

RIVER'S EDGE SUBDIVISION

CONSTRUCTION DOCUMENT SET

NEW BRAUNFELS, TEXAS 78130

COMAL COUNTY

NBU NOTES:

- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, NEW BRAUNFELS UTILITIES MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
- THE ENGINEER OF RECORD ACKNOWLEDGES THAT ALL PROPOSED WATER AND WASTEWATER IMPROVEMENTS MUST COMPLY WITH CRITERIA FROM THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, THE CITY OF NEW BRAUNFELS, NBU W&WW DESIGN CRITERIA, AND OTHER GOVERNING ENTITY ORDINANCES OR CODES, AND SOUND ENGINEERING JUDGEMENT.
- THE ENGINEER OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR THE NBU WATER SYSTEM IS THE MAIN SIDE OF THE SERVICE/LATERAL/LEAD FROM THE CUSTOMER'S METER, BACKFLOW PREVENTER, OR EASEMENT EDGE. THE CUSTOMER IS RESPONSIBLE FOR THE DESIGN, PERMITTING, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER ITS INSTALLATION.
- THE ENGINEERING OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR A NBU WASTEWATER SYSTEM IS THE MAIN SIDE OF THE SERVICE LATERAL FROM THE CUSTOMER'S CLEAN OUT OR PROPERTY LINE, WHICHEVER IS NEARER. THE CUSTOMER IS RESPONSIBLE FOR THE DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER ITS INSTALLATION.
- WATER IS A PRECIOUS COMMODITY IN THE STATE OF TEXAS AND NEW BRAUNFELS UTILITIES (NBU) IS PASSIONATE ABOUT PROTECTING THE LOCAL RESOURCE. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING A FIRE HYDRANT METER SO THAT ALL WATER USED FOR CONSTRUCTION OR TESTING PURPOSED IS PROPERLY ACCOUNTED FOR. NBU WILL NOT TOLERATE ANY WATER THEFT, REGARDLESS OF THE AMOUNT. IF WATER THEFT IS DISCOVERED, THE CONTRACTOR SHALL BE SUBJECT TO MONETARY PENALTIES, CRIMINAL CHARGES, AND STOPPAGE OF ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROJECT. COSTS ASSOCIATED WITH ANY WORK STOPPAGE RESULTING FROM WATER THEFT SHALL BE AT THE FULL EXPENSE OF THE CONTRACTOR.

NBU AS-BUILT REQUIREMENTS:

NBU REQUIRES GPS POINTS FOR CERTAIN WATER, WASTEWATER AND ELECTRIC IMPROVEMENTS. SOME OF THIS INFORMATION/DATA MUST BE PERFORMED DURING CONSTRUCTION, PRIOR TO BACKFILLING OPERATIONS. CONTRACTOR SHALL COORDINATE WITH NBU INSPECTOR TO VERIFY ANY ADDITIONAL ITEMS NOT SHOWN BELOW THAT NEED TO BE GPS LOCATED AND THE SURVEY/DELIVERY REQUIREMENTS REGARDING THIS INFORMATION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER'S CONTRACTOR OR ENGINEER. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE. THE ELECTRIC GPS POINTS SHALL BE TO MAP GRADE.

WATER

VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL
HORIZONTAL BENDS PRIOR TO BACKFILL
TEES PRIOR TO BACKFILL
FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL
FIRE HYDRANTS (TOP OF FLANGE)
VALVES
METERS (TOP CENTER OF BOX)
BLOW OFF ASSEMBLY
CORNER SLAB OF WATER TANK & GATE VALVE ON TANK

WASTEWATER

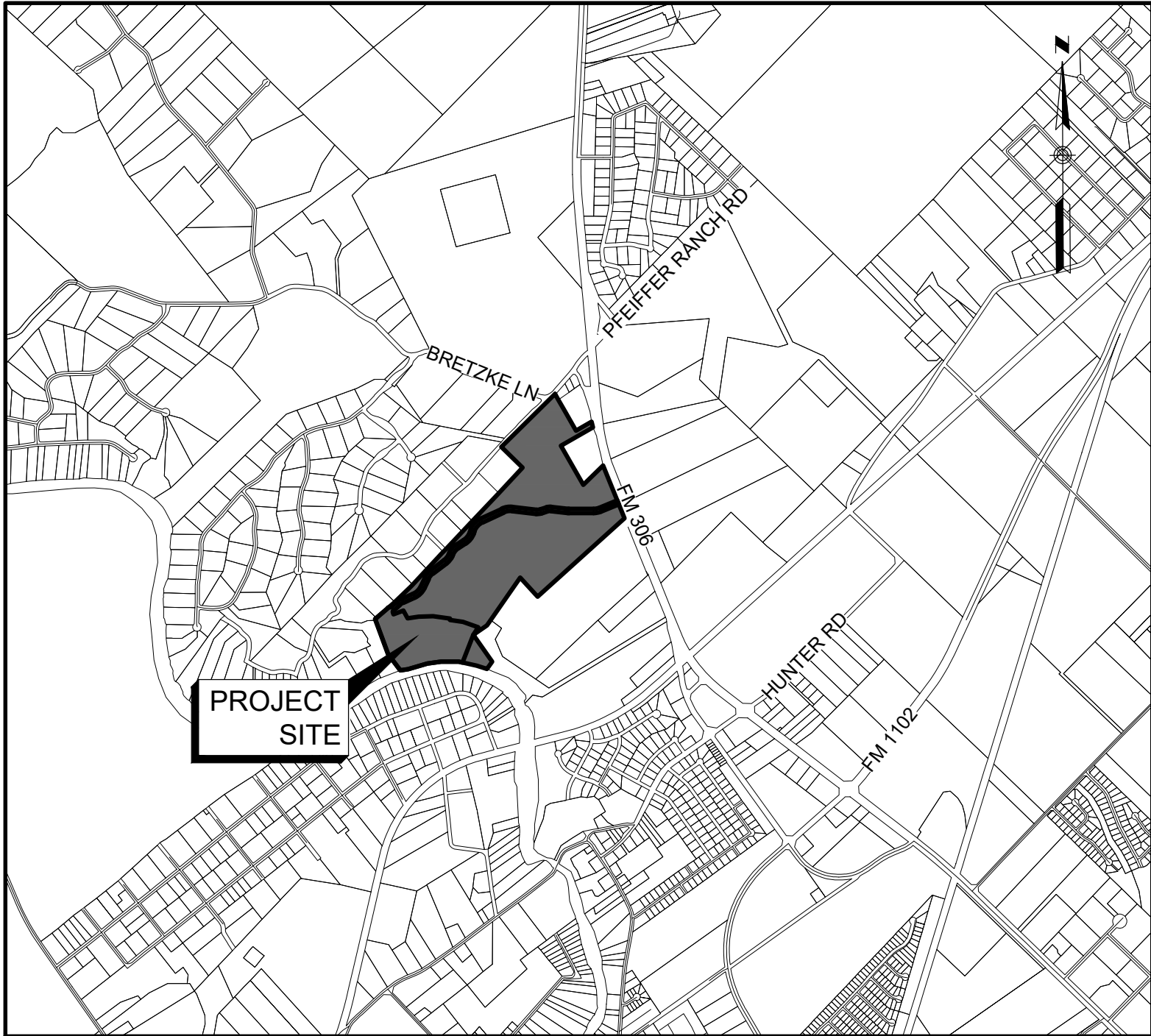
MANHOLES (AND INVERT DEPTH(S))
CLEANOUTS
CORNER SLAB OF LIFT STATION

ELECTRIC

POLES
TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK)
PULL BOXES
STREET LIGHTS
SEE NBU'S "CAD/GPS DELIVERABLES" ON NBU WEBSITE AT NBUGTEXAS.COM FOR COMPLETE DETAILS AND REQUIREMENTS.

NOTES:

- TYPE 3 DEVELOPMENT.
- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER RECORD.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- THIS PROJECT IS WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
- A PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO.48091C0455G EFFECTIVE DATE 5/9/2024.
- FOLLOWING PERMITS ARE REQUIRED PRIOR TO START OF CONSTRUCTION:
 - NEW BRAUNFELS UTILITY APPROVAL
 - TCEQ WATER POLLUTION ABATEMENT PLAN APPROVAL
 - COMAL COUNTY OSSF SYSTEM APPROVAL
 - TXDOT UTILITY PERMIT



LOCATION MAP
1" = 2000'

SUBMITTAL DATE: FEBRUARY 2025

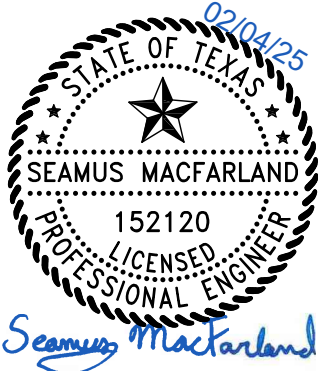
PROPERTY DESCRIPTION

DESCRIPTION OF A 124.79 ACRE TRACT OF LAND, SITUATED IN THE ORILLA RUSSELL, SURVEY NO. 2, ABSTRACT NO. 485 AND THE ALANSON P. FUGUAY SURVEY NO. 35, ABSTRACT NO. 155, COMAL COUNTY, TEXAS, BEING A PORTION OF A CALLED 39.312 ACRE TRACT DESCRIBED AS TRACT 2, IN DEED CONVEYED TO ANNA GARTH CLARK (1/3 PROPORTION), ARCHIE A. WOHLFAHRT (1/3 PROPORTION), AND JANIS KAY WOMMACK (1/3 PROPORTION), AS RECORDED IN DOCUMENT NO. 201406020560, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS (O.P.R.C.C.TX.), AND BEING A PORTION OF A CALLED 90.871 ACRE TRACT AS CONVEYED IN DEED TO ANNA GARTH CLARK (1/3 PROPORTION), ARCHIE A. WOHLFAHRT (1/3 PROPORTION), AND JANIS KAY WOMMACK (1/3 PROPORTION), AS RECORDED IN DOCUMENT NO. 201406020562, O.P.R.C.C.TX.

DEVELOPER: REGAL LAND DEVELOPMENT
6 GRUENE WALD
NEW BRAUNFELS, TEXAS 78130
CONTACT PERSON: CLINT JONES
TELEPHONE: () - -

ENGINEER: LJA ENGINEERING, INC.
9830 COLONNADE BLVD, SUITE 300
SAN ANTONIO, TEXAS 78230
CONTACT PERSON: PRISCILLA FLORES, P.E.
PHONE # (210) 503-2700
LJA.COM

SURVEYOR: LJA SURVEYING
9830 COLONNADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 78230
CONTACT PERSON: GORDON ANDERSON
PHONE # (210) 503-2700



REVISIONS			
NO.	DESCRIPTION	BY	DATE

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



Know what's below.
Call before you dig.

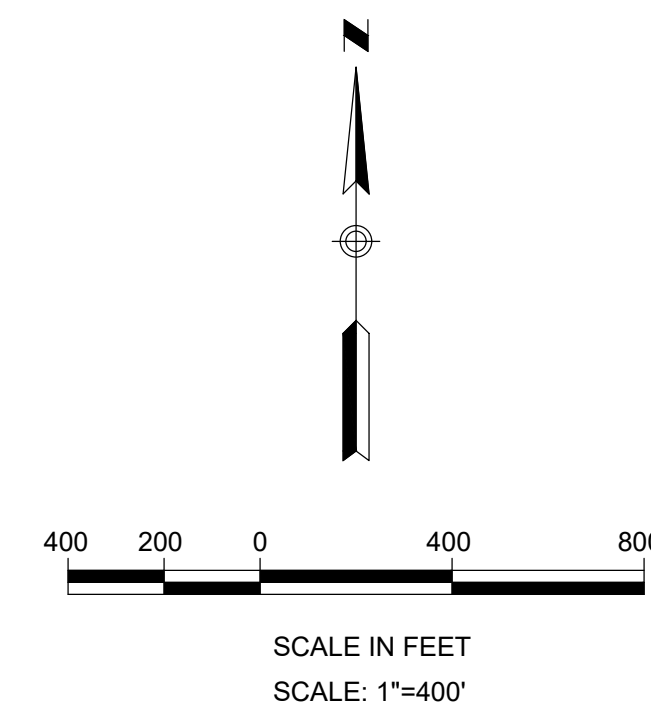
LJA JOB NO. A292-XXXX

LJA Engineering, Inc.

9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230



Phone 210.503.2700
LJA.COM
FRN-F-1386



LEGEND

— — — — — VEGETATIVE FILTER STRIP



SENSITIVE FEATURE

RIVER'S EDGE SUBDIVISION
WATER POLLUTION ABATEMENT PLAN
SITE PLAN

REVISIONS			
NO.	DESCRIPTION	BY	DATE
	DESIGNED BY:		
	DRAWN BY:		
	CHECKED BY: RG		
	APPROVED NAME:		
	sh OverallProjectLayout.dwg		

LJA Engineering, Inc.

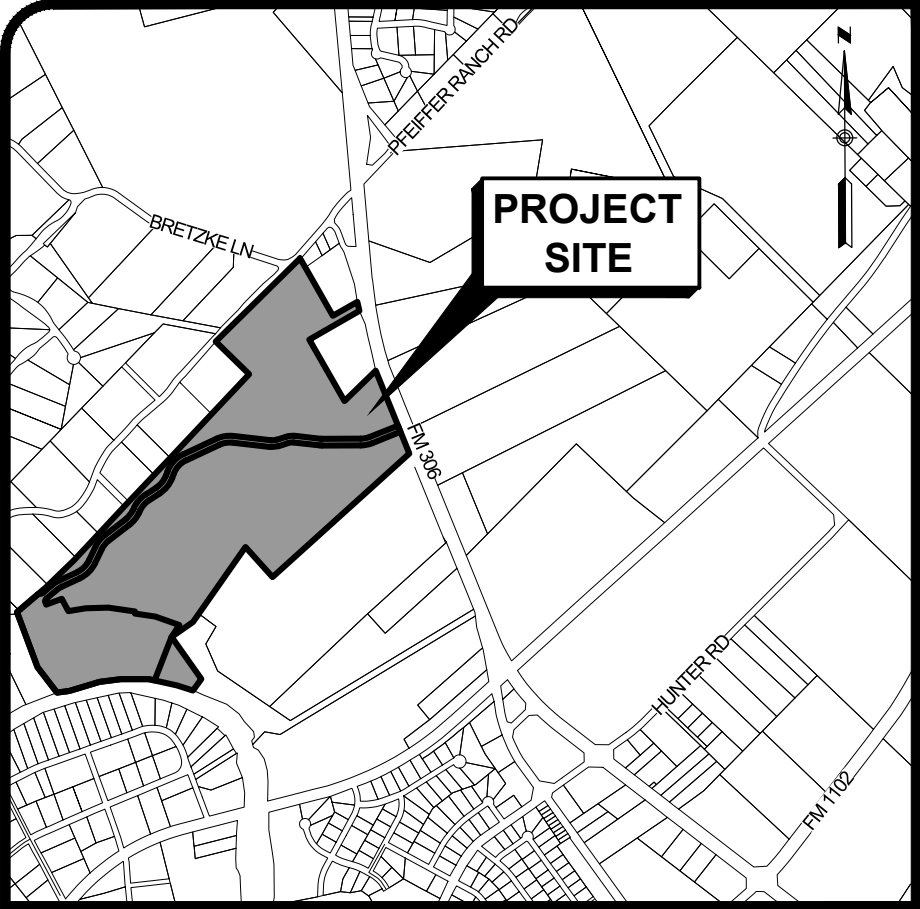
9830 Colomade Blvd
Suite 300
San Antonio, Texas 78230

Phone 210-503-2700
LJA.COM
TRPE No. E-1986

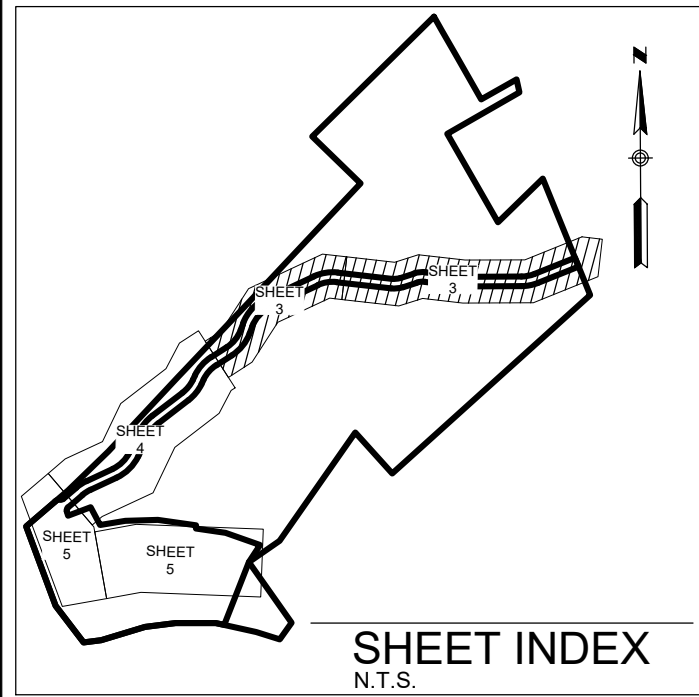
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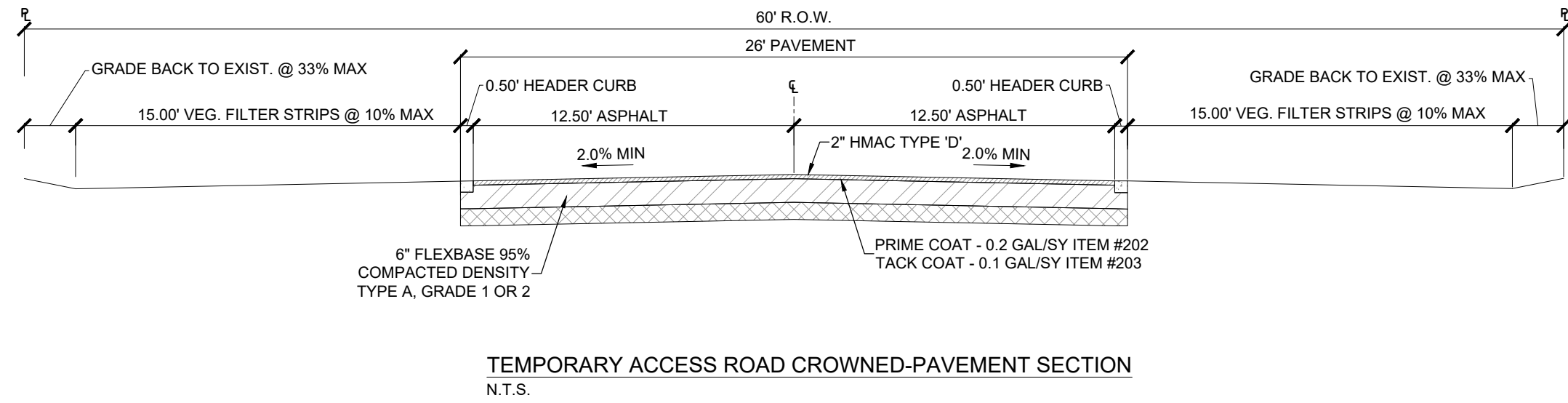
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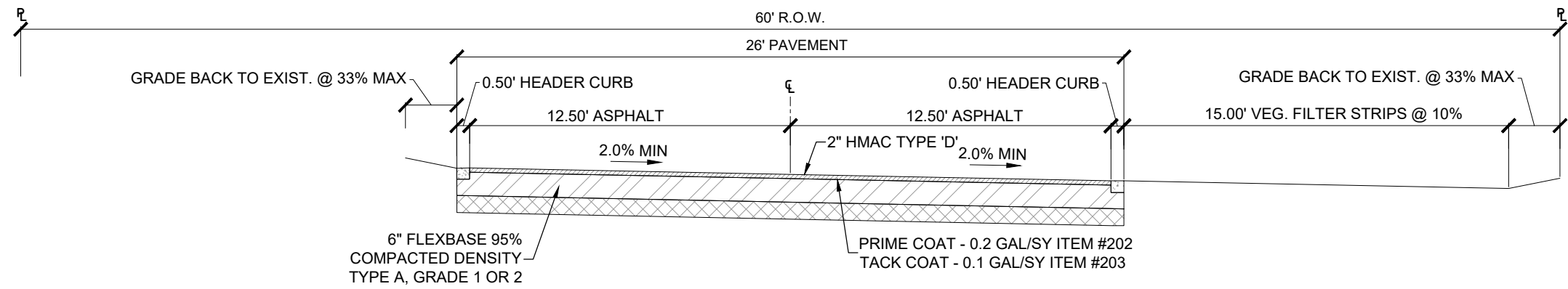
LOCATION MAP
N.T.S.



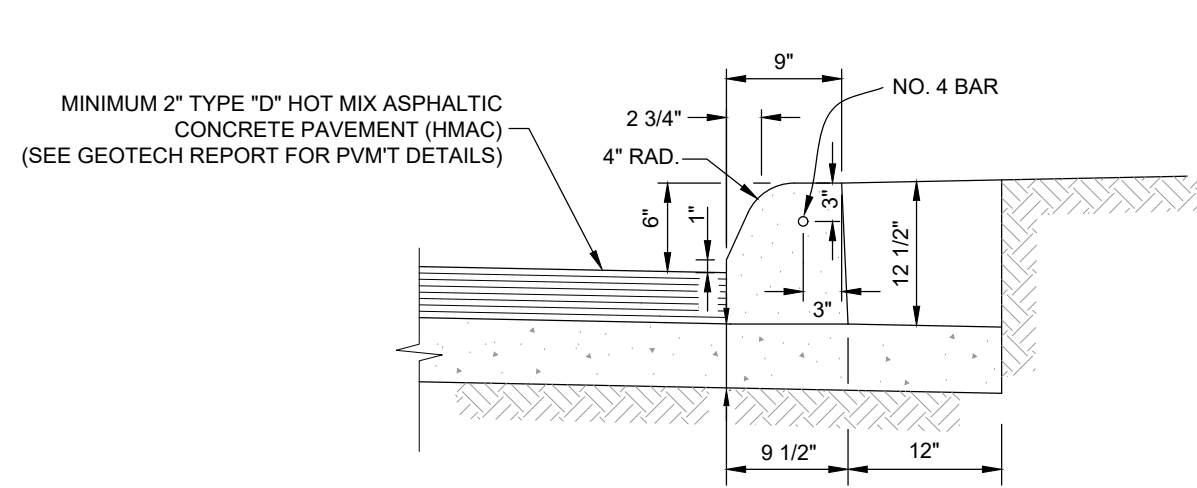
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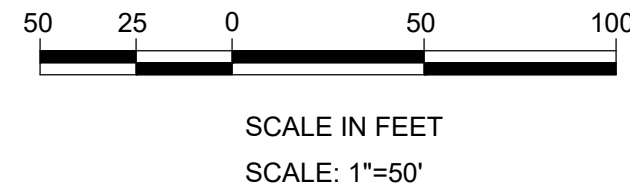
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N.T.S.



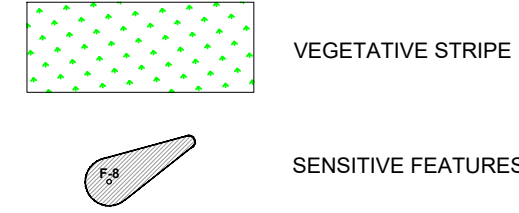
TEMPORARY ACCESS ROAD SUPER ELEVATED-PAVEMENT SECTION
N.T.S.



STANDARD CURB DETAIL
N.T.S.



LEGEND



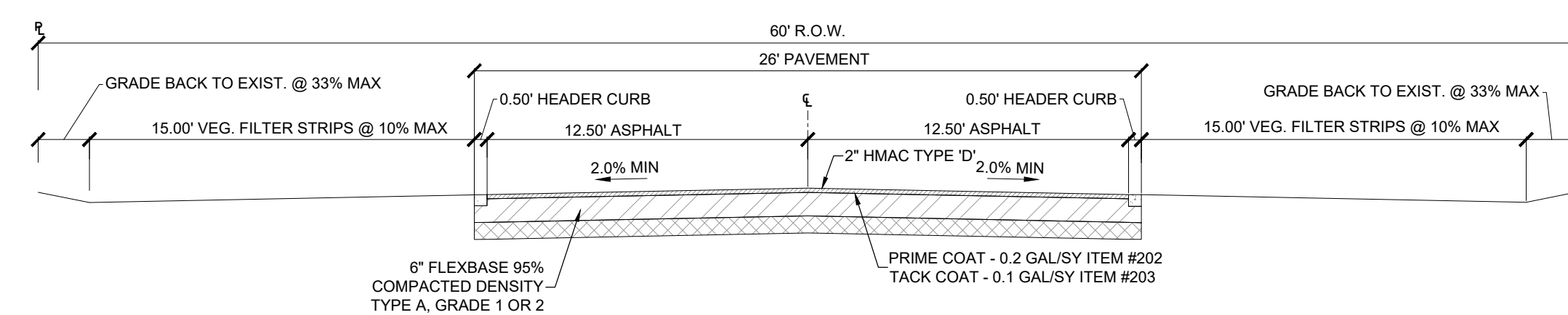
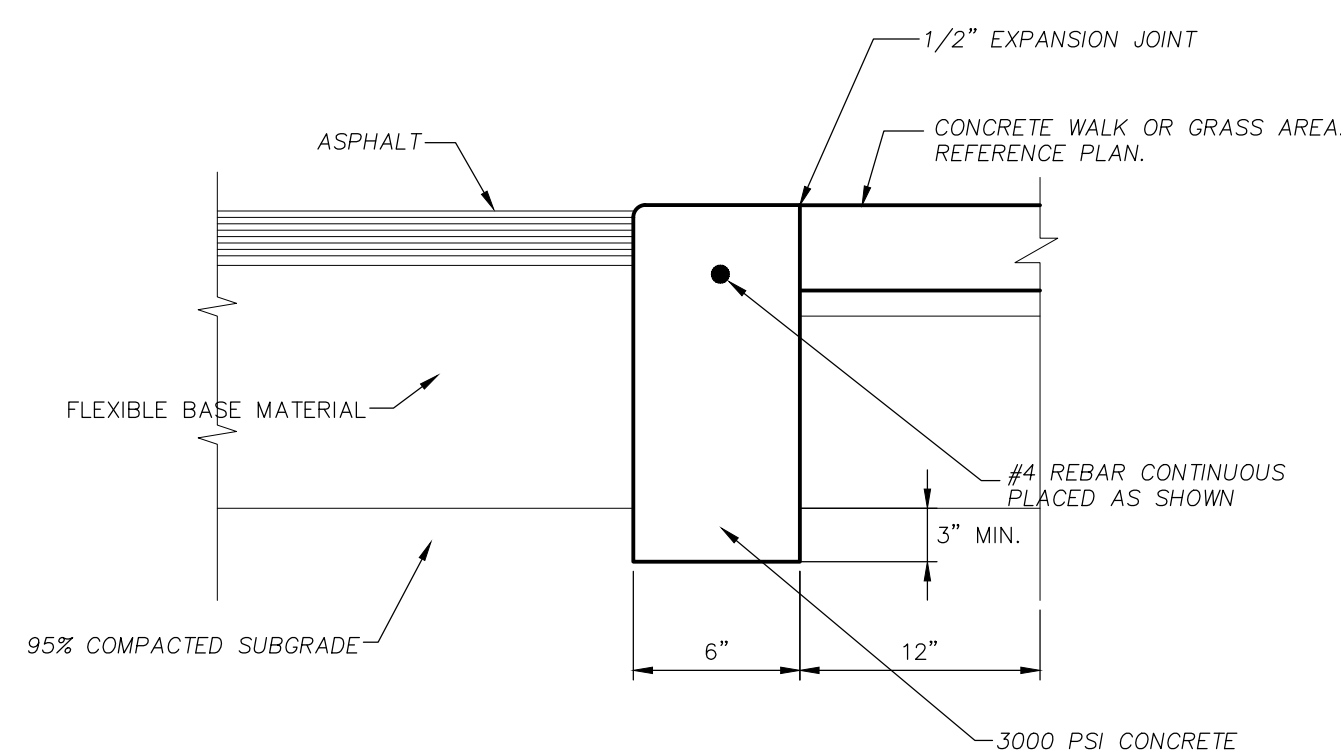
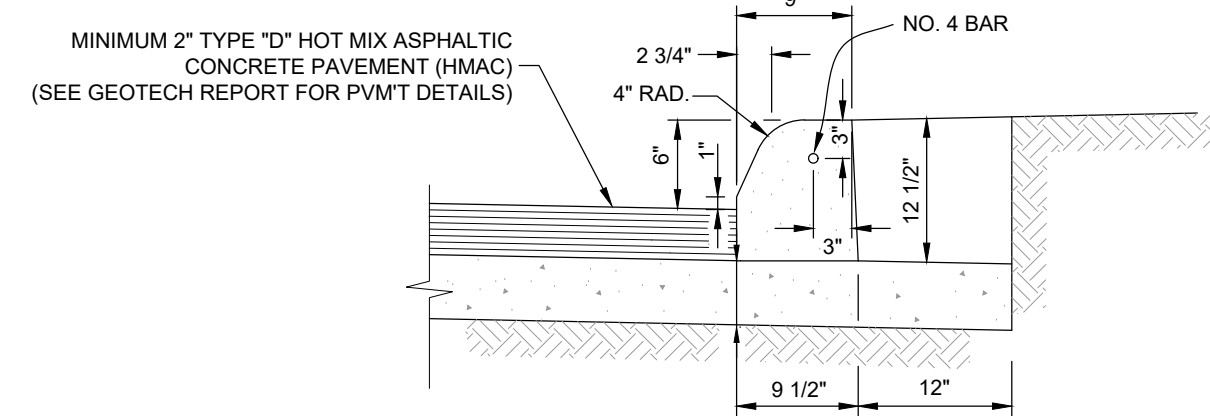
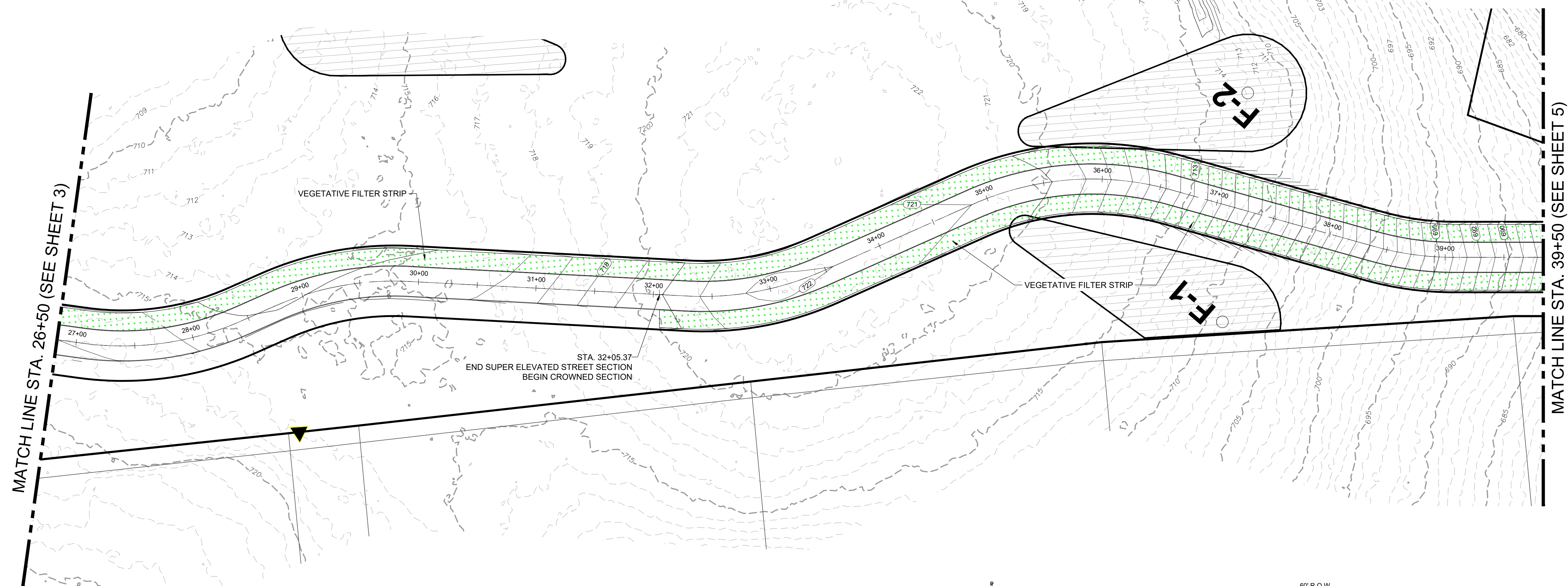
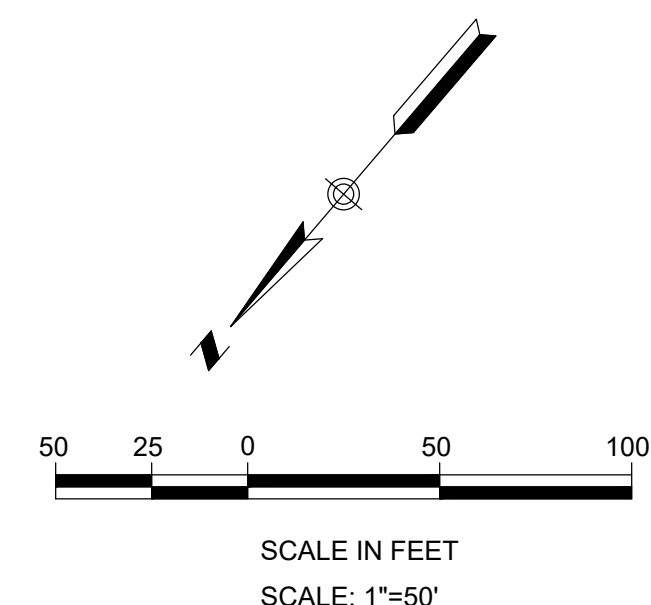
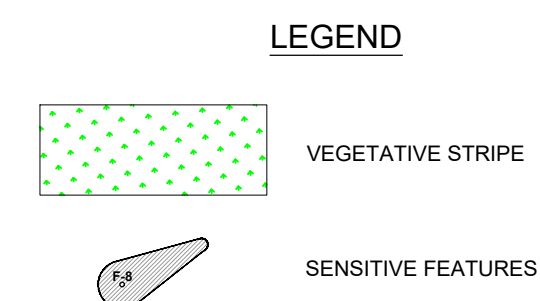
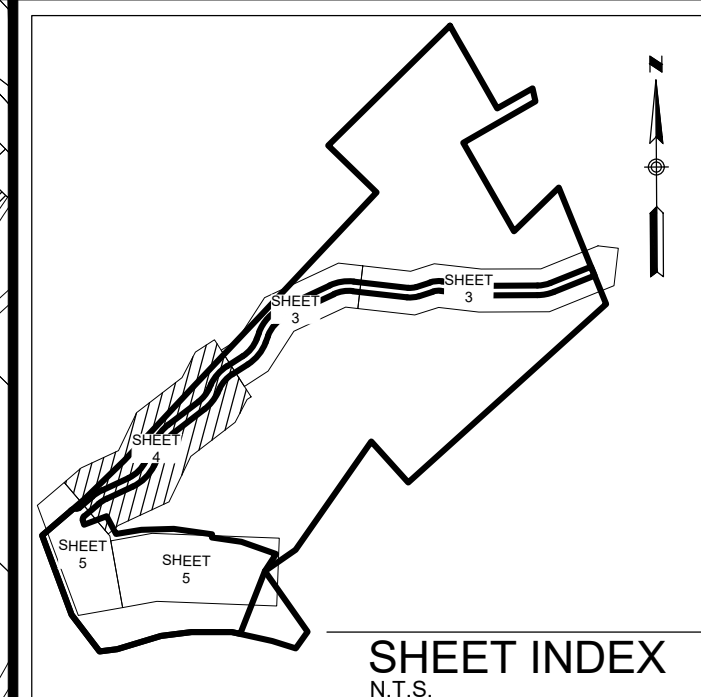
MATCH LINE STA. 16+50

MATCH LINE STA. 26+50 (SEE SHEET 4)

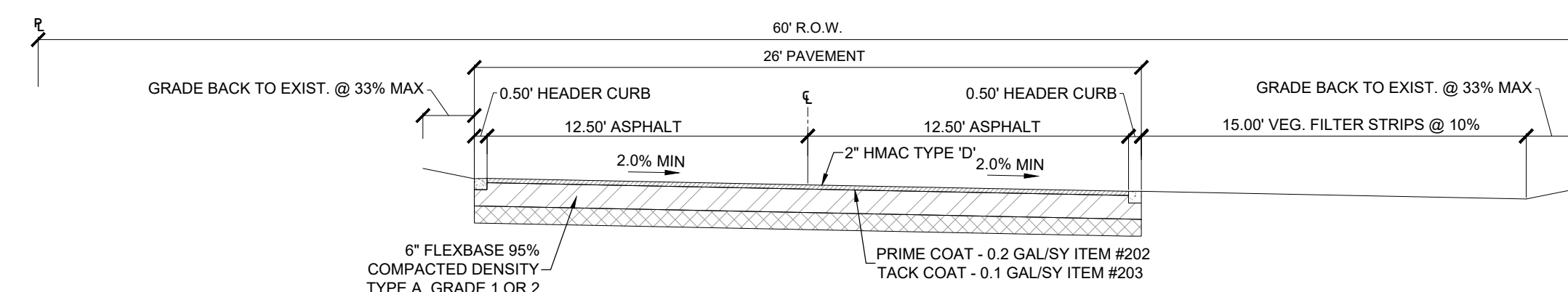
HEADER CURB DETAIL
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Last Modified: Mon, 25 Jun 2024 16:22:22
Plot Date/Time: Tue, 25 Jun 2024 11:50:07

RIVER'S EDGE SUBDIVISION	
PERMANENT WPAP (SHEET 1 OF 3)	
NO.	DATE
REVISIONS	
DESCRIPTION	BY
DATE	
24/2025	DESIGNED BY:
	DRAWN BY:
	CHECKED BY: RG
	DRAWING NAME: sh-Project Layout.dwg
LJA Engineering, Inc. 9830 Colomade Blvd Suite 300 San Antonio, Texas 78230 Phone 210.503.2700 LJA.COM TBP No. F-1386	
JOB NUMBER: A292-426	
SHEET NO. 3	



TEMPORARY ACCESS ROAD CROWNED-PAVEMENT SECTION
N.T.S.



TEMPORARY ACCESS ROAD SUPER ELEVATED-PAVEMENT SECTION
N.T.S.

RIVER'S EDGE SUBDIVISION

PERMANENT WPA (SHEET 2 OF 3)

REVISIONS	
NO.	DESCRIPTION
	BY
	DATE

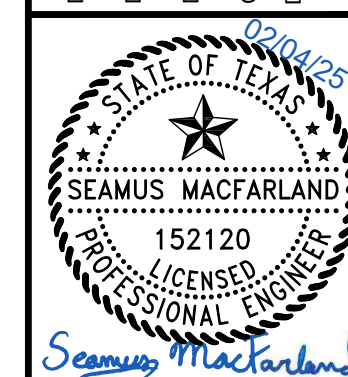
DATE: 24/2025

DESIGNED BY:

DRAWN BY:

CHECKED BY: RG

DRAWING NAME: Project-ayout.dwg



LJA Engineering, Inc.

LJA

9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

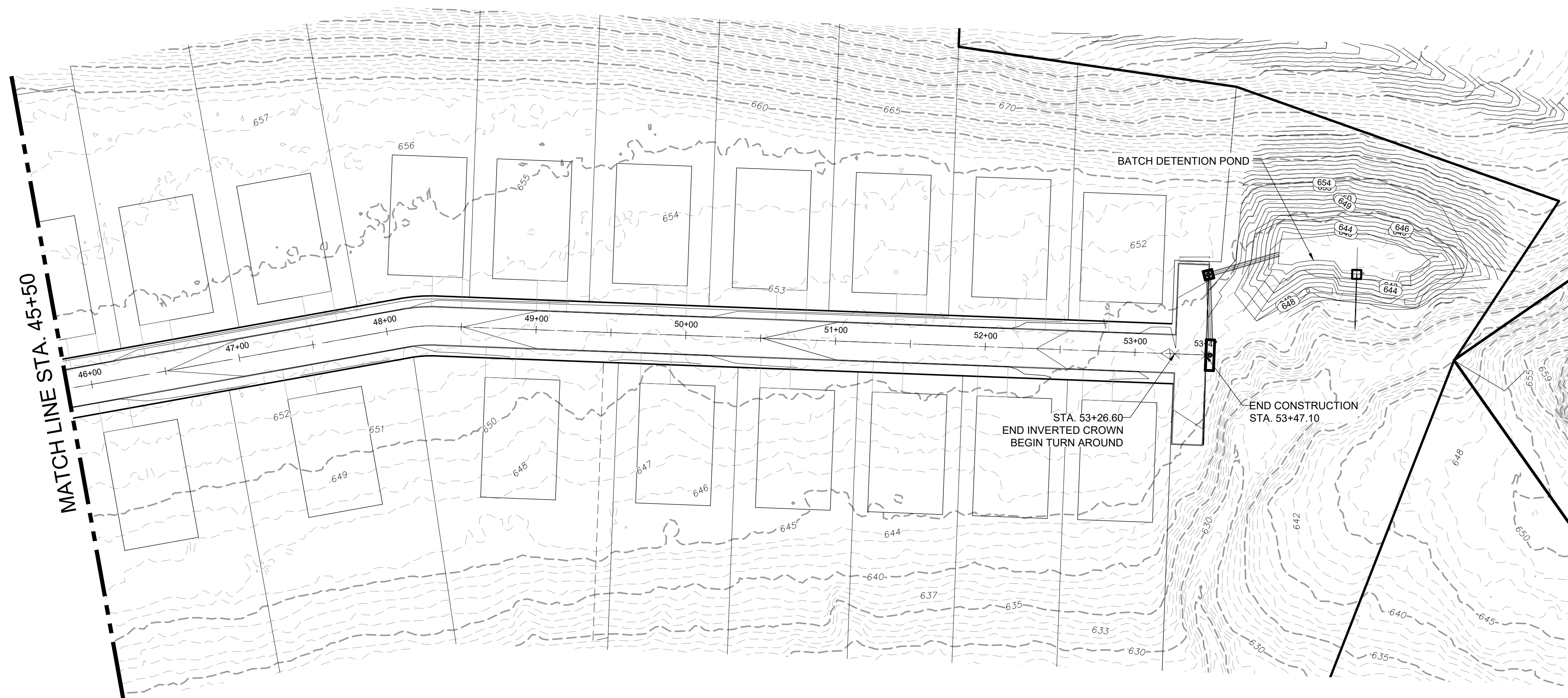
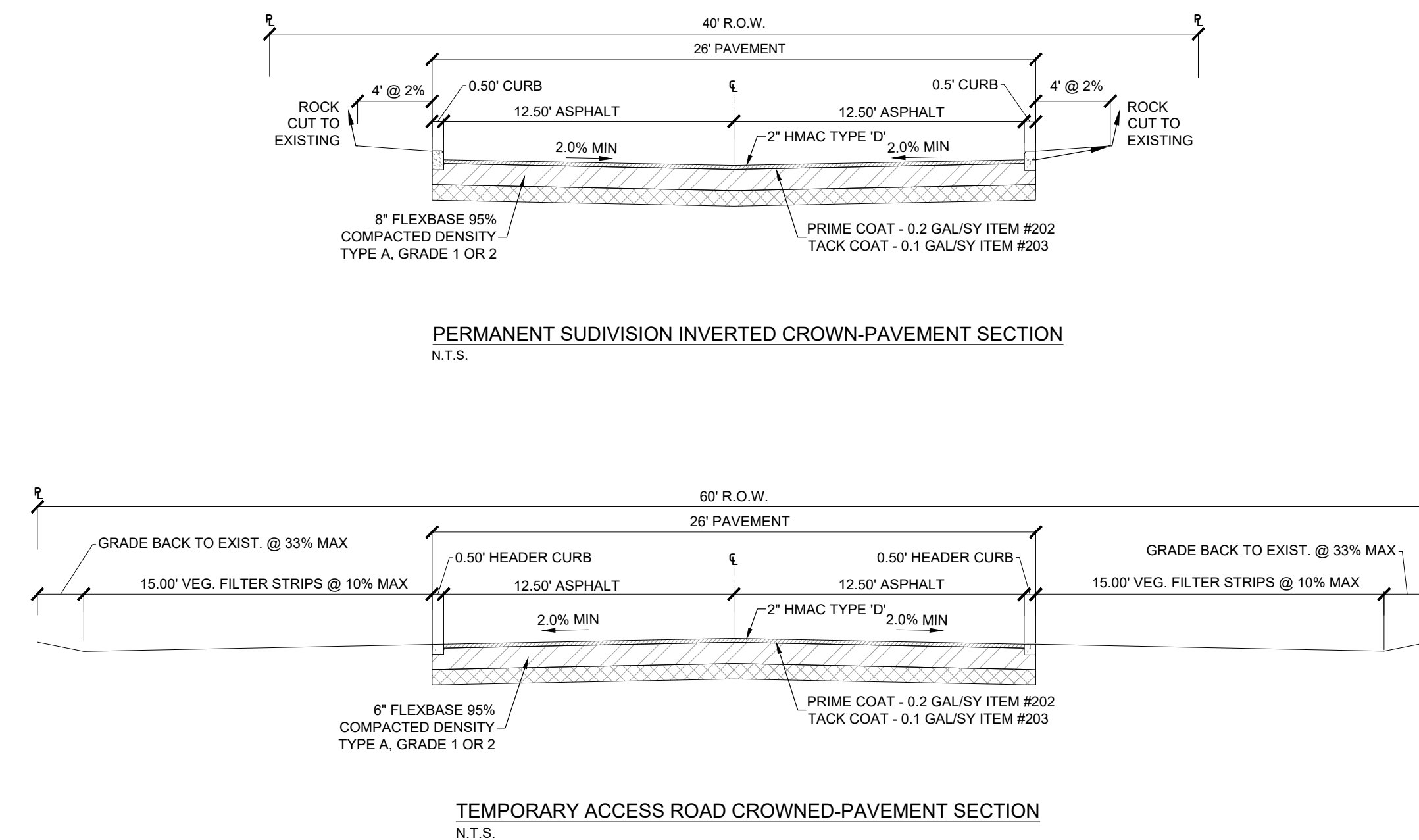
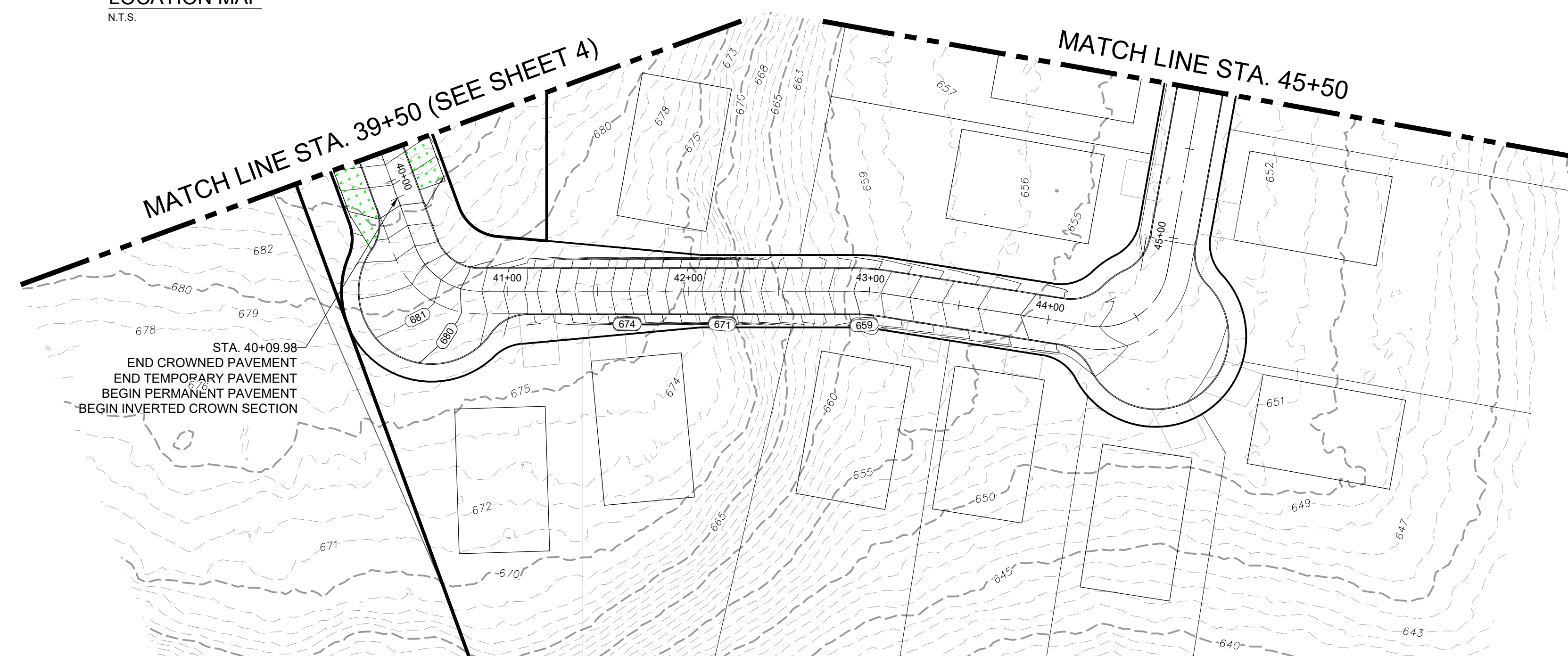
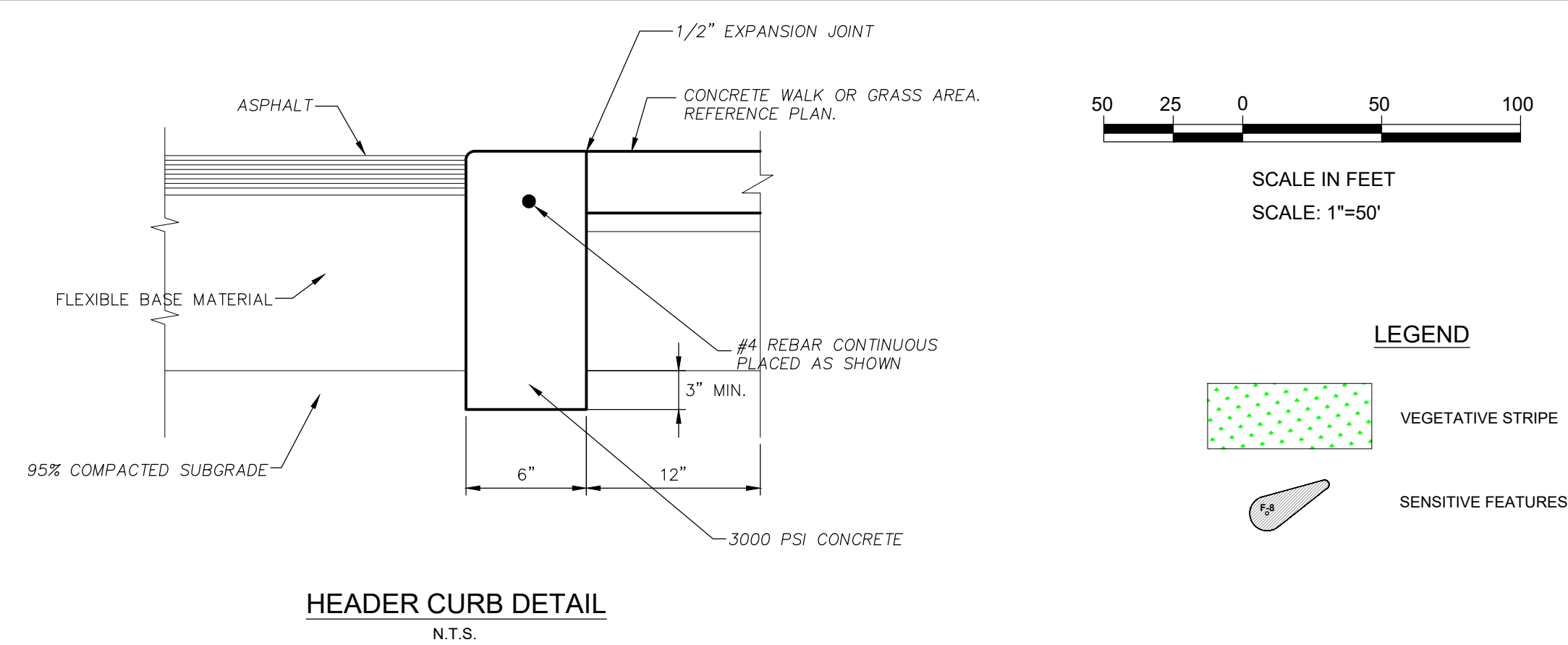
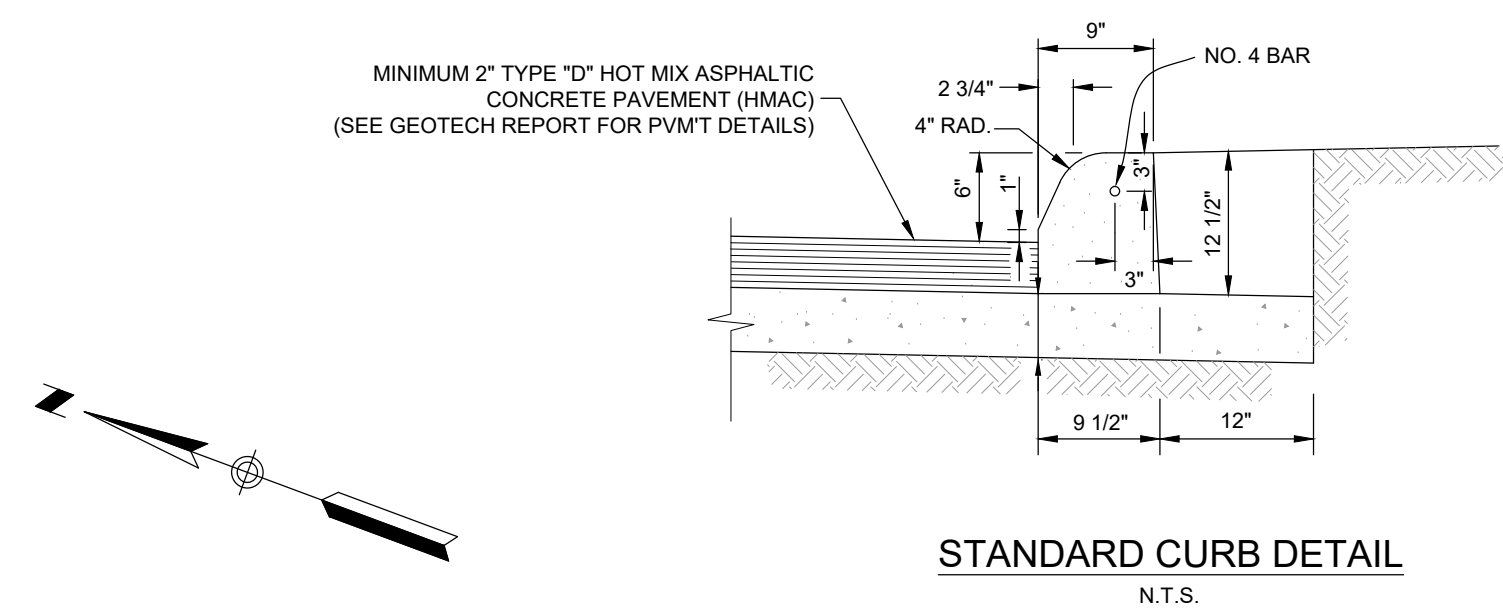
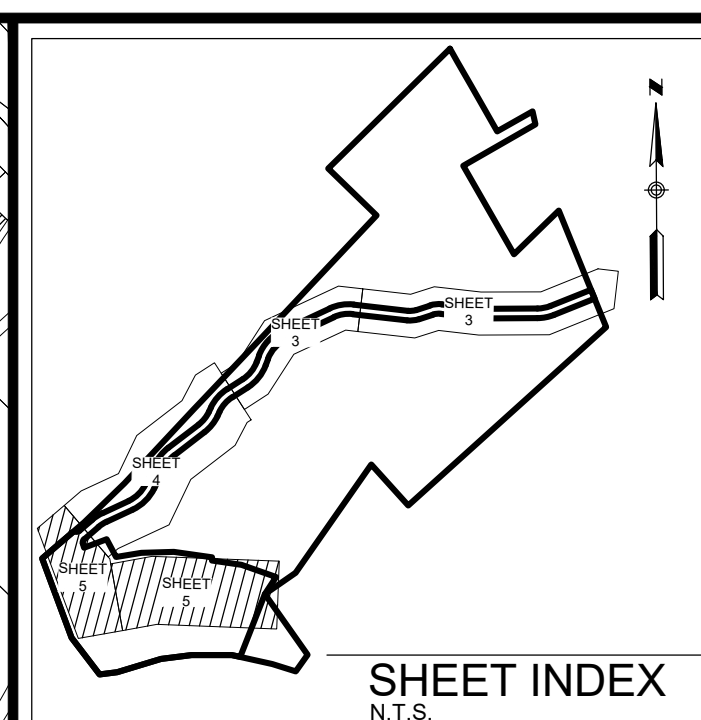
Phone 210.503.2700
LJA.COM
TBP# No. F-1386

JOB NUMBER:
A292-426

SHEET NO.

4

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User: smcraford
Last Modified: Jan. 29, 25 - 16:22
Plot Date/Time: Feb. 04, 25 - 17:50:15



RIVER'S EDGE SUBDIVISION

PERMANENT WPAW (SHEET 3 OF 3)

REVISIONS					
NO.	DESCRIPTION	BY	DATE		
	DRAWN BY:				
	CHECKED BY:				
	DRAWING NAME:				
	sh - Project layout.dwg				

LJA Engineering, Inc.
3830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.513.2700
LJA.COM
TBPE No F-1386

JOB NUMBER:
A292-426

SHEET NO.
5

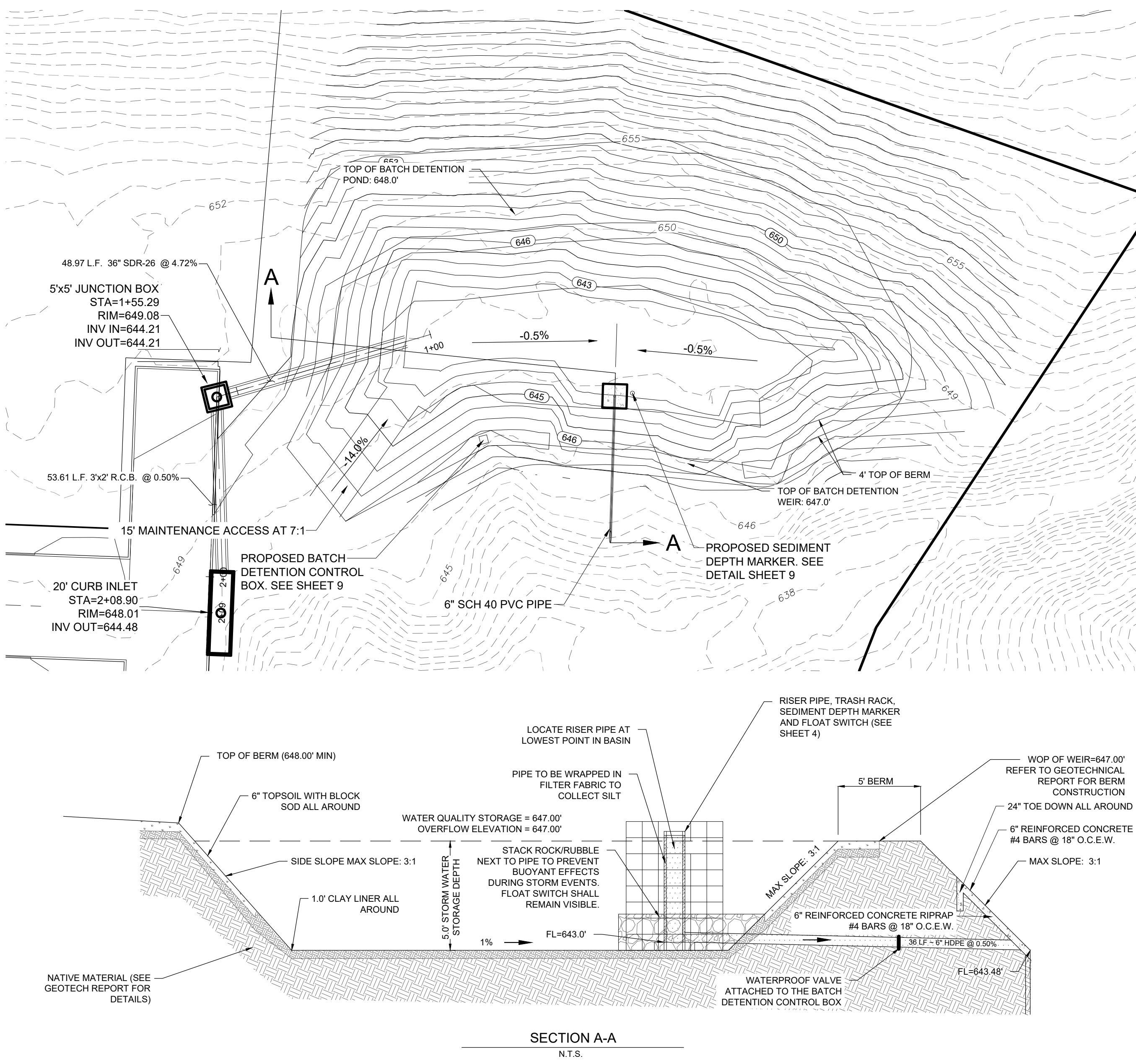
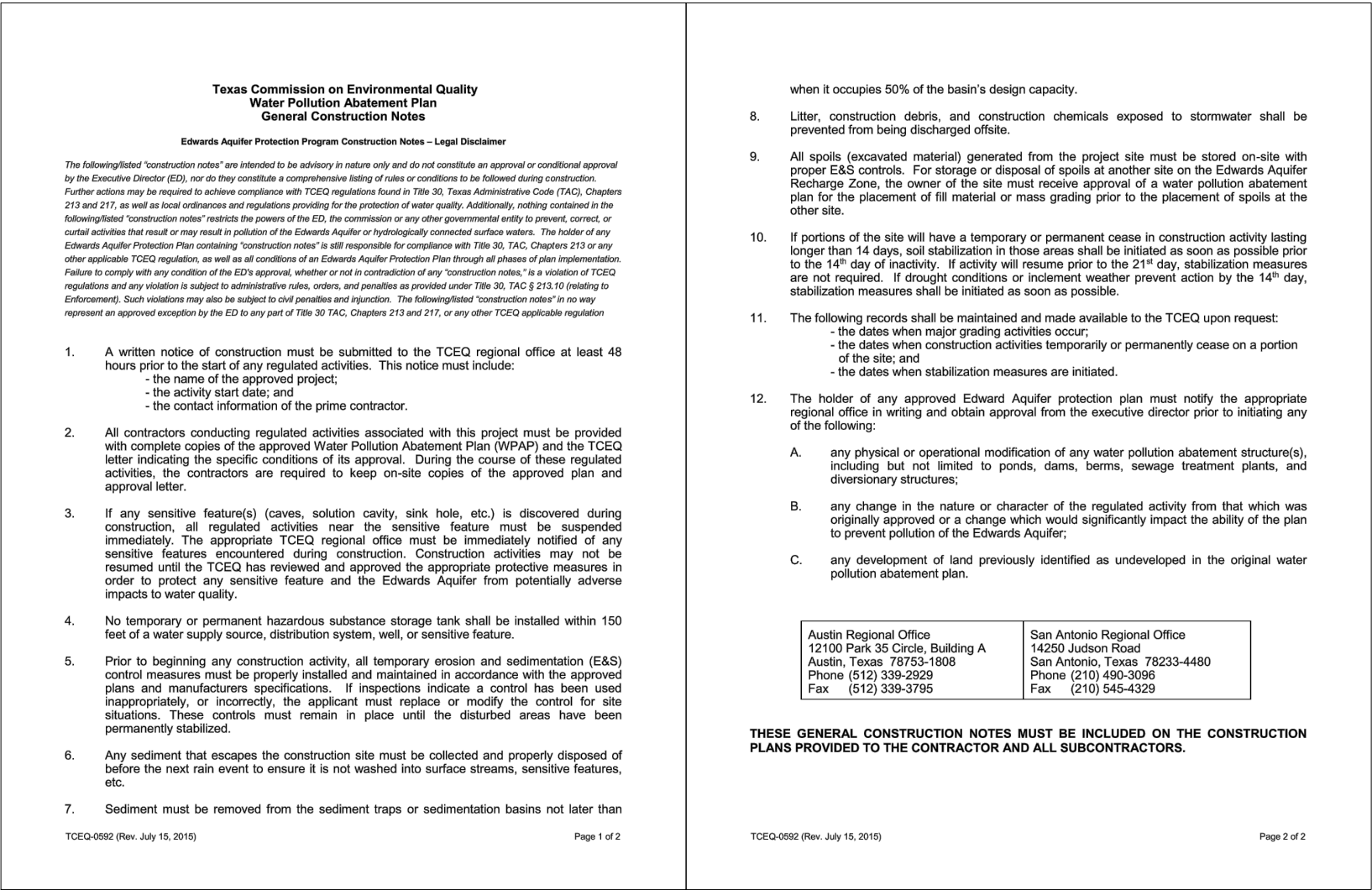
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 Last Modified: Jan. 29, 25 - 16:22
 Plot Date/Time: Feb. 04, 25 - 17:50:25

1. 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 BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATION 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.
2. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" CONCRETE AND MEET THE REQUIREMENTS OF THE COMPREHENSIVE SPECIFICATIONS FOR CONCRETE.
3. REFERENCE DRAWING DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND GINNGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GRANT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW ORLEANS SHALL GRANT A CURB INLET.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE ASHTO M70 CLASS III RCP.
8. WORK SHALL BE PERFORMED WITHIN THE SITES LIMITS OF CONSTRUCTION.
9. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED TOPSOIL.
10. CONTRACTOR WILL BE RESPONSIBLE FOR MEETING TESTING REQUIREMENTS TO SATISFY CITY OF NEW ORLEANS INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AND HYDROLOGICALLY ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
12. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMITS DIVISION, THE DESIGN ENGINEER SHALL BE REQUIRED TO OBTAIN THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
13. ALL CONCRETE LINING SHALL BE A MINIMUM 18 IN SIX (6) INCHES THICK AND CONCRETE WITH NO. 4 BARS OR 18 IN SIX (6) INCHES THICK FOR EACH RAY OR WELDED WIRE FABRIC OF 6" x 6"-WIDE x W/6". THE DEPTH OF ALL TODEOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES FOR SIDE SLOPE.
14. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0(YIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
15. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF NEW ORLEANS SPECIFICATIONS.
16. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.

BREAKDOWN OF TSS BEING TREATED BY PERMANENT BMP'S							
PROPOSED BMP	DRAINAGE AREA TO BMP	IMPERVIOUS COVER TO BPM	BMP EFFICIENCY	F	REQUIRED TSS TO BE TREATED (LBS)	TSS BEING REMOVED BY BMP (LBS)	ACTUAL TSS BEING REMOVED BY BMP (LBS)
BATCH DETENTION 'A1'	14.80 ACRES	3.21 ACRES	91%	0.88	2,881 LBS	3,523 LBS	3,100 LBS
VEGETATIVE FILTER STRIP 'A2'	0.5 ACRES	0.22 ACRES	85%	1.0	197 LBS	218 LBS	218 LBS
VEGETATIVE FILTER STRIP 'A3'	0.6 ACRES	0.25 ACRES	85%	1.0	224 LBS	248 LBS	248 LBS
VEGETATIVE FILTER STRIP 'B1'	2.6 ACRES	1.13 ACRES	85%	1.0	1014 LBS	1119 LBS	1119 LBS
VEGETATIVE FILTER STRIP 'C1'	0.8 ACRES	0.34 ACRES	85%	1.0	305 LBS	337 LBS	337 LBS
VEGETATIVE FILTER STRIP 'C2'	0.8 ACRES	0.34 ACRES	85%	1.0	305 LBS	337 LBS	337 LBS
UNTREATED	10.9 ACRES	0.5 ACRES	--	--	449 LBS	0 LBS	0 LBS



- | | |
|--------|---------------------------------------|
| | EXISTING CONTOUR |
| | PROPOSED CONTOUR |
| | FLOW ARROWS |
| | ROCK BERM |
| | TEMP. SPOILS & STORAGE AREA |
| | CONCRETE TRUCK WASHOUT PIT |
| | CONSTRUCTION ENTRANCE |
| LOC'SF | LIMITS OF CONSTRUCTION/
SILT FENCE |
| | INLET PROTECTION |
| | VEGETATIVE FILTER STRIPS |



EMERGENCY OVERFLOW
WEIR CALCULATION

$Q_{CAP} = C \cdot L \cdot H^{3/2}$
 $L = 50'$
 $H = 1.0'$
 $C = 2.6$
 $Q_{CAP} = 2.6 \cdot 50 \cdot 1.0^{3/2}$
 $Q_{CAP} = 130.0 \text{ CFS}$
 $Q_{100} = 56.0 \text{ CFS}$
 $130.0 \text{ CFS} > 56.0 \text{ CFS} = \text{OK}$

CAUTION:

CONTRACTOR TO NOTIFY TEXAS
ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION
FOR UTILITY LINE LOCATE, CONTRACTOR SHALL VERIFY
HORIZONTAL AND DEPTH LOCATION OF ALL EXISTING UTILITIES
PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED
IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED
DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR
INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO
RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

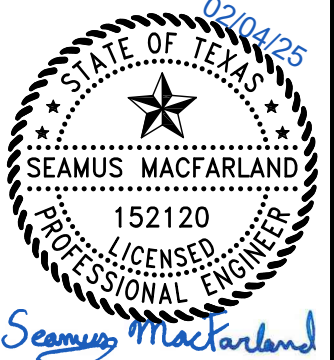


Know what's **below**.
Call before you dig.

RIVER'S EDGE SUBDIVISION

POND OUTFALL

REVIEWS		NO.	DESCRIPTION	BY	DATE
DATE:	2/4/2025				
DESIGNED BY:					
DRAWN BY:					
CHECKED BY:	RG				
DRAWING NAME:					
sh. Pond Outfall.dwg					

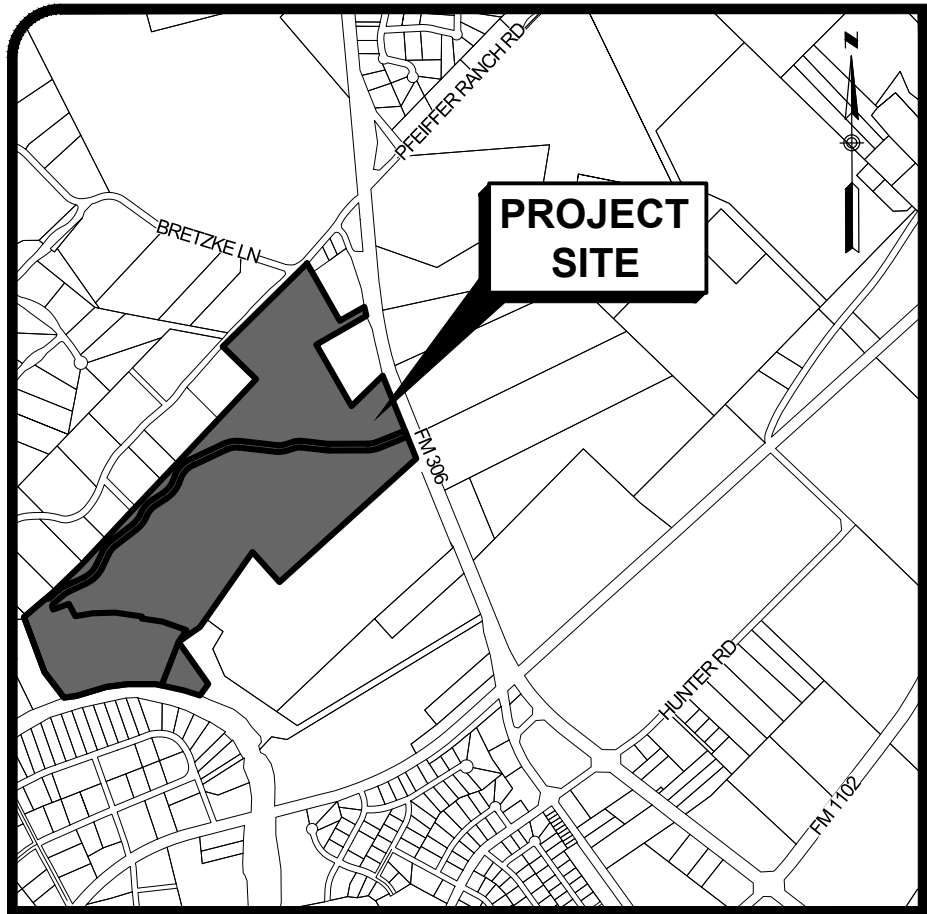


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Suite 300
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Phone 210.503.2700
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TRPF No. F-1386

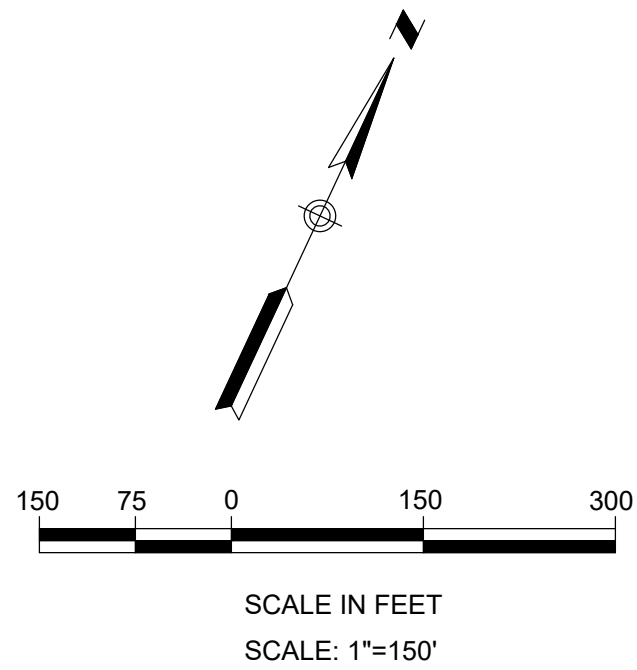
JOB NUMBER:
A292-426

SHEET NO.

6



LOCATION MAP
N.T.S.



LEGEND

- AREA (BASIN) ACREAGE
- EXISTING CONTOUR
- PROPOSE CONTOUR
- DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION PATH
- FLOW ARROWS
- PROPOSED BOUNDARY
- EXISTING LOT LINES
- REFERENCE POINT



RATIONAL METHOD DRAINAGE AREA CALCULATION SHEET																					
DRAINAGE AREA	2-YRS					10-YRS				25-YRS				50-YRS				100-YRS			
	TOTAL ACRES	GRASS AREA GOOD CONDITION 2-7%	DEVELOPED ASPHALTIC	DEVELOPED CONCRETE	TOTAL	GRASS AREA GOOD CONDITION 2-7%	DEVELOPED ASPHALTIC	DEVELOPED CONCRETE	TOTAL	GRASS AREA GOOD CONDITION 2-7%	DEVELOPED ASPHALTIC	DEVELOPED CONCRETE	TOTAL	GRASS AREA GOOD CONDITION 2-7%	DEVELOPED ASPHALTIC	DEVELOPED CONCRETE	TOTAL	GRASS AREA GOOD CONDITION 2-7%	DEVELOPED ASPHALTIC	DEVELOPED CONCRETE	TOTAL
AC	0.29	0.73	0.75		0.35	0.81	0.83		0.39	0.86	0.88		0.42	0.9	0.92		0.46	0.95	0.97		
Runoff Coefficients Referenced from City of New Braunfels DCM Table 4.1																					
Ultimate																					
UNCAPTURED	10.90	10.40	0.00	0.50	0.31	10.40	0.00	0.50	0.37	10.40	0.00	0.50	0.41	10.40	0.00	0.50	0.44	10.40	0.00	0.50	0.48
A1	14.80	11.59	0.98	2.23	0.39	11.59	0.98	2.23	0.45	11.59	0.98	2.23	0.49	11.59	0.98	2.23	0.53	11.59	0.98	2.23	0.57
A2	0.50	0.28	0.22	0.00	0.48	0.28	0.22	0.00	0.55	0.28	0.22	0.00	0.60	0.28	0.22	0.00	0.63	0.28	0.22	0.00	0.68
A3	0.60	0.35	0.25	0.00	0.47	0.35	0.25	0.00	0.54	0.35	0.25	0.00	0.59	0.35	0.25	0.00	0.62	0.35	0.25	0.00	0.66
B1	2.60	1.47	1.13	0.00	0.48	1.47	1.13	0.00	0.55	1.47	1.13	0.00	0.59	1.47	1.13	0.00	0.63	1.47	1.13	0.00	0.67
UG - B1	18.5	18.50	0.00	0.00	0.29	18.50	0.00	0.00	0.35	18.50	0.00	0.00	0.39	18.50	0.00	0.00	0.42	18.50	0.00	0.00	0.46
C1	0.8	0.46	0.34	0.00	0.48	0.46	0.34	0.00	0.55	0.46	0.34	0.00	0.59	0.46	0.34	0.00	0.62	0.46	0.34	0.00	0.67
UG-C1	9.9	9.90	0.00	0.00	0.29	9.90	0.00	0.00	0.35	9.90	0.00	0.00	0.39	9.90	0.00	0.00	0.42	9.90	0.00	0.00	0.46
C1+UG-C1	10.7	10.36	0.34	0.00	0.30	10.36	0.34	0.00	0.36	10.36	0.34	0.00	0.40	10.36	0.34	0.00	0.44	10.36	0.34	0.00	0.48
C2	0.8	0.46	0.34	0.00	0.48	0.46	0.34	0.00	0.55	0.46	0.34	0.00	0.59	0.46	0.34	0.00	0.62	0.46	0.34	0.00	0.67
UG-C2	9.9	9.90	0.00	0.00	0.29	9.90	0.00	0.00	0.35	9.90	0.00	0.00	0.39	9.90	0.00	0.00	0.42	9.90	0.00	0.00	0.46
C2+UG-C2	10.7	10.36	0.34	0.00	0.30	10.36	0.34	0.00	0.36	10.36	0.34	0.00	0.40	10.36	0.34	0.00	0.44	10.36	0.34	0.00	0.48
UG-A1	5.1	5.10	0.00	0.00	0.29	5.10	0.00	0.00	0.35	5.10	0.00	0.00	0.39	5.10	0.00	0.00	0.42	5.10	0.00	0.00	0.46

River's Edge Atlas14 Proposed Time of Concentration Table PA_NB																
Study Point	Drainage Area	Sheet Flow (max length = 150')					Shallow Concentrated Flow					Channel Flow			Total	Total
		n	L _f (ft)	P ₂ (in)	S _p %	T _c (min)	Paved/Unpaved	L _{sc} (ft)	S _{sc} %	k	T _{sc} (min)	L _c (ft)	V _f (ft/sec)	T _{ch} (min)	T _c (min)	Lag(min)
	A1	0.24	100	4.08	1.3	15.0	Unpaved	624	4.8	16.13	2.9	648	5	2.2	21.4	12.8
	UG-A1	0.24	150	4.08	1.3	20.0	Unpaved	247	3.9	16.13	1.3	861	5	2.9	29.9	17.9
	C1 + UG C1	0.24	150	4.08	2.6	15.7	Unpaved	1,031	3.5	16.13	5.7	0	5	0.0	28.4	17.0
	C2+UG-C2	0.24	150	4.08	3.5	14.0	Unpaved	844	1.6	16.13	6.9	0	5	0.0	20.9	12.5
Eq 5.4.1		$T_c = \frac{0.007(nL_f)^{0.8}}{(P_2)^{0.5} S_p^{0.5}}$					Eq 5.4.2					Eq 5.4.3			Eq 5.4	
							$T_{sc} = \frac{L_{sc}}{3600K S_{sc}^{0.5}}$					$T_{ch} = \frac{L_{ch}}{3600 \times V}$			$T_c = T_{sc} + T_{ch}$	

River's Edge Atlas14 Proposed Q Flow Table_PA_NB																	
Study Point	Drainage Area		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Intensity					Flow				
	Area(s)	A (ac.)	C ₂	C ₁₀	C ₂₅	C ₅₀	C ₁₀₀	I ₂ (in/hr)	I ₁₀ (in/hr)	I ₂₅ (in/hr)	I ₅₀ (in/hr)	I ₁₀₀ (in/hr)	Q ₂ (ft ³ /s)	Q ₁₀ (ft ³ /s)	Q ₂₅ (ft ³ /s)	Q ₅₀ (ft ³ /s)	Q ₁₀₀ (ft ³ /s)
	A1	14.80	0.39	0.45	0.49	0.53	0.57	3.53	5.18	6.23	7.05	7.93	20.3	34.7	45.6	55.0	66.8
	UG-A1	5.10	0.29	0.35	0.39	0.42	0.46	2.99	4.37	5.25	5.93	6.67	4.4	7.8	10.4	12.7	15.7
	C1 + UG C1	10.70	0.30	0.36	0.40	0.44	0.48	3.07	4.49	5.39	6.09	6.85	10.0	17.5	23.4	28.3	34.9
	C2+UG-C2	10.70	0.30	0.36	0.40	0.44	0.48	3.58	5.24	6.31	7.14	8.03	11.6	20.5	27.3	33.2	40.9
Eq 5.3.1		Q=CIA															

RIVER'S EDGE SUBDIVISION

PROPOSED DRAINAGE AREA MAP

DATE: 2/4/2025

DESIGNED BY: [Signature]

DRAWN BY: [Signature]

CHECKED BY: RG

DRAWING NAME: 24_Prop Drain.dwg

STATE OF TEXAS

SEAMUS MACFARLAND

152120

LICENSED PROFESSIONAL ENGINEER

Seamus Macfarland

LJA Engineering, Inc.

9830 Colomade Blvd

Suite 300

San Antonio, Texas 78230

Phone 210.503.2700

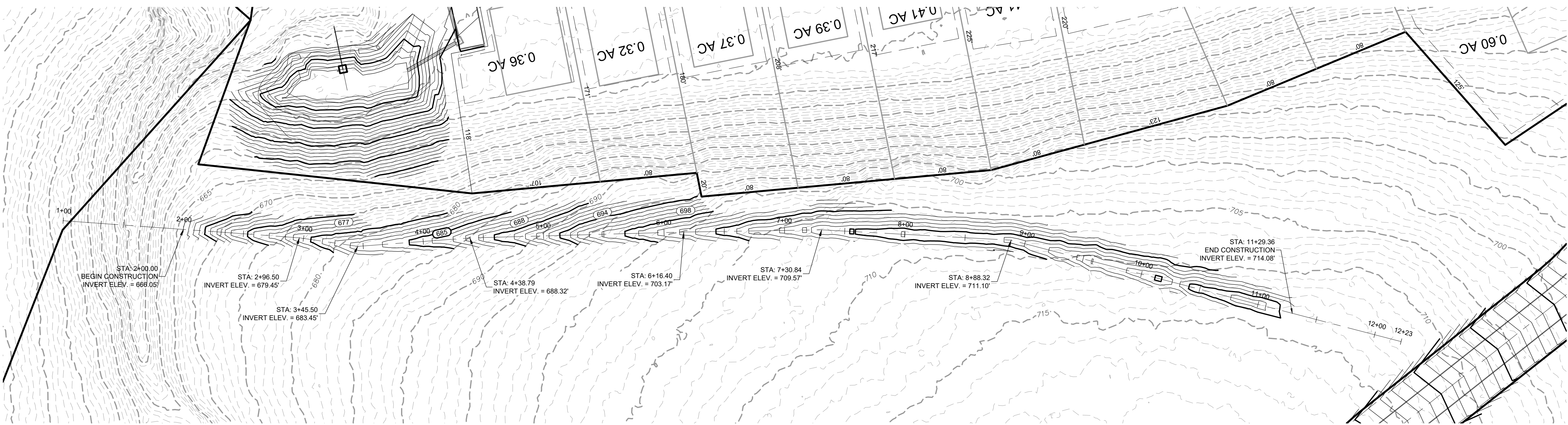
LJA.COM

TBPE No. F-1386

JOB NUMBER: A292-426

SHEET NO. 7

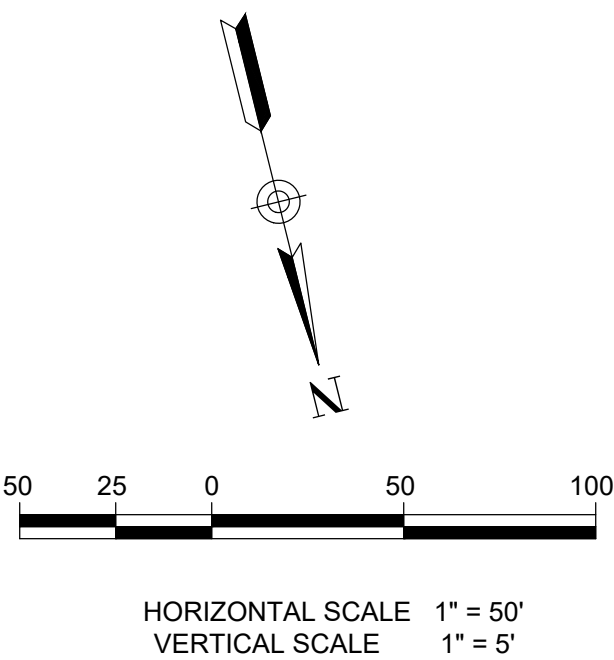
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User: smcintione
Last Modified: Nov 18, 24 - 07:54
Plot Date/Time: Nov 24, 24 - 11:52:21



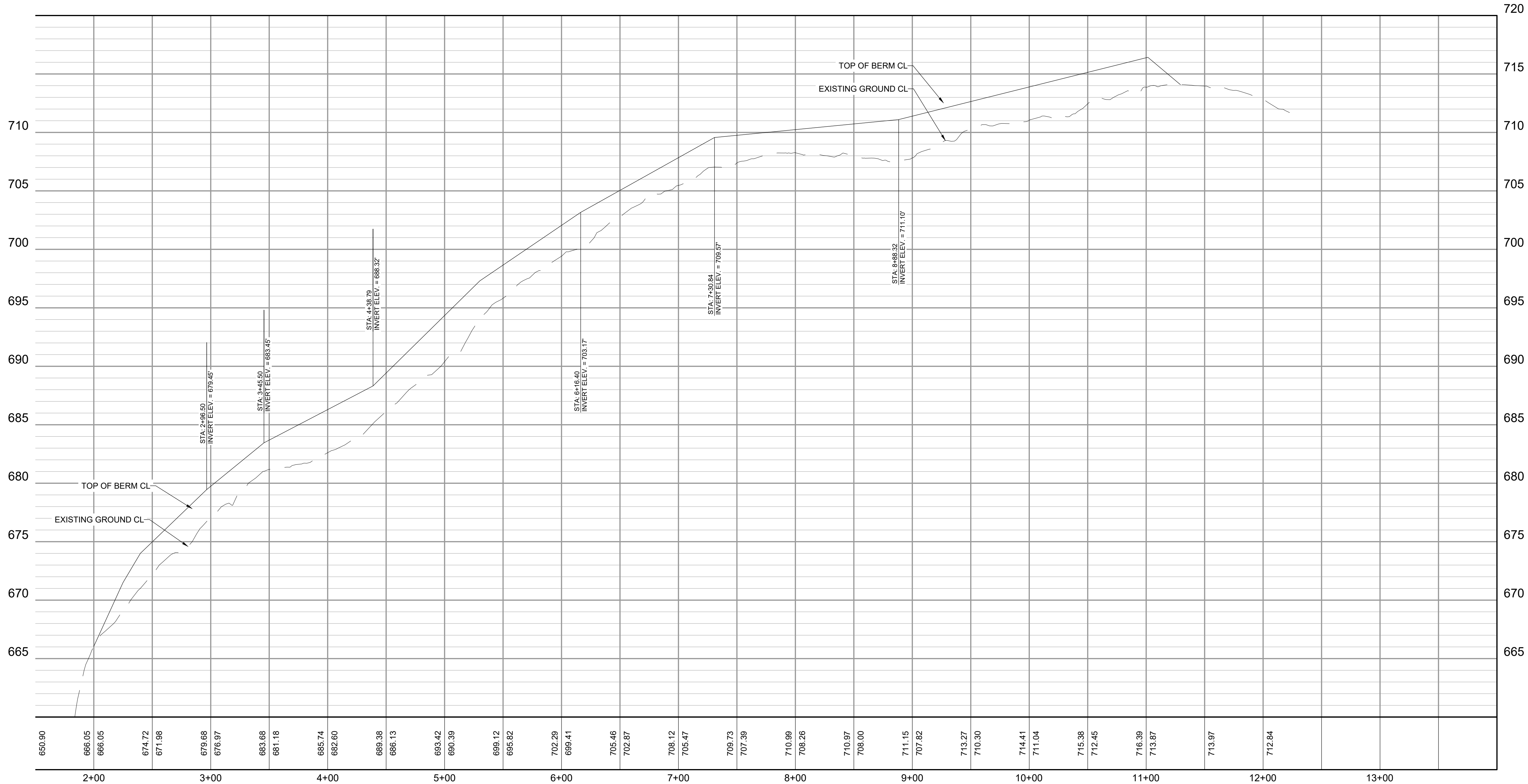
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	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
	BUILDING SETBACK LINE
	EASEMENT
	LEFT
	RIGHT

GENERAL NOTES:

- ALL CONCRETE LINING SHALL BE A MINIMUM OF FIVE (5) INCHES THICK AND REINFORCED WITH NO. 4 ROUND BARS @ 18 INCHES ON CENTER EACH WAY. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN THREE THOUSAND (3000) POUNDS PER SQUARE INCH IN TWENTY EIGHT (28) DAYS. THE DEPTH OF ALL TOEDOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES OF SIDE SLOPES.
- IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
- REFER TO SHEETS 12 - 13 FOR DRAINAGE DETAILS.



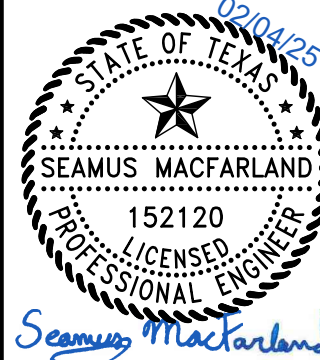
RIVER'S EDGE DIVERSION BERM STA 1+00 TO END



RIVER'S EDGE SUBDIVISION
RIVER'S EDGE DIVERSION BERM
STA 1+00 TO END PLAN & PROFILE

REVISIONS		DATE	BY
NO.	DESCRIPTION		

DATE:	2/4/2025
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	RG
DRAWING NAME:	th Off Site Channel.dwg



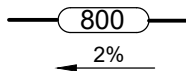

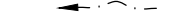




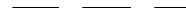






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LJA.COM
TBPE No. F-1386

JOB NUMBER:
A292-426

SHEET NO.
10

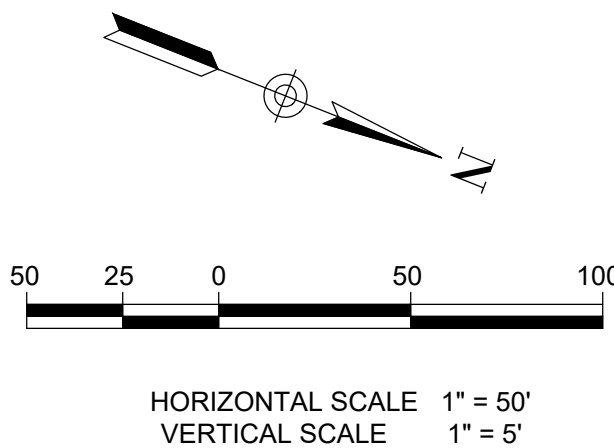


LEGEND

	PROPOSED CONTOUR
	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
	BUILDING SETBACK LINE
	EASEMENT
	LEFT
	RIGHT

GENERAL NOTES:

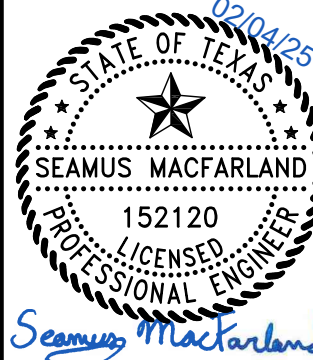
1. ALL CONCRETE LINING SHALL BE A MINIMUM OF FIVE (5) INCHES THICK AND REINFORCED WITH NO. 4 BARS @ 18 INCHES ON CENTER EACH WAY. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN THREE THOUSAND (3000) POUNDS PER SQUARE INCH IN TWENTY EIGHT (28) DAYS. THE DEPTH OF THE CHANNELS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES OF SIDE SLOPES.
2. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION. THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
3. REFER TO SHEETS 12 & 13 FOR DRAINAGE DETAILS.



RIVER'S EDGE SUBDIVISION
RIVER'S EDGE ENTRY CULVERT
STA 1+00 TO END PLAN & PROFILE

[illegible]

DATE: 2/4/2025
DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____ RG
DRAWING NAME: sh_Off-Site Channel.dwg



9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

JOB NUMBER:
A292-426

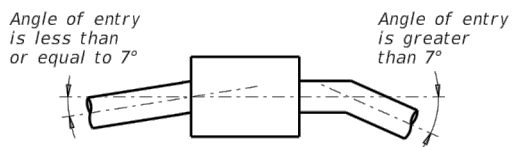
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DATE:

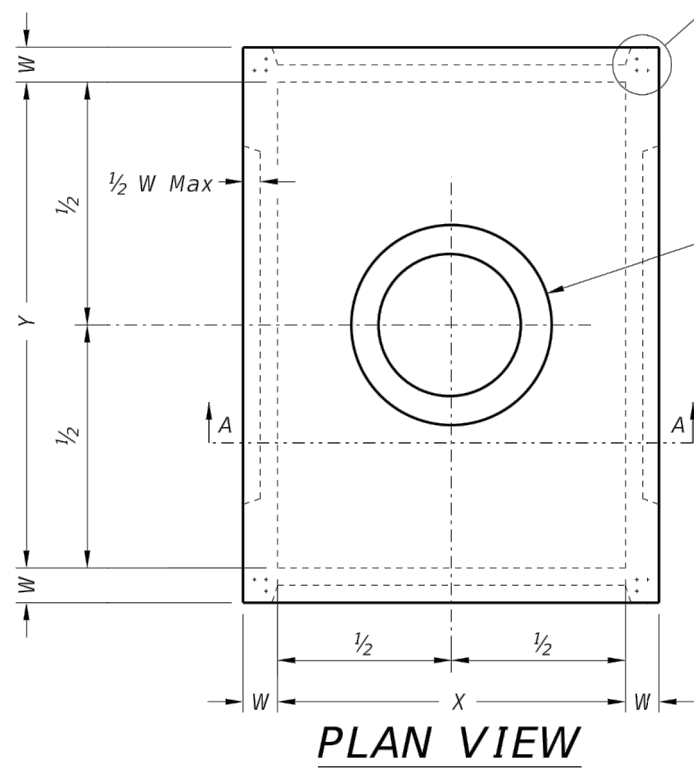
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DISCLAIMER: This drawing is prepared by the Texas Engineering Practice Act. The user shall be responsible for the accuracy of the information provided. The user shall be responsible for the accuracy of the information provided. The user shall be responsible for the accuracy of the information provided.

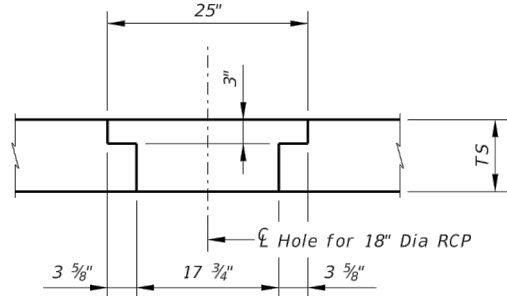


PIPE CONNECTION DETAIL

Connect pipes within 7' of normal to PJB wall.
If necessary, use pipe elbow or curved approach
alignment to stay within this limit.



DETAIL "B"



(3) VERTICAL REBAR IN BASE & RISERS
#4 @ 2" O.C. EACH CORNER
2" TO CORNER

Hole in below grade slab,
when required. See
Fabrication Note 10.

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.
10. Provide hole in below grade slab only when PJB is installed with inlet type POD.

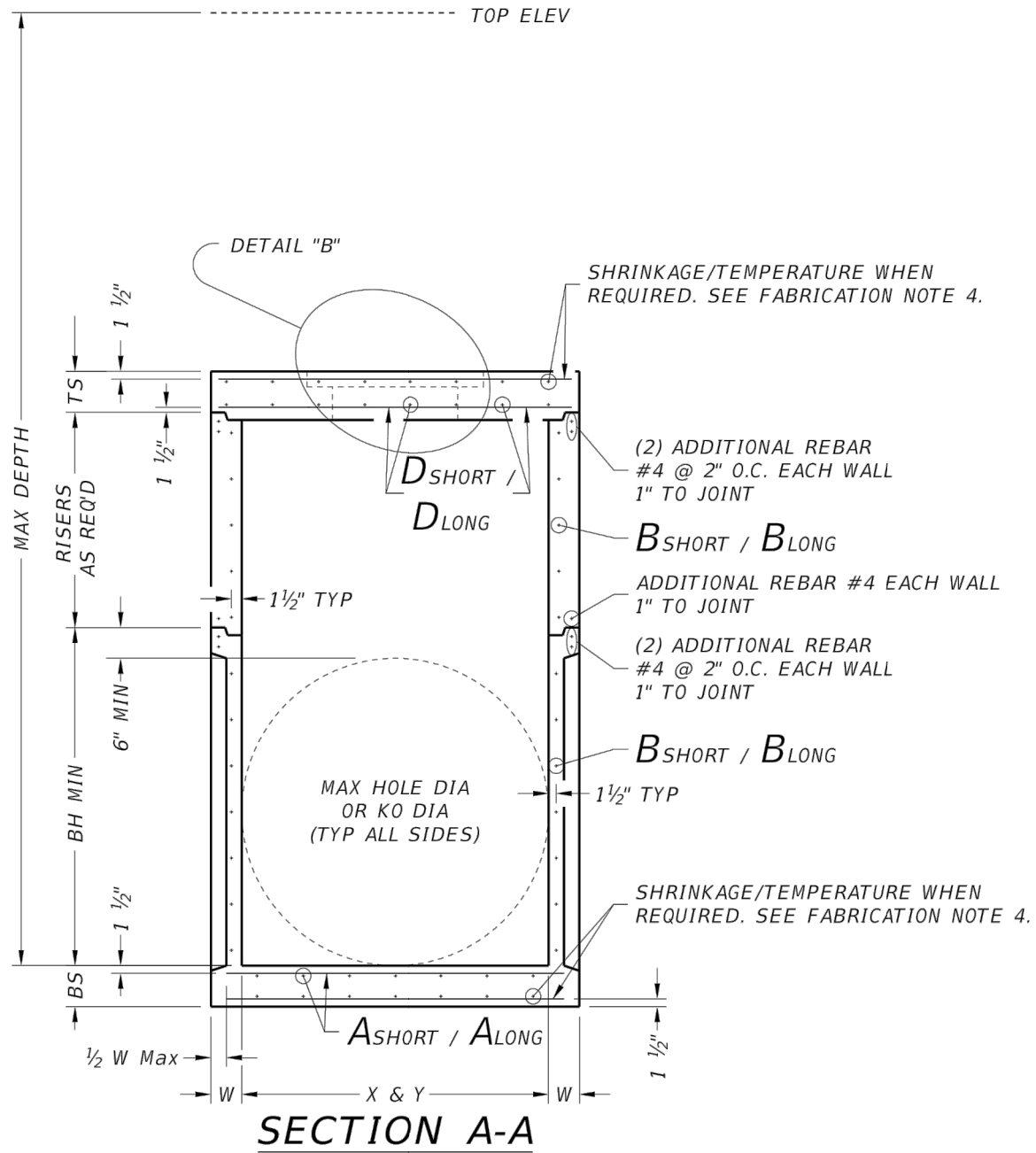
INSTALLATION NOTES:

1. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to junction box.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for junction box is per Item 465 "Junction Boxes, Manholes, and Inlets" by type and size.

SECTION A-A



Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING



PRECAST JUNCTION BOX

PJB

File: 15-PJB-20.dwg	Rev: T100T	Rev: T100T	Rev: T100T	Rev: T100T
CT100T February 2020	DATE	BY	JOB	ISSUED
REVISIONS	DATE	BY	JOB	ISSUED
DATE	BY	JOB	COUNTY	SHEET NO.

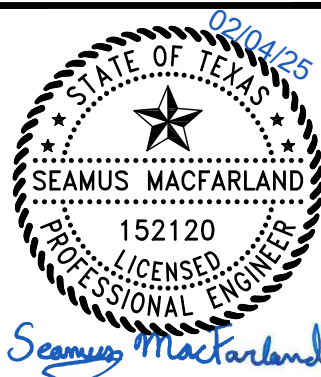
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER:
A292-426

SHEET NO.

12



DATE: 2/4/2025
DESIGNED BY:
DRAWN BY:
CHECKED BY: RG
DRAWING NAME: 30 Drainage Details.dwg

REVISIONS

NO.	DESCRIPTION	BY	DATE

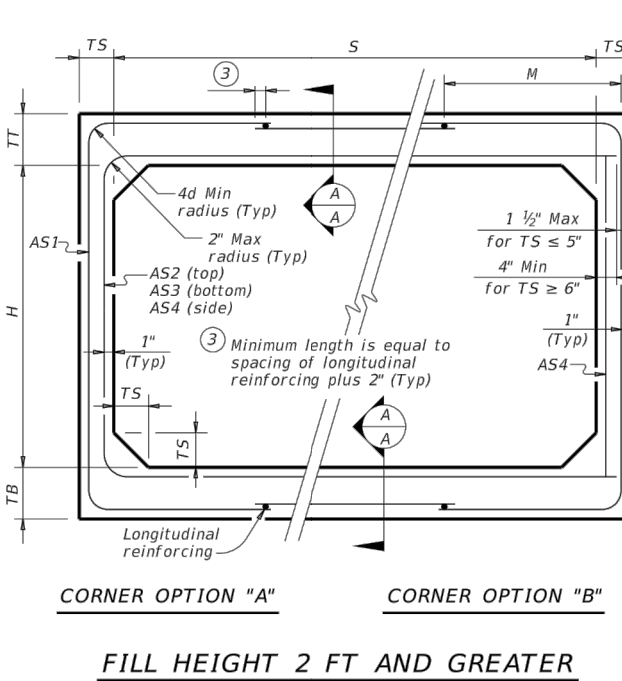
RIVER'S EDGE SUBDIVISION

DRAINAGE DETAILS (SHEET 2 OF 2)

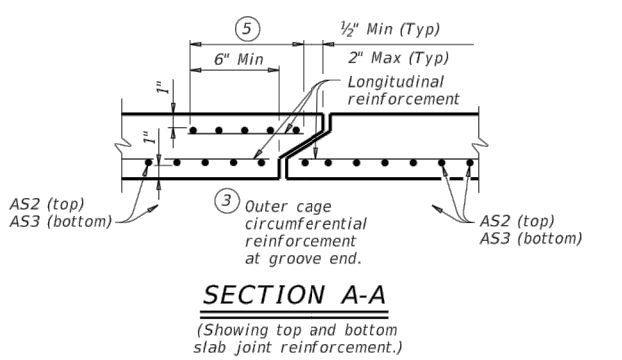
BOX DATA

SECTION DIMENSIONS					Fill Height	H	REINFORCING (sq. in. / ft.) ^②							①
S	H	TT	TB	TS	(ft.)	(ft.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	
(ft.)	(ft.)	(in.)	(in.)	(in.)	(ft.)	(in.)							(feet)	
3	2	7	6	4	< 2	-	0.17	0.25	0.16	0.10	0.17	0.17	3.3	
3	2	4	4	4	2 < 3	31	0.13	0.19	0.16	0.10	-	-	2.4	
3	2	4	4	4	3 - 5	31	0.10	0.11	0.12	0.10	-	-	2.4	
3	2	4	4	4	10	31	0.10	0.10	0.10	0.10	-	-	2.4	
3	2	4	4	4	15	31	0.10	0.13	0.13	0.10	-	-	2.4	
3	2	4	4	4	20	31	0.11	0.17	0.17	0.10	-	-	2.4	
3	2	4	4	4	25	31	0.14	0.21	0.21	0.10	-	-	2.4	
3	2	4	4	4	30	31	0.17	0.25	0.25	0.10	-	-	2.4	
3	2	4	4	4	35	31	0.20	0.29	0.30	0.10	-	-	2.4	

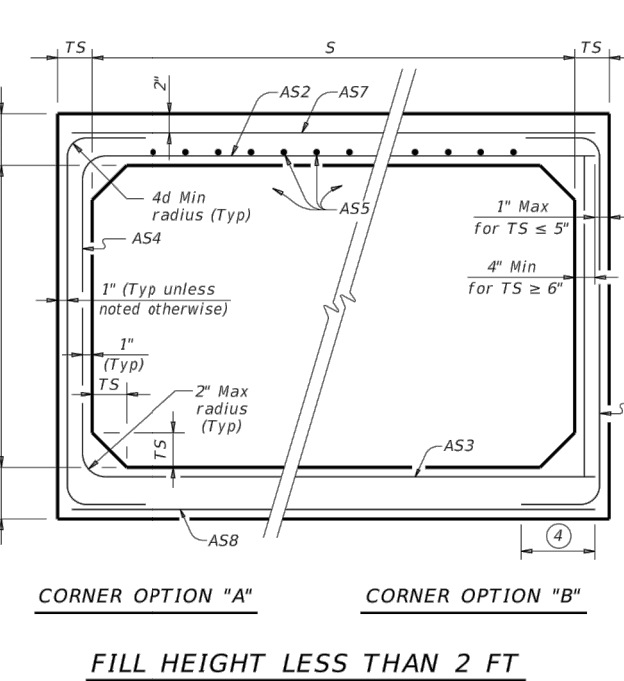
- ① For box length = 8'-0"
② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS3 is minimum required area of reinforcement per linear foot of box width.



FILL HEIGHT 2 FT AND GREATER



SECTION A-A
(Showing top and bottom slab joint reinforcement.)



FILL HEIGHT LESS THAN 2 FT

- ① Length is equal to spacing of longitudinal reinforcing plus 2" (10" Min) (Typ)

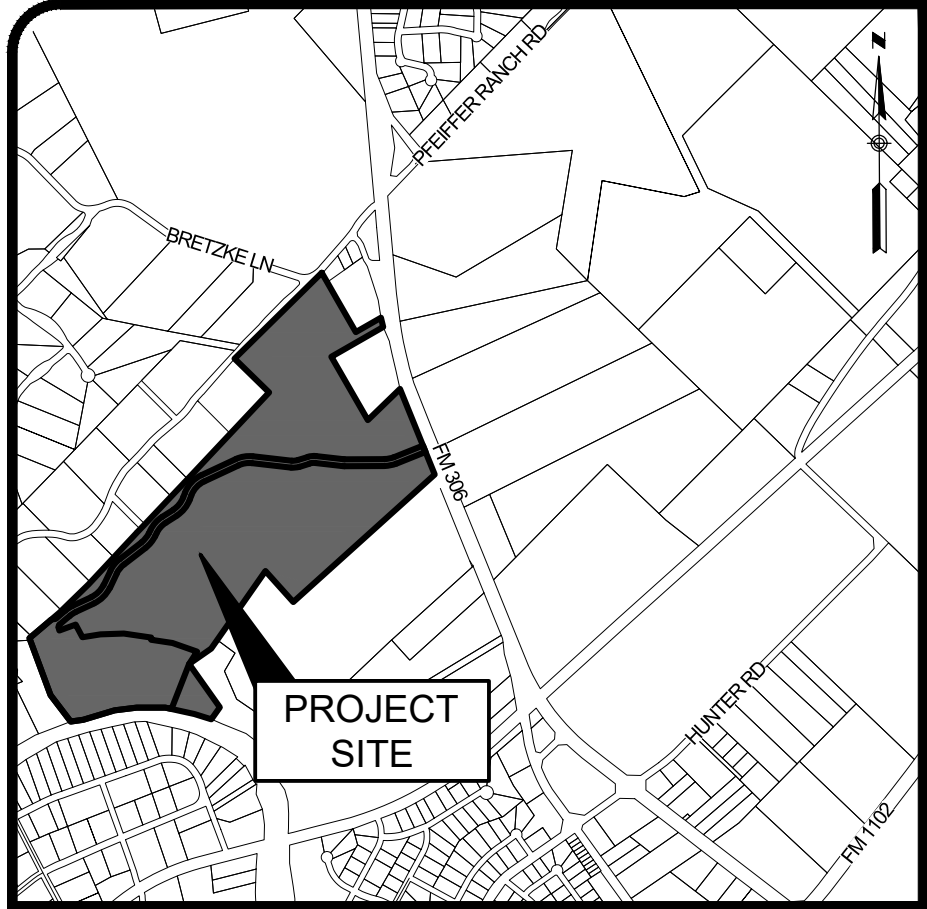
MATERIAL NOTES:
Provide 6.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class II concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members Fabrication".

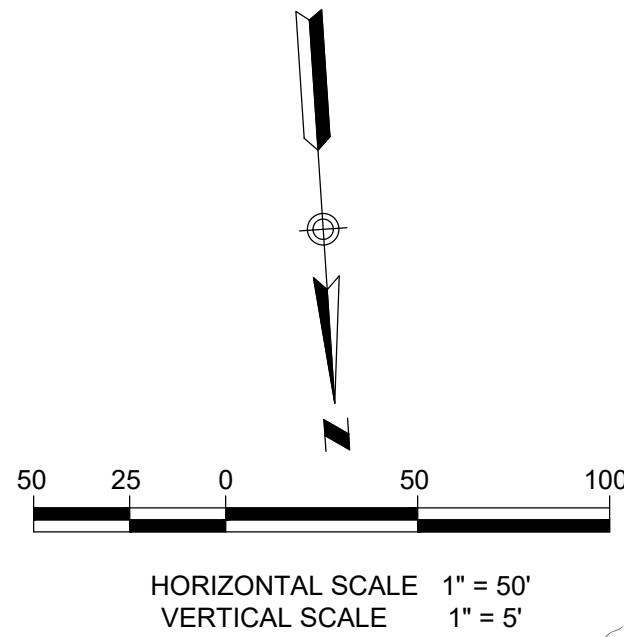
HLB3 LOADING
TEXAS DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION STANDARD
SINGLE BOX CULVERTS
PRECAST
3'-0" SPAN

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12	1/2007	February 2020	12	1/2007	February 2020	12	1/20



LOCATION MAP
N.T.S.



NOTE:

1. ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS SHALL HAVE A REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (R/P) INSTALLED PRIOR TO PLACEMENT OF METER. ALL NEW FACILITIES ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE LATEST NBU BACKFLOW POLICY.
2. ALL GATE VALVES 16" AND SMALLER SHALL BE RESILIENT SEATED GATE VALVES.
3. FOR PAVEMENT DESIGN SEE GEOTECHNICAL ENGINEERING REPORT.
4. MINIMUM DEPTH OF COVER FOR WATER LINES SHALL BE 42".

NBU PRESSURE ZONE:

PROPOSED WATER MAIN IS WITHIN NBU "TEXAS" PRESSURE ZONE.

NEW BRAUNFELS UTILITIES NOTES

1. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS.

LEGEND

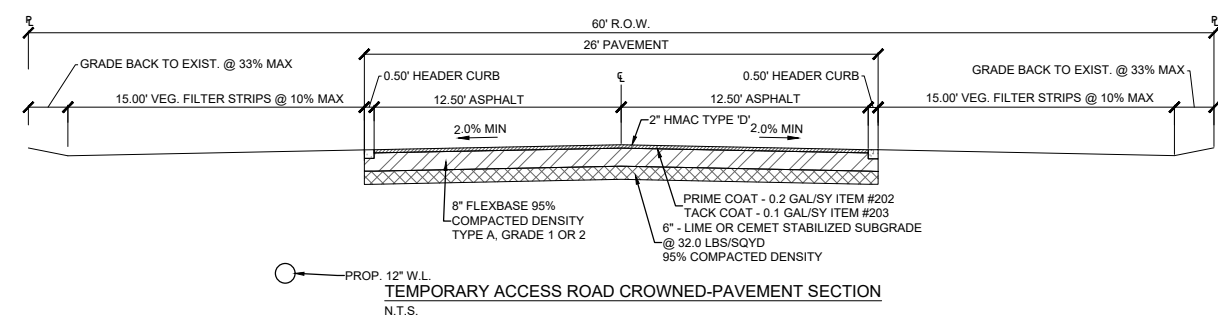
PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
		SINGLE WATER SERVICE
		AIR RELEASE VALVE
		GATE VALVE
		WATER VALVE
		WATERLINE ECCENTRIC REDUCER
		WATER METER
		FIRE HYDRANT
		WATERLINE CONCRETE ENCASEMENT
		STEEL WATERLINE CASING
		WATER METER
		GAS VALVE
		GAS LINE
		STORM SEWER MANHOLE
		DRAINAGE STRUCTURE
		POWER POLE
		TELECOM
		GUY WIRE
		OVERHEAD ELECTRIC
		SIGNAGE
		BENCHMARK
		BUILDING PAD
		DRIVEWAY
		TOP OF MANHOLE EXISTING
		GAS, ELEC, TELE & CABLE TV ESM.T.
		EASEMENT
		VOL
		PG
		FUTURE GROUND
		FLOW LINE
		CLEARANCE
		EDGE OF PAVEMENT
		GUARD RAIL

CITY OF NEW BRAUNFELS NOTES

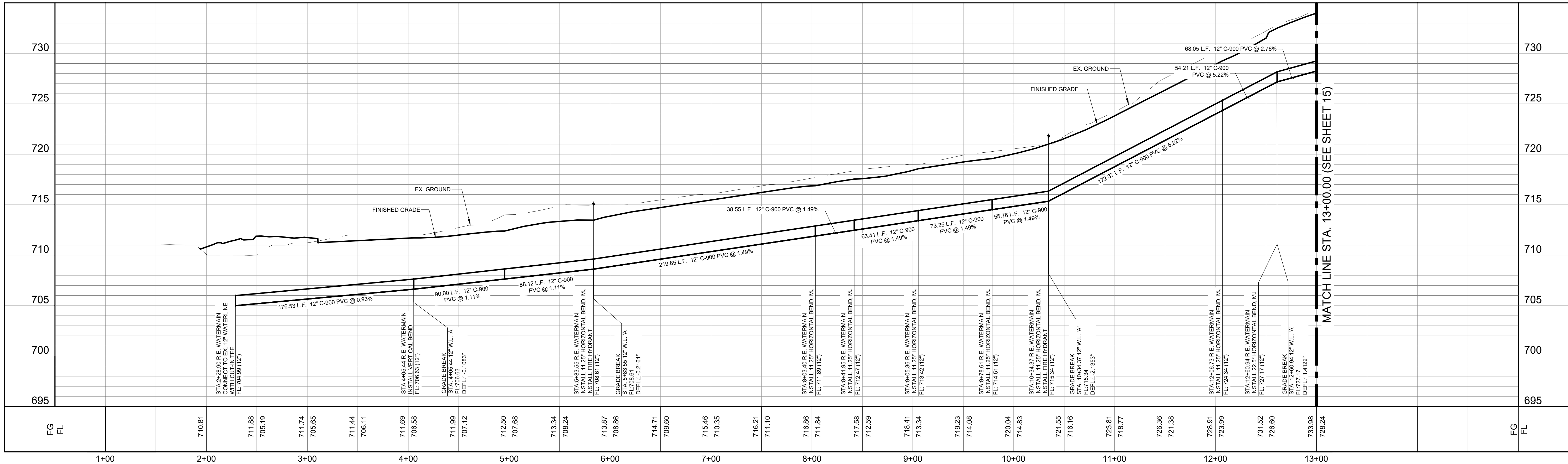
1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5'-FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
4. UTILITY TRENCH COMPACTION ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12) THICK. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM TESTS SHALL BE TAKEN EVERY 200 FT FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

CAUTION:

CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.



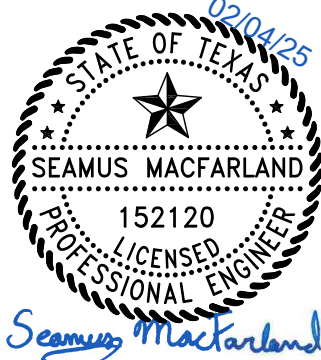
WATER LINE STA. 1+00 TO STA. 13+00



RIVER'S EDGE SUBDIVISION

WATER LINE PLAN & PROFILE
STA. 1+00 TO STA. 13+00

REVISIONS	DESCRIPTION	DATE	BY
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24/2/2025	DESIGNED BY: NB		
	DRAWN BY: NE / MAP		
	CHECKED BY: RG		
	DRAWING NAME: st_Vaterline P&P.dwg		



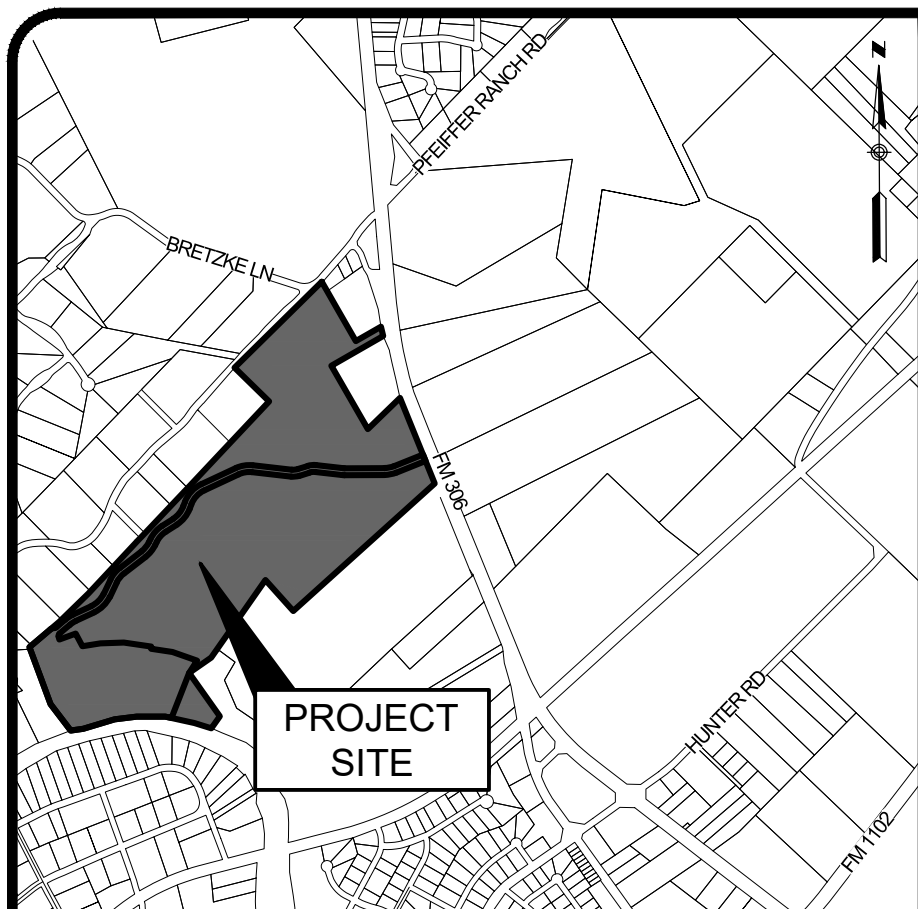
Phone 210.503.2700
JLA.COM
Suite 300
San Antonio, Texas 78230

JLA Engineering, Inc.

JOB NUMBER:
A292-426

SHEET NO.

14

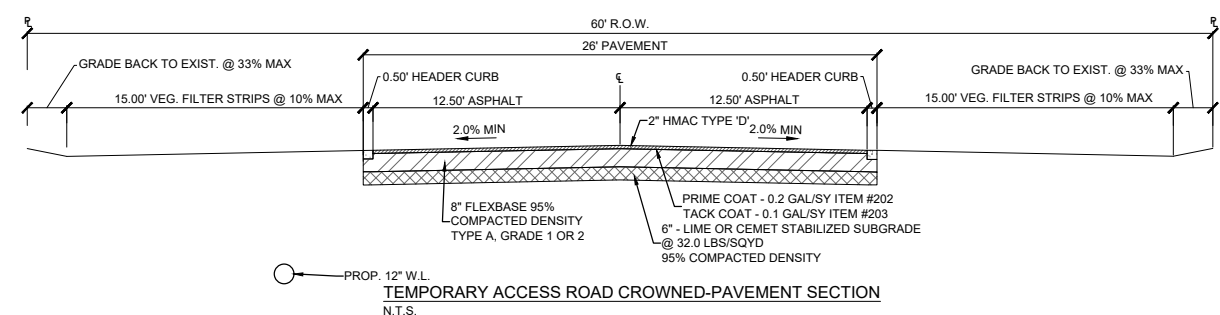


LOCATION MAP

N.T.S.

CITY OF NEW BRAUNFELS NOTES

- 1 NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITH CURBS, SIDEWALKS, OR DRIVEWAYS.
- 2 ALL UTILITIES TO BE CONSTRUCTED PRO TO STREETS.
- 3 THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5 FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGES AND THE METHODS FOR DEEP TRENCHES ARE DIFFERENT. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
- 4 UTILITY TRENCH COMPACTION ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE OWNER'S GEOTECHNICAL ENGINEER. THE UTILITY TRENCHES SHALL BE PLACED IN LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM FILL THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATOR AND EQUIPMENT TO COMPACT TO A MINIMUM 90% DENSITY. TESTED FOR DENSITY AND MOISTURE IN THE 14-16" TO 14-18" DEPTH RANGE. THE UTILITY TRENCHES SHALL BE TESTED SHALL BE DETERMINED BY THE CITY OF NEW BRUNSWICK STREET INSPECTOR AT A DAILY RATE. THE UTILITY TRENCHES SHALL BE TESTED BY THE CITY OF NEW BRUNSWICK SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRUNSWICK STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. A DAILY RATE OF DENSITY TESTS SHALL BE SUBMITTED BY THE CITY OF NEW BRUNSWICK STREET INSPECTOR.



NOTE:

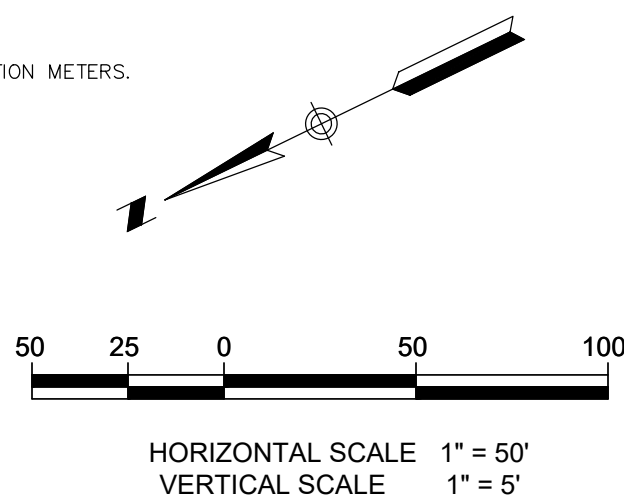
1. ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS SHALL HAVE A REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (R/P) INSTALLED PRIOR TO PLACEMENT OF METER. ALL NEW FACILITIES ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE LATEST NBU BACKFLOW POLICY.
2. ALL GATE VALVES 16" AND SMALLER SHALL BE RESILIENT SEATED GATE VALVES.
3. FOR PAVEMENT DESIGN SEE GEOTECHNICAL ENGINEERING REPORT.
4. MINIMUM DEPTH OF COVER FOR WATER LINES SHALL BE 42"

NBU PRESSURE ZONE:

PROPOSED WATER MAIN IS WITHIN NBU "TEXAS" PRESSURE ZONE.

NEW BRAUNFELS UTILITIES NOTES

1. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS



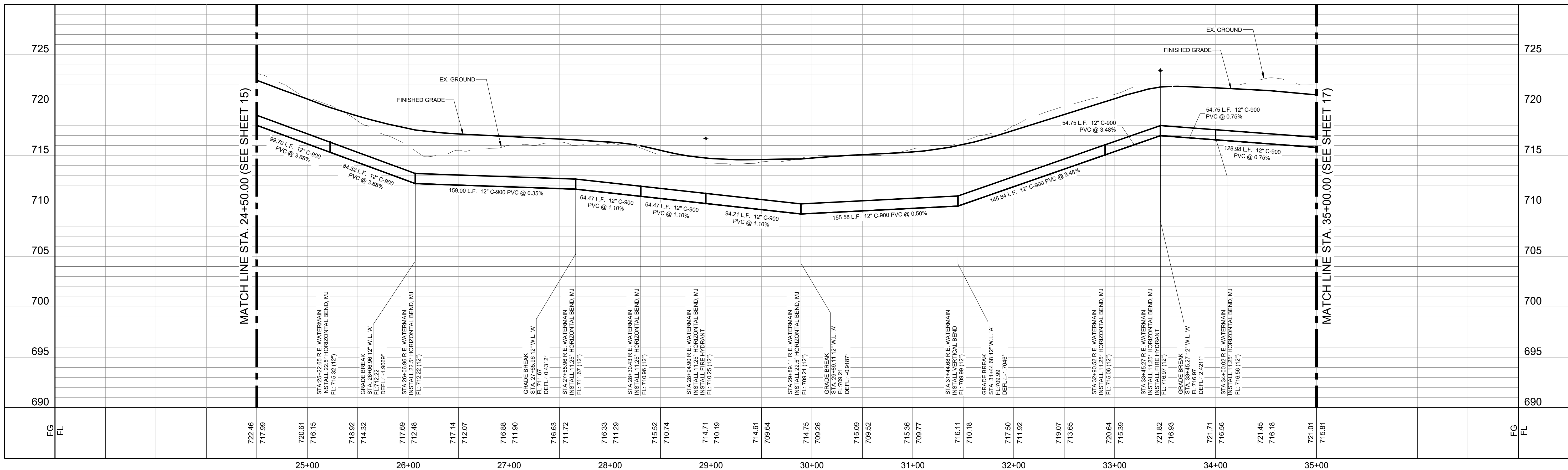
LEGEND

PROPOSED	EXISTING

CAUTION:

CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRE DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

WATER LINE STA. 24+50 TO STA. 35+00



RIVER'S EDGE SUBDIVISION

WATER LINE PLAN & PROFILE
STA. 24+50 TO STA. 35+00

STA. 24+50 TO STA. 35+00

DATE:		24/02/2025		REVISIONS			
DESIGNED BY:		NB		DESCRIPTION		BY	
DRAWN BY:		NB / MAP					
CHECKED BY:		RG					
DRAWING NAME							
3m, 1:100000 P&P (Aug)							

L7

LJA Engineering, Inc.

9830 Colonnade Blvd

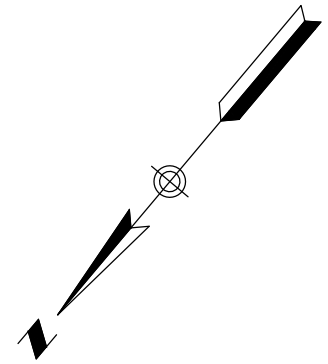
Suite 300
San Antonio, Texas 78205

Suite 300
San Antonio, Texas 78205

JOB NUMBER:

SHEET NO.

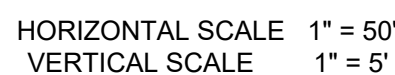
16



1. ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS SHALL HAVE A REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (R/P) INSTALLED PRIOR TO PLACEMENT OF METER. ALL NEW FACILITIES ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE LATEST NBU BACKFLOW POLICY.
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3. FOR PAVEMENT DESIGN SEE GEOTECHNICAL ENGINEERING REPORT.
4. MINIMUM DEPTH OF COVER FOR WATER LINES SHALL BE 42".

PROPOSED WATER MAIN IS WITHIN NBU "TEXAS" PRESSURE ZONE

1. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS.

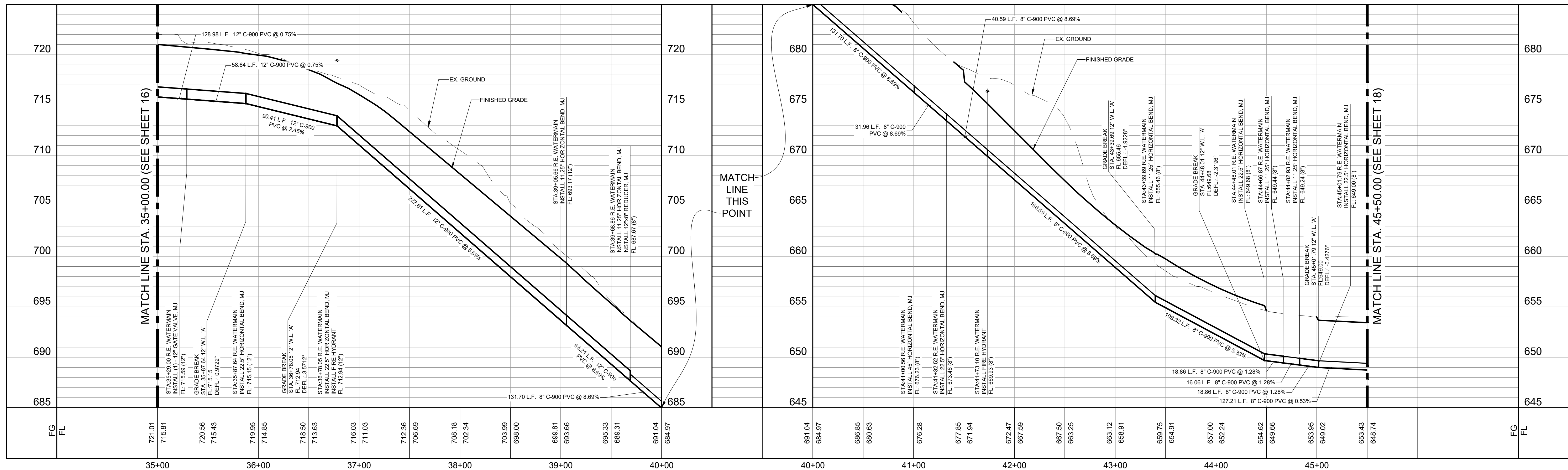
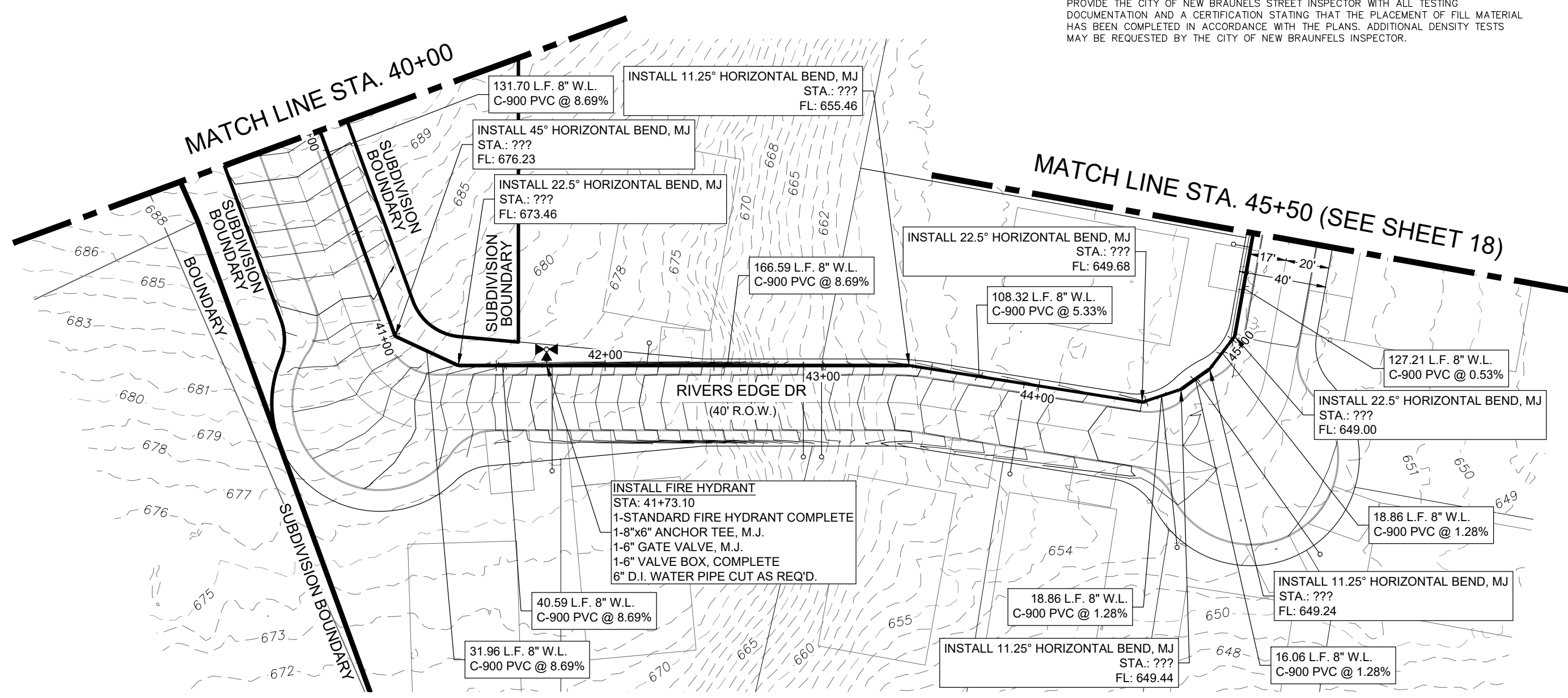
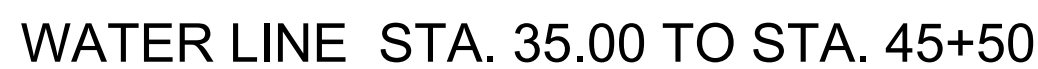


1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FOOT IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGE AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

4. UTILITY TRENCH COMPACTION ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12) THICK, DETERMINE THE MAXIMUM LIFT DEPTH BASED ON THE TYPE OF MATERIAL AND THE TYPE OF EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE TEX-114-E, TEX-115-E, THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRUNSWICK STREET INSPECTOR. AT A MINIMUM TESTS SHALL BE TAKEN EVERY 200 FT FOR EACH LIFT AND EVERY OTHER 100 FEET THEREAFTER UPON COMPLETION OF THE TRENCH. THE CITY SHALL PROVIDE THE CITY OF NEW BRUNSWICK STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL WAS COMPLETED TO THE REQUIRED DENSITY. THE REQUIRED DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRUNSWICK INSPECTOR.

LEGEND		
PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
		WATER LINE
		SINGLE WATER SERVICE
		AIR RELEASE VALVE
		GATE VALVE
		WATER VALVE
		WATERLINE ECCENTRIC REDUCER
		WATER METER
		FIRE HYDRANT
		WATERLINE CONCRETE ENCASEMENT
		STEEL WATERLINE CASING
		WATER METER
		GAS VALVE
		STORM SEWER MANHOLE
		DRAINAGE STRUCTURE
		POWER POLE
		TELECOM
		GUV WIRE
		OVERHEAD ELECTRIC
		SIGNAGE
		BENCHMARK
		BUILDING PAD / DRIVEWAY
		TOP OF MANHOLE
		EASEMENT
		GAS, ELEC, TELE & CABLE TV EASEMENT
		EASEMENT
		VOLUME
		FUTURE GROUND FLOOR LINE
		CLEAR LINE
		EDGE OF PAVEMENT
		GUARD RAIL

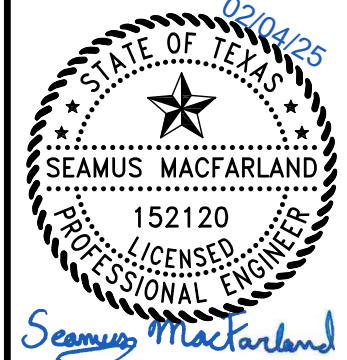
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.



RIVER'S EDGE SUBDIVISION

WATER LINE PLAN & PROFILE
STA. 35.00 TO STA. 45+50

REVISIONS					
NO.		DESCRIPTION	BY	DATE	
	DESIGNED BY:	NB			
	DRAWN BY:	NB / MAP			
	CHECKED BY:	RG			
DRAWING NAME: C-20, Unitarian P&P.dwg					



LJA Engineering, Inc.

9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

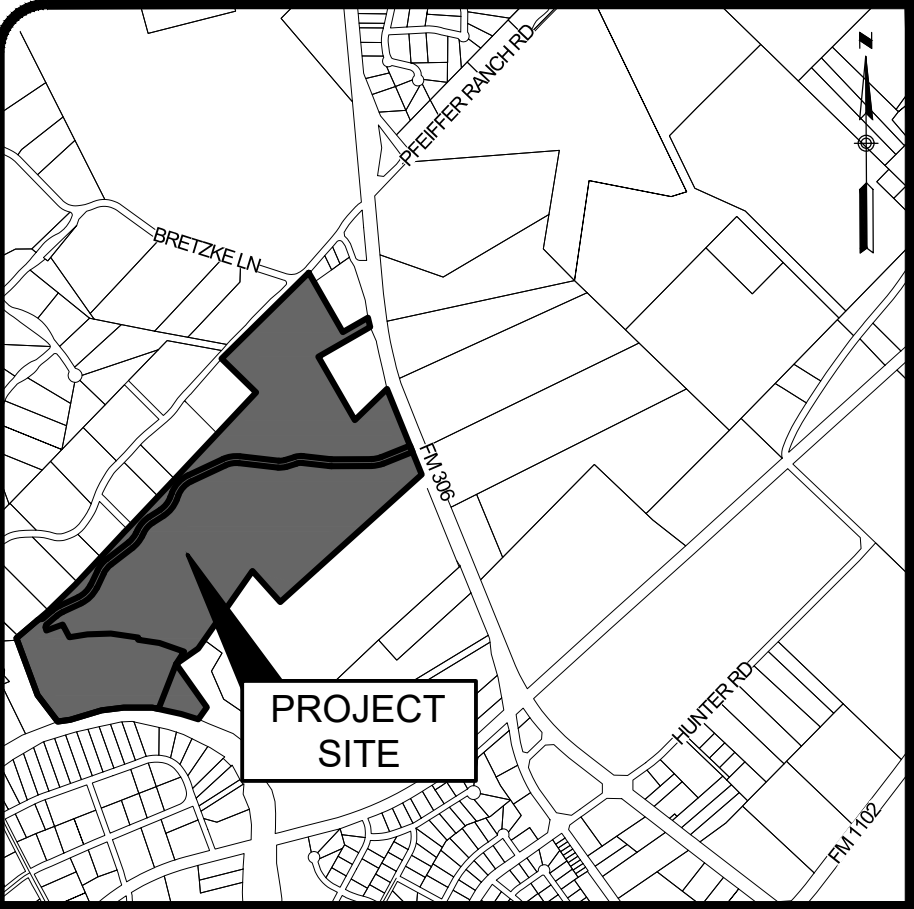
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

LJA

JOB NUMBER:

SHEET NO

17



LOCATION MAP
N.T.S.

CITY OF NEW BRAUNFELS NOTES

1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
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3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5- FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
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NOTE:

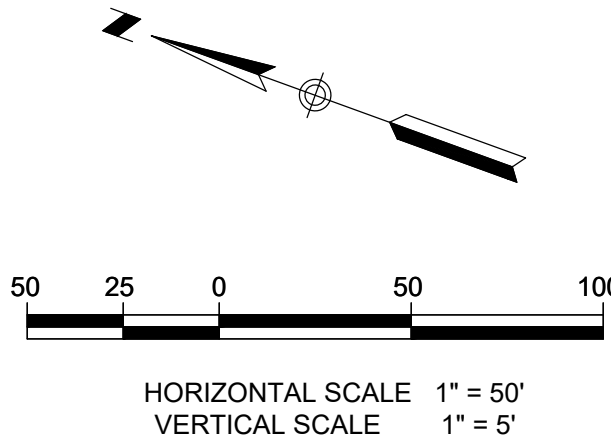
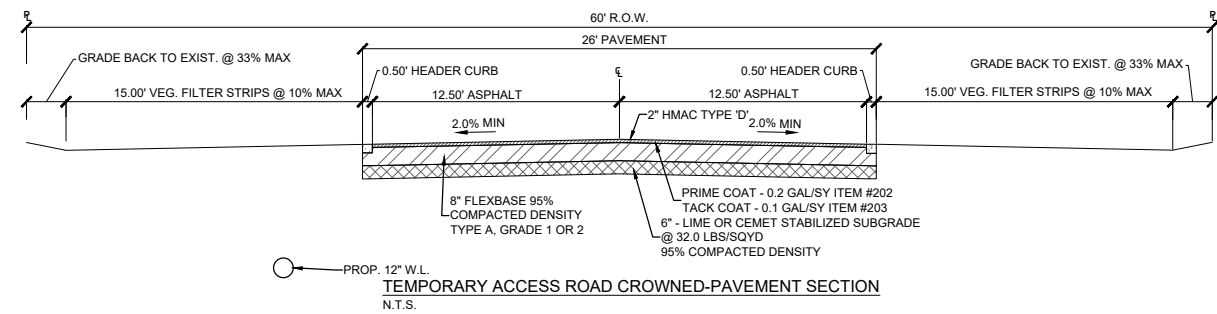
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2. ALL GATE VALVES 16" AND SMALLER SHALL BE RESILIENT SEATED GATE VALVES.
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4. MINIMUM DEPTH OF COVER FOR WATER LINES SHALL BE 42".

NBU PRESSURE ZONE:

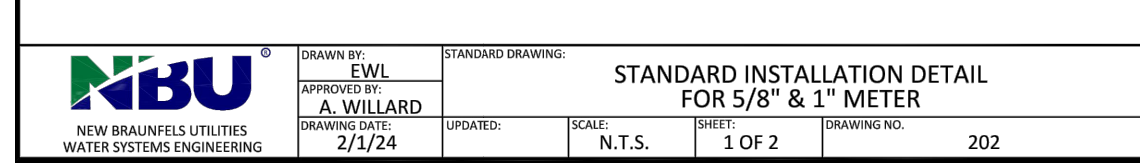
PROPOSED WATER MAIN IS WITHIN NBU "TEXAS" PRESSURE ZONE.


NEW BRAUNFELS UTILITIES NOTES

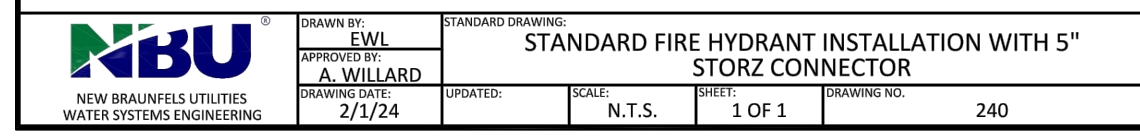
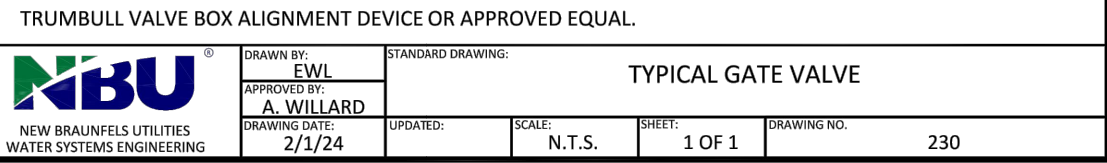
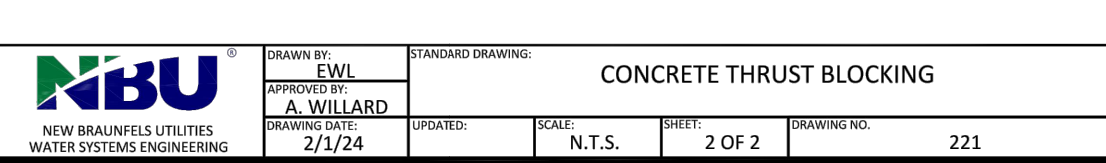
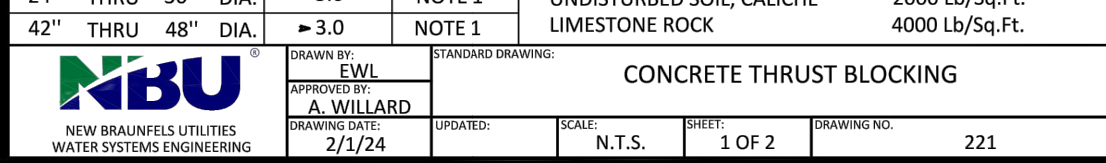
1. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS.




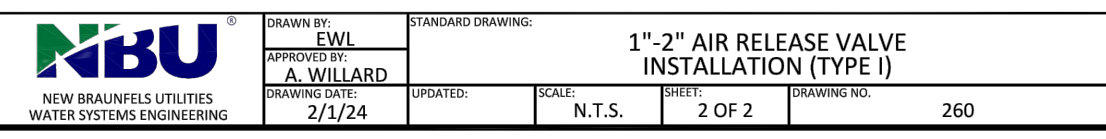
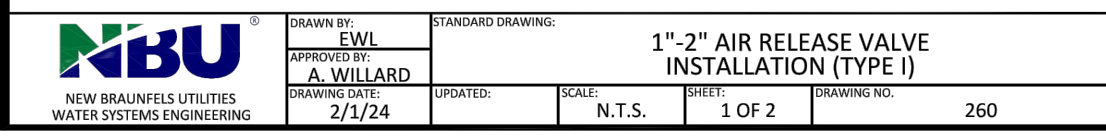
LEGEND	
PROPOSED	EXISTING



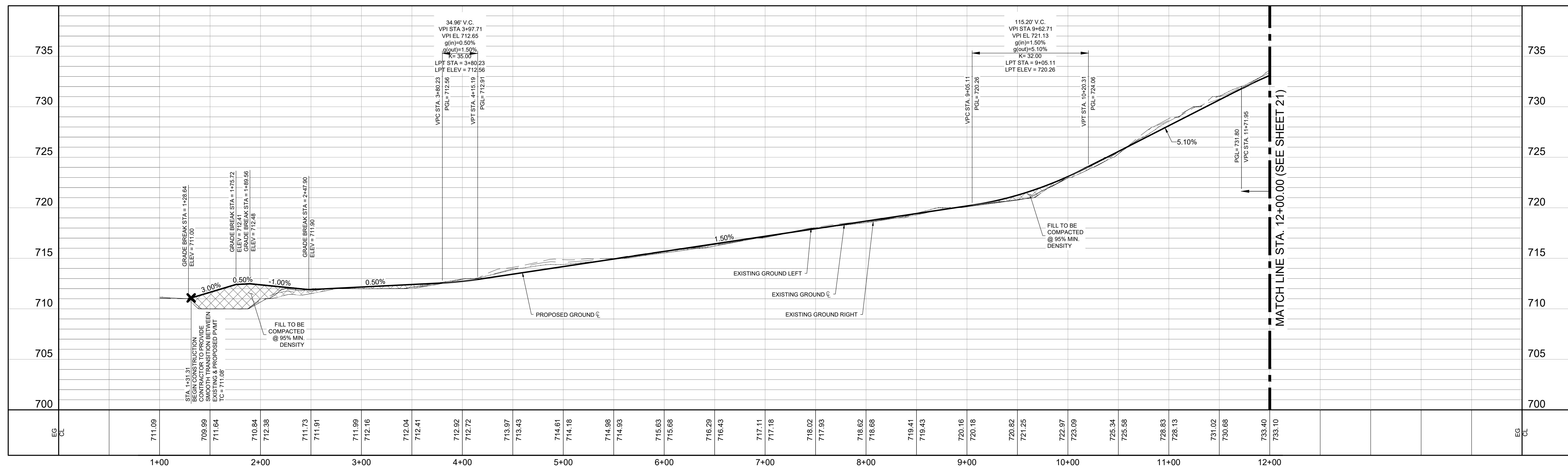
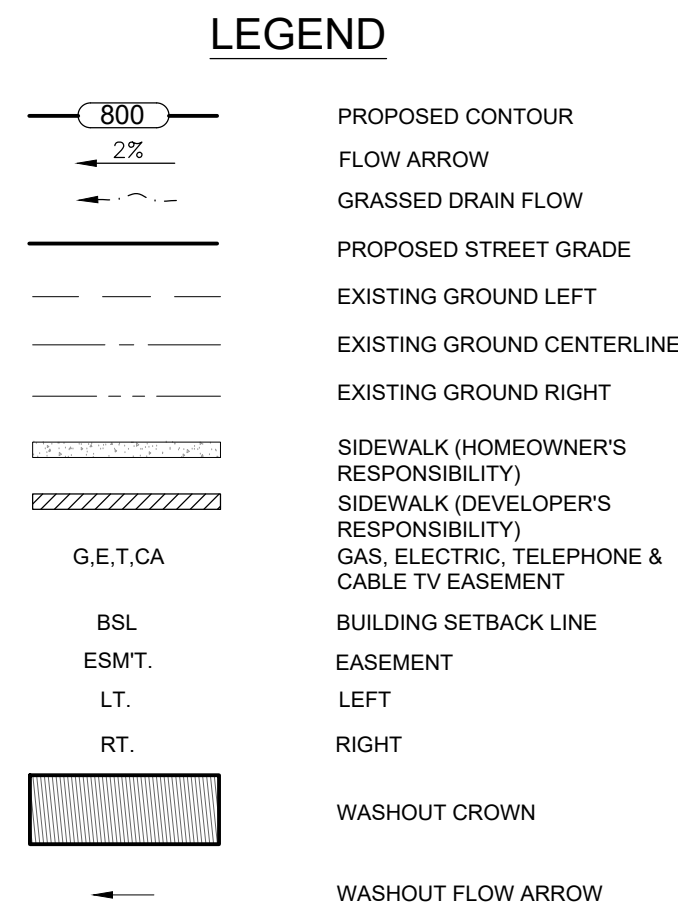
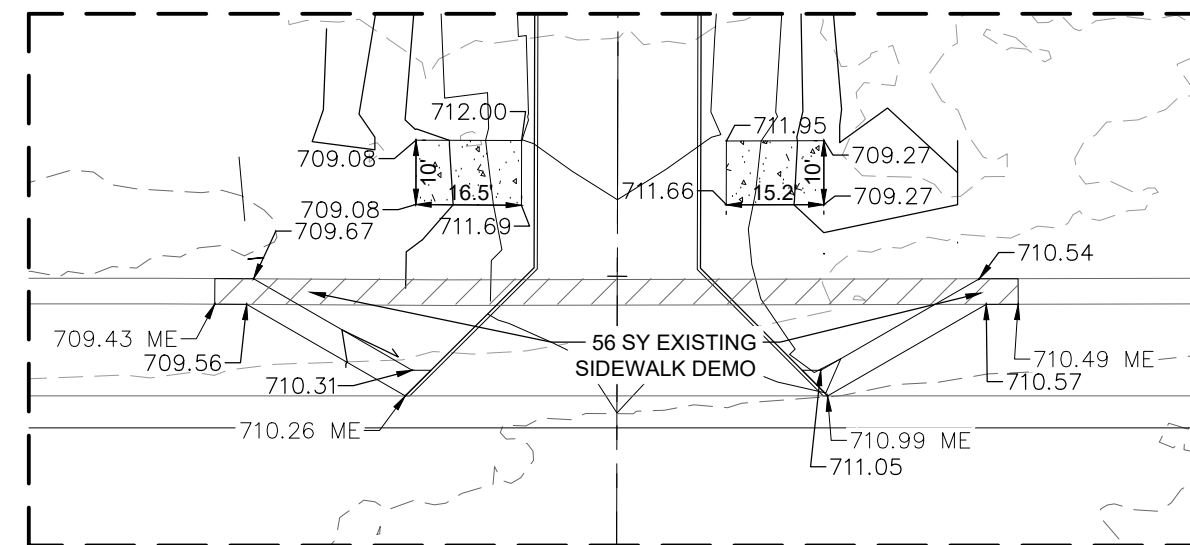
 NBU ® NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING: STANDARD INSTALLATION DETAIL FOR 5/8" & 1" METER			
	APPROVED BY: A. WILLARD				
	DRAWING DATE: 2/3/24	UPDATED:	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO. 202



 NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	STANDARD FIRE HYDRANT CEARANCE		
DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 242



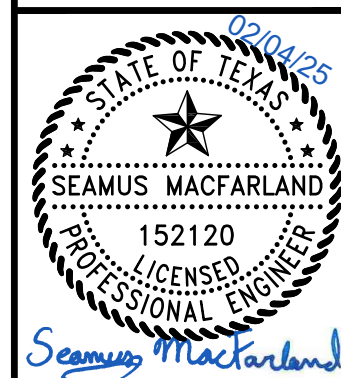
1. ALL ELEVATIONS ARE TOP OF CENTER LINE UNLESS OTHERWISE NOTED.
2. REFER TO SHEETS 3-5 FOR STREET AND PAVEMENT SECTION DETAIL, CONCRETE CURB DETAIL, AND SIDEWALK DETAIL.
3. CONTRACTOR TO FIELD VERIFY ALL MATCH EXISTING ELEVATIONS, SEWER MANHOLE INVERTS, STORM DRAIN INVERTS AND ALL OTHER UTILITIES PRIOR TO UTILITY WORK AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
4. CONTRACTOR IS TO MATCH EXISTING PAVEMENT, SIDEWALK, AND CURB ELEVATIONS.



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User: smactorland
Last Modified: Dec. 06, 24 - 10:58
Plot Date/Time: Feb. 04, 25 - 17:56:31

RIVER'S EDGE SUBDIVISION
RIVERS EDGE DR PLAN & PROFILE
STA. 1+00 TO STA. 12+00

REVISIONS					
	NO.	DESCRIPTION	BY	DATE	
DATE:	2/4/2025				
DESIGNED BY:	SM				
DRAWN BY:	SM				
CHECKED BY:	RG				
DRAWING NAME:					
sh_Sheet P&P.dwg					



LJA Engineering, Inc.

9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

LJA

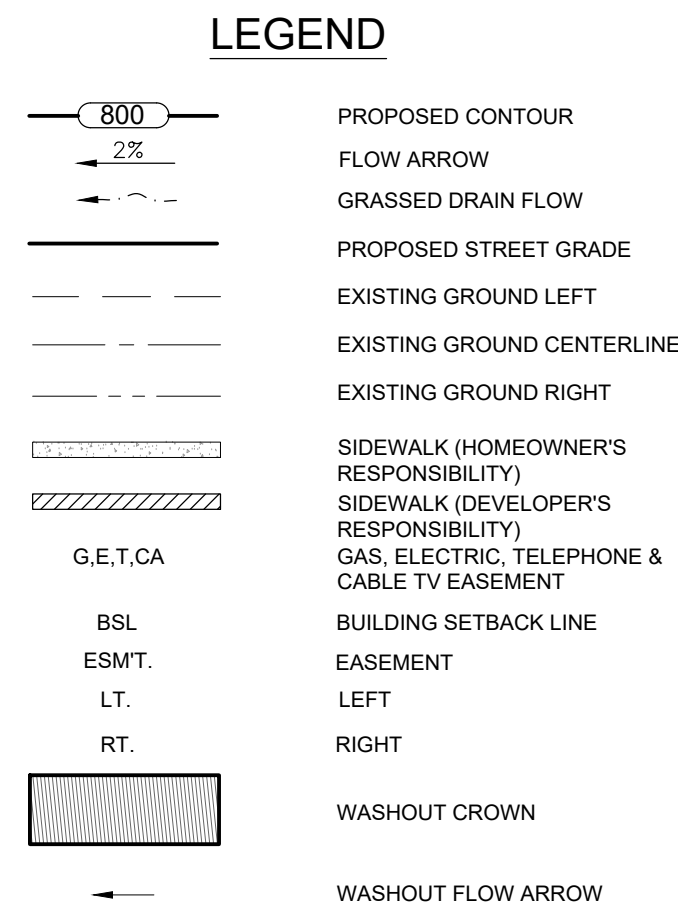
Phone 210.503.2700
LJA.COM
TBE No. F-1386

JOB NUMBER:
A292-426

SHEET NO.

20

1. ALL ELEVATIONS ARE TOP OF CENTER LINE UNLESS OTHERWISE NOTED.
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MATCH LINE STA. 12+00.00 (SEE SHEET 20)



RIVER'S EDGE SUBDIVISION
RIVERS EDGE DR PLAN & PROFILE
STA. 12+00 TO STA. 24+00

02/04/25

STATE OF TEXAS

SEAMUS MACFARLAND

152120

LICENSED PROFESSIONAL ENGINEER

Seamus MacFarland

JOB NUMBER:
A292-426

SHEET NO

21

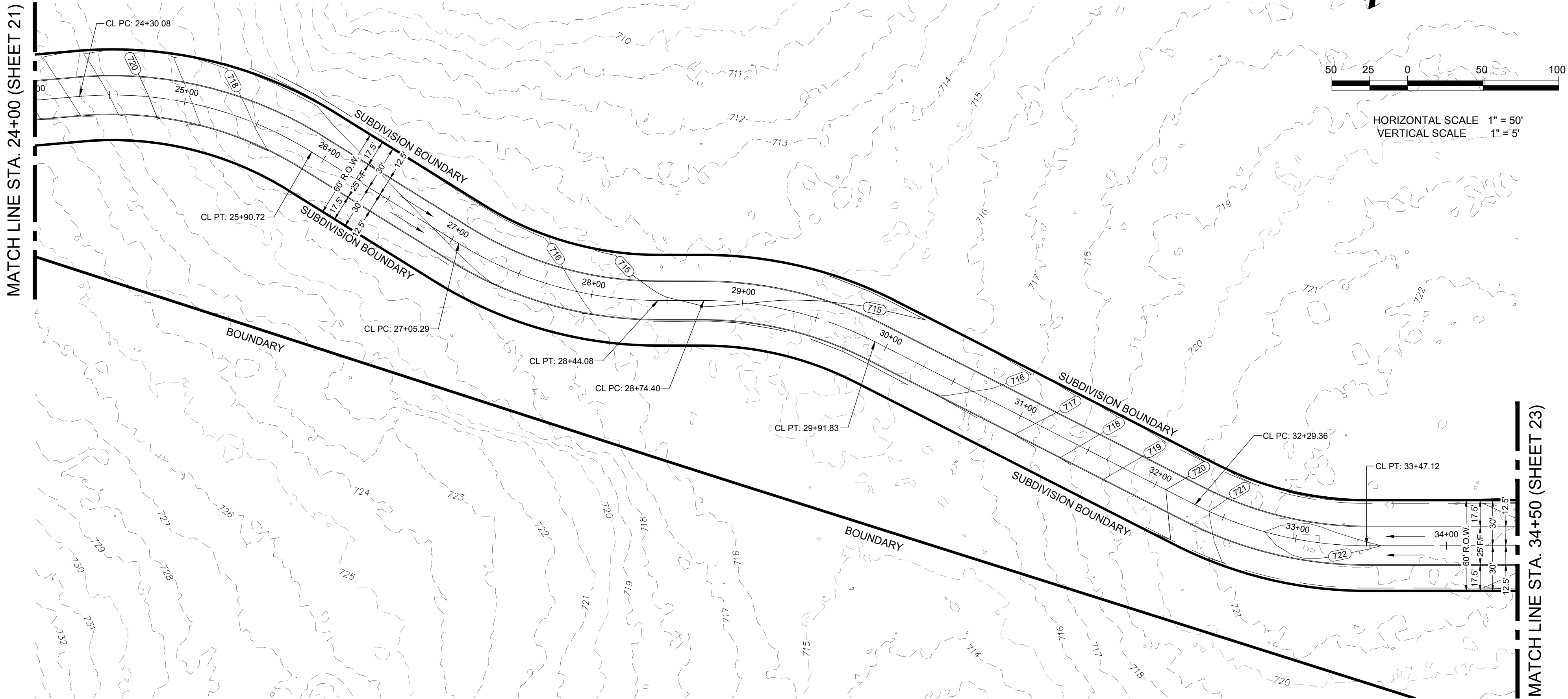
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Last Modified: Dec 06, 24 - 10:58
Plot Date/Time: Dec 04, 23 - 11:26:45

GENERAL NOTES:

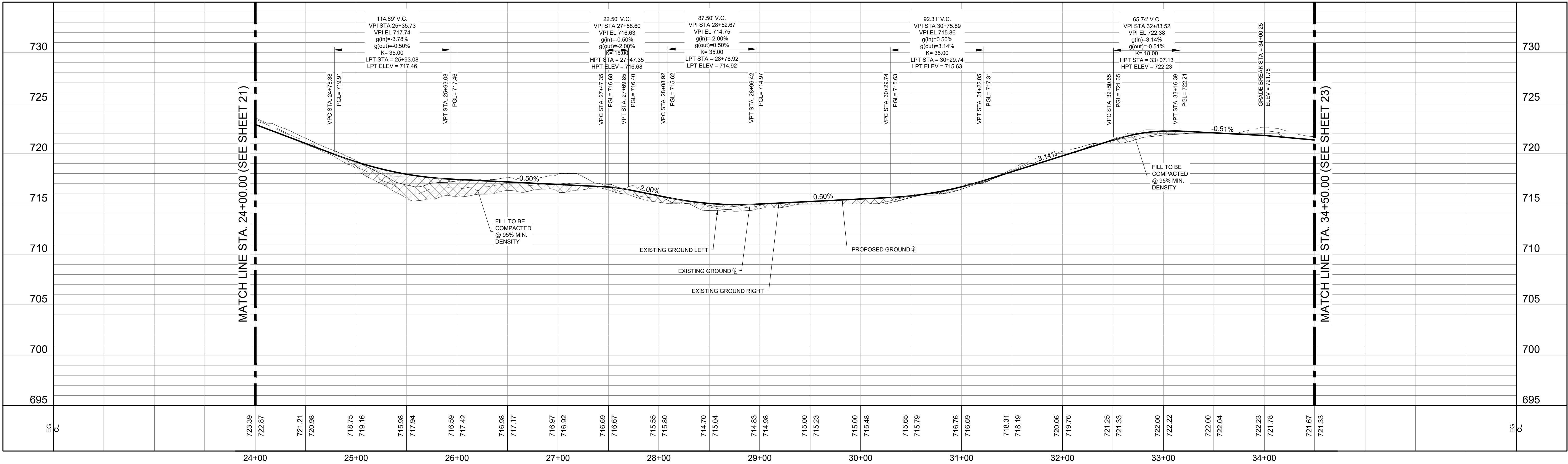
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LEGEND

- PROPOSED CONTOUR
- FLOW ARROW
- GRASSED DRAIN FLOW
- PROPOSED STREET GRADE
- EXISTING GROUND LEFT
- EXISTING GROUND CENTERLINE
- EXISTING GROUND RIGHT
- SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
- SIDEWALK (DEVELOPER'S RESPONSIBILITY)
- GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
- BUILDING SETBACK LINE
- EASEMENT
- LEFT
- RIGHT
- WASHOUT CROWN
- WASHOUT FLOW ARROW



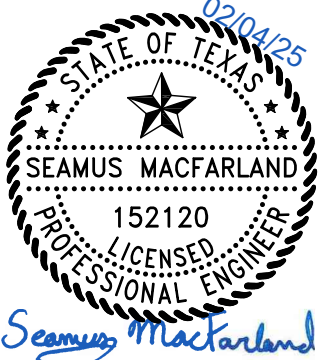
RIVER'S EDGE STA. 24+00 TO STA. 34+50



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STA. 24+00 TO STA. 34+50

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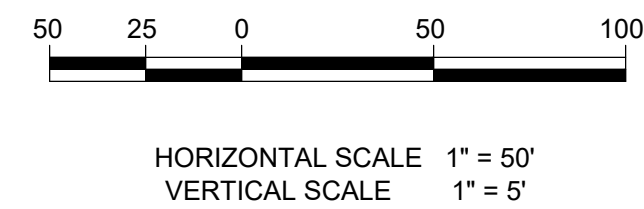
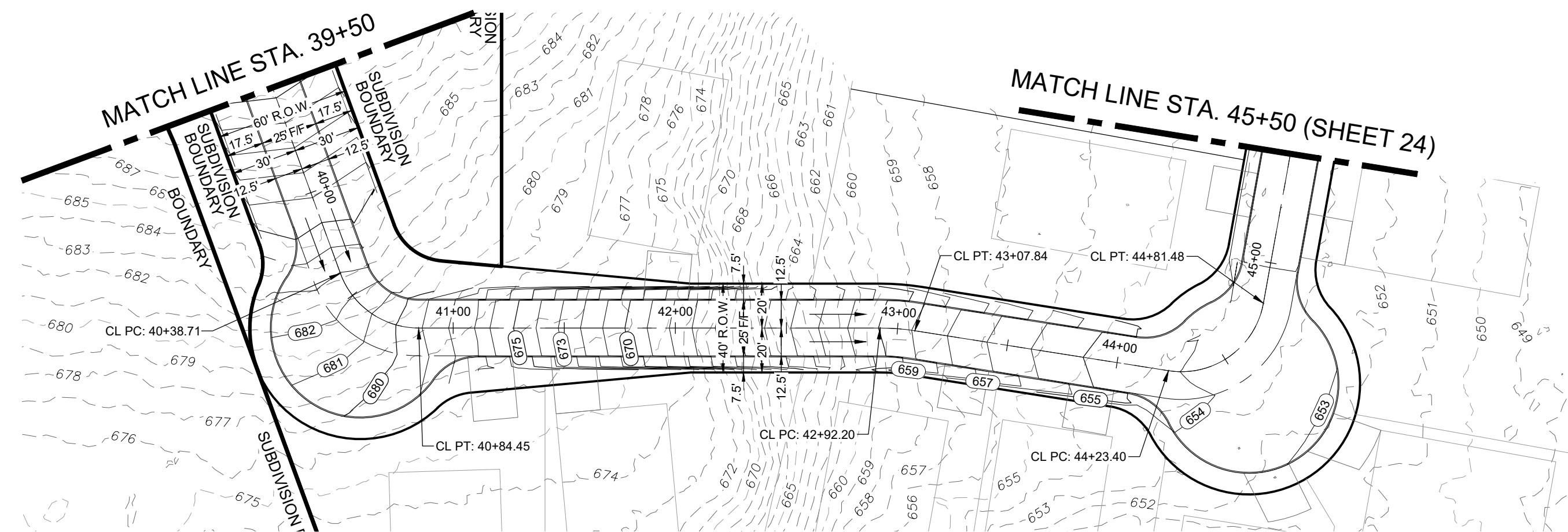
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TBPE No. F-1386

JOB NUMBER:
A292-426

SHEET NO.

22

1. ALL ELEVATIONS ARE TOP OF CENTER LINE UNLESS OTHERWISE NOTED.
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The diagram illustrates a proposed drainage system layout. At the top, a horizontal line represents the 'PROPOSED CONTOUR' with a 'FLOW ARROW' pointing right. Below this is the 'GRASSED DRAIN FLOW' area. The 'PROPOSED STREET GRADE' is shown as a horizontal line. Below the street grade are the 'EXISTING GROUND LEFT' and 'EXISTING GROUND CENTERLINE' lines. The 'EXISTING GROUND RIGHT' is indicated by a dashed line. A 'SIDEWALK (HOMEOWNERS RESPONSIBILITY)' is shown as a hatched area. Below the sidewalk is the 'SIDEWALK (DEVELOPER'S RESPONSIBILITY)' area. The 'GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT' is shown as a hatched area. The 'BUILDING SETBACK LINE' is shown as a horizontal line. Below the setback line is the 'EASEMENT' area. The 'LEFT' and 'RIGHT' sides are indicated. The 'WASHOUT FLOW ARROW' is shown at the bottom, pointing right.

RIVER'S EDGE SUBDIVISION

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San Antonio, Texas 78230

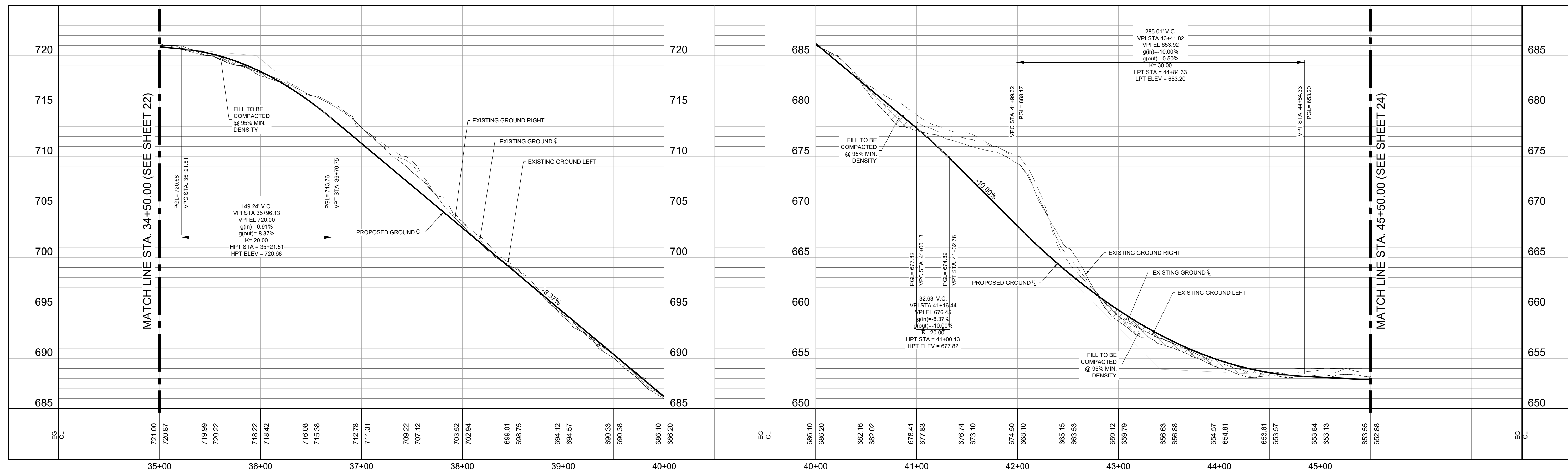
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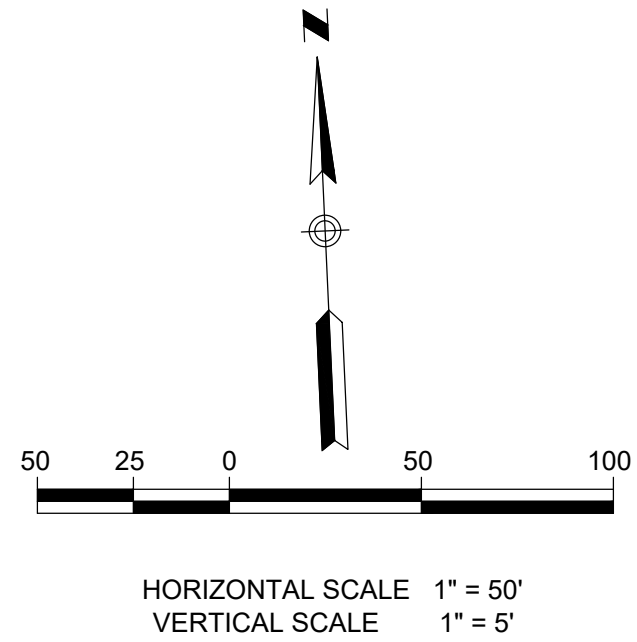
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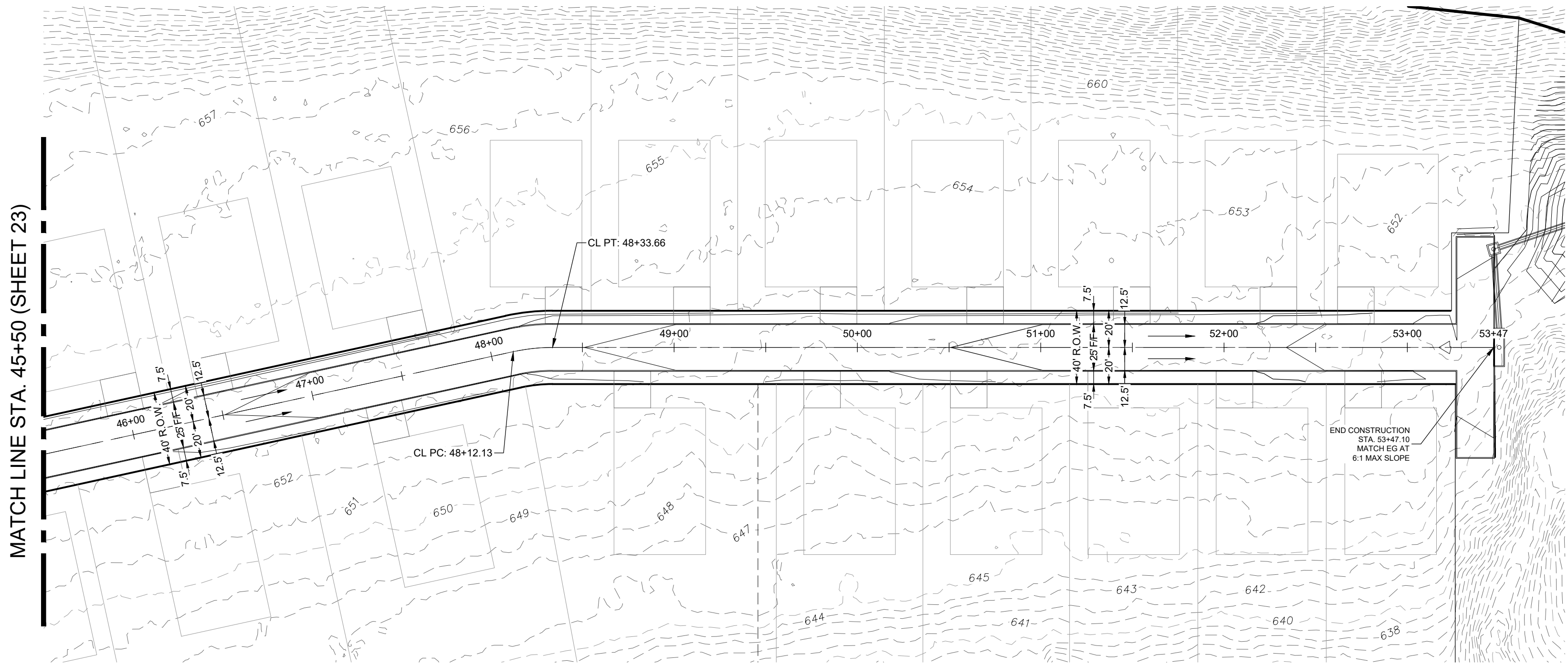


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Plot Date/Time: Feb. 04, 25 - 17:56:58

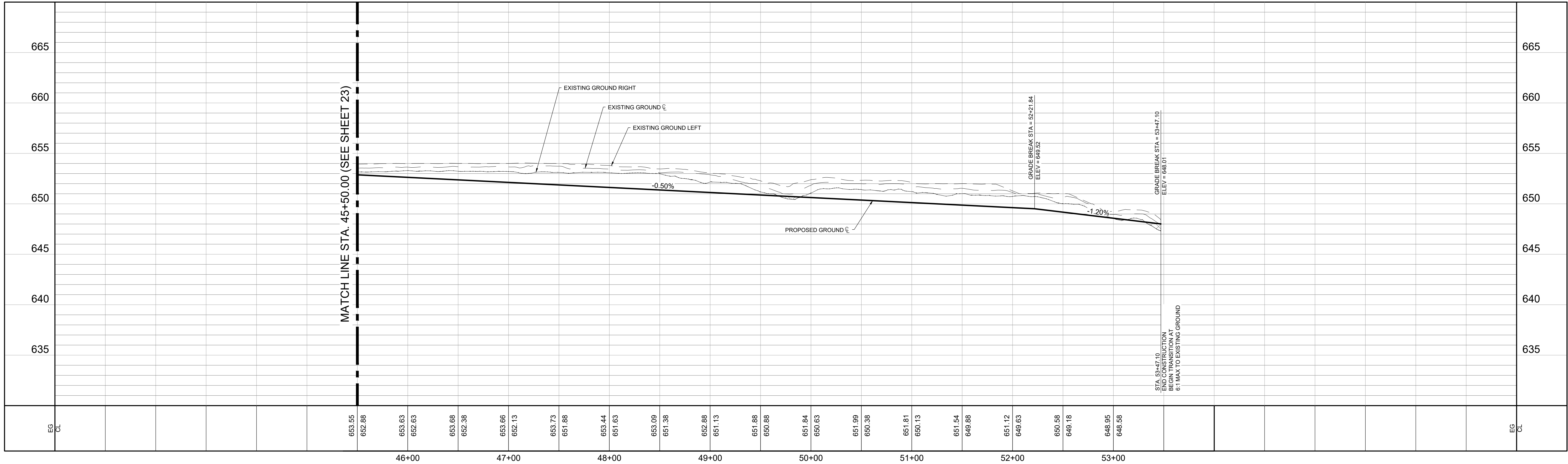
- GENERAL NOTES:**
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- LEGEND**
- PROPOSED CONTOUR
 - FLOW ARROW
 - GRASSED DRAIN FLOW
 - PROPOSED STREET GRADE
 - EXISTING GROUND LEFT
 - EXISTING GROUND CENTERLINE
 - EXISTING GROUND RIGHT
 - SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
 - SIDEWALK (DEVELOPER'S RESPONSIBILITY)
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 - BUILDING SETBACK LINE
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 - WASHOUT CROWN
 - WASHOUT FLOW ARROW



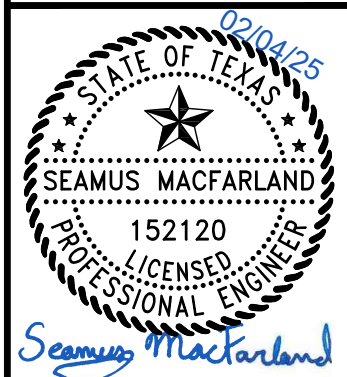
RIVER'S EDGE STA. 45+50 TO END



RIVER'S EDGE SUBDIVISION
RIVERS EDGE DR PLAN & PROFILE
STA. 45+50 TO END

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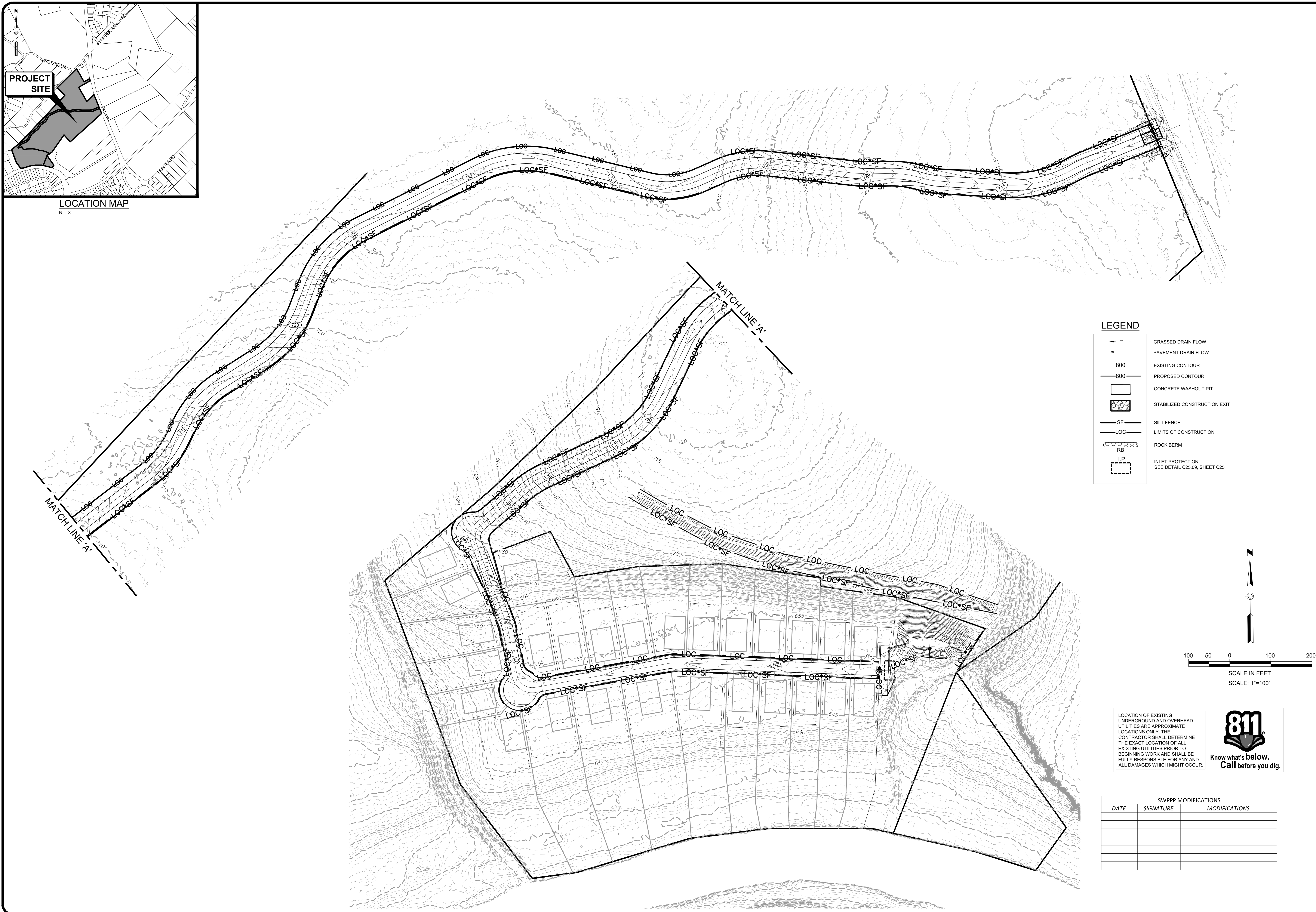
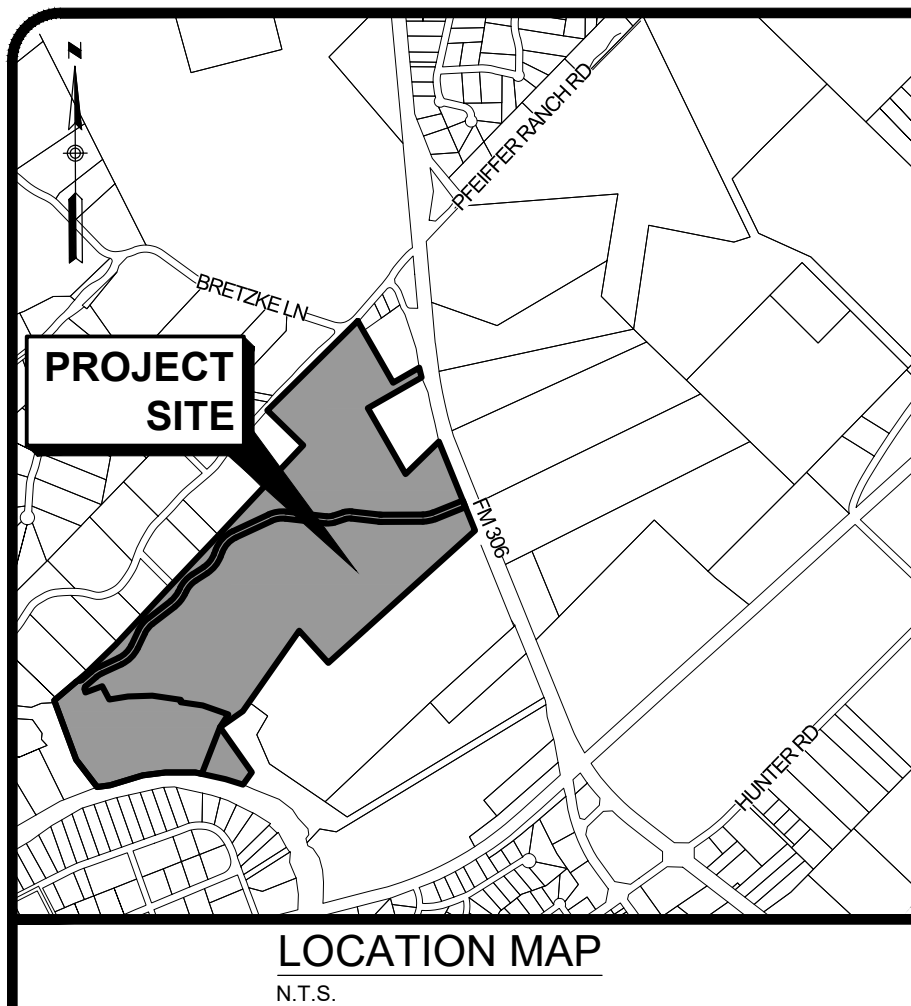
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SHEET NO.
24



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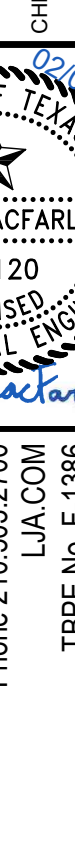
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DESIGNED BY: NB

DRAWN BY: NB

CHECKED BY: RG

DRAWING NAME: sh_SWPPP.dwg



Seanus MacFarland

JOB NUMBER: A292-426

SHEET NO.

25

A. SILT FENCE

- FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR WBAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.
 - WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.
 - STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST 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.
 - LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SETTED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/10 FEET OF FENCE.
 - THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW, WHERE FENCE CANNOT BE TRENCHED (I.E.G. PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
 - THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
 - SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
 - INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL, REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES, REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
- B. TRIANGULAR SEDIMENT FILTER DIKE
- THE DIKE STRUCTURE SHALL BE CONSTRUCTED OF 6" X 6", 6 GAUGE WELDED WIRE MESH, 18 INCHES PER SIDE, AND WRAPPED WITH GEOTEXTILE FABRIC THE SAME COMPOSITION AS THAT USED FOR SILT FENCES.
 - FILTER FABRIC SHOULD LAP OVER ENDS SIX (6) INCHES TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHOULD BE SECURED BY SHOAT RINGS.
 - POSITION DIKE PARALLEL TO THE CONTOURS, WITH THE END OF EACH SECTION CLOSELY ABUTTING THE ADJACENT SECTIONS.
 - FASTENING - THE FABRIC SKIRT MAY BE TOED-IN WITH 6 INCHES OF COMPACTED MATERIAL, OR 12 INCHES OF THE FABRIC SKIRT SHOULD EXTEND UPHILL AND BE SECURED WITH A MINIMUM OF 3 INCHES OF OPEN GRADED ROCK, OR WITH STAPLES OR NAILS. IF THESE TWO OPTIONS ARE NOT FEASIBLE, THE DIKE STRUCTURE MAY BE TRENCHED IN 4 INCHES.
 - TRIANGULAR SEDIMENT FILTER DIKES SHOULD BE INSTALLED ACROSS EXPOSED SLOPES DURING CONSTRUCTION WITH ENDS OF THE DIKE TIED INTO EXISTING GRADES TO PREVENT FAILURE AND SHOULD INTERCEPT NO MORE THAN ONE ACRE OF RUNOFF.
 - WHEN MOVED TO ALLOW VEHICULAR ACCESS, THE DIKES SHOULD BE REINSTALLED AS SOON AS POSSIBLE, BUT ALWAYS AT THE END OF THE WORKDAY.
 - INSPECTION SHOULD BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR. TRENCHES AND REALIGN DIKES AS NEEDED TO PREVENT GAPS BETWEEN SECTIONS.
 - ACCUMULATED SILT SHOULD BE REMOVED AFTER EACH RAINFALL, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.

C. TEMPORARY CONSTRUCTION ENTRANCE/EXIT

- AGGREGATE SIZE - 4 TO 8 INCHES WASHED, COARSE STONE.
- LENGTH - AT LEAST 50 FEET.
- THICKNESS - MINIMUM 8 INCHES.
- WIDTH - MINIMUM WIDTH SHALL BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
- WASHING - WHEN NECESSARY, IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM 4 INCH DIAMETER WASHED STONE OR COMMERCIAL RACK SHALL BE INSTALLED WHICH DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
- DRAINAGE - IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 6 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. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
- FABRIC - PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

D. INTERCEPTOR SWALE

- MAXIMUM DEPTH OF FLOW IN THE SWALE SHALL BE 1 FOOT.
- THE MINIMUM BOTTOM WIDTH OF THE SWALE SHALL BE 2 FEET.
- SIDE SLOPES OF THE SWALE SHALL BE 3:1 OR FLATTER.
- MINIMUM DESIGN CHANNEL FREEBOARD SHALL BE 6 INCHES.
- SWALES MUST MAINTAIN POSITIVE GRADE TO AN ACCEPTABLE OUTLET.
- INTERCEPTOR SWALES MUST BE STABILIZED IMMEDIATELY UPON EXCAVATION SO AS NOT TO CONTRIBUTE TO THE EROSION PROBLEM THEY ARE ADDRESSING.
- ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
- ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE DISPOSED OF IN AN APPROPRIATE SPOILS SITE.
- INSPECTION MUST BE MADE AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE TO THE CHANNEL OR TO CLEAR DEBRIS OR OTHER OBSTRUCTIONS SO AS NOT TO DIMINISH FLOW CAPACITY. DAMAGES WHICH RESULT FROM NORMAL CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE END OF EACH WORK DAY.

E. ROCK BERMS

- LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
- BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
- PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM (FIGURE 1-28), TO A HEIGHT NOT LESS THAN 18".
- WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
- BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE. 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.
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS MUST BE MADE.
- 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.
- REPAIR ANY LOOSE WIRE SHEATHING. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION. 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.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

F. SANDBAG BERMS

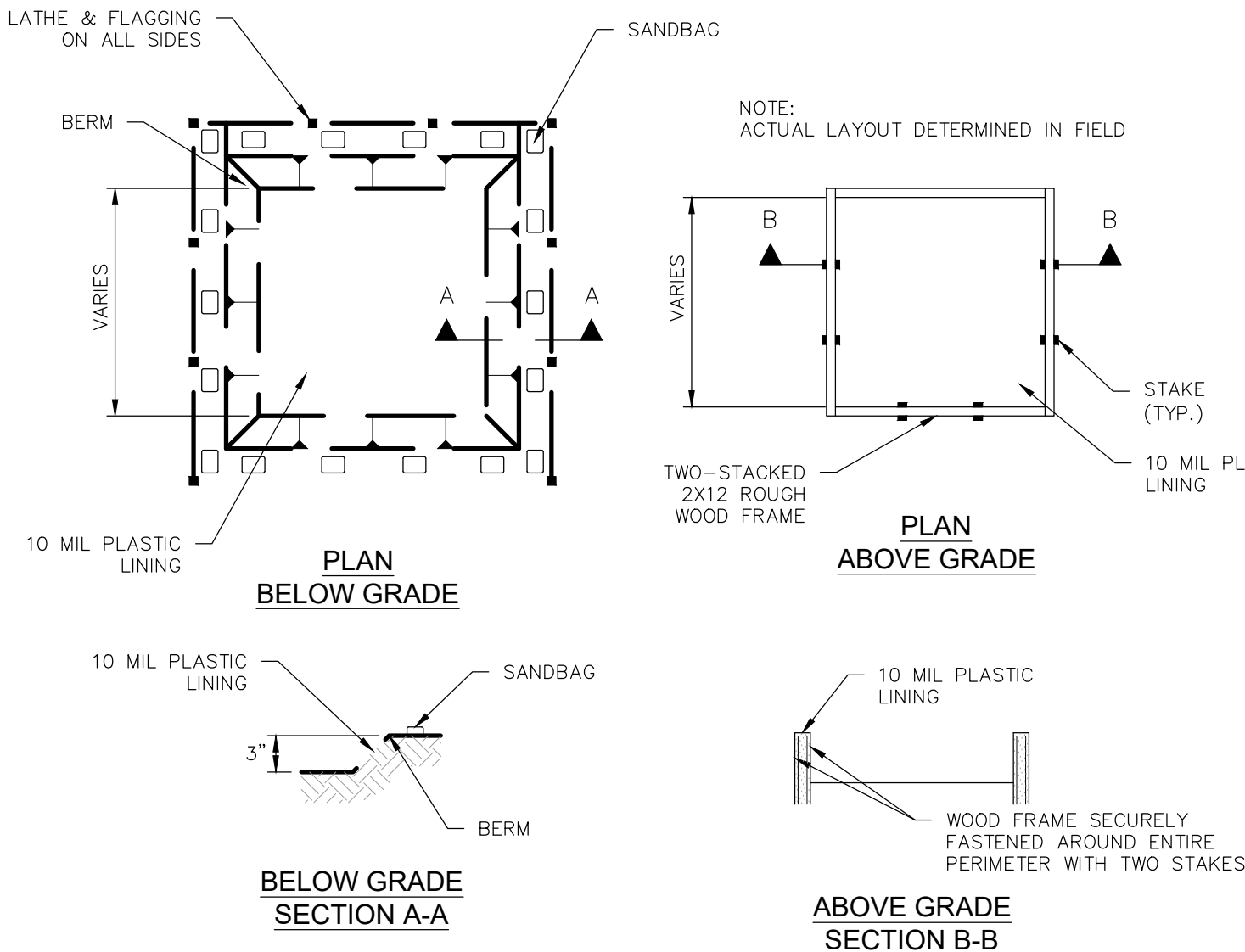
- THE BAG LENGTH SHOULD BE 24 TO 30 INCHES, WIDTH SHOULD BE 16 TO 18 INCHES AND THICKNESS SHOULD BE 6 TO 8 INCHES. (8) SANDBAGS SHOULD BE FILLED WITH COARSE GRADE SAND, FREE FROM DELETERIOUS MATERIAL. ALL SAND SHOULD PASS THROUGH A NO. 10 SIEVE. THE FILLED BAG SHOULD HAVE AN APPROXIMATE WEIGHT OF 40 POUNDS.
- THE BERM SHOULD BE A MINIMUM HEIGHT OF 18 INCHES, MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO THE TOP OF THE BERM.
- THE BERM SHOULD BE SIZED AS SHOWN IN THE PLANS BUT SHOULD HAVE A MINIMUM WIDTH OF 48 INCHES MEASURED AT THE BOTTOM OF THE BERM AND 16 INCHES MEASURED AT THE TOP OF THE BERM.
- RUNOFF WATER SHOULD FLOW OVER THE TOPS OF THE SANDBAGS OR THROUGH 4-INCH DIAMETER PVC PIPES EMBEDDED BELOW THE TOP LAYER OF BAGS AS SHOWN.
- SANDBAGS SHOULD BE STACKED IN AT LEAST THREE ROWS ABUTTING EACH OTHER, AND IN STAGGERED ARRANGEMENT.
- THE BASE OF THE BERM SHOULD HAVE AT LEAST 3 SANDBAGS. THESE CAN BE REDUCED TO 2 AND 1 BAG IN THE SECOND AND THIRD ROWS RESPECTIVELY. FOR EACH ADDITIONAL 6 INCHES OF HEIGHT, AN ADDITIONAL SANDBAG MUST BE ADDED TO EACH ROW WIDTH.
- THE SAND BAG BERM SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN. THE SANDBAGS SHOULD BE RESHAPED OR REPLACED AS NEEDED DURING INSPECTION.
- WHEN THE SILT REACHES 6 INCHES, THE ACCUMULATED SILT SHOULD BE REMOVED AND DISPOSED OF AT AN APPROVED SITE IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

G. STONE OUTLET SEDIMENT TRAP

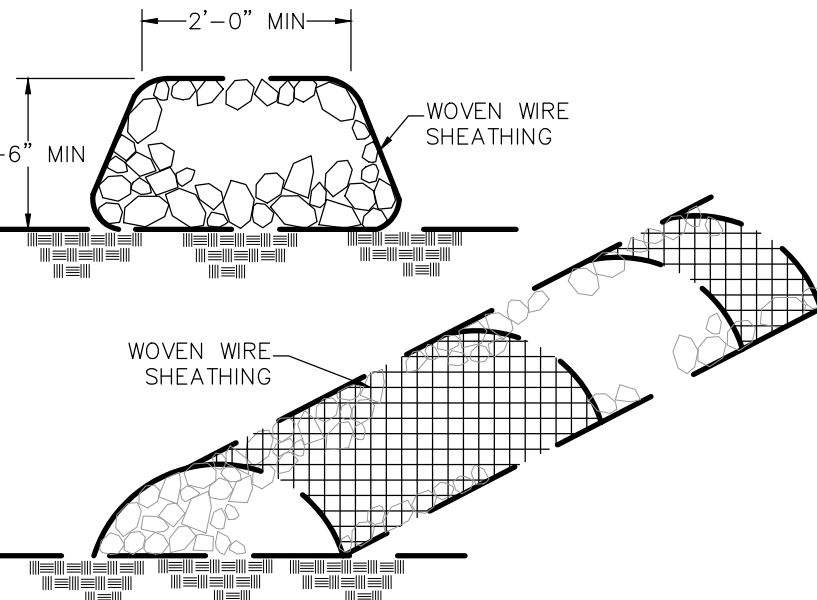
- ALL AGGREGATE SHOULD BE AT LEAST 3 INCHES IN DIAMETER AND SHOULD NOT EXCEED A VOLUME OF 0.5 CUBIC FOOT.
 - EARTH EMBANKMENT: PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH, BEFORE COMPACTION. MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL. COMPACT EACH LAYER TO 95 PERCENT STANDARD PROCTOR DENSITY. DO NOT PLACE MATERIAL ON SURFACES THAT ARE MUDDY OR FROZEN. SIDE SLOPES FOR THE EMBANKMENT ARE TO BE 3:1. THE MINIMUM WIDTH OF THE EMBANKMENT SHOULD BE 3 FEET.
 - A GAP IS TO BE LEFT IN THE EMBANKMENT IN THE LOCATION WHERE THE NATURAL CONFLUENCE OF RUNOFF CROSSES THE EMBANKMENT LINE. THE GAP IS TO HAVE A WIDTH IN FEET EQUAL TO 6 TIMES THE DRAINAGE AREA IN ACRES.
 - GEOTEXTILE COVERED ROCK CORE: A CORE OF FILTER STONE HAVING A MINIMUM HEIGHT OF 1.5 FEET AND A MINIMUM WIDTH AT THE BASE OF 3 FEET SHOULD BE PLACED ACROSS THE OPENING OF THE EARTH EMBANKMENT AND SHOULD BE COVERED BY GEOTEXTILE FABRIC WHICH SHOULD EXTEND A MINIMUM DISTANCE OF 2 FEET IN EITHER DIRECTION FROM THE BASE OF THE FILTER STONE CORE.
 - FILTER STONE EMBANKMENT: FILTER STONE SHOULD BE PLACED OVER THE GEOTEXTILE AND IS TO HAVE A SIDE SLOPE WHICH MATCHES THAT OF THE EARTH EMBANKMENT OF 3:1 AND SHOULD COVER THE GEOTEXTILE/ROCK CORE A MINIMUM OF 6 INCHES WHEN INSTALLATION IS COMPLETE. THE CREST OF THE OUTLET SHOULD BE AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
 - INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. REPAIR SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
 - TRASH AND OTHER DEBRIS SHOULD BE REMOVED AFTER EACH RAINFALL TO PREVENT CLOGGING OF THE OUTLET STRUCTURE. SEDIMENT SHOULD BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO HALF OF THE DESIGN DEPTH OF THE TRAP.
- H. SEDIMENT BASINS
- THE DRAINAGE AREA FOR A SEDIMENT BASIN SHALL BE LESS THAN 100 ACRES.
 - THE BASIN SHOULD INCLUDE A PERMANENT STAKE TO INDICATE THE SEDIMENT LEVEL IN THE POOL AND MARKED TO INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME (NOT THE TOP OF THE STAKE). SEDIMENT SHALL BE REMOVED WHEN SEDIMENT REACHES 50% STORAGE CAPACITY.
 - PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH, BEFORE COMPACTION. MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL. COMPACT EACH LAYER TO 95 PERCENT STANDARD PROCTOR DENSITY. DO NOT PLACE MATERIAL ON SURFACES THAT ARE MUDDY OR FROZEN. SIDE SLOPES FOR THE EMBANKMENT SHOULD BE 3:1 (H:V). MINIMUM WIDTH OF THE EMBANKMENT AT THE TOP SHALL BE 8 FEET.
 - AN EMERGENCY SPILLWAY SHOULD BE INSTALLED ADJACENT TO THE EMBANKMENT ON UNDISTURBED SOIL AND SHOULD BE SIZED TO CARRY THE FULL AMOUNT OF FLOW GENERATED BY A 10-YEAR, 3-HOUR STORM WITH 1 FOOT OF FREEBOARD, LESS THE AMOUNT WHICH CAN BE CARRIED BY THE PRINCIPAL OUTLET CONTROL DEVICE. THE EMERGENCY SPILLWAY SHOULD BE LINED WITH RIPRAP AS SHOULD THE SWALE LEADING FROM THE SPILLWAY TO THE NORMAL WATERCOURSE AT THE BASE OF THE EMBANKMENT.
 - INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. REPAIR SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR. TRASH AND OTHER DEBRIS SHOULD BE REMOVED AFTER EACH RAINFALL TO PREVENT CLOGGING OF THE OUTLET STRUCTURE.
 - ACCUMULATED SILT SHOULD BE REMOVED AND THE BASIN SHOULD BE RE-GRADED TO ITS ORIGINAL DIMENSIONS AT SUCH POINT THAT THE CAPACITY OF THE IMPOUNDMENT HAS BEEN REDUCED TO 75% OF ITS ORIGINAL STORAGE CAPACITY.

ADDITIONAL NOTES:

- UPON COMPLETION OF CONSTRUCTION ALL DISTURBED AREAS SHALL BE REVEGETATED TO 70% OF EXISTING CONDITIONS IN ACCORDANCE WITH THE SWPPP AND TPDES REQUIREMENTS.
- THIS SITE IS NOT LOCATED ADJACENT TO ANY SURFACE WATERS.
- THIS SITE WILL NOT HAVE ANY LOCATIONS WHERE STORM WATER DISCHARGES DIRECTLY TO A SURFACE WATER BODY.



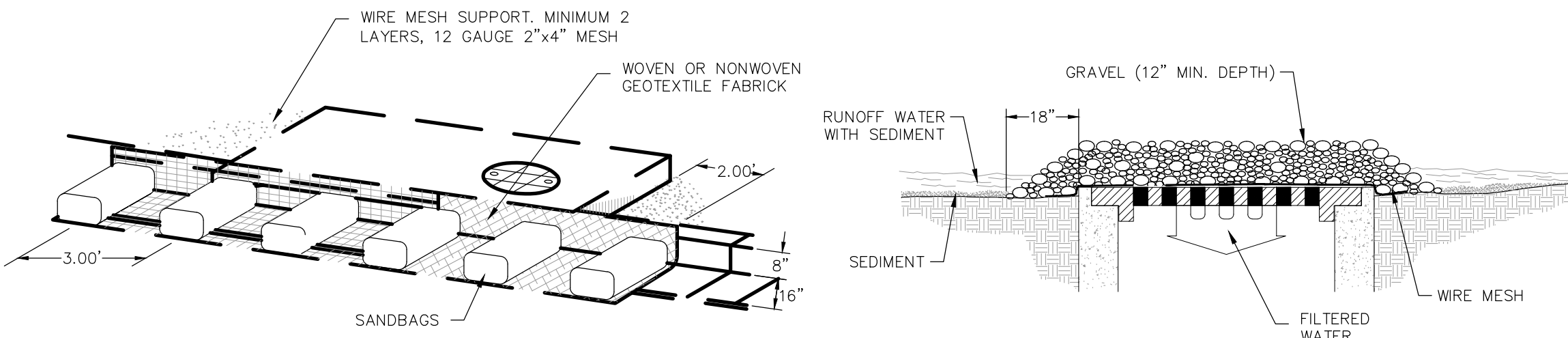
27.02 CONCRETE WASHOUT AREA
N.T.S.



27.05 ROCK BERM
N.T.S.

NOTES:

- USE ONLY OPEN GRADED ROCK 4-8 INCH DIAMETER FOR STREAMFLOW CONDITION; USE OPEN GRADED ROCK 3-5 INCHES DIAMETER FOR OTHER CONDITIONS.
- THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
- THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE - WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
- DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
- WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

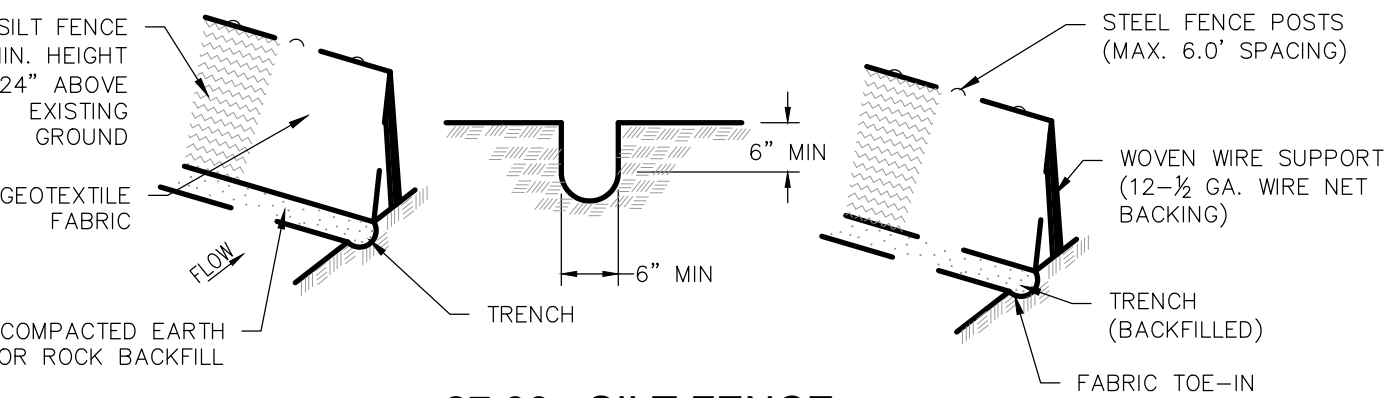


CURB INLET PROTECTION

NOTES:

- WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEN END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CHORD.
- INLET PROTECTION SHALL BE PLACED OVER THE MOUTH OF THE INLET WITH A 2 FOOT OVERLAP ON EITHER SIDE.
- THE FABRIC COVER AND SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE.
- THE SKIRT SHALL BE WEIGHTED WITH ONE 18"x24"x6" SANDBAG EVERY 3 FEET.
- INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF FOUR INCHES, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
- AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

27.04 INLET PROTECTION
N.T.S.

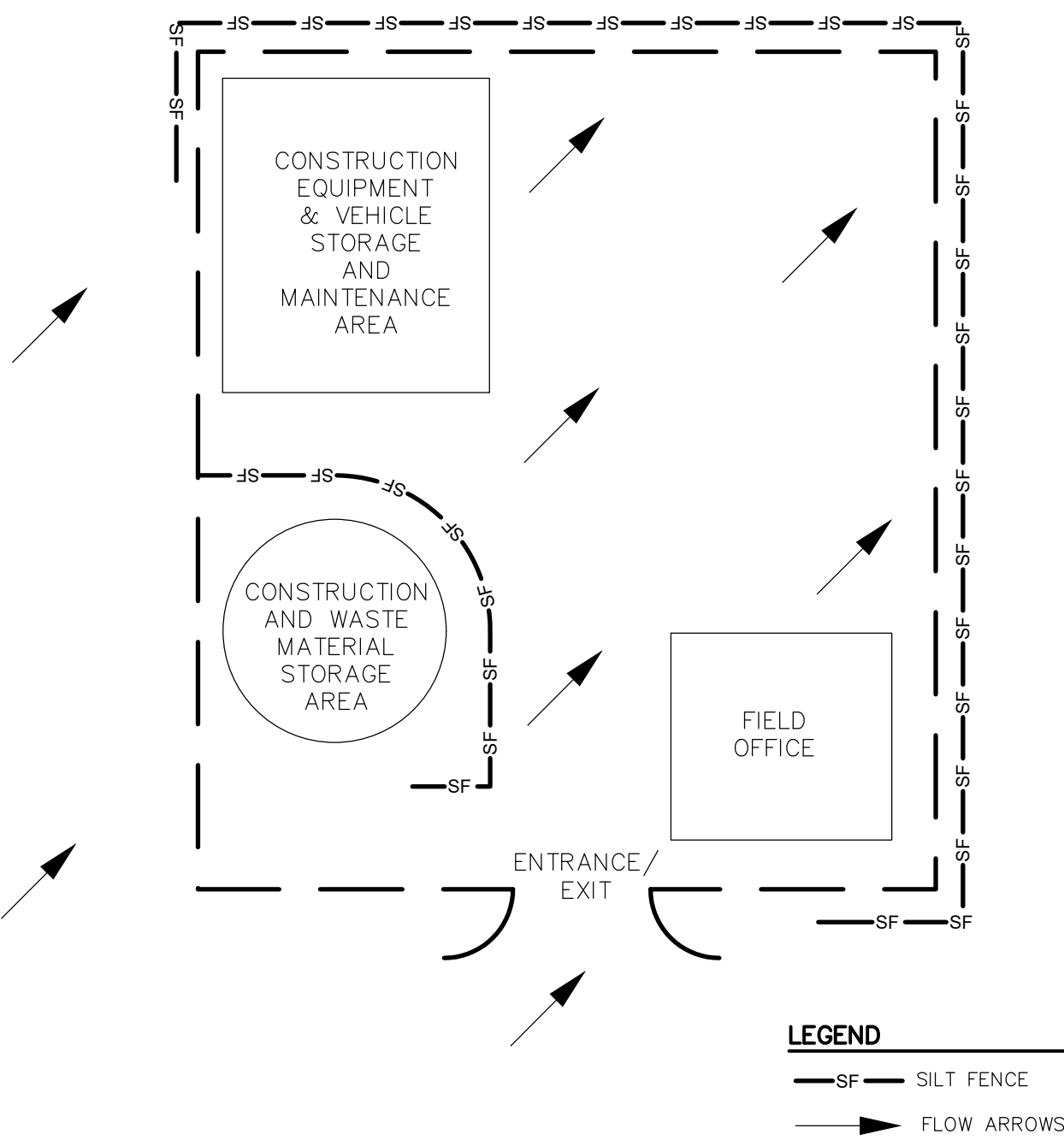


27.03 SILT FENCE
N.T.S.

GRATE INLET PROTECTION

NOTES:

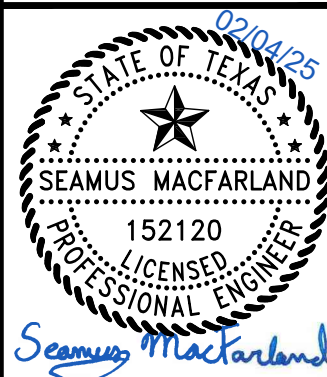
- WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. WIRE MESH WITH ½ INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
- COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED ABOVE. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
- IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.



CONSTRUCTION STAGING AREA
N.T.S.

RIVER'S EDGE SUBDIVISION
STORMWATER POLLUTION PREVENTION PLAN
DETAILS

REVISIONS	DATE	DESCRIPTION	BY
NO.			
24/02/2025	NB		
	NB		
	RG		
	en SWPPP.dwg		



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SHEET NO.

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