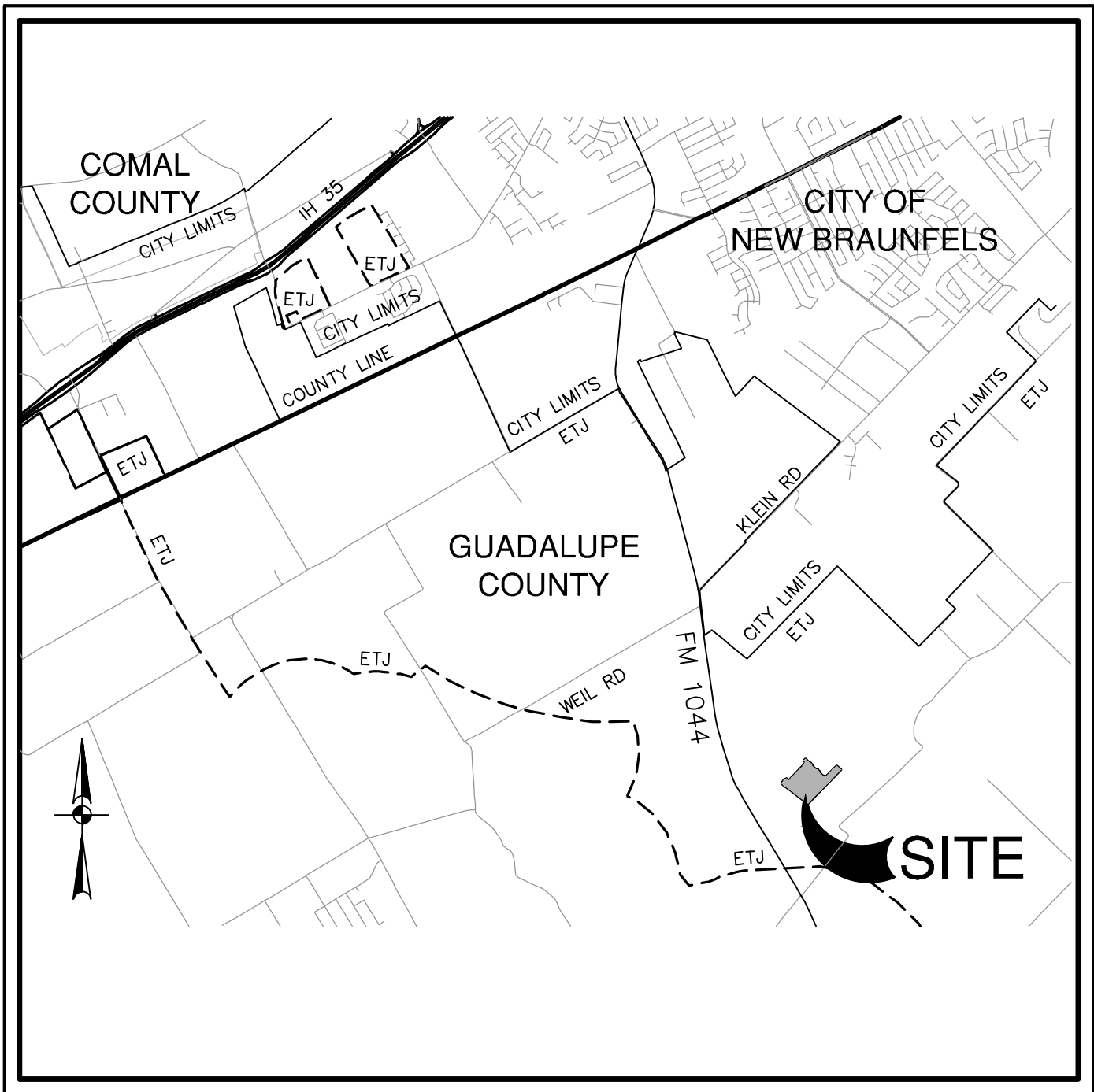


WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

CIVIL CONSTRUCTION PLANS



LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

CONTINENTAL HOMES OF TEXAS, L.P.
5419 N. LOOP 1604 E.
SAN ANTONIO, TEXAS 78247

NOVEMBER 2023

**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



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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- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.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 NOT WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
- NO PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0255F EFFECTIVE DATE 11/2/2007.
- GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- FOLLOWING PERMITS ARE REQUIRED PRIOR TO START OF CONSTRUCTION:
 - CITY OF NEW BRAUNFELS PUBLIC INFRASTRUCTURE PERMIT
 - GVEC
 - GBRA
 - GVSUD

LEGAL DESCRIPTION:

BEING 23.439 ACRES OF LAND ALL COMPRISED OF A 23.439 ACRE TRACT OF LAND IN THE DANIEL CHANDLER SURVEY NO. 489, ABSTRACT NO. 100, LOCATED IN GUADALUPE COUNTY, TEXAS; ALL BEING A PORTION OF A 193.397 ACRE TRACT, RECORDED IN DOCUMENT NO. 202199023875 OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

Revised 03/2020

If construction has not commenced within one-year of City approval for construction inspection that approval is no longer valid.

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 of record.

For Public Infrastructure Permit or Grading Permit Projects:

- For Commercial Permit (CP) Projects:

- It is the Contractor's responsibility to see that all temporary and permanent traffic control devices are properly installed and maintained in accordance with the plans and latest edition of the Texas Manual on Uniform Traffic Control Devices. If, in the opinion of the engineering representative and the construction inspector, the barricades and signs do not conform to established standards or are incorrectly placed or are insufficient in quantity to protect the general public, the construction inspector shall have the option to stop operations until such time as the conditions are corrected. If the need arises, additional temporary traffic control devices may be ordered by the Engineering representative at the Contractor's expense.

A TxDOT Type II B-B blue reflective raised pavement marker shall be installed in the center of the roadway adjacent to all fire hydrants. In locations where hydrants are situated on corners, blue reflective raised pavement markers shall be installed on both approaches which front the hydrant. The raised pavement marker shall meet TxDOT material, epoxy and adhesive specifications.

The following are guidelines for the overall maintenance of the channel system and drainage easement by the designated maintenance entity as defined by the executed drainage agreement. The designated maintenance entity will be responsible for the operation, maintenance, and repair of the system and easement to ensure that it operates as designed.

- *Inspections.* The channel should be inspected to assure proper operation at least four times annually. One of these inspections should occur during or immediately following wet weather.
- *Mowing.* The side slopes and bottom of the channel that are covered with grass must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around the channel must be mowed at least four times annually to limit vegetation height to 12 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed. Vegetation should be maintained so as to match the intent of the original design of the channel and preserve the flow conveyance capacity. Any woody vegetation which becomes established shall be periodically removed or mulched to ground level. Any removal of brush which results in disturbance of established grades shall be repaired/re-graded and revegetated.
- *Debris, Litter, and Obstruction Removal.* Debris and litter may accumulate in the channel and/or near the drop structure and outfall and should be removed during regular mowing operations and inspections or after large rainfall events. Any other obstructions that impede flow as intended by the original design shall be removed in a timely manner.
- *Erosion Control.* The channel side slopes and embankment may periodically suffer from slumping and erosion. Regrading and re-establishment of vegetation may be required to correct the problems. Vegetation should be re-established to the original design standards. Inspection of sediment deposits along the length of the channel should occur during the stated intervals. All sediment deposits exceeding 12" in depth or which are preventing positive drainage should be removed from the channel at least once annually. All sediment should be removed and disposed of properly.

It shall be the responsibility of the developer, contractor, subcontractors, builders, Geo-technical Engineer, and project engineer to immediately notify the Office of the City Engineer and project engineer if the presence of groundwater within the site is evident. Upon notification the project engineer shall respond with plan revisions for the mitigation of the groundwater issue. The City Engineer shall respond within two (2) business days upon receipt of the mitigation plan. All construction activity, impacted by the discovery of groundwater, shall be suspended until the City Engineer grants a written approval of the groundwater mitigation plan.

As per Platting Ordinance Section 118-38m.: When all of the improvements are found to be constructed and completed in accordance with the approved plans and specifications and with the City's standards, and upon receipt of one set of "Record Drawing" plans, and a digital copy of all plans (PDF copy) the City Engineer shall accept such improvements for the City of New Braunfels, subject to the guaranty of material and workmanship provisions in this Section.

Contractor is responsible to ensure that erosion control measures and stormwater control sufficient to mitigate off site impacts are in place at all stages of construction.

Drainage improvements sufficient to mitigate the impact of construction shall be installed prior to adding impervious cover.

The elevation of the lowest floor shall be at least 10 inches above the finished grade of the surrounding ground, which shall be sloped in a fashion so as to direct stormwater away from the structure. Properties adjacent to stormwater conveyance structures must have floor slab elevation or bottom of floor joists a minimum of one foot above the 100-year water flow elevation in the structure. Driveways serving houses on the downhill side of the street shall have a properly sized cross swale preventing runoff from entering the garage.

Proctors shall be sampled from on-site material (on-site is defined as limits of construction for this -plan set) and a copy of the proctor results shall be delivered to the City of New Braunfels Street Inspector prior to any density tests.

All roadway compaction tests shall be the responsibility of the developer's Geotechnical Engineer. Flexible base or fill/embankment material shall be placed in uniform layers not to exceed eight inches (8") loose. The required density for the fill/embankment material shall meet the requirements of TxDOT's Specification Item 132. The required density for the flexible base material shall meet the requirements of TxDOT's Specification Item 247. Each layer of material, inclusive of subgrade, shall be compacted as specified and tested for density and moisture in accordance with the requirements of TxDOT's Specification Item 132. The number of tests and the locations of the required tests shall be determined by the Geotechnical Engineer and approved by the City of New Braunfels Street Inspector. At a minimum, tests shall be taken every 200 LF for each lift. Upon completion of testing, the Geotechnical Engineer will provide the City of New Braunfels Street Inspector with all testing documentation and a certification stating that the placement of flexible base material meets the requirements of the project specifications. The designated "Responsible party" is responsible to insure that erosion control measures and stormwater control sufficient to mitigate off site impacts are in place at all stages of construction.

The storm drain pipe shall be checked for accumulation of silt, debris or other obstruction which could block flow. When silt deposits have accumulated to the point of reducing the drain capacity then the pipes can be flushed with a high-pressure water flushing process. Soil accumulations, vegetative overgrowth and other blockages should be cleared from the pipe discharge point. Erosion at the point of discharge shall be monitored. If erosion occurs, the addition of rock rubble to disperse the flow should be accomplished.

base, and fill material, and subgrade, has been completed in accordance with the plans. Additional density tests may be requested by the City of New Braunfels Inspector.

Asphaltic concrete pavement shall be the type of hot mix asphalt as defined in TxDOT's standard specifications for current TxDOT Standard Specifications for Construction of Highways, Street and Bridges.

The City of New Braunfels will not accept the use of Recycled Asphalt Pavement (RAP) or Recycled Asphalt Shingles (RAS) in asphalt mixtures for new roadways. Any debris inclusions within new asphalt pavements will result in asphalt removal and replacement from curb to curb for limits to be determined by the City of New Braunfels.

The asphaltic concrete pavement surface course shall be plant mixed, hot laid type "D" meeting the specification requirements of TxDOT Item 340. The asphaltic concrete pavement sub-surface courses shall be plant mixed, hot laid type "B" meeting the specification requirements of TxDOT Item 340. The mixture shall be designed per the design requirements specified in TxDOT Item 340 and shall be compacted to between 91 and 95 percent of the maximum theoretical density as determined by the Gyratory Compactor. The construction of the roadway surface at the time the temperature is at or above 60°F. Complete all compaction operations before the pavement temperature drops below 160°F. The asphalt cement content by percent of total mixture weight shall fall within a tolerance of ± 0.5 percent from a specific mix design.

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") loose. Determine the maximum fill 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 and tested for density and moisture in accordance with Test Methods TEX-113-E, TEX-114-E, TEX-115-E. The number and location of required tests shall be determined by the Geotechnical Engineer and approved by the City of New Braunfels Street Inspector. At a minimum, tests shall be taken every 200 LF 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.

(Indicate the 2 Options on the construction plans).

1. Sawcut existing street and match to new construction.
2. Sawcut existing curb to tie into existing construction.

Sawcut curb for construction entrance.

Stabilized construction area shall be constructed of 3"x5" rock to be placed a minimum length of 25-ft. and maintained so that construction debris does not fall within the city right-of-way. Right-of-way must be cleared from mud, rocks, etc. at all times.

*At least one biannual inspection must occur during or immediately after a rainfall event
√Indicates maintenance procedure that applies to this specific site.

See description of maintenance task to be performed on the following pages. Frequency of maintenance tasks may vary depending on amount of rainfall and other weather related conditions but may not be altered without TCEQ approval.

A written record should be kept of inspection results and maintenance performed.

Task No. & Description	Included in this project	
1. Mowing	Yes	No
2. Litter and Debris Removal	Yes	No
3. Erosion Control	Yes	No
4. Level Sensor	Yes	No
5. Nuisance Control	Yes	No
6. Structural Repairs and Replacement	Yes	No
7. Discharge Pipe	Yes	No
8. Detention and Drawdown Time	Yes	No
9. Sediment Removal	Yes	No
10. Logic Controller	Yes	No
11. Vegetated Filter Strips	Yes	No
12. Visually Inspect Security Fencing for Damage or Breach	Yes	No
13. Recordkeeping for Inspections, Maintenance, and Repairs	Yes	No

Ensure all driveway approaches are built in general accordance with A.D.A. specifications.

No valves, hydrants, etc. shall be constructed within curbs, sidewalks, or driveways.

The Contractor shall furnish and install all regulatory and warning signs, streets name signs and sign mounts in accordance with approved engineering plans. The City will inspect all signs at final inspection.

The Contractor shall install all pavement markings in accordance with approved engineering plans. The Contractor shall notify the City at least twenty-four (24) hours prior to the installation of all sealer and final markings. The City will inspect all markings at final application.

Seeding for the purpose of establishing vegetation within constructed earthen channels, basins and disturbed areas shall be conducted in accordance with Item 164 (Seeding for Erosion Control of TxDOT's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges manual. Only seed types and mixes specified for the San Antonio District (District 15 in Tables 1 and 2 under Item 164 shall be utilized. During the Cool Season (Sept 1-Nov 30, Cool Season) and seed species specified for the San Antonio District in Table 3 may be used. For Cool Season seeding applications, cool season seed mixes shall be used in conjunction with seed mixes for the San Antonio District as specified in Table 1 and 2 under Item 164.

It may be deemed necessary to incorporate topsoil and soil amendments (i.e. compost/ fertilizer) into existing soil in order to facilitate vegetation growth. Topsoil, compost and fertilizer additions shall be conducted according to Items 160, 161 and 166 of TxDOT's Standard Specifications manual, respectively.

Areas requiring permanent vegetation (earthen channels, ponds, etc.) are required to meet TxDOT Specifications for Item 160 Topsoil. Testing per Tex-128-E will be required at the City's request.

Watering may also be necessary to facilitate and expedite the sprouting and growth of vegetation. Item 168 of TxDOT's Standard Specifications manual shall be adhered to for vegetative watering.

If extended drought conditions exist that hinder or prohibit the growth and establishment of vegetation, the contractor/ developer shall provide a plan to the City of New Braunfels describing the measures that will be taken to stabilize earthen drainage infrastructure until a time when growing conditions become more favorable.

1. INSTALL TEMPORARY STORMWATER EROSION CONTROL MEASURES IN AFFECTED CONSTRUCTION AREAS AND STABILIZED CONSTRUCTION ENTRANCES/EXITS.
2. INSTALL TREE PRESERVATION MEASURES, IF REQUIRED.
3. EXCAVATE STREETS.
4. CONSTRUCT DRAINAGE.
5. CONSTRUCT WASTEWATER SYSTEM.
6. CONSTRUCT WATER SYSTEM.
7. CONSTRUCT SUBGRADE AND BASE FOR STREETS.
8. CONSTRUCT CURBS FOR STREETS.
9. CONSTRUCT ASPHALT PAVEMENT FOR STREETS.
10. ESTABLISH SITE STABILIZATION.
11. REMOVE ALL TEMPORARY STORMWATER EROSION CONTROL MEASURES.

1. SOME ITEMS ABOVE WILL OCCUR SIMULTANEOUSLY OR MAY OCCUR OUT OF SEQUENCE INDICATED
2. ALL SEQUENCES SUBJECT TO CHANGE.
3. CONTOURS SHOWN ARE FOR GRAPHICAL USE ONLY.



PLAT NOTES:

GVEC NOTE:

SURVEYOR'S NOTES:

KNOW ALL MEN BY THESE PRESENTS

JON COOPER
REGISTERED PROFESSIONAL LAND SURVEYOR #6716
PAPE-DAWSON ENGINEERS, INC.
2000 NW LOOP 410
SAN ANTONIO, TEXAS 78213

SIDEWALK NOTES:

UTILITY PROVIDER NOTE:

SCHOOL DISTRICT NOTE

COMMON SPACE NOTE:

DRAINAGE EASEMENT NOTES:

FLOODPLAIN NOTE:

GVSUD NOTE:

IT IS AGREED AND UNDERSTOOD THAT NO OTHER UTILITIES SHALL BE INSTALLED WITHIN OUR EASEMENT TO INCLUDE BUT NOT LIMITED TO PERMANENT STRUCTURES AND/OR BUILDINGS, CONCRETE SLABS, SIDEWALKS, WALLS, AND PAVEMENTS. ANY MONETARY LOSS TO GREEN VALLEY SUD RESULTING FROM MODIFICATIONS REQUIRED OF UTILITY EQUIPMENT LOCATED WITHIN SAID EASEMENTS DUE TO GRADE CHANGE OR GROUND ELEVATION ALTERATIONS SHALL BE CHARGED TO THE PERSON OR PERSONS DEEMED RESPONSIBLE FOR SAID GRADE CHANGES OR GROUND ELEVATION ALTERATIONS. UPON ENTERING IN AND LEAVING THE DISTRICT, THE ENDORSEMENT TO RESTORE THE LAND SURFACE TO A USABLE CONDITION BUT IS NOT OBLIGATED TO RESTORE IT TO A PRE-FIXISTING CONDITION.

THE EASEMENT CONVEYED HEREIN WAS OBTAINED OR IMPROVED THROUGH FEDERAL FINANCIAL ASSISTANCE. THIS EASEMENT IS SUBJECT TO THE PROVISION OF TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, AND THE REGULATIONS ISSUED PURSUANT THERETO FOR SO LONG AS THE EASEMENT CONTINUES TO BE USED FOR THE SAME OR SIMILAR PURPOSE FOR WHICH FINANCIAL ASSISTANCE WAS EXTENDED OR FOR SO LONG AS THE GRANTEE OWNS IT, WHICHEVER IS LONGER.

GBRA NOTES:

PLAT NOTES APPLY TO EVERY PAGE
OF THIS MULTIPLE PAGE PLAT

CURVE AND LINE
DATA ON SHEET 3 OF 3

SUBDIVISION PLAT
OF
WINDING CREEK RANCH UNIT 7



STATE OF TEXAS
COUNTY OF BEXAR

I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE WINDING CREEK RANCH UNIT 7 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL AND GUADALUPE, TEXAS, AND WHOSE NAME IS SUBScribed, HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DESIGNATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

OWNER/DEVELOPER: CONTINENTAL HOMES OF TEXAS, L.P.

STATE OF TEXAS
COUNTY OF BEXAR

NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES: _____

THIS LAND DEVELOPMENT PLAT HAS BEEN SUBMITTED TO AND APPROVED BY GREEN VALLEY SPECIAL UTILITY DISTRICT FOR EASEMENTS. UPON REQUEST OF THE CUSTOMER AND PAYMENT OF THE REQUIRED FEES, THE DISTRICT WILL PROVIDE DOMESTIC WATER SERVICE TO EACH LOT IN THIS SUBDIVISION, BY AGREEMENT WITH THE DEVELOPER.

AGENT FOR GREEN VALLEY SPECIAL UTILITY DISTRICT

THIS SUBDIVISION PLAT OF WINDING CREEK RANCH UNIT 7 HAS BEEN SUBMITTED TO AND APPROVED BY GUADALUPE VALLEY ELECTRIC COOPERATIVE, INC. FOR EASEMENTS.

AGENT FOR GUADALUPE VALLEY ELECTRIC COOPERATIVE, INC.
CERTIFICATE OF APPROVAL

APPROVED THIS THE _____ DAY OF _____, 20____, BY THE
PLANNING COMMISSION OF THE CITY OF NEW BRAUNFELS, TEXAS.

PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

DATE _____ DIRECTOR OF PLANNING _____
 DATE _____ CITY ENGINEER _____

STATE OF TEXAS
COUNTY OF GUADALUPE

I, _____, COUNTY CLERK OF GUADALUPE COUNTY, DO
HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH MY
CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE, ON THE
DAY OF _____, A.D. 20 AT _____ M. AND DULY
RECORDED THE _____ DAY OF _____, A.D.
20 AT _____ M. IN THE RECORDS OF _____ OF
SAID COUNTY, TEXAS IN VOLUME _____ ON PAGE _____ IN
TESTIMONY WHEREOF, WITNESS MY HAND AND OFFICIAL SEAL OF OFFICE, THIS
_____ DAY OF _____, A.D. 20 _____

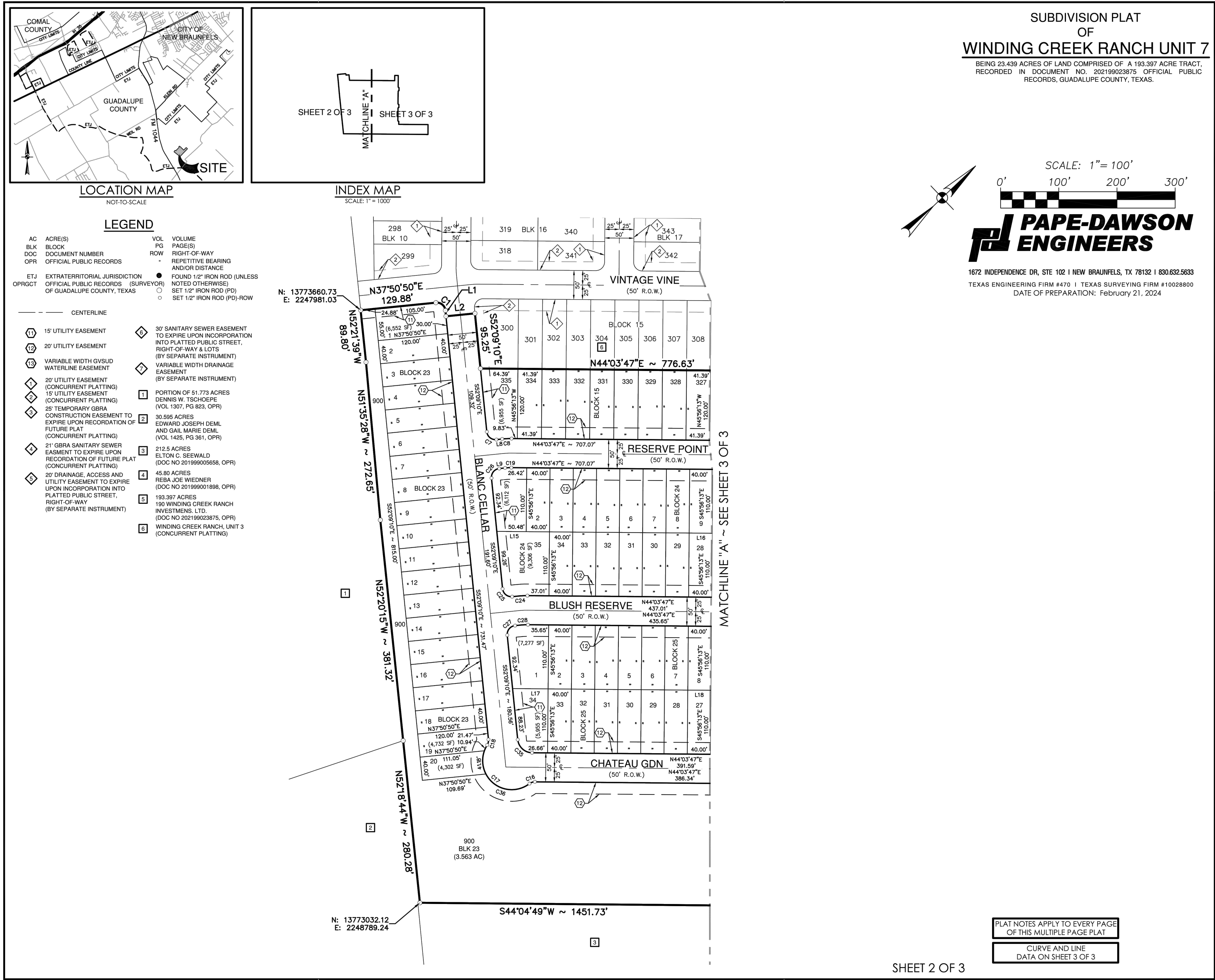
COUNTY CLERK, GUADALUPE COUNTY, TEXAS

3 BY: _____, DEPUTY

NOTE

Date: Feb 29, 2024 8:10am User: JD Aluddy
File: P:\30058\30058-05\Design\Civil\PLAT-30058-05.dwg

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



NOTE
THE WINDING CREEK RANCH UNIT 7 PLAT HAS NOT YET BEEN SUBMITTED TO THE CITY OF NEW BRAUNFELS PLANNING COMMISSION FOR APPROVAL.

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C0.03

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
PLAT (2 OF 3)

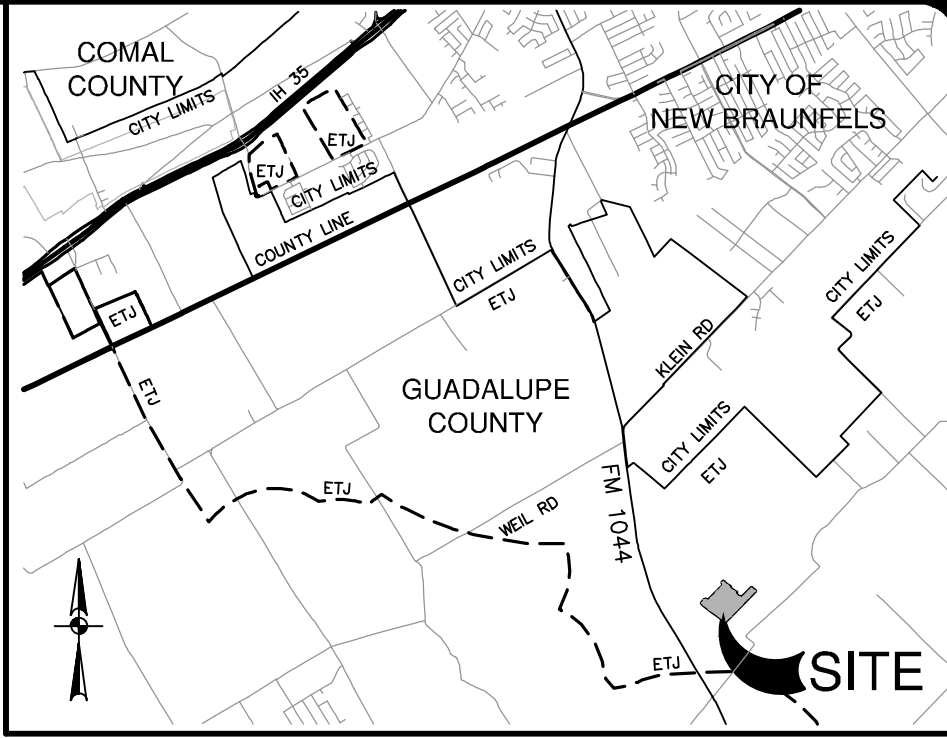
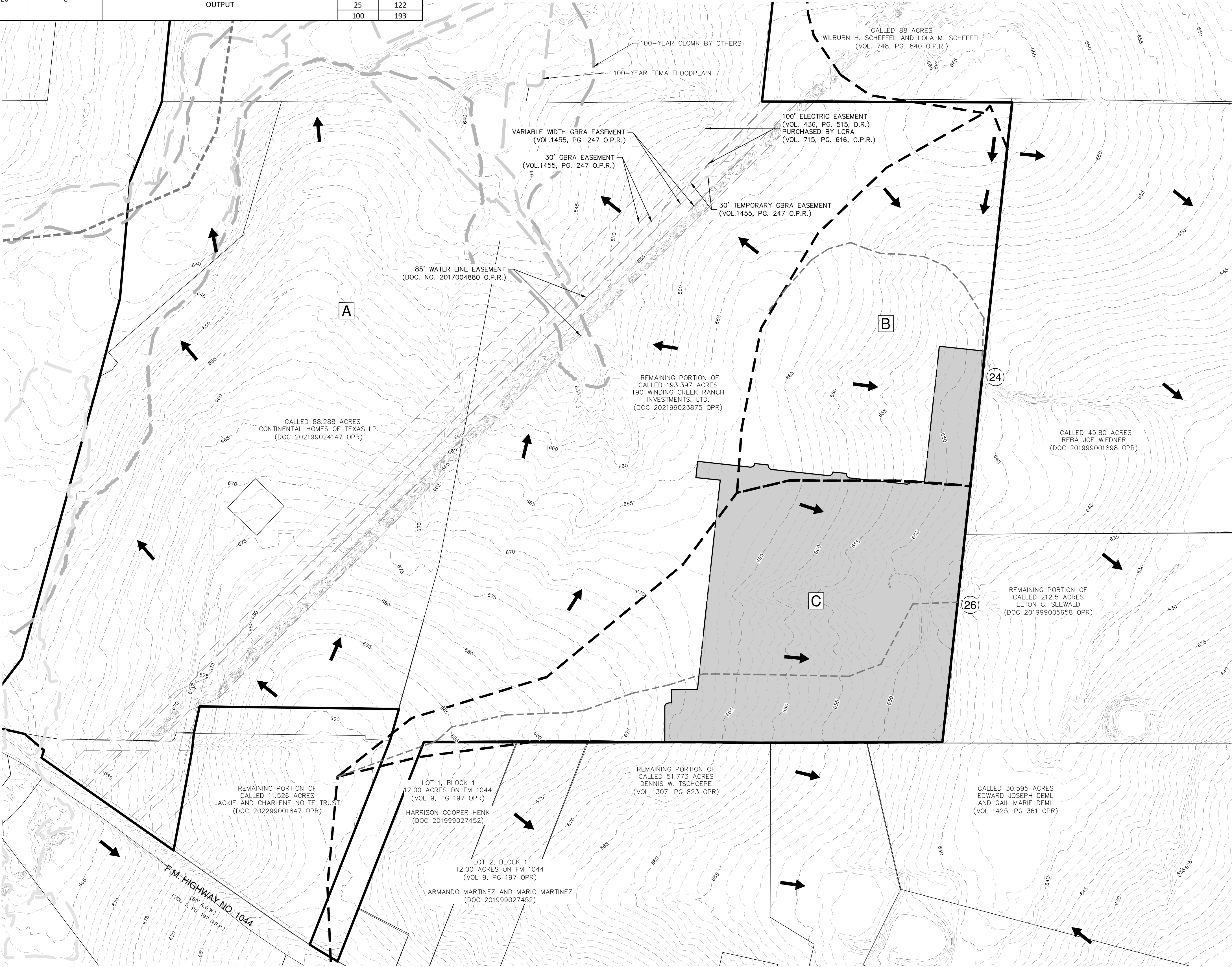
PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 1 TEXAS SURVEYING FIRM #10028800

2-22-2024
JOCELYN PEREZ
98367
PROFESSIONAL ENGINEER
PAPE-DAWSON ENGINEERS

NO. REVISION
DATE

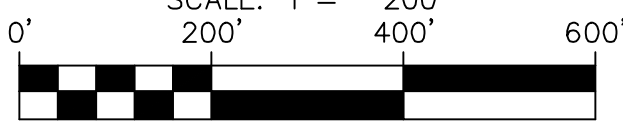
FOR PERMIT

Calc Pt	Drainage Area		Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q (cfs)	Frequency (year)	Total Q (cfs)
	Area ID	Acres						
23	A	REFERENCE WINDING CREEK RANCH CLOMR LONG CREEK MAIN RIVER STATION 9260				2	2	2441
						10	10	4988
						25	25	6733
						100	100	9696
24	B	21.46			BASIN HEC-HMS OUTPUT	2	2	43
						10	10	90
						25	25	115
						100	100	163
26	C	REFERENCE WINDING CREEK RANCH UNIT 3 AREA C HEC-HMS OUTPUT				2	2	38
						10	10	84
						25	25	122
						100	100	193

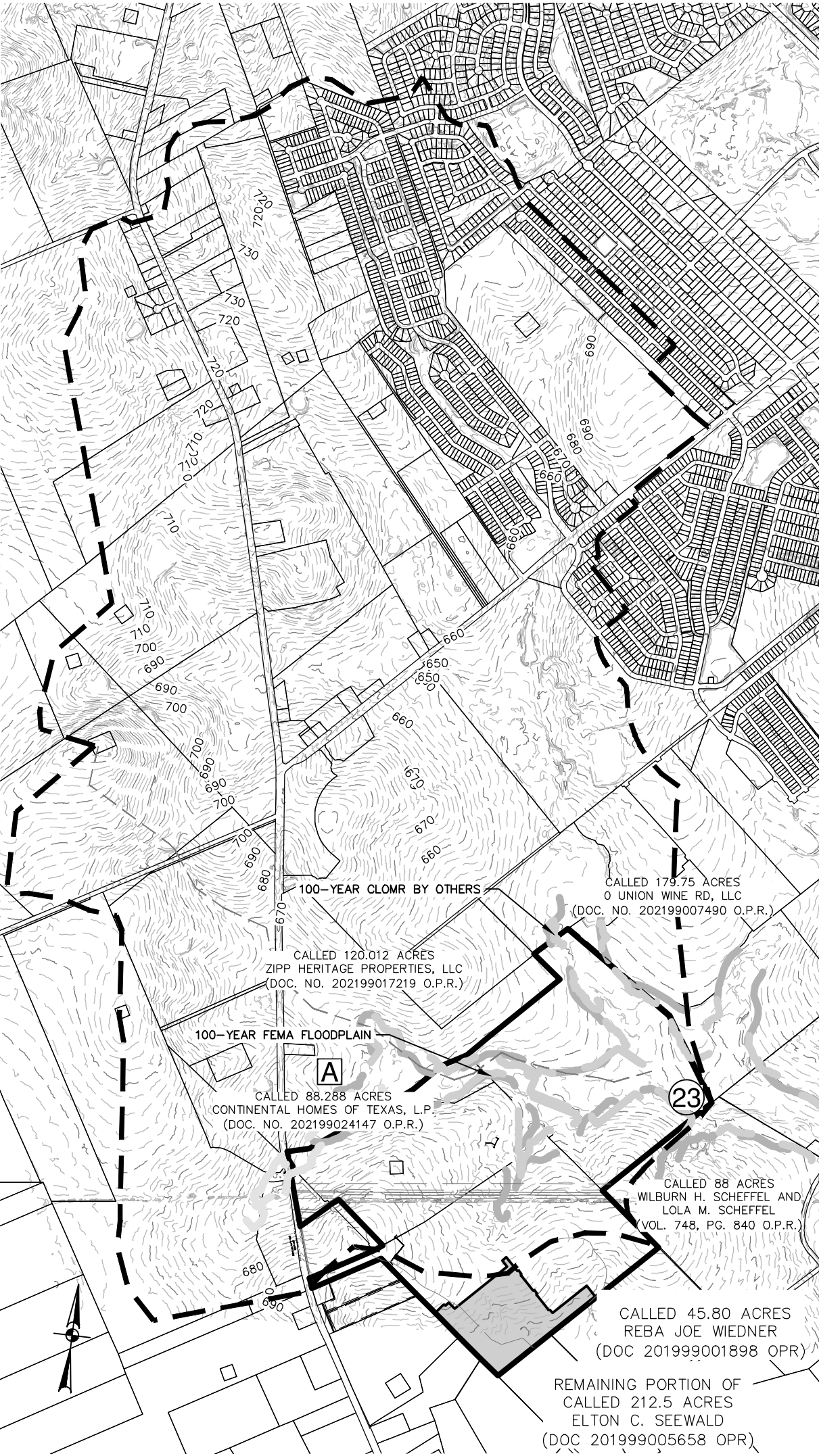
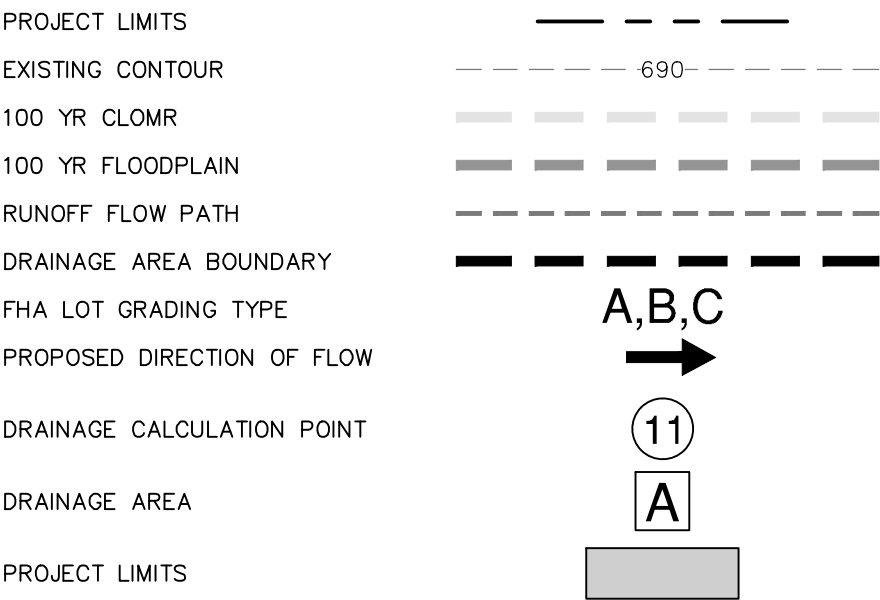


LOCATION MAP

NOT-TO-SCALE



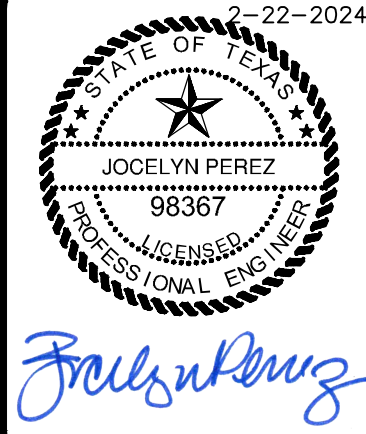
MASTER DRAINAGE LEGEND



OVERALL DRAINAGE

SCALE 1"=1,500'

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

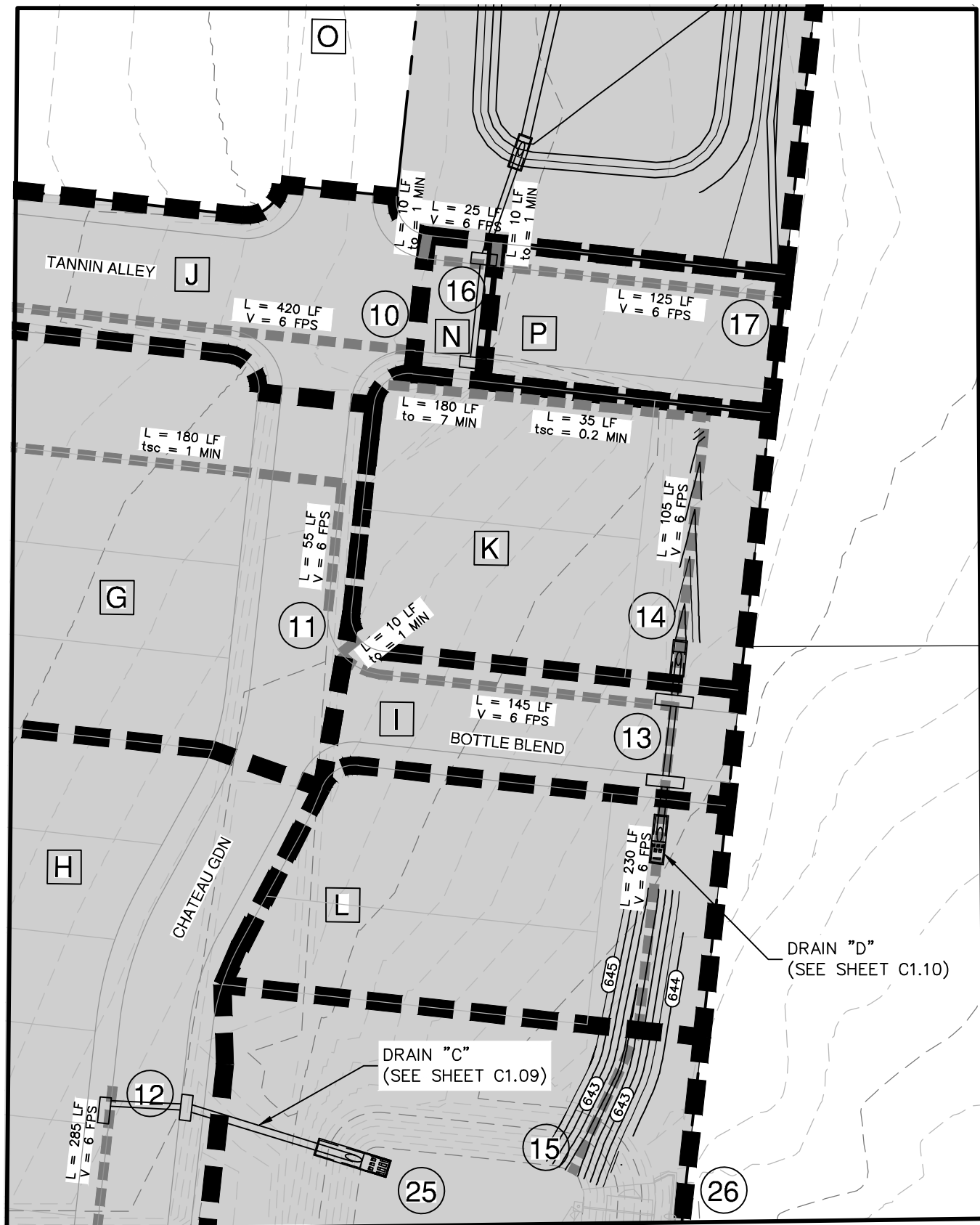
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
MASTER DRAINAGE PLAN - EXISTING CONDITIONS

PLAT NO.	30058-05
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C1.00

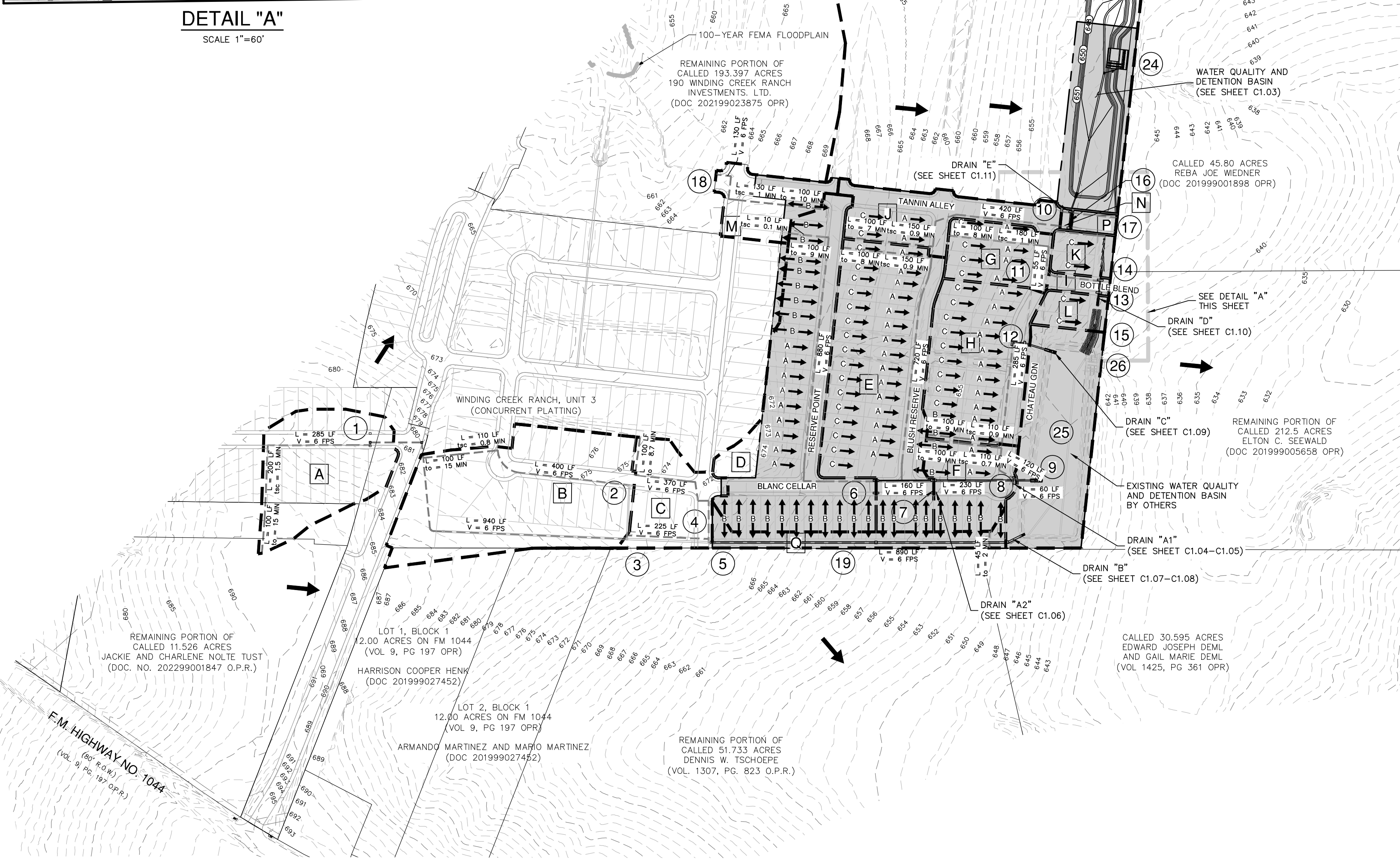
FOR PERMIT

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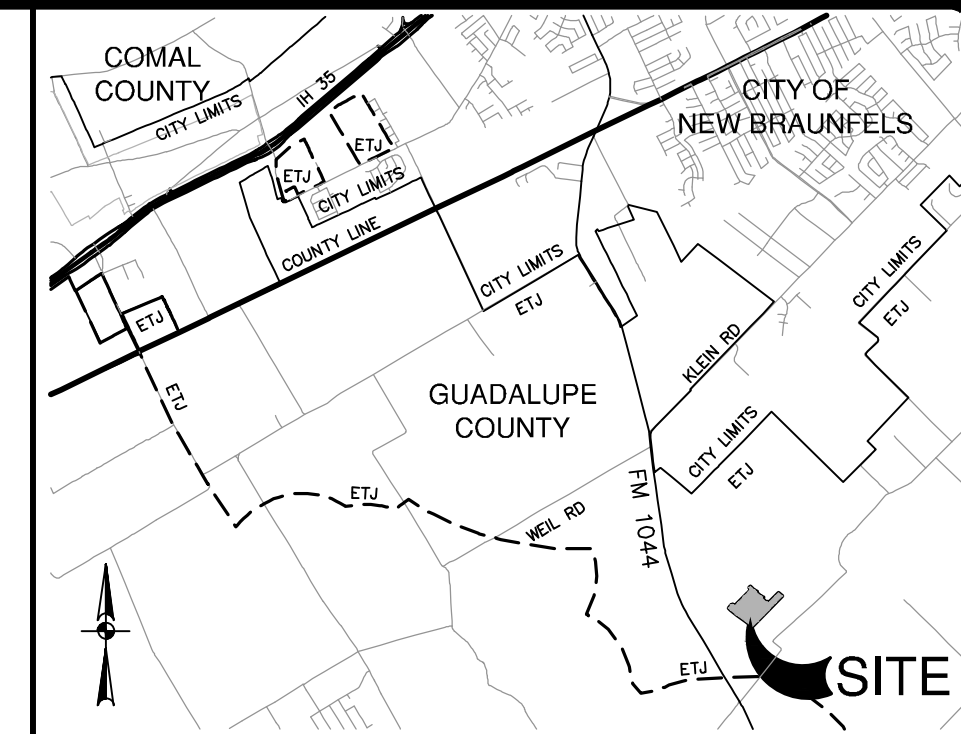


DETAIL "A"
SCALE 1"=60'

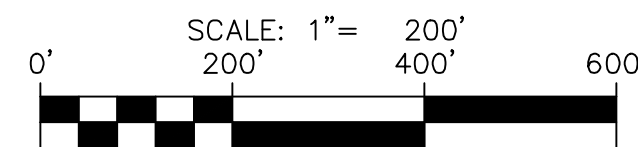


MASTER DRAINAGE LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	---
100 YR CLOMR	---
100 YR FLOODPLAIN	---
RUNOFF FLOW PATH	---
DRAINAGE AREA BOUNDARY	---
FHA LOT GRADING TYPE	---
PROPOSED DIRECTION OF FLOW	A,B,C
DRAINAGE CALCULATION POINT	11
DRAINAGE AREA	A
PROJECT LIMITS	---



LOCATION MAP
NOT-TO-SCALE



Calc Pt	Description	Drainage Area		Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q (cfs)	Frequency (year)	Total Q (cfs)	Inlets on Grade	
		Area ID	Acres							Intercept	Bypass
1	WINDING CREEK RANCH UNIT 2 DRAIN A3a-2	A	2.42	17	3.97	0.58	6	2	6		
					5.83	0.64	9	10	9		
					7.02	0.69	12	25	12		
					8.98	0.77	17	100	17		
2	WINDING CREEK RANCH UNIT 3 DRAIN C	B	4.63	17	3.97	0.58	11	2	11		
					5.83	0.64	17	10	17		
					7.02	0.69	22	25	22		
					8.98	0.77	32	100	32		
3	WINDING CREEK RANCH UNIT 3 DRAIN C	A + B	7.05	20	3.65	0.58	15	2	15		
					5.36	0.64	24	10	24		
					6.45	0.69	31	25	31		
					8.23	0.77	45	100	45		
4	WINDING CREEK RANCH UNIT 3 DRAIN C	C	1.43	10	5.05	0.58	4	2	4		
					7.50	0.64	7	10	7		
					9.12	0.69	9	25	9		
					11.70	0.77	13	100	13		
5	WINDING CREEK RANCH UNIT 3 DRAIN C OUTFALL	A + B + C	8.48	20	3.65	0.58	18	2	18		
					5.36	0.64	29	10	29		
					6.45	0.69	38	25	38		
					8.23	0.77	54	100	54		
6	DRAIN A ON-GRADE INLETS	D	4.59	12	4.70	0.58	13	2	13	11	2
					6.97	0.64	20	10	20	13	7
					8.45	0.69	27	25	27	16	11
					10.83	0.77	38	100	38	20	18
7	DRAIN A ON-GRADE INLETS	D(BYPASS) + E	4.70	10	5.05	0.58	14	2	16	13	3
					7.50	0.64	23	10	30	19	11
					9.12	0.69	30	25	41	22	19
					11.70	0.77	42	100	60	28	32
8	DRAIN A CURB INLET	E(BYPASS) + F	1.26	10	5.05	0.58	4	2	7		
					7.50	0.64	6	10	17		
					9.12	0.69	8	25	27		
					11.70	0.77	11	100	43		
9	DRAIN A OUTFALL	D + E + F	10.55	13	4.54	0.58	28	2	28		
					6.72	0.64	45	10	45		
					8.13	0.69	59	25	59		
					10.42	0.77	85	100	85		
10	CHATEAU GDN AND TANNIN ALLEY INTERSECTION	J	1.52	10	5.05	0.58	4	2	4	4	0
					7.50	0.64	7	10	7	7	0
					9.12	0.69	10	25	10	10	0
					11.70	0.77	14	100	14	14	0
11	CHATEAU GDN AND BOTTLE BLEND INTERSECTION	G + (1/2)* J (INTERCEPT)	1.12	10	5.05	0.58	3	2	6	3	3
					7.50	0.64	5	10	9	4	5
					9.12	0.69	7	25	12	6	6
					11.70	0.77	10	100	17	8	9
12	DRAIN C	G(BYPASS) + H	2.81	11	4.87	0.58	8	2	11		
					7.23	0.64	13	10	18		
					8.78	0.69	17	25	23		
					11.26	0.77	24	100	33		
13	DRAIN D ON-GRADE INLETS	I + G(INTERCEPT)	0.20	10	5.05	0.58	1	2	4	4	0
					7.50	0.64	1	10	5	5	0
					9.12	0.69	1	25	7	6	1
					11.70	0.77	2	100	10	8	2
14	DRAIN D EARTHEN CHANNEL	K	0.47	10	5.05	0.58	1	2	1		
					7.50	0.64	2	10	2		
					9.12	0.69	3	25	3		
					11.70	0.77	4	100	4		
15	DRAIN D OUTFALL	K + L + I(INTERCEPT)	0.90	10	5.05	0.58	3	2	6		
					7.50	0.64	4	10	9		
					9.12	0.69	6	25	12		
					11.70	0.77	8	100	16		
16	DRAIN E ON-GRADE INLETS	N + J(BYPASS)	0.04	10	5.05	0.70	1	2	1	1	0.0
					7.50	0.78	1	10	1	1	0.0
					9.12	0.83	1	25	1	1	0.0
					11.70	0.91	1	100	1	1	0.0
17	OFFSITE FLOW	P + N(BYPASS)	0.17	10	5.05	0.70	1	2	1		
					7.50	0.78	1	10	1		
					9.12	0.83	1	25	1		
					11.70	0.91	2	100	2		
18	OFFSITE FLOW	M	1.07	10	5.05	0.60	3	2	3		
					7.50	0.67	5	10	5		
					9.12	0.71	7	25	7		
					11.70	0.80	10	2	10		
19	OFFSITE FLOW	Q	0.94	10	5.05	0.25	1	2	1		
					7.50	0.30	2	10	2		
					9.12	0.34	3	25	3		
					11.70	0.41	5	100	5		
24	WATER QUALITY AND DETENTION BASIN D	J + O + N	19.94	SEE HEC-HMS CALCULATIONS FOR PROPOSED BASIN					2	12	
									10	61	
									25	92	
									100	137	
25	COMBINED DETENTION AND WATER QUALITY BASIN C	A + B + C + D + E + F + G + H + I + K + L	26.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT					2	31	
									10	82	
									25	117	
									100	186	
26	EXISTING COMBINED DETENTION AND WATER QUALITY BASIN C OUTFALL	A + B + C + D + E + F + G + H + I + K + L + P + Q (BYPASS)	27.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT					2	32	
									10	83	
									25	119	
									100	190	

PAPE-DAWSON
ENGINEERS

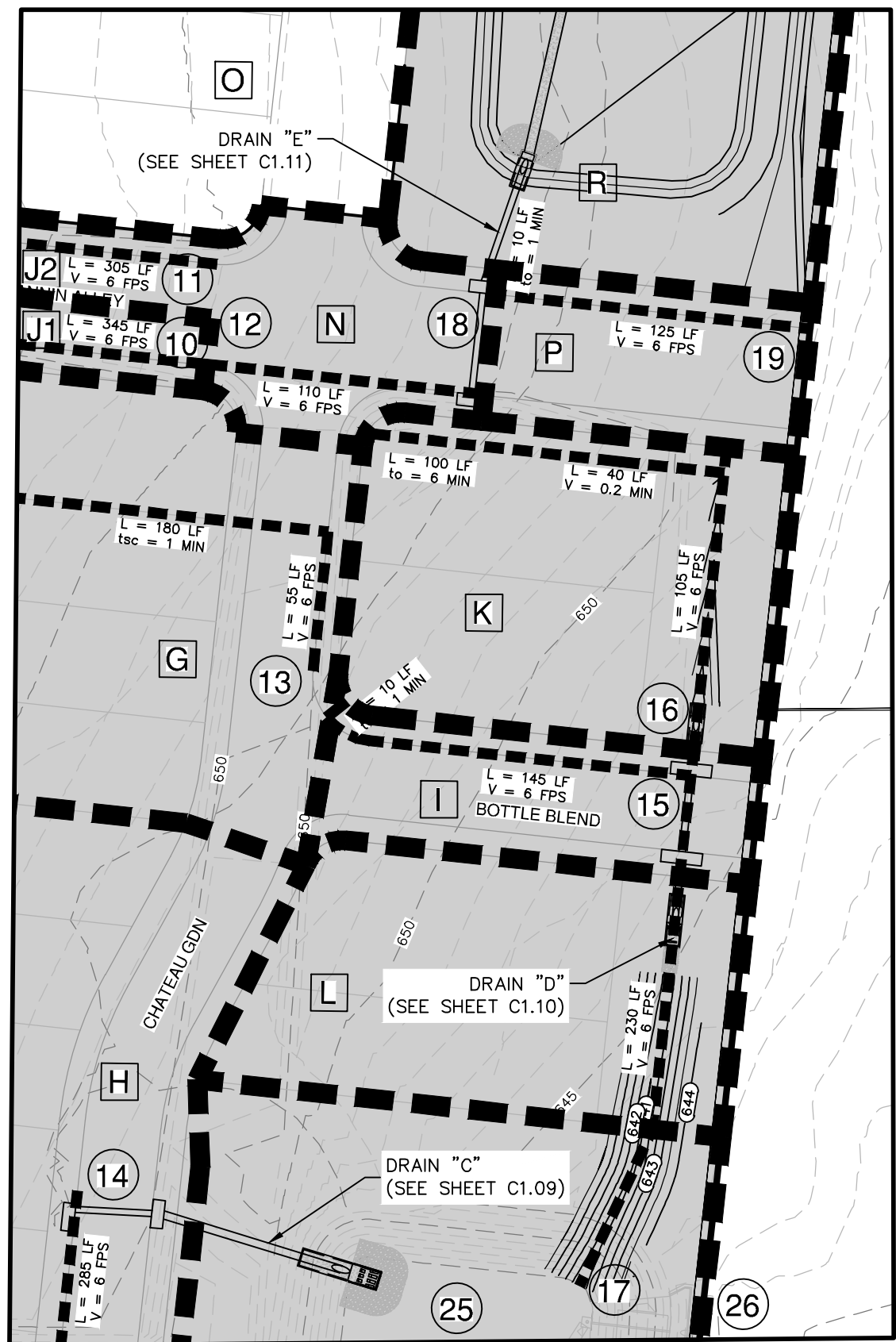
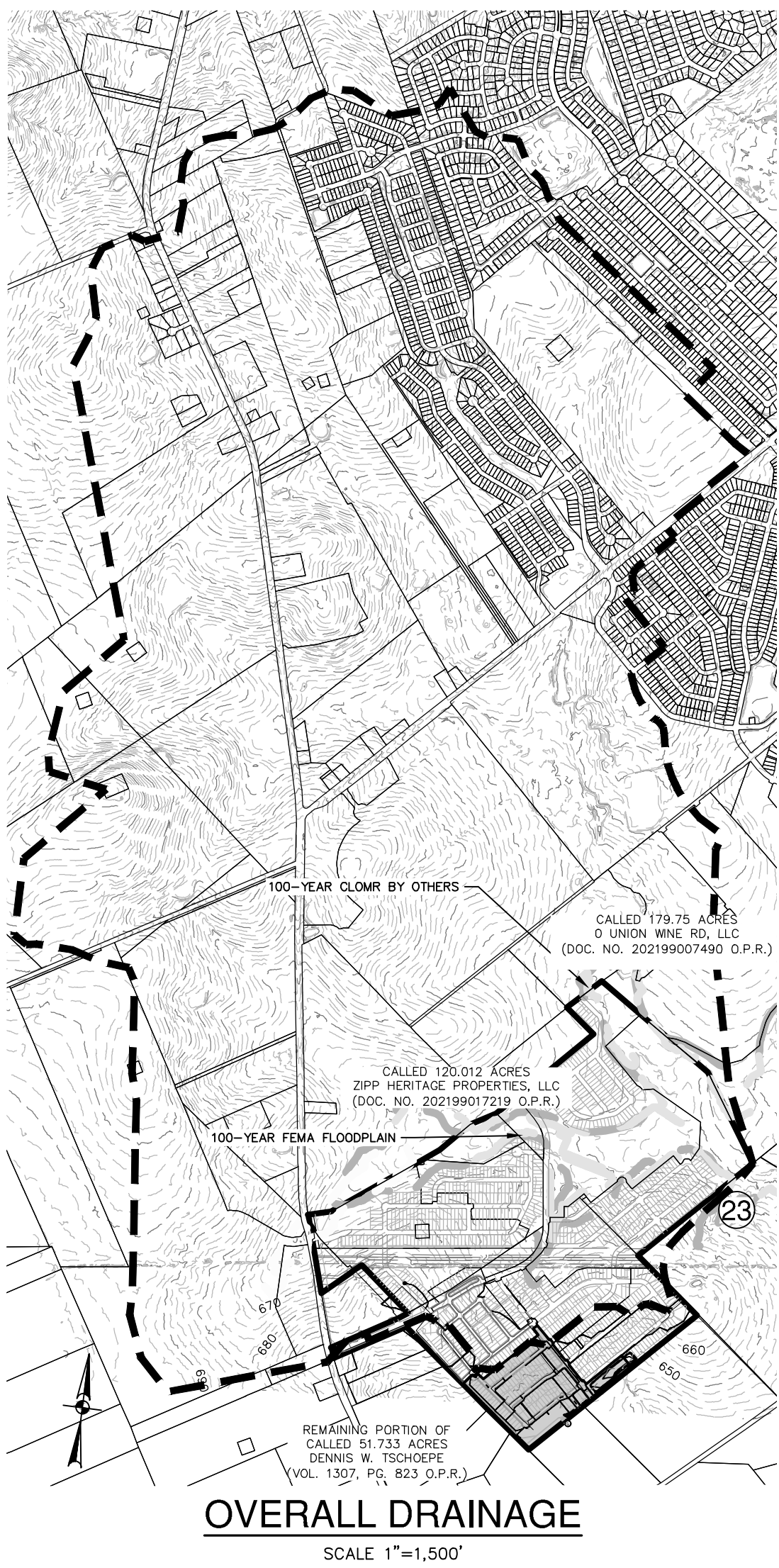
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

MASTER DRAINAGE PLAN - PROPOSED CONDITIONS

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN **JM**
SHEET **C1.01**

FOR PERMIT



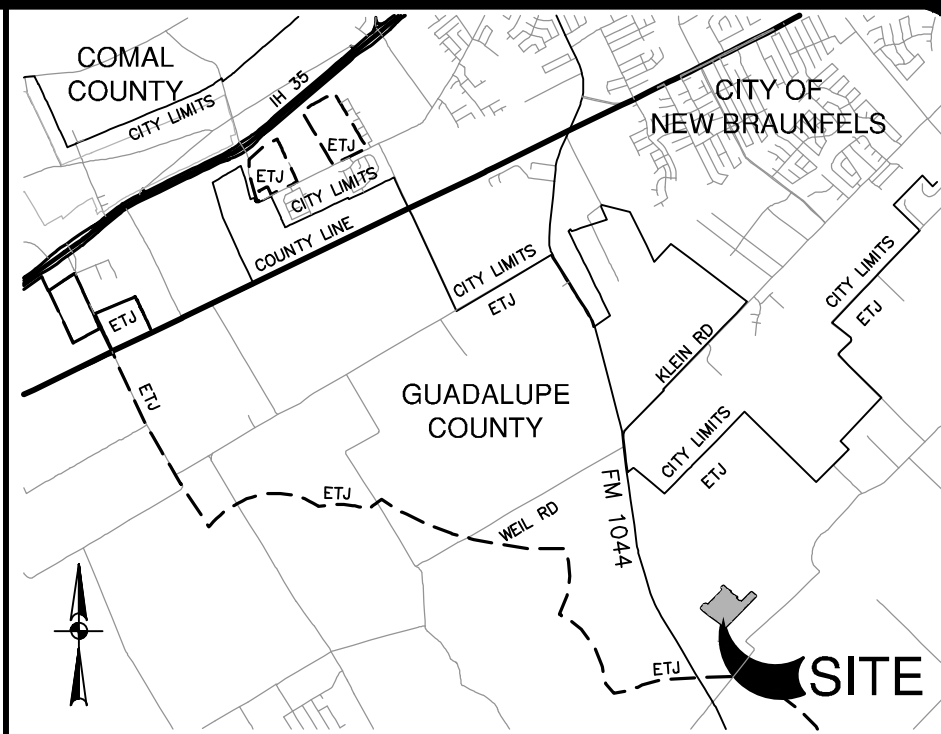
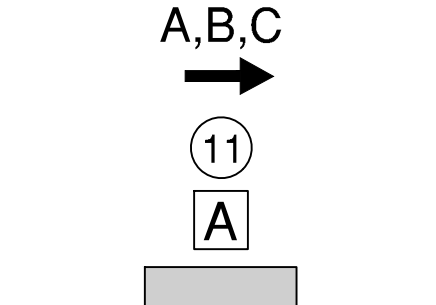
DETAIL "A"
SCALE 1"=60'

OVERALL DRAINAGE
SCALE 1"=1,500'



MASTER DRAINAGE LEGEND

- PROJECT LIMITS
EXISTING CONTOUR
100 YR CLOMR
100 YR FLOODPLAIN
RUNOFF FLOW PATH
DRAINAGE AREA BOUNDARY
FHA LOT GRADING TYPE
PROPOSED DIRECTION OF FLOW
DRAINAGE CALCULATION POINT
DRAINAGE AREA
PROJECT LIMITS



LOCATION MAP
NOT-TO-SCALE

Calc Pt	Description	Drainage Area Area ID	Acres	Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q(cfs)	Frequency (year)	Total Q	Inlets on Grade	Intercept	Bypass
1	WINDING CREEK RANCH UNIT 2 DRAIN A3+2	A	2.42	17	3.97 5.83 7.02 8.98	0.58 0.64 0.69 0.77	6 9 12 17	2 10 17 100	6 9 12 11			
2	WINDING CREEK RANCH UNIT 3 DRAIN C	B	4.63	17	3.97 5.83 7.02 8.98	0.58 0.64 0.69 0.77	11 17 22 32	2 10 17 100	11 17 22 32			
3	WINDING CREEK RANCH UNIT 3 DRAIN C	A + B	7.05	20	3.65 5.36 6.45 8.23	0.58 0.64 0.69 0.77	15 24 31 45	2 10 25 100	15 24 31 45			
4	WINDING CREEK RANCH UNIT 3 DRAIN C	C	1.43	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	4 7 9 13	2 10 25 100	4 7 9 13			
5	WINDING CREEK RANCH UNIT 3 DRAIN C OUTFALL/DRAIN "B"	A + B + C	8.48	20	3.65 5.36 6.45 8.23	0.58 0.64 0.69 0.77	18 29 38 54	2 10 25 100	18 29 38 54			
6	DRAIN A ON-GRADE INLETS	D	4.59	12	4.70 6.97 8.45 10.83	0.58 0.64 0.69 0.77	13 20 27 38	2 10 20 100	13 20 27 38	11 13 16 20	2 7 11 18	
7	DRAIN A ON-GRADE INLETS	D(BYPASS) + E	4.70	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	14 23 30 42	2 10 25 100	14 23 30 42	16 30 41 60	13 19 22 28	3 11 19 32
8	DRAIN A CURB INLET	E(BYPASS) + F	1.26	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	4 6 8 11	2 10 25 100	4 6 8 11			
9	DRAIN A OUTFALL	D + E + F	10.55	13	4.54 6.72 8.13 10.42	0.58 0.64 0.69 0.77	28 45 59 85	2 10 25 100	28 45 59 85			
10	TANNIN ALLEY CAPACITY CHECK	J1	0.96	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	3 4 6 8	2 10 25 100	3 4 6 8			
11	TANNIN ALLEY CAPACITY CHECK	J2	2.58	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	7 12 16 22	2 10 25 100	7 12 16 22			
12	TANNIN ALLEY AND CHATEAU GDN INTERSECTION	J1 + J2	3.54	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	10 16 21 31	2 10 25 100	10 16 21 31	10 16 20 31	0 0 1 3	
13	CHATEAU GDN AND BOTTLE BLEND INTERSECTION	G + (1/2)* (J1+J2)(INTERCEPT)	1.12	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	3 5 7 10	2 10 25 100	3 5 7 10	8 14 17 24	4 7 10 12	4 7 7 12
14	DRAIN C	G(BYPASS) + H	2.81	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	8 13 17 24	2 10 25 100	8 13 17 24			
15	DRAIN D ON-GRADE INLETS	I + G(INTERCEPT)	0.20	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	1 2 3 4	2 10 25 100	1 2 3 4	5 8 9 10	0 1 3 4	
16	DRAIN D EARTHEN CHANNEL	K	0.47	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	1 2 3 4	2 10 25 100	1 2 3 4			
17	DRAIN D OUTFALL	K + L + (INTERCEPT)	0.90	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	3 4 6 8	2 10 25 100	3 4 6 8			
18	DRAIN E ON-GRADE INLETS	N + J1(BYPASS) + J2(BYPASS)	0.19	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	1 1 2 3	2 10 25 100	1 1 2 3	1 1 2 4	0 0 0 1	
19	OFFSITE FLOW	P + N(BYPASS)	0.17	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	1 1 2 3	2 10 25 100	1 1 2 3			
20	OFFSITE FLOW	M	4.41	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	12 20 27 38	2 10 25 100	12 20 27 38			
21	OFFSITE FLOW	Q	0.94	10	5.05 7.50 9.12 11.70	0.58 0.64 0.69 0.77	1 2 3 4	2 10 25 100	1 2 3 4			
22	OFFSITE FLOW	O + (1/2)* (J1+J2)(INTERCEPT)	9.00	11	4.87 7.23 8.78 11.26	0.58 0.64 0.69 0.77	25 42 55 78	2 10 25 100	25 42 55 78	30 50 65 92		
23		M + S										
24	WATER QUALITY AND DETENTION BASIN D	J1 + J2 + O + N + R	17.33	SEE HEC-HMS CALCULATIONS FOR PROPOSED BASIN								
25	COMBINED DETENTION AND WATER QUALITY BASIN C	A + B + C + D + E + F + G + H + I + K + L	26.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT								
26	EXISTING COMBINED DETENTION AND WATER QUALITY BASIN C OUTFALL	A + B + C + D + E + F + G + H + I + K + L + P + Q (BYPASS)	27.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT								

Winding Creek Ranch Flow Comparison Table									
Calc Pt.	2-Year (cfs)		10-Year (cfs)		25-Year (cfs)		100-Year (cfs)		Proposed
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	
*23	2441	2354	4988	4854	6733	6572	9696	9520	
24	43	21	90	76	115	104	163	146	
26	38	32	84	84	122	121	193	193	

*Reference Winding Creek Ranch CLOMR

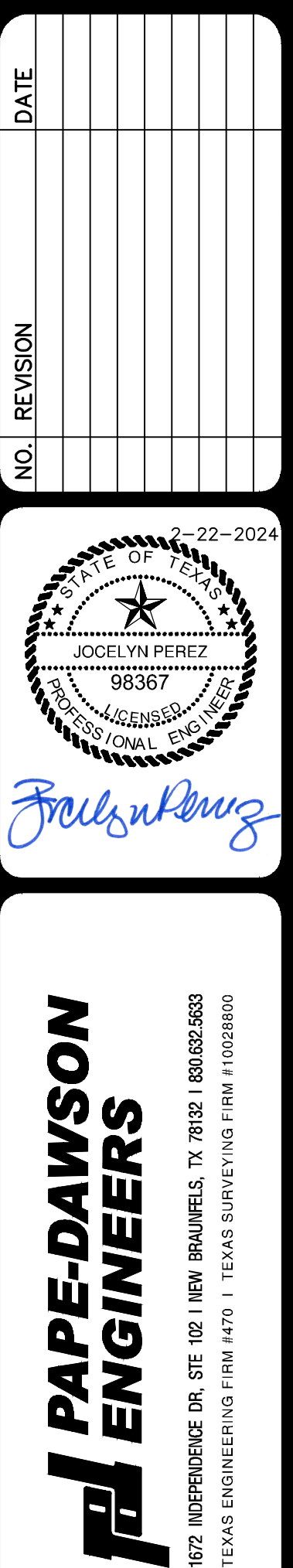
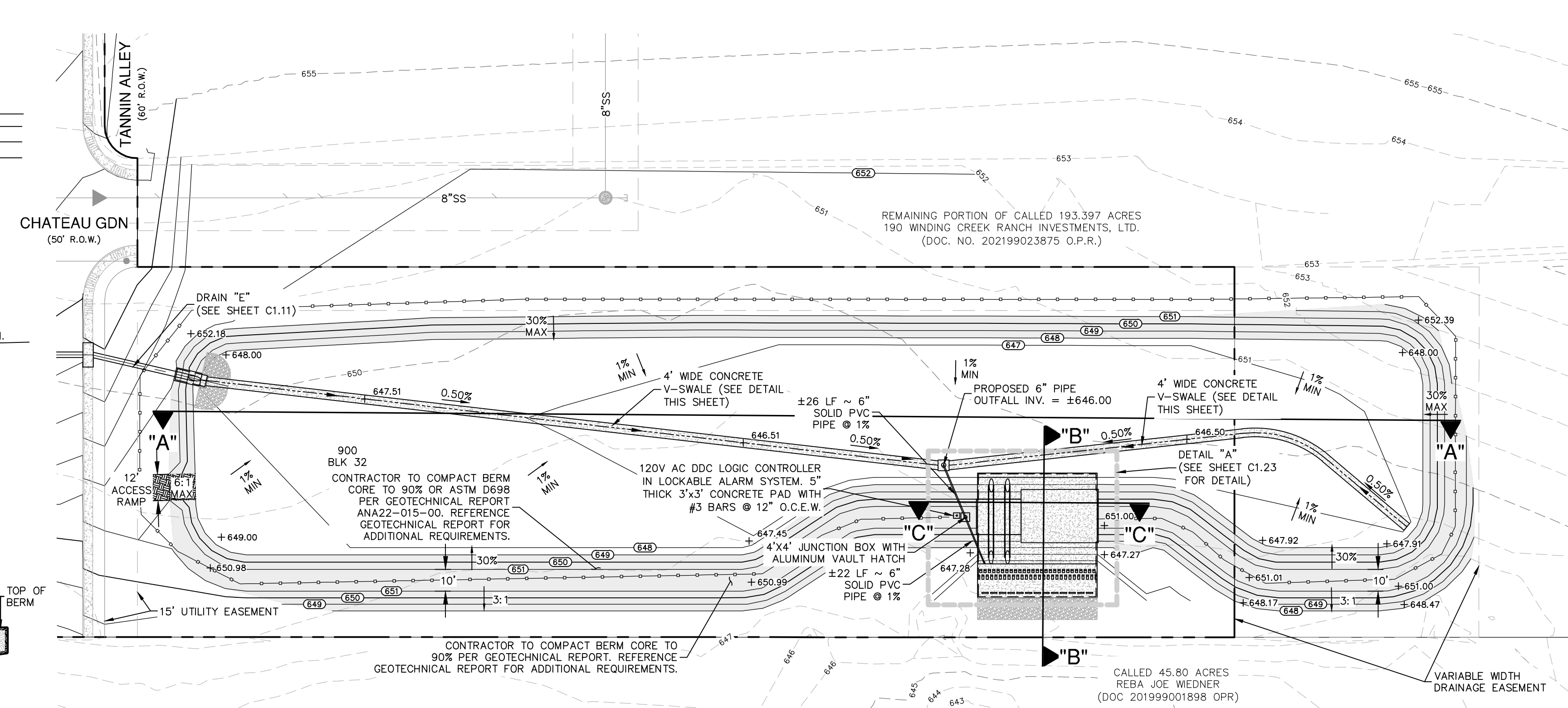
DATE
NO. REVISION
2-22-2024
JOCELYN PEREZ
98367
PROFESSIONAL ENGINEER
TEXAS
J. Papadopoulos

PAPE-DAWSON
ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C1.02

FOR PERMIT



Detention Pond - Stage Storage Table					
Stage Elev.	Incremental Height (ft)	Surface Area (sf)	Incremental Vol. (cf)	Cumulative Vol. (cf)	
646	0	0	-	-	Water Quality
647	1	22,526	11,263	11,263	
647.25	0.25	24,796	5,915	17,178	
647.25	0	24,796	-	-	
648	0.75	45,214	26,254	26,254	Detention
649	1	52,190	48,702	74,956	
650	1	56,604	54,397	129,353	
651	1	61,809	59,207	188,559	

****REFERENCE STORM WATER MANAGEMENT
PLAN FOR OVERALL DETENTION ANALYSIS
OF PEAK DISCHARGE FROM SITE.**

<u>OVERFLOW WEIR</u> <u>CALCULATIONS</u>	
Q ₁₀₀	= (C _w)(L)(h) ^{3/2}
Q ₁₀₀	= 173.4
C	= 3.087
L	= 55 ft
173.4	= (3.087)(55)(h) ^{3/2}
h	= 1.01 ft

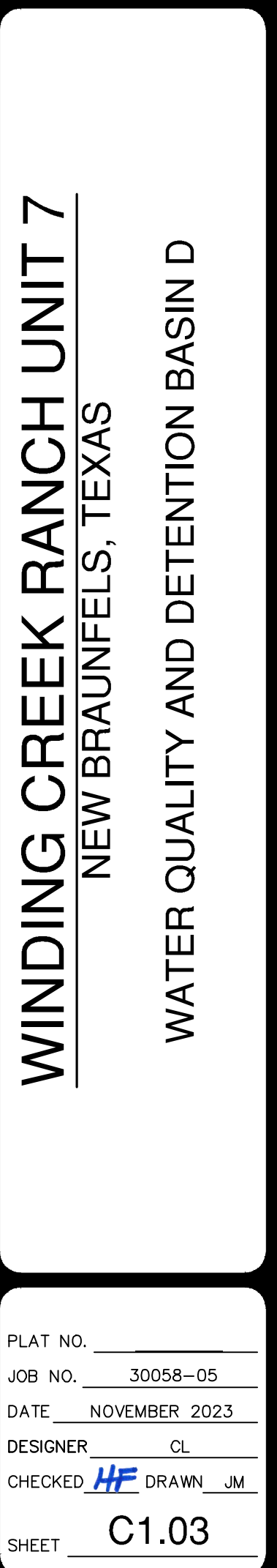
- ## **DRAINAGE & GRADING NOTES:**
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. IF ANY DISCREPANCY IS NOTICED, 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.
 2. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS, ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT BEDDING AND EXCAVATION LIMITS.
 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. EASE OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR SHALL, PRIOR TO ANY TRENCHING, 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 TRENCHING AREA. CONTRACTOR SHALL PROVIDE 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 BE SUFFICIENT FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONSULTANT'S INDEPENDENTLY RETAINED EMPLOYEE SAFETY PROGRAM SHALL BE SUFFICIENT TO MEET THE MINIMUM OSHA STANDARDS IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

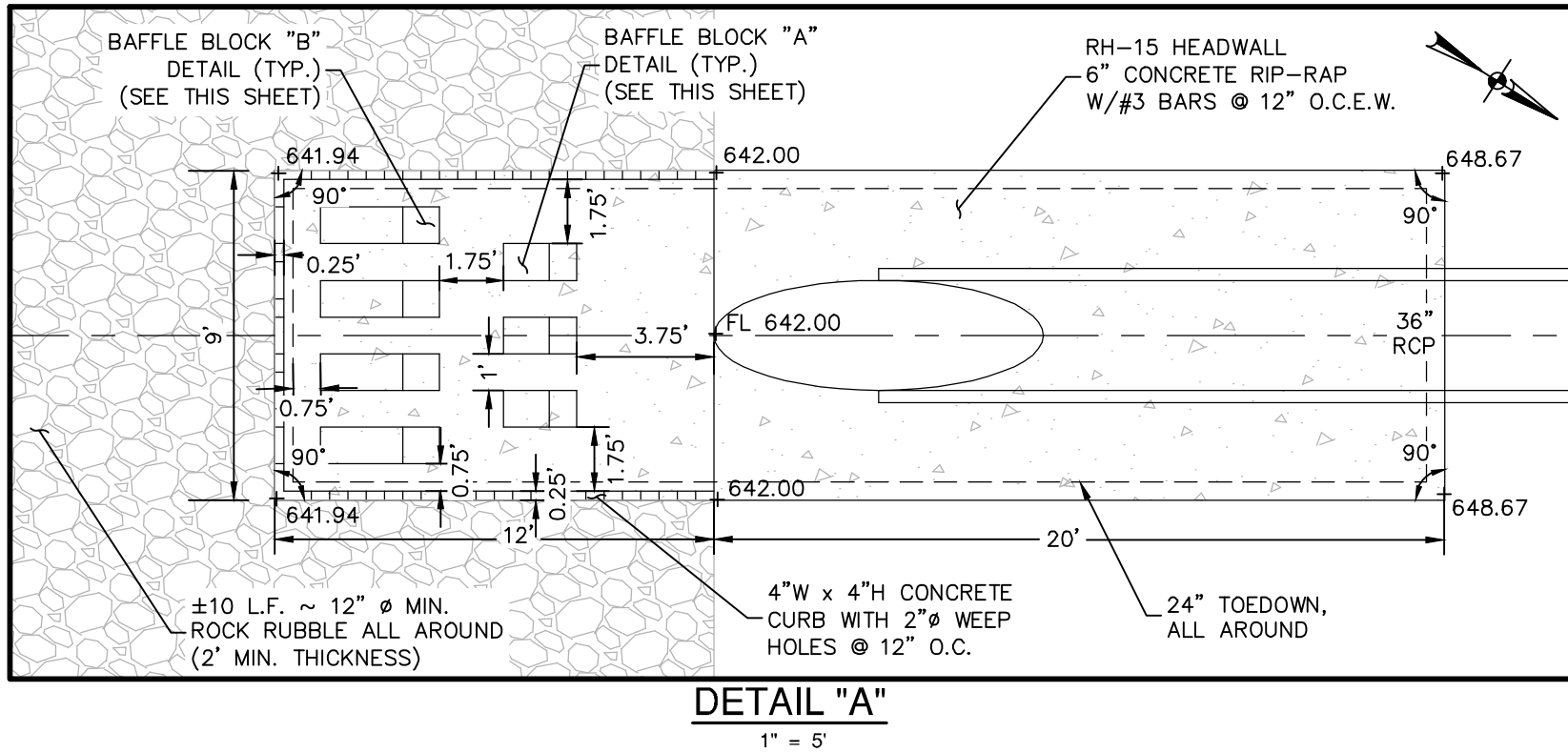
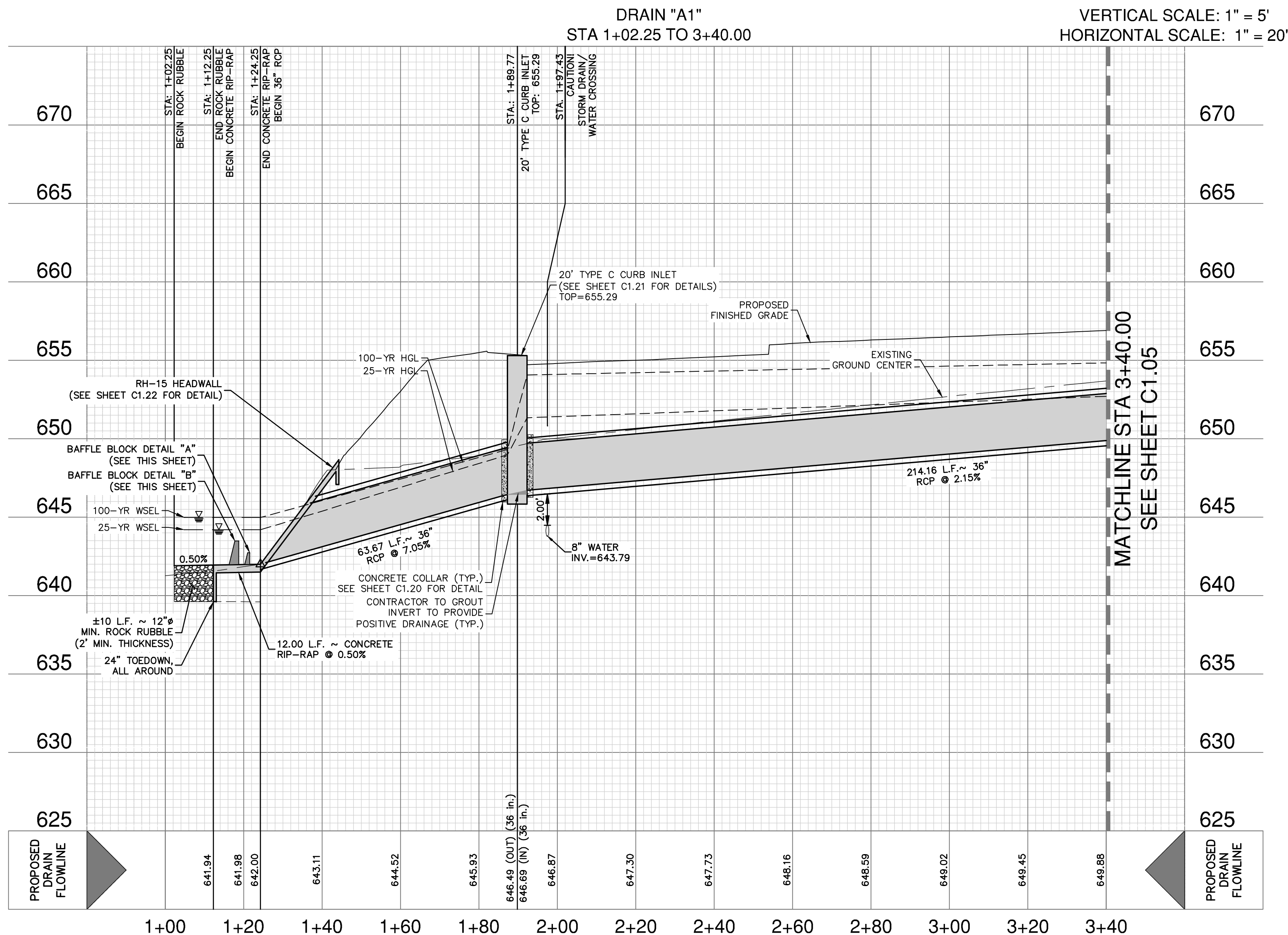
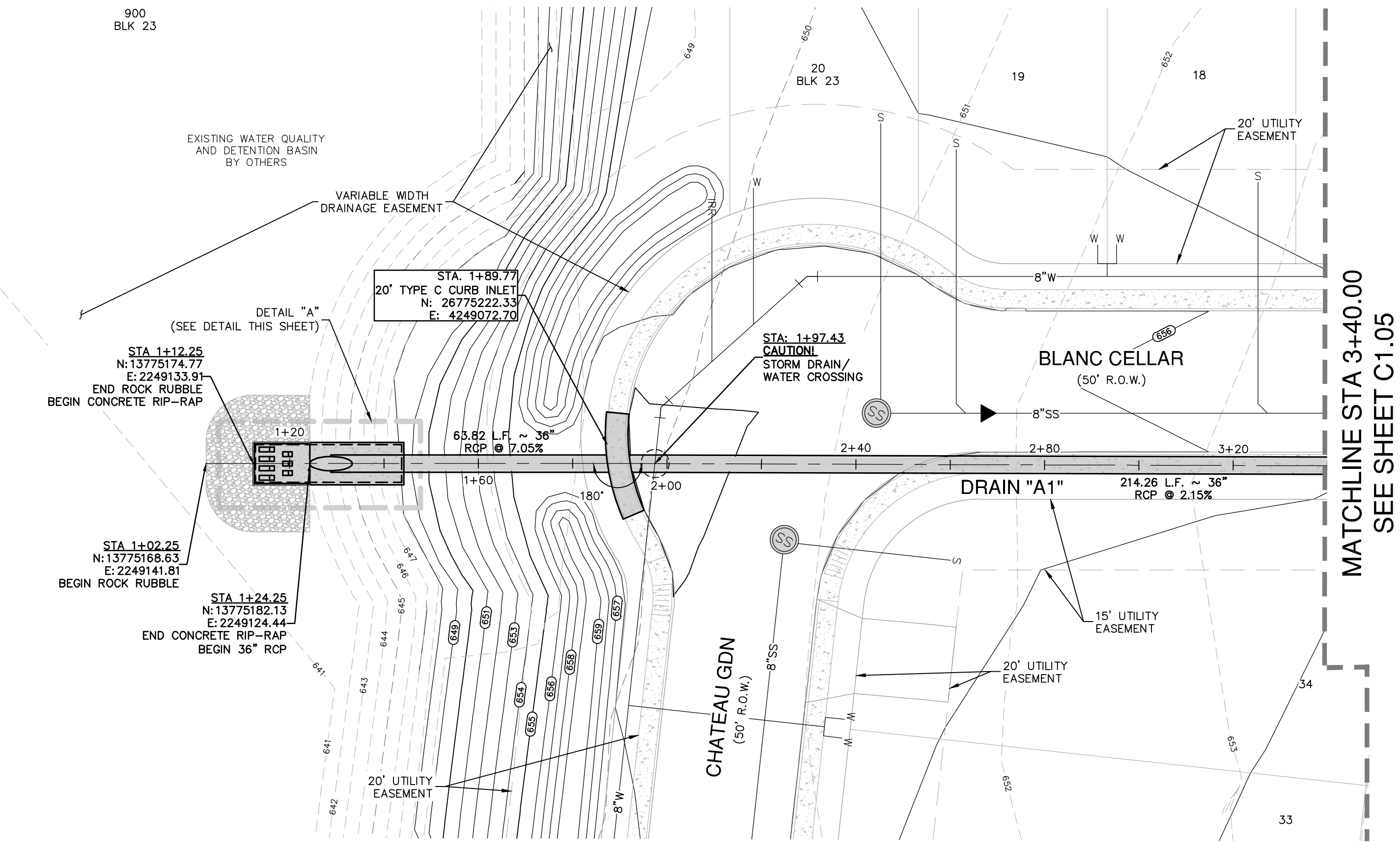
CAUTION!!

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 ELECTRIC, GAS, CABLE, AND OTHER UTILITIES. CONTRACTOR SHALL NOTIFY ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES FROM 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: Nov 22, 2023 1:27pm User: ID: Aladdy
File: P:\300\356\03\Drawings\Civil\SDA1-30955-05.dwg

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HYDRAULIC CALCULATIONS - 20' CURB INLET

TOTAL $Q_{25} = 27$ CFS
 $Q_{25} = 27$ CFS
 $Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)
 $A = L(0.52)$, $h = 0.54$, $g = 32.2$, $c = 0.70$
 $L = \frac{27 \text{ CFS}}{(0.7)(0.52)\sqrt{2}(32.2)(0.54)}$
 $L = 12.57'$ USE 20' FT.
CHECK WITH WEIR FORMULA
 $h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{27}{(3.087)(20)}\right)^{2/3} = 0.58$ FT.
 $h = 0.58' < 0.79'$ OK

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+24.25 TO 1+89.77	
$Q_{25} = 59$ CFS	$S = 7.05\%$
$S_f = 0.78\%$	$V_{25} = 10.67$ FPS
$n = 0.013$	$D = 3.0'$
$Q_2 = 28$ CFS	$V_2 = 18.18$ FPS

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+89.77 TO 4+13.29	
$Q_{25} = 38$ CFS	$S = 2.15\%$
$S_f = 0.33\%$	$V_{25} = 5.38$ FPS
$n = 0.013$	$D = 3.0'$
$Q_2 = 24$ CFS	$V_2 = 3.83$ FPS

DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING WATER	---
EXISTING UNDERGROUND ELECTRIC	---
EXISTING GAS	---
EXISTING SEWER	---
PROPOSED SEWER	---
PROPOSED WATER	---
PROPOSED STORM DRAIN	---
EXISTING STORM DRAIN	---
FLOW ARROW	---
CURLEX SINGLE NET EROSION CONTROL BLANKETS	---
DRAINAGE MAINTENANCE ACCESS	---

WATER PONDING WIDTH:

SEE STORMWATER REPORT FOR STREET CAPACITY CALCULATIONS
(10YR SPREAD WIDTH CONTAINED WITHIN CURB)

DRAINAGE & GRADING NOTES:

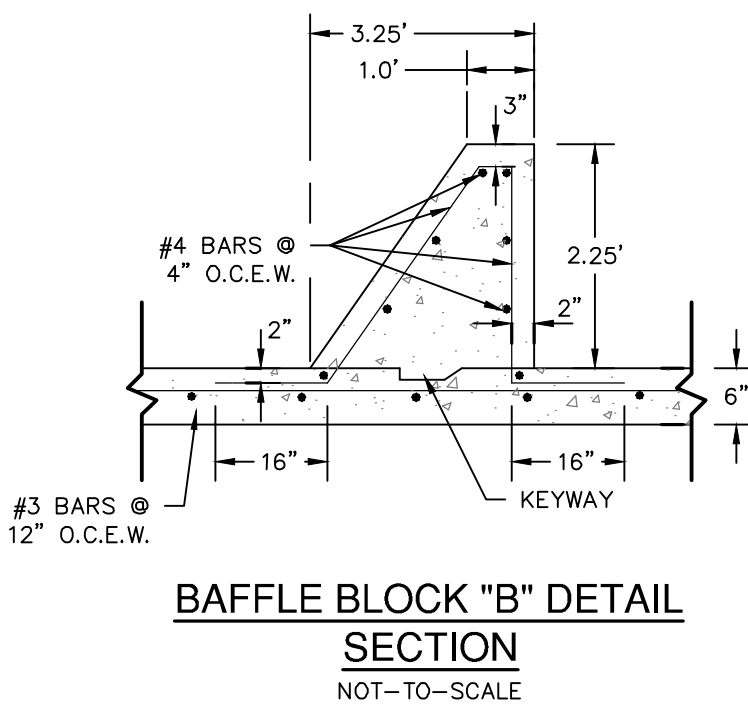
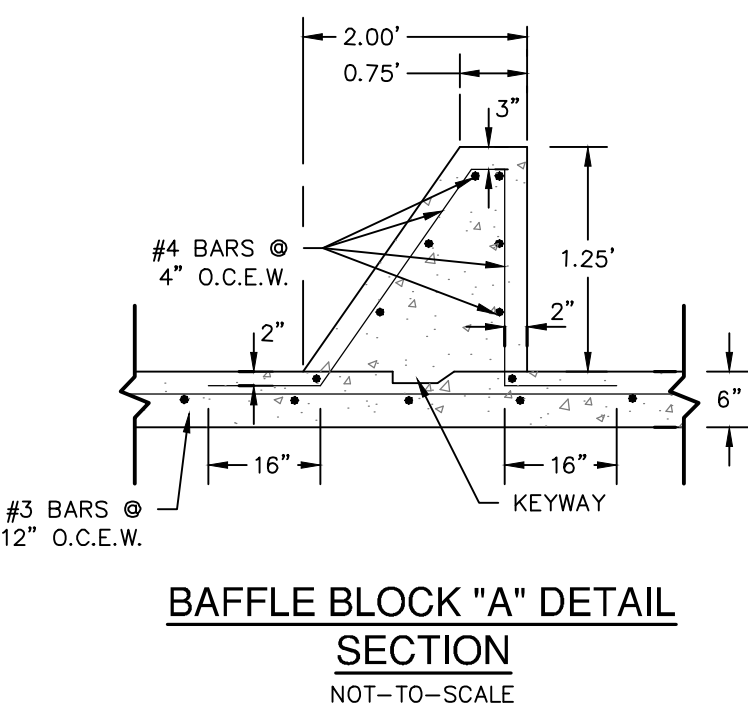
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE COMAL COUNTY WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
- ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

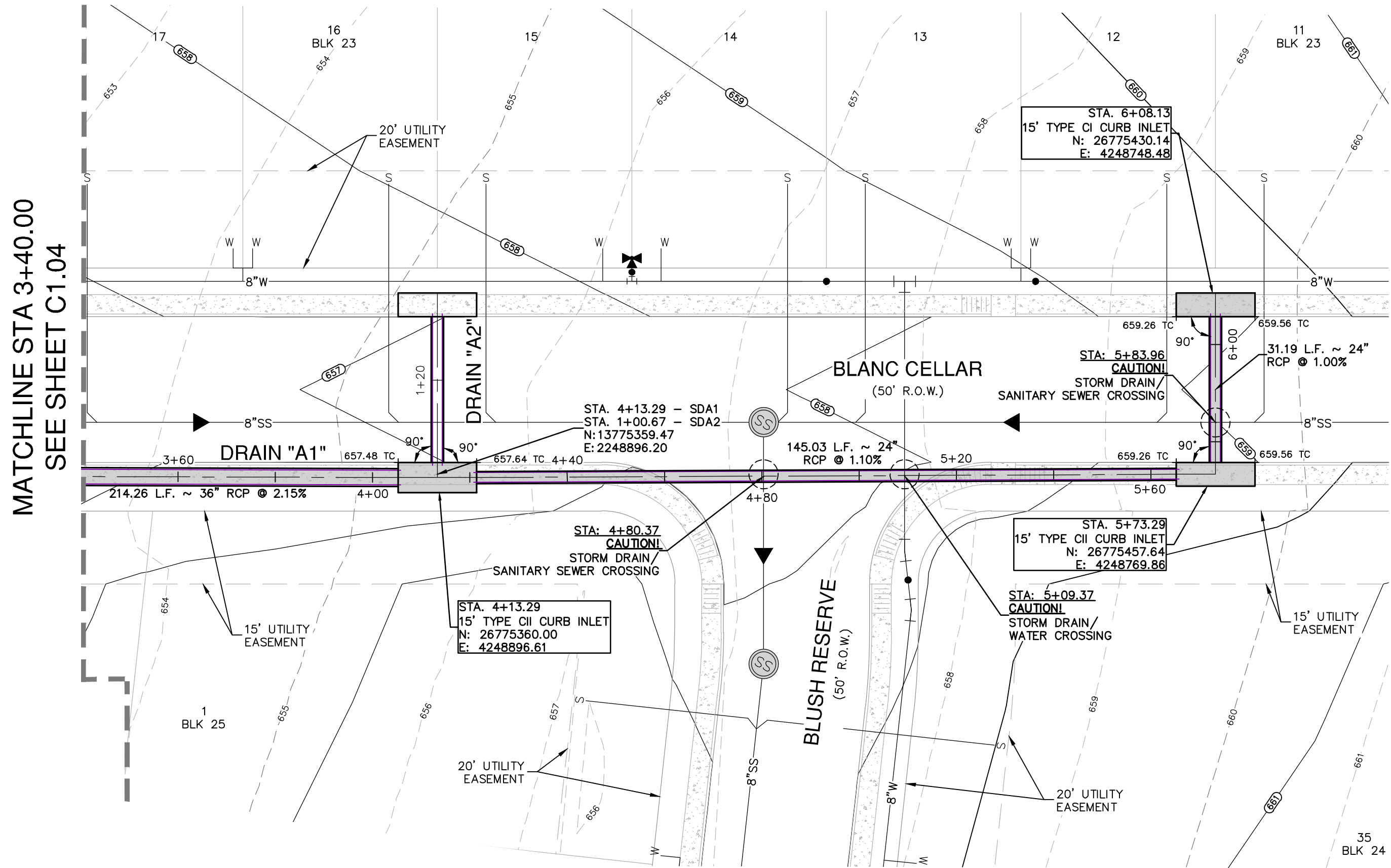


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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
DRAIN A1 - PLAN & PROFILE
STA 1+02.25 TO 3+40.00

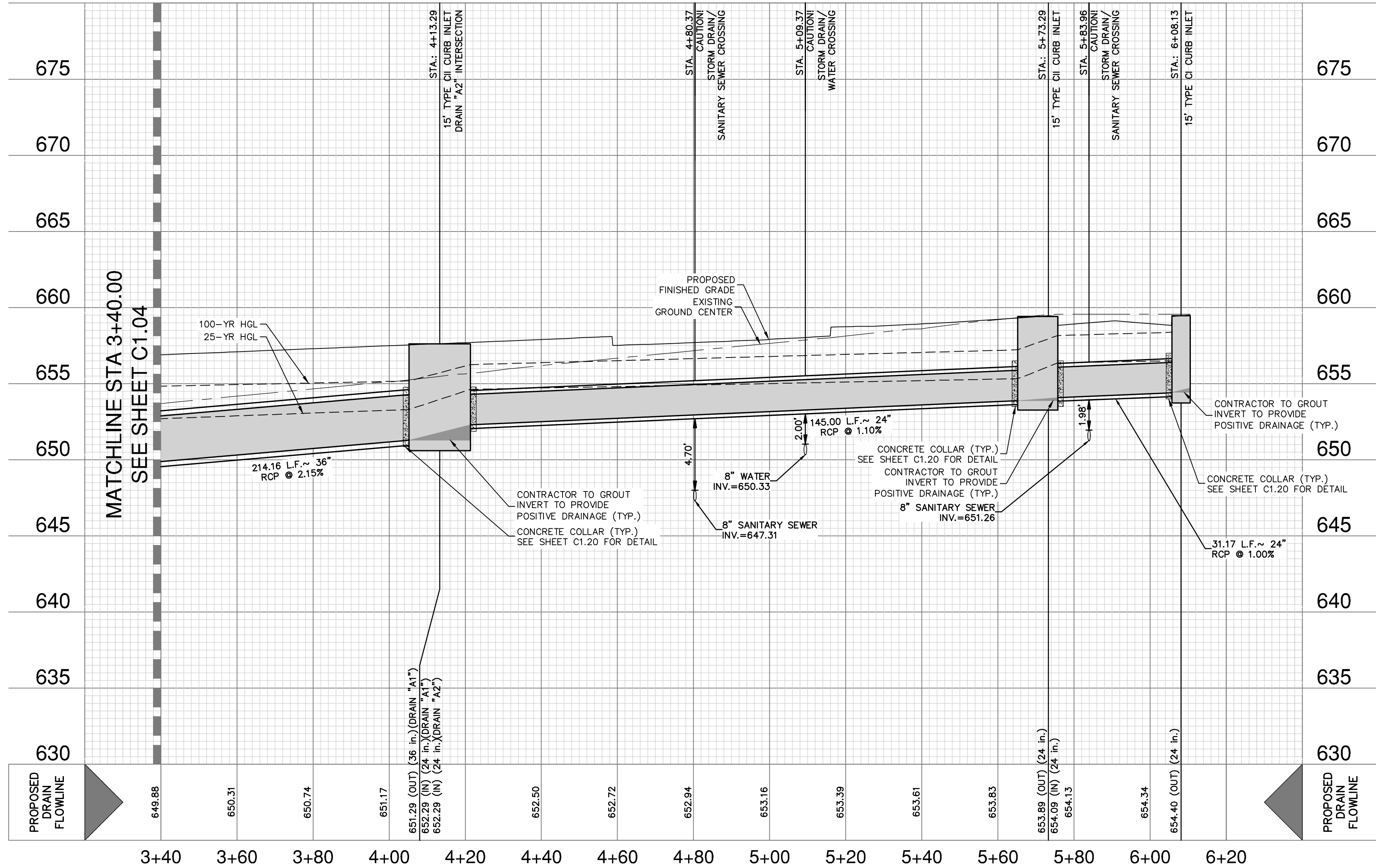
PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN **JM**
SHEET **C1.04**

FOR PERMIT



DRAIN "A1"
STA 3+40.00 TO 6+08.13

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



DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING WATER	---
EXISTING UNDERGROUND ELECTRIC	---
EXISTING GAS	---
EXISTING SEWER	---
PROPOSED SEWER	---
PROPOSED WATER	---
PROPOSED STORM DRAIN	---
EXISTING STORM DRAIN	---
FLOW ARROW	→
CURLEX SINGLE NET EROSION CONTROL BLANKETS	---
DRAINAGE MAINTENANCE ACCESS	---

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+89.77 TO 4+13.29	HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 4+13.29 TO 5+73.29	HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 5+73.29 TO 6+08.13
Q25 = 38 CFS S = 2.15% Sf = 0.33% V25 = 5.38 FPS n = 0.013 D = 3.0' Q2 = 24 CFS V2 = 3.83 FPS	Q25 = 16 CFS S = 1.10% Sf = 0.50% V25 = 5.09 FPS n = 0.013 D = 2.0' Q2 = 11 CFS V2 = 4.57 FPS	Q25 = 8 CFS S = 1.00% Sf = 0.13% V25 = 2.55 FPS n = 0.013 D = 2.0' Q2 = 6 CFS V2 = 2.13 FPS

DRAIN "A1" ON-GRADE INLETS
(STA. 5+73.29 AND STA. 6+08.12) SEE STORMWATER REPORT FOR STREET CAPACITY CALCULATIONS
HYDRAULIC CALCULATIONS
Q25/2 = 13.5
S = 1.9%
L = 15' INLET
Q_CAPTURED = 8 CFS
Q_BYPASS = 5.5 CFS

WATER PONDING WIDTH:

SEE STORMWATER REPORT FOR STREET CAPACITY CALCULATIONS
(10YR SPREAD WIDTH CONTAINED WITHIN CURB)

DRAINAGE & GRADING NOTES:

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CAUTION!!

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TRENCH EXCAVATION SAFETY PROTECTION:

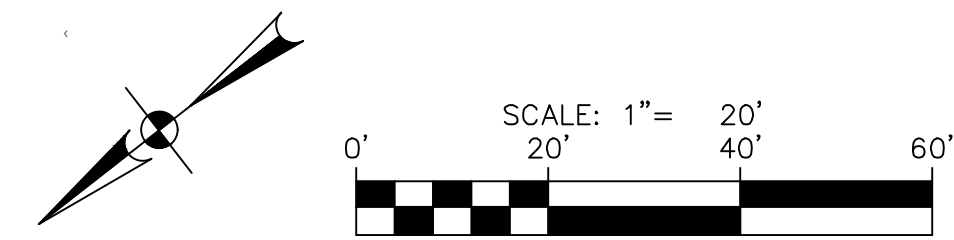
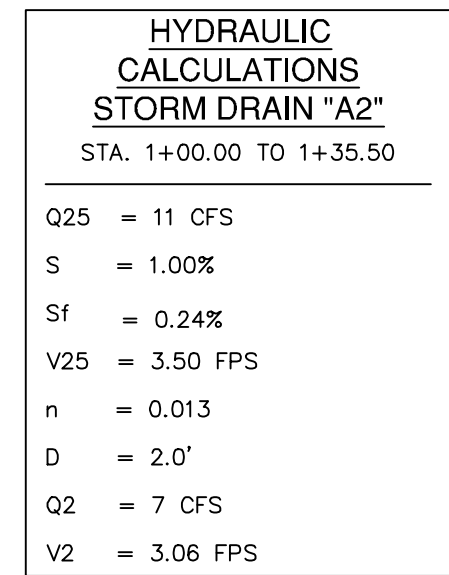
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
DRAIN A1 - PLAN & PROFILE
STA 3+40.00 TO 6+08.13

JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C1.05

FOR PERMIT

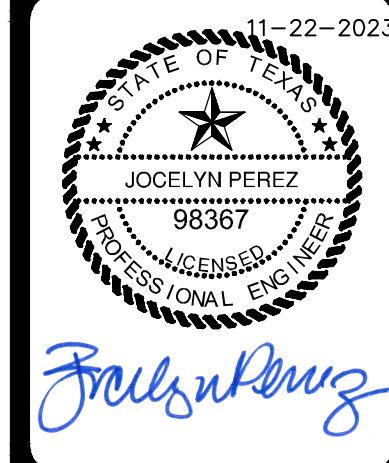
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SEE STORMWATER REPORT FOR STREET CAPACITY CALCULATIONS
(10YR SPREAD WIDTH CONTAINED WITHIN CURB)

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WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

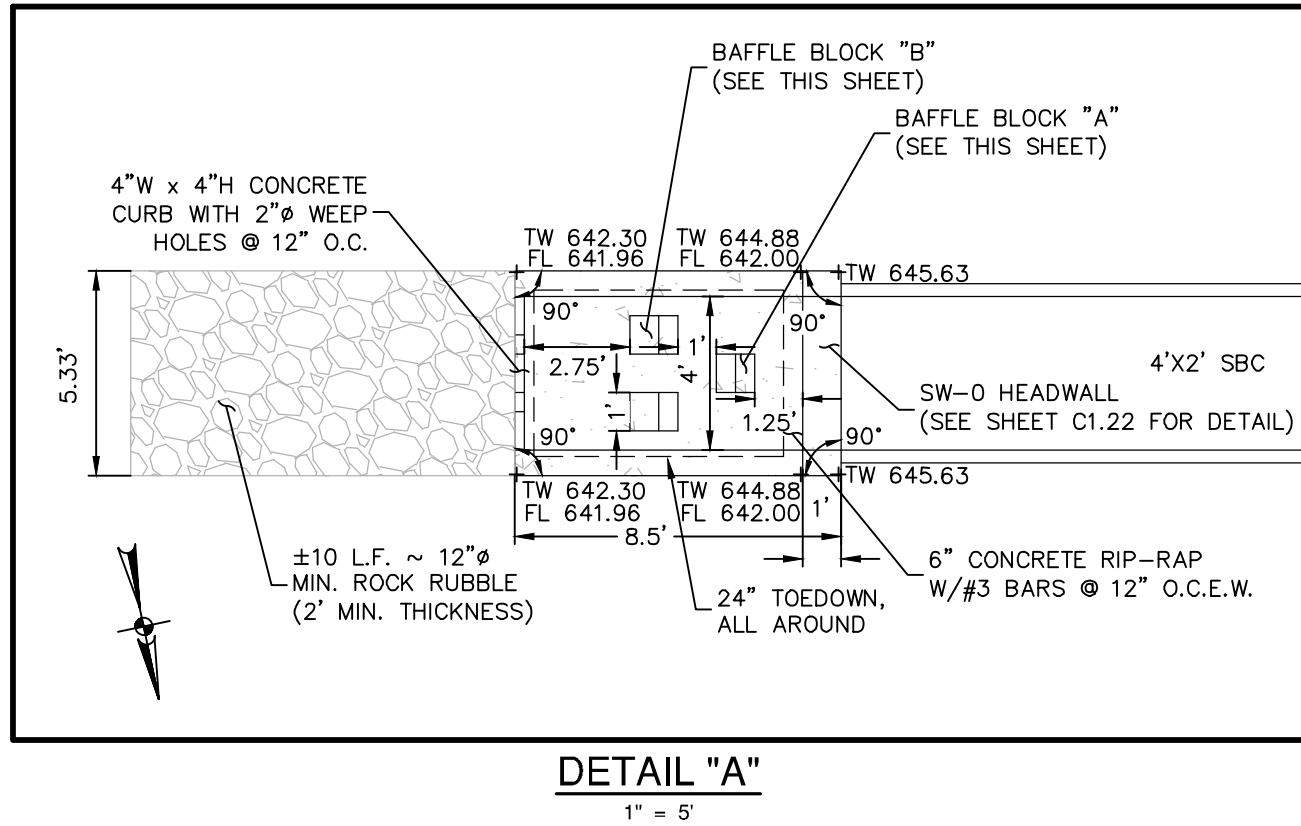
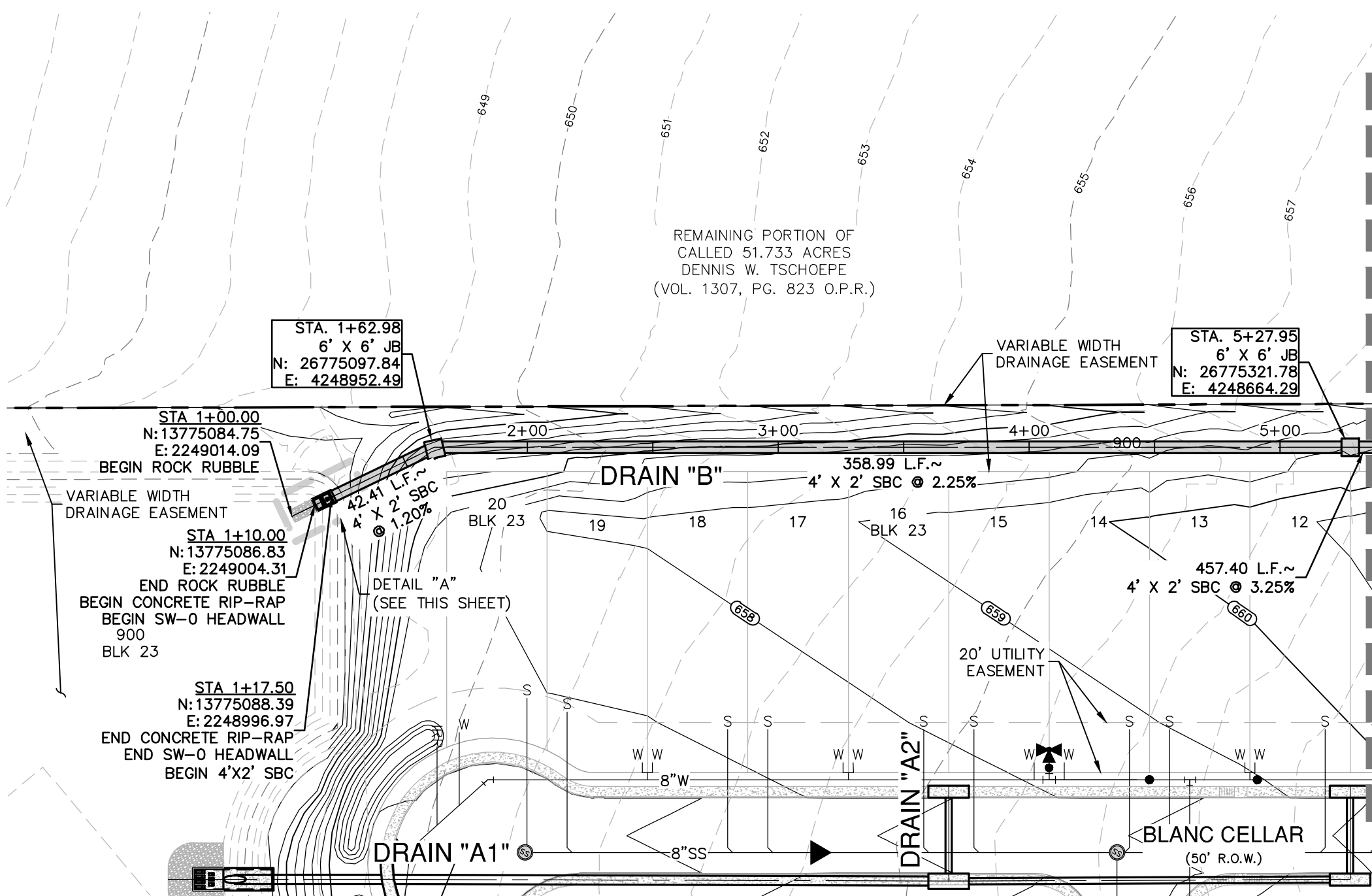
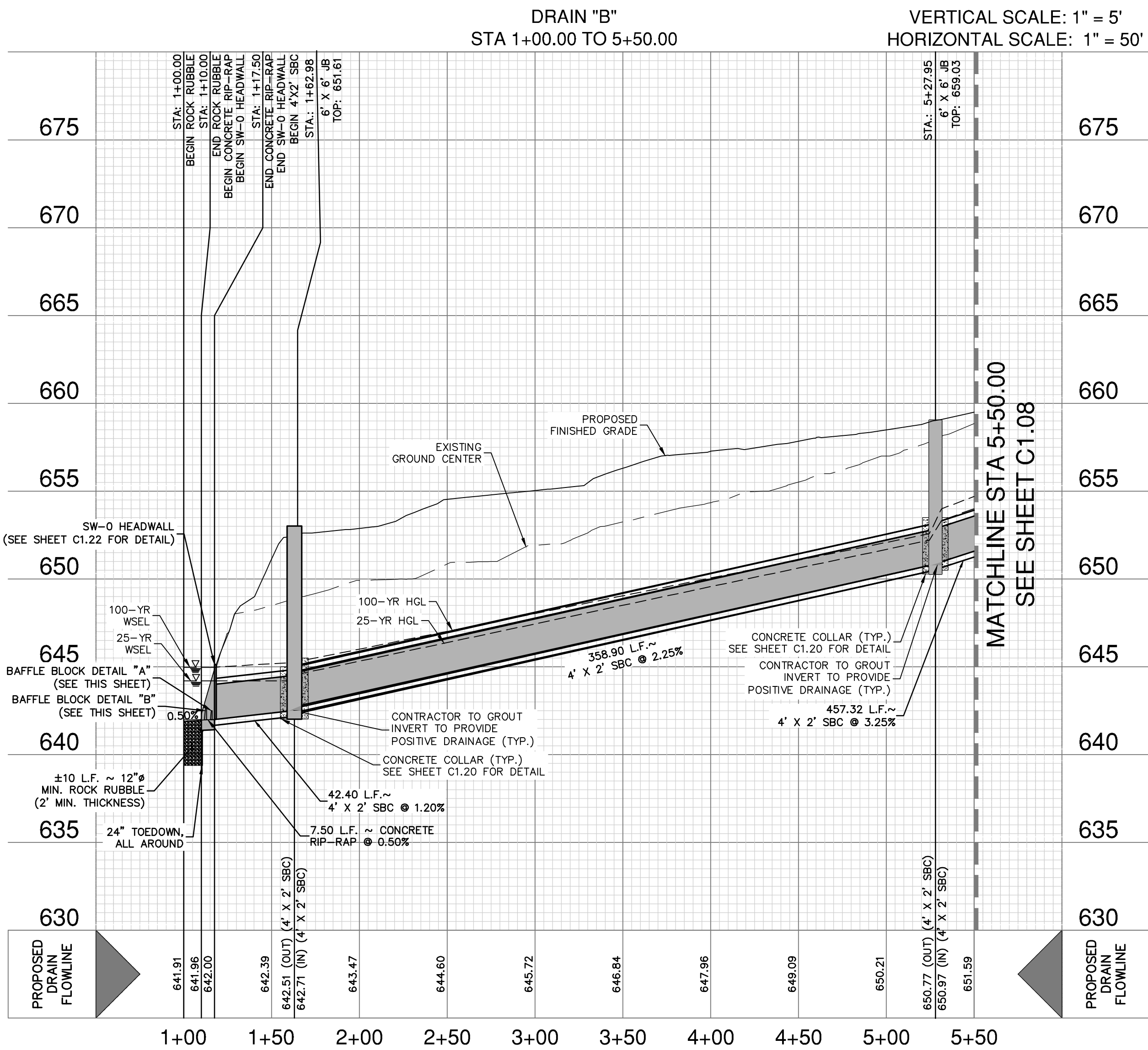
DRAIN A2 - PLAN & PROFILE
STA 1+00.00 TO 1+35.50

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED *HF* DRAWN JM
SHEET C1.06

FOR PERMIT

Date: Nov 22, 2023, 1:30pm User: JP_Aleddy
File: P:\300\565\05\Drawings\Civil\565-30058-03.dwg

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DRAINAGE LEGEND

PROJECT LIMITS	---
100 YR FLOODPLAIN	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING WATER	---
EXISTING UNDERGROUND ELECTRIC	---
EXISTING GAS	---
EXISTING SEWER	---
PROPOSED SEWER	---
PROPOSED WATER	---
PROPOSED STORM DRAIN	---
EXISTING STORM DRAIN	---
FLOW ARROW	→
CURLEX SINGLE NET EROSION CONTROL BLANKETS	---
DRAINAGE MAINTENANCE ACCESS	---

HYDRAULIC CALCULATIONS STORM DRAIN "B"

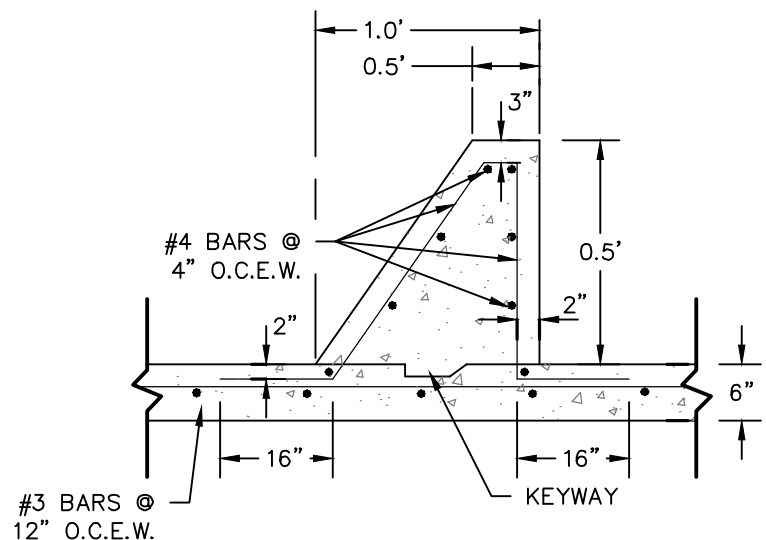
STA. 1+17.50 TO 1+62.98

Q25 = 38 CFS
S = 1.25%
Sf = 0.30%
V25 = 4.75 FPS
n = 0.013
D = 2.0'
Q2 = 18 CFS
V2 = 7.14 FPS

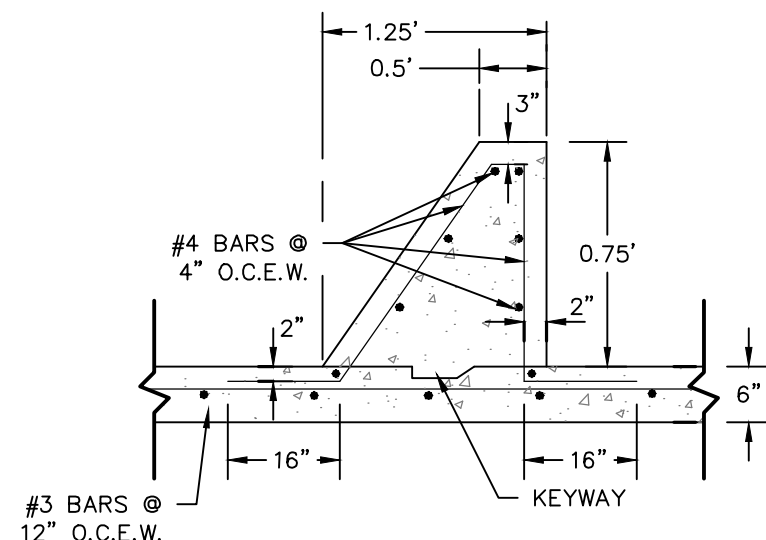
HYDRAULIC CALCULATIONS STORM DRAIN "B"

STA. 1+62.98 TO 5+27.95

Q25 = 38 CFS
S = 2.25%
Sf = 0.30%
V25 = 4.92 FPS
n = 0.013
D = 2.0'
Q2 = 18 CFS
V2 = 3.35 FPS



BAFFLE BLOCK "A" DETAIL
SECTION
NOT-TO-SCALE



BAFFLE BLOCK "B" DETAIL
SECTION
NOT-TO-SCALE

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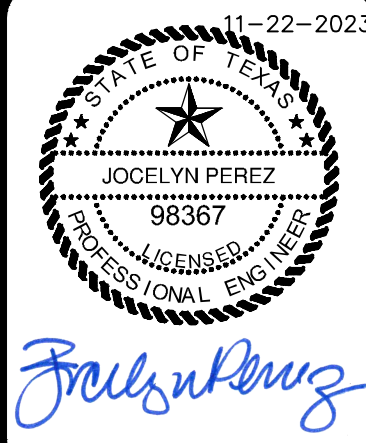
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DATE	
NO.	
REVISION	



PAPE-DAWSON
ENGINEERS

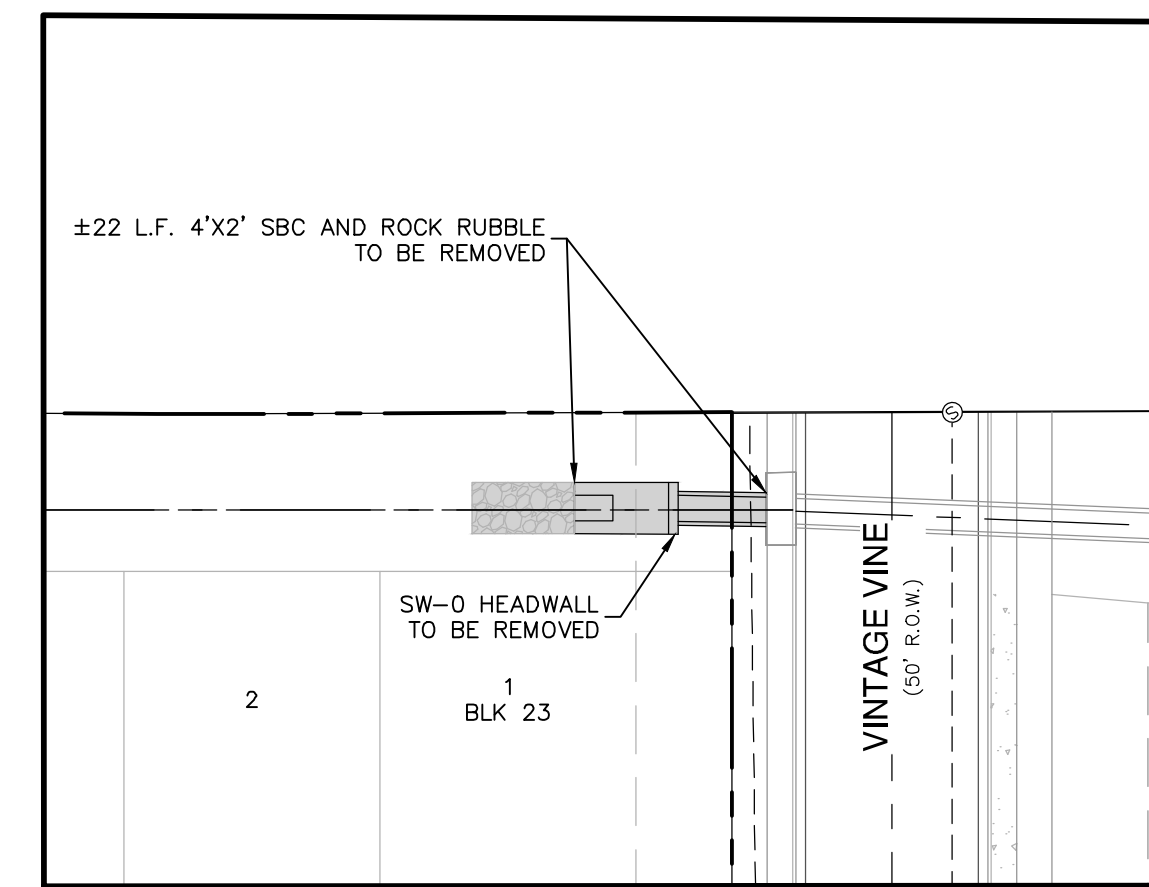
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAIN B - PLAN & PROFILE
STA 1+00.00 TO 5+50.00

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C1.07

FOR PERMIT



DETAIL "B": EXISTING DRAIN DEMOLITION

SCALE: 1" = 30'



**HYDRAULIC
CALCULATIONS
STORM DRAIN "B"**

STA. 5+27.95 TO 9+88.27

Q25 = 38 CFS
 S = 0.42%
 Sf = 0.42%
 V25 = 8.08 FPS
 n = 0.013
 D = 2.0'
 Q2 = 18 CFS
 V2 = 6.65 FPS



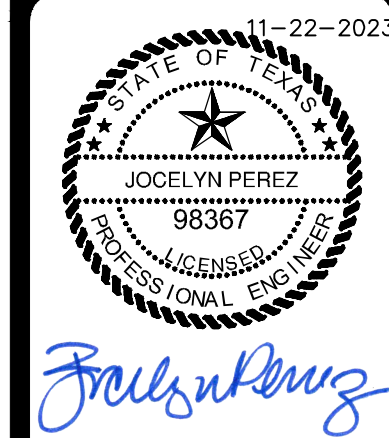
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TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE WITHIN THE PROJECT WORK AREA IN ORDER TO IDENTIFY AND/OR CORRECT EXISTING 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 ADEQUATE EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS MINIMUM, OSHA 1926.650 THROUGH 1926.654, AND ANY APPLICABLE STATE AND LOCAL REQUIREMENTS 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 1926.650 THROUGH 1926.654. THE PRESENCE OF ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION,

[illegible]

**PAPE-DAWSON
ENGINEERS**

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

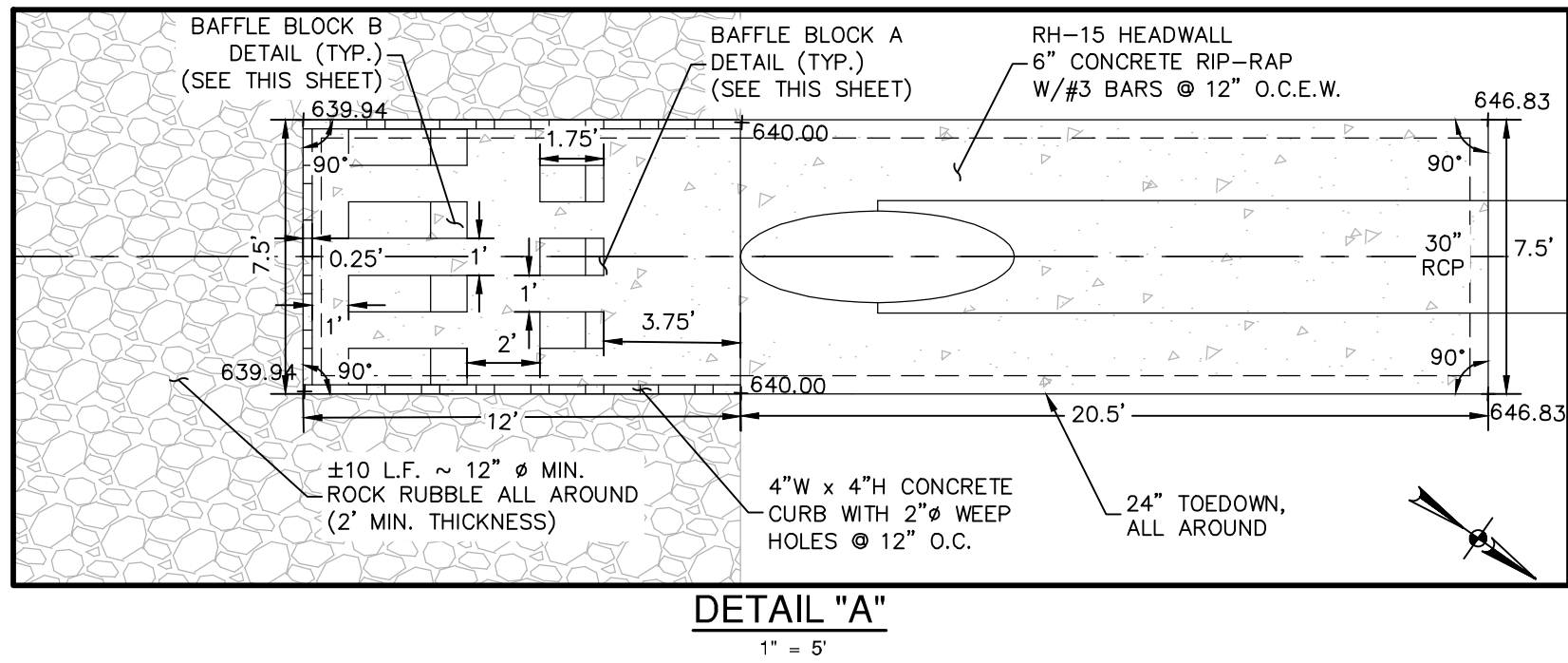
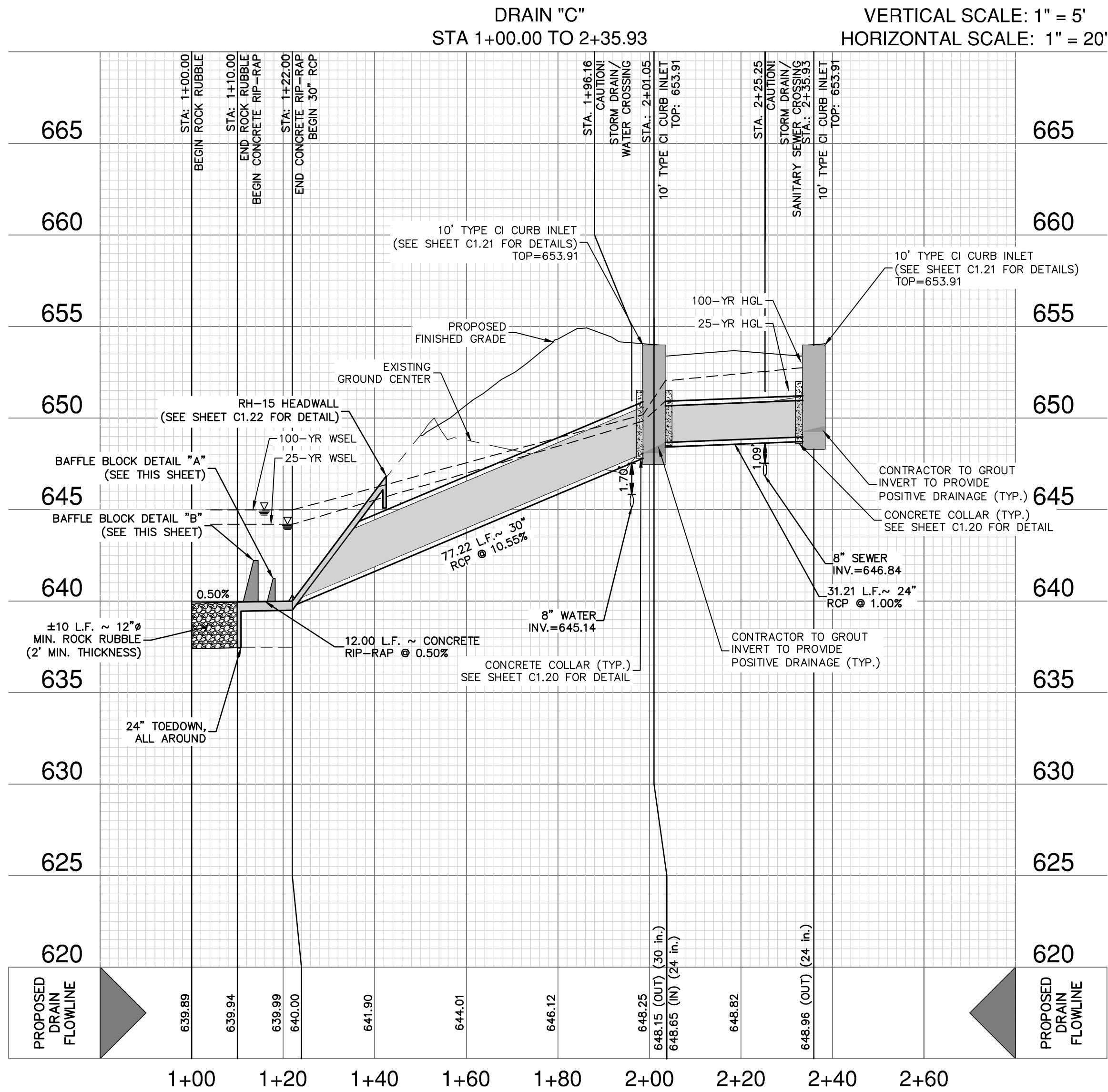
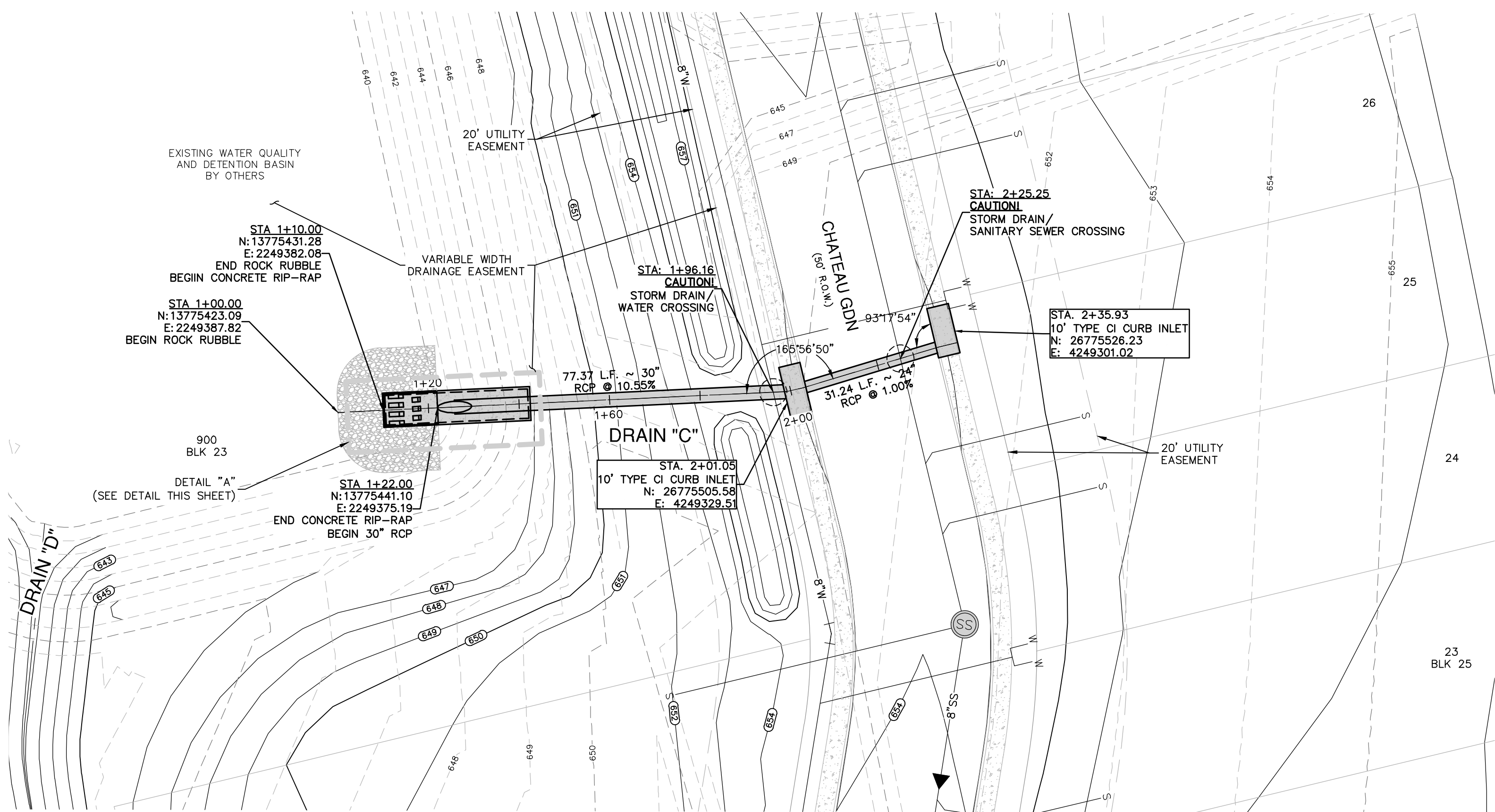
DRAIN B - PLAN & PROFILE
STA 5+50.00 TO 9+88.27

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED *HF* DRAWN JM
SHEET C1.08

FOR PERMIT

Date: Nov 22, 2023, 1:31pm User ID: Alcedo
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HYDRAULIC CALCULATIONS - 10' CURB INLET

TOTAL Q₂₅ = 24 CFS

Q₂₅ = 12 CFS

Q₂₅ = CA√2gh (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.54, g = 32.2, c = 0.70

$$L = \frac{12 \text{ CFS}}{(0.7) (0.52) \sqrt{2} (32.2) (0.54)}$$

L = 5.59' USE 10' FT.

$$h = \left(\frac{Q}{(CL)} \right)^{2/3} = \left(\frac{12}{(3.087)(10)} \right)^{2/3} = 0.53 \text{ FT.}$$

h = 0.53' < 0.79' OK

DRAINAGE LEGEND

PROJECT LIMITS

100 YR FLOODPLAIN

EXISTING CONTOUR

PROPOSED CONTOUR

EXISTING WATER

EXISTING UNDERGROUND ELECTRIC

EXISTING GAS

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

FLOW ARROW

CURLEX SINGLE NET EROSION
CONTROL BLANKETS

DRAINAGE MAINTENANCE
ACCESS

HYDRAULIC CALCULATIONS STORM DRAIN "D"

STA. 1+22.00 TO 2+01.05

Q₂₅ = 24 CFS

S = 10.55%

Sf = 0.34%

V₂₅ = 4.89 FPS

n = 0.013

D = 2.5'

Q₂ = 12 CFS

V₂ = 5.38 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "D"

STA. 2+01.05 TO 2+35.93

Q₂₅ = 12 CFS

S = 1.00%

Sf = 0.28

V₂₅ = 3.82 FPS

n = 0.013

D = 2.0'

Q₂ = 6 CFS

V₂ = 4.61 FPS

DRAINAGE & GRADING NOTES:

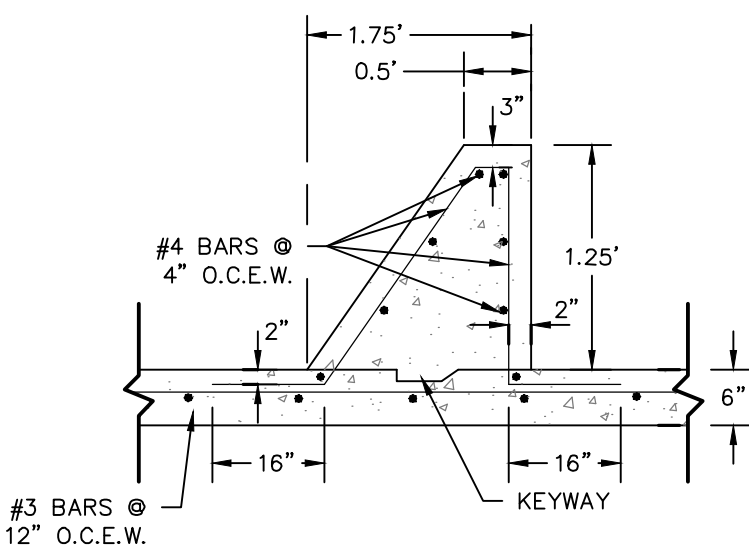
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY 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.
2. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT 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 COMAL COUNTY WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

CAUTION!!

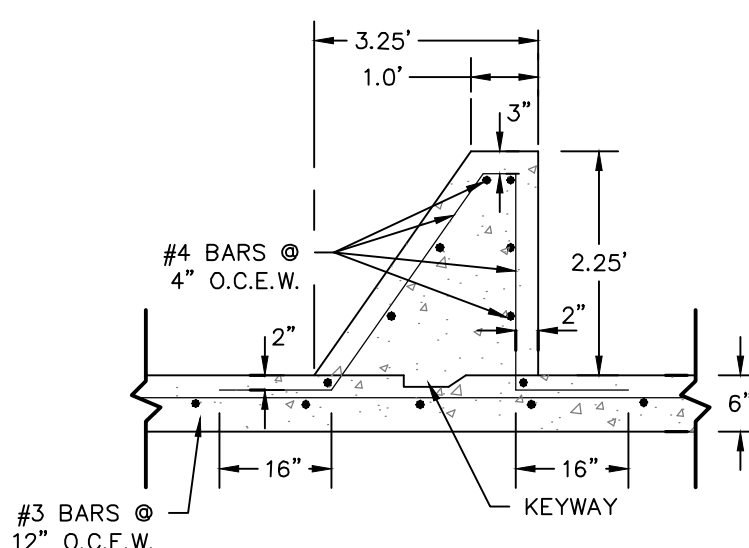
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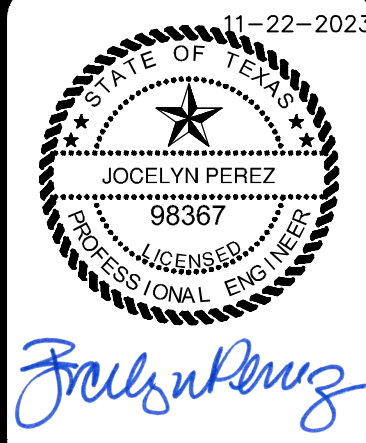


BAFFLE BLOCK "A" DETAIL SECTION NOT-TO-SCALE



BAFFLE BLOCK "B" DETAIL SECTION NOT-TO-SCALE

DATE	
NO.	
REVISION	



**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

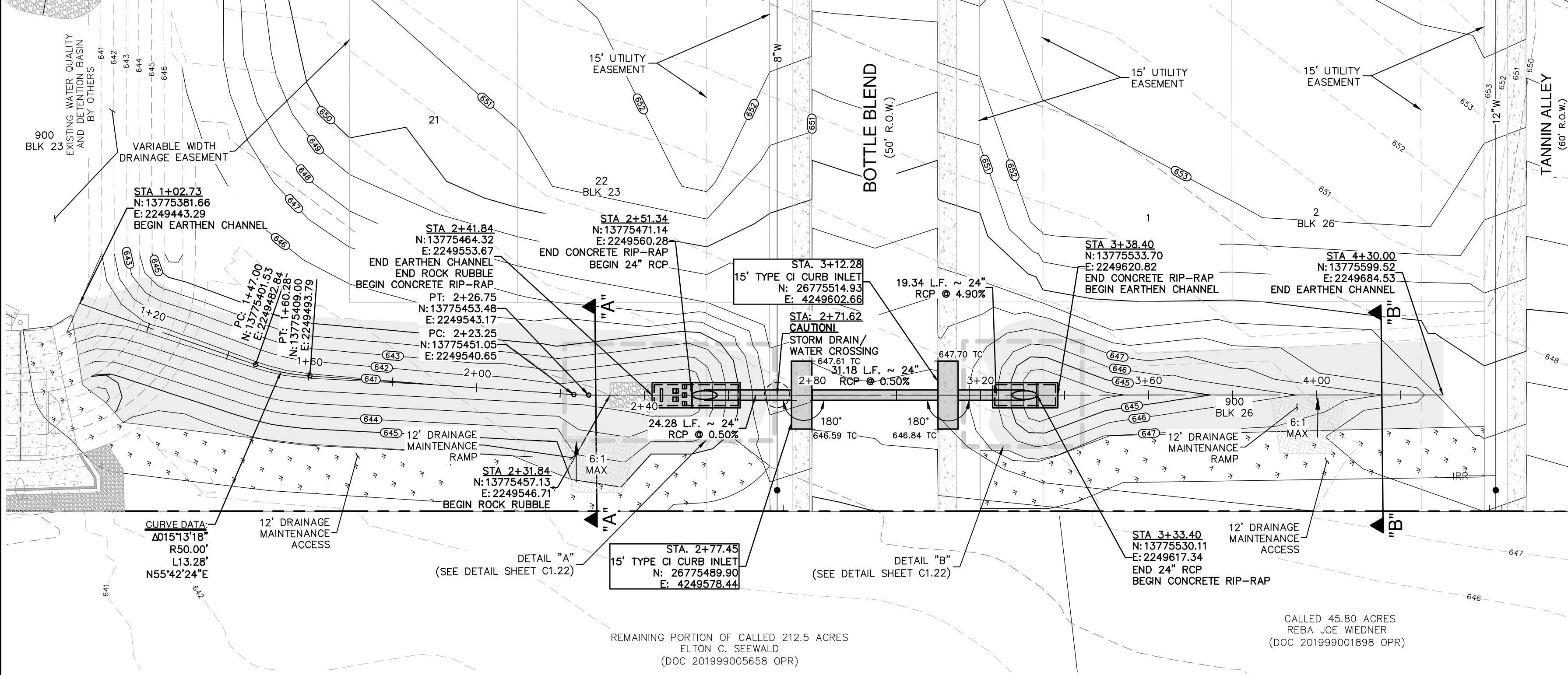
DRAIN C - PLAN & PROFILE
STA 1+00.00 TO 2+35.93

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C1.09

FOR PERMIT

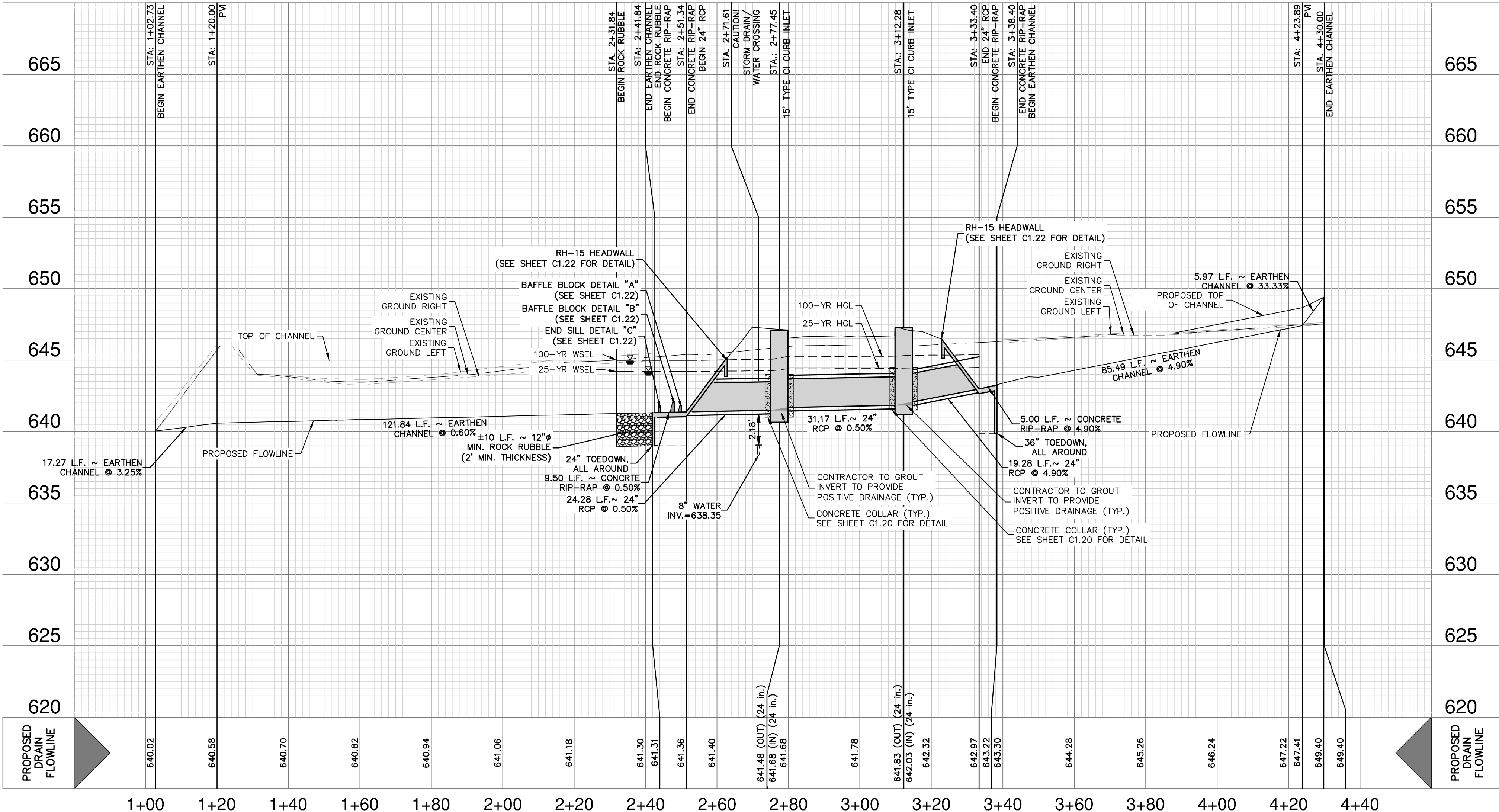
CAUTION!!

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DRAIN "D"
STA 1+02.73 TO 4+30.00

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



HYDRAULIC
CALCULATIONS
EARTH CHANNEL

STA. 1+02.73 TO 1+20.00

Q ₂₅	=	14 CFS
B _w	=	0 FT
n	=	0.035
S	=	3.25%
d _{n25}	=	1.01 FT
V ₂₅	=	4.57 FPS
d _{n25} +F _{brd.}	=	1.51 FT
Q ₂	=	7 CFS
V ₂	=	3.84 FPS
Q ₁₀₀	=	18 CFS
d _{n100}	=	1.10 FT
V ₁₀₀	=	4.96 FPS

HYDRAULIC
CALCULATIONS
EARTH CHANNEL

STA. 1+20.00 TO 2+41.84

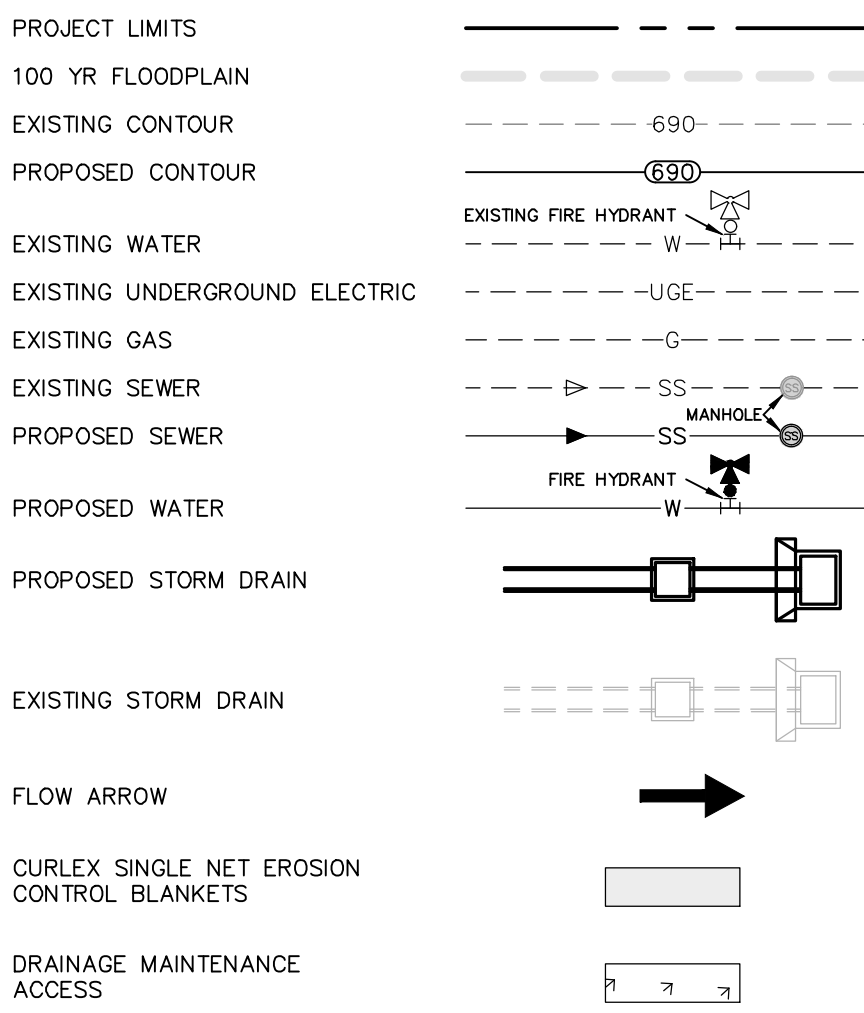
Q ₂₅	=	14 CFS
B _w	=	0 FT
n	=	0.035
S	=	0.60%
d _{n25}	=	1.38 FT
V ₂₅	=	2.45 FPS
d _{n25} +F _{brd.}	=	1.88 FT
Q ₂	=	7 CFS
V ₂	=	2.08 FPS
Q ₁₀₀	=	18 CFS
d _{n100}	=	1.51 FT
V ₁₀₀	=	2.63 FPS

HYDRAULIC
CALCULATIONS
STORM DRAIN "D"

STA. 2+41.34 TO 2+77.45

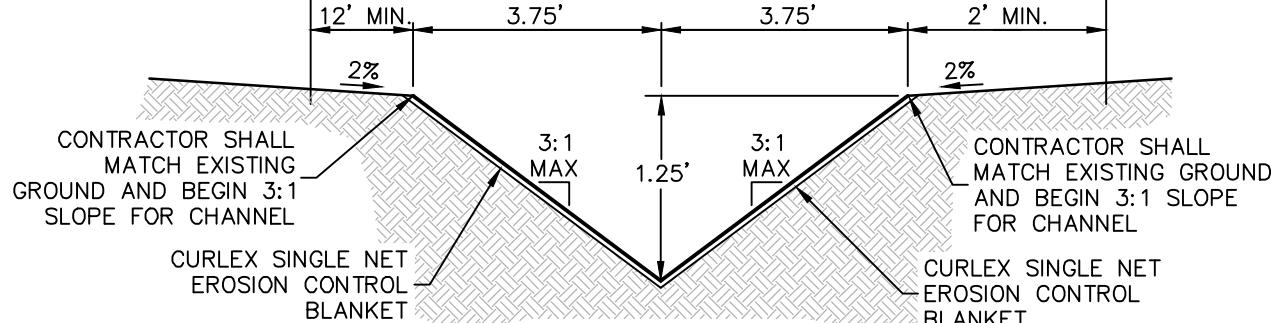
Q ₂₅	=	12 CFS
S	=	0.50%
S _f	=	0.23%
V ₂₅	=	3.82 FPS
n	=	0.013
D	=	2.0'
Q ₂	=	6 CFS
V ₂	=	2.85 FPS
Q ₁₀₀	=	14 CFS
V ₁₀₀	=	4.46 FPS

DRAINAGE LEGEND



EARTHEN "V" CHANNEL
SECTION "A-A"

NOT-TO-SCALE
(STA. 1+02.73 - STA. 2+41.84)



EARTHEN "V" CHANNEL
SECTION "B-B"

NOT-TO-SCALE
(STA. 3+38.40 - STA. 4+30.00)



HYDRAULIC
CALCULATIONS
STORM DRAIN "D"

STA. 2+77.45 TO 3+12.28

Q ₂₅	=	7.5 CFS
S	=	4.90%
S _f	=	0.096%
V ₂₅	=	2.39 FPS
n	=	0.013
D	=	2.0'
Q ₂	=	3.5 CFS
V ₂	=	3.92 FPS
Q ₁₀₀	=	9 CFS
V ₁₀₀	=	2.87 FPS

HYDRAULIC
CALCULATIONS
STORM DRAIN "D"

STA. 3+12.28 TO 3+33.40

Q ₂₅	=	3 CFS
S	=	4.90%
S _f	=	0.018%
V ₂₅	=	1.21 FPS
n	=	0.013
D	=	2.0'
Q ₂	=	1 CFS
V ₂	=	2.77 FPS
Q ₁₀₀	=	4 CFS
V ₁₀₀	=	1.27 FPS

HYDRAULIC
CALCULATIONS
EARTH CHANNEL

STA. 3+38.40 TO 4+23.89

Q ₂₅	=	3 CFS
B _w	=	0 FT
n	=	0.035
S	=	4.90%
d _{n25}	=	0.53 FT
V ₂₅	=	3.56 FPS
d _{n25} +F _{brd.}	=	1.03 FT
Q ₂	=	1 CFS
V ₂	=	2.72 FPS
Q ₁₀₀	=	4 CFS
d _{n100}	=	0.58 FT
V ₁₀₀	=	3.96 FPS

STORM PONDING WIDTH:

SEE STORMWATER REPORT FOR STREET CAPACITY CALCULATIONS (10YR SPREAD WIDTH CONTAINED WITHIN CURB)

DRAINAGE & GRADING NOTES:

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- ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE COMAL COUNTY WILL ACCEPT.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
- ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

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PAPE-DAWSON
ENGINEERS

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

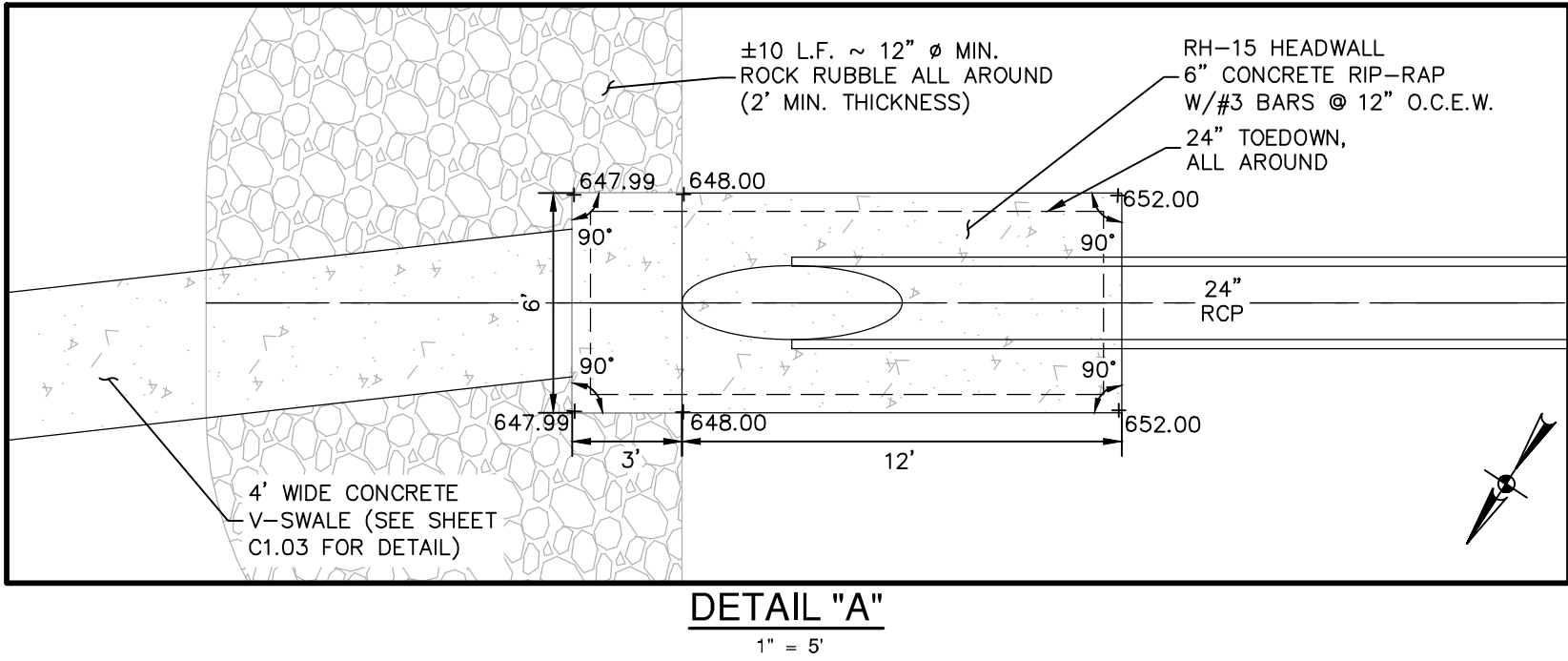
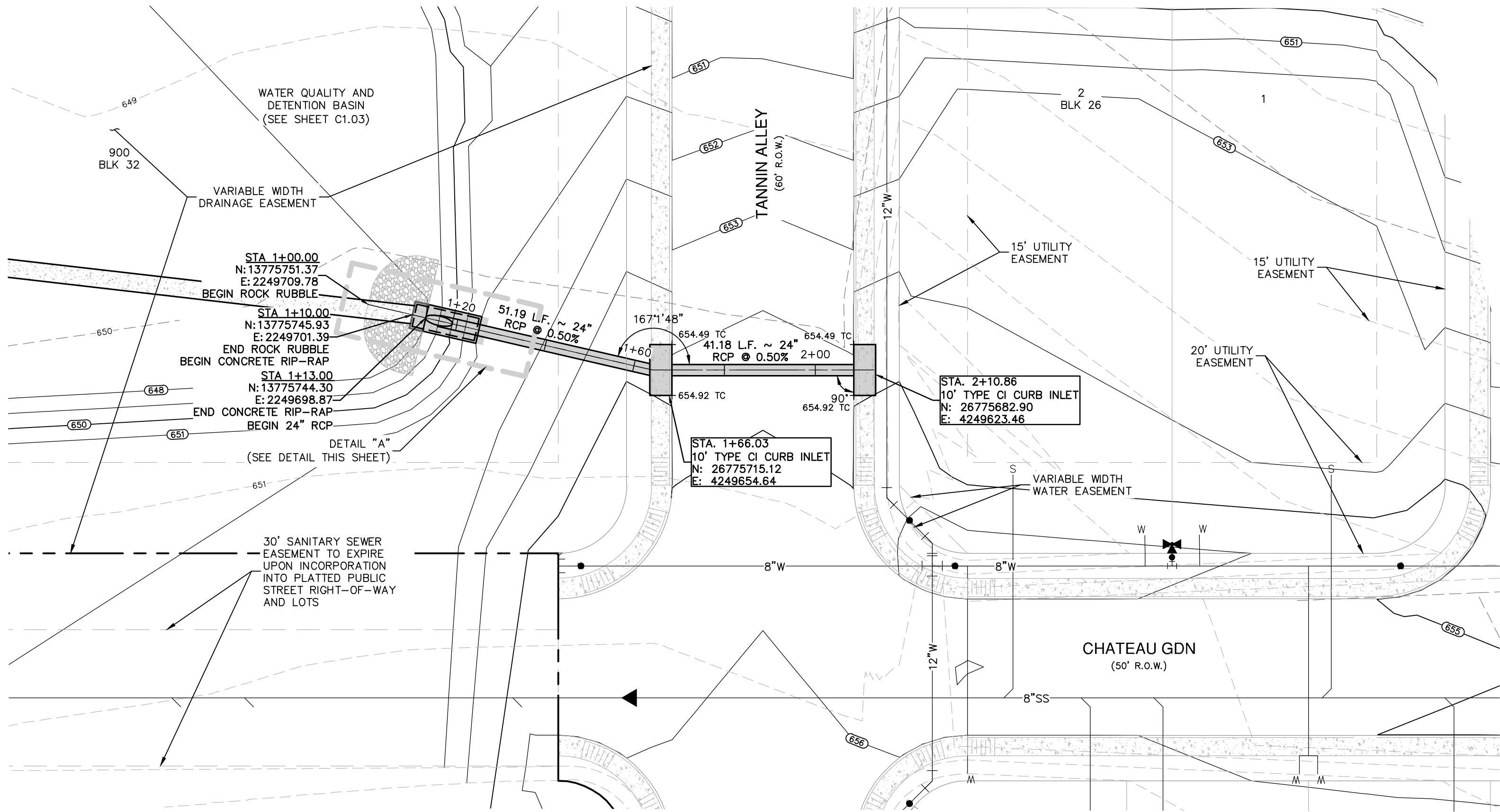
DRAIN D - PLAN & PROFILE
STA 1+02.73 TO 4+30.00

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HJ DRAWN JM
SHEET C1.10

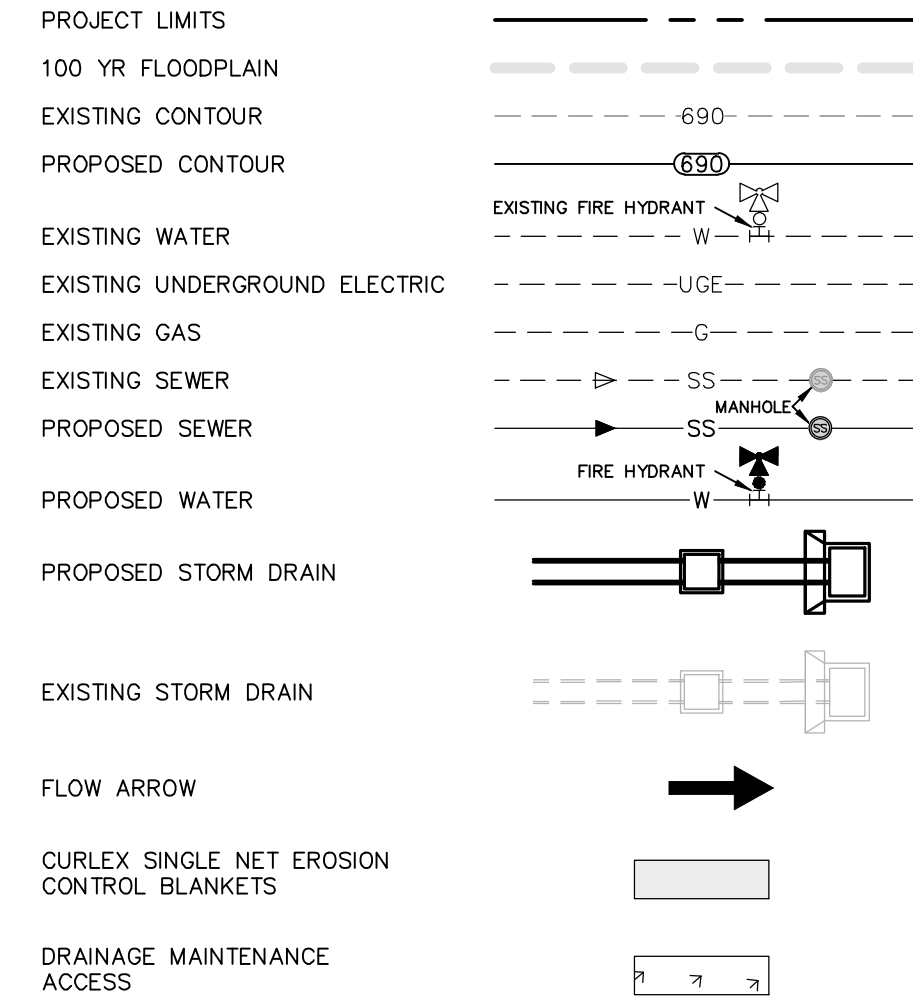
FOR PERMIT

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DRAINAGE LEGEND



HYDRAULIC CALCULATIONS STORM DRAIN "E"

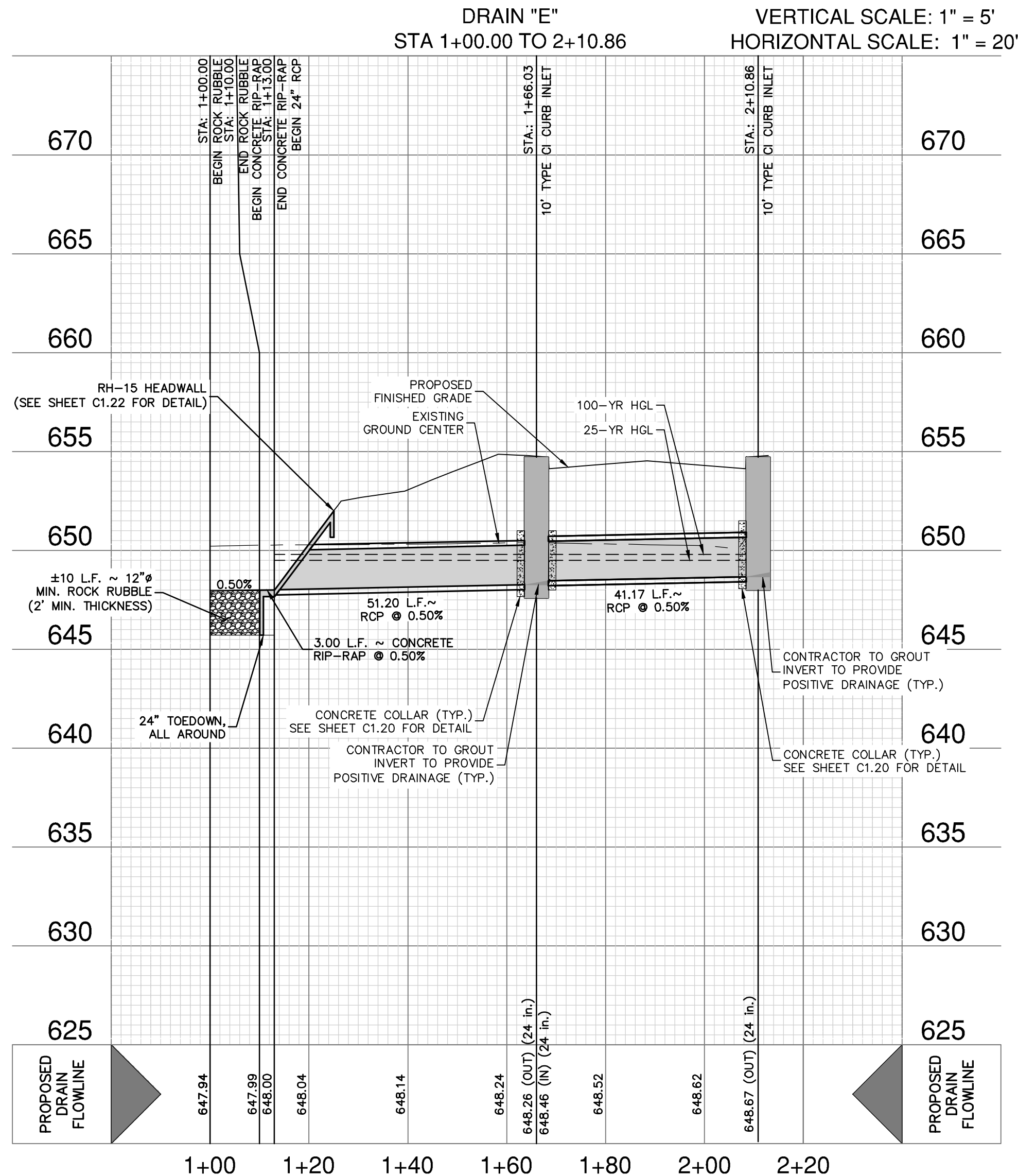
STA. 1+13.00 TO 1+66.03

Q25 = 2 CFS
S = 0.50%
Sf = 0.008%
V25 = 3.35 FPS
n = 0.013
D = 2.0'
Q2 = 1 CFS
V2 = 2.77 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "E"

STA. 1+66.03 TO 2+10.86

Q25 = 1 CFS
S = 0.50%
Sf = 0.002%
V25 = 2.77 FPS
n = 0.013
D = 2.0'
Q2 = 0.5 CFS
V2 = 2.31 FPS



DRAIN "E" ON-GRADE INLETS
(STA. 1+66.03 AND STA. 2+10.86)
HYDRAULIC CALCULATIONS
Q25/2 = 1 CFS
S = 2.6%
L = 10' INLET
Q_CAPTURED = 1 CFS
Q_BYPASS = 0 CFS

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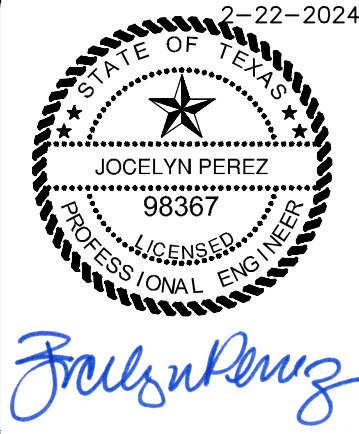
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NO.	REVISION	DATE



**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAIN E - PLAN & PROFILE
STA 1+00.00 TO 2+10.86

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C1.11

FOR PERMIT

CURLEX® EROSION CONTROL BLANKETS INSTALLATION GUIDELINES

Before installing Curlex blankets, the seedbed shall be inspected by the Owner's Representative to ensure it has been properly compacted and fine graded to remove any existing rills. It shall be free of obstructions, such as tree roots, projections such as stones, and other foreign objects. The contractor shall proceed when satisfactory conditions are present. After the area has been properly shaped, seeded, fertilized, and compacted, remove the Curlex protective cover. Next, locate the start of the roll, making sure the roll is facing toward the area to be covered, and then roll out the product. The product shall be rolled out flat, even, and smooth without stretching the material then anchored to the subgrade.

Slopes: It is recommended the blankets be installed vertically on the slope; however, on short slopes it may be more practical to install horizontally across the width of the application when agreed upon by the Engineer prior to installation. If more than one width is required, simply abut the edges of the vertically installed blankets together and secure them with a common row of staples. Overlapping adjacent sides of Curlex blankets is not required when installed vertically on slopes. Curlex blankets shall be trenched at the head of the slope if the blanket cannot be extended three feet over the slope crest or if overland flow is anticipated from upslope areas.

Channels: Curlex blankets shall be centered to offset a seam in the middle of the waterway. They shall be installed in the same direction as the water flow. The adjoining blankets shall be installed away from the center of channel and overlapped. Curlex blanket installation should continue up the side slopes three feet above the anticipated high water elevation. Flanks exposed to runoff, or sheet flow, must be protected by a check slot or trench. Curlex blankets shall be trenched at the start of the channel. Curlex blankets shall be anchored using a staggered staple pattern at end of roll overlaps and end of roll terminations.

Disclaimer: Curlex is a system for erosion control and revegetation on slopes and channels. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion control and re-vegetation applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantee and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using Curlex, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing. These guidelines are subject to change without notice.

850 Avenue H East | Arlington, Texas 76011
Phone 1-800-777-SOIL | Fax 817-385-3585 | www.Curlex.com

W0315R1116

MATERIAL SPECIFICATIONS CURLEX® I

Materials:

Great Lakes Aspen (naturally seed free)
Polypropylene Netting
Stitching Thread
QuickGRASS® (green excelsior – optional)

Typical Roll Sizes:

Width:	4.0 ft (1.2 m)	8.0 ft (2.4 m)	16.0 ft (4.9 m)
Length:	112.5 ft (34.29 m)	112.5 ft (34.29 m)	112.5 ft (34.29 m)
Area:	50.0 yd ² (41.8 m ²)	100.0 yd ² (83.6 m ²)	200.0 yd ² (167.2 m ²)
Weight:	36.5 lb (16.6 kg)	73.0 lb (33.1 kg)	146.0 lb (66.2 kg)

Description:

Curlex I erosion control blanket (ECB) is a natural, stitched excelsior blanket that provides a temporary organic cover to reduce erosion, protect seeds, enhance germination, and hasten re-vegetation. Curlex I is furnished in rolls with polyethylene wrapping to protect against the elements prior to installation, and may be ordered in Master-Paks of fifteen rolls banded together to minimize material handling requirements. Curlex I is also available as QuickGRASS (green pigment). Curlex I shall be manufactured in the U.S.A.

Curlex I has a design soil loss ratio (event-based RUSLE C factor) of .018 and is typically suitable for slopes up to 2H:1V. Curlex I is rated for channel flows up to 7.0 ft/s (2.1 m/s) and 1.75 lb/ft² (84 Pa) shear stress.

Physical Properties:

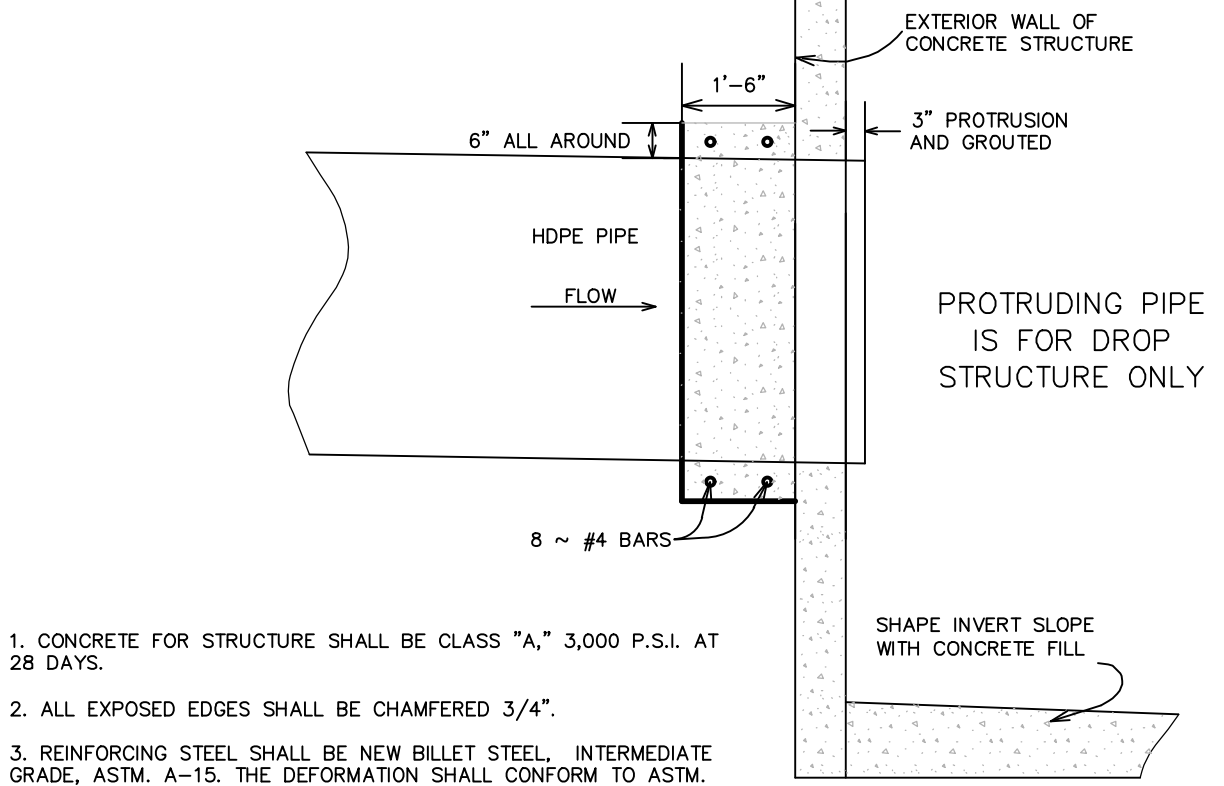
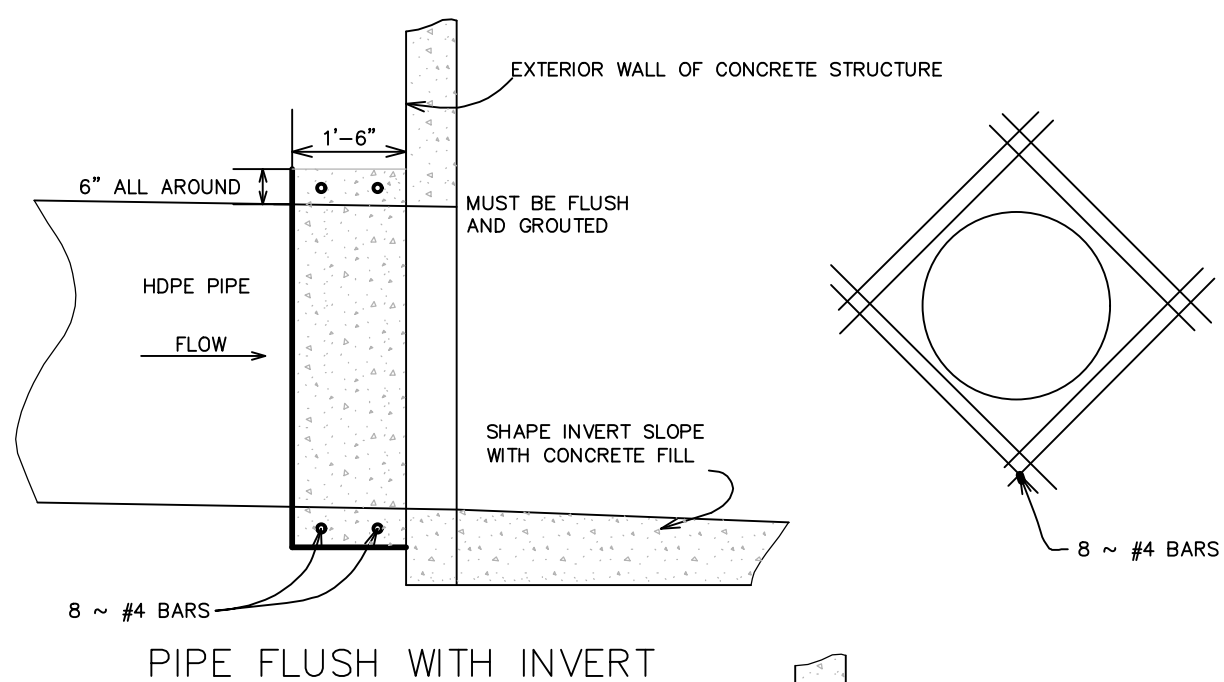
Fiber: Great Lakes Aspen (naturally seed free)
Fiber Size: Curlexed, interlocking fibers with barbed edges
80% of fibers a minimum of 6 in (15.2 cm) long
0.038 in ± 0.008 in wide x 0.018 in ± 0.003 in thick
(0.97 mm ± 0.20 mm wide x 0.46 mm ± 0.08 mm thick)
Weight*: 0.73 lb/yd² (0.40 kg/m²) ± 10% @ 22% Moisture
Thread Pattern: No more than 4.0 in (10.2 cm) transverse stitch spacing
Net Material: Polypropylene (green with eco-biodegradable and UV degradable additives or white with UV degradable additive)
Net Openings: 1.0 in wide x 2.0 in long (25.4 mm wide x 50.8 mm long)
Net Configuration: Top side only

* Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior is 22%.



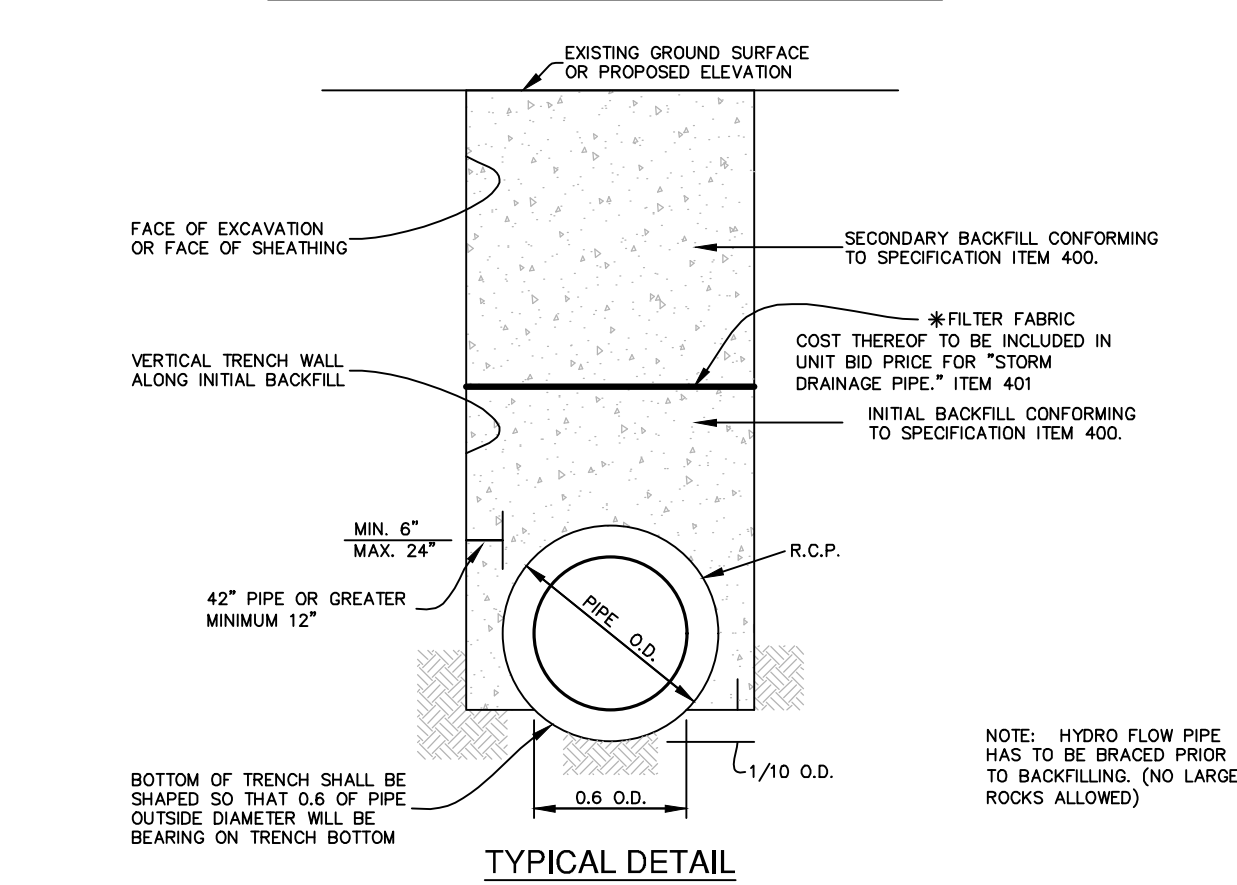
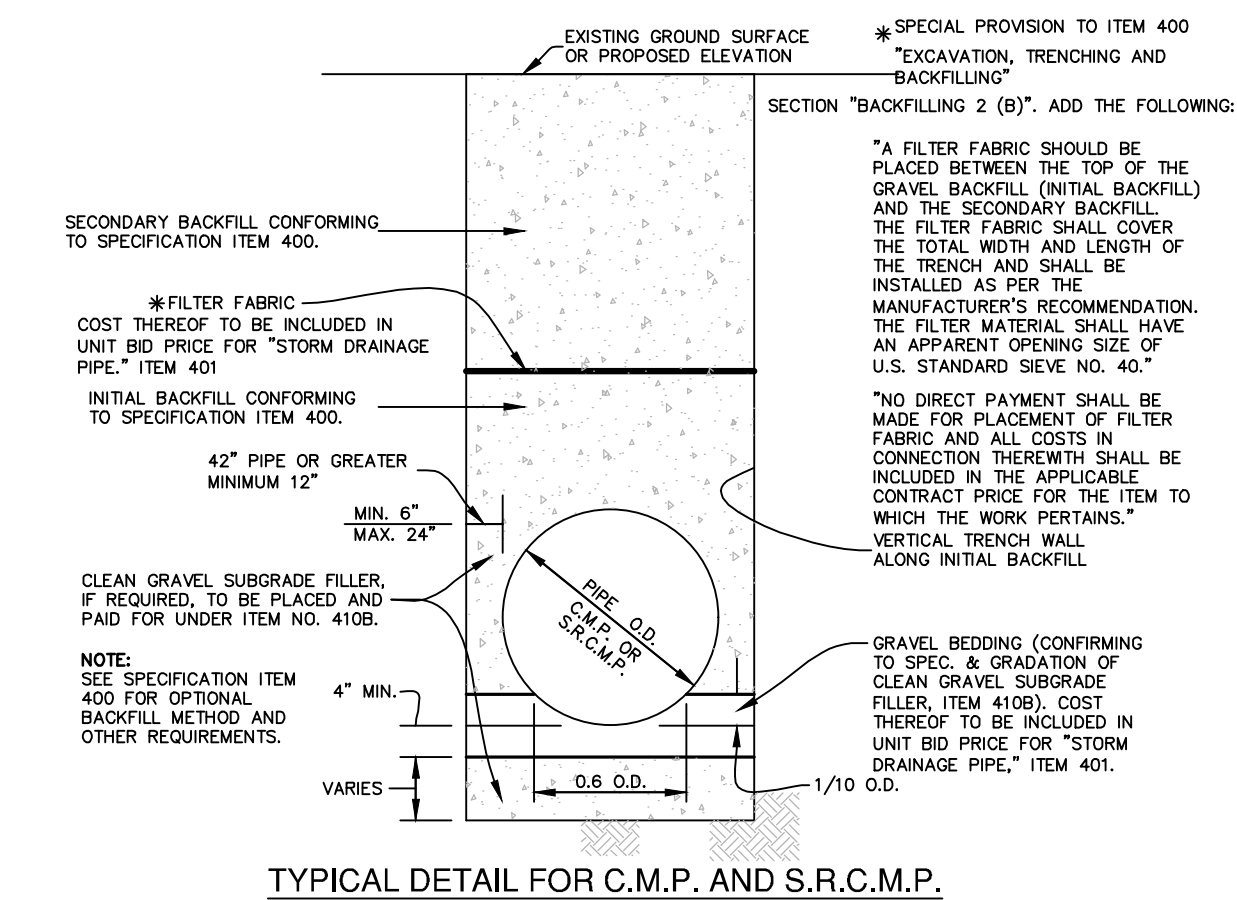
850 Avenue H East | Arlington, Texas 76011
Phone 1-800-777-SOIL | Fax 817-385-3585 | www.Curlex.com

W0316R1116

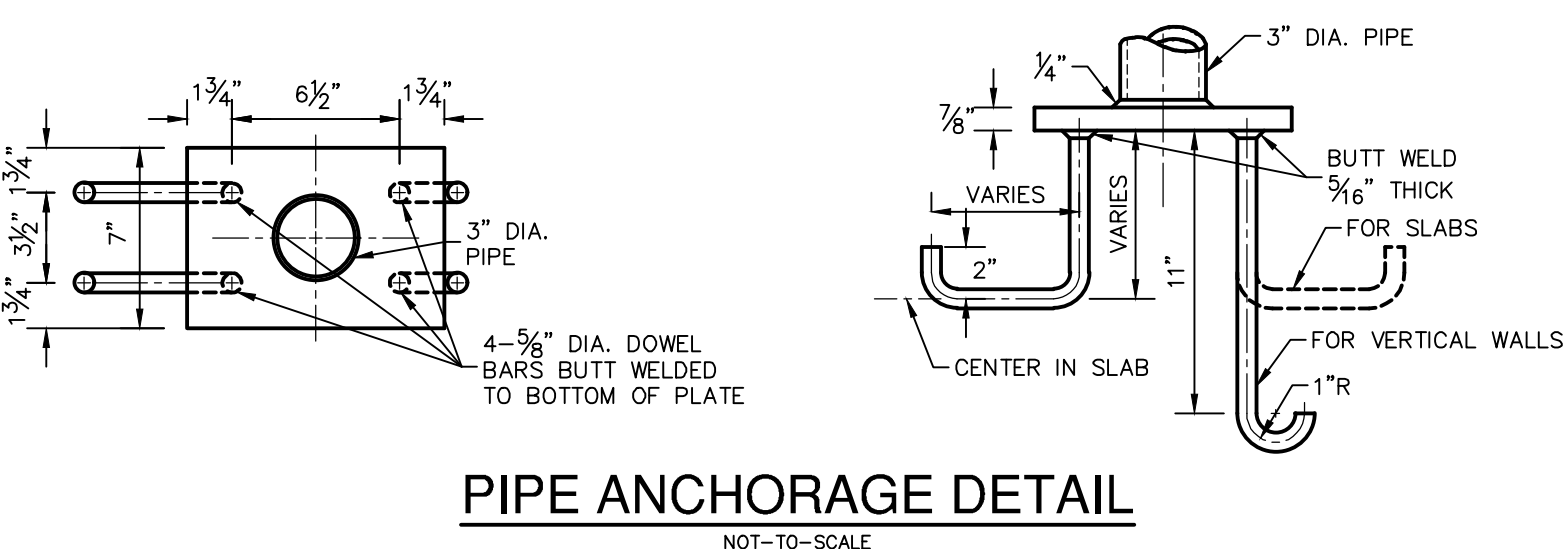
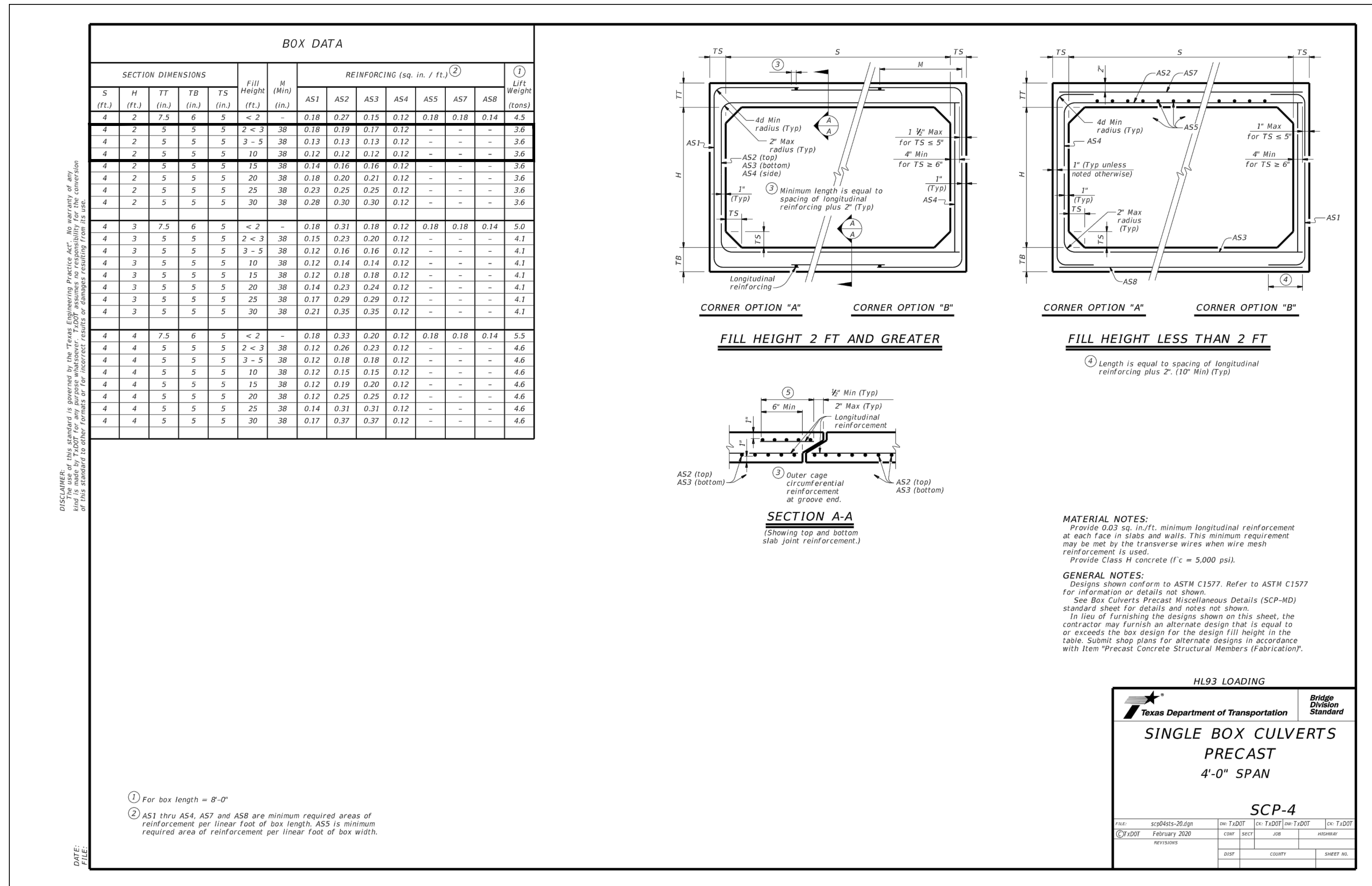


1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).

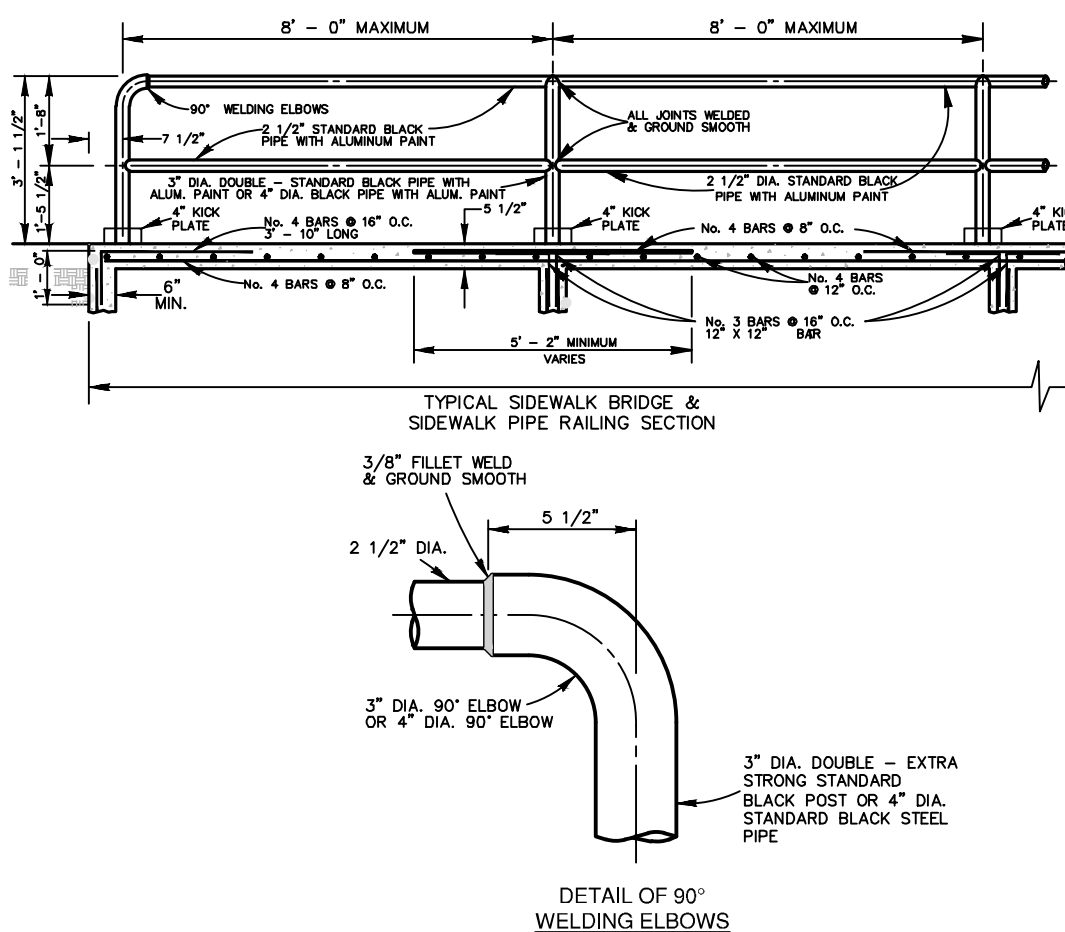
CONCRETE COLLAR DETAIL NOT TO SCALE



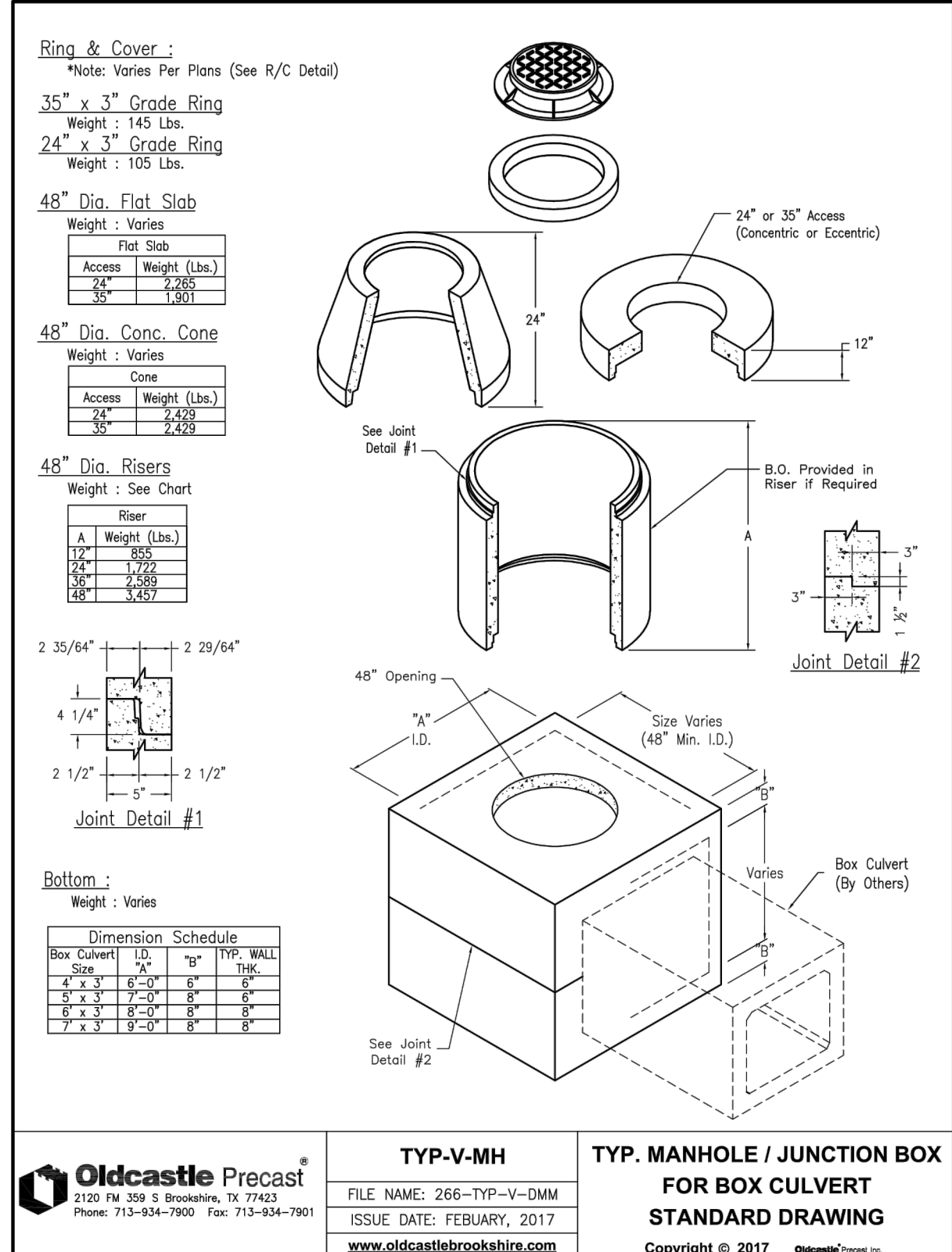
PIPE BEDDING AND BACKFILL DETAILS NOT TO SCALE



PIPE ANCHORAGE DETAIL NOT TO SCALE



PIPE RAILING DETAIL NOT TO SCALE

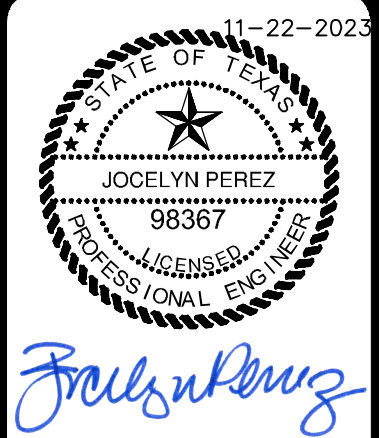


Oldcastle Precast
2120 FM 359 S. Houston, TX 77423
Phone: 713-934-7000 Fax: 713-934-7001

TYP-V-MH
FILE NAME: 266-TYP-V-MH
ISSUE DATE: FEBRUARY, 2017
www.oldcastlebrookshire.com

TYP. MANHOLE / JUNCTION BOX
FOR BOX CULVERT
STANDARD DRAWING
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DATE	NO.	REVISION

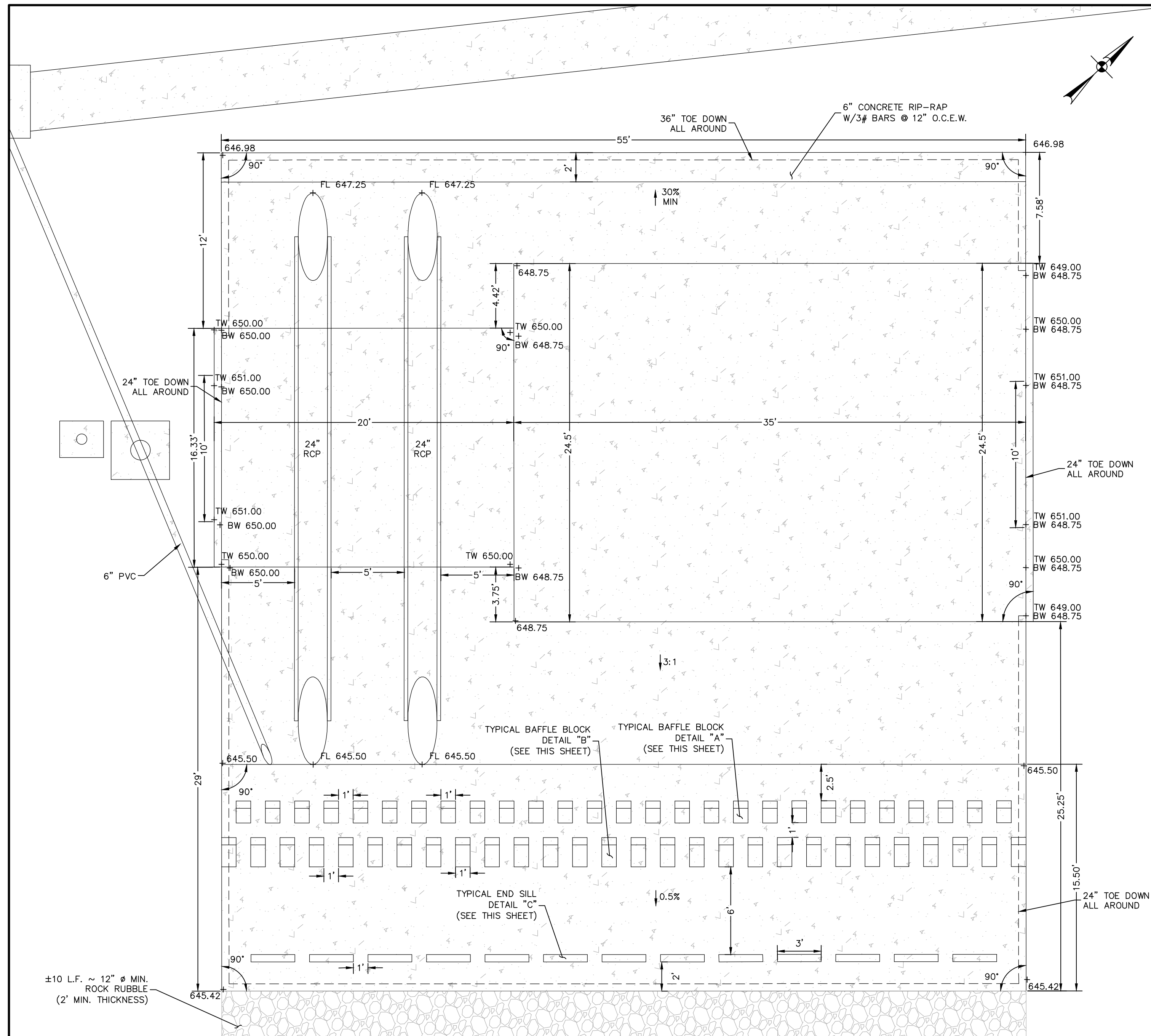


PAPE-DAWSON
ENGINEERS
1672 INDEPENDENCE DR. STE 1021 NEW BRAUNFELS, TX 77857 830.632.5633
TEXAS ENGINEERING FIRM #470 TEXAS SURVEYING FIRM #10028800

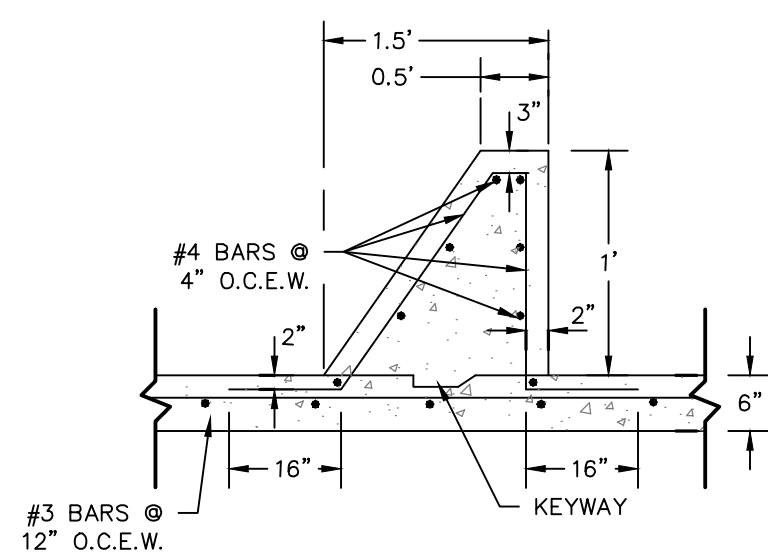
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
DRAINAGE DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C1.20

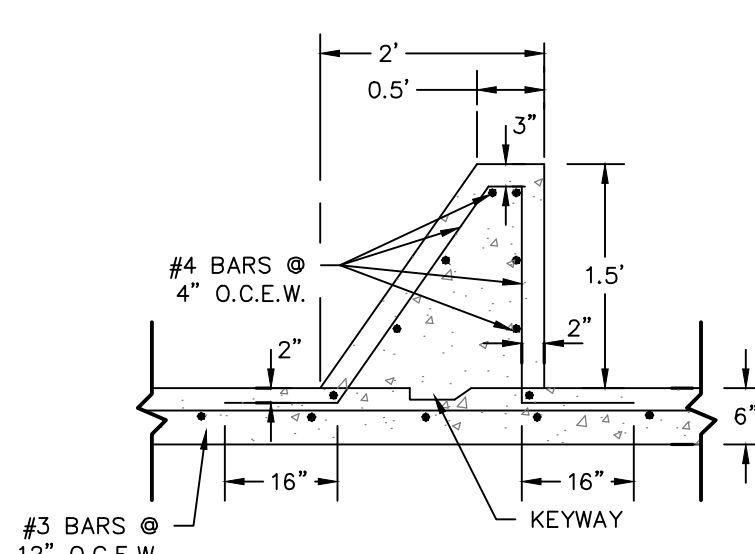
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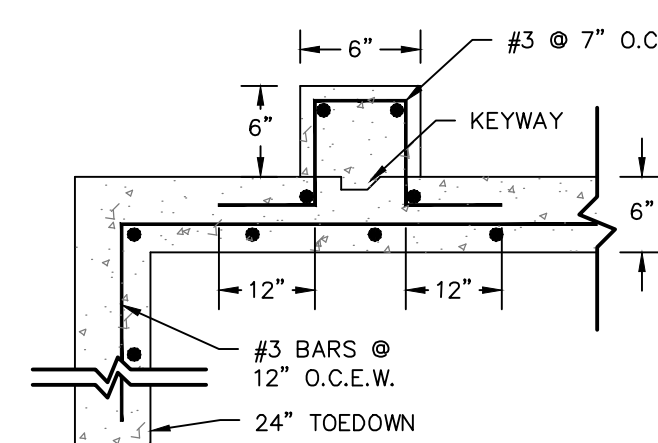
DETAIL "A"
1" = 5'



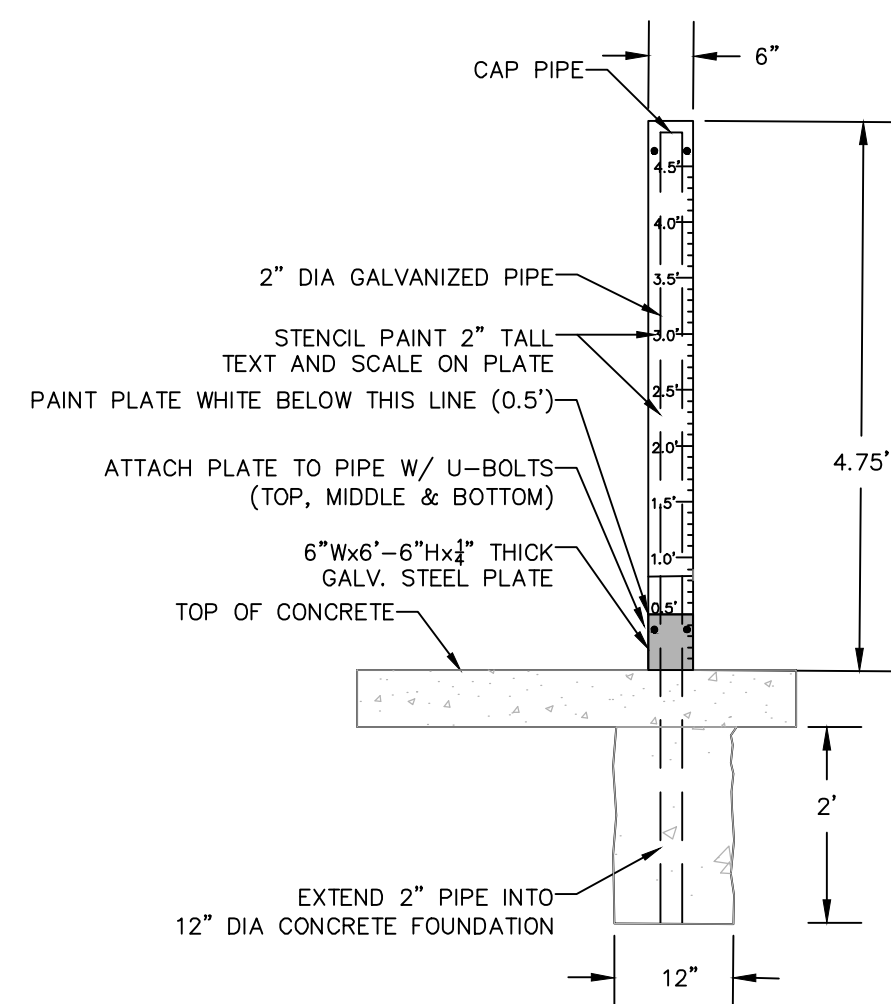
BAFFLE BLOCK "A"
SECTION
NOT-TO-SCALE



BAFFLE BLOCK "B" DETAIL
SECTION
NOT TO SCALE

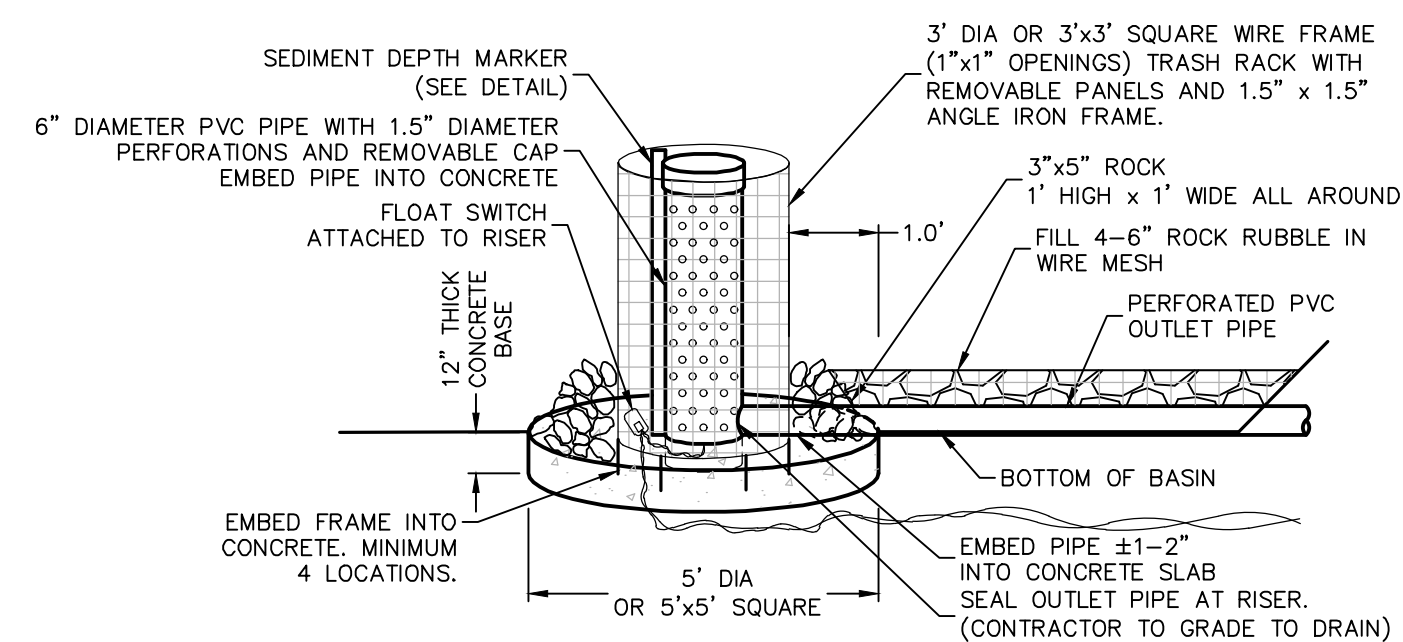


TYPICAL END SILL DETAIL "C"
SECTION



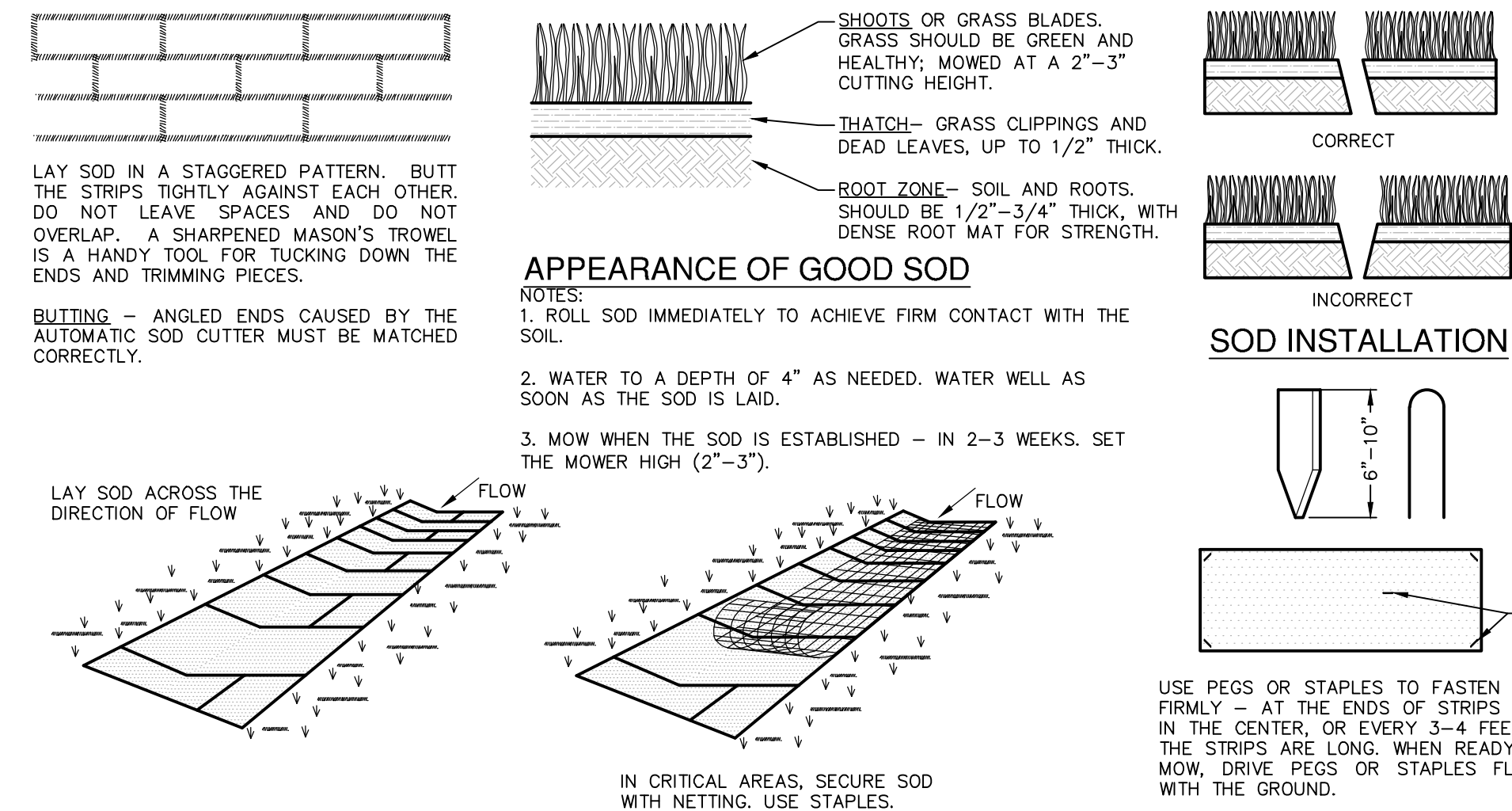
SEDIMENT DEPTH MARKER

NOTE: ONCE SEDIMENT IS ABOVE THE 6" DESIGNATION,
THE BASIN MUST BE CLEANED OUT TO DESIGN
ELEVATIONS AND VOLUMES PER PLAN.



OUTLET STRUCTURE DETAIL WITH SURFACE OUTFALL PIPE

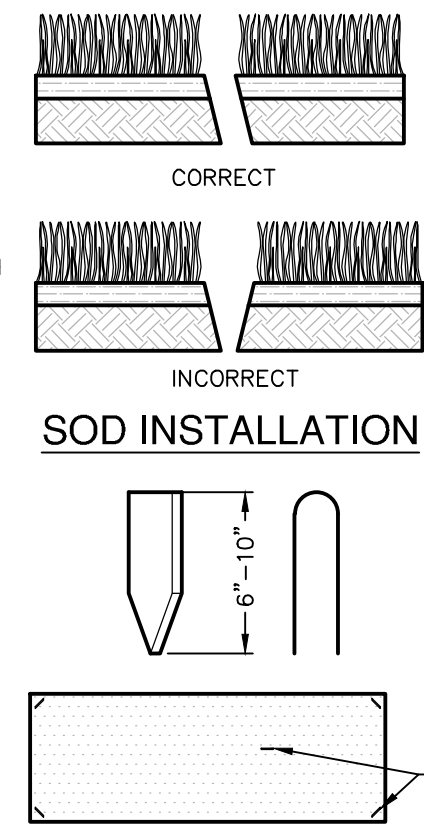
NOT-TO-SCALE



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").



SOD INSTALLATION

USE PEGS OR STAPLES TO FASTEN SOD FIRMLY - AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

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 EDGES SHOULD NOT BE ACCEPTABLE.
3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND BE EASY TO HANDLE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.
4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODED 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, SPRINGTOW HARROW OR DISC HARROW. THE FERTILIZER SHOULD BE APPLIED IN THE FINEST HARBORING 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.

GENERAL INSTALLATION (VA. DEPT. OF
CONSERVATION, 1992)

3. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.
4. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.
5. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).
6. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY TAMPING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).
7. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
8. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.
9. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.
10. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. MOWING SHOULD BE MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

INSPECTION AND MAINTENANCE GUIDELINES

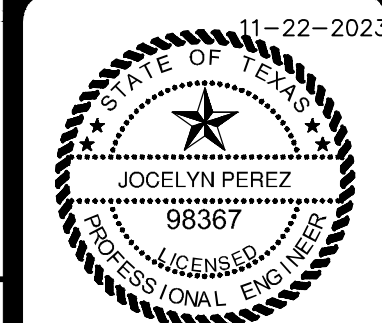
1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.
2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT-TO-SCALE

NOTES:

1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASINS PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASINS) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASINS SHALL BE REVEGETATED PRIOR TO COMPLETION.

[illegible]

Frederick



**PAPE-DAWSON
ENGINEERS**

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

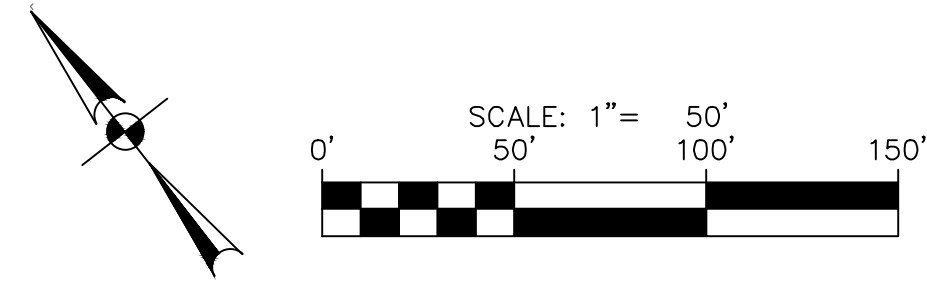
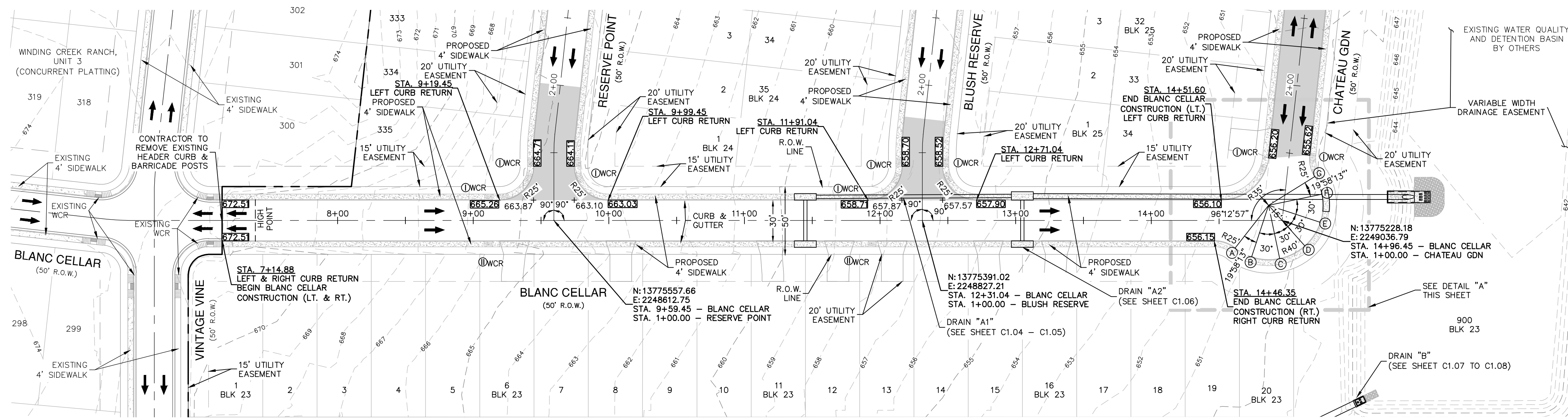
BASIN DETAILS

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN BH
SHEET C1.23

FOR PERMIT

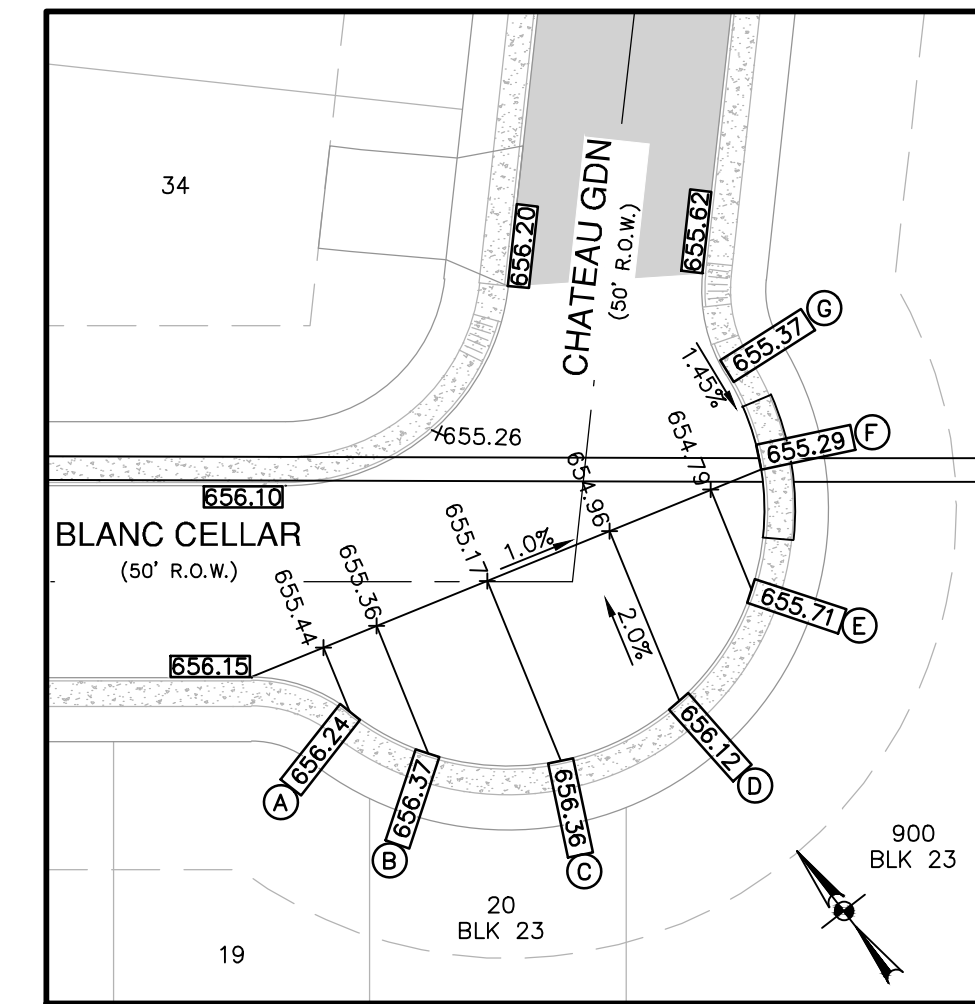
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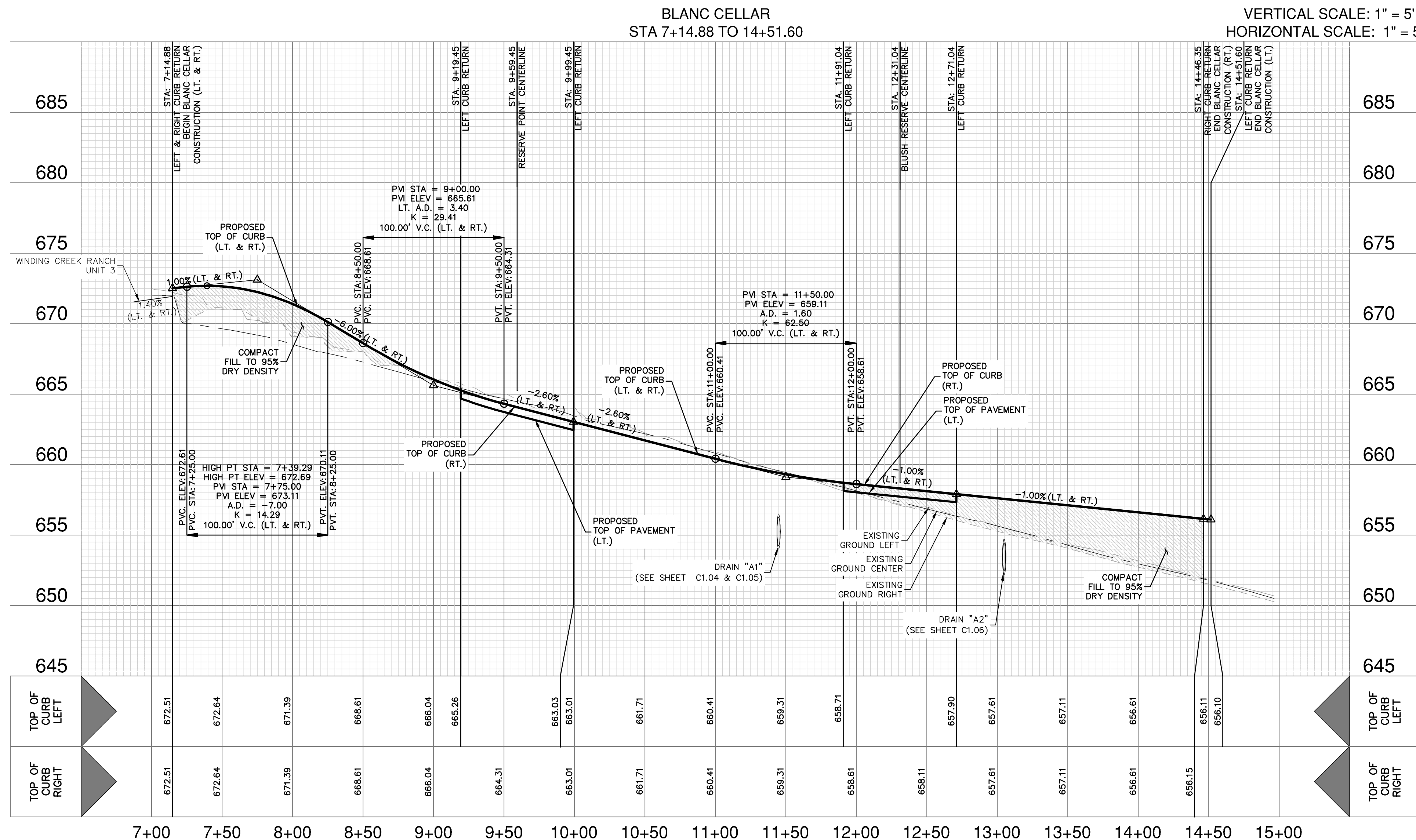


STREET LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	--- 970 ---
CORRECTED EFFECTIVE 100 YR FLOOD PLAIN	---
PROPOSED 100 YR FLOOD PLAIN	---
WHEELCHAIR RAMP	○WCR
CENTERLINE	CL
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	---
SIDEWALK (SEE SHEETS C3.00 FOR DEVELOPER RESPONSIBILITY)	---
DRIVEWAY	---



DETAIL "A"
SCALE: 1" = 30'



STREET NOTES:

- CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 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 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.
- PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

PAPE-DAWSON
ENGINEERS

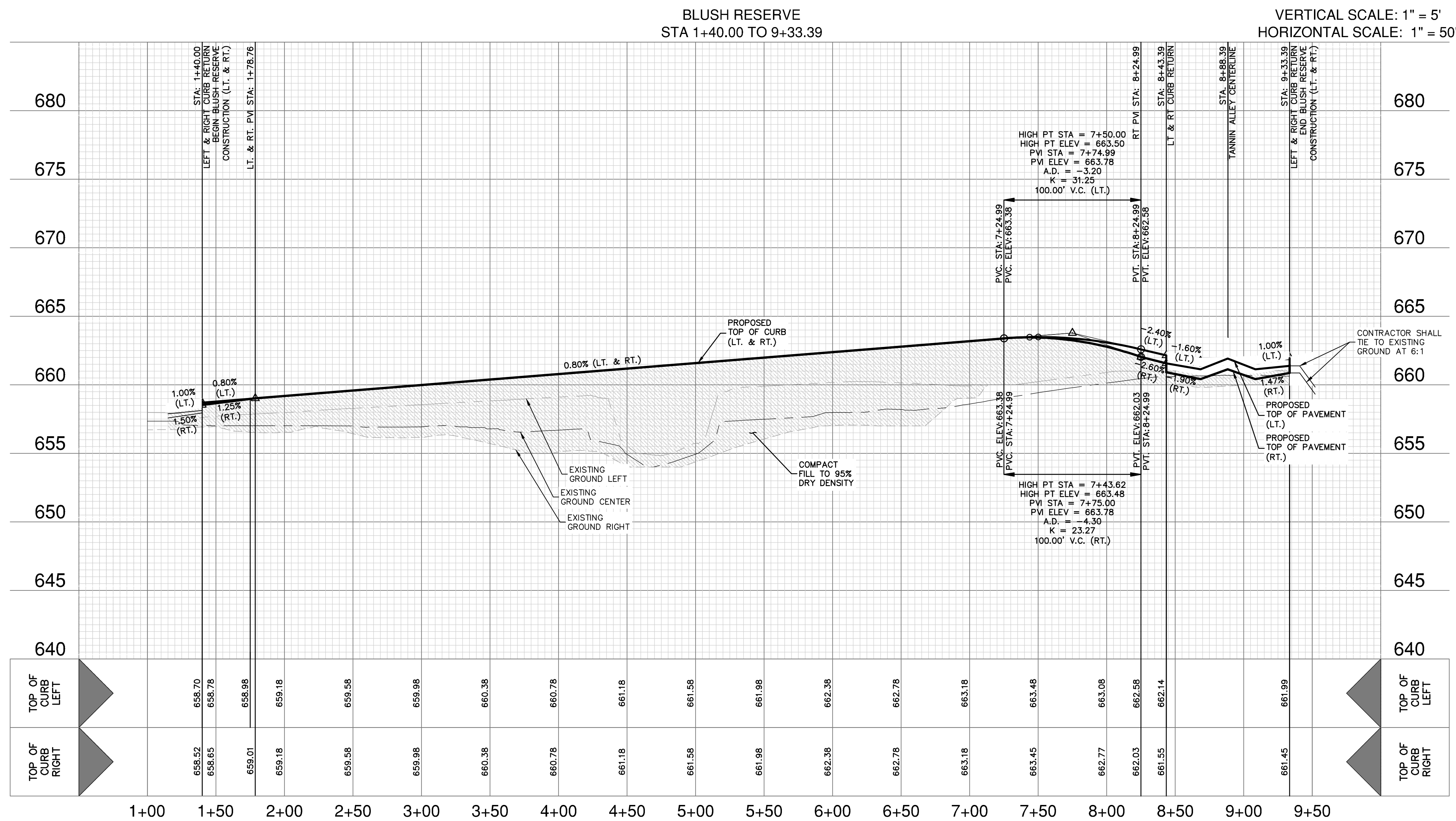
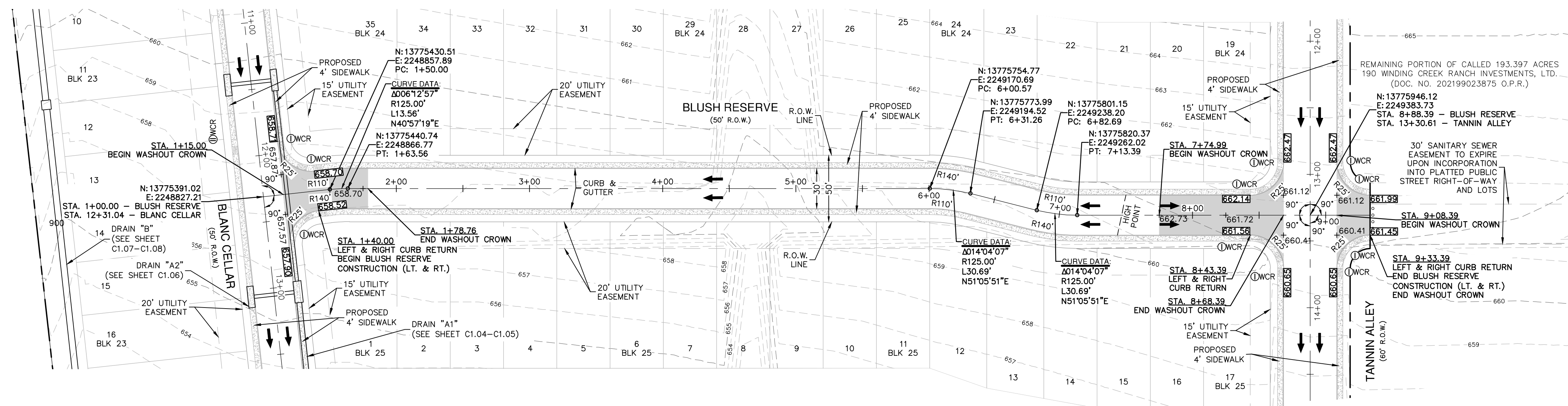
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS




BLANC CELLAR - PLAN & PROFILE
STA 7+14.88 TO 14+51.60

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.00

FOR PERMIT



STREET LEGEND

PROJECT LIMITS	_____
EXISTING CONTOUR	----- 970 -----
CORRECTED EFFECTIVE 100 YR FLOOD PLAIN	=====
PROPOSED 100 YR FLOOD PLAIN	=====
WHEELCHAIR RAMP	ⓓWCR
CENTERLINE	CL
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	$857.00(P) \times$
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 FOR DEVELOPER RESPONSIBILITY)	
DRIVEWAY	



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WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

BLUSH RESERVE - PLAN & PROFILE
STA 1+40.00 TO 9+33.39

STREET NOTES:

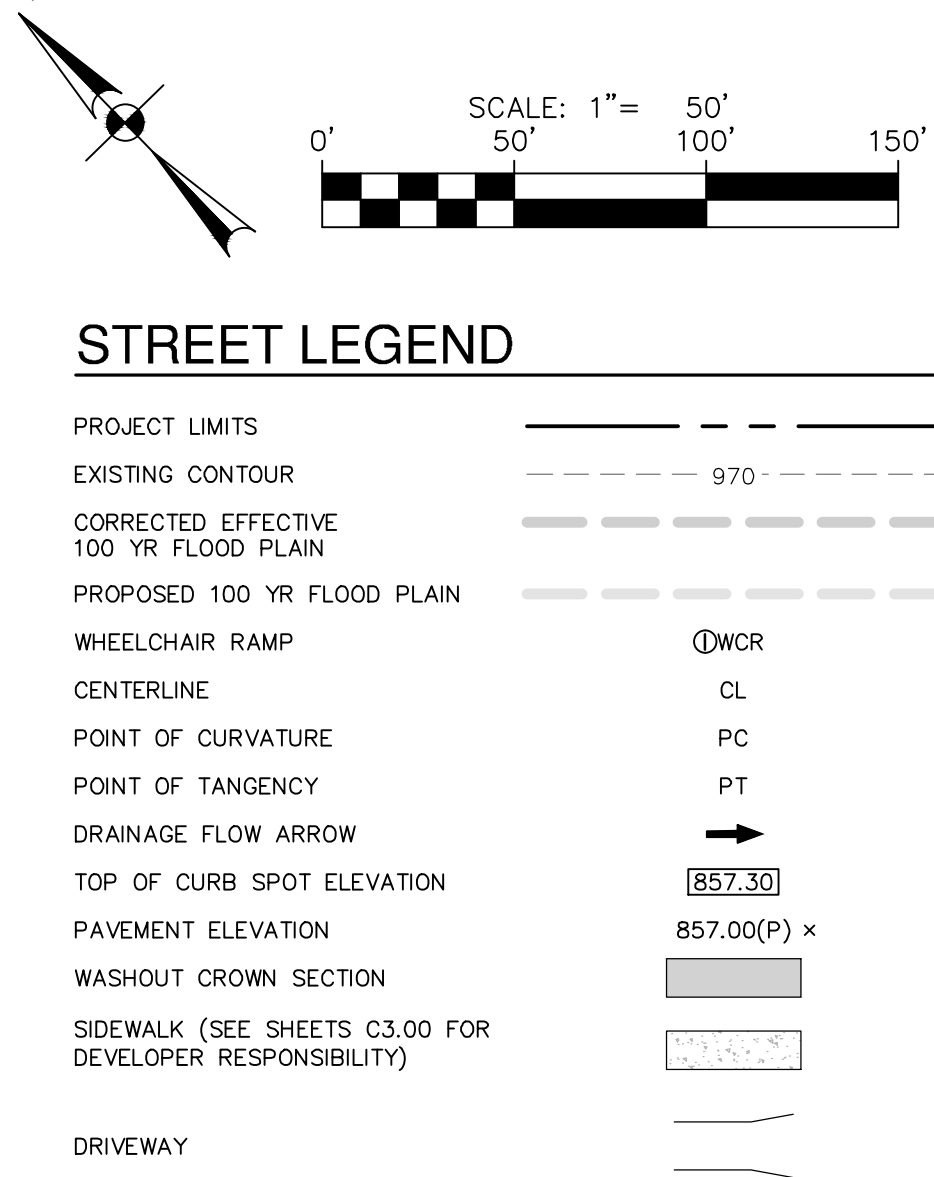
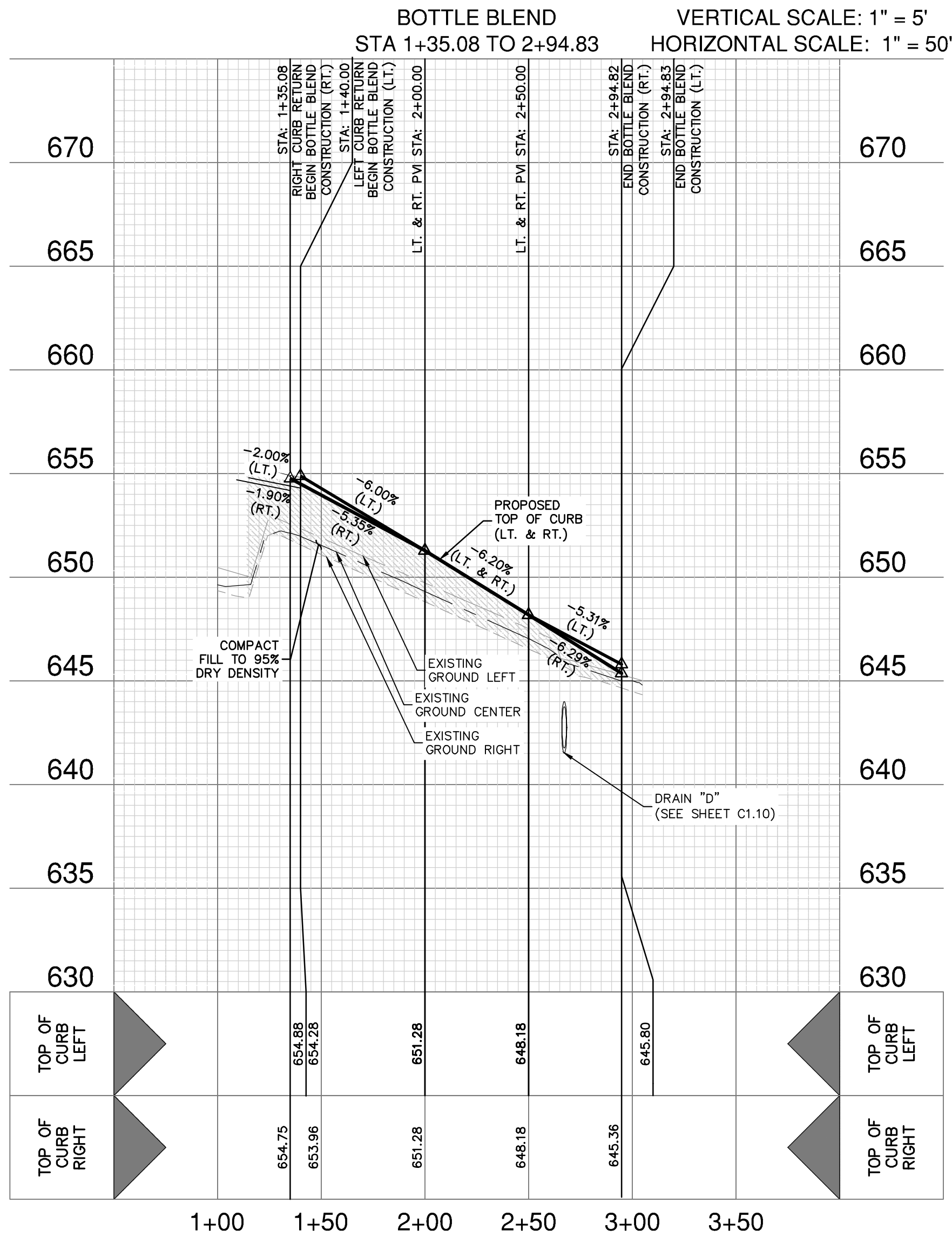
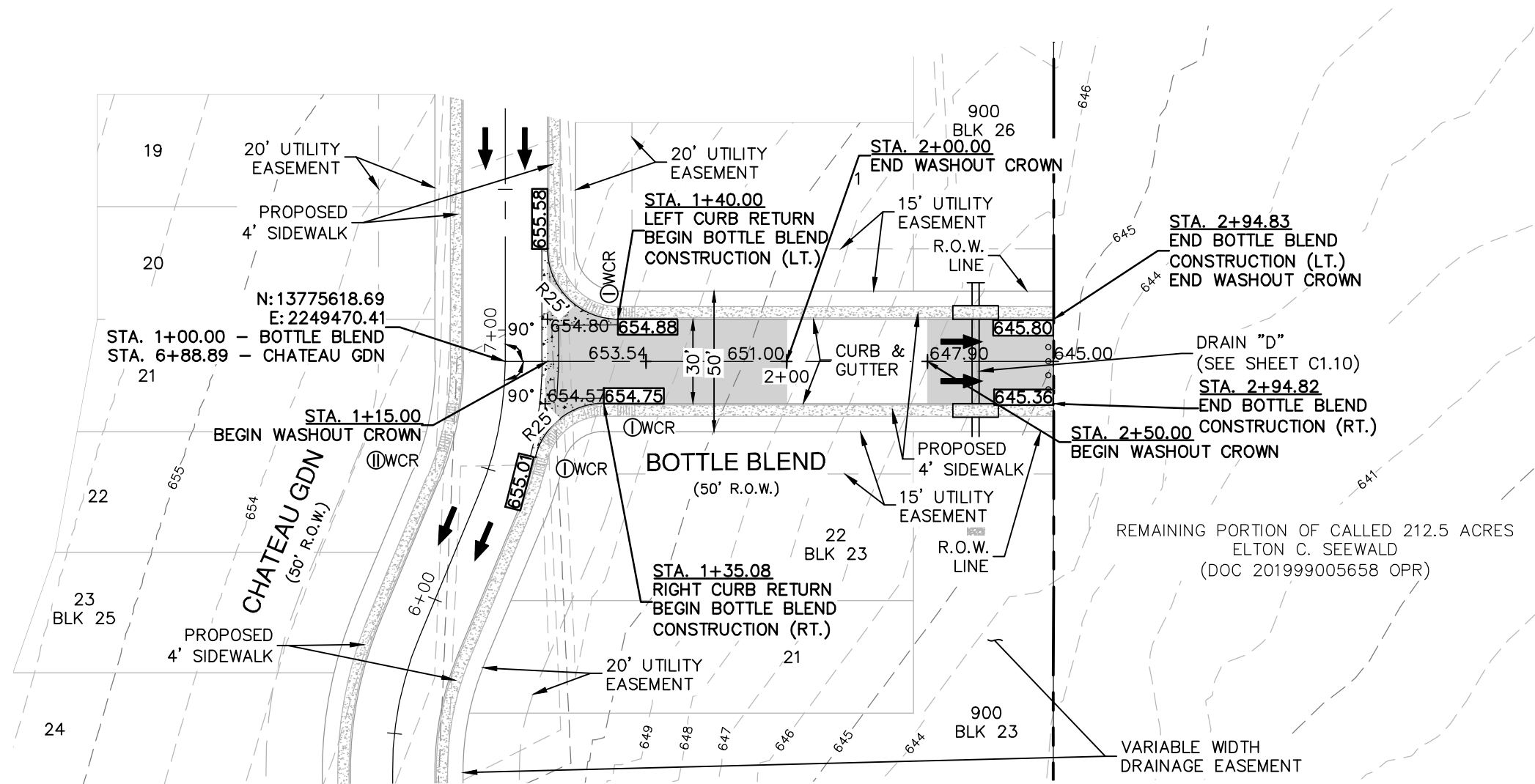
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT THE-IN, IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
2. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 1 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CLEAR VISION EASEMENT SHALL BE 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.
3. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR STRUCTURE. CONFLICT DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
4. PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER _____ CL
CHECKED HF DRAWN JM
SHEET C2.01

FOR PERMIT

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- STREET NOTES:
- 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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 - PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

DATE

NO. REVISION

11-22-2023

JOCELYN PEREZ

98367

PROFESSIONAL ENGINEER

Joelyn Perez

PAPE-DAWSON

ENGINEERS

1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

BOTTLE BLEND - PLAN & PROFILE

STA 1+35.08 TO 2+94.83

PLAT NO.

JOB NO.

DATE

DESIGNER

CHECKED

DRAWN

SHEET

30058-05

NOVEMBER 2023

CL

HF

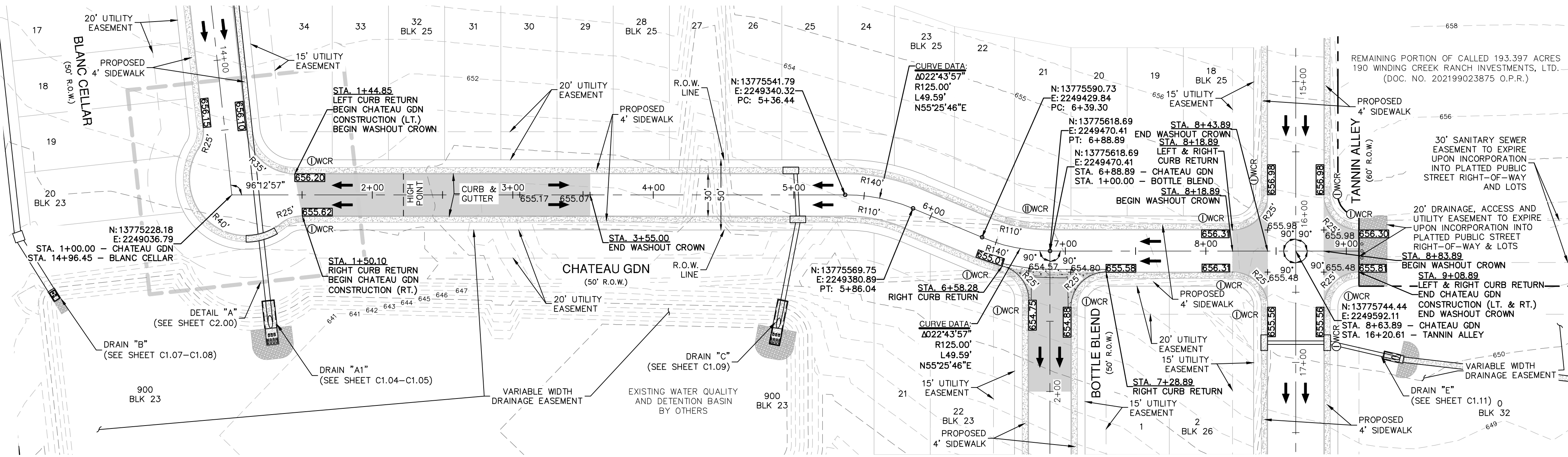
JM

C2.02

FOR PERMIT

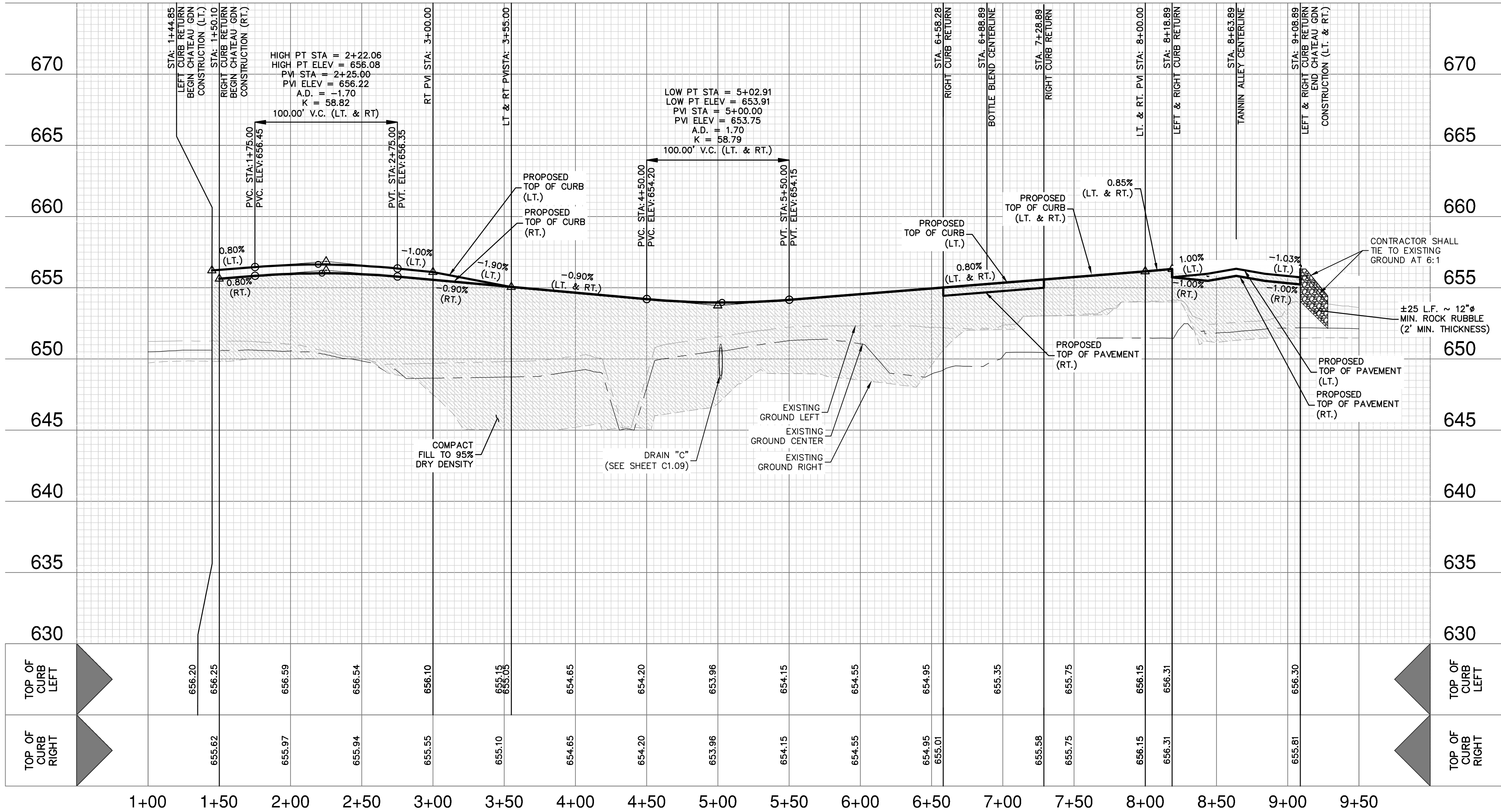
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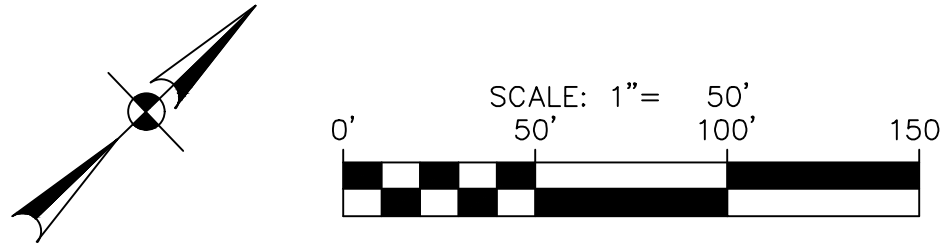
CHATEAU GDN
STA 1+44.85 TO 9+08.89

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



STREET NOTES:

- 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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- PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.



STREET LEGEND

- PROJECT LIMITS: ---
- EXISTING CONTOUR: - - - 970 - - -
- CORRECTED EFFECTIVE 100 YR FLOOD PLAIN: ---
- PROPOSED 100 YR FLOOD PLAIN: ---
- WHEELCHAIR RAMP: DWCR
- CENTERLINE: CL
- POINT OF CURVATURE: PC
- POINT OF TANGENCY: PT
- DRAINAGE FLOW ARROW: →
- TOP OF CURB SPOT ELEVATION: 857.30
- PAVEMENT ELEVATION: 857.00(P) x
- WASHOUT CROWN SECTION: [Symbol]
- SIDEWALK (SEE SHEETS C3.00 FOR DEVELOPER RESPONSIBILITY): [Symbol]
- DRIVEWAY: [Symbol]

PAPE-DAWSON
ENGINEERS

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 77832 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

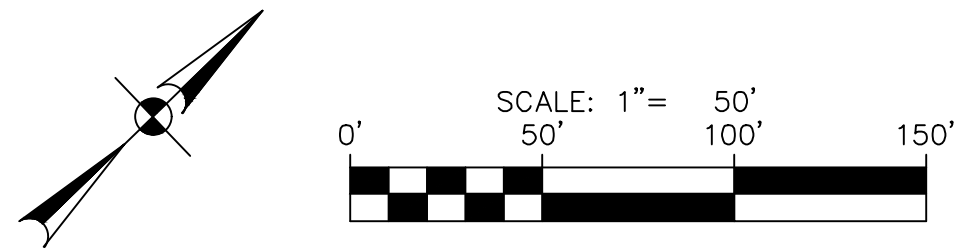
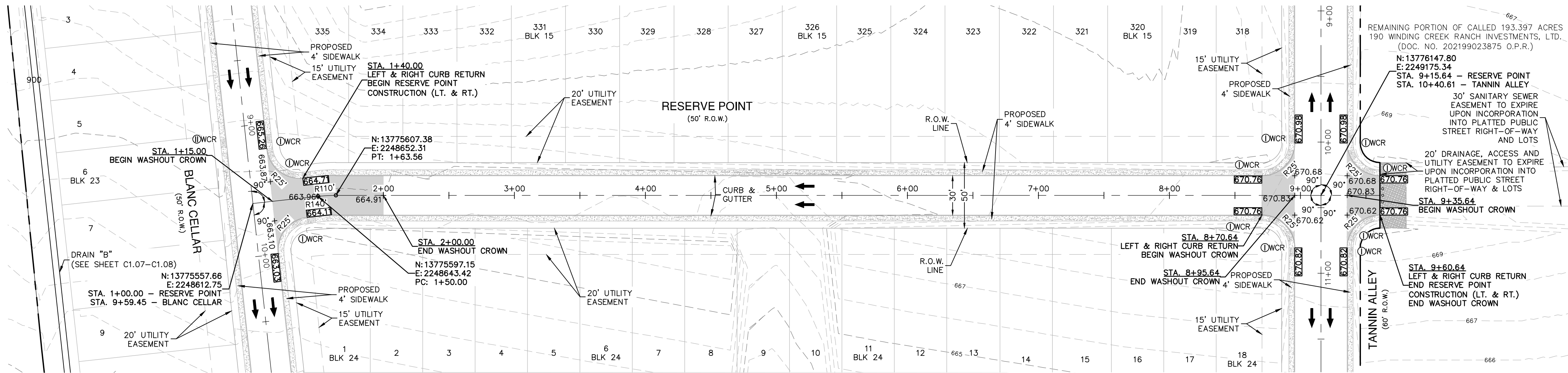
CHATEAU GDN - PLAN & PROFILE
STA 1+44.85 TO 9+08.89

PLAT NO. 30058-05
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.03

FOR PERMIT

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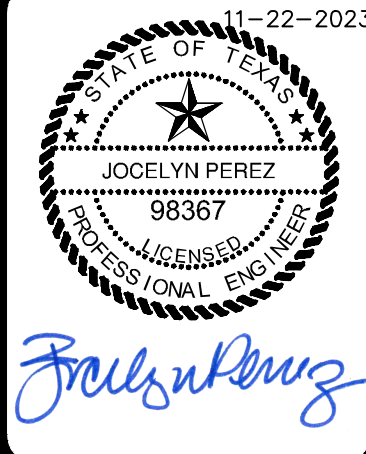
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STREET LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	--- 970 ---
CORRECTED EFFECTIVE 100 YR FLOOD PLAIN	---
PROPOSED 100 YR FLOOD PLAIN	---
WHEELCHAIR RAMP	⊕WCR
CENTERLINE	CL
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	857.30
SIDEWALK (SEE SHEETS C3.00 FOR DEVELOPER RESPONSIBILITY)	---
DRIVEWAY	---

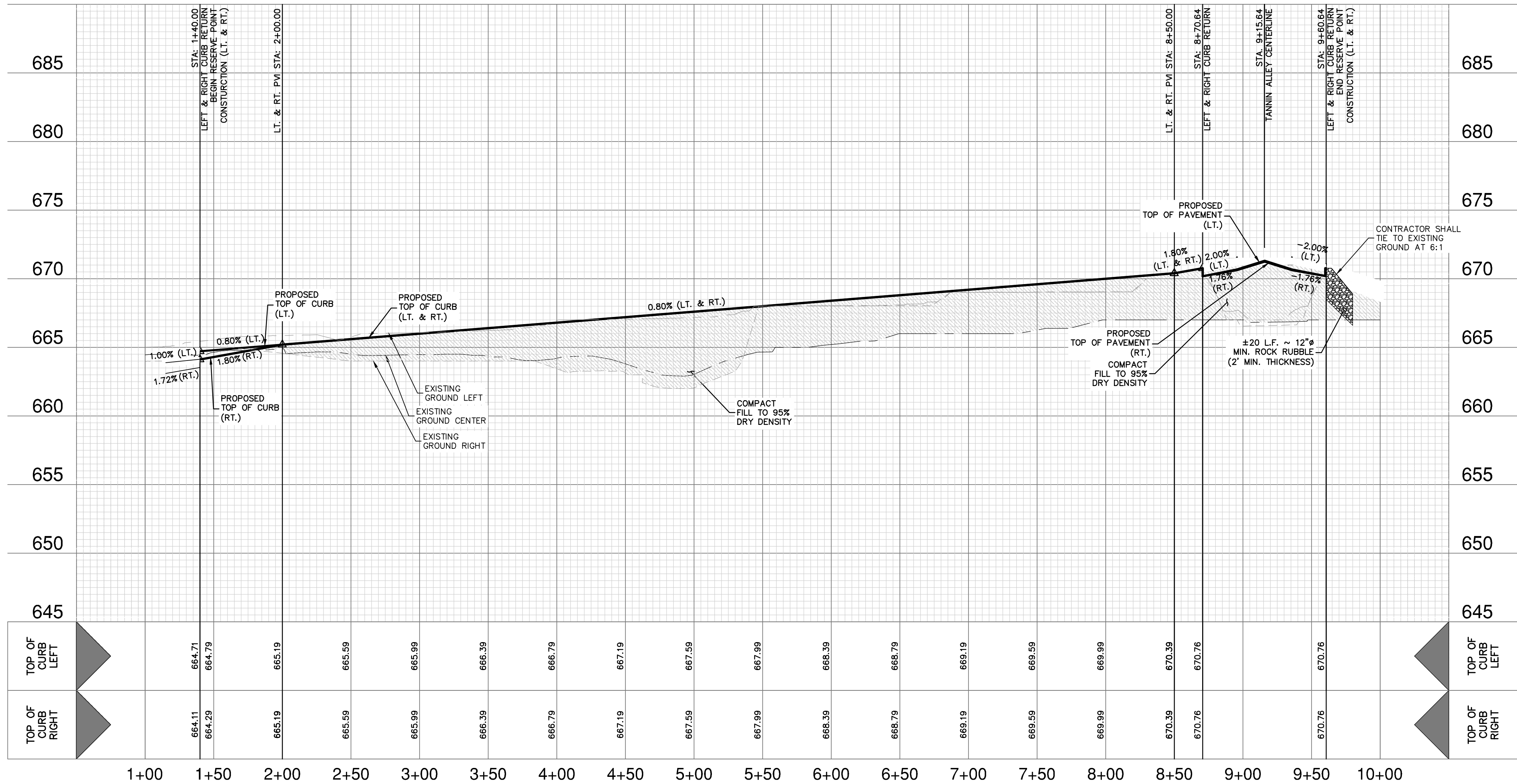
NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

RESERVE POINT
STA 1+40.00 TO 9+60.64

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



STREET NOTES:

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- PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

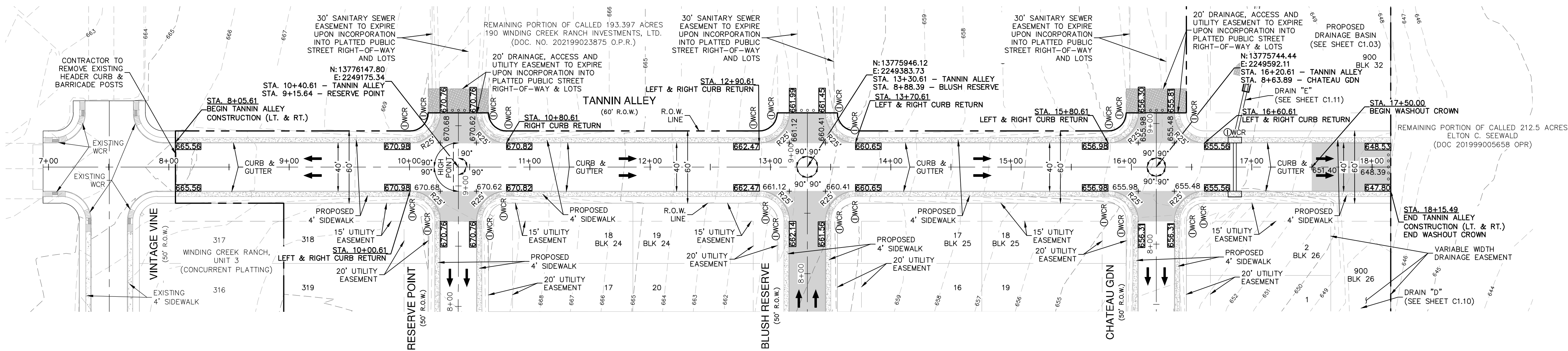
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
RESERVE POINT - PLAN & PROFILE
STA 1+40.00 TO 9+60.64

PLAT NO.	30058-05
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C2.04

FOR PERMIT

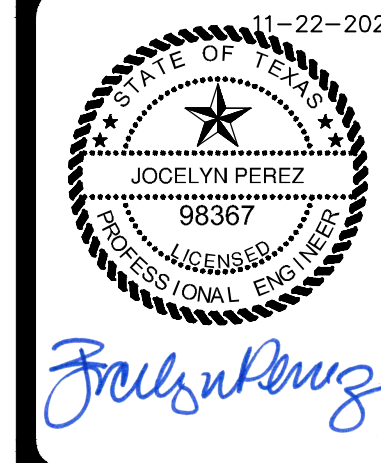
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STREET LEGEND

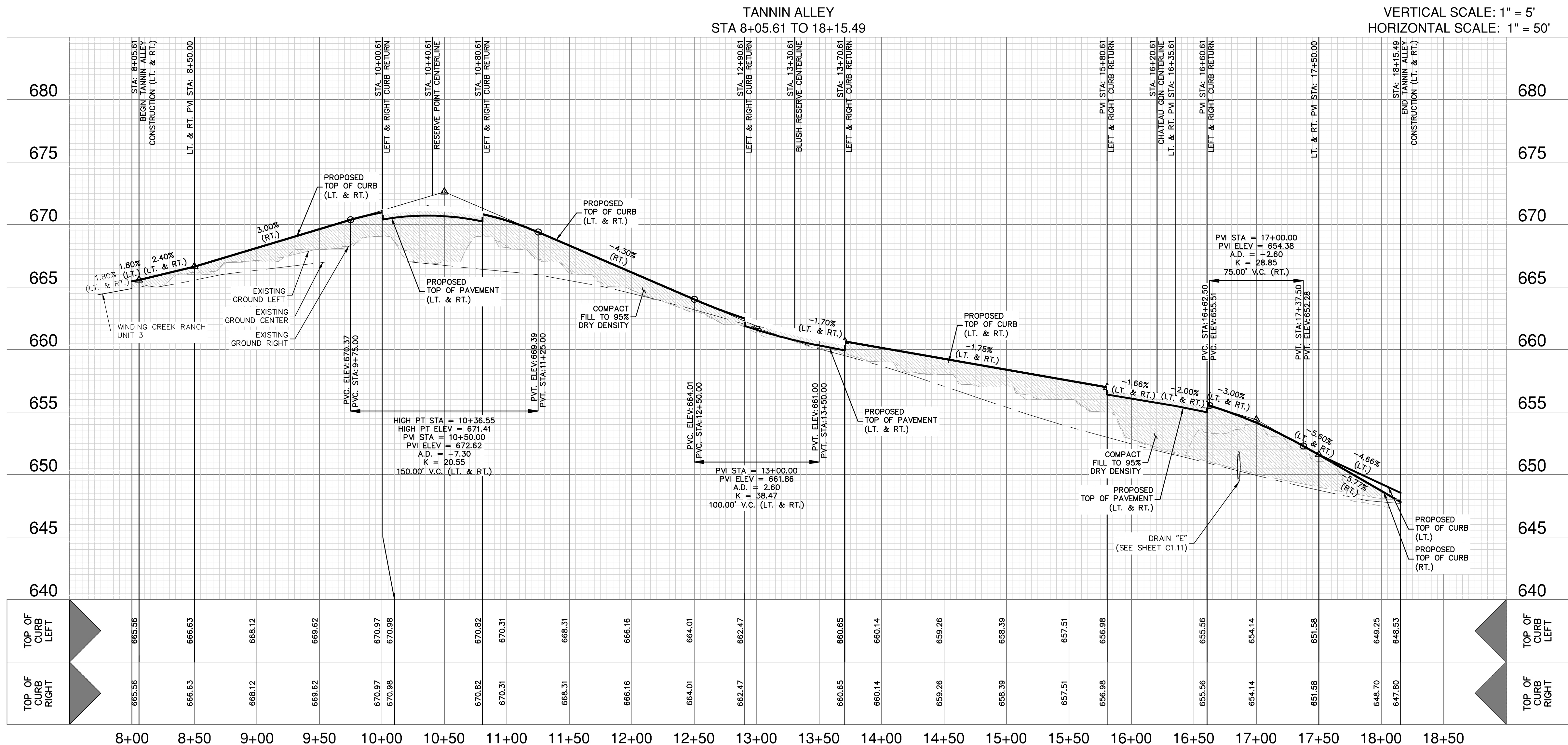
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EXISTING CONTOUR	970
CORRECTED EFFECTIVE 100 YR FLOOD PLAIN	---
PROPOSED 100 YR FLOOD PLAIN	---
WHEELCHAIR RAMP	OWCR
CENTERLINE	CL
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	---
SIDEWALK (SEE SHEETS C3.00 FOR DEVELOPER RESPONSIBILITY)	---
DRIVEWAY	---



PAPE-DAWSON
ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
TANNIN ALLEY - PLAN & PROFILE
STA 8+05.61 TO 18+15.49

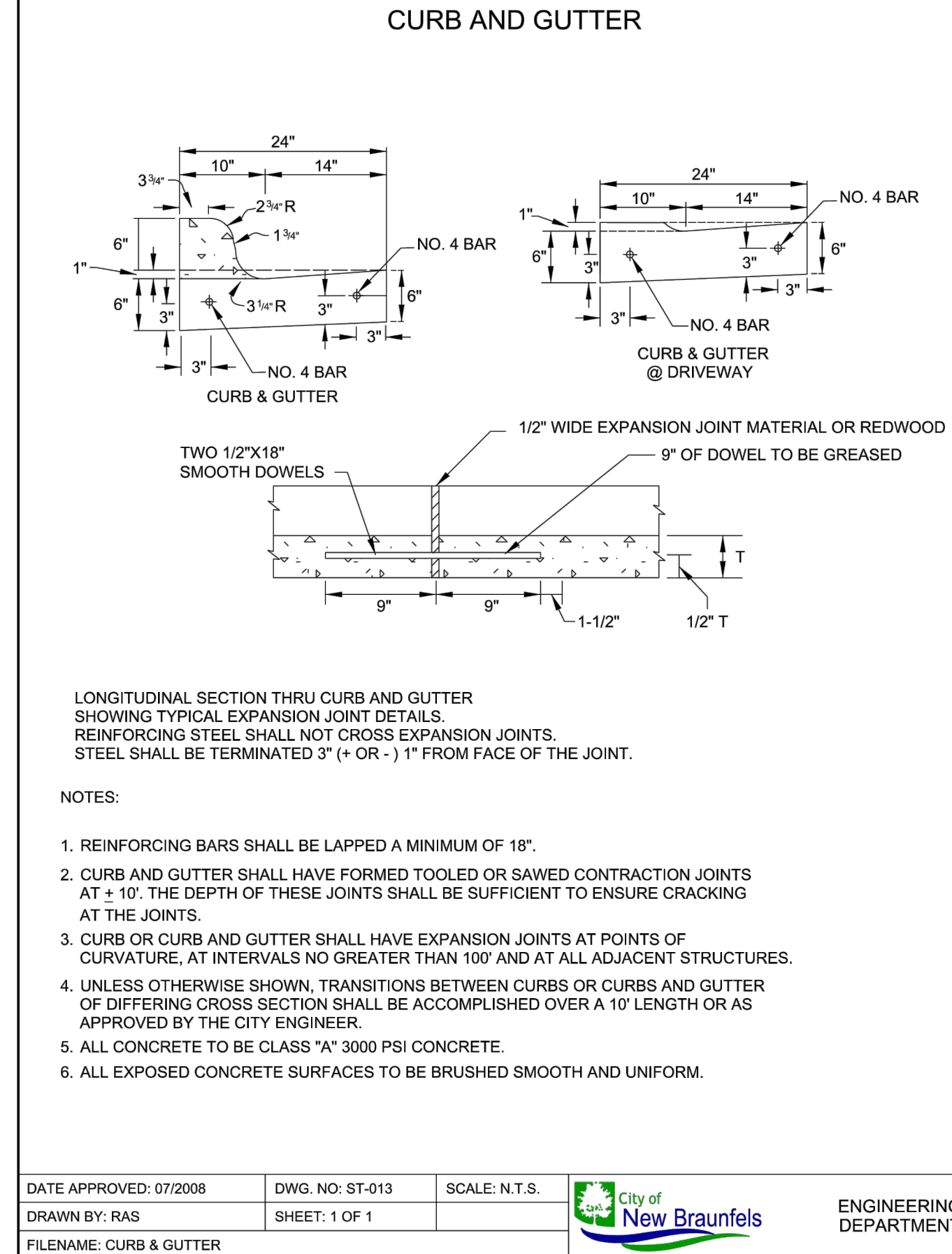
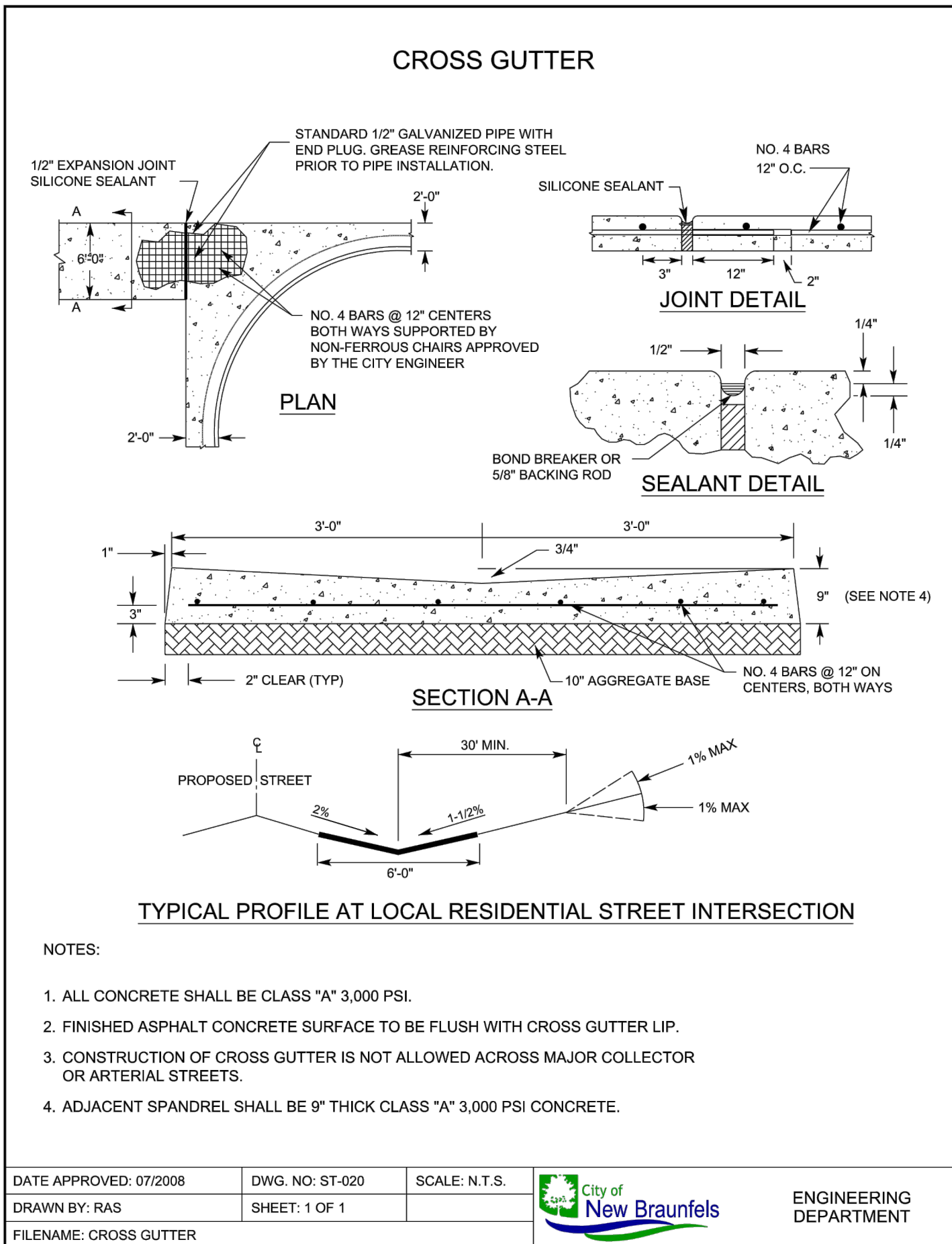
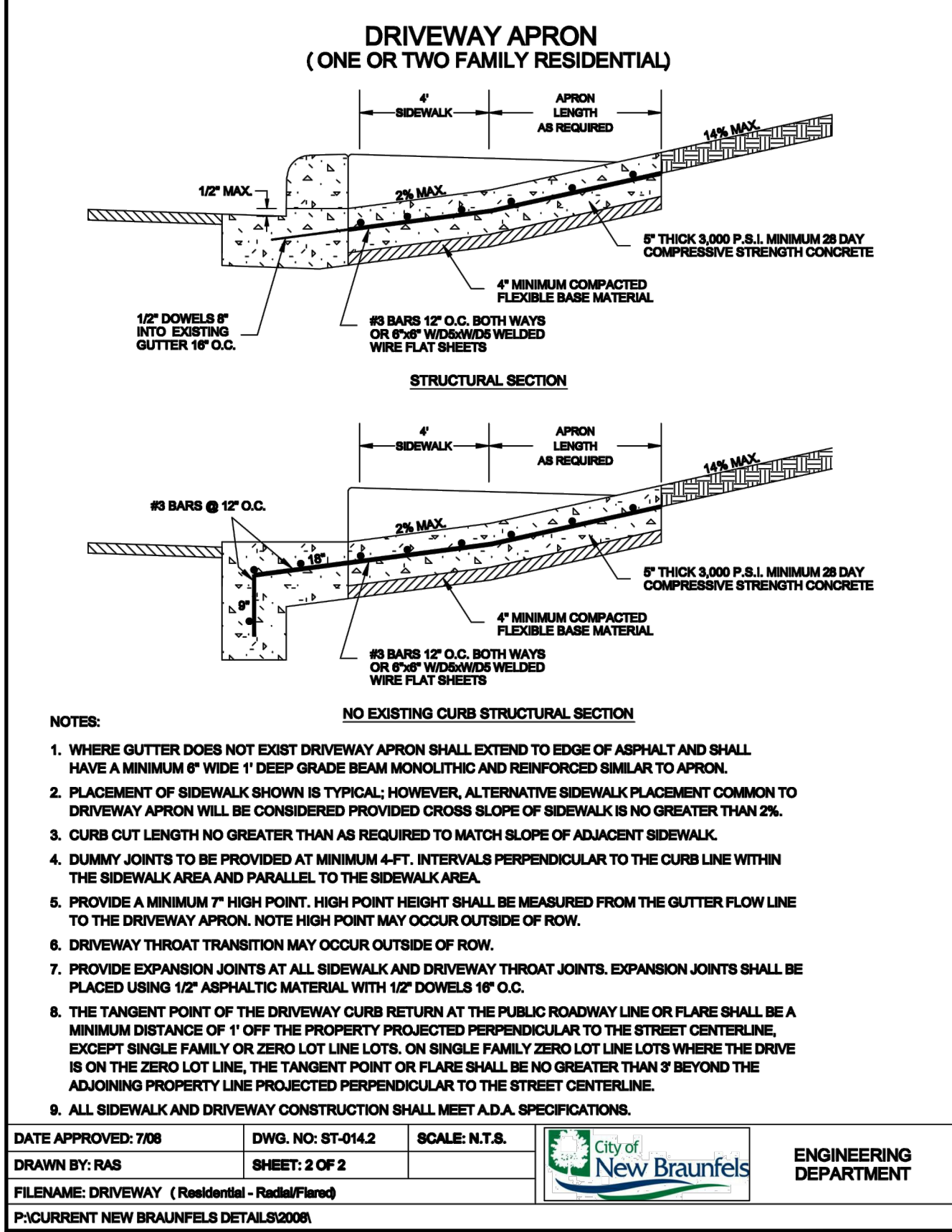
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JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.05



STREET NOTES:

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- PER CITY OF NEW BRAUNFELS CODE, SECTION 118-46, RESIDENTIAL COLLECTORS WERE DESIGNED FOR 30 MPH.

FOR PERMIT



NOTES:

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY RABA KISTNER CONSULTANTS, INC. DATED APRIL 21, 2023, AND THE SUPPLEMENTAL LETTERS BY RABA KISTNER CONSULTANTS, INC. DATED MAY 15, 2023 AND JUNE 12, 2023 PROJECT NO. ANA23-010-00.

2. REFERENCE PROJECT GEOTECHNICAL REPORT, SUPPLEMENTAL LETTER, PROJECT SPECIFICATIONS, AND CITY OF NEW BRAUNFELS SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.

4. SUBGRADE SOILS SHALL BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO LIME TREATMENT.

5. THE FOLLOWING IS AN EXCERPT FROM THE PROJECT GEOTECHNICAL REPORT BY RABA KISTNER CONSULTANTS, INC. DATED APRIL 21, 2023, PROJECT NO. ANA23-010-00.

"ON-SITE SOILS BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 IN. IN THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY TxDOT, TEX-114-E. THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED. WE RECOMMEND THAT FILL MATERIALS BE FREE OF ROOTS AND OTHER ORGANIC OR DEGRADABLE MATERIAL. WE ALSO RECOMMEND THAT THE MAXIMUM PARTICLE SIZE NOT EXCEED 4 IN. OR ONE HALF THE LIFT THICKNESS, WHICHEVER IS SMALLER.

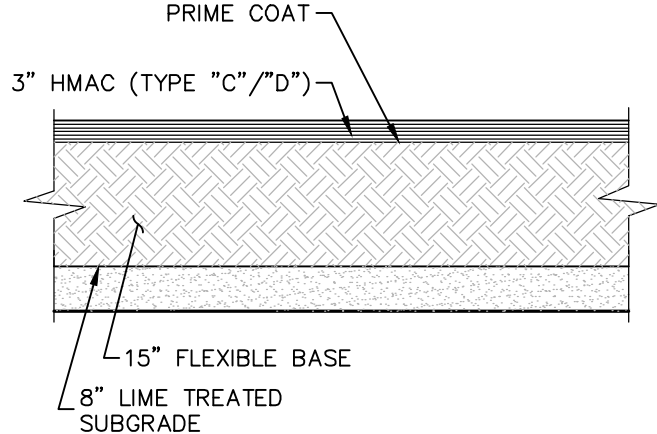
LIME OR CEMENT TREATMENT OF THE SUBGRADE SOILS, IF UTILIZED, SHOULD BE IN ACCORDANCE WITH THE TxDOT STANDARD SPECIFICATIONS, ITEM 260 OR ITEM 275, RESPECTIVELY. A SUFFICIENT QUANTITY OF HYDRATED LIME SHOULD BE MIXED WITH THE SUBGRADE SOILS TO REDUCE THE SOIL PLASTICITY INDEX TO 20 OR LESS. BASED ON THE RESULTS OF THE PH-LIME SERIES AND SOIL LIME TESTING, WE RECOMMEND THAT AT LEAST 6 PERCENT HYDRATED LIME TREATMENT BY WEIGHT BE USED, WHICH DECREASED THE SOIL SUBGRADE PLASTICITY INDEX TO 14 IN OUR LABORATORY TEST.

TREATED SUBGRADE SOILS SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AT A MOISTURE CONTENT WITHIN THE RANGE OF OPTIMUM MOISTURE CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY TEX-113-E."

Pavement Section

3" Type C/D HMAC
15" Flexible Base
8" Lime Treated Subgrade

Total: 26"
Structural No: 4.06



RESIDENTIAL COLLECTOR

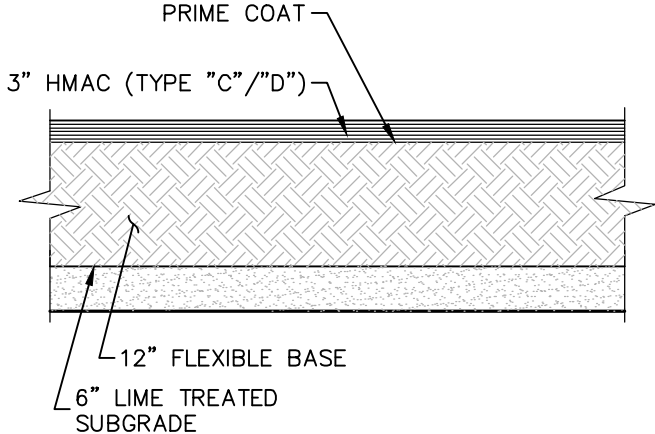
NOT TO SCALE

TANNIN ALLEY: STA 8+05.61 TO 18+15.49

Pavement Section

3" Type C/D HMAC
12" Flexible Base
6" Lime Treated Subgrade

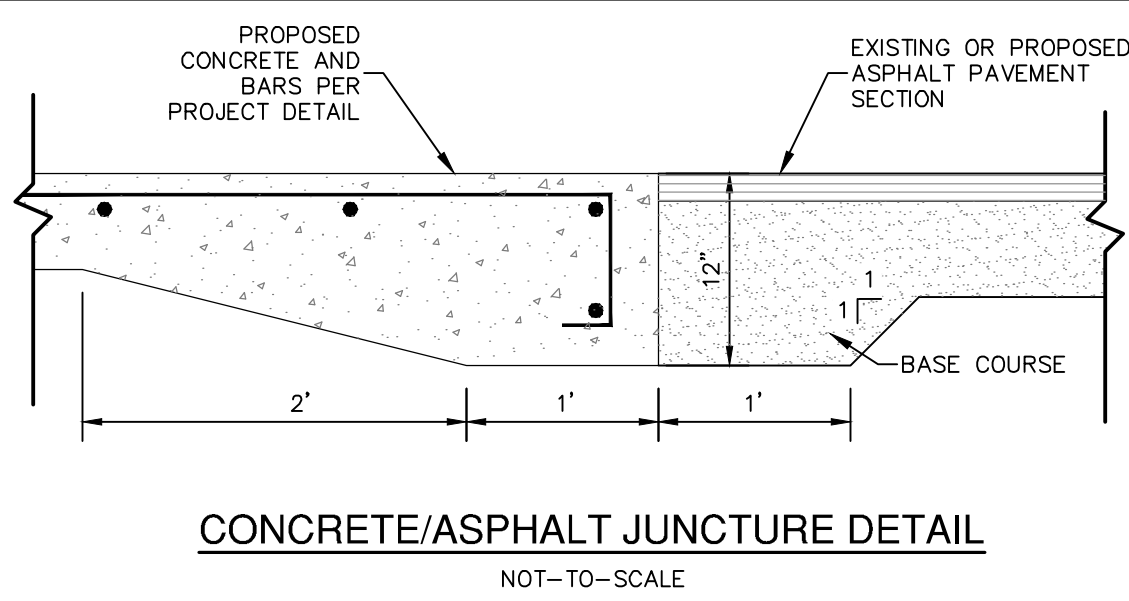
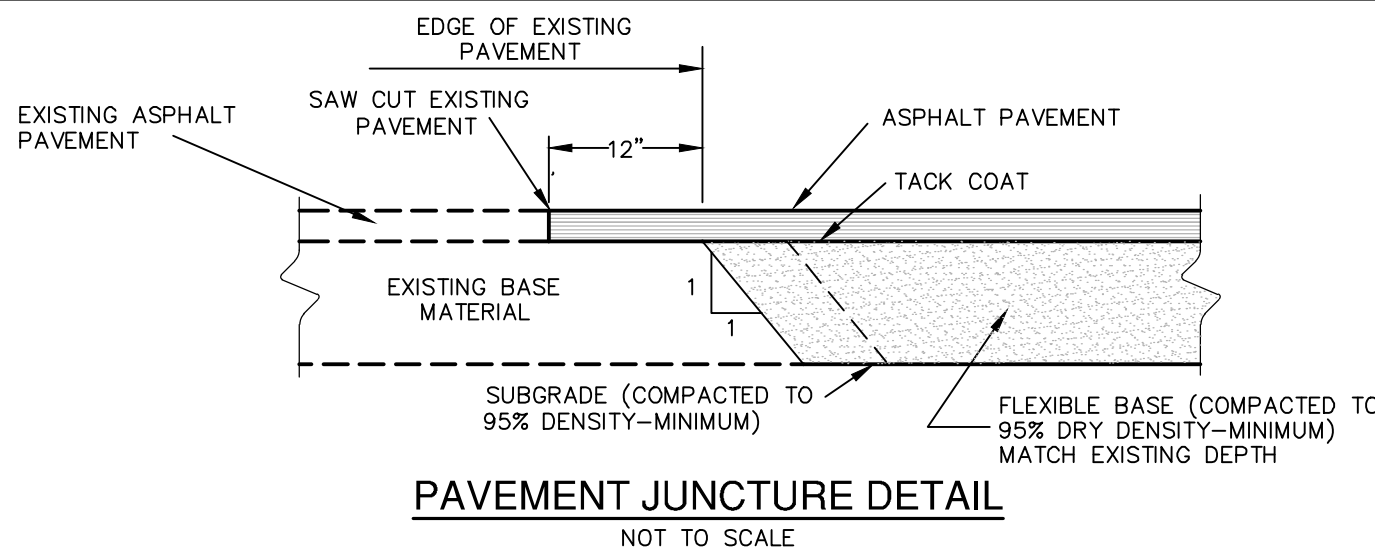
Total: 21"
Structural No: 3.48



LOCAL A

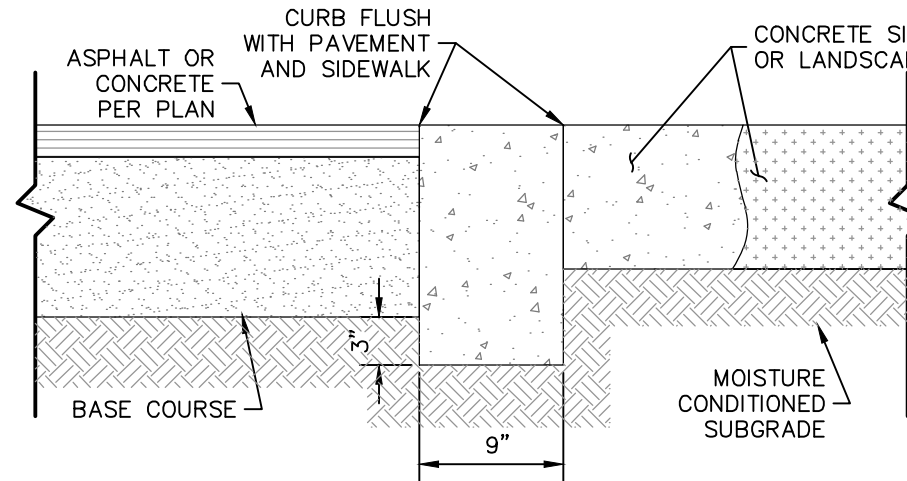
NOT TO SCALE

BLANC CELLAR: STA 7+14.88 TO 14+51.60
BLUSH RESERVE: STA 1+40.00 TO 9+33.39
BOTTLE BLEND: STA 1+35.08 TO 2+94.83
CHATEAU GDN: STA 1+44.85 TO 9+08.89
RESERVE POINT: STA 1+40.00 TO 9+60.64



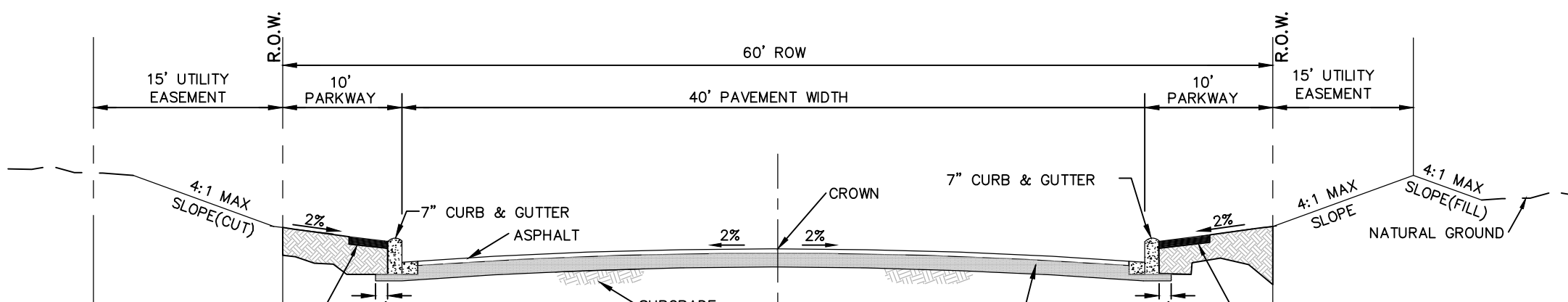
CONCRETE/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE



HEADER CURB DETAIL

NOT-TO-SCALE

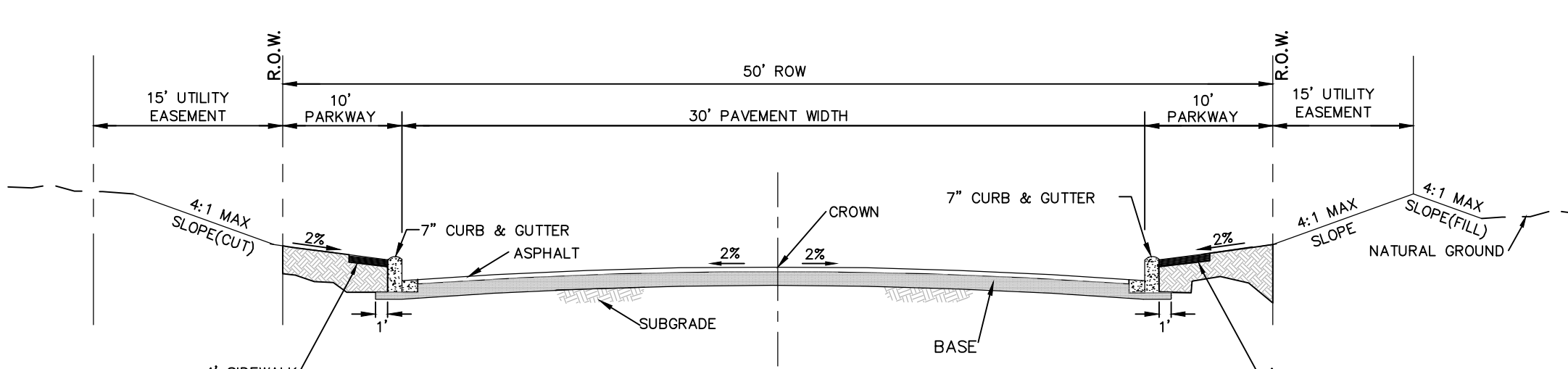


RESIDENTIAL COLLECTOR - 60' R.O.W.

TYPICAL STREET SECTION

NOT-TO-SCALE

TANNIN ALLEY: STA 8+05.61 TO 18+15.49

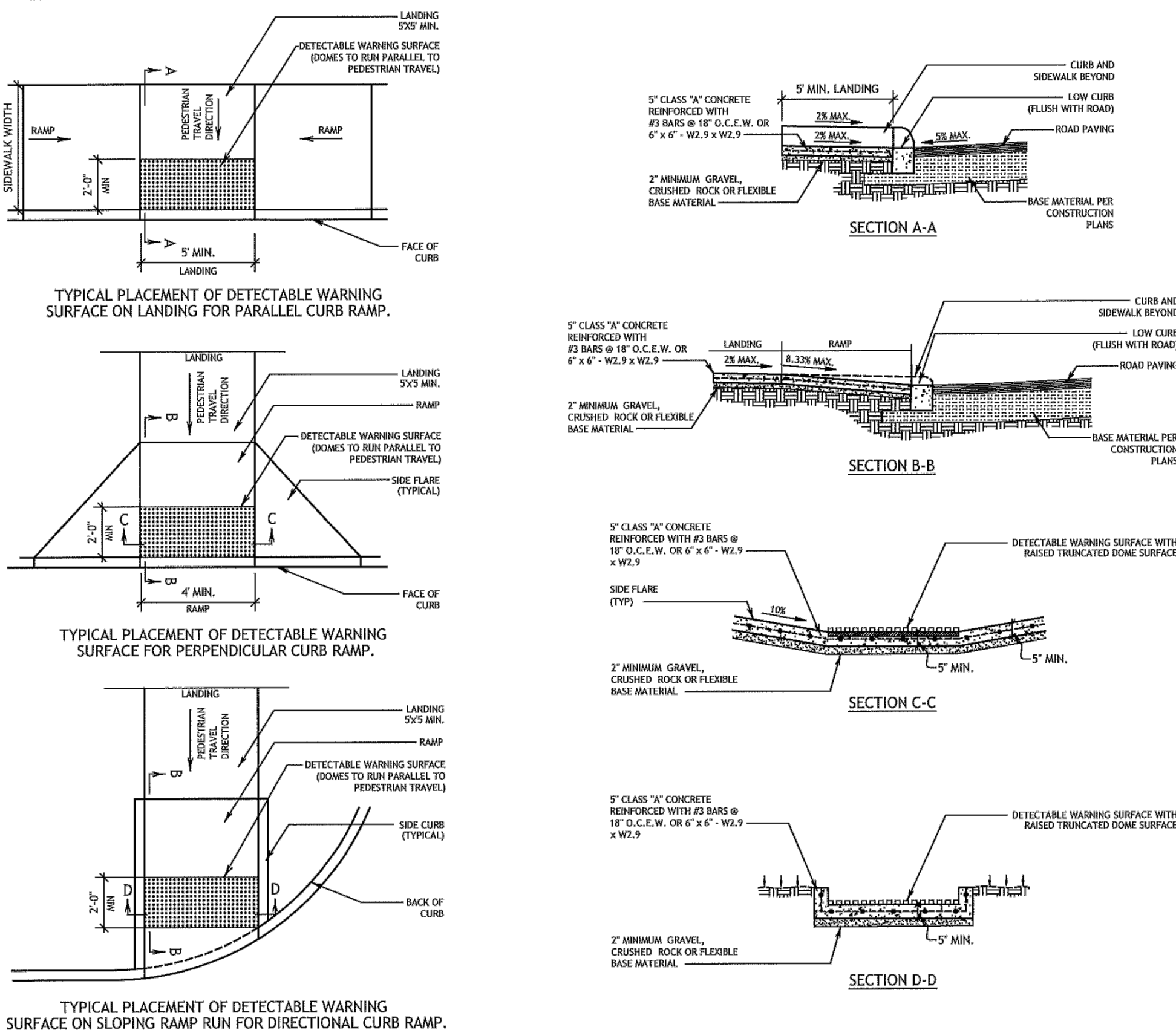


RESIDENTIAL LOCAL A - 50' R.O.W.

TYPICAL STREET SECTION

NOT-TO-SCALE

BLANC CELLAR: STA 7+14.88 TO 14+51.60
BLUSH RESERVE: STA 1+40.00 TO 9+33.39
BOTTLE BLEND: STA 1+35.08 TO 2+94.83
CHATEAU GDN: STA 1+44.85 TO 9+08.89
RESERVE POINT: STA 1+40.00 TO 9+60.64



CURB RAMP NOTES

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMP ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE WALK WAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS). CITY ENGINEER OR BUILDING OFFICIAL MAY ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
3. THE MINIMUM STANDARD SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 118-49 OF THE NEW BRAUNFELS CODE OF ORDINANCES.
4. ALL LANDINGS WHERE REQUIRED SHALL BE 5' x 5' (60"x60") MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
5. RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1V:12H). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
6. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1V:10H) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED IN-AREA OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
8. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' x 4' (48"x48") WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
9. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALKS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
10. EXISTING FEATURES THAT CONFLICT WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
11. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
12. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PRE-CAST OR ROAD JOINT OF 1/2" UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
13. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP POSSESSING AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(2.67)=5.66). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
16. ADA RAMP SHALL BE CONSTRUCTED WITH 5" CLASS "A" CONCRETE WITH 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" x W2.9 x W2.9 x WIRE MESH.
17. THE EXTENTS OF ADA COMPLIANCE IN ALTERNATIONS SHALL BE WITHIN THE BARS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

1. CURB RAMPS OR LANDINGS ADJUTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 905 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DOME BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADII.
6. DETECTABLE WARNING MATERIALS MUST MEET TxDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS-4200 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

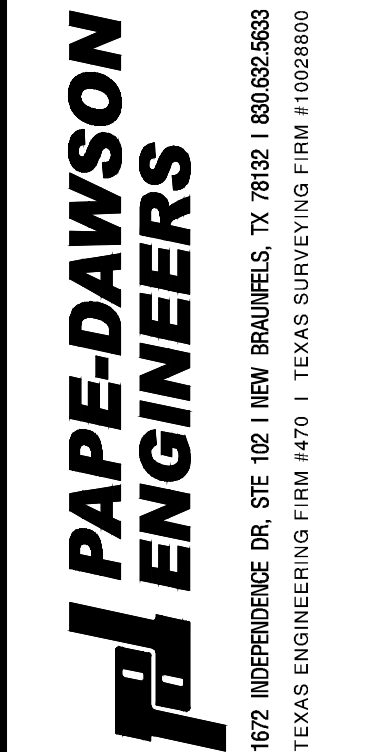
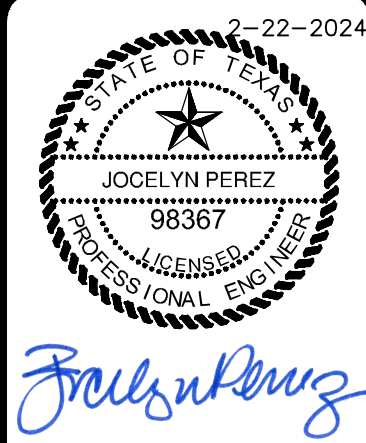


ENGINEERING DIVISION
850 LANOA STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830.221.4020
FAX: 830.630.3600

CURB RAMP STANDARDS

APPROVED DATE: 05/18/2017 DWG. NO.: ST-019 SCALE: AS NOTED
DRAWN BY: RC CONTACT: GF SHEET: 1 OF 1

DATE	
NO.	
REVISION	

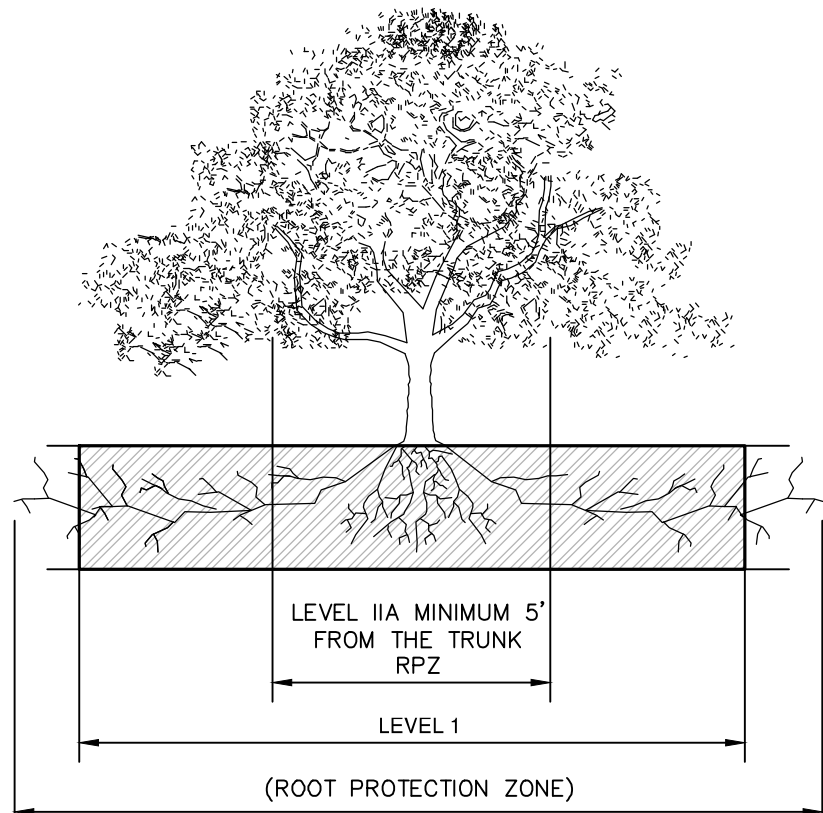


WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
TYPICAL STREET DETAILS

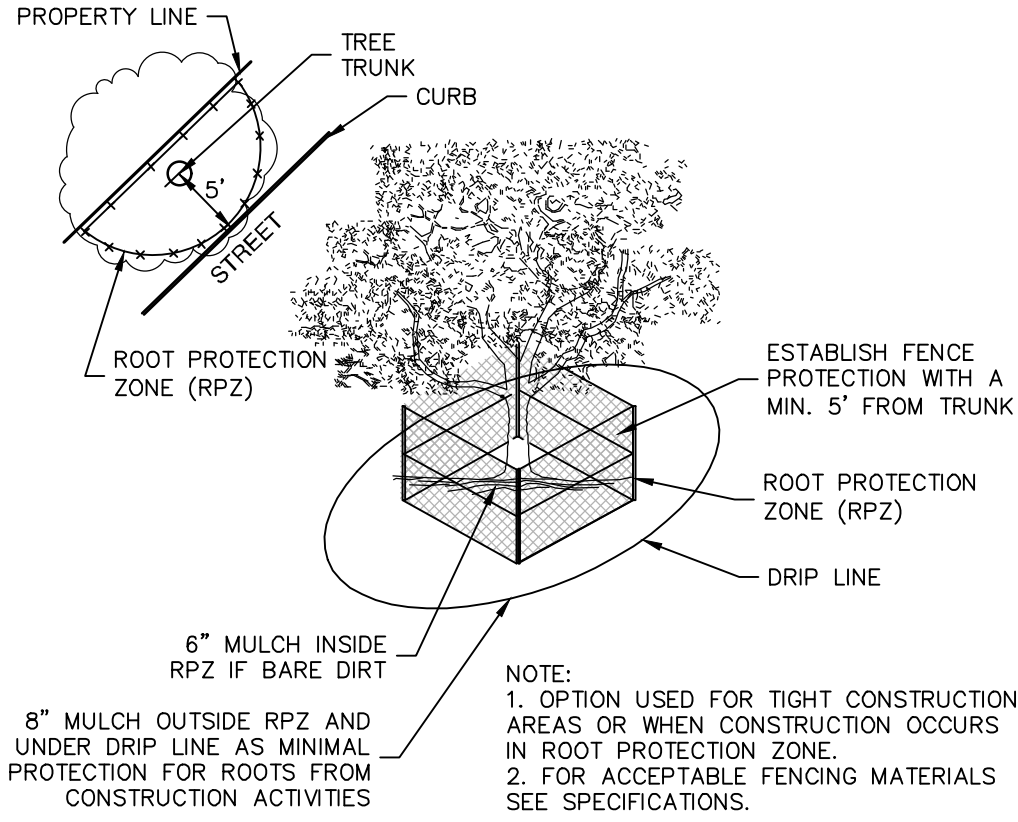
PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C2.11

Date: Nov 22, 2023, 4:39pm User: JD_Aldedy
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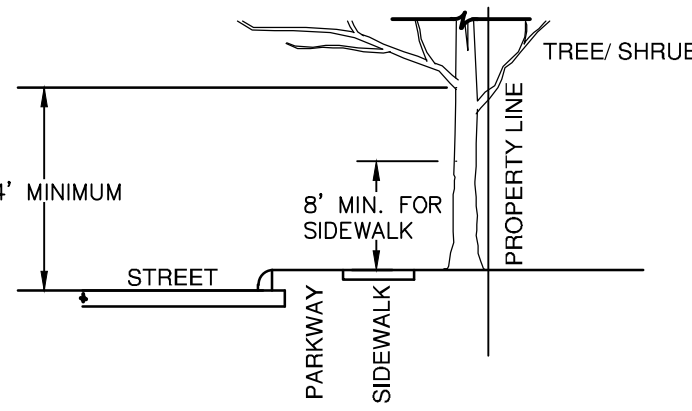
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOO,digital Gdn,Texas Orthomogrphey Program, USDA Farm Service Agency.



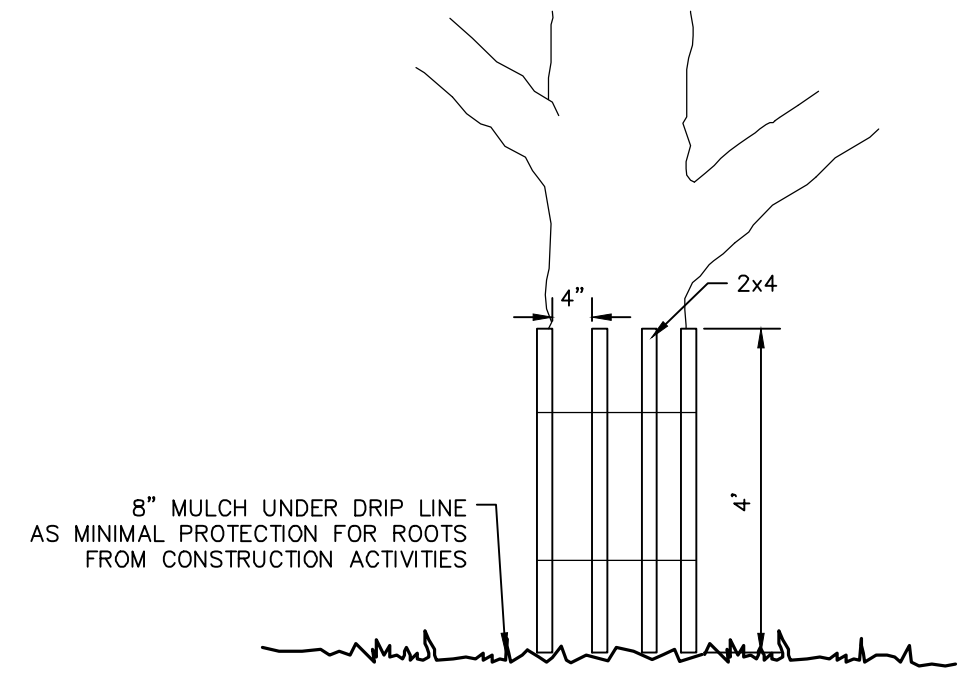
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NOT TO SCALE



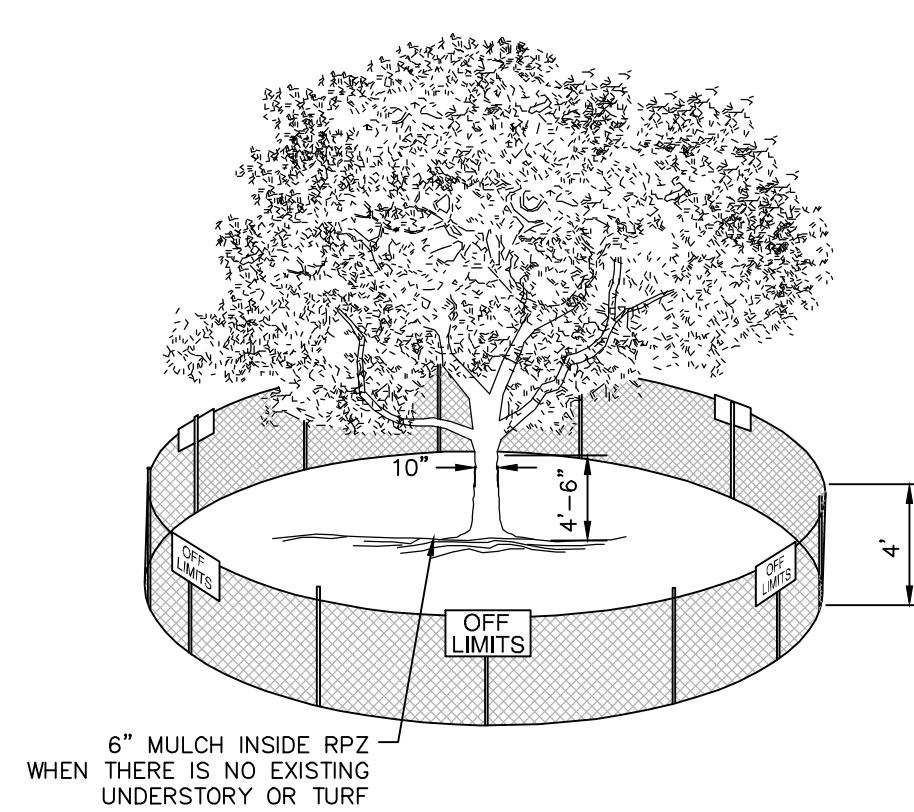
LEVEL II A FENCE PROTECTION
NOT TO SCALE



BRANCH CLEARANCE DETAIL
NOT TO SCALE

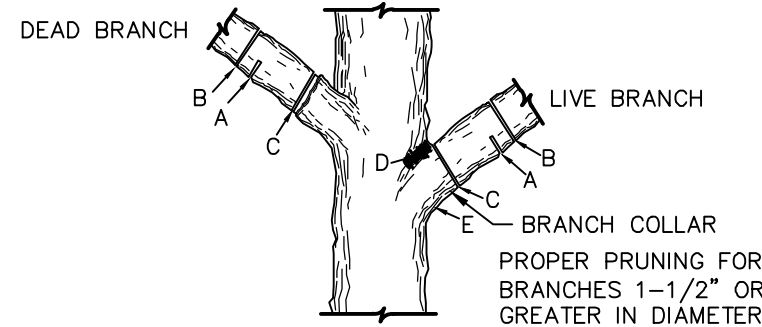


LEVEL II B FENCE PROTECTION
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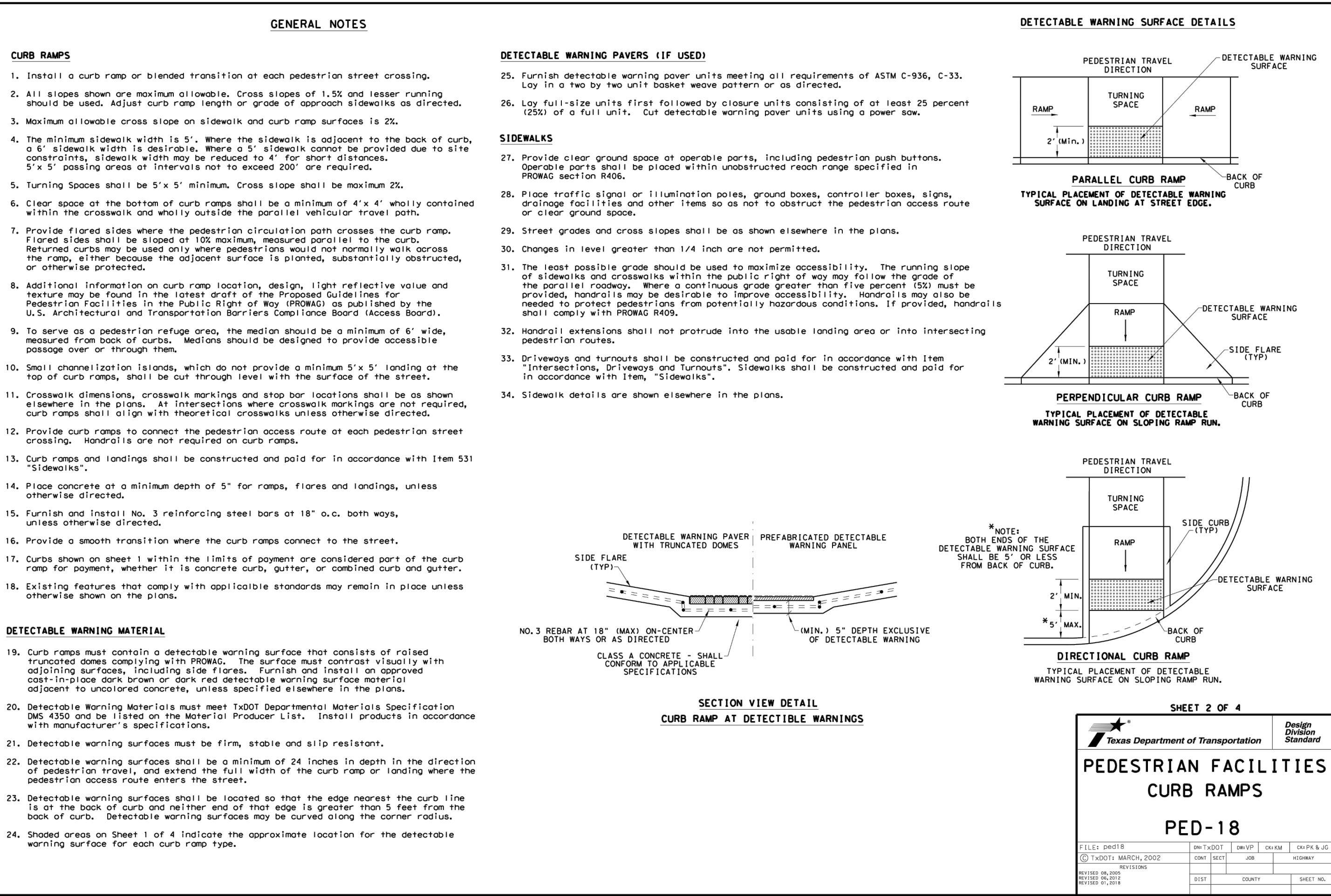
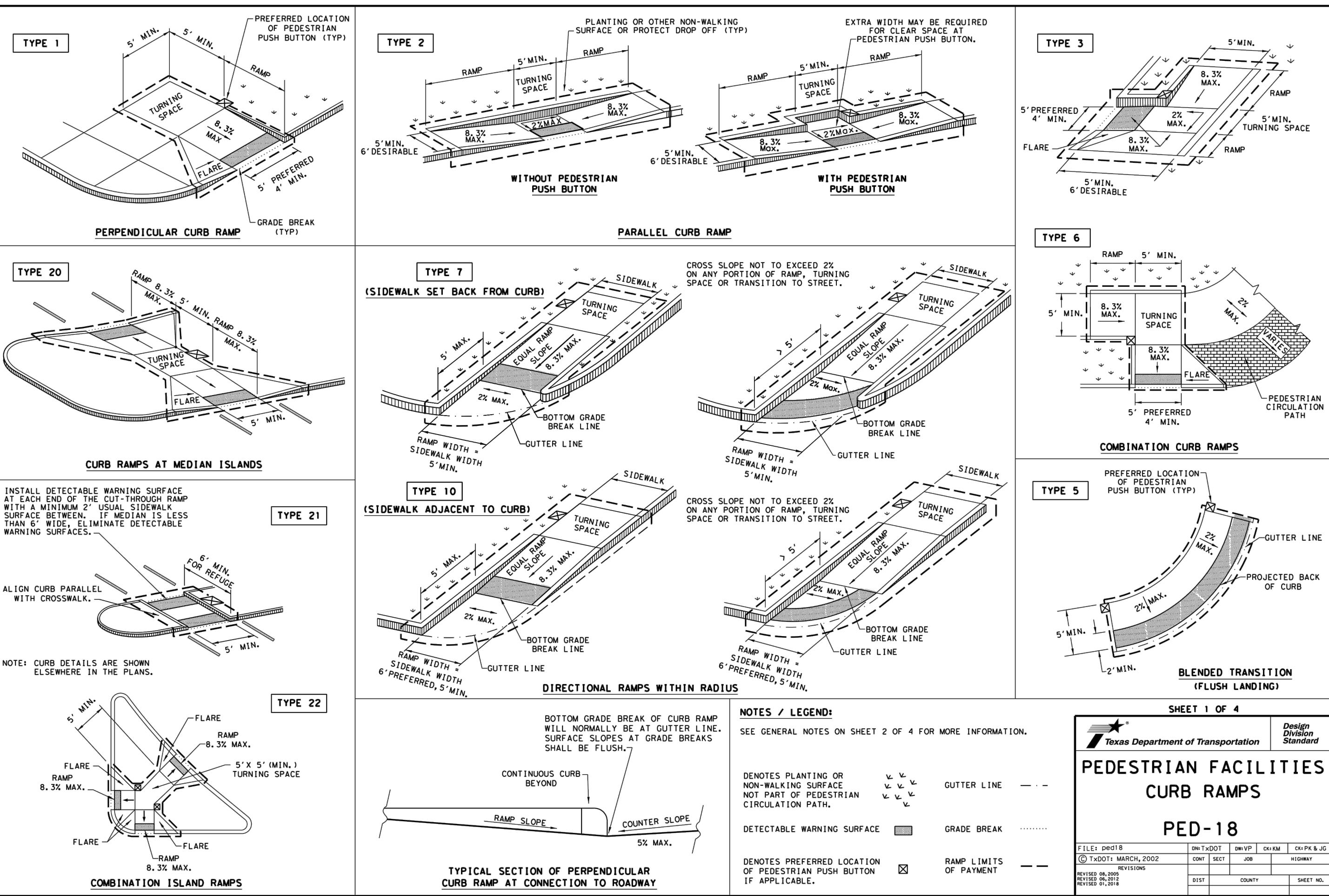


TREE PROTECTION ZONE
NOT TO SCALE

- NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY, WILL CONFORM TO THE DRIP LINE AND IS LIMITED TO PROJECT BOUNDARY.
 2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECS.
 3. CHAIN LINK FENCE SHALL BE ERECTED PRIOR TO ANY CLEARING, GRUBBING OR SITE WORK OF ANY KIND. FENCING SHALL STAY ERECTED UNTIL FINAL LANDSCAPE OPERATIONS COMMENCE.
 4. ANY PRUNING TO PROVIDE CLEARANCE TO PRESERVED TREES MUST BE APPROVED BY A CERTIFIED ARBORIST.
 5. DO NOT REMOVE ANY TREES OVER 1" CALIPER WITHIN THE TREE PROTECTION FENCING OR OUTSIDE THE LIMITS OF CONSTRUCTION.
 6. TREE ROOT CUTS SHALL BE MECHANICALLY CUT AT THE DIRECTION OF A CERTIFIED ARBORIST. CUTS SHALL BE CLEAN CUTS, WITHOUT PULLING OR TEARING.



BRANCH PRUNING
NOT TO SCALE



WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
TYPICAL STREET DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.12

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Jocelyn Perez
PROFESSIONAL ENGINEER
11-22-2023

DATE
NO. REVISION

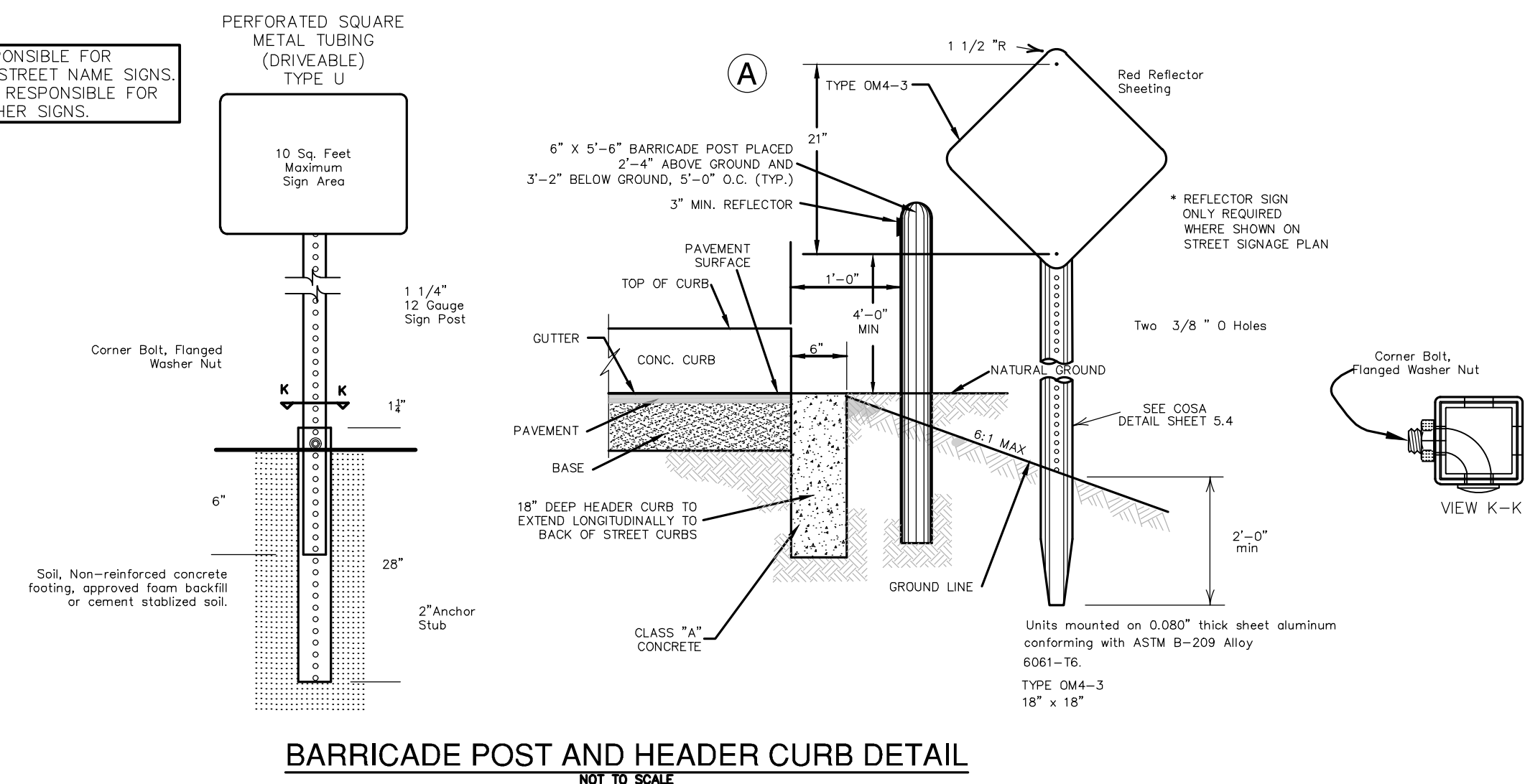
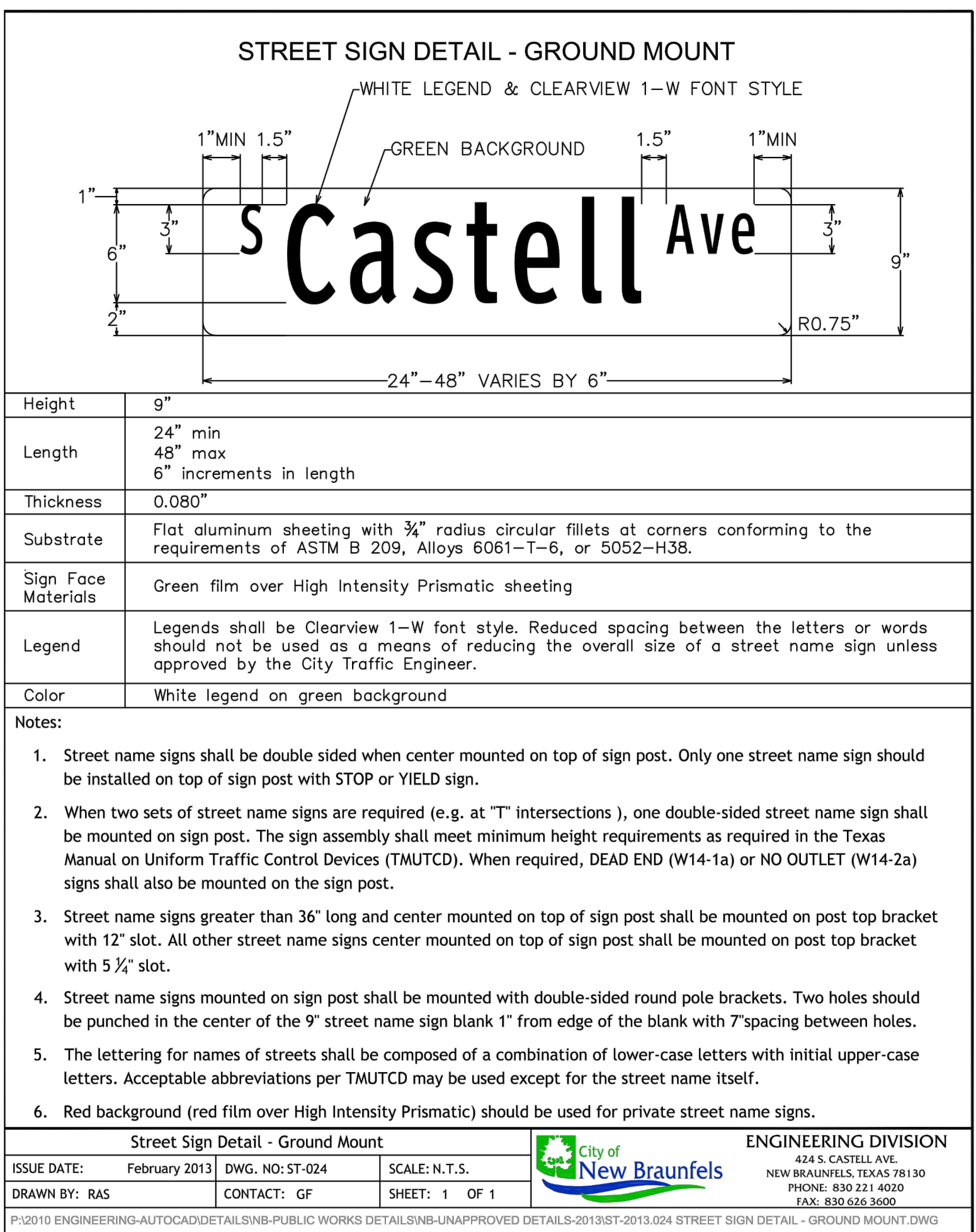
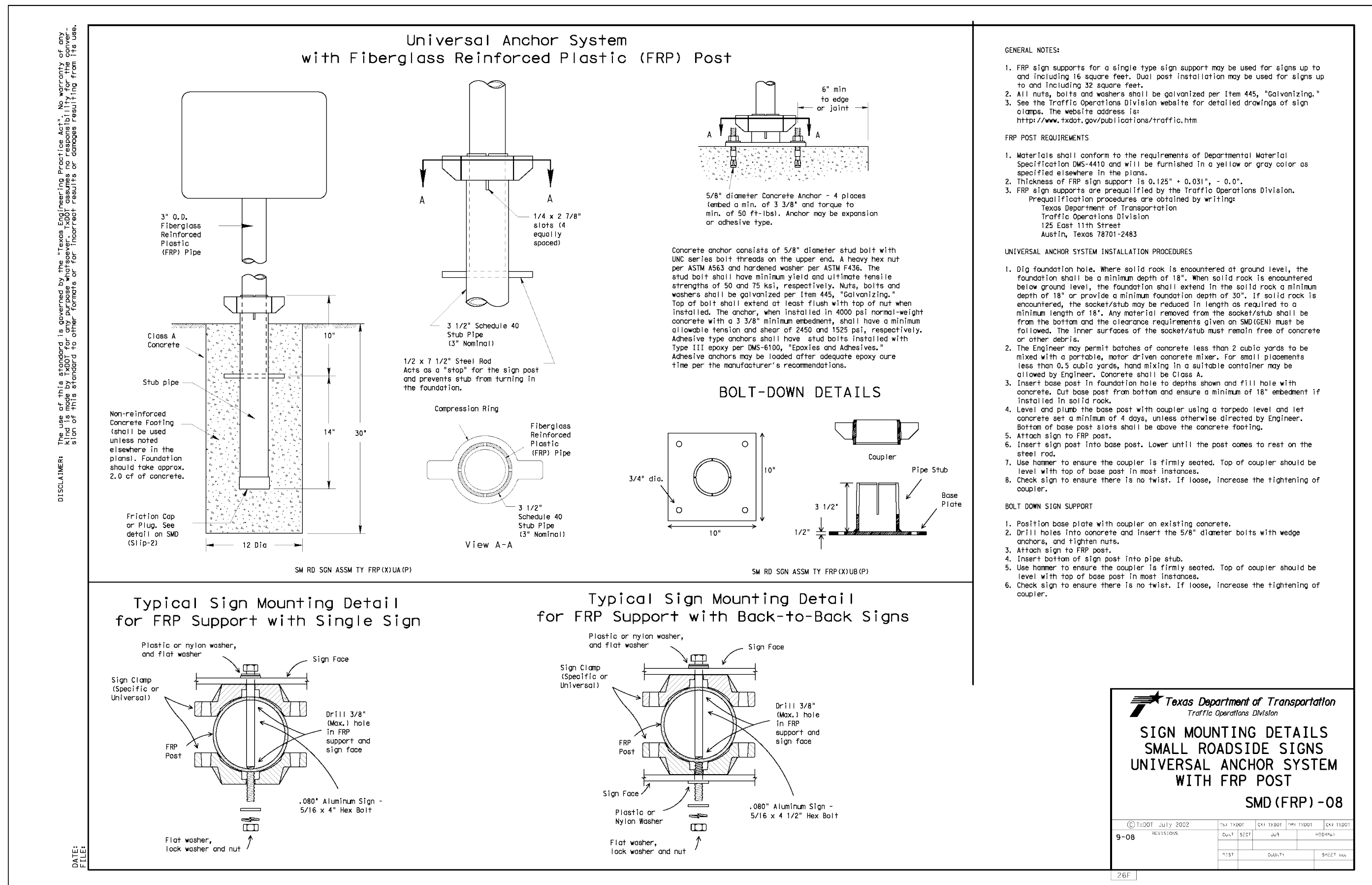
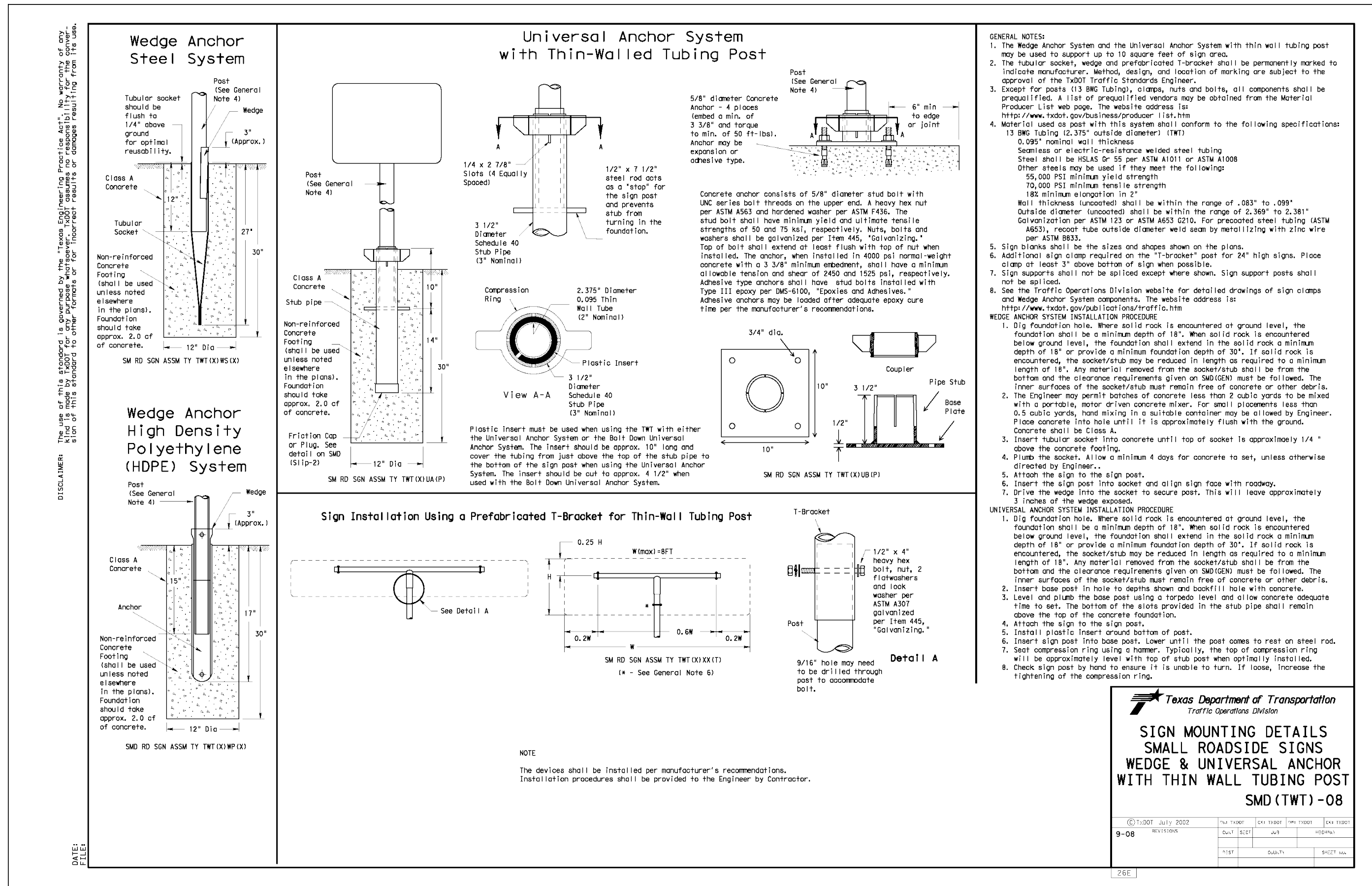
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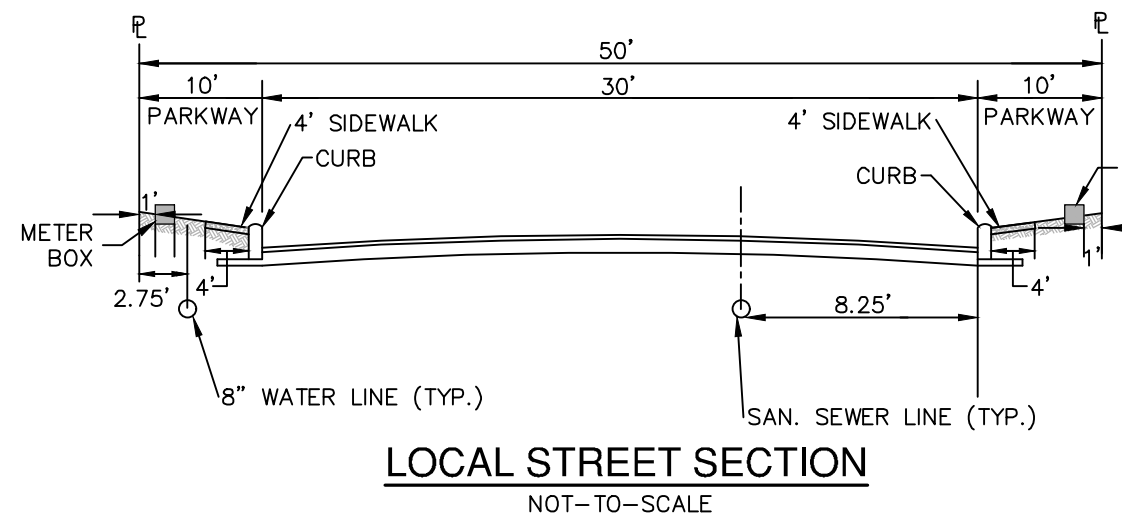
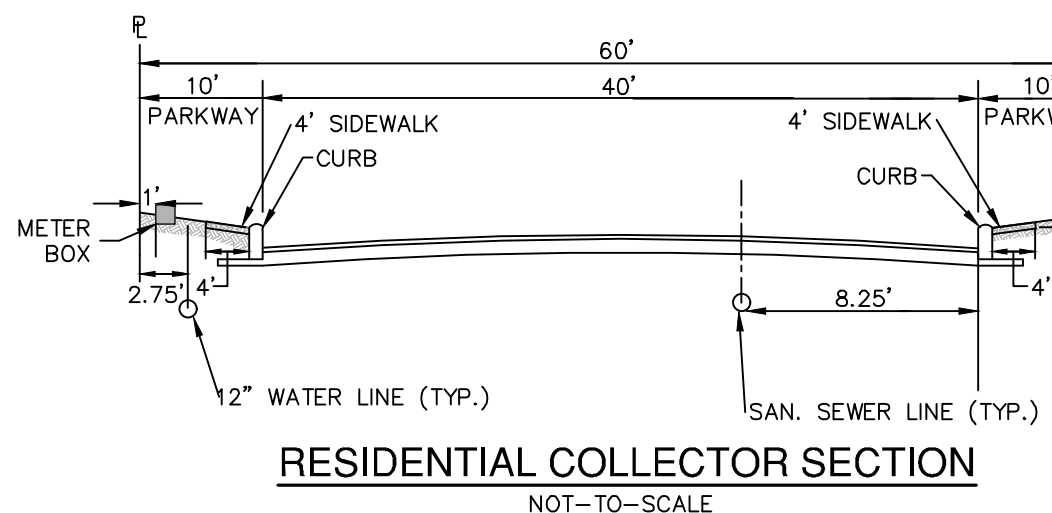
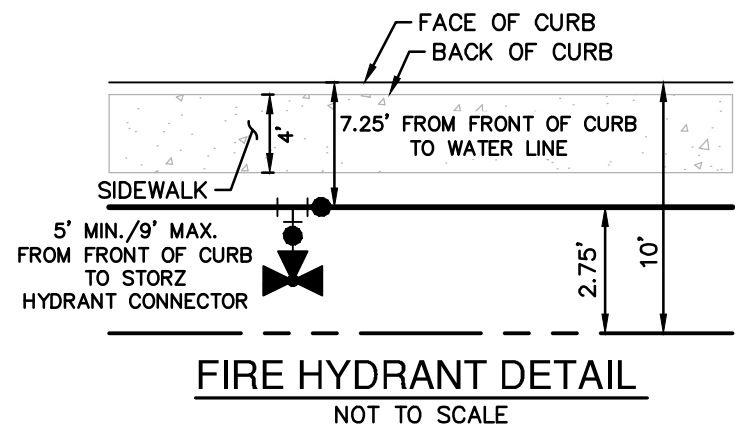


FOR PERMIT

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED *HF* DRAWN JM
SHEET C3.00

FOR PERMIT



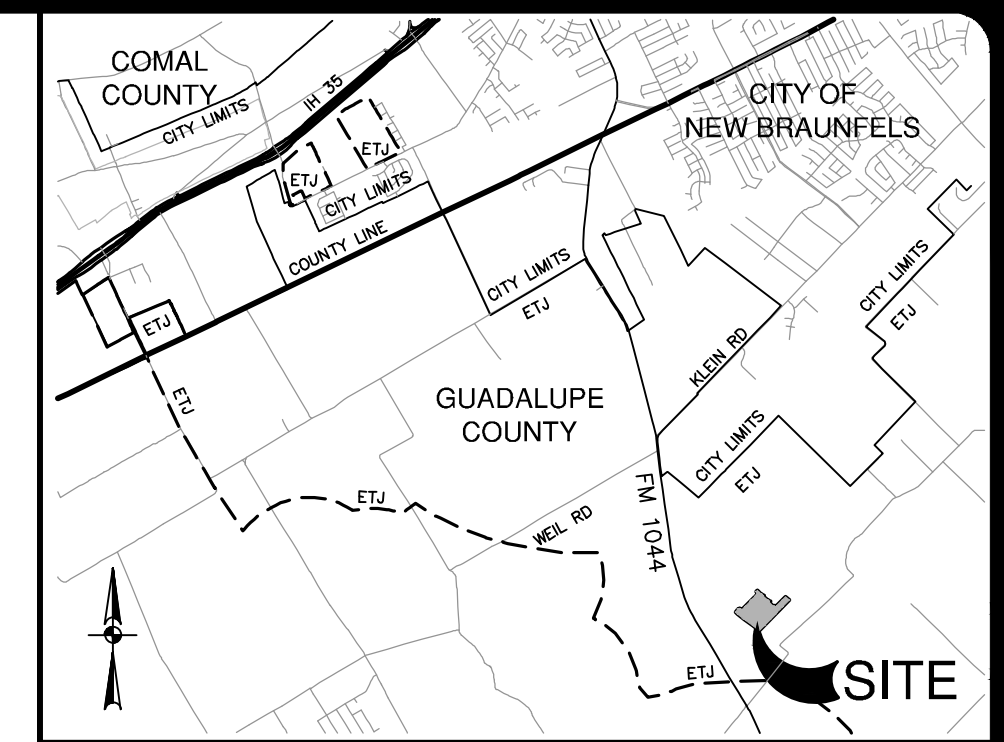


GVSUD NOTES:

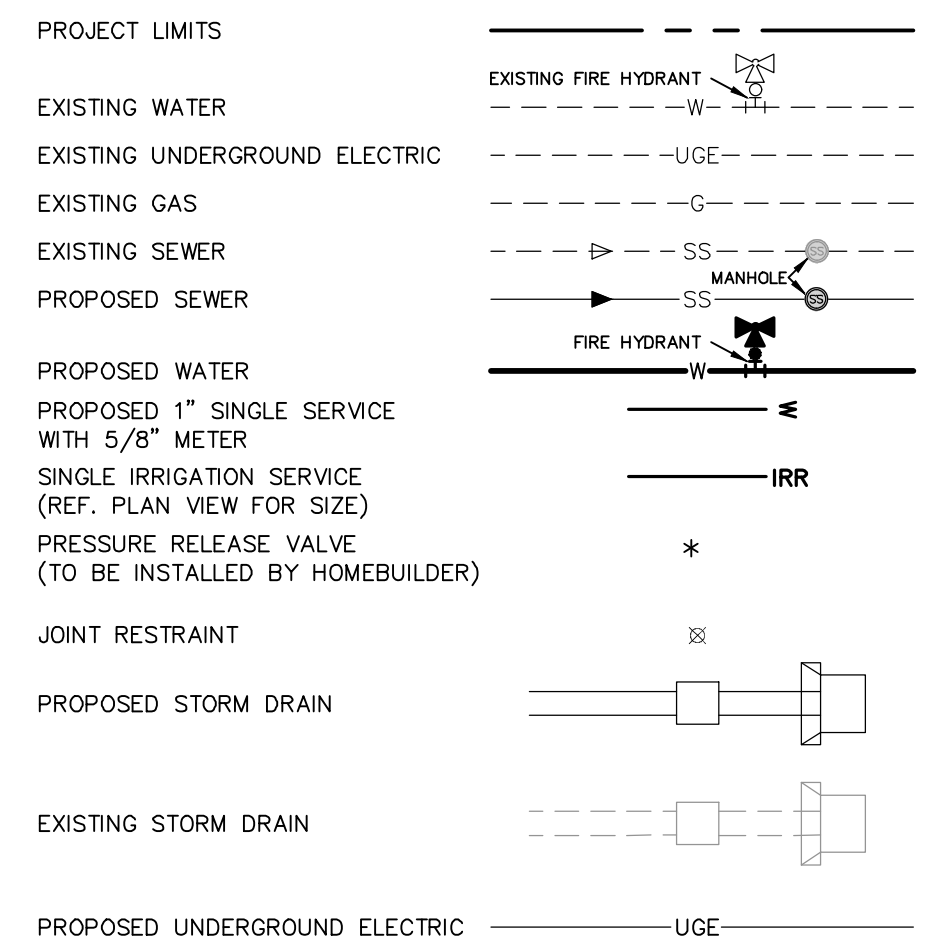
1. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
2. MOISTURE DENSITY COMPACTION TESTING FREQUENCY - WATER MAIN TRENCHES REQUIRED EVERY 300 LF. FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.
3. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
4. ALL DUCTILE IRON PIPE TO BE AMERICAN, ZINC COATED, AWWA/ANSI C-151.
5. CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION-VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION WHEN TRYING TO EXISTING INFRASTRUCTURE.



Water Total Materials Quantities		
Item	Unit	Quantity
8" PVC, C909 PC-235	LF	2871
12" PVC, C909 PC-235	LF	893
8" Ductile Iron Pipe	LF	433
12" Ductile Iron Pipe	LF	141
8" X 8" TEE	EA	3
12" X 8" CROSS	EA	3
8" GATE VALVE ASSEMBLY	EA	21
12" GATE VALVE ASSEMBLY	EA	6
STANDARD FIRE HYDRANT ASSEMBLY	EA	8
6" 1/4 BEND	EA	8
8" 1/8 BEND	EA	2
8" 1/16 BEND	EA	2
8" 1/32 BEND	EA	6
12" 1/8 BEND	EA	12
METER ASSEMBLY	EA	111
IRRIGATION METER ASSEMBLY	EA	2
2" TEMPORARY BLOWOFF	EA	2
2" PERMANENT BLOWOFF	EA	5
AIR RELEASE VALVE	EA	1



WATER LEGEND



JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES 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 THE DEVELOPER'S ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE JOINT RESTRAINTS WITH THE DEVELOPER'S ENGINEER.

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-FOOT 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") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE COMPACTION TESTING OPERATIONS. THE NUMBER AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF 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 INFORMATION AND A CERTIFICATION STATING THAT THE PLACEMENT AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR.

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 DUCTS, 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 CONDUCT A GROUND-PENETRATING RADAR (GPR) TEST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTIPOPE 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.

FOR PERMIT

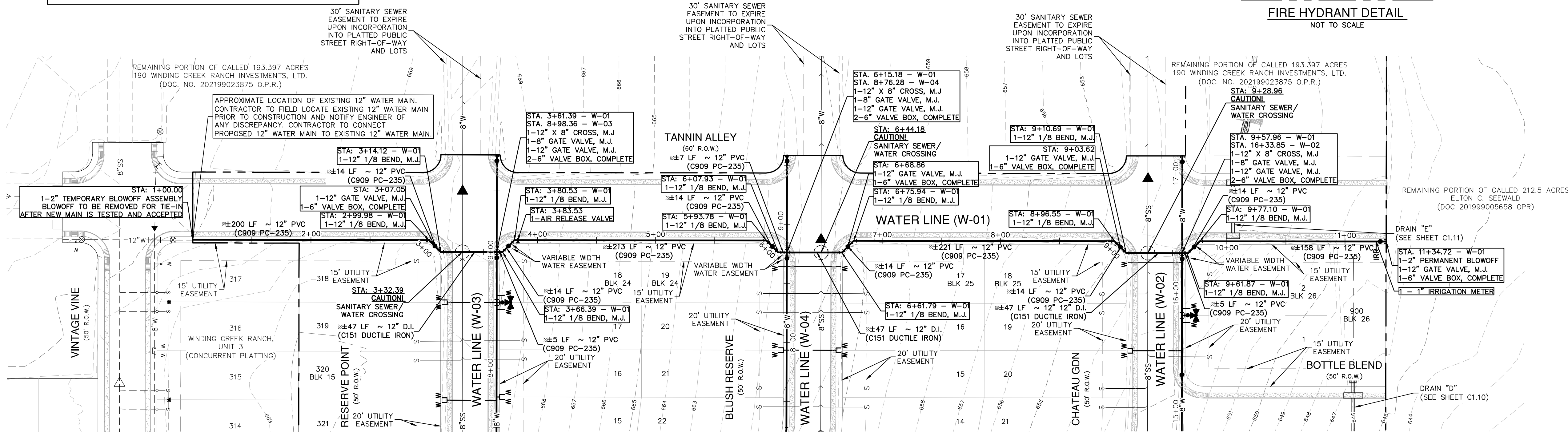


WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
OVERALL WATER DISTRIBUTION PLAN

PLAT NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C4.00

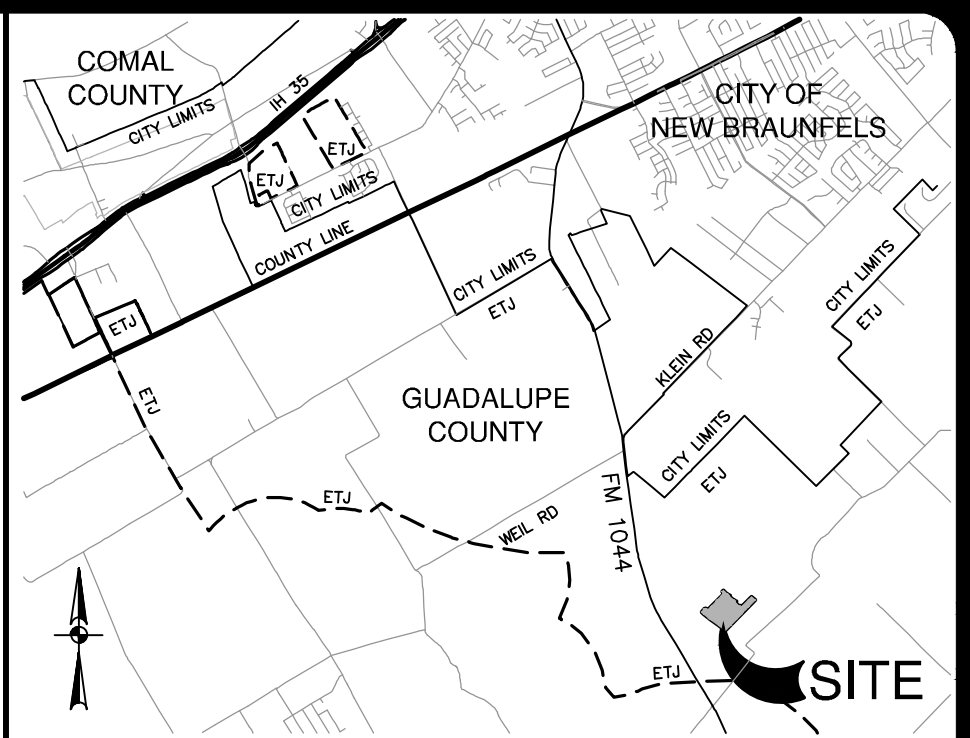
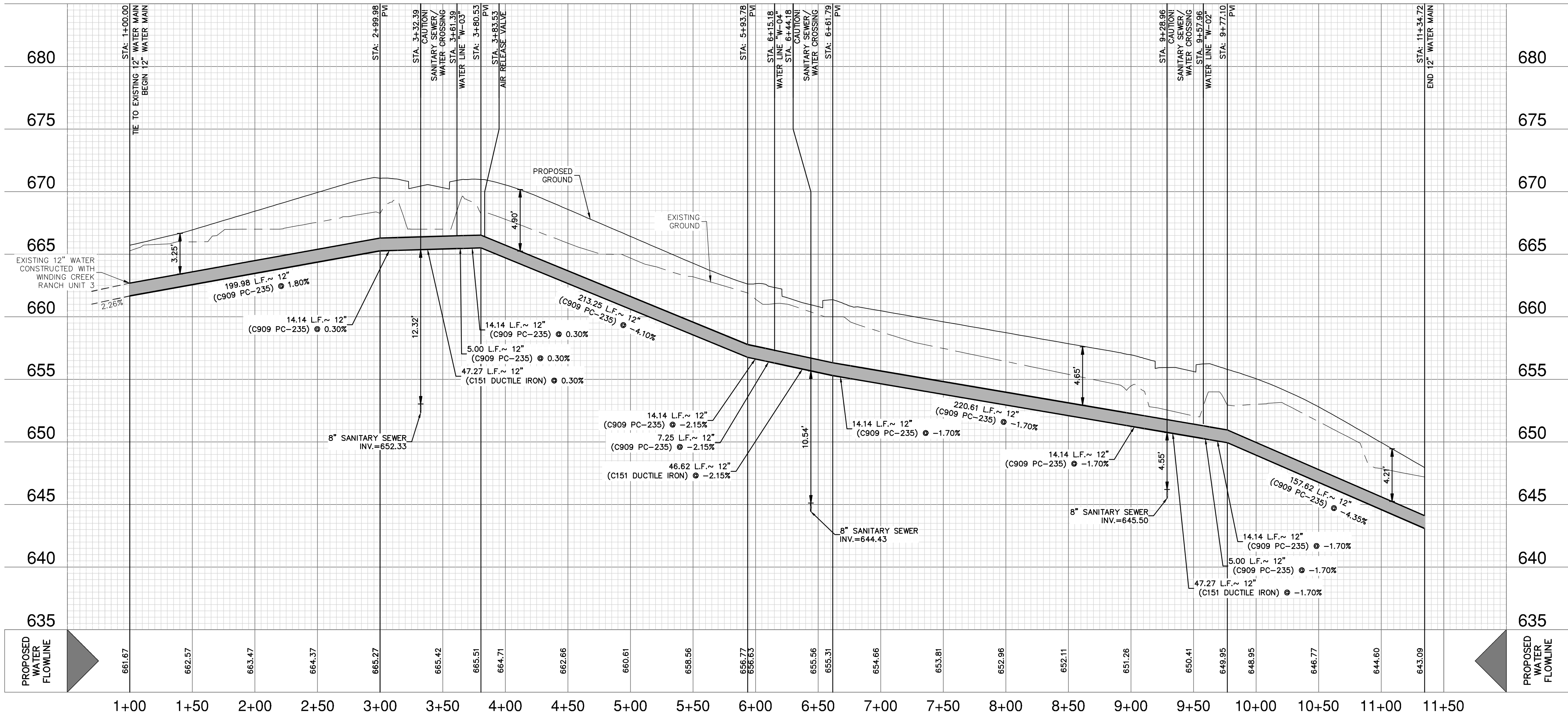
NOTE:
FOR PAVEMENT DESIGN SECTION SEE GEOTECHNICAL ENGINEERING REPORT.

CAUTION!!!:
THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS OF UTILITIES MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

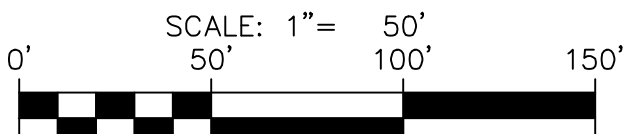


12" WATER MAIN "W-01"
STA 1+00.00 TO 11+34.72

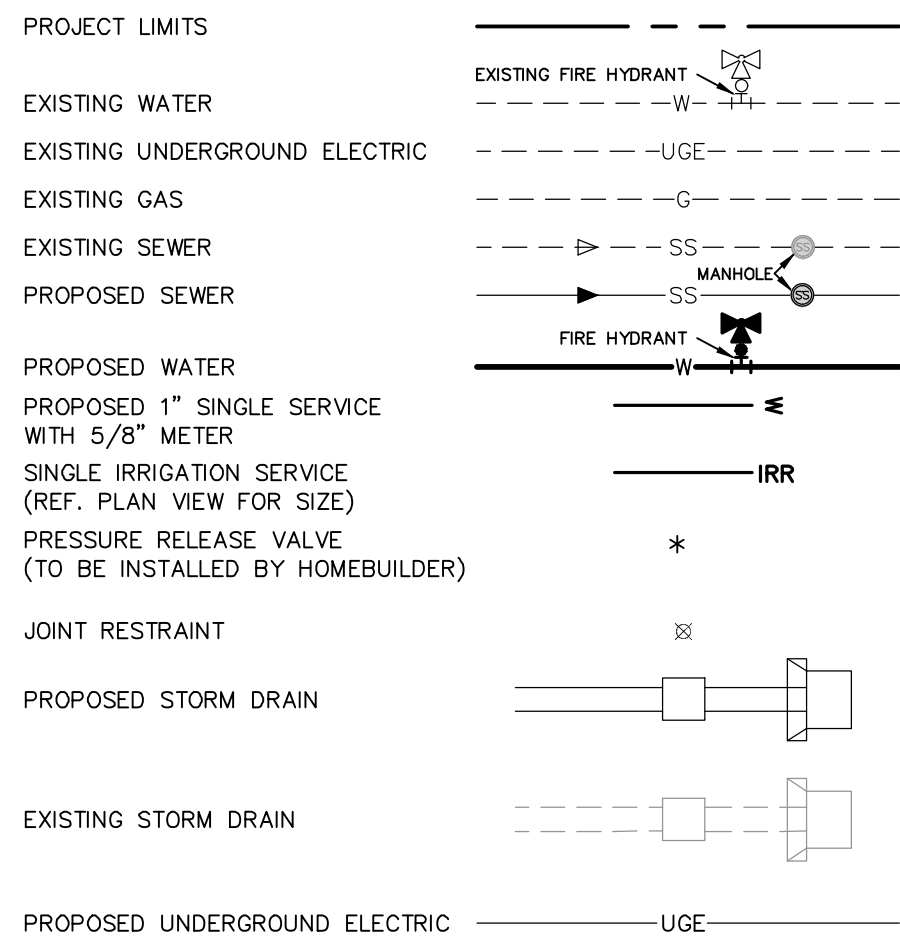
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



LOCATION MAP
NOT-TO-SCALE



WATER LEGEND



JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES 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 THE DEVELOPER'S ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE JOINT RESTRAINTS WITH THE DEVELOPER'S ENGINEER.

CITY OF NEW BRAUNFELS NOTES

- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
- 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.
- 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") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE UTILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF 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 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 SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION:

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

DATE: _____

NO. REVISION: _____

2-22-2024

JOCelyn PEREZ
98367
PROFESSIONAL ENGINEER

Frederickburg

**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

12 INCH WATER MAIN W-01 - PLAN & PROFILE
STA 1+00.00 TO 11+34.72

PLAT NO. _____

JOB NO. 30058-05

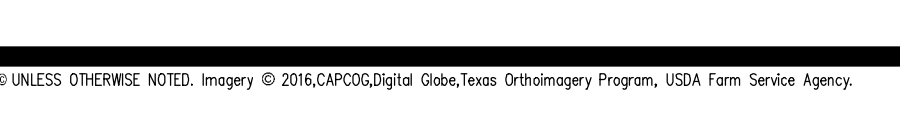
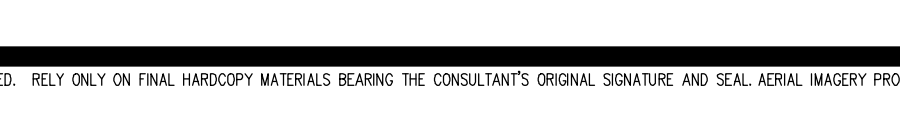
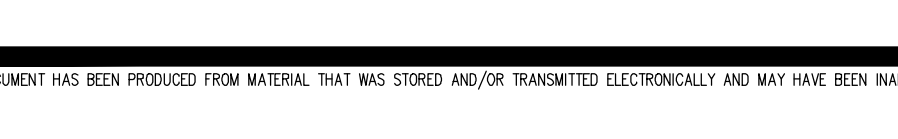
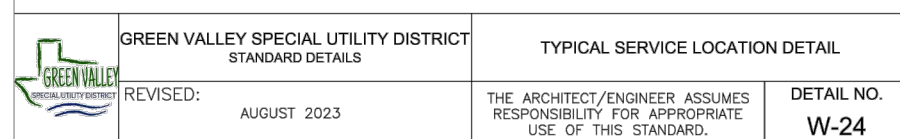
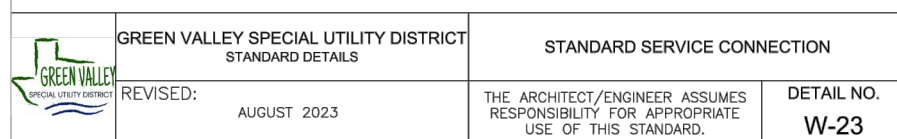
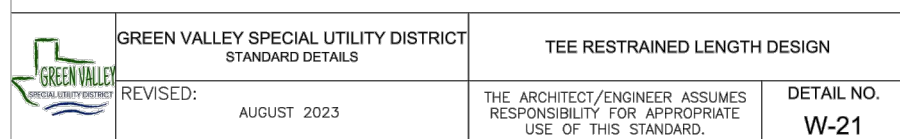
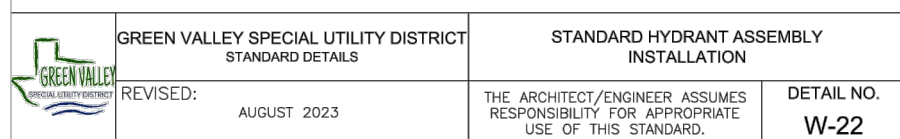
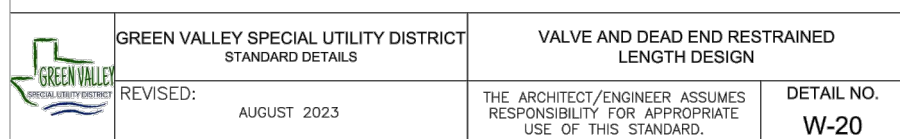
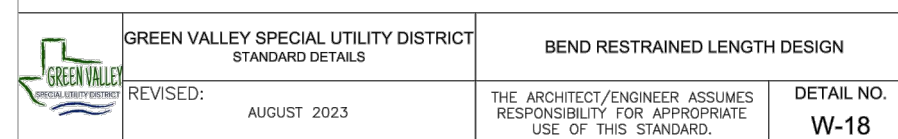
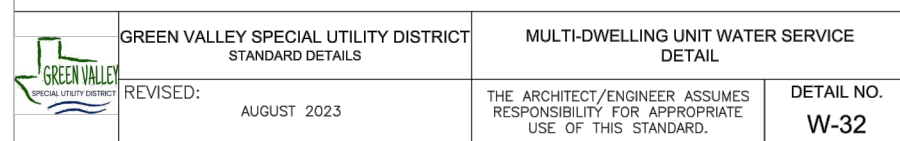
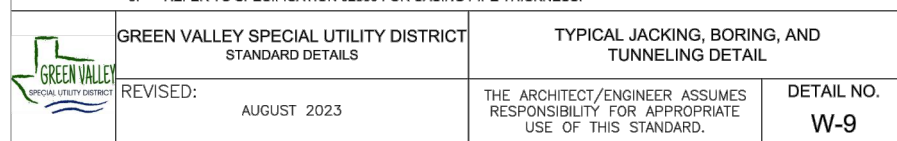
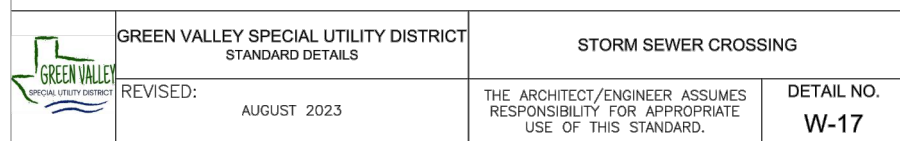
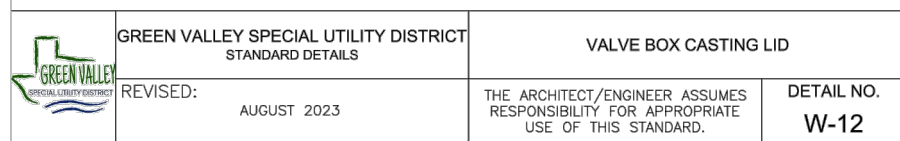
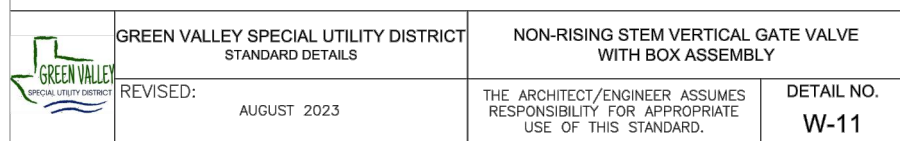
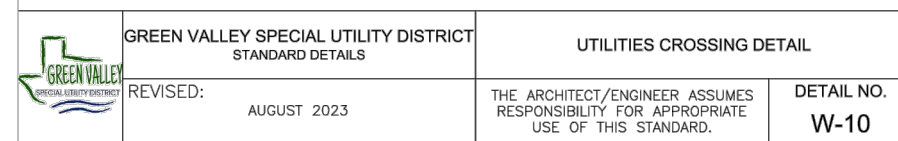
DATE NOVEMBER 2023

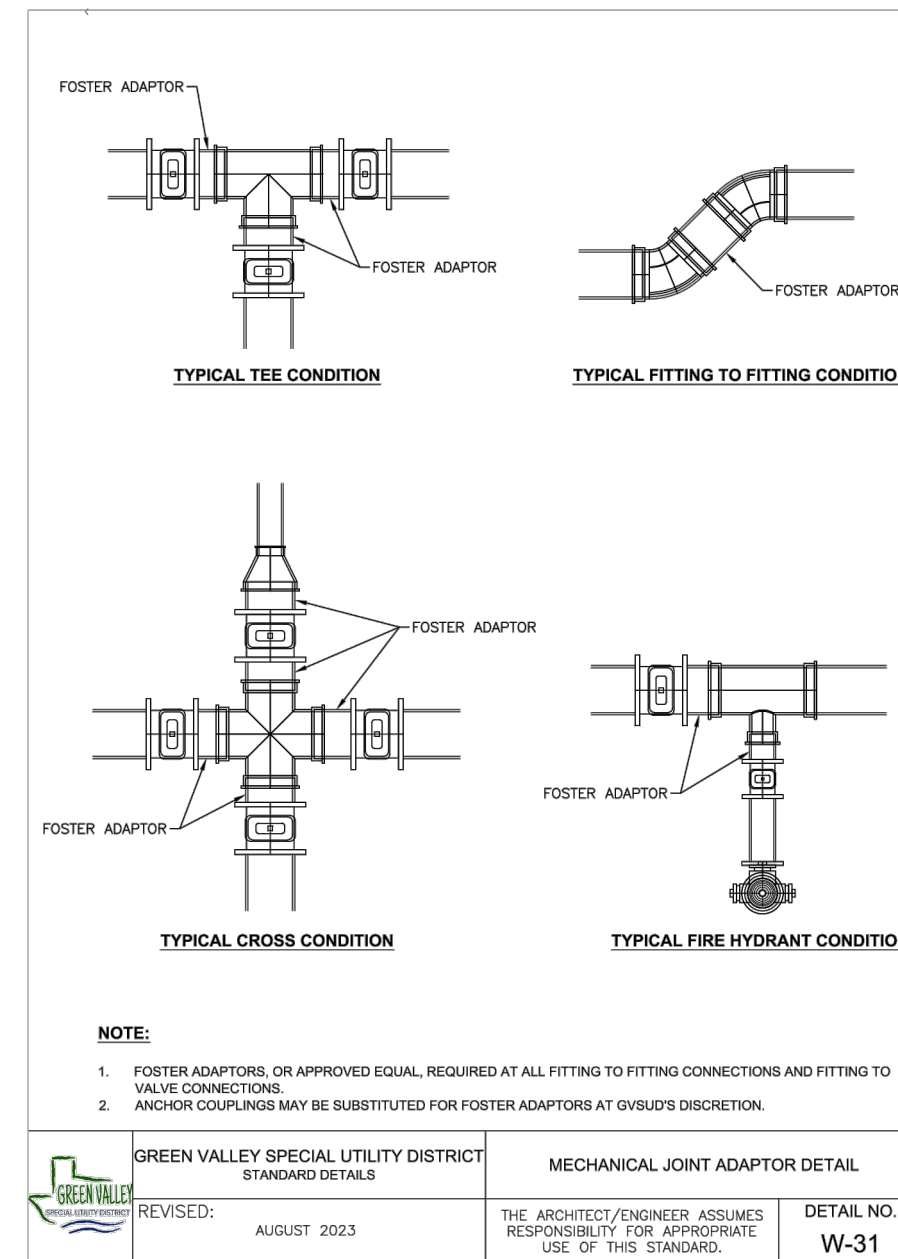
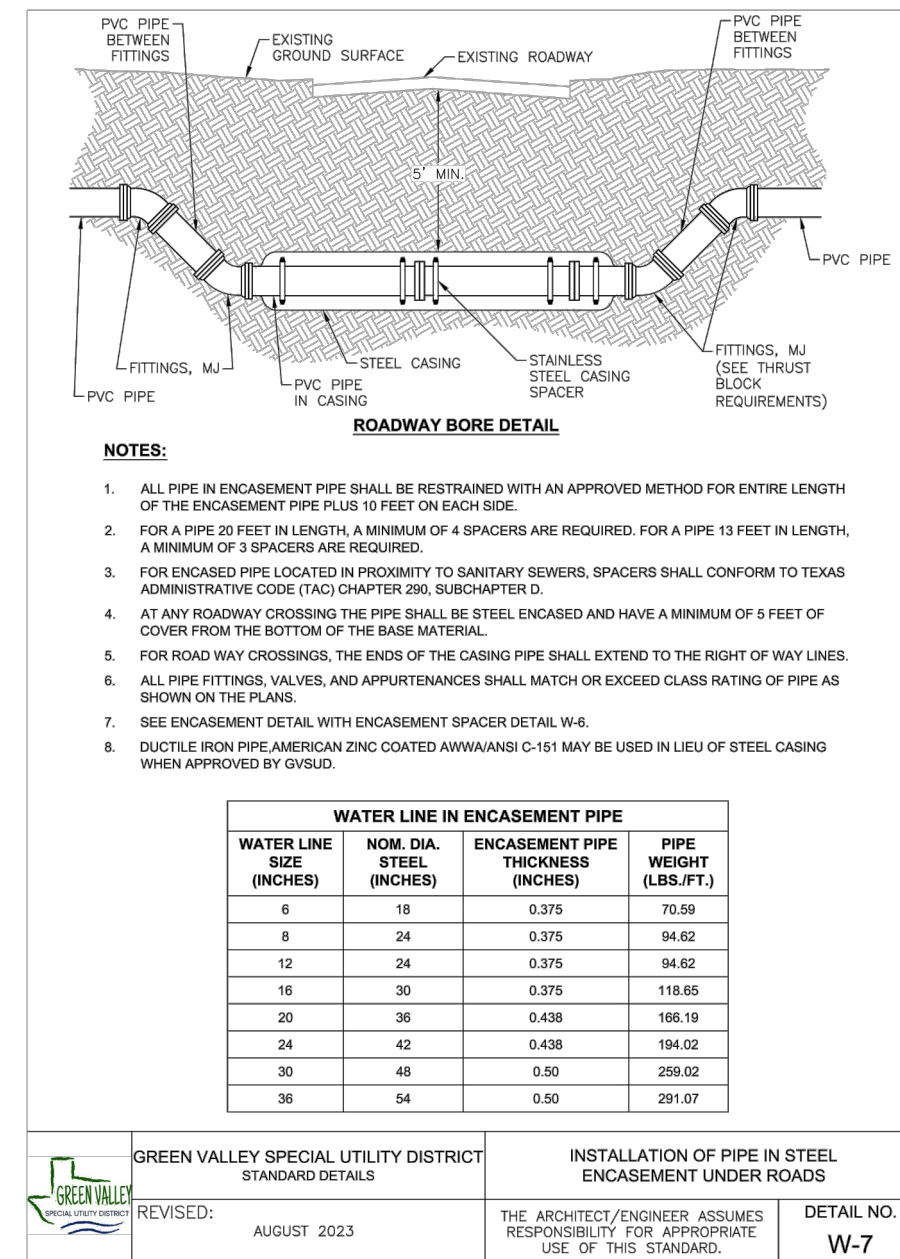
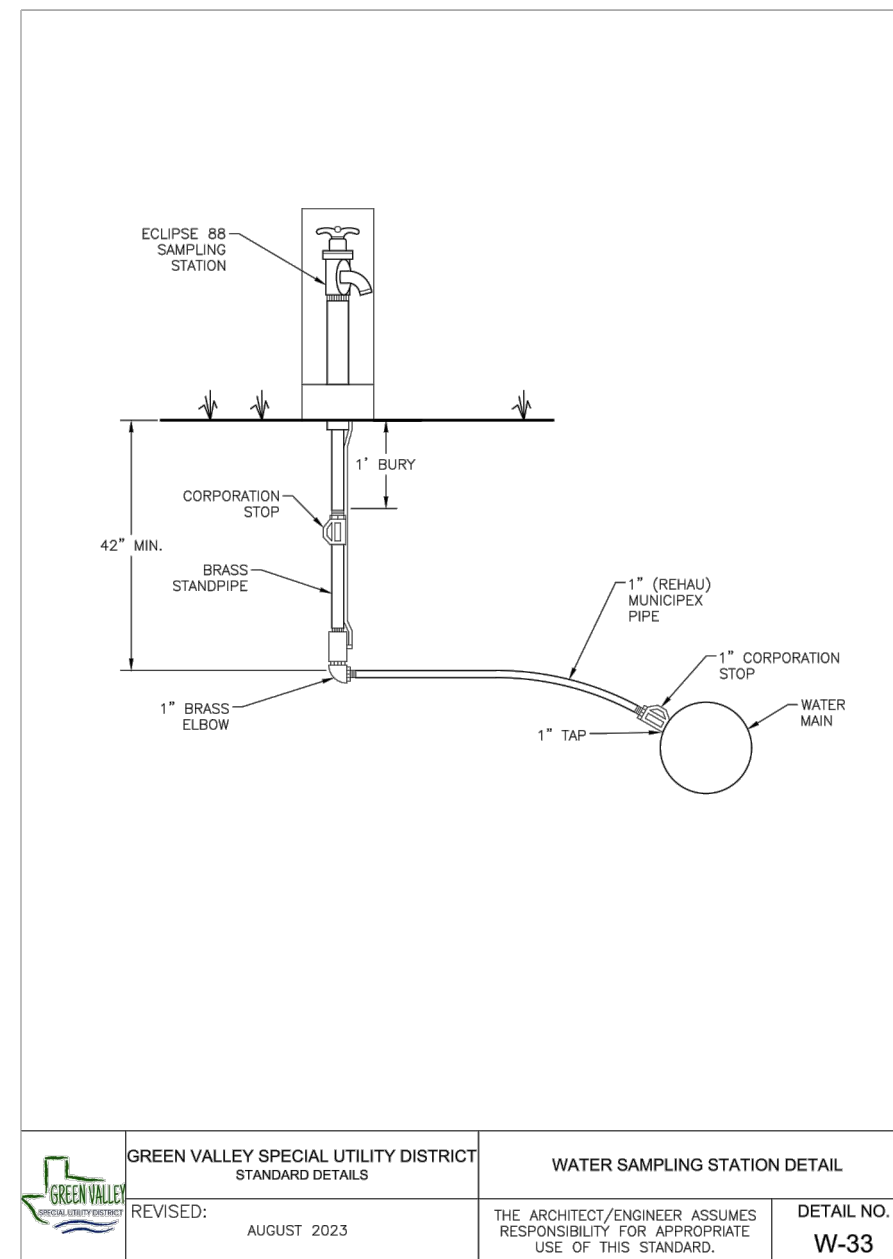
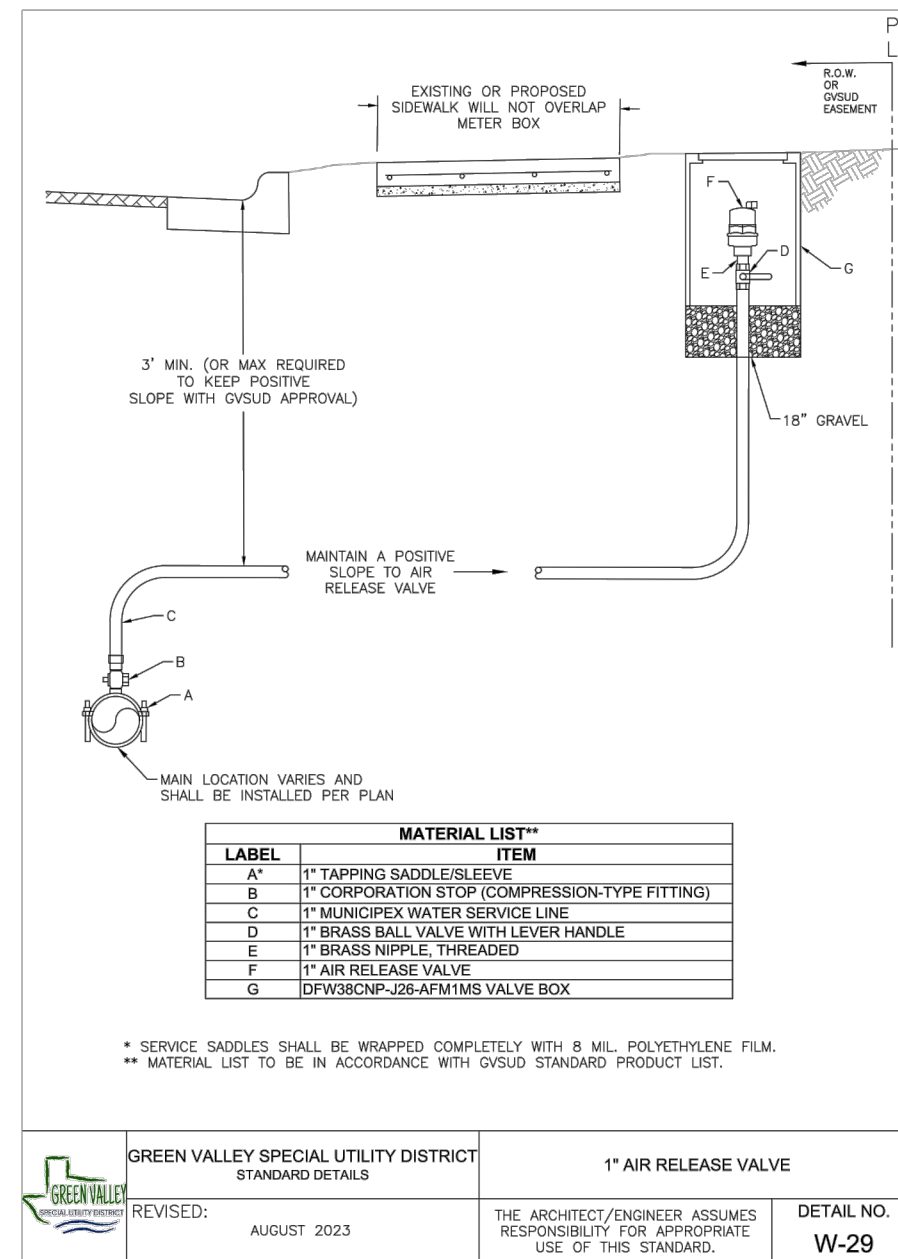
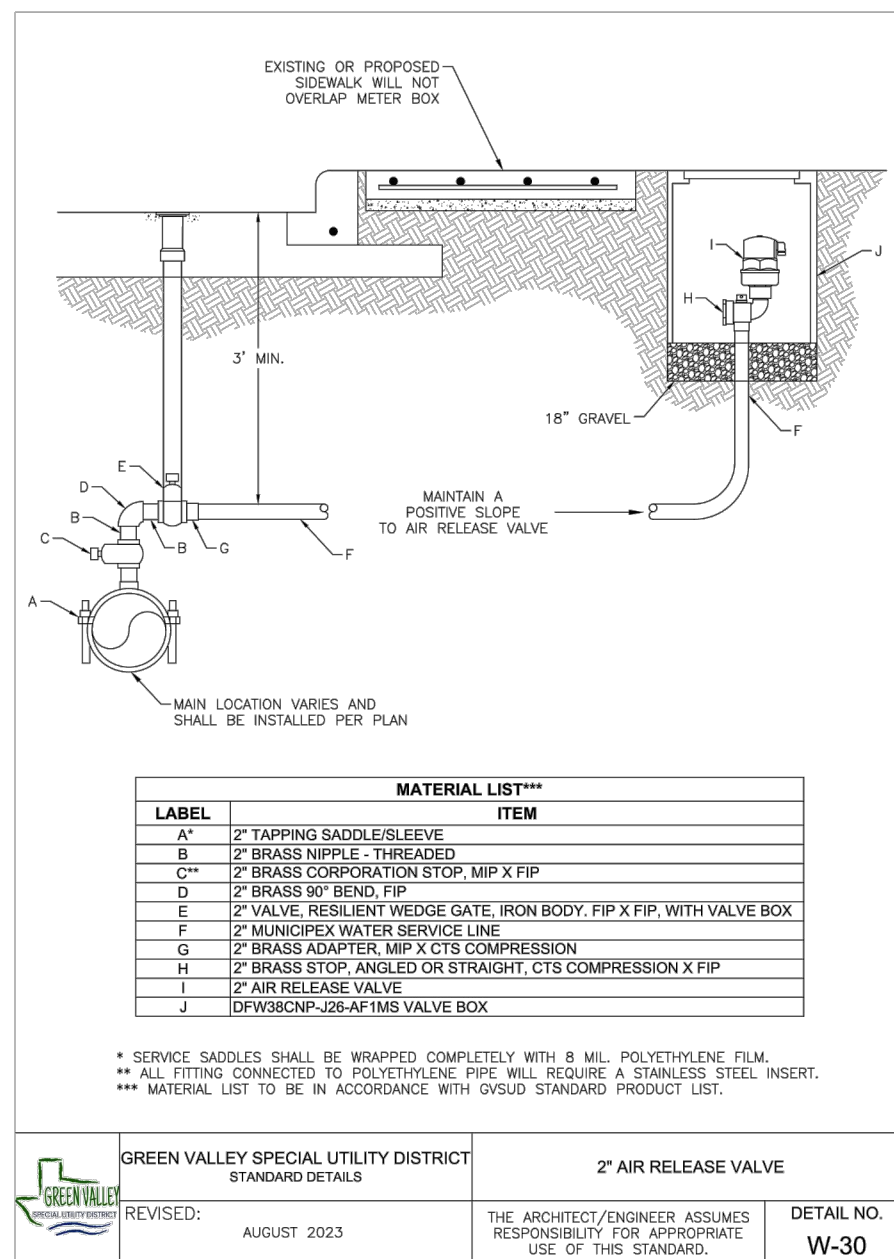
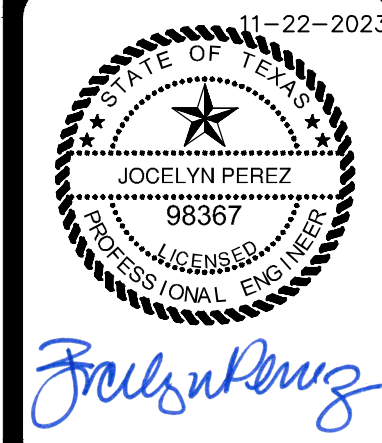
DESIGNER CL

CHECKED HF DRAWN JM

SHEET C4.01

FOR PERMIT



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1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

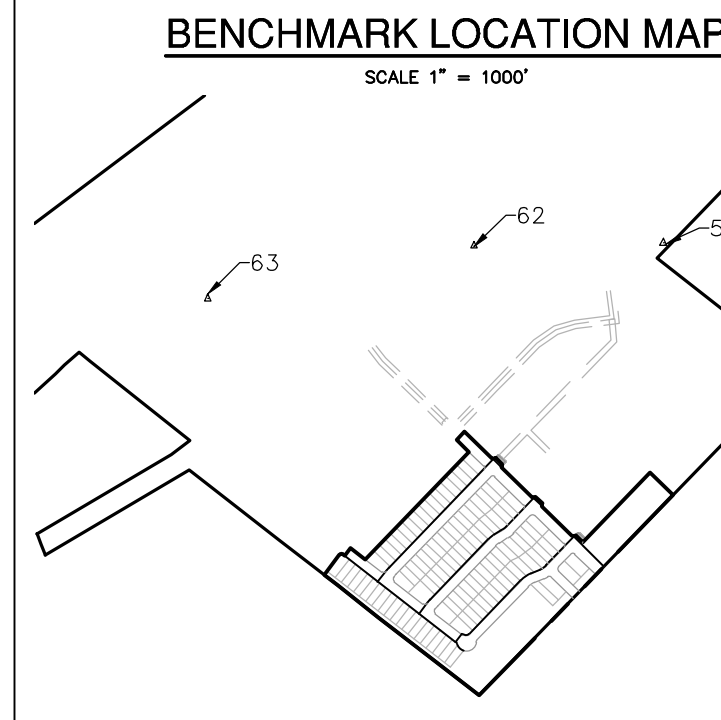
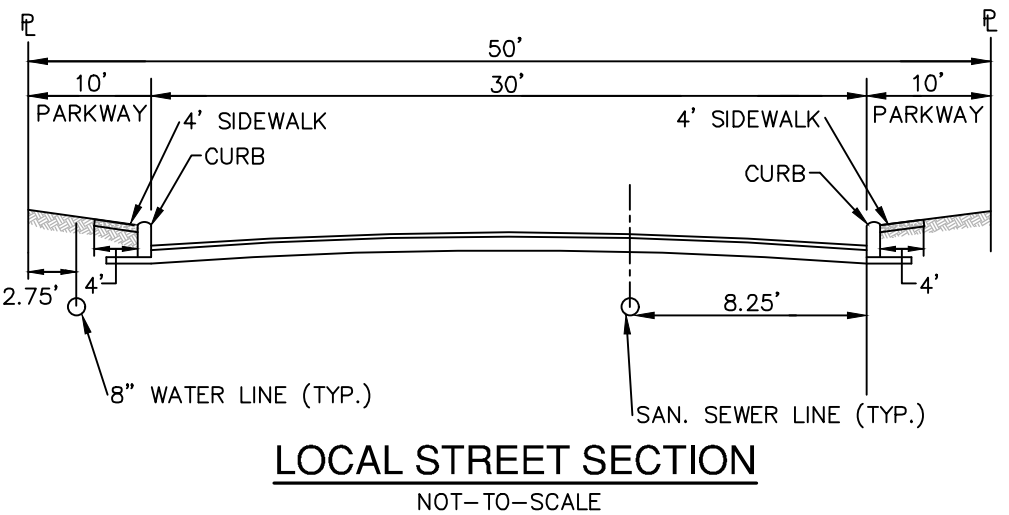
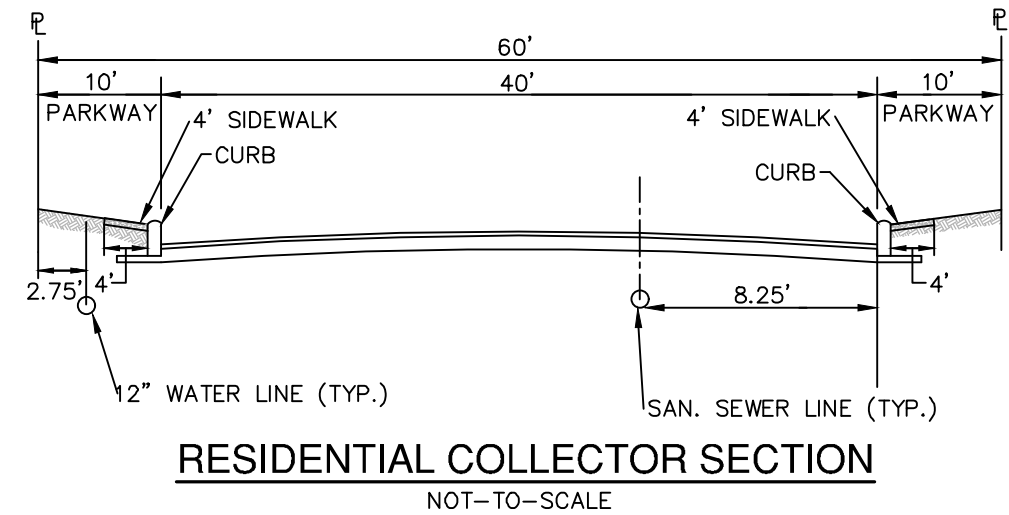
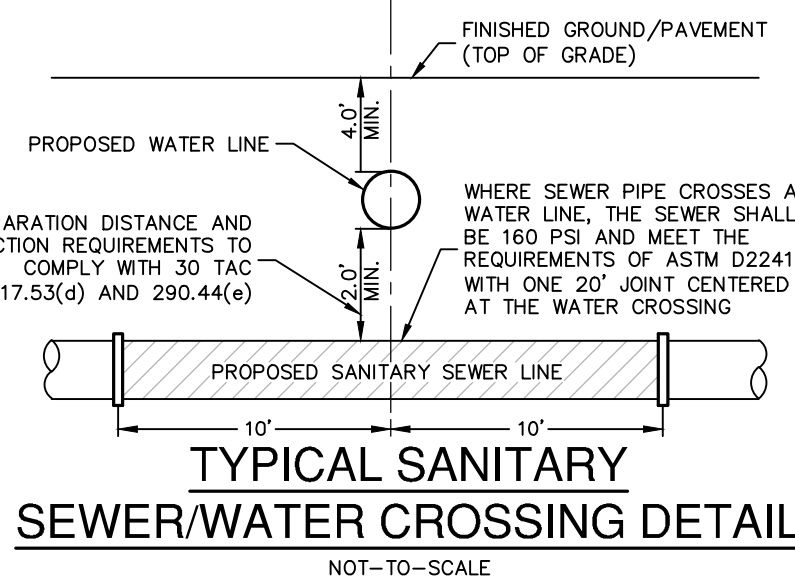
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
WATER DISTRIBUTION DETAILS

WATER DISTRIBUTION DETAILS

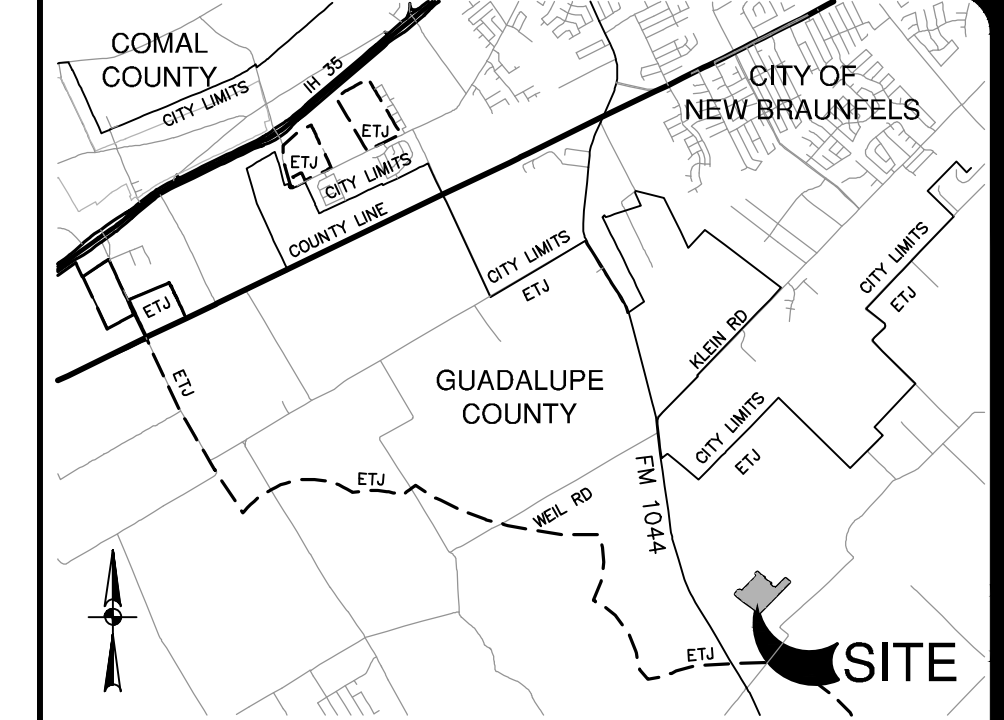


PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED *HF* DRAWN JM
SHEET C4.11

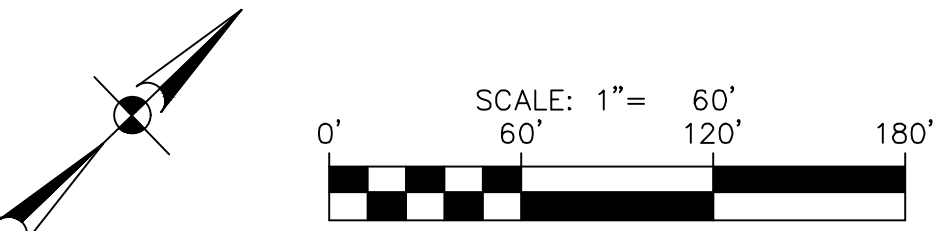
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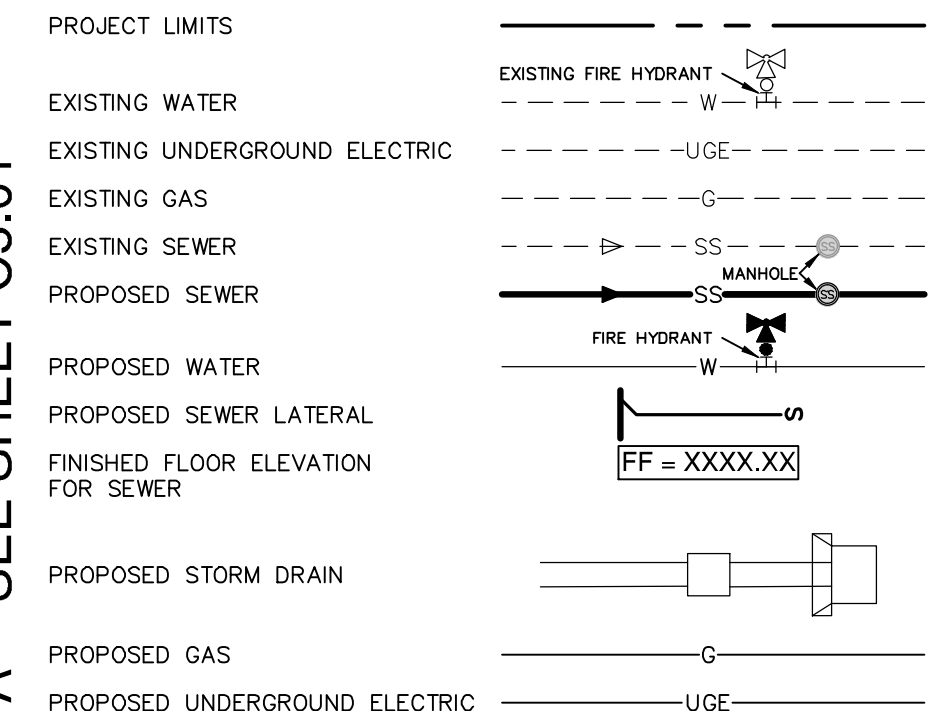
Point #	Northing	Easting	Elevation	Full Description
54	13,777,045.90	2,249,846.02	608.27	FD. 1R (TRAYSE)
62	13,777,236.46	2,248,998.16	645.33	FD. MAG. NAIL & WASHER (WMT)
63	13,776,994.02	2,247,777.63	674.77	FD. \"-\" IN CONC.



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 LEGEND



GBRA NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: <http://www.gbra.org/public/waterwastewaterservices.aspx>
- COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
- ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
- TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
- BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
- PVC MALE ADAPTERS ARE NOT ALLOWED.
- SANITARY TAPPING SADDLES ARE NOT ALLOWED.
- MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
- PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
- ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
- MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
- WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS. WATER AND WASTEWATER DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
- WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30\"/>
- VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
- ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 1/4\"/>
- EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
- THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
- EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

NOTES:

SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

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 ELECTRICAL, 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 \"TEXAS 811\" 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.

CITY OF NEW BRAUNFELS NOTES

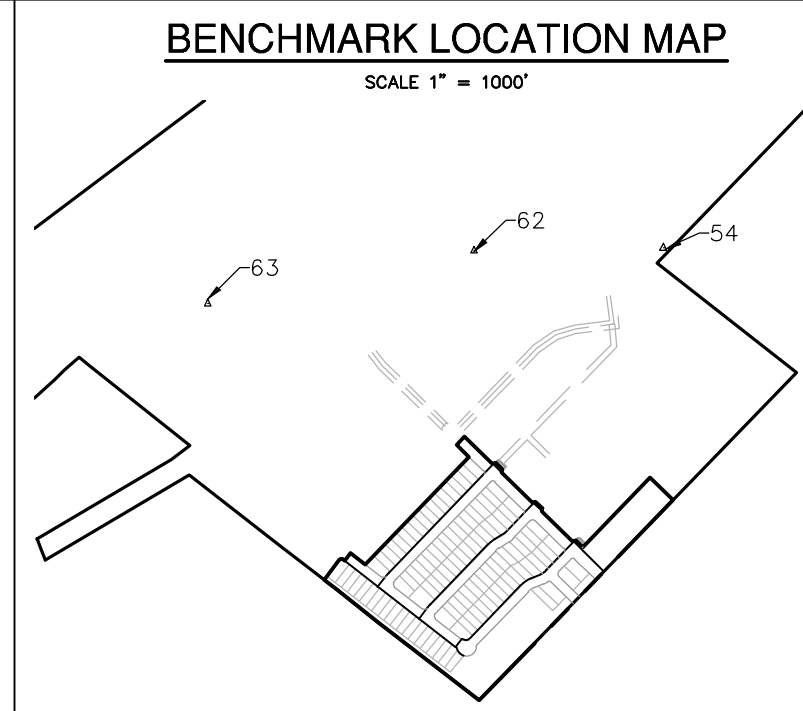
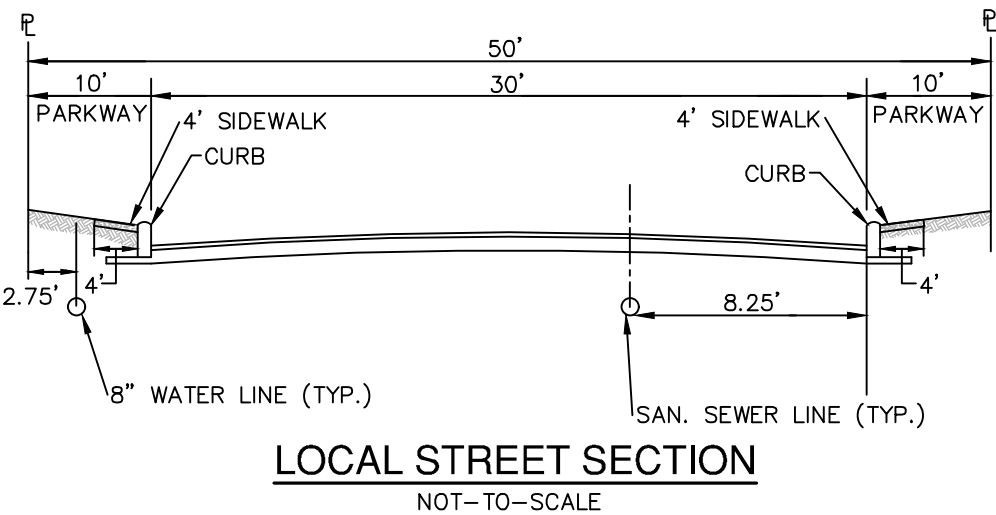
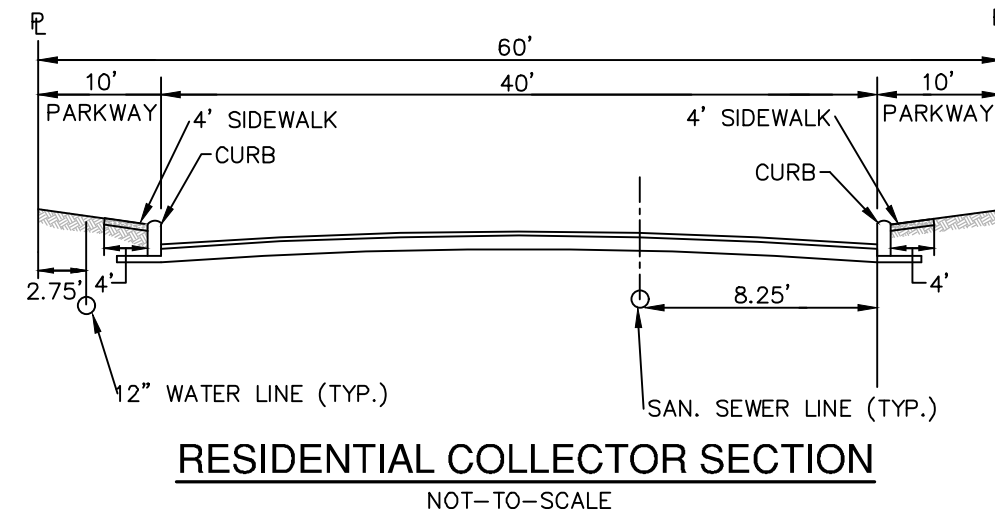
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
- THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5- FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR 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.
- 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\") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTION OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE 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.

PAPE-DAWSON
ENGINEERS

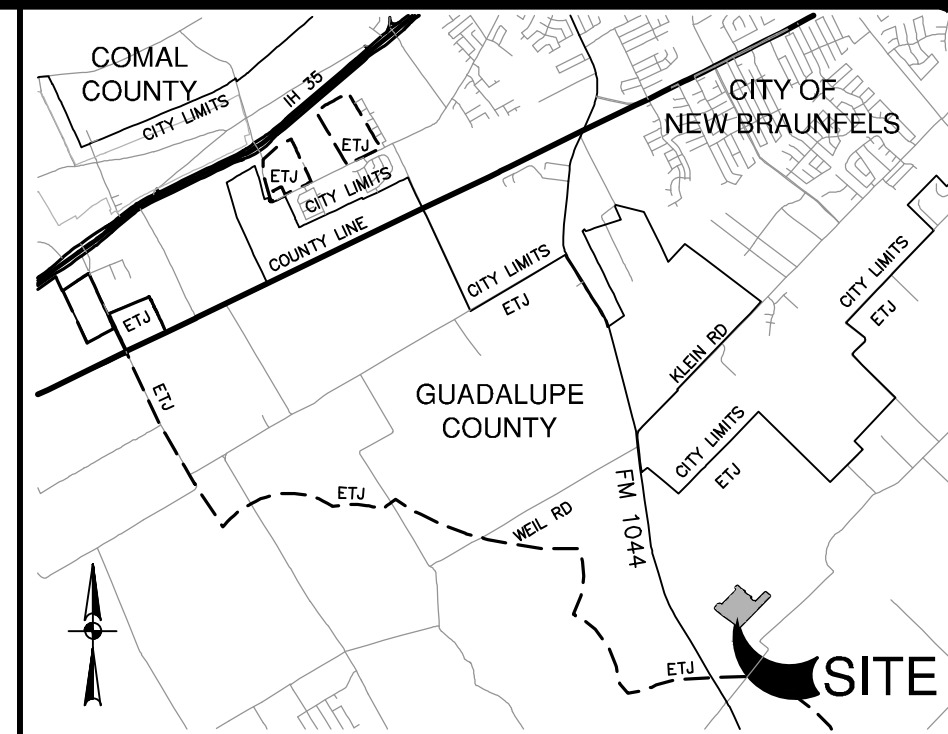
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
OVERALL SANITARY SEWER

PLAT NO. 30058-05
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.00

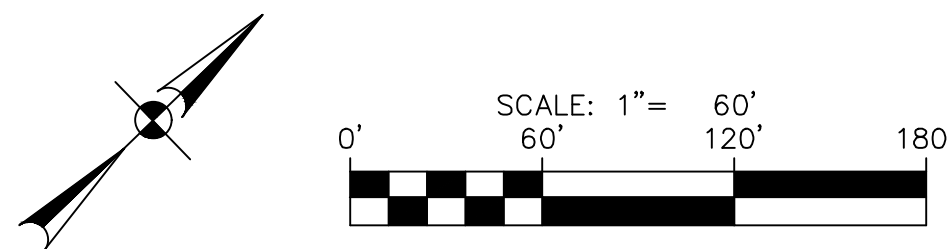
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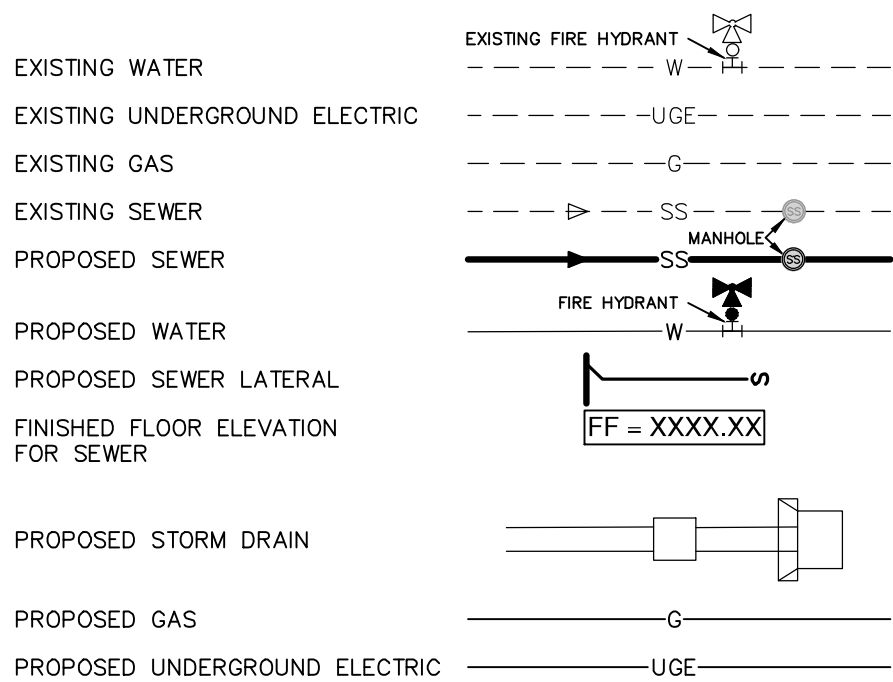
HORIZONTAL AND VERTICAL CONTROL POINTS				
Point #	Northing	Easting	Elevation	Full Description
54	13,777,045.90	2,249,846.02	658.27	FD. I.R.(TRAVERSE)
62	13,777,236.46	2,248,998.16	645.33	FD. MAG NAIL & WASHER (HMT)
63	13,776,994.02	2,247,777.63	674.77	FD. "+" IN CONC



NOT-TO-SCALE



PROJECT LIMITS



GBRA NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: [HTTP://WWW.GBRA.ORG/PUBLIC/WATER/MAINTENANCE/SERVICES.ASP](http://www.gbra.org/public/WATER/MAINTENANCE/SERVICES.ASP)
2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION, USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-373-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTINUUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET FROM PROPERTY LINE PRIOR TO TRENCHING. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TECHNICIAN. SUBMIT TEST REPORTS.
6. PVC MALE ADAPTERS ARE NOT ALLOWED.
7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
8. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES, INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 3/4" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK THAT MAY INTERRUPT SERVICE TO EXISTING PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TAPPING POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

NOTES:

SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING 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 "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. AFTER EXISTING UTILITIES HAVE BEEN LOCATED, THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE ON CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

DRY UTILITY CROSSING NOTE:

LOCATION AND DEPTH OF DRY UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS ARE TO BE BASED ON THE FINAL DESIGN FROM GVEC. CONTRACTOR WILL BE RESPONSIBLE FOR CENTERING 14'-FEET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE WHERE SANITARY SEWER MAINS CROSS DRY UTILITIES AND MAINTAINING 10 FT OF HORIZONTAL CLEARANCE BETWEEN DRY UTILITIES AND SANITARY SEWER.

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**PAPE-DAWSON
ENGINEERS**

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

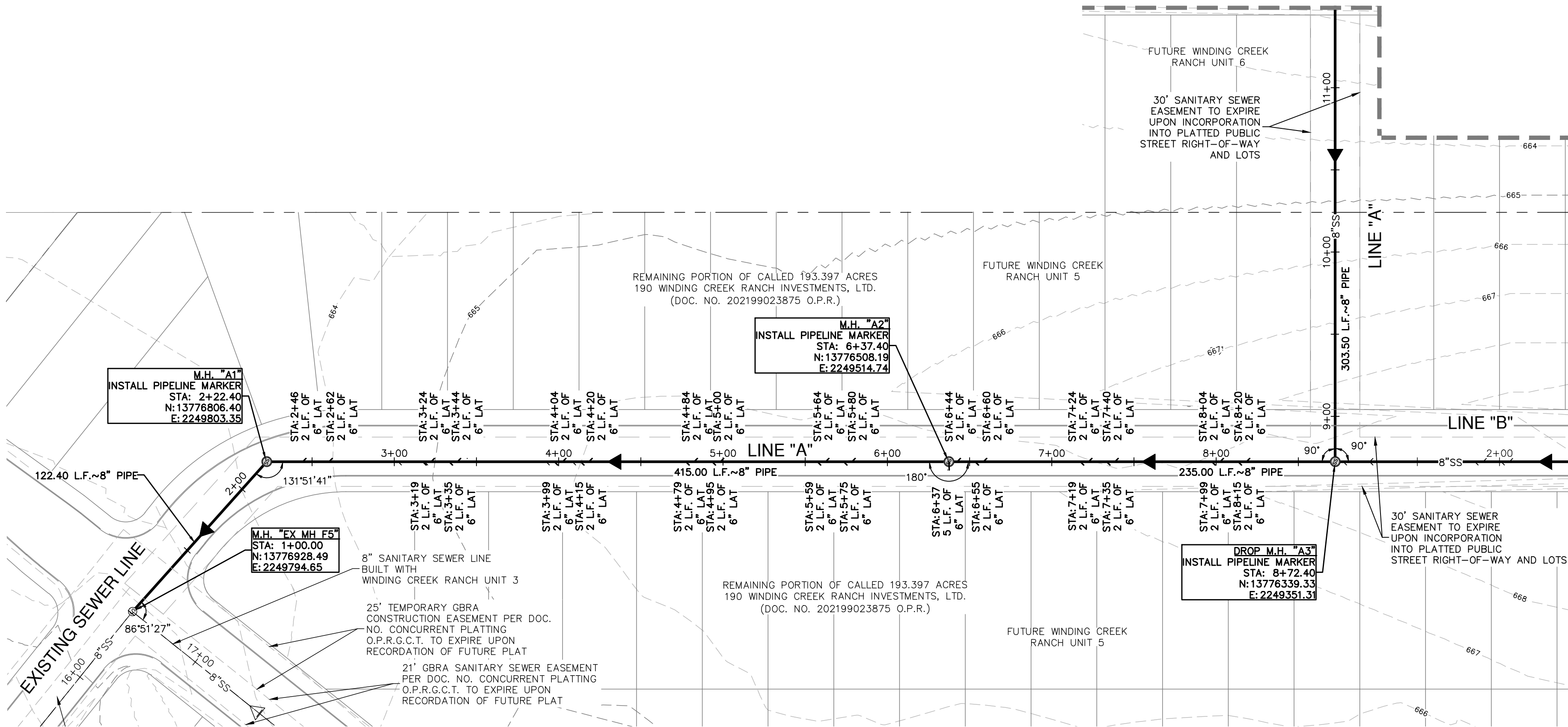
PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN JM
SHEET C5.01

FOR PERMIT

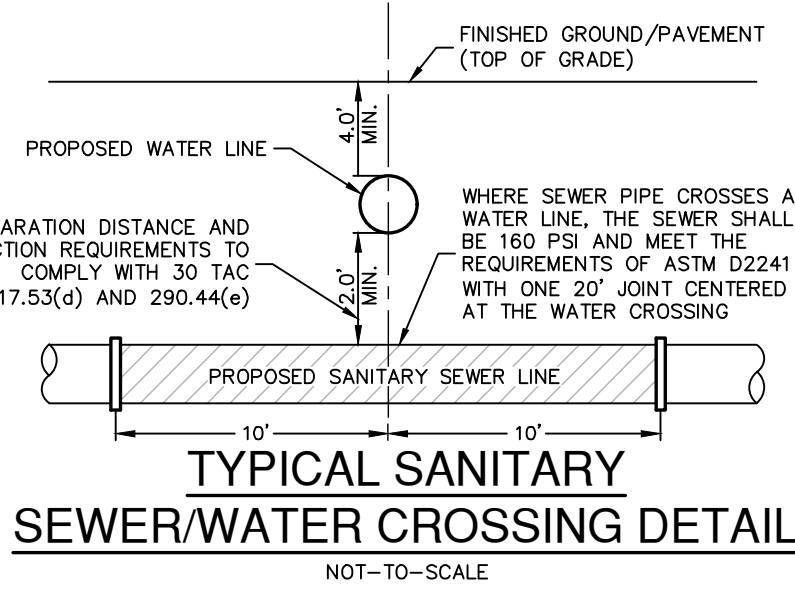
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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED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

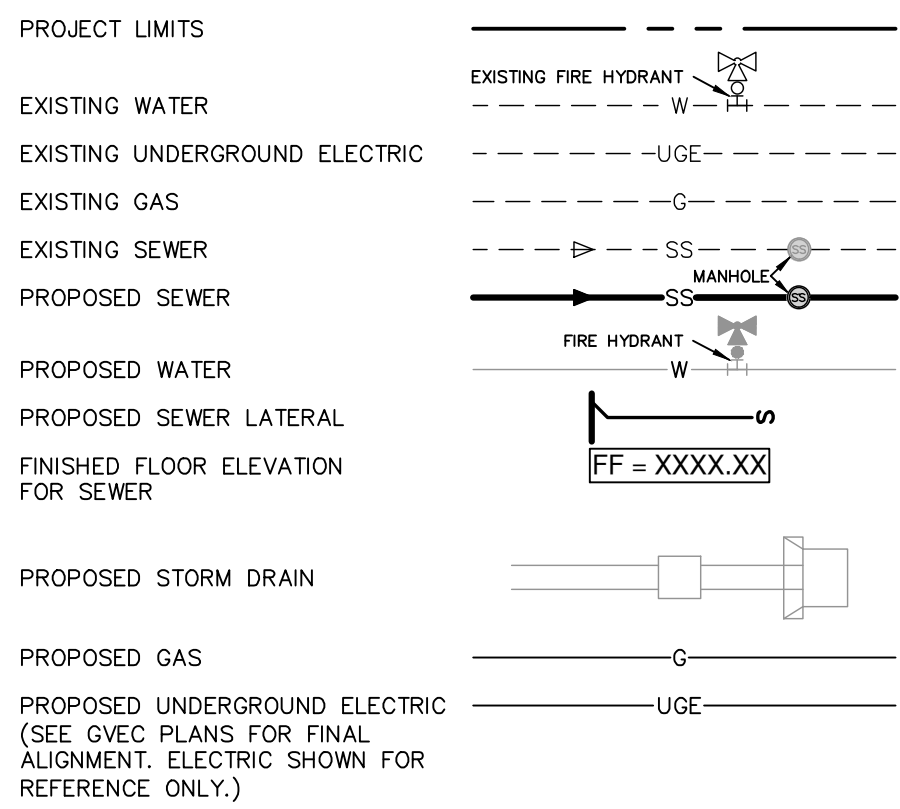
MATCHLINE STA 11+50.00
SEE SHEET C5.03



SANITARY SEWER LINE "A"
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SEWER LEGEND



GBRA NOTES:

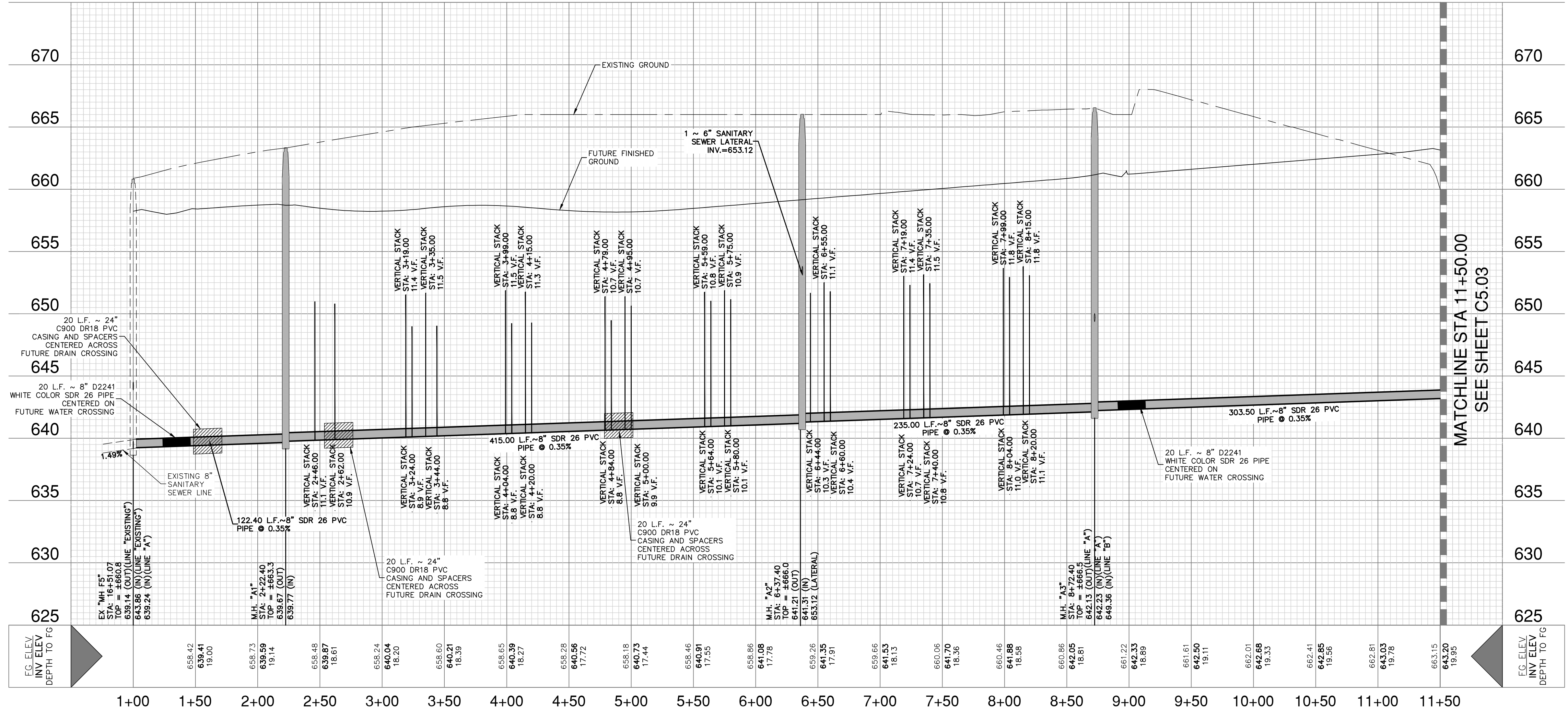
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18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

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.

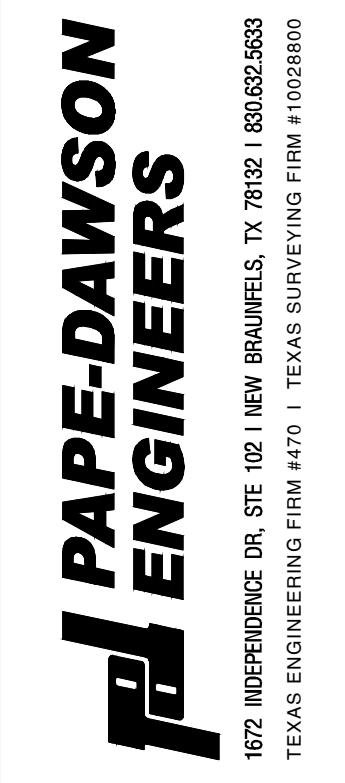
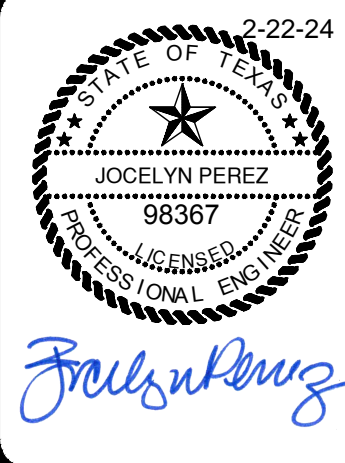
DRY UTILITY CROSSING NOTE:

LOCATION AND DEPTH OF DRY UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS ARE TO BE BASED ON THE FINAL DESIGN FROM GVEC. CONTRACTOR WILL BE RESPONSIBLE FOR CENTERING 14-FEET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE UNDER SANITARY SEWER MAINS CROSS DRY UTILITIES AND MAINTAINING 10 FT OF HORIZONTAL CLEARANCE BETWEEN DRY UTILITIES AND SANITARY SEWER.



MATCHLINE STA 11+50.00
SEE SHEET C5.03

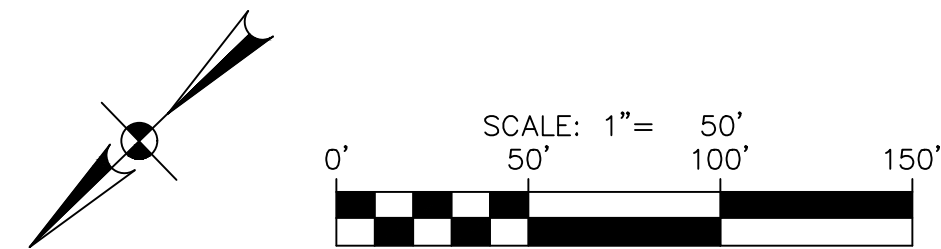
DATE	
NO.	
REVISION	



WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
SANITARY SEWER LINE A - PLAN & PROFILE
STA 1+00.00 TO 11+50.00

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C5.02

FOR PERMIT



OPRA NOT



- ### TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT AREA AND SHALL COMPLY WITH THE FOLLOWING 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 SYSTEMS, PROGRAMS AND/OR PROCEDURES TO COMPLY WITH THE MINIMUM REQUIREMENTS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS FOR TRENCH SAFETY ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

DRY UTILITY CROSSING NOTE

LOCATION AND DEPTH OF DRY UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS ARE TO BE BASED ON THE FINAL DESIGN FROM GVEC. CONTRACTOR WILL BE RESPONSIBLE FOR CENTERING 14-FEET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE WHERE SANITARY SEWER MAINS CROSS DRY UTILITIES AND MAINTAINING 10 FT OF HORIZONTAL CLEARANCE BETWEEN DRY UTILITIES AND SANITARY SEWER.



MATCHLINE STA 20+50.00
SEE SHEET C5.04

VERTICAL STACK NOTE:

FOR VERTICAL STACKS ON FUTURE LOTS, CONTRACTOR TO CAP VERTICAL
STACKS AT SPECIFIED LENGTHS AS SHOWN IN PROFILE VIEW.

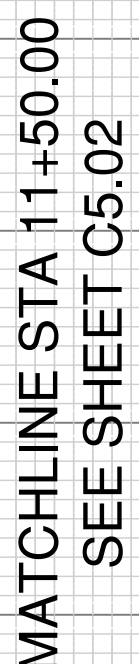
CAUTION!!

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 TEXAS 811* A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

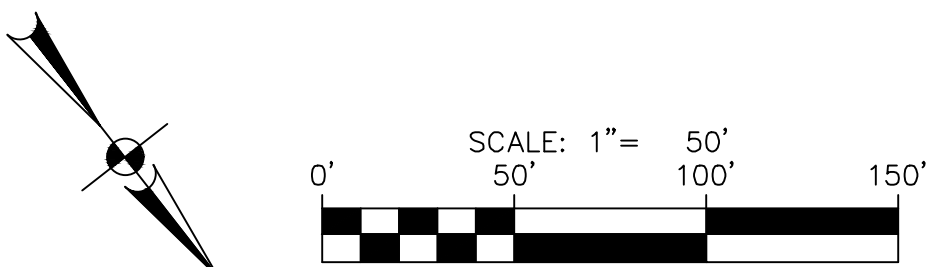
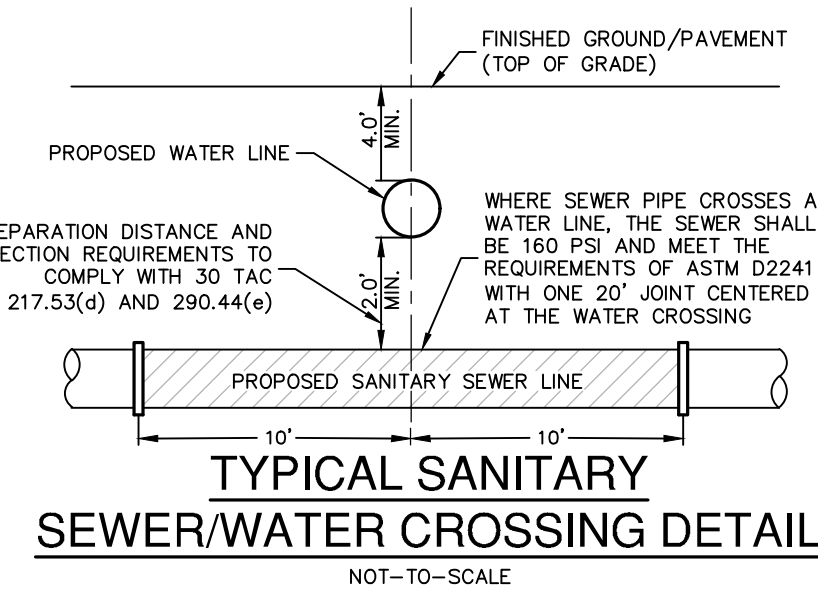
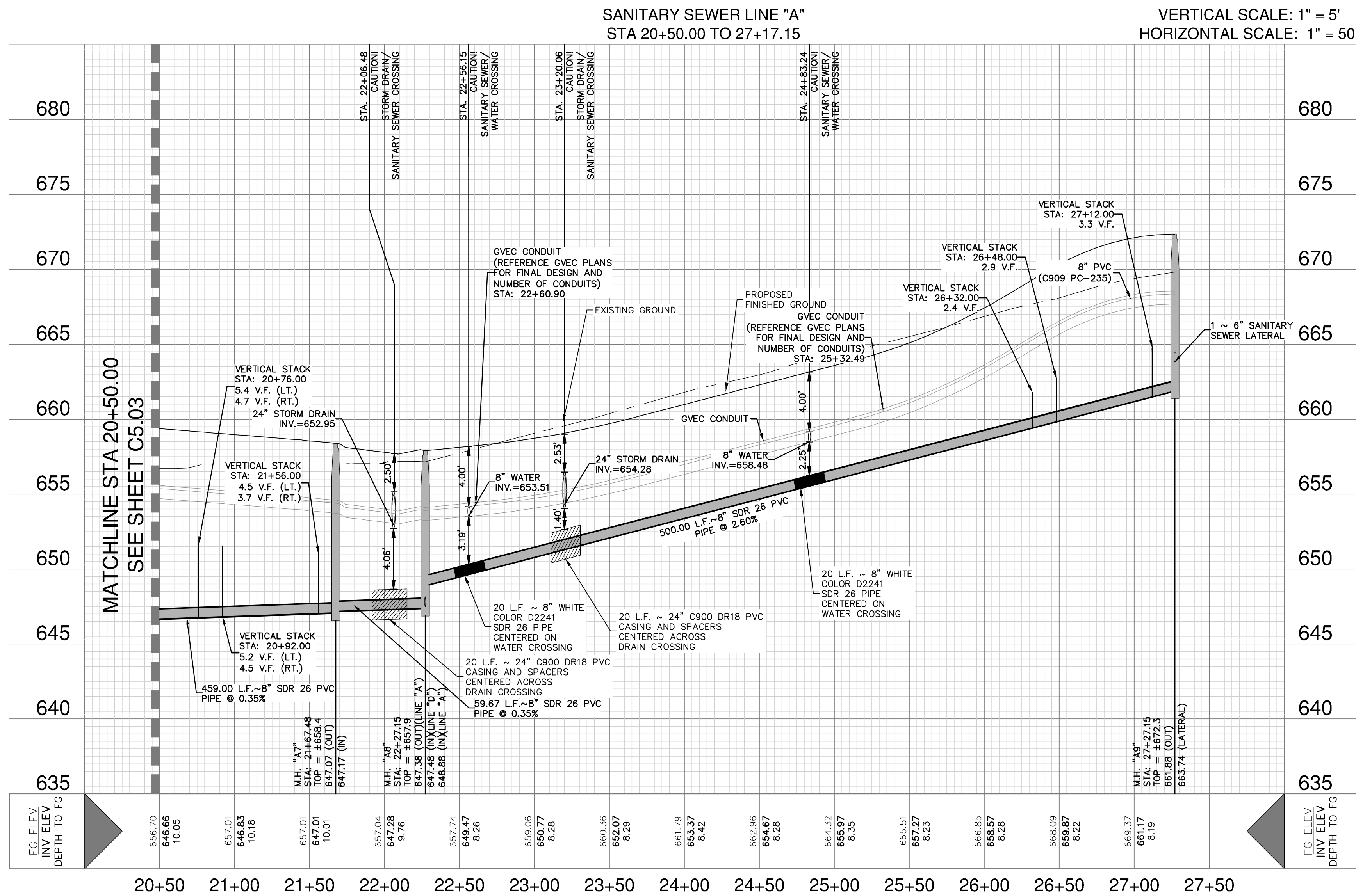
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



MATCHLINE STA 20+50.00
SEE SHEET C5.04

Date: Feb 28, 2024 11:29am User: jf-jay
File: P:\300368\03\Drawings\03\SSA-300368-05.dwg

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



SEWER LEGEND

PROJECT LIMITS	
EXISTING WATER	
EXISTING UNDERGROUND ELECTRIC	
EXISTING GAS	
EXISTING SEWER	
PROPOSED SEWER	
PROPOSED WATER	
PROPOSED SEWER LATERAL	
FINISHED FLOOR ELEVATION FOR SEWER	
PROPOSED STORM DRAIN	
PROPOSED GAS	
PROPOSED UNDERGROUND ELECTRIC (SEE GVEC PLANS FOR FINAL ALIGNMENT. ELECTRIC SHOWN FOR REFERENCE ONLY.)	

GBRA NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: [HTTP://WWW.GBRA.ORG/PUBLIC/WATERWASTEWATERSERVICES.ASPX](http://www.gbra.org/public/waterwastewaterservices.aspx)
- COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
- ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-378-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
- TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
- BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
- PVC MALE ADAPTERS ARE NOT ALLOWED.
- SANITARY TAPPING SADDLES ARE NOT ALLOWED.
- PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
- ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
- MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
- WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
- WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
- VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE INSTALLED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
- ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 1/8" CHAMFER STRIPS.
- EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
- THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
- EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" 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.

NOTES:

- SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

**PAPE-DAWSON
ENGINEERS**

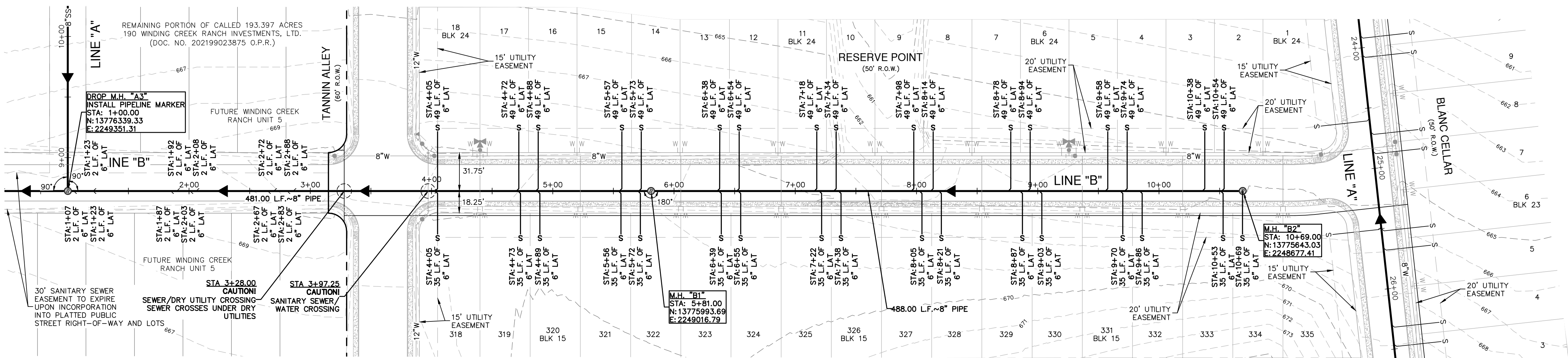
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 20+50.00 TO 27+17.15

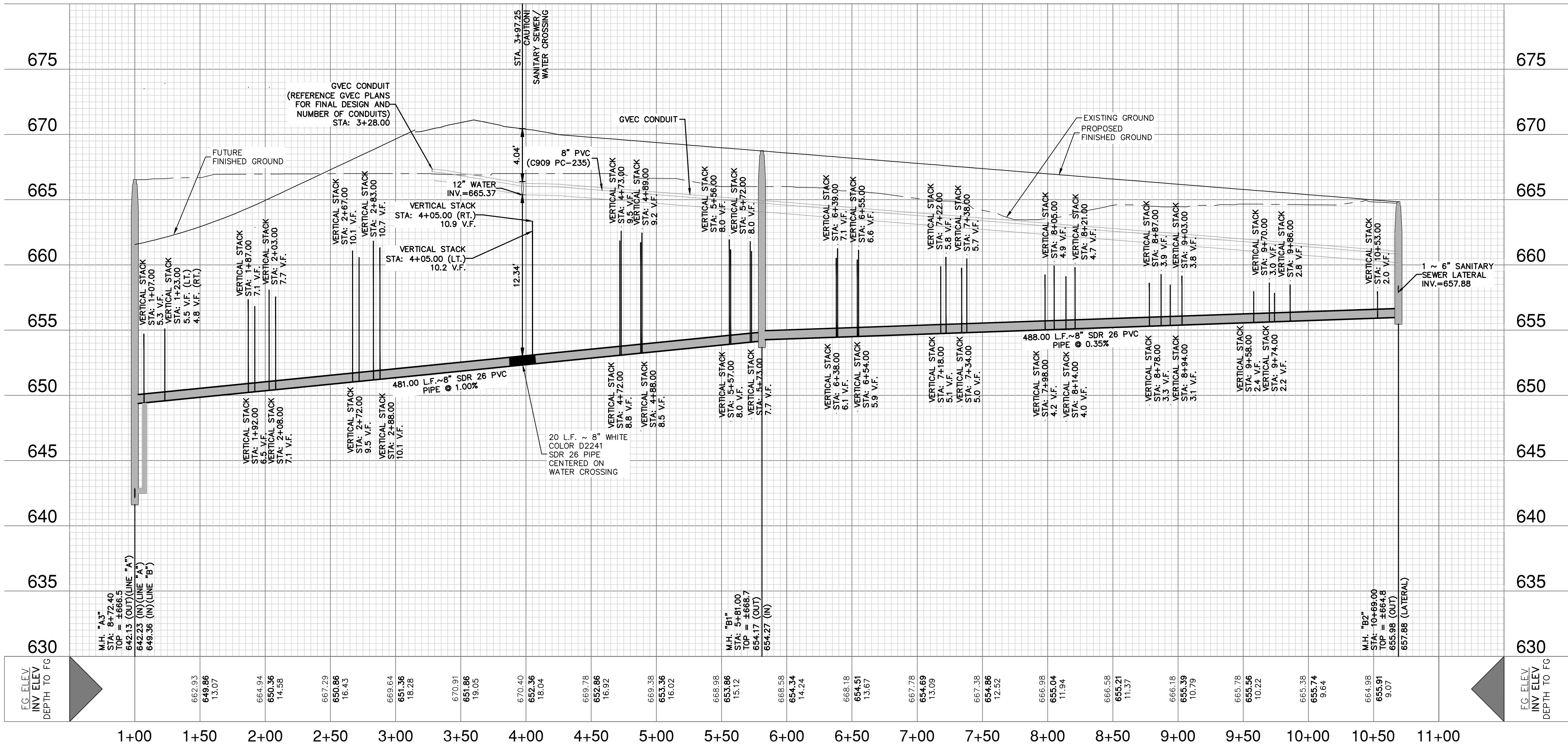
PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.04

FOR PERMIT



SANITARY SEWER LINE "B"
STA 1+00.00 TO 10+69.00

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



CAUTION!!

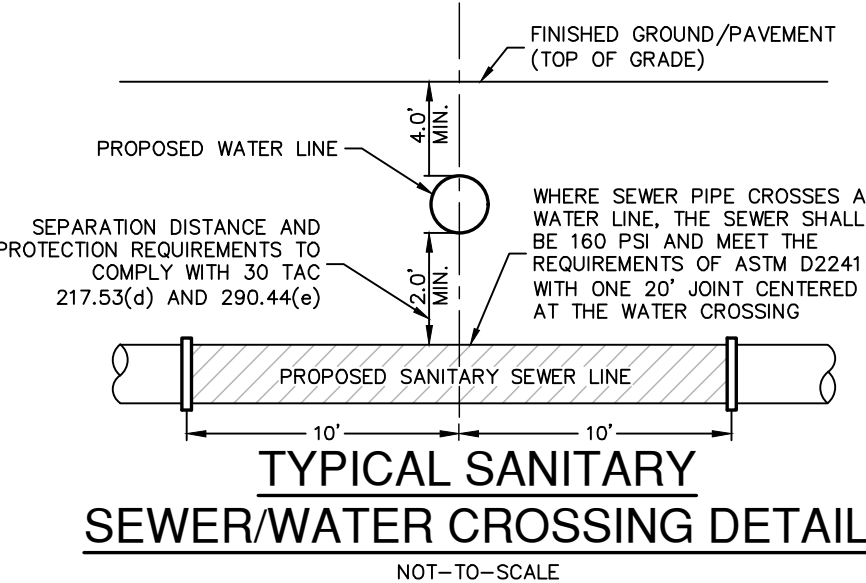
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" 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.

NOTES:

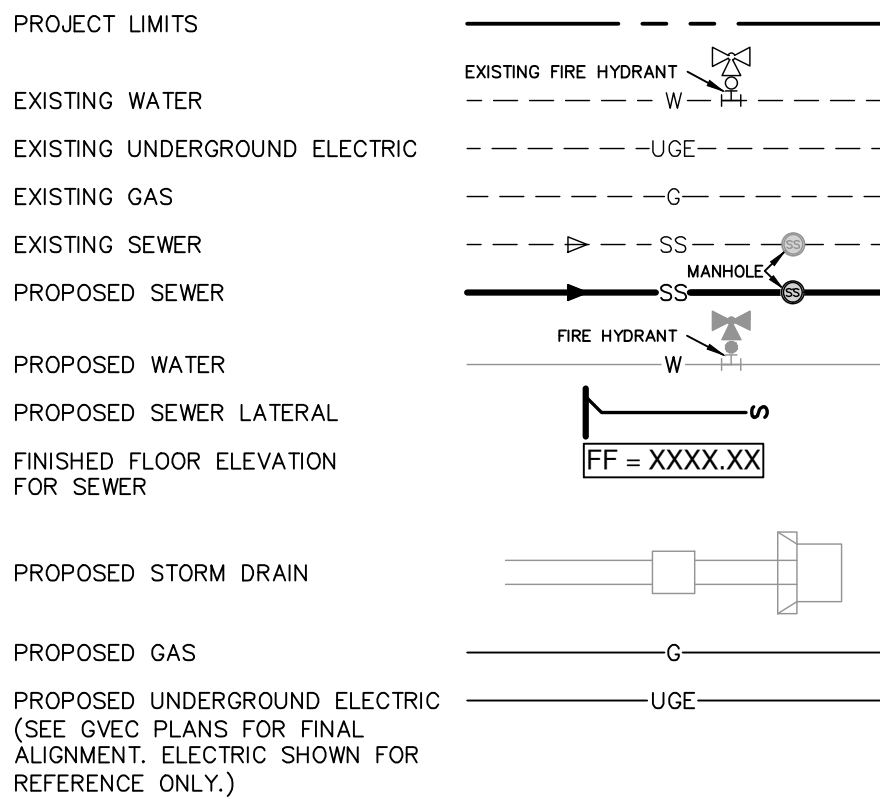
1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

VERTICAL STACK NOTE:

FOR VERTICAL STACKS ON FUTURE LOTS, CONTRACTOR TO CAP VERTICAL STACKS AT SPECIFIED LENGTHS AS SHOWN IN PROFILE VIEW.



SEWER LEGEND



GBRA NOTES:

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2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERLY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
6. PVC MALE ADAPTERS ARE NOT ALLOWED.
7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
8. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 3/4" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

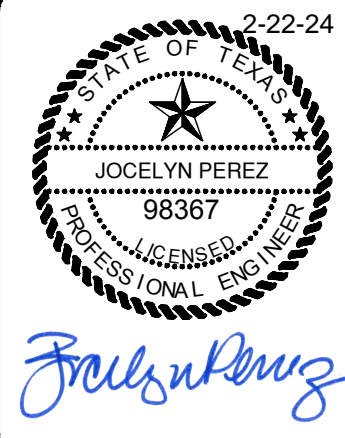
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DRY UTILITY CROSSING NOTE:

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DATE	
NO.	REVISION



PAPE-DAWSON
ENGINEERS

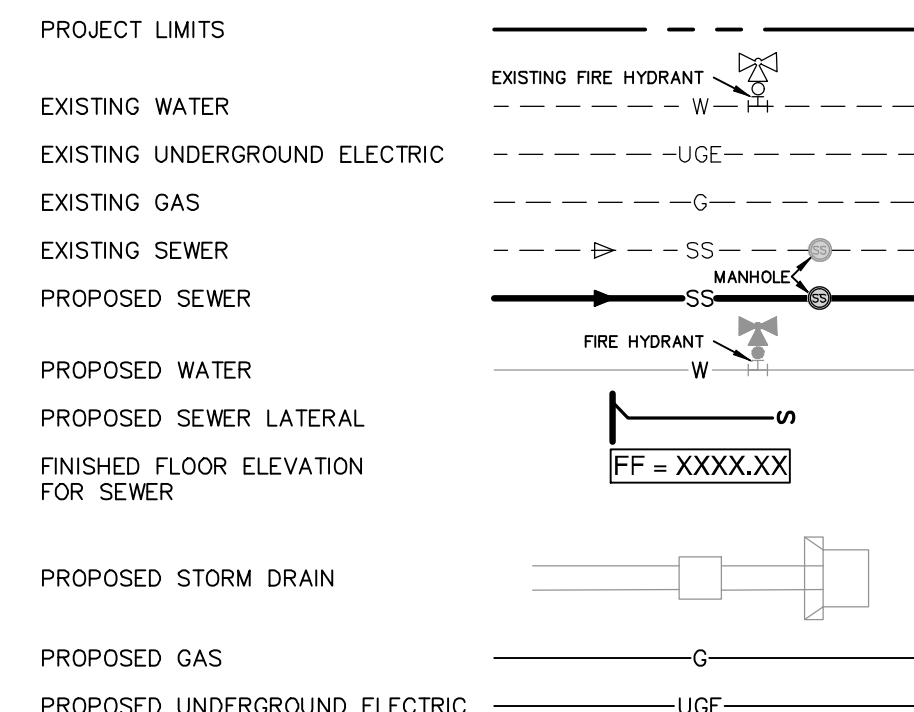
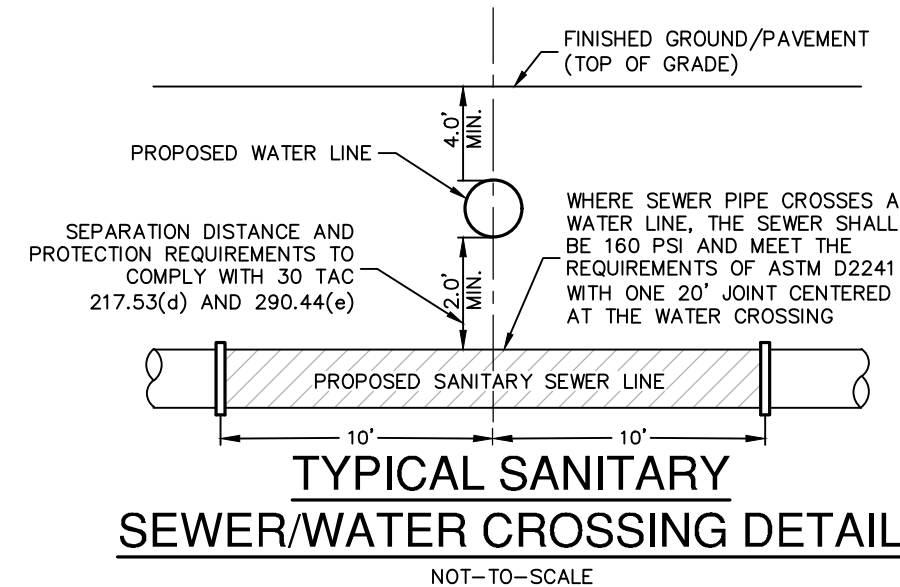
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE B - PLAN & PROFILE
STA 1+00.00 TO 10+69.00

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C5.05

FOR PERMIT



GBRA NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: [HTTP://WWW.GBRA.ORG/PUBLIC/WATER/WASTEWATER/SERVICES.ASPX](http://www.gbra.org/public/water/wastewater/services.aspx)
2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SOW DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED CHANGES ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR PERIOD BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-378-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET CROSSINGS AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
6. PVC MALE ADAPTERS ARE NOT ALLOWED.
7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
8. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH OTHER UTILITIES INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDED PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 3/4" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER, OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TAPPING POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

TRENCH EXCAVATION SAFETY PROTECTION:

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 MAINTAIN 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.

NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

DRY UTILITY CROSSING NOTI

LOCATION AND DEPTH OF DRY UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS ARE TO BE BASED ON THE FINAL DESIGN FROM GVEC. CONTRACTOR WILL BE RESPONSIBLE FOR CENTERING 14-FOET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE WHERE SANITARY SEWER MAINS CROSS DRY UTILITIES AND MAINTAINING 10 FT OF HORIZONTAL CLEARANCE BETWEEN DRY UTILITIES AND SANITARY SEWER.

[illegible]

**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE C - PLAN & PROFILE
STA 6+50.00 TO 13+68.53

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN JM
SHEET C5.07

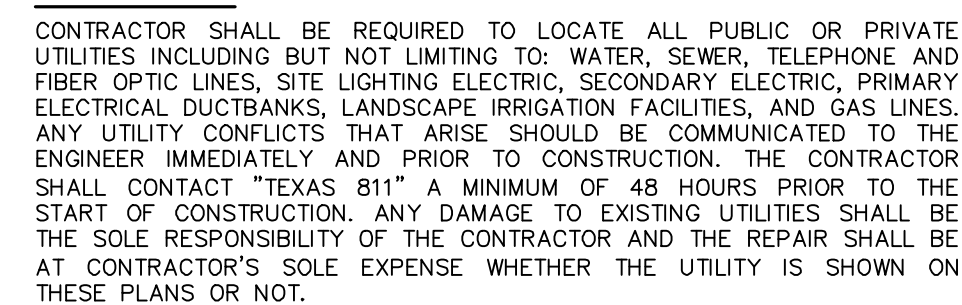
FOR PERMIT



1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: WWW.GBRA.ORG/PUBLIC/ WATERWATERWATERWATER.SPSX
2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
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10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH AN OTHER UTILITY, INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 1/2" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

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 NOTES WITHIN THE PROJECT AREA TO DETERMINE THE APPROPRIATE 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 COMPLIANCE WITH THE MINIMUM REQUIREMENTS SPECIFIED FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS REGARDING THE ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

LOCATION AND DEPTH OF DRY UTILITIES SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS ARE TO BE BASED ON THE FINAL DESIGN FROM GVEC. CONTRACTOR WILL BE RESPONSIBLE FOR CENTERING 14'-FEET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE WHERE SANITARY SEWER MAINS CROSS DRY UTILITIES AND MAINTAINING 10 FT OF HORIZONTAL CLEARANCE BETWEEN DRY UTILITIES AND SANITARY SEWER.

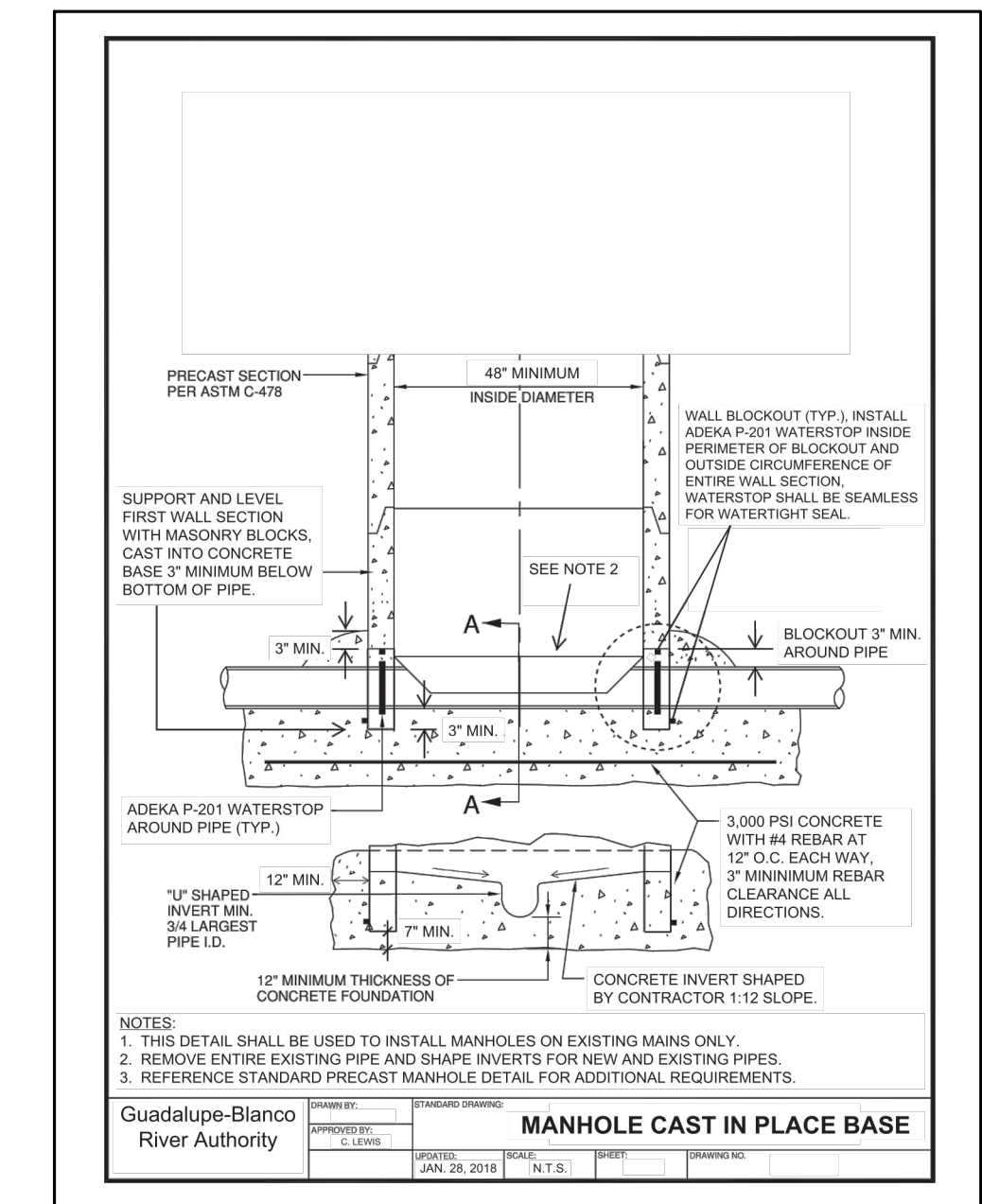
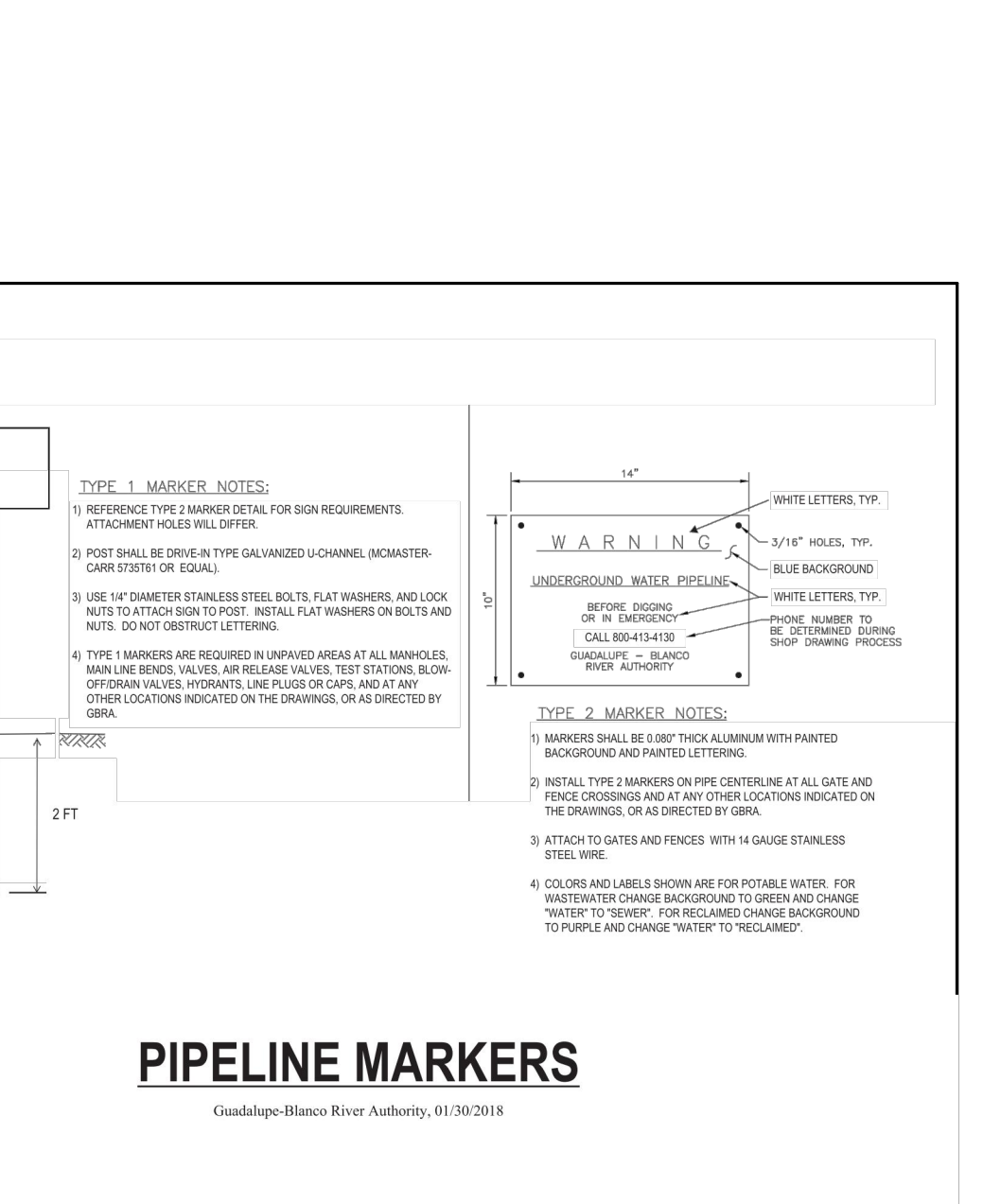
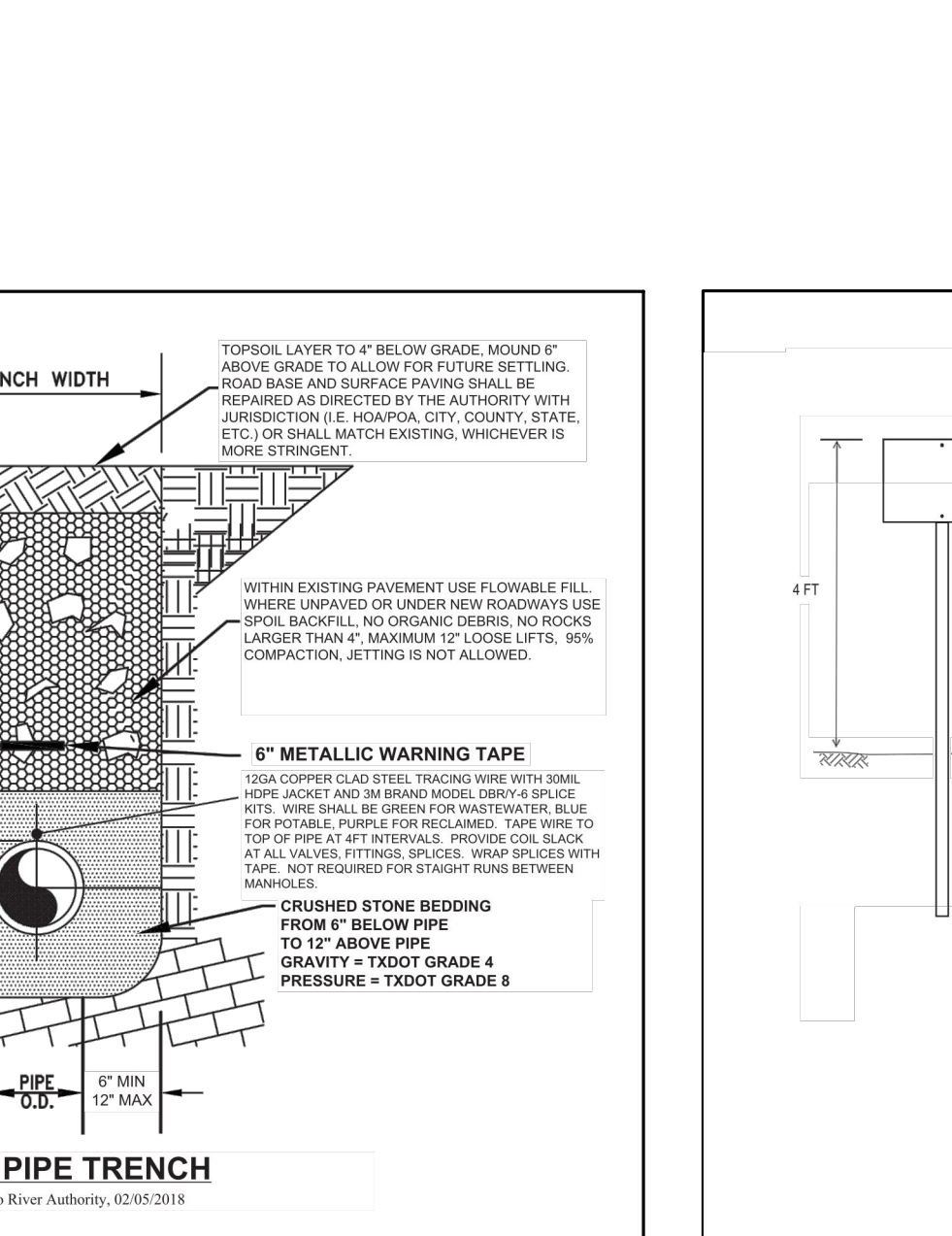
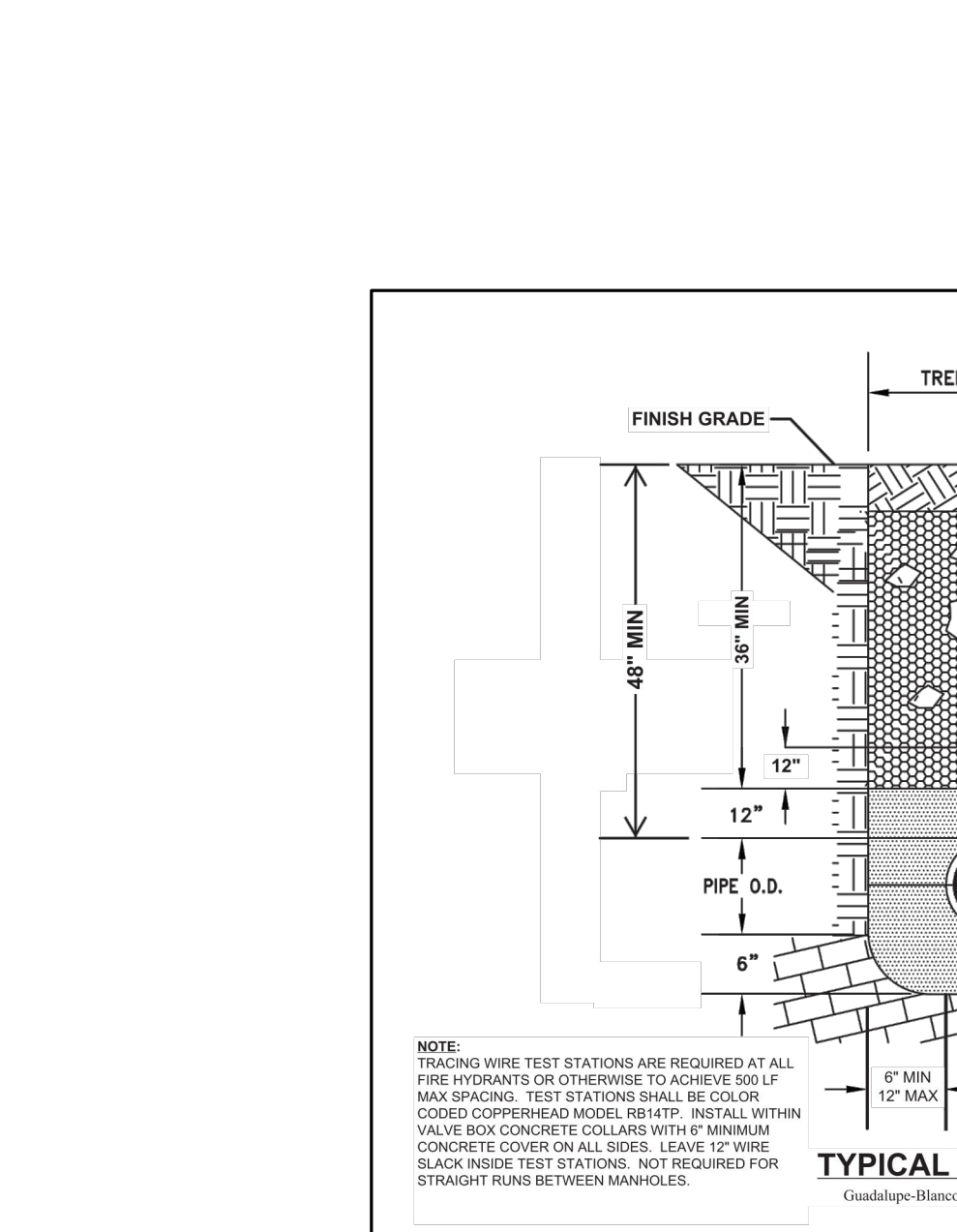
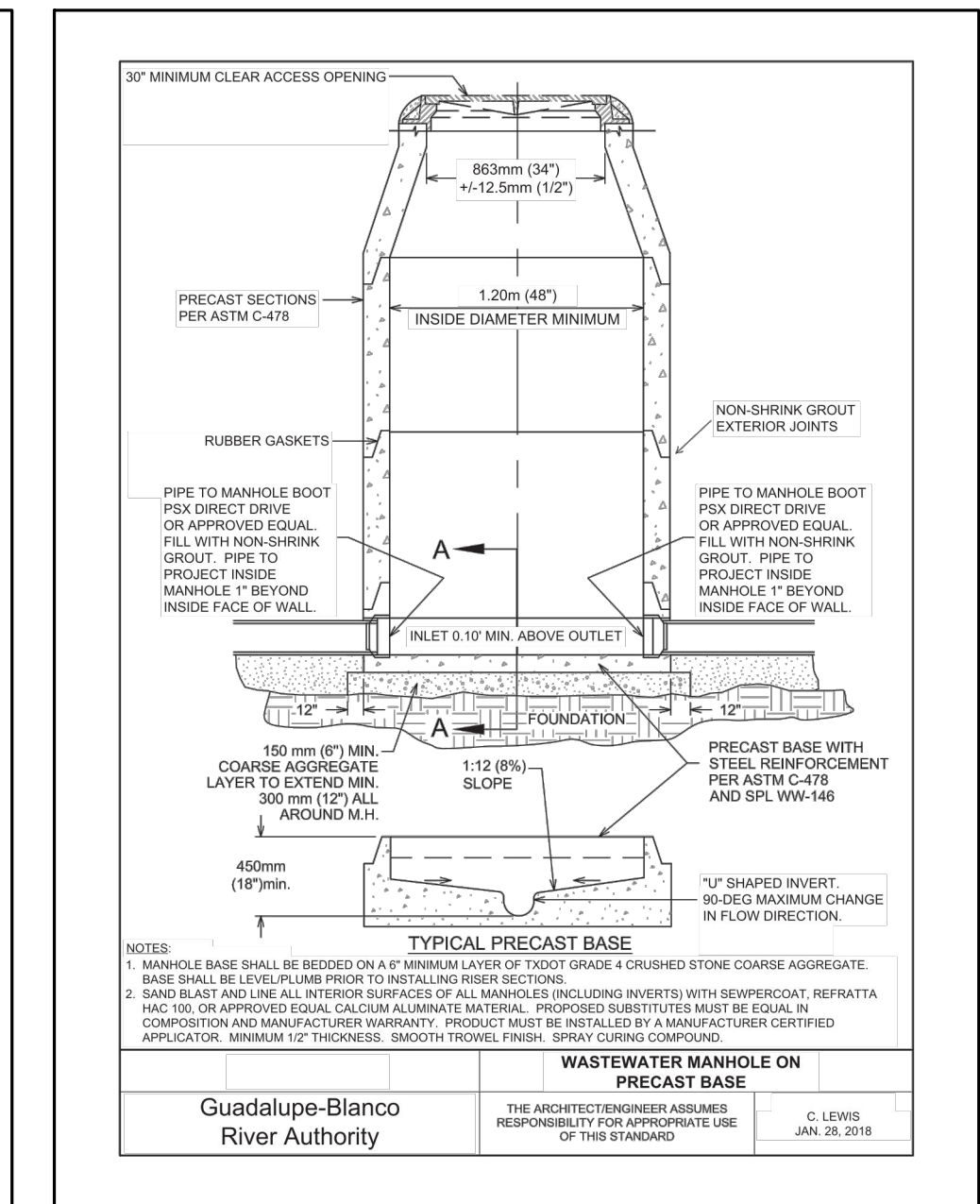
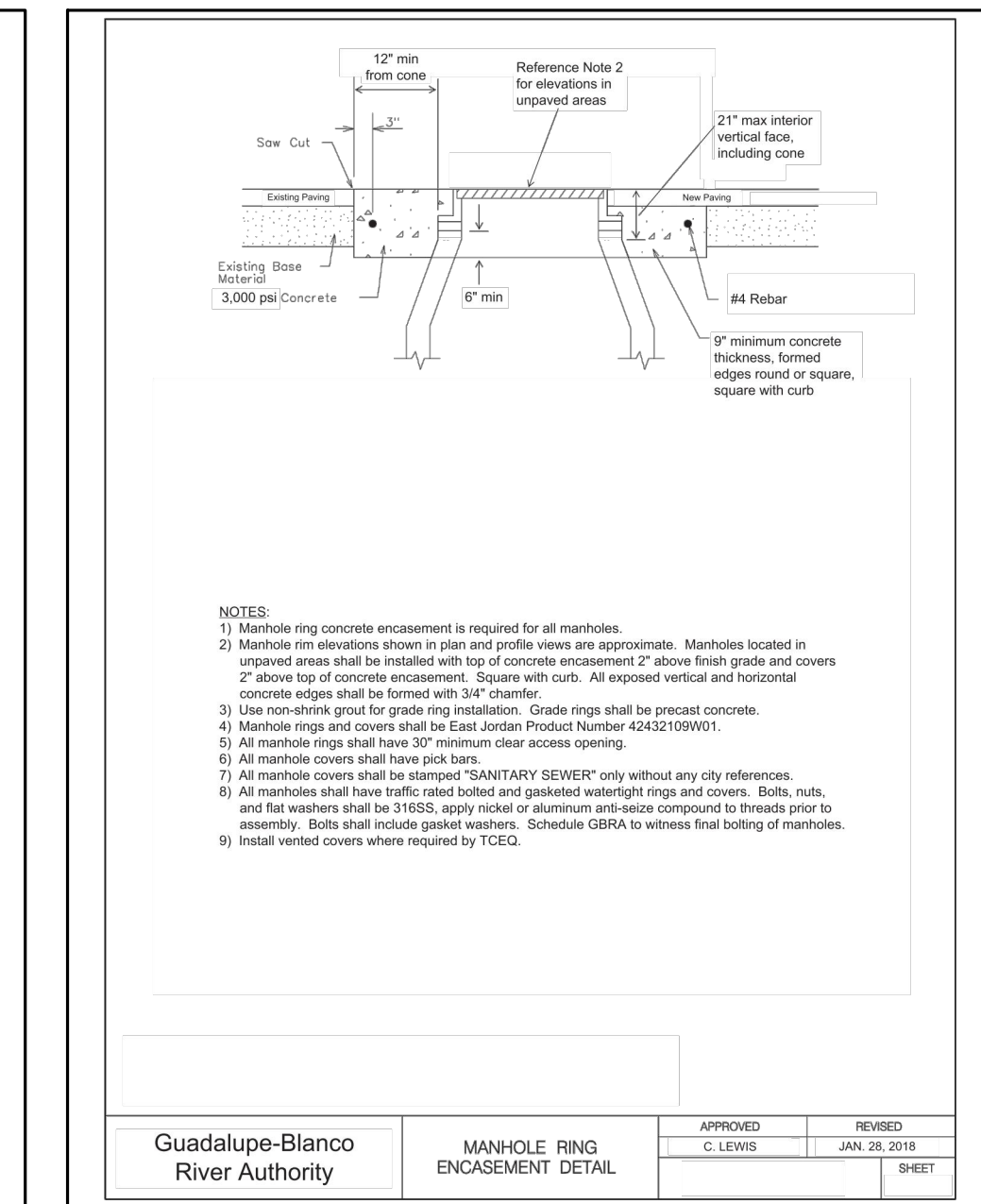
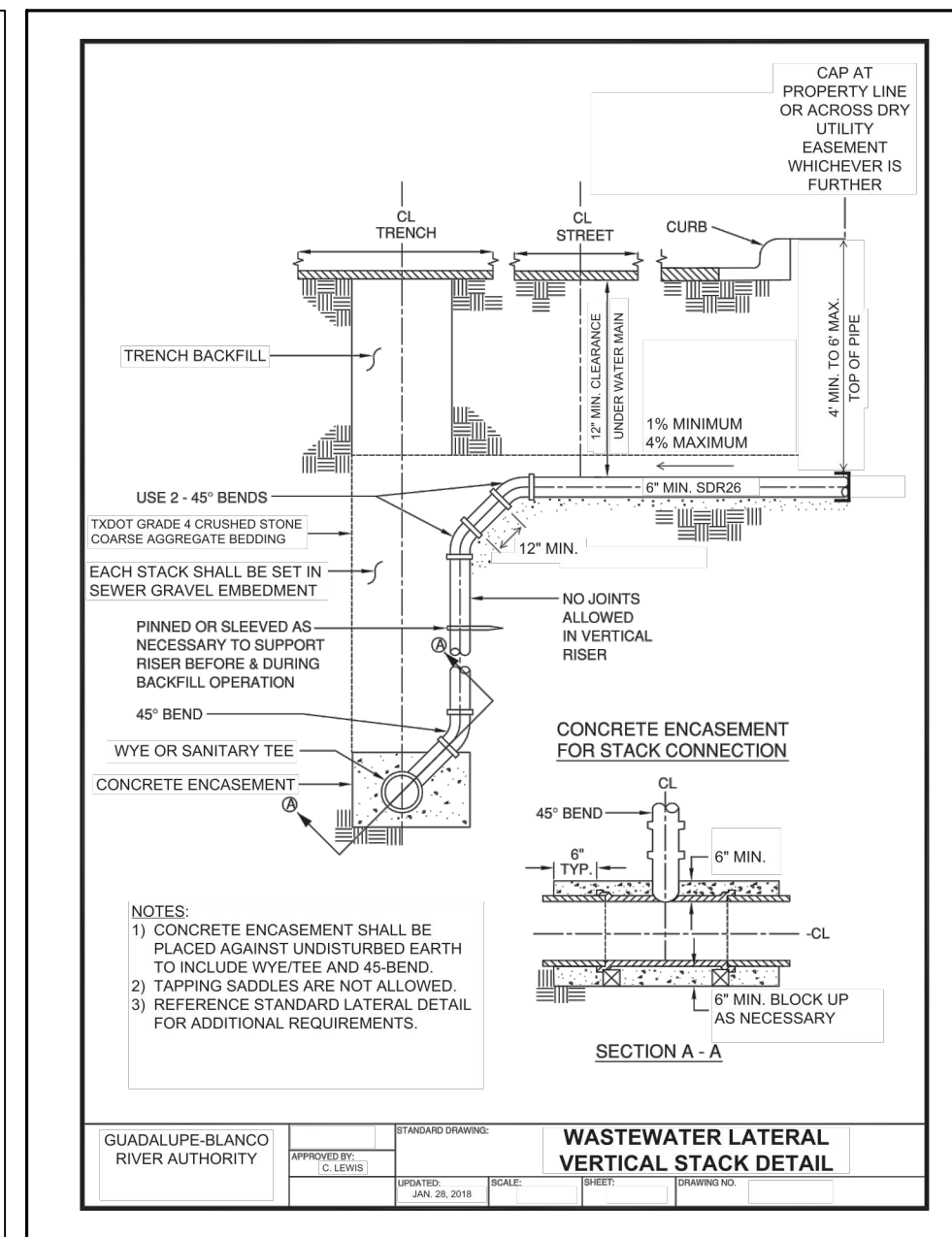
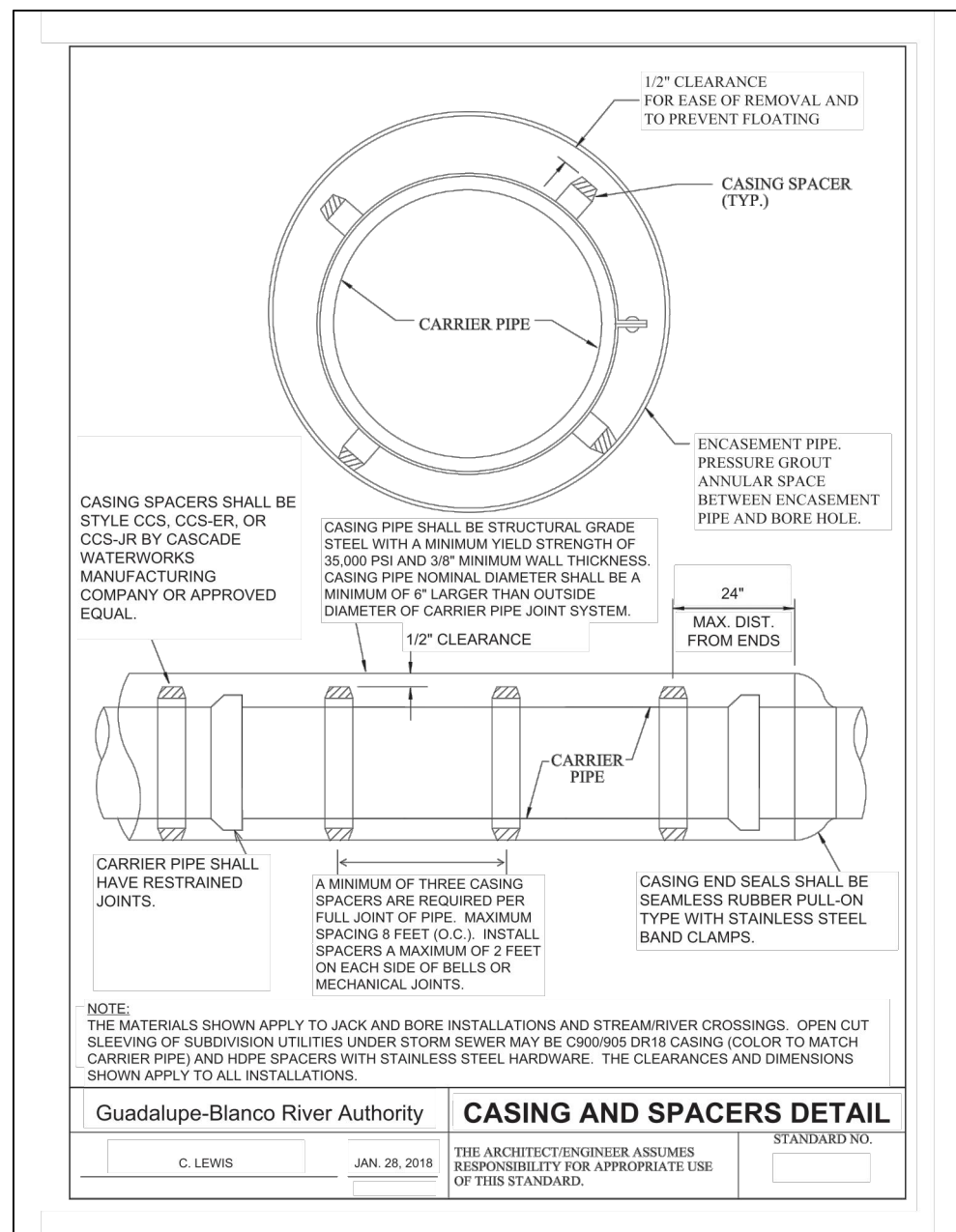
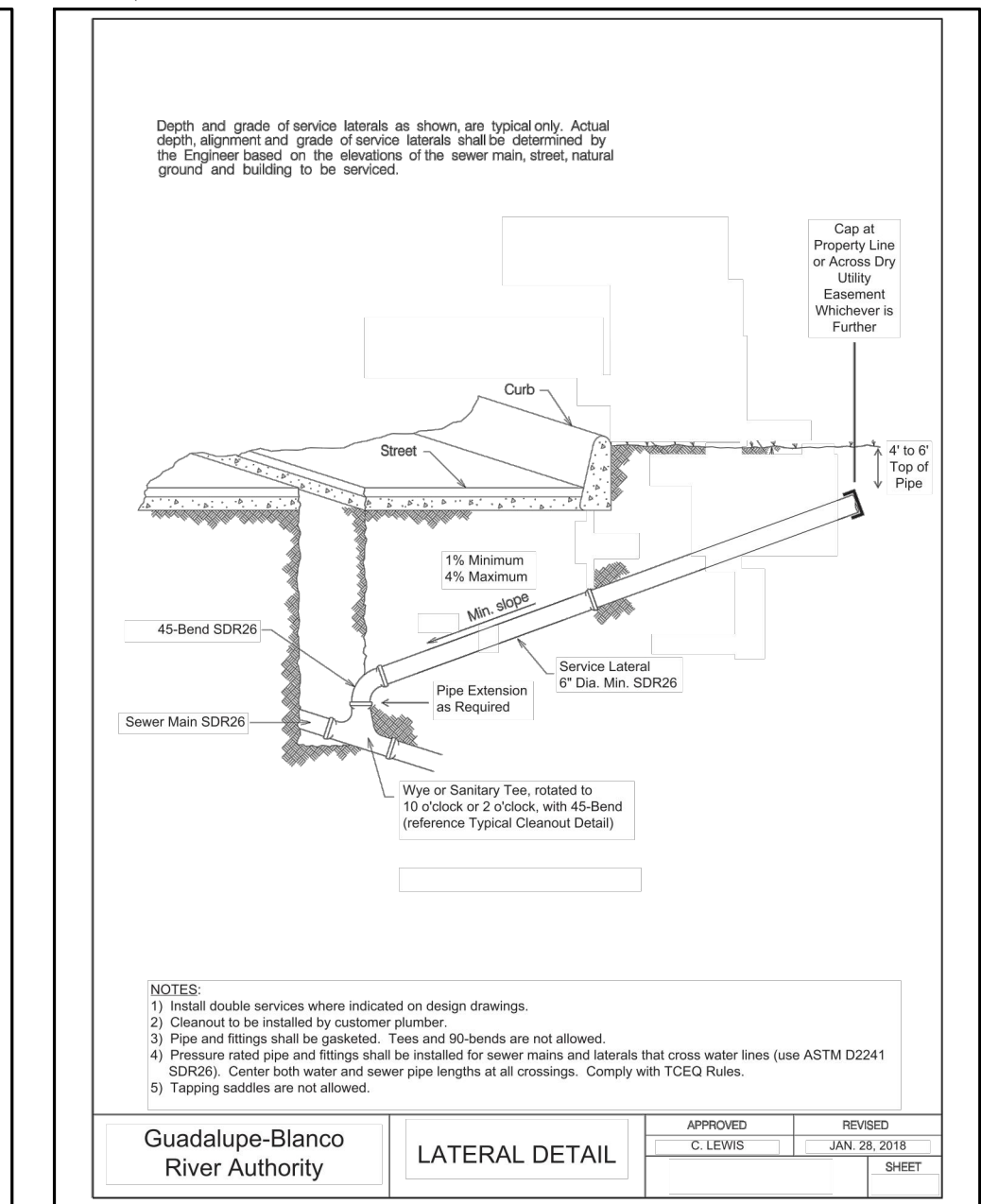
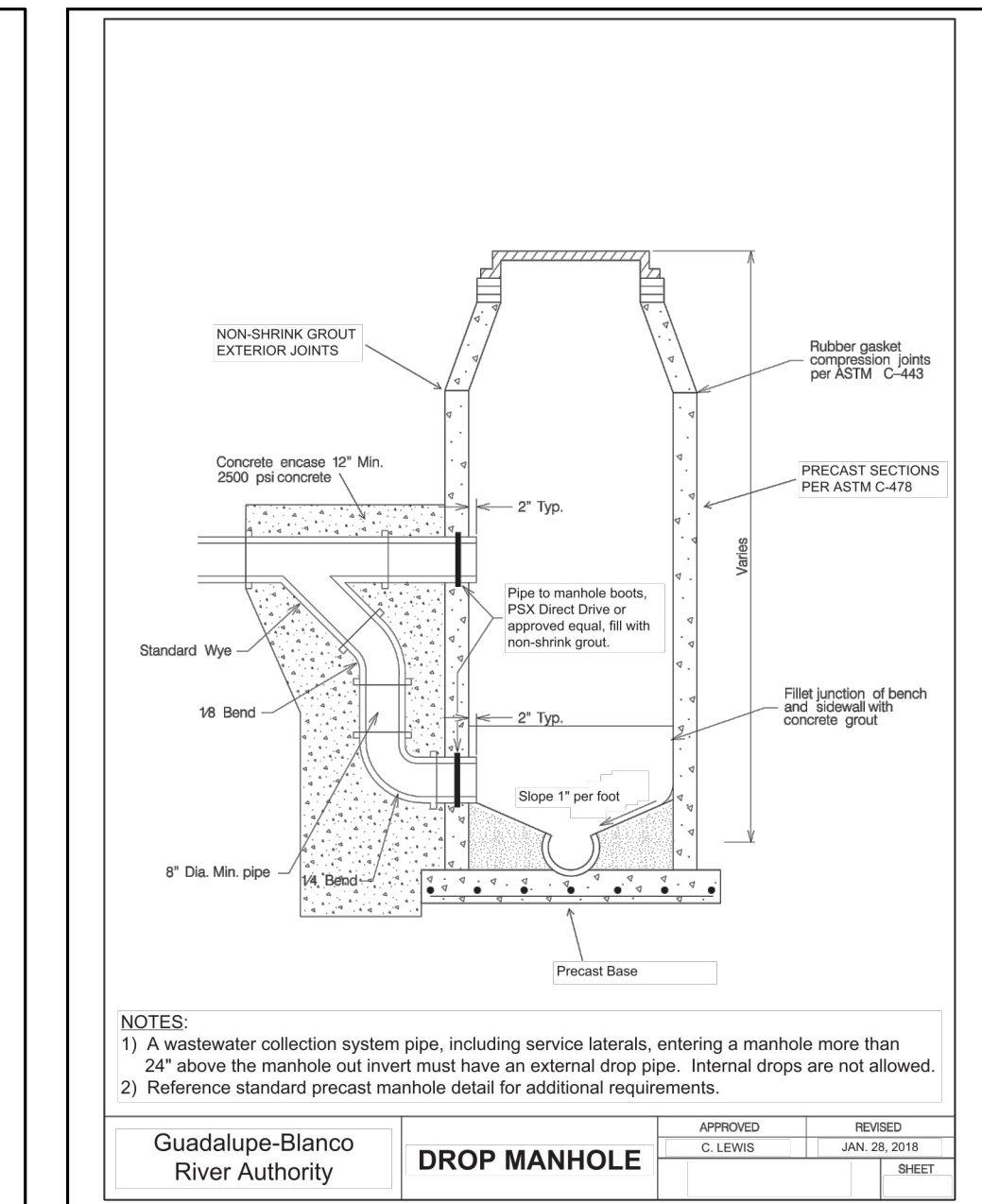
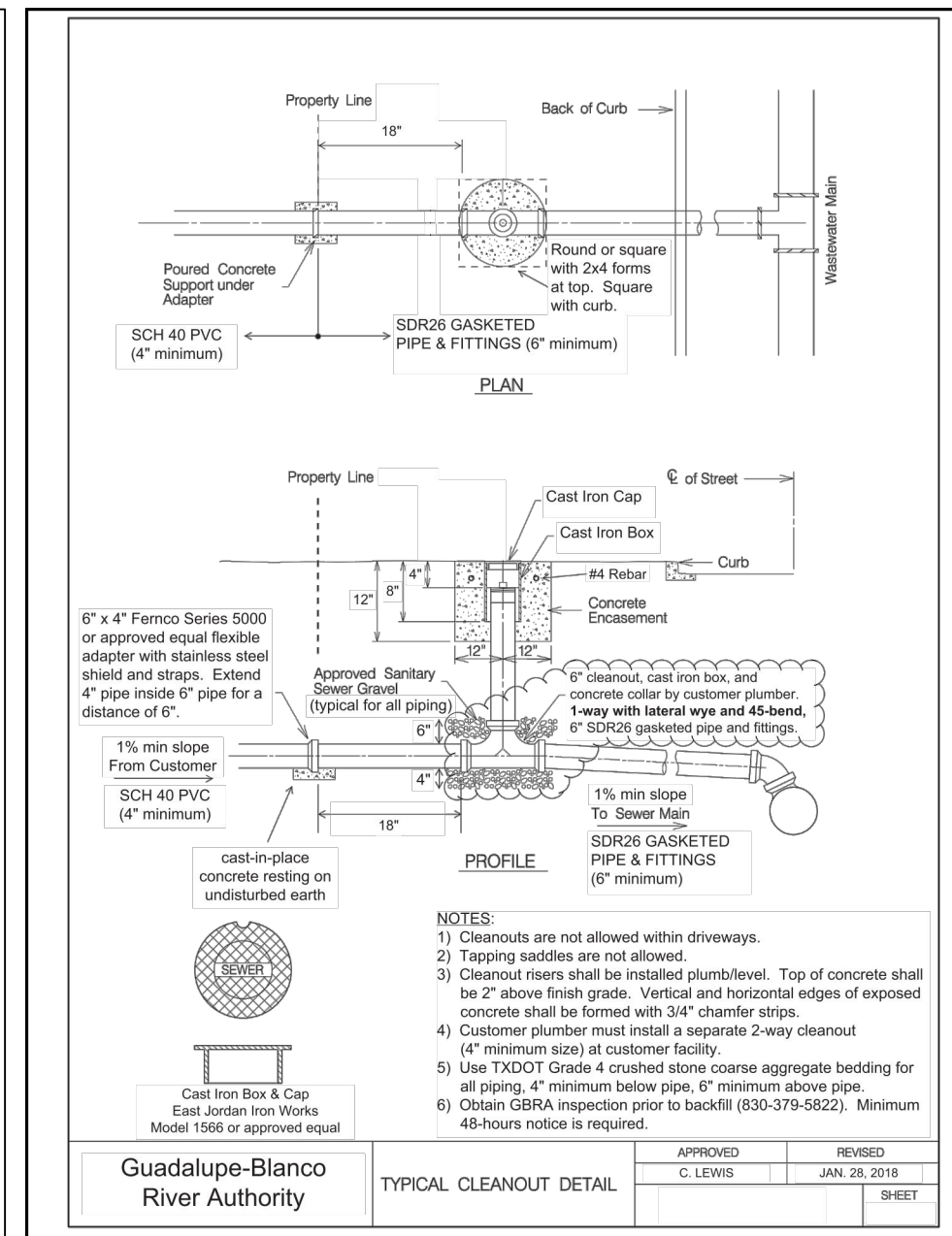
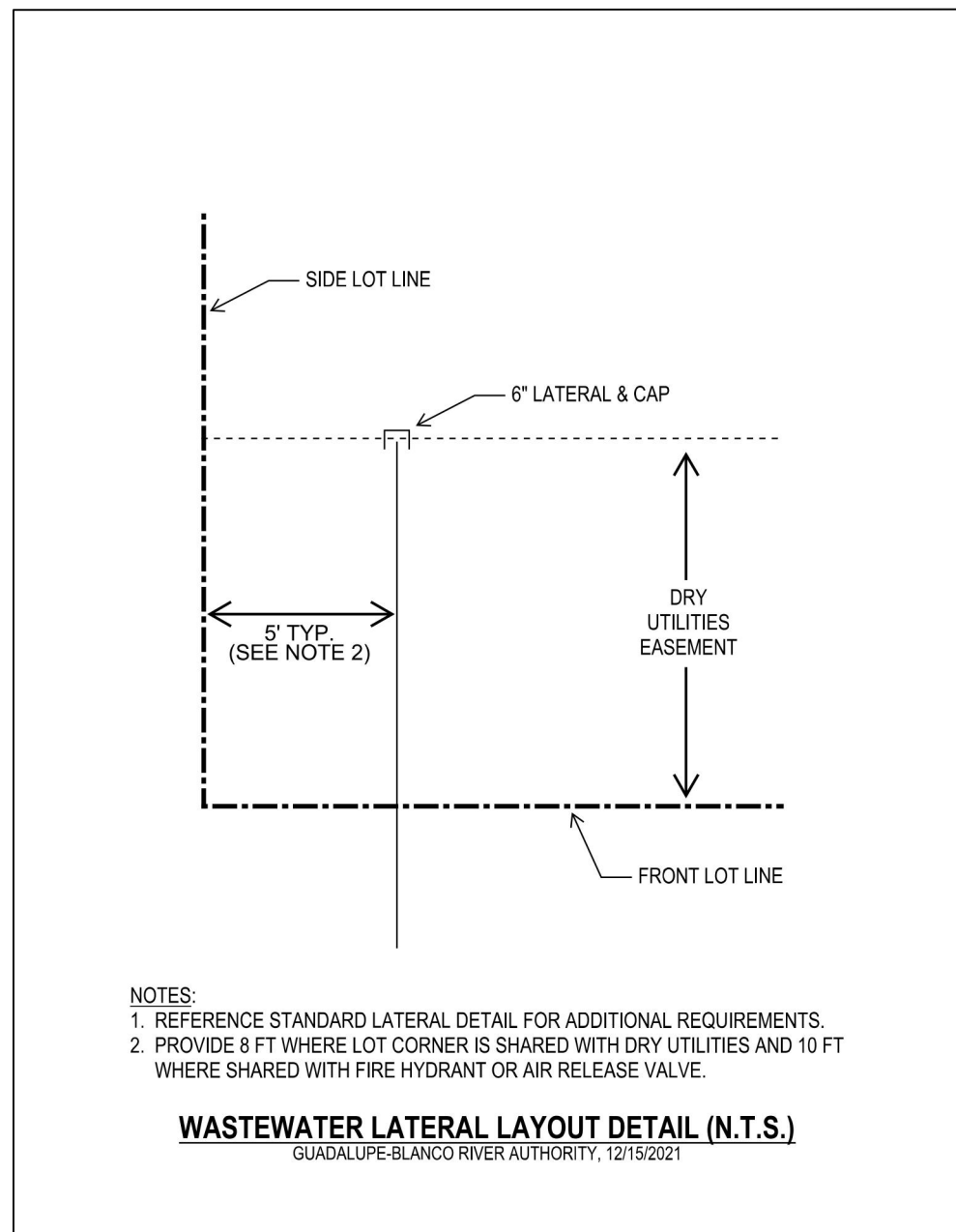


1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.

FOR PERMIT

Date: Nov. 22, 2023, 1:46pm User: JD_Aleddy
File: P:\300\56\05\Drawings\CV\WSS01-30056-05.dwg

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DATE

NO. REVISION

11-22-2023

JOCELYN PEREZ

98367

PROFESSIONAL ENGINEER

Fullenkamp

PAPE-DAWSON

ENGINEERS

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER DETAILS

PLAT NO.

JOB NO.

DATE

DESIGNER

CHECKED

SHEET

30058-05

NOVEMBER 2023

CL

HF

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FOR PERMIT

1. CONTRACTOR TO INSTALL PERMANENT MARKERS AT THE END OF ALL SEWER LATERALS
2. CONTRACTOR SHALL VERIFY TOP OF MANHOLES AND MAKE FLUSH WITH TOP OF PAVEMENT OR 4" ABOVE FINISH GRADE. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON FINISH GRADE OR FRESH PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATION SUCH THAT THE TOP OF MANHOLE SHALL BE 4" ABOVE FINISH GRADE OR FLUSH TO FINISH ASPHALT PAVEMENT
3. CONTRACTOR TO CENTER 14 FEET OF ASTM D3034 SDR 26 SANITARY SEWER PIPE LENGTH AT DRY UTILITY CROSSING.

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1. GRAVITY WASTEWATER PIPE AND FITTINGS SHALL BE GREEN COLOR GASKETED ASTM D3034 SDR 26 PIPE. WATER CROSSING INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE. AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
2. ALL OTHER FASTENERS SHALL BE TYPE 304 STAINLESS STEEL (E.G. HARDWARE, SCREWS, ANCHORS, BOLTS, RODS, BOLTS, NUTS, ETC. FOR PIPING, VALVES, PUMPS, MOTORS, EQUIPMENT, ETC.) INCLUDING ANCHORS FOR FACTORY ASSEMBLY OF MANHOLE RINGS. ALL BOLTS AND NUTS SHALL BE HEAVY HEX. ANCHOR BOLTS INSTALLED WITHIN HYDRAULIC STRUCTURES SHALL BE EPOXY TYPE, FIELD APPLY NICKEL ANTI-SIZE COMPOUND TO THREADS PRIOR TO ASSEMBLY. STAINLESS STEEL SHALL NOT BE PAINTED.

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1. ALL OTHER UTILITIES MUST BE COMPLETE PRIOR TO PERFORMING ANY WATER OR WASTEWATER TESTING.
2. ALL TESTING MUST BE COMPLETE PRIOR TO PAVING STREETS.
3. ALL TESTING MUST BE COMPLETE PRIOR TO PERFORMING TIE-INS TO EXISTING WATER OR WASTEWATER SYSTEMS.
4. CONTRACTOR SHALL PERFORM PRE-TESTING TO VERIFY PASSING RESULTS PRIOR TO REQUESTING GBR A INSPECTION. PROVIDE CONNECTION POINT FOR GBR A DIGITAL TEST GAUGE.
5. ALL TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY GBR A.
6. PERFORM TRENCH BACKFILL DENSITY TESTING AT INTERVALS SPECIFIED BY THE DESIGN ENGINEER. EXACT LOCATIONS TO BE DESIGNATED BY INSPECTOR. SCHEDULE GBR A TO WITNESS TESTING. PROVIDE COPIES OF REPORTS TO GBR A.
7. FOLLOW AWWA PIPE TESTING PROCEDURES AND ALLOWABLE LEAKAGE FOR WATER LINES. TEST EVERY VALVE SECTIONS (I.E. TEST AGAINST EVERY VALVE IN CLOSED POSITION). TEST PRESSURE SHALL BE MAXIMUM RATING OF MATERIAL INSTALLED. TEST DURATION SHALL BE 2 HOURS.
8. FOLLOW AWWA PROCEDURES FOR FLUSHING AND DISINFECTION OF WATER PIPING. FLUSHING AND DISINFECTION MUST BE COMPLETE PRIOR TO PERFORMING TIE-INS TO EXISTING SYSTEMS.
9. ALL GRAVITY WASTEWATER PIPING SHALL BE SUBJECT TO LOW PRESSURE AIR TESTING IN ACCORDANCE WITH TCEQ REQUIREMENTS. INFILTRATION AND EXFILTRATION TESTING ARE NOT ALLOWED.
10. MANHOLE TESTING SHALL BE PERFORMED FOR ALL GRAVITY WASTEWATER MAINS PRIOR TO INSTALLATION OF CORROSION RESISTANT MANHOLE LINING.
11. ALL MANHOLES, REGARDLESS OF VEHICULAR TRAFFIC DETOURING, SHALL BE VACUUM TESTED AFTER COMPLETION OF BACKFILL, COMPACTION, AND FINAL GRADING OF ROAD BASE BUT PRIOR TO PAVING STREETS AND PRIOR TO CORROSION RESISTANT MANHOLE LINING. VACUUM TESTING SHALL BE PERFORMED WITH A PLATE TYPE TEST HEAD PLACED ON TOP OF COMPLETED MANHOLE METAL CASTING RING WHICH HAS BEEN INSTALLED AND ENCASED IN CONCRETE AT FINAL GRADE. MANHOLES SHALL BE TESTED AT 10 INCHES OF MERCURY FOR 2 MINUTES DURATION. ALLOWABLE LOSS IS 1 INCH OF MERCURY. INFILTRATION AND EXFILTRATION TESTING ARE NOT ALLOWED.
12. PERFORM VIDEO INSPECTION AND GOLF BALL TESTING OF GRAVITY WASTEWATER PIPING AFTER CORROSION RESISTANT MANHOLE LINING BUT PRIOR TO PAVING STREETS. PIPE AND MANHOLES MUST BE CLEANED FREE OF DIRT, ROCKS, SCALE, MUD, SILT, AND ANY OTHER FOREIGN MATTER PRIOR TO PERFORMING VIDEO INSPECTION AND GOLF BALL TESTING. FLOOD SYSTEM WITH WATER IMMEDIATELY PRIOR TO PERFORMING VIDEO INSPECTION. HANG AND DRAG A GOLF BALL IN FRONT OF CAMERA. PIPE GRADE IS OUT OF TOLERANCE IF GOLF BALL BECOMES FULLY SUBMERGED. SCHEDULE GBR A TO WITNESS VIDEO INSPECTION. PROVIDE DVD'S AND WRITTEN REPORTS TO GBR A.
13. FOLLOW TCEQ PIPE TESTING PROCEDURES AND ALLOWABLE LEAKAGE FOR FORCE MAINS. TEST EVERY VALVED SECTION (I.E. TEST AGAINST EVERY VALVE IN CLOSED POSITION). TEST PRESSURE SHALL BE THE MAXIMUM RATING OF MATERIAL INSTALLED.

1. ALL OTHER UTILITIES MUST BE COMPLETE PRIOR TO PERFORMING ANY WATER OR WASTEWATER TESTING.
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13. FOLLOW TCEQ PIPE TESTING PROCEDURES AND ALLOWABLE LEAKAGE FOR FORCE MAINS. TEST EVERY VALVED SECTION (I.E. TEST AGAINST EVERY VALVE IN CLOSED POSITION). TEST PRESSURE SHALL BE THE MAXIMUM RATING OF MATERIAL INSTALLED.

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: [HTTPS://WWW.GBRA.ORG/OPERATIONS/DEVELOPER-RESOURCES/](https://www.gbra.org/operations/developed-resources/) COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION, USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AN PART NUMBERS, LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
2. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR INSPECTIONS).
3. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/OUT OR OFFSET STAKES AND PROPERTY PINS. STAKES AND MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
4. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
5. PVC MALE ADAPTERS ARE NOT ALLOWED.
6. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
7. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
8. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
9. ALL PIPING SHALL BE INSTALLED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
10. INSTALL CONCRETE THRUST BLOCKING AND MECHANICAL RESTRAINTS FOR PRESSURE PIPING SYSTEMS.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCH VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 3/4" CHAMFER STRIPS.
16. EXISTING FACILITIES THAT ARE DISTURBED SHALL BE RESTORED AND TESTED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS. THE CONTRACTOR SHALL ADJUST EXISTING WATER AND WASTEWATER FACILITIES TO MEET ALL PIPING AND GRADES INCLUDING BUT NOT LIMITED TO MANHOLES, CLEANOUTS, VALVES, HYDRANTS, APPURTENANCES, ETC.
17. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
18. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY CLOSURE OF PIPELINE FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00 PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
19. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

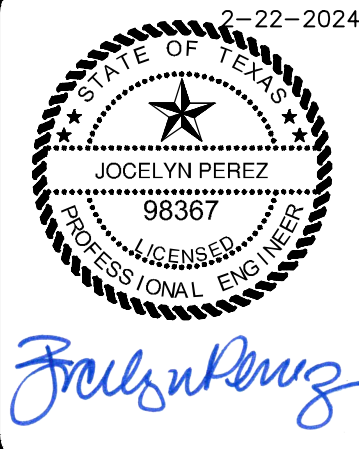
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PROVIDE COMPLETE PROJECT DRAWING SETS INCLUDING DRY UTILITIES, ROADS, GRADING, STORM SEWER, SANITARY SEWER, WATER, ETC. SUBMIT ELECTRONIC PRELIMINARY COPIES FOR GBRA REVIEW AND APPROVAL PRIOR TO PRINTING FINAL COPIES.

- PROVIDE COMPLETE PROJECT DRAWING SETS INCLUDING DRY UTILITIES, ROADS, GRADING, STORM SEWER, SANITARY SEWER, WATER, ETC. SUBMIT ELECTRONIC PRELIMINARY COPIES FOR GBRA REVIEW AND APPROVAL PRIOR TO PRINTING FINAL COPIES.

1. CONTRACTOR SHALL PROVIDE ONE (1) PRINTED AND BOUND FULL SIZE COPY OF RED LINED AS-BUILT DRAWINGS AND ONE (1) CD/PDF ELECTRONIC COPY, EACH SHEET STAMPED "AS-BUILT DRAWING"
2. ENGINEER SHALL PREPARE CORRECTED CAD DRAWINGS, EACH SHEET STAMPED "CORRECTED DRAWING", AND SUBMIT TO CBRA FIVE (5) PRINTED AND BOUND HALF SIZE COPIES AND FIVE (5) CD/PDF AS-BUILT ELECTRONIC COPIES OF THE CORRECTED CAD DRAWINGS. SCANNED AND/OR PHOTOCOPIES ARE NOT ACCEPTABLE.

NO.	REVISION



**PAPE-DAWSON
ENGINEERS**

1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #1470 | TEXAS SURVEYING FIRM #10028600

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER NOTES

JOB NO. 30058-05

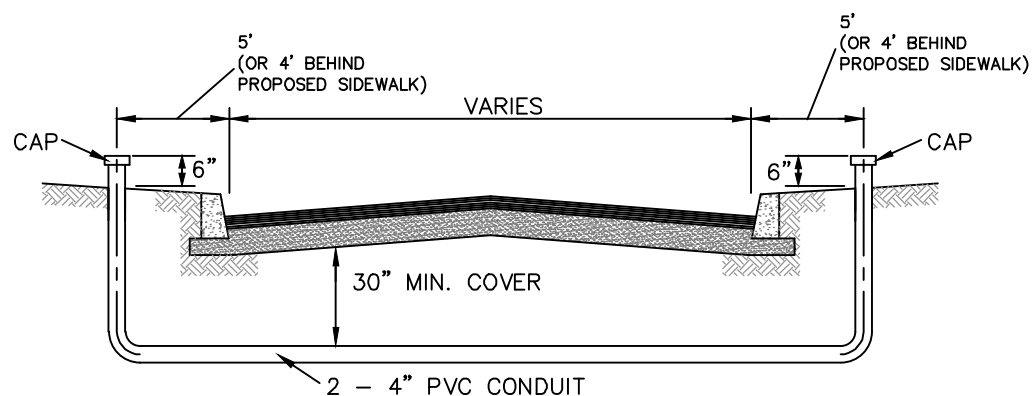
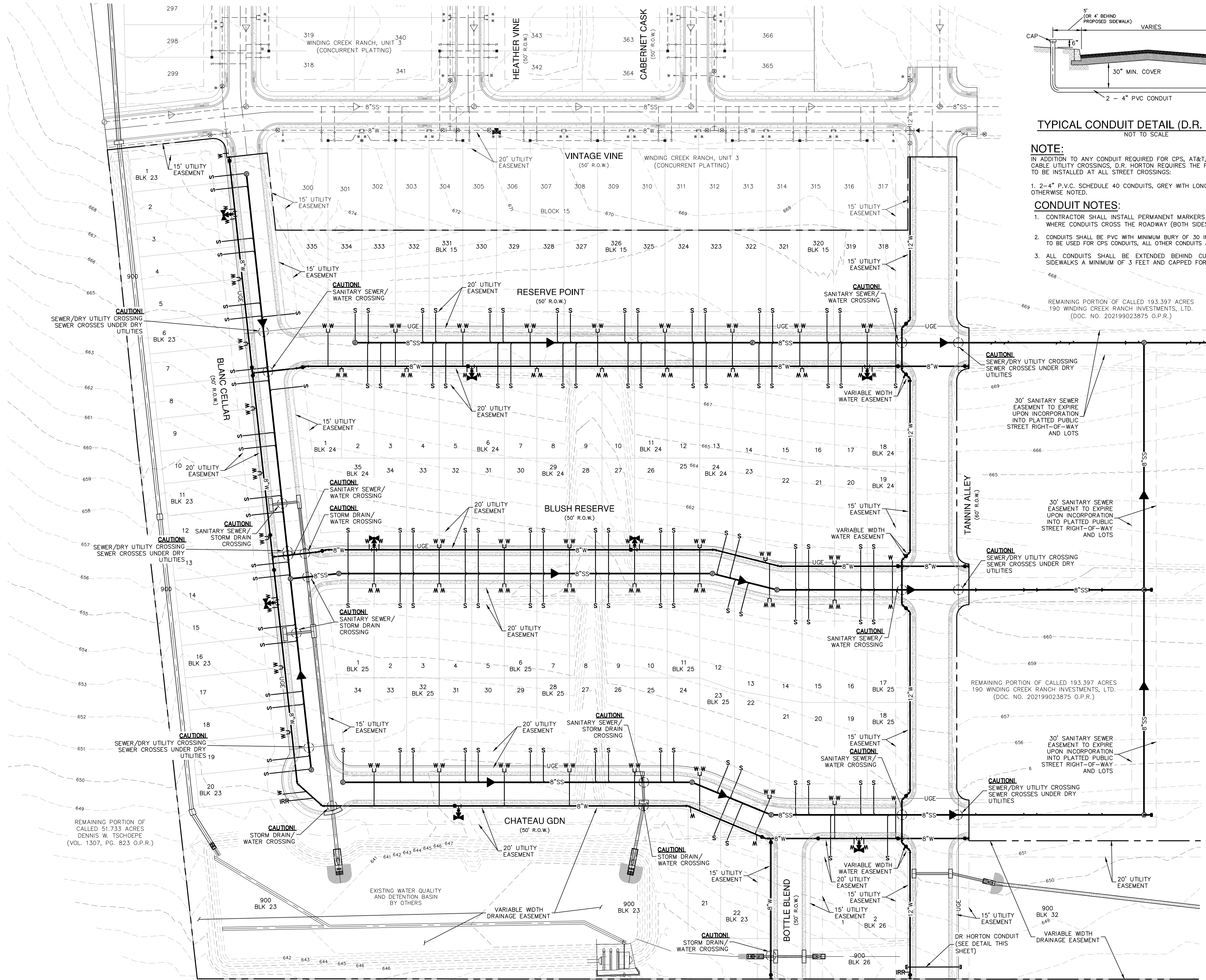
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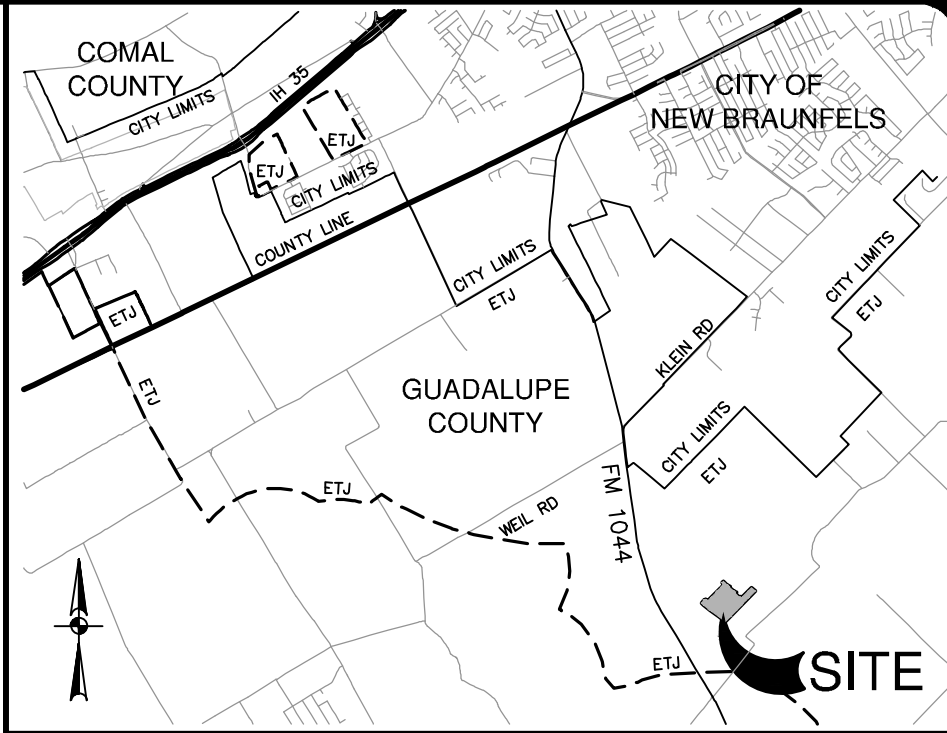
TYPICAL CONDUIT DETAIL (D.R. HORTON)
NOT TO SCALE

NOTE:

IN ADDITION TO ANY CONDUIT REQUIRED FOR CPS, AT&T, AND/OR SPECTRUM CABLE UTILITY CROSSINGS, D.R. HORTON REQUIRES THE FOLLOWING CONDUITS TO BE INSTALLED AT ALL STREET CROSSINGS:

CONDUIT NOTES:

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



LOCATION MAP
NOT-TO-SCALE



UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING UNDERGROUND ELECTRIC	UGE
EXISTING GAS	G
EXISTING SEWER	SS
PROPOSED SEWER	SS
PROPOSED WATER	W
PROPOSED WYE & LATERAL	W
SINGLE WATER SERVICE	W
STREET LIGHTS	SL
PROPOSED STORM DRAIN	SD
EXISTING STORM DRAIN	SD
PROPOSED GAS	G
PROPOSED UNDERGROUND ELECTRIC	UGE

CITY OF NEW BRAUNFELS NOTES

- NO VALVES, HYDRANTS, CLEANOUTS ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
- 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.
- 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") LOOSE. 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 AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF 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.
- THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5- FEET IN DEPTH LOCATED IN PUBLIC RIGHT-OF-WAY OR EASEMENTS. 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.

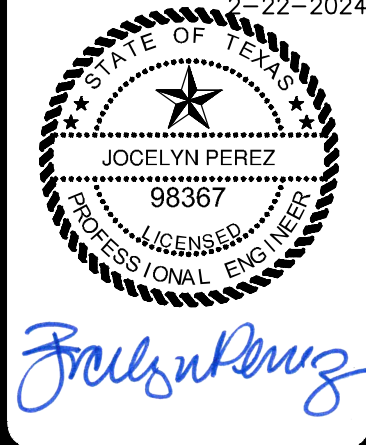
CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

DATE	
NO. REVISION	



PAPE-DAWSON
ENGINEERS

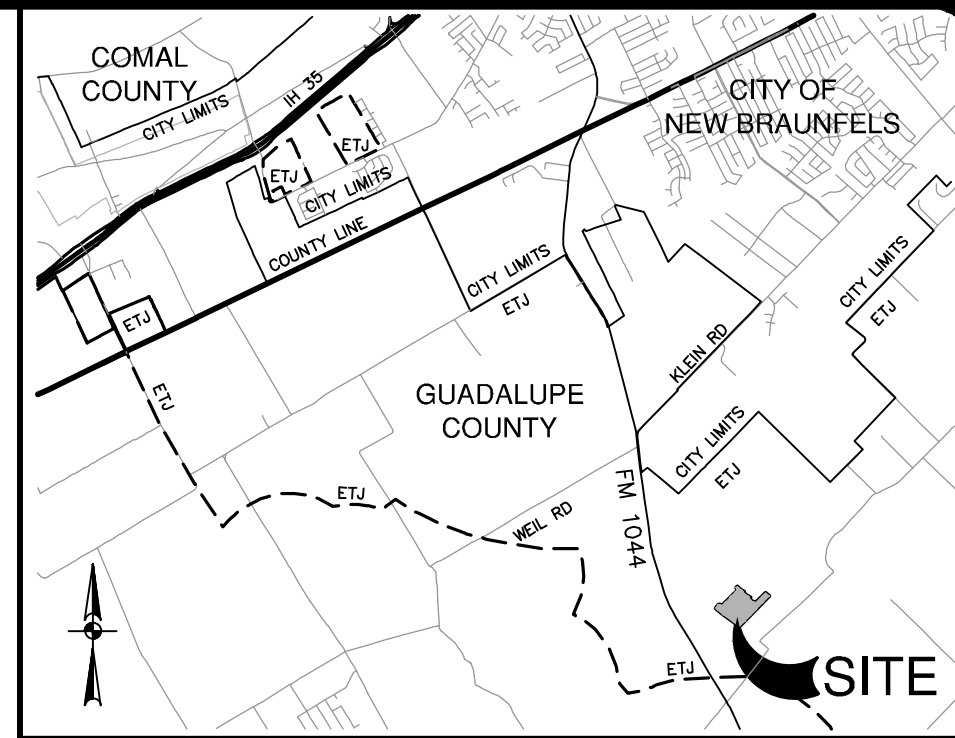
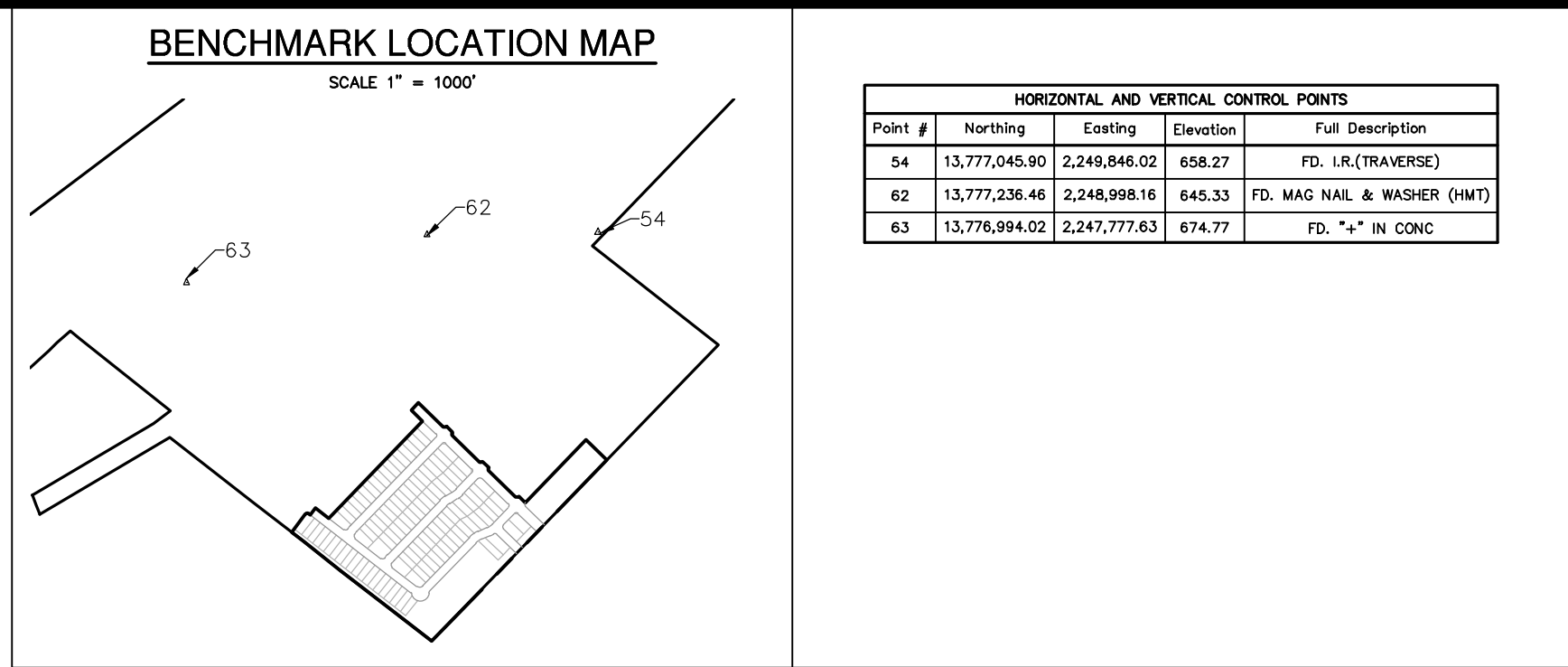
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

OVERALL UTILITY PLAN

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C6.00

FOR PERMIT



1. DRIVEWAYS MAY BE LOCATED ON EITHER SIDE OF THE LOT UNLESS OTHERWISE SHOWN ON THIS PLAN OR STREET PLANS.
2. REFERENCE GRADING NOTES AND GEOTECHNICAL ENGINEERING SPECIFICATIONS PROVIDED BY THE OWNER.
3. LOT GRADING PATTERNS (A, B, OR C) MUST BE FOLLOWED.
4. ALL LOTS SHALL BE GRADED SO THAT NO DRAINAGE SHALL BE ALLOWED TO FLOW ONTO ADJACENT SIDE LOTS.
5. BUILDER TO VERIFY INVERTS OF ALL SANITARY SEWER LATERALS WHEN ESTABLISHING THE APPROXIMATE FINISHED FLOOR ELEVATIONS IN ORDER TO ENSURE ADEQUATE DRAINAGE OF HOUSE LATERALS.
6. EXISTING CONTOURS SHOWN ONSITE ARE FROM LIDAR TOPOGRAPHY & FIELD SURVEY.
7. GRADES, SLOPES, AND ELEVATIONS SHOWN ARE MASS GRADES ONLY. BUILDER SHALL BE RESPONSIBLE FOR CONSTRUCTION OF SIDE YARD SWALES AND DETAILED GRADING AROUND EACH INDIVIDUAL HOUSE ENSURING POSITIVE DRAINAGE IN EACH CASE.



PROJECT LIMITS

100 YR FLOODPLAIN

100 YR ULTIMATE DEVELOPMENT FLOODPLAIN

EXISTING CONTOUR

PROPOSED CONTOUR

970

970

FLOW ARROW (EXISTING)

FLOW ARROW (PROPOSED)

TREES TO REMAIN

RETAINING WALL

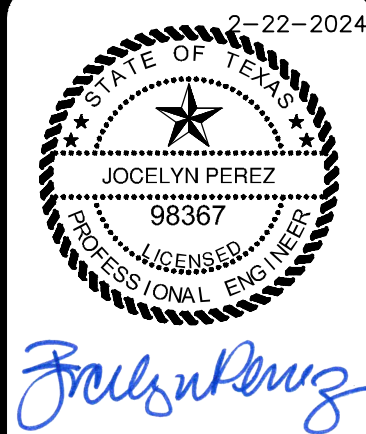
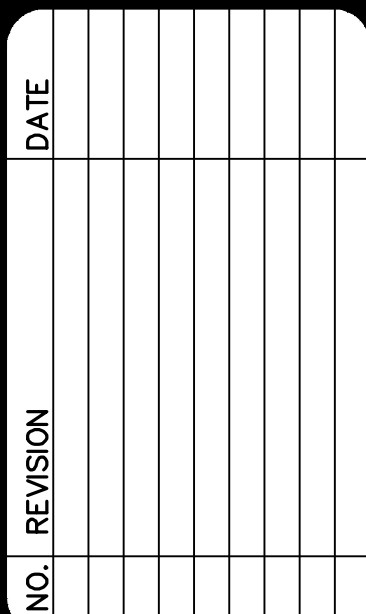
MINIMUM FINISHED FLOOR ELEVATIONS
(SEE FINISHED FLOOR ELEVATION NOTE)

1234.56

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).

3. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
4. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
5. 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.
6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTION THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS AND GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
7. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS, AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
9. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC., AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPIINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TYPES/SWMP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
11. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCE, 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 SWMP PLANS & TPDES BOOK).
12. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
13. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
14. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
16. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, OR LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN LOCATED. IF ANY UTILITY CONFLICTS ARE DISCOVERED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
17. 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 RECOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM EXISTING UTILITIES. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
18. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOOTPRINTS. THE CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.

1. FINISHED FLOORS ELEVATIONS ARE ELEVATED 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND AS PRESCRIBED IN THE BUILDING REGULATIONS AND THE CITY OF NEW BRAUNFELS CODE OF ORDINANCES OR 12 INCHES ABOVE THE 100-YEAR WATER FLOW ELEVATION, WHICHEVER OF THE TWO IS GREATER. THE FUTURE FLOOR ELEVATIONS FOR WINDING CREEK RANCH UNIT 7 ARE CONTROLLED BY THE 10 INCHES ABOVE FINISHED GRADE REQUIREMENT.

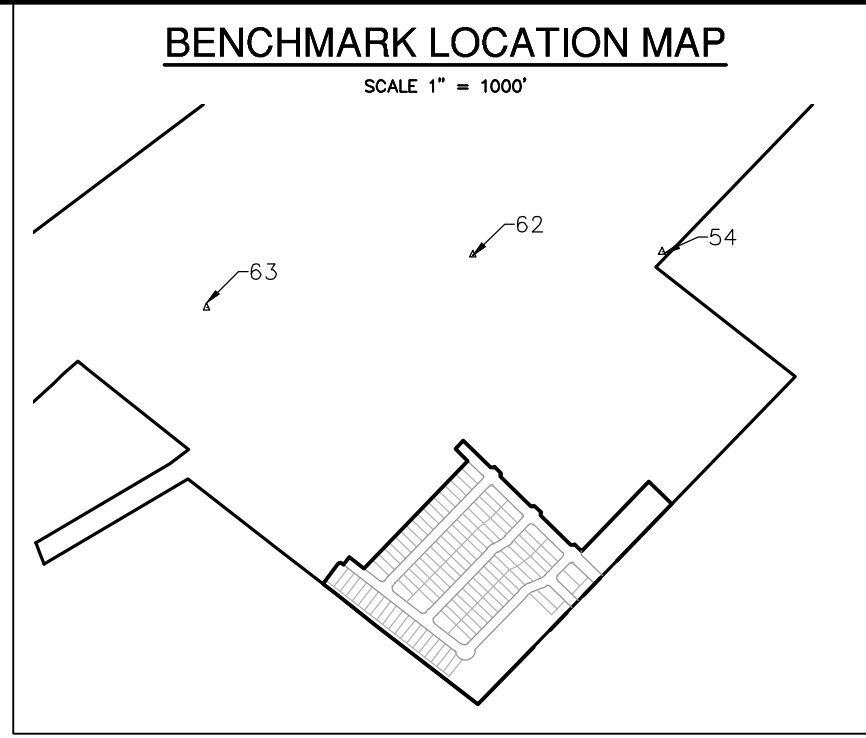
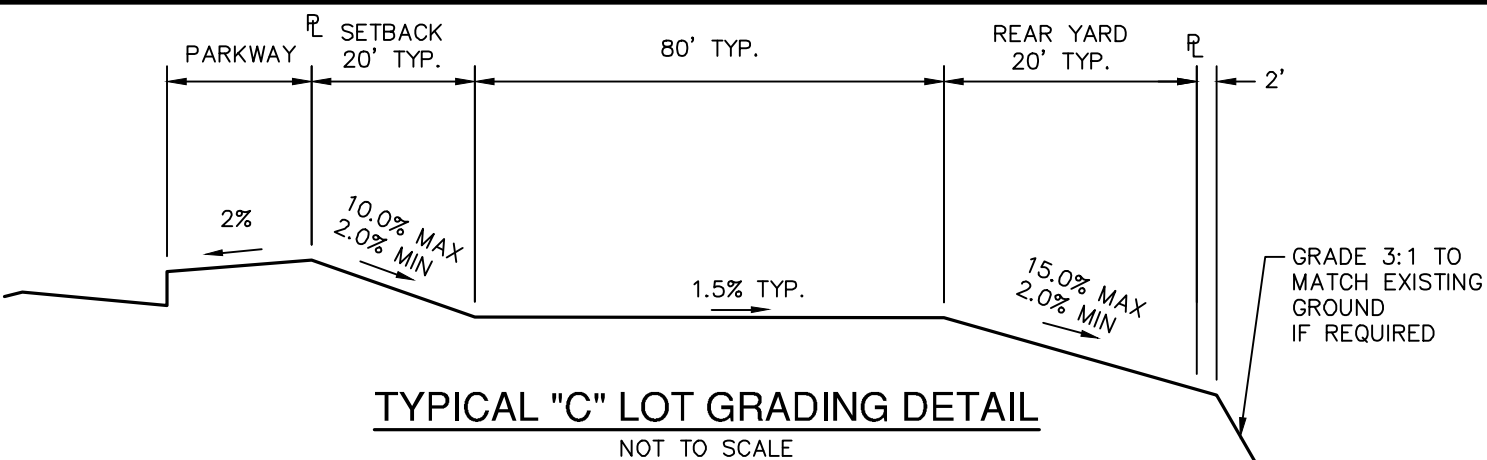
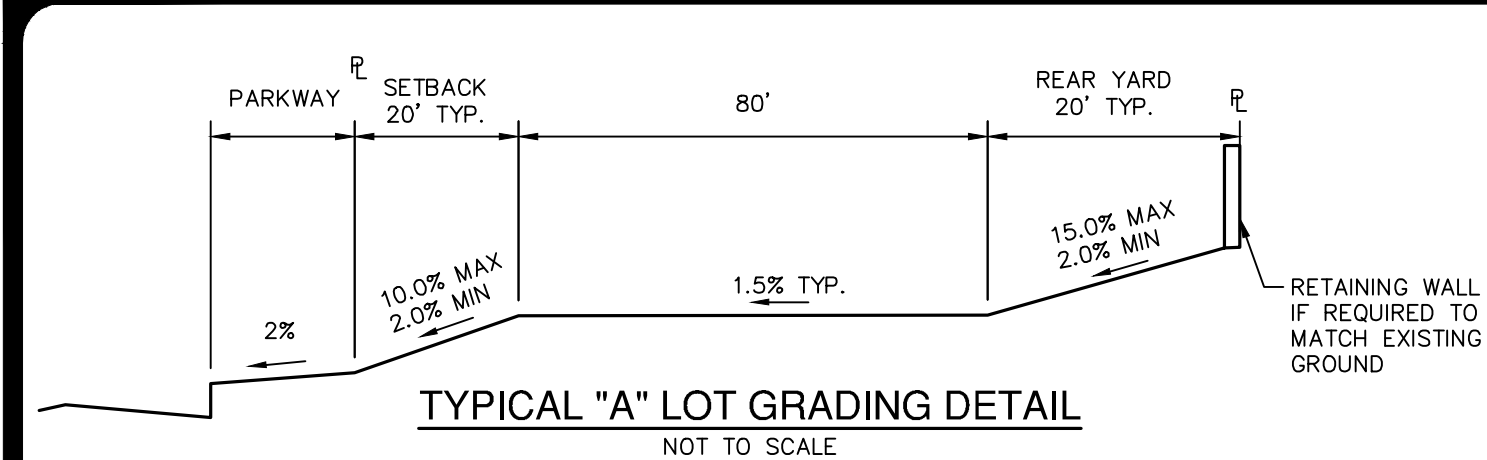


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ENGINEERS**

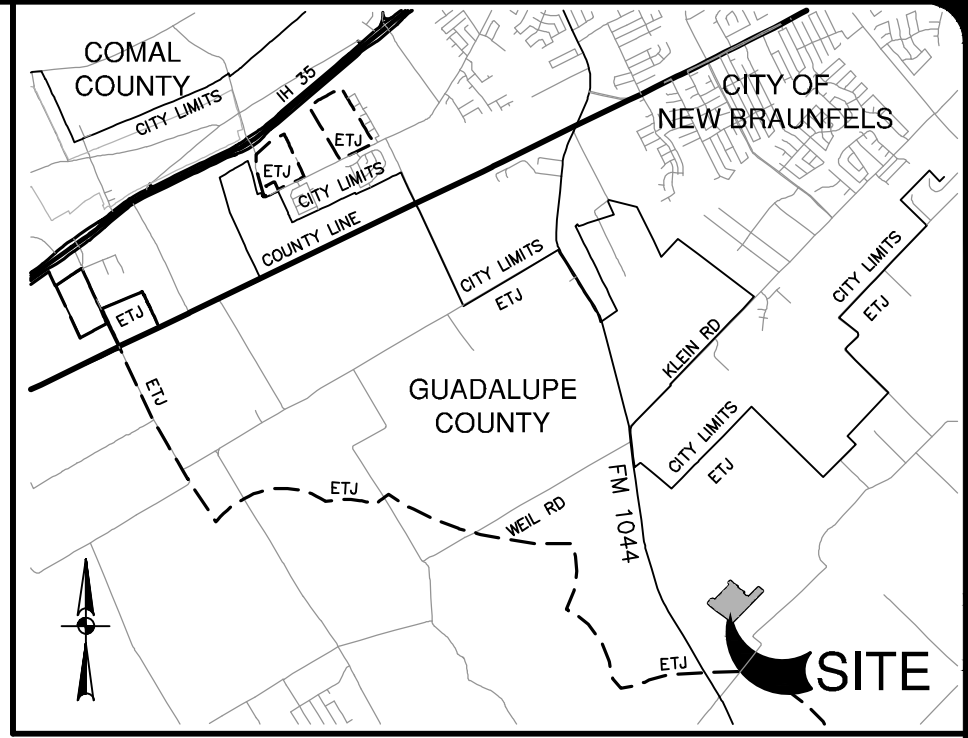
WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
OVERALL GRADING PLAN

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED **HF** DRAWN JM
SHEET C7.00

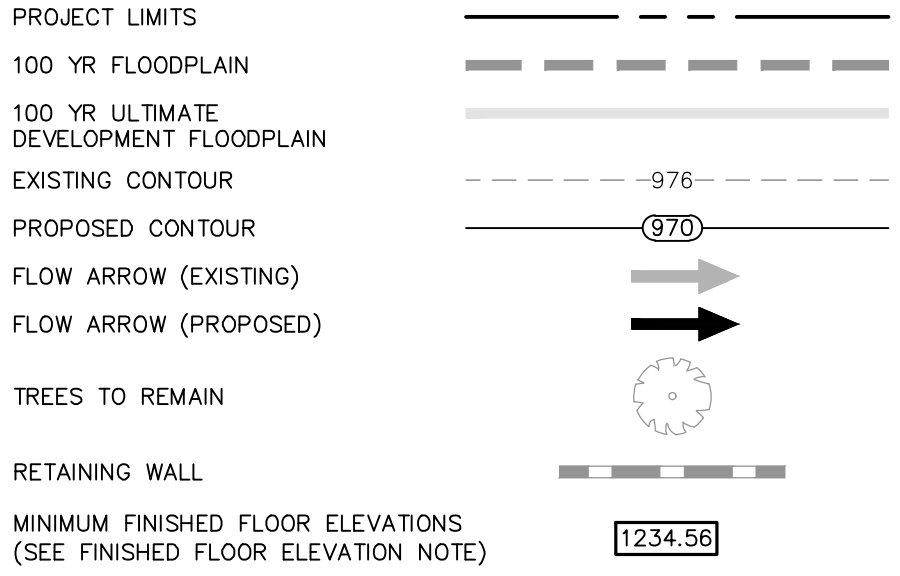
FOR PERMIT



HORIZONTAL AND VERTICAL CONTROL POINTS			
Point #	Northing	Easting	Full Description
54	13,777,045.80	2,249,846.02	658.27 FD. 18 (TRANSVERSE)
62	13,777,236.46	2,248,998.16	645.33 FD. MAG NAIL & WISHER (HWT)
63	13,776,994.02	2,247,777.63	674.77 FD. "X" IN CONC



GRADING LEGEND



GRADING NOTES:

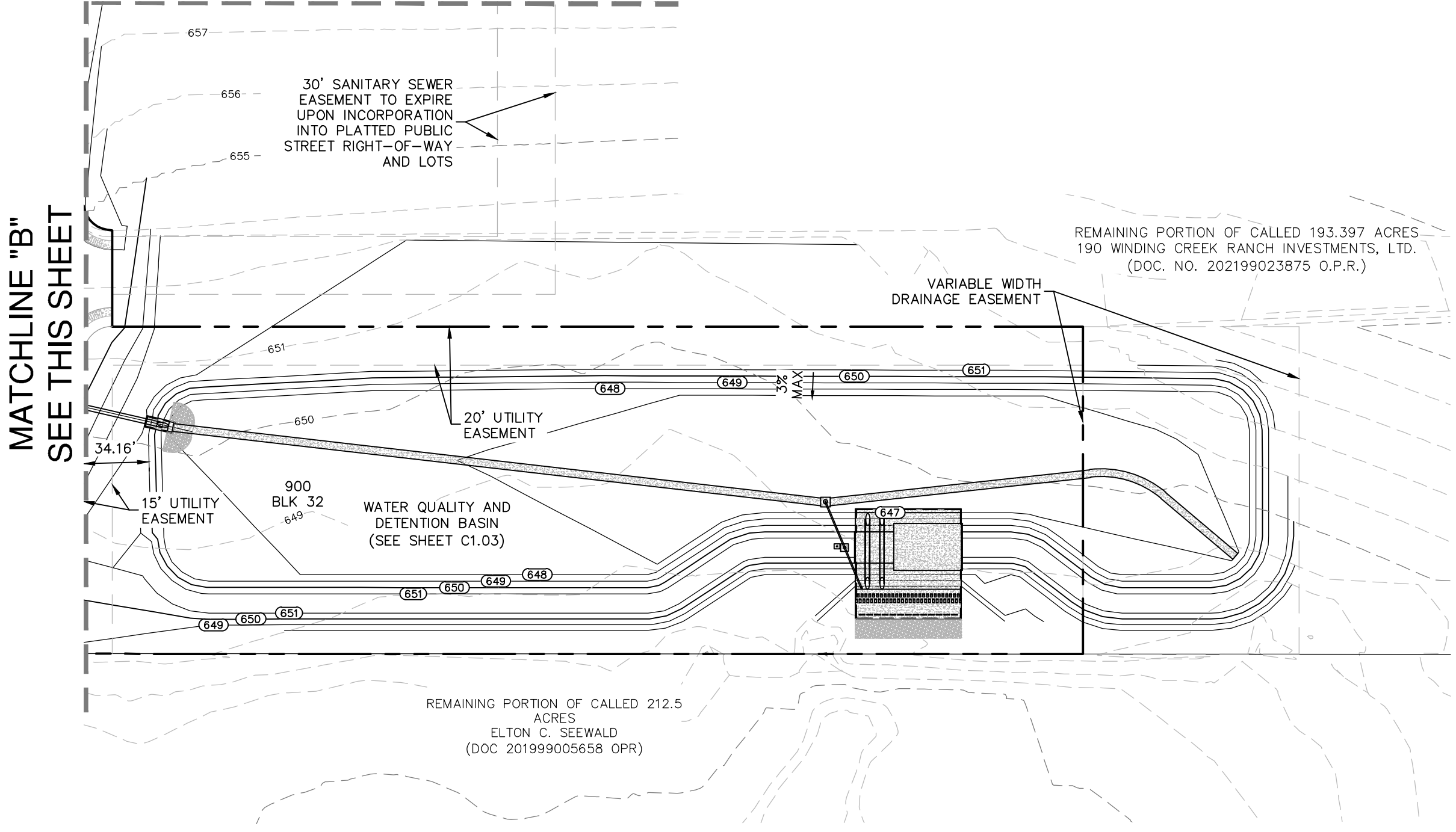
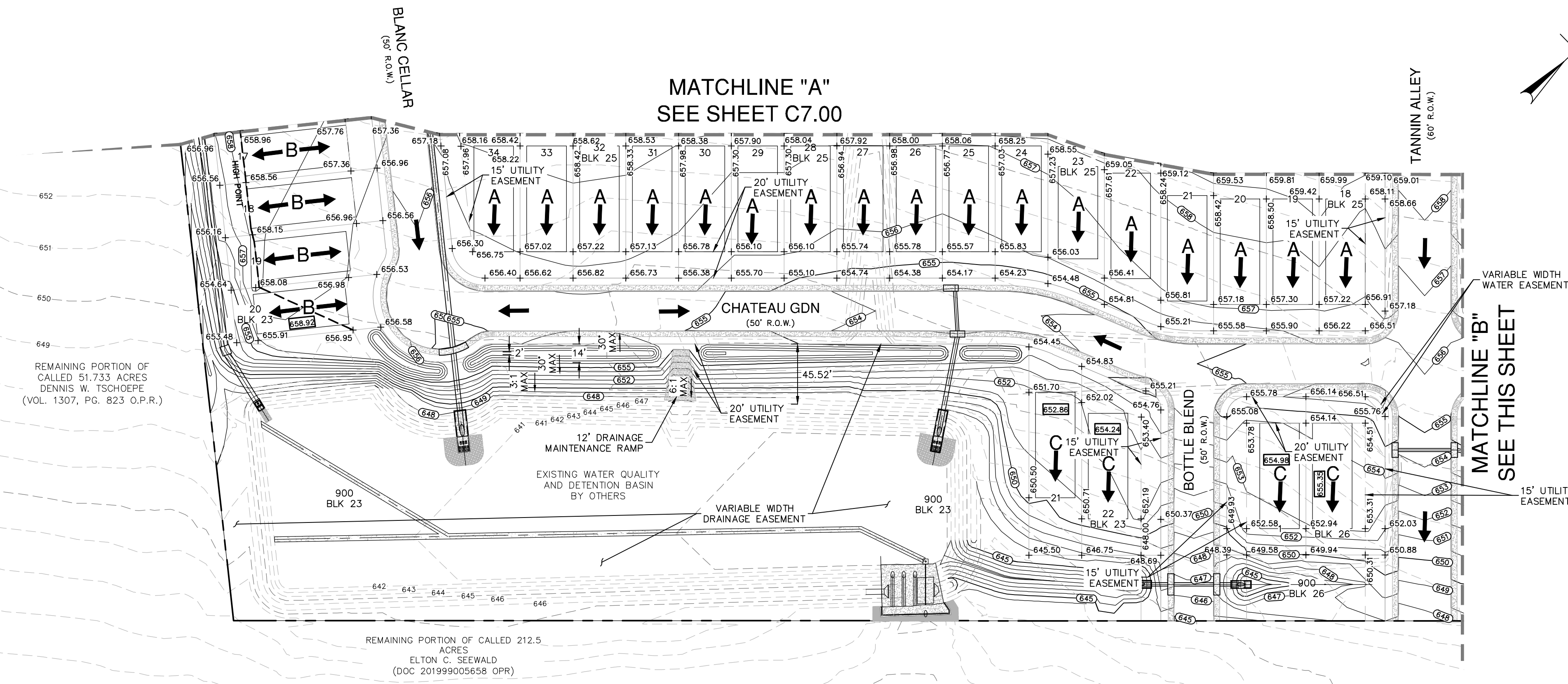
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, 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 DRAINAGEWAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S 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.
20. STRIPPING OF VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE PERIOD OF TIME PER THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC.12.2(N).

FINISHED FLOOR NOTE:

1. FINISHED FLOORS ELEVATIONS ARE ELEVATED 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND AS PRESCRIBED IN THE BUILDING REGULATIONS AND THE CITY OF NEW BRAUNFELS CODE OF ORDINANCES OR 12 INCHES ABOVE THE 100-YEAR WATER FLOW ELEVATION, WHICHEVER OF THE TWO IS GREATER. THE FUTURE FLOOR ELEVATIONS FOR WINDING CREEK RANCH UNIT 7 ARE CONTROLLED BY THE 10 INCHES ABOVE FINISHED GRADE REQUIREMENT.

RESIDENTIAL GRADING NOTES:

1. DRIVEWAYS MAY BE LOCATED ON EITHER SIDE OF THE LOT UNLESS OTHERWISE SHOWN ON THIS PLAN OR STREET PLANS.
2. REFERENCE GRADING NOTES AND GEOTECHNICAL ENGINEERING SPECIFICATIONS PROVIDED BY THE OWNER.
3. LOT GRADING PATTERNS (A, B, OR C) MUST BE FOLLOWED.
4. ALL LOTS SHALL BE GRADED SO THAT NO DRAINAGE SHALL BE ALLOWED TO FLOW ONTO ADJACENT SIDE LOTS.
5. BUILDER TO VERIFY INVERTS OF ALL SANITARY SEWER LATERALS WHEN ESTABLISHING THE APPROPRIATE FINISHED FLOOR ELEVATIONS IN ORDER TO ENSURE ADEQUATE DRAINAGE OF HOUSE LATERALS.
6. EXISTING CONTOURS SHOWN ONSITE ARE FROM LIDAR TOPOGRAPHY & FIELD SURVEY.
7. GRADES, SLOPES, AND ELEVATIONS SHOWN ARE MASS GRADES ONLY. BUILDER SHALL BE RESPONSIBLE FOR CONSTRUCTION OF SIDE YARD SWALES AND DETAILED GRADING AROUND EACH INDIVIDUAL HOUSE ENSURING POSITIVE DRAINAGE IN EACH CASE.



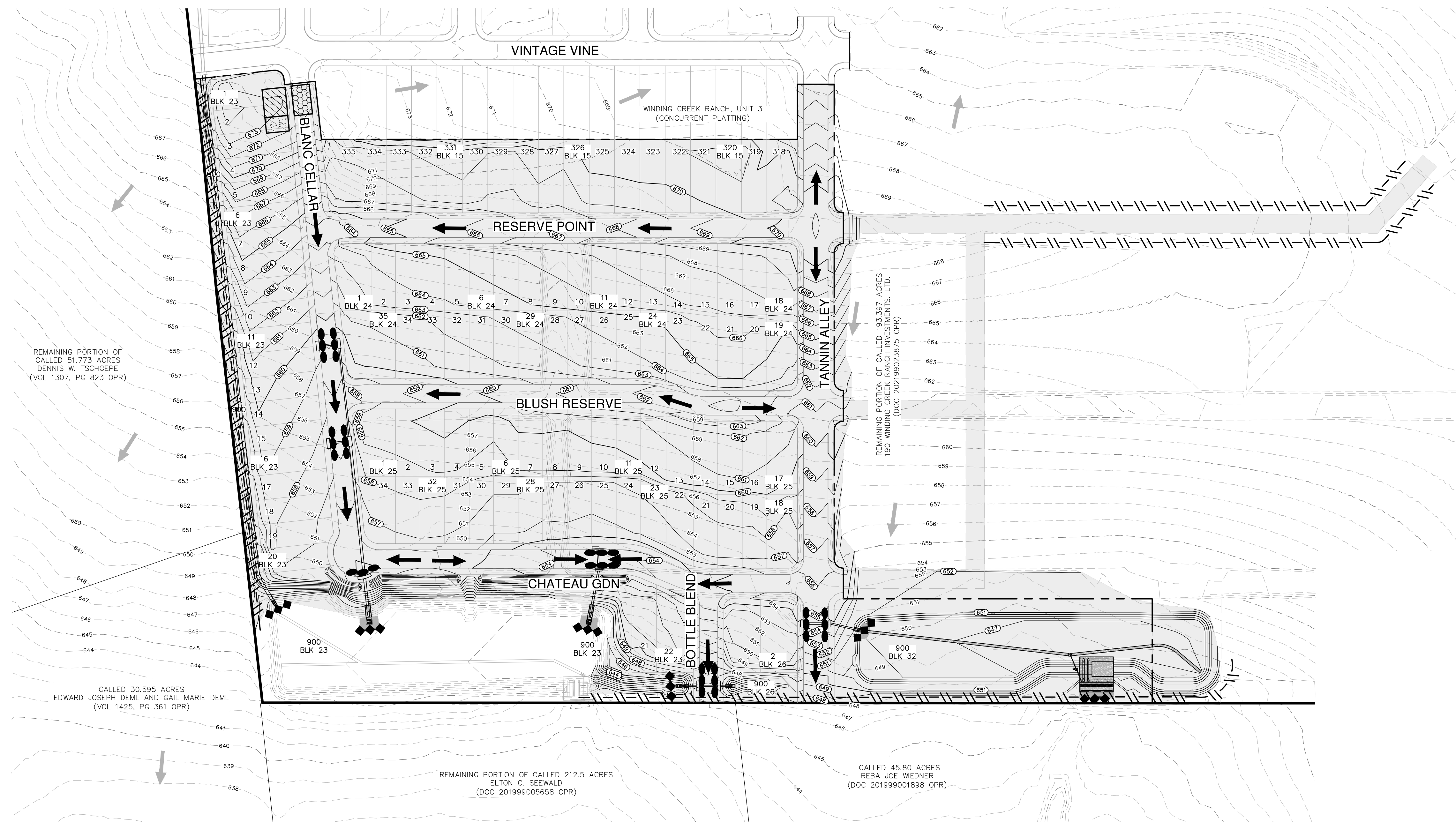
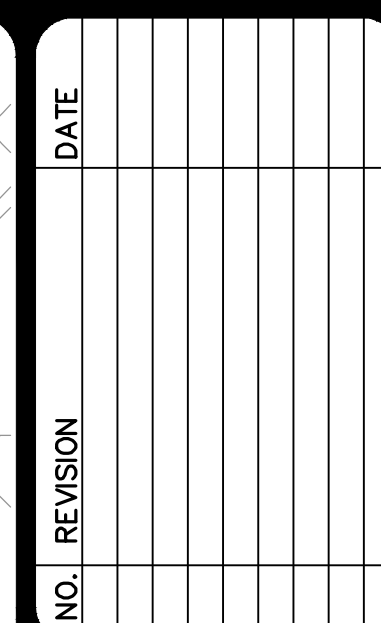
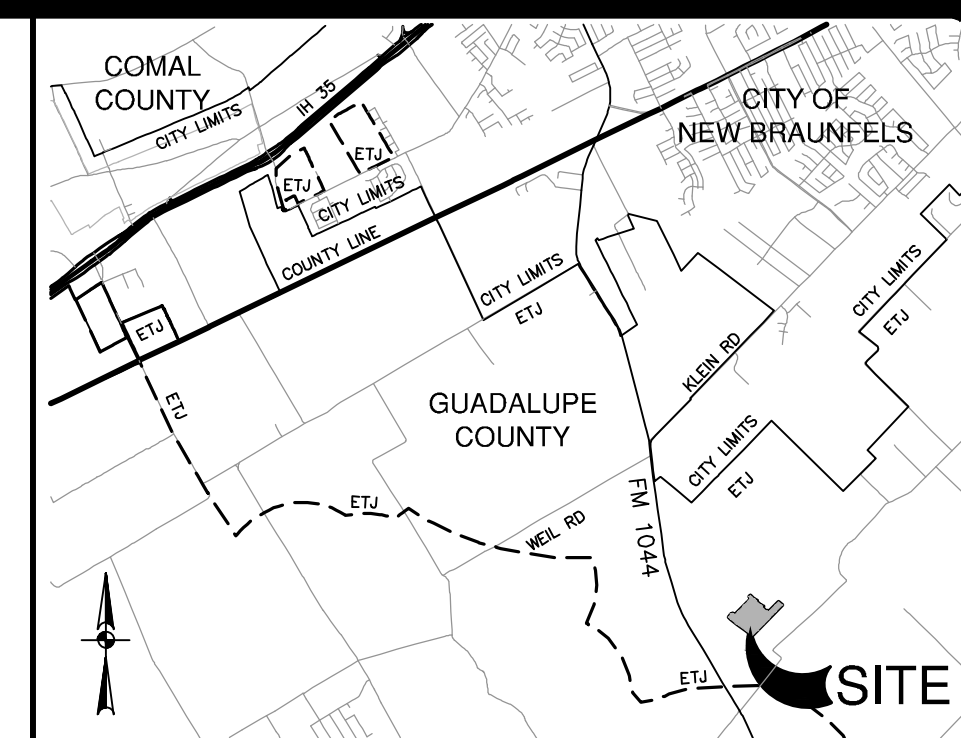
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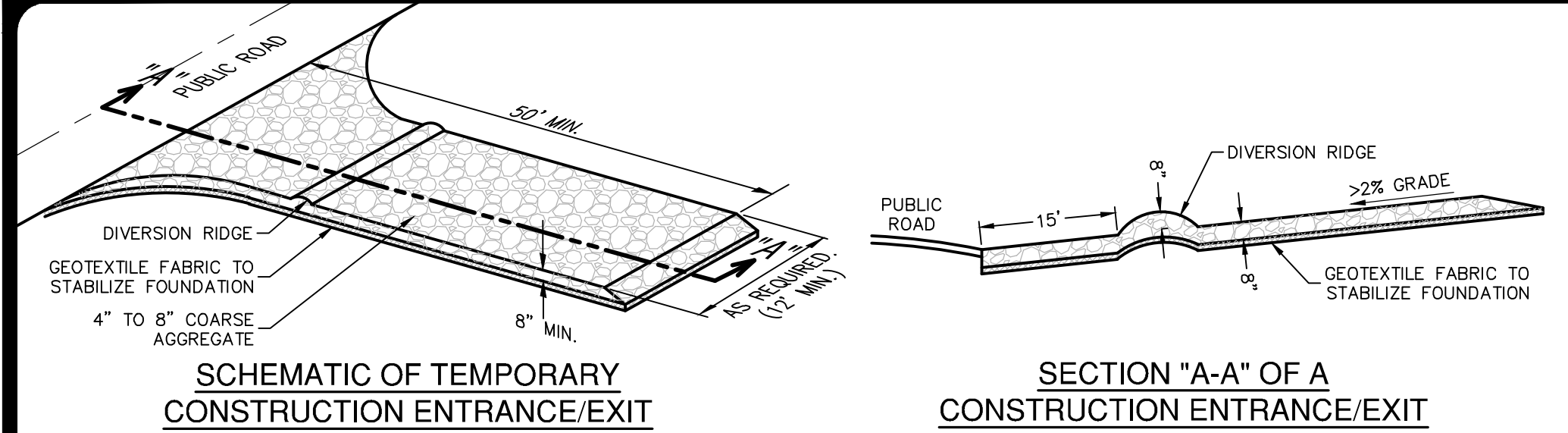


PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
OVERALL GRADING PLAN

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED	HF
DRAWN	JM
SHEET	C7.01

[illegible]

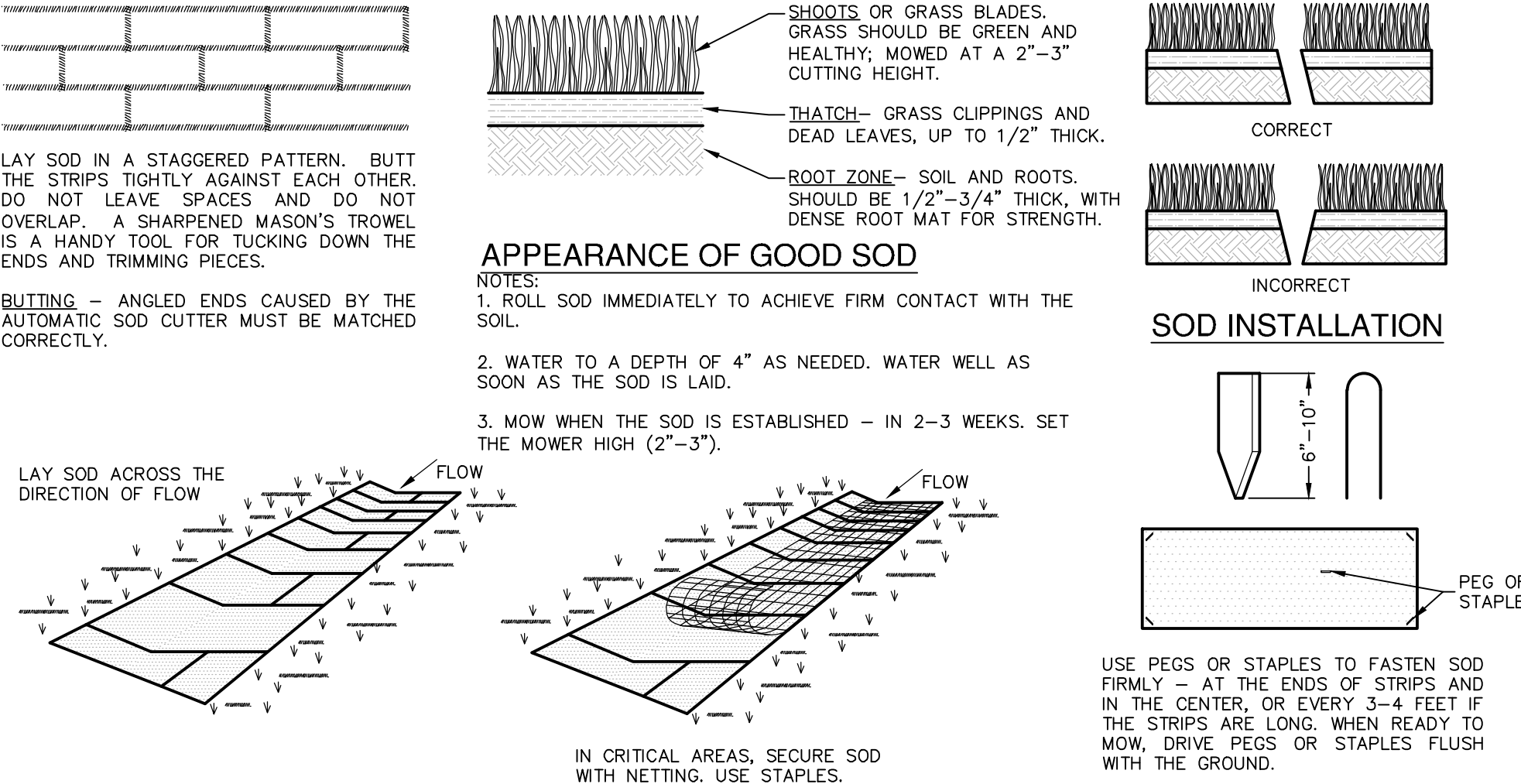


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH 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.
- 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.

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT--TO--SCALE



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

SITE PREPARATION

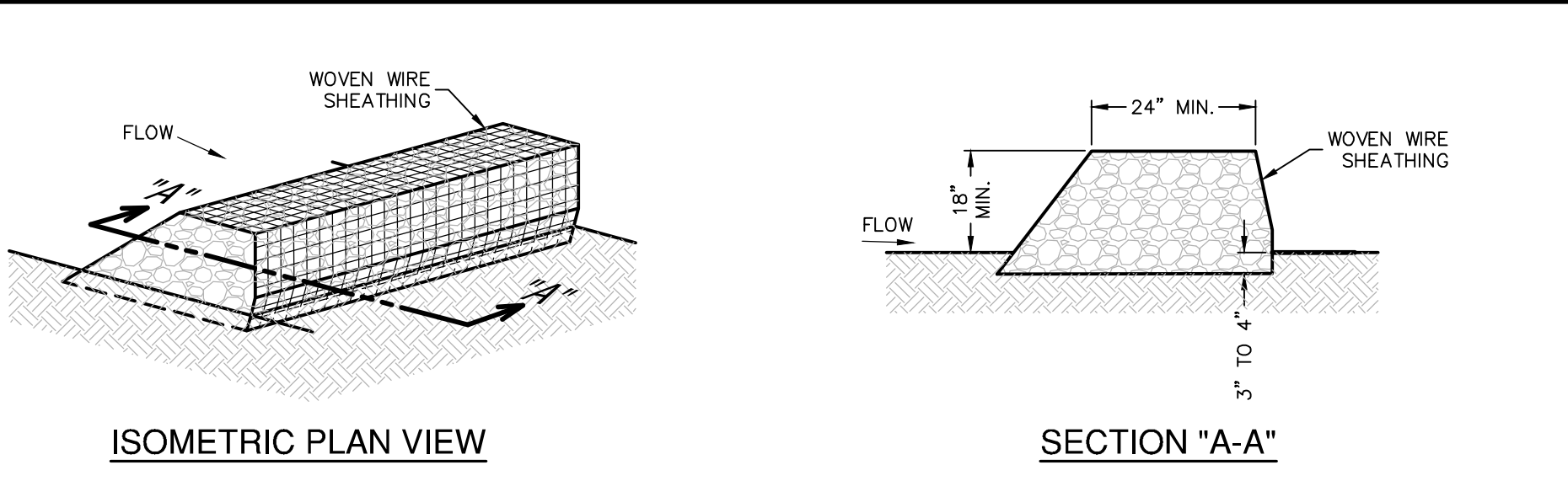
1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.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

INSTALLATION IN CHANNELS

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

SOD INSTALLATION DETAIL

NOT--TO--SCALE



ROCK BERMS

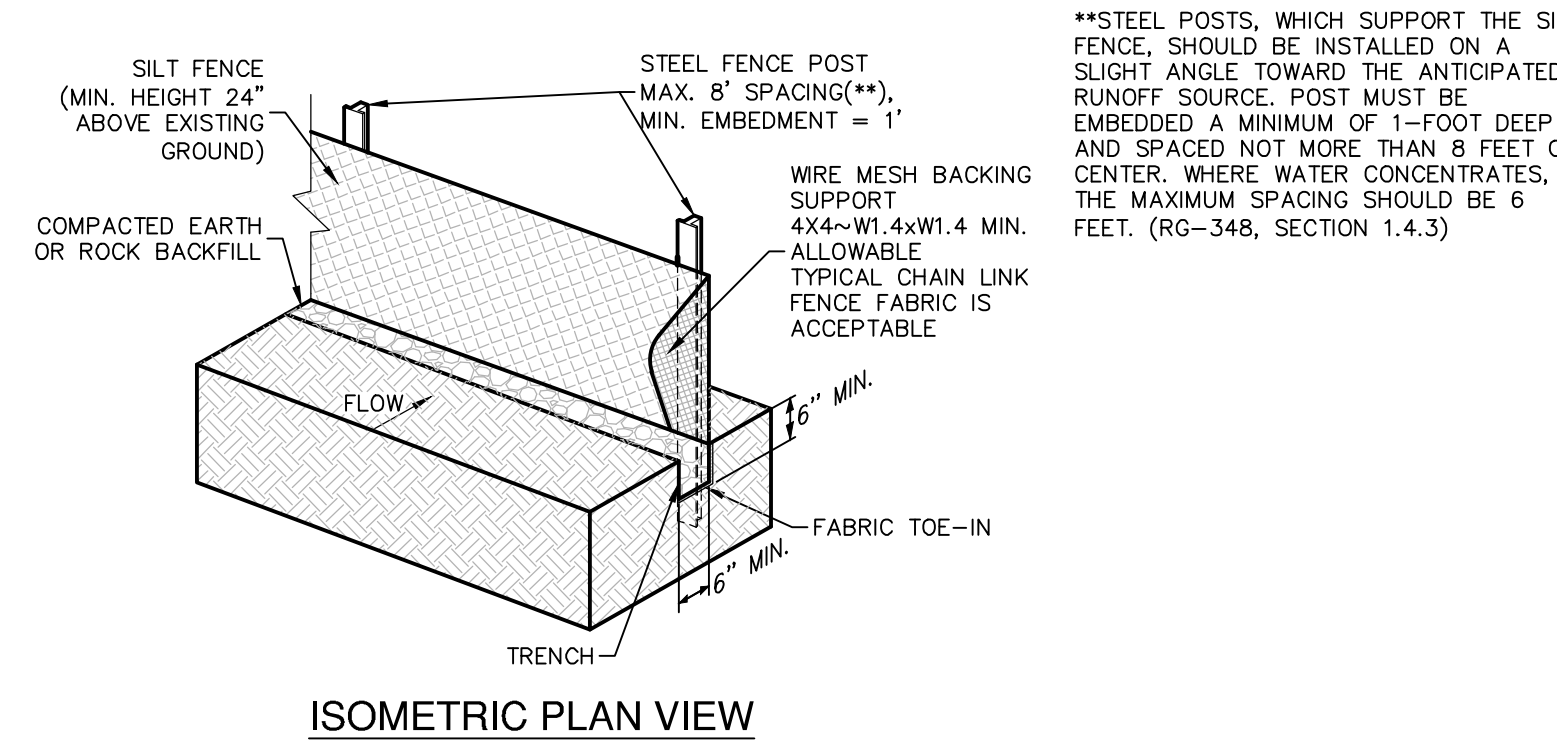
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT--LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE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

INSPECTION AND MAINTENANCE GUIDELINES

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

ROCK BERM DETAIL

NOT--TO--SCALE



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

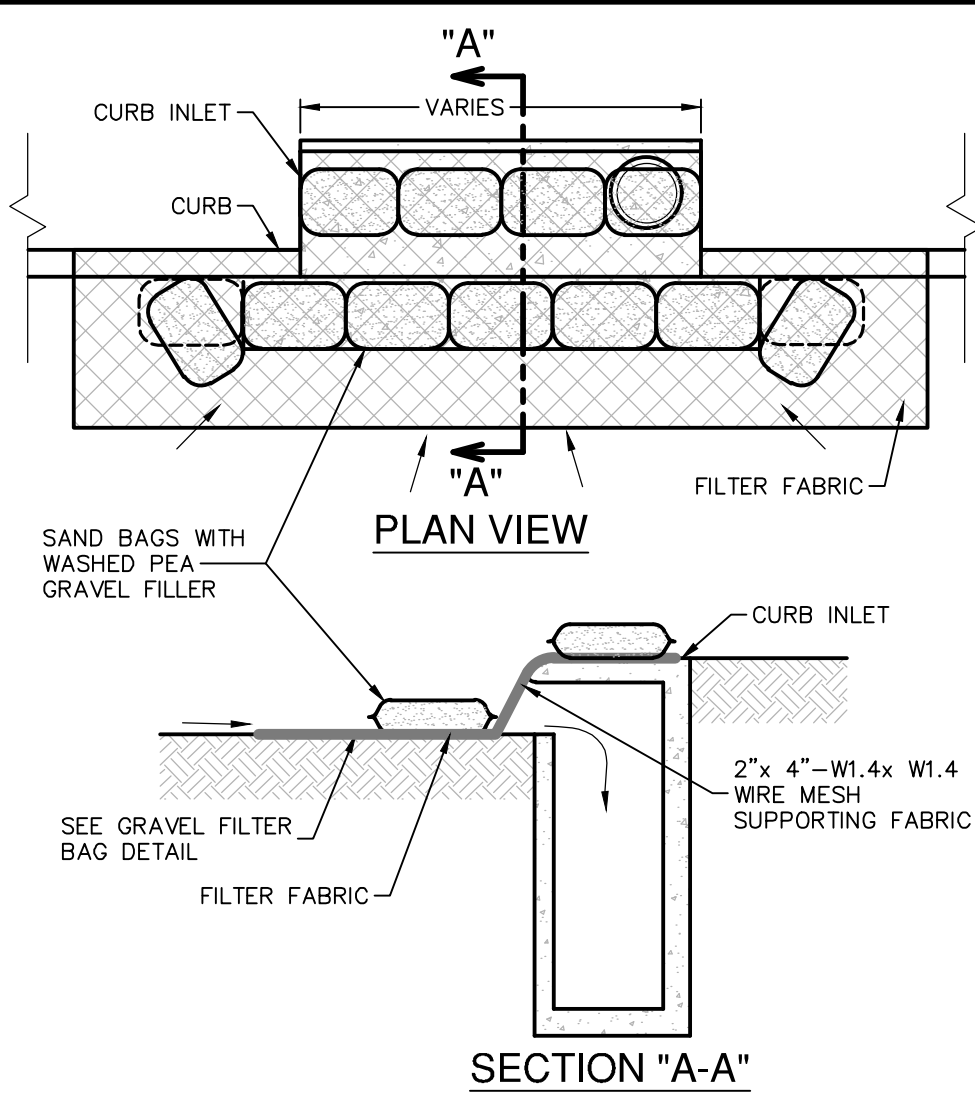
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE 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 BRINELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

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

SILT FENCE DETAIL

NOT--TO--SCALE

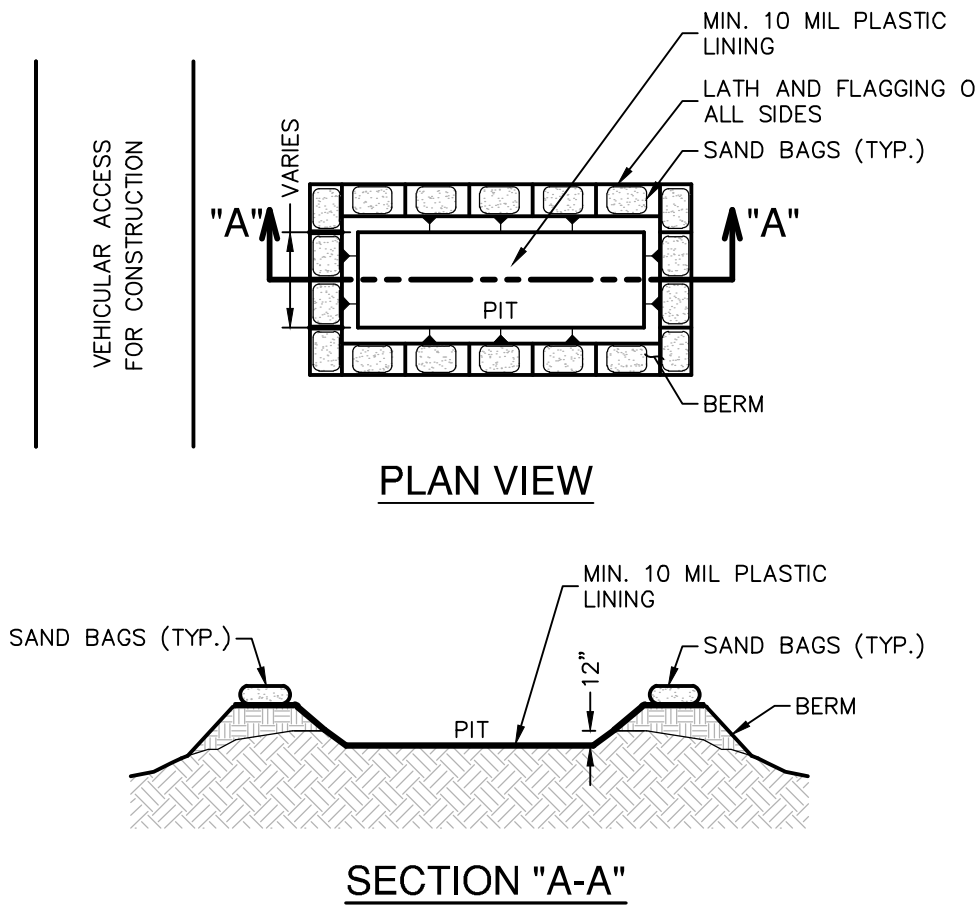


GENERAL NOTES

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

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT--TO--SCALE



GENERAL NOTES

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

MATERIALS

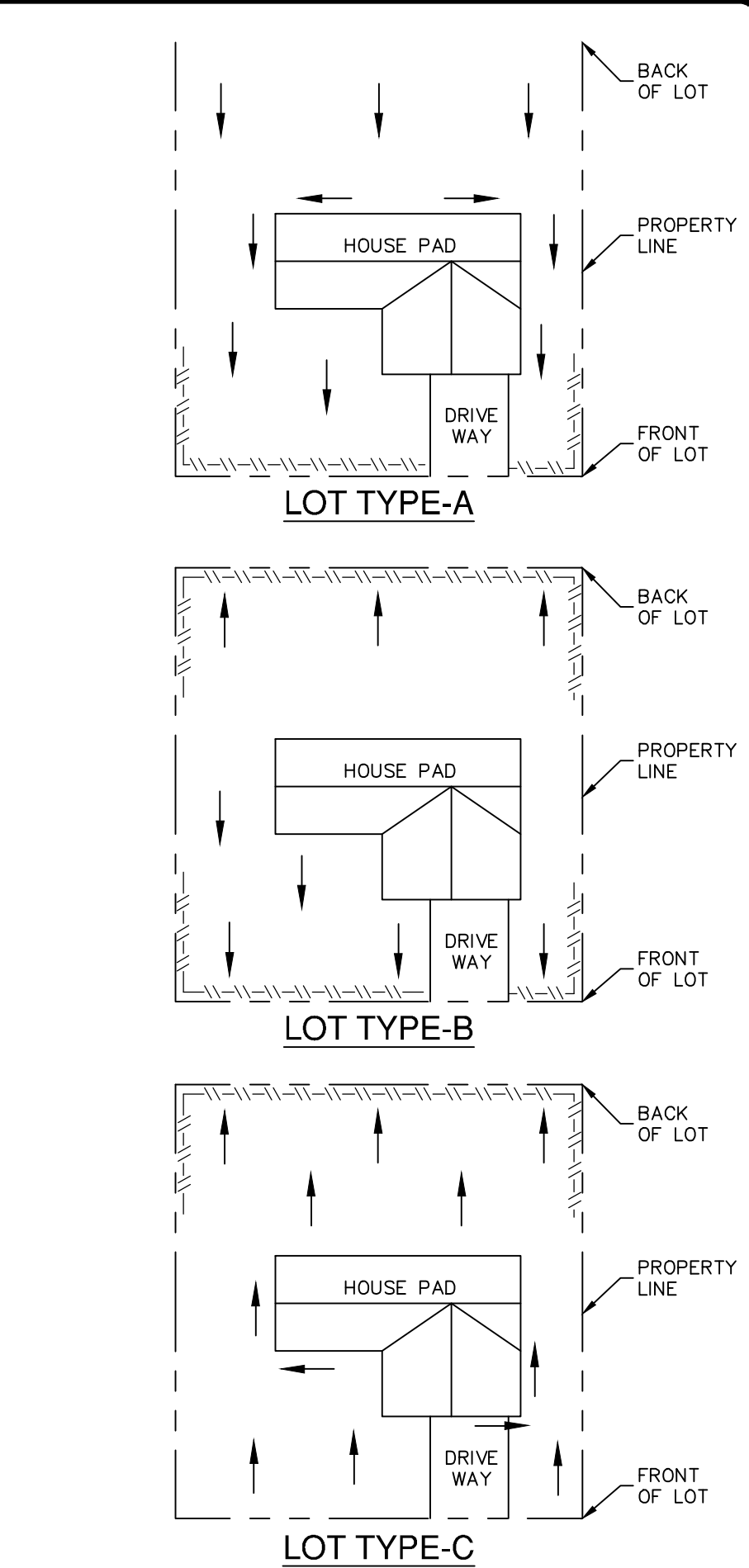
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

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

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT--TO--SCALE



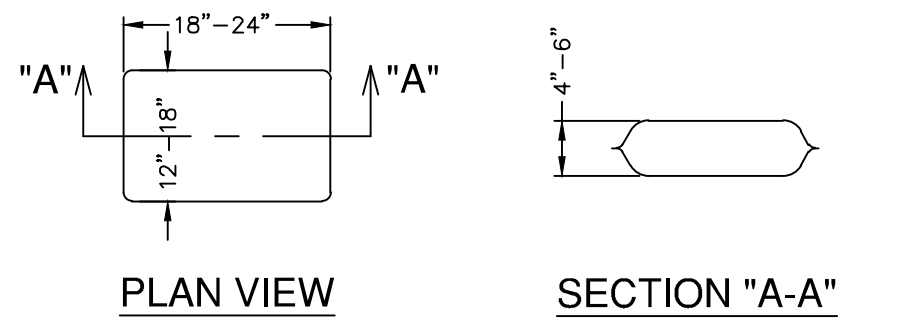
NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNDRAIN SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

LEGEND

--- SILT FENCE DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

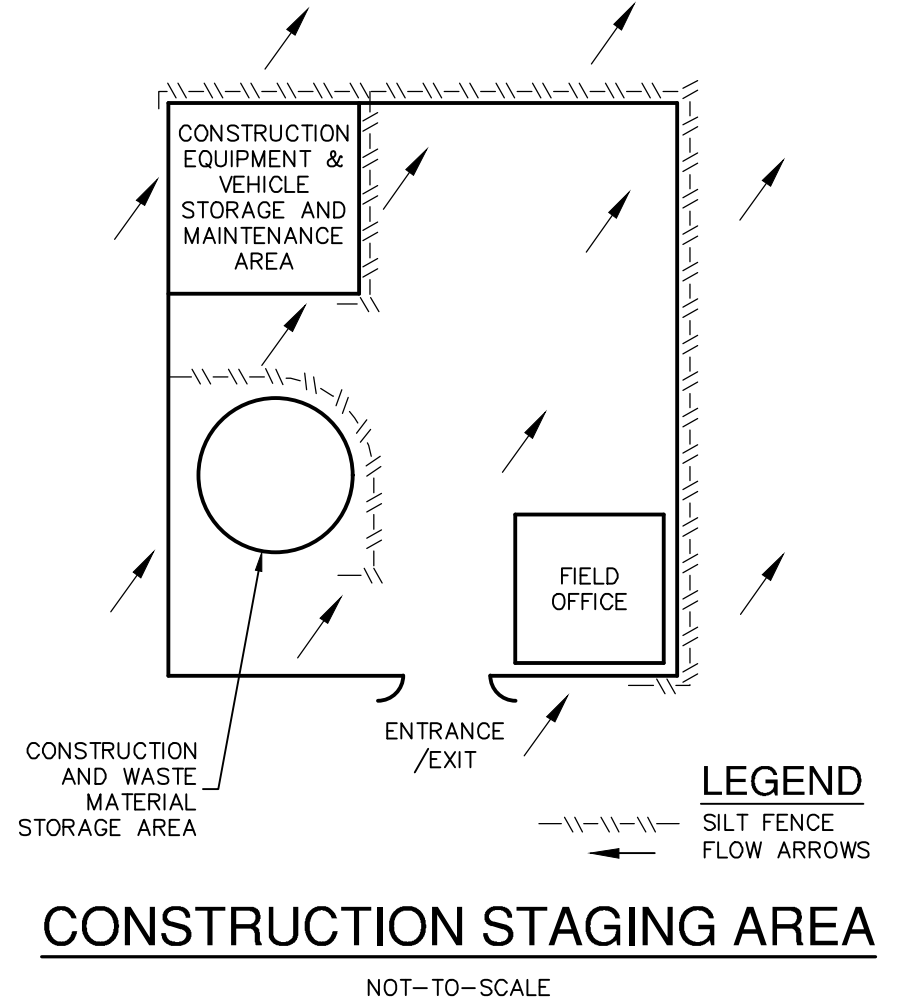
NOT--TO--SCALE



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

GRAVEL FILTER BAG DETAIL

NOT--TO--SCALE

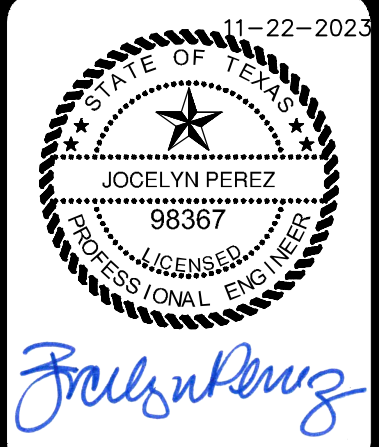


CONSTRUCTION STAGING AREA

NOT--TO--SCALE

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

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS

1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008890

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DRAWN	CL
CHECKED	HF
SHEET	C8.01

FOR PERMIT