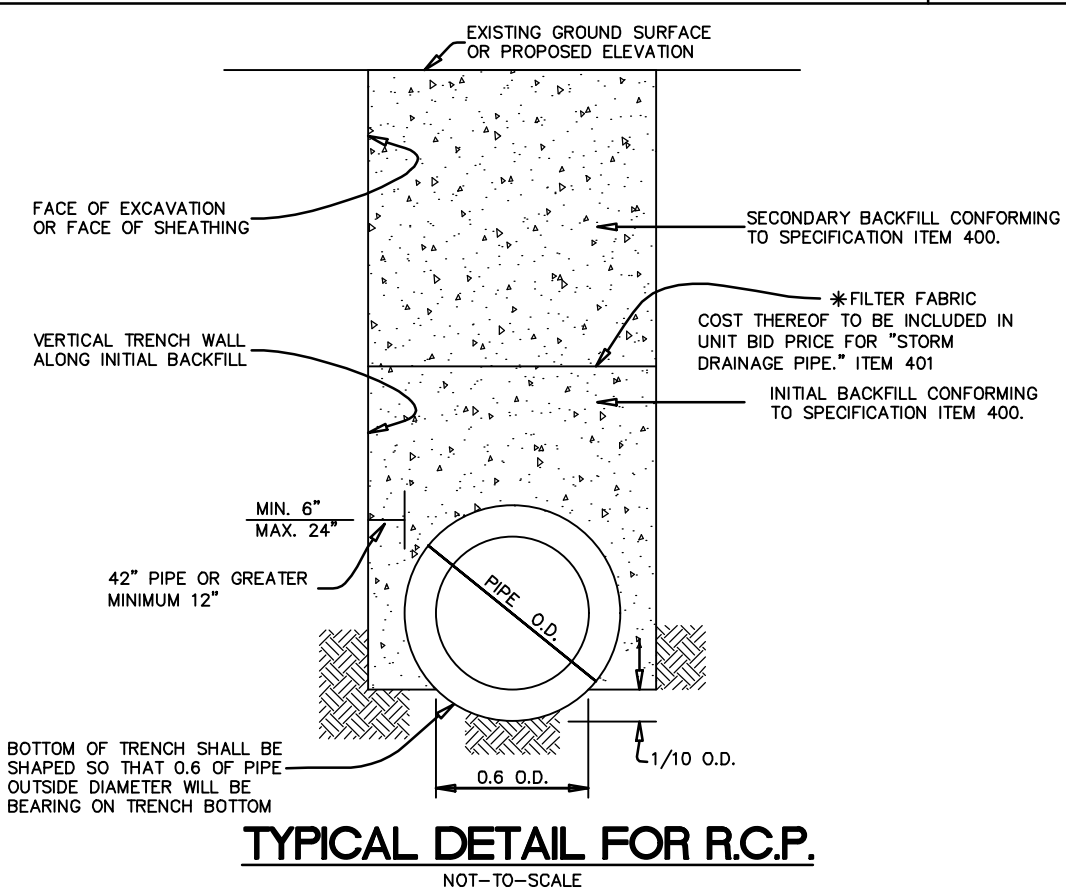


JANUARY 2006

STANDARD PLANS  
CITY OF SAN ANTONIO, TEXAS  
DEVELOPMENT SERVICES

**CONCRETE COLLAR DETAIL**

DATE	REVISION	SCALE	SEE ABOVE
DATE: 10 JANUARY 2006			
CHECKED BY: M. BARBERA, P.E.			SHEET 1 OF 1



**DIMENSIONS FOR CIRCULAR (CMP AND RCP) PIPE CULVERT**

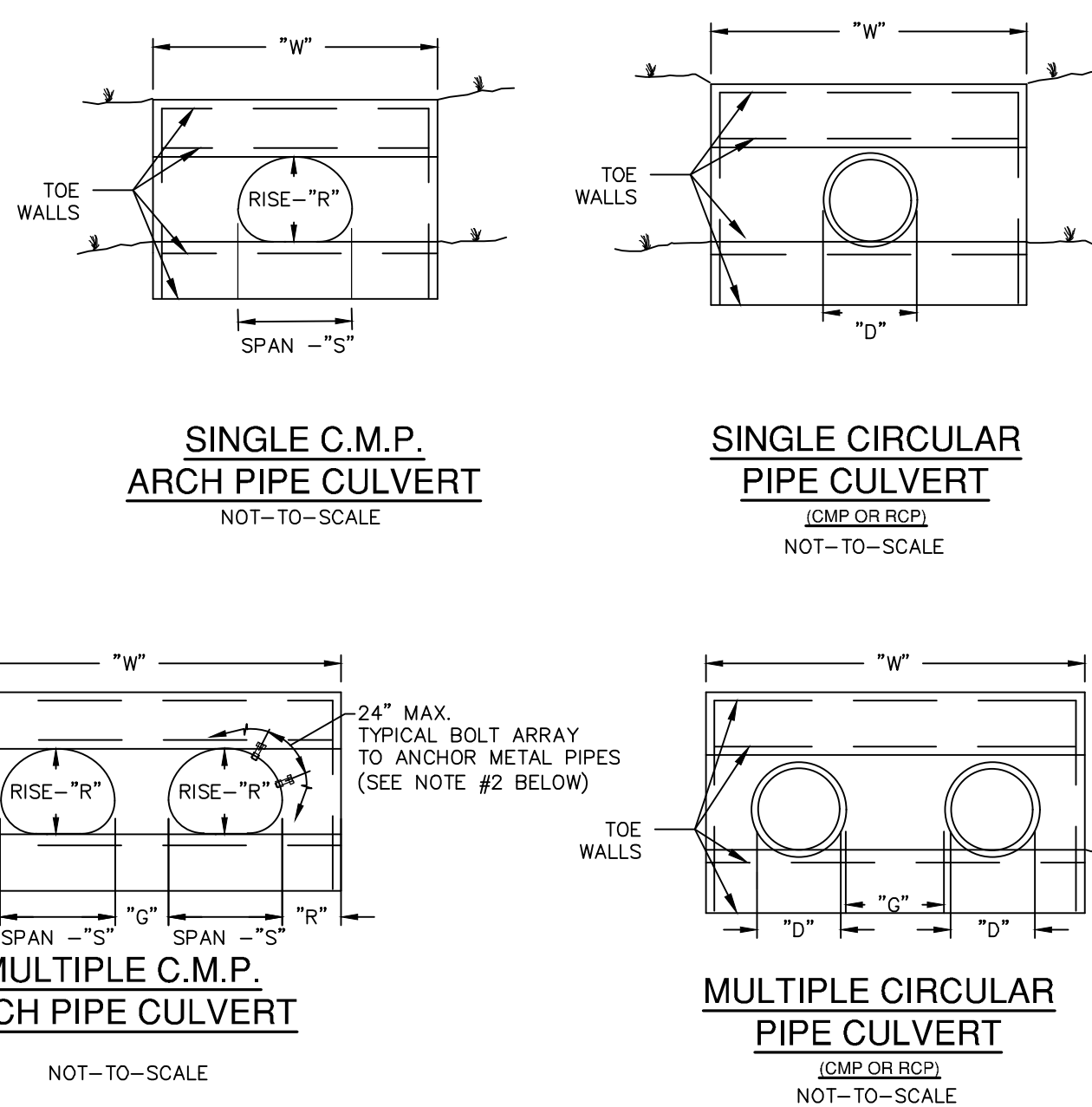
"D" INSIDE DIA. OF PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP				
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"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

"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.

**DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS**

DESIGN SIZE	APPROX ARCH DIM RISE / SPAN	"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE	
				"W"				
2	21"	15'	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20'	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24'	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29'	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33'	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38'	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43'	8'-0"	2'-10"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47'	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

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

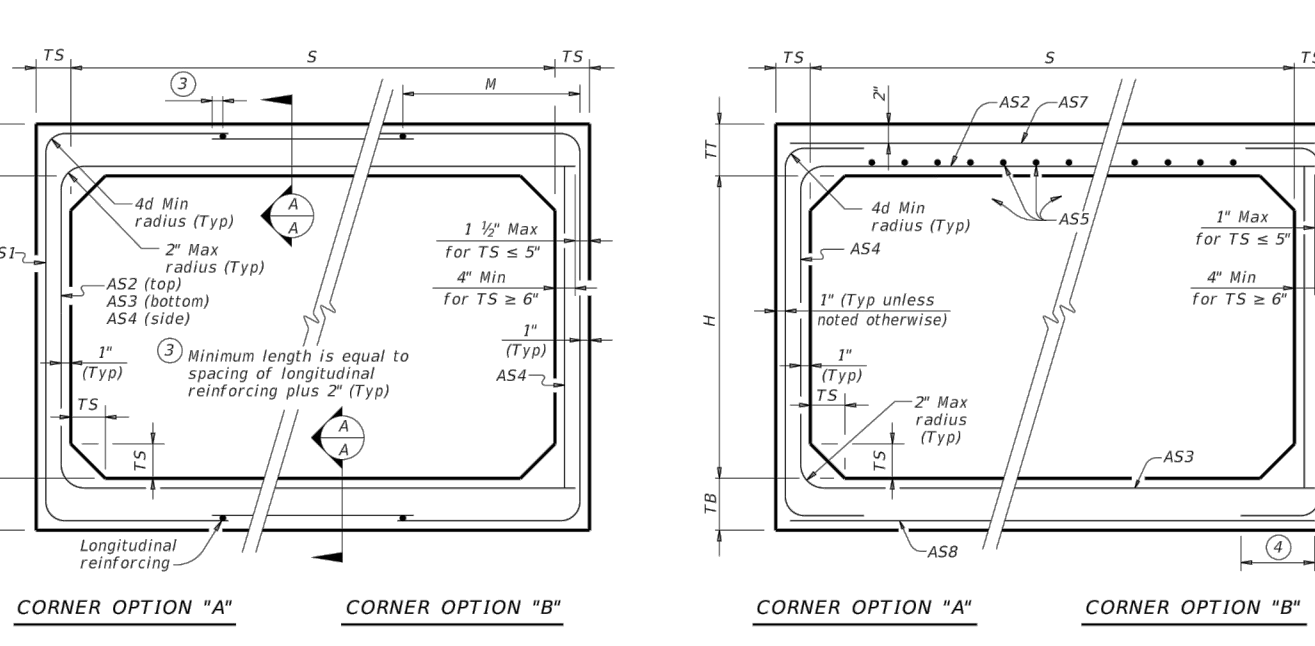


- NOTES:
- CONCRETE SHALL BE CLASS "A" 3000 PSI
  - ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.
  - FOR CONCRETE ARCH PIPES THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.
  - FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN TxDOT ITEMS 460 AND/OR 464.
  - IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

RH-15 HEADWALL

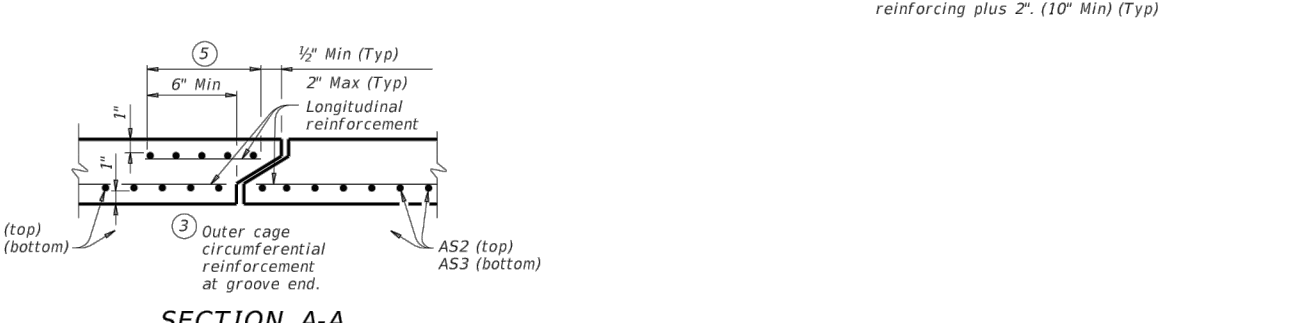


BOX DATA														
SECTION DIMENSIONS					REINFORCING (sq. in. / ft.) <sup>(2)</sup>									
S	H	TT	TB	TS	Height (ft.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Life Weight (tons)	
6	2	8	7	7	<2	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2	
6	2	7	7	7	2 < 3	0.25	0.21	0.17	0.17	-	-	-	6.8	
6	2	7	7	7	3 - 5	0.20	0.17	0.17	0.17	-	-	-	6.8	
6	2	7	7	7	10	0.39	0.20	0.17	0.17	-	-	-	6.8	
6	2	7	7	7	15	0.39	0.26	0.20	0.20	0.17	-	-	6.8	
6	2	7	7	7	20	0.39	0.26	0.26	0.26	0.17	-	-	6.8	
6	2	7	7	7	25	0.39	0.43	0.32	0.32	0.17	-	-	6.8	
6	2	7	7	7	30	0.39	0.52	0.38	0.39	0.17	-	-	6.8	
6	3	8	7	7	<2	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9	
6	3	7	7	7	2 < 3	0.21	0.24	0.19	0.17	-	-	-	7.5	
6	3	7	7	7	3 - 5	0.17	0.18	0.17	0.17	-	-	-	7.5	
6	3	7	7	7	10	0.39	0.17	0.18	0.19	0.17	-	-	7.5	
6	3	7	7	7	15	0.39	0.22	0.24	0.24	0.17	-	-	7.5	
6	3	7	7	7	20	0.38	0.28	0.31	0.31	0.17	-	-	7.5	
6	3	7	7	7	25	0.38	0.35	0.38	0.39	0.17	-	-	7.5	
6	3	7	7	7	30	0.42	0.46	0.46	0.46	0.17	-	-	7.5	
6	4	8	7	7	<2	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6	
6	4	7	7	7	2 < 3	0.19	0.27	0.21	0.17	-	-	-	8.2	
6	4	7	7	7	3 - 5	0.17	0.21	0.19	0.17	-	-	-	8.2	
6	4	7	7	7	10	0.39	0.17	0.20	0.21	0.17	-	-	8.2	
6	4	7	7	7	15	0.38	0.18	0.27	0.27	0.17	-	-	8.2	
6	4	7	7	7	20	0.38	0.24	0.34	0.35	0.17	-	-	8.2	
6	4	7	7	7	25	0.38	0.29	0.43	0.42	0.17	-	-	8.2	
6	4	7	7	7	30	0.38	0.35	0.51	0.52	0.17	-	-	8.2	
6	5	8	7	7	<2	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3	
6	5	7	7	7	2 < 3	0.17	0.30	0.24	0.17	-	-	-	8.9	
6	5	7	7	7	3 - 5	0.17	0.23	0.21	0.17	-	-	-	8.9	
6	5	7	7	7	10	0.39	0.17	0.22	0.23	0.17	-	-	8.9	
6	5	7	7	7	15	0.38	0.17	0.26	0.26	0.17	-	-	8.9	
6	5	7	7	7	20	0.38	0.20	0.37	0.38	0.17	-	-	8.9	
6	5	7	7	7	25	0.38	0.25	0.45	0.46	0.17	-	-	8.9	
6	5	7	7	7	30	0.38	0.30	0.54	0.55	0.17	-	-	8.9	
6	6	8	7	7	<2	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10	
6	6	7	7	7	2 < 3	0.17	0.32	0.26	0.17	-	-	-	9.6	
6	6	7	7	7	3 - 5	0.17	0.24	0.22	0.17	-	-	-	9.6	
6	6	7	7	7	10	0.43	0.17	0.23	0.24	0.17	-	-	9.6	
6	6	7	7	7	15	0.39	0.17	0.29	0.31	0.17	-	-	9.6	
6	6	7	7	7	20	0.39	0.18	0.36	0.39	0.17	-	-	9.6	
6	6	7	7	7	25	0.39	0.23	0.46	0.48	0.17	-	-	9.6	
6	6	7	7	7	30	0.39	0.27	0.55	0.57	0.17	-	-	9.6	



FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT



SECTION A-A

HL93 LOADING

BRIDGE DIVISION STANDARD

SINGLE BOX CULVERTS

PRECAST

6'-0" SPAN

SCP-6

Reinforcing Steel 4.12 Lb Concrete 0.037 Cy

QUANTITIES PER FOOT OF CURB

SECTION THRU CURB

SECTION THRU TOP SLABS LESS THAN 8"

ANGLE DETAIL

PLAN OF SKEWED ENDS

BOX CULVERTS

MISCELLANEOUS DETAILS

SCP-MD

Reinforcing Steel 4.12 Lb Concrete 0.037 Cy

QUANTITIES PER FOOT OF CURB

SECTION THRU CURB

SECTION THRU TOP SLABS LESS THAN 8"

ANGLE DETAIL

PLAN OF SKEWED ENDS

BOX CULVERTS

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QUANTITIES PER FOOT OF CURB

SECTION THRU CURB

SECTION THRU TOP SLABS LESS THAN 8"

ANGLE DETAIL

PLAN OF SKEWED ENDS

BOX CULVERTS

TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)											TABLE OF WINGWALL REINFORCING (2-wings)			
Dimensions					Variable Reinforcing					Estimated Quantity wing length (ft) (CY/ft)	Bar	Size	No.	Spa
Maximum Wing Height	W	X	Y	Z	Bar Size	Bar J2	Bar J3	Bar J4	Spa					
					Bar Size	Spa	Bar J2	Bar J3	Bar J4	Spa				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	33.73	0.248	H	#4	4	-
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	37.07	0.261	J	#4	-	1'-0"
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	40.41	0.273	K	#4	-	1'-0"
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	43.75	0.285	V	#4	-	1'-0"
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	47.10	0.300				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	50.44	0.313				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	53.79	0.326				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	57.13	0.340				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	60.48	0.353				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	63.83	0.367				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	67.17	0.380				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	70.52	0.394				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	73.86	0.407				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	77.21	0.421				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	80.55	0.434				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	83.90	0.448				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	87.24	0.461				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	90.59	0.475				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	93.93	0.488				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	97.28	0.502				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	100.62	0.515				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	103.97	0.529				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	107.31	0.542				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	110.66	0.556				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	114.00	0.569				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	117.35	0.583				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	120.69	0.596				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	124.04	0.610				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	127.38	0.623				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	130.73	0.637				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	134.07	0.650				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	137.42	0.664				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	140.76	0.677				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	144.11	0.691				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	147.45	0.704				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	150.80	0.718				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	154.14	0.731				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	157.49	0.745				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	160.83	0.758				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	164.18	0.772				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	167.52	0.785				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	170.87	0.799				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	174.21	0.812				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	177.56	0.826				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	180.90	0.839				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	184.25	0.853				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	187.59	0.866				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	190.94	0.880				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	194.28	0.893				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	197.63	0.907				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	200.97	0.920				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	204.32	0.934				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	207.66	0.947				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	211.01	0.961				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	214.35	0.974				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	217.70	0.988				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	221.04	1.001				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	224.39	1.015				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	227.73	1.028				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	231.08	1.042				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	234.42	1.055				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	237.77	1.069				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	241.11	1.082				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	244.46	1.096				
2'-0"	2'-0"	1'-0"	1'-0"	9"	#4	1'-0"	#4	1'-0"	247.80	1.109				
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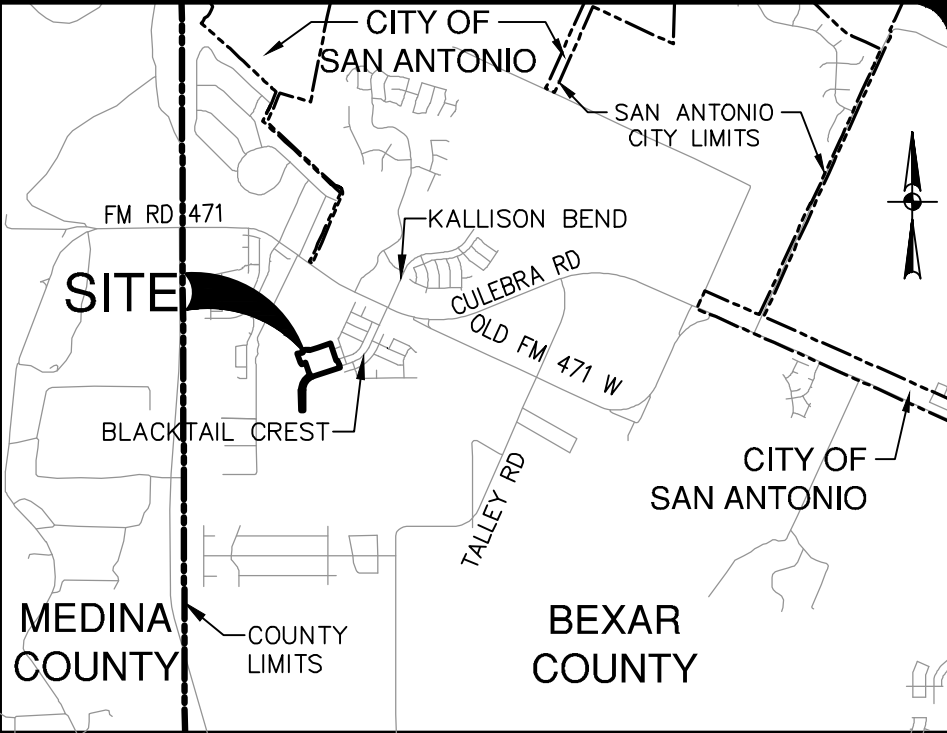


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STREET NOTES:

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- 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 (Q)(6).
- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.



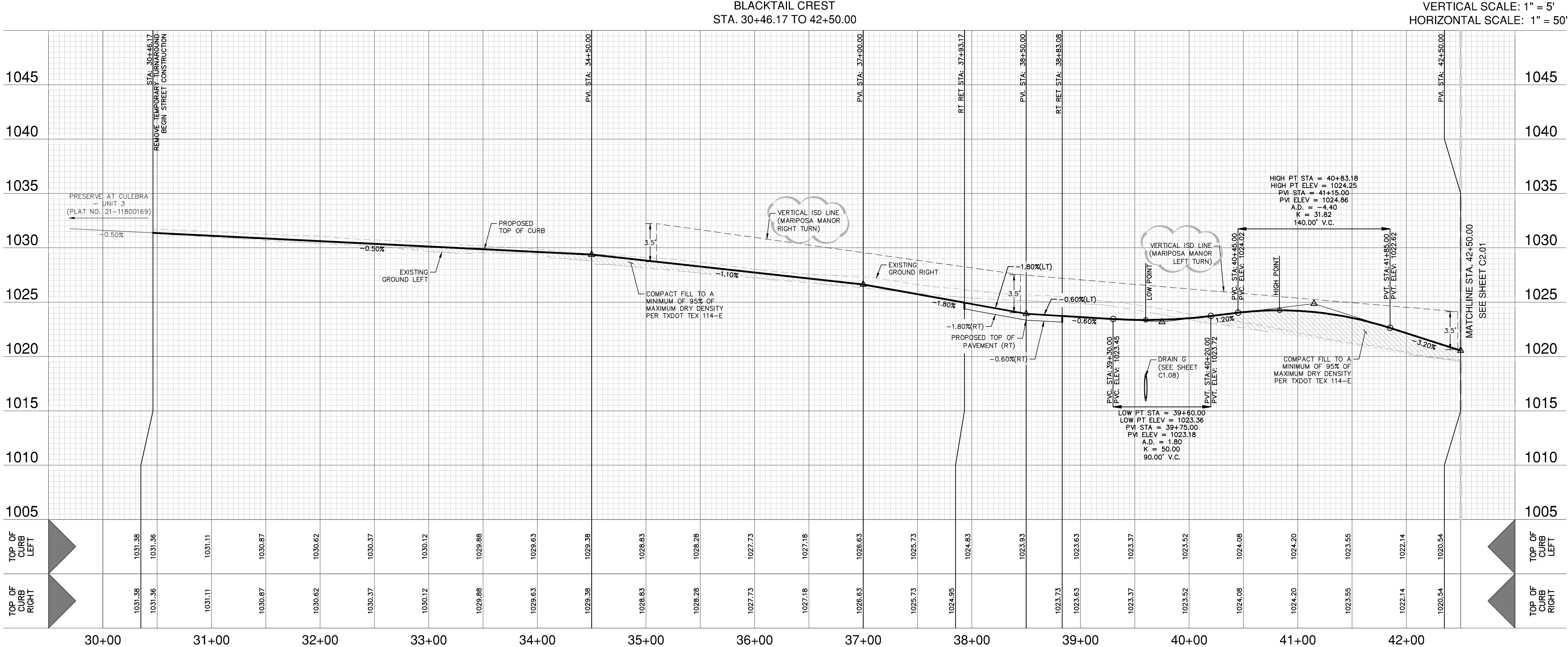
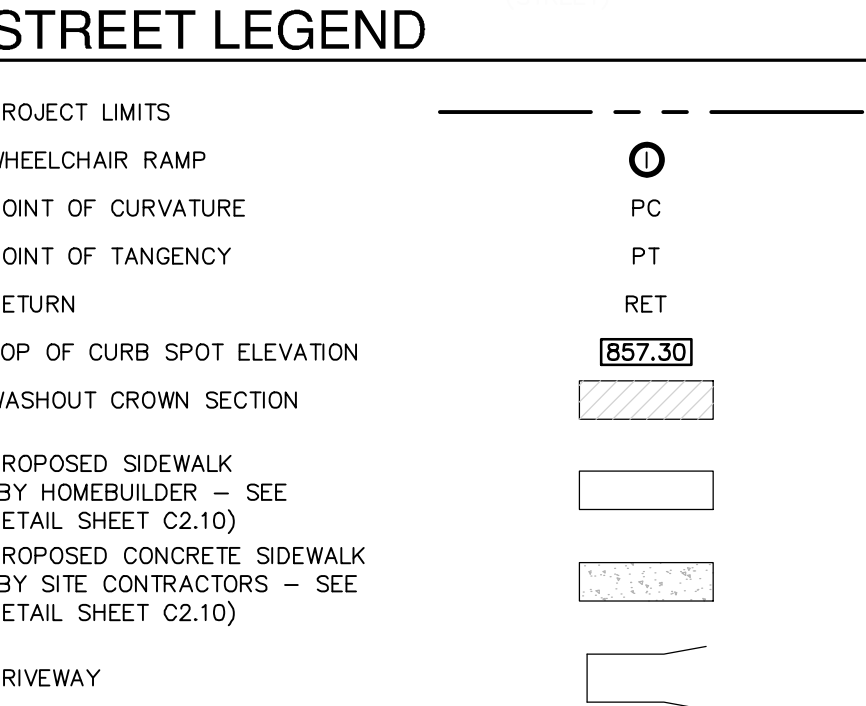
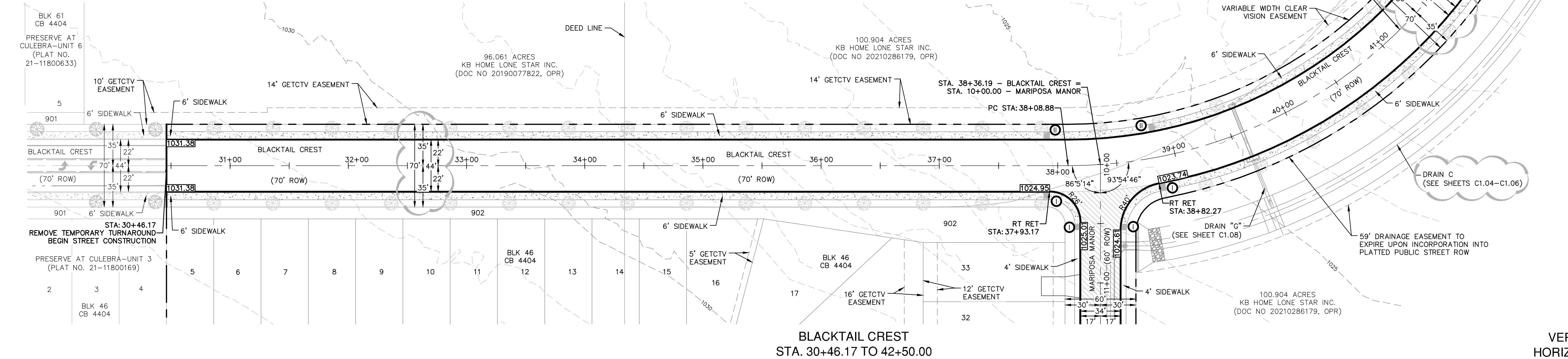
NO.	REVISION	DATE
1.	REVISED ROAD SECTION & ADDED ISD LINEWORK	02/02/2024

2/16/2024  
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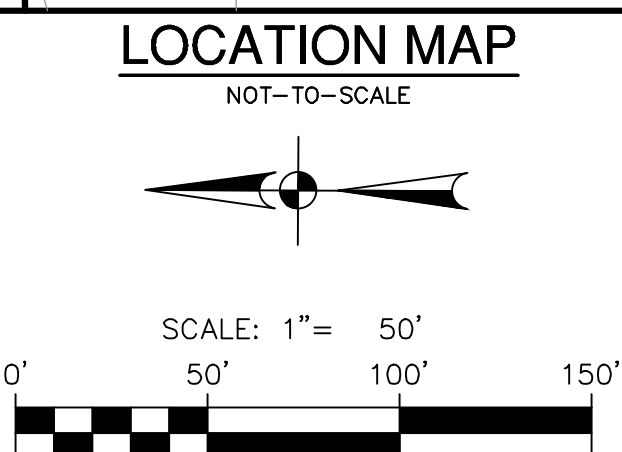
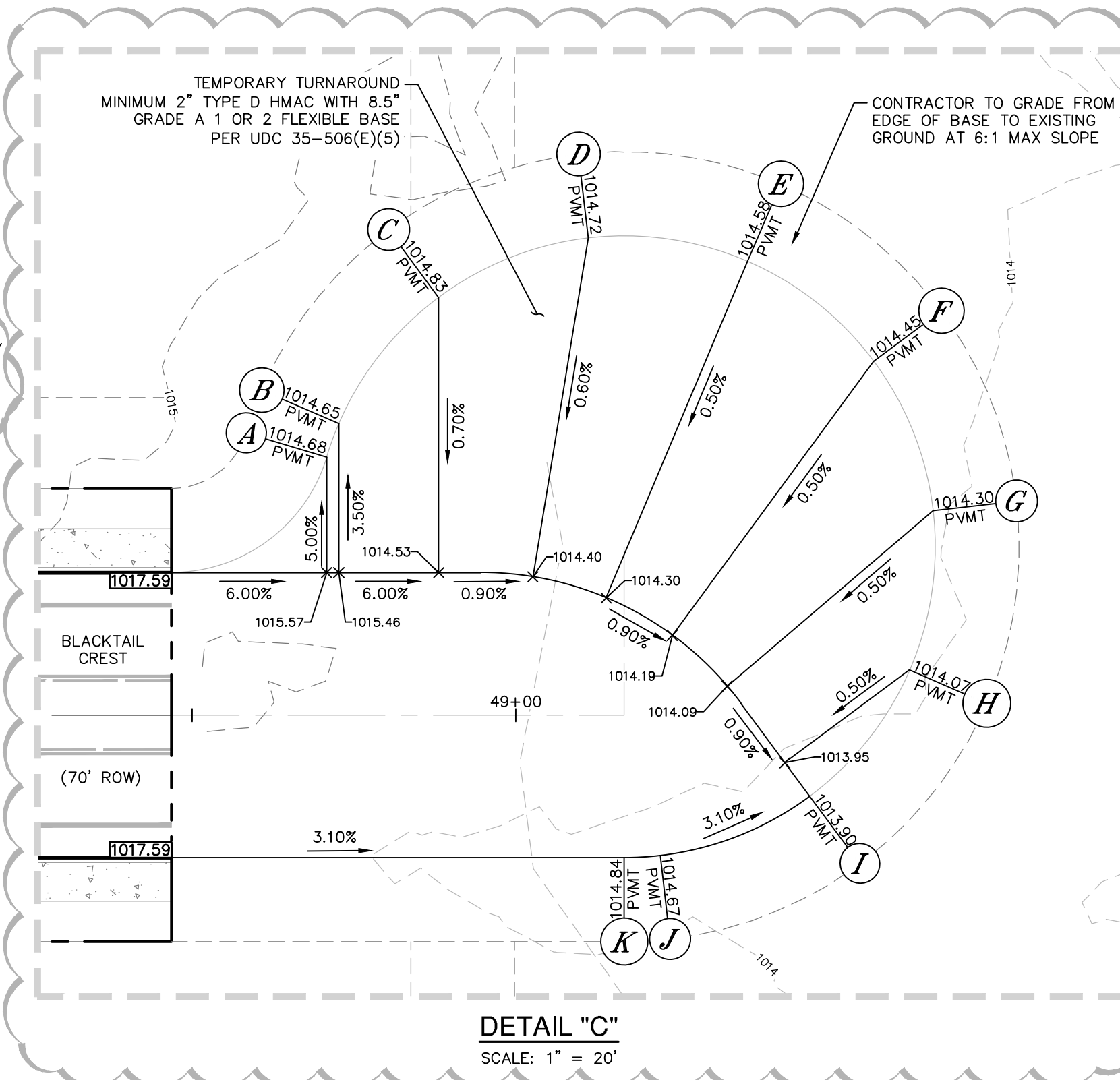
**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TPLS FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**BLACKTAIL CREST**  
PLAN AND PROFILE (STA. 30+46.17 TO 42+50.00)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED DRAWN GK  
SHEET C2.00


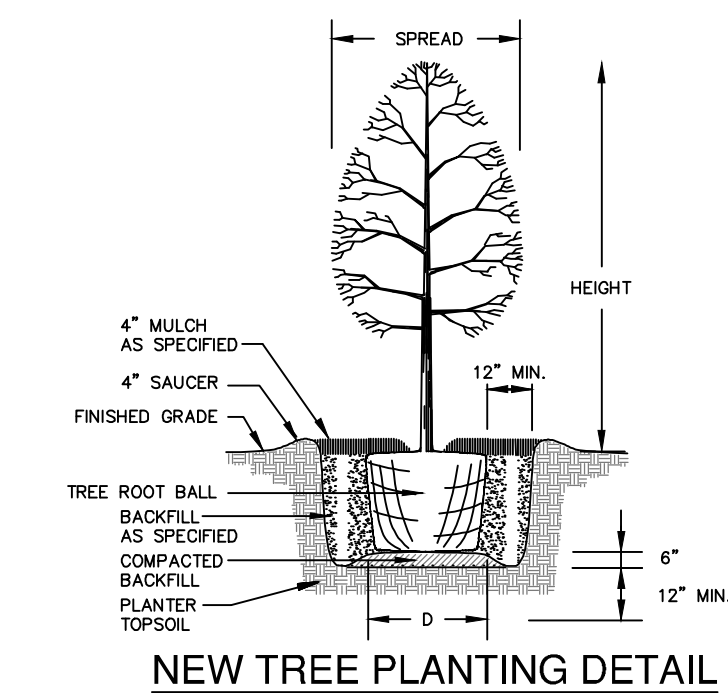




[illegible]

**PAPE-DAWSON**  
**PE ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
20200 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.8000  
TBPB FIRM REGISTRATION #470 | TBPB FIRM REGISTRATION #10028600



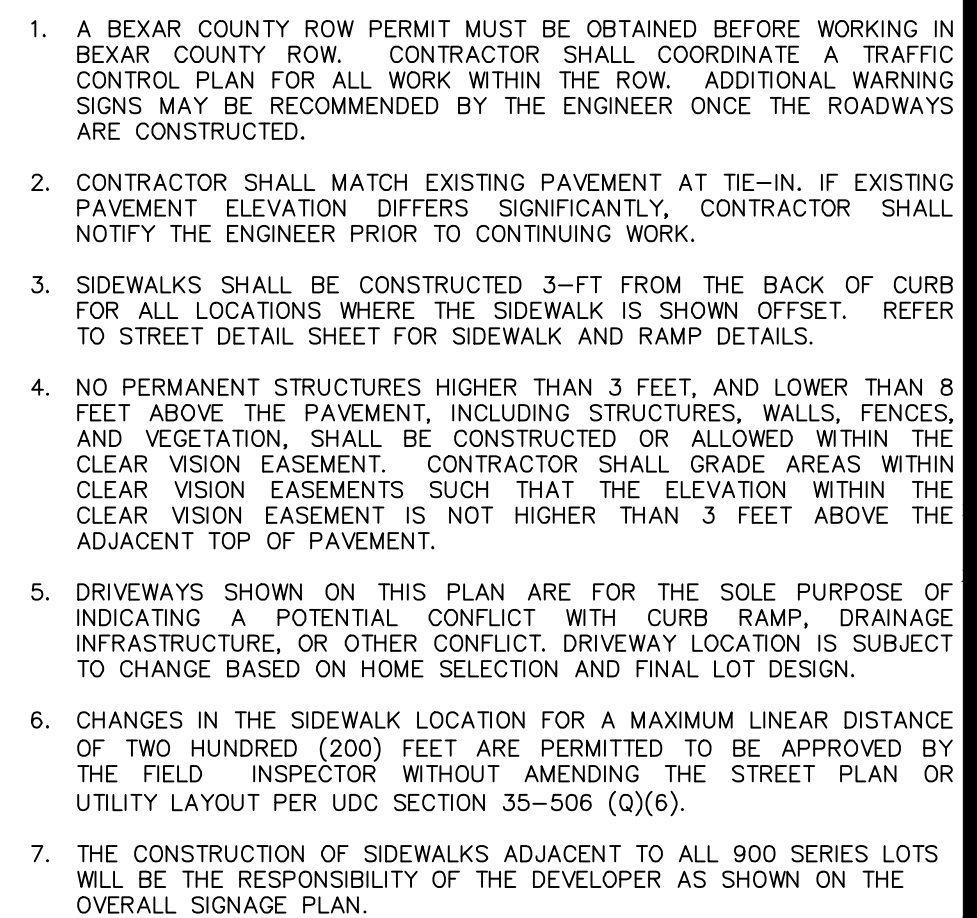
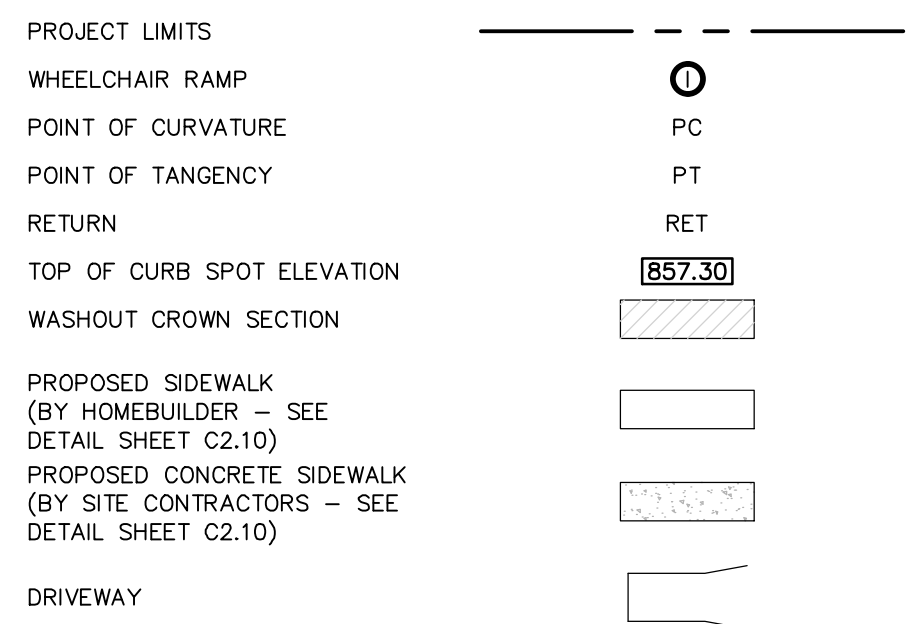
LARGE TREES (PER UDC) TO BE PLANTED EVERY  
50 FEET PER DETAIL.

1. SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS.
2. DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
3. ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED IN THE LATEST VERSION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."
4. TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC, IF OVERHEAD ELECTRIC IS REQUIRED BY CPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES.

1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN WITH ALL AGENCIES WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE A SIDEWALK IS SHOWN OFF-PLAN. REFER TO STREET CATCH BASIN SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN THE CLEAR VISION EASEMENT TO BE AT LEAST 2 FEET ABOVE THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE CATCH BASIN OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE PLANS.

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED      DRAWN GK  
SHEET C2.01



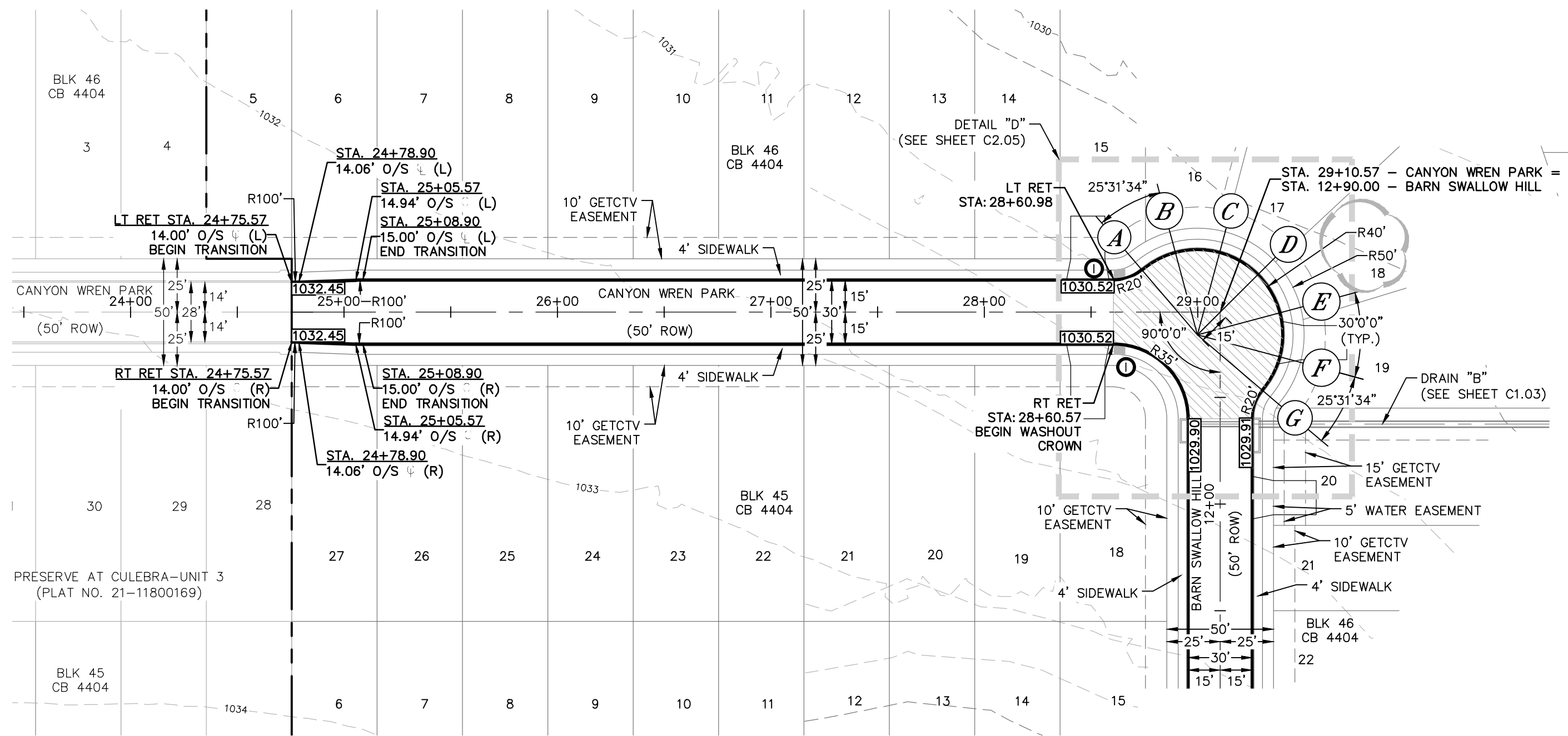


PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
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SHEET C2.02

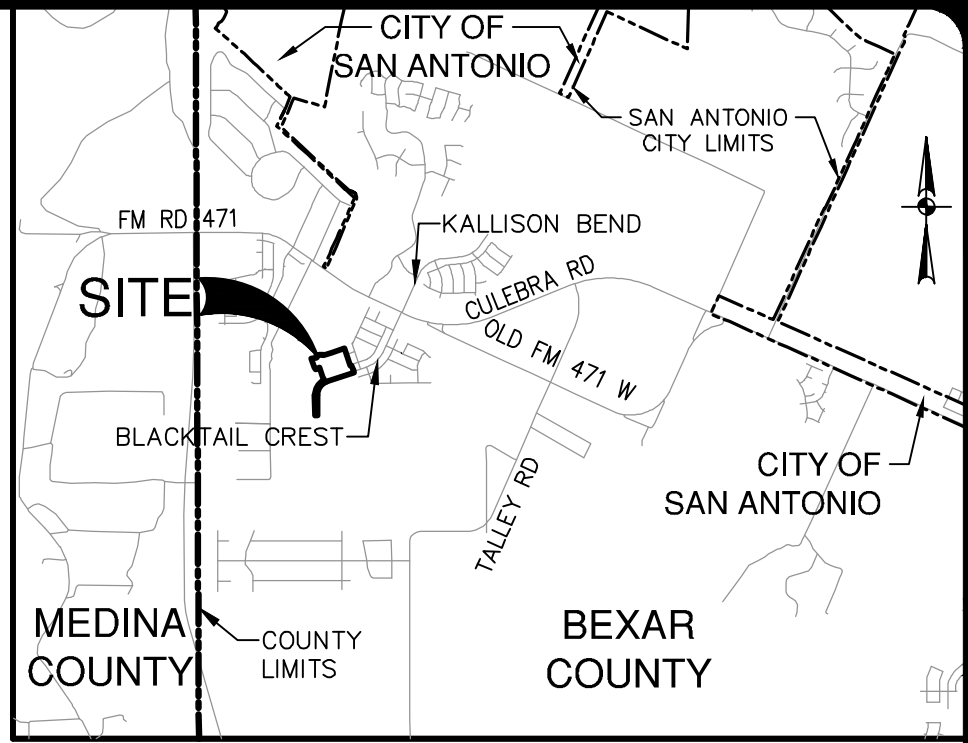
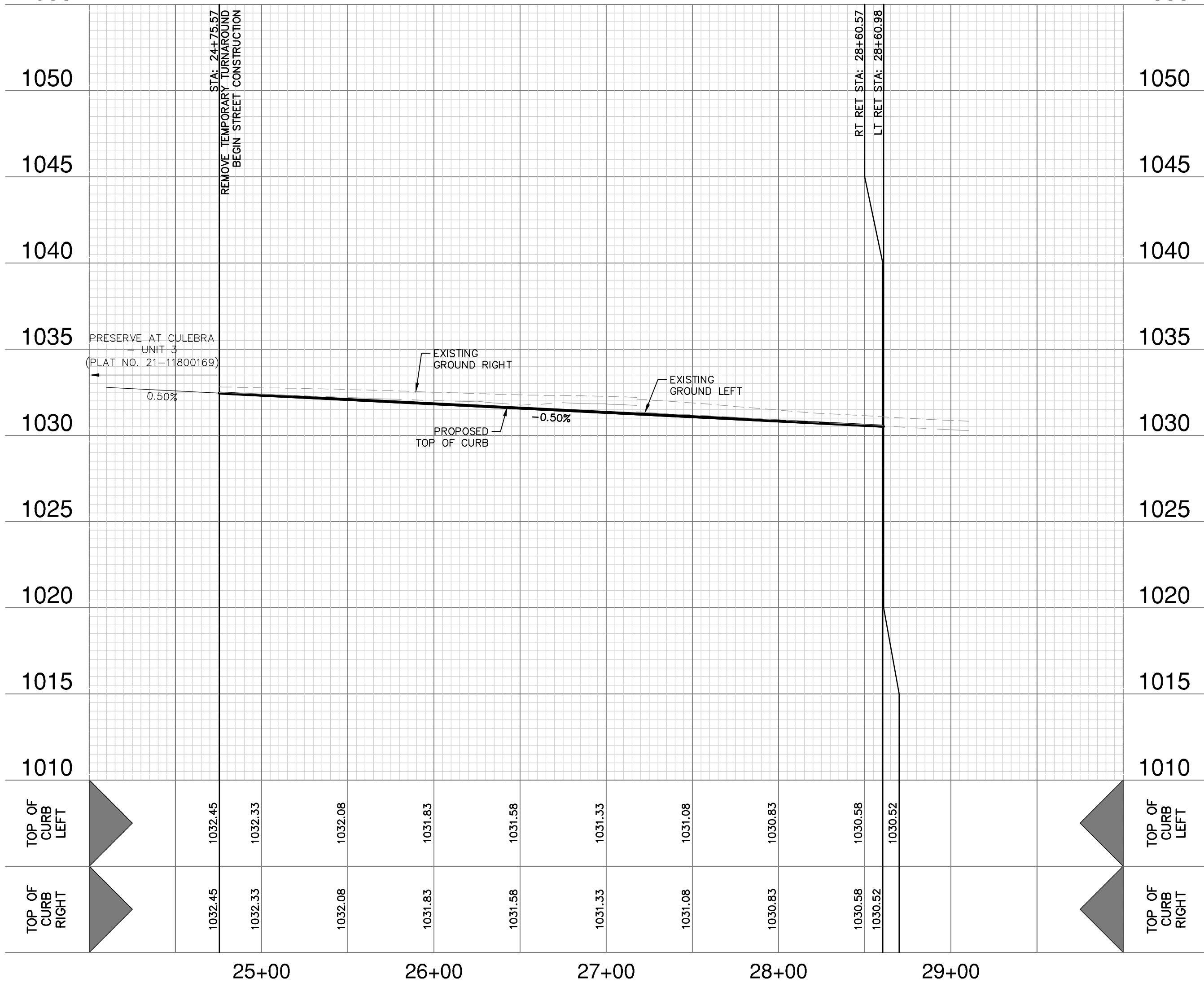


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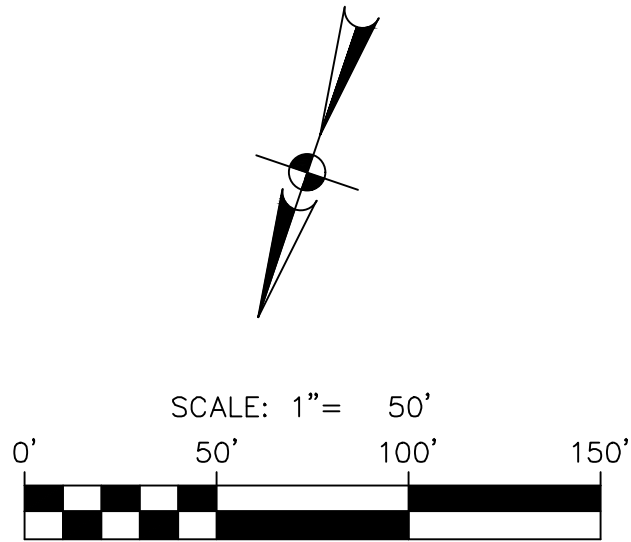
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CANYON WREN PARK  
STA. 24+75.57 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



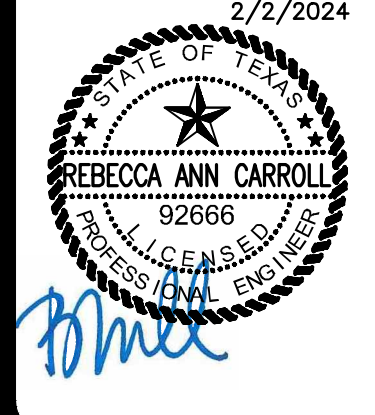
### STREET LEGEND

PROJECT LIMITS	---
WHEELCHAIR RAMP	⊙
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	657.30
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (BY HOMEBUILDER - SEE DETAIL SHEET C2.10)	
PROPOSED CONCRETE SIDEWALK (BY SITE CONTRACTORS - SEE DETAIL SHEET C2.10)	
DRIVEWAY	

### STREET NOTES:

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- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED RADI LABELS	02/02/2024



**PAPE-DAWSON  
ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

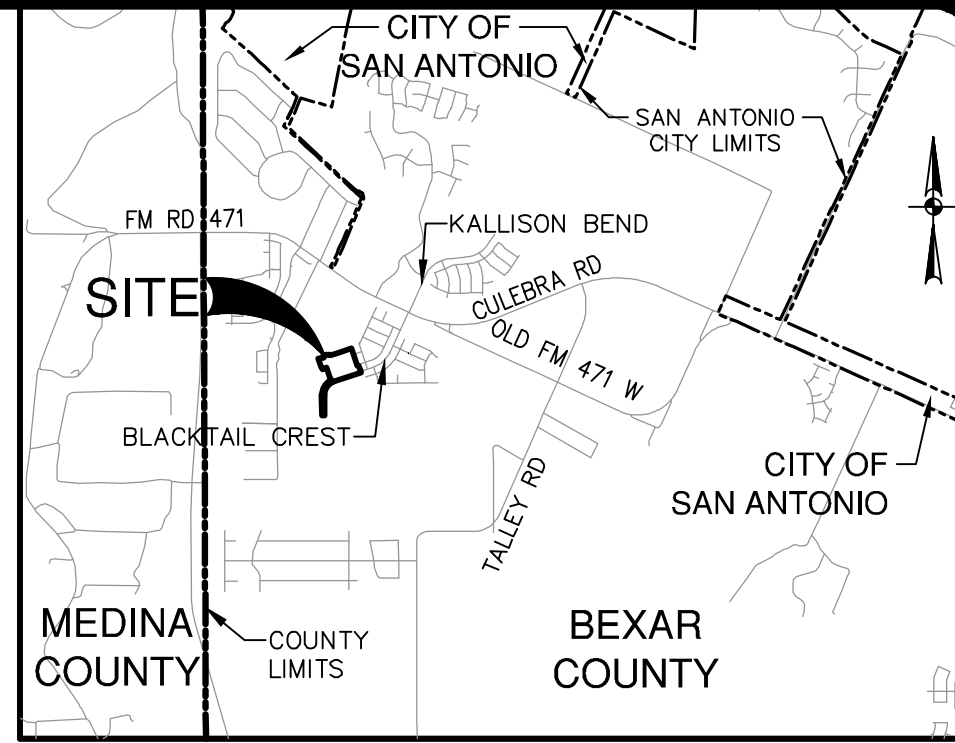
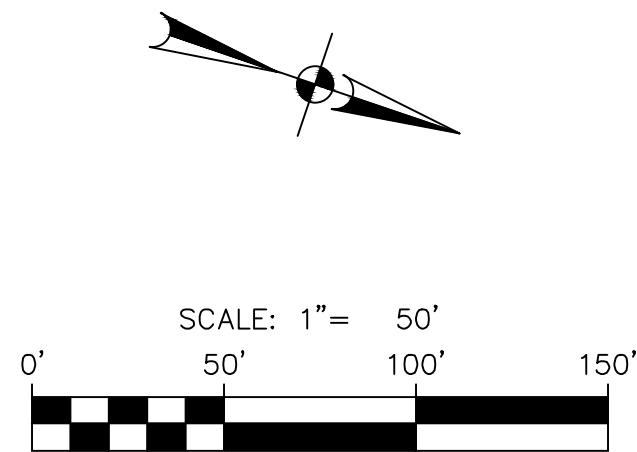
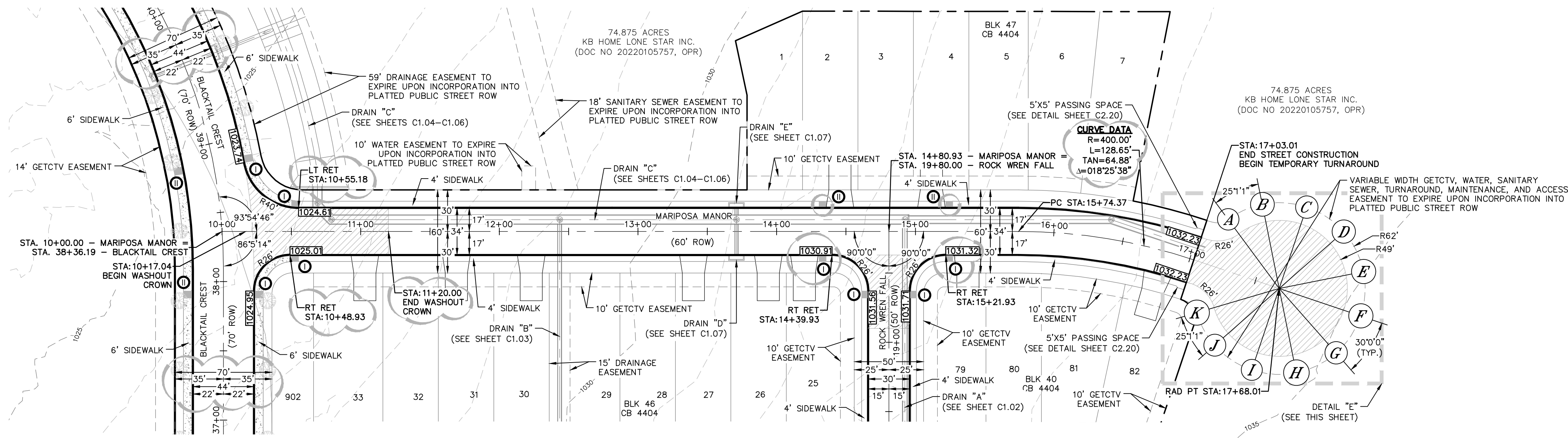
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
CANYON WREN PARK  
PLAN AND PROFILE

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C2.03



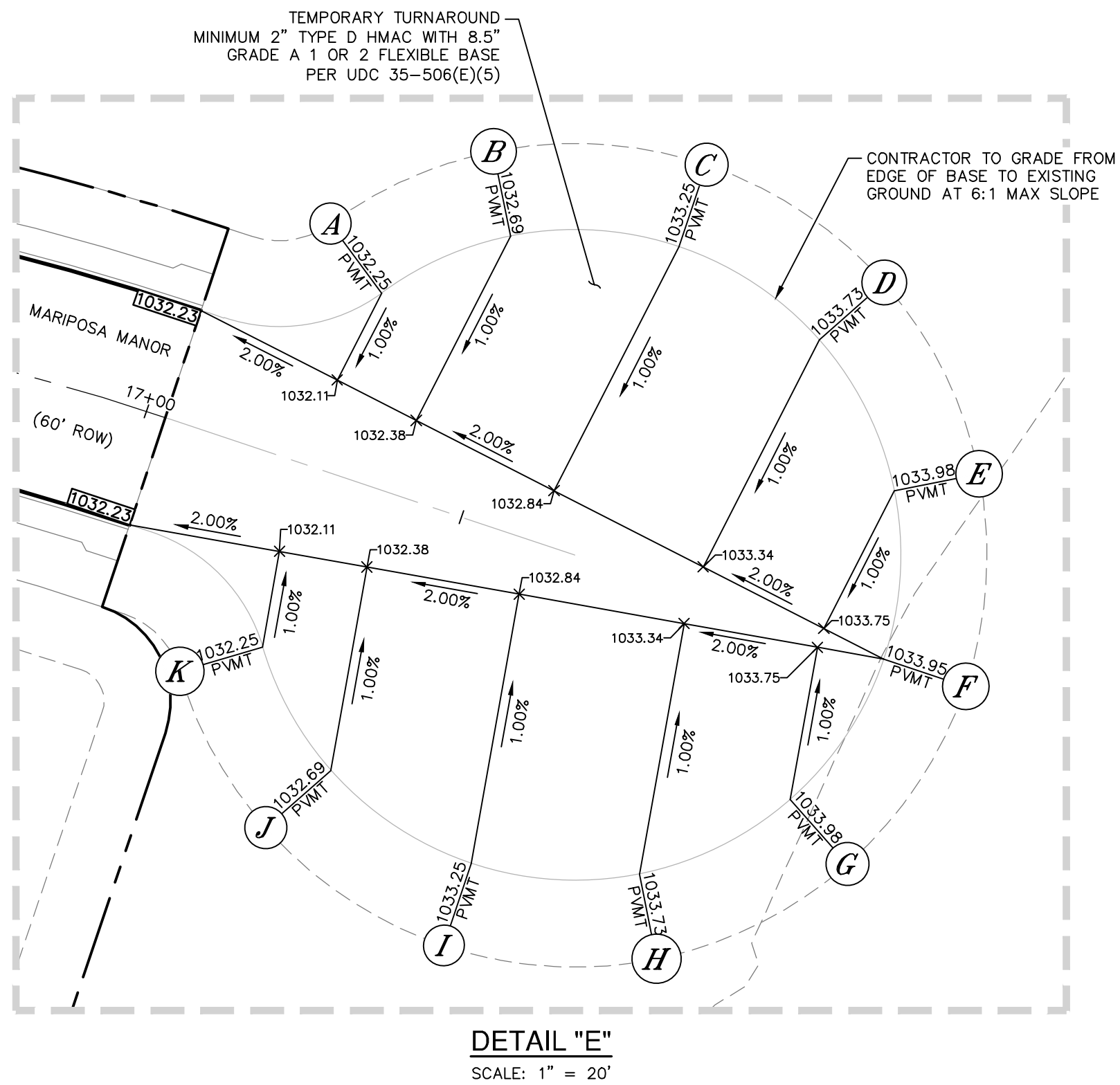
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## STREET LEGEND

PROJECT LIMITS	---
WHEELCHAIR RAMP	○
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	[857.30]
WASHOUT CROWN SECTION	[Pattern]
PROPOSED SIDEWALK (BY HOMEOWNER - SEE DETAIL SHEET C2.10)	[Pattern]
PROPOSED CONCRETE SIDEWALK (BY SITE CONTRACTORS - SEE DETAIL SHEET C2.10)	[Pattern]
DRIVEWAY	[Pattern]



## STREET NOTES:

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NO.	REVISION	DATE
1.	REVISED PROFILE/RAMPS AND REMOVED STRIPING	02/02/2024

2/16/2024

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

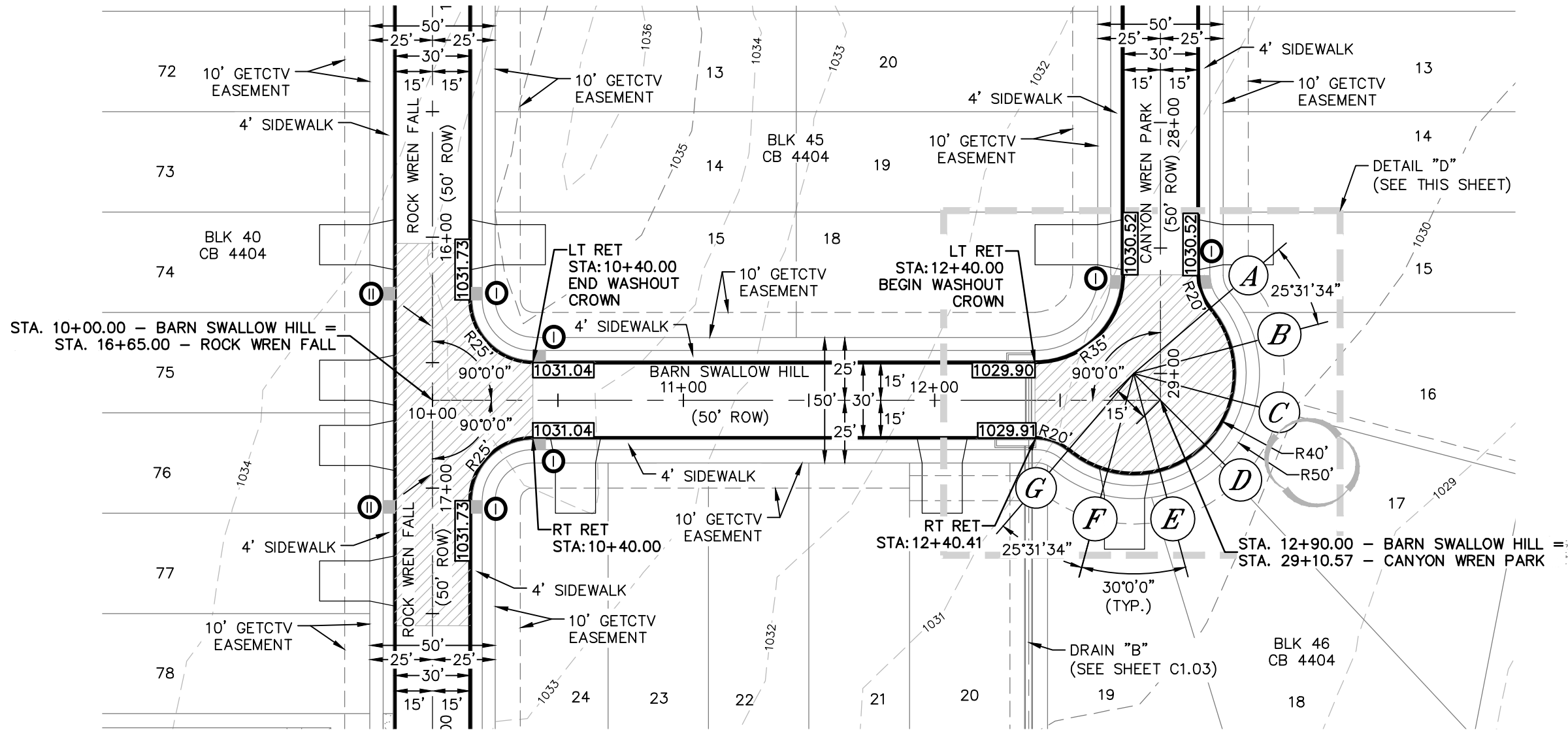
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**MARIPOSA MANOR**  
PLAN AND PROFILE

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C2.04

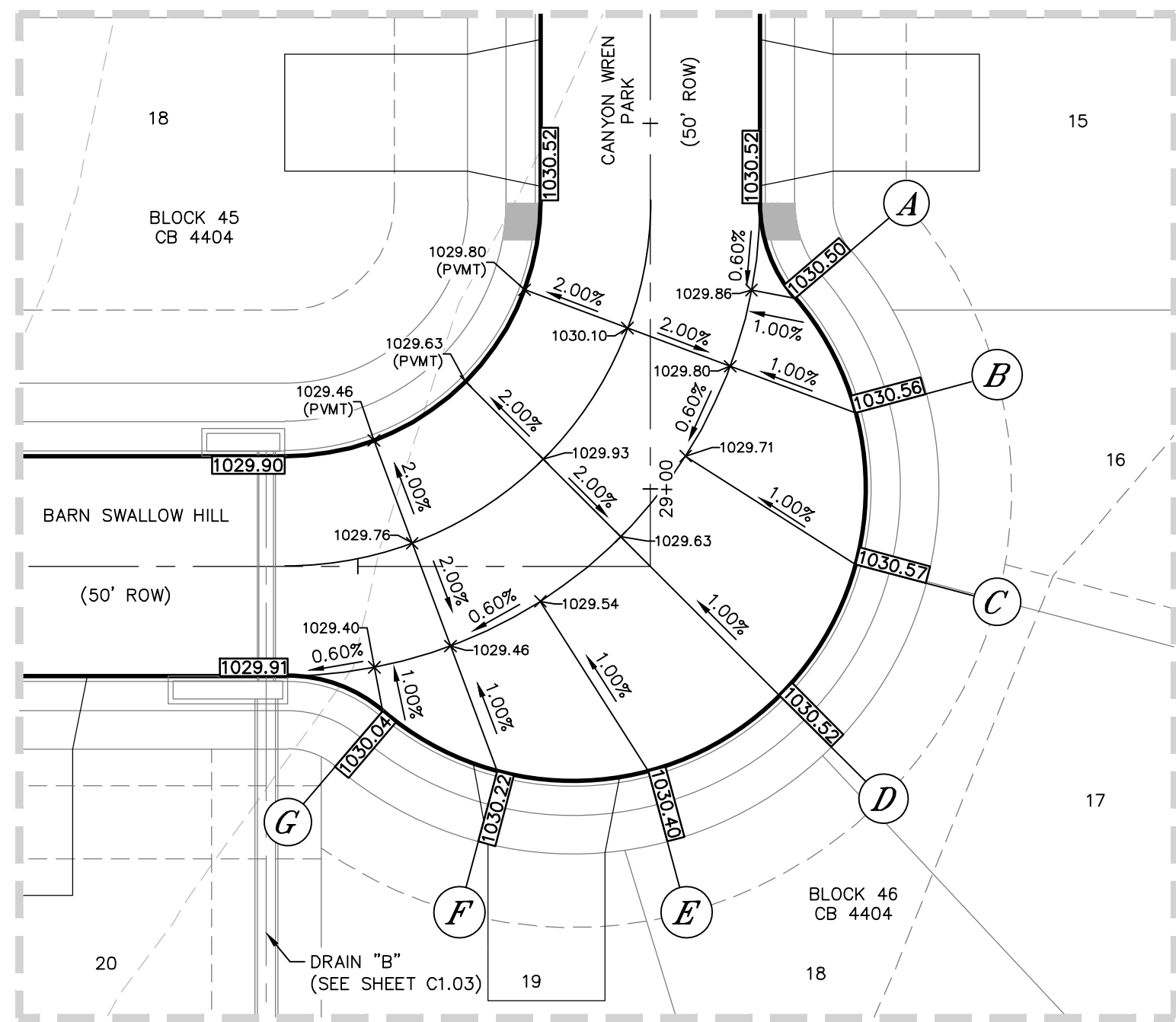
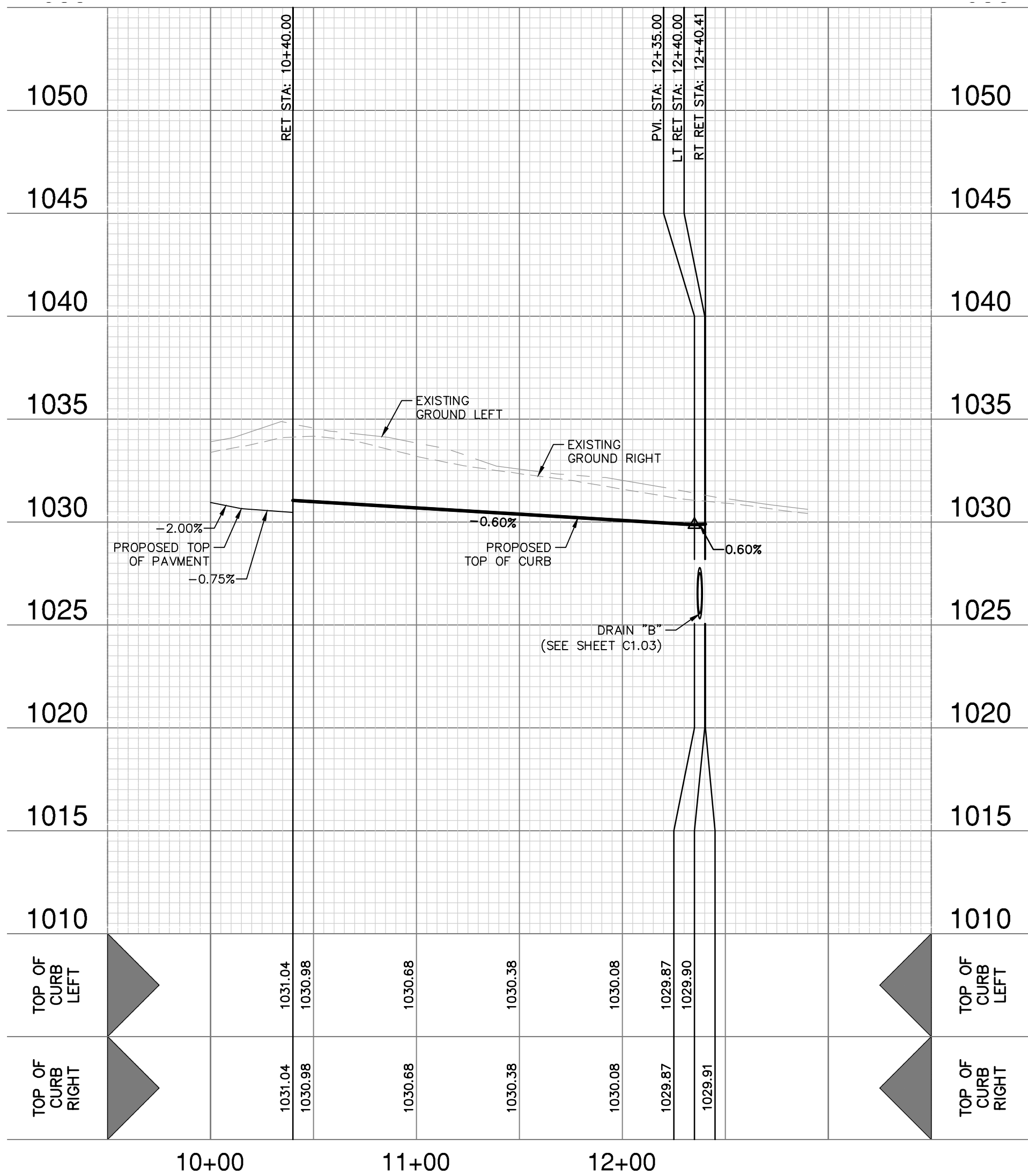


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File: P:\16168114\Design\Drawings\BARN SWALLOW HILL\166814.dwg

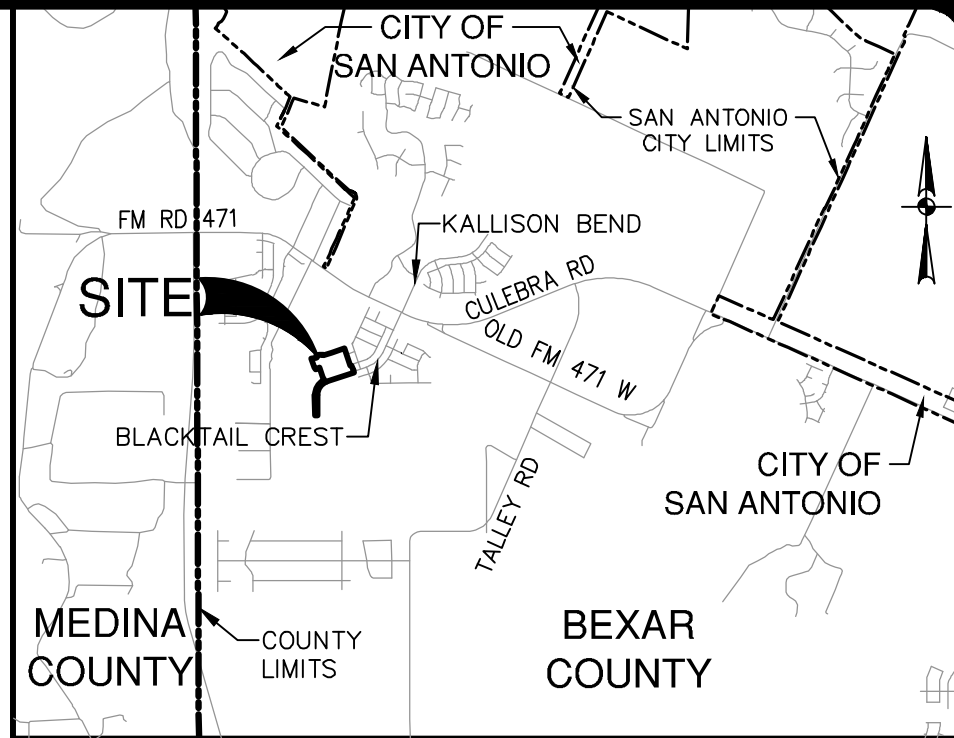
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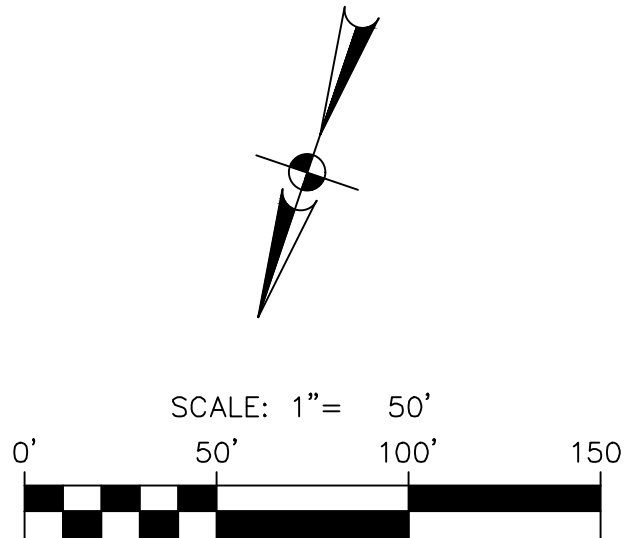
BARN SWALLOW HILL  
STA. 10+00.00 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



DETAIL "D"  
SCALE: 1" = 20'



LOCATION MAP  
NOT-TO-SCALE



### STREET LEGEND

PROJECT LIMITS	---
WHEELCHAIR RAMP	○
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	657.30
WASHOUT CROWN SECTION	▨
PROPOSED SIDEWALK (BY HOMEOWNER - SEE DETAIL SHEET C2.10)	▨
PROPOSED CONCRETE SIDEWALK (BY SITE CONTRACTORS - SEE DETAIL SHEET C2.10)	▨
DRIVEWAY	▨

### 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 (O)(6).
- THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED RADI LABELS	02/02/2024



**PAPE-DAWSON  
ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**BARN SWALLOW HILL**  
PLAN AND PROFILE

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C2.05



RECOMMENDED NOTES & PAVEMENT SECTION

NOTES & DESIGN BASED ON THE MINIMUM REQUIREMENTS OF THE UDC AND THE GEOTECH ENGINEERING REPORT PREPARED BY INTEC, PROJECT NO. S181355-P-R1 DATED NOVEMBER 16, 2020. FOR PAVEMENT MATERIAL AND CONSTRUCTION REQUIREMENTS, CONTRACTOR SHALL MEET OR EXCEED ALL PAVEMENT RECOMMENDATIONS.

PAVEMENT SECTION DETAIL						
STREET NAME	CLASSIFICATION	STATION	TYPE "D" HMAc SURFACE TXDOT ITEM 340, in.	TYPE "C" HMAc SURFACE TXDOT ITEM 340, in.	AGGREGATE BASE, in. (TXDOT ITEM 247 TYPE A GRADE 1 OR 2)	STABILIZED SUBGRADE
BLACKTAIL CREST	COLLECTOR	30+46.17 TO END	1.5"	2.5"	21.0"	8"
MARIPOSA MANOR	LOCAL B	10+17.04 TO END	1.5"	2.5"	18.5"	8"
ROCK WREN FALL	LOCAL A	12+30.00 TO END	2"	-	11.0"	6"
CANYON WREN PARK	LOCAL A	24+75.57 TO END	2"	-	11.0"	6"
BARN SWALLOW HILL	LOCAL A	10+00.00 TO END	2"	-	11.0"	6"

SUBGRADE NOTES (-):

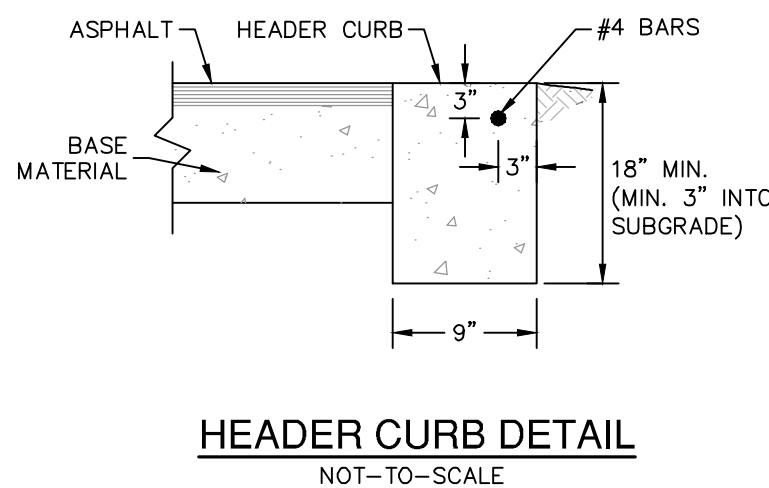
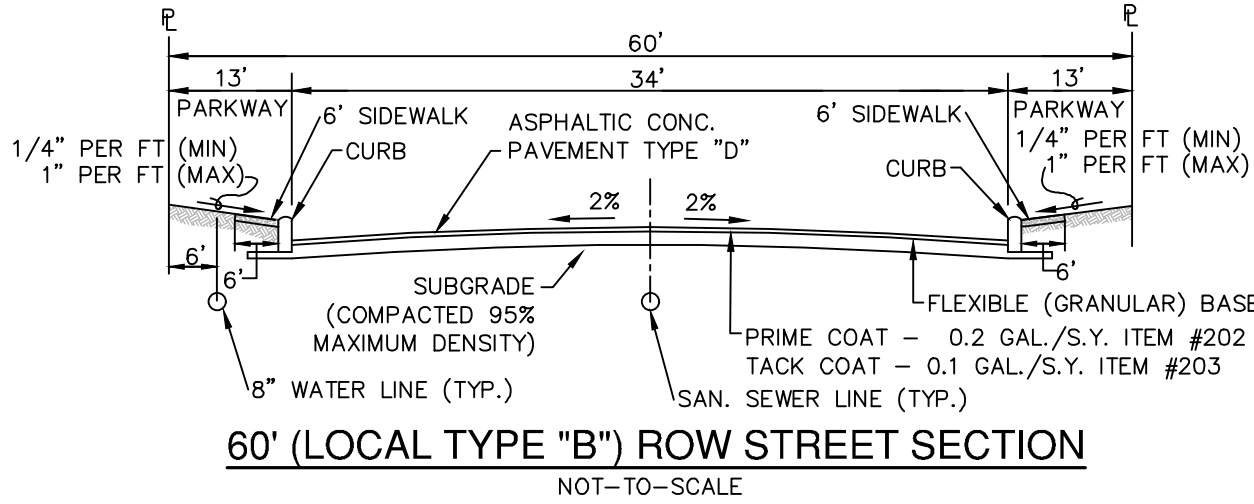
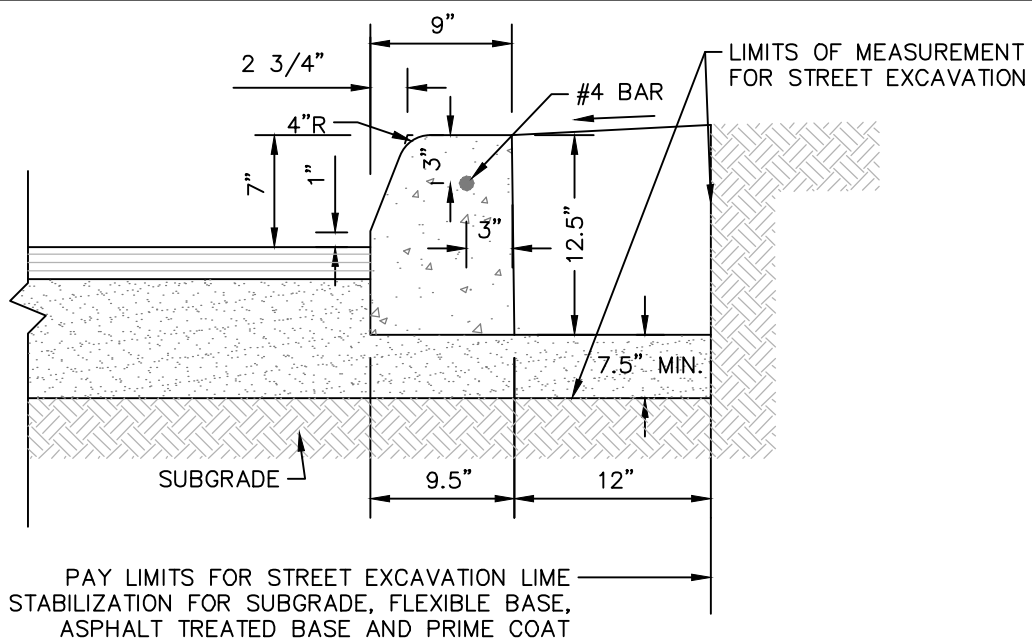
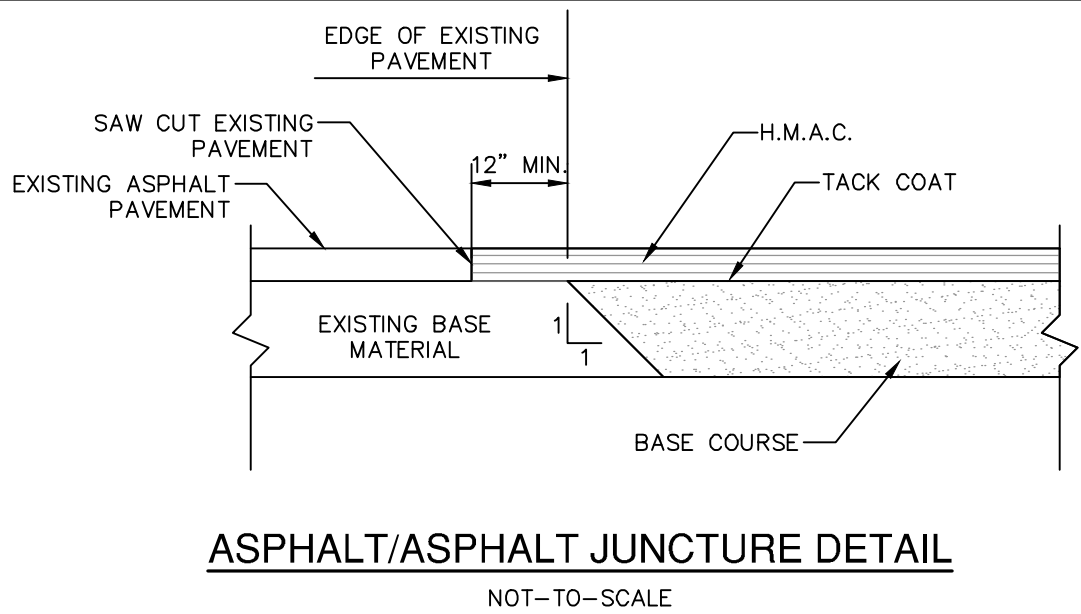
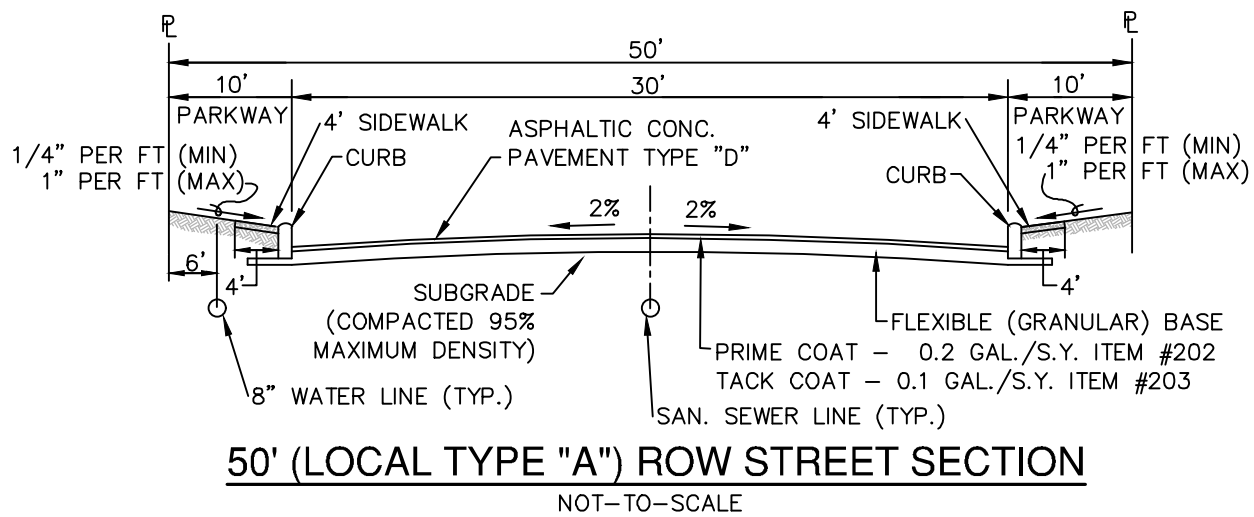
- THE SUBGRADE PLASTICITY INDEX VALUE IS EXPECTED TO BE GREATER THAN 20. SUBGRADE STABILIZATION IS NEEDED.
  - THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE WILL BE NEEDED.
  - LIME STABILIZATION TO A DEPTH OF 6 OR 8 INCHES AS NOTED ABOVE BASED ON AN APPLICATION RATE OF 7 PERCENT OF THE DRY WEIGHT OF THE SOIL TO BE TREATED.
    - LIME APPLICATION RATE OF 39.0 LBS PER SQ YARD FOR 6-INCH DEPTH OF STABILIZATION IS RECOMMENDED.
    - LIME APPLICATION RATE OF 39.0 LBS PER SQ YARD FOR 8-INCH DEPTH OF STABILIZATION IS RECOMMENDED.
  - THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.
  - IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL UNDERNEATH THE PAVEMENT SHOULD BE USED. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.0 AND THE PLASTICITY INDEX VALUES OF 65 OR LESS. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND SULFATE CONTENT TESTED FOR THE MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
- NOTES (\*\*):
- INPUT PARAMETERS ARE SHOWN TABLE NO. 6. PLEASE CALL US TO PROVIDE PAVEMENT RECOMMENDATIONS, IF NEEDED, FOR DIFFERENT INPUT VALUES.
  - IF REPETITIVE TRUCK OR HEAVY TRUCK TRAFFIC IS ANTICIPATED, PLEASE CONTACT US FOR REVISED PAVEMENT RECOMMENDATIONS.
  - PAVEMENT SECTION RECOMMENDATIONS ARE BASED ON A CBR VALUE OF 2.0. THE PAVEMENT RECOMMENDATIONS ARE NOT BASED ON THE SHRINK / SWELL CHARACTERISTICS OF THE UNDERLYING SOILS. IF WATER IS ALLOWED TO GET UNDERNEATH THE ASPHALT / CONCRETE OR IF MOISTURE CONTENT OF THE BASE OR SUBGRADE CHANGES SIGNIFICANTLY, THEN PAVEMENT DISTRESS WILL OCCUR. MOISTURE PENETRATION UNDERNEATH THE ASPHALT PAVEMENT SURFACE MAY BE REDUCED BY USING DEEPER CURBS' CURBS EXTENDING A MINIMUM OF 6 INCHES INTO SUBGRADE.
  - THE PAVEMENT CAN EXPERIENCE CRACKING AND DEFORMATION DUE TO SHRINKAGE AND SWELLING CHARACTERISTICS OF THE SOILS AS DESCRIBED IN THE VERTICAL MOVEMENTS SECTION OF THIS REPORT. USE OF GEGRID WILL HELP REDUCE SHRINK/SWELL RELATED CRACKING.

FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

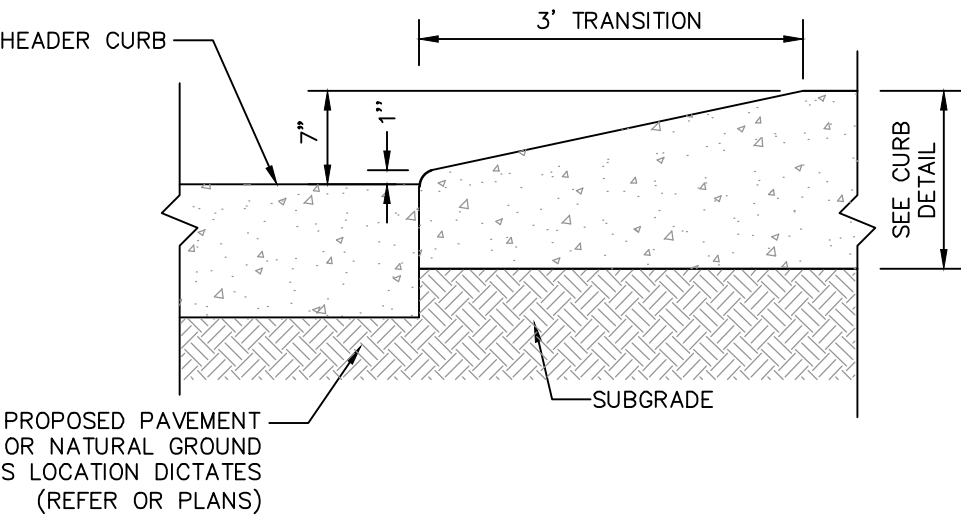
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
- AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 1/4 INCH SIEVE FROM THE SAMPLE):

0	MINIMUM PASSING 1 1/2" SIEVE	100
0	MINIMUM PASSING 3/4" SIEVE	85
0	MINIMUM PASSING NO. 4 SIEVE	60
- SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN ±1.0 INCH.

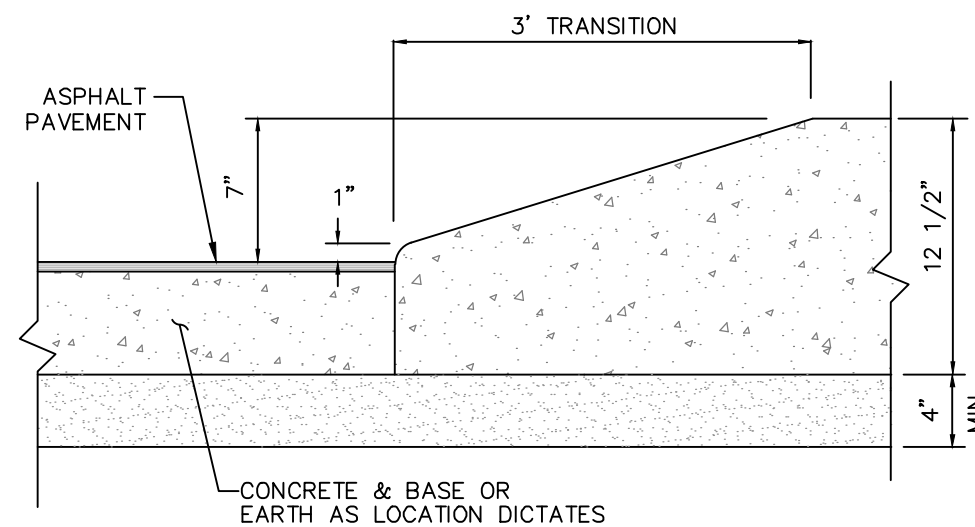
- PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT. SEE TABLE FOR STRUCTURAL NUMBER CALCULATION. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.
- A GEOTECHNICAL ENGINEERING REPRESENTATIVE SHALL BE RETAINED TO: (1) OBSERVE THE SITE PREPARATION AND SUBGRADE OPERATIONS; (2) EVALUATE THE ACTUAL SUBGRADE MATERIAL CLASSIFICATION; AND (3) VERIFY THAT RECOMMENDATIONS ARE FOLLOWED. THE ACTUAL SUBGRADE CONDITION AT A PARTICULAR LOCATION WILL NEED TO BE EVALUATED DURING CONSTRUCTION ONCE THE SUBGRADE IS CUT/FILLED TO THE PROPER GRADE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
- CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.
- IF ALTERNATE PAVEMENT SECTION CHOSEN, BEXAR COUNTY SHALL BE PROVIDED WITH REVISED CONSTRUCTION PLANS INDICATING SELECTED PAVEMENT DESIGN PRIOR TO CONSTRUCTION.
- PAVEMENT SECTIONS ARE SUBJECT TO CHANGE DUE TO RETESTING OF SOIL AFTER STREET EXCAVATION HAS BEEN DONE TO TOP OF CURB.
- CONTRACTOR SHALL CONTACT ENGINEER 24 HRS IN ADVANCE FOR FIELD OBSERVATION DURING STREET CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO CONTACT ENGINEER FOR INSPECTION OF THE SUBGRADE, BASE, ASPHALT, AND CURB.



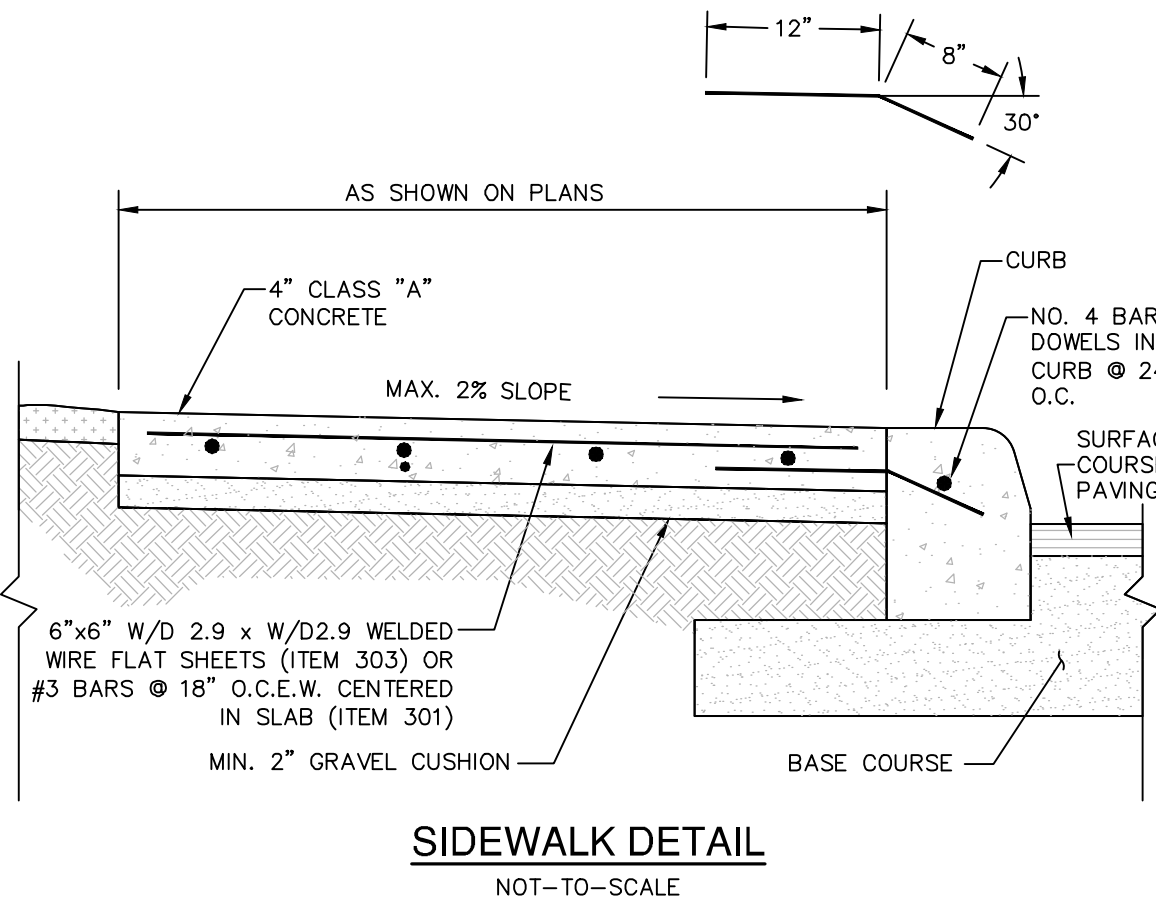
CONCRETE CURB DETAIL



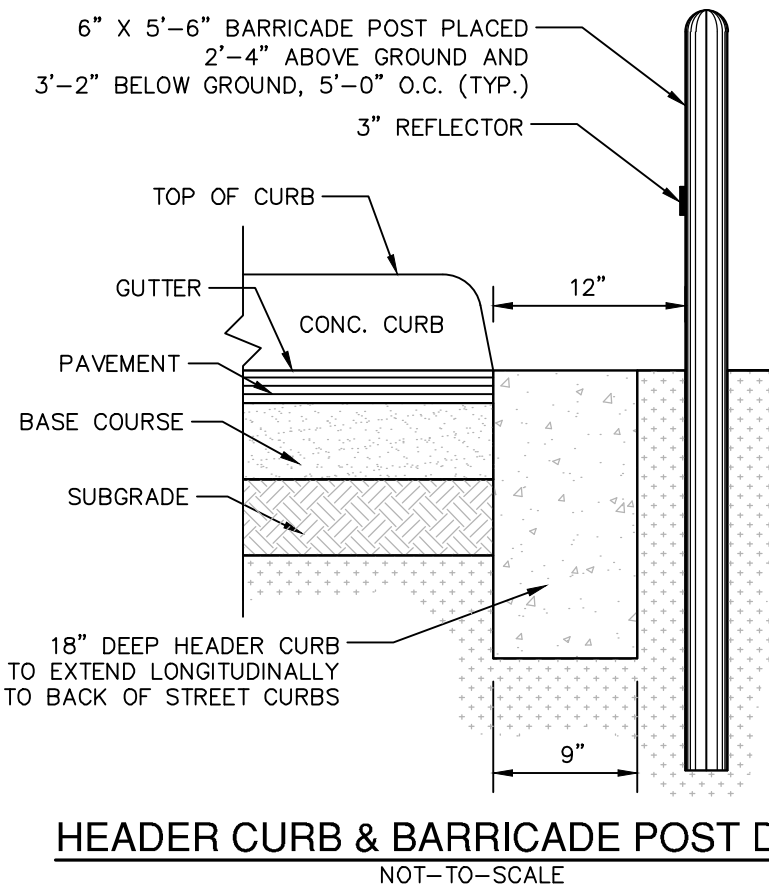
CURB TRANSITION DETAIL (FROM HEADER CURB TO STANDARD CURB)



CURB TRANSITION DETAIL (FROM PAVEMENT TO STANDARD CURB)



SIDEWALK DETAIL



HEADER CURB & BARRICADE POST DETAIL

NO.	REVISION	DATE
1.	REVISED DETAIL	02/02/2024

2/16/2024

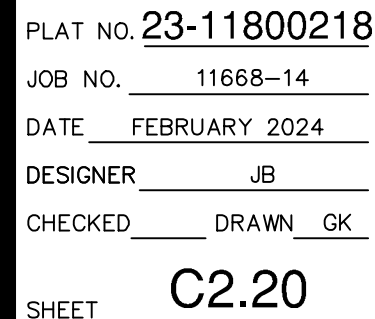
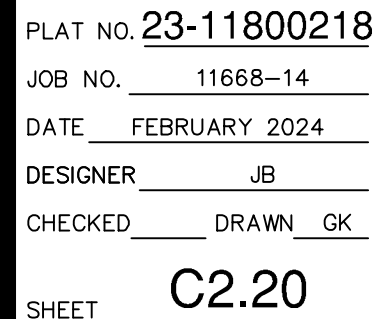
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**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

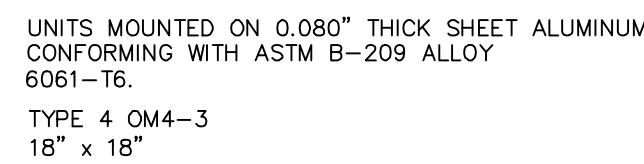
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**STREET DETAILS**  
(SHEET 1 OF 2)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED DRAWN GK  
SHEET C2.10



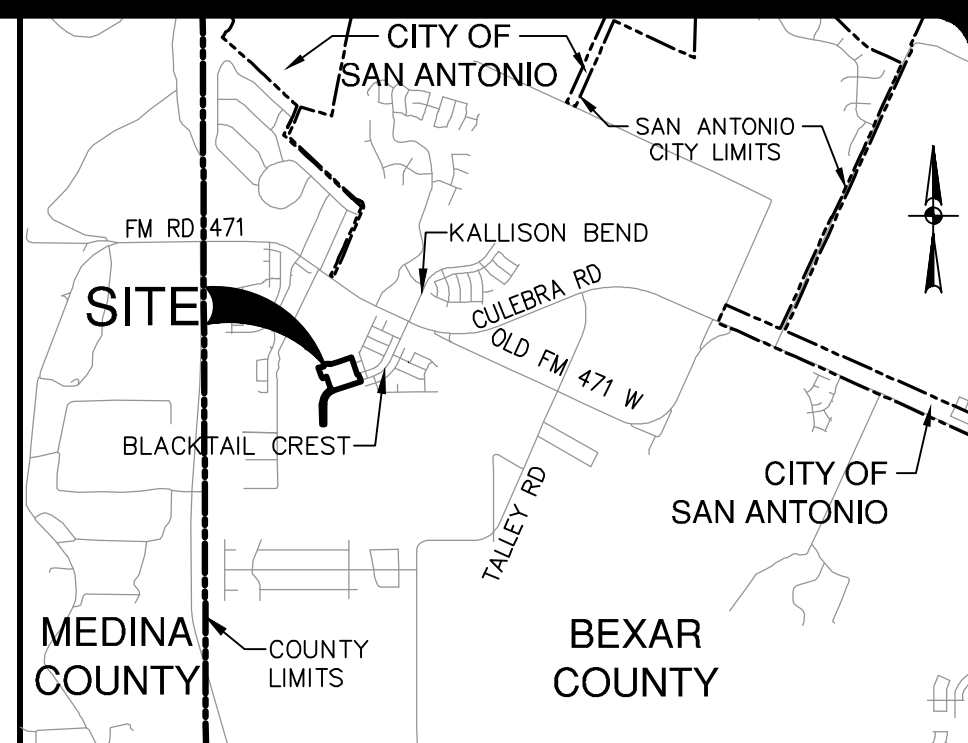
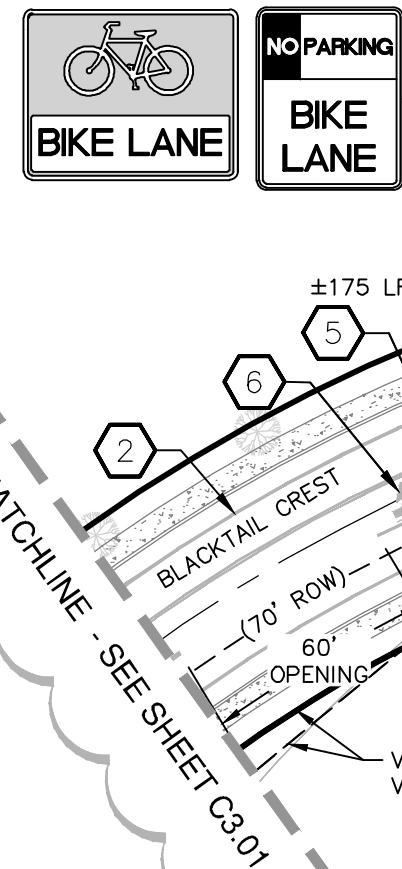






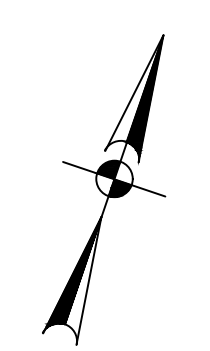
**OBJECT MARKER TYPE 4**  
NOT-TO-SCALE

1	BICYCLE LANE PAVEMENT MARKINGS (WHITE THERMO-PLASTIC).
2	8" SOLID WHITE THERMO-PLASTIC LINE
3	8" SOLID WHITE THERMO-PLASTIC LINE W/ TYPE I-C RPM'S @ 20' O.C.
4	6" SOLID YELLOW THERMO-PLASTIC LINE 6" BROKEN YELLOW THERMO-PLASTIC LINE W/ TYPE II A-A @ 40' O.C. RPM'S
5	6" DOUBLE SOLID YELLOW THERMO-PLASTIC LINE W/ DOUBLE TYPE II A-A @ 20' O.C. RPM'S
6	LEFT WHITE ARROW THERMO-PLASTIC PAVEMENT MARKING (REFL)
7	WHITE "ONLY" THERMO-PLASTIC PAVEMENT MARKING (REFL)
8	50 LF OF 8" WIDE BROKEN WHITE PAVEMENT STRIPE

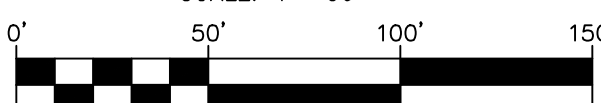















## LOCATION MAP

NOT-TO-SCALE

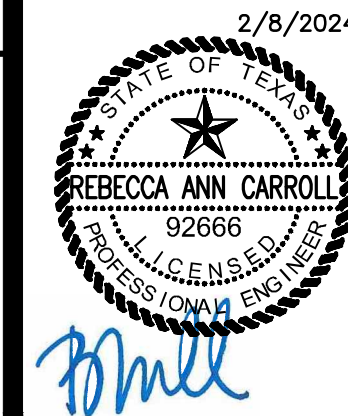


SCALE: 1"= 50'



SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	TRAFFIC FLOW ARROW	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)	
	TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)	
	END OF ROAD MARKER QM4-3	
	HEADER CURB W/ BARRICADE POSTS	
	STREET SIGN	531.57
	R1-1 30"x30"	531.3
	R3-17 24"x18"	531.68
	R7-9 12"x18"	

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 AREA AND THE EXISTING AND PROPOSED 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 SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE STANDARD PRACTICES, PRESENTED AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



**PAPE-DAWSON  
ENGINEERS**

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

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

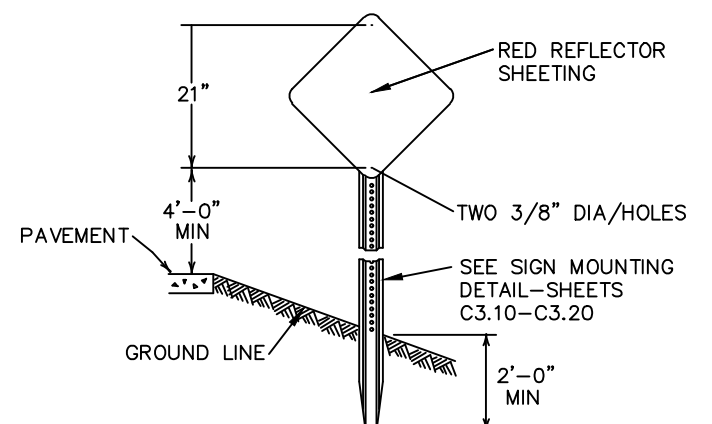
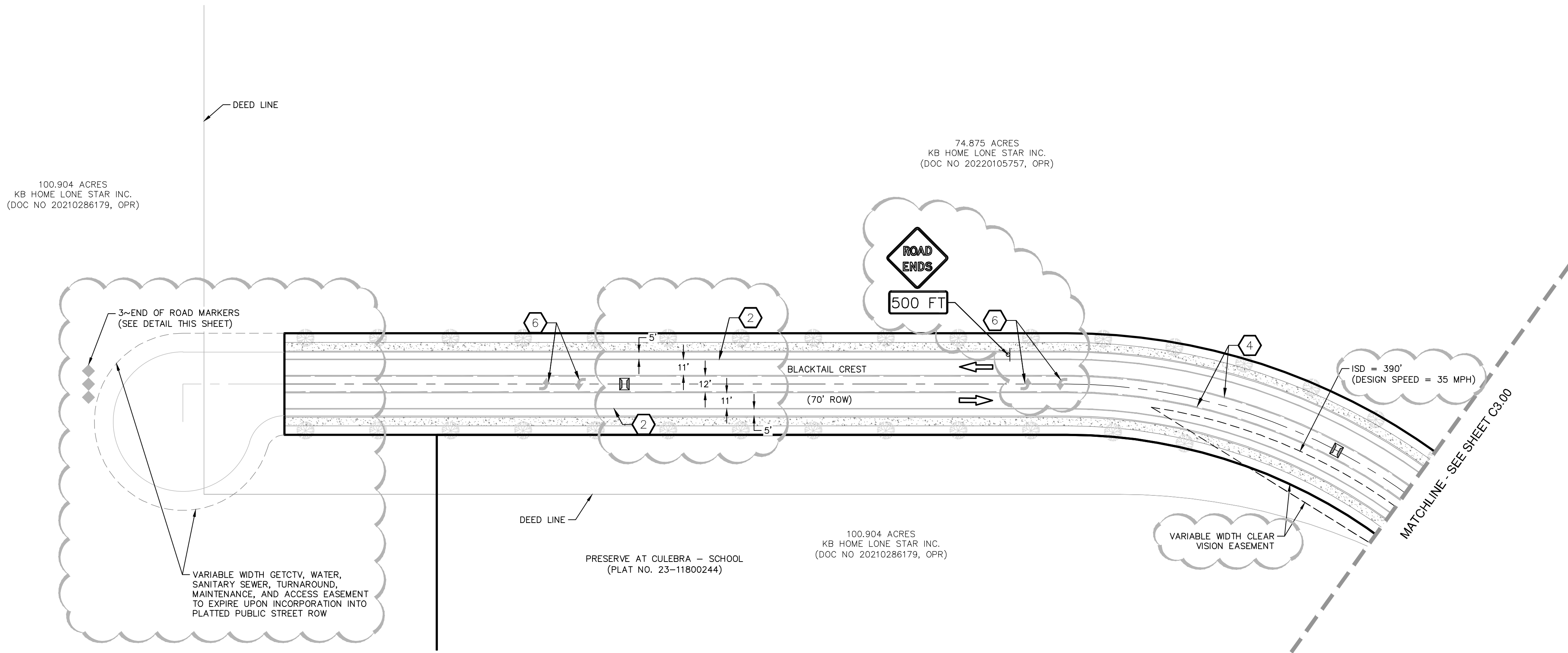
SIGNAGE PLAN  
(SHEET 1 OF 2)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED          DRAWN          GK           
SHEET          **C3.00**



Date: Feb 08, 2024, 8:57am User: dfl@shaw  
File: P:\16\68\14\Drawings\23-11800218.dwg

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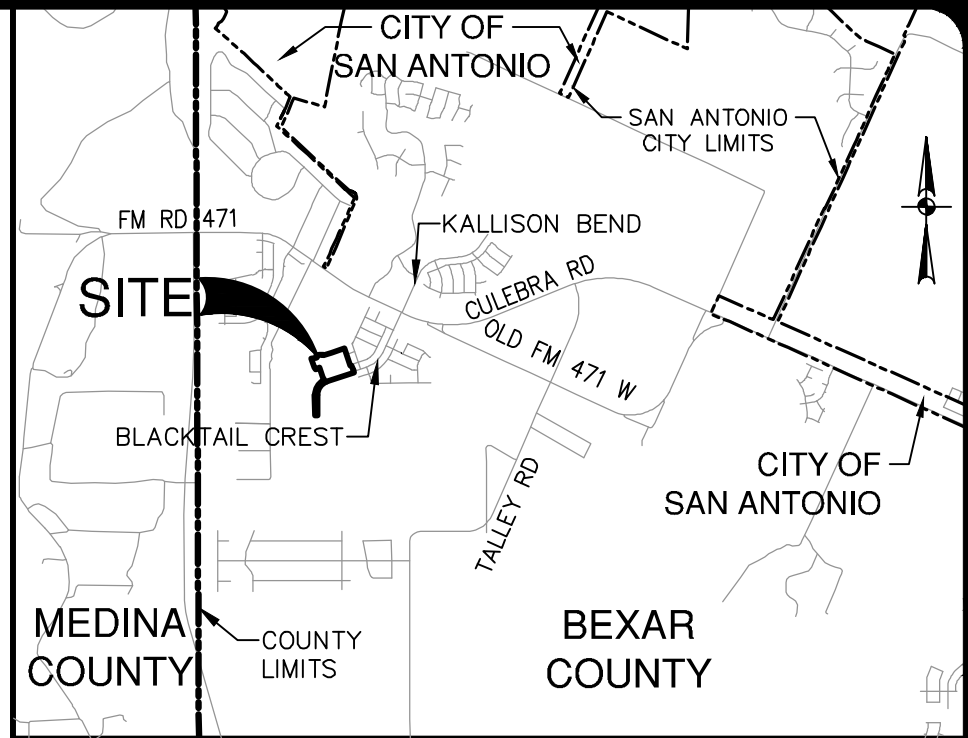


UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM  
CONFORMING WITH ASTM B-209 ALLOY  
6061-T6  
TYPE 4 OM4-3  
18" x 18"

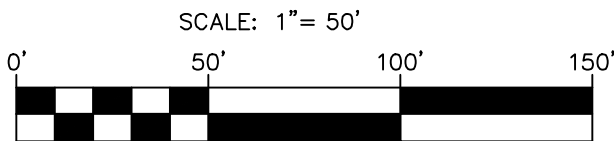
**OBJECT MARKER TYPE 4**  
NOT-TO-SCALE

**KEYED NOTES:**

- 1 BICYCLE LANE PAVEMENT MARKINGS (WHITE THERMO-PLASTIC).
- 2 8" SOLID WHITE THERMO-PLASTIC LINE
- 3 8" SOLID WHITE THERMO-PLASTIC LINE W/ TYPE I-C RPM'S @ 20' O.C.
- 4 6" SOLID YELLOW THERMO-PLASTIC LINE  
6" BROKEN YELLOW THERMO-PLASTIC LINE W/  
TYPE II A-A @ 40' O.C. RPM'S
- 5 6" DOUBLE SOLID YELLOW THERMO-PLASTIC LINE W/  
DOUBLE TYPE II A-A @ 20' O.C. RPM'S
- 6 LEFT WHITE ARROW THERMO-PLASTIC PAVEMENT MARKING (REFL)
- 7 WHITE "ONLY" THERMO-PLASTIC PAVEMENT MARKING (REFL)
- 8 50 LF OF 8" WIDE BROKEN WHITE PAVEMENT STRIPE



**LOCATION MAP**  
NOT-TO-SCALE



SYMBOL		ITEM NUMBER
	UNIT BOUNDARY	
	CURB INLET	
	PROPOSED DRIVEWAY	
	TRAFFIC FLOW ARROW	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	
	SIDEWALK (CONTRACTOR RESPONSIBILITY)	
	TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)	
	END OF ROAD MARKER OM4-3	
	HEADER CURB W/ BARRICADE POSTS	
	STREET SIGN	531.57
	R1-1 30"x30"	531.3
	R3-17 24"x18"	531.68
	R3-17B 24"x8"	531.70
	R9-6 12"x18"	531.67

**BEXAR COUNTY ROW 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.

**DRIVEWAY NOTE:**

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

**TRENCH EXCAVATION SAFETY PROTECTION:**

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

NO.	REVISION	DATE
1.	REVISED STREET, STRIPING, & ADDED SIGN, RPM, & ISD INFO	02/02/2024



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

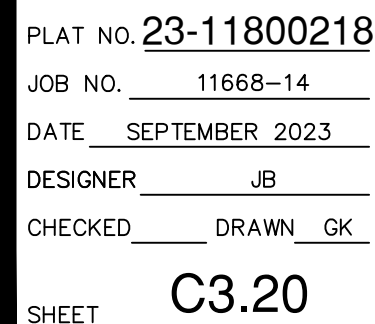
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SIGNAGE PLAN**  
(SHEET 2 OF 2)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C3.01

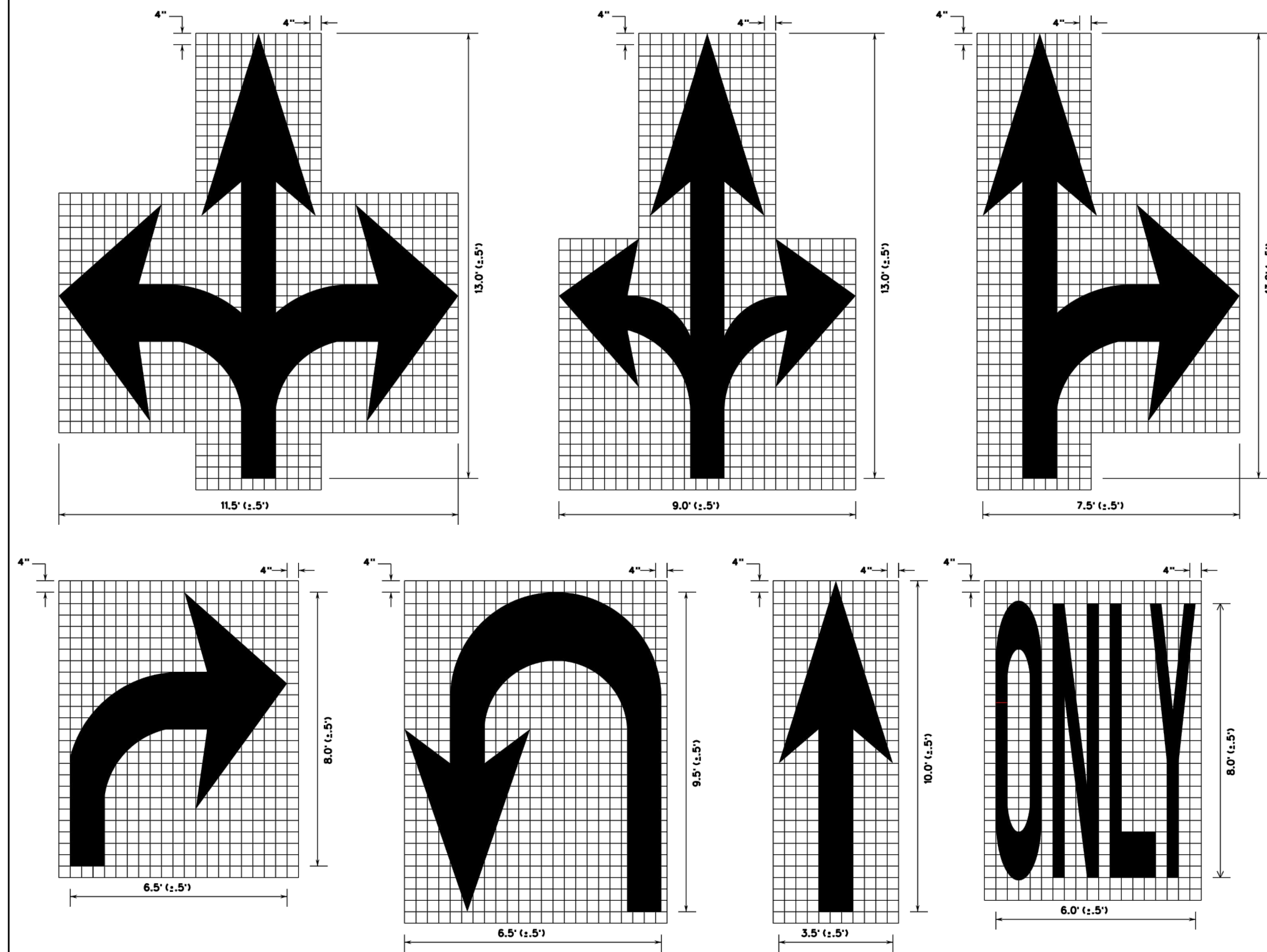








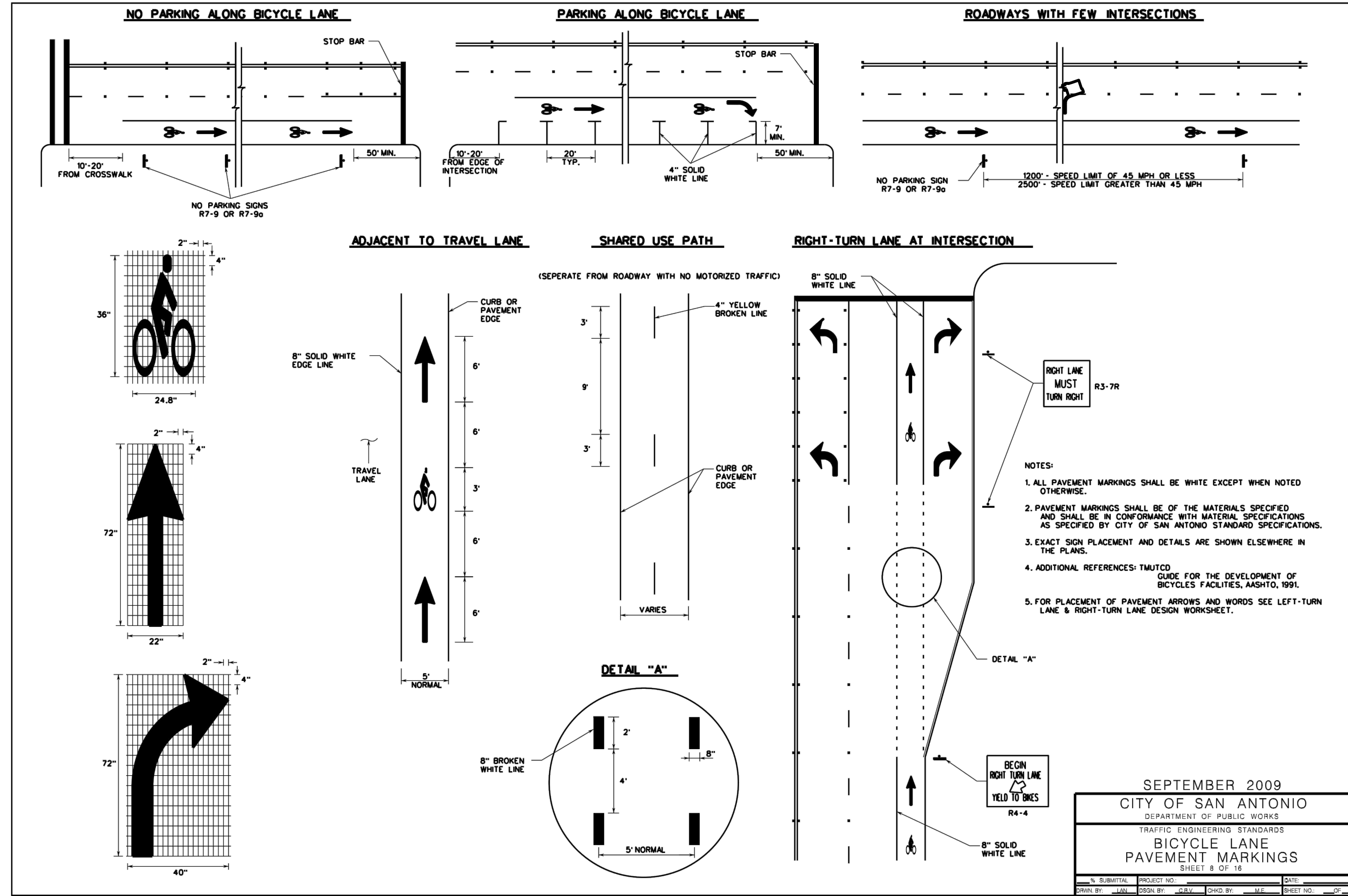




- NOTES:
- MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
  - THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION. SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS.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

SEPTEMBER 2009  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS  
TRAFFIC ENGINEERING STANDARDS  
STANDARD PAVEMENT MARKINGS  
(ARROWS)  
SHEET 3 OF 16

DATE: 02/02/2024  
DRAWN BY: JAL  
CHECKED BY: JAL  
DESIGNED BY: JAL  
IN CHARGE: JAL  
SHEET NO: 3 OF 16



PRESERVE AT CULEBRA-UNIT 14  
BEXAR COUNTY, TEXAS  
SIGNAGE DETAILS  
(SHEET 3 OF 4)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED DRAWN GK  
SHEET C3.30

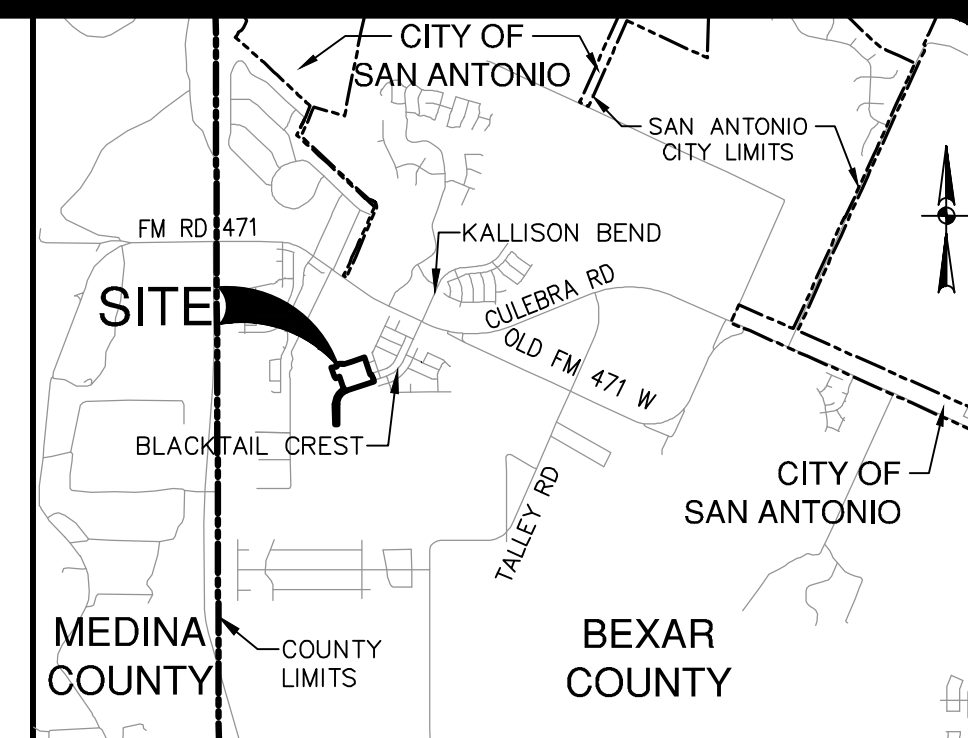
2/2/2024  
STATE OF TEXAS  
REBECCA ANN CARROLL  
92666  
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON  
ENGINEERS  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028800

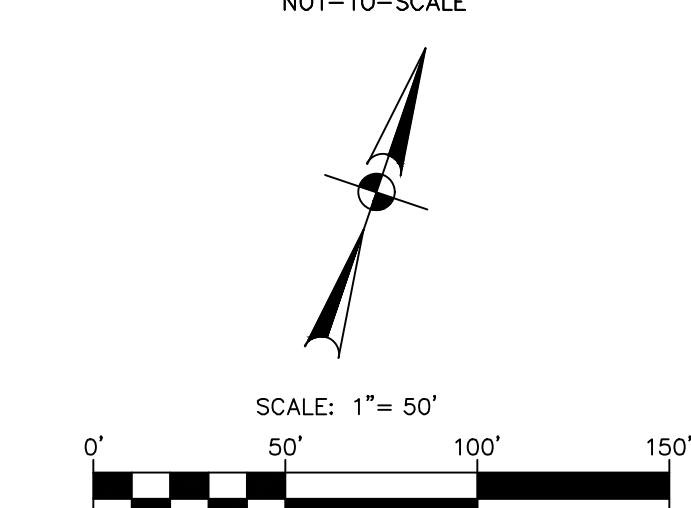








## LOCATION MAP



### SEWER LEGEND

PROJECT LIMITS

EXISTING CONTOUR

EXISTING WATER

EXISTING SEWER

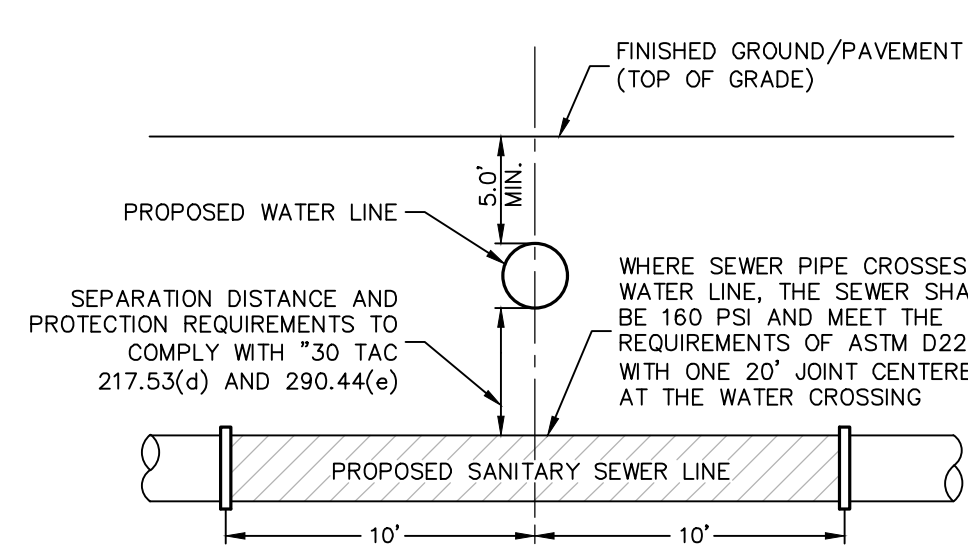
PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

VERTICAL STACKS ARE NEEDED FOR THESE LOTS

Diagram showing a plan view of a sewer main and lateral. The sewer main runs horizontally, with a manhole (MH) and a fire hydrant (FIRE HYDRANT) located on it. A proposed sewer lateral branches off the main. The diagram includes project limits, existing contours, existing water and sewer lines, and proposed water and sewer lines. A note indicates that vertical stacks are needed for the lots shown.



(SEE SAWS SPEC ITEM 812)

**TYPICAL SANITARY**  
**SEWER/WATER CROSSING DETAIL**

**CAUTION!!**

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ROW PERMIT NOTE:

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

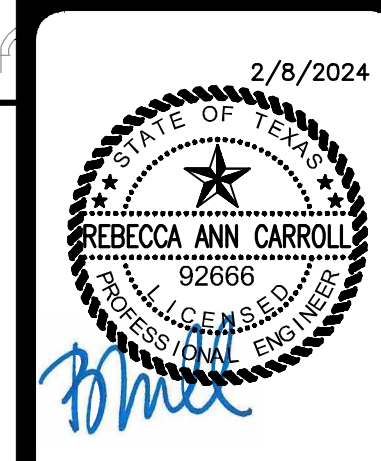
TRENCH EXCAVATION SAFETY PROTECTION:

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## SEWER: WEST WATERSHED-LEON CREEK W.R.C

DEVELOPER'S NAME: KB HOME LONE STAR, INC.  
ADDRESS: 4800 FREDERICKSBURG ROAD  
CITY: SAN ANTONIO STATE: TX ZIP: 78229  
PHONE# (210) 301-2815 FAX# \_\_\_\_\_  
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806  
TOTAL LINEAR FOOTAGE 2,845 LF <sup>2845 LF</sup> 12' PLAT NO. 23-11800218  
NUMBER OF LOTS 74 <sup>16 LFS</sup> 30 SAW JOB NO. 23-1639

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND SAWS BLOCK	12/14/2023
2.	REVISED LATERALS/ADDED WATER CROSSING	02/02/2024



**PAPE-DAWSON  
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TPELS FIRM REGISTRATION #10026800

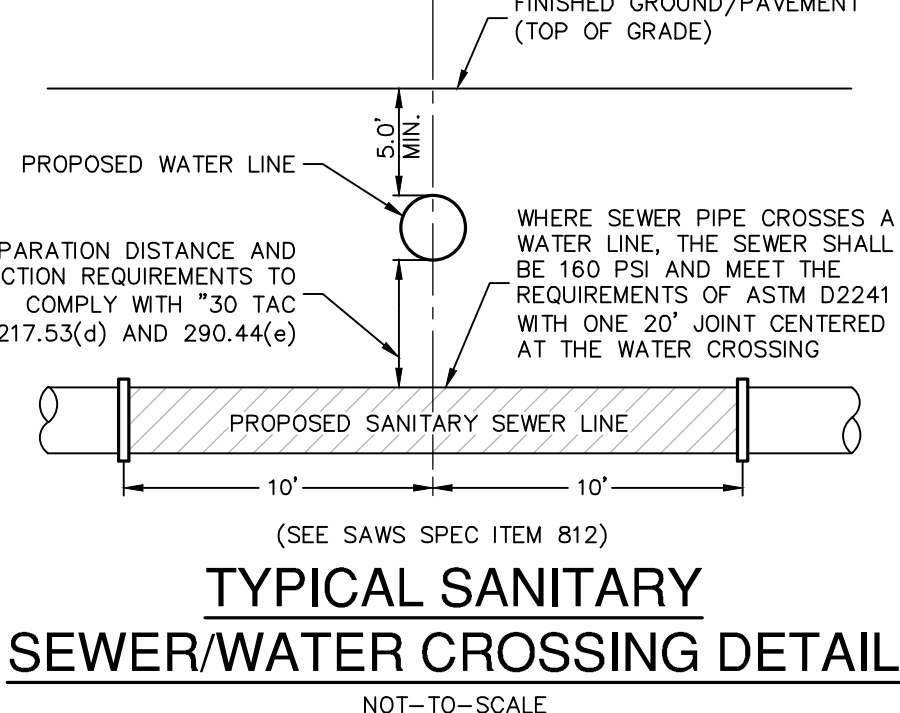
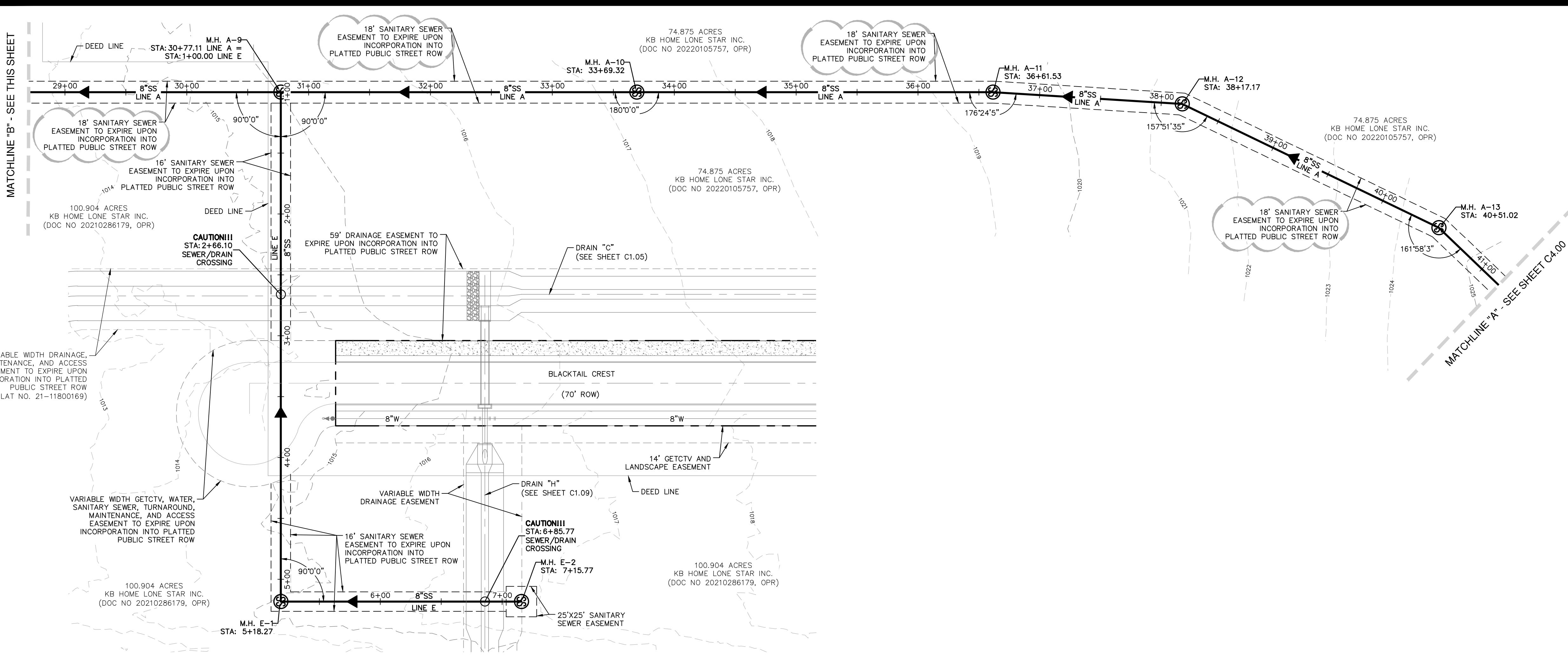
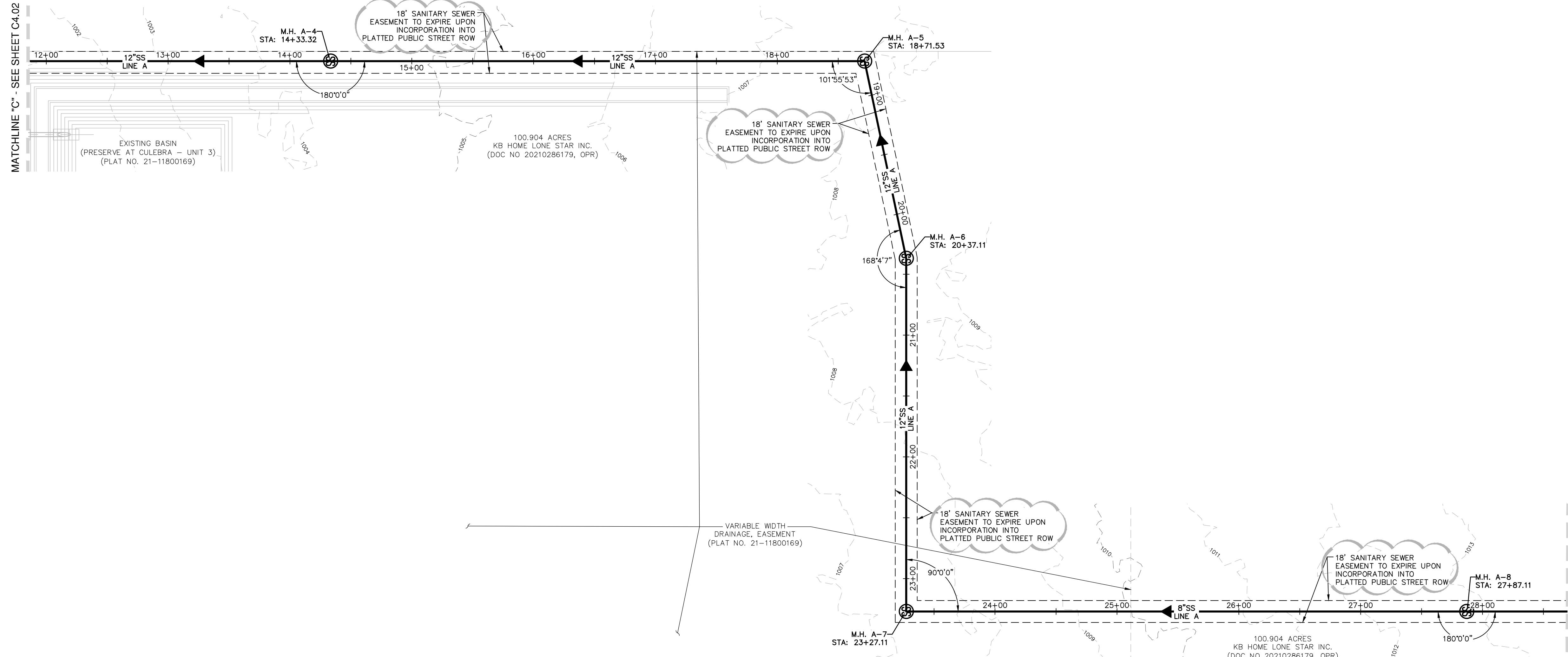
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
OVERALL SANITARY SEWER PLAN  
(SHEET 1 OF 3)

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER JB  
CHECKED \_\_\_\_\_ DRAWN GK  
SHEET C4.00



Date: Dec 14, 2023, 10:49am User: jgallagher  
File: P:\16\68\14\Design\CA\OS-1168814.dwg

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**CAUTION!!**

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**ROW PERMIT NOTE:**

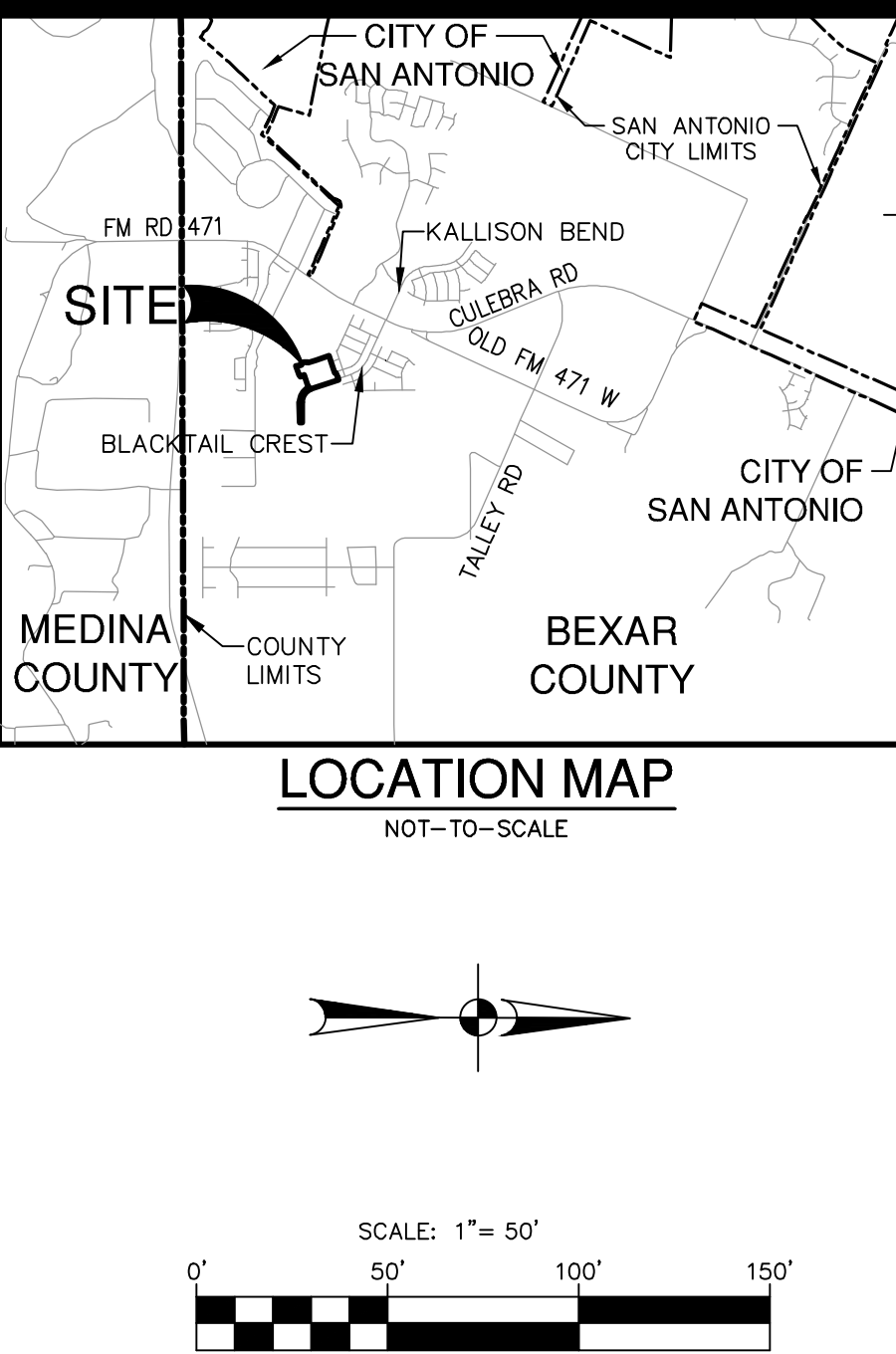
A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

**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: WEST WATERSHED-LEON CREEK W.R.C.**

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 2,211 LF @ 12" PLAT NO. 23-11800218			
NUMBER OF LOTS 74 SAWS JOB NO. 23-1639			



- SEWER LEGEND**
- PROJECT LIMITS
  - EXISTING CONTOUR
  - EXISTING WATER
  - EXISTING SEWER
  - PROPOSED SEWER
  - PROPOSED WATER
  - PROPOSED SEWER LATERAL
  - VERTICAL STACKS ARE NEEDED FOR THESE LOTS

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND SAWS BLOCK	12/14/2023



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

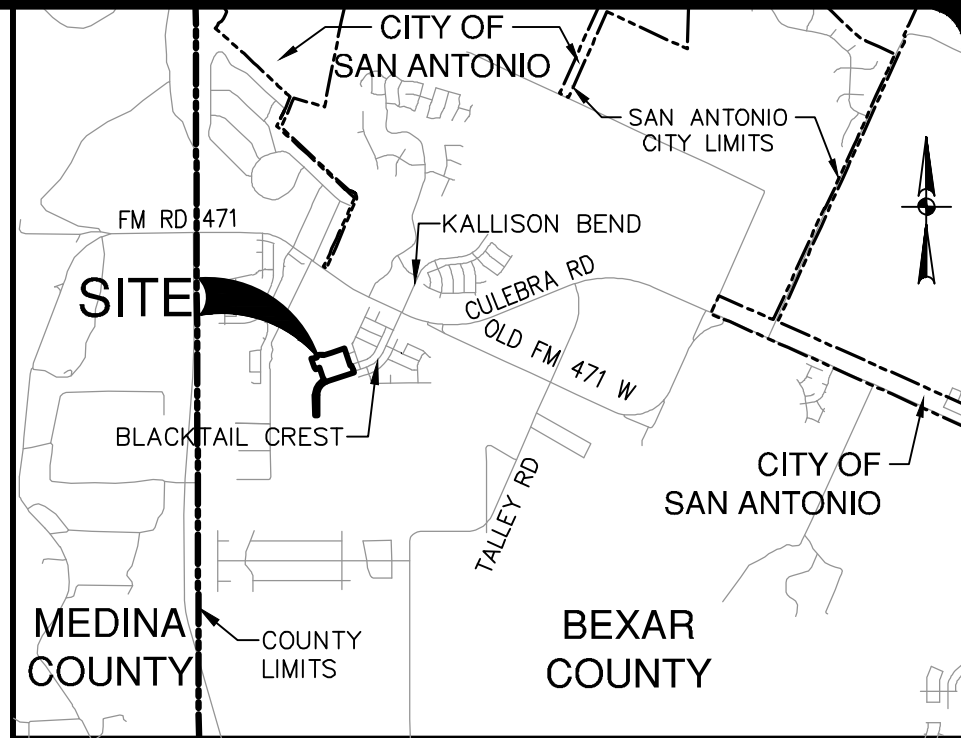
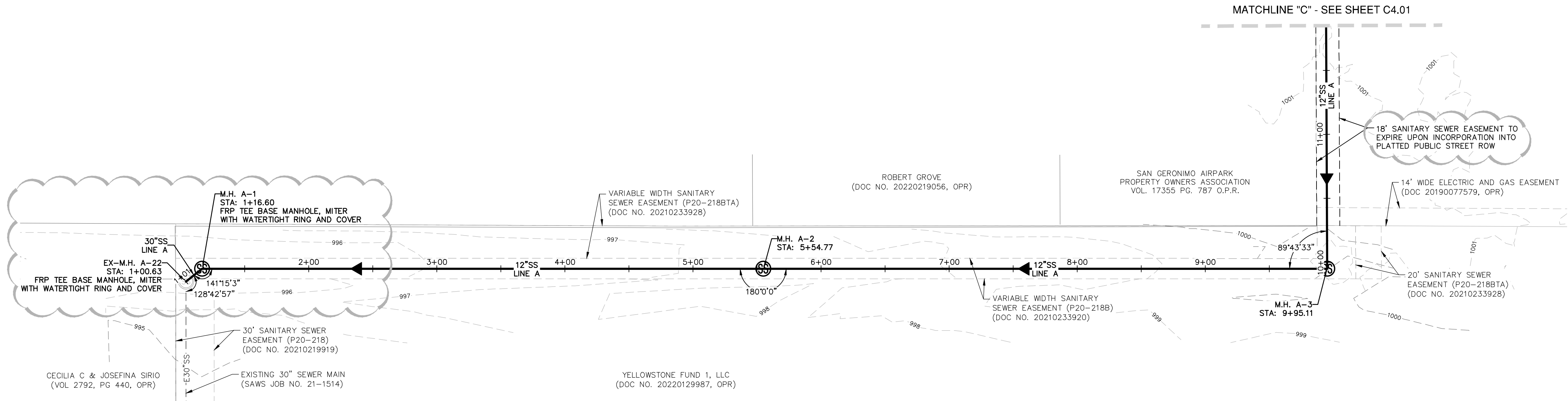
**OVERALL SANITARY SEWER PLAN**  
(SHEET 2 OF 3)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	DECEMBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.01



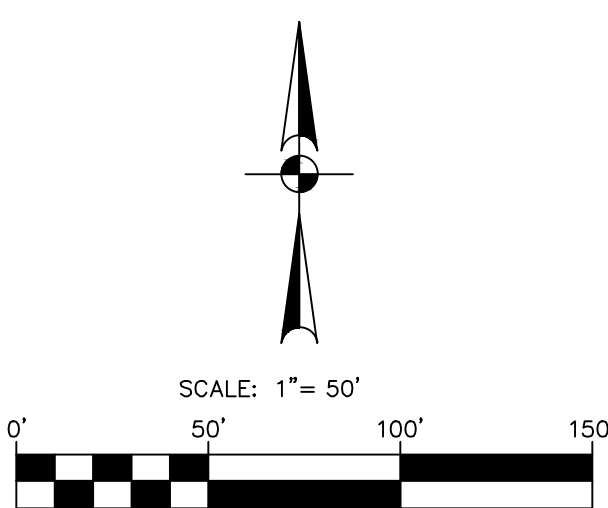
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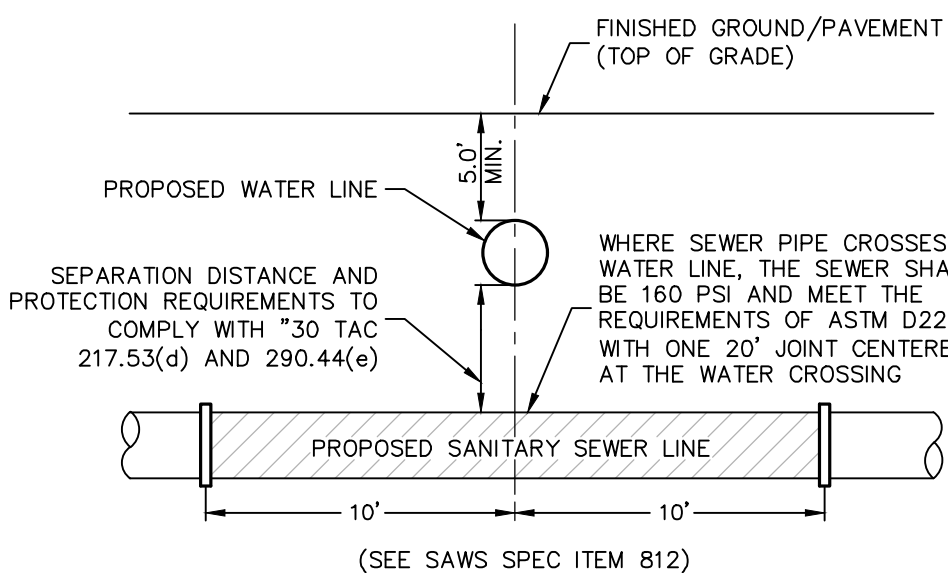
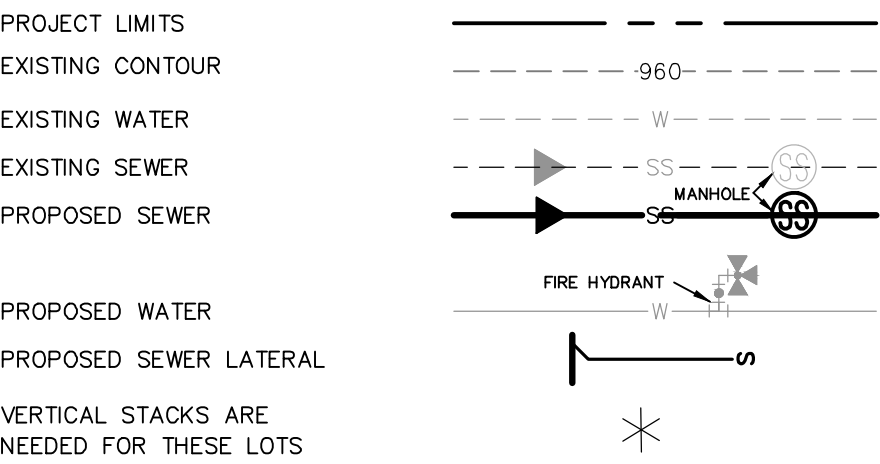


### LOCATION MAP

NOT-TO-SCALE



### SEWER LEGEND



### TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

#### CAUTION!!

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#### SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDP# 73 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 2,845 LF 12" PLAT NO. 23-11800218			
NUMBER OF LOTS 74 SAWS JOB NO. 23-1639			

NO.	REVISION	DATE
1.	REVISED SEWER TIE-IN, EASEMENT, AND SAWS BLOCK	12/14/2023



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

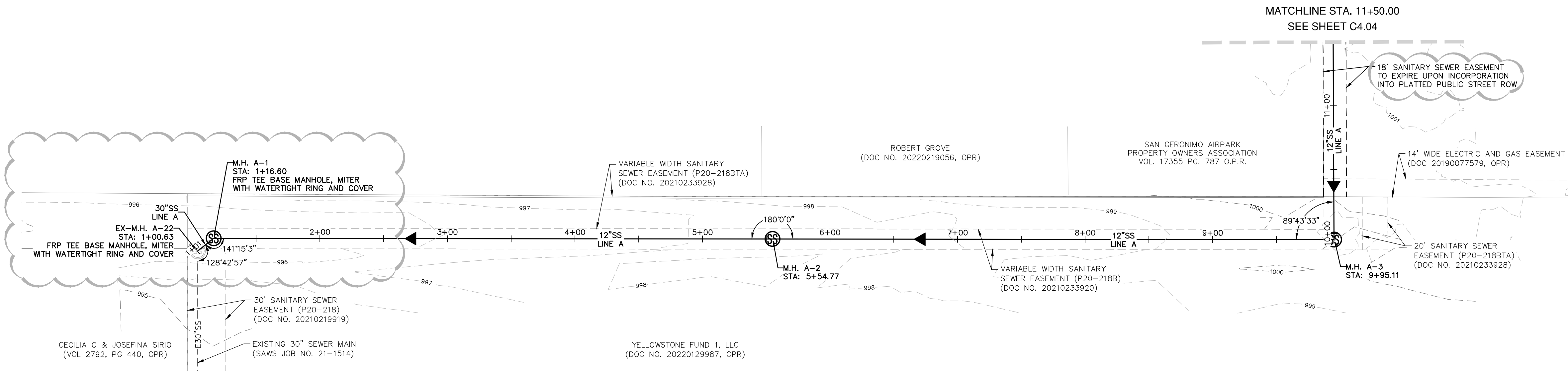
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**OVERALL SANITARY SEWER PLAN**  
(SHEET 3 OF 3)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	DECEMBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.02



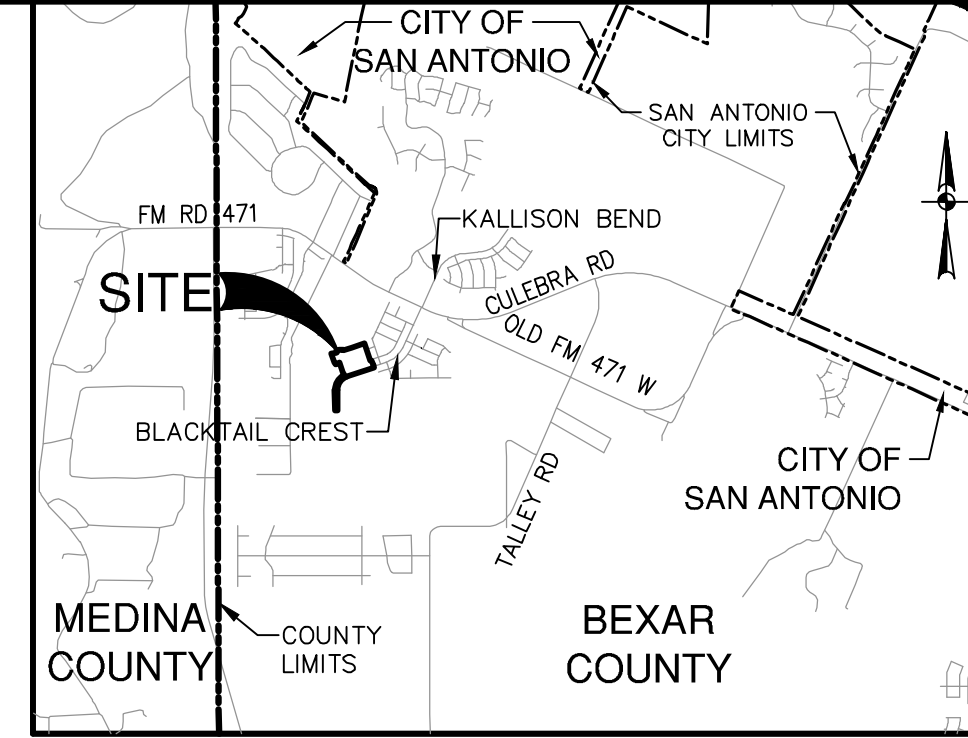
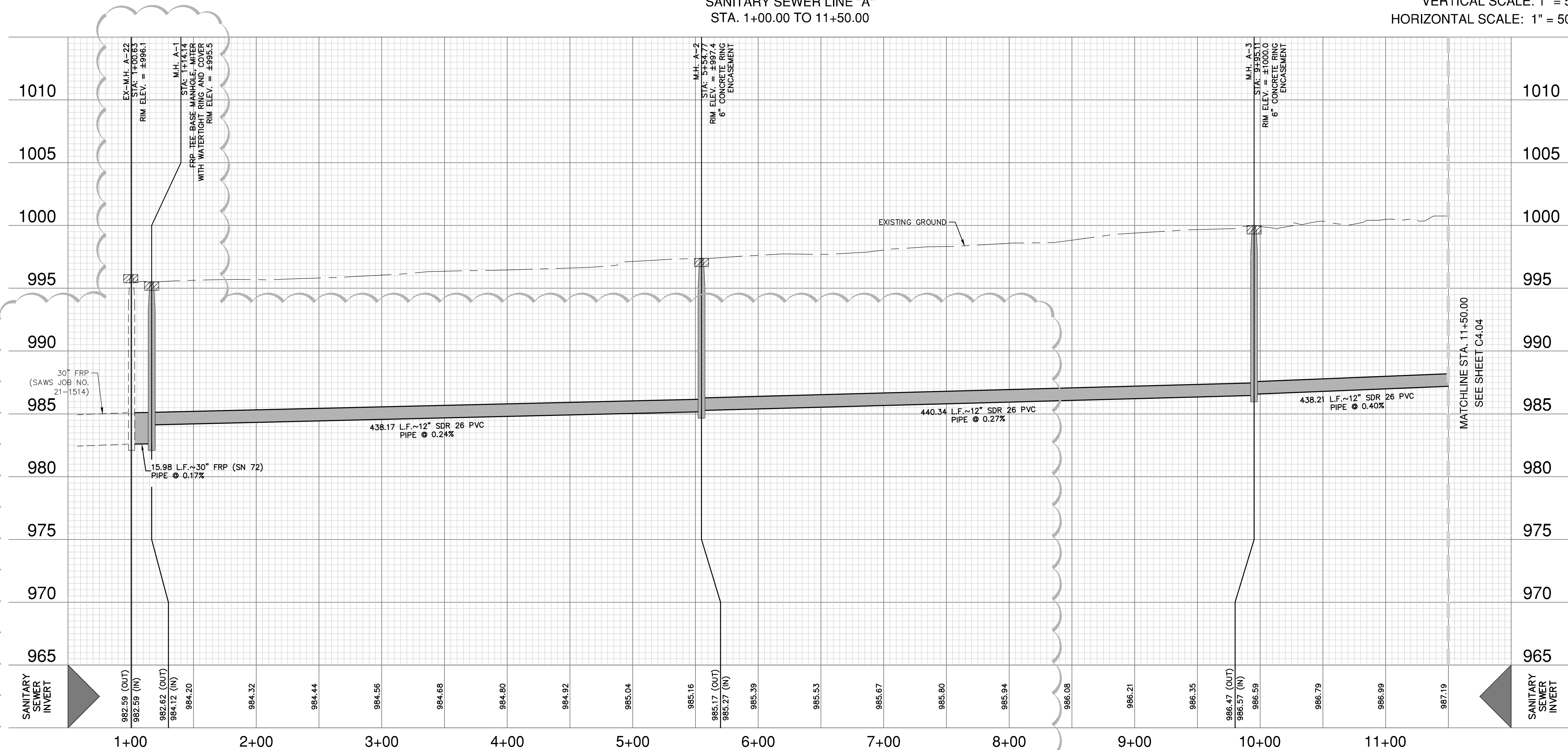
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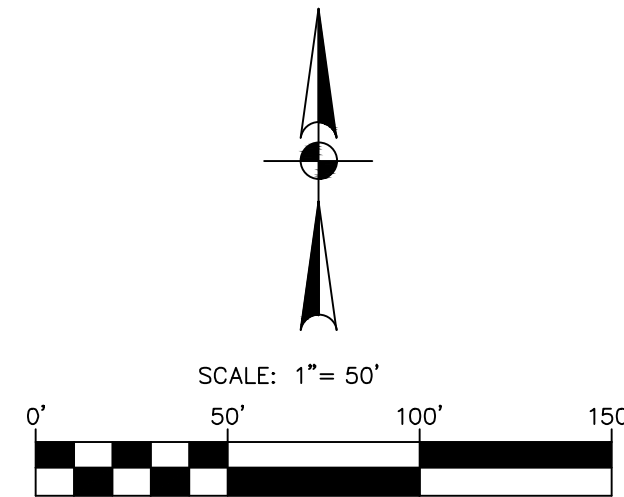


SANITARY SEWER LINE "A"  
STA. 1+00.00 TO 11+50.00

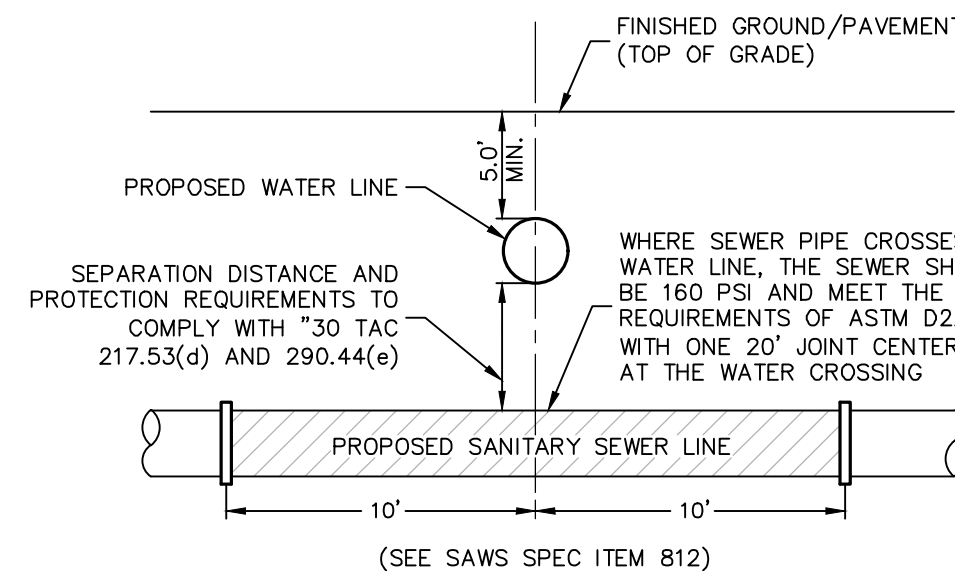
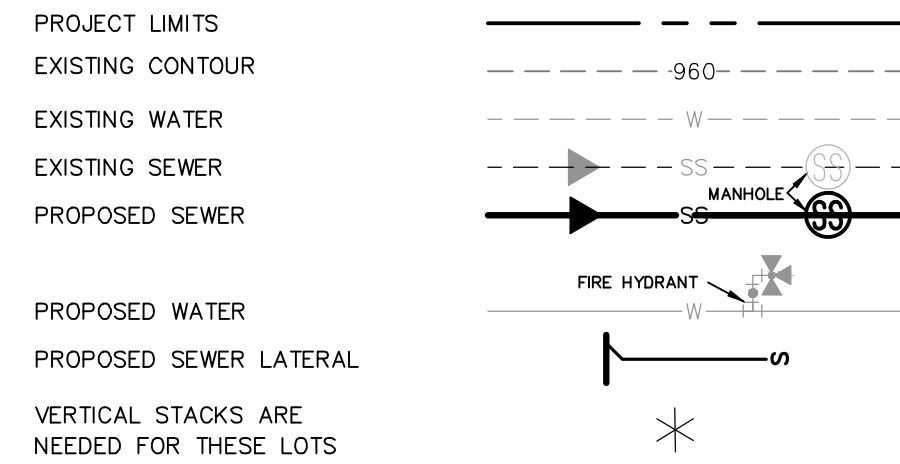
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND



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

#### CAUTION!!

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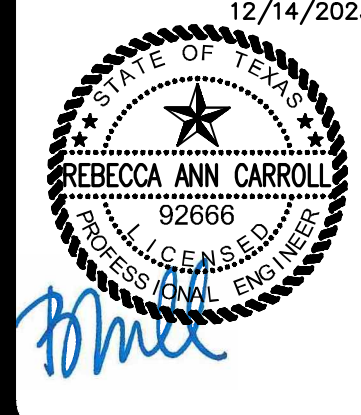
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#### SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.	
ADDRESS: 4800 FREDERICKSBURG ROAD	
CITY: SAN ANTONIO	STATE: TX ZIP: 78229
PHONE# (210) 301-2815	FAX#
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806	
TOTAL LINEAR FOOTAGE OF PIPE: 2,211 LF ~ 12" PLAT NO. 23-11800218	
NUMBER OF LOTS 74	SAWS JOB NO. 23-1639

NO.	REVISION	DATE
1.	REVISED SEWER TIE-IN, SLOPES, EASEMENT, AND SAWS BLOCK	12/14/2023



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

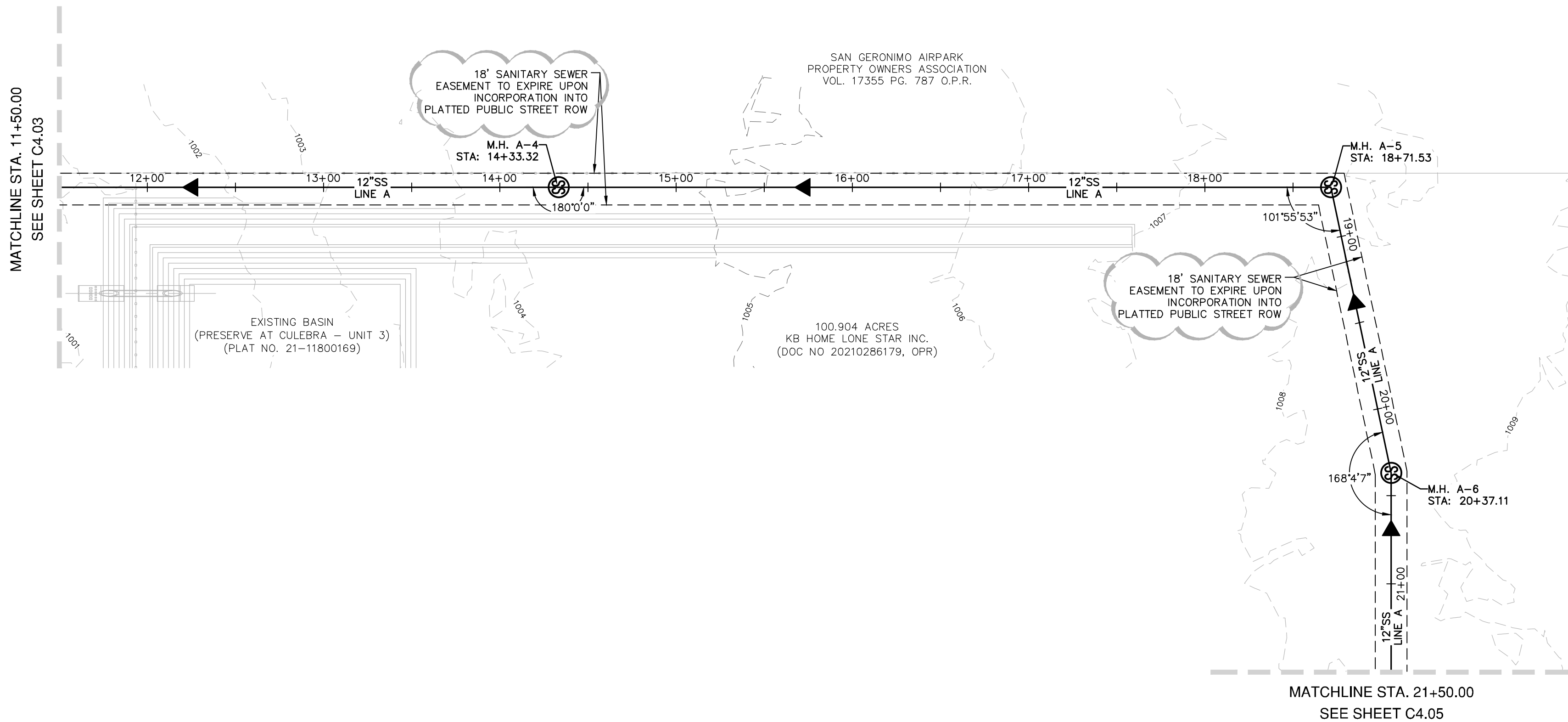
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SANITARY SEWER LINE A**  
**PLAN AND PROFILE (STA. 1+00.00 TO 11+50.00)**

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE DECEMBER 2023
DRAWN BY JB
CHECKED BY GK
SHEET C4.03



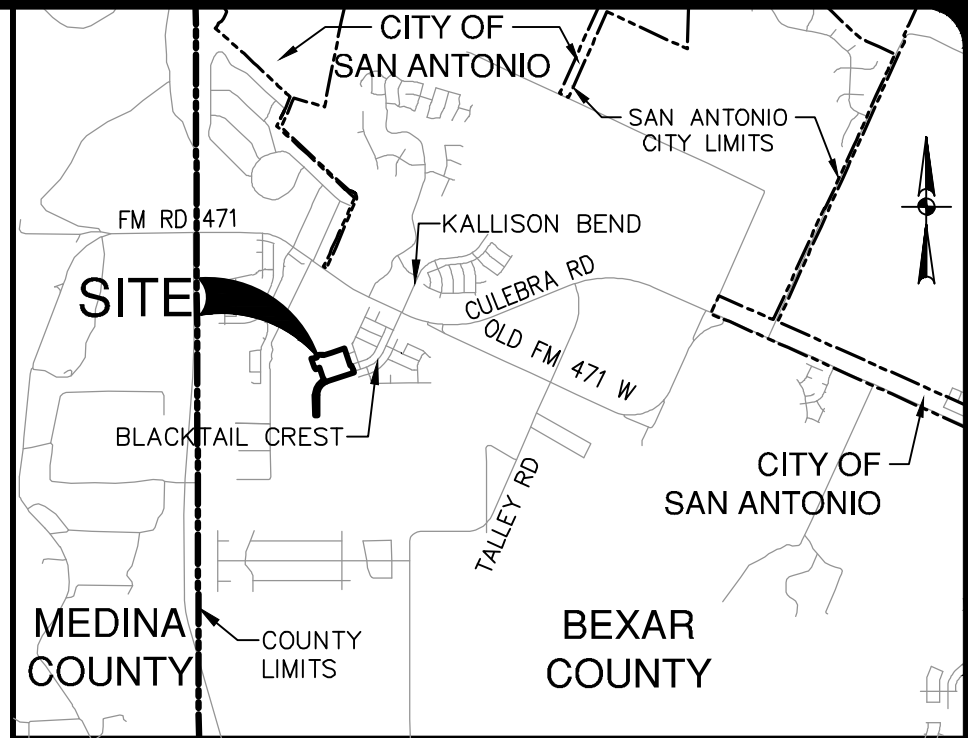
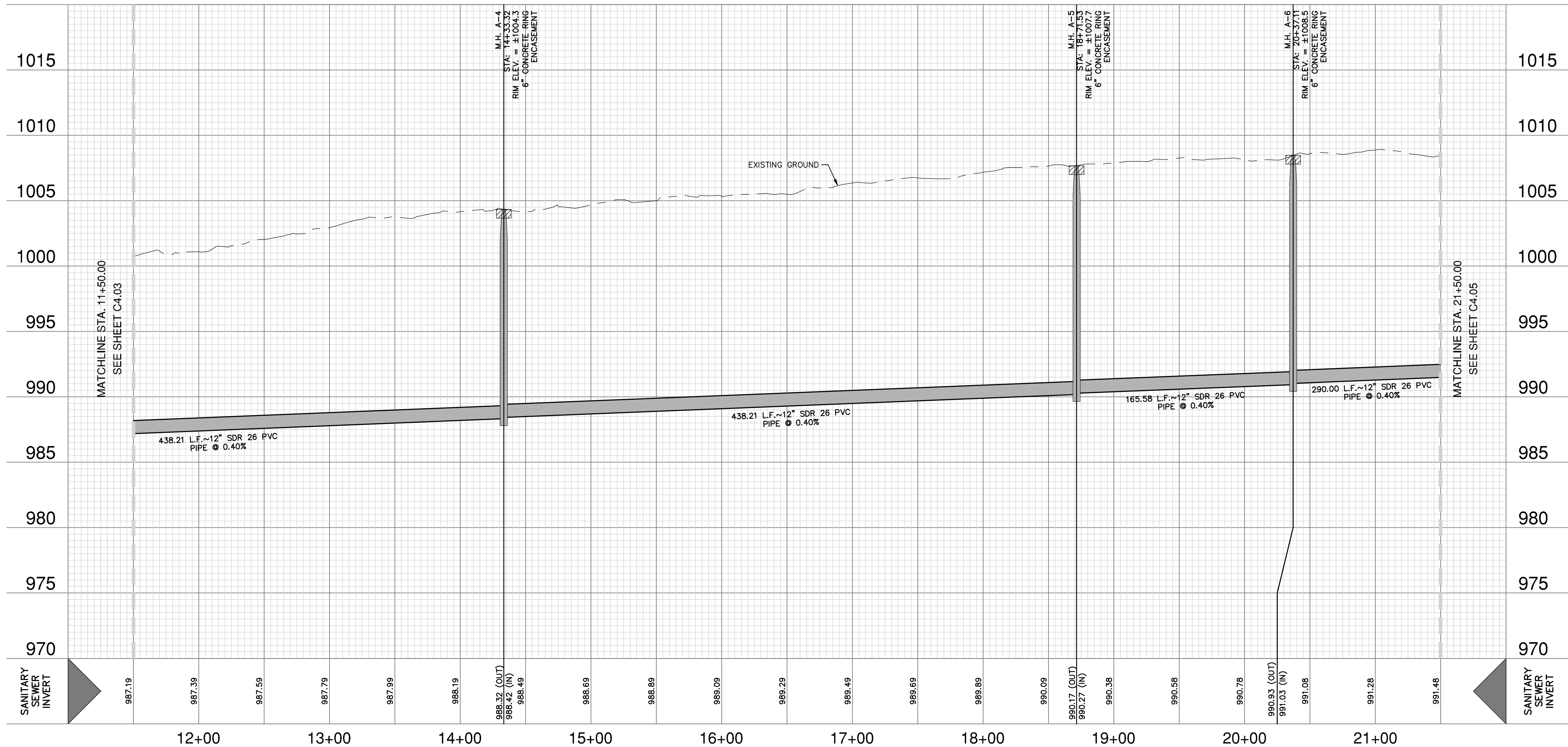
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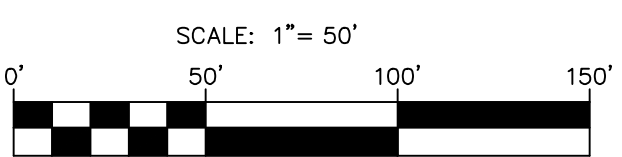


SANITARY SEWER LINE "A"  
STA. 11+50.00 TO 21+50.00

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

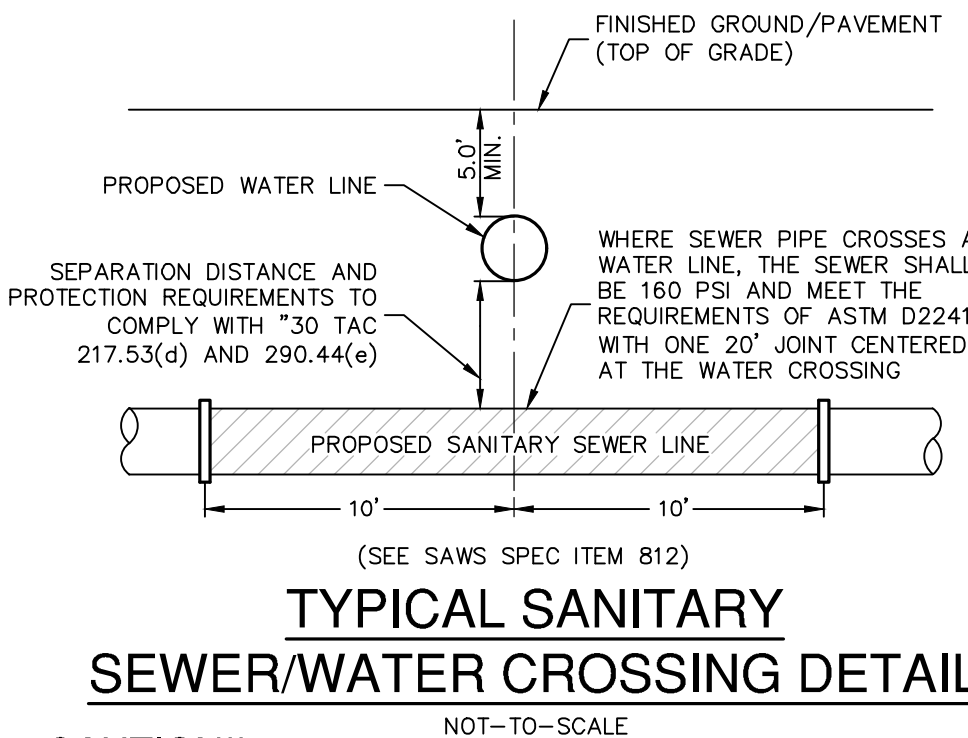


LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- VERTICAL STACKS ARE NEEDED FOR THESE LOTS



**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.

**ROW PERMIT NOTE:**  
A BEXAR COUNTY ROW 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: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME:	KB HOME LONE STAR, INC.
ADDRESS:	4800 FREDERICKSBURG ROAD
CITY:	SAN ANTONIO
STATE:	TX
ZIP:	78229
PHONE#	(210) 301-2815
FAX#	
SAWS BLOCK MAP#	064610
TOTAL EDU'S	73
TOTAL ACREAGE	21.806
TOTAL LINEAR FOOTAGE OF PIPE	2,111 L.F. ~12"
PLAT NO.	23-11800218
NUMBER OF LOTS	74
SAWS JOB NO.	23-1639

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND SAWS BLOCK	12/14/2023



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10098800

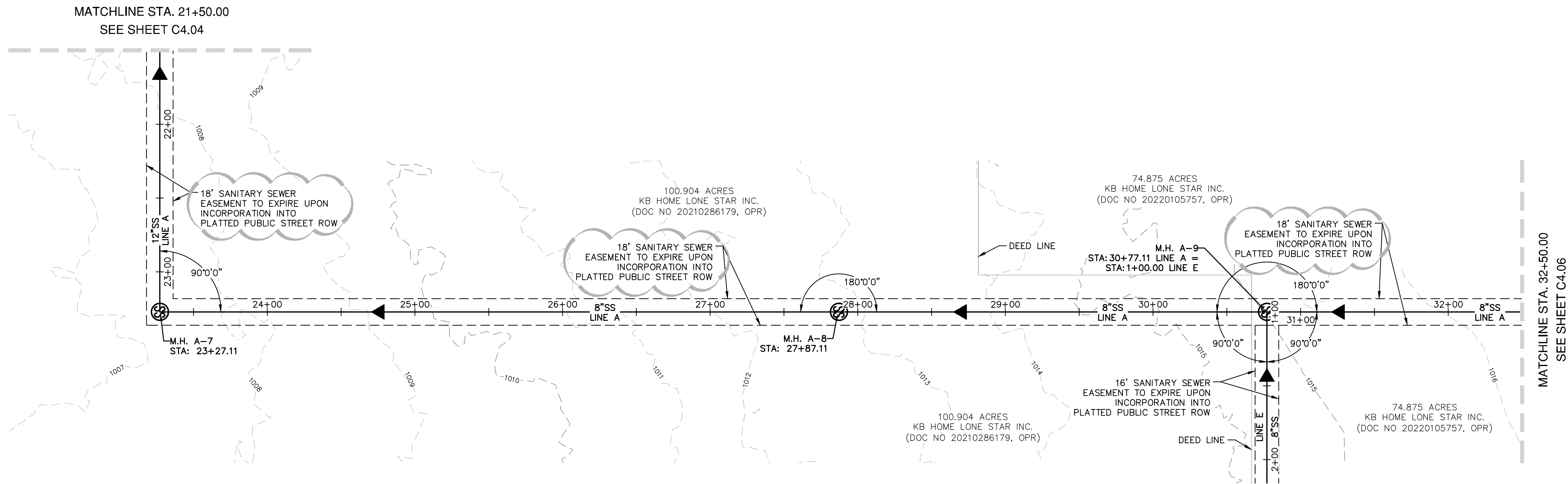
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SANITARY SEWER LINE A**  
PLAN AND PROFILE (STA. 11+50.00 TO 21+50.00)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	DECEMBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.04



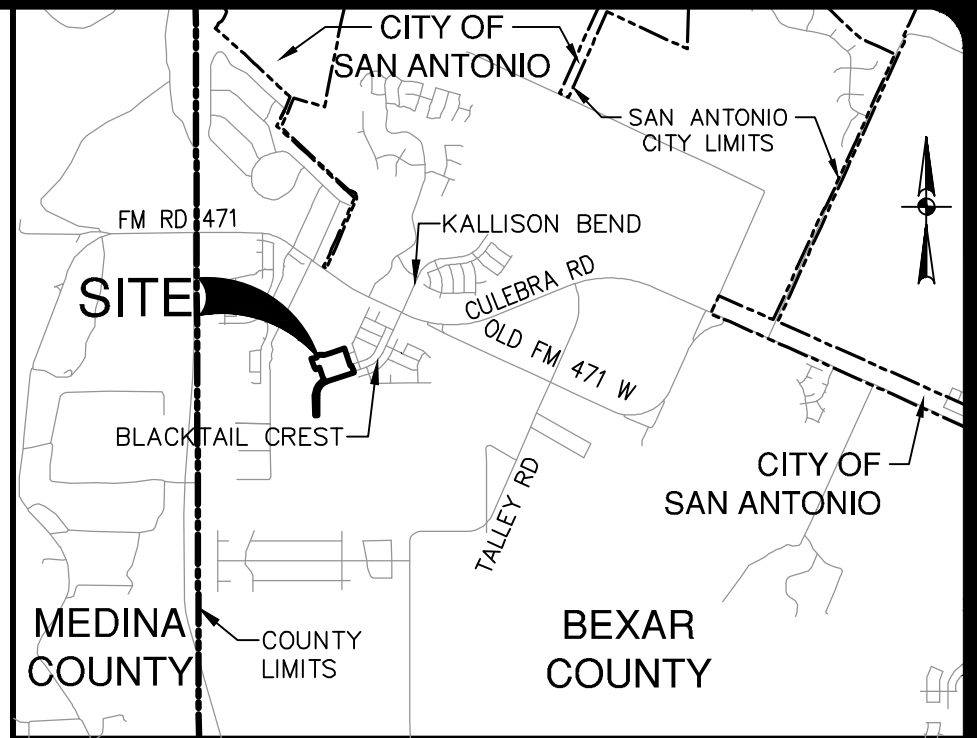
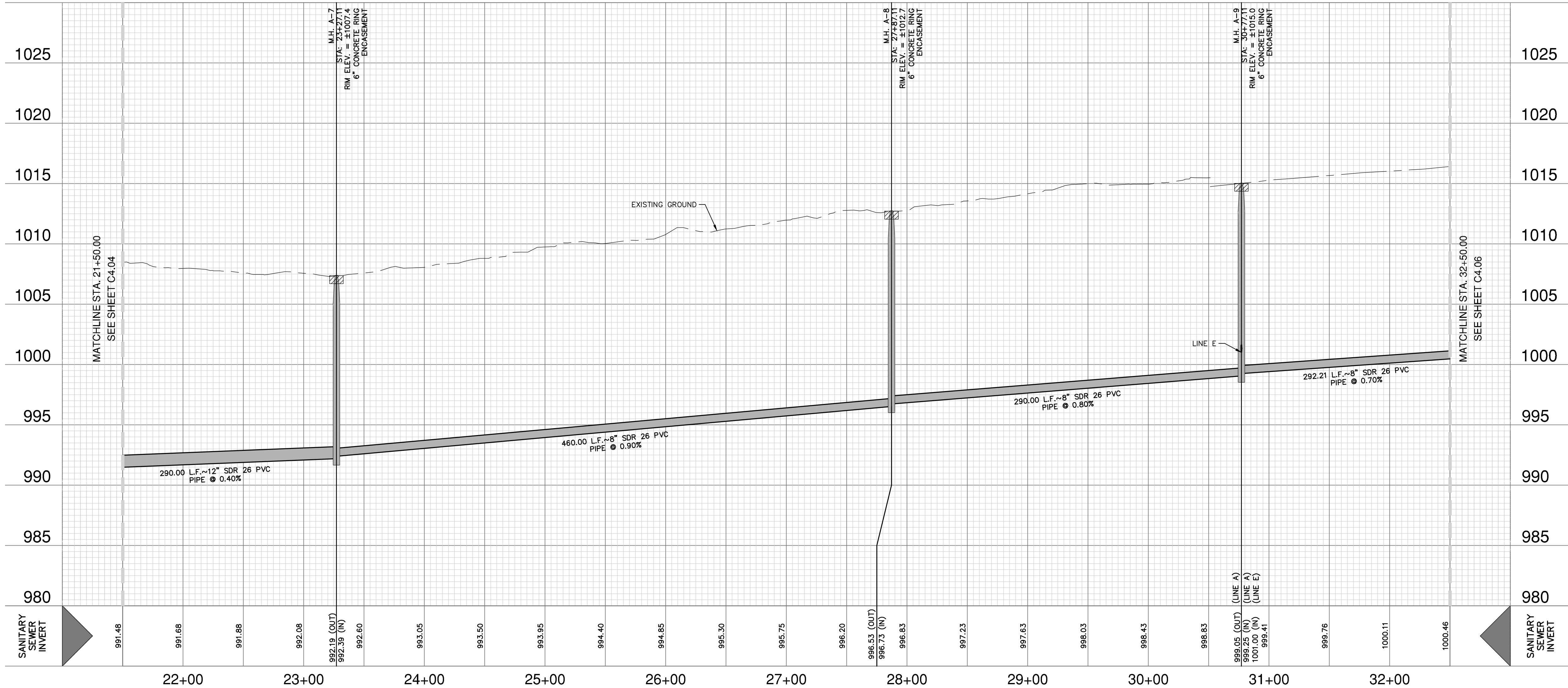
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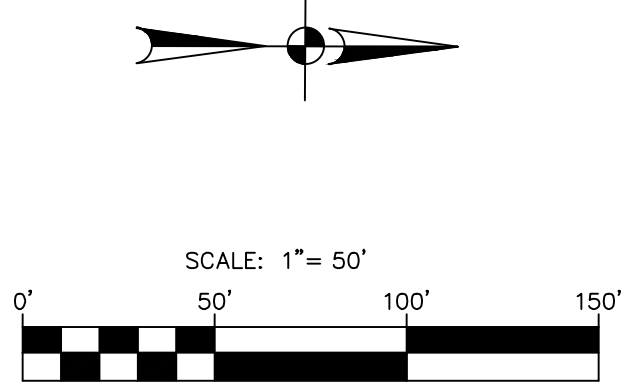


SANITARY SEWER LINE "A"  
STA. 21+50.00 TO 32+50.00

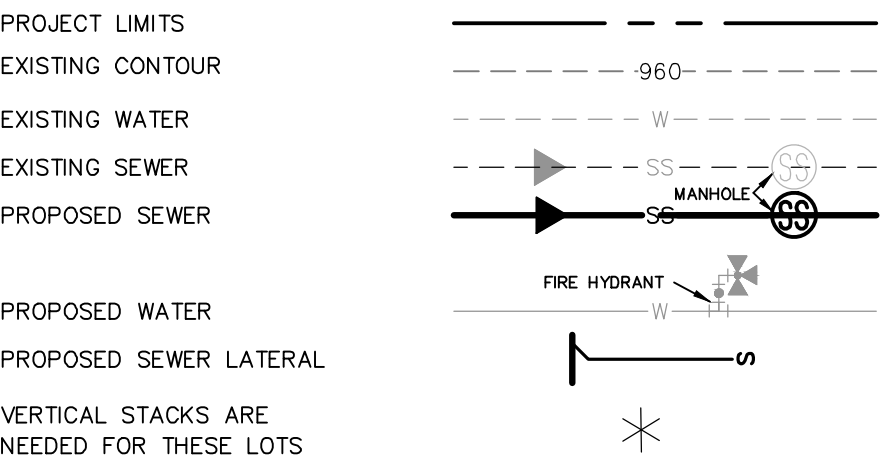
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HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND



### TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

**CAUTION!!**

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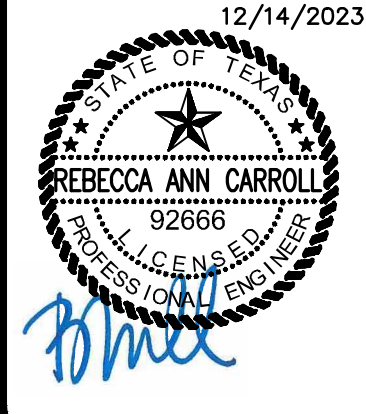
**TRENCH EXCAVATION SAFETY PROTECTION:**

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### SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.  
ADDRESS: 4800 FREDERICKSBURG ROAD  
CITY: SAN ANTONIO STATE: TX ZIP: 78229  
PHONE# (210) 301-2815 FAX#  
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806  
TOTAL LINEAR FOOTAGE OF PIPE: 2,211 L.F. ~12" PLAT NO. 23-11800218  
NUMBER OF LOTS 74 SAWS JOB NO. 23-1639

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND SAWS BLOCK	12/14/2023



**PAPE-DAWSON  
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

**SANITARY SEWER LINE A**  
PLAN AND PROFILE (STA. 21+50.00 TO 32+50.00)

PLAT NO. 23-11800218

JOB NO. 11668-14

DATE DECEMBER 2023

DRAWN BY JB

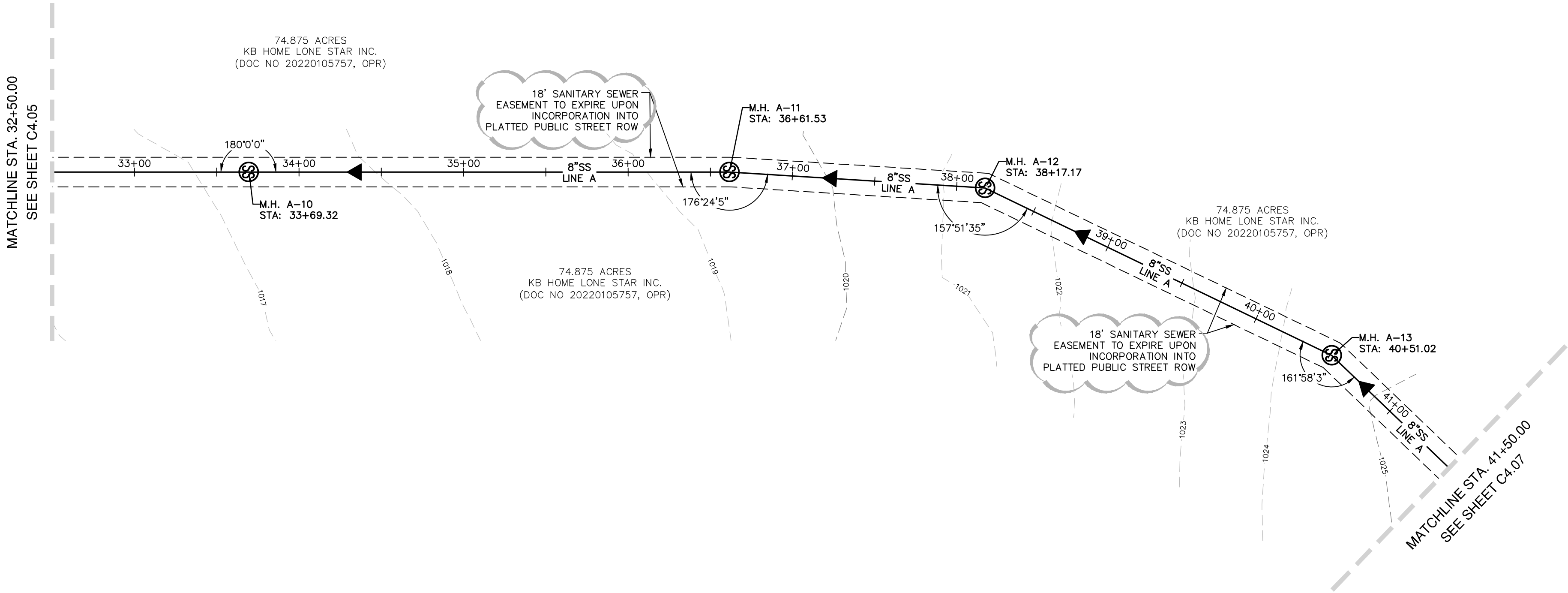
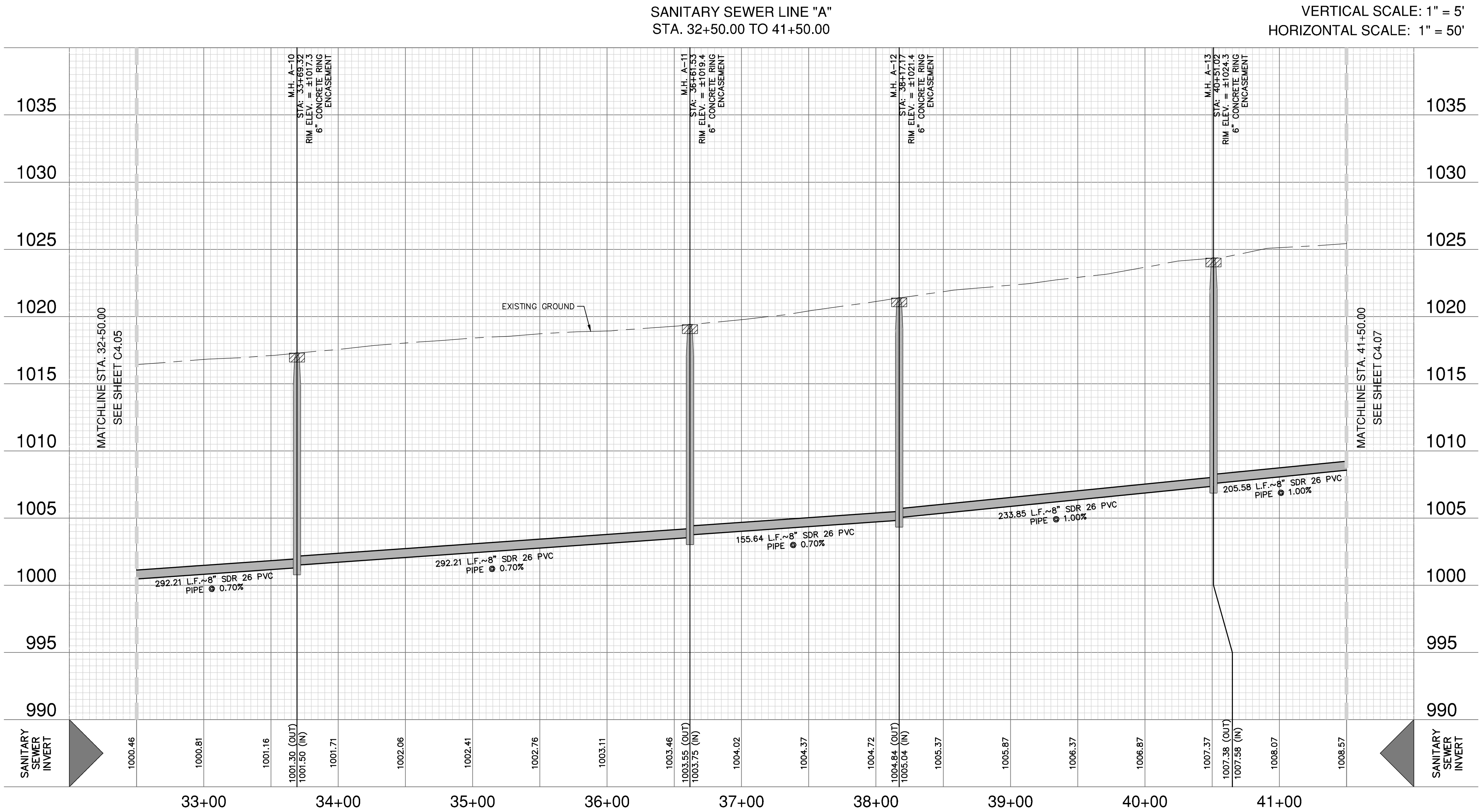
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SHEET C4.05

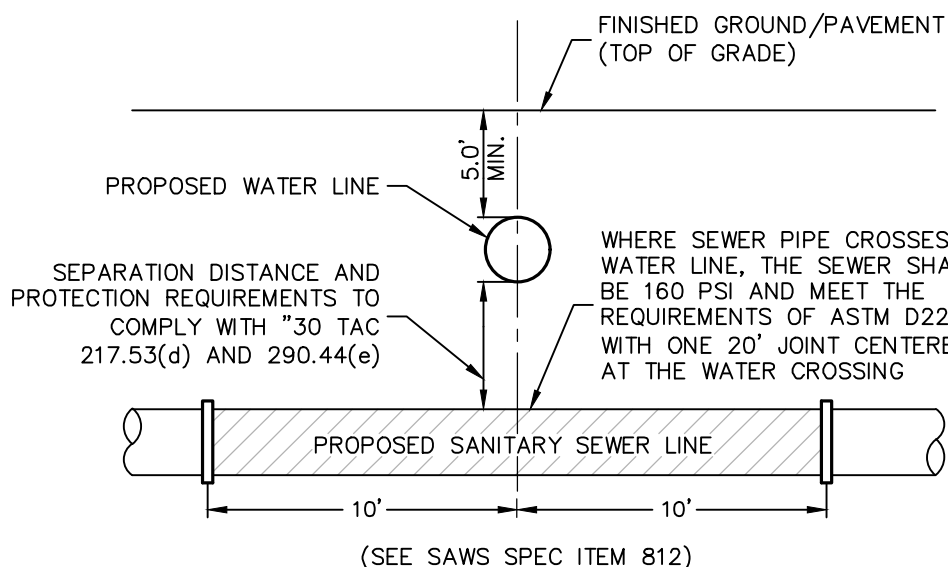
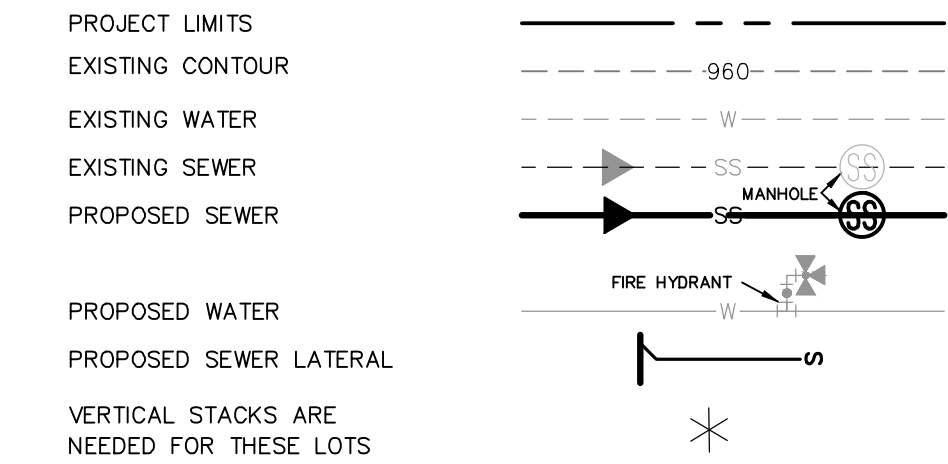


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### SEWER LEGEND



### TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

#### CAUTION!!

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#### SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.	
ADDRESS: 4800 FREDERICKSBURG ROAD	
CITY: SAN ANTONIO	STATE: TX ZIP: 78229
PHONE# (210) 301-2815	FAX#
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806	
TOTAL LINEAR FOOTAGE OF PIPE: 2,211 LF ~8" 18" LF ~12" PLAT NO. 23-11800218	
NUMBER OF LOTS 74	SAWS JOB NO. 23-1639

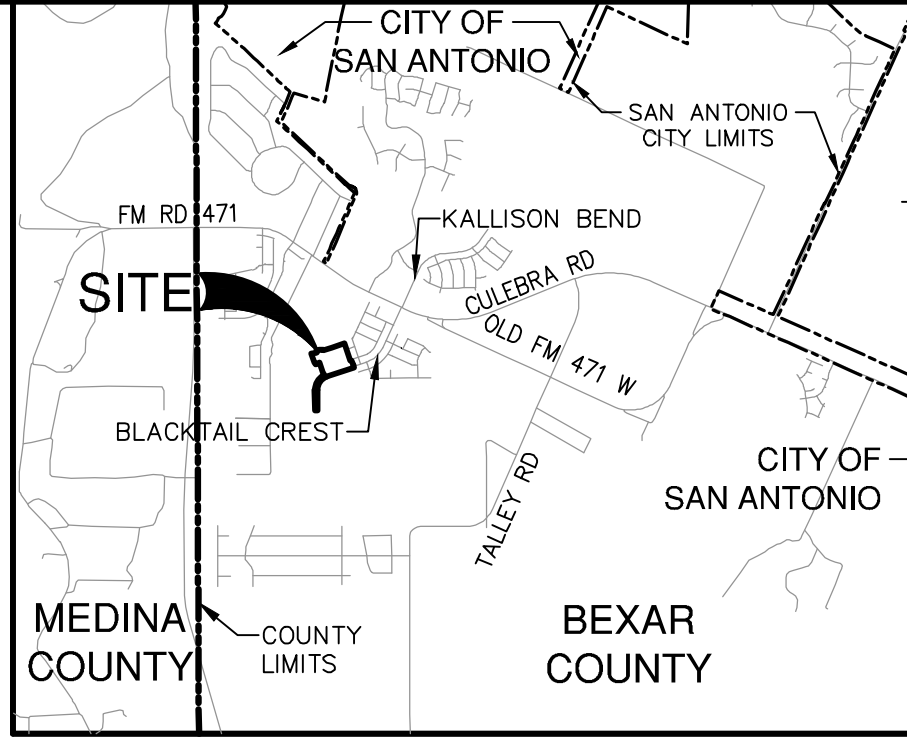
SEWER: WEST WATERSHED-LEON CREEK W.R.C.	
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NUMBER OF LOTS 74	SAWS JOB NO. 23-1639

DATE: DEC 14, 2023

DESIGNER: JB

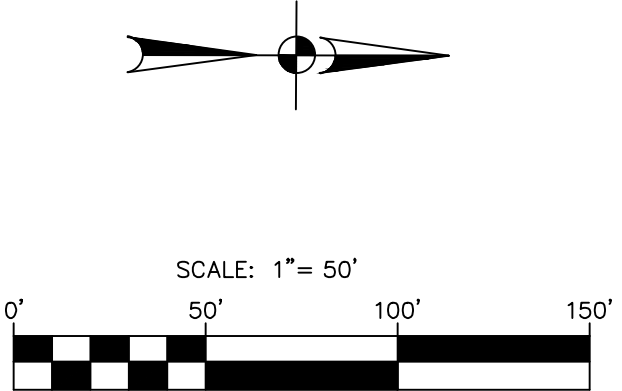
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SHEET: C4.06

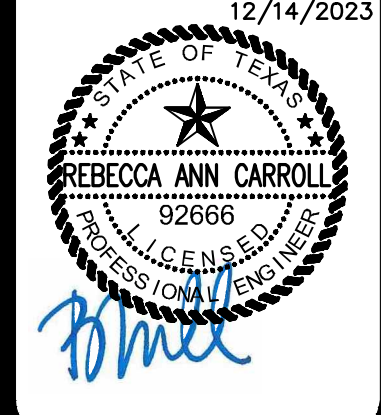


### LOCATION MAP

NOT-TO-SCALE



NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND SAWS BLOCK	12/14/2023

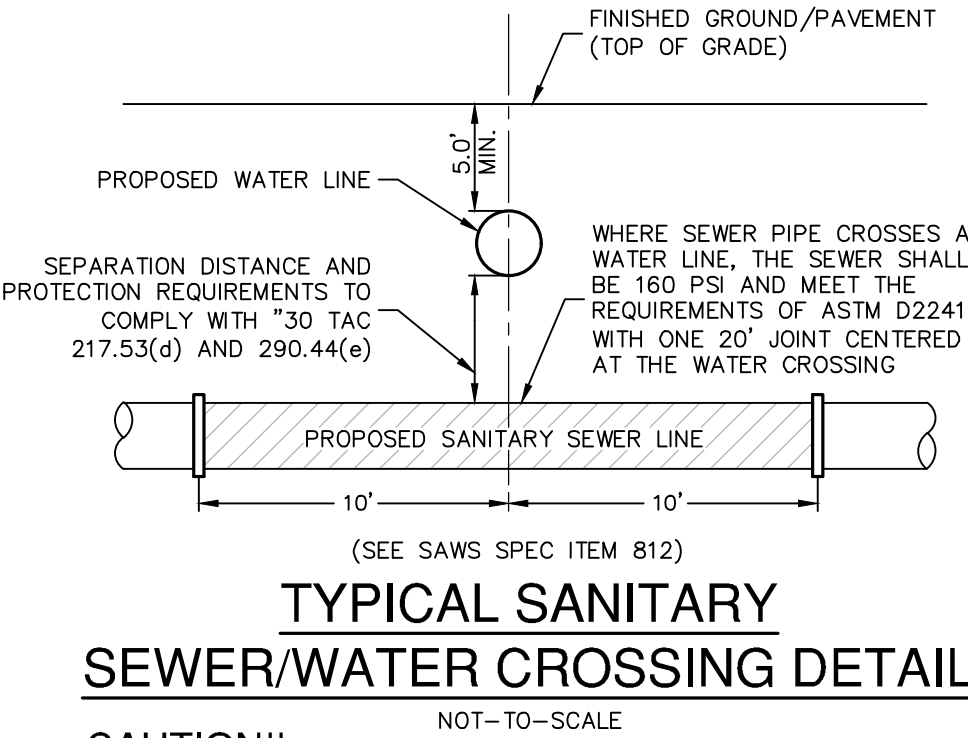
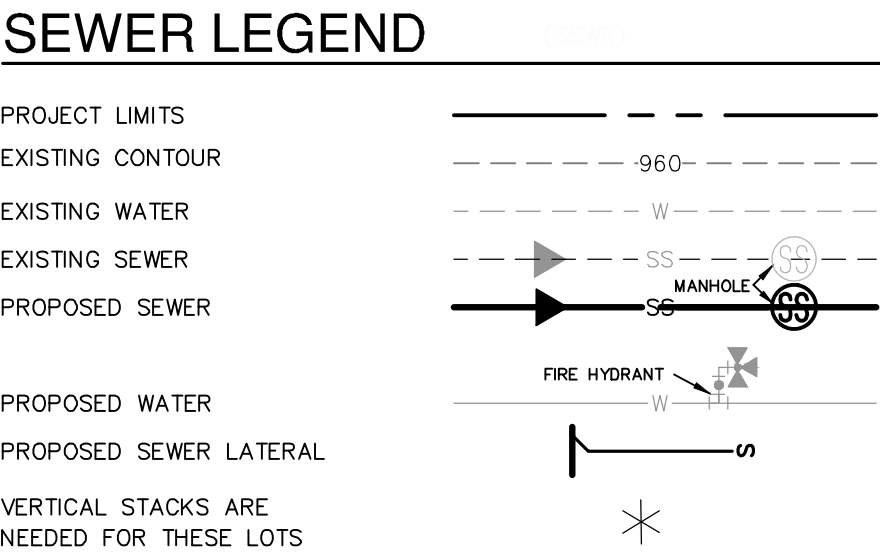
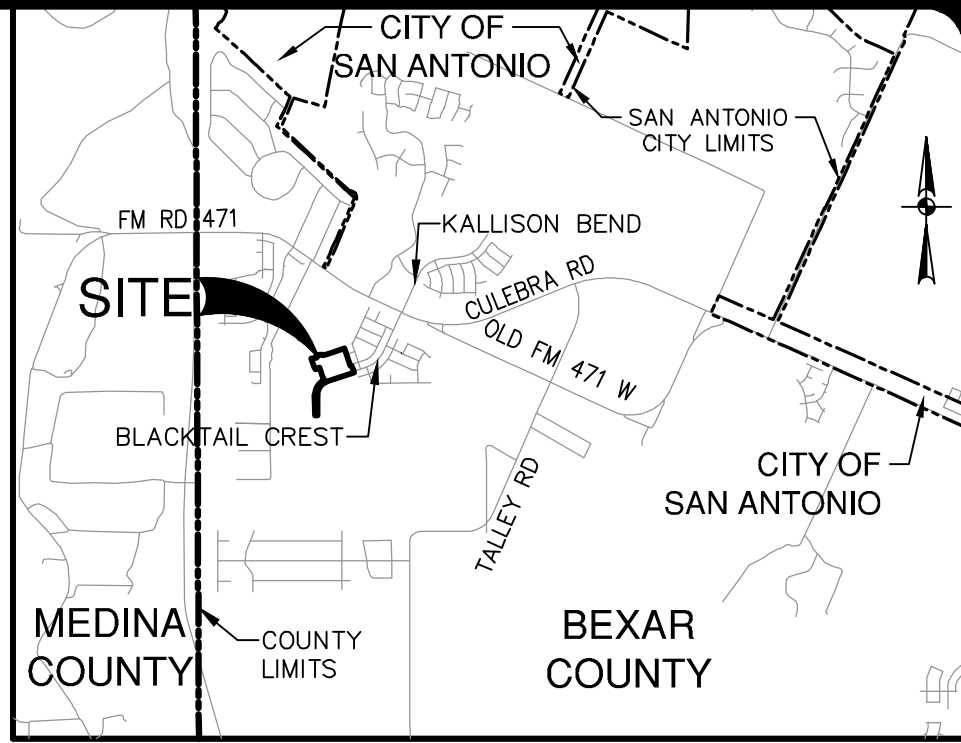
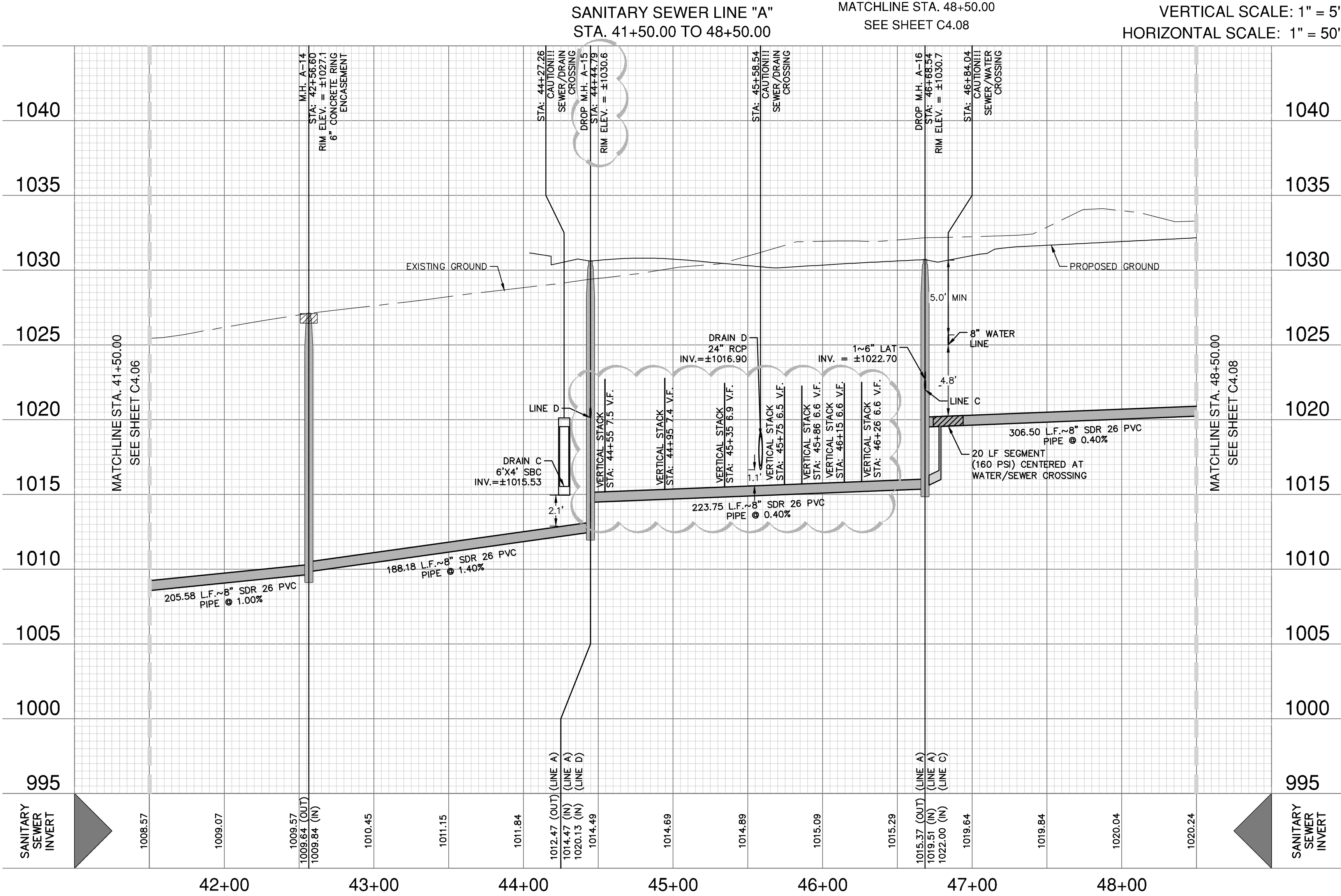


**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SANITARY SEWER LINE A**  
PLAN AND PROFILE (STA. 32+50.00 TO 41+50.00)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	DECEMBER 2023
DESIGNER	JB
CHECKED	DRAWN: GK
SHEET	C4.06





**CAUTION!!**  
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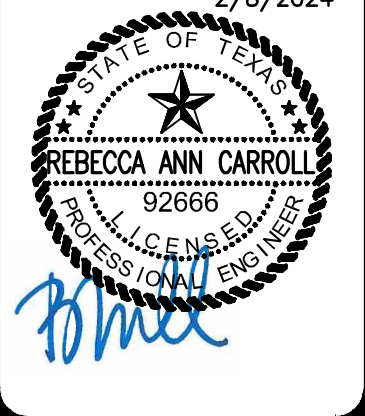
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**SEWER: WEST WATERSHED-LEON CREEK W.R.C.**

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 2,211 LF @ 12" PLAT NO. 23-11800218			
NUMBER OF LOTS 74 SAWS JOB NO. 23-1639			

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND	12/14/2023
2.	SAWS BLOCK	
3.	REVISED LATERAL STATIONS.	02/02/2024
4.	STACKS AND ROW ELEVATION	



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

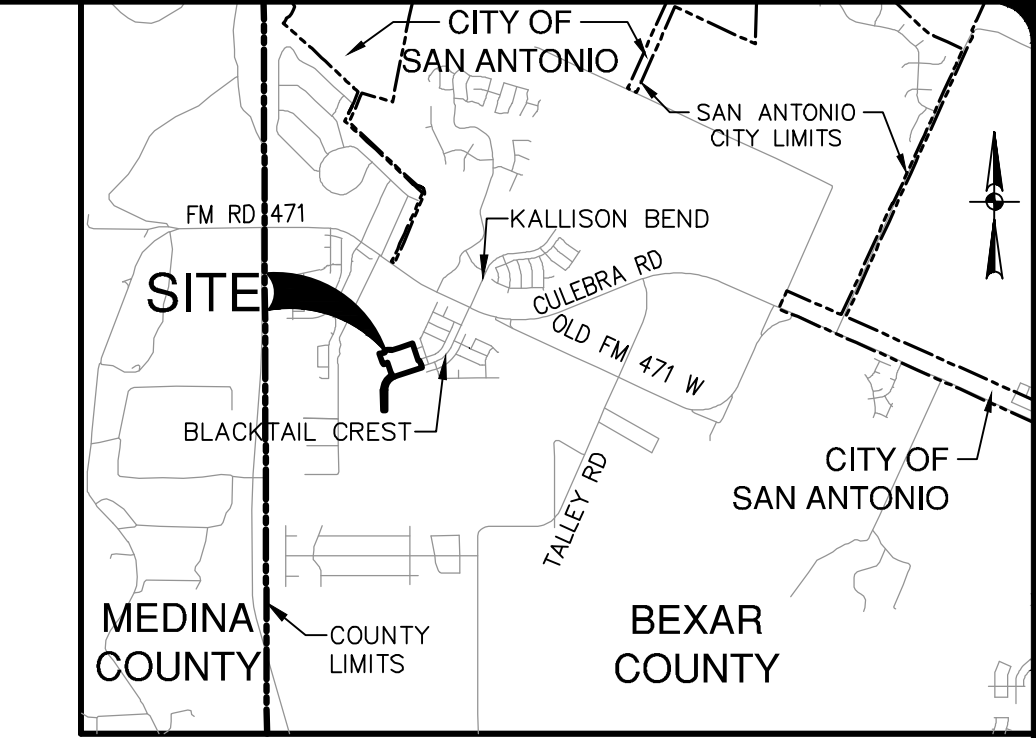
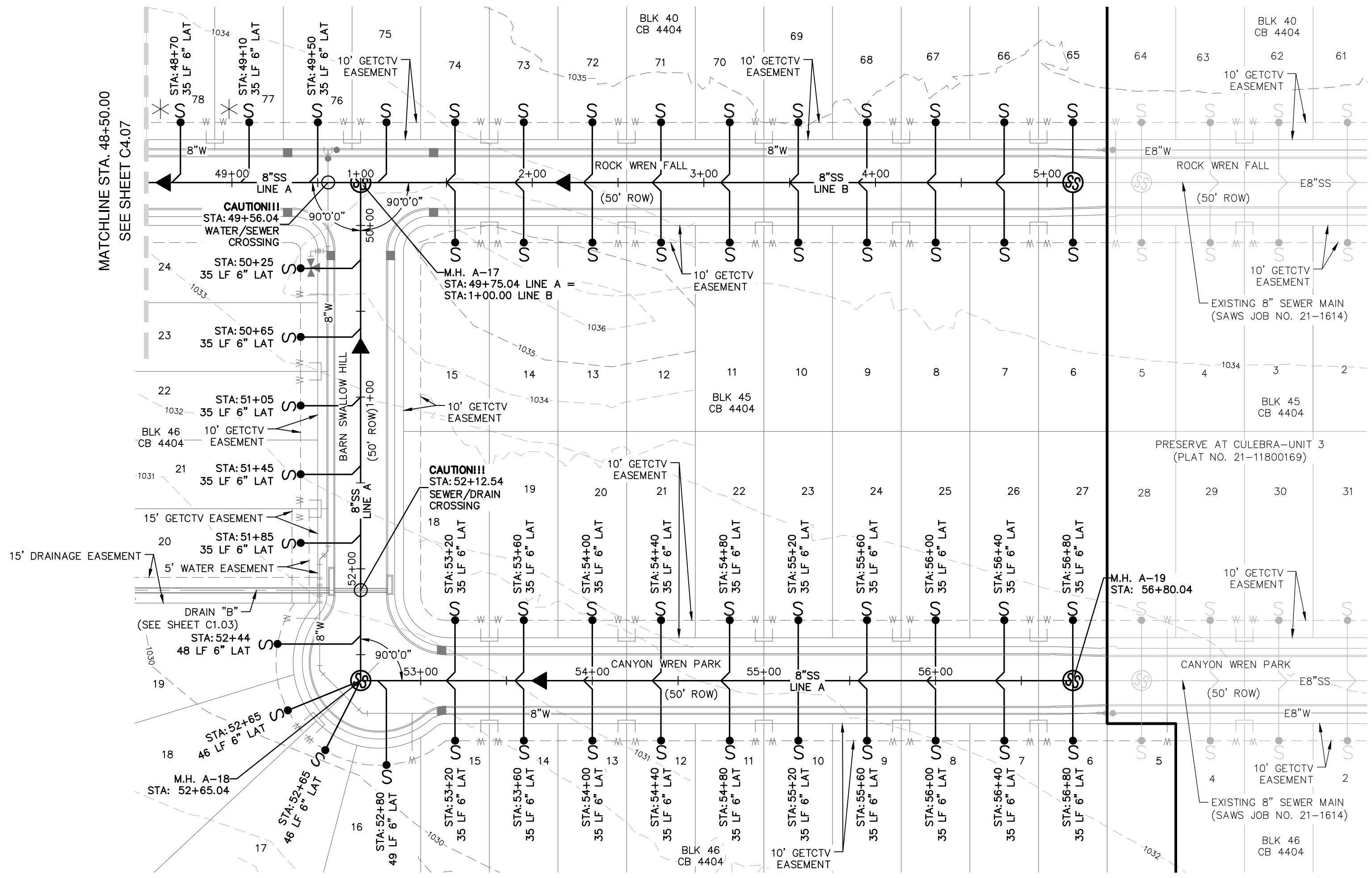
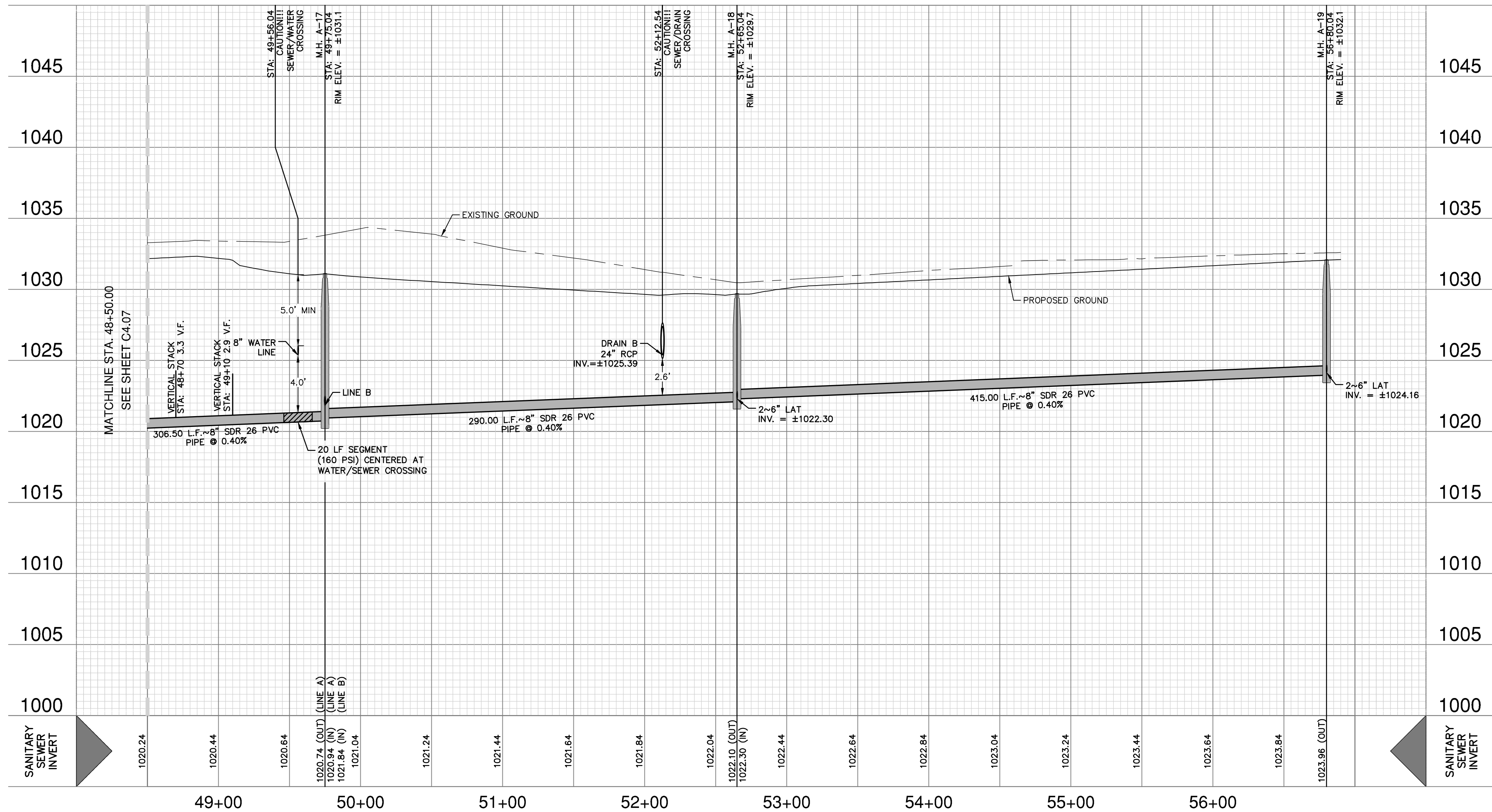
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SANITARY SEWER LINE A**  
PLAN AND PROFILE (STA. 41+50.00 TO 48+50.00)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.07

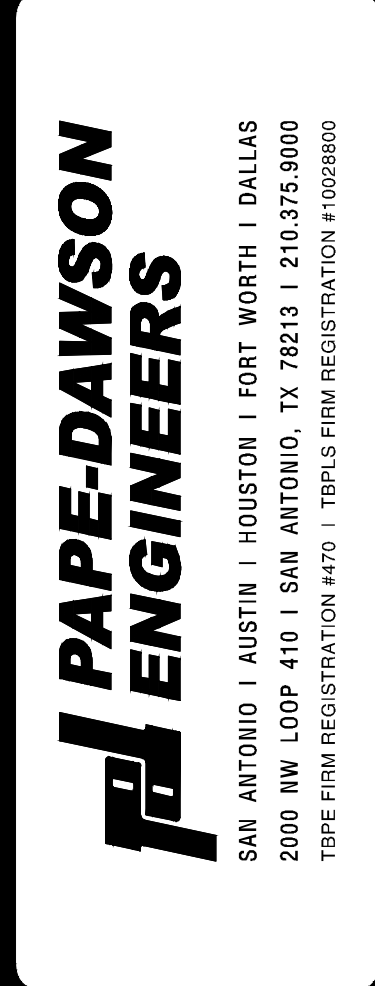


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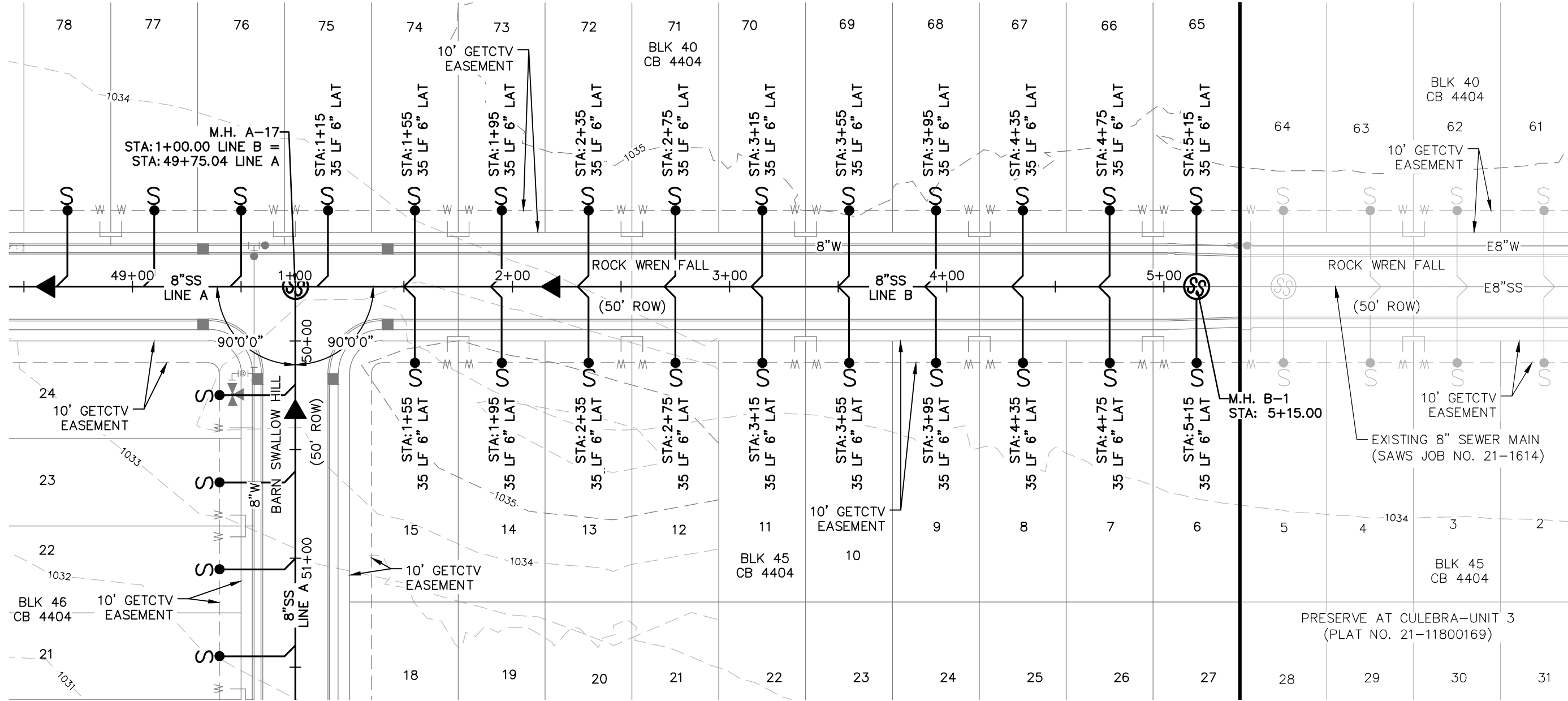
NO.	REVISION	DATE
1.	REVISED SAWS BLOCK	12/14/2023



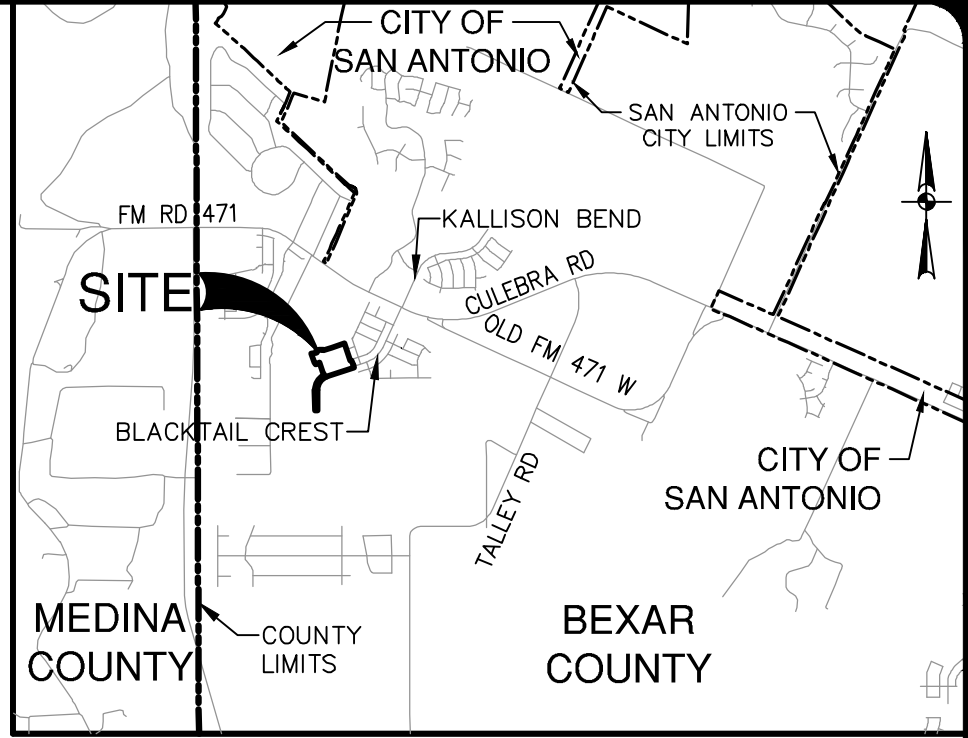
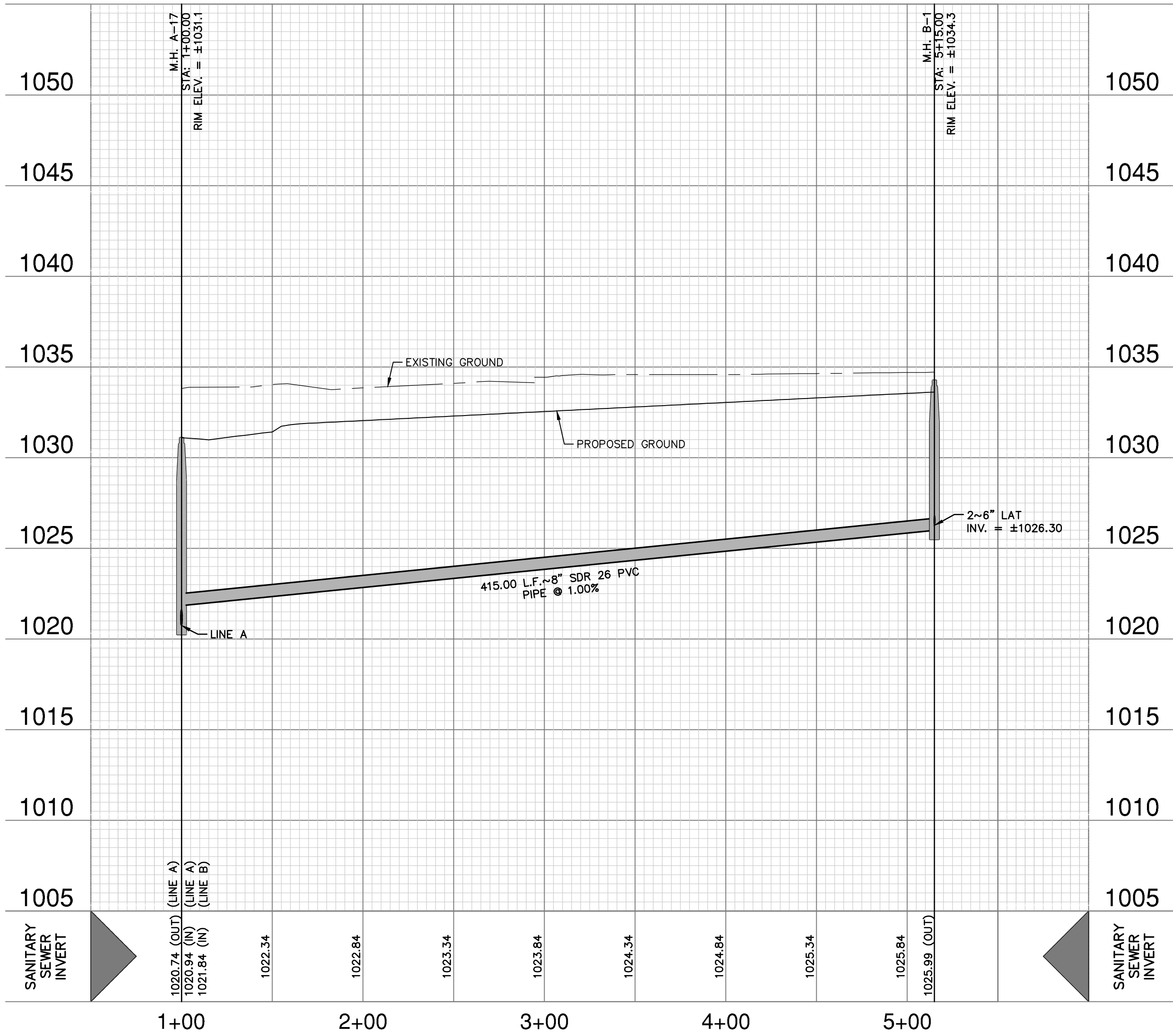


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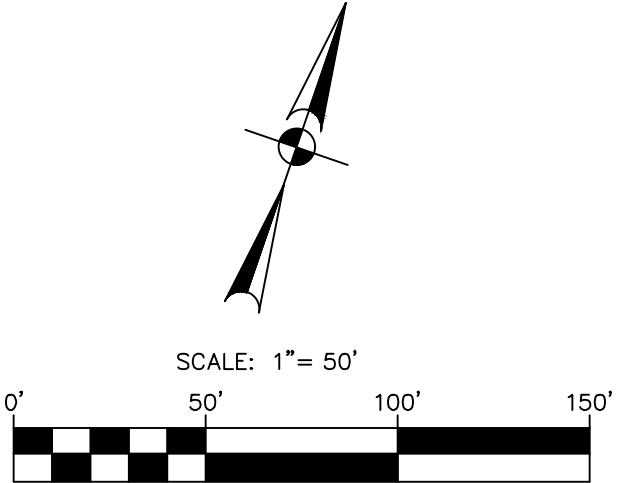
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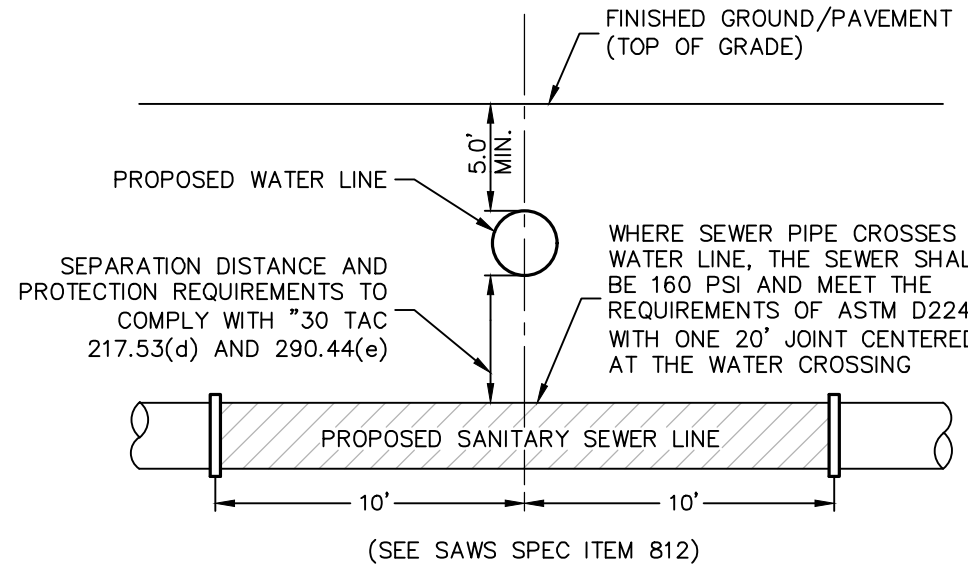
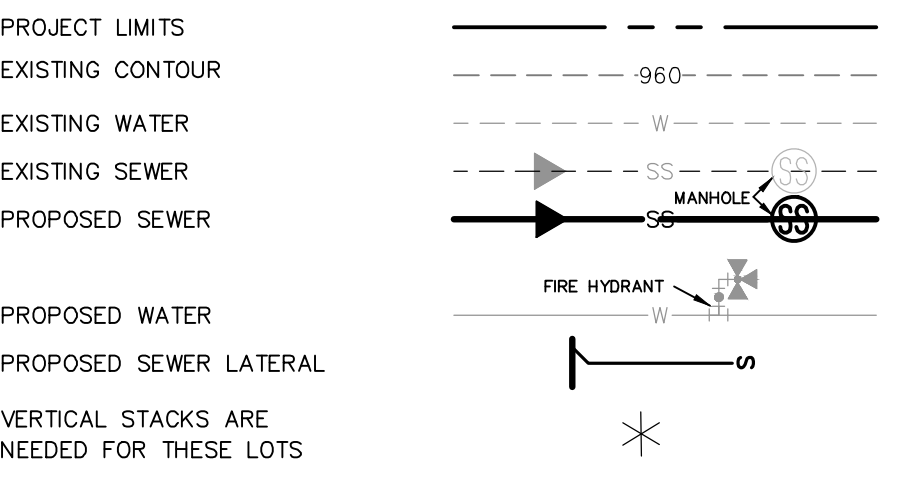
SANITARY SEWER LINE "B"  
STA. 1+00.00 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND



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

**CAUTION!!**  
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, 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.

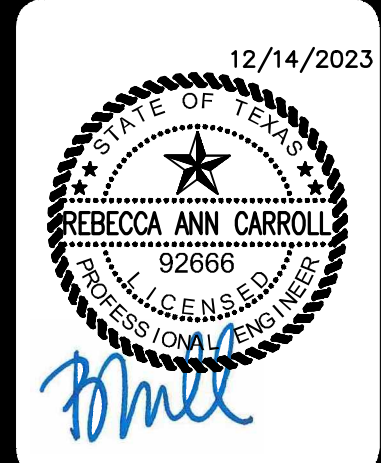
**ROW PERMIT NOTE:**  
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SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.	
ADDRESS: 4800 FREDERICKSBURG ROAD	
CITY: SAN ANTONIO	STATE: TX ZIP: 78229
PHONE# (210) 301-2815	FAX#
SAWS BLOCK MAP# 064610 TOTAL EDU'S 73 TOTAL ACREAGE 21.806	
TOTAL LINEAR FOOTAGE OF PIPE 2,211 LF ~ 8" 15" LF ~ 12" PLAT NO. 23-11800218	
NUMBER OF LOTS 74	SAWS JOB NO. 23-1639

NO.	REVISION	DATE
1.	REVISED SAWS BLOCK	12/14/2023



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

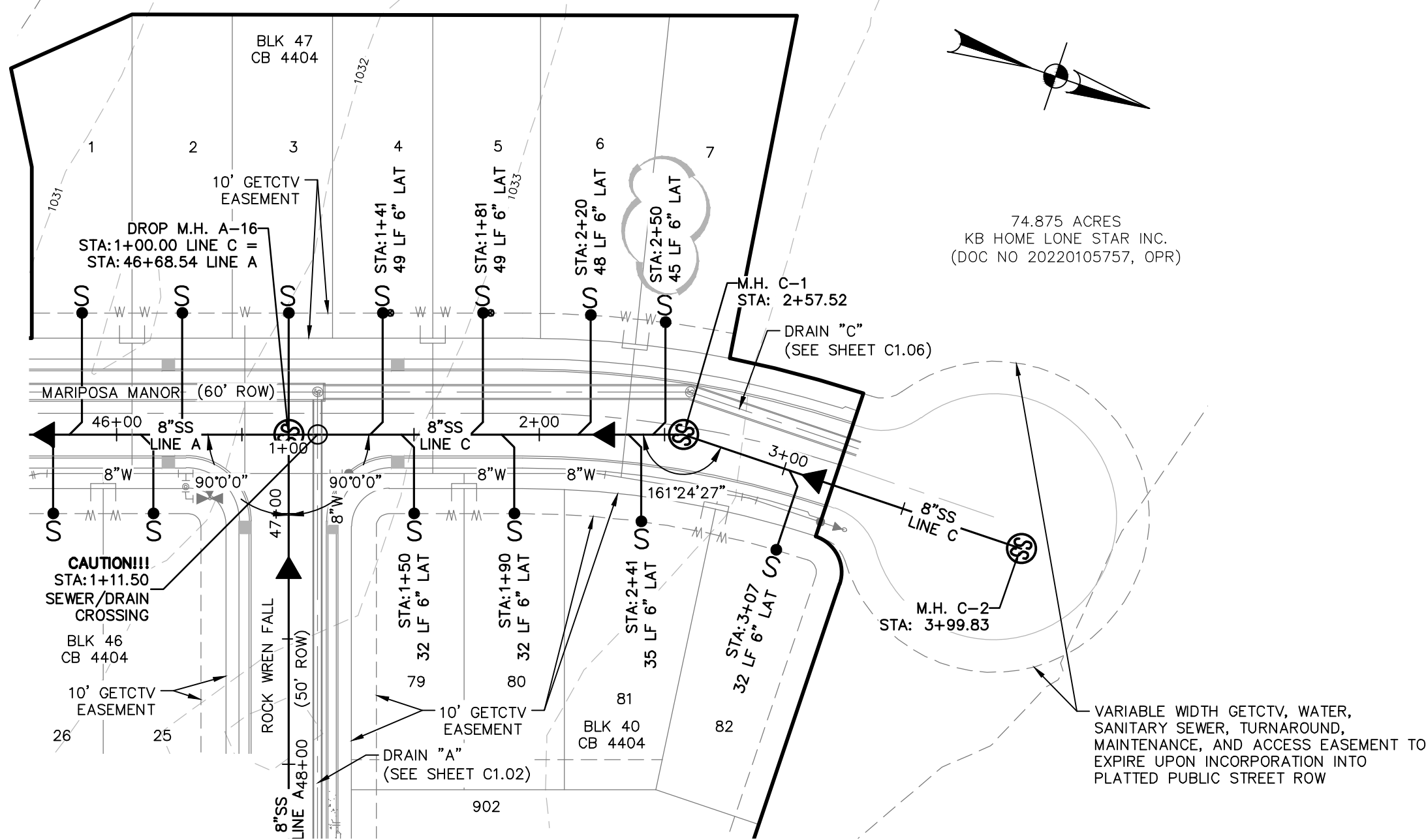
**SANITARY SEWER LINE B**  
PLAN AND PROFILE

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE DECEMBER 2023
DRAWN JB
CHECKED DRAWN GK
SHEET C4.09

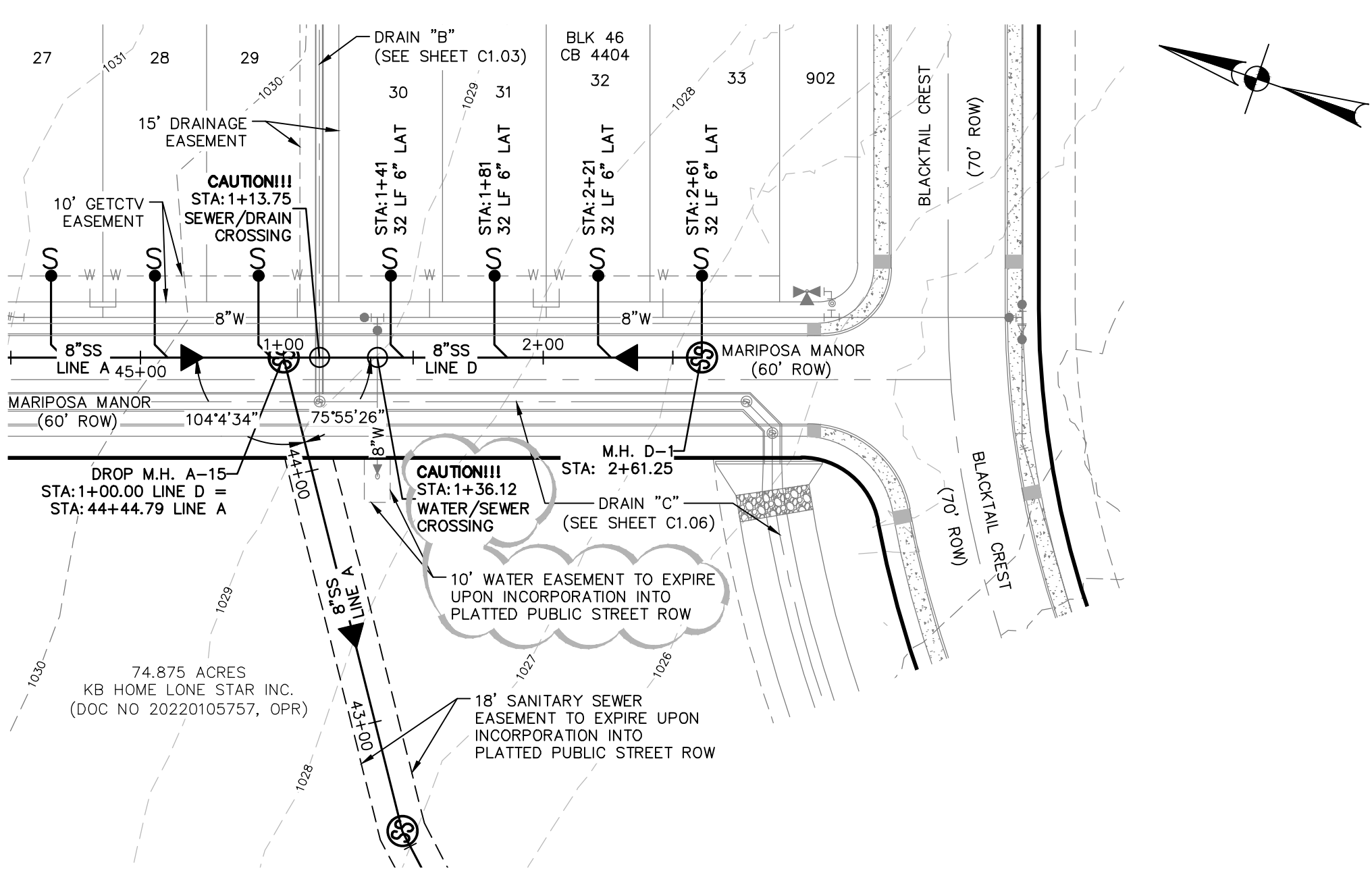
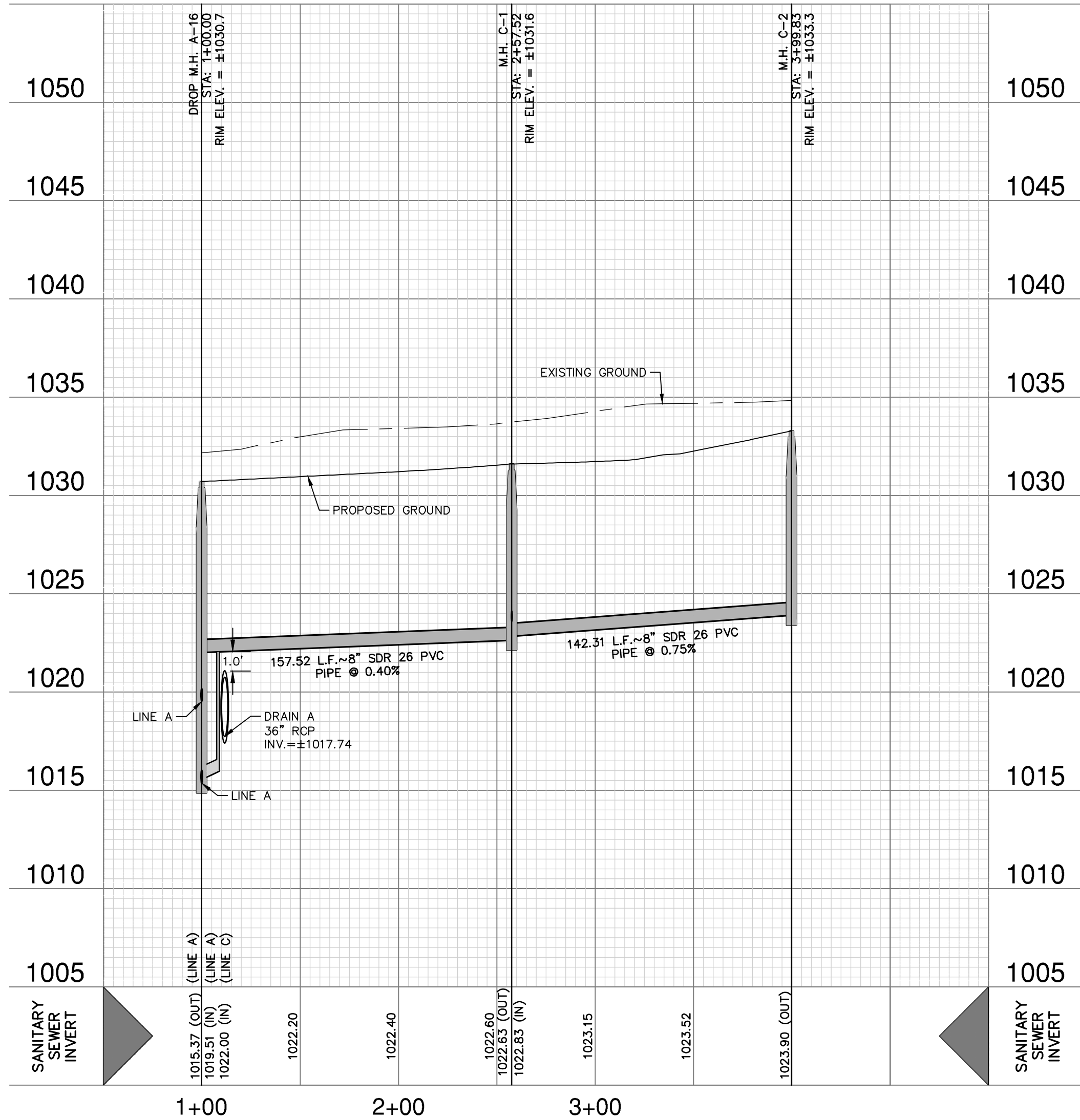


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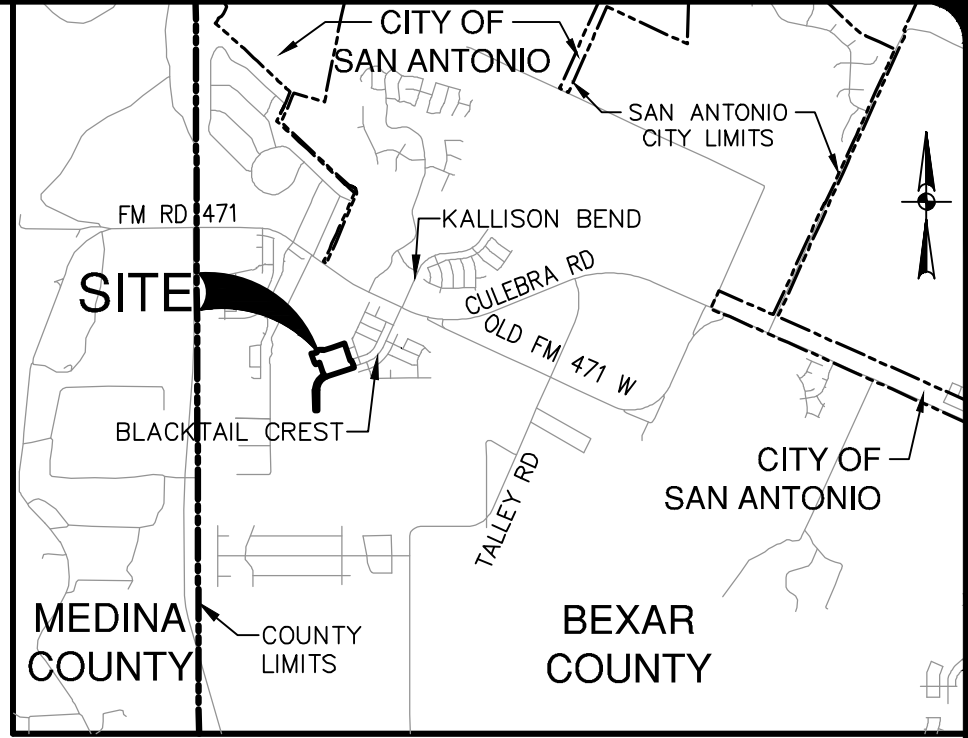
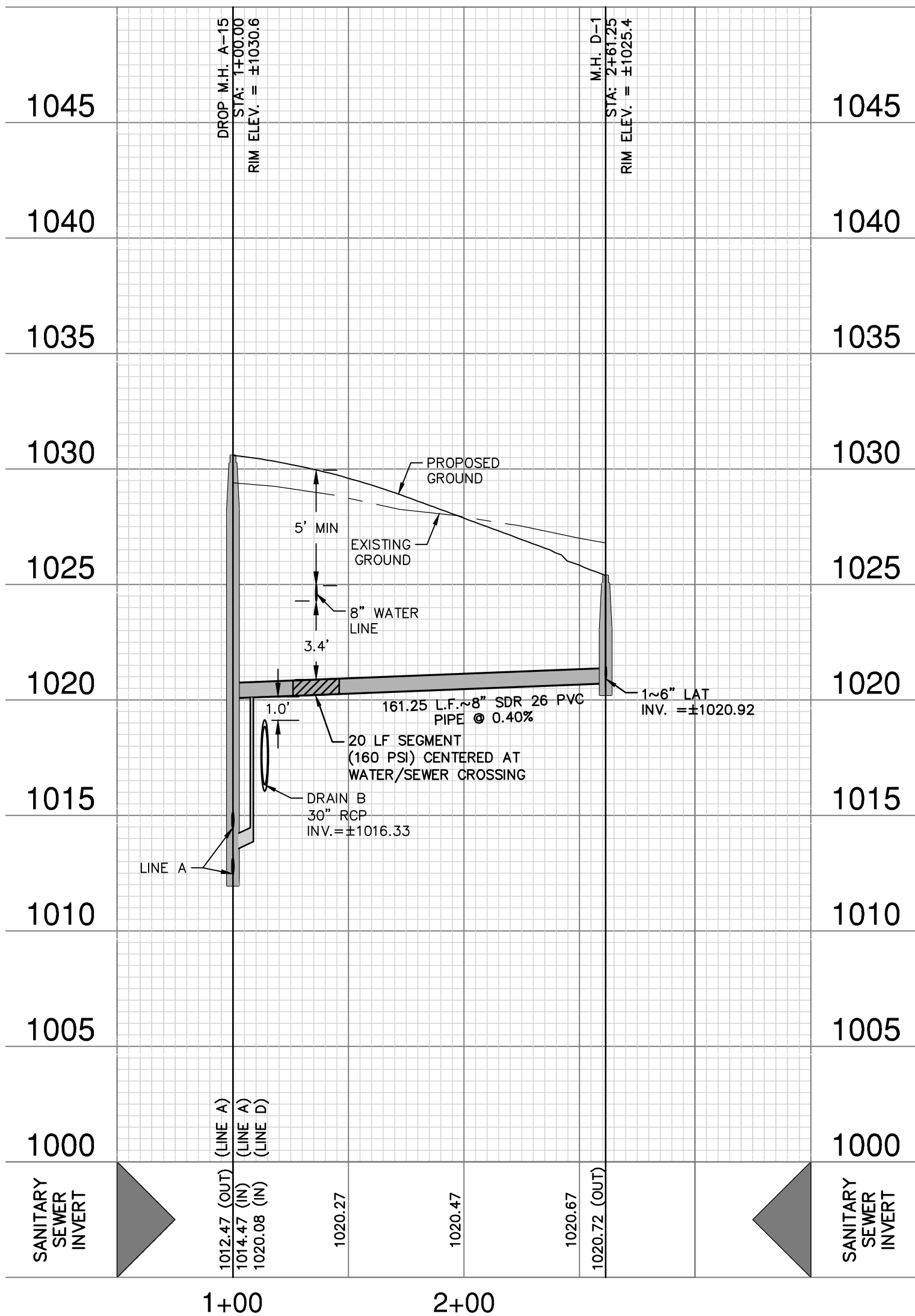
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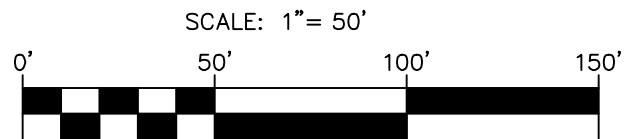
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HORIZONTAL SCALE: 1" = 50'



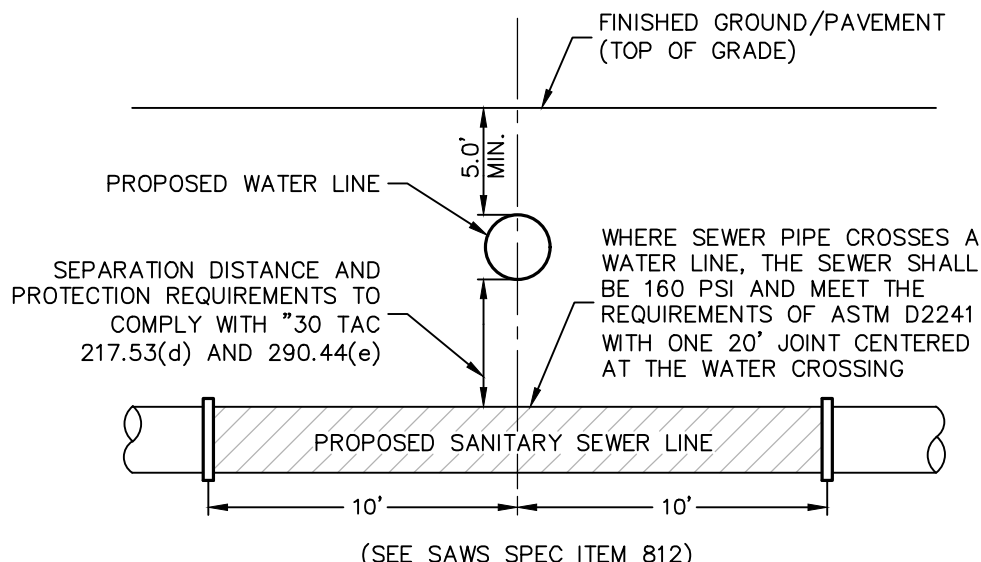
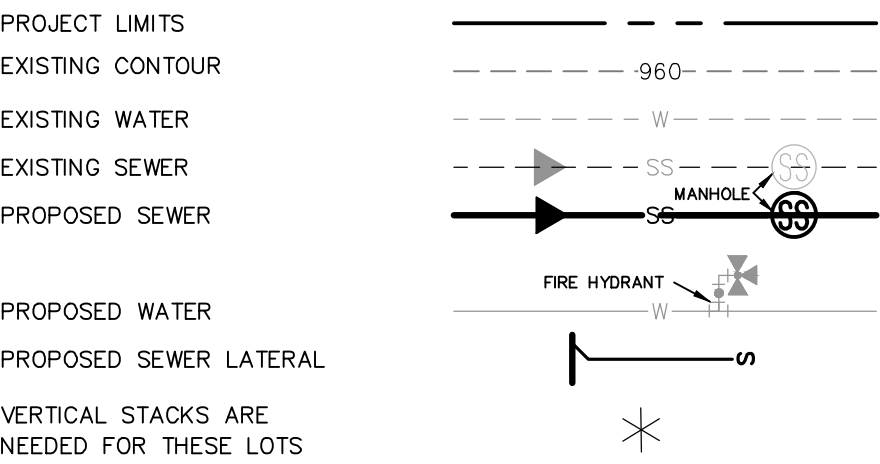
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STA. 1+00.00 TO END  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND



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

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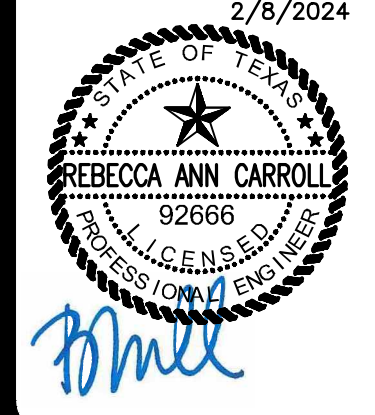
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NUMBER OF LOTS 74	SAWS JOB NO. 23-1639

NO.	REVISION	DATE
1.	REVISED SEWER EASEMENT AND	12/14/2023
2.	SAWS BLOCK	
3.	REVISED LINE D PROFILE; ADDED	02/02/2024
4.	WATER CROSSING AND WYE	



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
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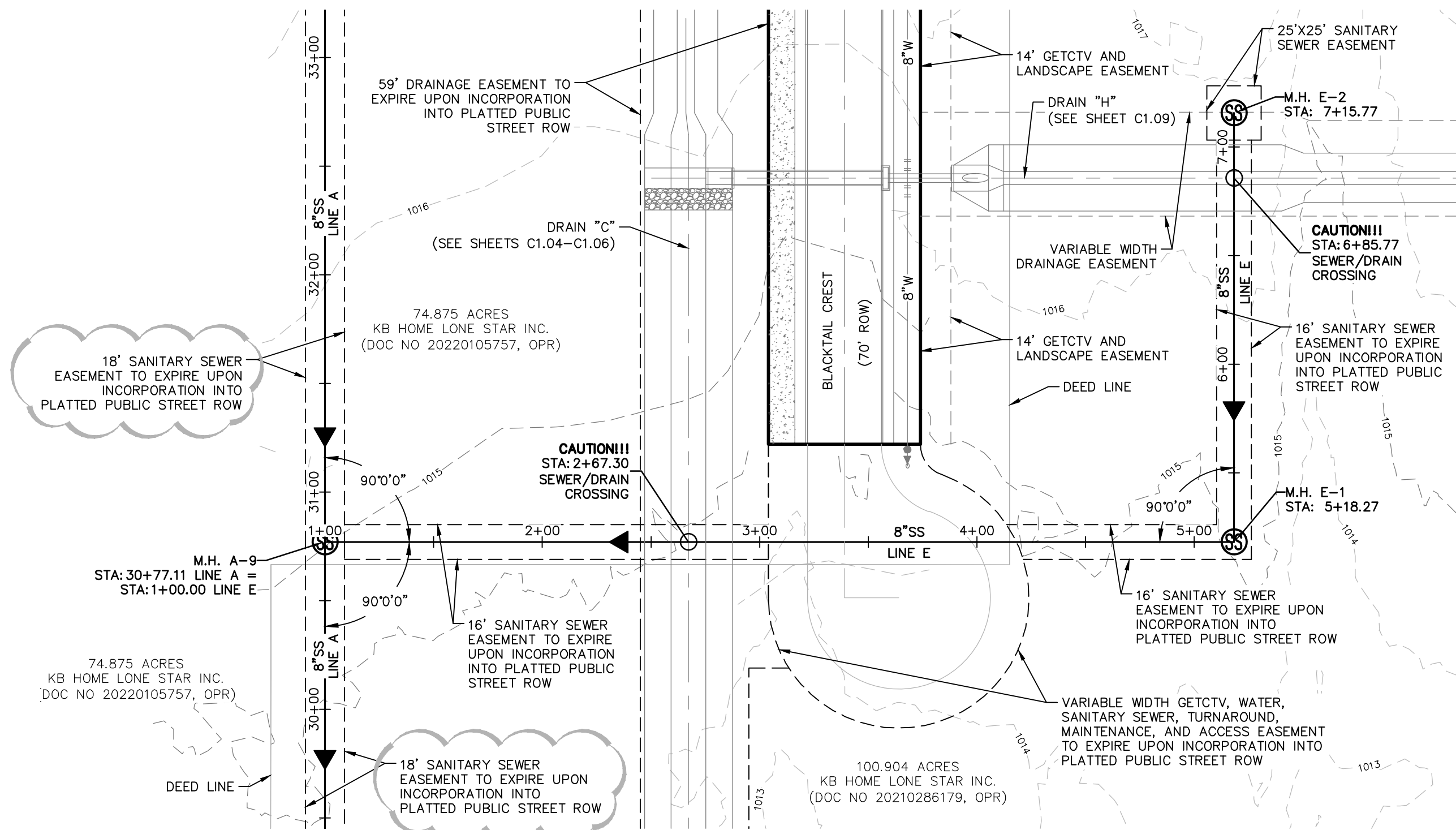
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
SANITARY SEWER LINES C & D  
PLAN AND PROFILE

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.10



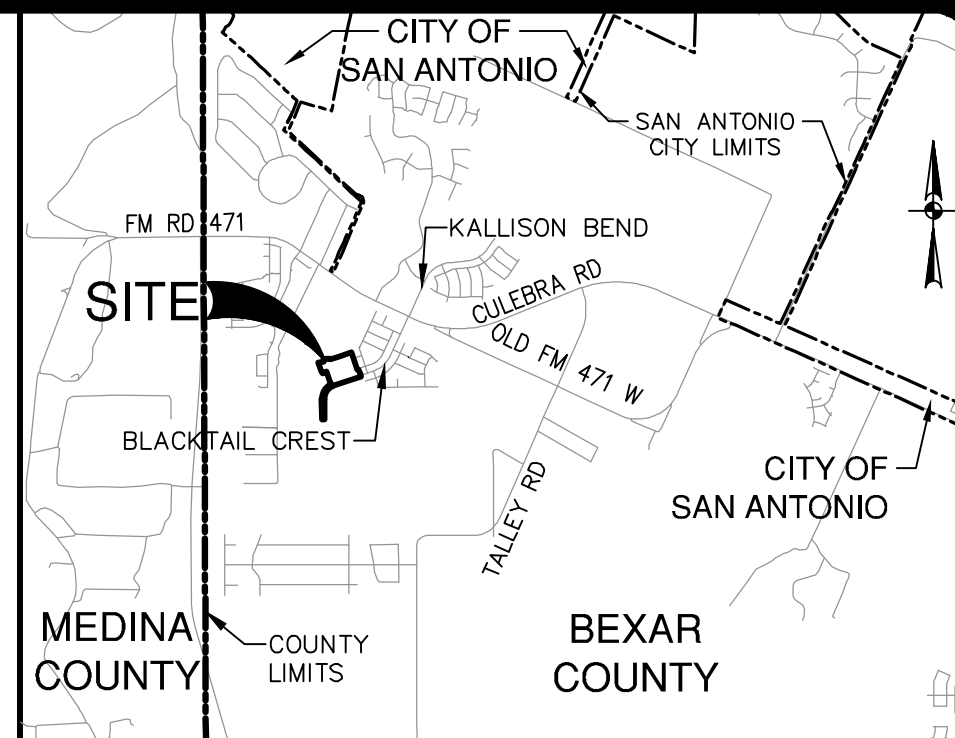
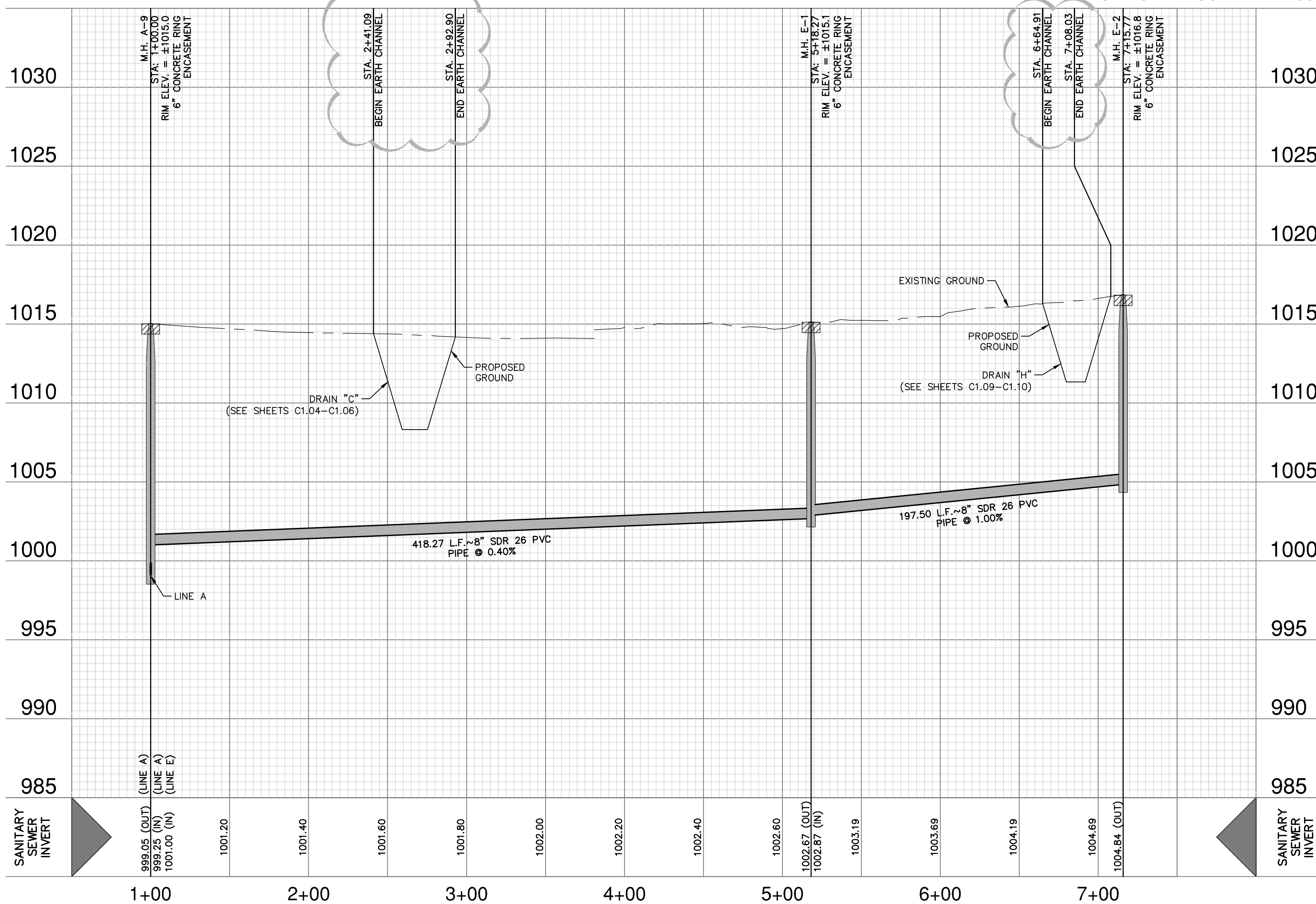
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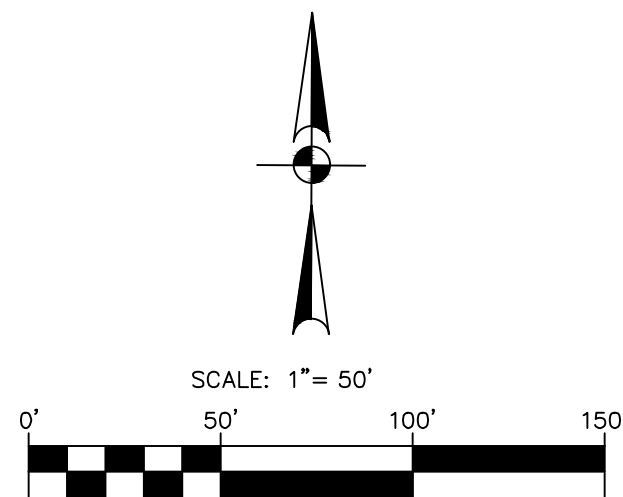


SANITARY SEWER LINE "E"  
STA. 1+00.00 TO END

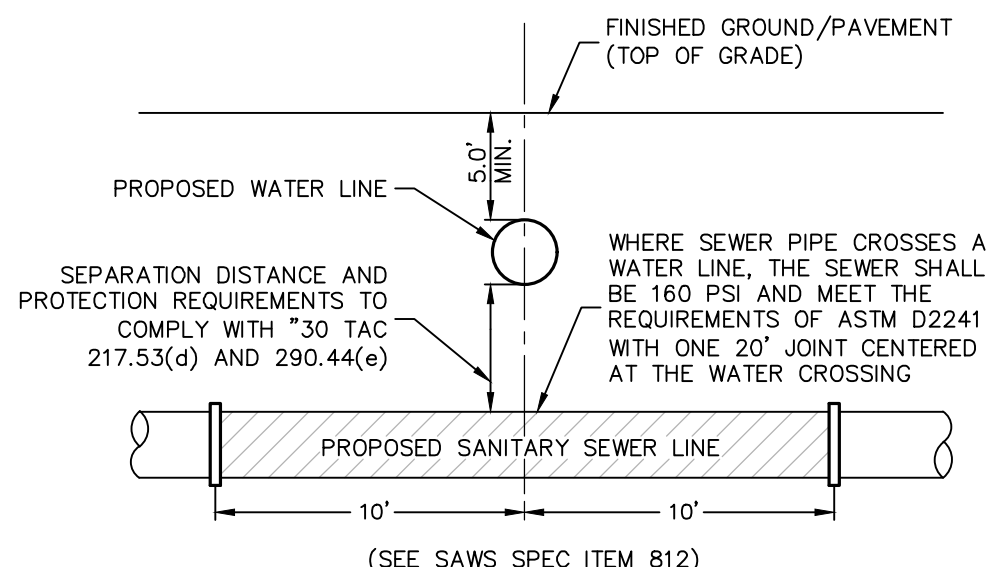
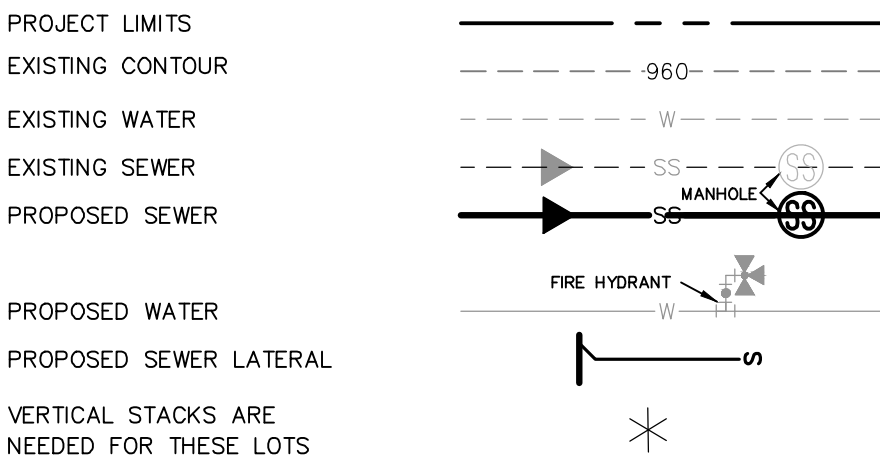
VERTICAL SCALE: 1" = 5'  
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LOCATION MAP  
NOT-TO-SCALE



### SEWER LEGEND



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

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2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**SANITARY SEWER LINE E**  
**PLAN AND PROFILE**

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE DECEMBER 2023
DESIGNER JB
CHECKED DRAWN GK
SHEET C4.11

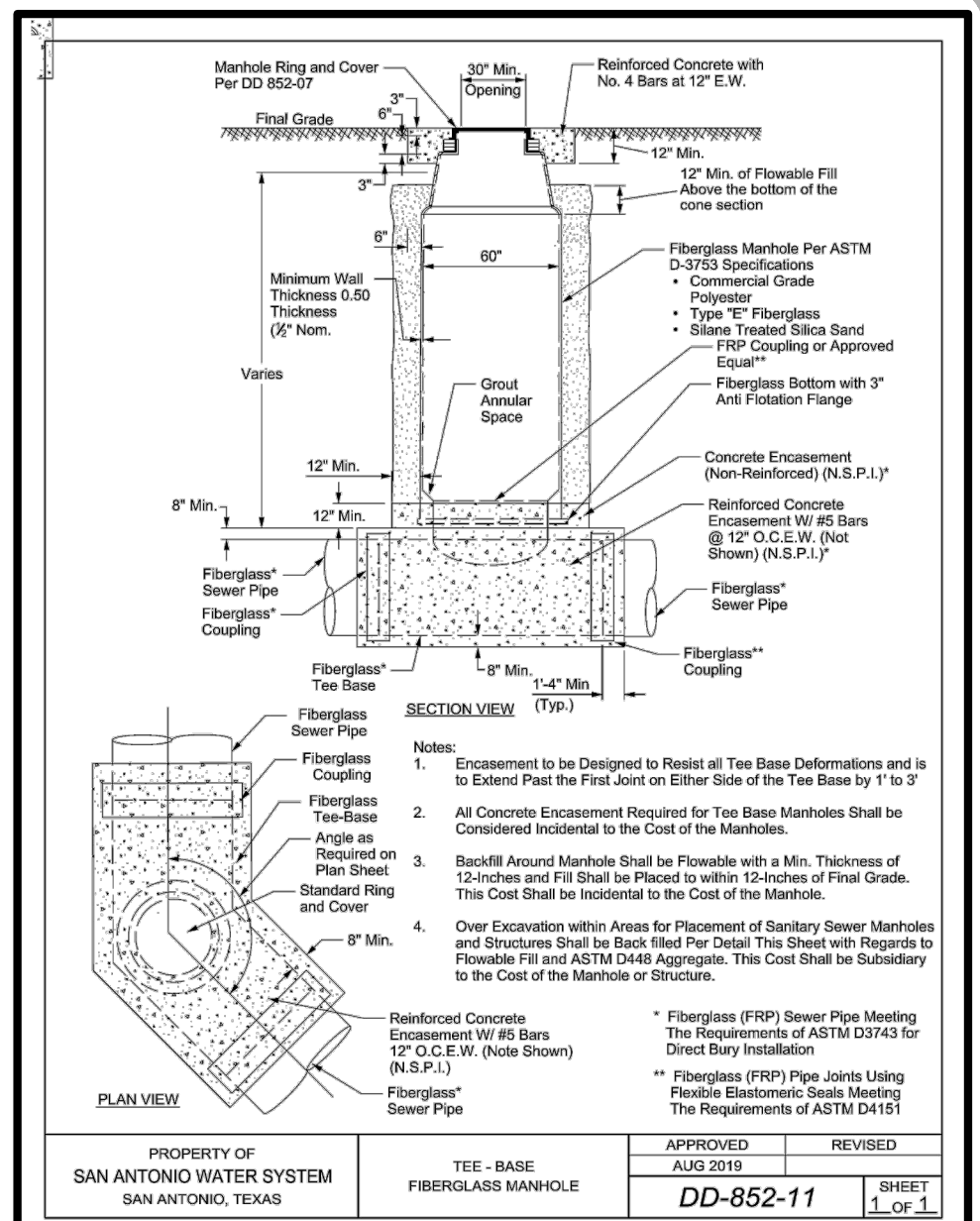


SAWS CONSTRUCTION NOTES

(LAST REVISED JANUARY 2022)

SAWS GENERAL SECTION

- 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).
- 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.
- THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS\\_CENTER/SPECS](http://www.saws.org/business_center/specs). UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.
- THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
- 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.
- 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 WIPERS LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
  - SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://www.saws.org/service/locates)
  - COSA DRAINAGE (210) 207-0724 OR (210) 207-5026
  - COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
  - COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
  - TEXAS STATE WDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- 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.
- 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.
- THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
- 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](mailto: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](mailto:CONSTWORKREQ@SAWS.ORG).  
  
ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
- 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.
- A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.



SAWS SEWER NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
  - A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-2014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
  - B.ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
  - C.CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
  - D.CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
  - E.CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
  - F.MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISIONING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.
- SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.
- NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.
- IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".
- PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
- SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44C(4)(b). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.
- ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)
- SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.
- MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
- ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

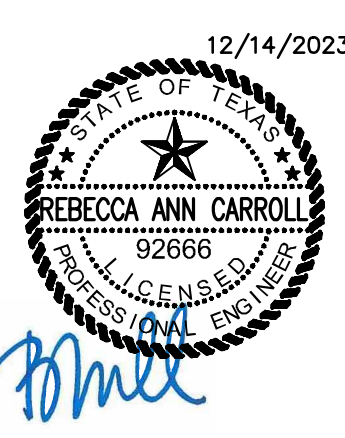
PROJECT SEWER NOTES

- ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 10' PAST THE PROPERTY LINE AND CAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2" X 4" STAKE, FOUR (4) FEET LONG, TWO (2) FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICE. NO SEPARATE PAY ITEM.
- CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C4.30.
- NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO THE PROPERTY LINE.
- WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 150 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.
- CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATIONS 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASEMENT.
- ALL SEWER PIPES SHALL BE 8" PVC (SDR 26), UNLESS OTHERWISE NOTED.
- CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
- CONTRACTOR SHALL PROTECT ALL EXISTING FENCES, ANY FENCE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- 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.
- CONCRETE RING ENCASEMENT TO BE INSTALLED ON ALL MANHOLES AND, WITHIN LIMITS OF PAVEMENT, BE INSTALLED TO THE TOP OF THE BASE LAYER WITH A MINIMUM OF 2" OF ASPHALT ON TOP OF THE RING ENCASEMENT.
- MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.
- ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.
- IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISH PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATIONS SUCH THAT THE TOP OF MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.
- ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

SEWER: WEST WATERSHED-LEON CREEK W.R.C.

DEVELOPER'S NAME: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 - TOTAL EDU'S 73 - TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE 2,845 LF - 16\"/>			
NUMBER OF LOTS 74	SAWS JOB NO. 23-11800218		

NO.	REVISION	DATE
1.	REVISED SAWS BLOCK AND ADDED DETAIL	12/14/2023



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

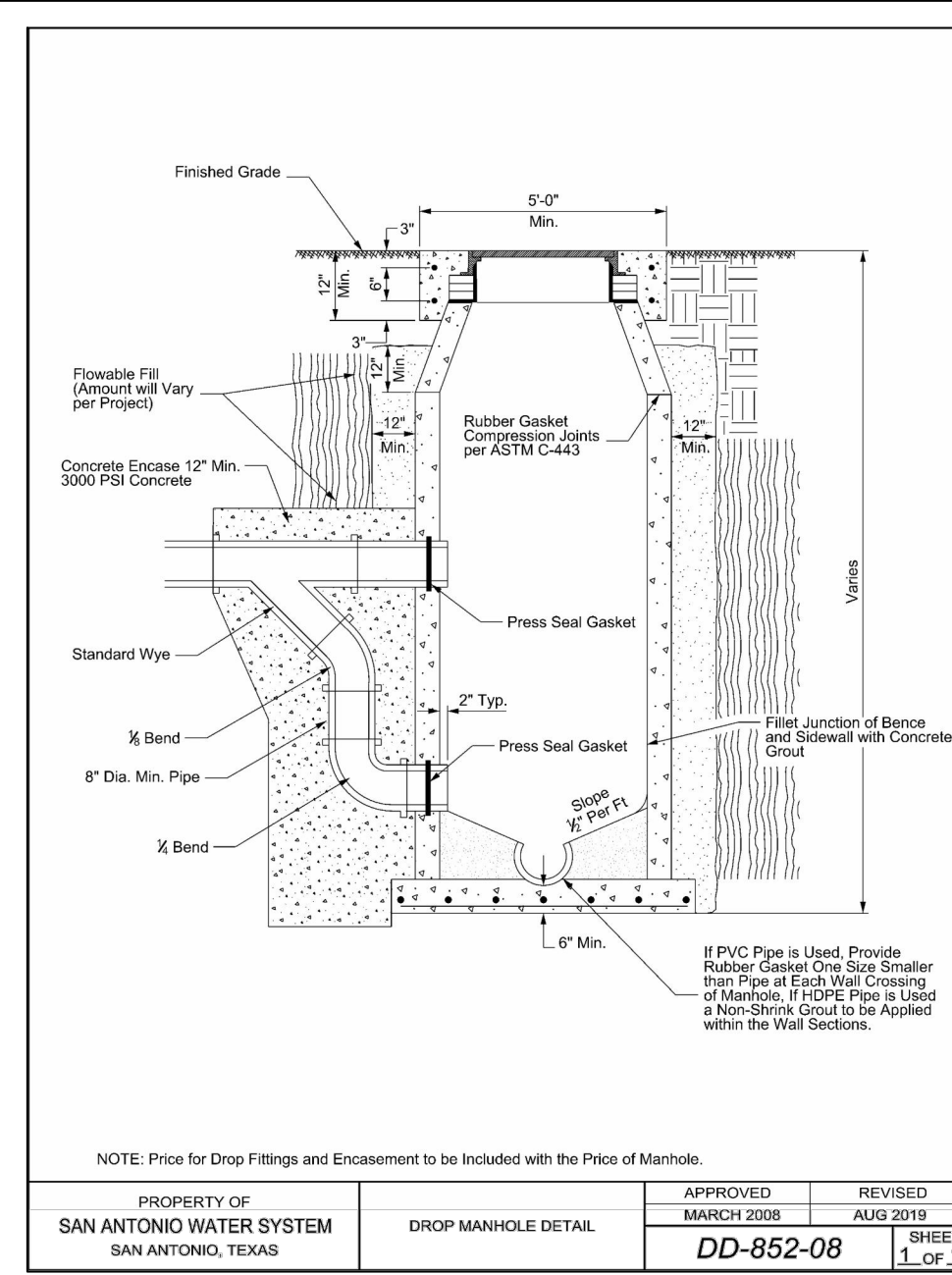
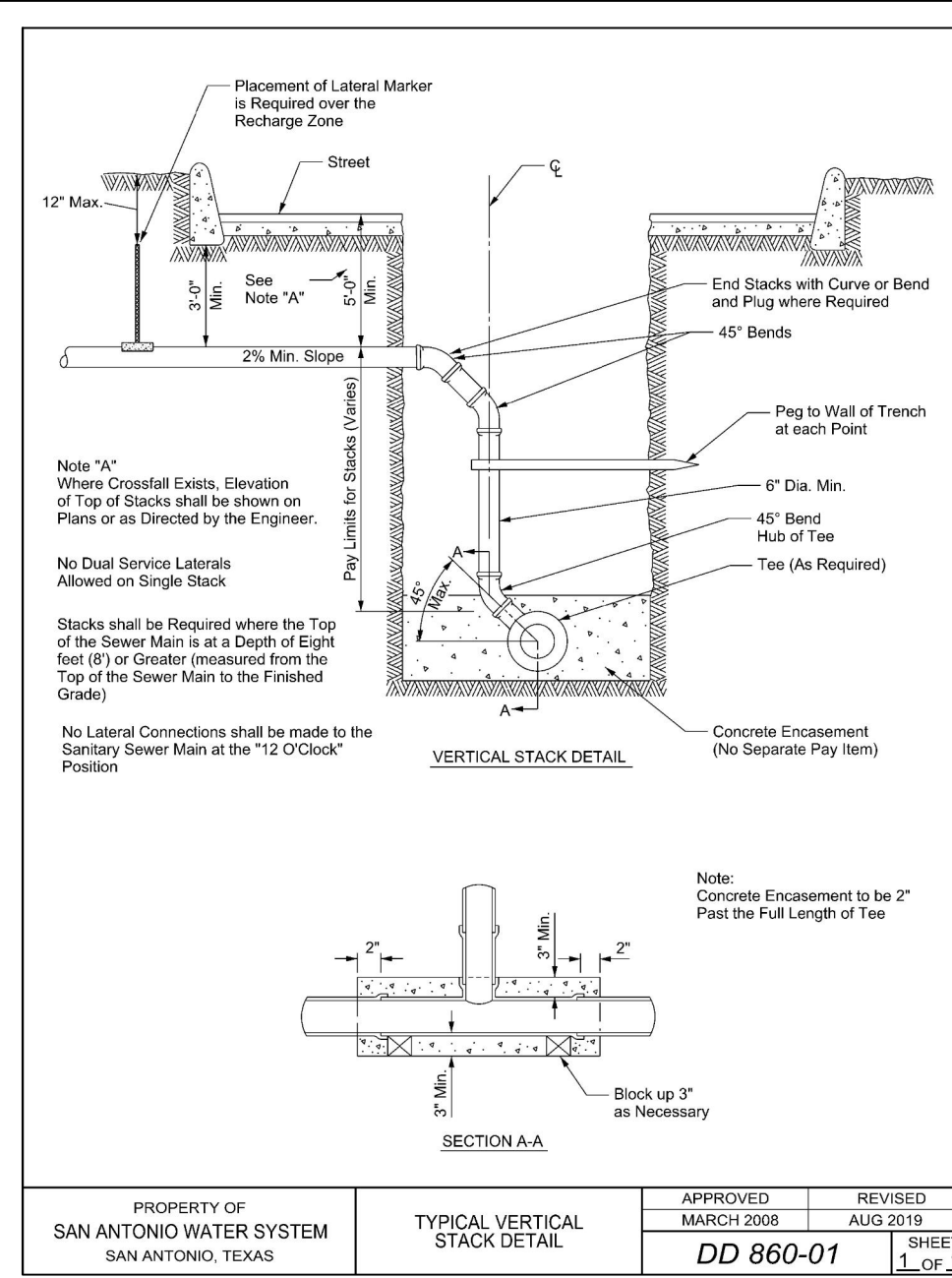
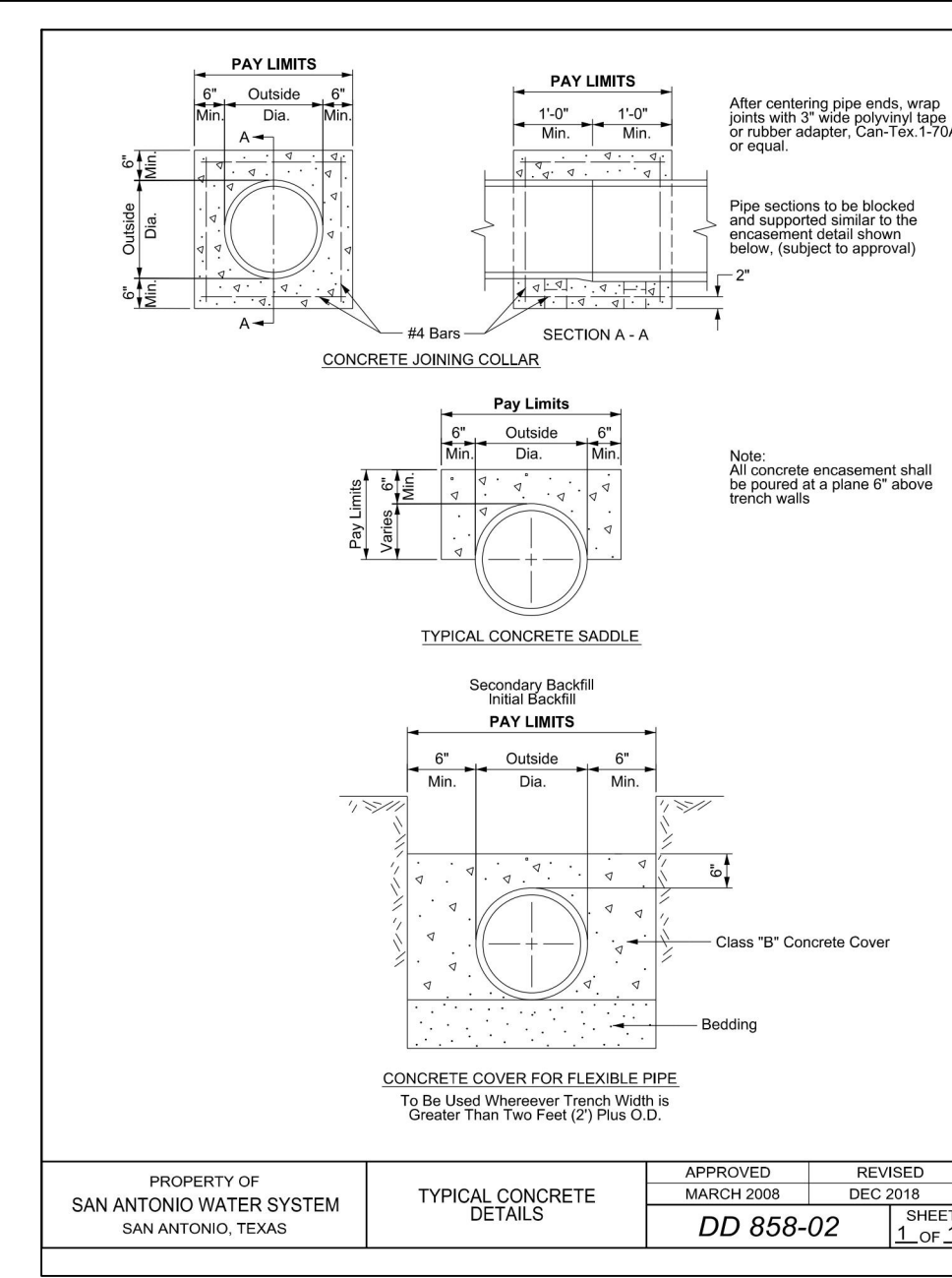
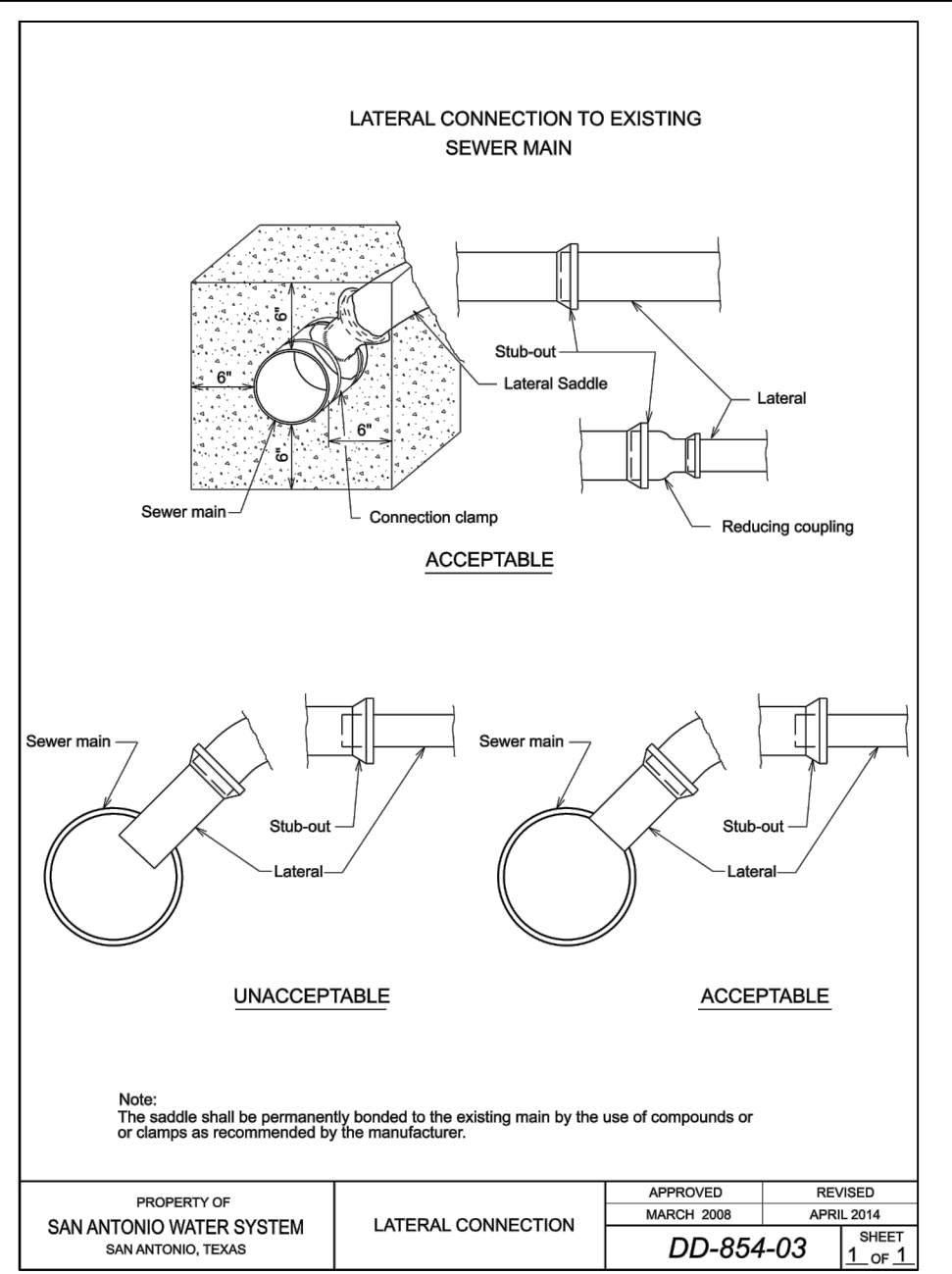
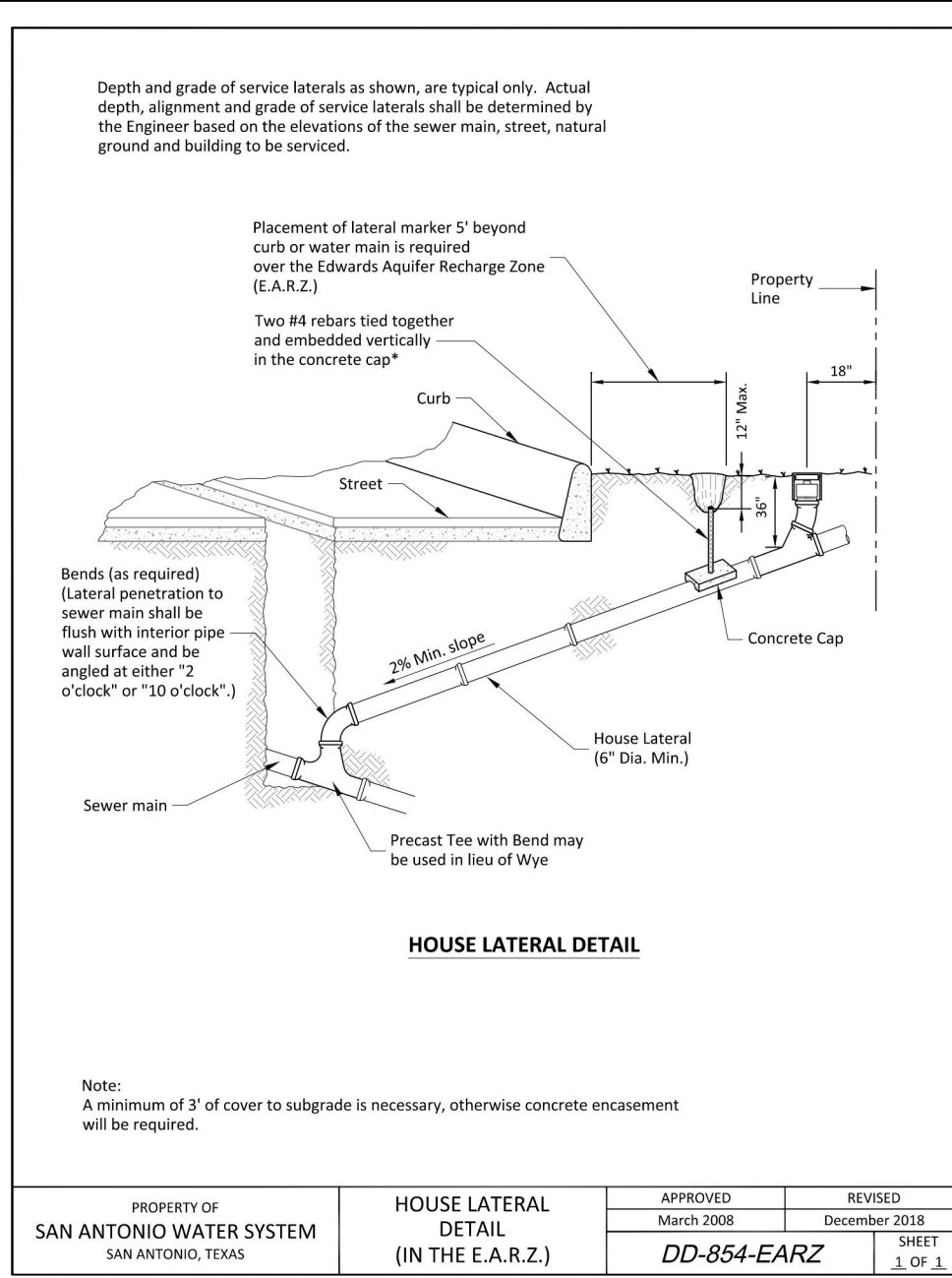
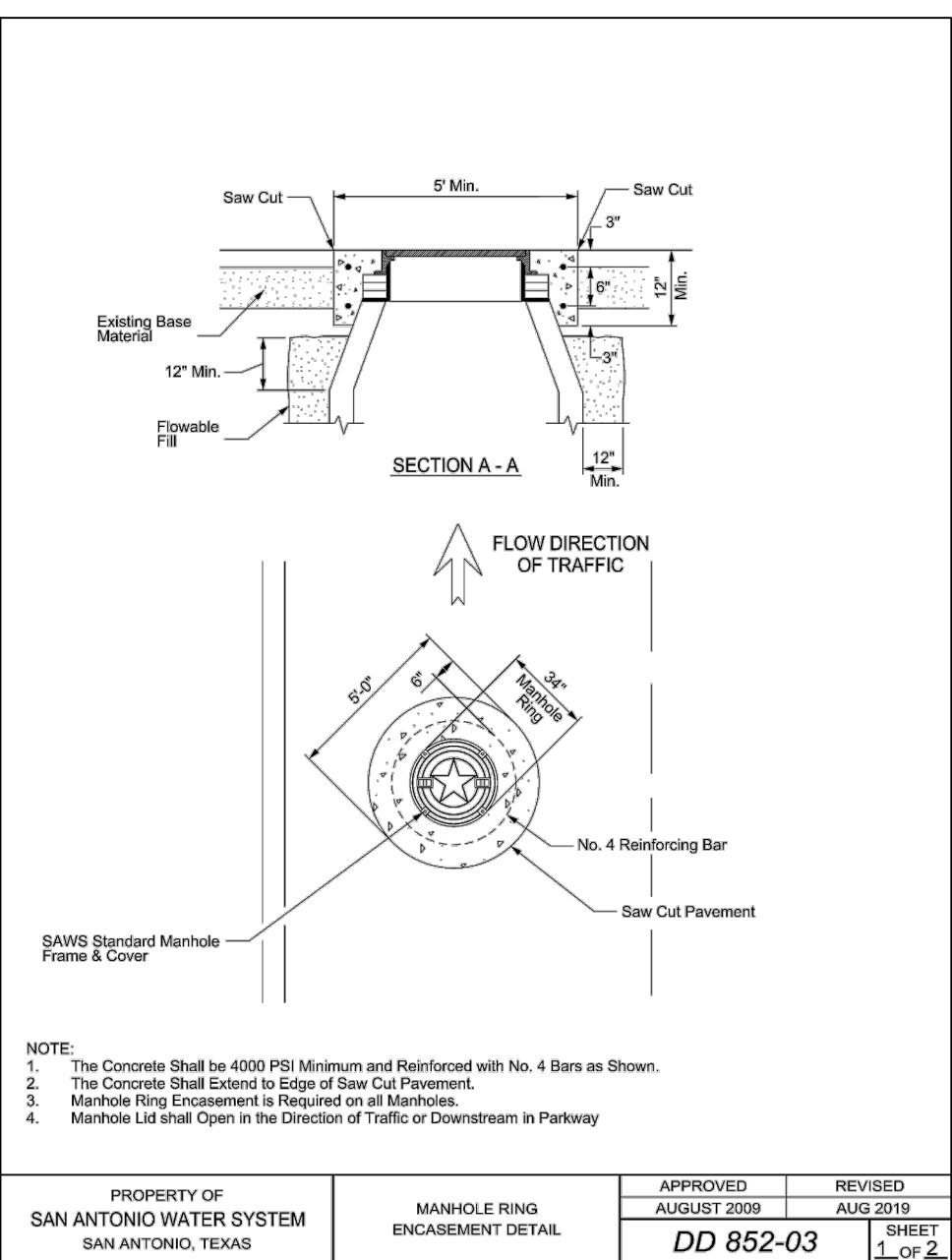
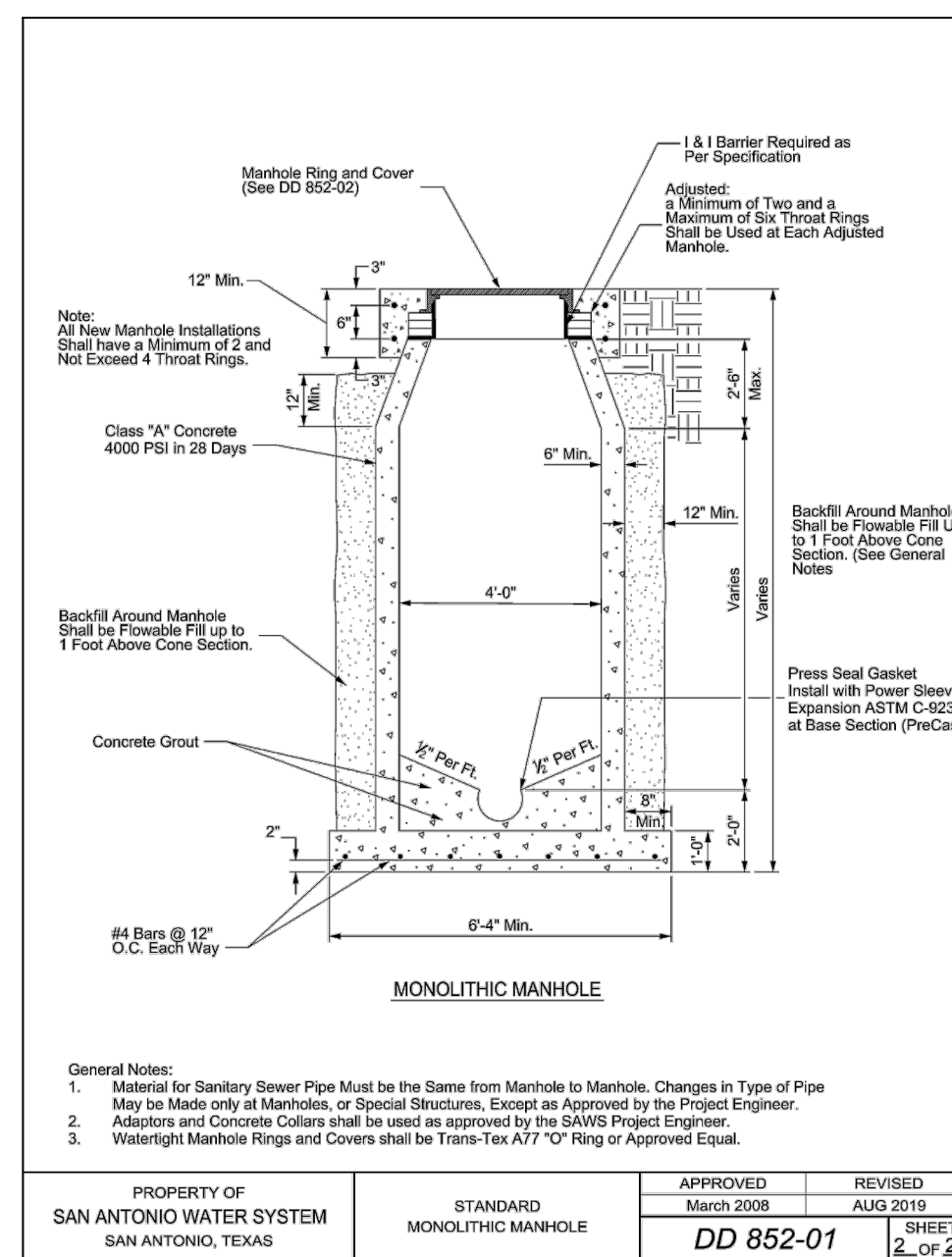
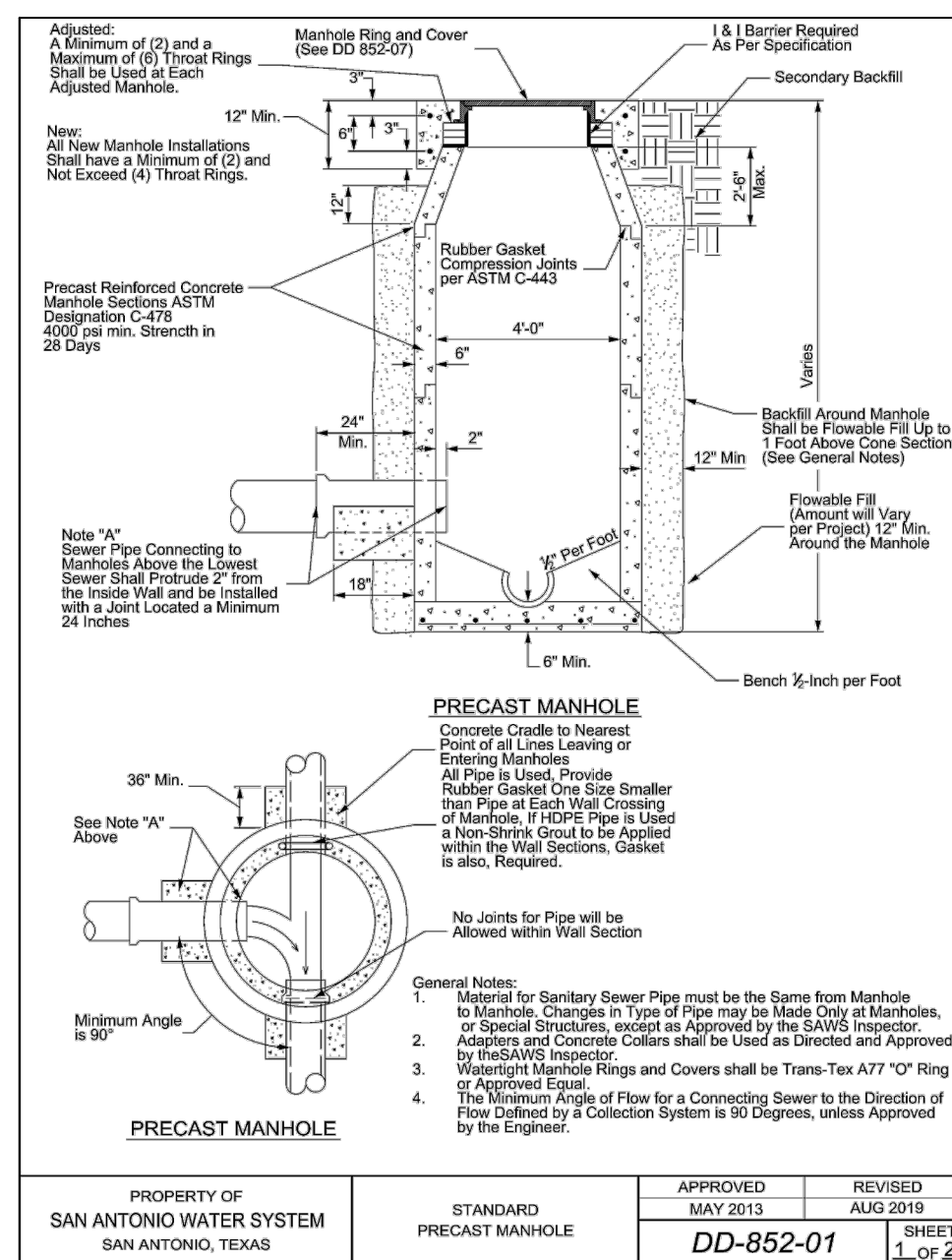
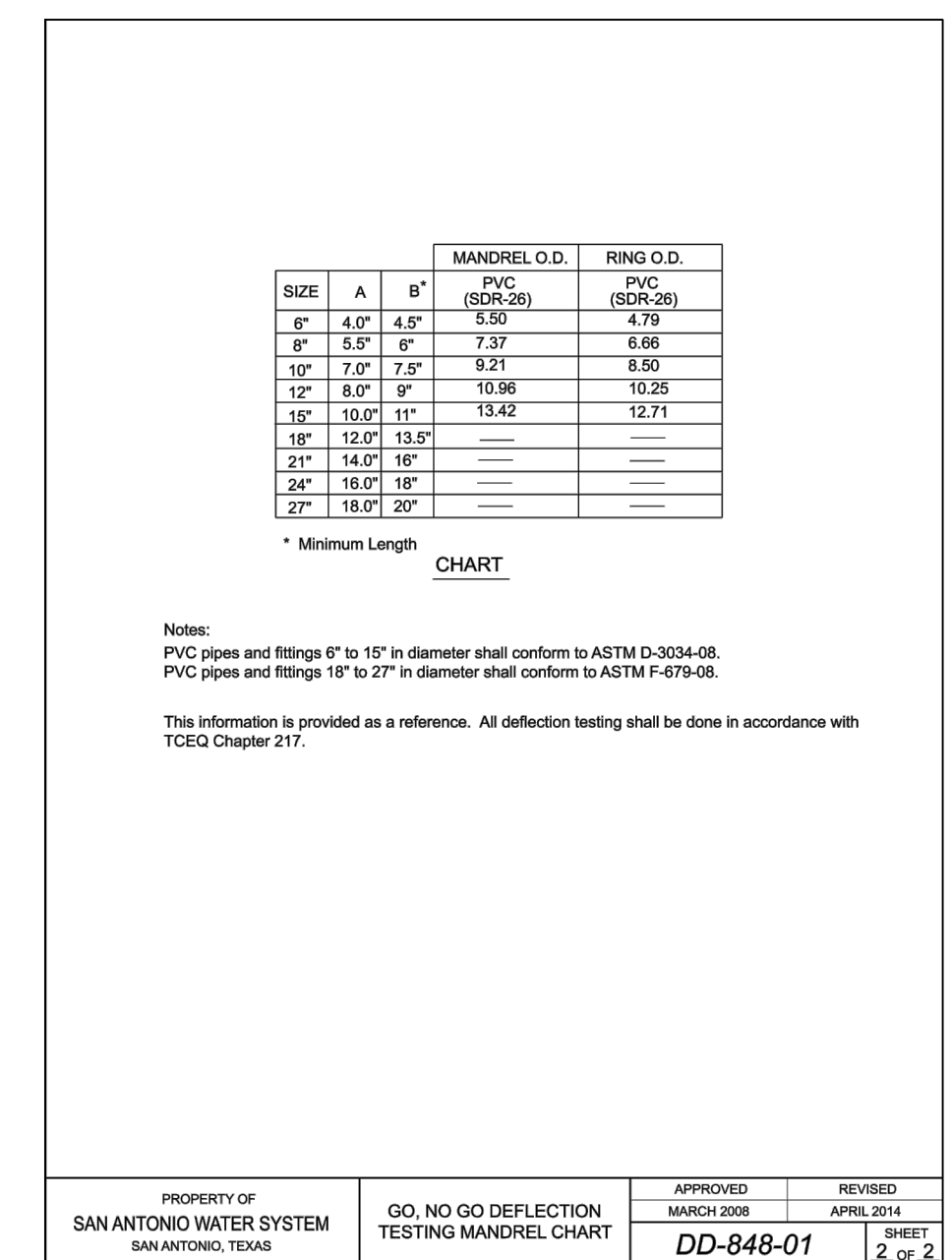
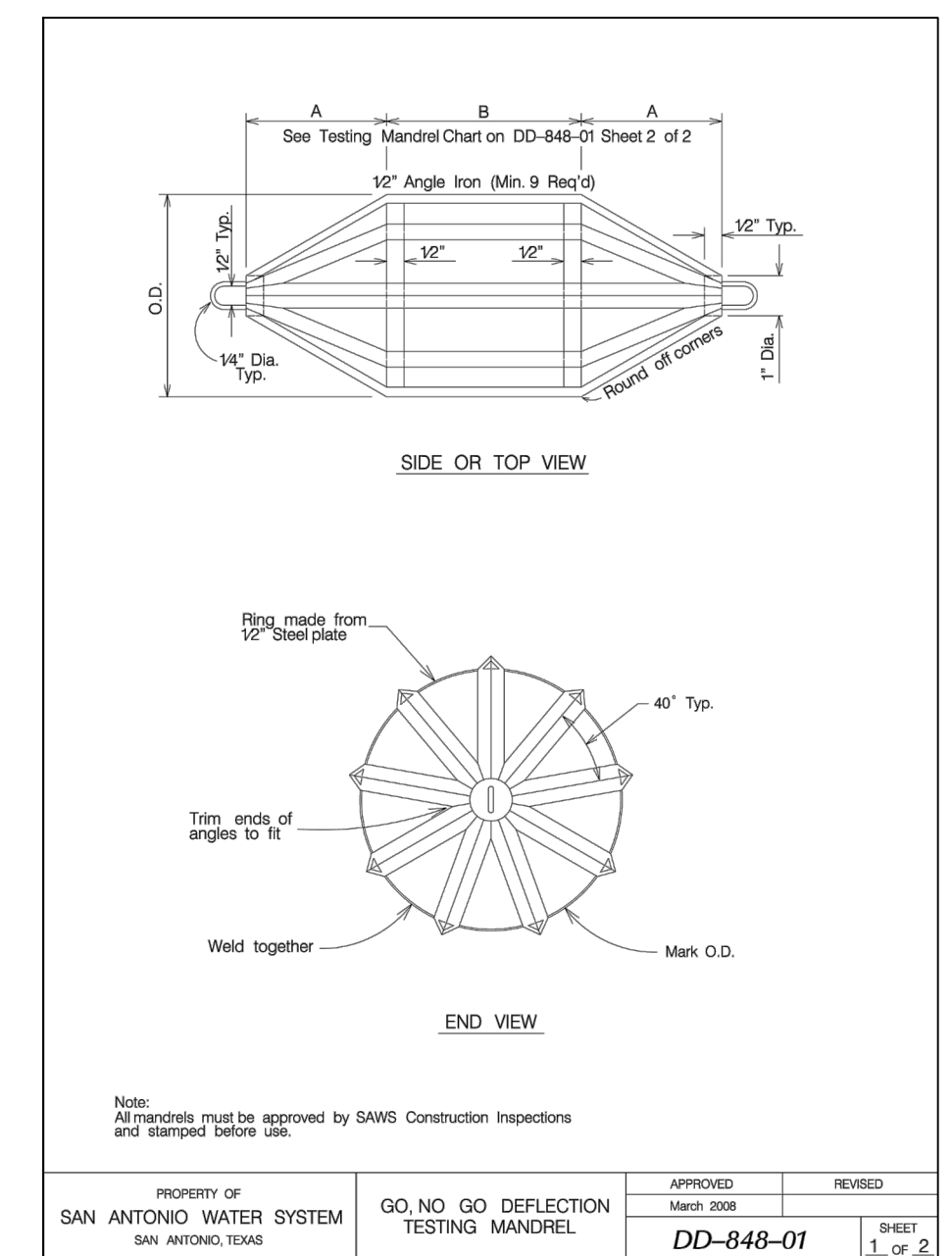
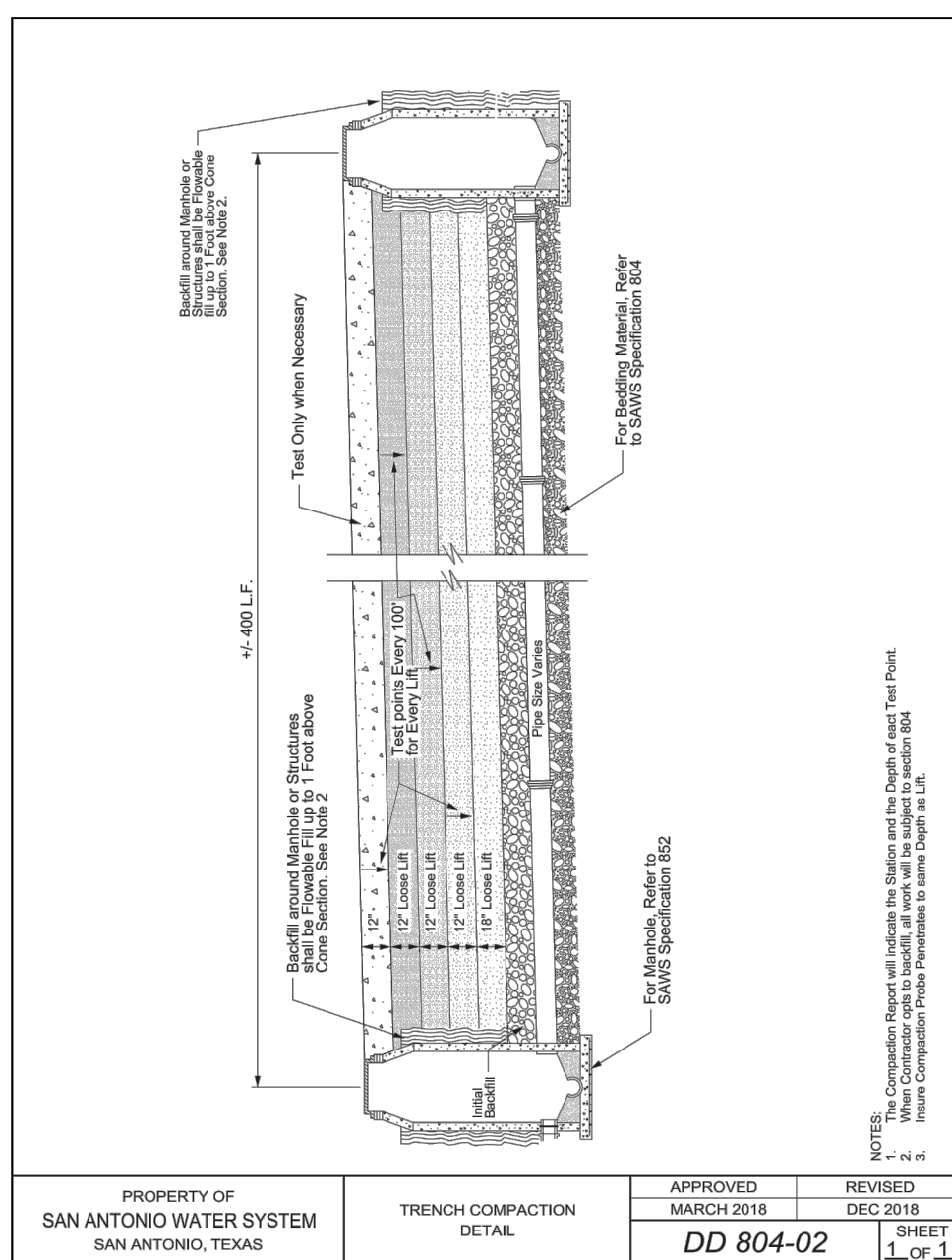
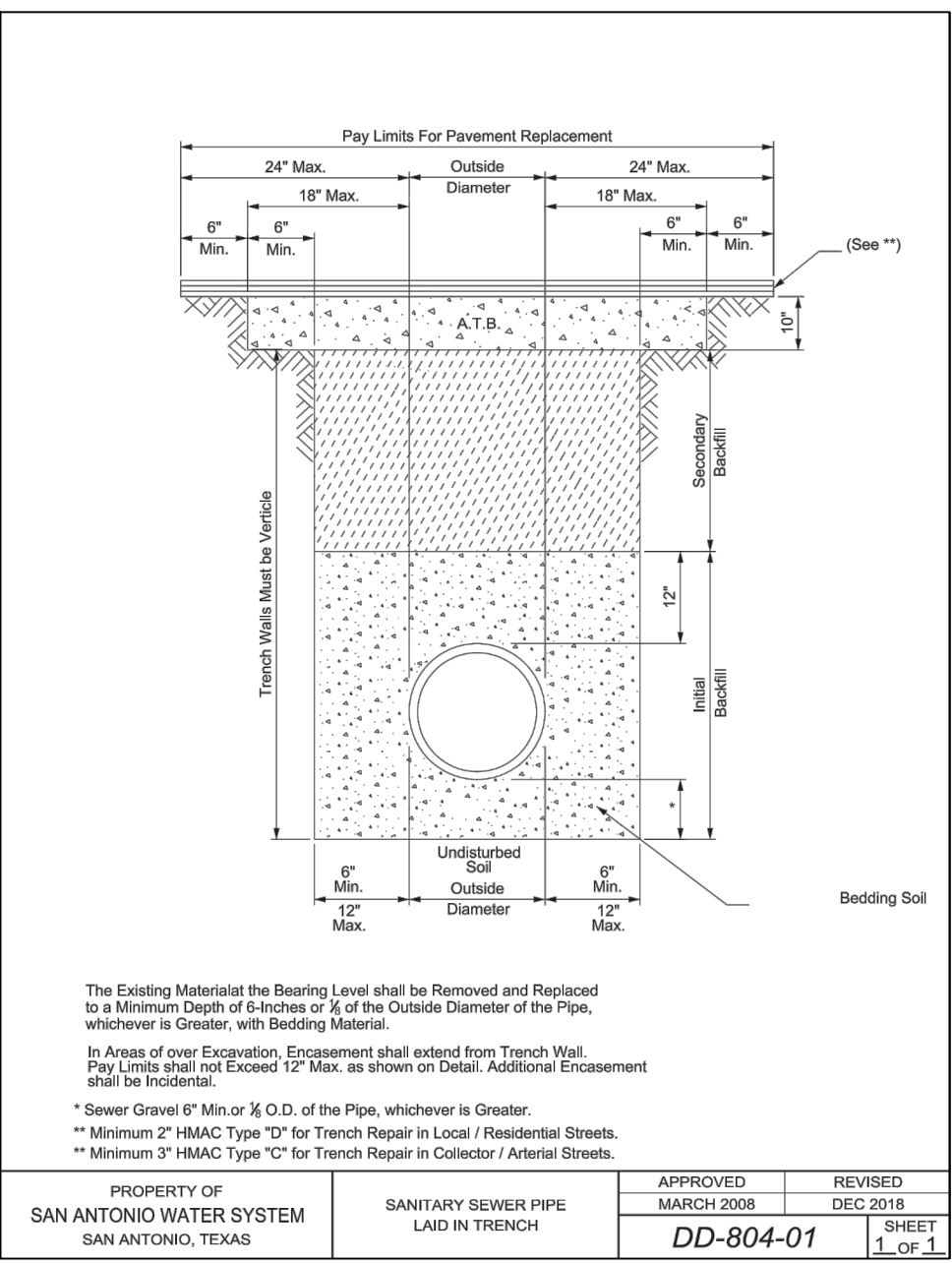
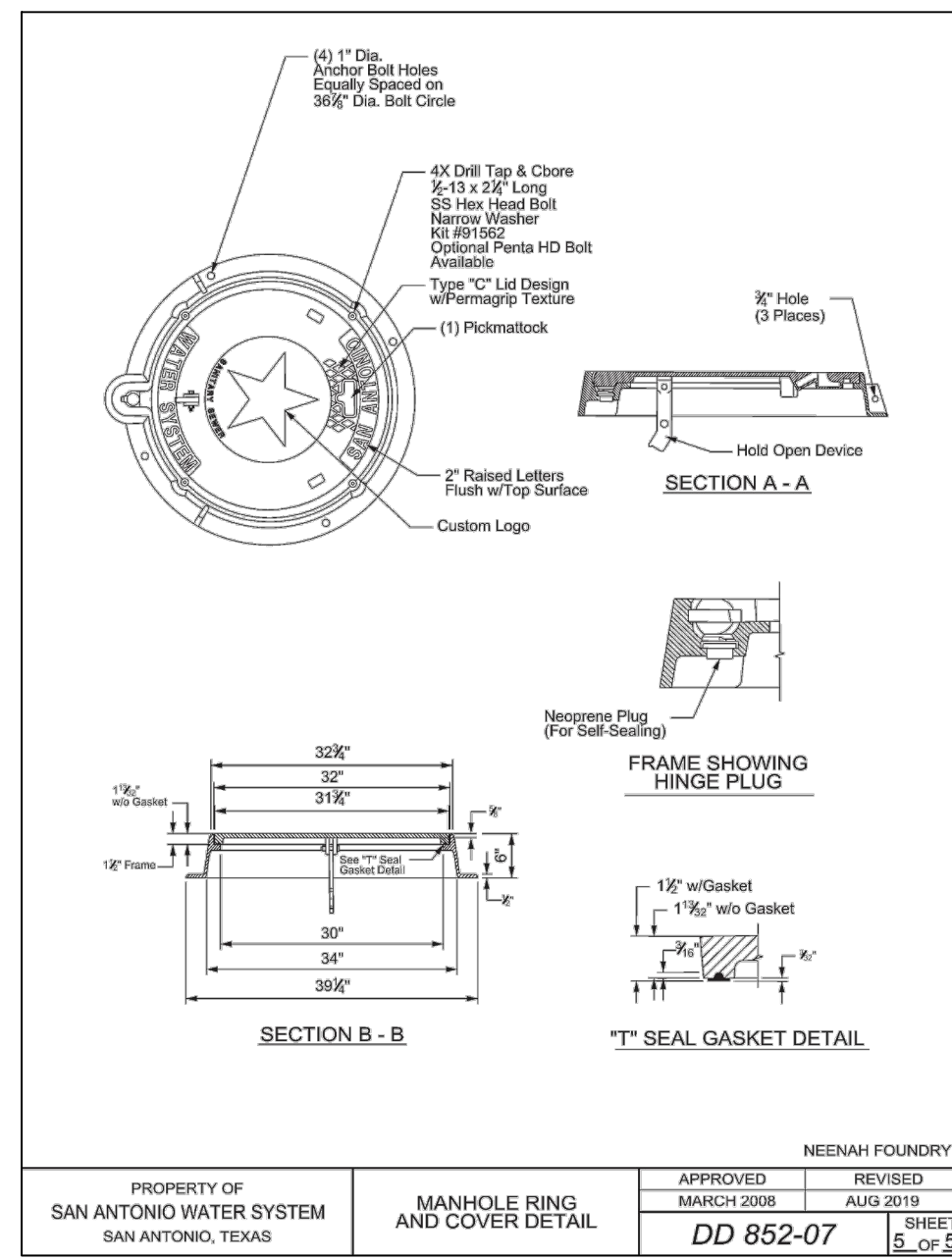
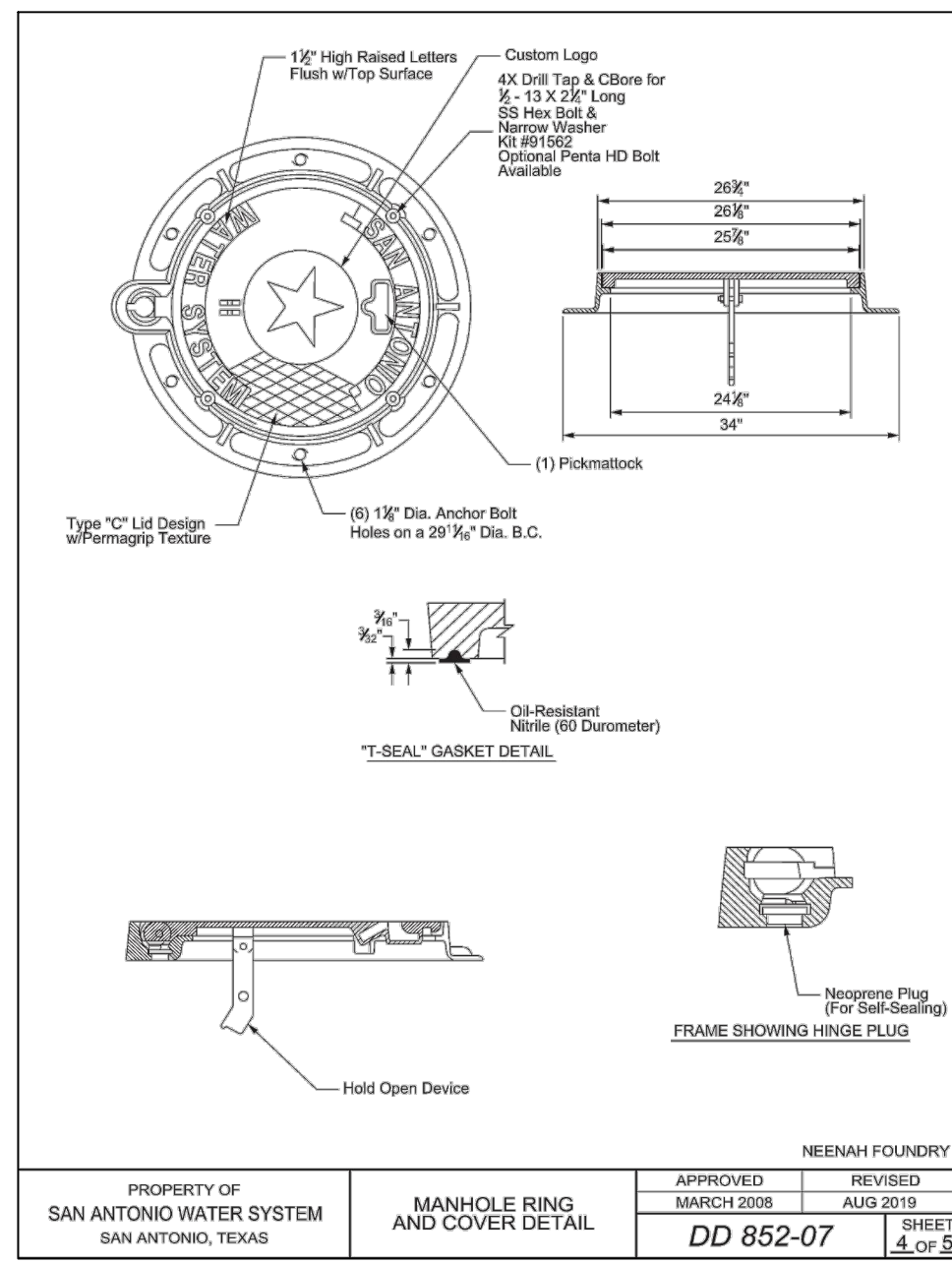
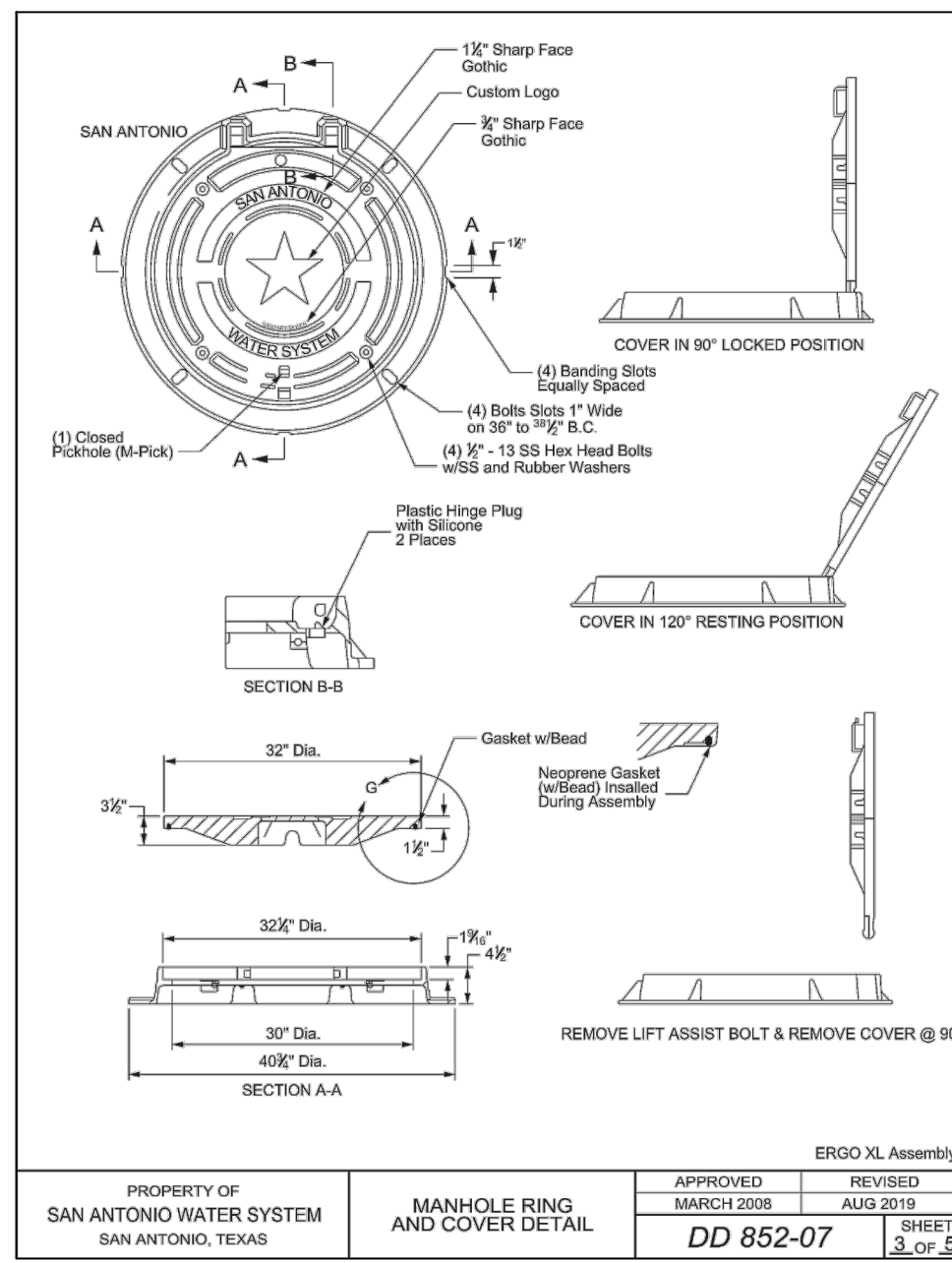
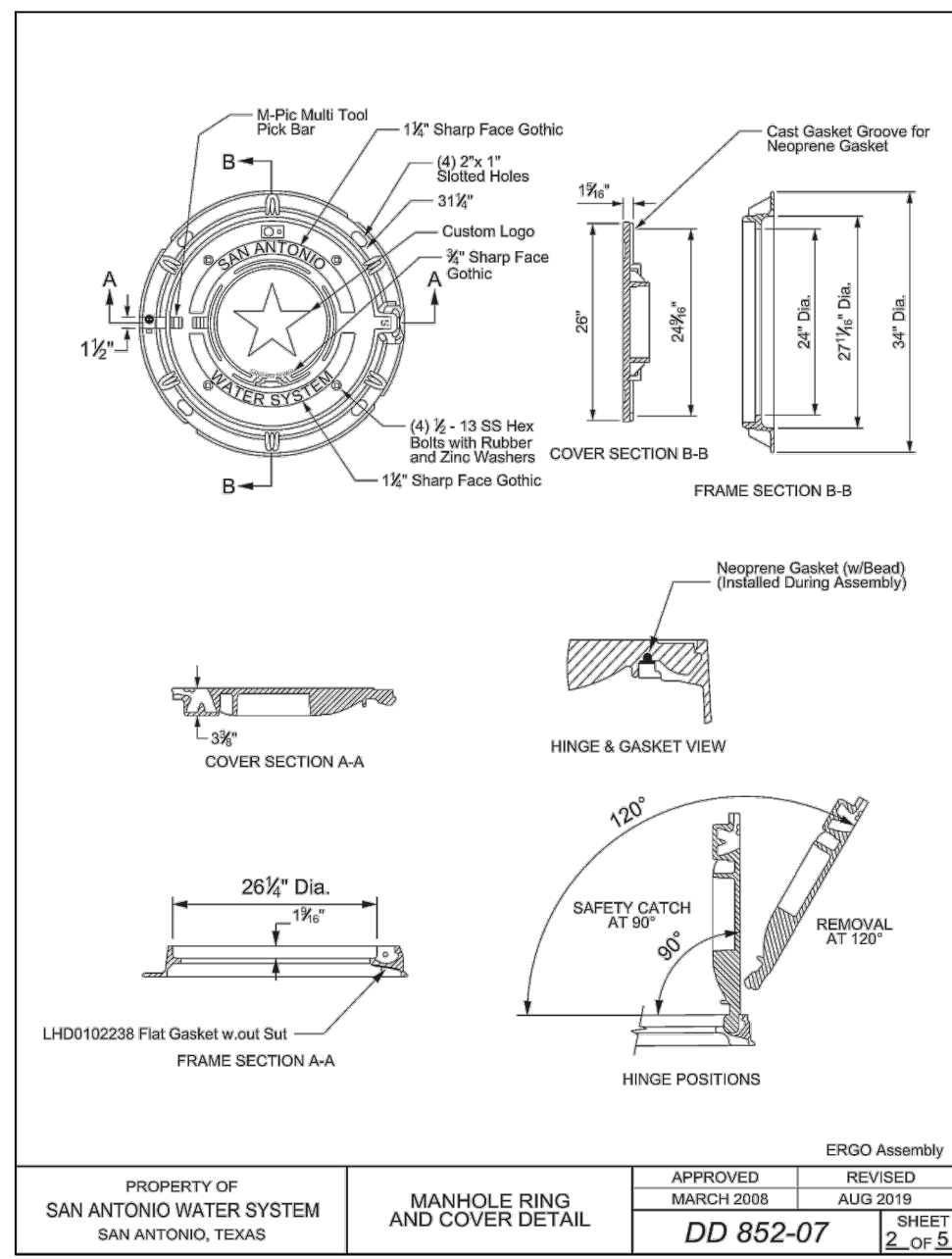
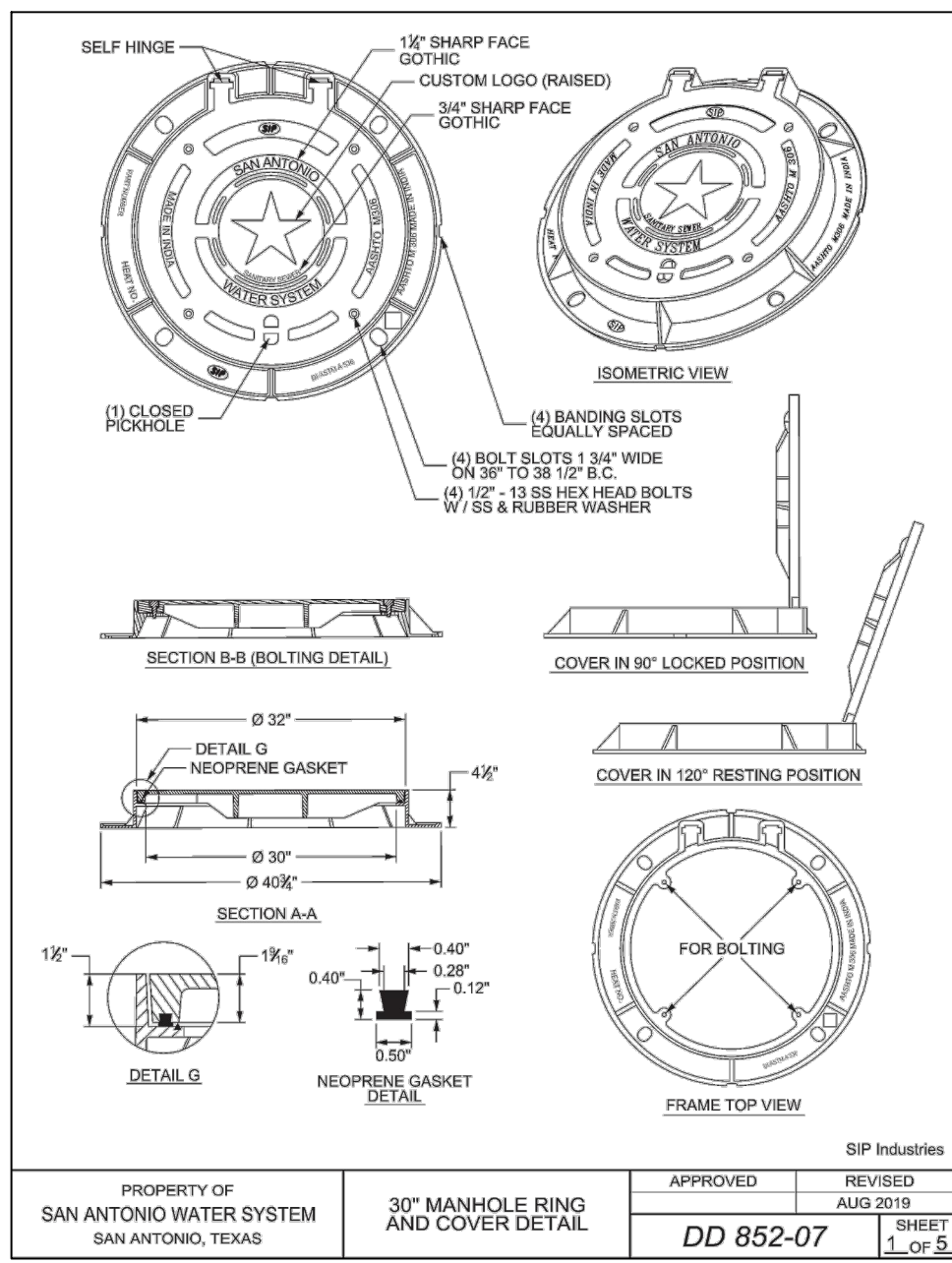
**SANITARY SEWER NOTES**

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	DECEMBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C4.20



Date: Dec 14, 2023, 9:47 am User: dj-dickensw  
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DATE  
12/14/2023

NO. REVISION  
1. ADDED SAWS JOB NUMBER

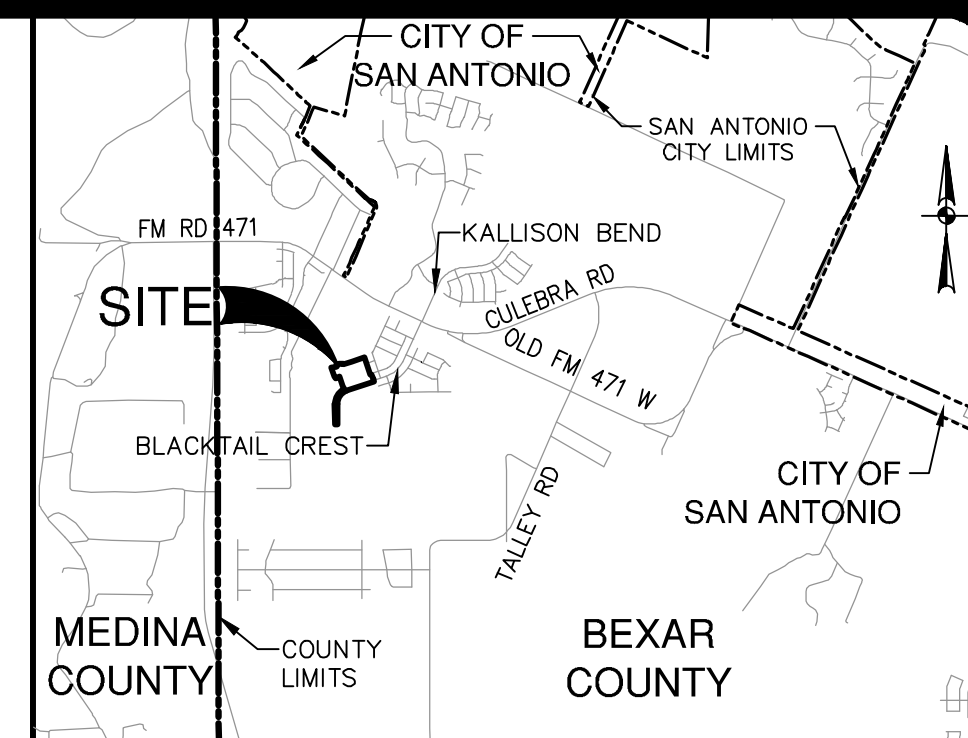
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STATE OF TEXAS  
REBECCA ANN CARROLL  
92666  
COUNTY CLERK  
B. M. C.

PAPER-DAWSON  
ENGINEERS  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028600

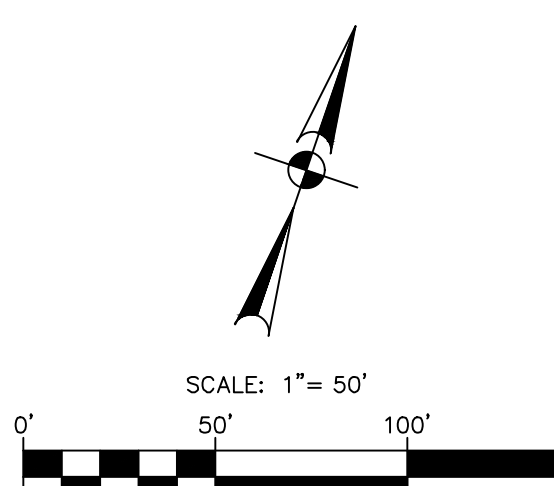
PRESERVE AT CULEBRA-UNIT 14  
BEXAR COUNTY, TEXAS  
SANITARY SEWER DETAILS

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE DECEMBER 2023  
DESIGNER JB  
CHECKED DRAWN GK  
SHEET C4.30





NOT-TO-SCALE



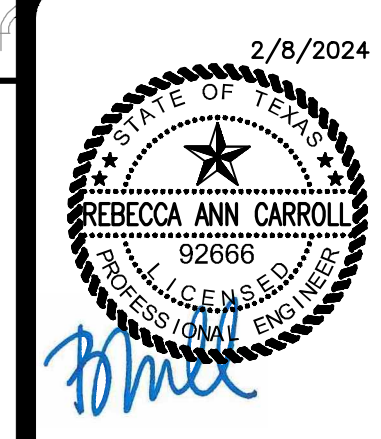
CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW  
GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE W  
NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND  
LEVEL IS BELOW 985 FEET, THE DEVELOPER OR BUILDER SHALL INST  
AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN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

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS PROVIDE JOINT RESTRAINING HARNESSES ON FIELD LOCK GASKETS AT JOINTS. JOINT LENGTH SHALL BE SUCH THAT CONTRACTOR SHALL INSURE THAT JOINTS ARE NOT LESS THAN 12" LONG. CONTRACTOR SHALL INSURE THAT ELBOWS, BENDS, VALVES ETC HAVE A MINIMUM OF 5' OF PIPE WITH JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETA GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. T WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

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 AREA AND ADVISE THE CONTRACTOR OF ANY EXISTING OR EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND 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 TO COMPLETELY SAFEGUARD THE CONTRACTOR AND FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE FOLLOWING PARAGRAPHS GOVERNING THE PROTECTION OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS:

DEVELOPER'S NAME: KB HOME LONE STAR, INC.  
ADDRESS: 4800 FREDERICKSBURG ROAD  
CITY: SAN ANTONIO STATE: TX ZIP: 78229  
PHONE # (210) 301-2815 FAX # \_\_\_\_\_  
SAWS BLOCK MAP# 064610 TOTAL EDU'S 74 TOTAL ACREAGE 21.8  
TOTAL LINEAR FOOTAGE OF PIPE: 3,294 L.F. ± PLAT NO. 23-1180021  
NUMBER OF LOTS 74 SAWS JOB NO. 23-1169

NO.	REVISION	DATE
1.	REVISED WATER MAIN SIZE AND ADDED DIMENSIONS/CATE. VALVE	11/30/2023
2.	REVISED MAIN & HYDRANTS	02/02/2024



**PAPE-DAWSON  
ENGINEERS**

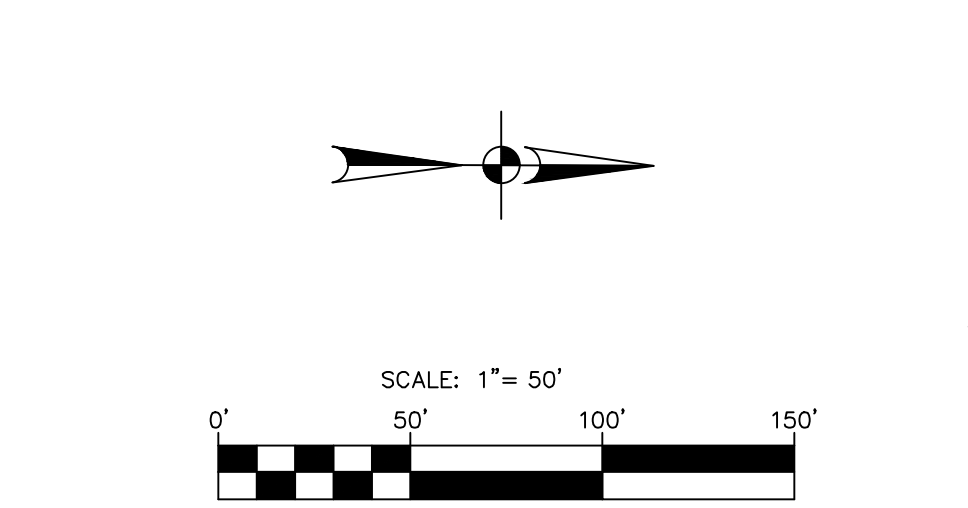
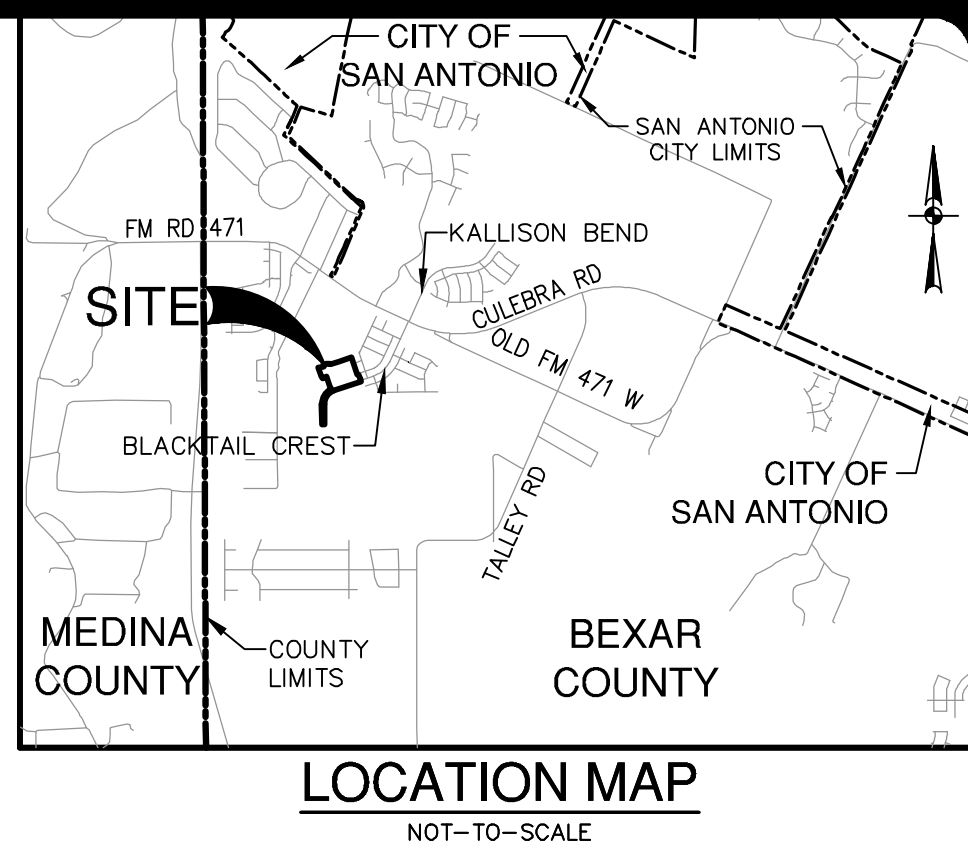
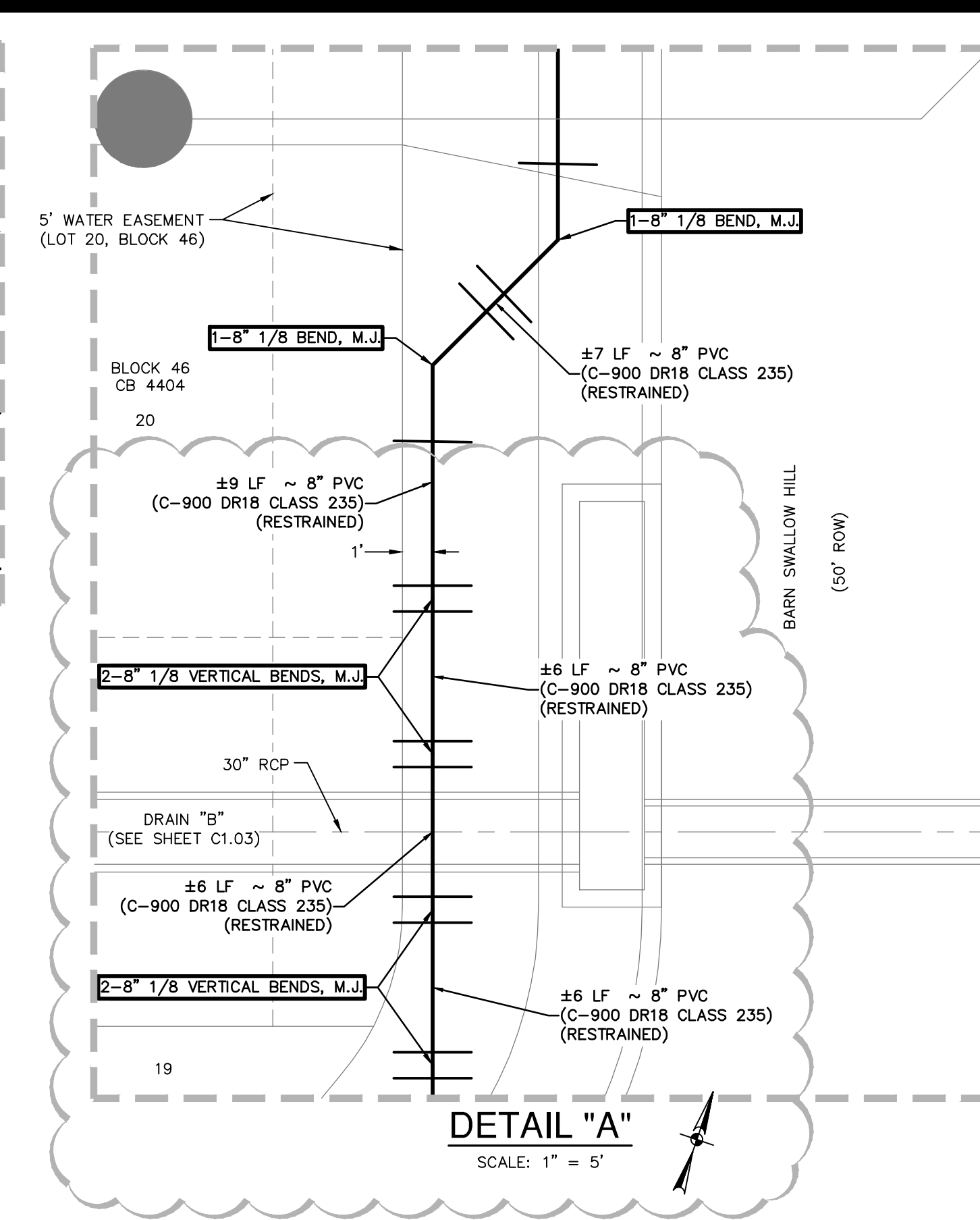
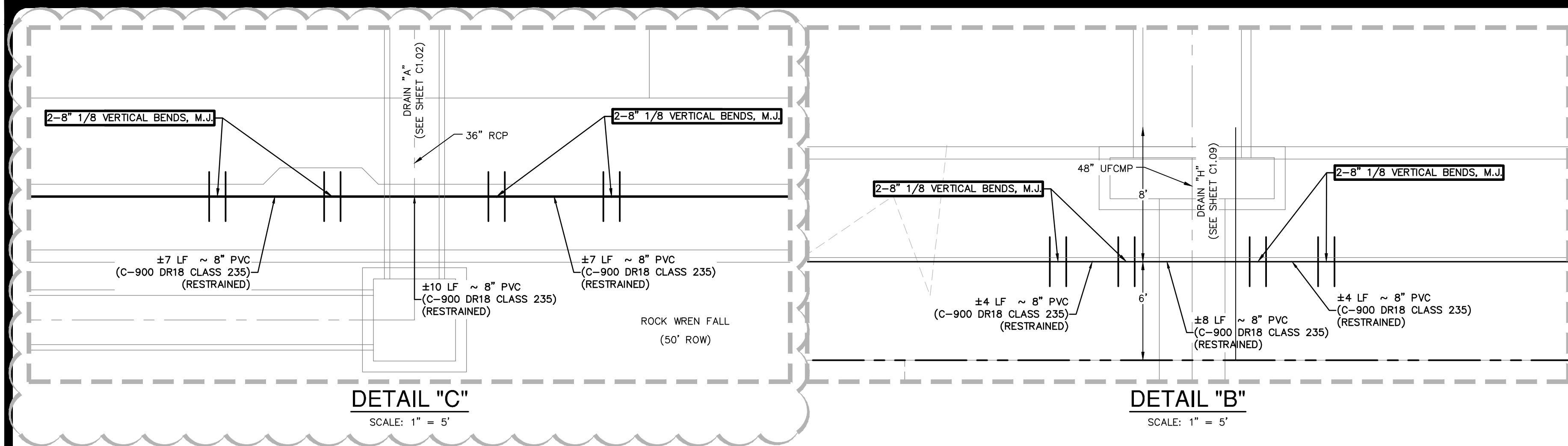
**PRESERVE AT CULEBRA-UNIT 14**  
**BEXAR COUNTY, TEXAS**  
**OVERALL WATER DISTRIBUTION PLAN**  
**(SHEET 1 OF 2)**

PLAT NO. 23-11800218  
JOB NO. 11668-14  
DATE FEBRUARY 2024  
DESIGNER \_\_\_\_\_ JB  
CHECKED \_\_\_\_\_ DRAWN \_\_\_\_\_ GK  
SHEET **C5.00**

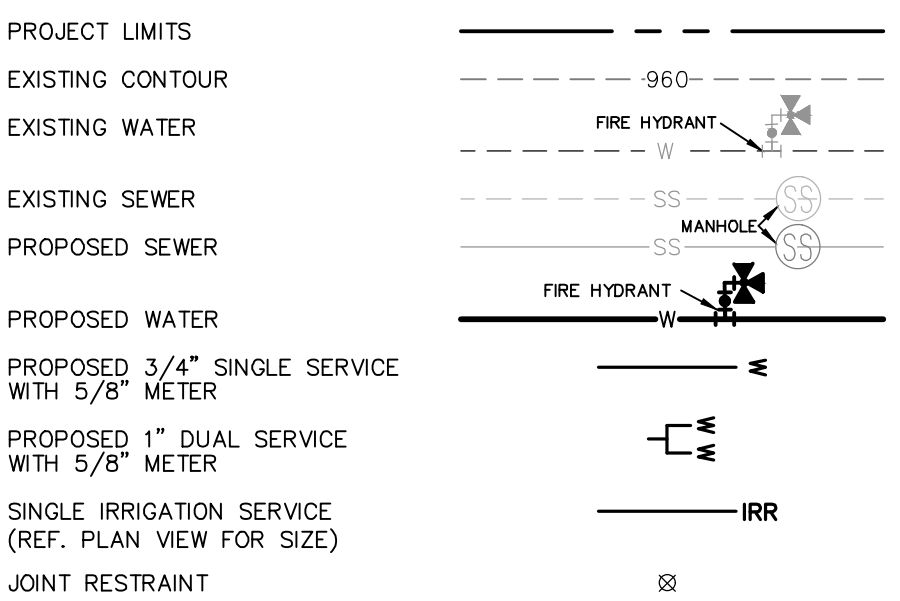


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### WATER LEGEND



### PRESSURE NOTE:

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

### JOINT RESTRAINT NOTE:

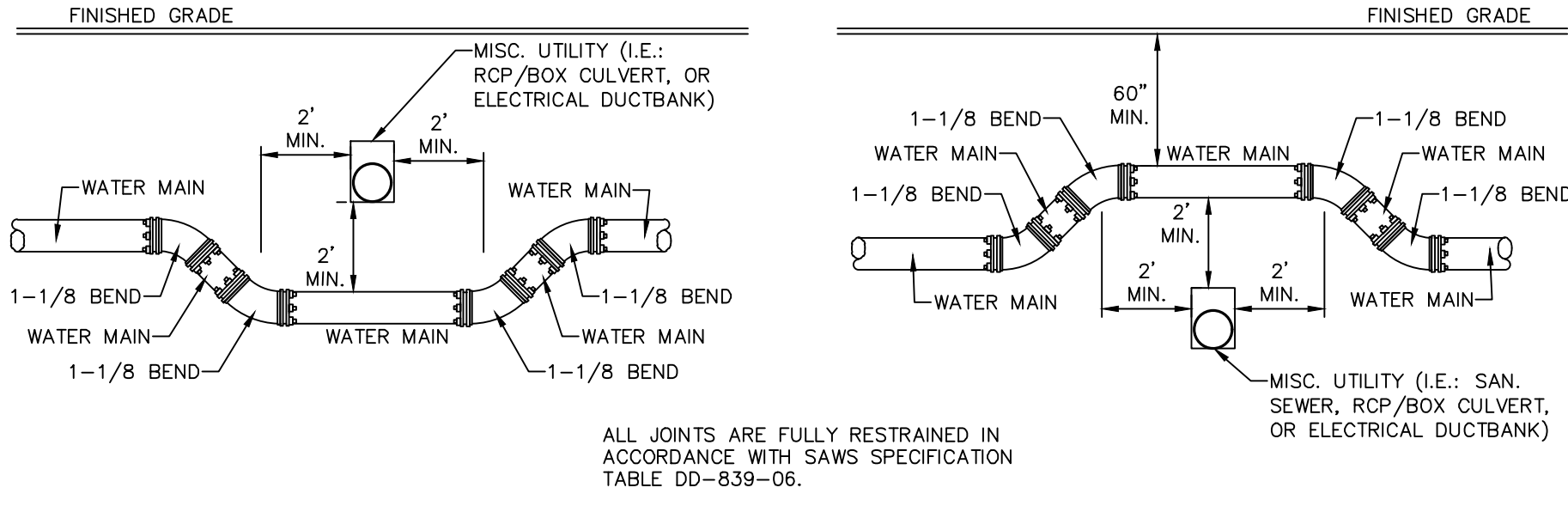
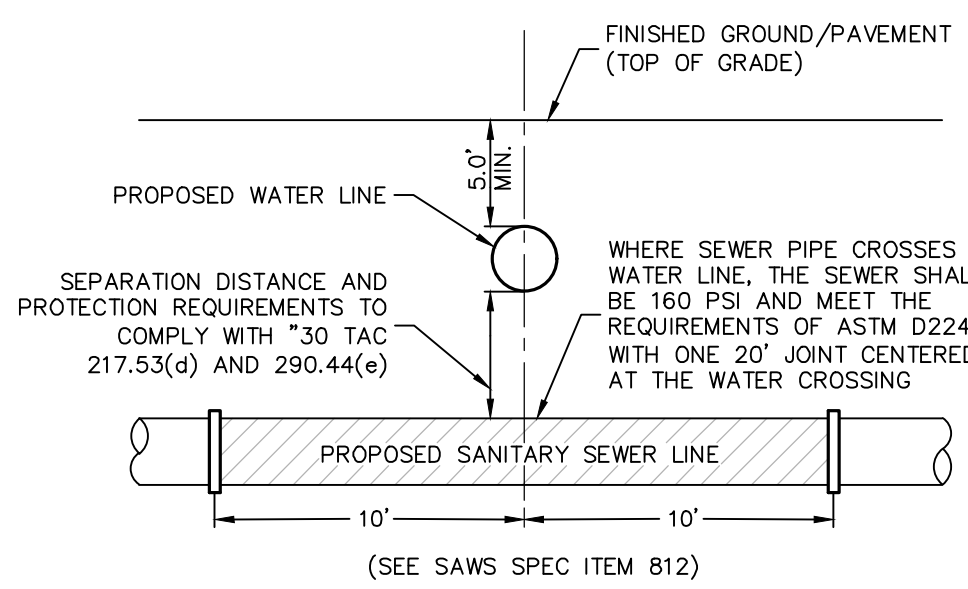
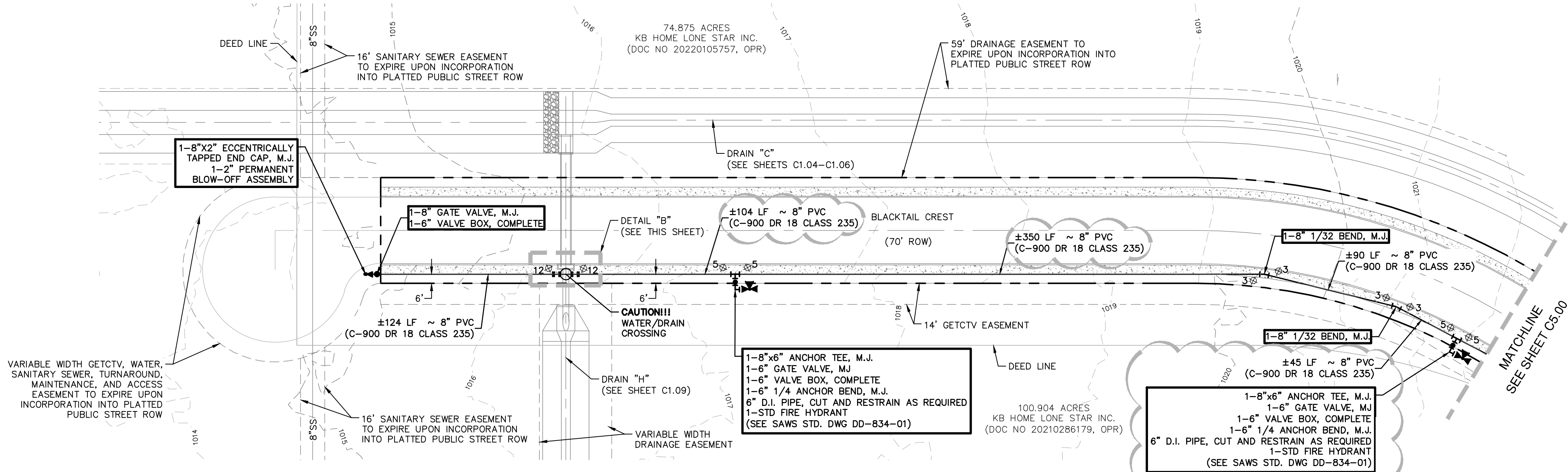
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS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

### TRENCH EXCAVATION SAFETY PROTECTION:

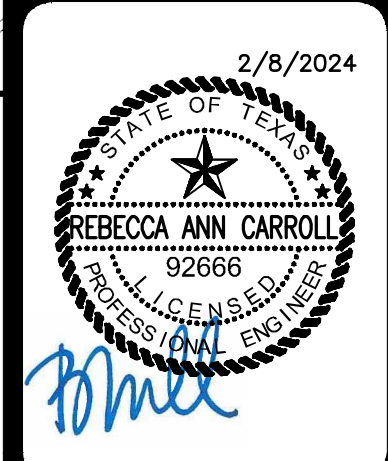
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S 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: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 74 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 3,294 L.F. ~ 8" PLAT NO. 23-11800218			
NUMBER OF LOTS 74		SAWS JOB NO. 23-1169	



NO.	REVISION	DATE
1.	REVISED WATER MAIN SIZE AND	11/30/2023
2.	ADDED DETAIL C. REVISED MAIN	02/02/2024
	HYDRANTS, & DETAIL A	



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**OVERALL WATER DISTRIBUTION PLAN**  
(SHEET 2 OF 2)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C5.01



SAWS CONSTRUCTION NOTES  
(LAST REVISED JANUARY 2022)

SAWS GENERAL SECTION

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

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

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 THE 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: KB HOME LONE STAR, INC.			
ADDRESS: 4800 FREDERICKSBURG ROAD			
CITY: SAN ANTONIO	STATE: TX	ZIP: 78229	
PHONE# (210) 301-2815	FAX#		
SAWS BLOCK MAP# 064610 TOTAL EDU'S 74 TOTAL ACREAGE 21.806			
TOTAL LINEAR FOOTAGE OF PIPE: 3,294 L.F. ~12" PLAT NO. 23-11800218			
NUMBER OF LOTS 74	SAWS JOB NO. 23-1169		

NO.	REVISION	DATE
1.	ADDED SAWS JOB NUMBER	11/30/2023
2.	REVISED LINEAR FOOTAGE	02/06/2024



**PAPE-DAWSON ENGINEERS**

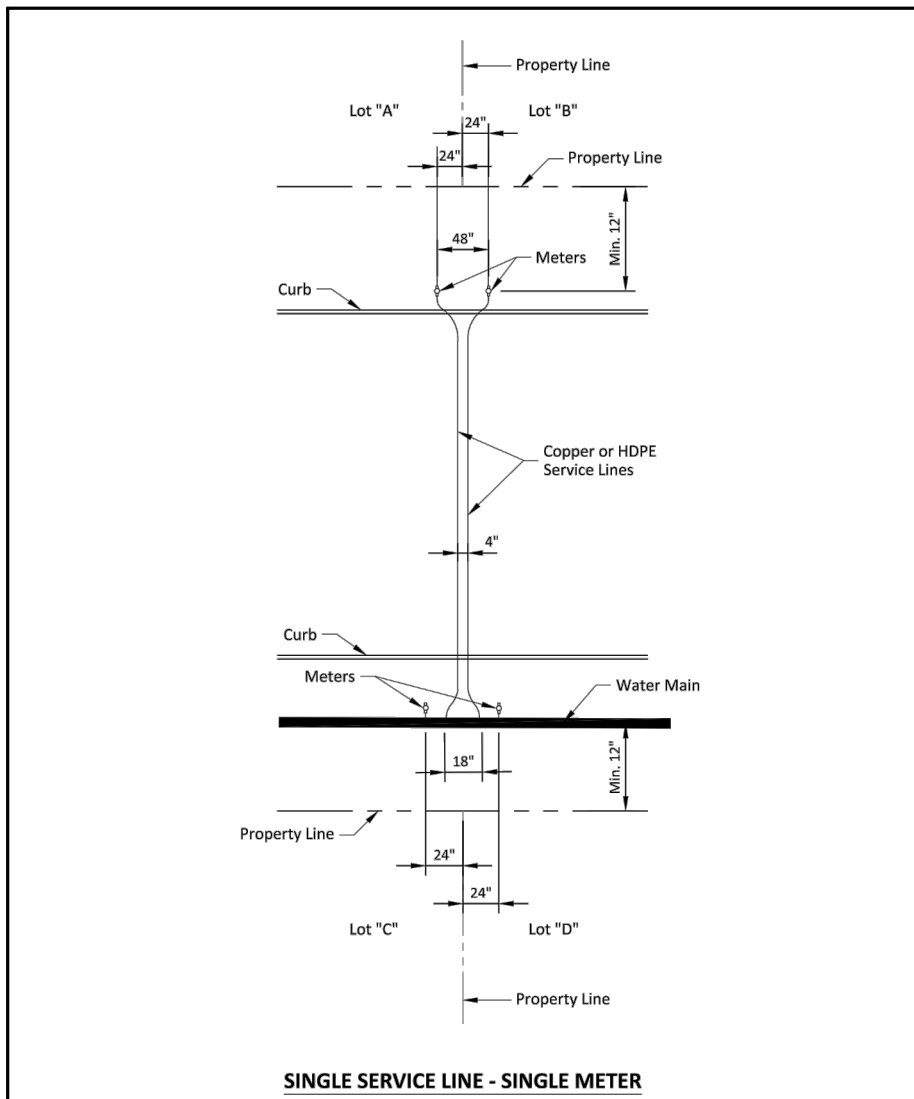
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

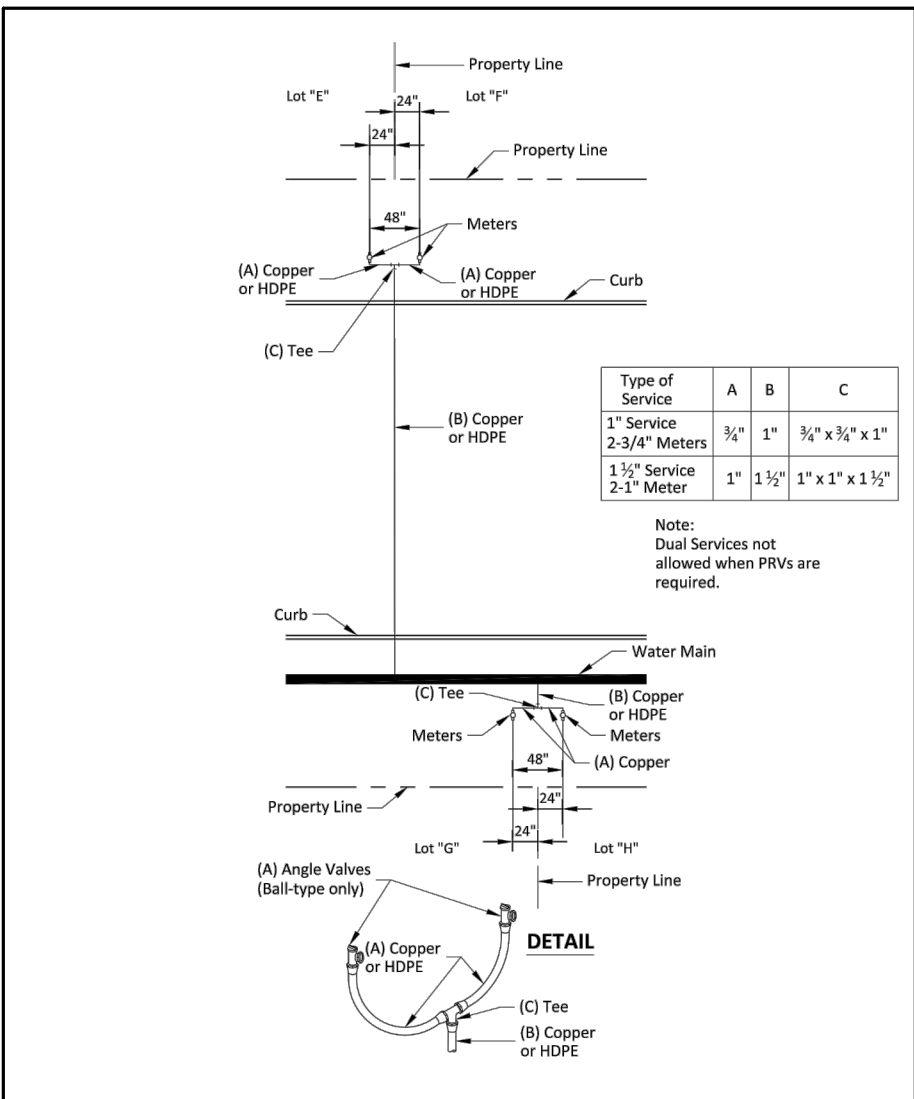
**WATER DISTRIBUTION NOTES**

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C5.10

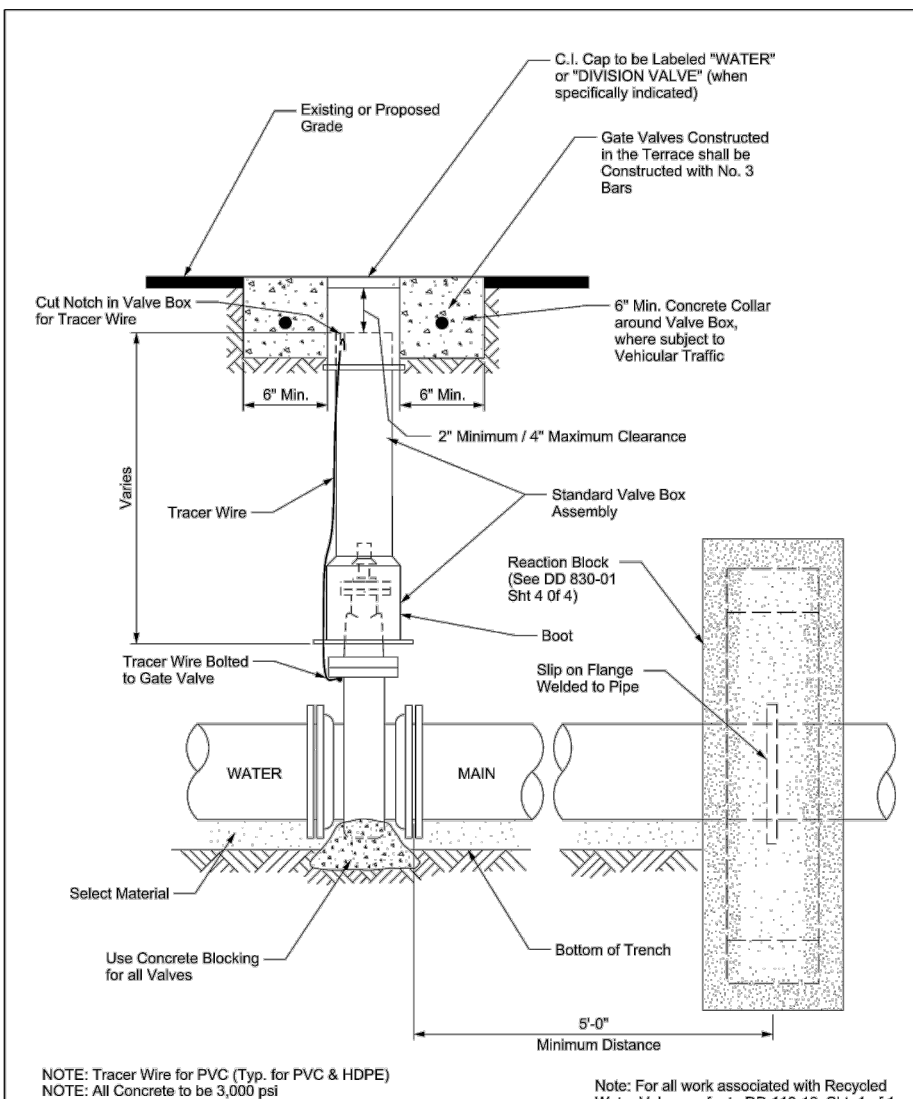




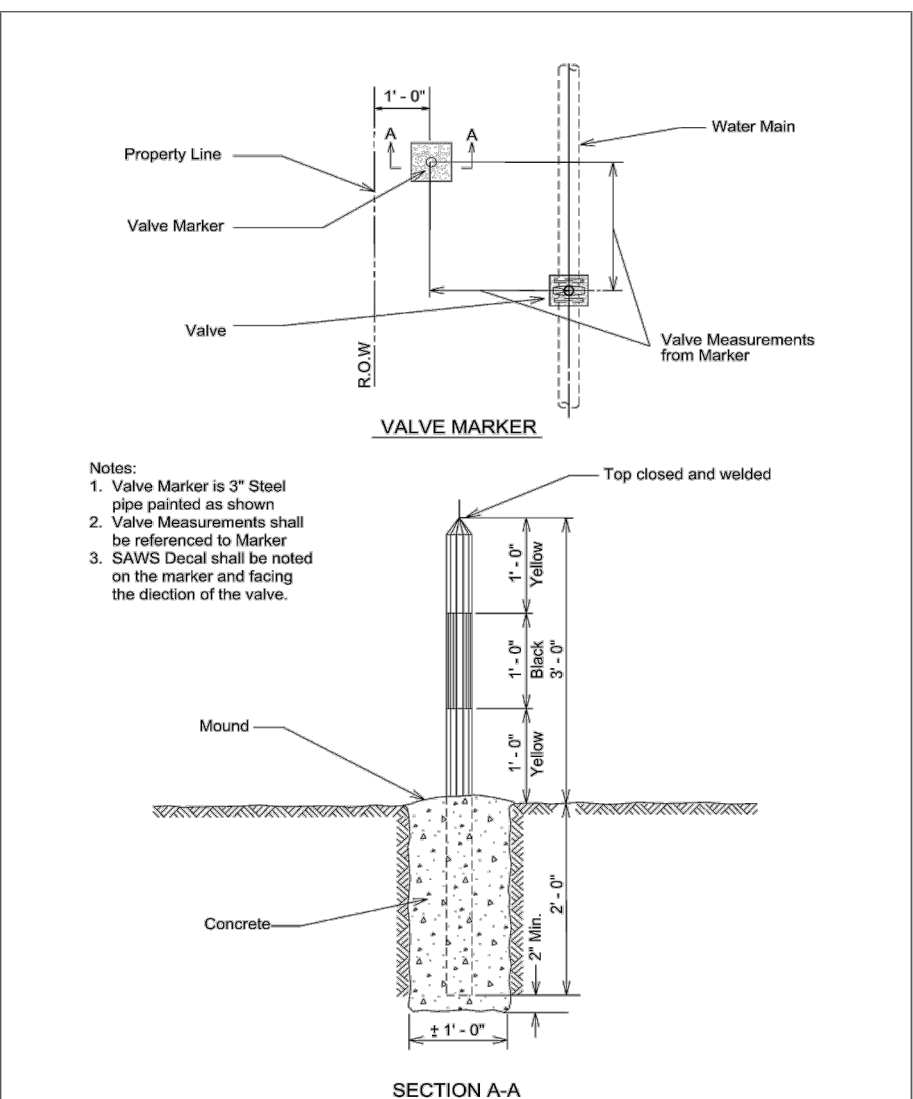
PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	NEW DEVELOPMENT SERVICE ARRANGEMENT	March 2008	December 2018
		DD-824-05	
			SHEET 1 OF 1



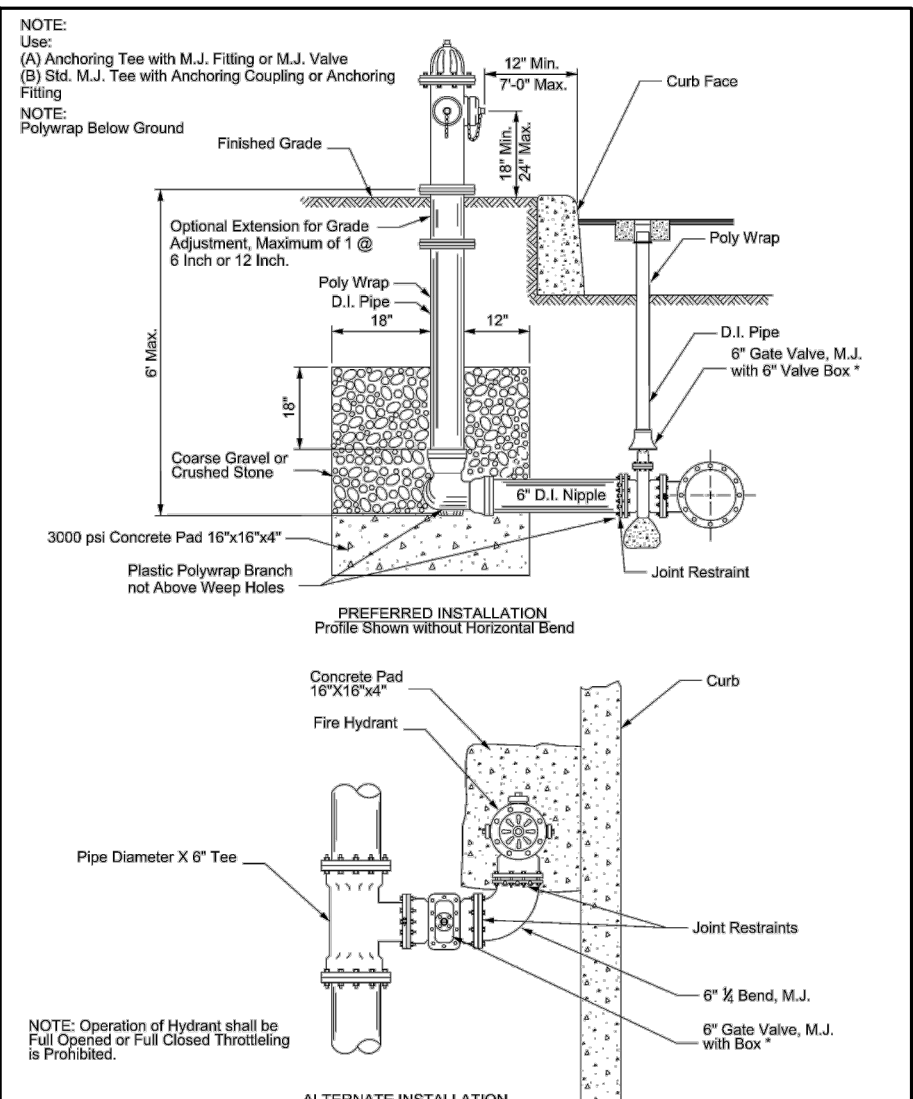
PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SERVICE ARRANGEMENT	March 2008	December 2018
		DD-824-05	
			SHEET 1 OF 1



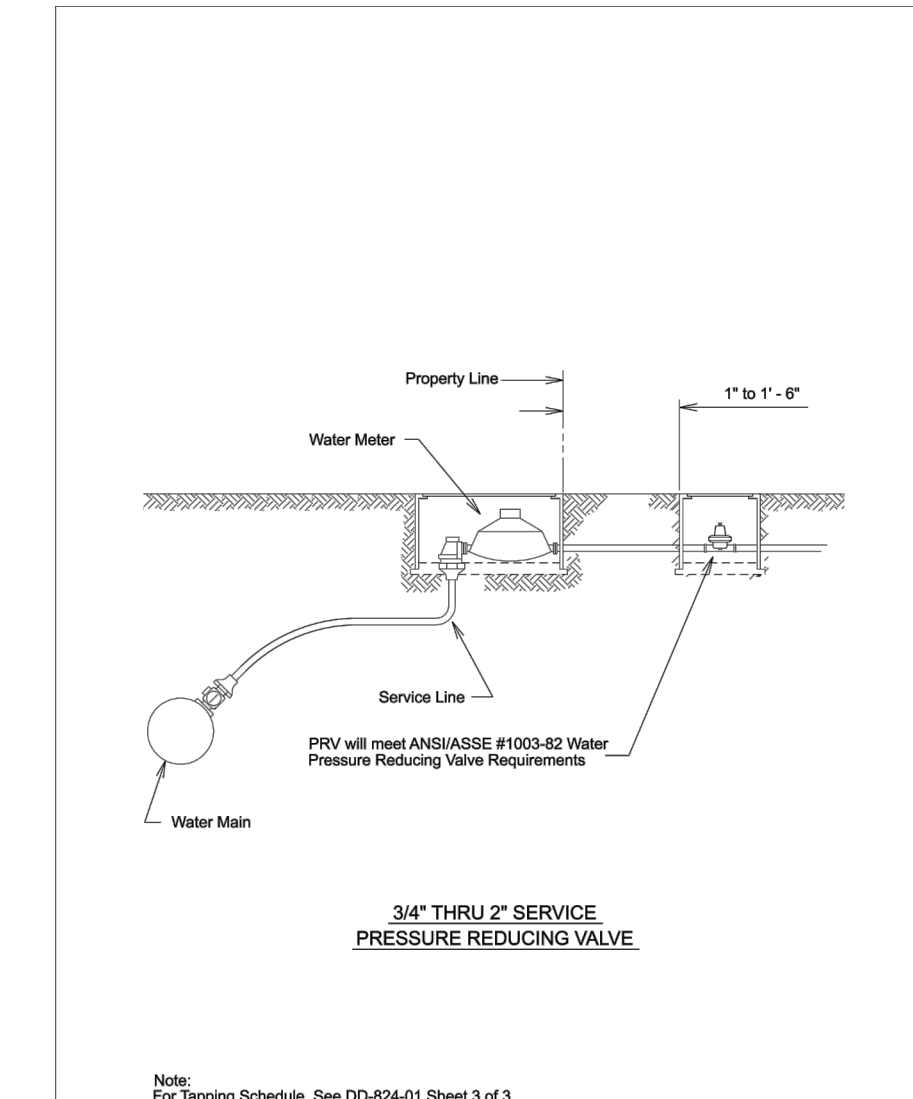
PROPERTY OF	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-828-01	
			SHEET 1 OF 1



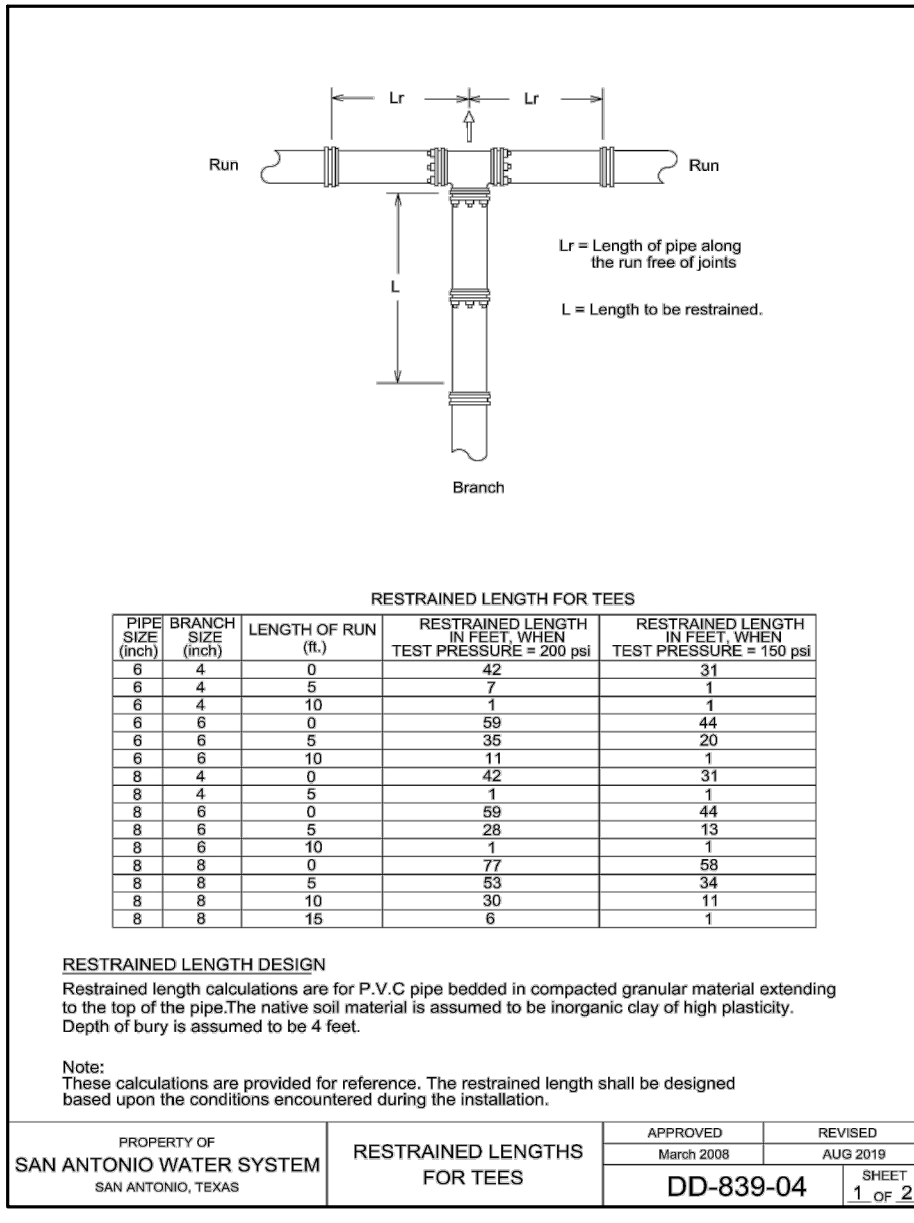
PROPERTY OF	VALVE MARKER	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-828-04	
			SHEET 1 OF 1



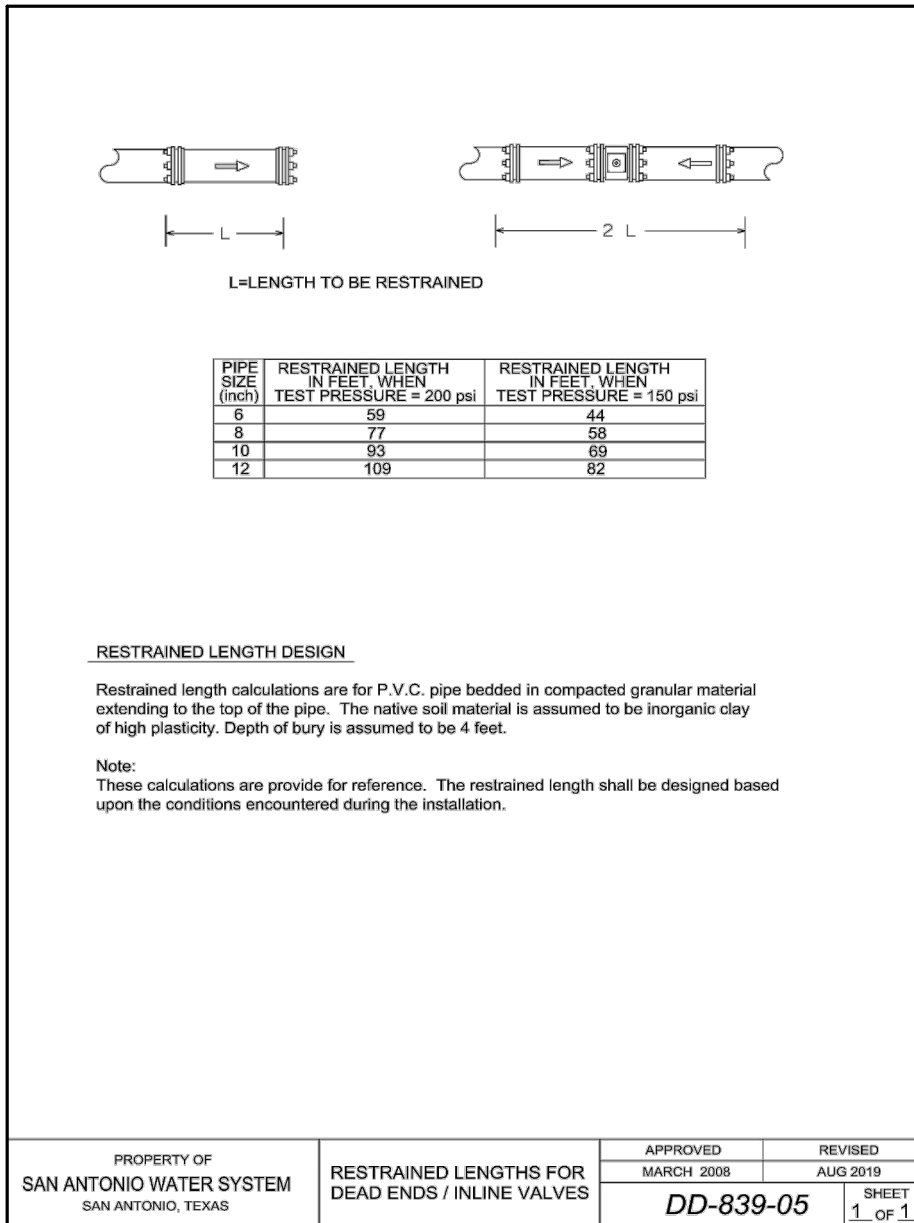
PROPERTY OF	3/4" THRU 2" SERVICE PRESSURE REDUCING VALVE	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-834-01	
			SHEET 1 OF 1



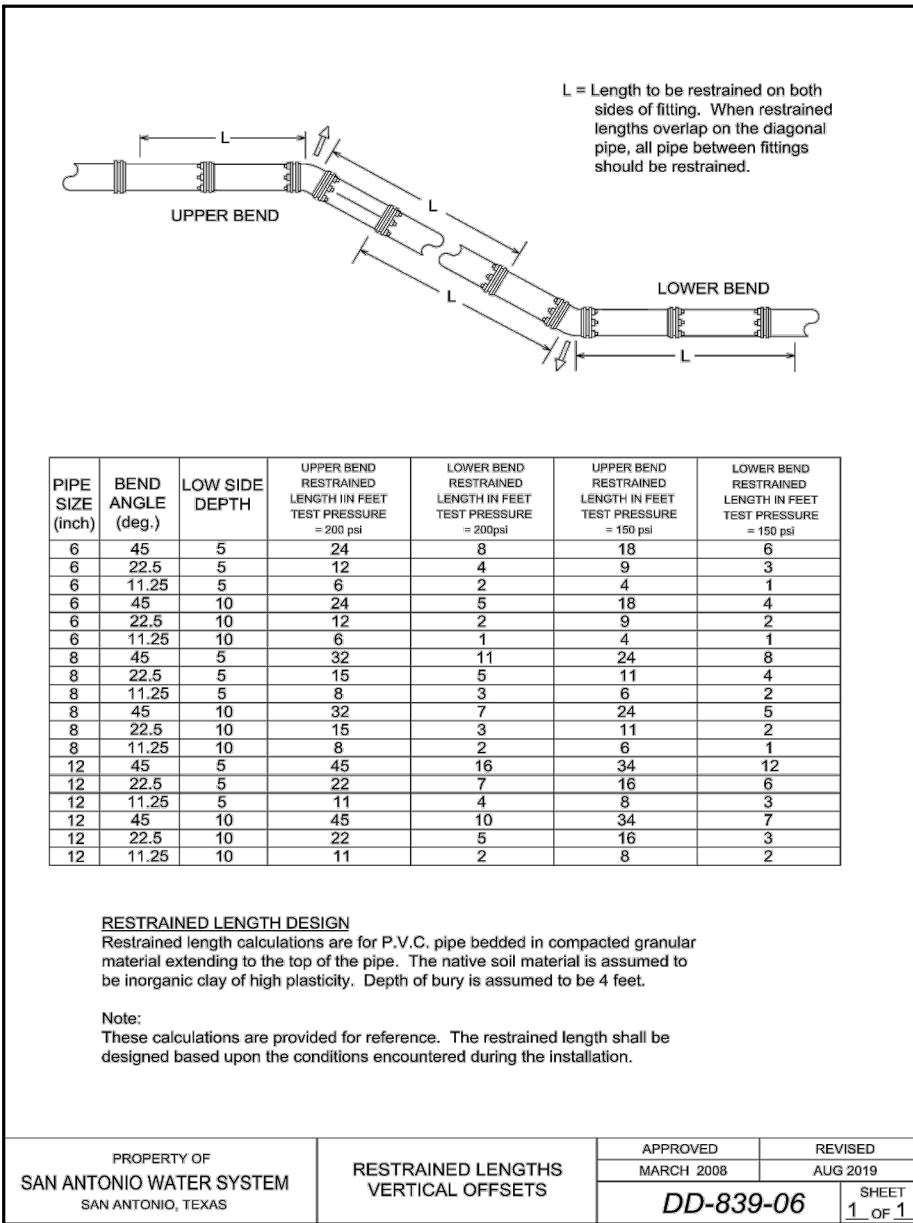
PROPERTY OF	SERVICE INSTALLATION WITH PRESSURE REDUCING VALVE	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-833-03	
			SHEET 1 OF 1



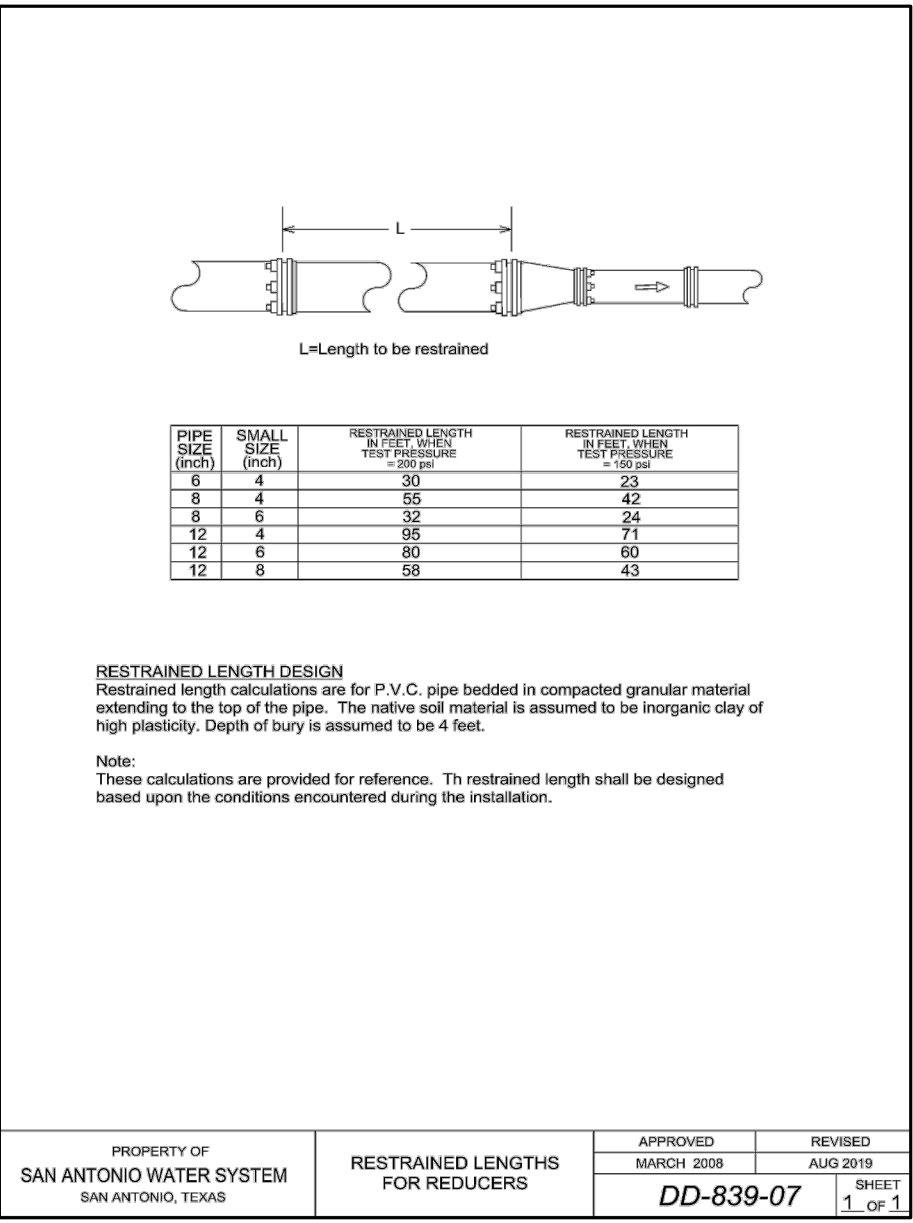
PROPERTY OF	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-839-04	
			SHEET 1 OF 1



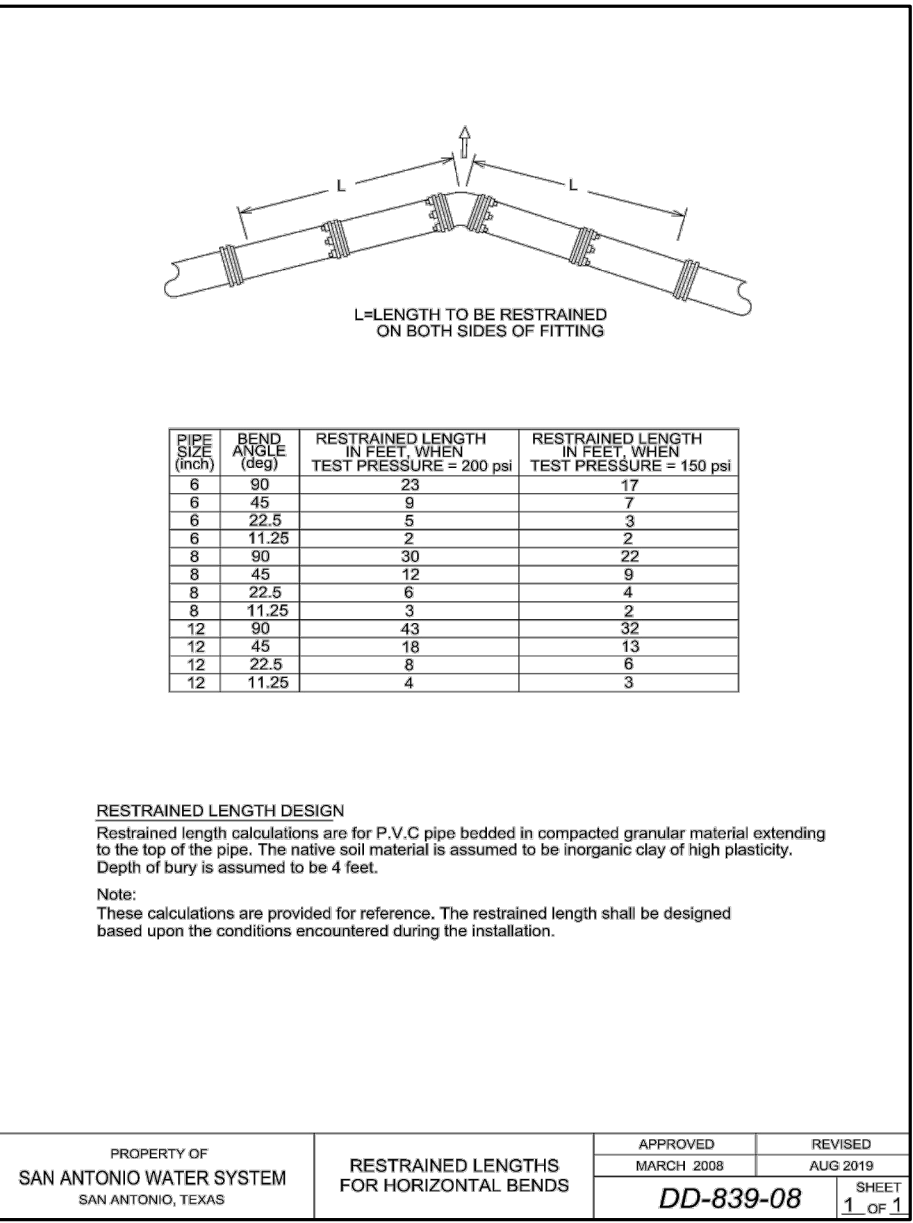
PROPERTY OF	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-839-05	
			SHEET 1 OF 1



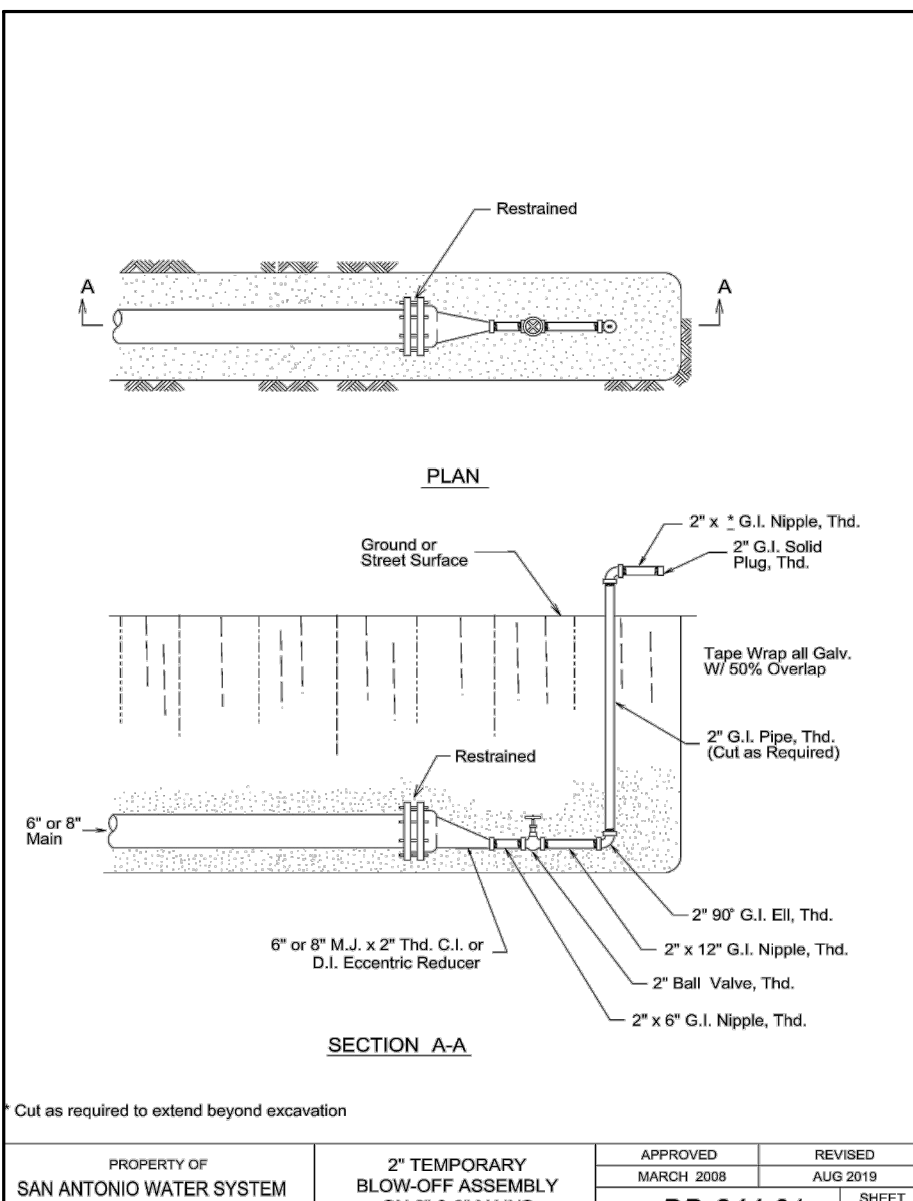
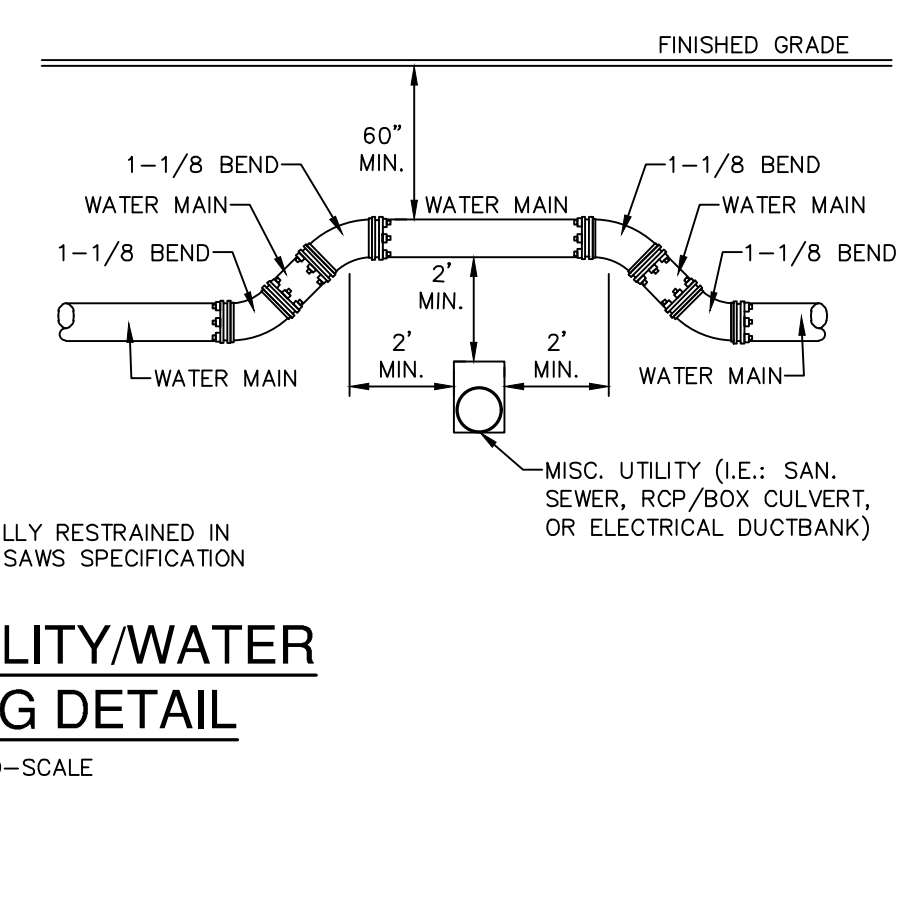
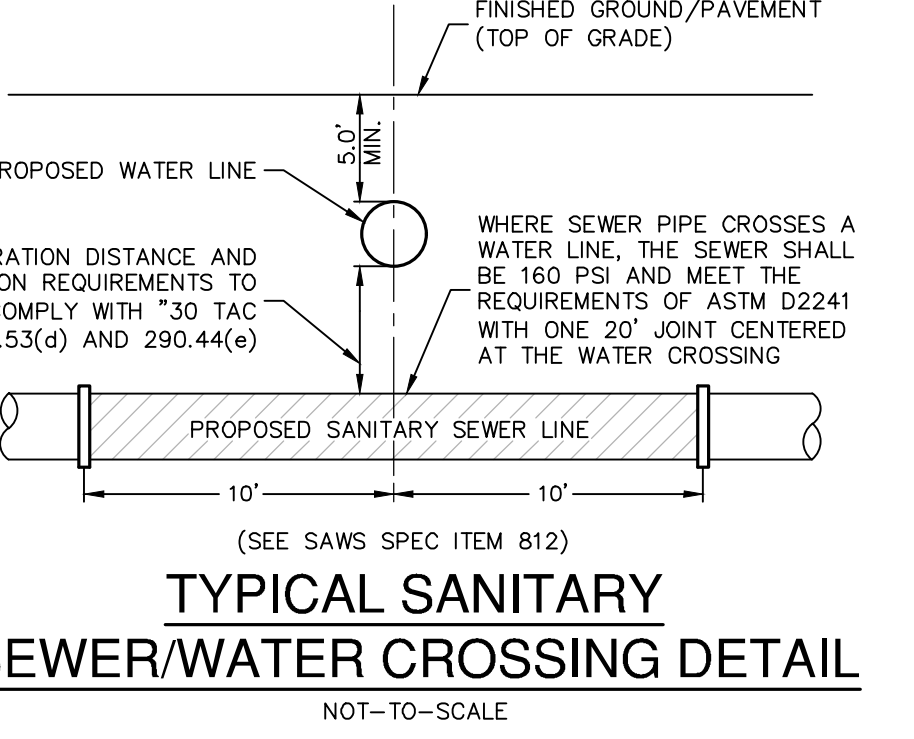
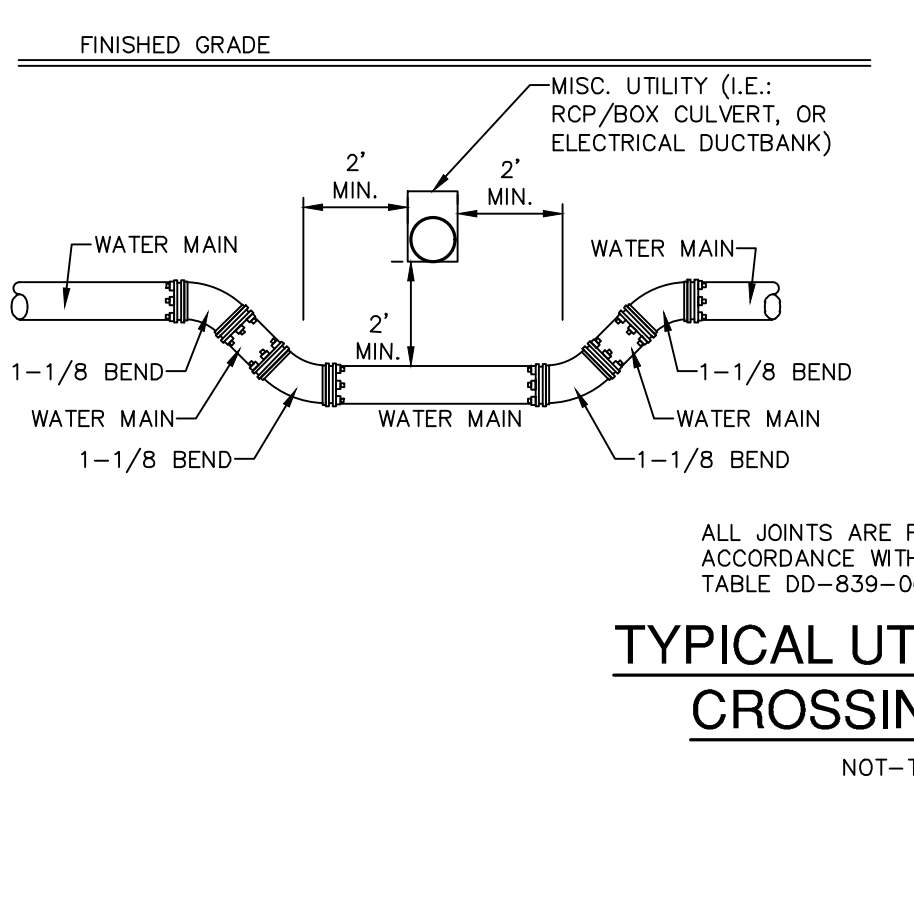
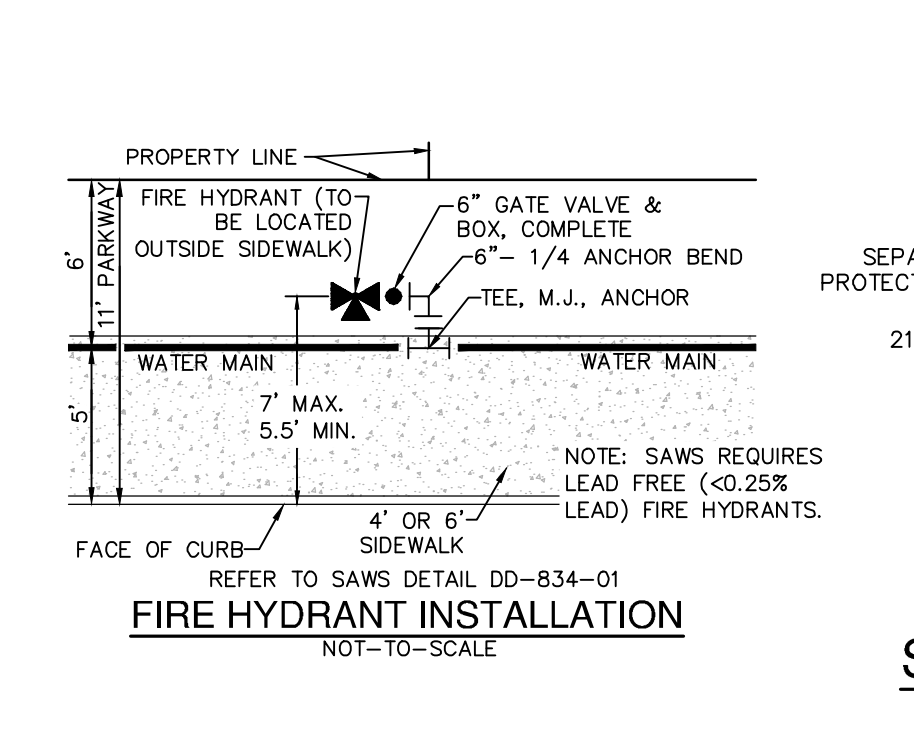
PROPERTY OF	RESTRAINED LENGTHS FOR VERTICAL OFFSETS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-839-06	
			SHEET 1 OF 1



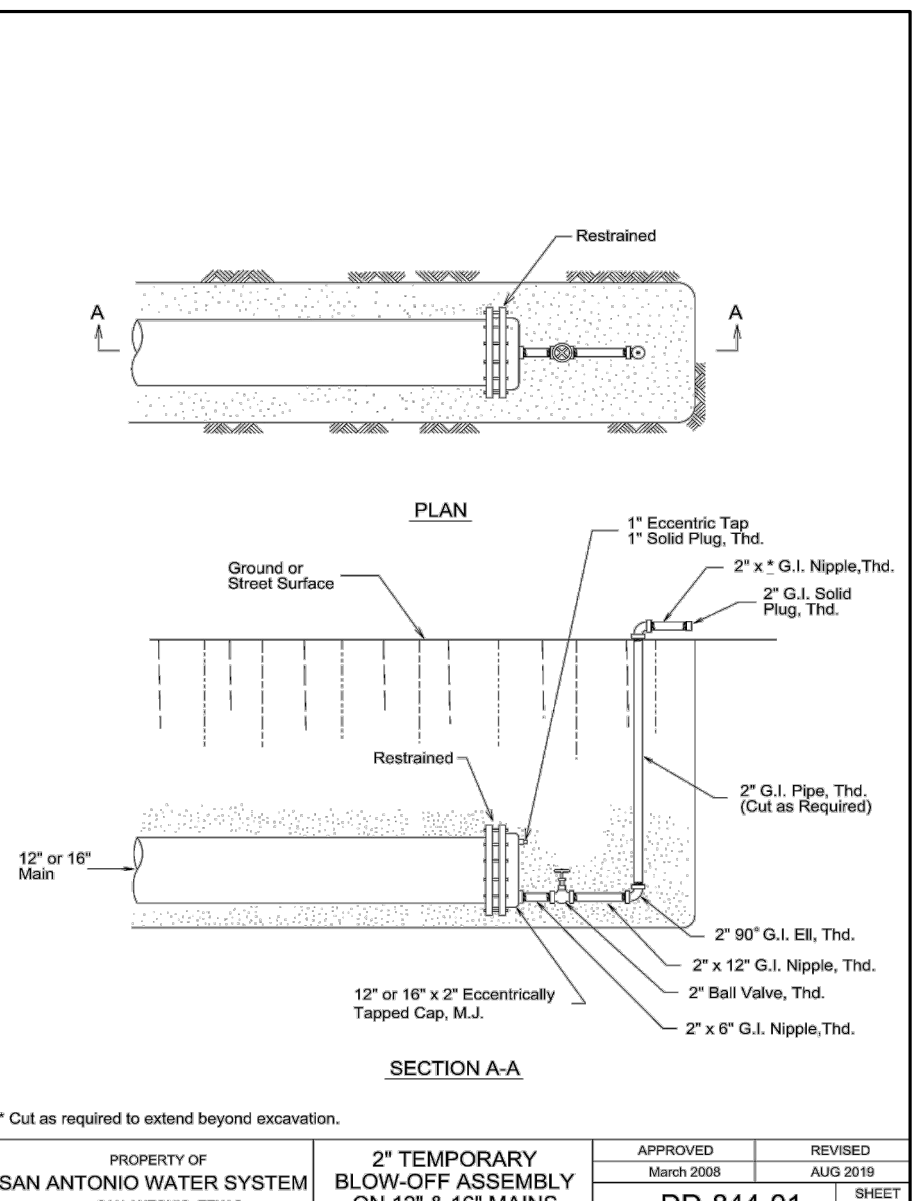
PROPERTY OF	RESTRAINED LENGTHS FOR REDUCERS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-839-07	
			SHEET 1 OF 1



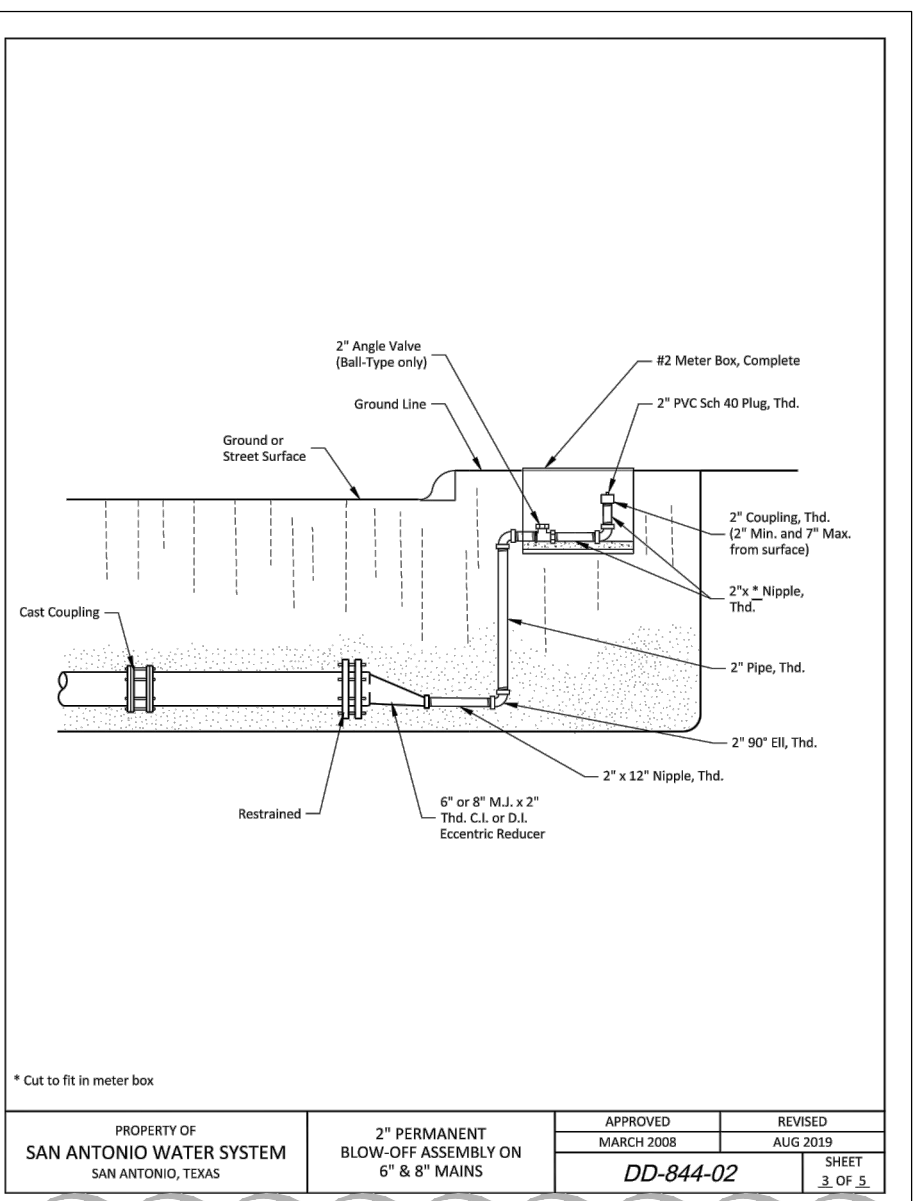
PROPERTY OF	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-839-08	
			SHEET 1 OF 1



PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 8" & 12" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-844-01	
			SHEET 1 OF 4



PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" & 16" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-844-01	
			SHEET 2 OF 4



PROPERTY OF	WATER DISTRIBUTION DETAIL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		March 2008	August 2019
		DD-844-02	
			SHEET 3 OF 5

WATER (SAWS PRESSURE ZONE 8)

DEVELOPER'S NAME: KB HOME LONE STAR, INC.

ADDRESS: 4800 FREDERICKSBURG ROAD

CITY: SAN ANTONIO STATE: TX ZIP: 78229

PHONE: (210) 301-2815 FAX: 781 L.F. 12"

SAWS BLOCK MAP# 064610 TOTAL EDU'S 74 TOTAL ACREAGE 21.806

TOTAL LINEAR FOOTAGE OF PIPE: 3,294 L.F. ~ 8" PLAT NO. 23-11800218

NUMBER OF LOTS 74 SAWS JOB NO. 23-1169

NO.	REVISION	DATE
1.	ADDED SAWS JOB NUMBER	11/30/2023
2.	REVISED LINEAR FOOTAGE	02/02/2024



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

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

TPE FIRM REGISTRATION #470 | TPE FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**

BEXAR COUNTY, TEXAS

**WATER DISTRIBUTION DETAILS**

PLAT NO. 23-11800218
JOB NO. 11668-14
DATE FEBRUARY 2024
DRAWN BY JB
CHECKED BY GK
SHEET C5.20



Date: Feb 14, 2024, 2:13pm User ID: ellidrew  
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VARIABLE WIDTH GETCTV, WATER,  
SANITARY SEWER, TURNAROUND,  
MAINTENANCE, AND ACCESS EASEMENT  
TO EXPIRE UPON INCORPORATION INTO  
PLATTED PUBLIC STREET ROW

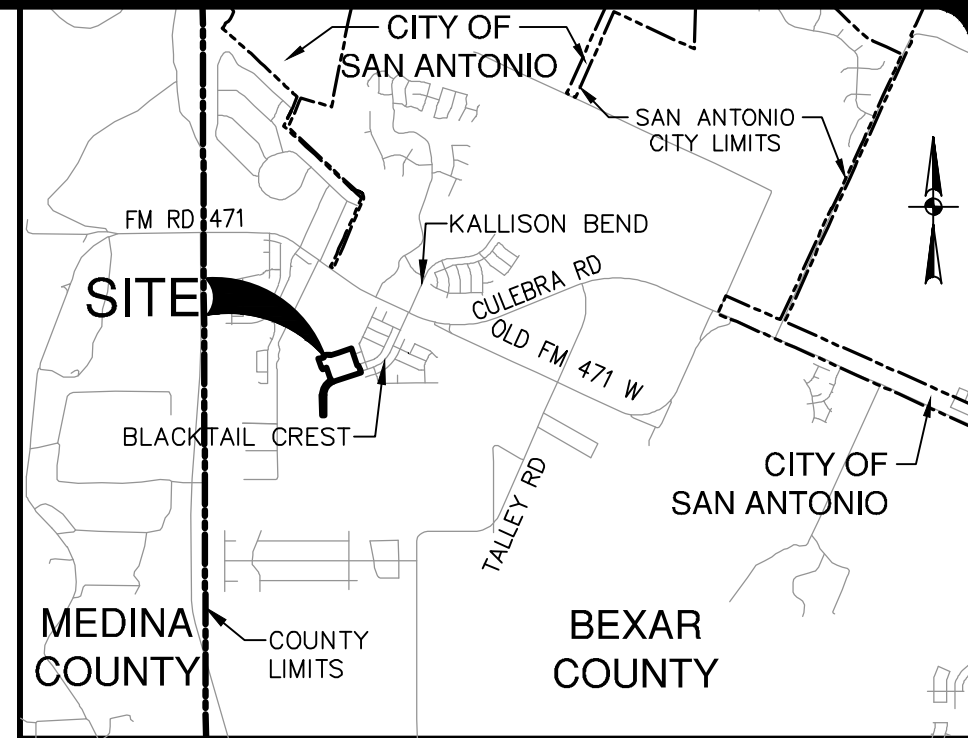
74.875 ACRES  
KB HOME LONE STAR INC.  
(DOC NO 20220105757, OPR)

74.875 ACRES  
KB HOME LONE STAR INC.  
(DOC NO 20220105757, OPR)

100.904 ACRES  
KB HOME LONE STAR INC.  
(DOC NO 20210286179, OPR)

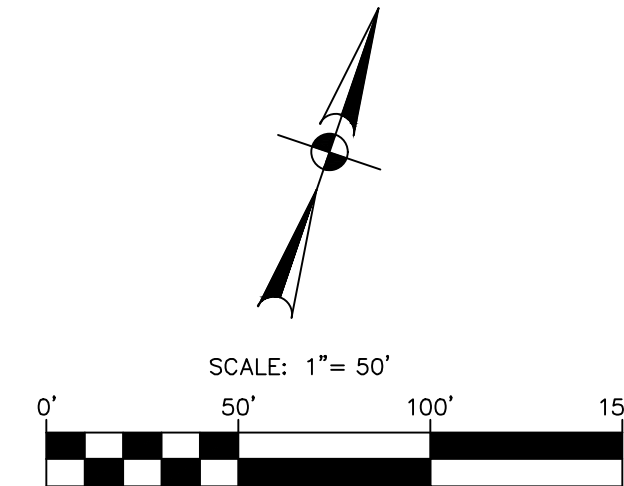
96.061 ACRES  
KB HOME LONE STAR INC.  
(DOC NO 20190077822, OPR)

15.62 ACRES  
AVINASH & NEHA GUPTA  
(DOC NO 2020300475, OPR)



### LOCATION MAP

NOT-TO-SCALE



### UTILITY LEGEND

PROJECT LIMITS	---
EXISTING CONTOURS	--- 960 ---
EXISTING WATER	--- W ---
EXISTING SEWER	--- SS ---
PROPOSED SEWER	--- SS ---
PROPOSED WATER	--- W ---
PROPOSED WYE & LATERAL	--- W ---
SINGLE WATER SERVICE	--- W ---
DUAL WATER SERVICE	--- W ---
STREET LIGHTS	--- S ---

TO AVOID EXTRA COSTS FROM HAVING TO BORE  
OR CUT NEW STREETS, THE DEVELOPER WILL BE  
RESPONSIBLE FOR PLACING 6" SCHEDULE 80 SLEEVES  
(AT A MINIMUM DEPTH OF 36" BELOW FINAL GRADE  
AND EXTENDED 2' INTO THE PROPERTY) FOR EACH  
CPS FACILITY AT ALL STREET AND DRAIN CROSSINGS  
WHEN BUILT AHEAD OF CPS CONSTRUCTION START.  
THESE SLEEVES MUST ALSO BE LOCATED FOR CPS  
CREWS DURING CPS CONSTRUCTION.  
PLEASE CONTACT **STEVE BLAIN**  
AT TELEPHONE NO. **353-6867** FOR DETAILS.

### STREETLIGHT NOTE:

STREETLIGHTS TO BE INSTALLED  
IN ACCORDANCE WITH BEXAR  
COUNTY STREETLIGHT PLACEMENT  
GUIDELINES IN THE ETJ.

### CONDUIT NOTES:

- CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
- CONDUITS SHALL BE PVC WITH MINIMUM BURY OF 30 INCHES. SCHEDULE 80 TO BE USED FOR CPS CONDUITS, ALL OTHER CONDUITS ARE SCHEDULE 40.
- ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.

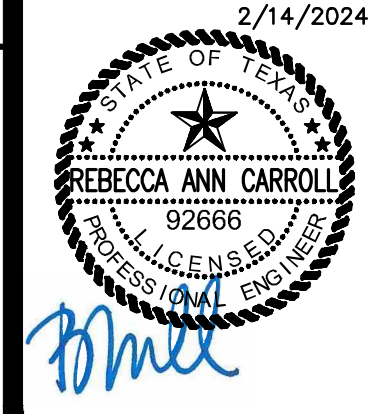
### TRENCH EXCAVATION SAFETY PROTECTION:

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-LESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NO.	REVISION	DATE
1	REVISED UTILITIES & EASEMENTS	02/06/2024



**PAPE-DAWSON**  
**ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TPLS FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

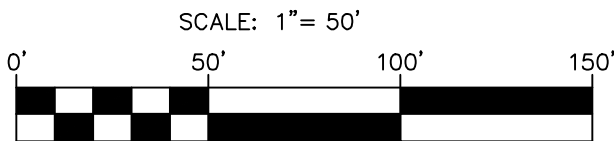
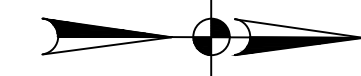
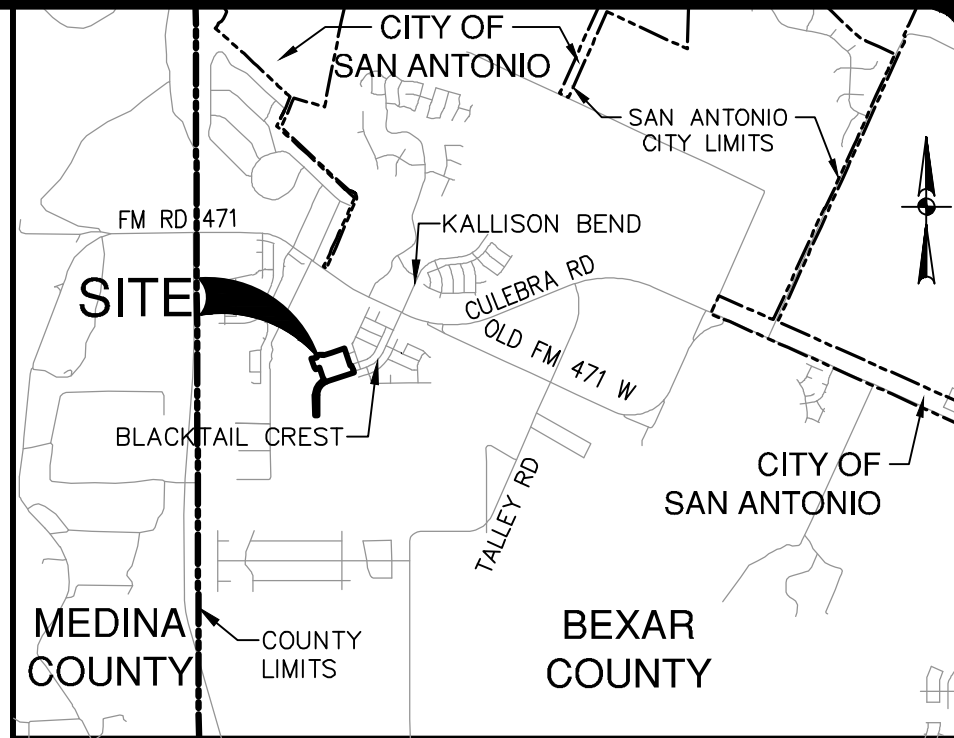
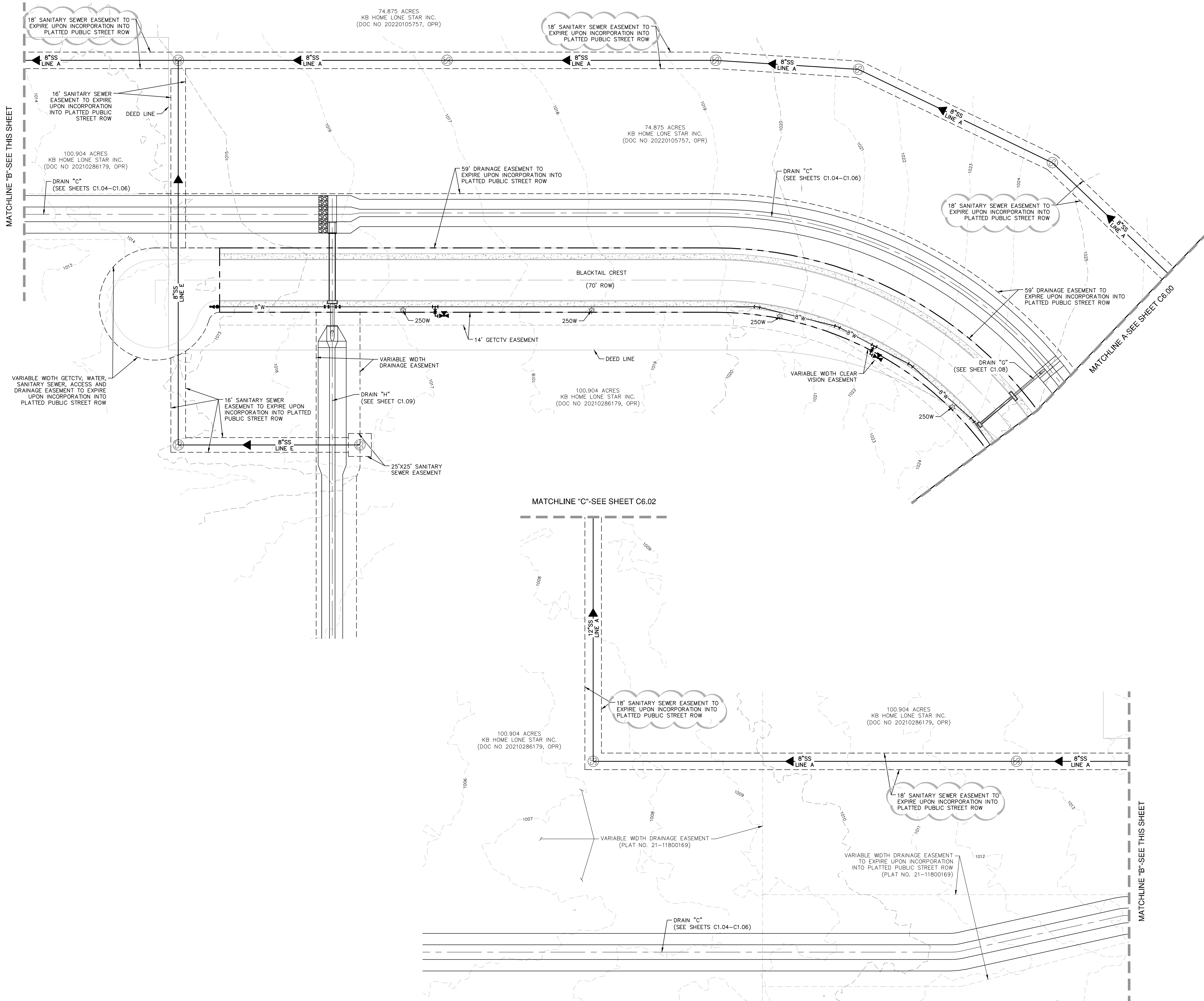
OVERALL UTILITY PLAN  
(SHEET 1 OF 3)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C6.00



Date: Feb 14, 2024, 2:15pm User ID: ellidrew  
File: P:\16\88\14\Design\CA\0616681.dwg

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### UTILITY LEGEND

PROJECT LIMITS	---
EXISTING CONTOURS	---960---
EXISTING WATER	---W---
EXISTING SEWER	---SS---
PROPOSED SEWER	---SS---
PROPOSED WATER	---W---
PROPOSED WYE & LATERAL	---W---
SINGLE WATER SERVICE	---W---
DUAL WATER SERVICE	---W---
STREET LIGHTS	---

TO AVOID EXTRA COSTS FROM HAVING TO BORE OR CUT NEW STREETS, THE DEVELOPER WILL BE RESPONSIBLE FOR PLACING 6" SCHEDULE 80 SLEEVES (AT A MINIMUM DEPTH OF 36" BELOW FINAL GRADE AND EXTENDED 2' INTO THE PROPERTY) FOR EACH CPS FACILITY AT ALL STREET AND DRAIN CROSSINGS WHEN BUILT AHEAD OF CPS CONSTRUCTION. THESE SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CPS CONSTRUCTION.  
PLEASE CONTACT STEVE BLAIN  
AT TELEPHONE NO. 353-6867 FOR DETAILS.

### STREETLIGHT NOTE:

STREETLIGHTS TO BE INSTALLED IN ACCORDANCE WITH BEXAR COUNTY STREETLIGHT PLACEMENT GUIDELINES IN THE ETJ.

### CONDUIT NOTES:

- CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
- CONDUITS SHALL BE PVC WITH MINIMUM BURY OF 30 INCHES. SCHEDULE 80 TO BE USED FOR GPS CONDUITS, ALL OTHER CONDUITS ARE SCHEDULE 40.
- ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.

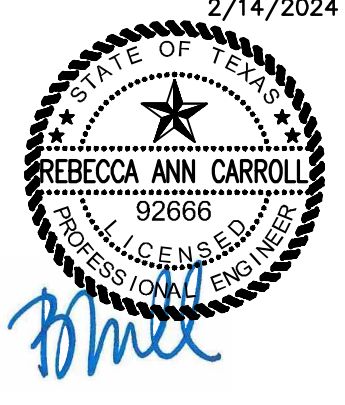
### TRENCH EXCAVATION SAFETY PROTECTION:

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

### CAUTION!!

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

NO.	REVISION	DATE
1.	REVISED UTILITIES & EASEMENTS	02/06/2024



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

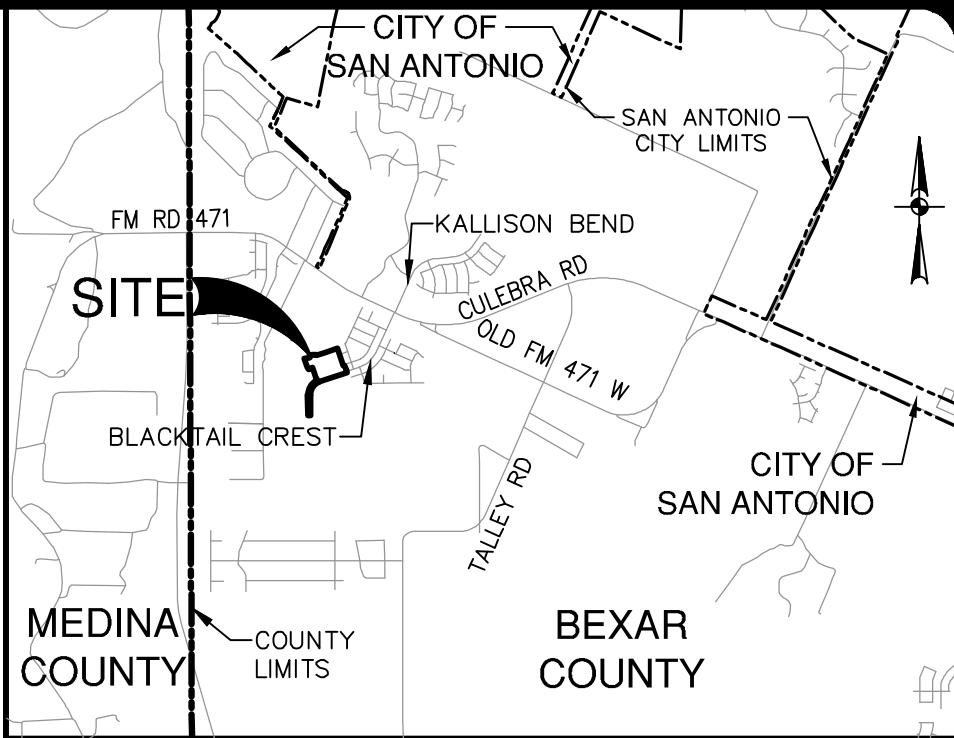
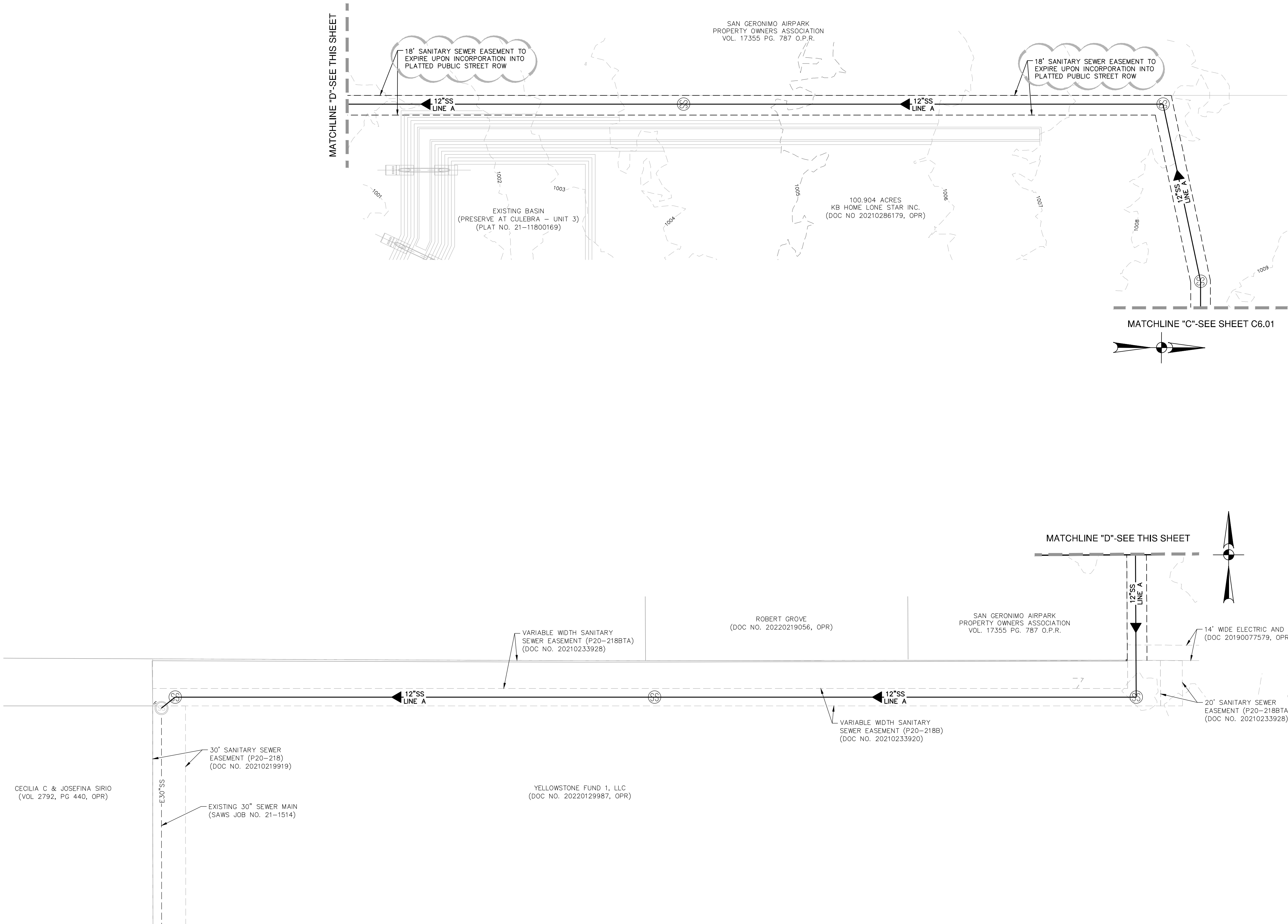
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**OVERALL UTILITY PLAN**  
(SHEET 2 OF 3)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C6.01

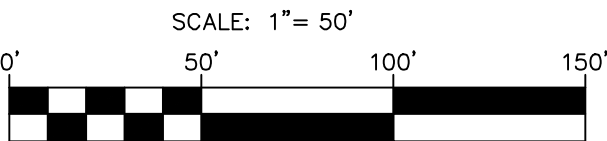


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LOCATION MAP  
NOT-TO-SCALE



### UTILITY LEGEND

PROJECT LIMITS	---
EXISTING CONTOURS	--- 960 ---
EXISTING WATER	--- W ---
EXISTING SEWER	--- SS ---
PROPOSED SEWER	--- SS ---
PROPOSED WATER	--- W ---
PROPOSED WYE & LATERAL	--- W ---
SINGLE WATER SERVICE	--- W ---
DUAL WATER SERVICE	--- W ---
STREET LIGHTS	---

TO AVOID EXTRA COSTS FROM HAVING TO BORE OR CUT NEW STREETS, THE DEVELOPER WILL BE RESPONSIBLE FOR PLACING 6" SCHEDULE 80 SLEEVES (AT A MINIMUM DEPTH OF 36" BELOW FINAL GRADE AND EXTENDED 2' INTO THE PROPERTY) FOR EACH CPS FACILITY AT ALL STREET AND DRAIN CROSSINGS WHEN BUILT AHEAD OF CPS CONSTRUCTION START. THESE SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CPS CONSTRUCTION.  
PLEASE CONTACT STEVE BLAIN  
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**STREETLIGHT NOTE:**  
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**CONDUIT NOTES:**  
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**CAUTION!!**  
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NO.	REVISION	DATE
1.	REVISED EASEMENT	02/06/2024

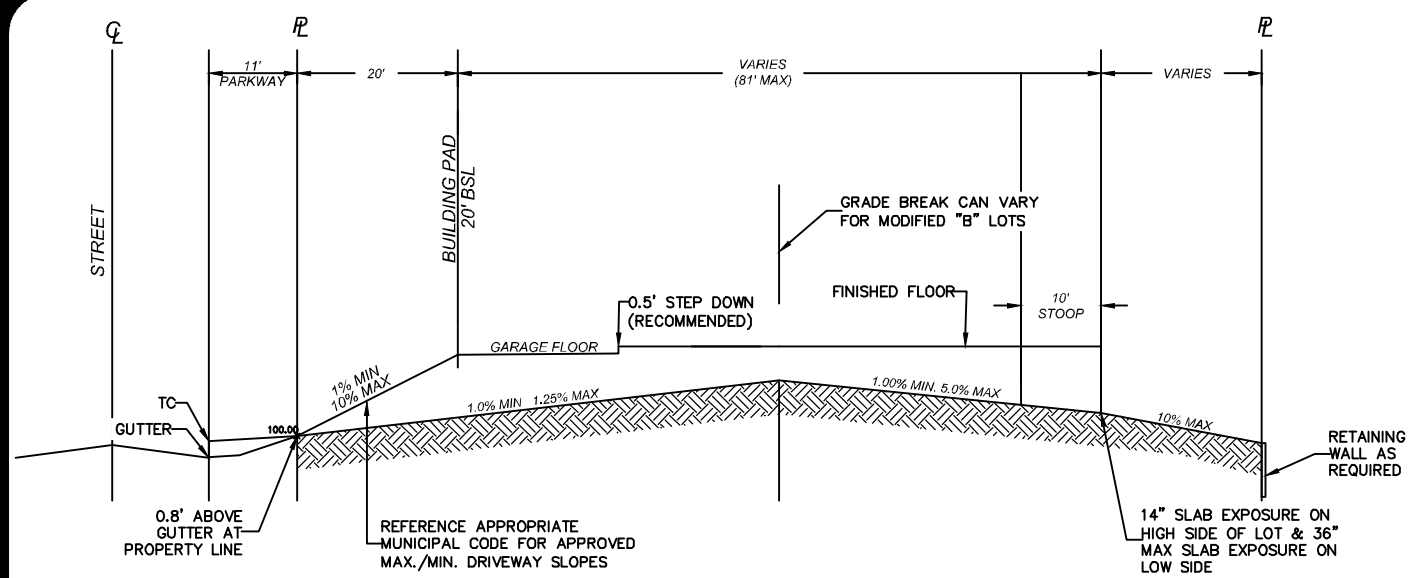


**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10028800

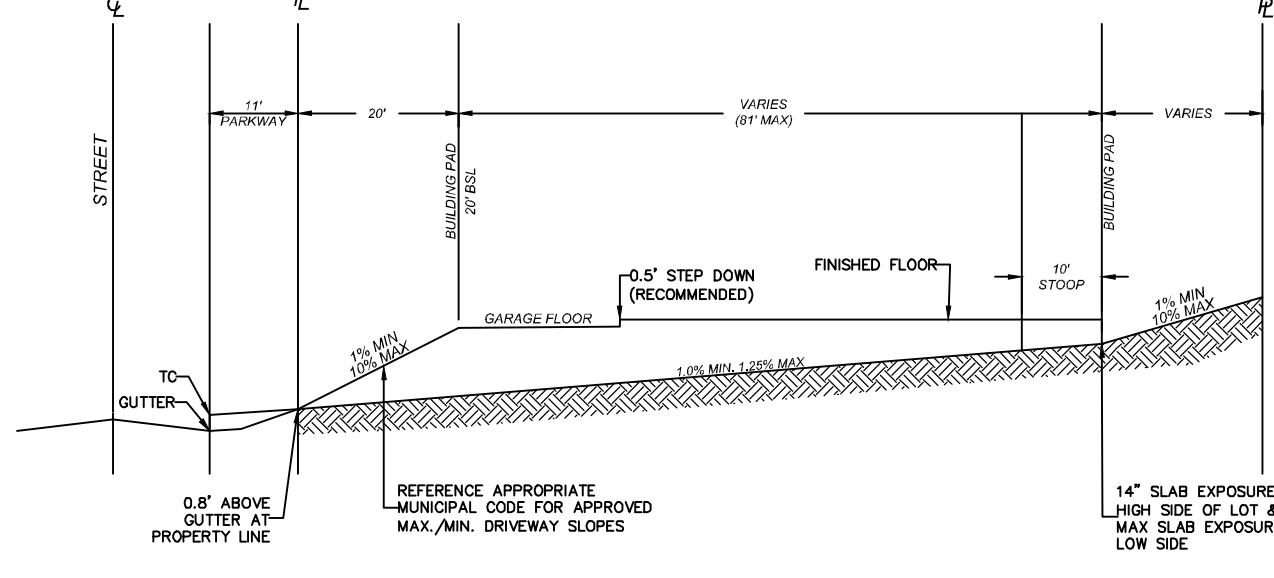
**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
OVERALL UTILITY PLAN  
(SHEET 3 OF 3)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C6.02

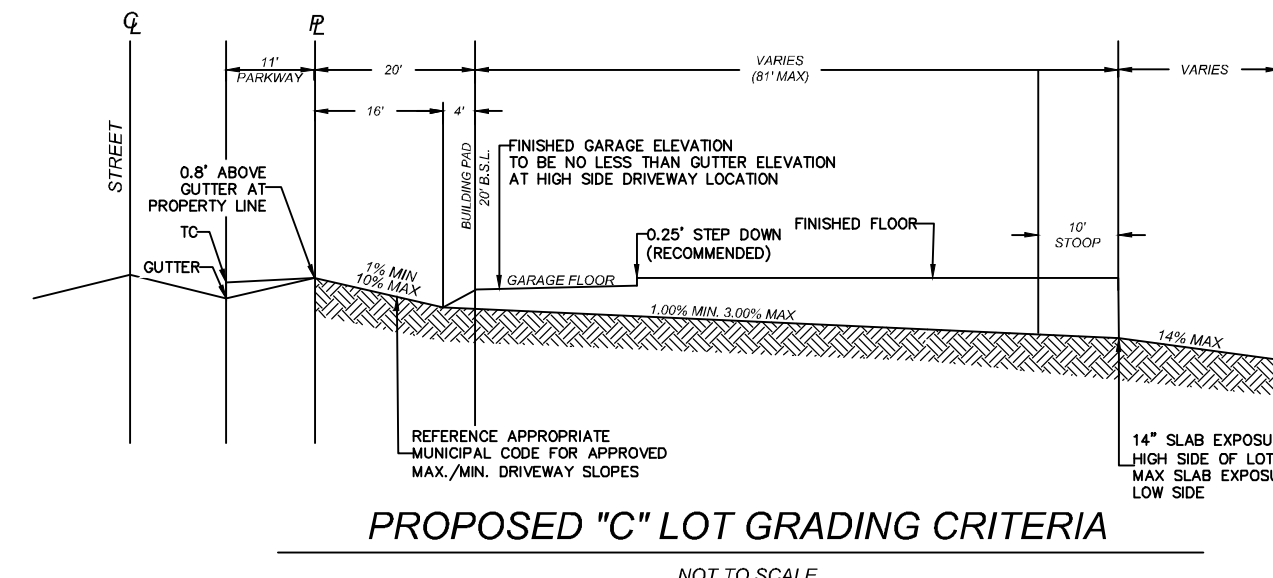




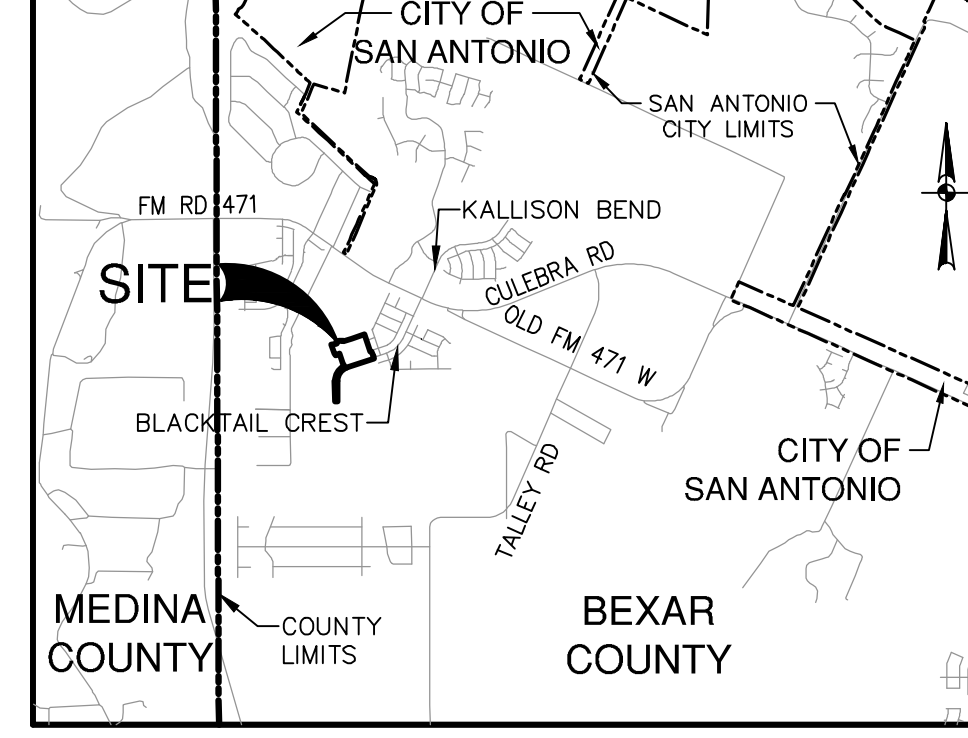
1. SHOW RETAINING WALLS GREATER THAN 1 FT. ON GRADING PLAN.
2. FINISHED GRADE AT FRONT BUILDING SETBACK LINE SHALL BE NO LESS THAN 1% SLOPE BACK TO RIGHT-OF-WAY.
3. MAXIMUM GRADE ACROSS BUILDING PAD SHALL BE 1.25% TO THE FRONT AND 3.0% TO THE BACK.
4. BUILDING PAD GRADE SHALL EXTEND 10' BEYOND THE ESTIMATED PAD LENGTH.
5. MAXIMUM GRADE ON REAR YARD SHALL BE 14% MINIMUM GRADE ON REAR YARD SHALL BE 1%.
6. CROSSFALL ACROSS BUILDING PAD TO CREATE NO MORE THAN 36 IN. SLAB EXPOSURE.



1. SHOW RETAINING WALLS GREATER THAN 1 FT. ON GRADING PLAN.
2. FINISHED GRADE AT FRONT BUILDING SETBACK NO LESS THAN 1% SLOPE BACK TO RIGHT-OF-WAY.
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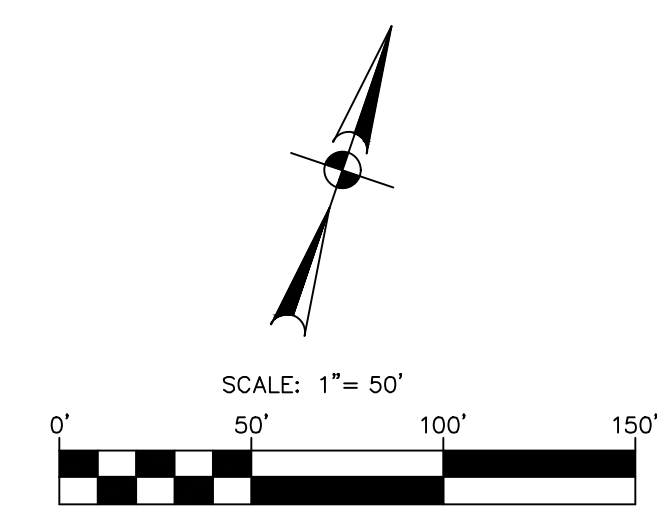


1. SHOW RETAINING WALLS GREATER THAN 1 FT. ON GRADING PLAN.
2. FINISHED GRADE AT FRONT BUILDING SETBACK LINE SHALL BE NO LESS THAN 1% SLOPE.
3. MAXIMUM GRADE THROUGH BUILDING PAD SHALL BE 3.0% MINIMUM GRADE THROUGH BUILDING PAD SHALL BE 1%.
4. BUILDING PAD GRADE SHALL EXTEND 10' BEYOND THE ESTIMATED PAD LENGTH.
5. MAXIMUM GRADE ON REAR YARD SHALL BE 14% MINIMUM GRADE ON REAR YARD SHALL BE 1%.
6. CROSSFALL ACROSS BUILDING PAD TO CREATE NO MORE THAN 36 IN. SLAB EXPOSURE.



LOCATION MAP

NOT-TO-SCALE

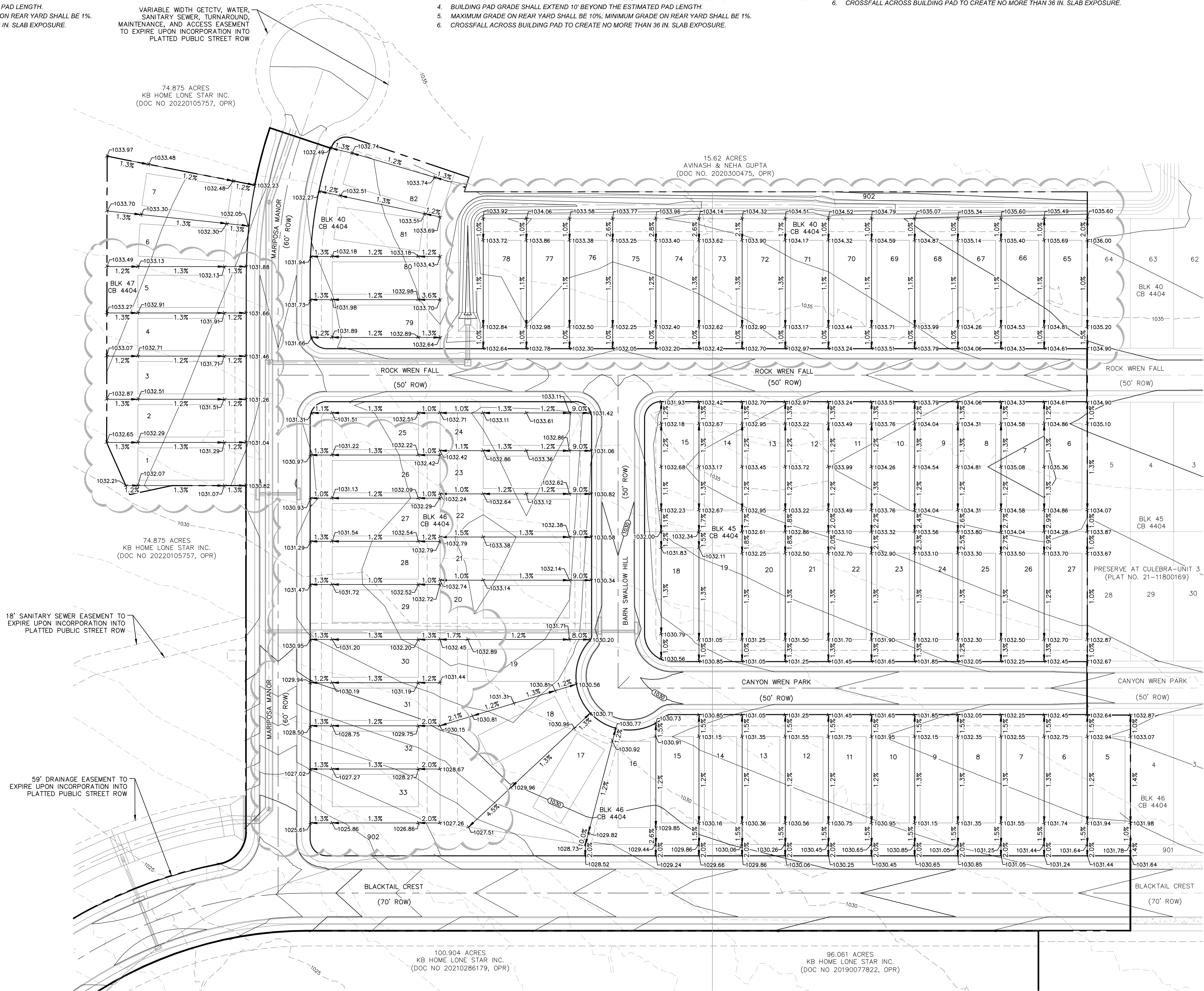


GRADING LEGEND

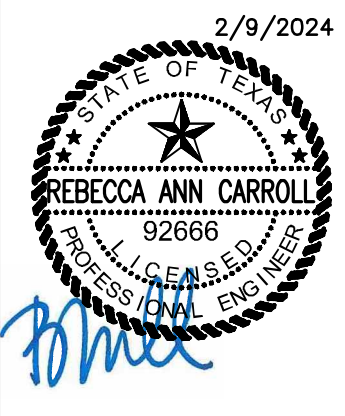
PROJECT LIMITS	---
EXISTING CONTOUR	---976---
PROPOSED CONTOUR	---970---

GRADING NOTES:

1. 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).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. 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.
5. 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.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITUATIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. 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.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION, ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. 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).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. 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.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. 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).
15. 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.
16. 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 CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. 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.
18. 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.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.



NO.	REVISION	DATE
1.	REVISED LOT LINES & GRADING	02/02/2024



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TPELS FIRM REGISTRATION #10028600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

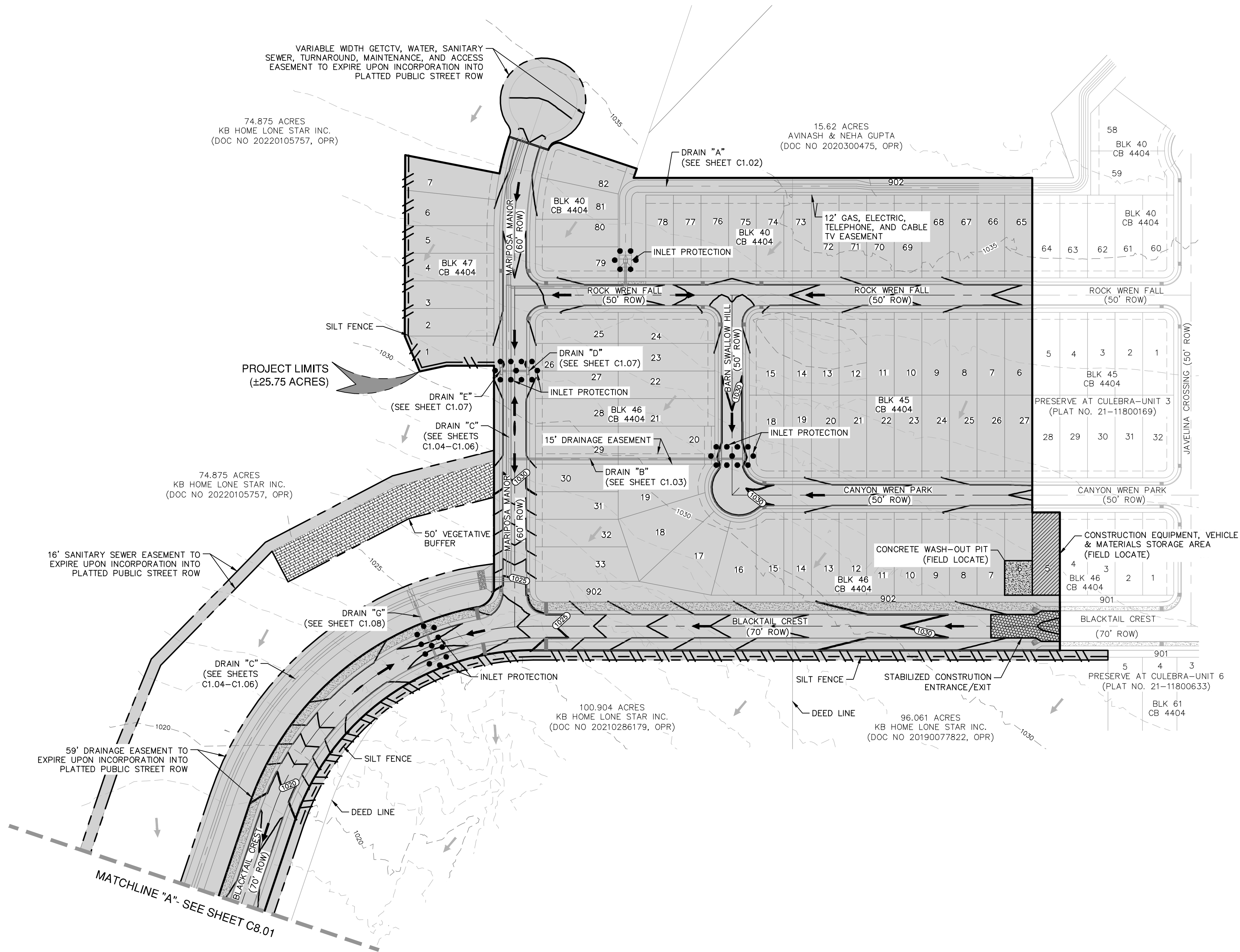
GRADING PLAN

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	FEBRUARY 2024
DRAWN	JB
CHECKED	DRAWN GK
SHEET	C7.00

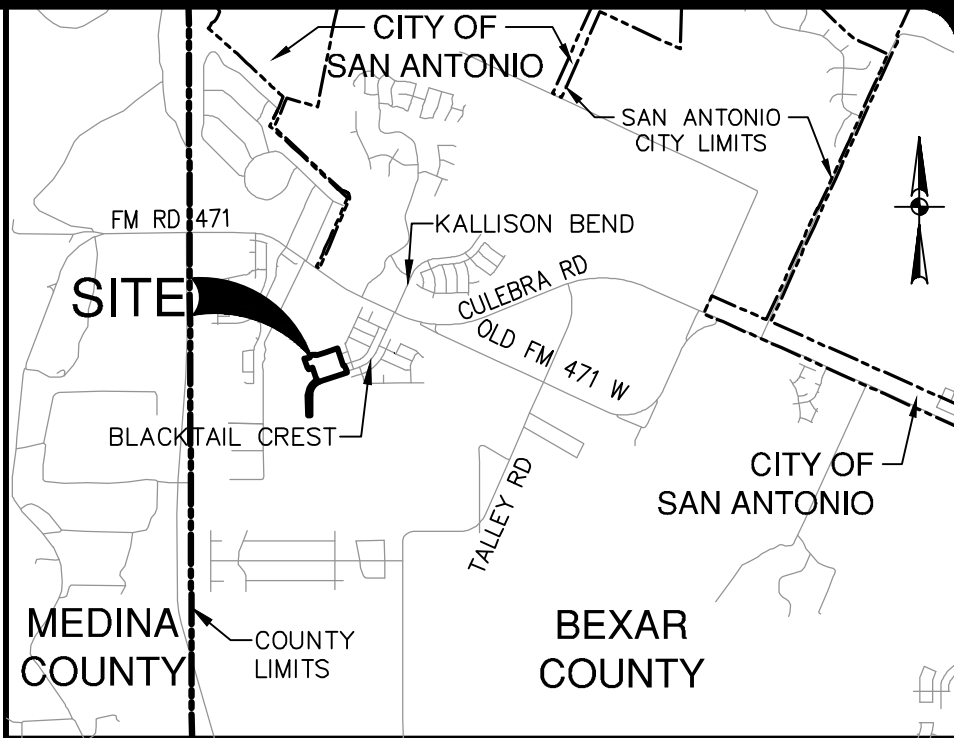


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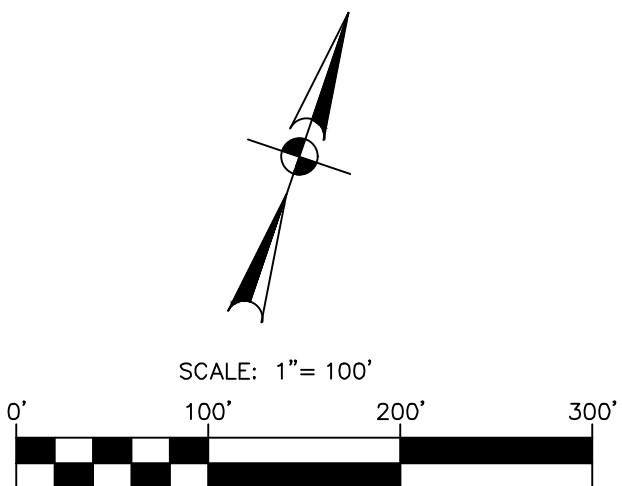
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SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



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 (±22.21 AC)	
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.

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.

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.

DATE	
NO.	REVISION



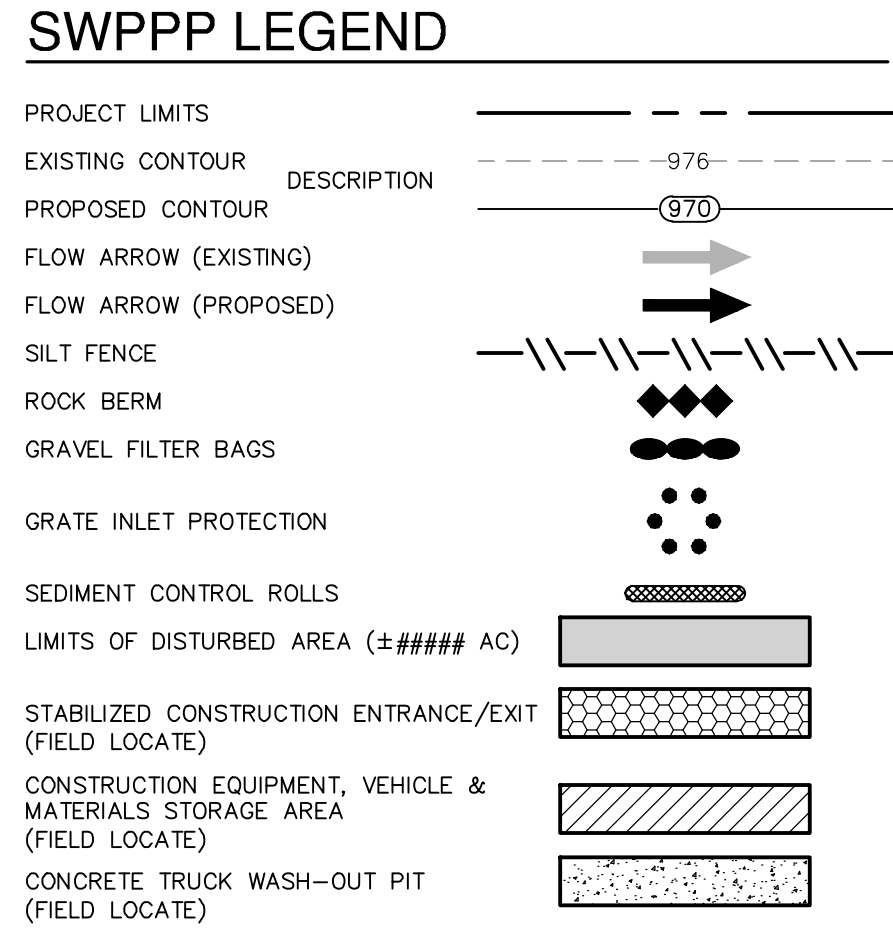
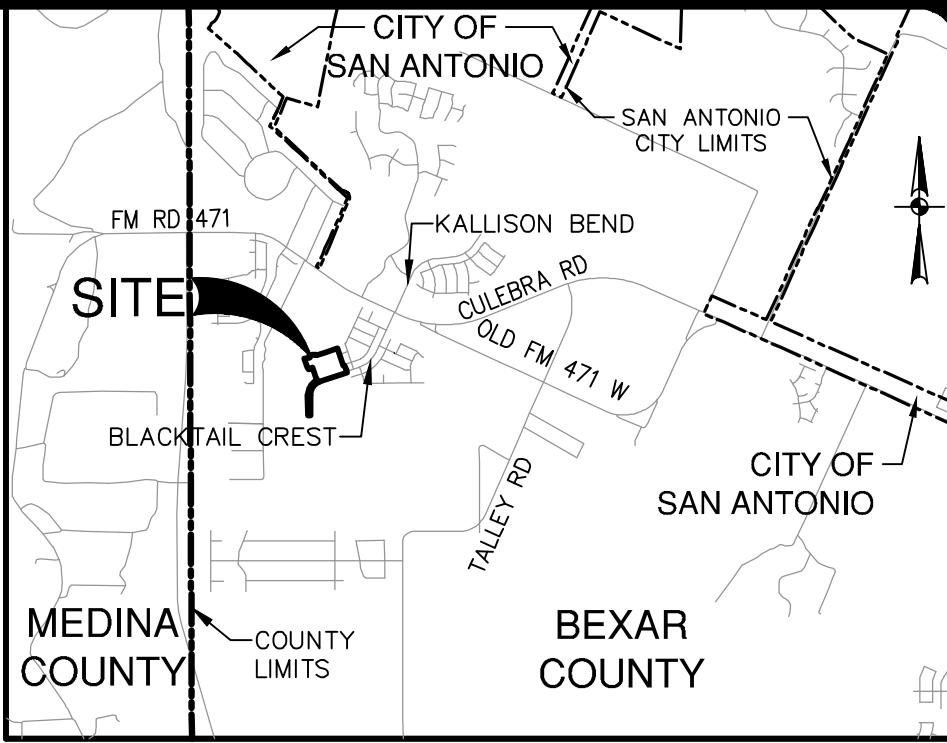
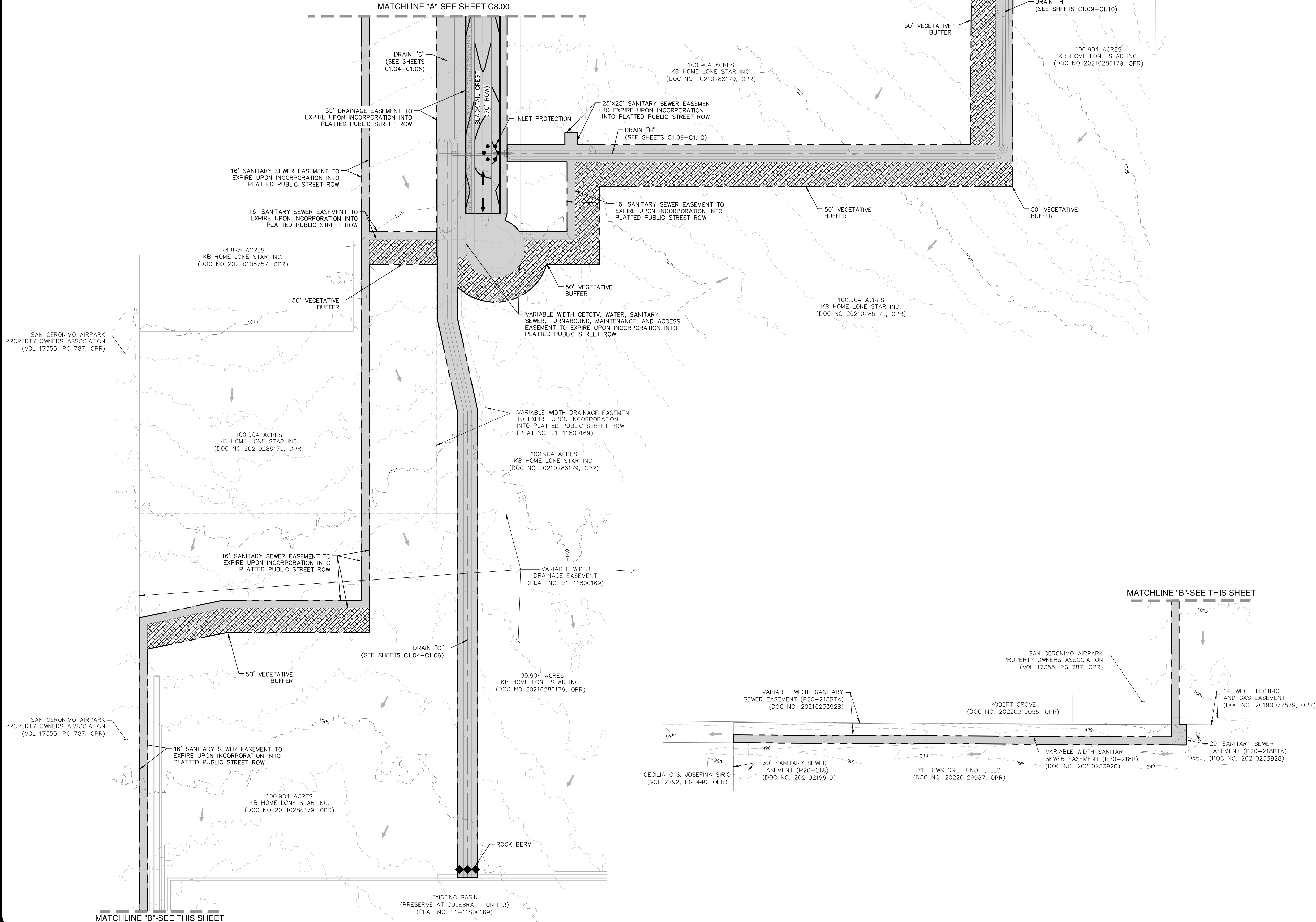
**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #10088600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS  
**STORM WATER POLLUTION PREVENTION PLAN**  
(SHEET 1 OF 2)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	OCTOBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C8.00



SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION

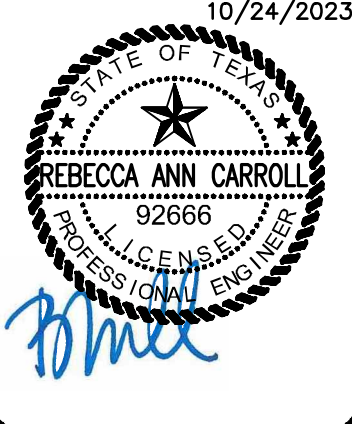


- GENERAL NOTES**
- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
  - CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
  - STORM WATER POLLUTION 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 COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
  - AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SHALL 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 WATERWAYS 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 WITH TxDOT RIGHT-OF-WAY WITH TxDOT.

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.

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.

DATE	
NO.	REVISION



**PAPE-DAWSON ENGINEERS**

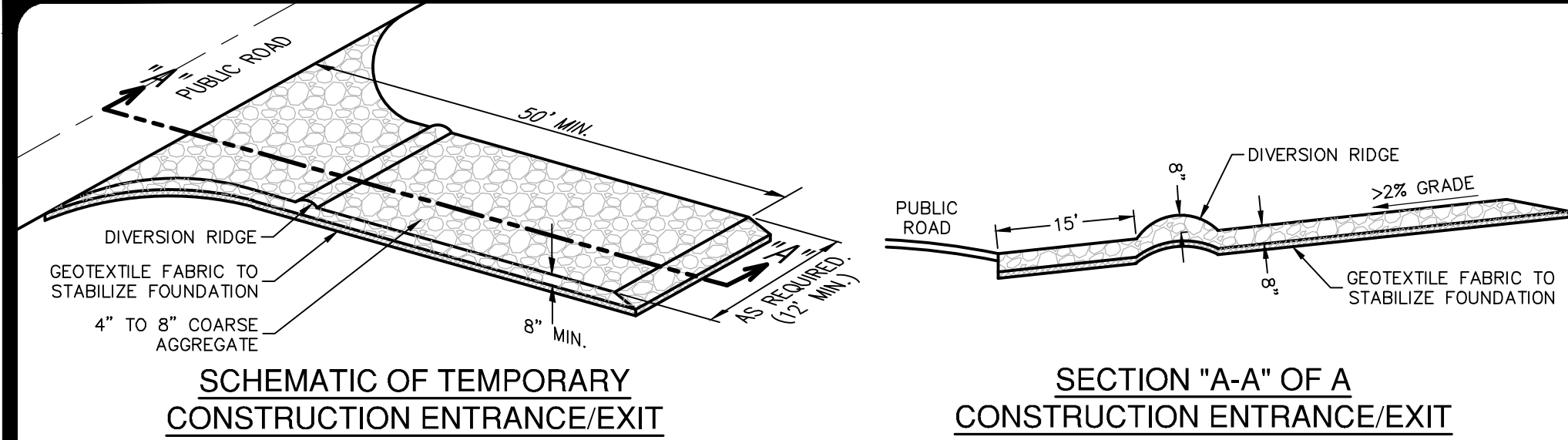
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TPDES FIRM REGISTRATION #10088600

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

**STORM WATER POLLUTION PREVENTION PLAN**  
(SHEET 2 OF 2)

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	OCTOBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C8.01



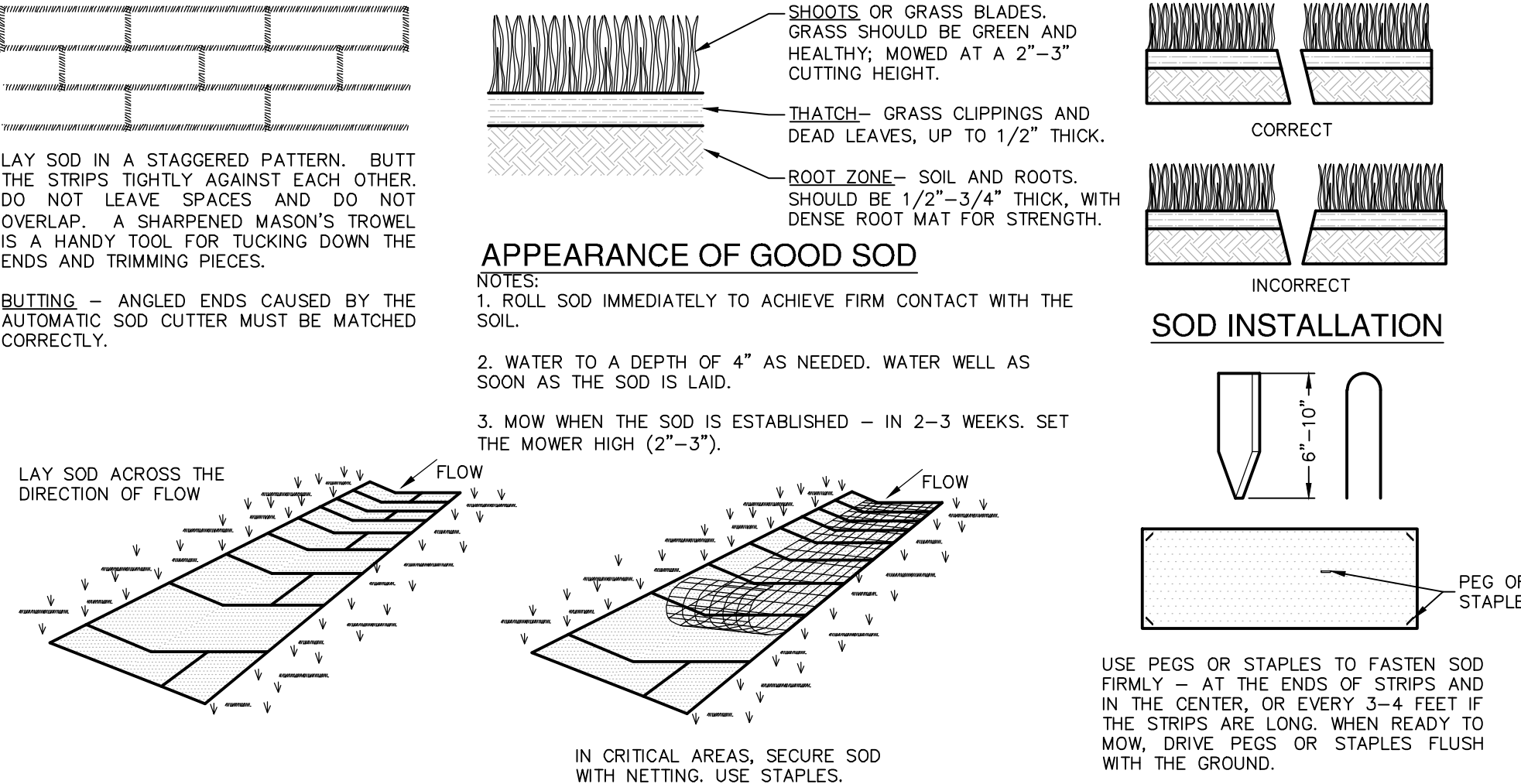


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
  2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
  3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH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

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

### STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



- MATERIALS**
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
  2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.
  3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.
  4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

### SITE PREPARATION

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

### INSTALLATION IN CHANNELS

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

### SOD INSTALLATION DETAIL

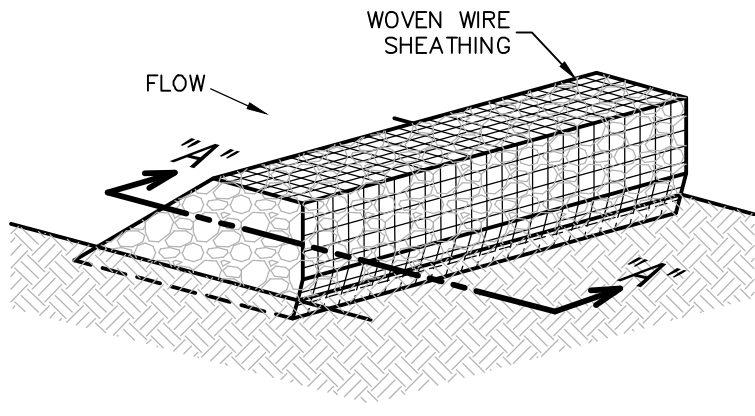
NOT-TO-SCALE

### 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

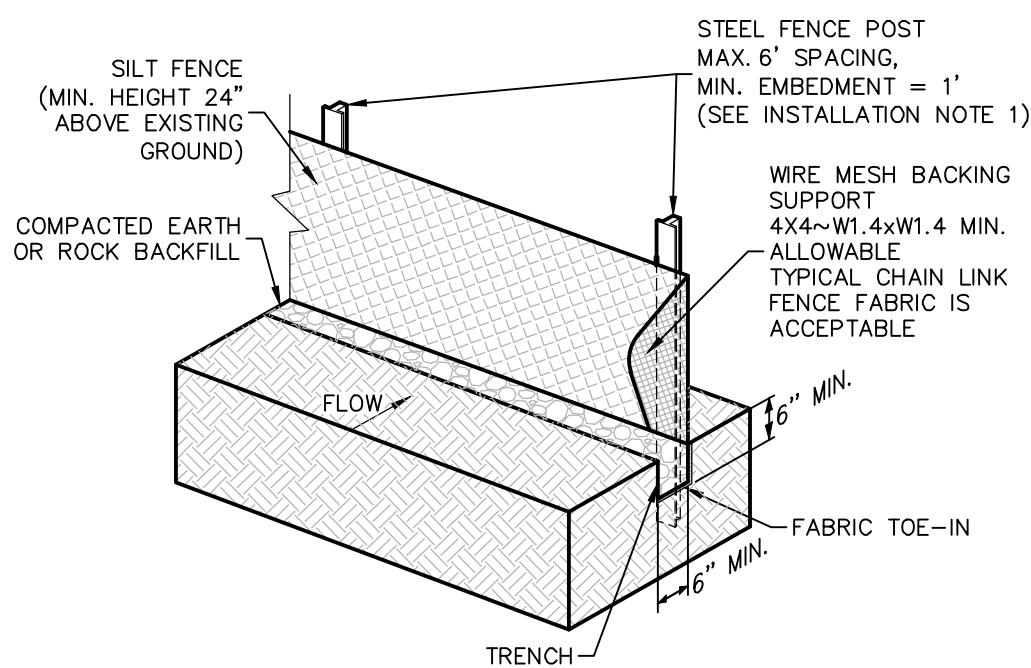
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE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

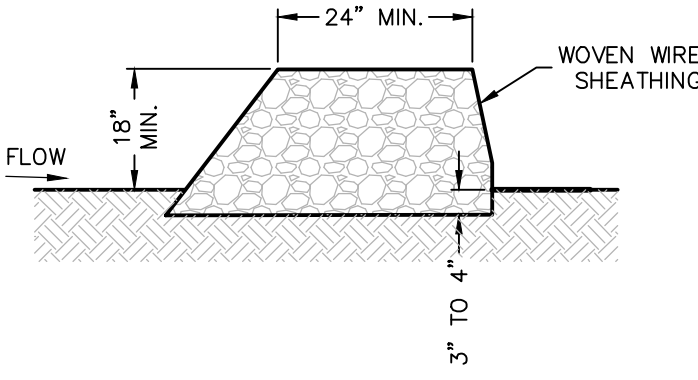
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN<sup>2</sup>, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

### INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER, WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

### SILT FENCE DETAIL

NOT-TO-SCALE



### SECTION "A-A"

### MATERIALS

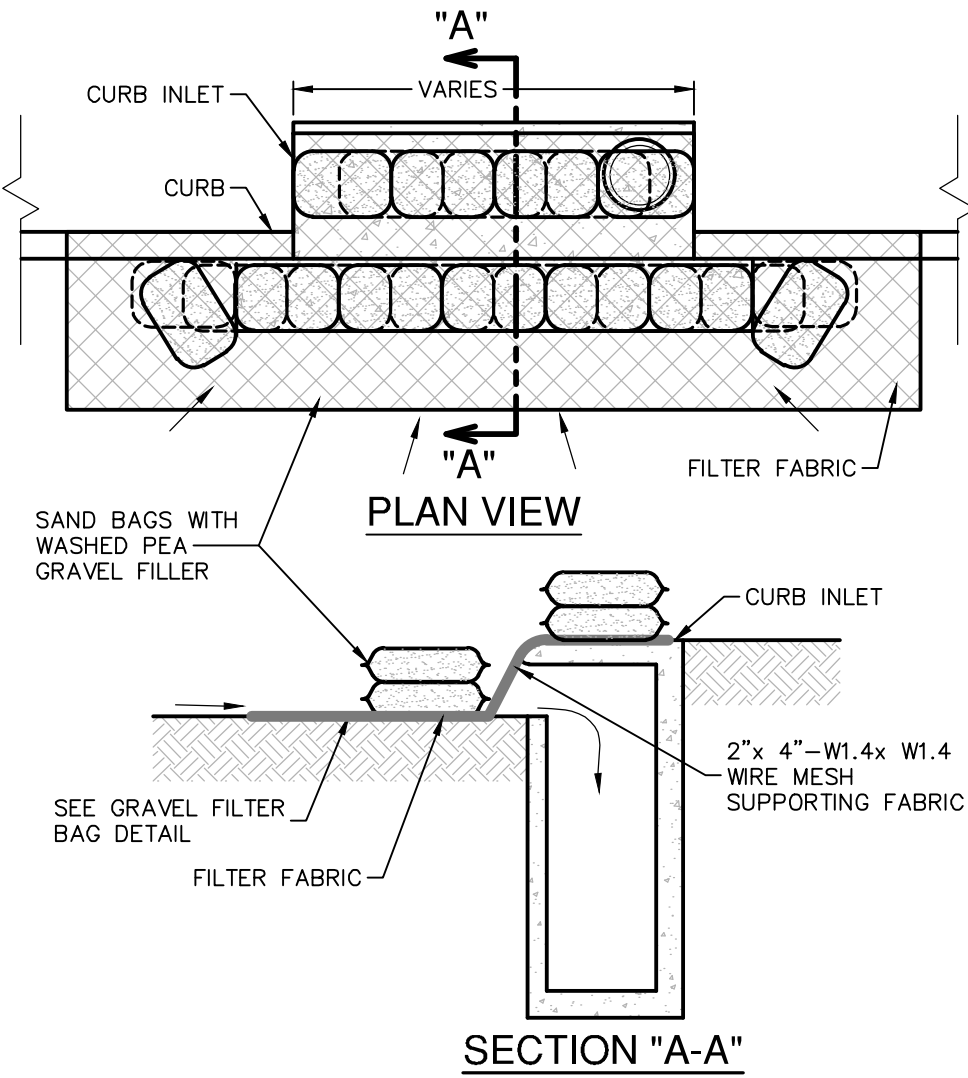
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR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

### INSTALLATION

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

### COMMON TROUBLE POINTS

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

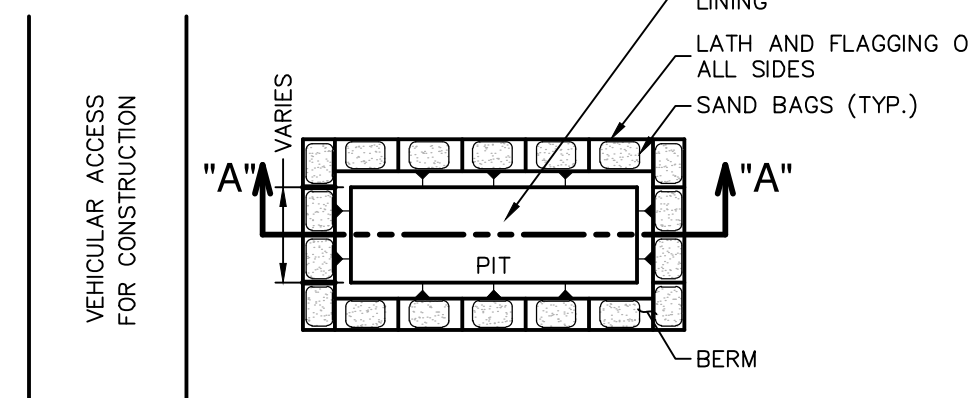


### GENERAL NOTES

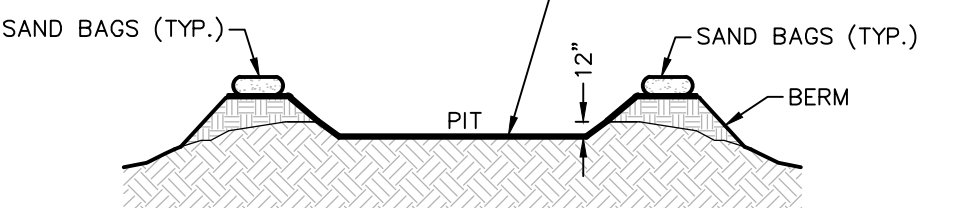
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

### BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



### PLAN VIEW



### SECTION "A-A"

### GENERAL NOTES

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

### MATERIALS

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

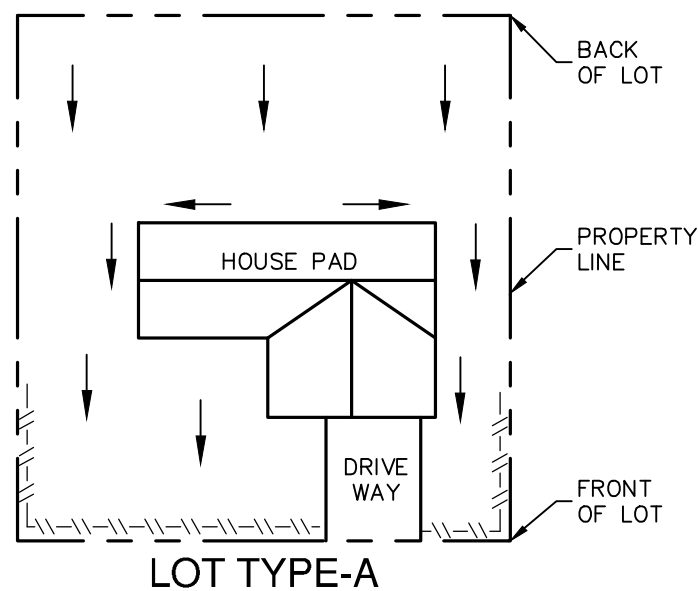
### MAINTENANCE

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

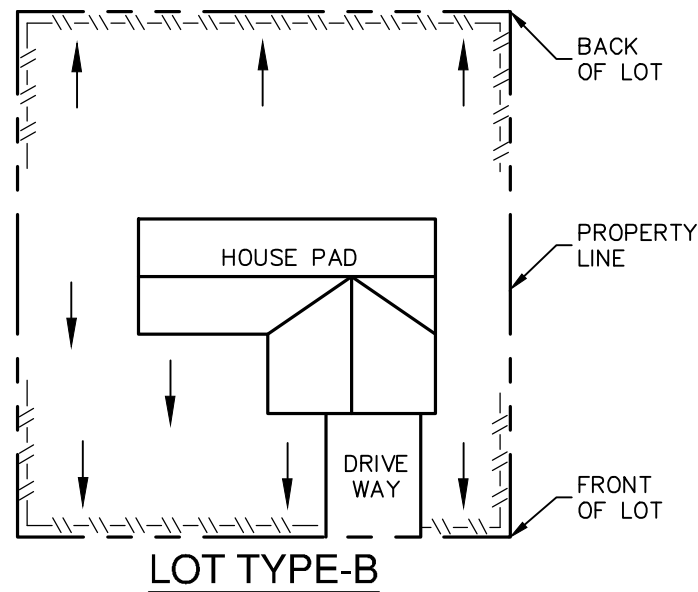
### CONCRETE TRUCK WASHOUT

### PIT DETAIL

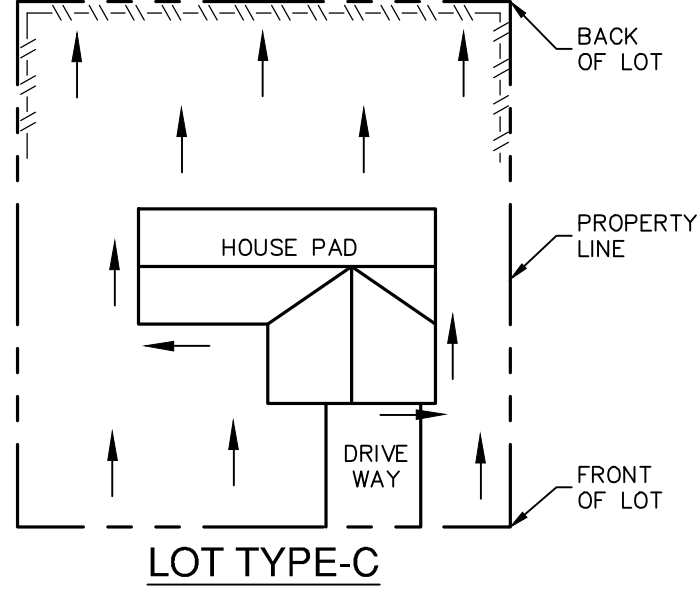
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### LOT TYPE-A



### LOT TYPE-B



### LOT TYPE-C

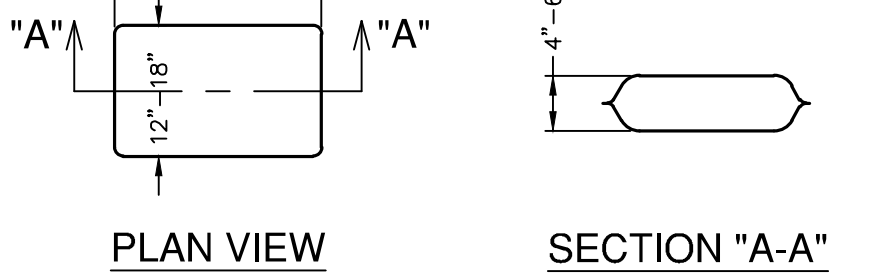
NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNGRADIENT SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

### LEGEND

--- SILT FENCE DRAINAGE FLOW

### TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE



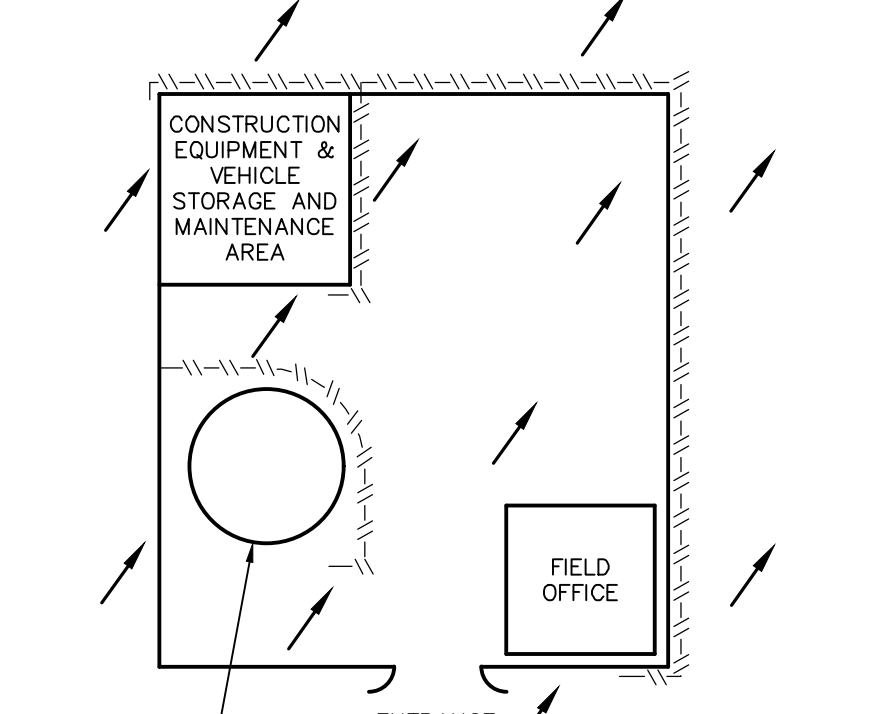
### PLAN VIEW

### SECTION "A-A"

- NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE WOVEN FABRIC, MIN. UNIT WIGHT 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

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.

DATE	
NO.	
REVISION	



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TYPE FIRM REGISTRATION #470 | TBPUS FIRM REGISTRATION #1008860

**PRESERVE AT CULEBRA-UNIT 14**  
BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO.	23-11800218
JOB NO.	11668-14
DATE	OCTOBER 2023
DESIGNER	JB
CHECKED	DRAWN GK
SHEET	C8.10