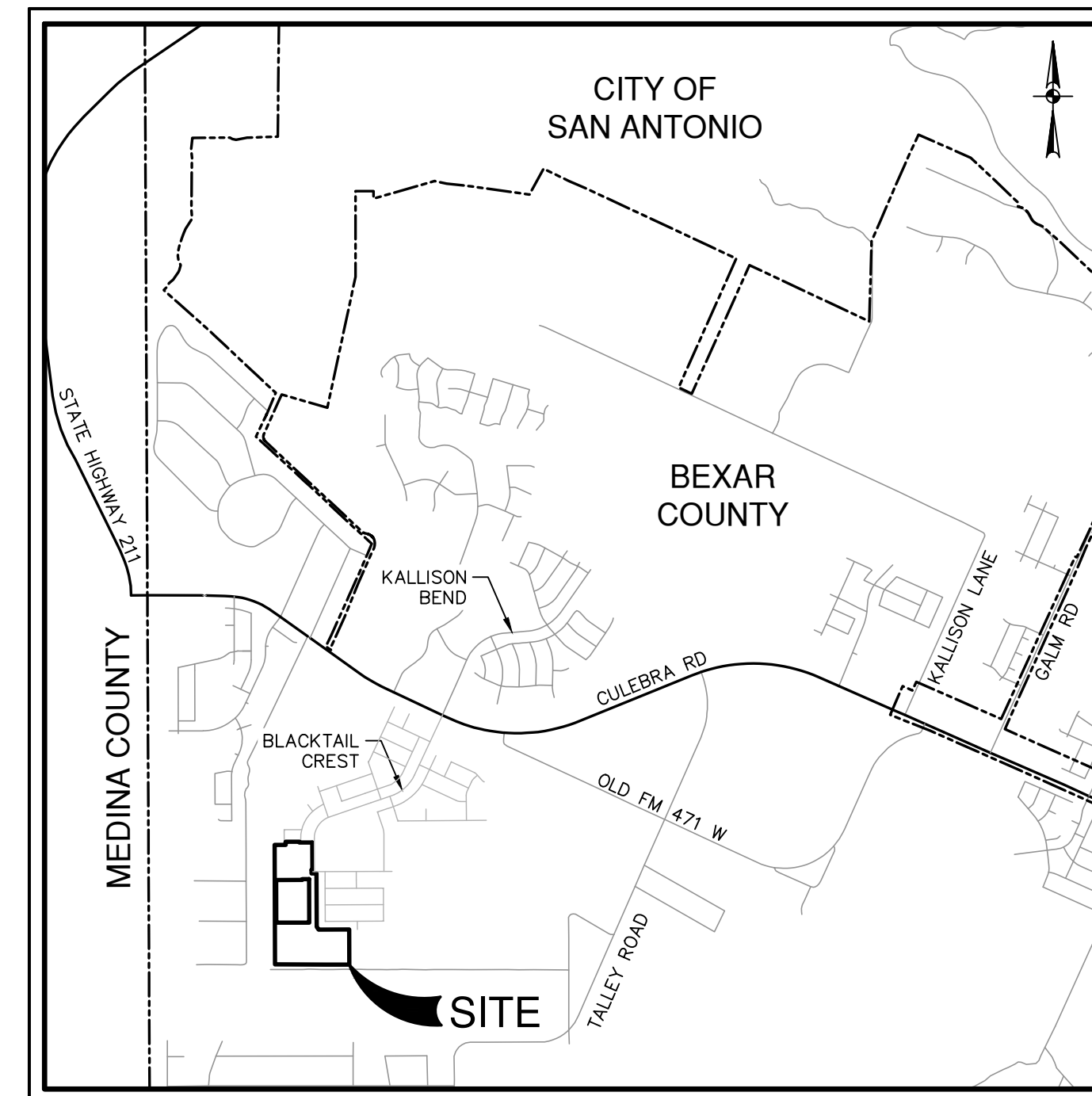


PRESERVE AT CULEBRA-UNIT 18

BEXAR COUNTY, TEXAS

CIVIL CONSTRUCTION PLANS



LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

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

JANUARY 2026

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



Sheet List Table		
Sheet Title	Sheet Description	Sheet Number
COVER SHEET		C0.00
MASTER DRAINAGE PLAN		C1.00
DRAIN M	PLAN AND PROFILE	C1.01
DRAIN N	PLAN AND PROFILE	C1.02
DRAINAGE DETAILS	(SHEET 1 OF 3)	C1.10
DRAINAGE DETAILS	(SHEET 2 OF 3)	C1.20
DRAINAGE DETAILS	(SHEET 3 OF 3)	C1.30
BONITO LOOP	PLAN & PROFILE	C2.00
MOUNTAINEER WAY	PLAN & PROFILE	C2.01
WOOD STORK RIDGE	PLAN & PROFILE	C2.02
STREET DETAILS	(SHEET 1 OF 2)	C2.10
STREET DETAILS	(SHEET 2 OF 2)	C2.20
OVERALL SIGNAGE PLAN		C3.00
SIGNAGE DETAILS	(SHEET 1 OF 2)	C3.10
SIGNAGE DETAILS	(SHEET 2 OF 2)	C3.20
OVERALL SANITARY SEWER PLAN		C4.00
EXISTING SEWER LINE A - UNIT 15	PLAN AND PROFILE	C4.01
EXISTING SEWER LINE A - UNIT 14	PLAN AND PROFILE	C4.02
SANITARY SEWER DETAILS		C4.10
SANITARY SEWER NOTES		C4.20
OVERALL WATER DISTRIBUTION PLAN		C5.00
WATER DISTRIBUTION PLAN DETAILS		C5.10
WATER DISTRIBUTION PLAN NOTES		C5.20
OVERALL UTILITY PLAN		C6.00
OVERALL GRADING PLAN		C7.00
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) HGL 1170

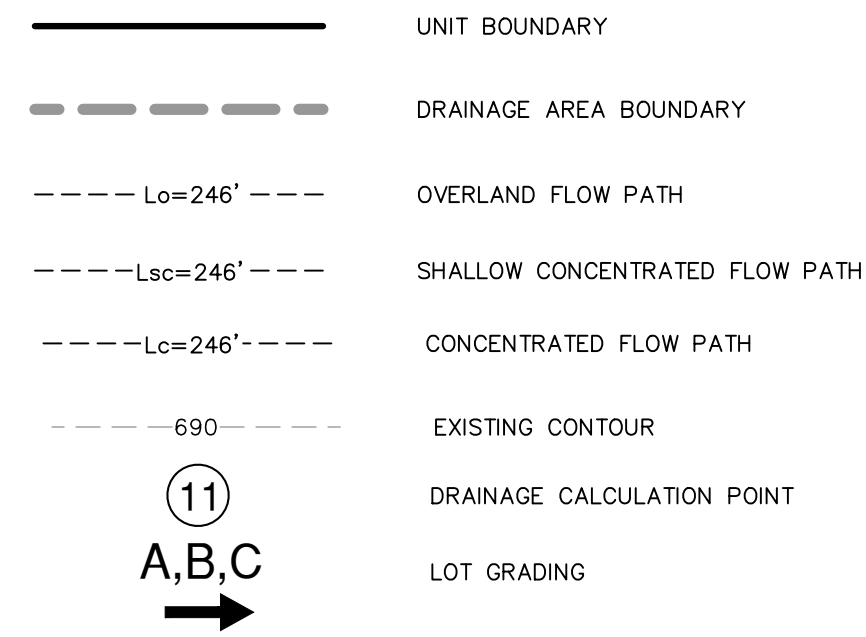
DEVELOPER'S NAME: KB HOME LONE STAR, INC.
ADDRESS: 4800 FREDERICKSBURG ROAD
CITY: SAN ANTONIO STATE: TX ZIP: 78229
PHONE# (210) 301-2815 FAX# 054608
SAWS BLOCK MAP# 054610 TOTAL EDU'S 50 TOTAL ACREAGE 33.273
TOTAL LINEAR FOOTAGE OF PIPE: 1637 LF - 8" PLAT NO. 25-11800004
NUMBER OF LOTS 52 SAWS JOB NO. 25-1124

SEWER: MEDIO-WEST SEWERSHED-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# 054608
SAWS BLOCK MAP# 054610 TOTAL EDU'S 51 TOTAL ACREAGE 33.273
TOTAL LINEAR FOOTAGE OF PIPE: 8" O LF PLAT NO. 25-11800004
NUMBER OF LOTS 52 SAWS JOB NO. 25-1616

SHEET C0.00

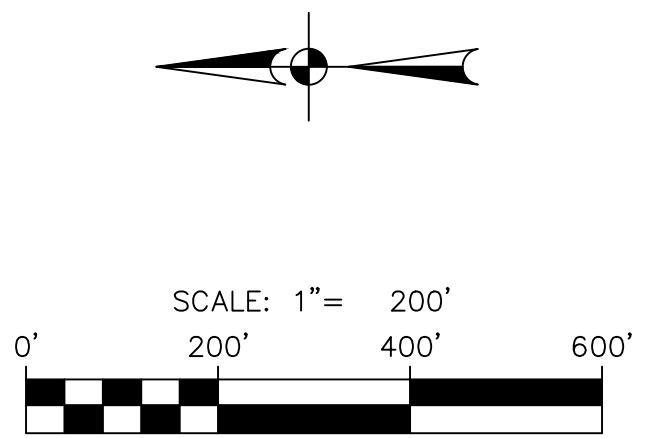
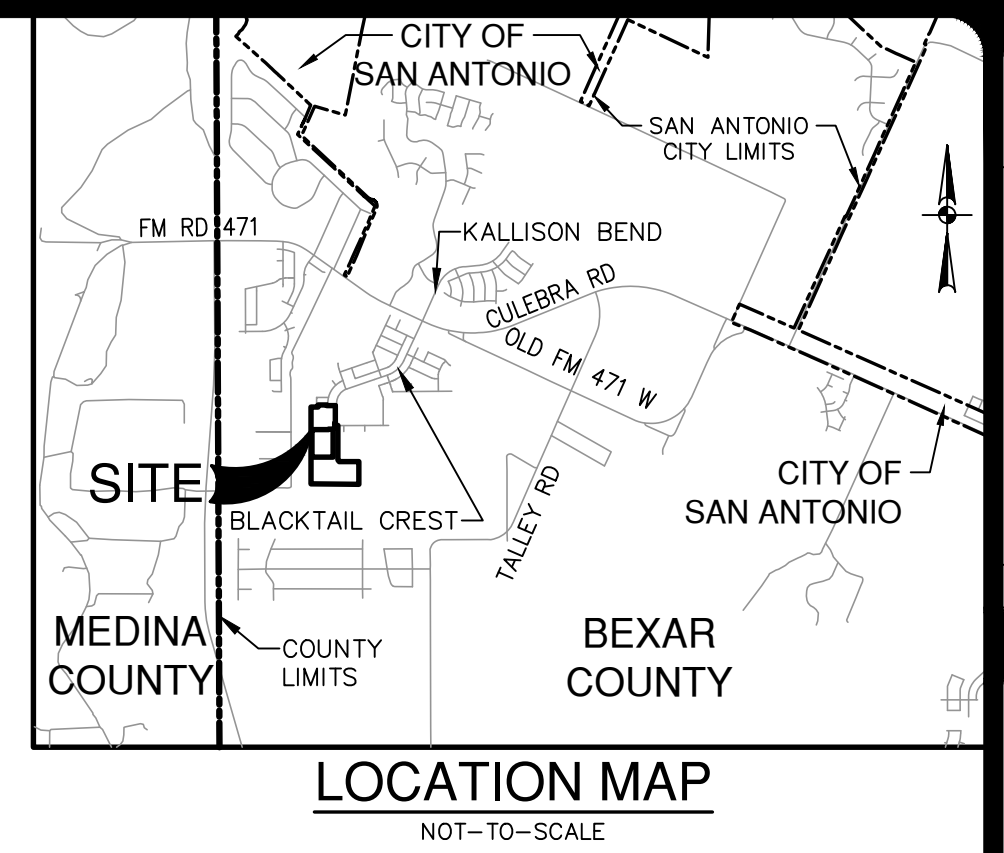
MASTER DRAINAGE LEGEND



Master Drainage Plan Calculations
(Ultimate Development)

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (Seelye)			Shallow Concentrated Flow - 1**			Channelized Flow**			Rational Method Q=CIA					
						L _c (FT)	S ₀ (ft/ft)	T _c (MIN)	L _c (FT)	Condition	Slope (ft/ft)	V _{sc} (FPS)	T _c (MIN)	L _c (FT)	V _{ch} (FPS)	T _c (MIN)	Return Year	Intensity (in/hr)	Q (cfs)	
55	Channel	AB+AC+AD+AE+AF+T+R+U +AA+GG+YY+S+V+AL+AH+AG	93.85	0.78	3,861	100	0.005	17	1,835	U	0.005	1.1	26.8	1,926	4.9	6.6	50	5	2.77	202.8
56	Drain N	AB+AC+AD+AE+AF+T+R+U +AA+GG+YY+S+V+AL+AH+AG+AN +W+X+Z+AJ+AK	128.92	0.77	3,861	100	0.005	17	1,835	U	0.005	1.1	26.8	1,926	5.5	5.8	49	5	2.81	278.9
57	Street Capacity/Drain M	AM	9.53	0.67	1,409	100	0.015	13	1,309	P	0.007	1.7	12.8	-	-	-	49	100	4.83	473.5
59	Interceptor Channel	AQ+AP	0.81	0.67	1,324	100	0.012	14	136	U	0.012	1.8	1.3	1,088	3.0	6.0	21	5	4.43	2.4
61	Channel	AB+AC+AD+AE+AF+T+R+U +AA+GG+YY+S+V+AL+AH+AG+AM +AN+W+X+Z+AJ+AK+AR+AY	152.46	0.76	4,226	100	0.005	17	1,835	U	0.005	1.1	26.8	2,291	6.2	6.2	49	25	3.89	450.7

*Seelye Chart or TR-55 Eqn. 3-3
 **As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s
 $T_c = \frac{(0.0007(n-L)^{0.87})}{(P^2 \cdot S^{0.5})} + 60$
 $v = \frac{k}{n} R^{2/3} S^{1/2}$
 $k = 1.486 ft^{1/3} / s$
 S: For Streets: n = 0.018, R = 0.2 (Ad R: Channel Hydraulic Radius)
 P: For Paved: n = 0.025, R = 0.2 (a/Pw)
 U: For Unpaved: n = 0.05, R = 0.4
 D: For Default: v = 6 fps
 n: Mannings n-Value
 Sch: Channel Flow Slope

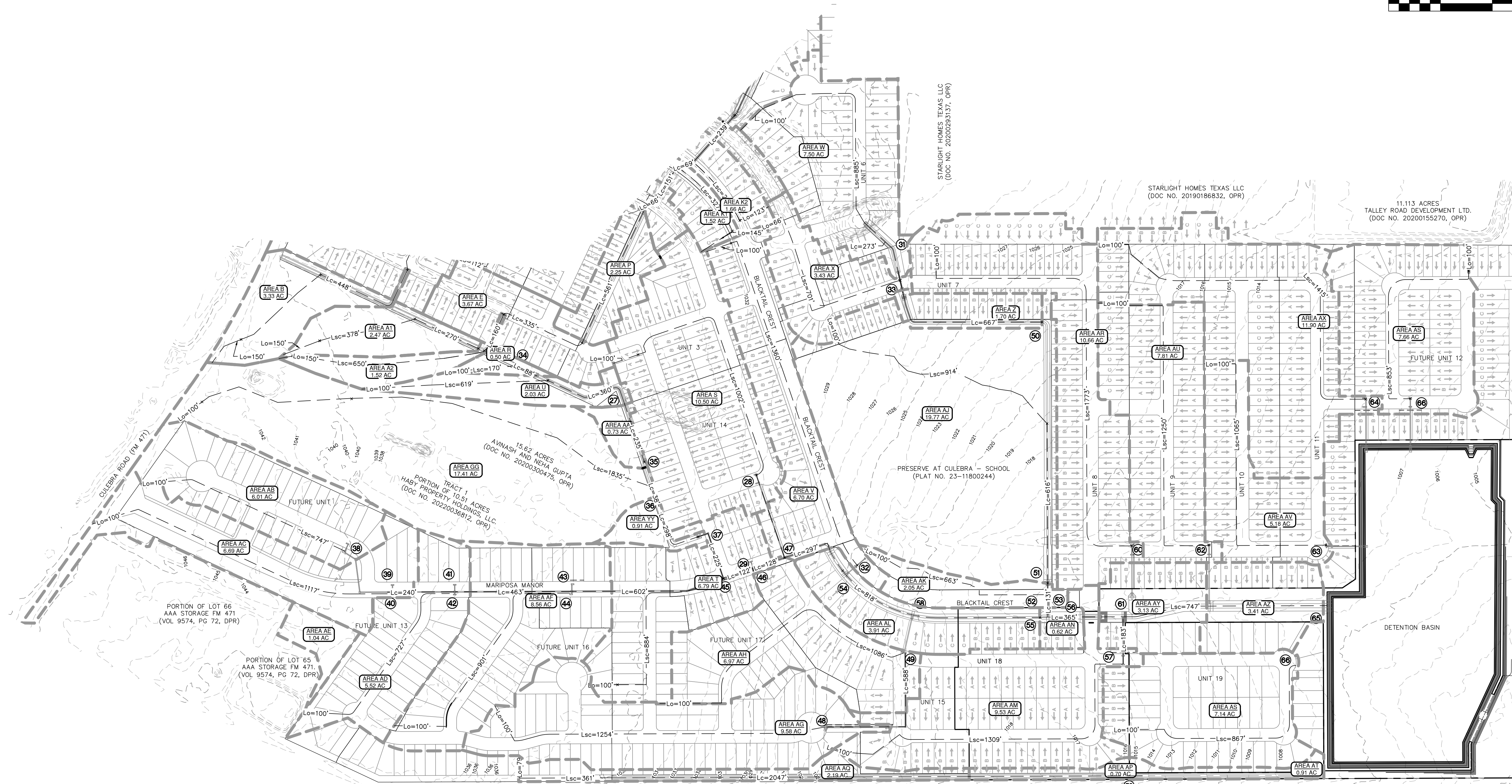


DATE: _____
 NO. REVISION: _____
 2/2/2026

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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 MASTER DRAINAGE PLAN

PLAT NO. 25-11800004
 JOB NO. 11668-20
 DATE FEBRUARY 2026
 DESIGNER AR
 CHECKED SSC DRAWN RP
 SHEET C1.00



Date: Feb 02, 2026, 4:13pm, User: ID: rrcorcar, File: P:\16168\20\Design\CA\URMP-116820.dwg
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HYDRAULIC CALCULATIONS-DRAIN "M"

TOTAL $Q_{25} = 35.8$ CFS
 $Q_{25} = 35.8$ CFS
 $Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)
 $A = L(0.52)$, $h = 0.50$, $g = 32.2$, $c = 0.70$
 $L = \frac{35.8 \text{ CFS}}{(0.70)(0.52)\sqrt{2(32.2)(0.50)}}$
 $L = 17.33$ FT USE 2 ~ 10 FT CURB INLET
 CHECK WITH WEIR FORMULA
 $h = \left(\frac{Q}{C(L)}\right)^{2/3} = \left(\frac{35.8}{(3.087)(20)}\right)^{2/3} = 0.70$ FT.
 $h = 0.70 < 0.79$ OK

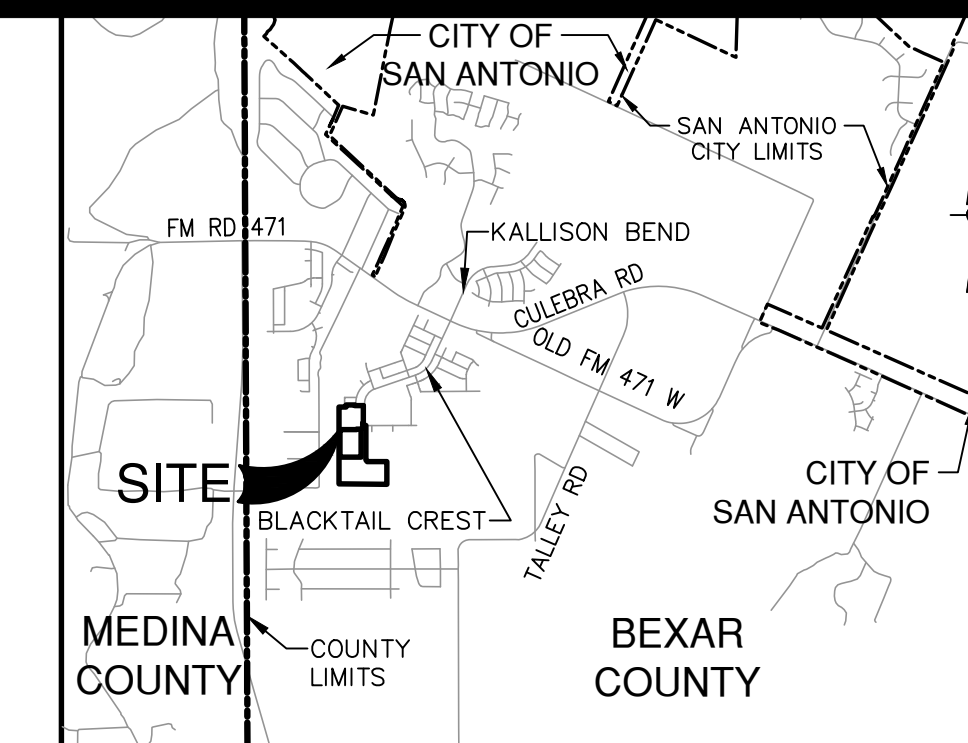
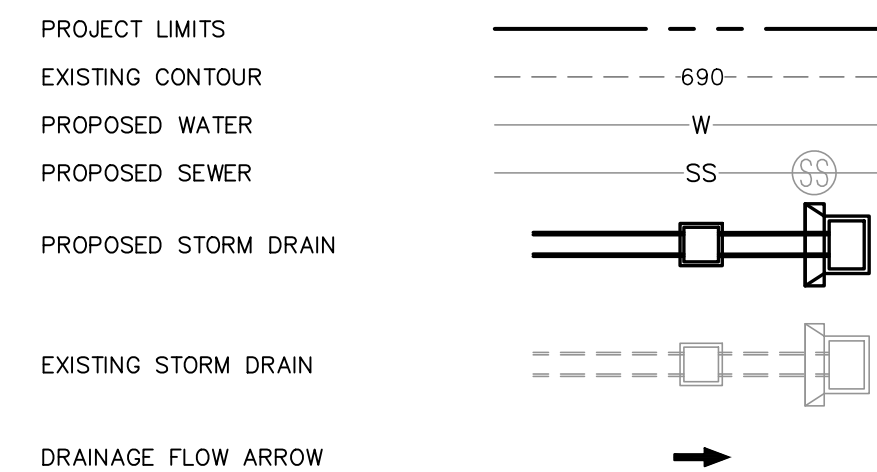
**1 - 30" RCP
HYDRAULIC CALCULATION
STA 1+28.45 TO 2+68.65**

$Q_{25} = 35.8$ CFS
 $n = 0.013$
 $S = 0.75\%$
 $S_f = 0.762\%$
 $dn = 2.50'$
 $V_n = 7.29$ FPS

**1 - 24" RCP
HYDRAULIC CALCULATION
STA 2+72.32 TO 3+03.48**

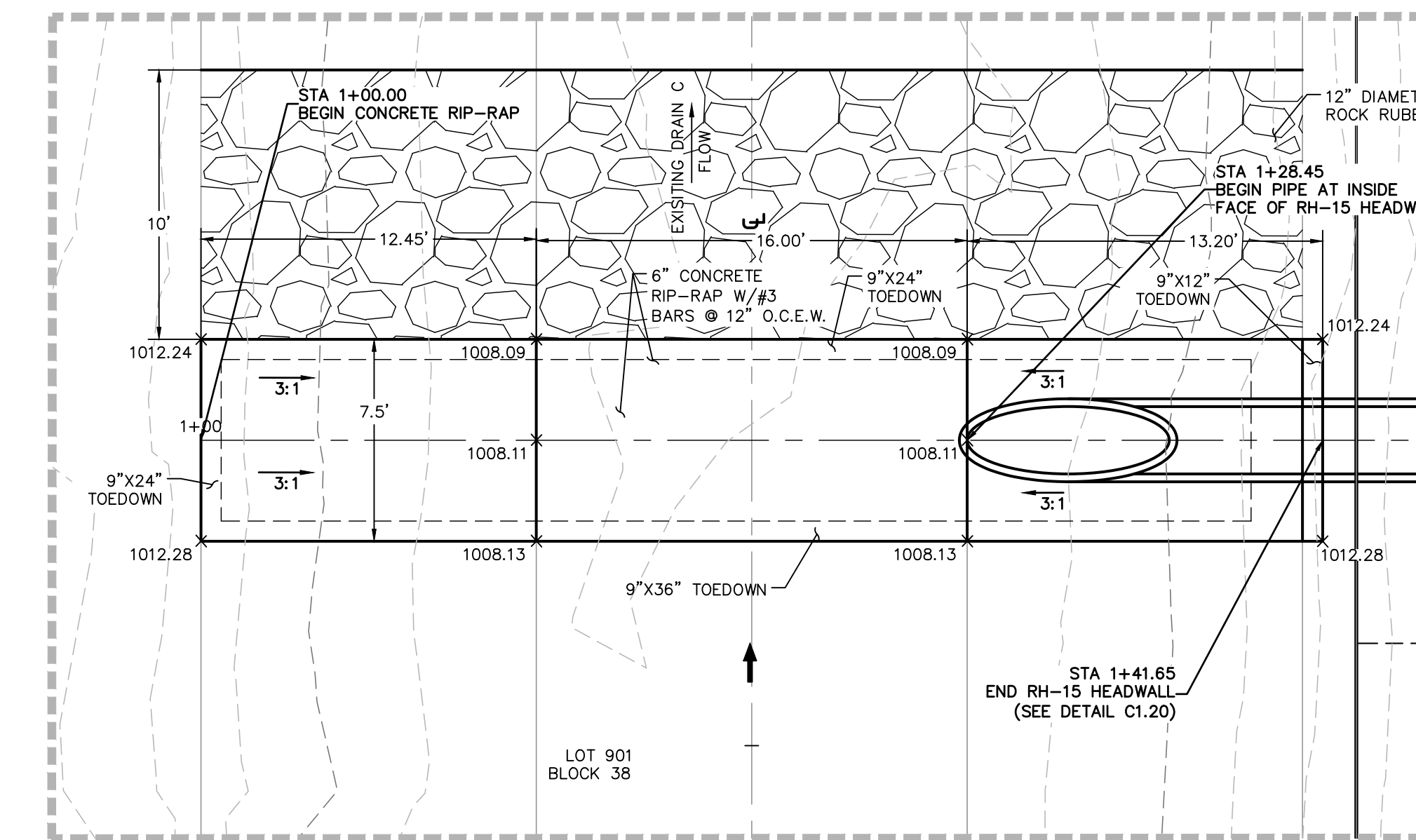
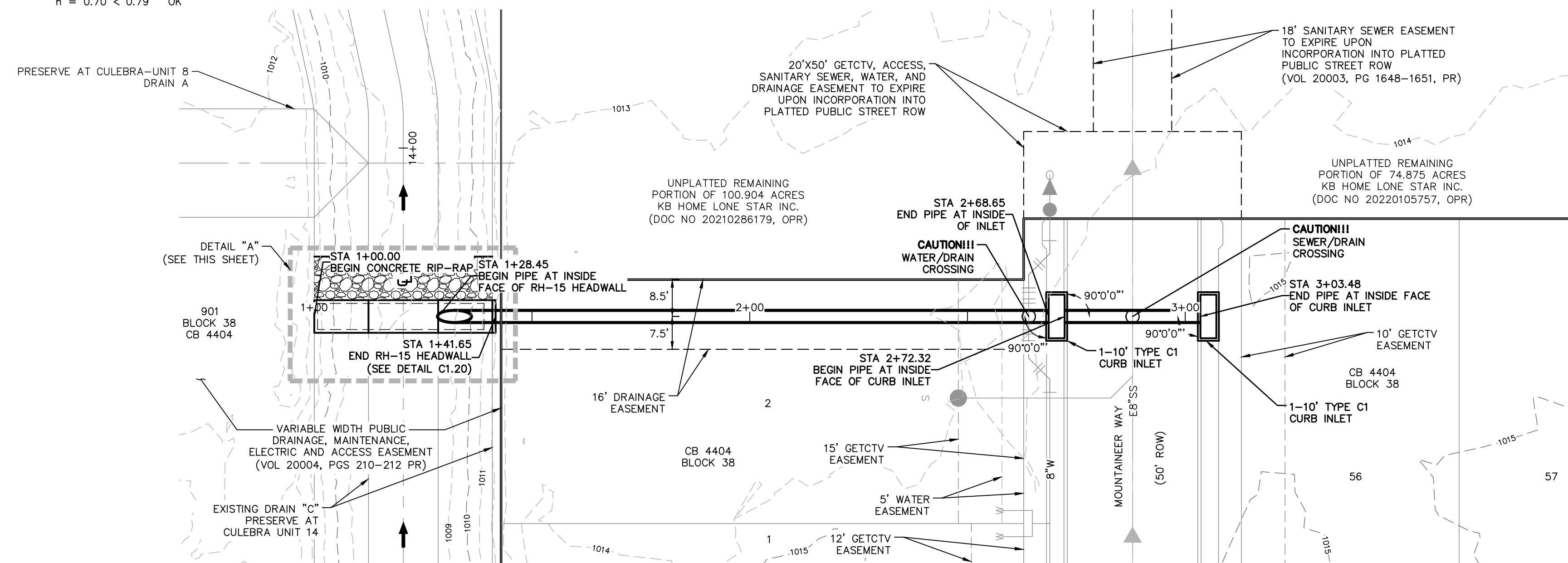
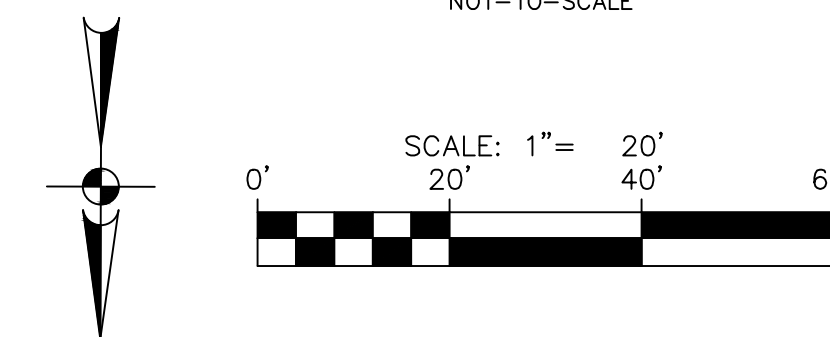
$Q_{25} = 35.8/2 = 17.9$ CFS
 $n = 0.013$
 $S = 0.50\%$
 $S_f = 0.626\%$
 $dn = 2.00'$
 $V_n = 5.70$ FPS

DRAINAGE LEGEND



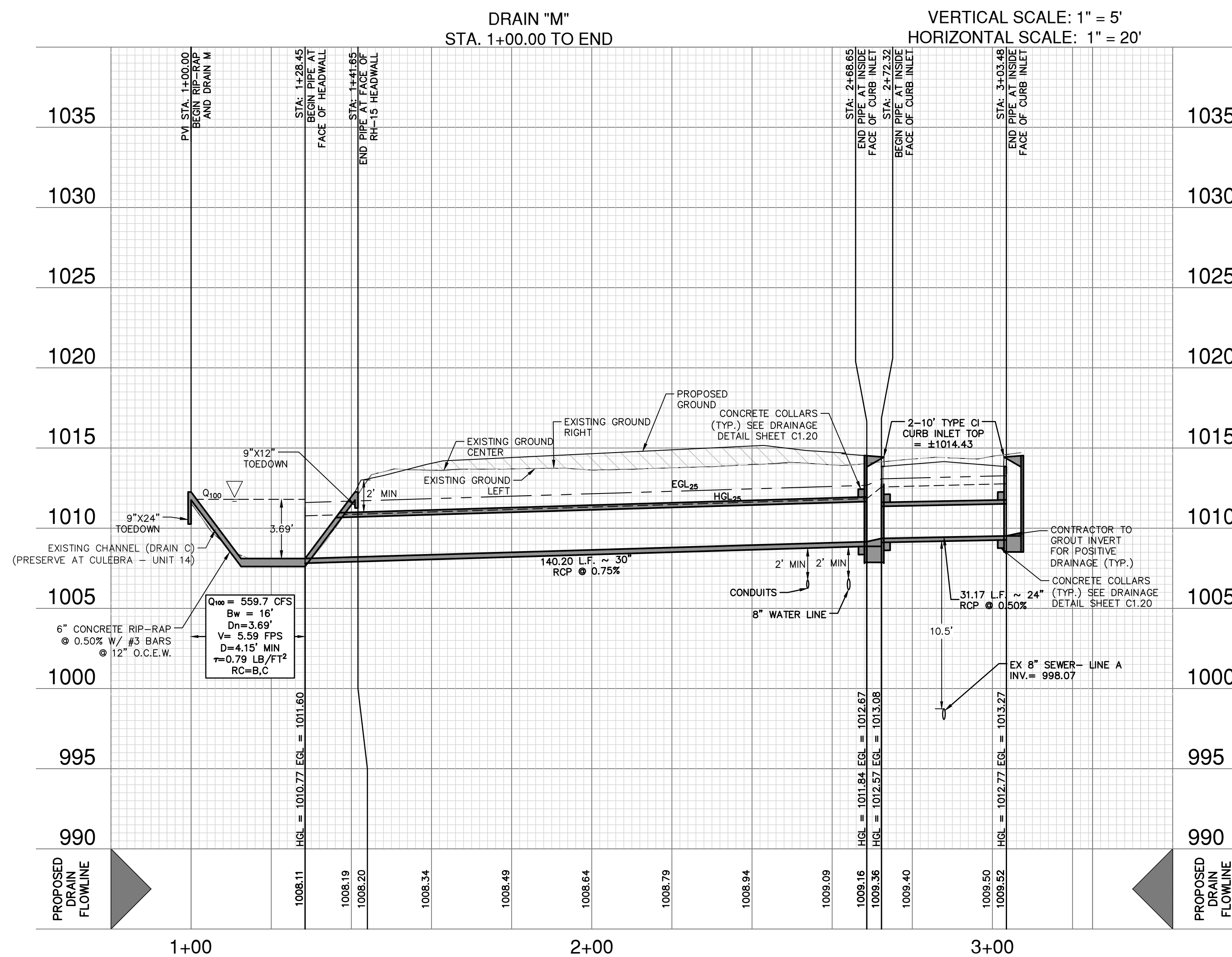
LOCATION MAP

NOT-TO-SCALE



DETAIL "A"

SCALE 1" = 5'



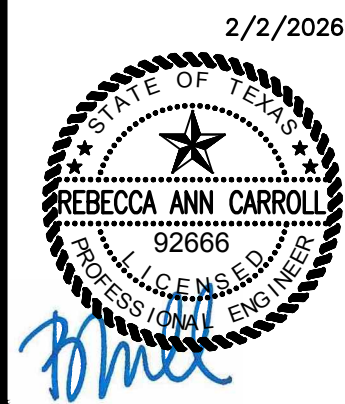
TRENCH EXCAVATION SAFETY PROTECTION:

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, ELECTRICAL, 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.

DATE	
NO.	
REVISION	



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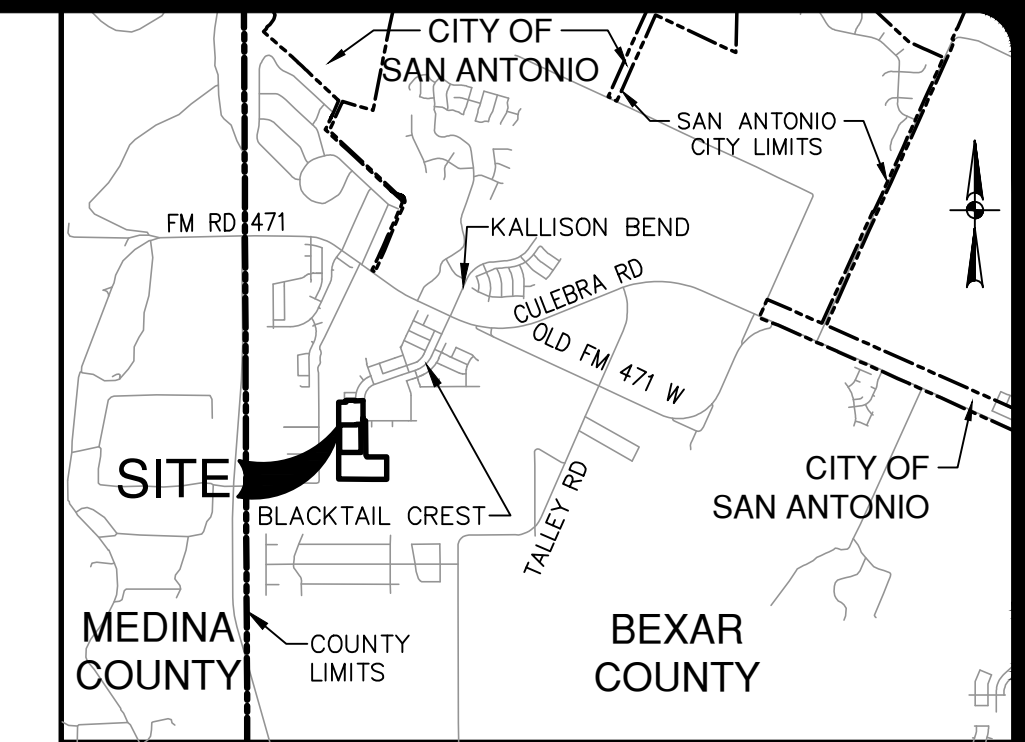
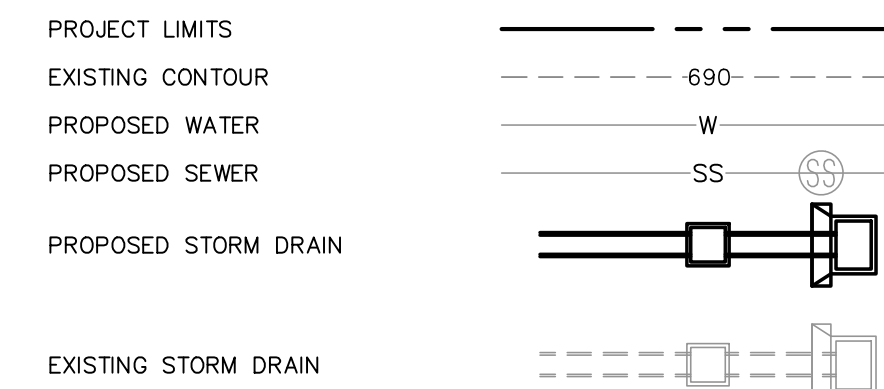
PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 DRAIN M
 PLAN AND PROFILE

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	FEBRUARY 2026
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C1.01

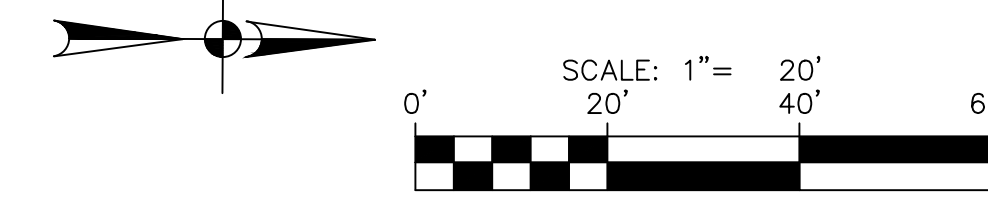
**3 - 6'x4' CAST-IN-PLACE M.B.C
HYDRAULIC CALCULATION**

Q₁₀₀ = 480.3 CFS
 n = 0.013
 S = 0.50%
 Sf = 0.00%
 dn (upstream) = 2.81'
 dn (downstream) = 3.40'
 Vn (upstream) = 9.51 FPS
 Vn (downstream) = 7.85 FPS

DRAINAGE LEGEND



LOCATION MAP
NOT-TO-SCALE



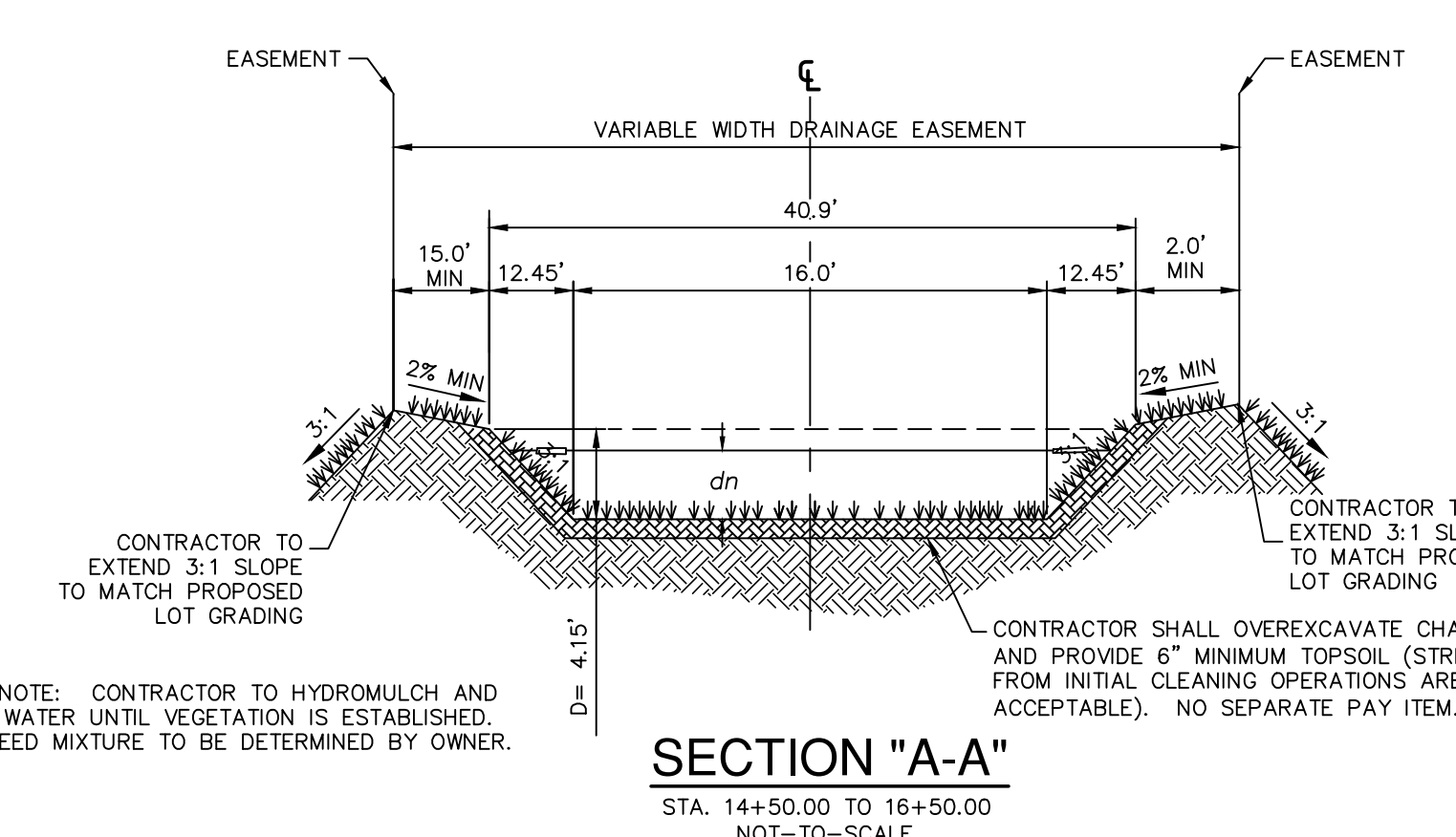
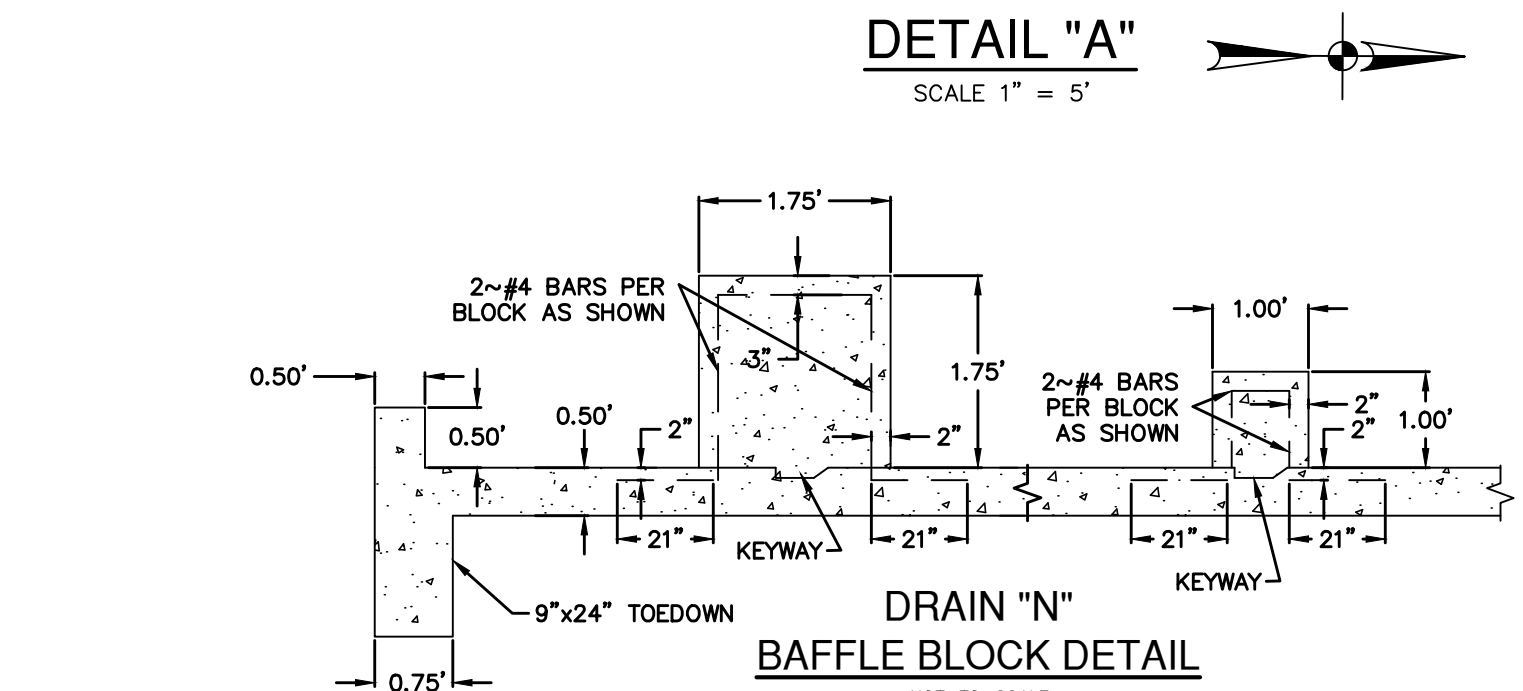
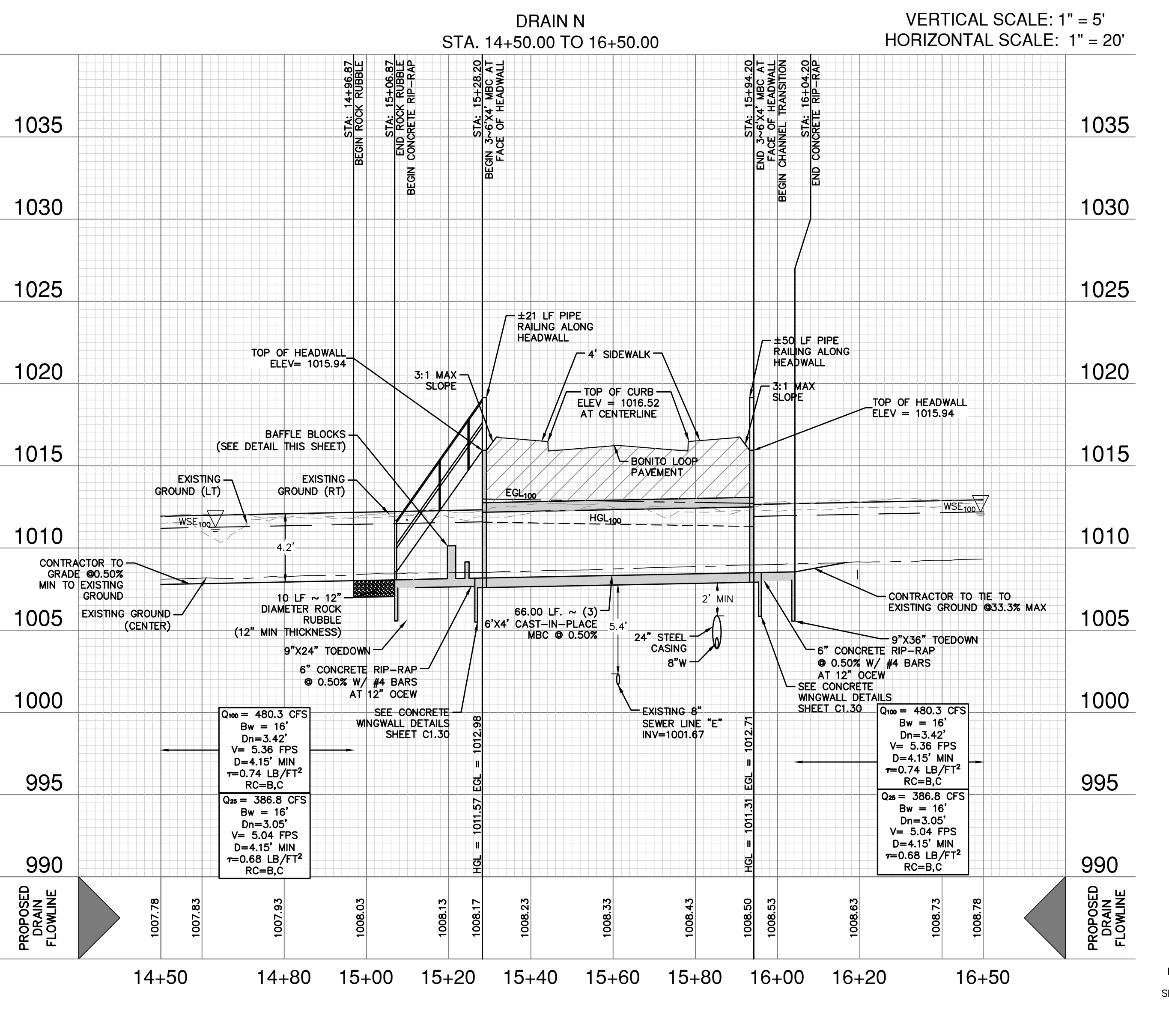
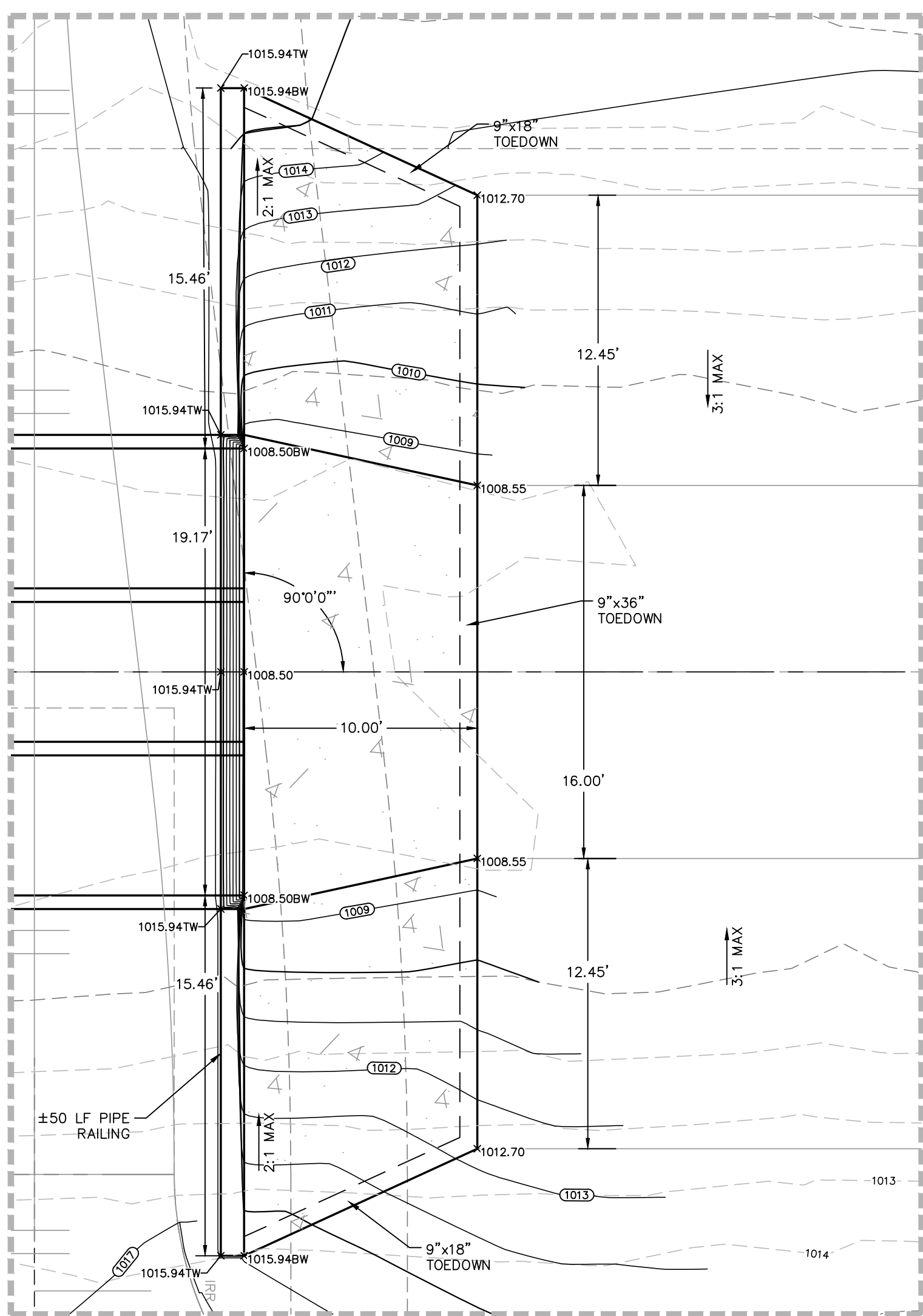
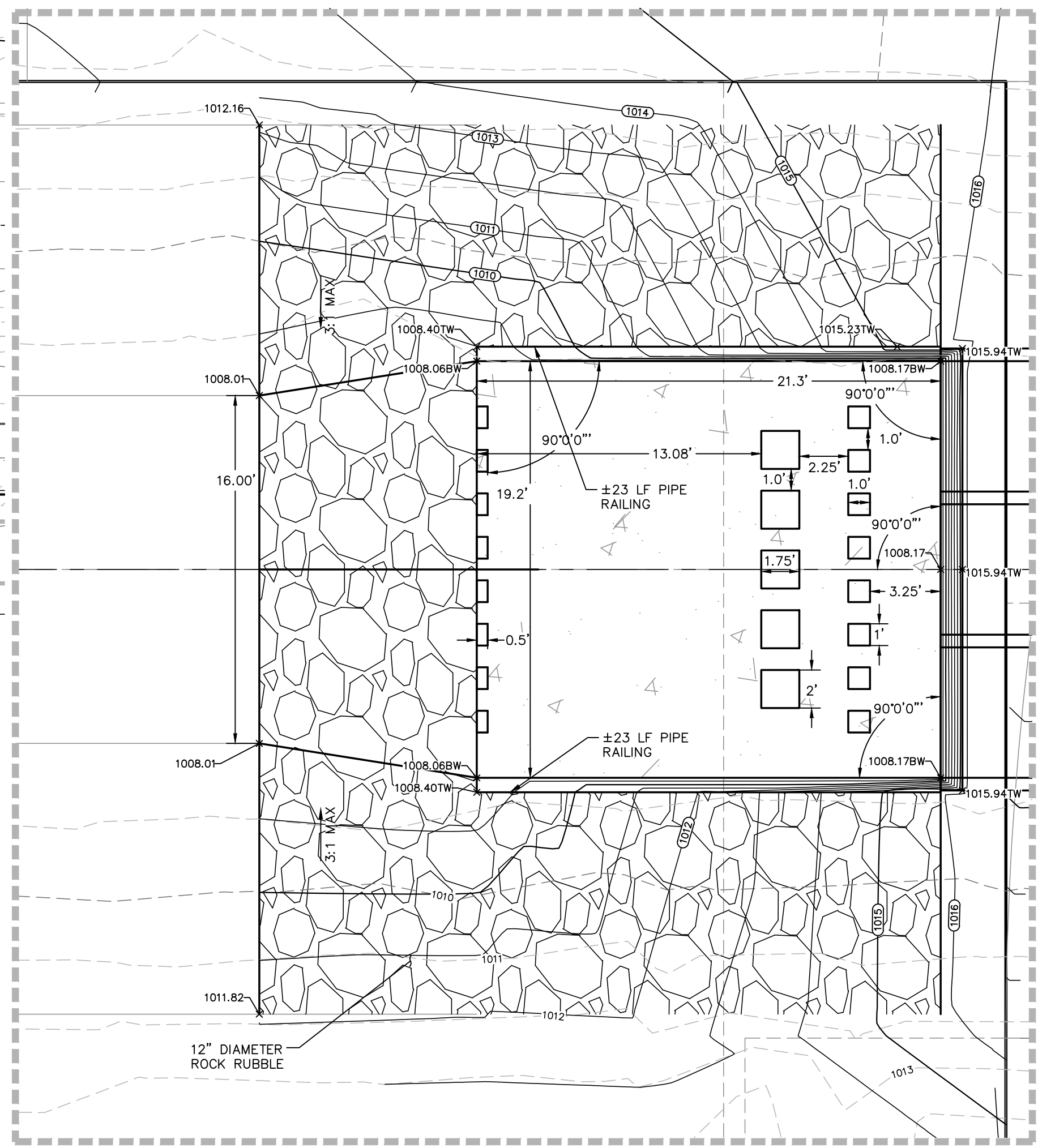
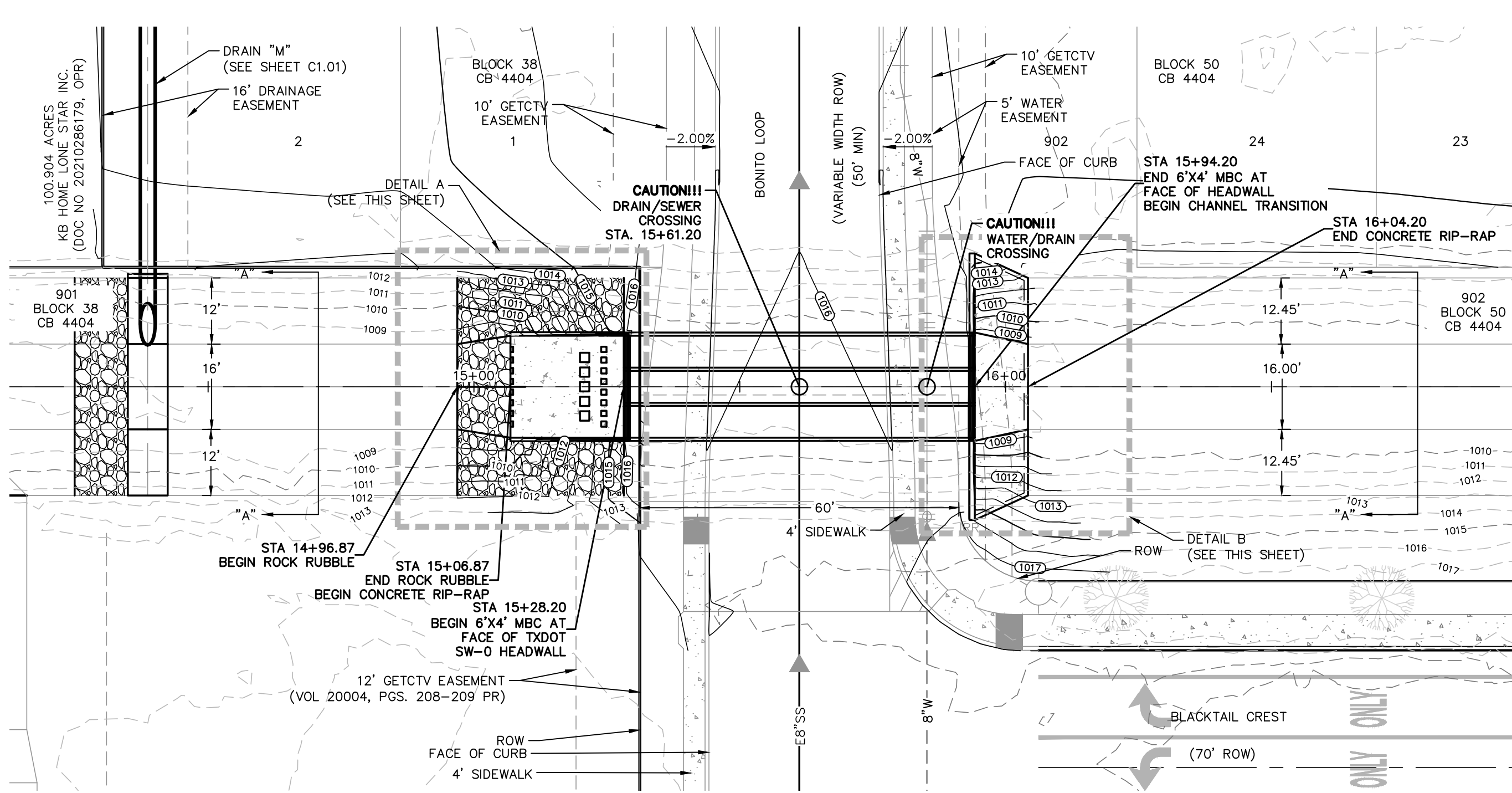
NO.	REVISION	DATE



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 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 DRAIN N
 PLAN AND PROFILE

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	FEBRUARY 2026
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C1.02



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

CAUTION!!
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REINFORCING STEEL

LOWER UNIT 10' X 3'-0" (TYPE I)				LOWER UNIT 10' X 8'-0" (TYPE II)				
BAR NO.	SIZE	SPAC.	LENGTH	BAR NO.	SIZE	SPAC.	LENGTH	
A	12	48"	12'	VARIES	A	12	48"	12'
B	11	48"	12'	VARIES	B	11	48"	12'
C	3	48"	12'	VARIES	C	3	48"	12'
D	7	48"	12'	VARIES	D	7	48"	12'
E	20	48"	12'	VARIES	E	20	48"	12'
F	8	48"	12'	VARIES	F	8	48"	12'
G	8	48"	12'	VARIES	G	8	48"	12'
H	8	48"	12'	VARIES	H	8	48"	12'
I	8	48"	12'	VARIES	I	8	48"	12'
J	8	48"	12'	VARIES	J	8	48"	12'
K	8	48"	12'	VARIES	K	8	48"	12'
L	8	48"	12'	VARIES	L	8	48"	12'
M	8	48"	12'	VARIES	M	8	48"	12'

SECTION A-A

SECTION B-B

GENERAL NOTES

1. FLEETS AND K EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TADOT CURB INLET TYPE "C" AND EXTENSION TYPE "E" (I.C.).
2. TYPE "C" INLET TO BE USED ONLY WHEN FORM DRUM PIPE IS IN LINE WITH CURB AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTOR INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A" 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3" x 4".
8. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
9. FACE OF INLET TO CONFORM TO THE FACE OF CURB LINE.
10. ALL BARS INTERSECTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
11. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL, RINGS AND COVERS, CURB ARMORS AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403.
12. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL, OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
13. GALVANIZED CURB ARMOR SHALL BE CLASS "A" 3000 PSI IN 28 DAYS.
14. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS. WELDING, NUTS, WASHERS, PLATES AND ANCHORS ARE SUBORDINATE TO INLETS.
15. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL FINISH, THE INLET SHALL BE COVERED BY A 2" THICK PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND COVER EXTENSION.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BENT.
17. ALL LOWER UNITS SHALL RECEIVE ANVERT MORTAR SHIMPS.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 1" BEYOND THE OUTER SHELL OF THE PIPE. WELDING TO ACCOMMODATE THE SIZE OF THE PIPE, AS NECESSARY, CONSTRUCTION JOINT MAY BE MADE A MAXIMUM OF 8".

FLOOR STEEL

WALL STEEL

PHASE CONSTRUCTION

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

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH 1/4" BELOW THE INLET AND EXTENSION OUTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL FINISH, THE INLET SHALL BE COVERED BY A 2" THICK PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND COVER EXTENSION.

CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 1 OF 3

REINFORCING STEEL (FOR Hu=11")

UPPER UNIT 10' X 3'-0" (TYPE I)				UPPER UNIT 10' X 8'-0" (TYPE II)			
BAR NO.	SIZE	SPAC.	LENGTH	BAR NO.	SIZE	SPAC.	LENGTH
A	4	48"	12'	A	4	48"	12'
B	3	48"	12'	B	3	48"	12'
C	3	48"	12'	C	3	48"	12'
D	7	48"	12'	D	7	48"	12'
E	21	48"	12'	E	21	48"	12'
F	21	48"	12'	F	21	48"	12'
G	22	48"	12'	G	22	48"	12'
H	4	48"	12'	H	4	48"	12'
I	4	48"	12'	I	4	48"	12'
J	4	48"	12'	J	4	48"	12'
K	4	48"	12'	K	4	48"	12'
L	4	48"	12'	L	4	48"	12'
M	4	48"	12'	M	4	48"	12'

PLAN

SECTION A-A

END WALL

MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING:

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

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 2 OF 3

CURB INLET DETAILS

PLAN VIEW

FRONT VIEW

SIDE VIEW

GENERAL NOTES

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

STANDARD PLANS CITY OF SAN ANTONIO, TEXAS DEPARTMENT OF PUBLIC WORKS

TYPE "C" INLET STANDARDS

DRAWN BY: V. WOODS DATE: REVISION: SCALE: SEE ABOVE
 CHECKED BY: NAT HANSEN, P.E. DATE: SHEET:

DRAINAGE DETAILS (SHEET 1 OF 3)

PLAN VIEW

ELEVATION

SECTION A-A CURB INLET EXTENSION TYPE E

GENERAL NOTES

1. WHEN LID EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS WITH EXTENSIONS SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL NOTES & DIMENSIONS OTHER THAN REINFORCING STEEL DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

CONCRETE INLET WITH INLET EXTENSION BOXES

CONCRETE INLET WITH INLET EXTENSION BOXES

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 3 OF 3

Date: Sep 16, 2025, 3:54pm User: ID: 166820 Design: C:\A\166820.dwg Plot: P:\166820.dwg

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DATE

NO. REVISION

9/16/2025

REBECCA ANN CARROLL
REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
No. 92666

PAPE-DAWSON

2000 NW LOOP #10 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 10028800

PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 1 OF 3)

PLAT NO. 25-11800004

JOB NO. 11668-20

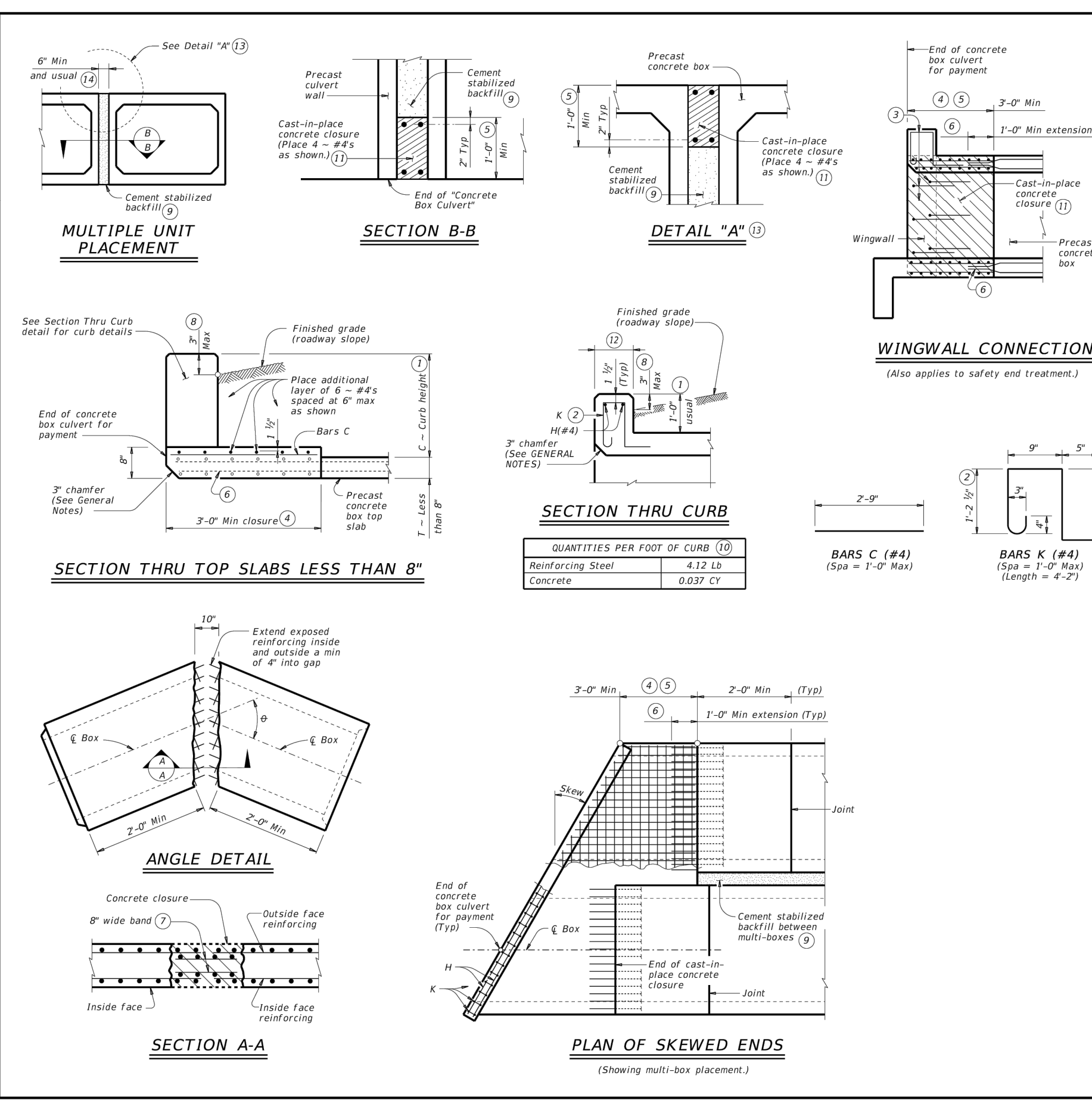
DATE SEPTEMBER 2025

DESIGNER AR

CHECKED SSC DRAWN RP

SHEET C1.10

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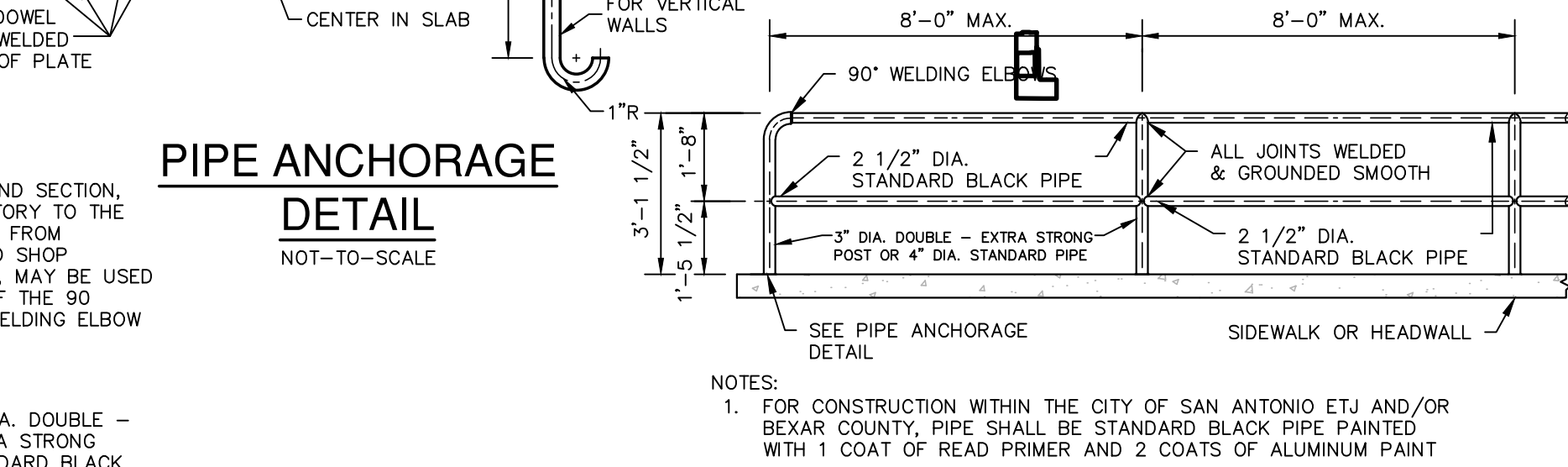
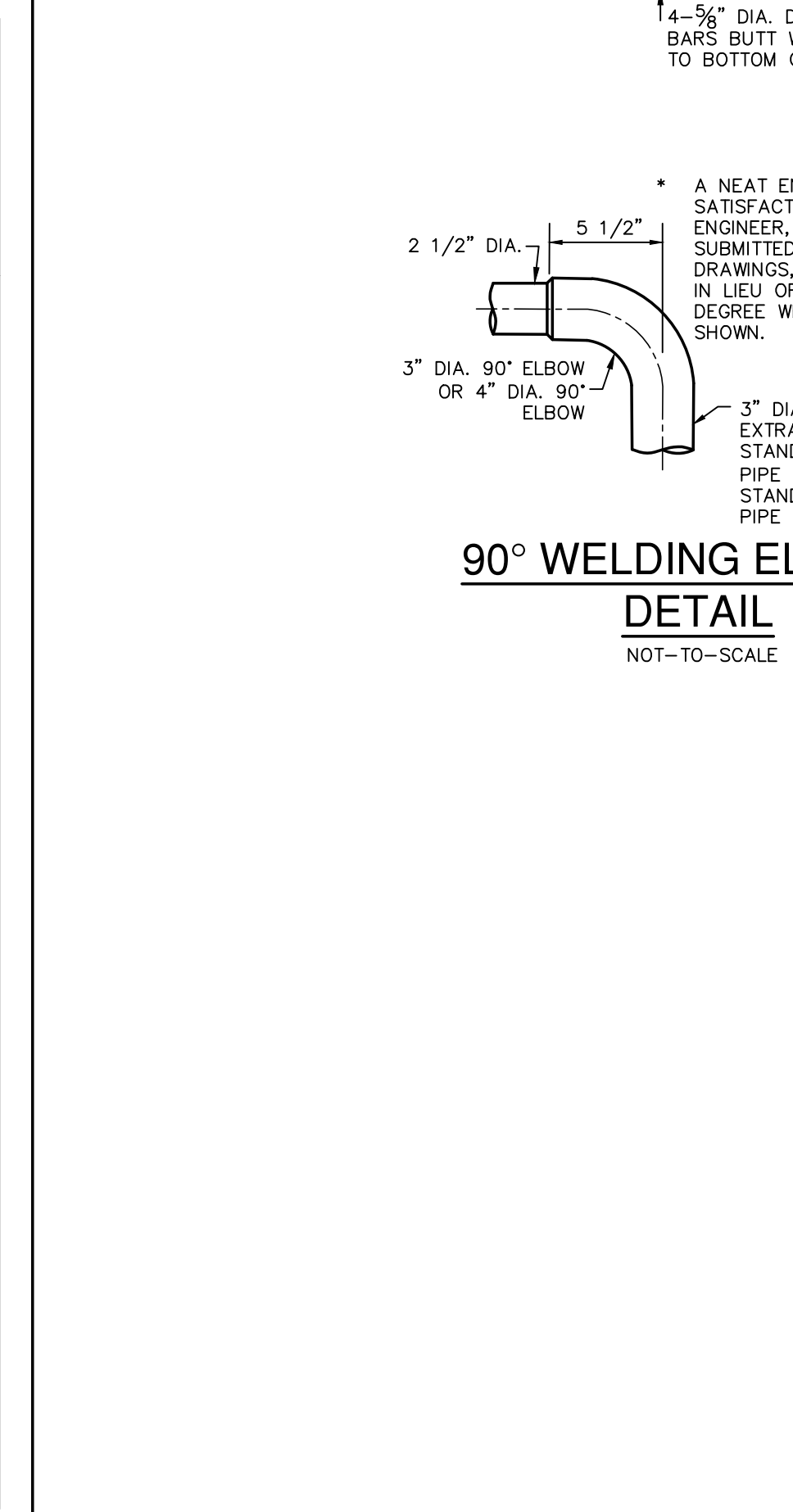
- 1" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail, or curbs taller than 1'-0", refer to the Standard Curb Details (ECD) standard sheet. For structures with 1631 or 1631S bridge rail, refer to the Mounting Details for 1631 & 1631S Rails (F131-CR) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than 1631 or 1631S.
 - For curbs less than 1'-0" high, the bars or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
 - Extend curb, wingwall, or safety end treatment reinforcing into concrete closure. Bars or trim, as necessary, any reinforcing that does not fit into closure area.
 - Provide a 3'-0" Min cast-in-place concrete closure. Break back boxes in the field or cast boxes short. Provide bands of reinforcing in the closure that are the same size and spacing as in the precast box section. Provide #4 longitudinal reinforcing spaced at 12 inches Max within the closure. Except where shown otherwise, construct the cast-in-place closure flush with the inside and outside faces of the precast box section.
 - For multiple unit placements, adjust the length of the closure for the interior walls as necessary. Provide a 3'-0" Min cast-in-place closure in the top slab, bottom slab, and exterior wall. See Section B-B detail when interior walls are cast full length.
 - Extend precast box reinforcing a minimum of 1'-0" into concrete closure (TYP).
 - Place bands of reinforcing matching the inside and outside face reinforcing in the gaps of the top and bottom slabs. Place a band matching the outside face reinforcing of the wall in the gaps of the walls (placed in the outside face only). Tack weld the bands to the exposed reinforcing at each point of contact.
 - For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs no more than 3' above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
 - Cement stabilized backfill between boxes is considered part of the box culvert for payment.
 - All curb concrete and reinforcing is considered part of the box culvert for payment.
 - Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.
 - 1'-0" typical 2-2" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
 - For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in Detail "A".
 - This dimension may be increased with approval of the Engineer to allow the precast boxes to be tandem or placed in accordance with Item 416, "Stacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.
- MATERIAL NOTES:**
 Provide Grade 60 reinforcing steel.
 Provide ASTM A1084 welded wire reinforcement.
 Provide Class C concrete (fc = 3400 psi) for the closures.
 Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures".
 Any additional concrete required for the closures will be considered subsidiary to the box culvert.
- GENERAL NOTES:**
 Designed according to AKSHTO LRD Bridge Design Specifications.
 Refer to the Single Box Culverts Precast (SCP) standard sheet for details and notes not shown.
 Check the bottom edge of the top slab closure 3 inches at culvert closure ends.
- Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bars dimensions are out-to-out of bars.

QUANTITIES PER FOOT OF CURB (10')

Reinforcing Steel	4.32 Lb
Concrete	0.037 CY

BARS C (#4)
(Spa = 1'-0" Max)

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

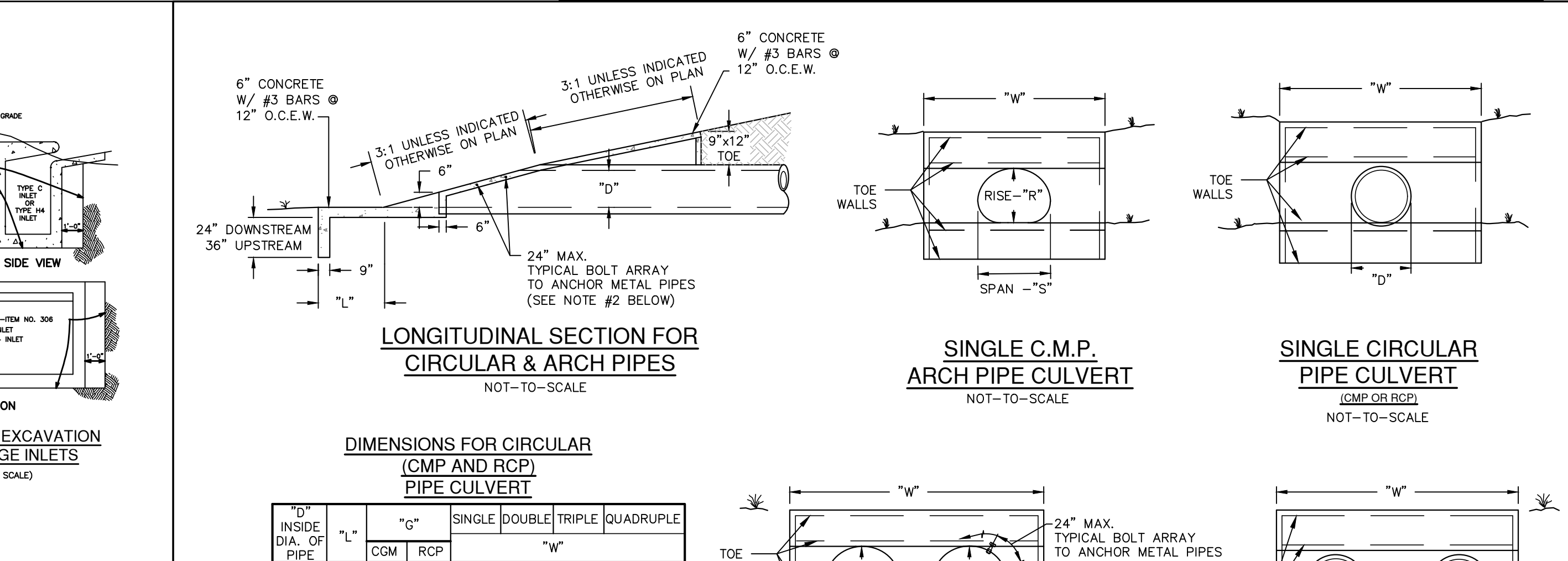
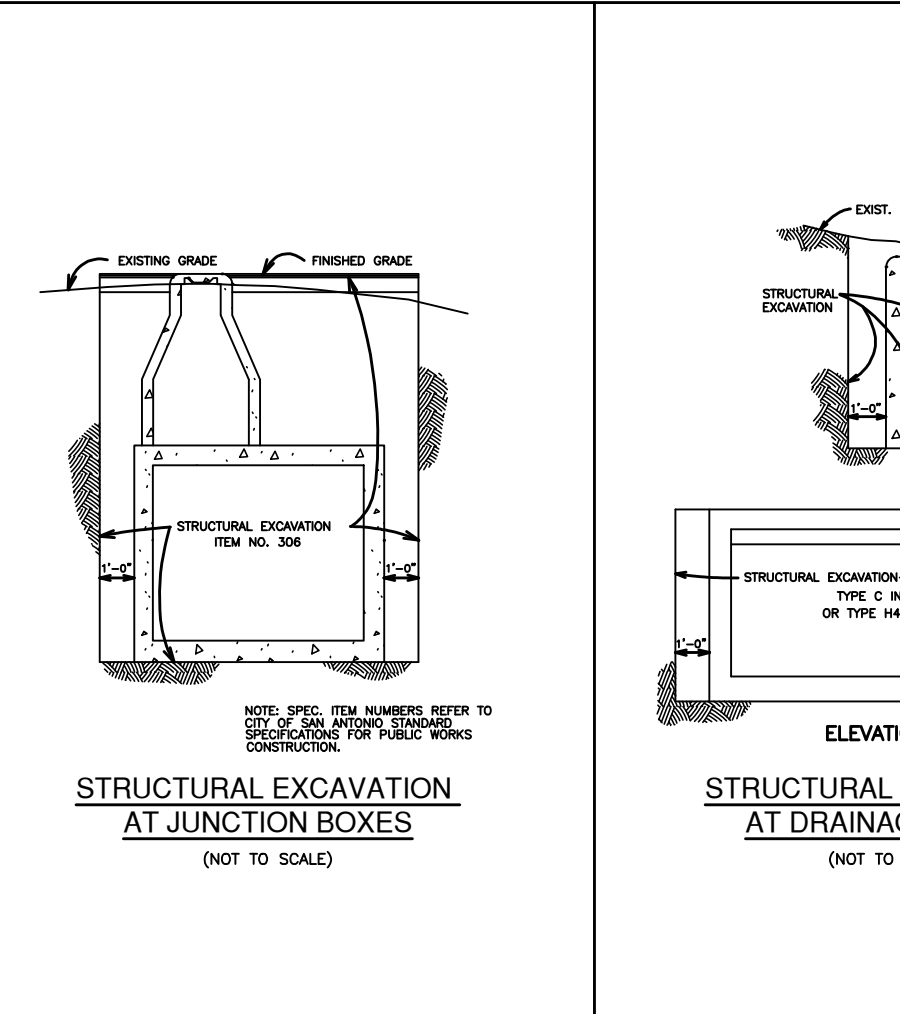
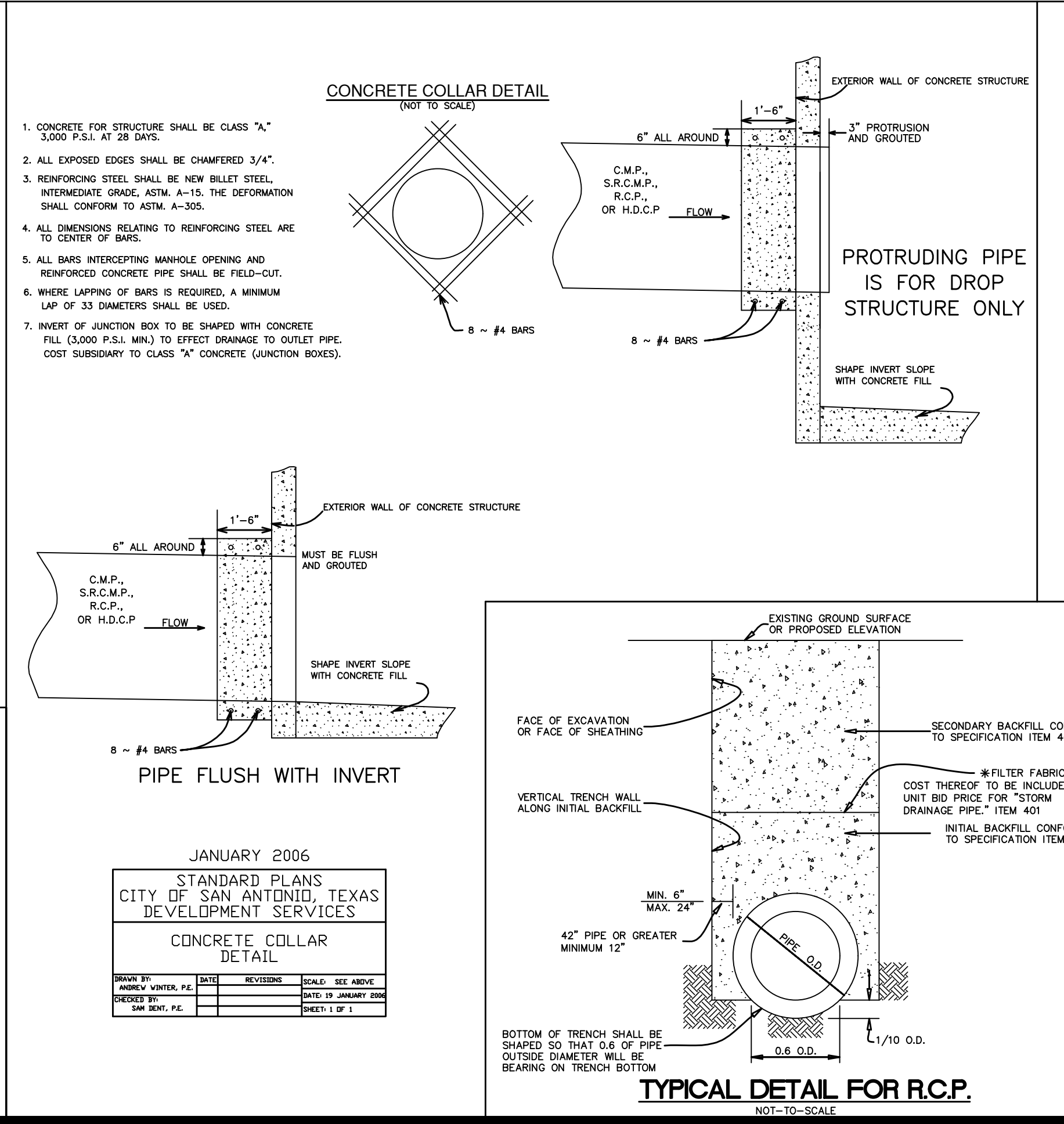


NOTES:

1. FOR CONSTRUCTION WITHIN THE CITY OF SAN ANTONIO ETJ AND/OR BEXAR COUNTY, PIPE SHALL BE STANDARD BLACK PIPE PAINTED WITH 1 COAT OF READ PRIMER AND 2 COATS OF ALUMINUM PAINT

Table 9.3.8.1 - Retardance Class for Lining Materials
(Source TXDOT - Hydraulic Design Manual, Chapter 7, Section 3 - Roadside Channel Design)

Retardance Class	Permissible Shear Stress (τ) (lb./sq.ft.)	Cover	Condition
B	2.1	Bermuda grass	Good stand, tall (average 12 in. or 305 mm)
		Native grass mixture	Good stand, unmowed
		little bluestem, bluestem, blue gamma, other short and long stem midwest grasses	
		Lespedeza sericea	Good stand, not woody, tall (Average 19 in. or 480 mm)
		Alfalfa	Good stand, uncut (average 11 in. or 280 mm)
C	1	Blue gamma	Good stand, uncut (average 13 in. or 330 mm)
		Crabgrass	Fair stand, uncut (10-to-48 in. or 55-to-1220 mm)
		Bermuda grass	Good stand, mowed (average 6 in. or 150 mm)
		Common lespedeza	Good stand, uncut (average 11 in. or 280 mm)
		Grass-legume mixture: summer (orchard grass redtop, Italian ryegrass, and common lespedeza)	Good stand, uncut (average 6 in. or 150 mm)
D	0.6	Centipede grass	Very dense cover (average 6 in. or 150 mm)
		Kentucky bluegrass	Good stand, headed (6-12 in. or 150-305 mm)
		Bermuda grass	Good stand, cut to 2.5 in. or 65 mm
		Common lespedeza	Excellent stand, uncut (average 4.5 in. or 115 mm)
		Buffalo grass	Good stand, uncut (3-6 in. or 75-150 mm)
E	0.35	Grass-legume mixture: fall, spring (orchard grass Italian ryegrass, and common lespedeza)	Good Stand, uncut (4-5 in. or 100-125 mm)
		Lespedeza sericea	After cutting to 2 in. or 50 mm (very good before cutting)
		Bermuda grass	Good stand, cut to 1.5 in. or 40 mm
		Bermuda grass	Burned Stubble



DIMENSIONS FOR CIRCULAR (CMP AND RCP) PIPE CULVERT

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

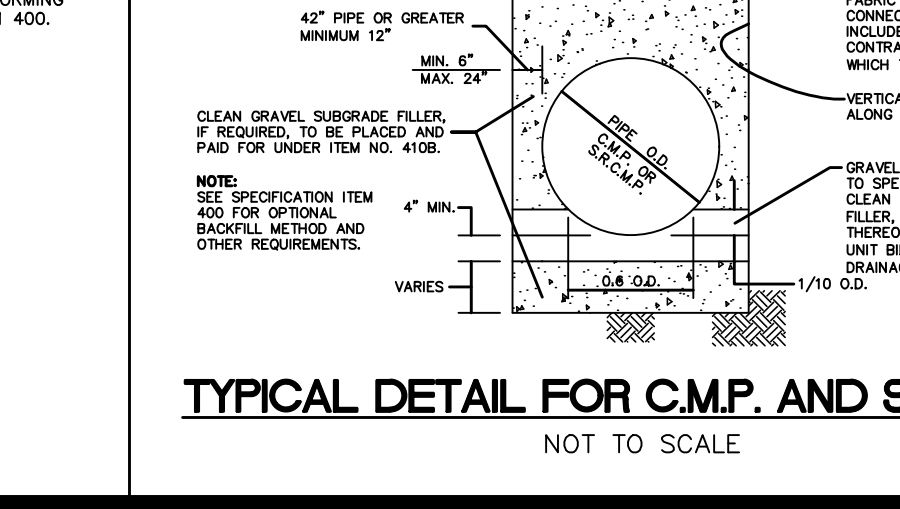
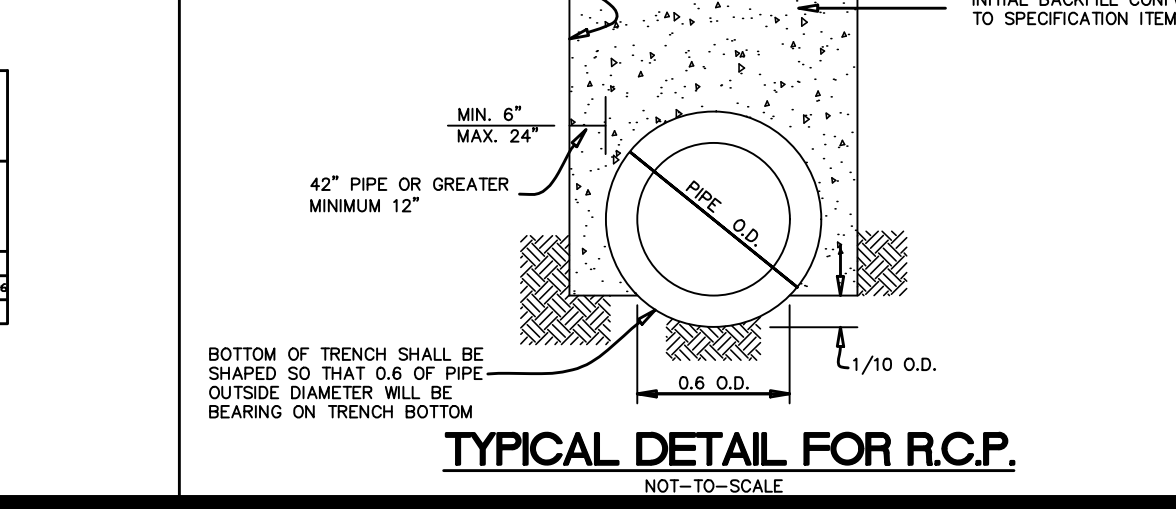
"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

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

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

JANUARY 2006
 STANDARD PLANS
 CITY OF SAN ANTONIO, TEXAS
 DEVELOPMENT SERVICES
CONCRETE COLLAR DETAIL



DATE: _____

NO. REVISION: _____

9/16/2025

STATE OF TEXAS
 REBECCA ANN CARROLL
 92666
 PROFESSIONAL ENGINEER
 BME

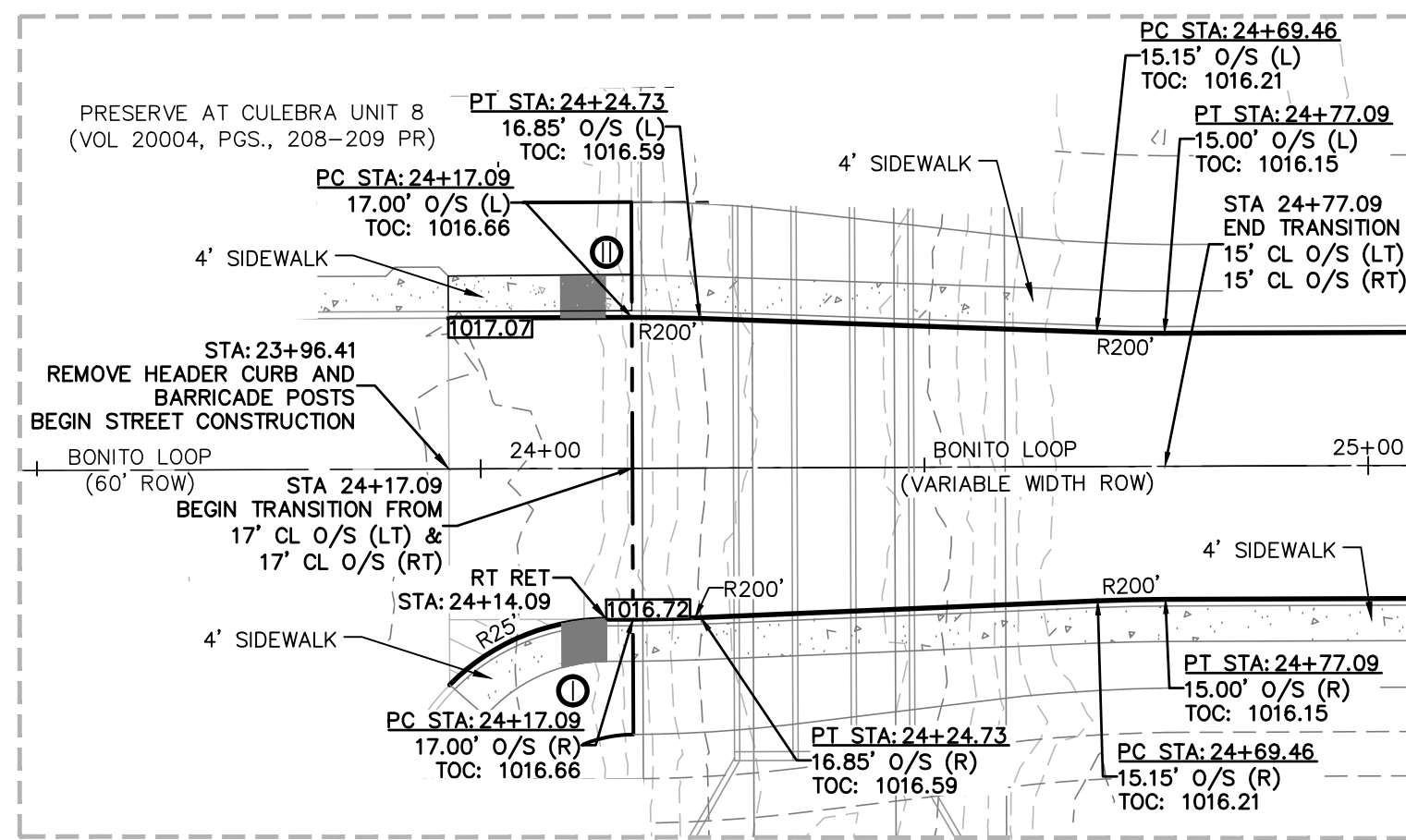
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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.0000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 10028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS

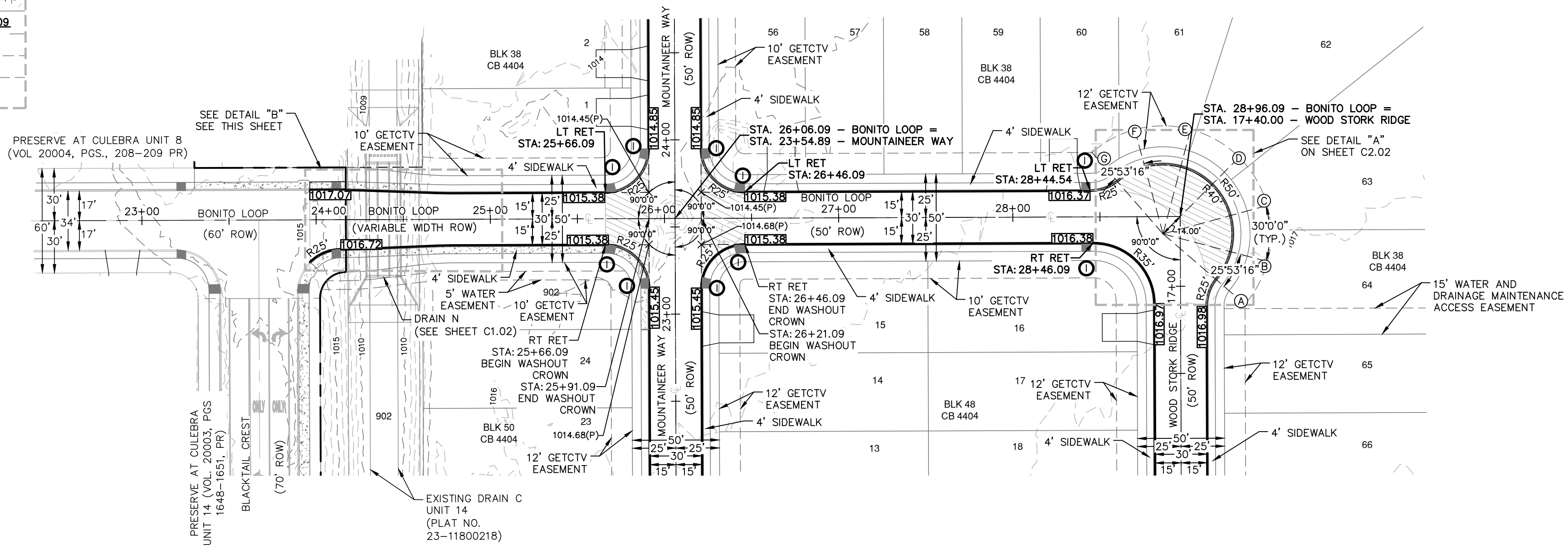
DRAINAGE DETAILS
 (SHEET 2 OF 3)

PLAT NO. 25-11800004
 JOB NO. 11668-20
 DATE: SEPTEMBER 2025
 DESIGNER: AR
 CHECKED: SSC DRAWN: RP
 SHEET: C1.20

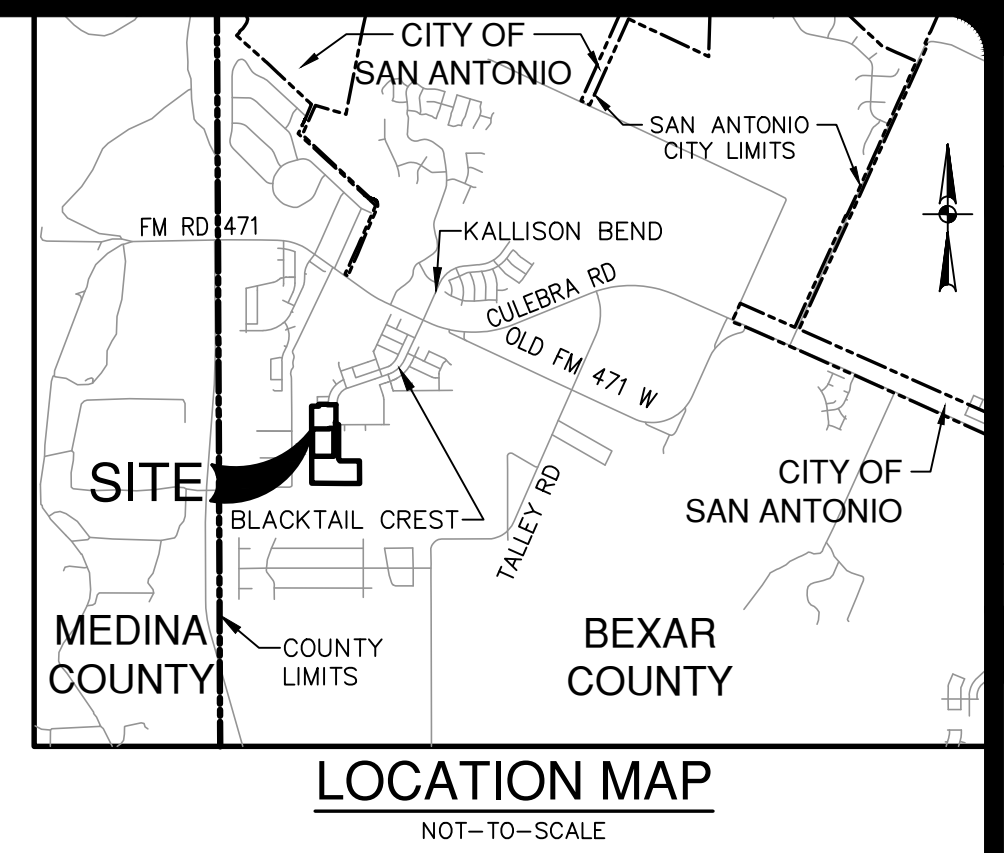
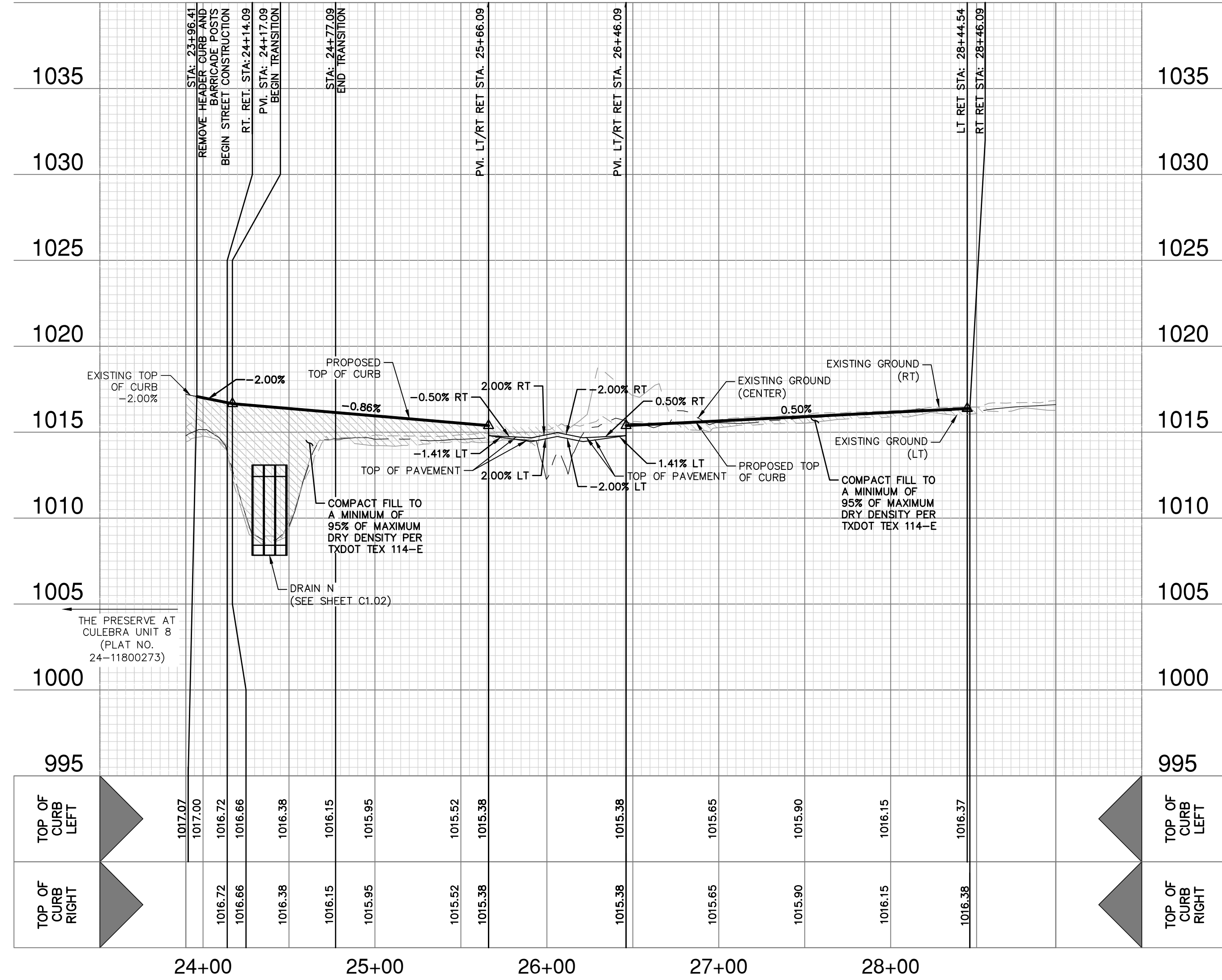
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DETAIL "B"
SCALE: 1" = 20'



BONITO LOOP
STA. 23+96.41 TO END
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP
NOT-TO-SCALE

STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	→
EXISTING CONTOUR	970
WHEELCHAIR RAMP	○
CENTERLINE	—+—
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	▨
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	▨
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	▨
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 (0)(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.

DATE: 10/28/2025

NO. REVISION:

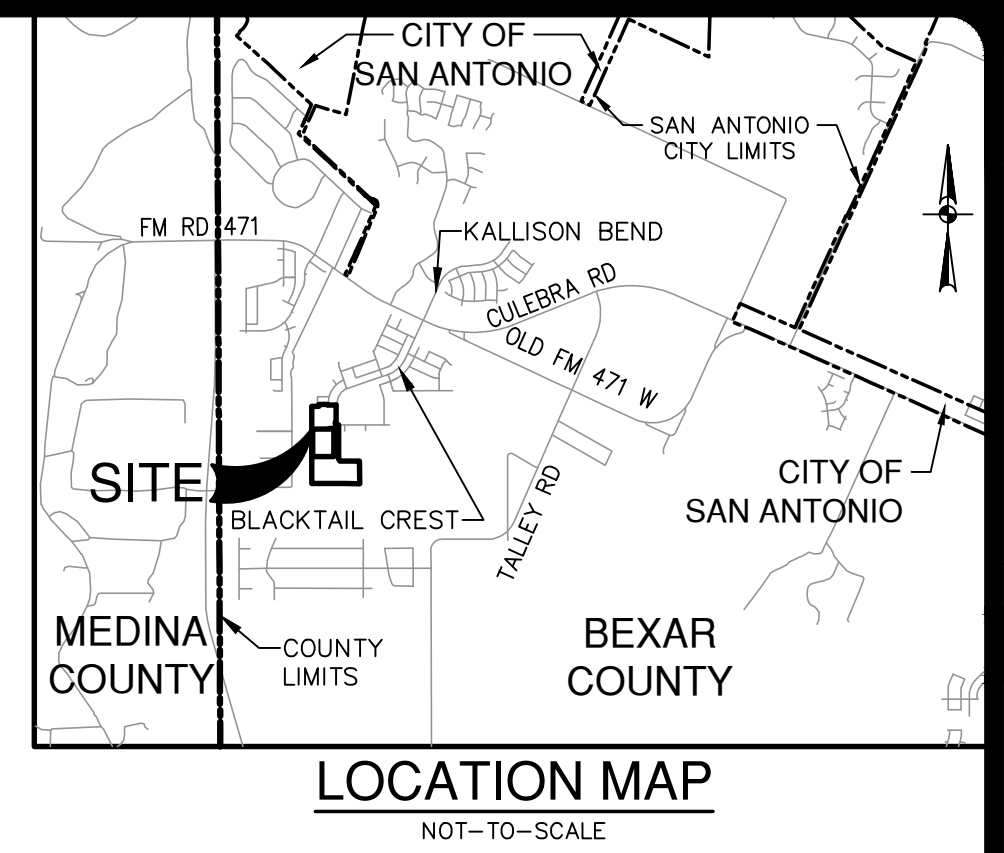
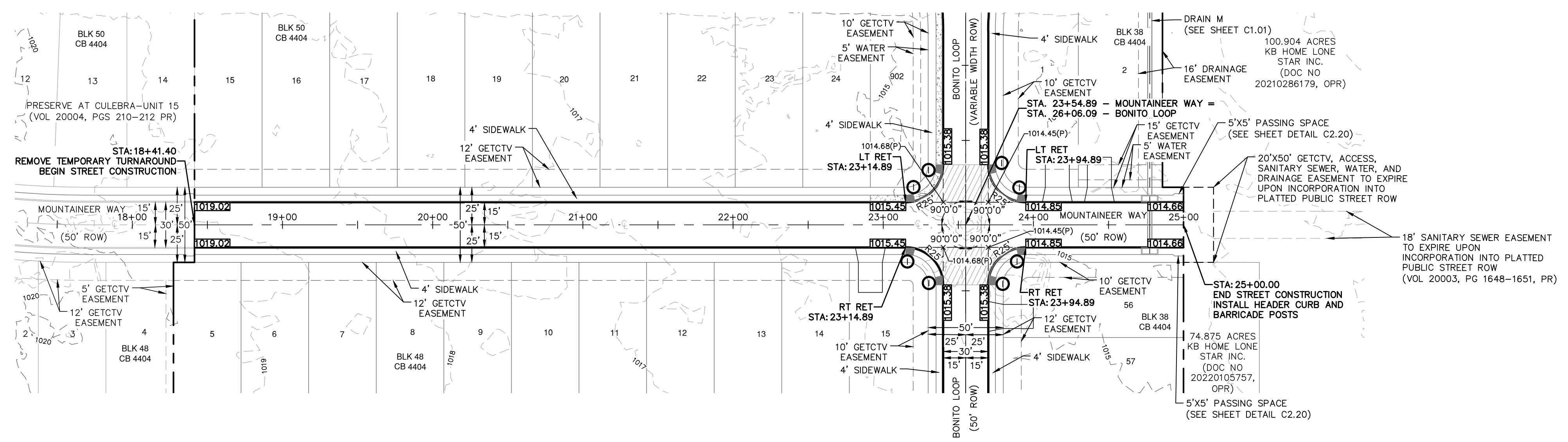
STATE OF TEXAS
REBECCA ANN CARROLL
92666
REGISTERED PROFESSIONAL ENGINEER
PAPE-DAWSON

PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1022890

PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS
BONITO LOOP
PLAN AND PROFILE

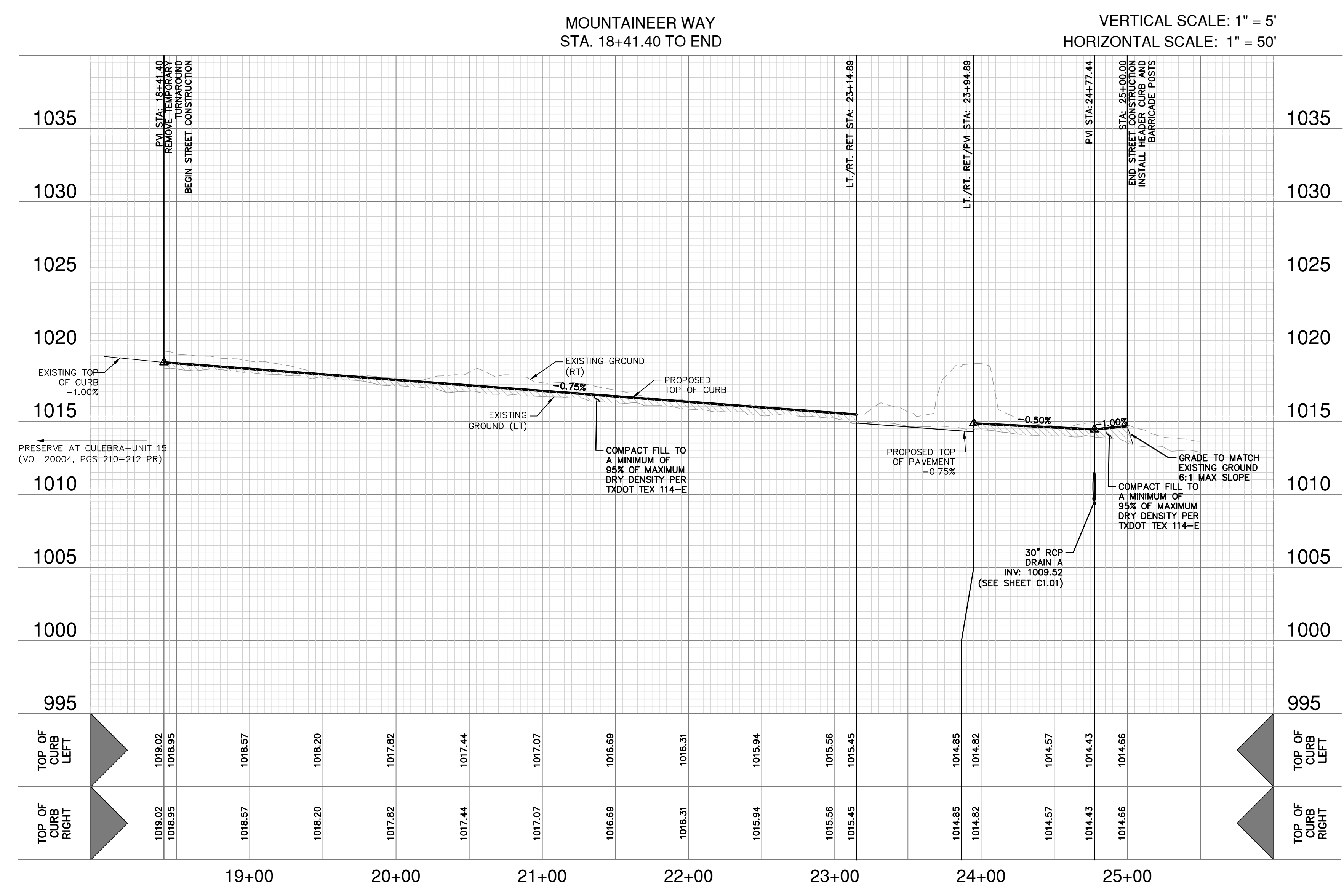
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JOB NO. 11668-20
DATE: OCTOBER 2025
DESIGNER: AR
CHECKED: SSC DRAWN: RP
SHEET: C2.00

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STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	→
EXISTING CONTOUR	970
WHEELCHAIR RAMP	○
CENTERLINE	---
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	▨
SIDEWALK (HOMEOWNER'S RESPONSIBILITY)	▨
SIDEWALK (DEVELOPER'S RESPONSIBILITY)	▨
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.
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 - DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
 - 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 (0)(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.

DATE	10/28/2025
NO. REVISION	
PAPE-DAWSON 2000 NW LOOP 410 SAN ANTONIO, TX 78213 210.375.9000 TEXAS ENGINEERING FIRM #470 TEXAS SURVEYING FIRM #1022890	
PRESERVE AT CULEBRA-UNIT 18 BEXAR COUNTY, TEXAS MOUNTAINEER WAY PLAN AND PROFILE	
PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	OCTOBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C2.01

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RECOMMENDED NOTES & PAVEMENT SECTION

NOTES AND DESIGN BASED ON THE MINIMUM REQUIREMENTS OF THE UDC AND THE GEOTECH ENGINEERING REPORT PREPARED BY INTEC, PROJECT NO. S181355-P-R1 AND NO. S18355-P-R2 DATED NOVEMBER 16, 2020 AND SEPTEMBER 11, 2024 RESPECTIVELY. FOR PAVEMENT MATERIAL AND CONSTRUCTION REQUIREMENTS, CONTRACTOR SHALL MEET OR EXCEED ALL PAVEMENT RECOMMENDATIONS.

PAVEMENT SECTION DETAIL CBR=2

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	STRUCTURAL NUMBER
BONITO LOOP	LOCAL B	23+96.41 TO 24+14.09	1.5"	2.5"	18.5"	8"	4.99
BONITO LOOP	LOCAL A	24+14.09 TO END	2"	-	11.0"	6"	2.90
WOODSTORK RIDGE	LOCAL A	12+67.06 TO END	2"	-	11.0"	6"	2.90
MOUNTAINEER WAY	LOCAL A	18+41.40 TO 25+00.00	2"	-	11.0"	6"	2.90

SUBGRADE NOTES (*):

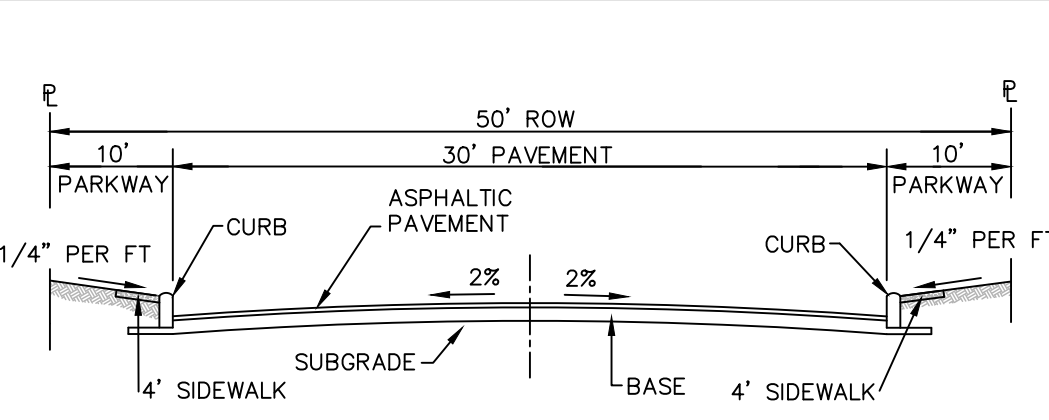
- THE SUBGRADE PLASTICITY INDEX VALUE IS EXPECTED TO BE GREATER THAN 20. SUBGRADE STABILIZATION IS NEEDED.
 - THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE WILL BE NEEDED.
 - LIME STABILIZATION TO A DEPTH 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 30 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:

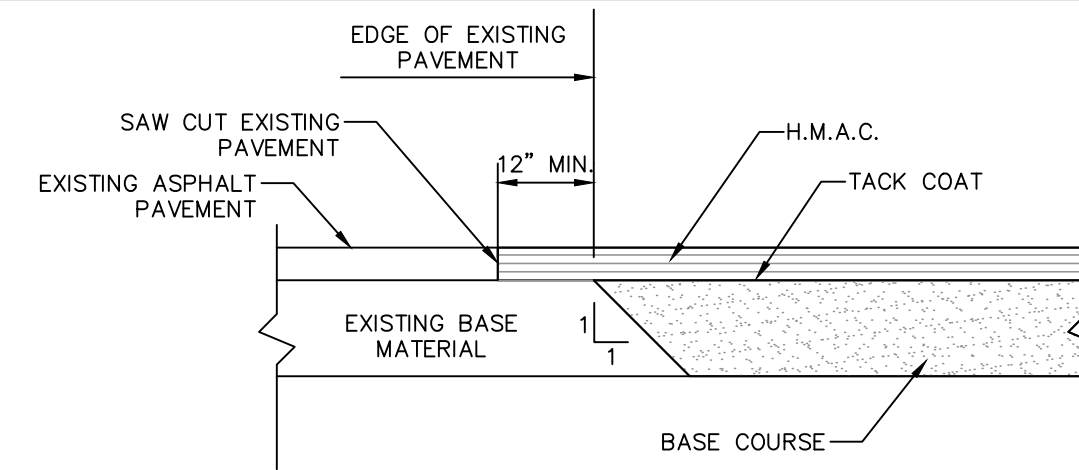
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
- AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 1/2 INCH SIEVE FROM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

o	MINIMUM PASSING 1 1/2" SIEVE	100
o	MINIMUM PASSING 3/4" SIEVE	85
o	MINIMUM PASSING NO. 4 SIEVE	50
- 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.

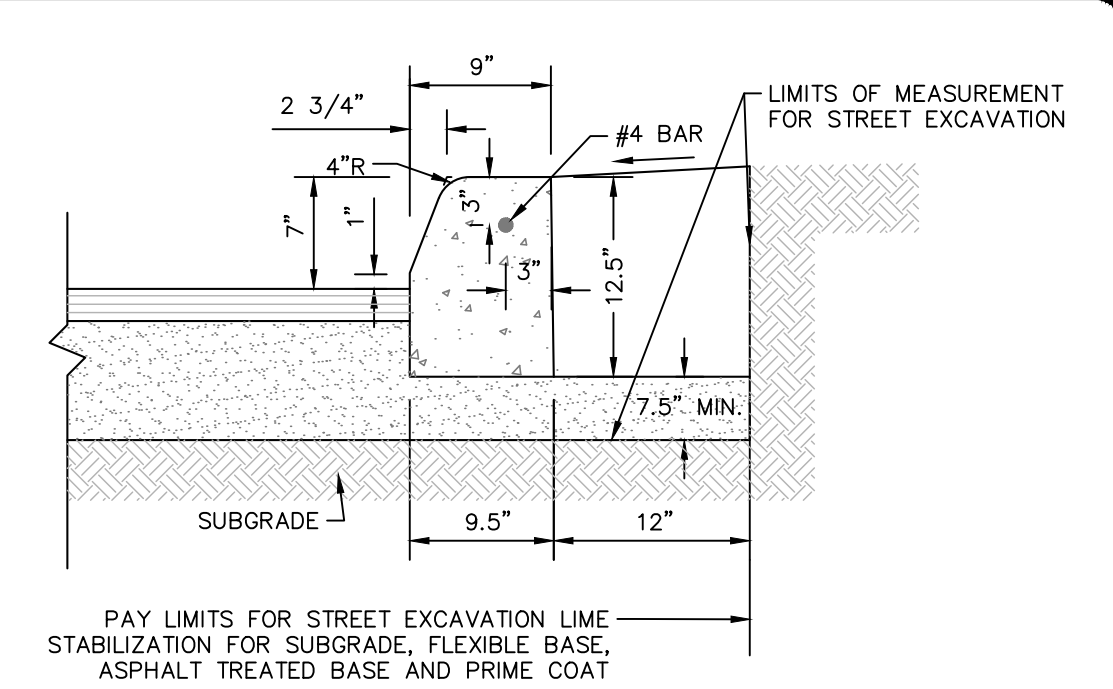
- PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT. SEE TABLE FOR STRUCTURAL NUMBER CALCULATION. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.
- A GEOTECHNICAL ENGINEERING REPRESENTATIVE SHALL BE RETAINED TO: (1) OBSERVE 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, BEAR 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.



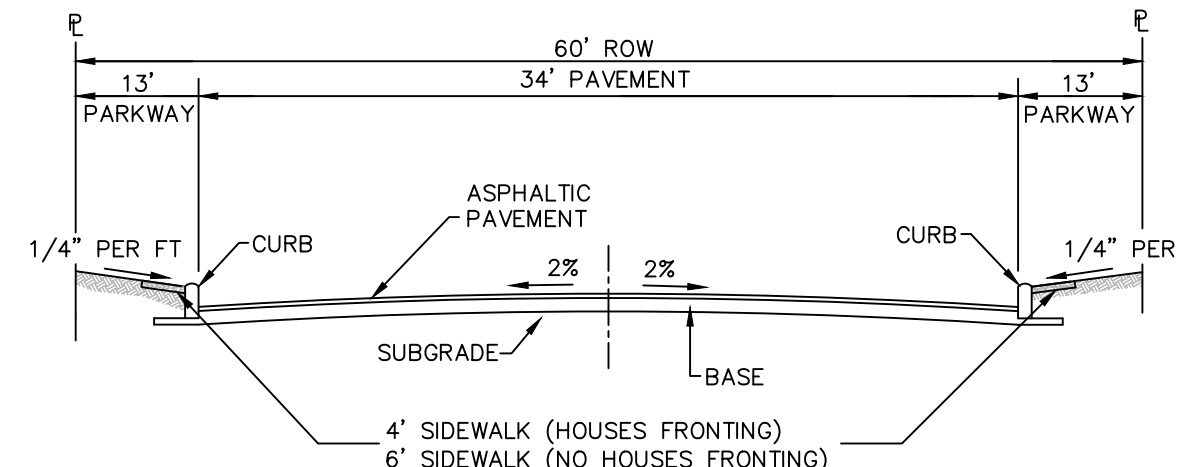
LOCAL A STREET SECTION
NOT-TO-SCALE



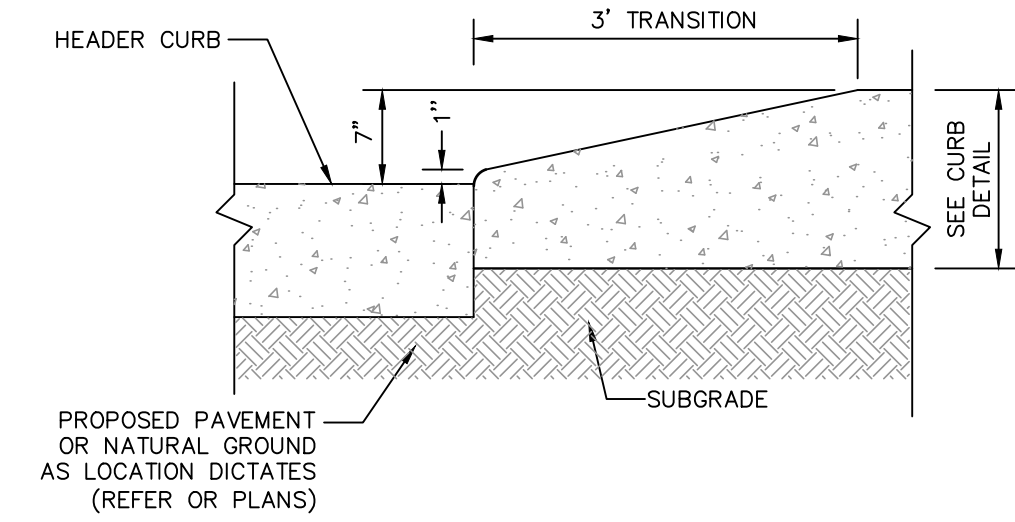
ASPHALT/ASPHALT JUNCTURE DETAIL
NOT-TO-SCALE



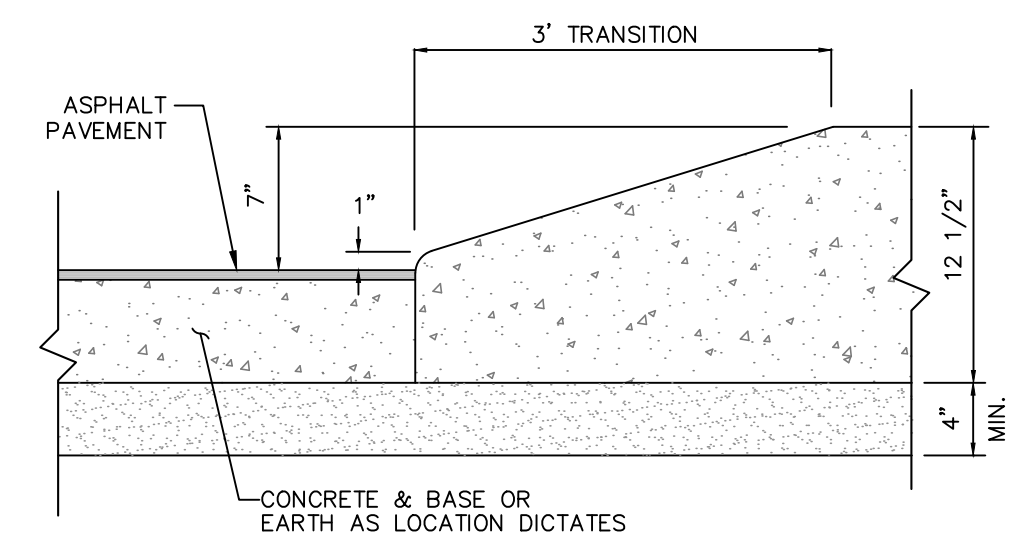
CONCRETE CURB DETAIL
NOT-TO-SCALE



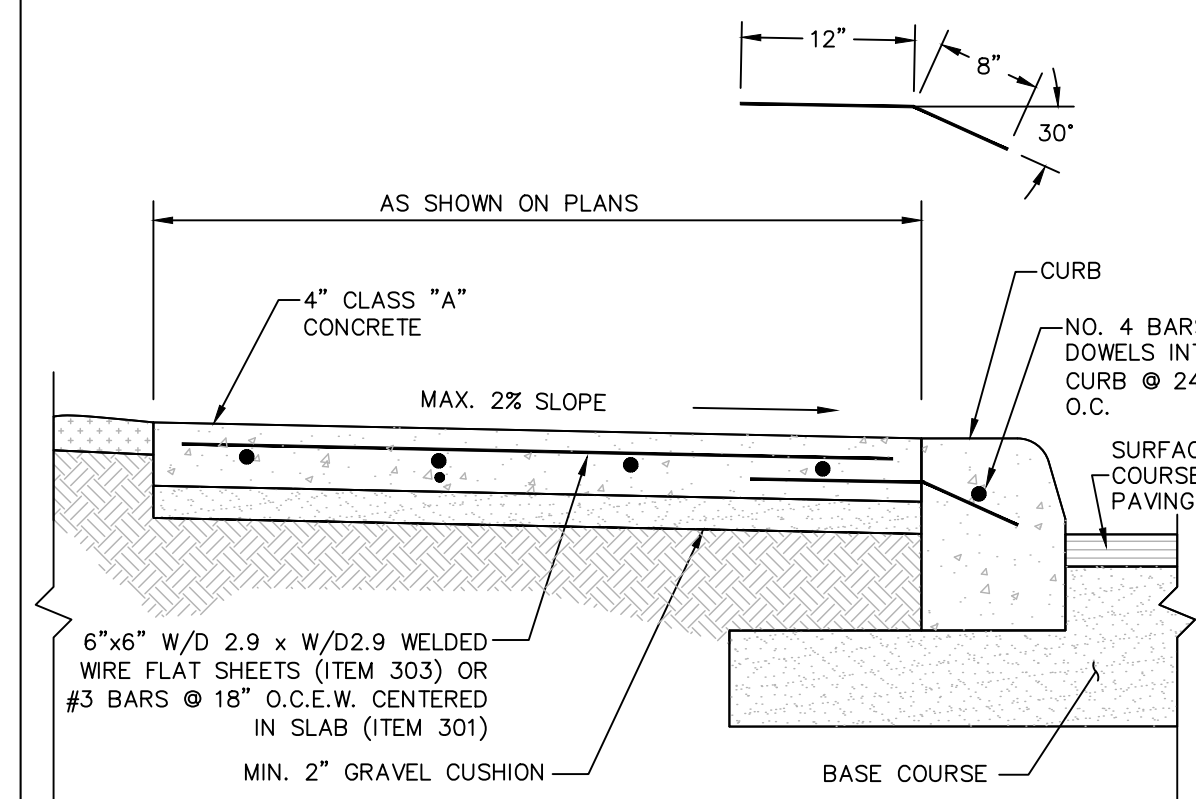
LOCAL B STREET SECTION
NOT-TO-SCALE



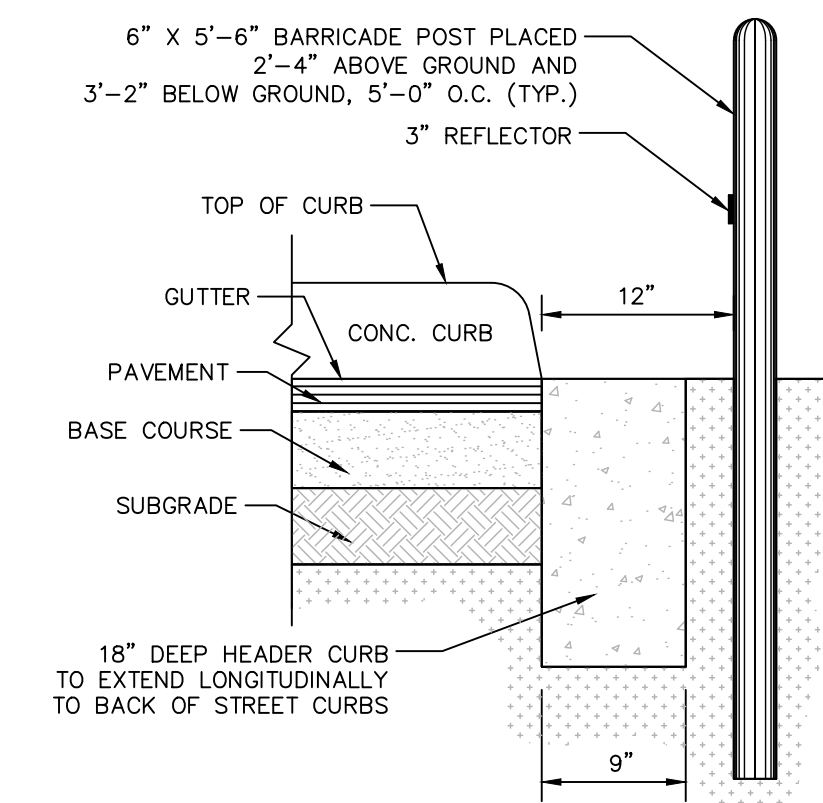
CURB TRANSITION DETAIL
(FROM HEADER CURB TO STANDARD CURB)
NOT-TO-SCALE



CURB TRANSITION DETAIL
(FROM PAVEMENT TO STANDARD CURB)
NOT-TO-SCALE



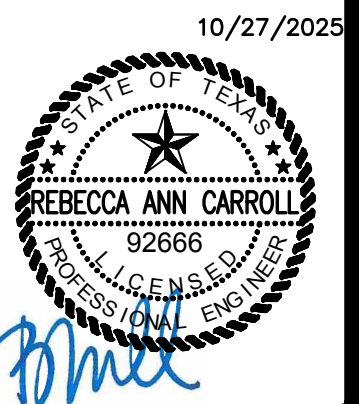
SIDEWALK DETAIL
NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE

DATE

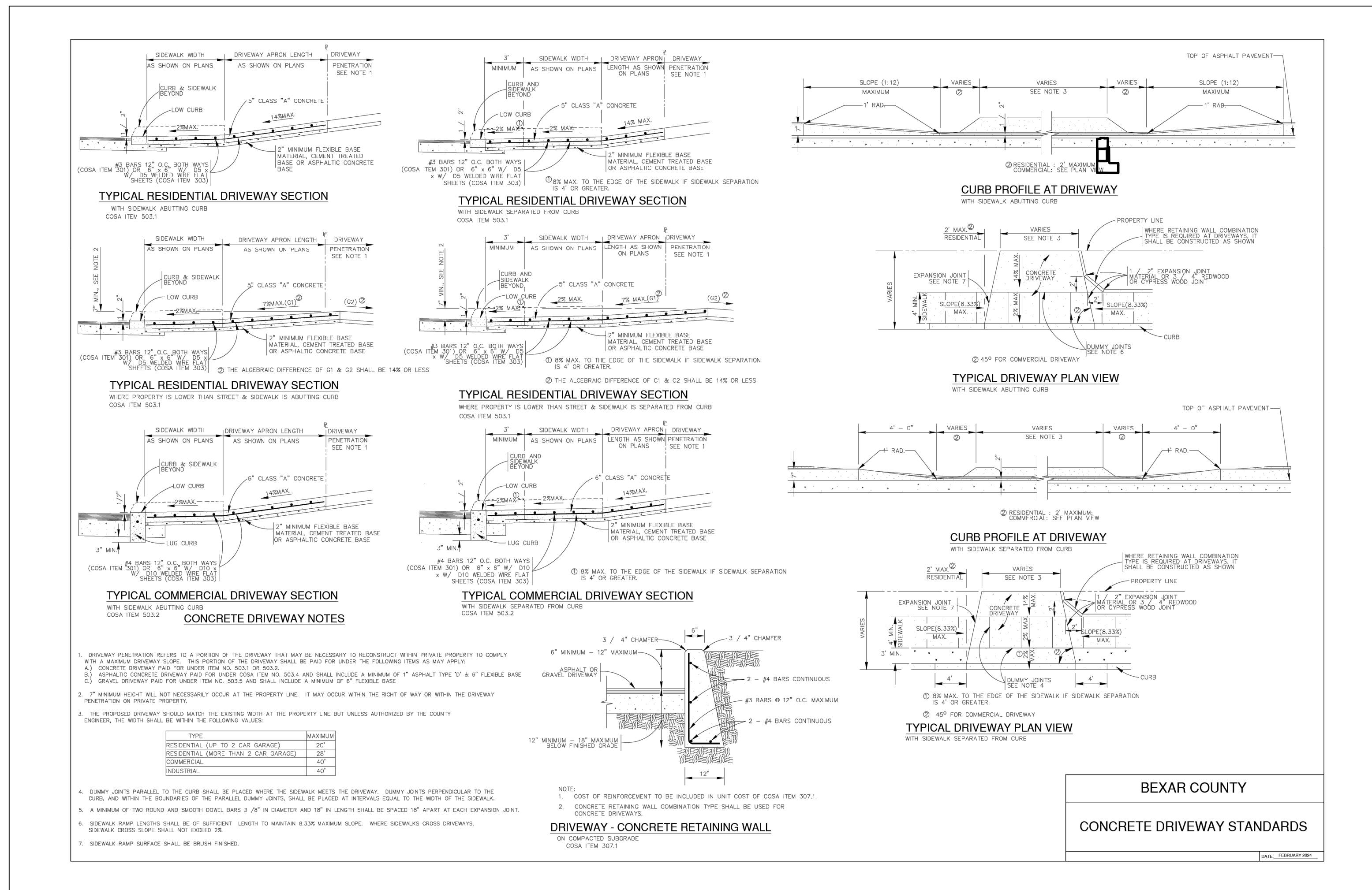
NO.	REVISION



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

PRESERVE AT CULEBRA-UNIT 18
BEAR COUNTY, TEXAS
STREET DETAILS
(SHEET 1 OF 2)

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	OCTOBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C2.10



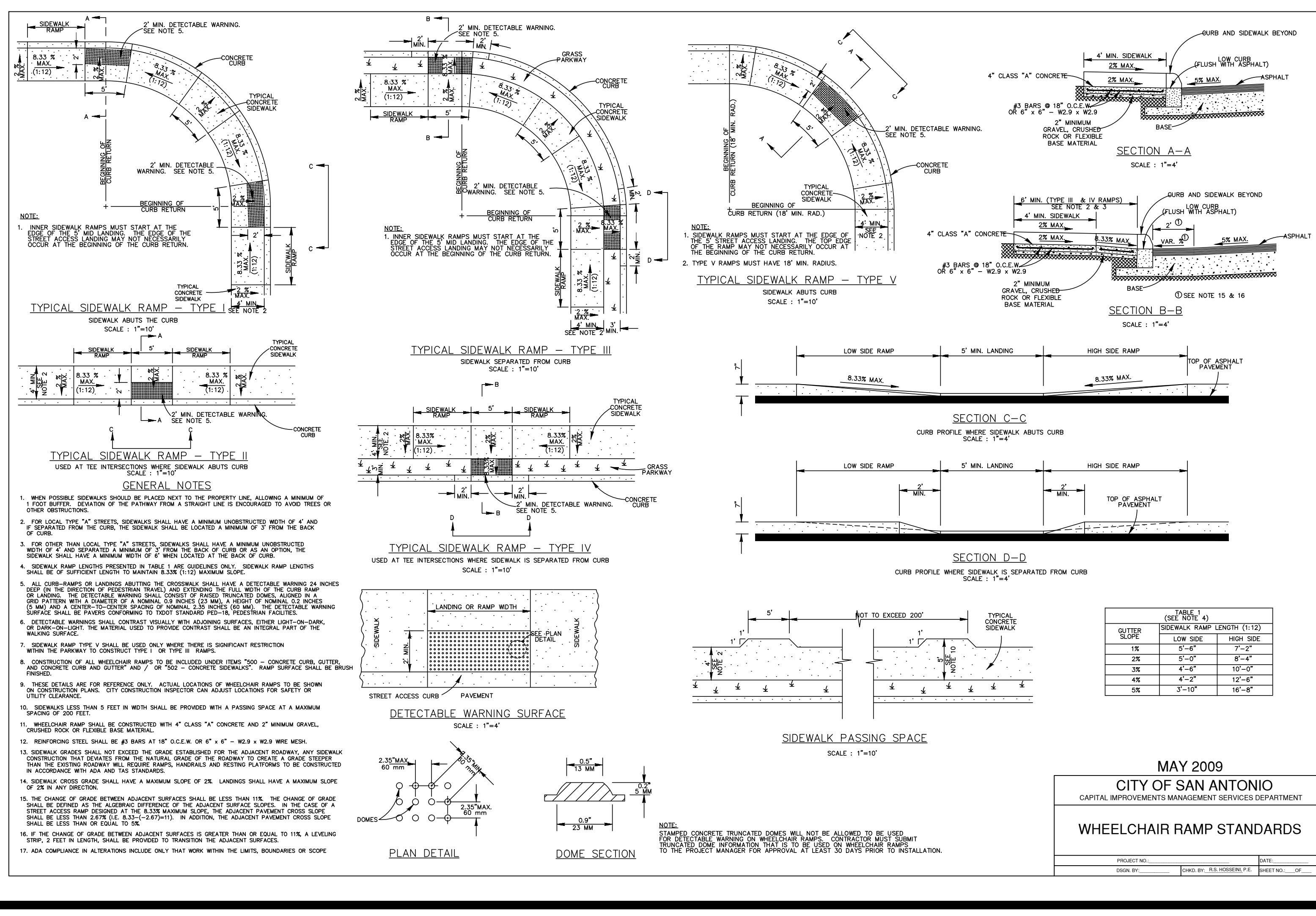
DATE: _____

NO. REVISION: _____

9/16/2025

STATE OF TEXAS
 REBECCA ANN CARROLL
 92666
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL

PAPE - DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS

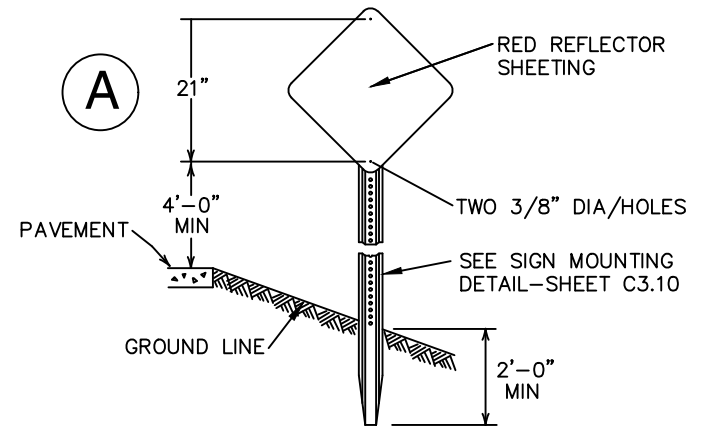
STREET DETAILS
 (SHEET 2 OF 2)

MAY 2009
 CITY OF SAN ANTONIO
 CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

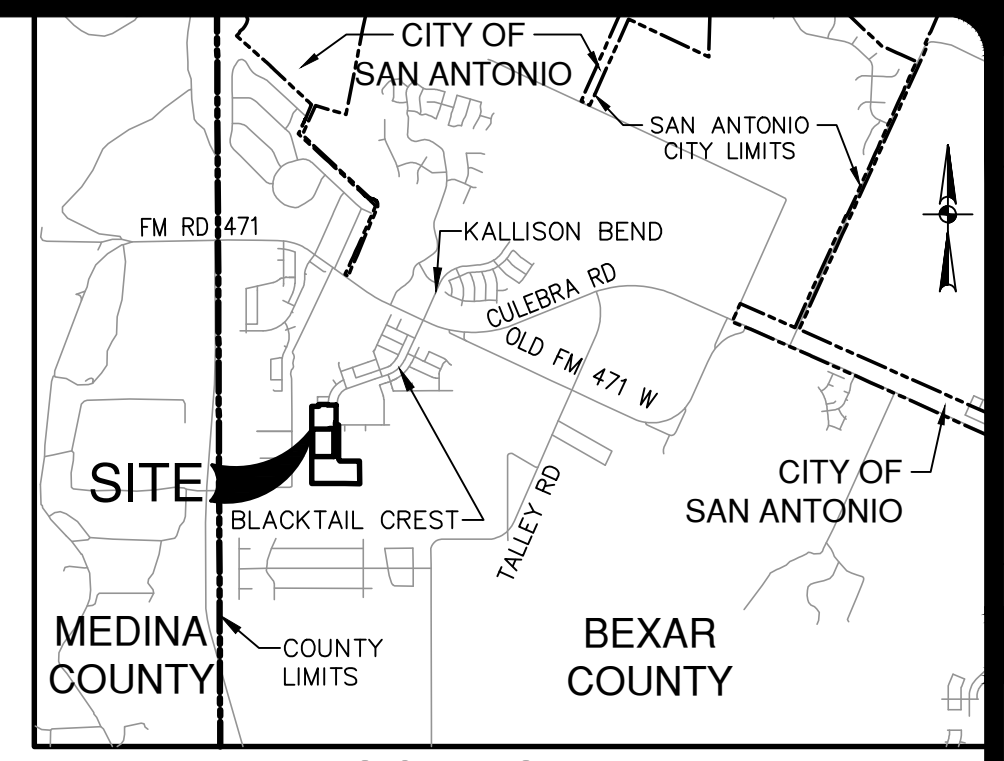
WHEELCHAIR RAMP STANDARDS

PROJECT NO. _____ DATE _____
 DRAWN BY: _____ SHEET NO. _____ OF _____

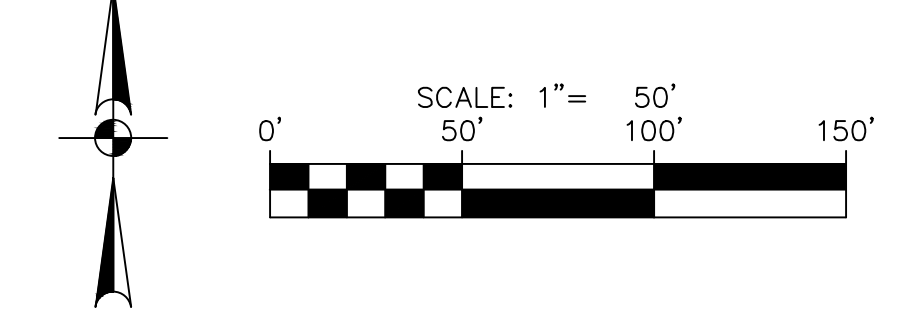
PLAT NO. 25-11800004
 JOB NO. 11668-20
 DATE SEPTEMBER 2025
 DESIGNER AR
 CHECKED SSC DRAWN RP
 SHEET C2.20



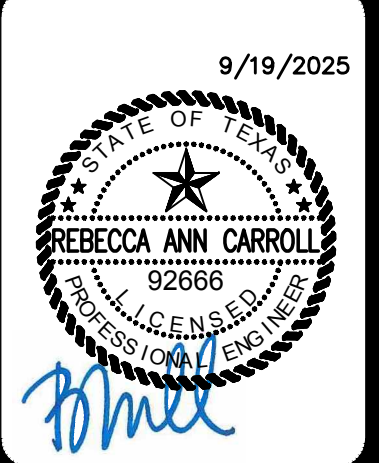
UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.
TYPE 4 OM4-3
18" x 18"
OBJECT MARKER TYPE 4
NOT-TO-SCALE



LOCATION MAP
NOT-TO-SCALE

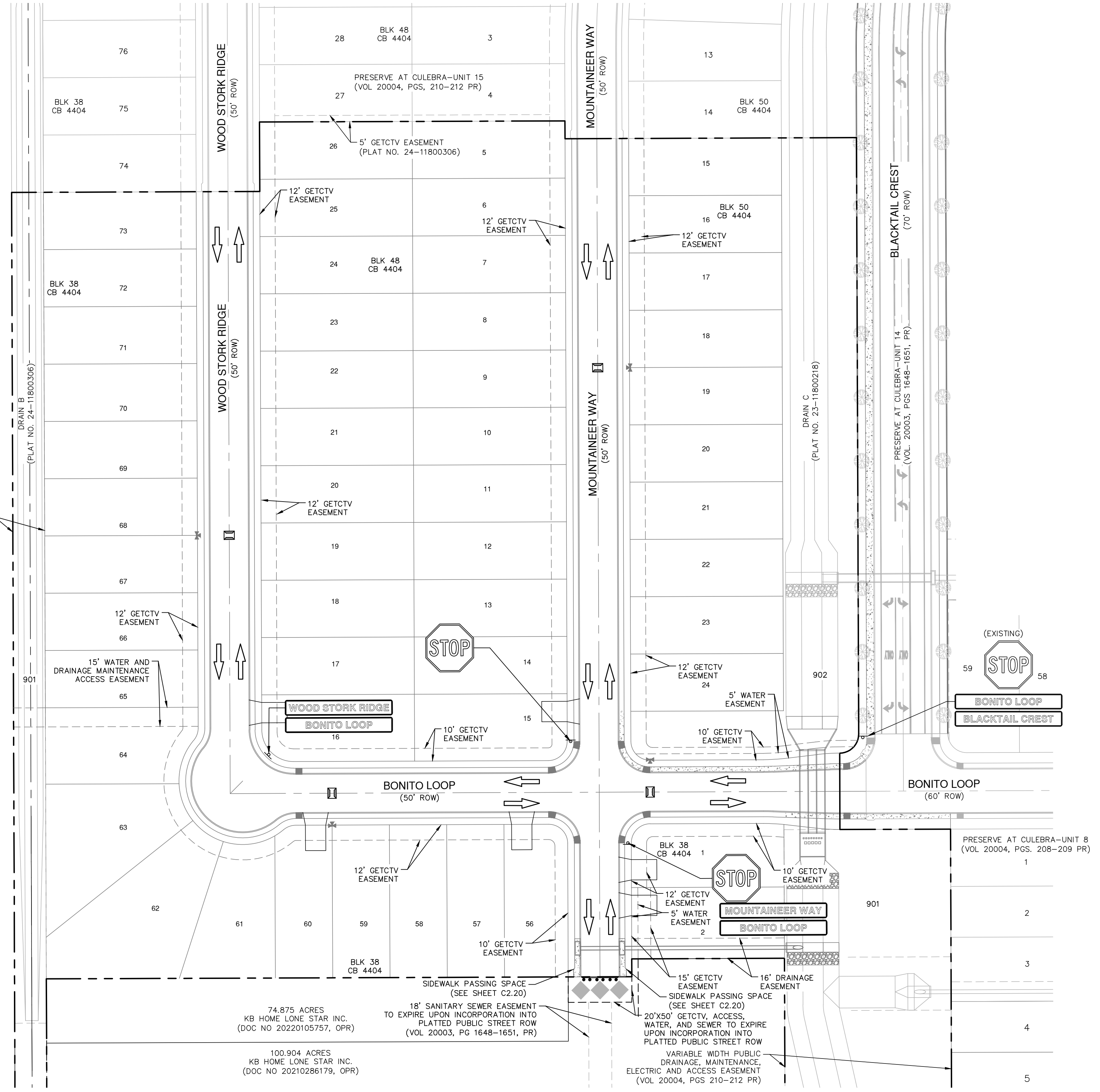


NO.	REVISION	DATE



PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS
OVERALL SIGNAGE PLAN



SYMBOL	ITEM NUMBER
---	UNIT BOUNDARY
[Symbol]	PROPOSED DRIVEWAY
[Symbol]	TRAFFIC FLOW ARROW
[Symbol]	SIDEWALK (HOME BUILDER RESPONSIBILITY)
[Symbol]	SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)
[Symbol]	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPARATE PAY ITEM (N.T.S.)
[Symbol]	END OF ROAD MARKER OM4-3
[Symbol]	HEADER CURB W/ BARRICADE POSTS
[Symbol]	R1-1 30"x30"
[Symbol]	STREET SIGN

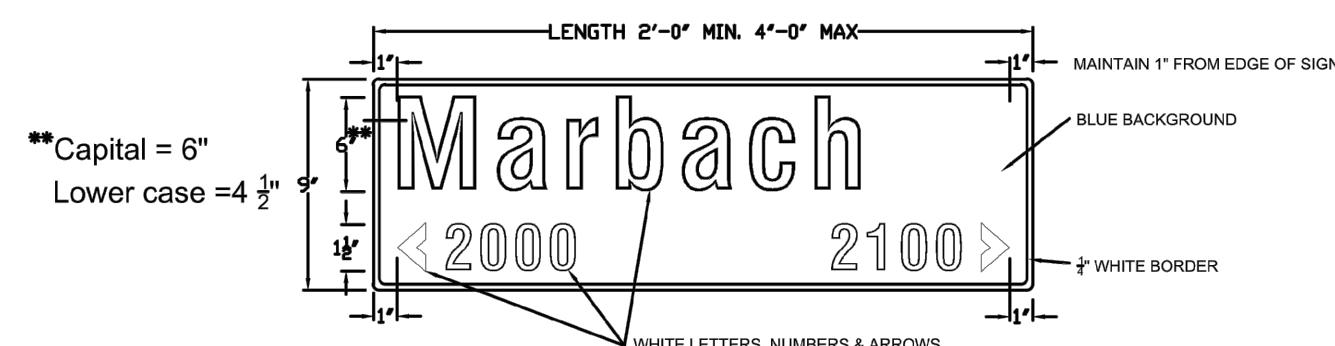
BEXAR COUNTY ROW NOTES:
A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

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.

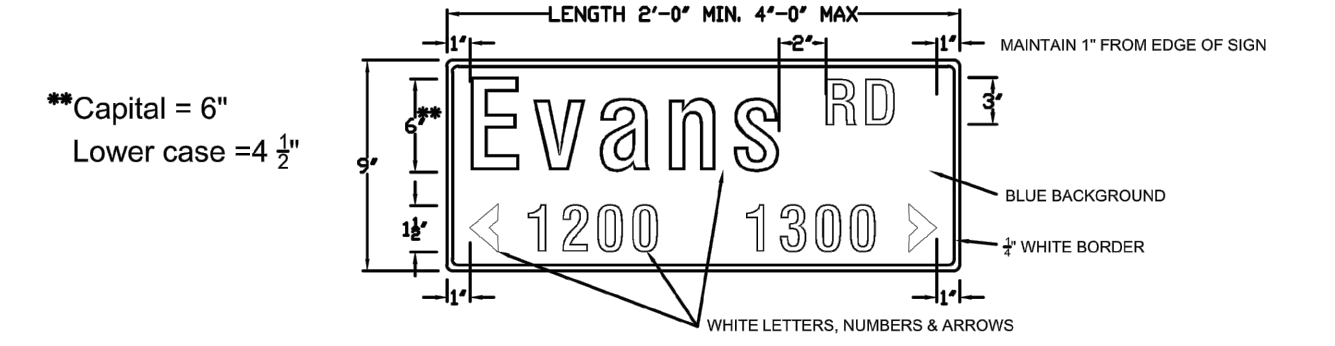
TRENCH EXCAVATION SAFETY PROTECTION:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK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

Date: Sep 18, 2025, 11:10am User: JD - erand@pape-dawson.com
 File: P:\18163\18163\2025\Design\Chan\SSCP-1166826.dwg

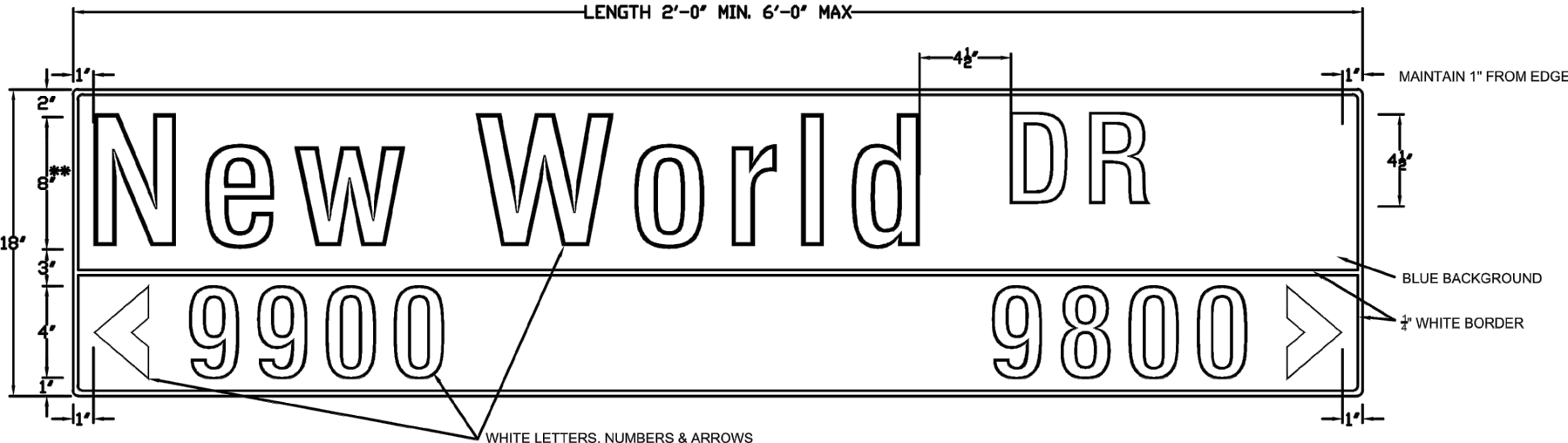
PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	SEPTEMBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C3.00



9" GROUND MOUNT STREET NAME SIGNS

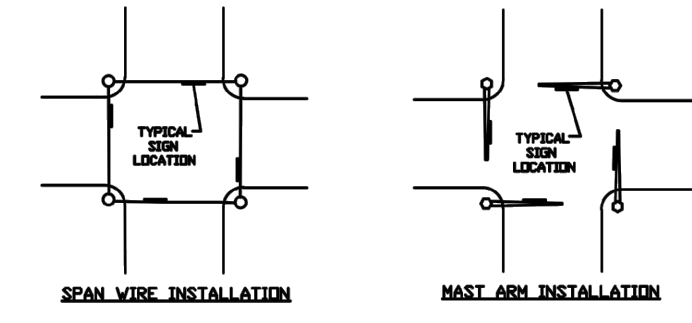


9" GROUND MOUNT STREET NAME SIGNS WITH STREET DESIGNATION



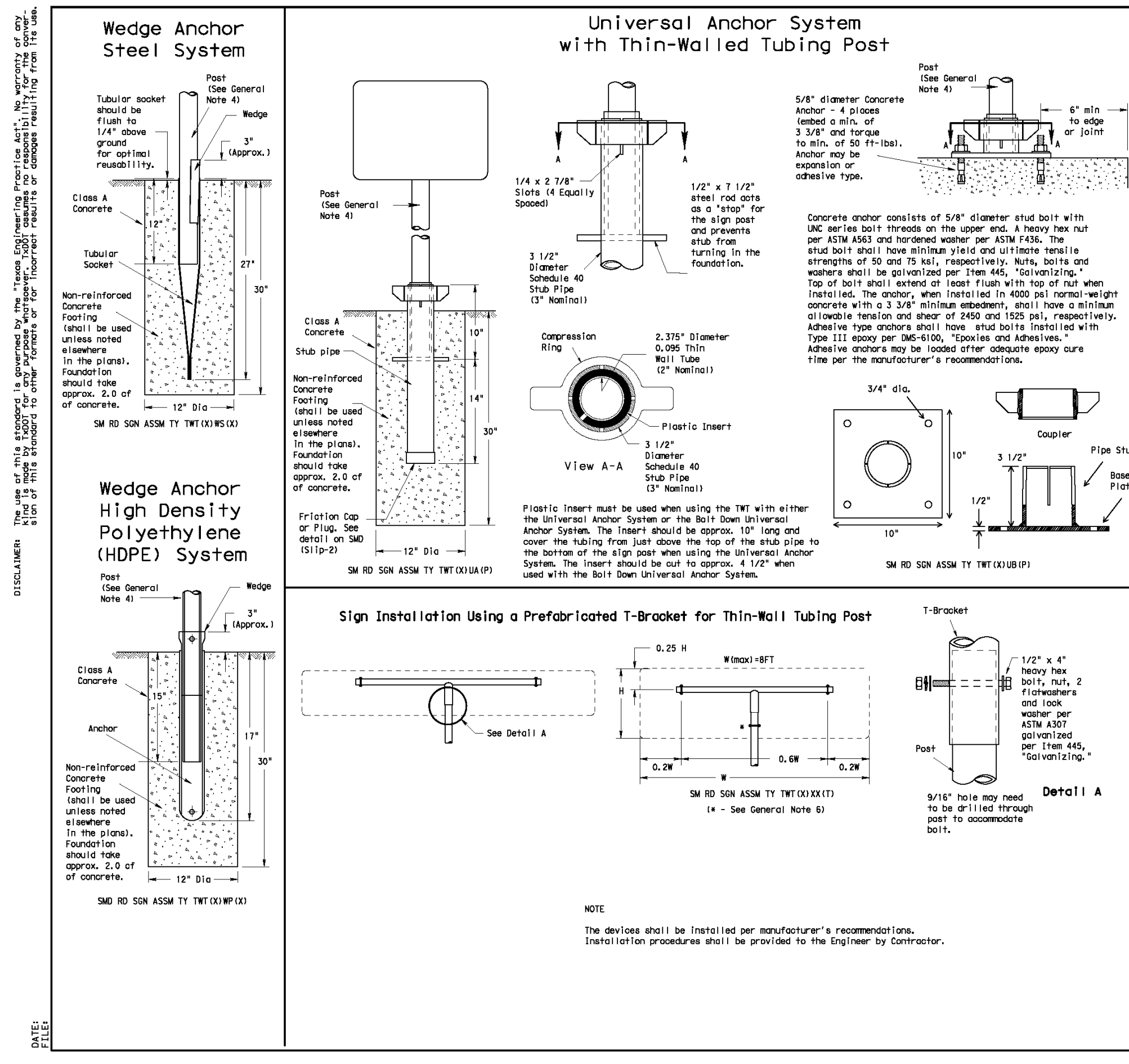
18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	4ft (1200 mm) MIN. 7'2" (1800 mm) MAX. (SEE INCREMENTS OF LENGTH)	2ft (600 mm) MIN. 4ft (1200 mm) MAX. (SEE INCREMENTS OF LENGTH)
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY 5052-H38 (ASTM B-209) GOLD CHROMIATE FINISH	
FACE MATERIALS	BLUE FILM OVER DIAMOND GRADE -ASTM Type III Non-Fluorescent	BLUE FILM OVER HIGH INTENSITY PRISMATIC-ASTM Type IV Non-Fluorescent
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%



- SIGN FACE MATERIALS SHALL CONFORM TO:
- STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FRHD US CUSTOMARY UNITS SECTION 718
 - GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-5-300C
 - ASTM D 4956 - 08A1

Bexar County Public Works
Street Name Sign Details



GENERAL NOTES:

- The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
- The base plate, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to the approval of the local Traffic Operations Division.
- Except for posts (13 3/8" Tubing), clamps, nuts and bolts, all components shall be galvanized. A list of galvanized vendors may be obtained from the Material Procurement List web page. The website address is: <http://www.texas.gov/pdfs/procurementlist.pdf>
- Material used on signs with this system shall conform to the following specifications:
 - 13 3/8" Tubing: 1.5" O.D. x 0.1875" Wall Thickness
 - Steel shall be A513 or 55 per ASTM A106 or ASTM A108
 - Other steels may be used if they meet the following:
 - 50,000 PSI minimum yield strength
 - 18: minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of .083" to .094" (coated diameter, uncoated) shall be within the range of 2.989" to 3.011" (coated diameter, uncoated) shall be within the range of 2.989" to 3.011" (coated diameter, uncoated)
 - Galvanization per ASTM 123 or ASTM A653 D10. For galvanized steel tubing (ASTM A513), request use of hot-dip galvanized steel with zinc wire per ASTM B33.
- Sign bases shall be the size and shape shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24" sign signs. Place clamp on top 3" above bottom of sign when possible.
- Sign supports shall not be applied except where shown. Sign support posts shall be installed in solid rock.
- See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: <http://www.texas.gov/pdfs/procurementlist.pdf>

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE:

- Drill foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/strut shall be reduced in length as required to a minimum length of 18". Any material removed from the socket/strut shall be from the bottom and the clearance requirements given on SMD(TWT)-08 must be followed. The inner surfaces of the socket/strut must remain free of concrete or other debris.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
- Insert tubular socket into concrete until top of socket is approximately 1/4" above the concrete footing.
- Place the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer.
- Attach the sign to the sign post.
- Insert the sign post into socket and align sign face with roadway.
- Drill the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

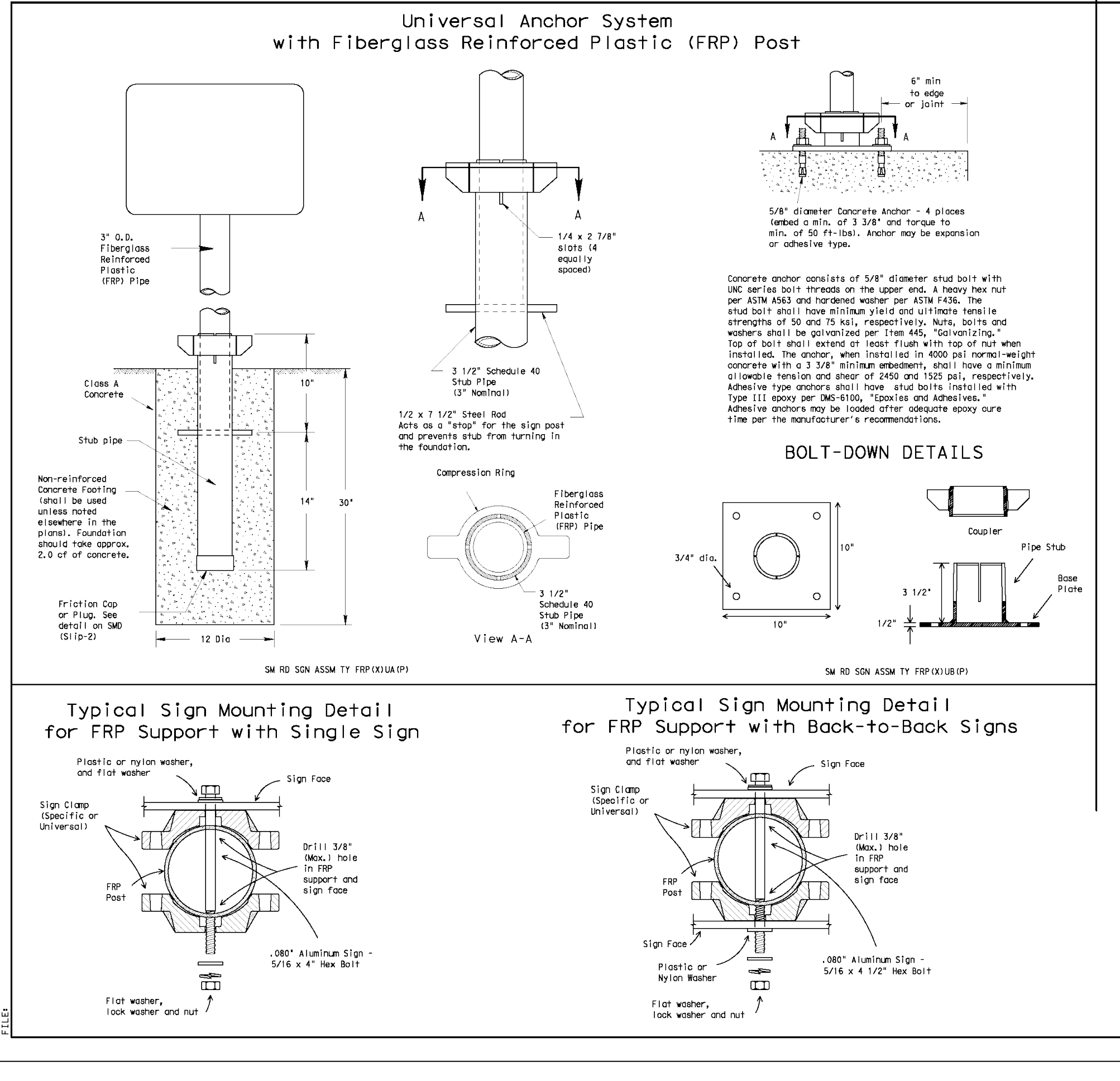
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE:

- Drill foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/strut shall be reduced in length as required to a minimum length of 18". Any material removed from the socket/strut shall be from the bottom and the clearance requirements given on SMD(TWT)-08 must be followed. The inner surfaces of the socket/strut must remain free of concrete or other debris.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment in solid rock.
- Level and plumb the base post using a torpedo level and set concrete adequate time to set. The bottom of the hole provided in the stub pipe shall remain above the top of the concrete foundation.
- Attach the sign to the sign post.
- Install plastic insert around bottom of post.
- Insert sign post into base post. Lower until the post comes to rest on steel rod.
- Set compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when properly installed.
- Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST
SMD (TWT) - 08

DATE: 9-08
FILED: 9-08

DATE: _____
NO. REVISION: _____
9/16/2025
REBECCA ANN CARROLL
REGISTERED PROFESSIONAL ENGINEER
No. 92666
PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 0028890



GENERAL NOTES:

- FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Sign post installation may be used for signs up to and including 32 square feet.
- All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
- See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: <http://www.texas.gov/pdfs/procurementlist.pdf>

FRP POST REQUIREMENTS:

- Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
- Thickness of FRP sign support is 0.125" ± 0.031" ± 0.01".
- FRP sign supports are prefabricated by the Traffic Operations Division. Prefabrication procedures are obtained by visiting: <http://www.texas.gov/pdfs/procurementlist.pdf>

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE:

- Drill foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/strut shall be reduced in length as required to a minimum length of 18". Any material removed from the socket/strut shall be from the bottom and the clearance requirements given on SMD(FRP)-08 must be followed. The inner surfaces of the socket/strut must remain free of concrete or other debris.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment in solid rock.
- Level and plumb the base post using a torpedo level and set concrete adequate time to set. The bottom of the hole provided in the stub pipe shall remain above the top of the concrete foundation.
- Attach sign to FRP post.
- Insert sign post into base post. Lower until the post comes to rest on the steel rod.
- Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
- Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

BOLT-DOWN SIGN SUPPORT:

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

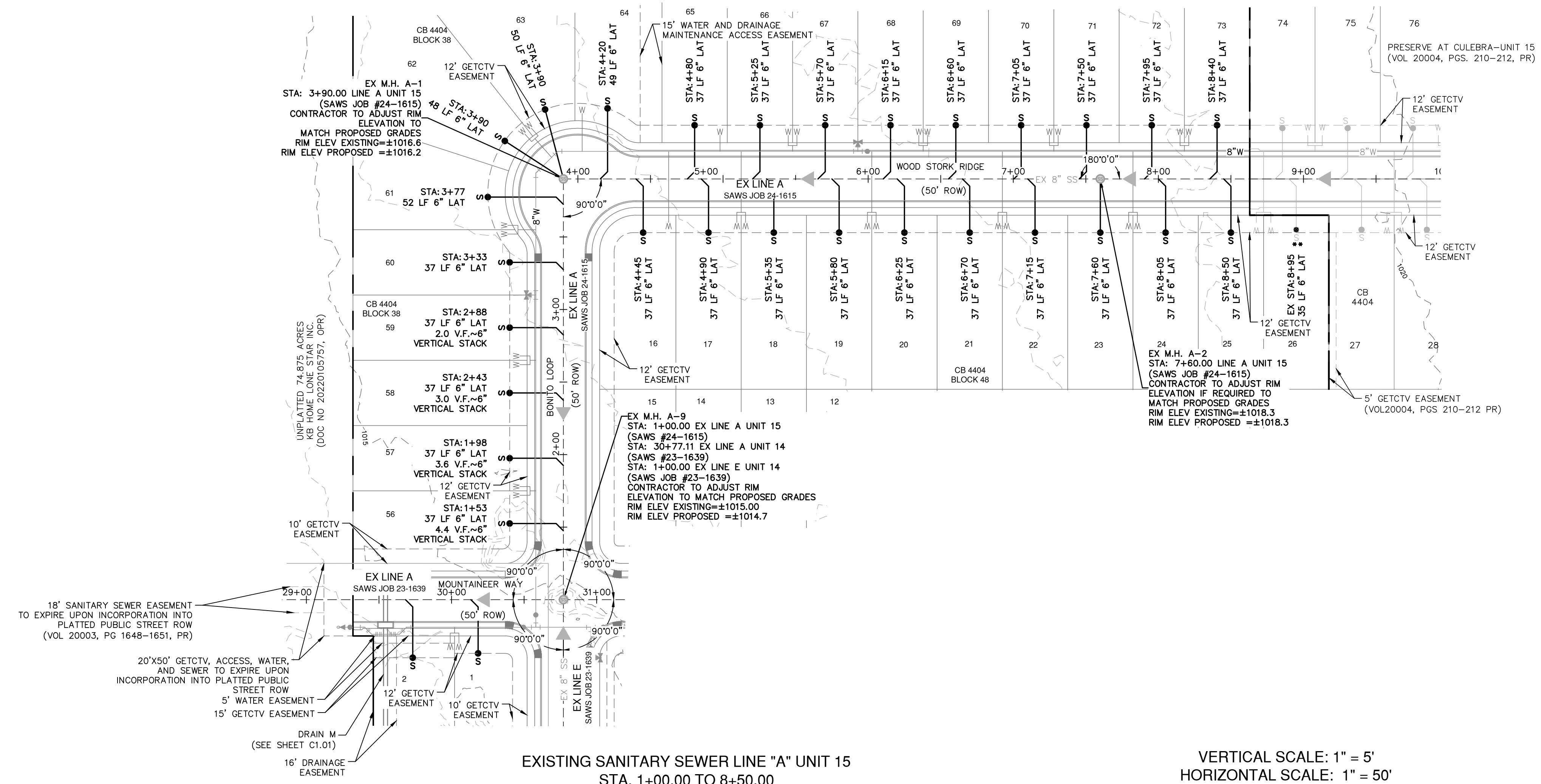
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM WITH FRP POST
SMD (FRP) - 08

DATE: 9-08
FILED: 9-08

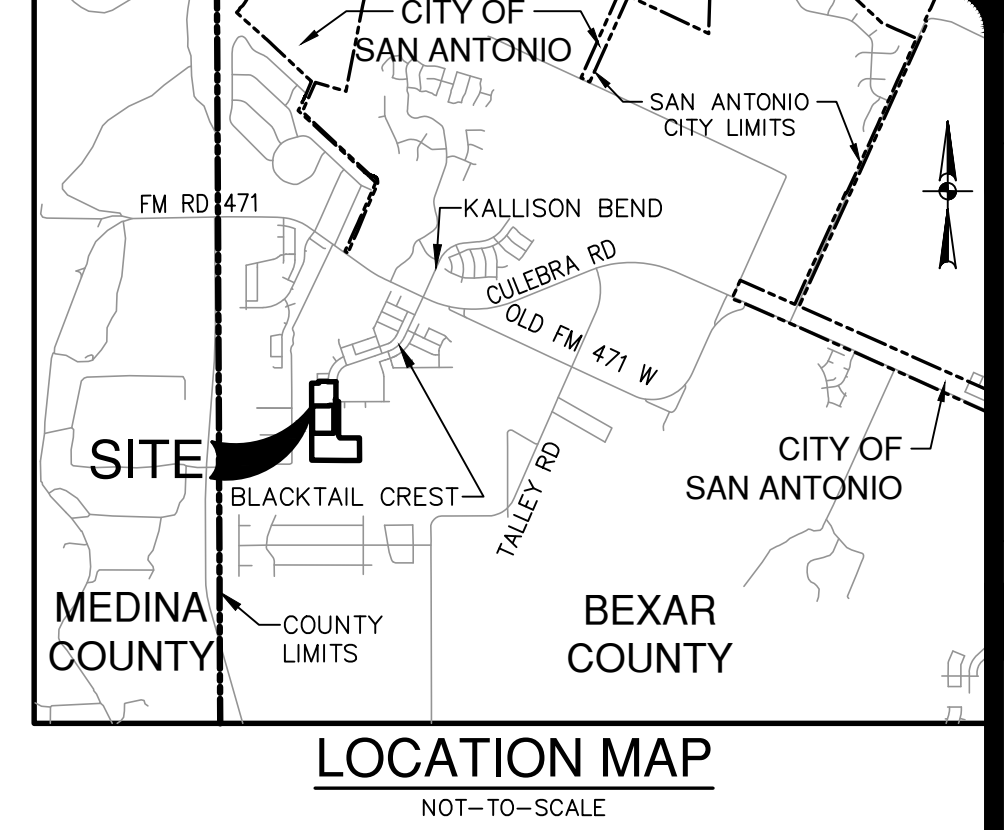
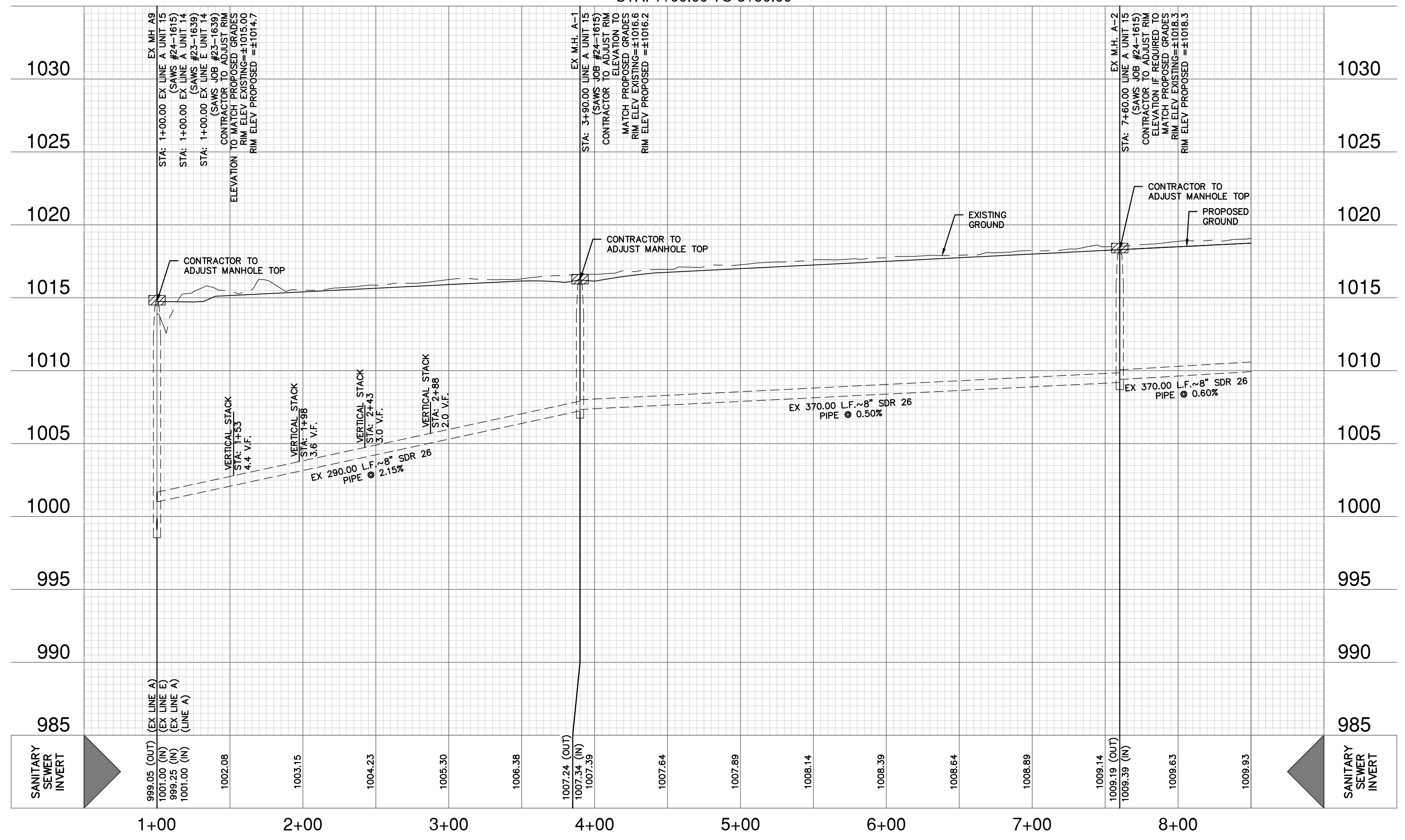
DATE: _____
NO. REVISION: _____
PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS
SIGNAGE DETAILS
(SHEET 2 OF 2)
PLAT NO. 25-11800004
JOB NO. 11668-20
DATE: SEPTEMBER 2025
DESIGNER: AR
CHECKED: SSC DRAWN: RP
SHEET: C3.20

Plotter: Jan 13, 2026, 9:17am, User: jf, Project: P:\16\16620\Design\Civil\SSA\LET-C-116620.dwg

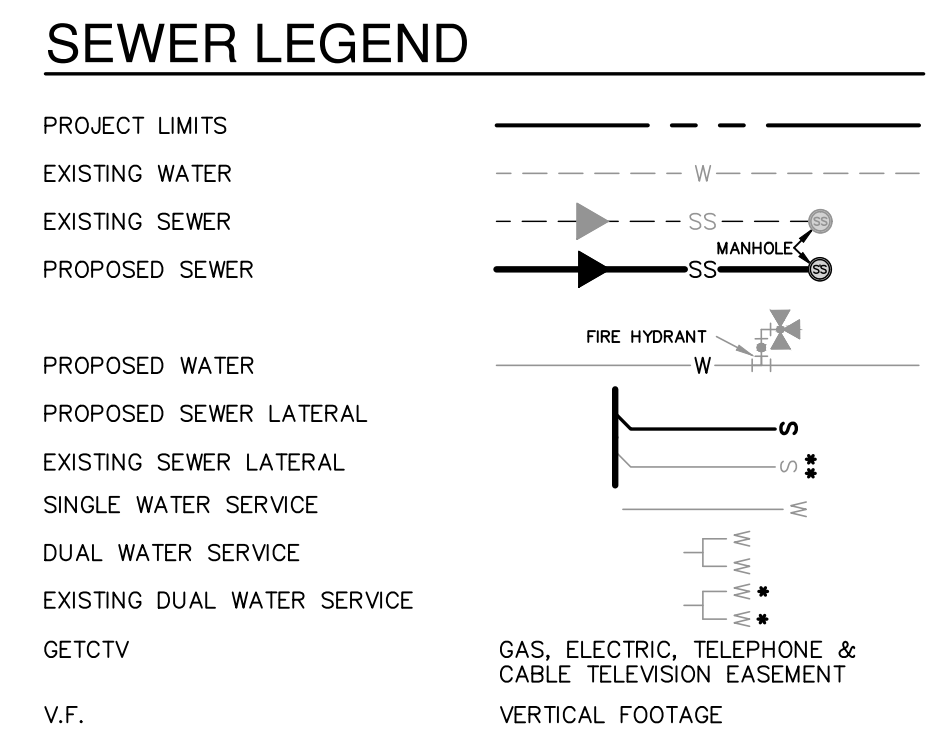
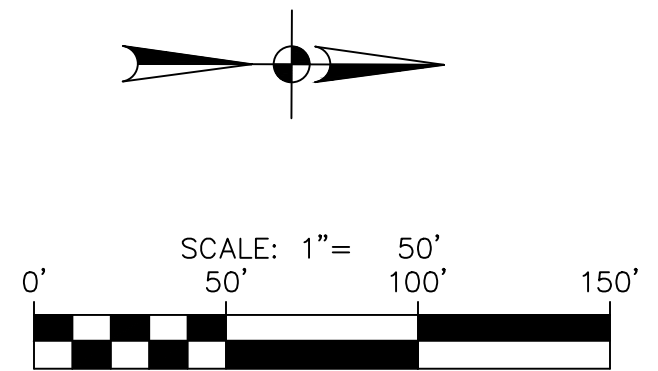
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EXISTING SANITARY SEWER LINE "A" UNIT 15
STA. 1+00.00 TO 8+50.00
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP
NOT-TO-SCALE



DATE	07/13/26
NO.	1
REVISION	ADD SAWS JOB NO.

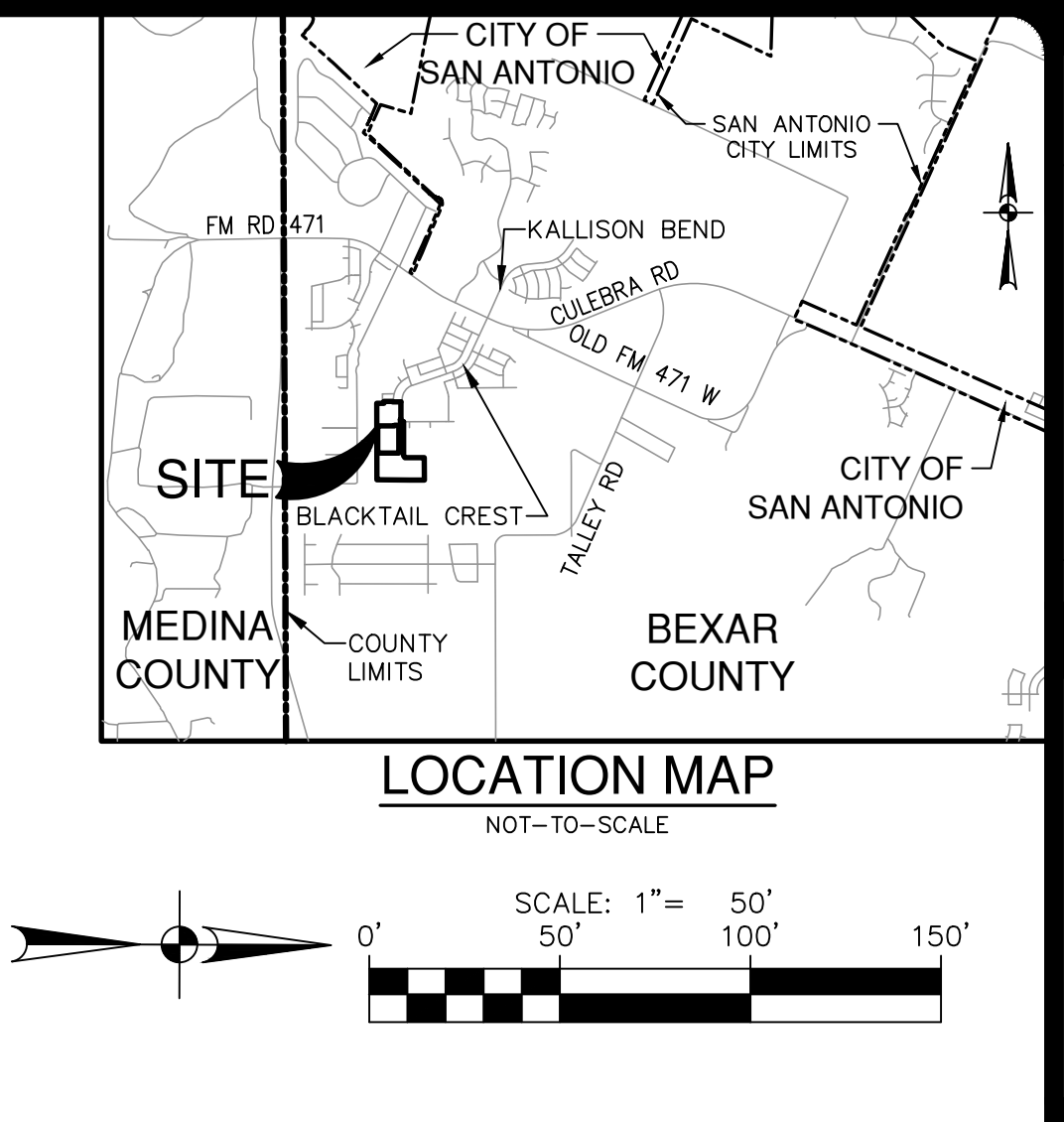
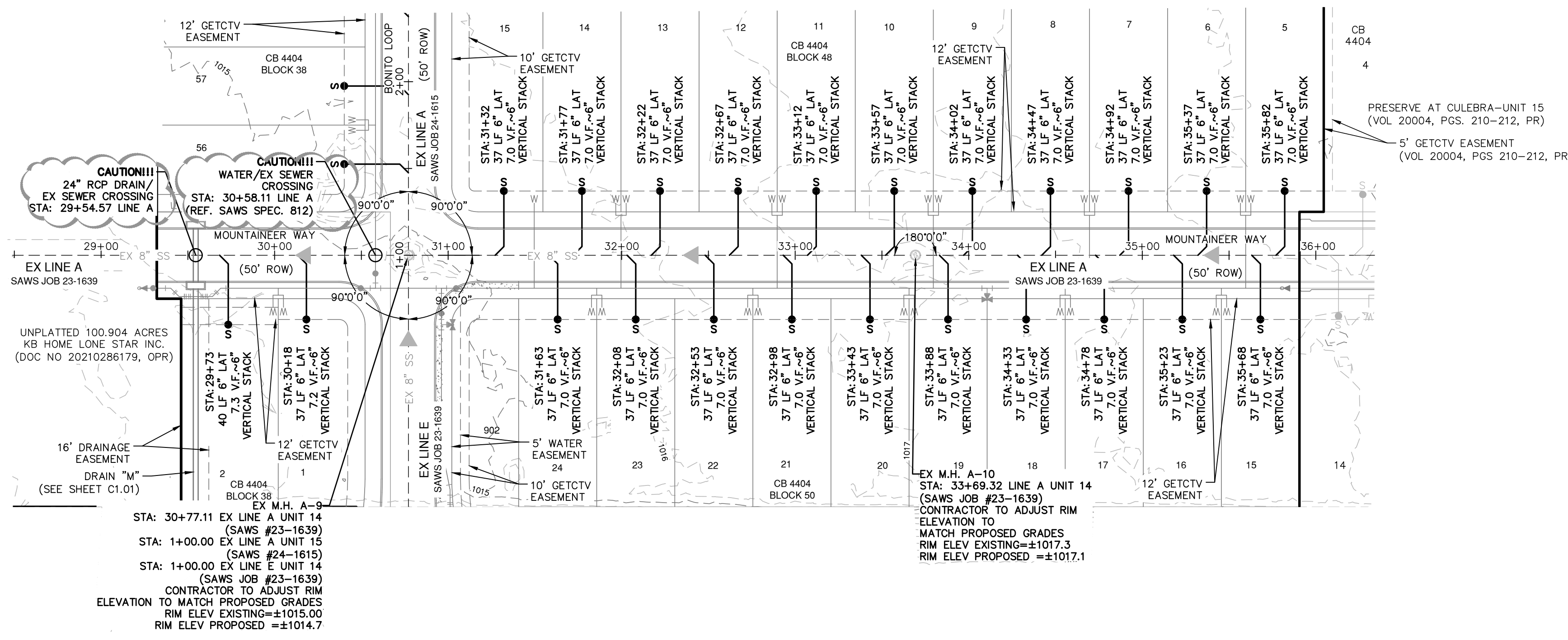


PAPE-DAWSON
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1022860

PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS
EXISTING SEWER LINE A - UNIT 15
PLAN AND PROFILE

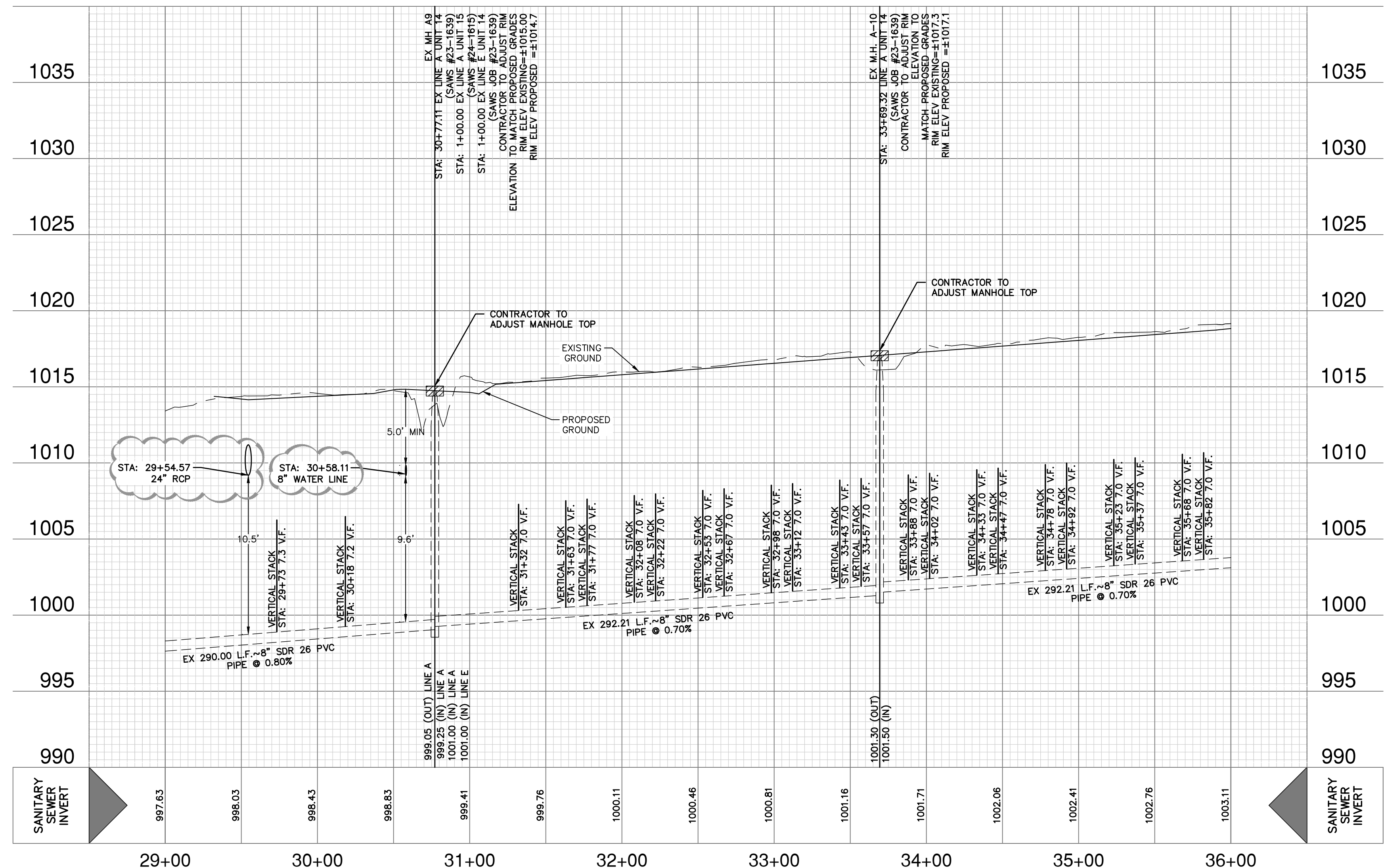
SEWER: MEDIO-WEST SEWERSHED-LEON CREEK W.R.C.	
DEVELOPER'S NAME:	KB HOME LONE STAR, INC
ADDRESS:	4800 FREDERICKSBURG ROAD
CITY:	SAN ANTONIO STATE: TX ZIP: 78229
PHONE#:	(210) 301-2815 FAX#:
SAWS BLOCK MAP#:	064608 TOTAL EDU'S: 51 TOTAL ACREAGE: 33.273
TOTAL LINEAR FOOTAGE OF PIPE:	8" O D LF PLAT NO. 25-11800004
NUMBER OF LOTS:	52 SAWS JOB NO. 25-1616

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	JANUARY 2026
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C4.01



DATE: 07/13/26
 NO. REVISION: 1. SEWER CROSSINGS AND SAWS JOB NO.
 1/13/2026
 REBECCA ANN CARROLL
 92666
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF TEXAS
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

EXISTING SANITARY SEWER LINE "A" UNIT 14
 STA. 29+00.00 TO STA 36+00.00
 VERTICAL SCALE: 1" = 5'
 HORIZONTAL SCALE: 1" = 50'



SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- EXISTING SEWER LATERAL
- SINGLE WATER SERVICE
- DUAL WATER SERVICE
- EXISTING DUAL WATER SERVICE
- GETCTV
- V.F.

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

FINISHED FLOOR NOTES:
 1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
 2. THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.

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: MEDIO-WEST SEWERSHED-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# 064608 TOTAL EDU'S_51 TOTAL ACREAGE 33.273
 TOTAL LINEAR FOOTAGE OF PIPE: 8" Q LF PLAT NO. 25-11800004
 NUMBER OF LOTS 52 SAWS JOB NO. 25-1616

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 EXISTING SEWER LINE A - UNIT 14
 PLAN AND PROFILE

PLAT NO. 25-11800004
 JOB NO. 11668-20
 DATE JANUARY 2026
 DESIGNER AR
 CHECKED SSC DRAWN RP
 SHEET C4.02

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 SYSTEMS", 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 AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

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

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

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

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

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

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

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

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

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

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

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

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

SAWS SEWER NOTES

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

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

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

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

4. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC D217.53 AND TCEQ 2200.44C(1)(E). CONTRACTOR SHALL CENTER A JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.

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

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

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

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

PROJECT SEWER NOTES

1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 12' PAST THE PROPERTY LINE AND CAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2' X 4' STAKE, FOUR (4) FEET LONG, TWO (2) FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICE. NO SEPARATE PAY ITEM.

2. CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C4.10.

3. NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

4. ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO THE PROPERTY LINE.

5. WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 160 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.

6. CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATIONS 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASUREMENT.

7. ALL SEWER PIPES SHALL BE 8" PVC (SDR 26), UNLESS OTHERWISE NOTED.

8. CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.

9. CONTRACTOR SHALL PROTECT ALL EXISTING FENCES. ANY FENCE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

10. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.

11. CONCRETE RING ENCASUREMENT 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 ENCASUREMENT.

12. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.

13. ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.

14. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISH PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATIONS SUCH THAT THE TOP OF MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.

15. ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

SEWER: MEDIO-WEST SEWERSHED-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# 084608 TOTAL EDU'S 51 TOTAL ACREAGE 33.273			
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NUMBER OF LOTS 52	SAWS JOB NO. 25-1616		

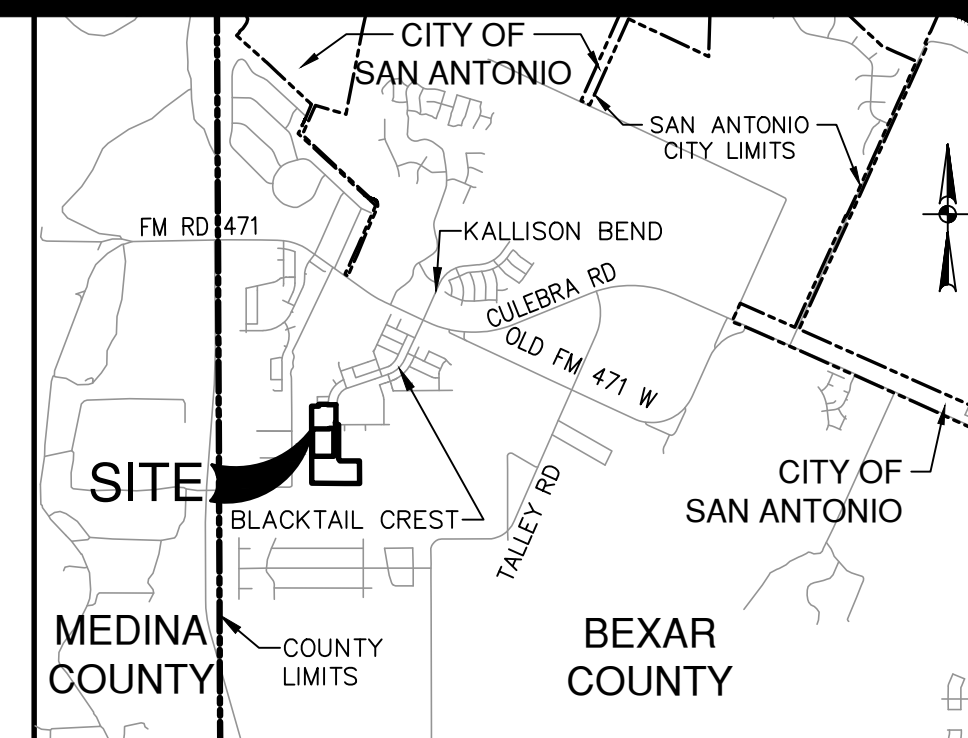
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1.	ADD SAWS JOB NO.	07/13/26



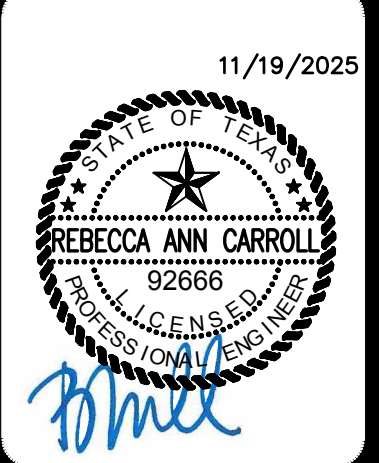
PAPE-DAWSON
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 10028800

PRESERVE AT CULEBRA-UNIT 18
BEXAR COUNTY, TEXAS
SANITARY SEWER NOTES

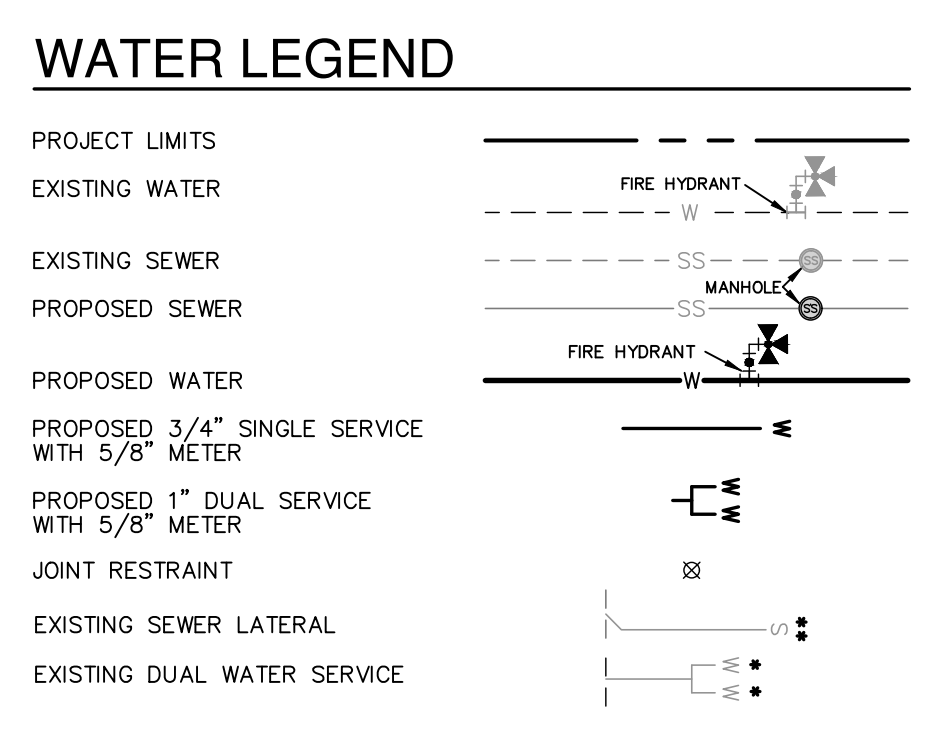
PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	JANUARY 2026
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C4.20



NO.	REVISION	DATE
1	ADD GATE VALVE, SAWS	11/19/25
	JOB NO.	



PAPE-DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1022860



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

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

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

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

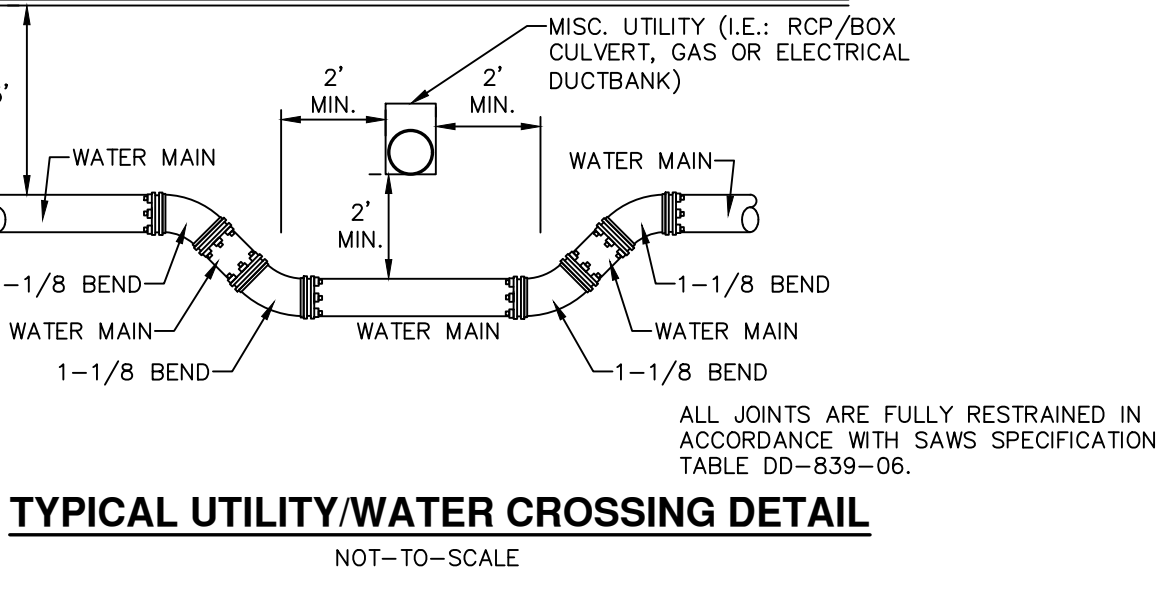
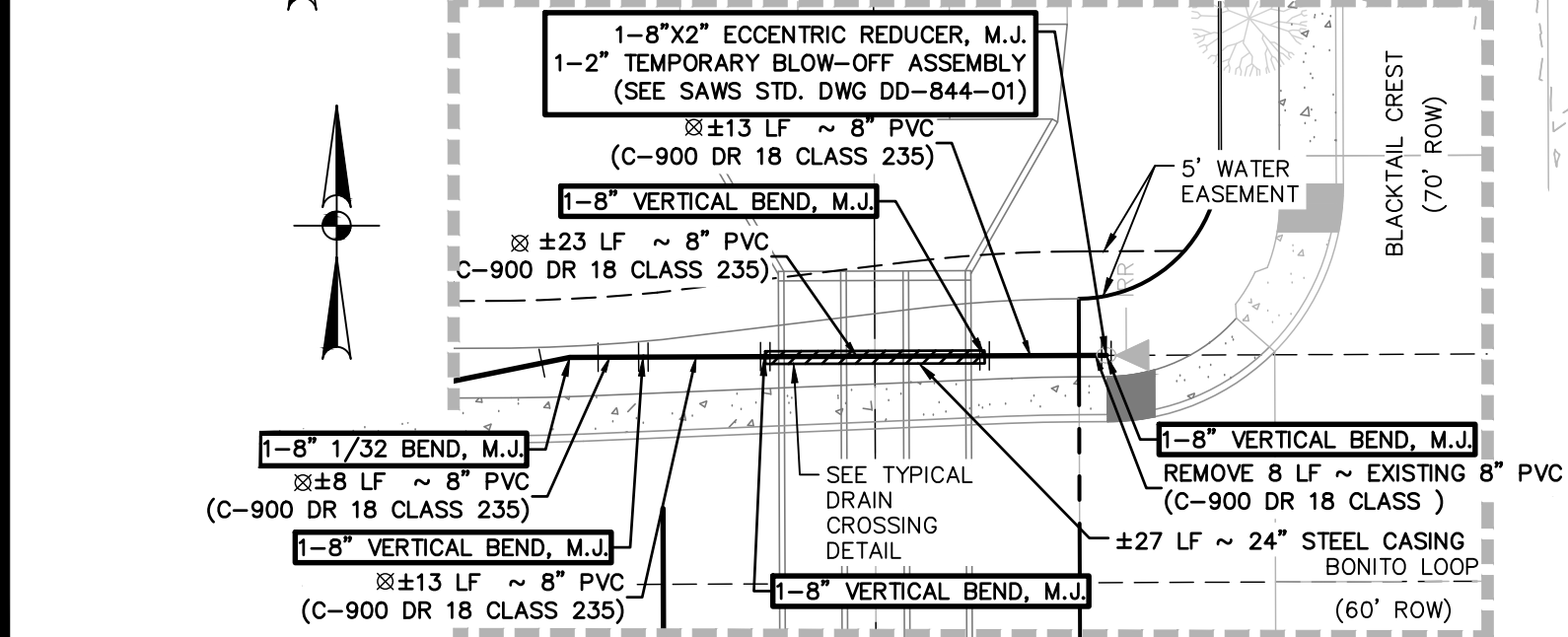
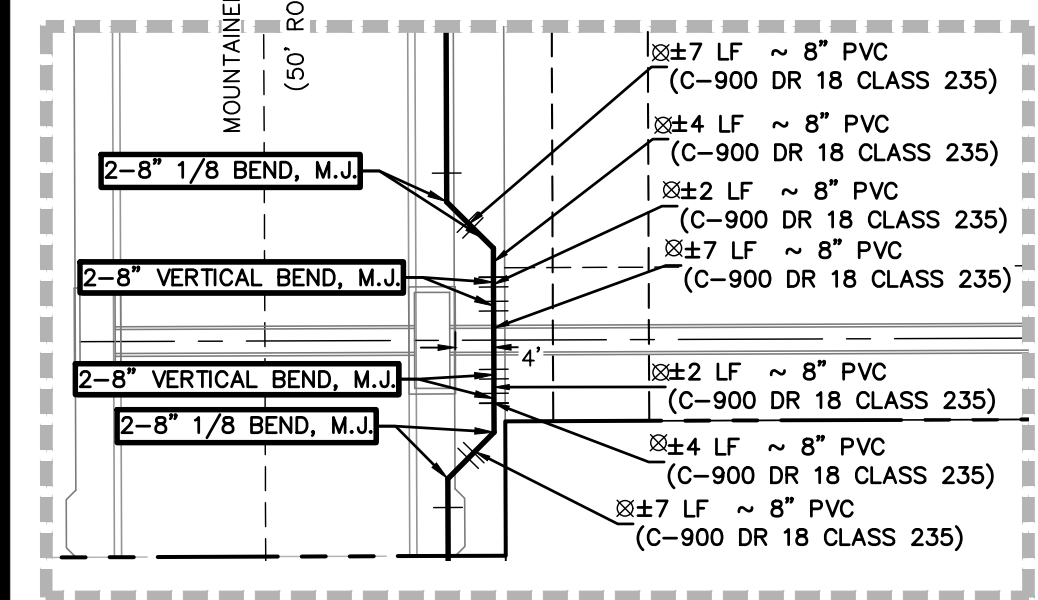
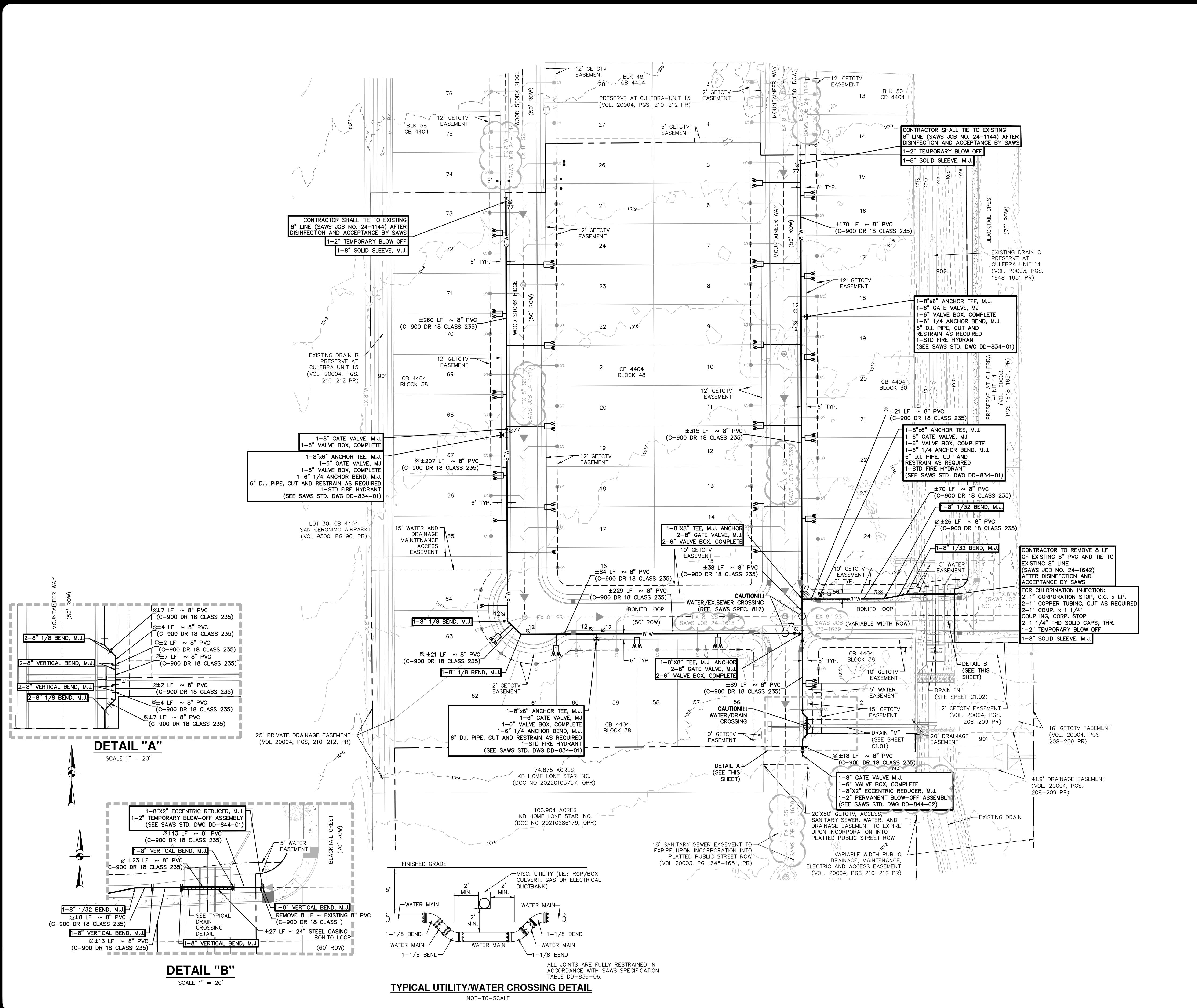
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WATER (SAWS PRESSURE ZONE 8) HGL 1170

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# 084608 TOTAL EDU'S_50 TOTAL ACREAGE33.273
TOTAL LINEAR FOOTAGE OF PIPE:1637 LF - 8" PLAT NO. 25-11800004
NUMBER OF LOTS_52 SAWS JOB NO. 25-1124

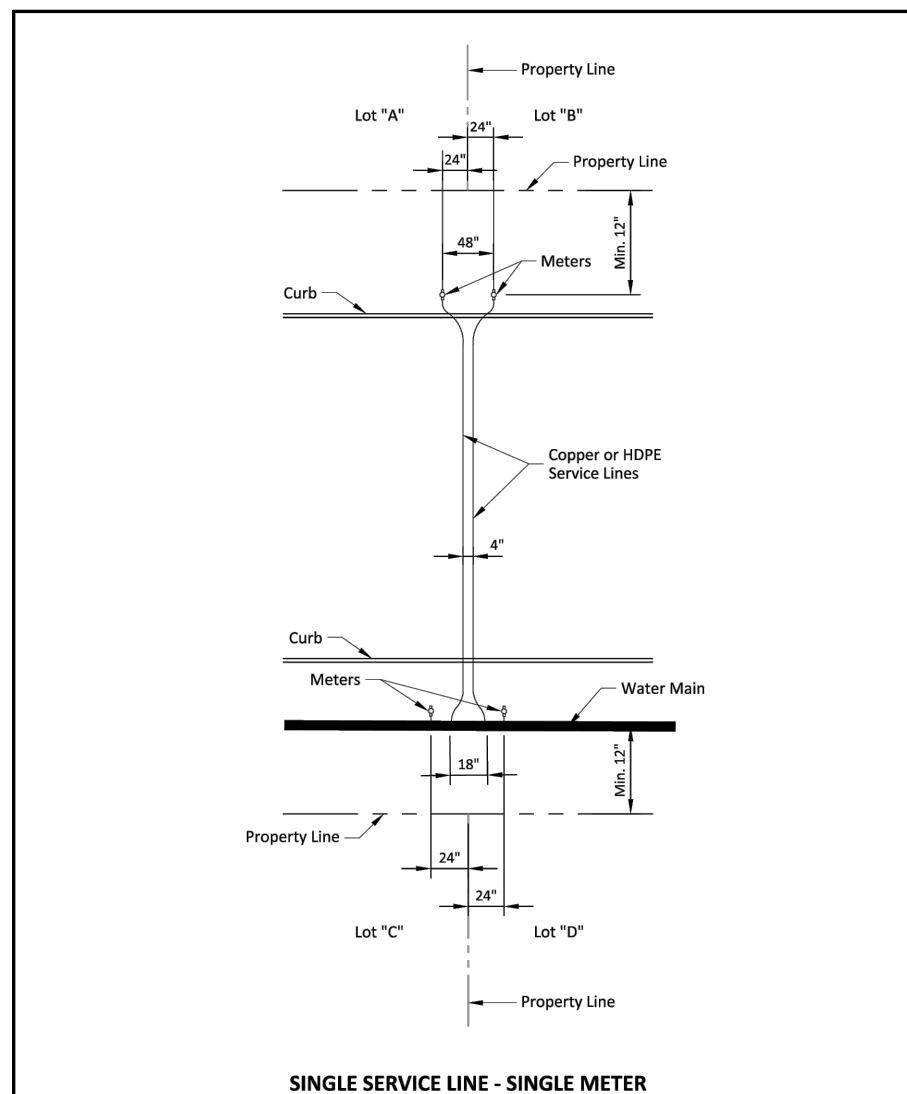
PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 OVERALL WATER DISTRIBUTION PLAN

PLAT NO. 25-11800004
JOB NO. 11668-20
DATE NOVEMBER 2025
DESIGNER AR
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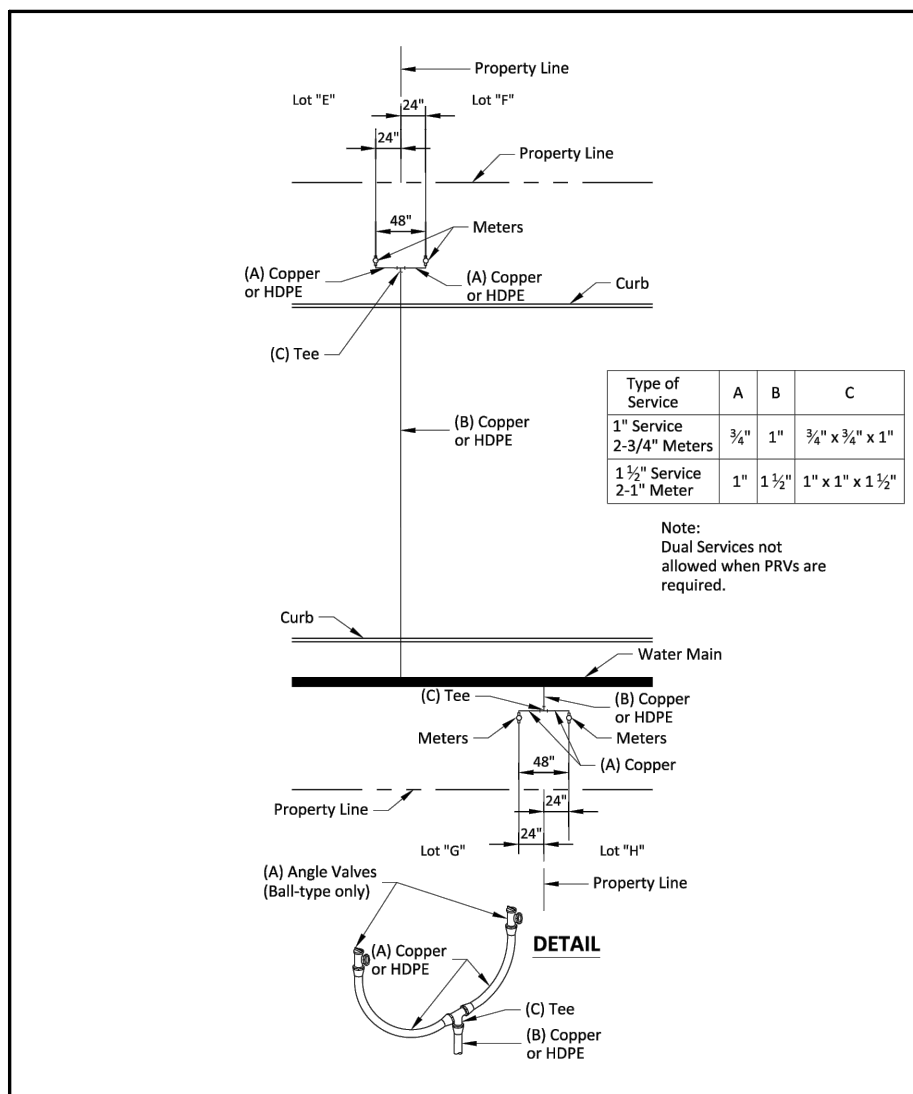


Date: Nov 18, 2025 10:24am User: ID: rcarroll
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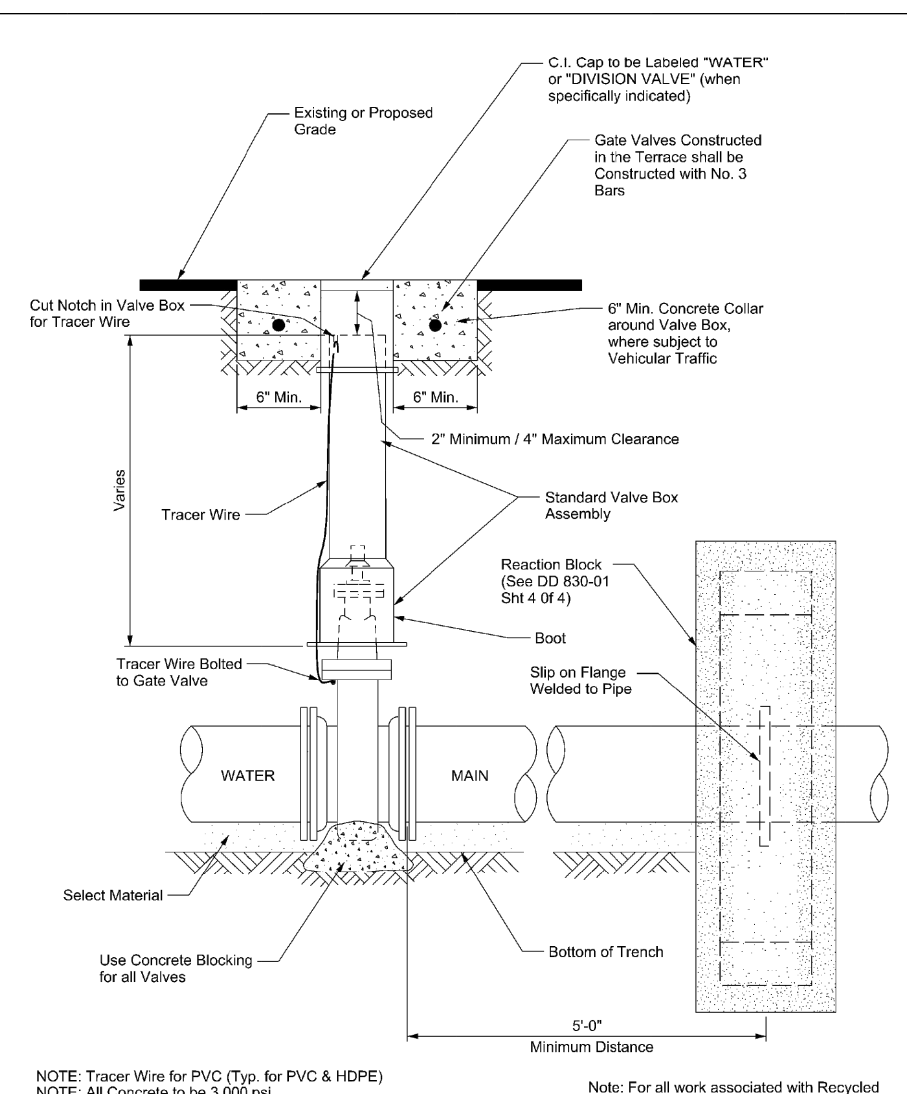
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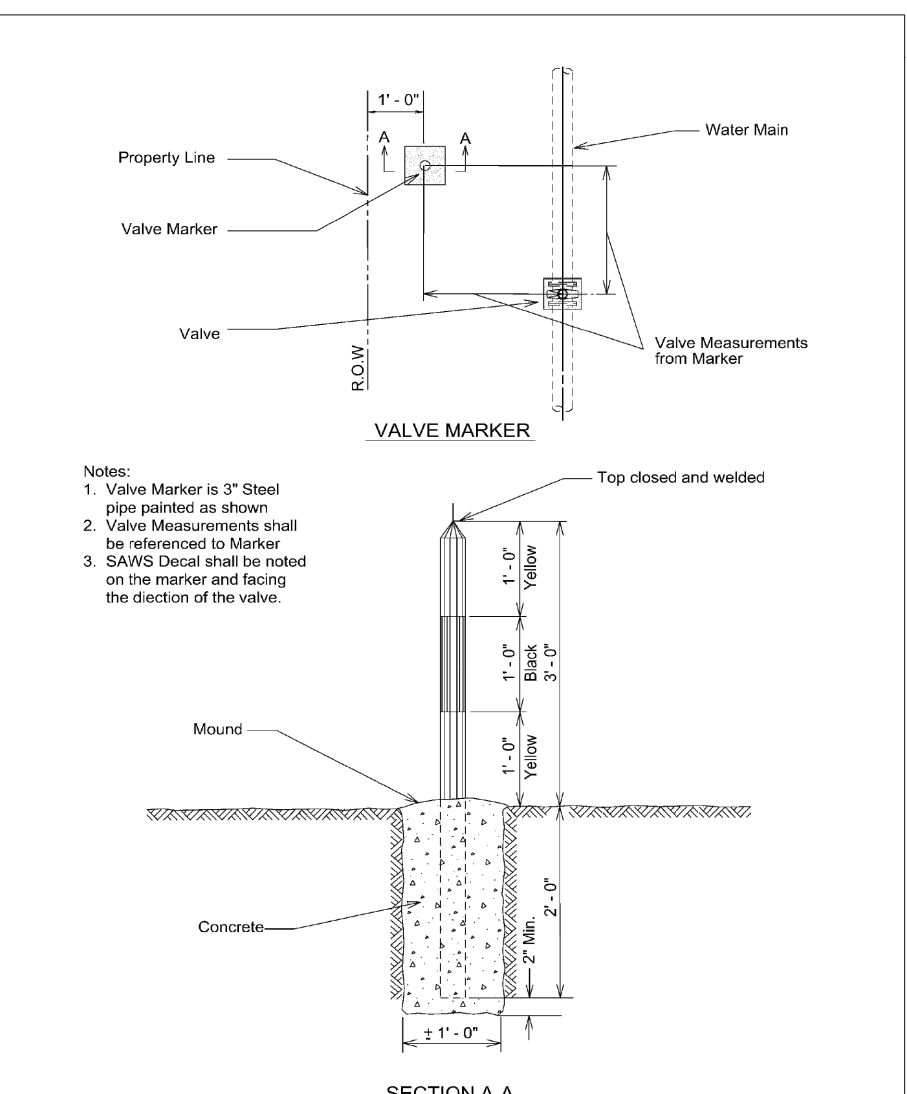
PROPERTY OF	TYPICAL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	NEW DEVELOPMENT SERVICE ARRANGEMENT	MARCH 2008	DECEMBER 2013
SAN ANTONIO, TEXAS		DD-824-05	
			SHEET 1 OF 3



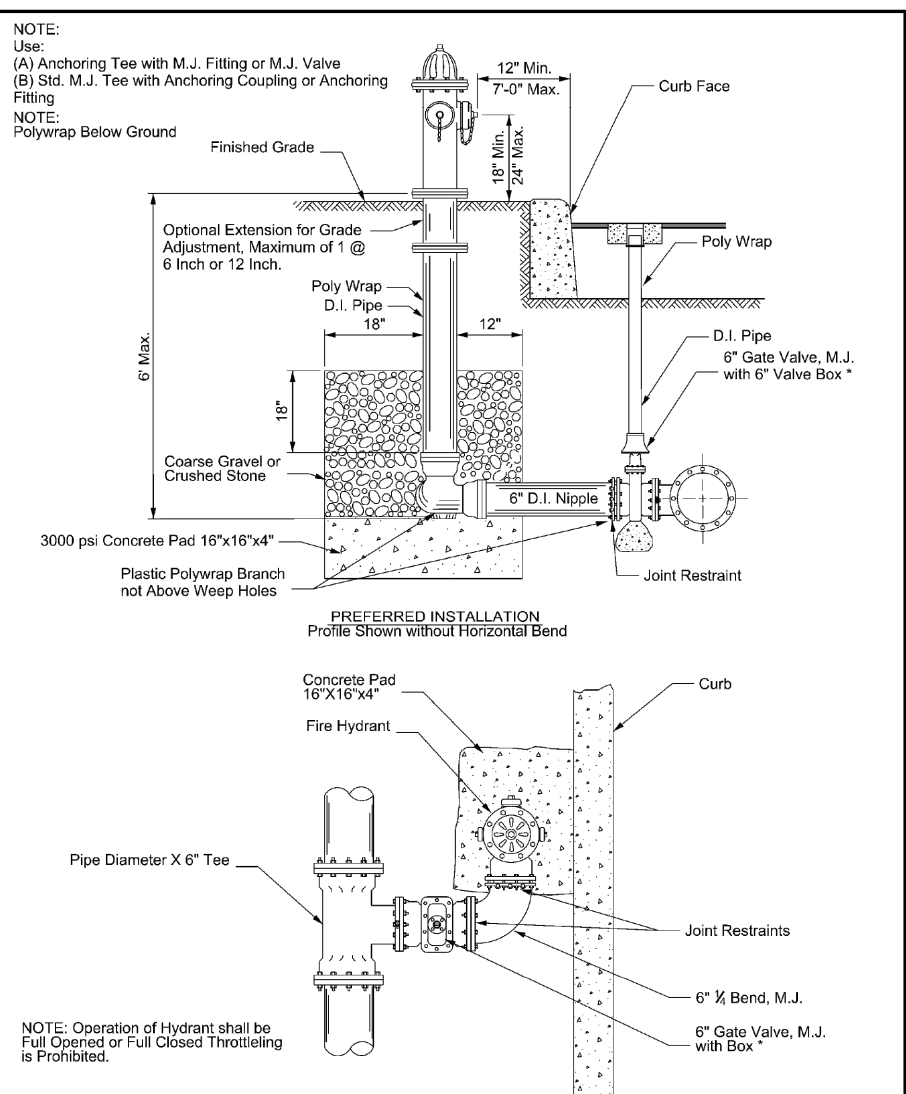
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SAN ANTONIO, TEXAS		DD-824-05	
			SHEET 2 OF 3



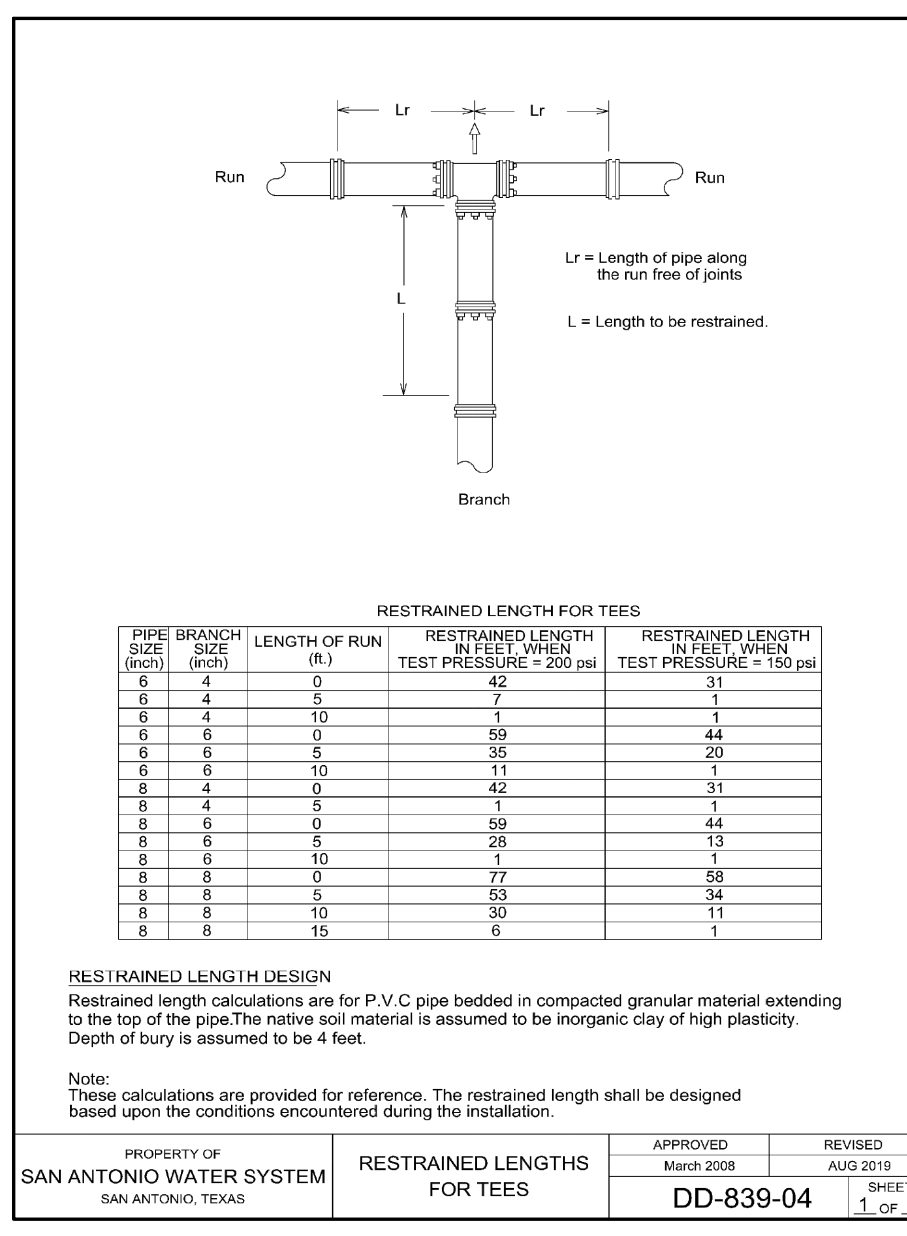
PROPERTY OF	INSTALLATION OF NON-DEAIRED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-828-01	
			SHEET 1 OF 3



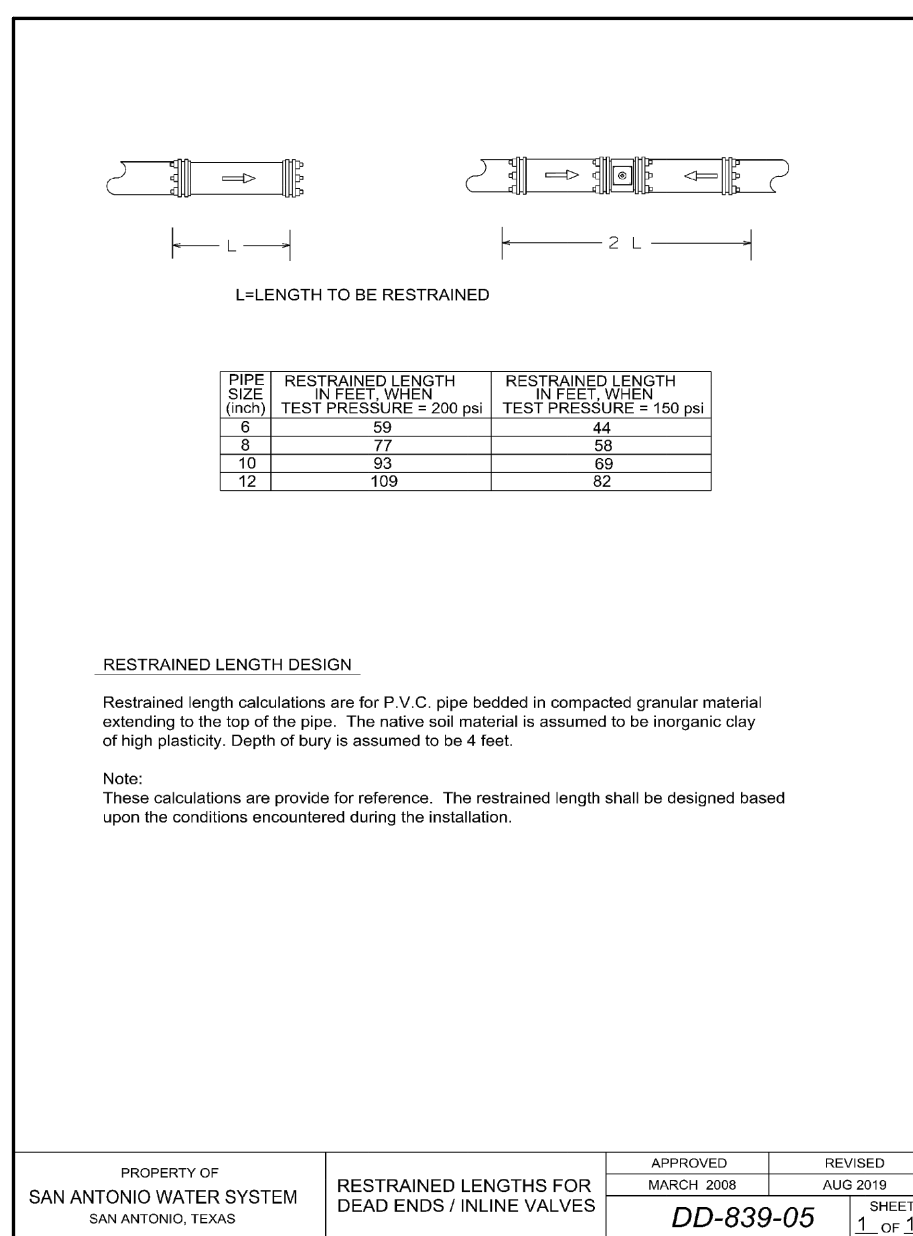
PROPERTY OF	VALVE MARKER	APPROVED	REVISED
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SAN ANTONIO, TEXAS		DD-828-04	
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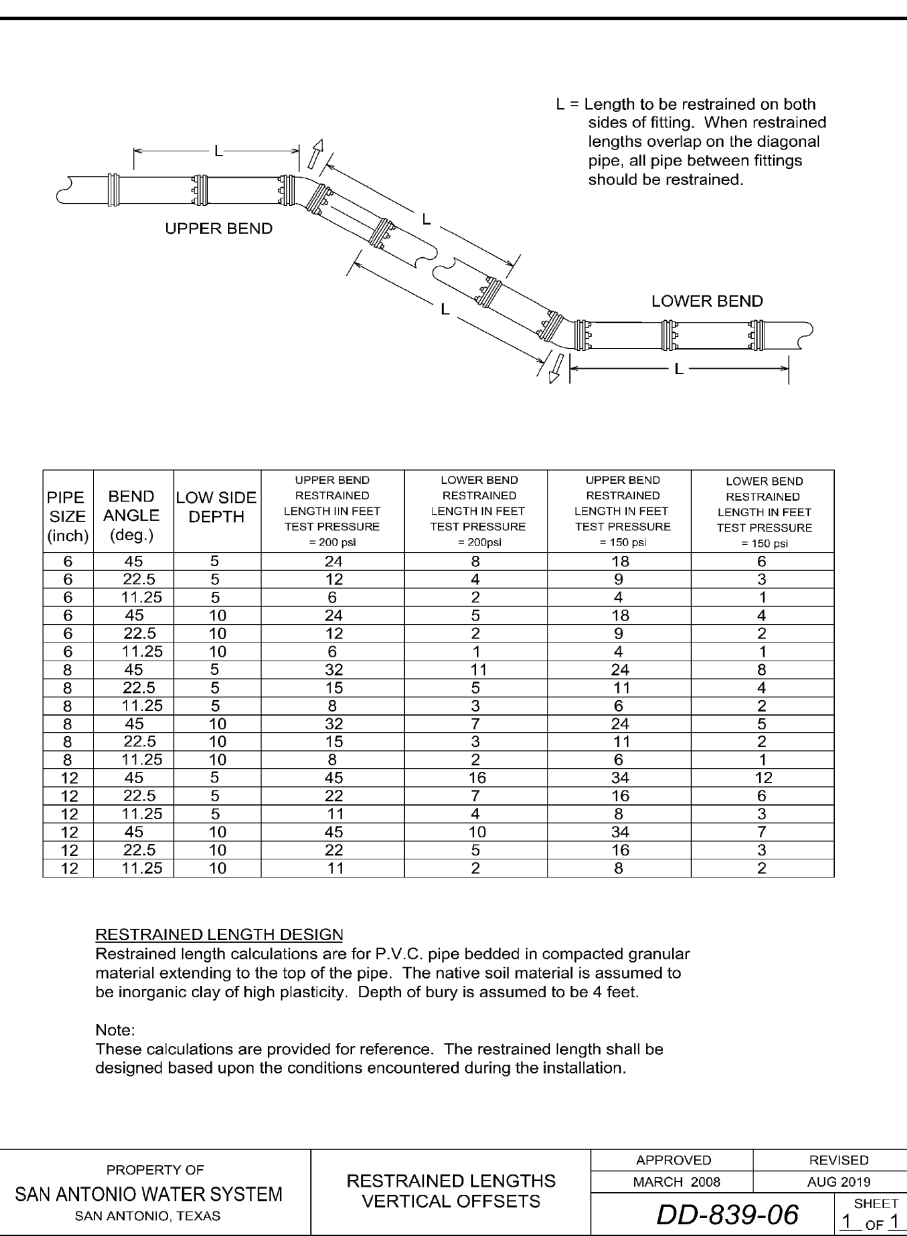
PROPERTY OF	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MAY 2013	AUG 2010
SAN ANTONIO, TEXAS		DD-834-01	
			SHEET 1 OF 3



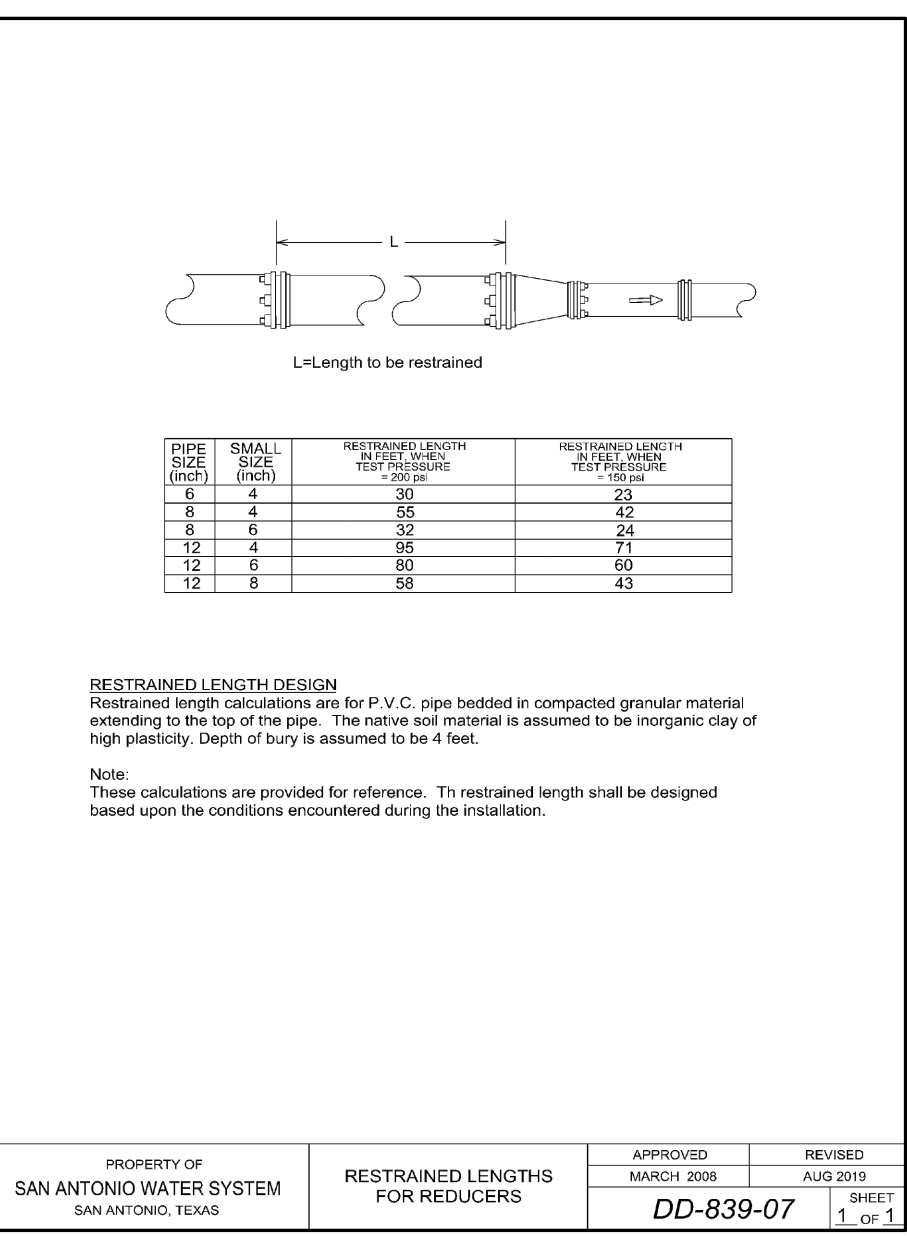
PROPERTY OF	RESTRAINED LENGTHS FOR TEES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-04	
			SHEET 1 OF 2



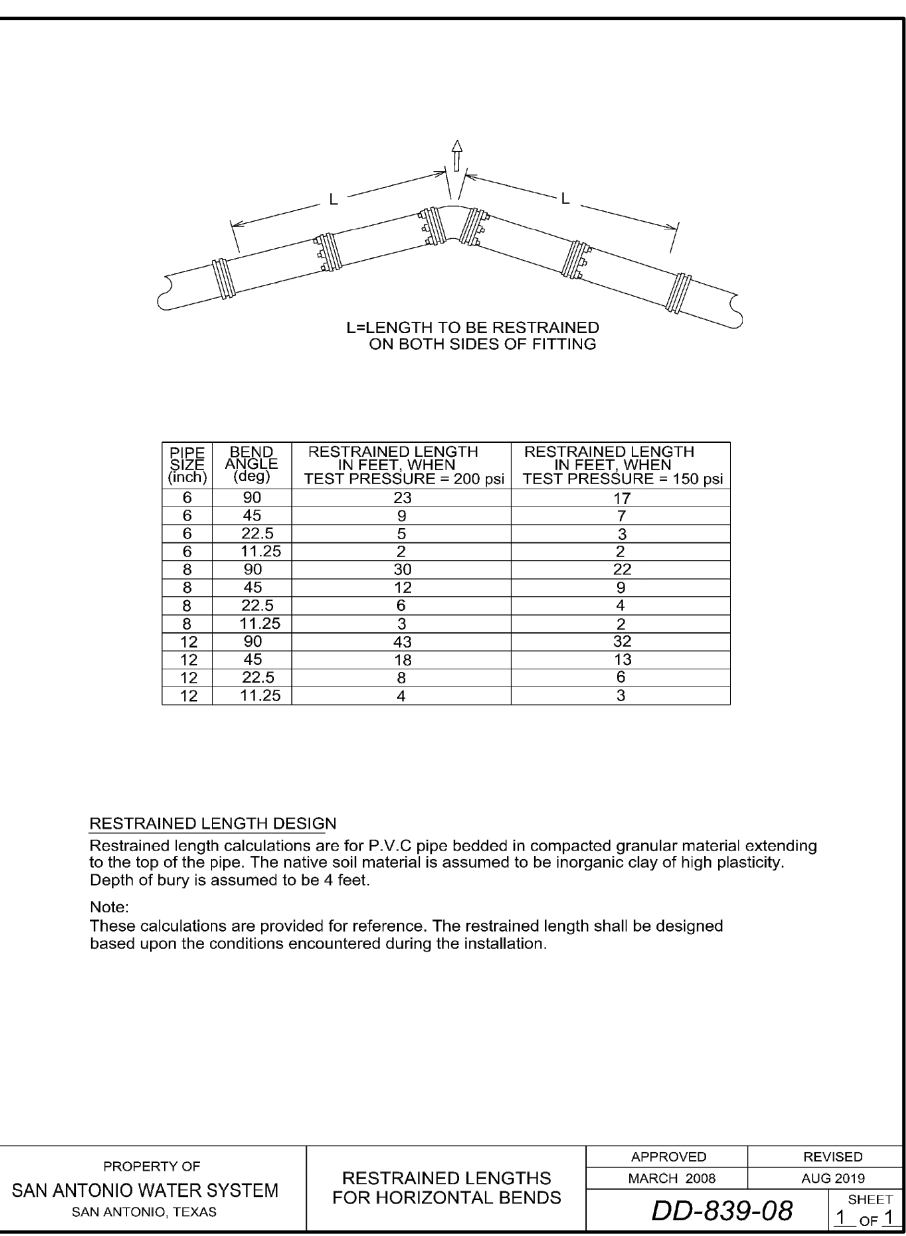
PROPERTY OF	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-05	
			SHEET 1 OF 1



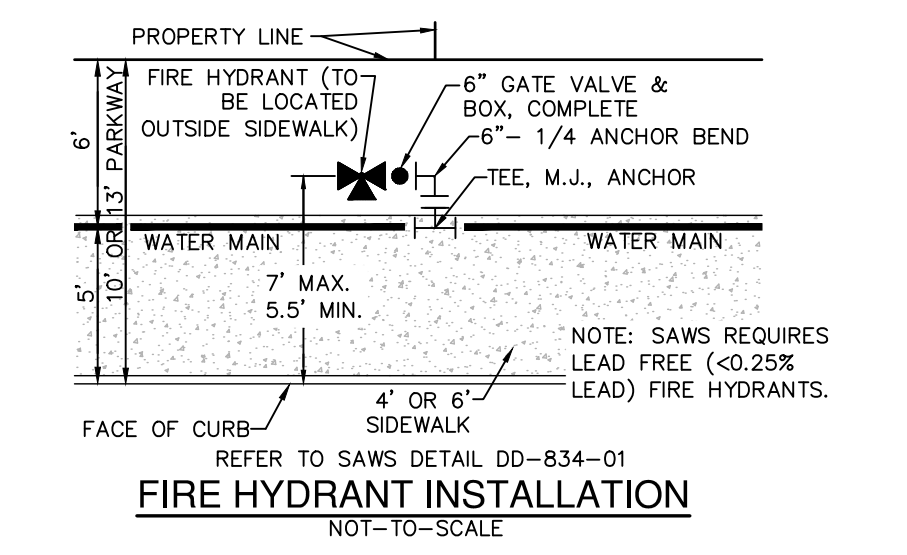
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SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-06	
			SHEET 1 OF 1



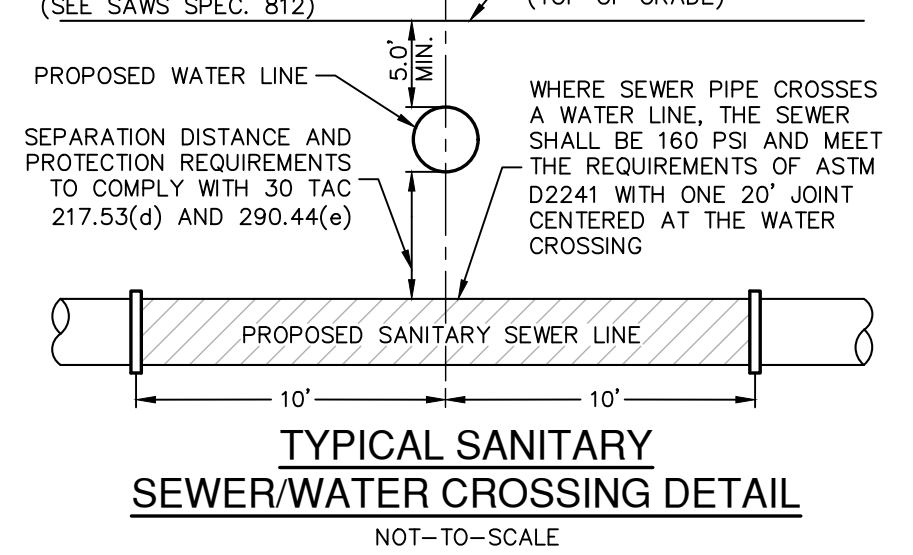
PROPERTY OF	RESTRAINED LENGTHS FOR REDUCERS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-07	
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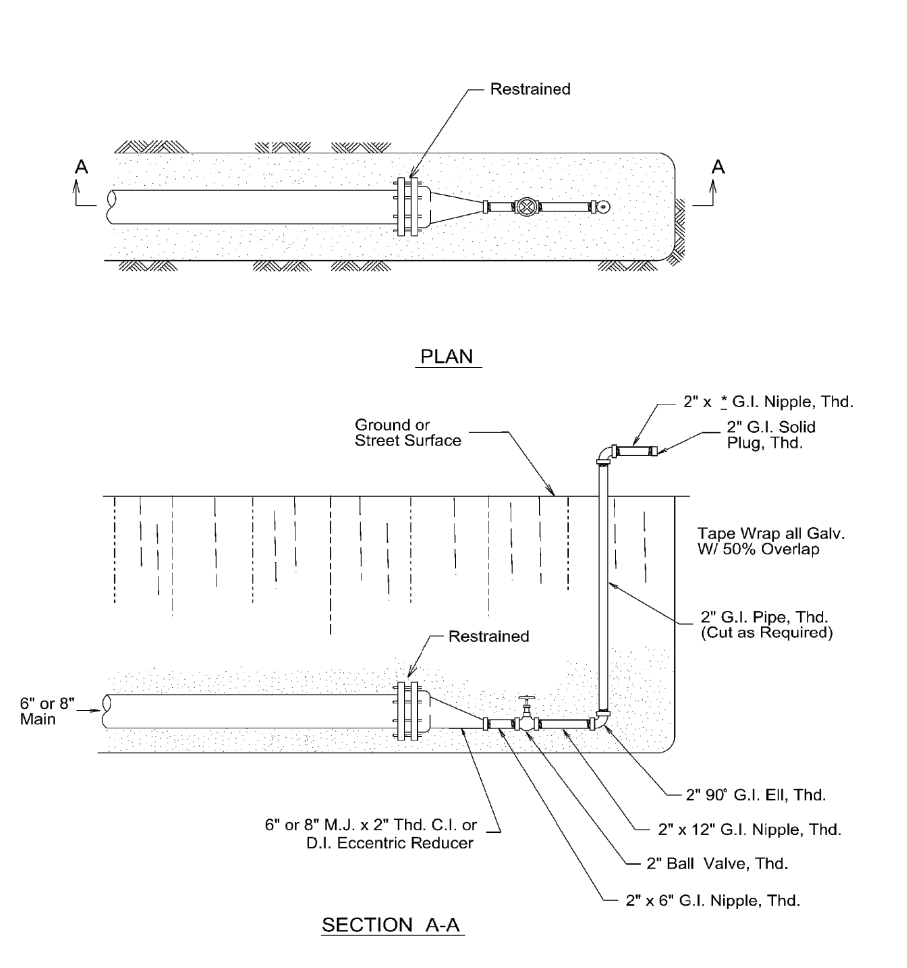
PROPERTY OF	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-08	
			SHEET 1 OF 1



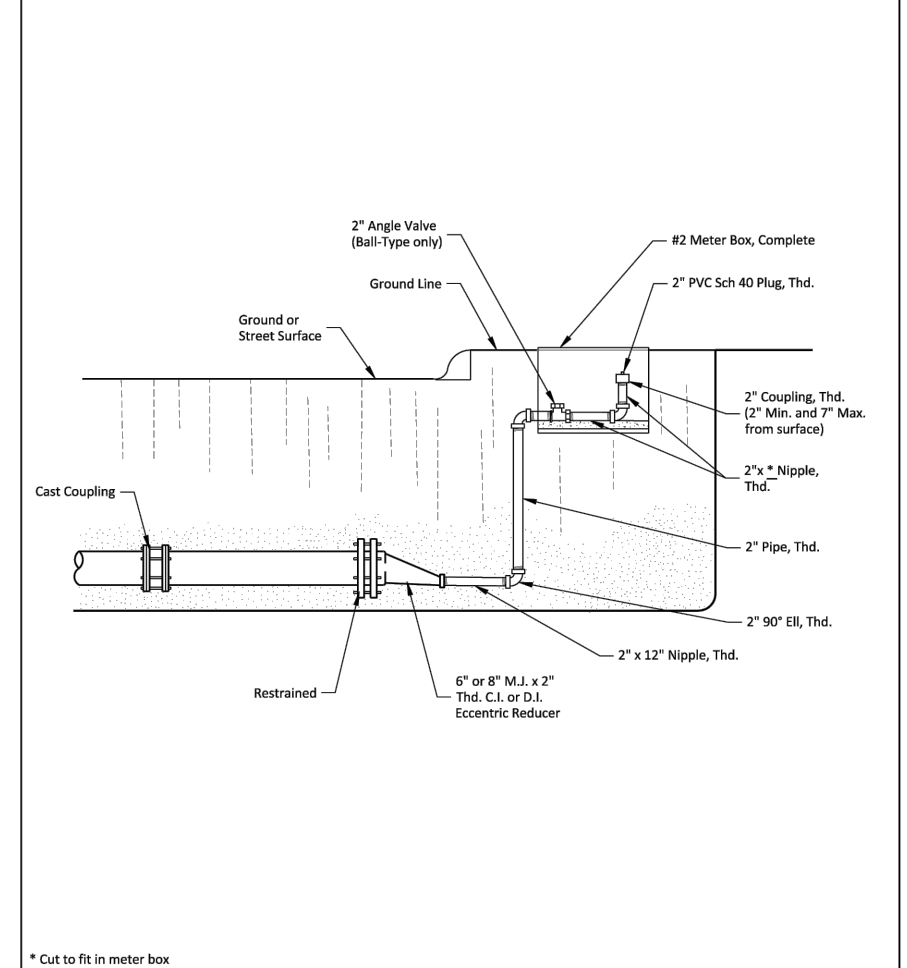
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SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-834-01	
			SHEET 1 OF 1



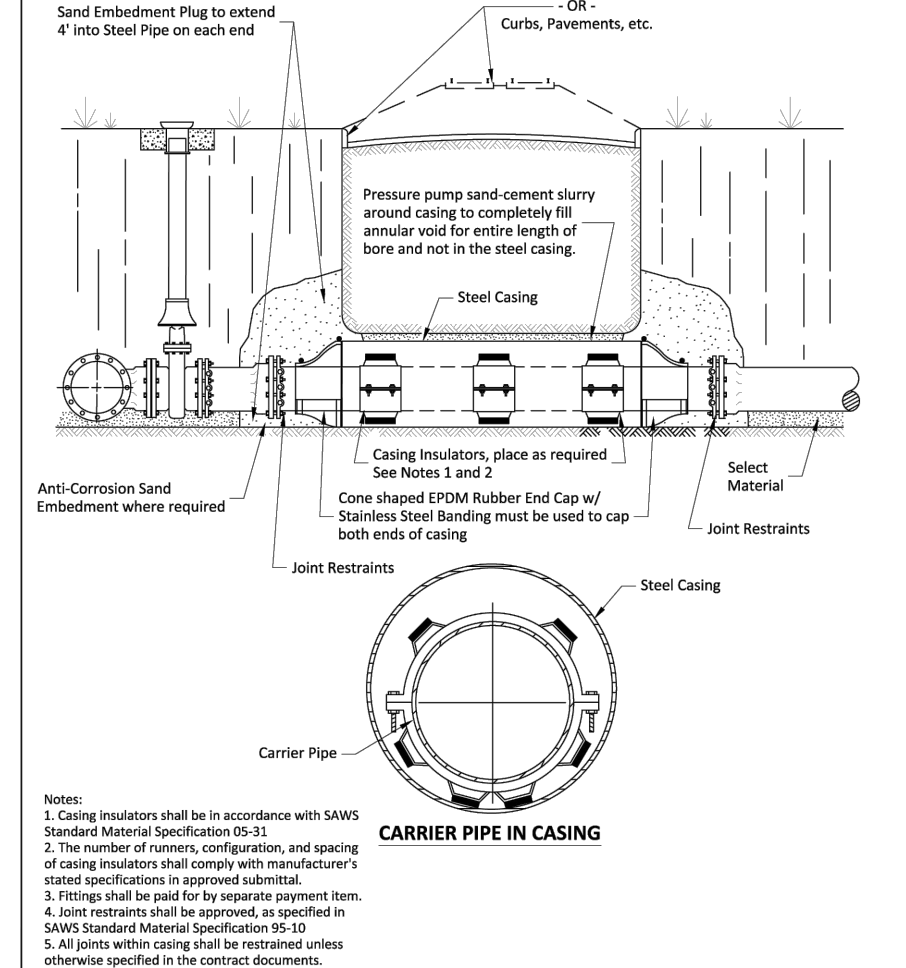
PROPERTY OF	TYPICAL SANITARY SEWER/WATER CROSSING DETAIL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-06	
			SHEET 1 OF 1



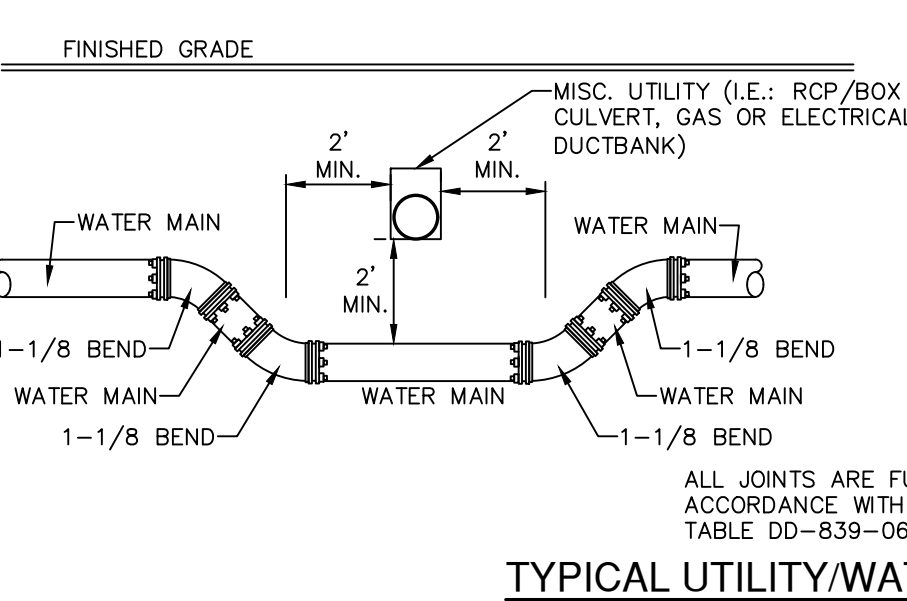
PROPERTY OF	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-844-01	
			SHEET 1 OF 4



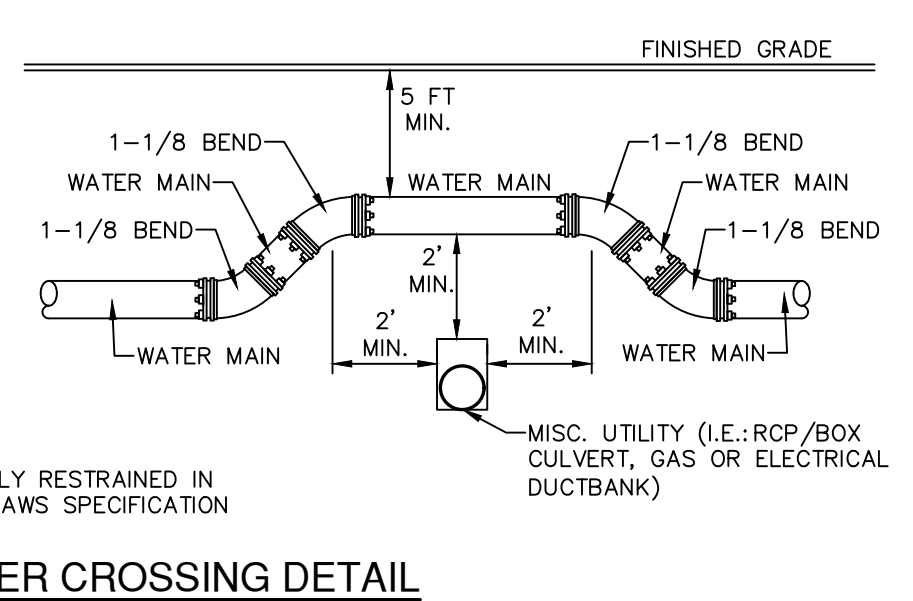
PROPERTY OF	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-844-02	
			SHEET 3 OF 3



PROPERTY OF	INSTALLATION OF WATER PIPE IN CASING WITH JOINT RESTRAINTS	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	NOVEMBER 2013
SAN ANTONIO, TEXAS		DD-856-02	
			SHEET 1 OF 1



PROPERTY OF	TYPICAL UTILITY/WATER CROSSING DETAIL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-06	
			SHEET 1 OF 1



PROPERTY OF	TYPICAL UTILITY/WATER CROSSING DETAIL	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM		MARCH 2008	AUG 2010
SAN ANTONIO, TEXAS		DD-839-06	
			SHEET 1 OF 1

WATER (SAWS PRESSURE ZONE 8) HGL 1170			
DEVELOPER'S NAME:	KB HOME LONE STAR, INC.	PLAT NO.	25-11800004
ADDRESS:	4800 FREDERICKSBURG ROAD	JOB NO.	11668-20
CITY:	SAN ANTONIO	STATE:	TX
ZIP:	78229	DATE:	NOVEMBER 2025
PHONE#:	(210) 301-2815	FAX#:	
SAWS BLOCK MAP#:	084608	TOTAL EDU'S:	50
TOTAL ACREAGE:	33.273	DESIGNER:	AR
TOTAL LINEAR FOOTAGE OF PIPE:	1637 LF = 8" PLAT NO. 25-11800004	CHECKED:	SSC DRAWN: RP
NUMBER OF LOTS:	52	SAWS JOB NO.:	25-1124
SHEET C5.10			

DATE: 11/19/25
 REVISION: 1
 NO. 1
 SAMS JOB NO. 25-11800004
 11/19/2025

PAPE-DAWSON
 2000 NW LOOP #110 SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800
PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 WATER DISTRIBUTION PLAN DETAILS

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 AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

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

6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES. REQUESTING PIPES 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 CONSTWKRREQ@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 CONSTWKRREQ@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 THIS CONTRACT BEGINS. STREET CUT SHEETS WILL BE SUPPLIED TO THE CONTRACTOR. THERE SHOULD BE NO ADDITIONAL STAKES REQUIRED, AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE AND VERIFY THAT ALL STAKES REQUIRED FOR HIS WORK ARE IN PLACE AT THE TIME THE CONSTRUCTION BEGINS. IF ANY STAKES ARE MISSING THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY. AFTER CONSTRUCTION BEGINS, ALL CONSTRUCTION STAKES, MARKS, ETC., SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR, AND IN CASE OF DESTRUCTION OR REMOVAL BY THE CONTRACTOR, HIS EMPLOYEE OR ANY OTHER MEANS, SUCH STAKES, MARKS, ETC., SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL THE FINAL MEASUREMENTS, TAPS AND LENGTH OF SERVICE CONNECTIONS.

6. THE LOT CORNERS WILL BE SET BY THE ENGINEER FOR INSTALLATION OF ALL WATER SERVICES. THESE LOT CORNERS SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR SO THE METER BOXES CAN BE SET IN PHASE II. ANY LOT CORNER DESTROYED OR REMOVED BY THE CONTRACTOR, HIS EMPLOYEES, OR BY ANY OTHER MEANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

7. STREETS WILL HAVE BEEN EXCAVATED DOWN TO SUBGRADE AND THE PARKWAY WILL BE CUT DOWN TO TOP OF CURB BY THE STREET CONTRACTOR, PRIOR TO CONSTRUCTION OF THE WATER MAINS. IT WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT.

8. WATER METER BOXES IF APPLICABLE SHALL BE INSTALLED NINE FEET FROM FACE OF CURB TO CENTER OF THE METER BOX.

9. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.

10. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE S.A.W.S. RELEASES THE MAIN FOR TIE-IN AND USE.

11. UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUDE FIRE HYDRANT, 6-INCH GATE VALVE AND 6-INCH VALVE BOX COMPLETE, ANCHOR BEND, AND ALL 6-INCH DI PIPE REQUIRED (DI PIPE REQUIRED SHALL INCLUDE ALL PIPE FROM THE TEE ON THE MAIN LINE TO THE FIRE HYDRANT).

12. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO).

13. A CLEAR SPACE SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. THIS AREA SHOULD HAVE A MINIMUM DIAMETER OF 3.0' AND BE CLEAN OF VERTICAL OBSTRUCTIONS, VALVES, AND METER BOXES.

14. SAWS REQUIRES LEAD FREE (< 0.25%) FIRE HYDRANTS.

15. UNLESS OTHERWISE NOTED ALL SERVICES SHALL BE 3/4" WITH 5/8" METER.

NO.	REVISION	DATE
1	SAWS JOB NO.	11/19/25



PAPE-DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 10028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 WATER DISTRIBUTION PLAN NOTES

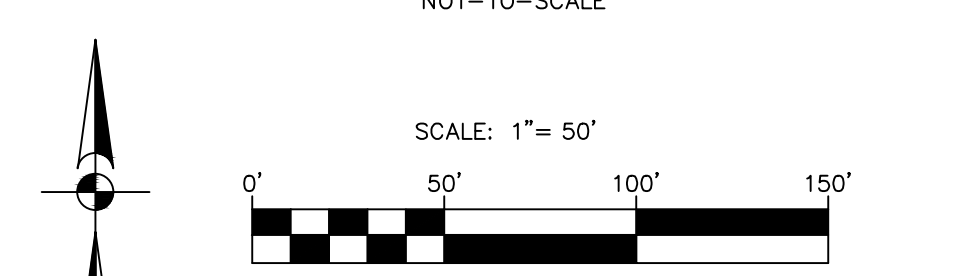
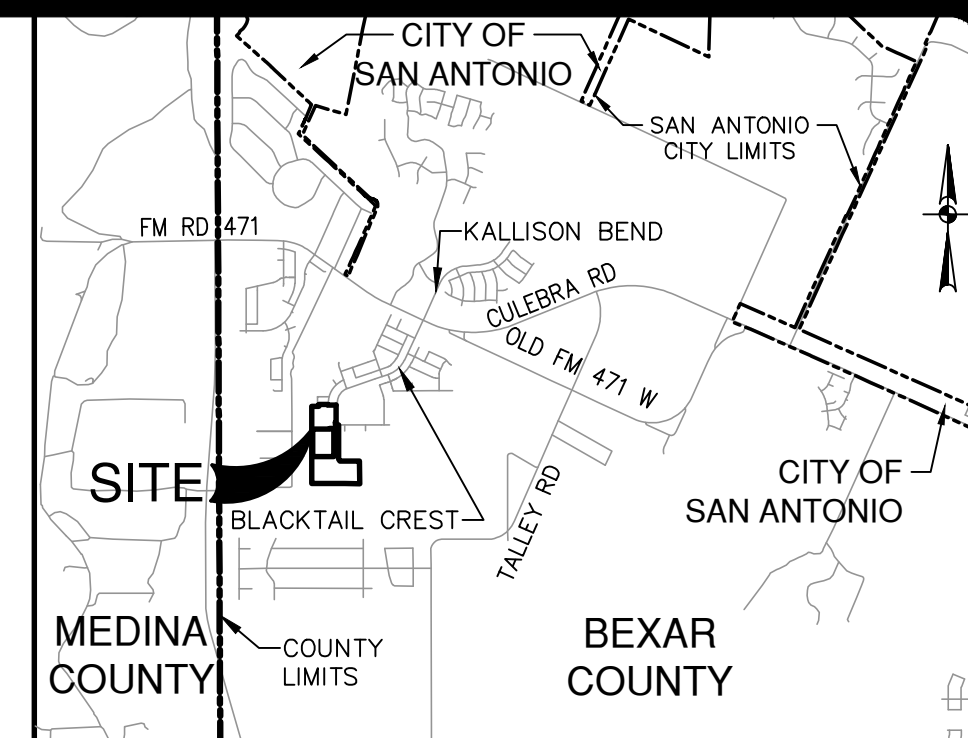
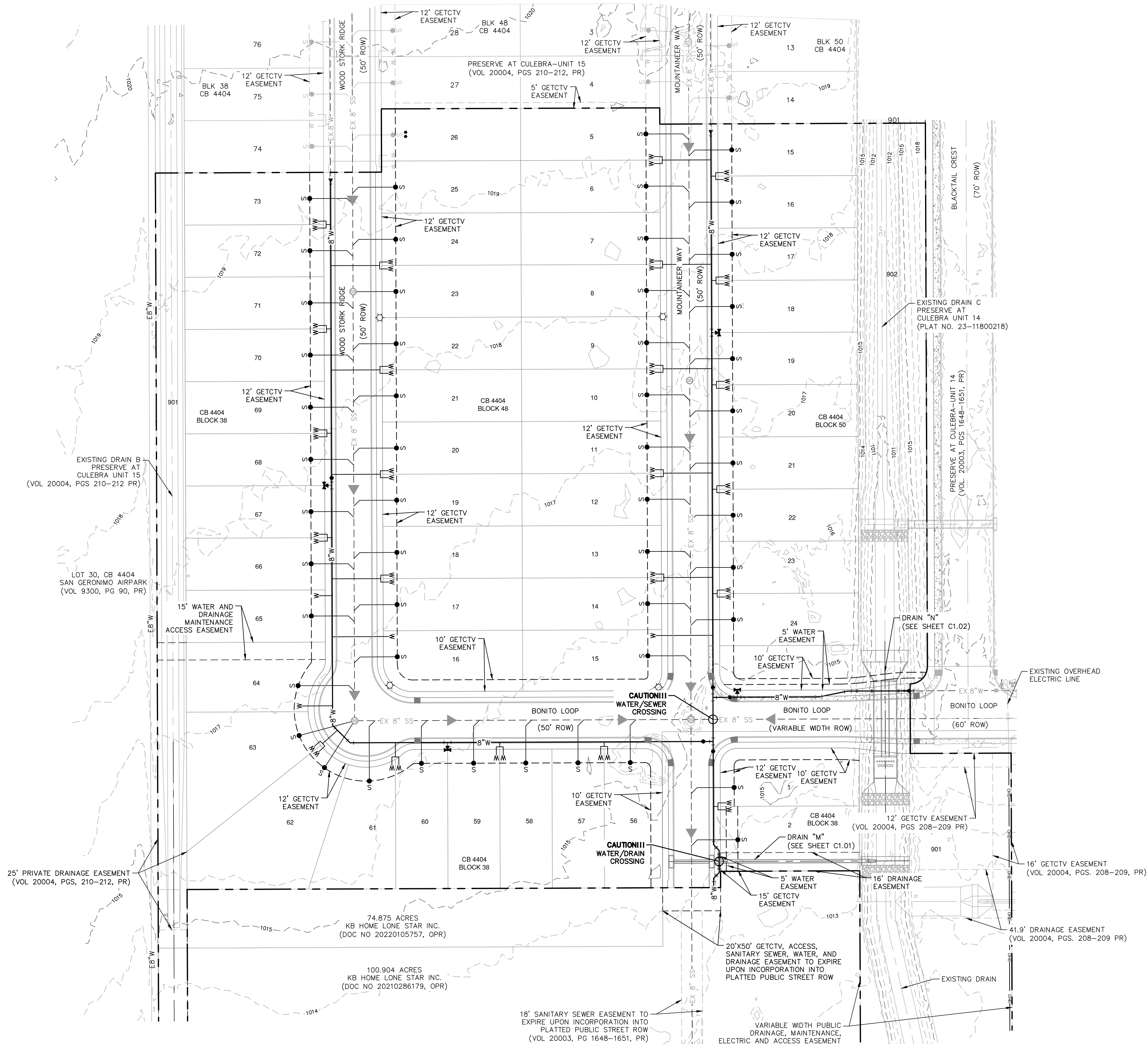
WATER (SAWS PRESSURE ZONE 8) HGL 1170

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# 084608	TOTAL EDU'S 50
TOTAL LINEAR FOOTAGE OF PIPE: 1637 LF	8" PLAT NO. 25-11800004
NUMBER OF LOTS 52	SAWS JOB NO. 25-1124

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	NOVEMBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C5.20

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UTILITY LEGEND

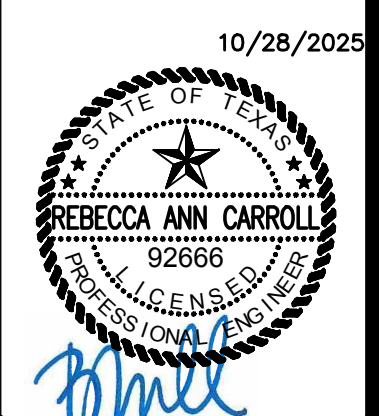
PROJECT LIMITS	---
EXISTING WATER	--- W ---
EXISTING SEWER	--- SS ---
PROPOSED SEWER	--- SS ---
PROPOSED WATER	--- W ---
PROPOSED WYE & LATERAL	--- W ---
SINGLE WATER SERVICE	--- W ---
DUAL WATER SERVICE	--- W ---
STREET LIGHTS	--- SL ---
GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT	--- G ---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

- 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 36 INCHES BELOW PROPOSED FINISHED GRADE. SCHEDULE 40 TO BE USED FOR GPC 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.
 - ALL CONDUIT SLEEVES TO BE USED FOR ELECTRIC, GAS, OR TELECOMMUNICATION UTILITY CROSSINGS SHALL BE INSTALLED TO MEET OR EXCEED DESIGN REQUIREMENTS FOR THE UTILITY AGENCY WHICH THEY ARE SERVING, INCLUDING BUT NOT LIMITED TO THE DEPTH, TRENCH PLACEMENT, AND PROXIMITY TO OTHER UTILITIES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING AND INSTALLING THE CONDUIT SLEEVES TO MEET THESE SPECIFICATIONS INCLUDING COORDINATING WITH THE UTILITY AGENCY FOR ANY REQUIRED INSPECTIONS.

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.

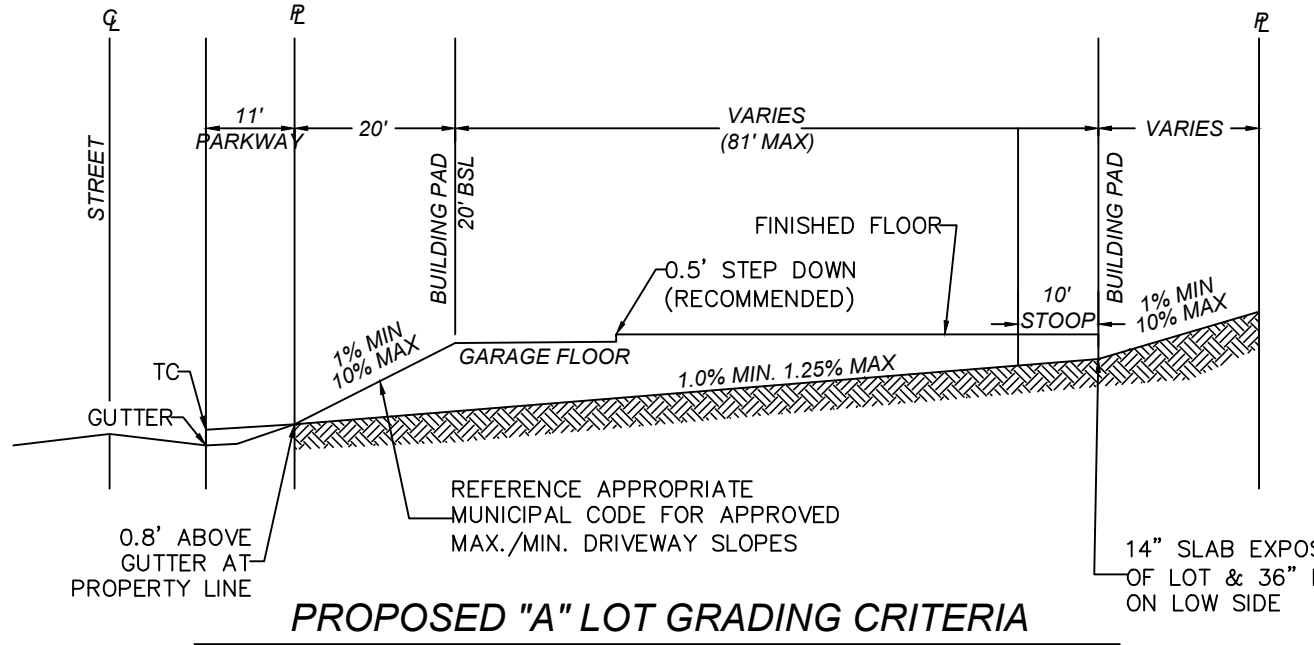
NO.	REVISION	DATE



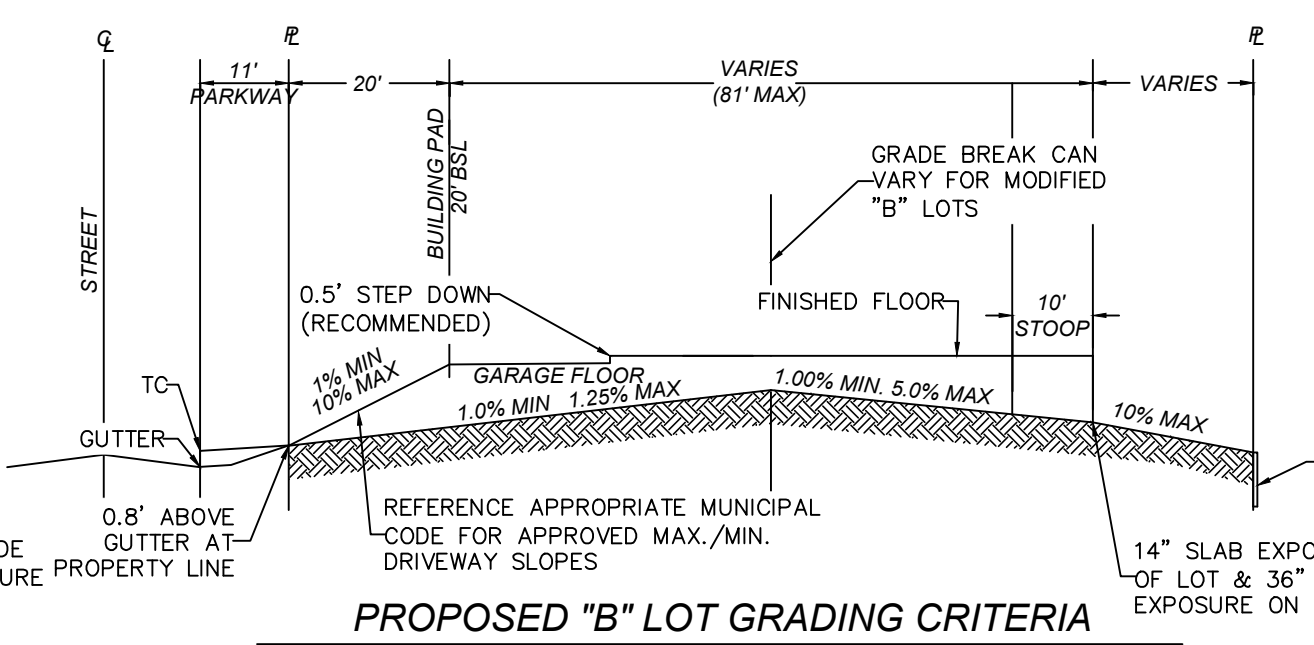
PAPE-DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028860

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 OVERALL UTILITY PLAN

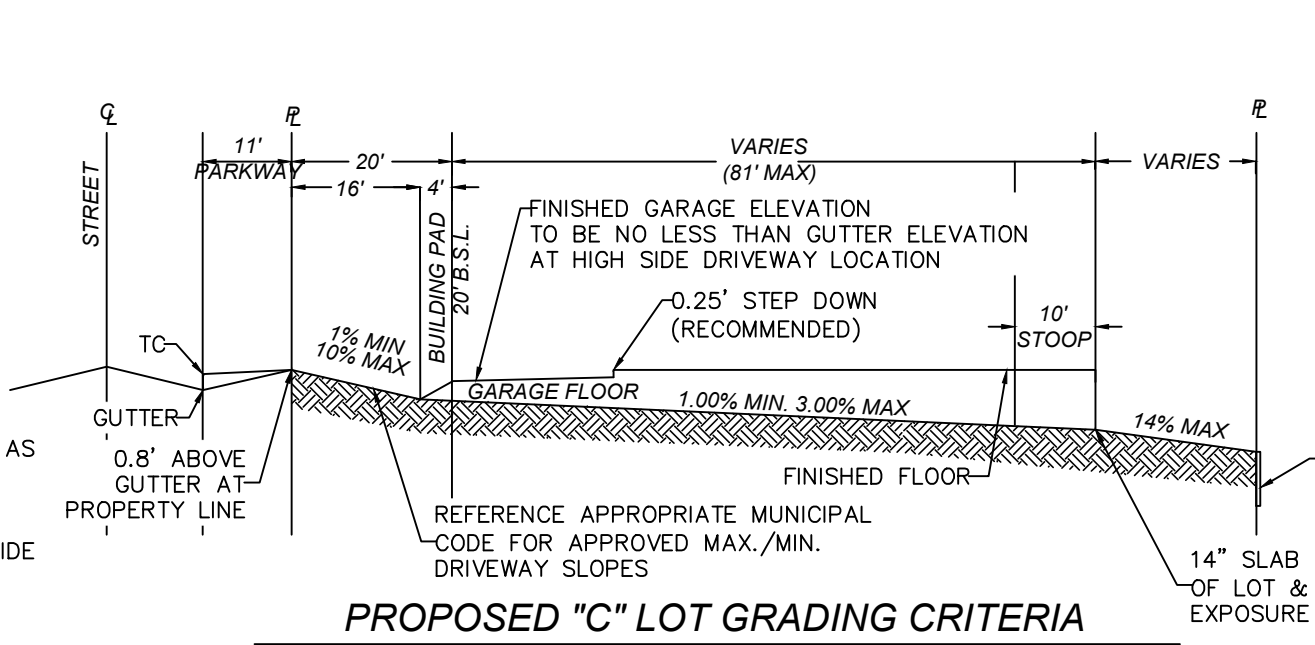
PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	OCTOBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C6.00



PROPOSED "A" LOT GRADING CRITERIA



PROPOSED "B" LOT GRADING CRITERIA

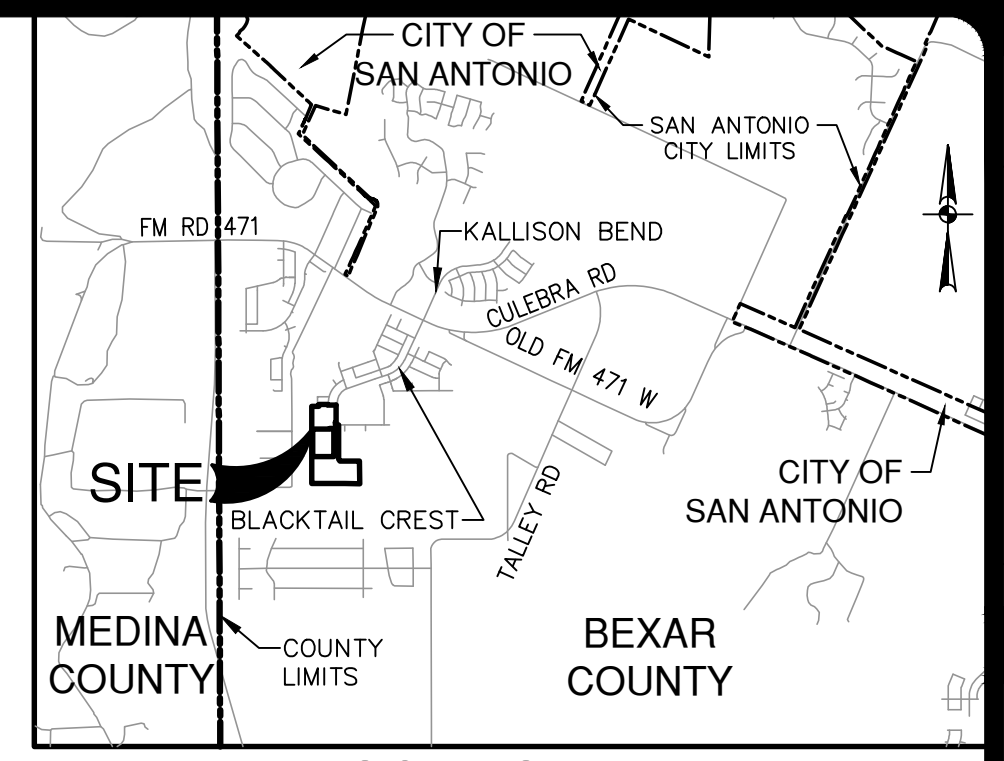


PROPOSED "C" LOT GRADING CRITERIA

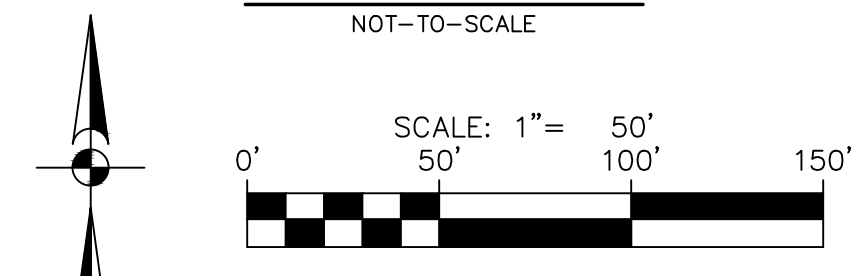
1. SHOW RETAINING WALLS GREATER THAN 1 FT. ON GRADING PLAN.
2. FINISHED GRADE AT FRONT BUILDING SETBACK NO LESS THAN 1% SLOPE BACK TO RIGHT-OF-WAY.
3. MAXIMUM GRADE ACROSS BUILDING PAD SHALL BE 1.25%. MINIMUM GRADE ACROSS BUILDING PAD SHALL BE 1%.
4. BUILDING PAD GRADE SHALL EXTEND 10' BEYOND THE ESTIMATED 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.

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 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.

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.
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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

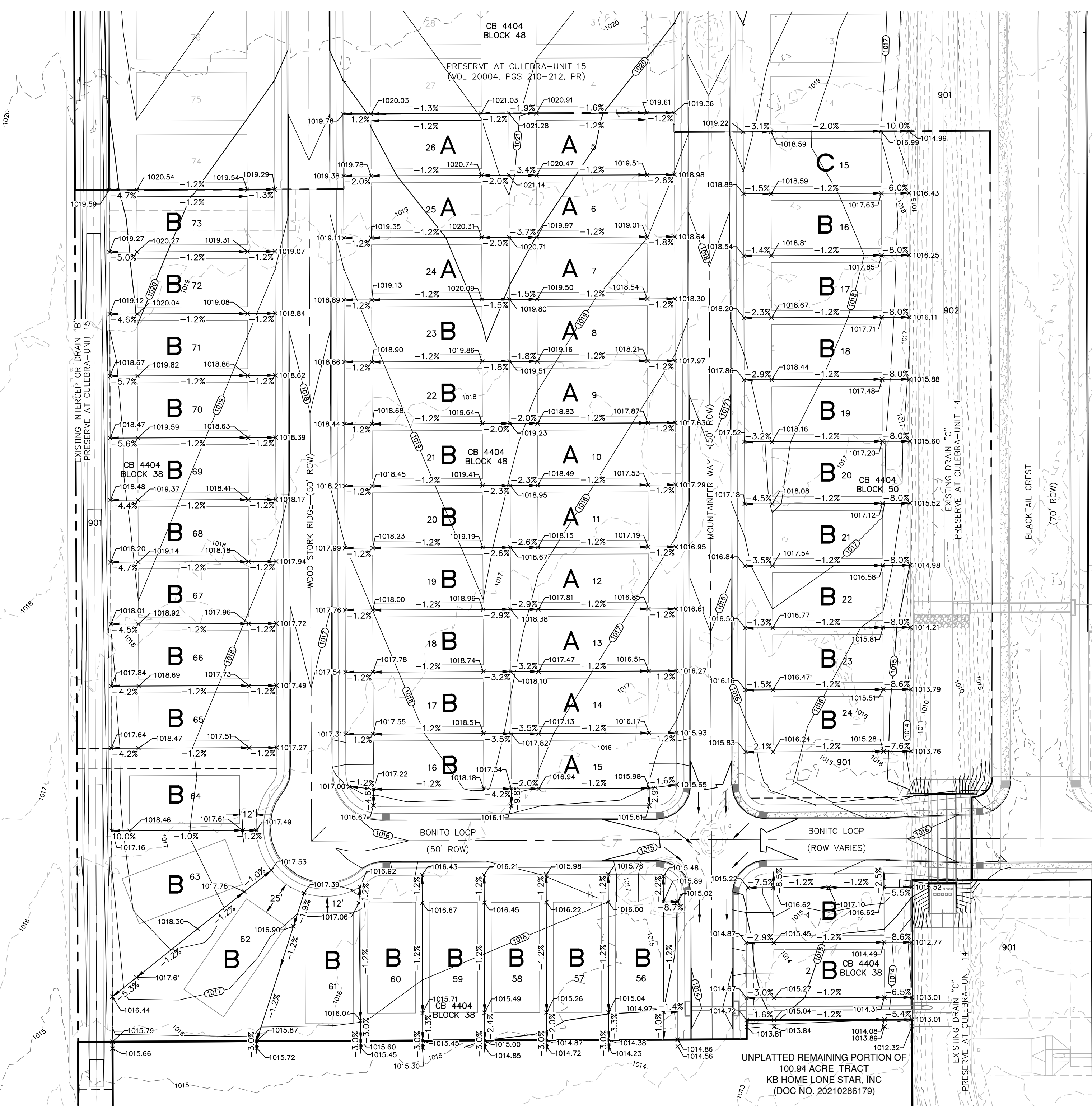


GRADING LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
MINIMUM FINISHED FLOOR ELEVATION	FF = XXXX.XX
TREES TO REMAIN	⊙
TYPICAL LOT PAD UNLESS NOTED	35'x80'

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 SITE CONDITIONS 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 1:08 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.



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DATE	
NO.	
REVISION	

2/3/2026

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 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028890

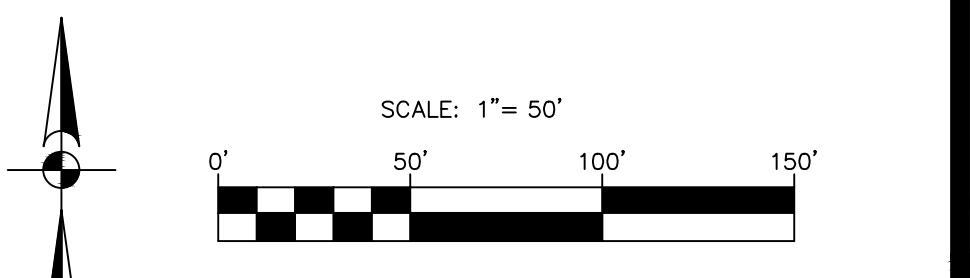
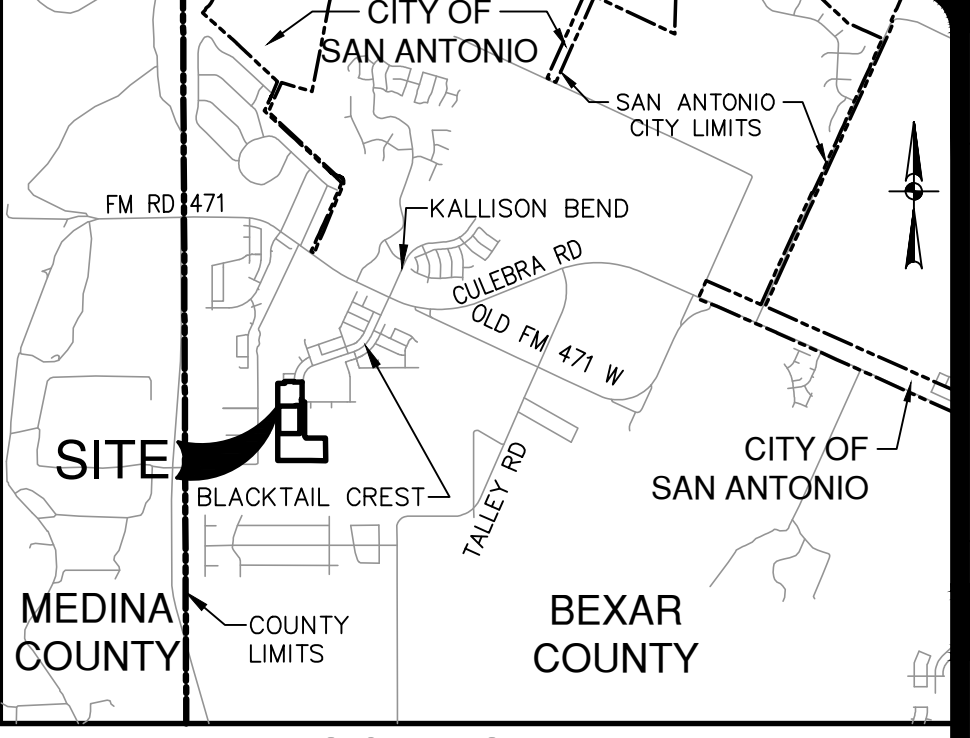
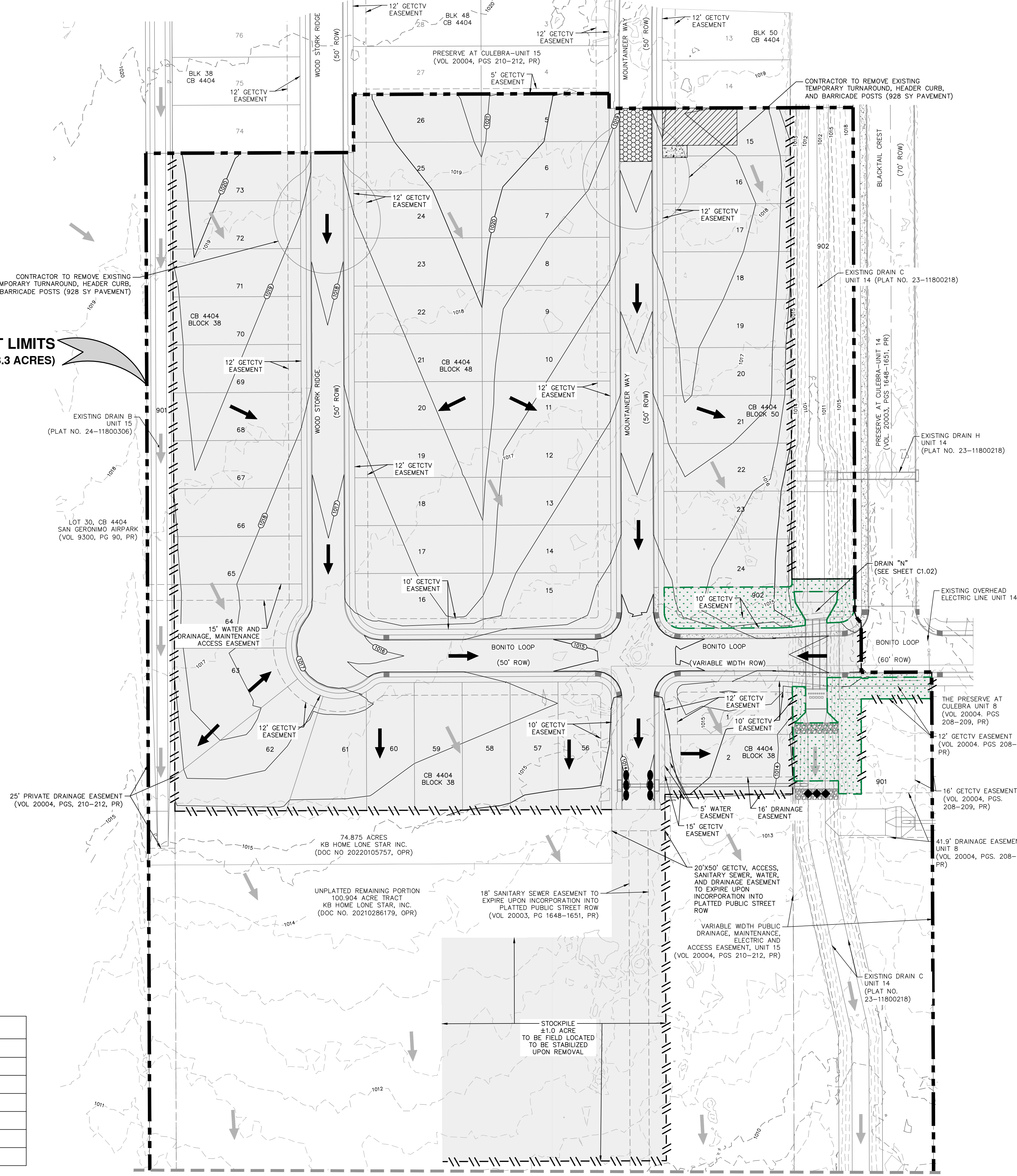
PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
 OVERALL GRADING PLAN

PLAT NO.	25-11800004
JOB NO.	116688-20
DATE	FEBRUARY 2026
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C7.00

Date: Oct 08, 2025, 9:06am, User: J. R. ...
 File: P:\114568\20\Design\Civil\SWPPP-11800000.dwg

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PROJECT LIMITS
(43.3 ACRES)



SWPPP LEGEND

PROJECT LIMITS	---
UNIT BOUNDARY	---
EXISTING CONTOUR	- - - - -
PROPOSED CONTOUR	970
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	
ROCK BERM	
GRAVEL FILTER BAGS	
GRATE INLET PROTECTION	•••••
SEDIMENT CONTROL ROLLS	
LIMITS OF DISTURBED AREA (±10.366 AC)	
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	
AREA TO BE TEMPORARILY STABILIZED/REVEGETATED	
AREA TO BE PERMANENTLY STABILIZED/VEGETATED	

- 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 AREA, 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.
 - CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR THE PROJECT.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

<p>DATE</p> <p>NO. REVISION</p>	<p>10/28/2025</p>
<p>PAPE-DAWSON</p> <p>2000 NW LOOP 410 SAN ANTONIO, TX 78213 210.375.9000</p> <p>TEXAS ENGINEERING FIRM #470 TEXAS SURVEYING FIRM #1028800</p>	
<p>PRESERVE AT CULEBRA-UNIT 18</p> <p>BEXAR COUNTY, TEXAS</p> <p>STORM WATER POLLUTION PREVENTION PLAN</p> <p>(SHEET 1 OF 2)</p>	
<p>PLAT NO. 25-11800004</p> <p>JOB NO. 11668-20</p> <p>DATE OCTOBER 2025</p> <p>DESIGNER AR</p> <p>CHECKED SSC DRAWN RP</p> <p>SHEET C8.00</p>	

MATCHLINE "A" - SEE SHEET C8.00

UNPLATTED REMAINING PORTION
100.904 ACRE TRACT
KB HOME LONE STAR, INC.
(DOC NO. 20210286179, OPR)

PRESERVE AT
CULEBRA-UNIT 10
(PLAT NO. 25-11800103)
(CONCURRENT PLAT)

EXISTING DRAIN C
PRESERVE AT CULEBRA UNIT 14

VARIABLE WIDTH PUBLIC
DRAINAGE, MAINTENANCE,
ELECTRIC AND
ACCESS EASEMENT, UNIT 15
(VOL 20004, PGS 210-212, PR)

18" SANITARY SEWER EASEMENT TO
EXPIRE UPON INCORPORATION INTO
PLATTED PUBLIC STREET ROW
(VOL 20003, PG 1648-1651, PR)

16" SANITARY SEWER EASEMENT
(PRESERVE AT CULEBRA-UNIT 9)
(PLAT 25-11800087)

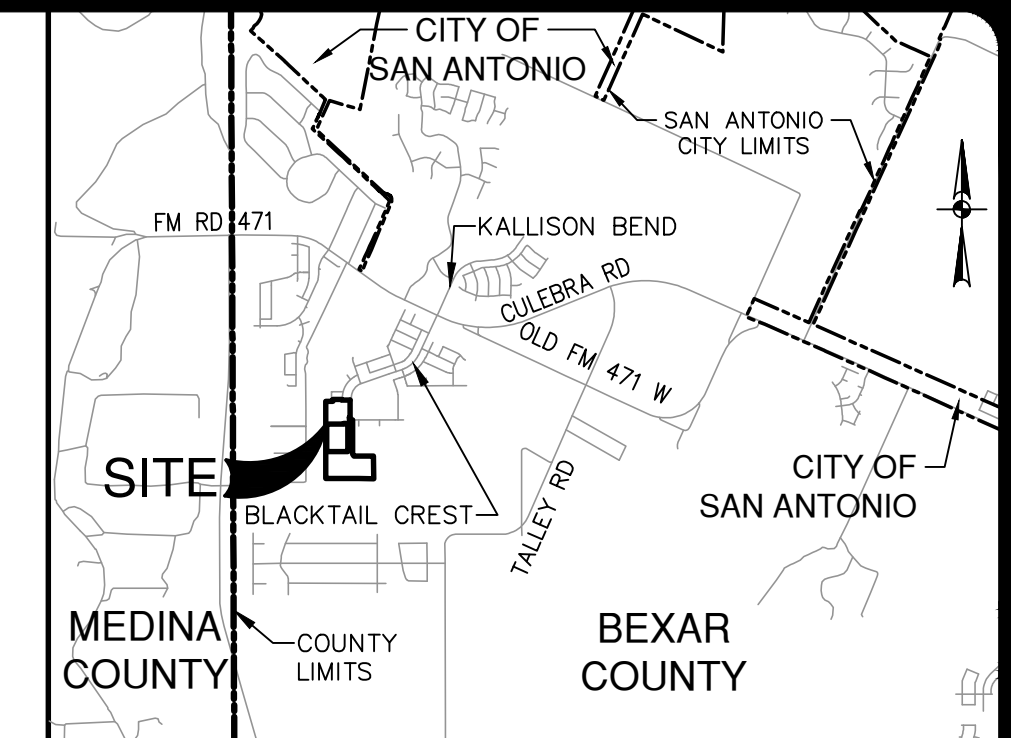
18" SANITARY SEWER
EASEMENT TO EXPIRE
UPON INCORPORATION
INTO PLATTED PUBLIC
STREET ROW
(VOL 20003, PG
1648-1651, PR)

LOT 901
BLOCK 38
EXISTING
DETENTION
BASIN

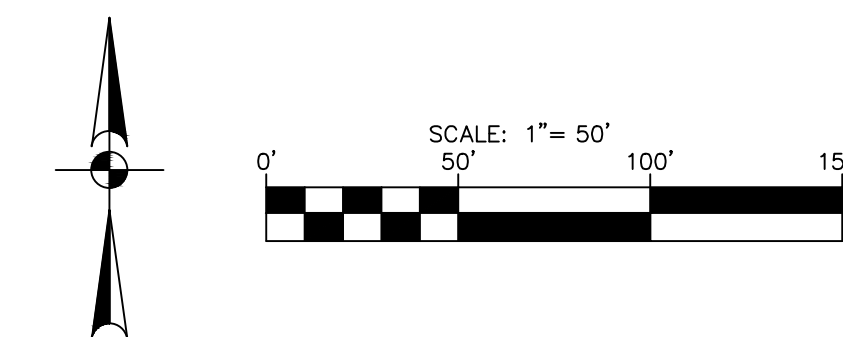
**PROJECT LIMITS
(43.3 ACRES)**

PRESERVE AT
CULEBRA-UNIT 11
(PLAT NO. 25-11800116)
(CONCURRENT PLAT)

SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



LOCATION MAP
NOT-TO-SCALE



SWPPP LEGEND

- PROJECT LIMITS
- UNIT BOUNDARY
- 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 (±10.366 AC)
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)
- AREA TO BE TEMPORARILY STABILIZED/REVEGETATED
- AREA TO BE PERMANENTLY STABILIZED/VEGETATED

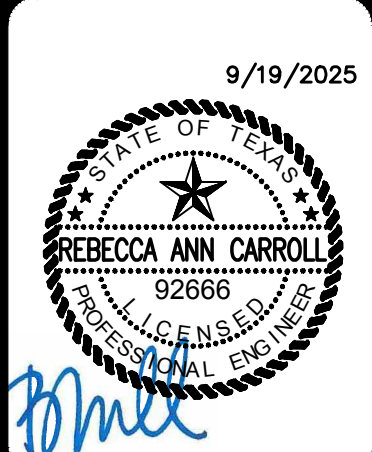
GENERAL NOTES

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

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

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

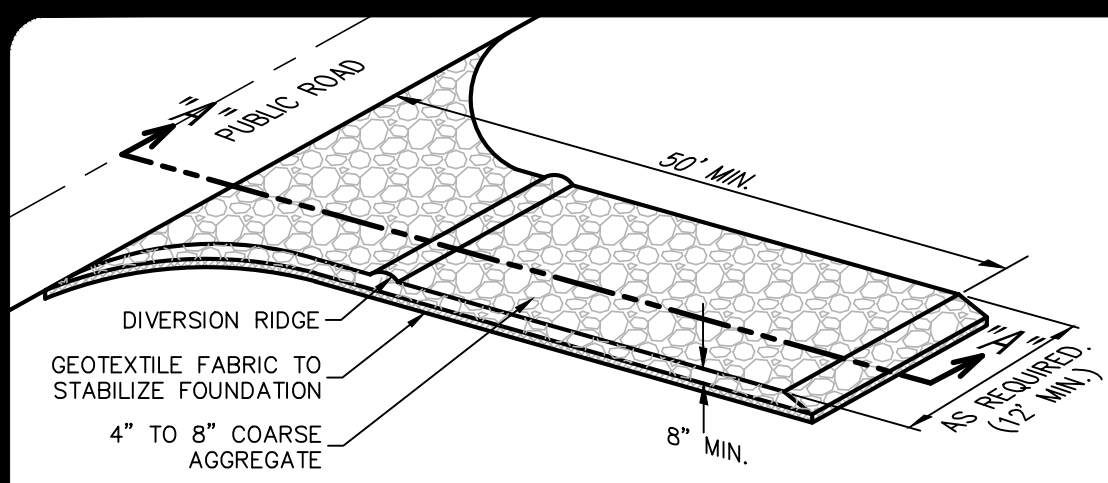
NO.	REVISION	DATE



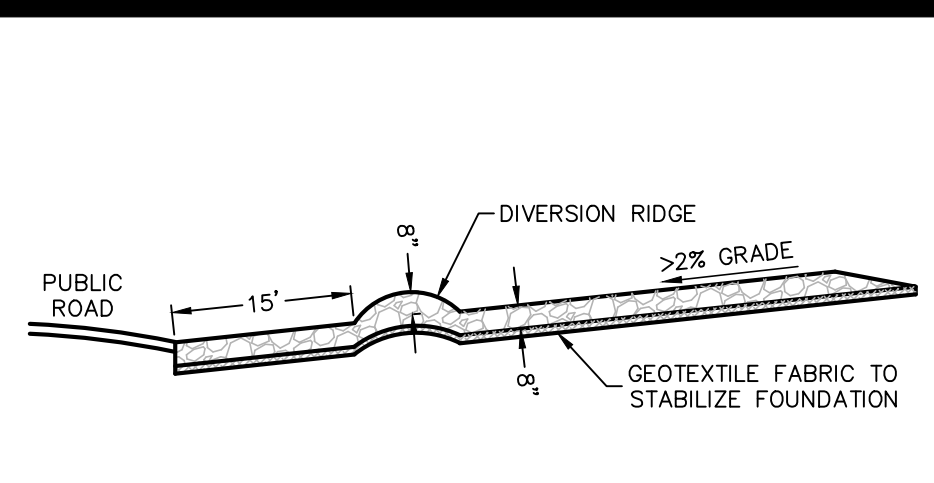
PAPE-DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 1028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS
STORM WATER POLLUTION PREVENTION PLAN
 (SHEET 2 OF 2)

PLAT NO.	25-11800004
JOB NO.	11668-20
DATE	SEPTEMBER 2025
DESIGNER	AR
CHECKED	SSC DRAWN RP
SHEET	C8.01



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



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

MATERIALS

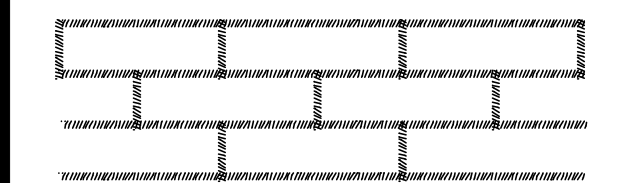
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT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

INSTALLATION

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

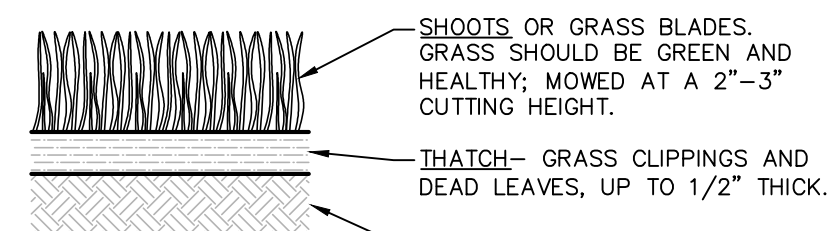
STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



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

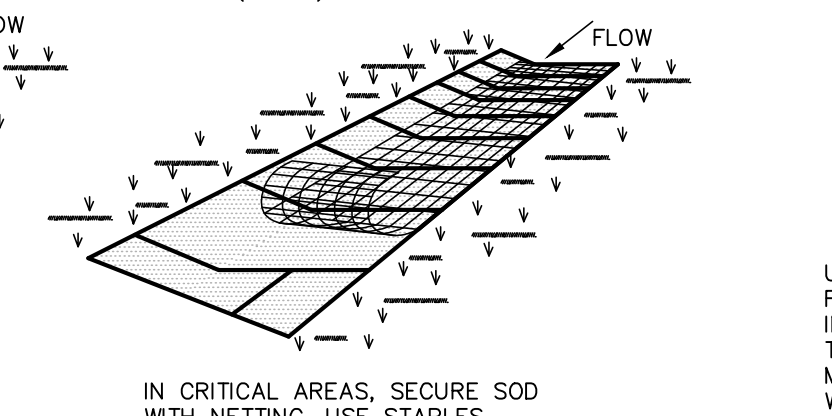
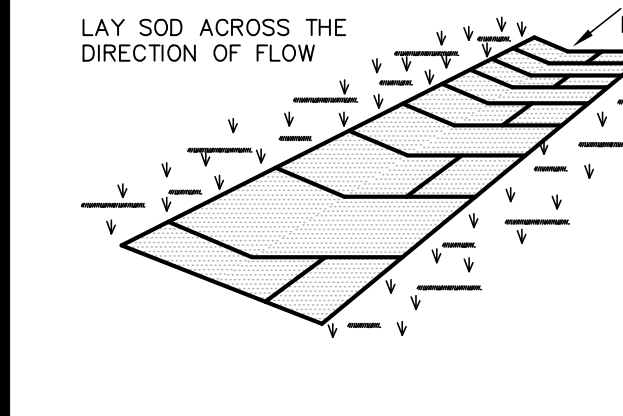
BUTTING - ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



APPEARANCE OF GOOD SOD

NOTES:

1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.
3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").



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

INSTALLATION IN CHANNELS

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

SOD INSTALLATION DETAIL

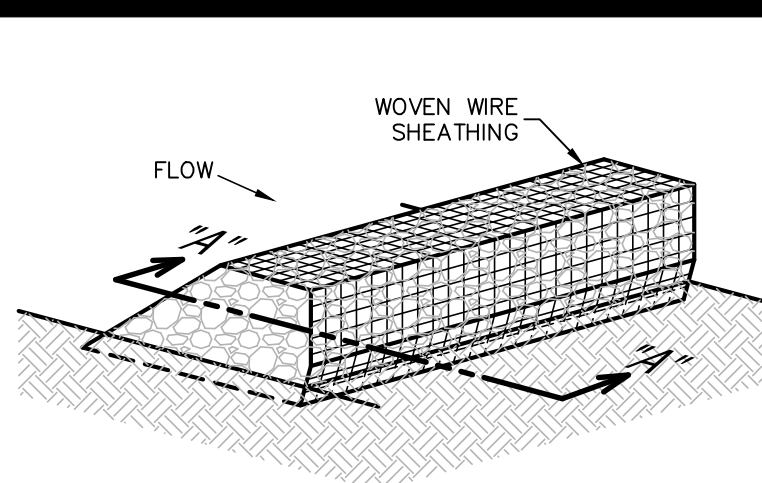
NOT-TO-SCALE

COMMON TROUBLE POINTS

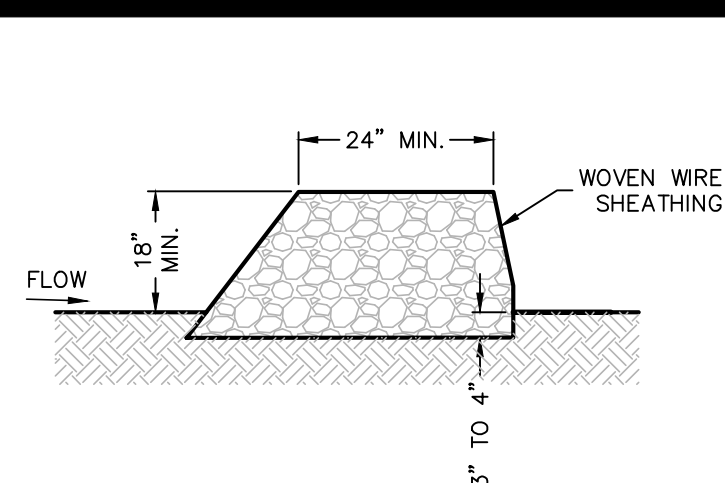
1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY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

INSPECTION AND MAINTENANCE GUIDELINES

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



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS

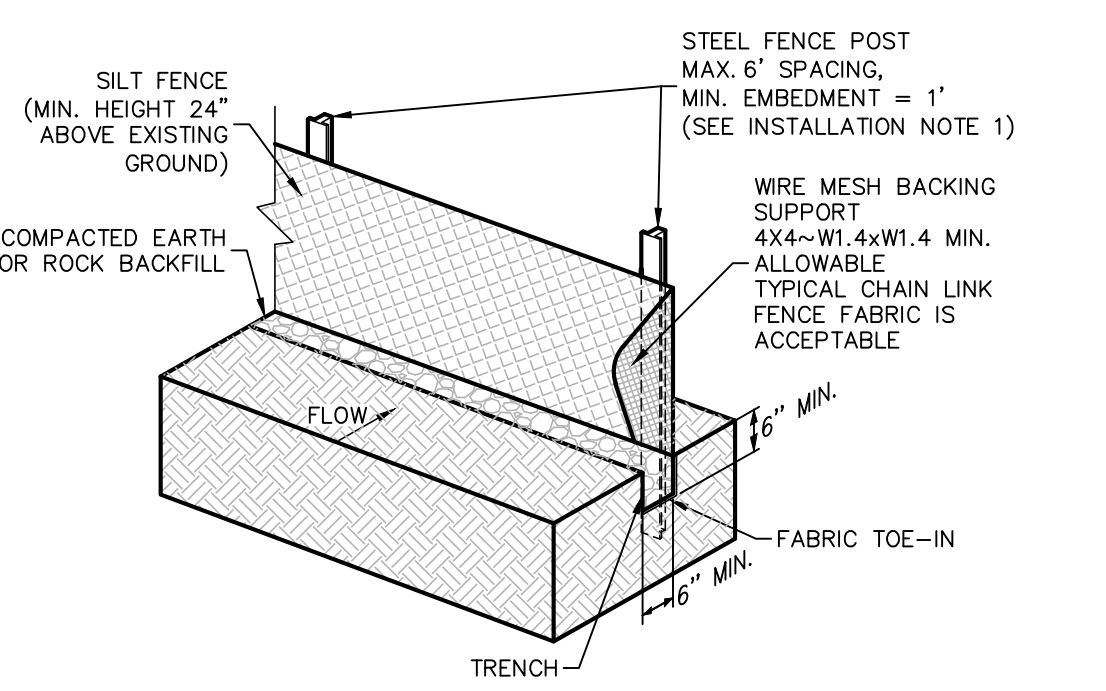
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE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

INSPECTION AND MAINTENANCE GUIDELINES

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

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

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

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

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

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 40.
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 1/4 ACRE/100 FEET OF FENCE.

SILT FENCE DETAIL

NOT-TO-SCALE

MATERIALS

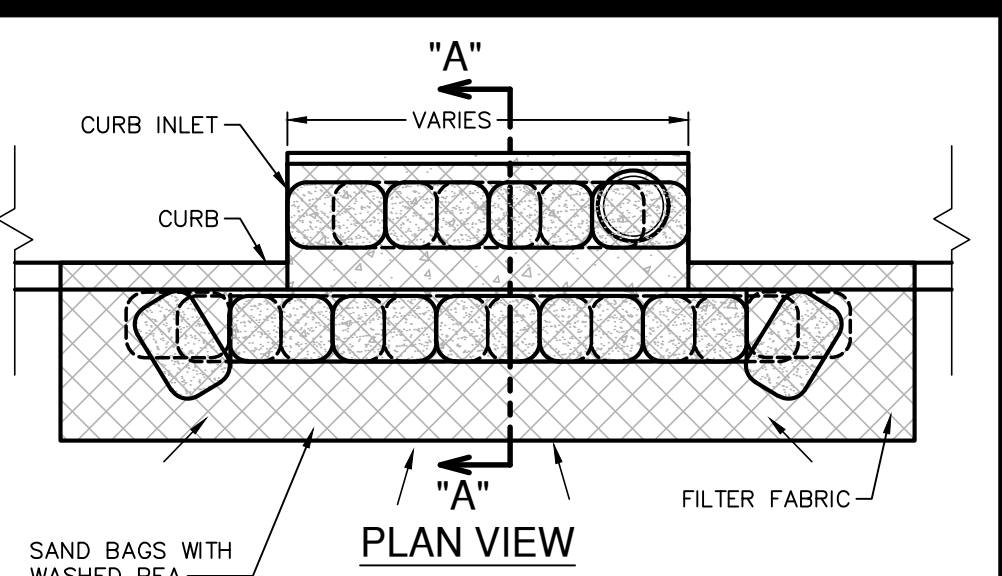
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOOT RINGS.
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR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

INSTALLATION

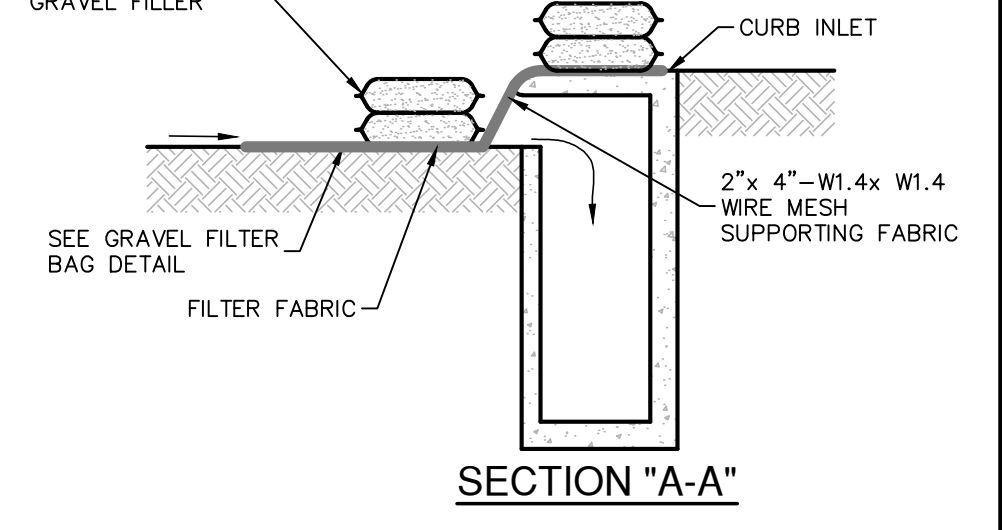
1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH THE 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).



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

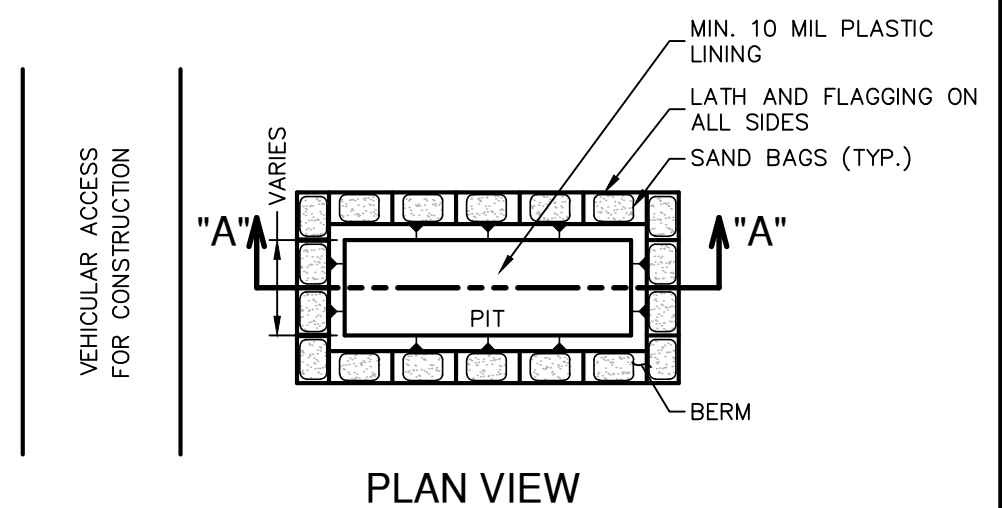
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL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

INSPECTION AND MAINTENANCE GUIDELINES

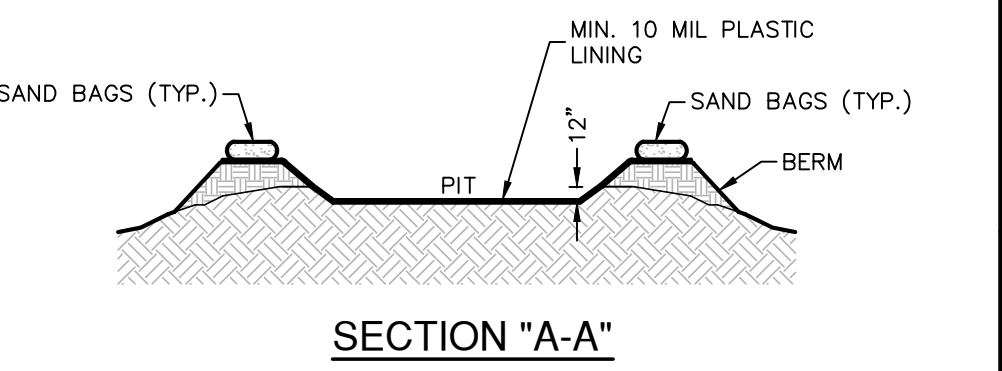
1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3.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

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

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

MATERIALS

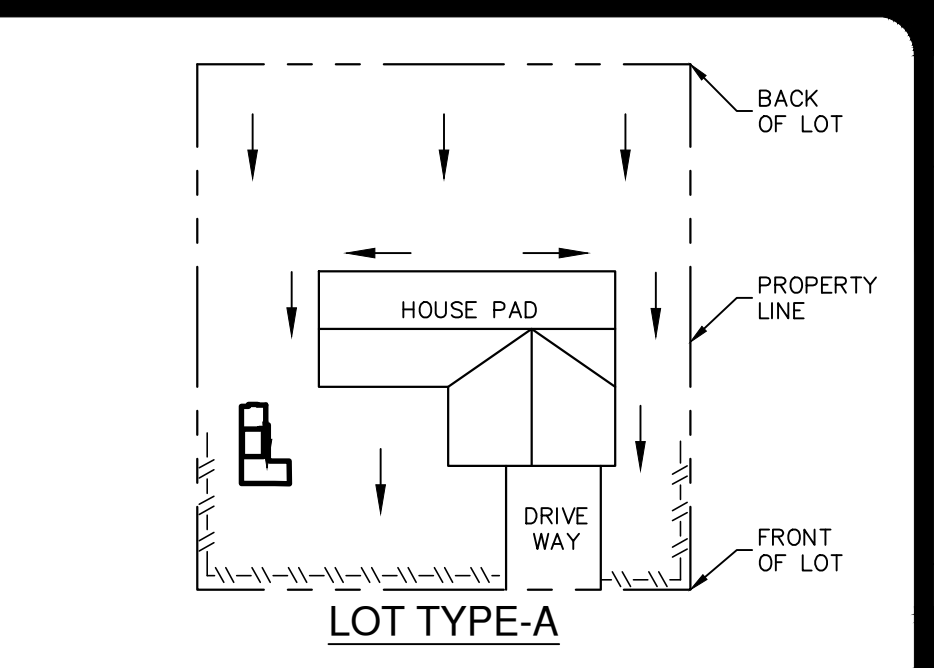
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

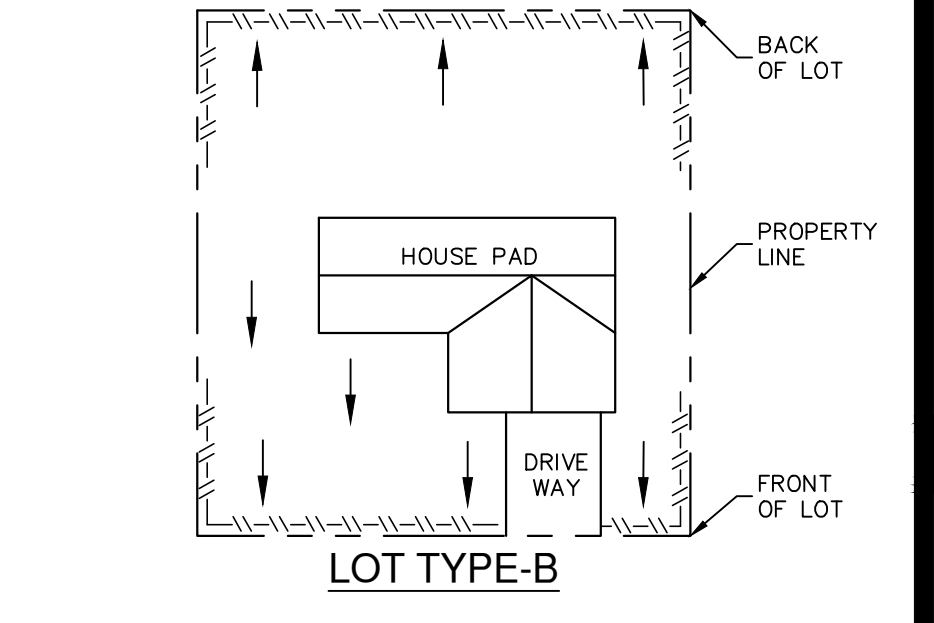
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
3. HOLES, DEPRESSIONS OR OTHER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

CONCRETE TRUCK WASHOUT PIT DETAIL

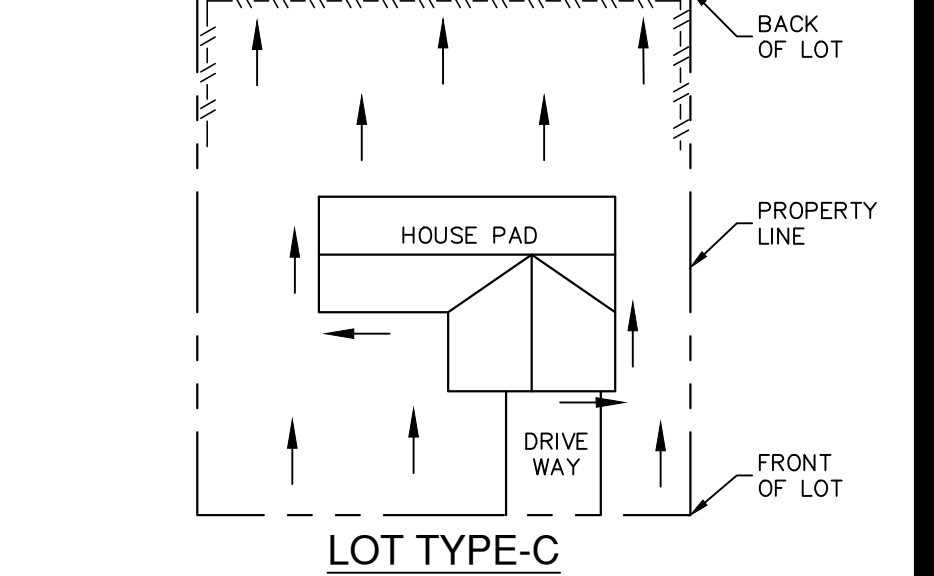
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LOT TYPE-A



LOT TYPE-B



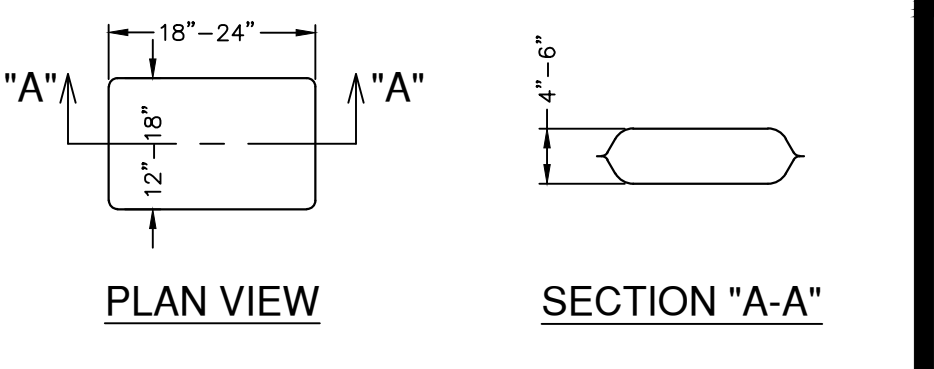
LOT TYPE-C

LEGEND

--- SILT FENCE DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE

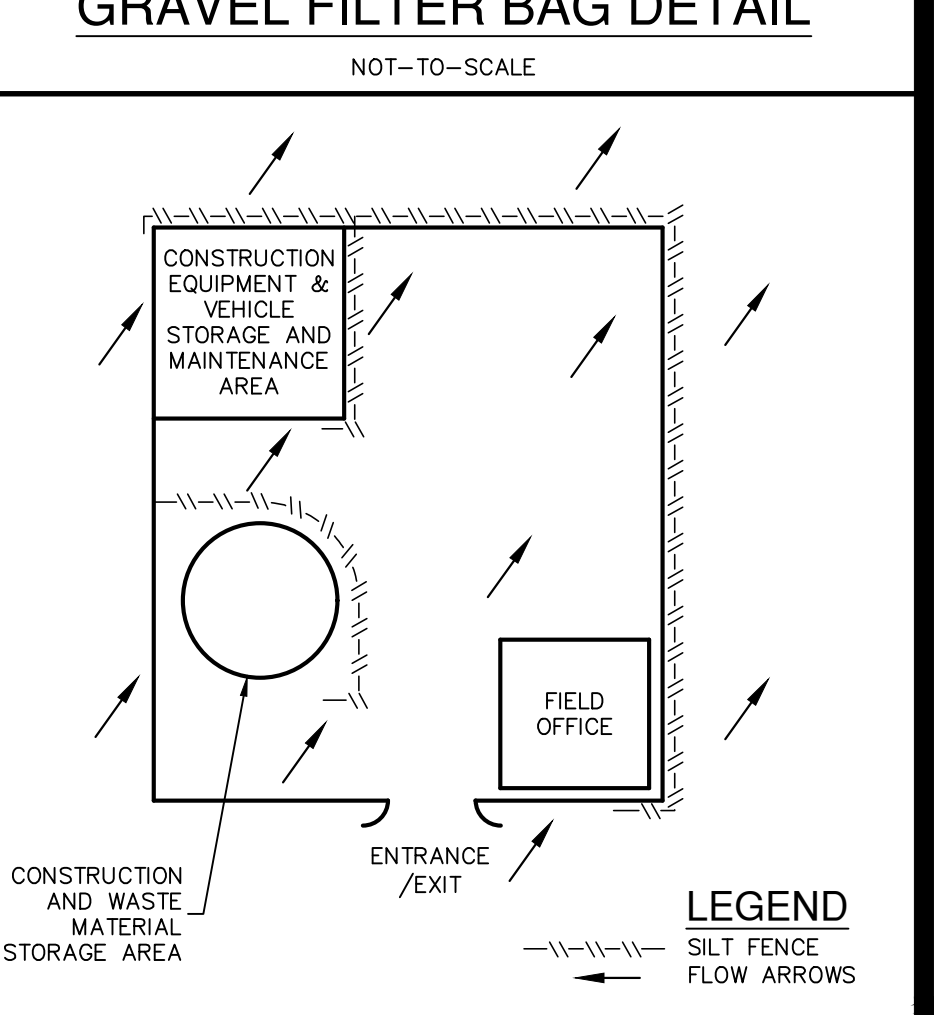


NOTES:

1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).
3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



CONSTRUCTION STAGING AREA

NOT-TO-SCALE

LEGEND

--- SILT FENCE FLOW ARROWS

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: _____

9/16/2025

STATE OF TEXAS
REBECCA ANN CARROLL
 LICENSED PROFESSIONAL ENGINEER
 92666

PAPE-DAWSON
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

PRESERVE AT CULEBRA-UNIT 18
 BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO. **25-11800004**

JOB NO. 11668-20

DATE: SEPTEMBER 2025

DESIGNER: AR

CHECKED: SSC DRAWN: RP

SHEET: **C8.10**

DATE: Sep 16, 2025, 4:49pm User: ID: 0000000000 File: P:\116682025\Design\Civil\SWPPP-D15-11800004.dwg

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