

VERAMENDI - CONFLUENCE DR PHASE 1

NEW BRAUNFELS, TEXAS

CIVIL CONSTRUCTION PLANS

NBU NOTES:

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

GPS POINTS ARE REQUIRED FROM THE DEVELOPER'S CONTRACTOR OR ENGINEER. A MINIMUM OF THREE (3) COORDINATE POINTS FOR GEOREFERENCING ARE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE AND ELECTRIC GPS POINTS SHALL BE MEASURED TO MAP GRADE. PLEASE REFERENCE NBU'S WATER CONNECTION POLICY FOR ADDITIONAL CAD DELIVERABLE REQUIREMENTS.

WATER:

- VERTICAL BENDS AND EDGES OF STEEL CASINGS (IF APPLICABLE) PRIOR TO BACKFILL.
- HORIZONTAL BENDS PRIOR TO BACKFILL.
- TEES PRIOR TO BACKFILL.
- FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL.
- FIRE HYDRANTS (TOP FLANGE).
- VALVES.
- METERS (TOP CENTER OF BOX).
- BLOW OFF ASSEMBLIES.
- CORNER SLAB OF ALL WATER TANKS AND THE ISOLATION GATE VALVE ON THE WATER TANK.

REQUIRED MEASUREMENTS FOR THE WASTEWATER SYSTEM INCLUDE:

- MANHOLES.
- CLEANOUTS.
- CORNER SLAB OF ALL LIFT STATIONS.

REQUIRED MEASUREMENTS FOR THE ELECTRIC SYSTEM:

- POLES.
- TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK).
- PULL BOXES.
- STREET LIGHTS.

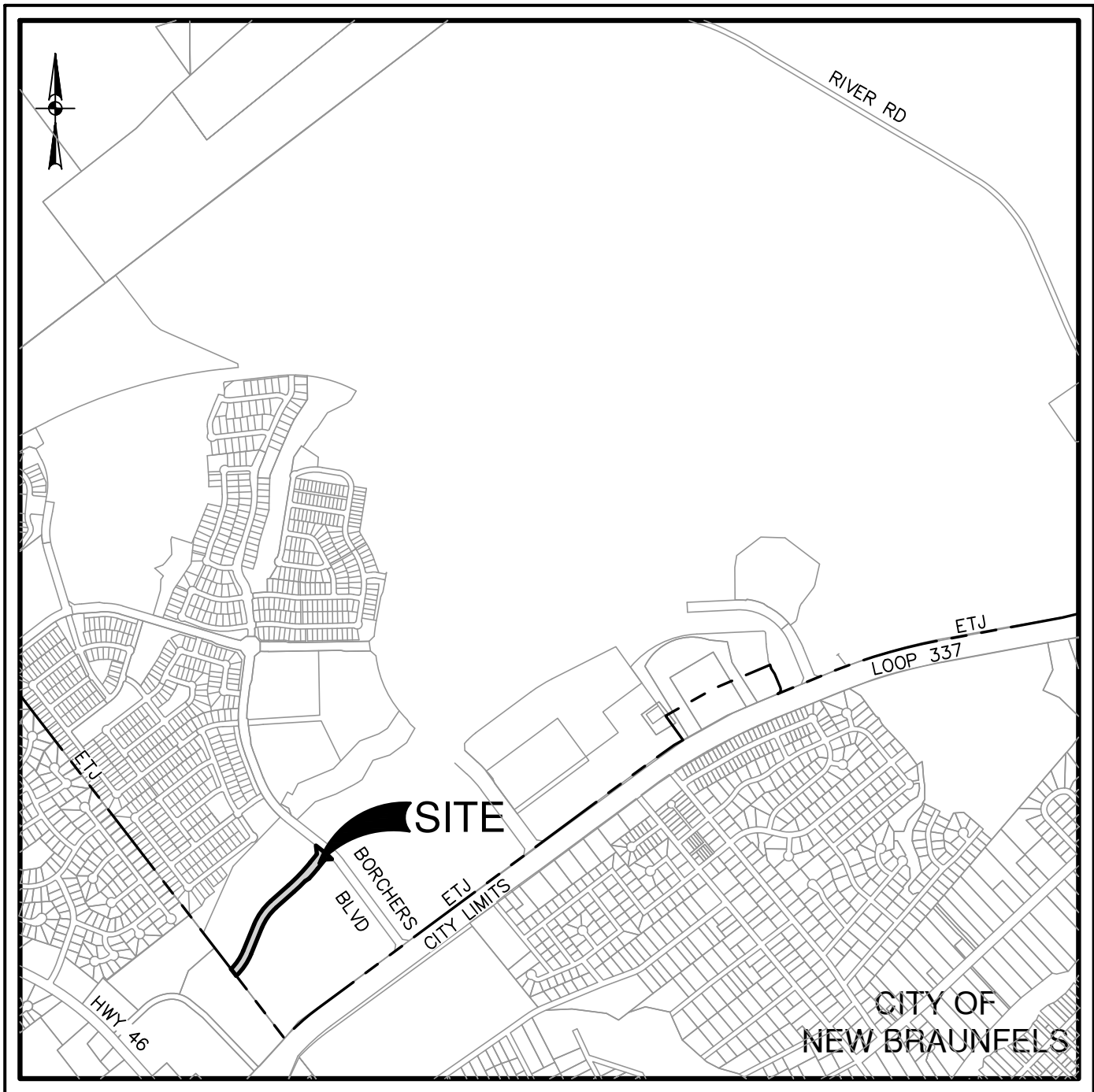
COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

NOTES:

- TYPE 3 DEVELOPMENT.
- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER RECORD.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- THIS PROJECT IS WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
- NO PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48091C0435G EFFECTIVE DATE 10/29/2021.
- 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
 - NEW BRAUNFELS UTILITY APPROVAL
 - TCEQ WATER POLLUTION ABATEMENT PLAN APPROVAL

LEGAL DESCRIPTION:
BEING 3.219 ACRES OF LAND, OUT OF THE 48.237 ACRE TRACT DESCRIBED IN DOCUMENT NO. 20160606009473, IN THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS, IN THE JAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

NBU NO. W-251487



LOCATION MAP

NOT-TO-SCALE

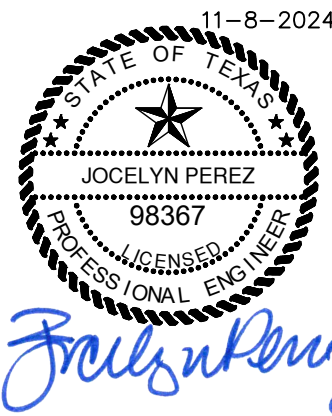
PREPARED FOR:

VERAMENDI PE - CAIRNS, LLC
2168 OAK RUN PKWY, SUITE 101
NEW BRAUNFELS, TEXAS

JULY 2024

PAPE-DAWSON
ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



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SHEET C0.00

FOR PERMIT

Date: Nov 08, 2024, 10:32am User: JD_cercher
File: P:\300\01\51\Design\Chal\24-30001-51.dwg

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CONSTRUCTION PLAN NOTES

Revised 03/2020

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

The most current editions of the City of San Antonio Standard Specifications and the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges shall be followed for all construction except as amended by the City of New Braunfels Standard Details.

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.

Prior to the start of construction, the contractor shall contact the City of New Braunfels to schedule a preconstruction meeting.

- For Public Infrastructure Permit or Grading Permit Projects:
- For inspections, you must call before 12:00 p.m., 48 hours prior to your inspection request.
 - Each inspection will be allotted 1 hour unless you request for more time.
 - Once your request has been accepted, you will receive a call from the City of New Braunfels Inspector.

- For Commercial Permit (CP) Projects:
- All inspections are to be called in at 830-221-4068 or,
 - Faxed in at 830-608-2117 or,
 - E-mailed at inspections@nbtexas.org.

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.

CHANNEL MAINTENANCE PLAN

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 4 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 shall 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.

DRAINAGE MAINTENANCE PLAN

The storm drain pipe shall be checked for accumulation of silt, debris or other obstructions 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.

Groundwater

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.

Record Drawings

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.

Construction Note

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 Note

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

Finished Floor Elevations

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.

Soils Testing

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.

Roadway

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 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. 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 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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES

- A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
- IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
- NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

8. LITTER, CONSTRUCTION DEBRIS, AND PREVIOUSLY IDENTIFIED UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:

- THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
- THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
- THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

- ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S),

INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

- ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
- ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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.

Item 340

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 TxDOT test method TEX-227-F. Place the mixture when the roadway surface 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.

Utility Trench Compaction (added to the construction plans on All Utility Plan Sheets).

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.

Curb Cut Due to Construction of New Right-Of-Way Construction

(Indicate the 2 Options on the construction plans).

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

Construction Stabilized Entrance

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.

PROPOSED CONSTRUCTION SEQUENCE

- INSTALL TEMPORARY STORMWATER EROSION CONTROL MEASURES IN AFFECTED CONSTRUCTION AREAS AND STABILIZED CONSTRUCTION ENTRANCES/EXITS.
- INSTALL TREE PRESERVATION MEASURES, IF REQUIRED.
- EXCAVATE STREETS.
- CONSTRUCT DRAINAGE.
- CONSTRUCT WATER SYSTEM.
- CONSTRUCT SUBGRADE AND BASE FOR STREETS.
- CONSTRUCT CURBS FOR STREETS.
- CONSTRUCT ASPHALT PAVEMENT FOR STREETS.
- ESTABLISH SITE STABILIZATION.
- REMOVE ALL TEMPORARY STORMWATER EROSION CONTROL MEASURES.

NOTES

- SOME ITEMS ABOVE WILL OCCUR SIMULTANEOUSLY OR MAY OCCUR OUT OF SEQUENCE INDICATED.
- ALL SEQUENCES SUBJECT TO CHANGE.

(Notes to Be Placed on All WW Plan & Detail Sheets)

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.

Signing and Pavement Marking Plan Notes

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 and Establishment of Vegetation within Earthen Channels, Stormwater Basins and Disturbed Areas

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, Cereal Rye 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.

INSPECTION AND MAINTENANCE SCHEDULE – BATCH DETENTION BASIN FOR PERMANENT POLLUTION ABATEMENT MEASURES

Recommended Frequency	Task to be Performed												
	1	2	3	4	5	6	7	8	9	10	11	12	13
After Rainfall	√							√			√		√
Biannually*	√	√	√	√	√	√	√	√	√	√	√	√	√

*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

VERAMENDI - CONFLUENCE DR PHASE 1

NEW BRAUNFELS, TEXAS

CONSTRUCTION NOTES

PLAT NO.	
JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	 DRAWN CA
SHEET	C0.01

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1675 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 800.652.5653
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #1008860

FOR PERMIT

LOCATION MAP

NOT TO SCALE

1. MAINTENANCE OF DEDICATED UTILITY EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER. ANY USE OF AN EASEMENT OR ANY PORTION OF IT THAT VIOLATES ANY CITY ORDINANCE, ANY APPLICABLE STATE OR FEDERAL LAW, OR ANY WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PORTION OF IT, SHALL BE PROHIBITED.
2. THE CITY WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE BUILDING STRUCTURE ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL BE USED DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
3. THE CITY WILL ACQUIRE A 5' WIDE SERVICE EASEMENT FROM THE FRONT YARD AND REAR LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
4. EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE EASEMENT LINE.
5. THE CITY WILL NOT COMBINE ANY NEW UTILITY EASEMENTS [UE] WITH DRAINAGE EASEMENTS [DE] OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS [UE] WITHOUT THE CITY'S WRITTEN APPROVAL.
6. THE CITY WILL NOT BE RESPONSIBLE FOR LANDSCAPING OR IRRIGATION IN UE/E.

NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE COMAL COUNTY, TEXAS, FLOOD INSURANCE RATE MAP NO. 48091C0435F EFFECTIVE DATE 9/2/2009 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

THE PROPERTY WILL BE SERVED BY THE FOLLOWING:
NEW BRAUNFELS UTILITIES (WATER, SEWER, ELECTRIC)
AT&T (TELECOMMUNICATIONS)
SPECTRUM (TELECOMMUNICATIONS)

1. DRAINAGE EASEMENTS SHALL REMAIN FREE OF ALL OBSTRUCTIONS."
2. MAINTENANCE OF DRAINAGE EASEMENT SHOWN OUTSIDE OF LOT LINES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNERS, OR THE PROPERTY OWNERS OF THE ADJACENT LOT OR LOTS, AND SHALL NOT BE THE RESPONSIBILITY OF THE CITY OF NEW BRAUNFELS OR COMAL COUNTY.
3. NO STRUCTURES, WALLS OR OTHER OBSTRUCTIONS OF ANY KIND SHALL BE PLACED WITHIN THE LIMITS OF DRAINAGE EASEMENTS SHOWN ON THIS PLAN. NO FENCES, BARRIERS, OR OTHER OBSTRUCTIONS WHICH ALTER THE NATURAL CROSS SECTIONS OF THE DRAINAGE EASEMENTS OR DECREASES THE HYDRAULIC CAPACITY OF THE EASEMENT, AS APPROVED, SHALL BE ALLOWED WITHOUT THE APPROVAL OF THE CITY ENGINEER. THE CITY OF NEW BRAUNFELS AND COMAL COUNTY SHALL HAVE THE RIGHT OF INGRESS AND EGRESS OVER GRANTORS' LANDS TO MAINTAIN, REPAIR, REPLACE, OR IMPROVE THE DRAINAGE EASEMENTS OR TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS WITHIN SAID DRAINAGE EASEMENTS.

SIDEWALKS ON BOTH SIDES OF THE RIGHT-OF-WAY SHALL BE 6' WIDE AND CONSTRUCTED AT THE TIME OF BUILDING PERMIT WITH ADJACENT DEVELOPMENT. THE SIDEWALKS MAY MEANDER WITHIN BOTH THE STREET RIGHT-OF-WAY AND/OR FUTURE ADJACENT PEDESTRIAN EASEMENTS.

BEING 3.219 ACRES OF LAND, OUT OF THE 48.237 ACRE TRACT DESCRIBED IN DOCUMENT NO. 20160606009473, IN THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS, IN THE JAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

[illegible]

REFERENCED PROPERTY LIES WITHIN THE NEW BRAUNFELS INDEPENDENT SCHOOL DISTRICT.

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

STATE OF TEXAS
COUNTY OF COMAL

I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE VERAMENDI - RDWCY C PHASE 1 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

STATE OF TEXAS

COUNTY OF COMAL
THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS _____ DAY OF
_____, 20____, BY _____.

NOTARY PUBLIC
STATE OF TEXAS

STATE OF TEXAS
COUNTY OF COMAL

I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE VERAMENDI - RDWC C PHASE 1 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

STATE OF TEXAS

COUNTY OF COMAL
THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS _____ DAY OF
_____, 20____, BY _____.

NOTARY PUBLIC
STATE OF TEXAS

MY COMMISSION EXPIRES: _____

STATE OF TEXAS
COUNTY OF COMAL

I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS VERAMENDI - RDWCY C PHASE 1 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE 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:	DATE
COMAL COUNTY WCID 1A 1108 LAVACA, SUITE 510 AUSTIN, TX 78701	

STATE OF TEXAS

COUNTY OF COMAL
THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS _____ DAY OF _____, 20____, BY _____.

NOTARY PUBLIC
STATE OF TEXAS

MY COMMISSION EXPIRES: _____

I, _____, DO HEREBY CERTIFY THAT THE
FOREGOING INSTRUMENT WAS FILED FOR RECORD IN THE MAP AND PLAT RECORDS.

DOC # _____ OF COMAL COUNTY ON
THE _____ DAY OF _____, 20_____, AT _____ M.

WITNESS MY HAND OFFICIAL SEAL, THIS THE _____ DAY OF _____, 20____.


COUNTY CLERK, COMAL COUNTY, TEXAS

DEPUTY _____

SHEET 1 OF 2

THE VERAMENDI - CONFLUENCE DR PHASE 1 PLAT WAS APPROVED WITH
CONDITIONS
AT THE CITY OF NEW BRAUNFELS PLANNING COMMISSION ON XX/XX/20XX

11-8-2024



JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

Jocelyn Perez

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

PLAT

PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C0.02

FOR PERMIT



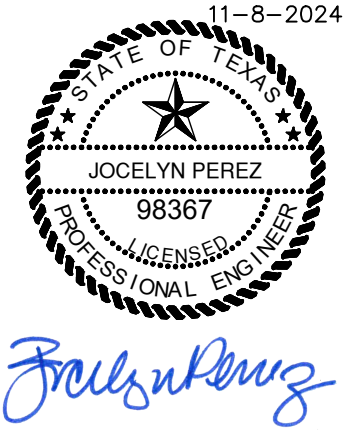
SHEET 2 OF 2

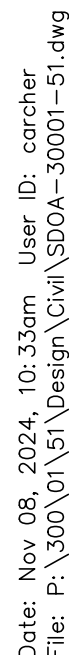
PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C0.03

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
PLAT

**PAPE-DAWSON
ENGINEERS**

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT. WORTH | DALLAS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

[illegible]



DETAIL "A"
NOT-TO-SCALE



NOT-TO-SCALE



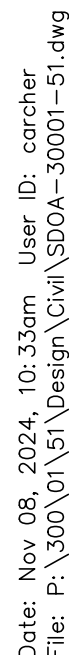
- | Calc Pt | Description | Drainage Area | | Time of Conc.
(minutes) | Intensity
(in/hr) | C | Discharge Q.
(cfs) | Frequency
(year) |
|---------|----------------------|---------------|-------|----------------------------|----------------------|------|-----------------------|---------------------|
| | | Area ID | Acres | | | | | |
| 1 | EXISTING OUTFALL | EA | 19.15 | 21.00 | 3.57 | 0.33 | 23 | 2 |
| | | | | | 5.23 | 0.38 | 38 | 10 |
| | | | | | 6.29 | 0.42 | 51 | 25 |
| | | | | | 7.12 | 0.45 | 61 | 50 |
| | | | | | 8.01 | 0.49 | 75 | 100 |
| 2 | EXISTING OUTFALL | EB | 35.79 | 23.00 | 3.41 | 0.33 | 40 | 2 |
| | | | | | 4.99 | 0.38 | 68 | 10 |
| | | | | | 6.00 | 0.42 | 90 | 25 |
| | | | | | 6.79 | 0.45 | 109 | 50 |
| | | | | | 7.64 | 0.49 | 134 | 100 |
| J-A | MODELED WITH HEC-HMS | | | | | | 442 | 2 |
| | | | | | | | 775 | 10 |
| | | | | | | | 940 | 25 |
| | | | | | | | 1250 | 100 |

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

OVERALL DRAINAGE PLAN - EXISTING CONDITIONS

PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN C
SHEET C1.00

FOR PERMIT



DETAIL "A"

NOT-TO-SCALE




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 | ON GRADE INLET
DRAIN "C" | PA | 0.43 | 10.00 | 5.05 | 0.68 | 1 | 2 | | | | |
| | | | | | 7.50 | 0.75 | 2 | 10 | | 1 | 0 | |
| | | | | | 9.12 | 0.80 | 3 | 25 | | 2 | 0 | |
| | | | | | 10.38 | 0.84 | 4 | 50 | | 3 | 0 | |
| | | | | | 11.70 | 0.89 | 4 | 100 | | 4 | 0 | |
| 2 | ON GRADE INLET
DRAIN "C" | PB | 0.41 | 10.00 | 5.05 | 0.67 | 1 | 2 | | | 1 | 0 |
| | | | | | 7.50 | 0.74 | 2 | 10 | | 2 | 0 | |
| | | | | | 9.12 | 0.79 | 3 | 25 | | 3 | 0 | |
| | | | | | 10.38 | 0.83 | 4 | 50 | | 4 | 0 | |
| | | | | | 11.70 | 0.88 | 4 | 100 | | 4 | 0 | |
| 3 | PIPE FLOW
DRAIN "C" | PA(C)+PB(C) | | | | 0.60 | | 2 | 2 | | 2 | 0 |
| | | | | | | 0.67 | | 10 | 4 | | 4 | 0 |
| | | | | | | 0.71 | | 25 | 6 | | 6 | 0 |
| | | | | | | 0.75 | | 50 | 7 | | 7 | 0 |
| | | | | | | 0.80 | | 100 | 8 | | 8 | 0 |
| 4 | DRAIN "B" | PG | 17.33 | 17.00 | 3.97 | 0.60 | 41 | 2 | | | | |
| | | | | | 5.83 | 0.67 | 67 | 10 | | | | |
| | | | | | 7.02 | 0.71 | 87 | 25 | | | | |
| | | | | | 7.98 | 0.75 | 104 | 50 | | | | |
| | | | | | 8.98 | 0.80 | 124 | 100 | | | | |
| 5 | ON GRADE INLET
DRAIN "B" | PC | 0.76 | 10.00 | 5.05 | 0.66 | 3 | 2 | | | 3 | 0 |
| | | | | | 7.50 | 0.73 | 4 | 10 | | 4 | 0 | |
| | | | | | 9.12 | 0.78 | 5 | 25 | | 5 | 0 | |
| | | | | | 10.38 | 0.82 | 6 | 50 | | 6 | 0 | |
| | | | | | 11.70 | 0.87 | 8 | 100 | | 8 | 0 | |
| 6 | ON GRADE INLET
DRAIN "B" | PD | 0.76 | 10.00 | 5.05 | 0.66 | 3 | 2 | | | 3 | 0 |
| | | | | | 7.50 | 0.74 | 4 | 10 | | 4 | 0 | |
| | | | | | 9.12 | 0.79 | 5 | 25 | | 5 | 0 | |
| | | | | | 10.38 | 0.83 | 7 | 50 | | 7 | 0 | |
| | | | | | 11.70 | 0.87 | 8 | 100 | | 8 | 0 | |
| 7 | PIPE FLOW
DRAIN "B" | PG+PC(C)+PD(C) | | | | 0.60 | | 2 | 47 | | | |
| | | | | | | 0.67 | | 10 | 75 | | | |
| | | | | | | 0.71 | | 25 | 97 | | | |
| | | | | | | 0.75 | | 50 | 117 | | | |
| | | | | | | 0.80 | | 100 | 140 | | | |
| 8 | BASIN OUTFALL | PI+PG+PC(C)+PD(C) | 19.04 | 18.00 | 3.86 | 0.60 | 44 | 2 | | | 49 | |
| | | | | | 5.66 | 0.67 | 72 | 10 | | 80 | | |
| | | | | | 6.81 | 0.71 | 93 | 25 | | 103 | | |
| | | | | | 7.74 | 0.75 | 111 | 50 | | 124 | | |
| | | | | | 8.71 | 0.80 | 132 | 100 | | 148 | | |
| 9 | DRAIN "A" | PH | 18.81 | 23.00 | 3.41 | 0.60 | 38 | 2 | | | | |
| | | | | | 4.99 | 0.67 | 63 | 10 | | | | |
| | | | | | 6.00 | 0.71 | 81 | 25 | | | | |
| | | | | | 6.79 | 0.75 | 96 | 50 | | | | |
| | | | | | 7.64 | 0.80 | 115 | 100 | | | | |
| 10 | ON GRADE INLET
DRAIN "A" | PE | 0.47 | 10.00 | 5.05 | 0.64 | 2 | 2 | | | 2 | 0 |
| | | | | | 7.50 | 0.71 | 3 | 10 | | 3 | 0 | |
| | | | | | 9.12 | 0.76 | 3 | 25 | | 3 | 0 | |
| | | | | | 10.38 | 0.80 | 4 | 50 | | 4 | 0 | |
| | | | | | 11.70 | 0.84 | 5 | 100 | | 5 | 0 | |
| 11 | ON GRADE INLET
DRAIN "A" | PF | 0.39 | 10.00 | 5.05 | 0.65 | 1 | 2 | | | 1 | 0 |
| | | | | | 7.50 | 0.72 | 2 | 10 | | 2 | 0 | |
| | | | | | 9.12 | 0.77 | 3 | 25 | | 3 | 0 | |
| | | | | | 10.38 | 0.81 | 3 | 50 | | 3 | 0 | |
| | | | | | 11.70 | 0.86 | 4 | 100 | | 4 | 0 | |
| 12 | PIPE FLOW
DRAIN "A" | PH+PE(C)+PF(C) | | | | 0.60 | | 2 | 41 | | | |
| | | | | | | 0.67 | | 10 | 68 | | | |
| | | | | | | 0.71 | | 25 | 87 | | | |
| | | | | | | 0.75 | | 50 | 103 | | | |
| | | | | | | 0.80 | | 100 | 124 | | | |
| 13 | EARTHEN CHANNEL
DRAIN "A" | PI+PH+PE(C)+PF(C) | 20.67 | 24.00 | 3.34 | 0.60 | 41 | 2 | | | 44 | |
| | | | | | 4.88 | 0.67 | 67 | 10 | | | | |

FOR PERMIT

11-8-202



JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

Jocelyn Perez

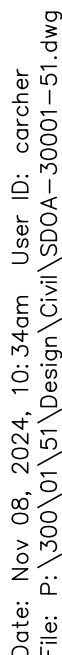


**PAPE-DAWSON
ENGINEERS**

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

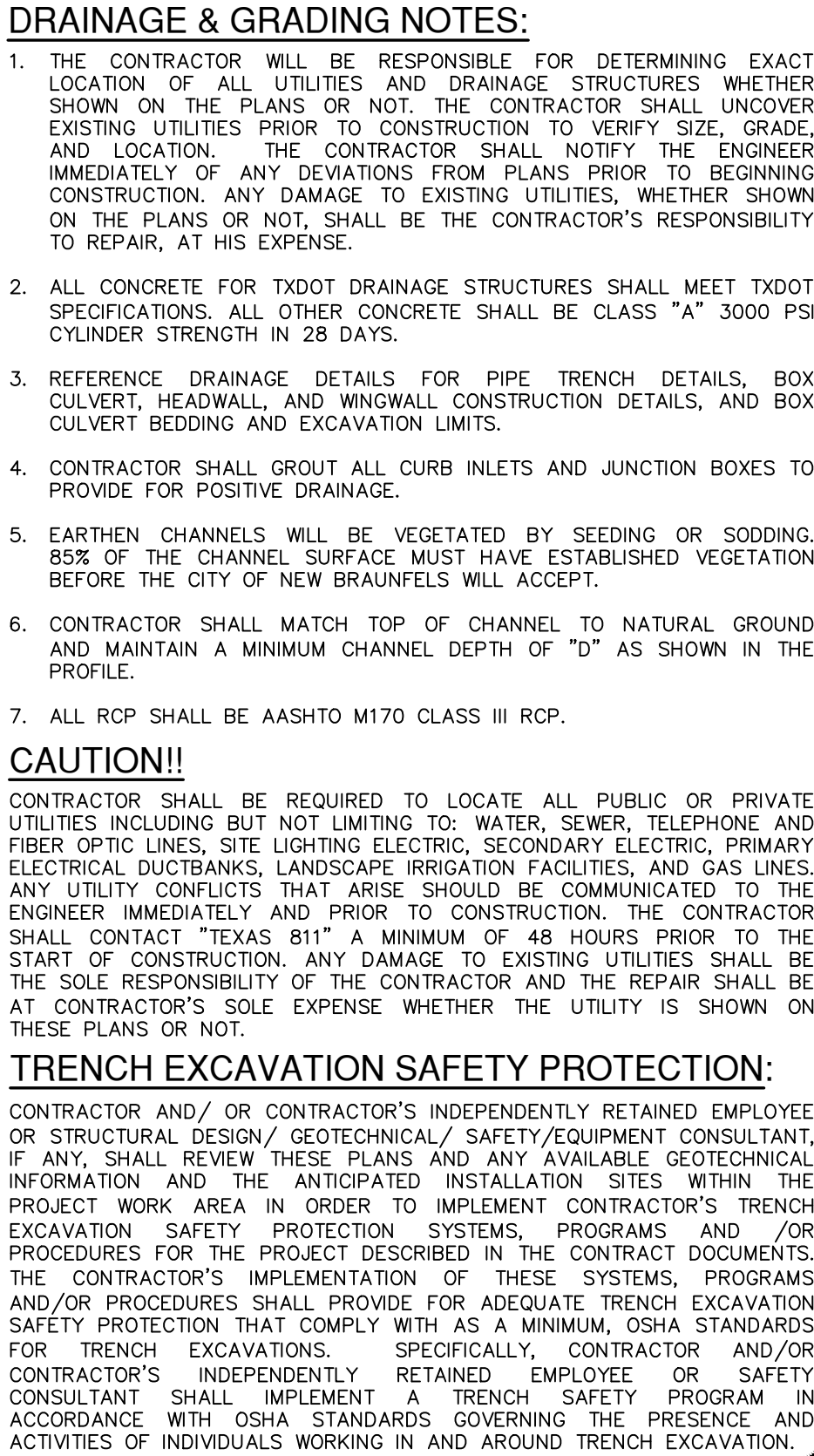
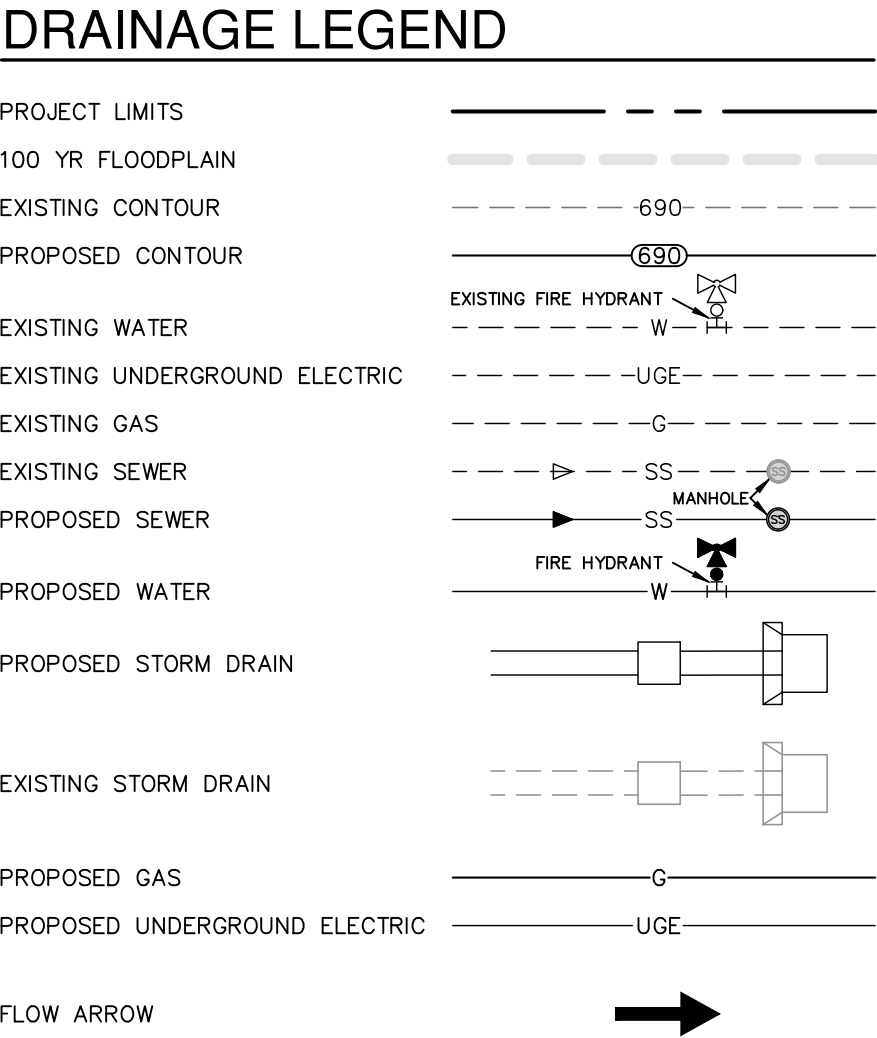
OVERALL DRAINAGE PLAN - PROPOSED CONDITIONS

PLAT NO. _____
 JOB NO. 30001-51
 DATE JULY 2024
 DESIGNER GDL
 CHECKED GL DRAWN CA
 SHEET **C1.01**



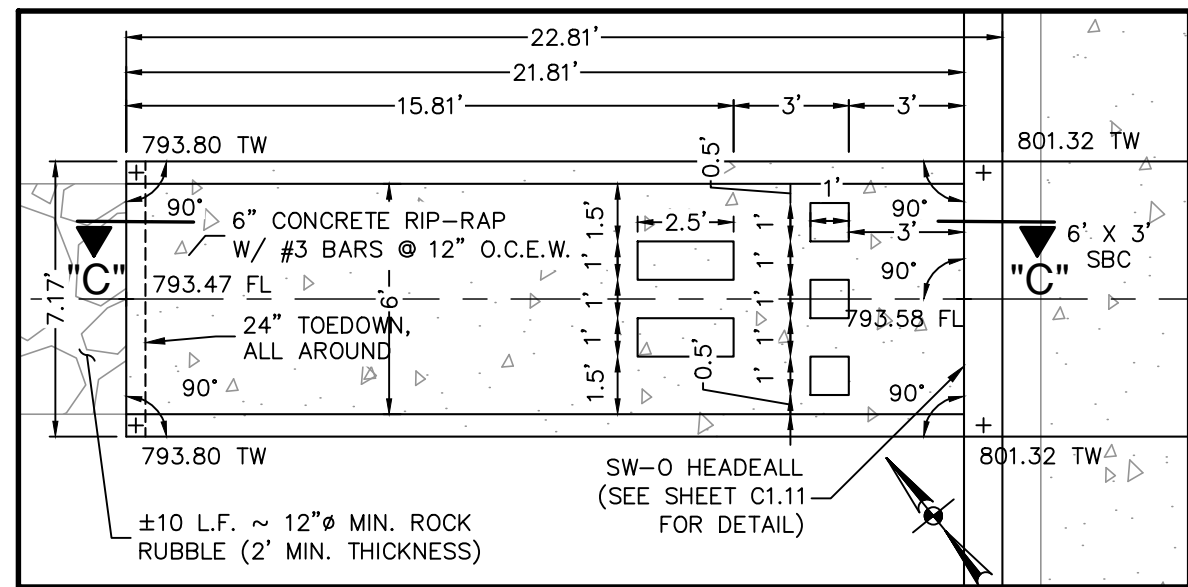
PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C1.02

FOR PERMIT

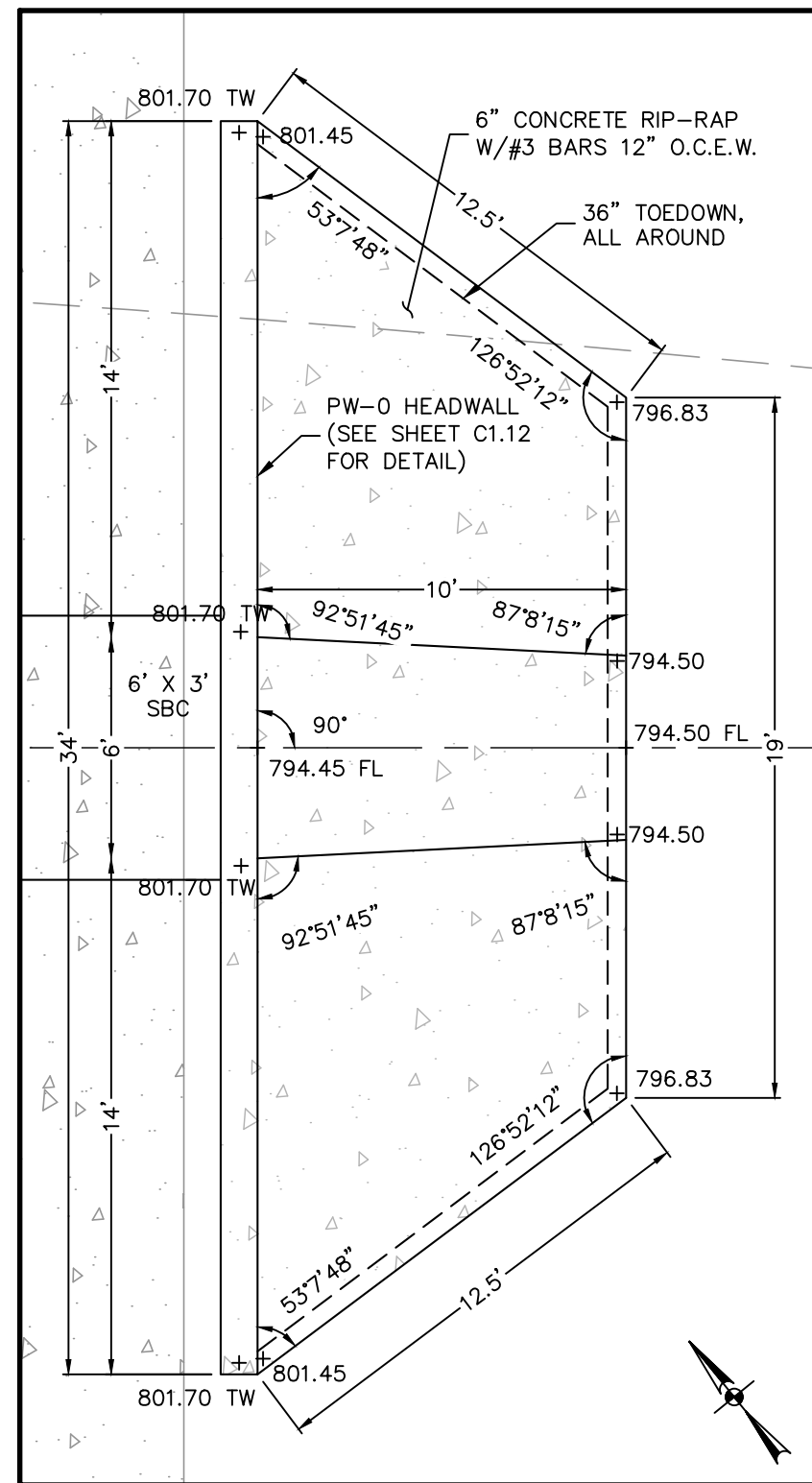
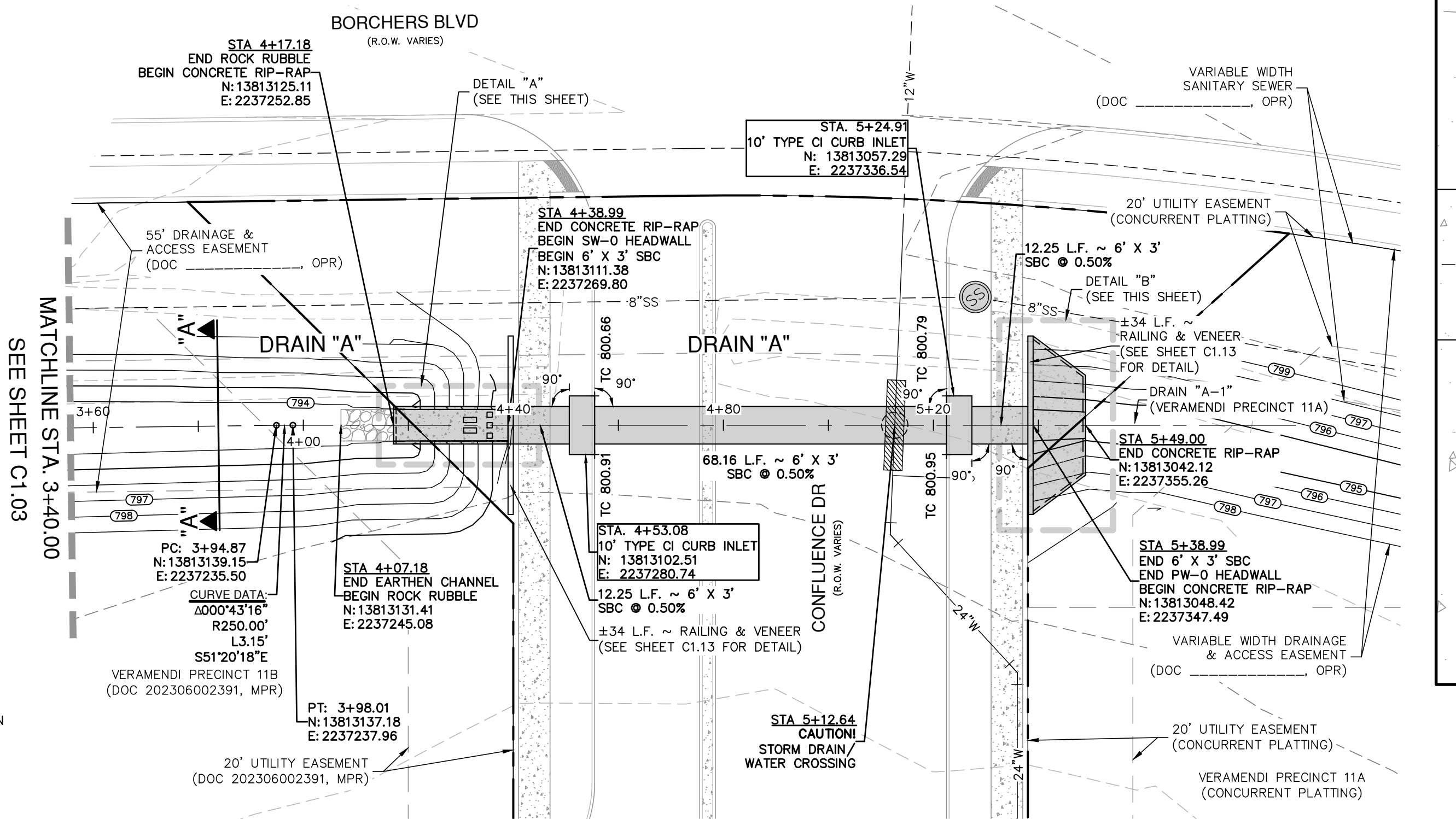
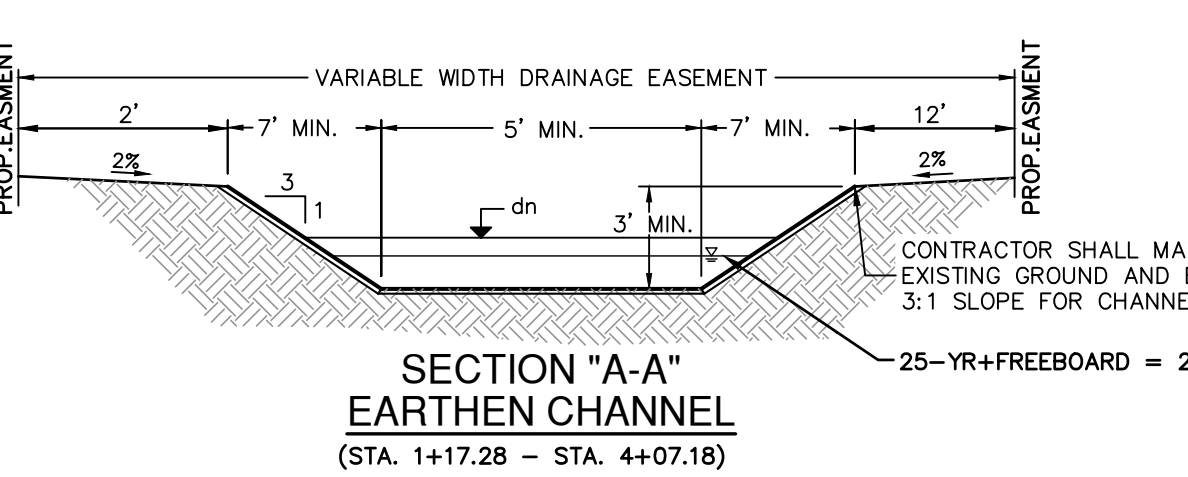
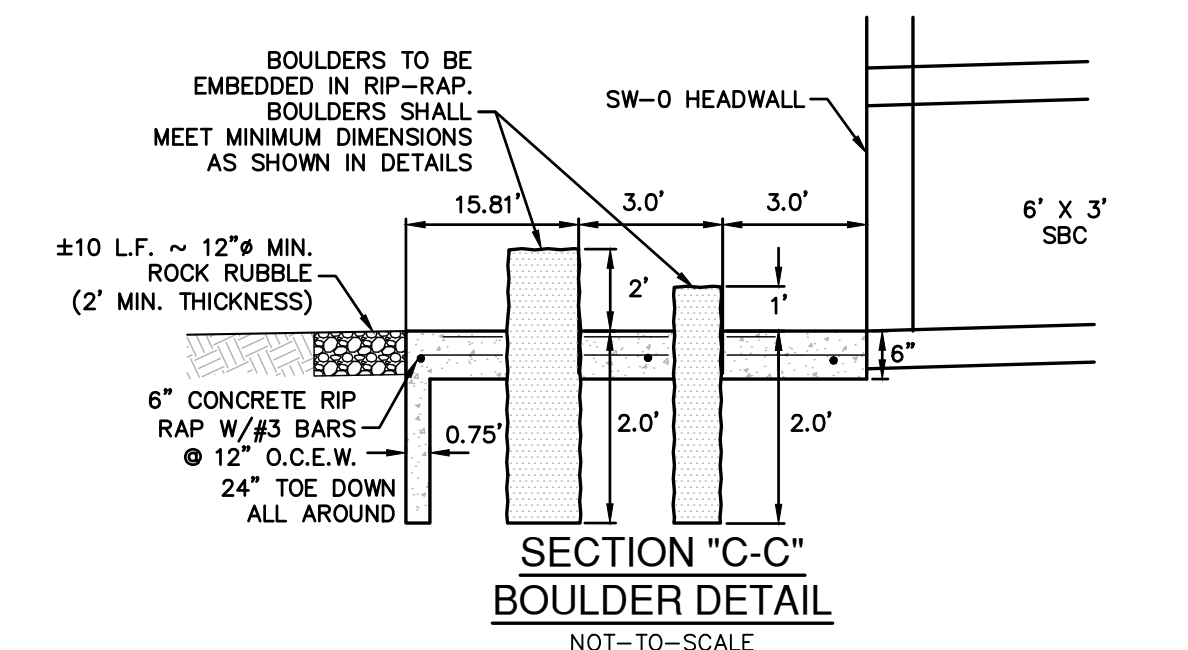


PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C1.03

FOR PERMIT



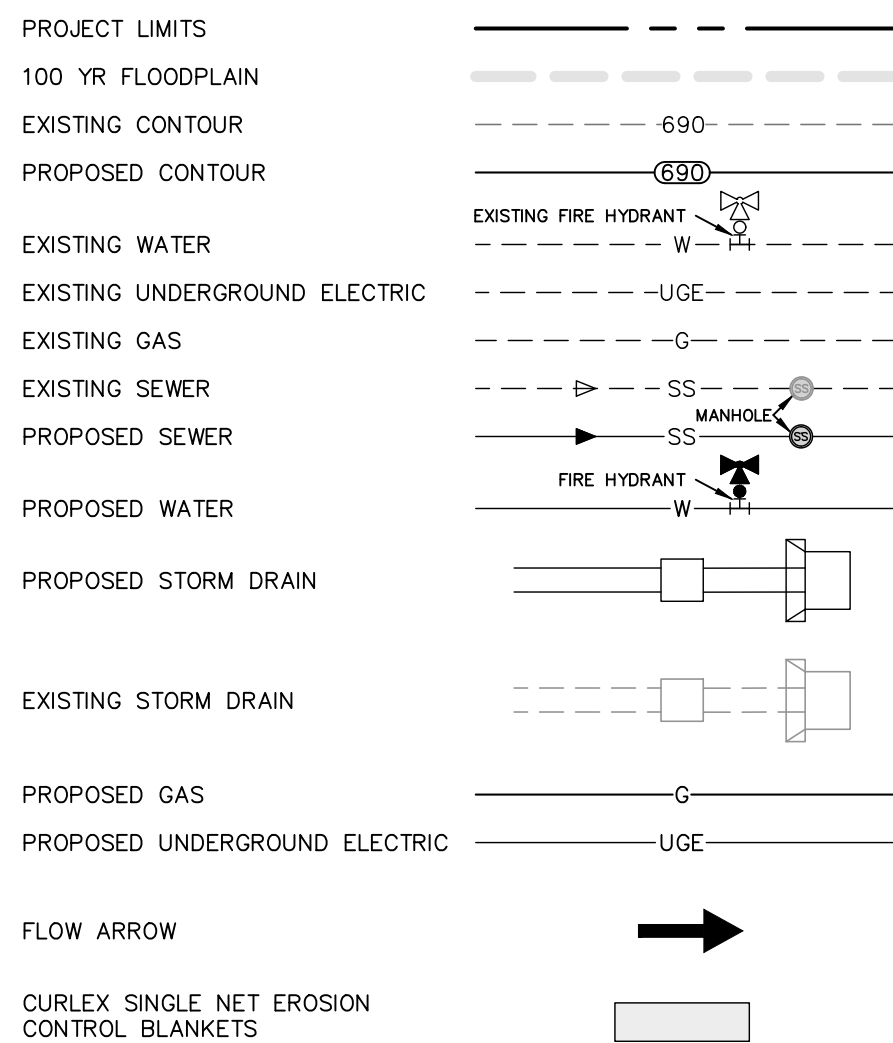
DETAIL "A"
1" = 5'



DETAIL "B"
1" = 5'

HYDRAULIC CALCULATIONS EARTH CHANNEL	
STA. 1+17.28 TO 4+07.18	
Q ₂₅ = 119 CFS	
B _w = 5 FT	
n = 0.035	
S = 0.50 %	
dn ₂₅ = 2.46 FT	
dn ₂₅ + Fbrd. = 2.96 FT	
Q ₂ = 57 CFS	
V ₂₅ = 3.90 FPS	
V ₂ = 3.22 FPS	
Q ₁₀₀ = 169 CFS	
dn ₁₀₀ = 2.89 FT	
V ₁₀₀ = 4.27 FPS	

DRAINAGE LEGEND



DRAIN "A" ON-GRADE INLET HYDRAULIC CALCULATIONS CURB INLET TABLE POINT 10 & 11	
Q ₂₅ = 3 CFS	
S = 1.25%	
L = 2 ~ 10' INLET	
Q ₂₅ CAPTURED = 3 CFS	
Q ₂₅ BYPASS = 0 CFS	

HYDRAULIC CALCULATIONS STORM DRAIN "A" STA. 4+38.99 TO 4+53.08	
Q ₂₅ = 117 CFS	
S = 0.50%	
Sf = 2.48%	
V ₂₅ = 8.94 FPS	
n = 0.013	
Q ₁₀₀ = 167 CFS	
V ₁₀₀ = 10.16 FPS	
Q ₅₀ = 140 CFS	
dn ₅₀ = 2.42 FT	
Q ₂ = 56 CFS	
V ₂ = 7.29 FPS	

HYDRAULIC CALCULATIONS STORM DRAIN "A" STA. 4+53.08 TO 5+24.91	
Q ₂₅ = 114 CFS	
S = 0.50%	
Sf = 2.34%	
V ₂₅ = 6.33 FPS	
n = 0.013	
Q ₁₀₀ = 163 CFS	
V ₁₀₀ = 9.06 FPS	
Q ₅₀ = 137 CFS	
dn ₅₀ = 3.00 FT	
Q ₂ = 55 CFS	
V ₂ = 3.98 FPS	

HYDRAULIC CALCULATIONS STORM DRAIN "A" STA. 5+24.91 TO 5+49.00	
Q ₂₅ = 111 CFS	
S = 0.50%	
Sf = 2.20%	
V ₂₅ = 6.17 FPS	
n = 0.013	
Q ₁₀₀ = 158 CFS	
V ₁₀₀ = 8.78 FPS	
Q ₅₀ = 133 CFS	
dn ₅₀ = 3.00 FT	
Q ₂ = 53 CFS	
V ₂ = 3.87 FPS	

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 THE CITY OF NEW BRAUNFELS 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 "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.

TRENCH EXCAVATION SAFETY PROTECTION:

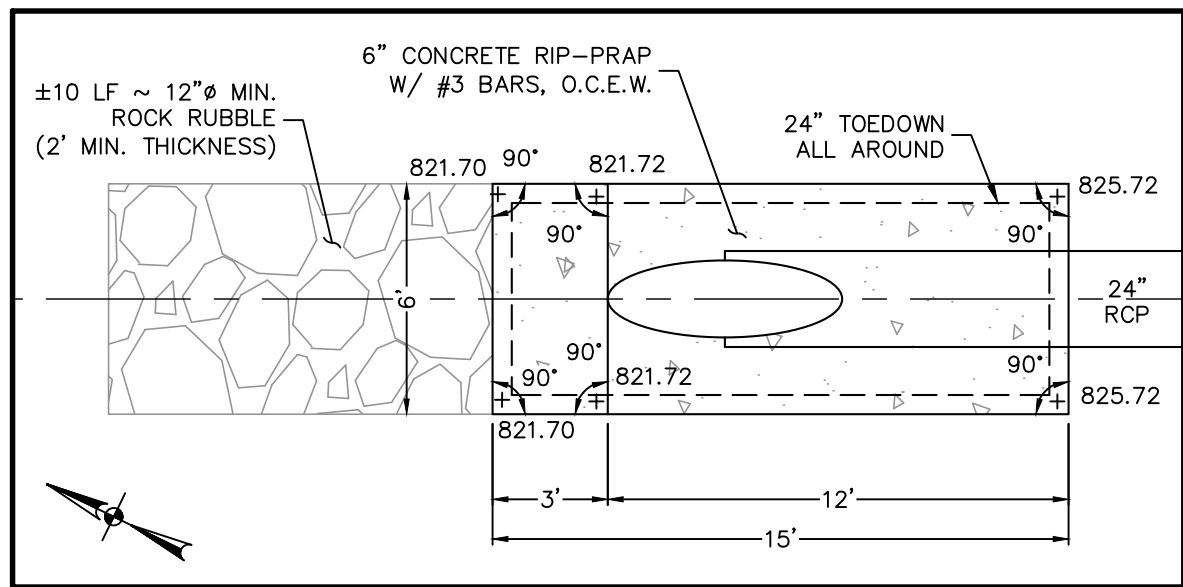
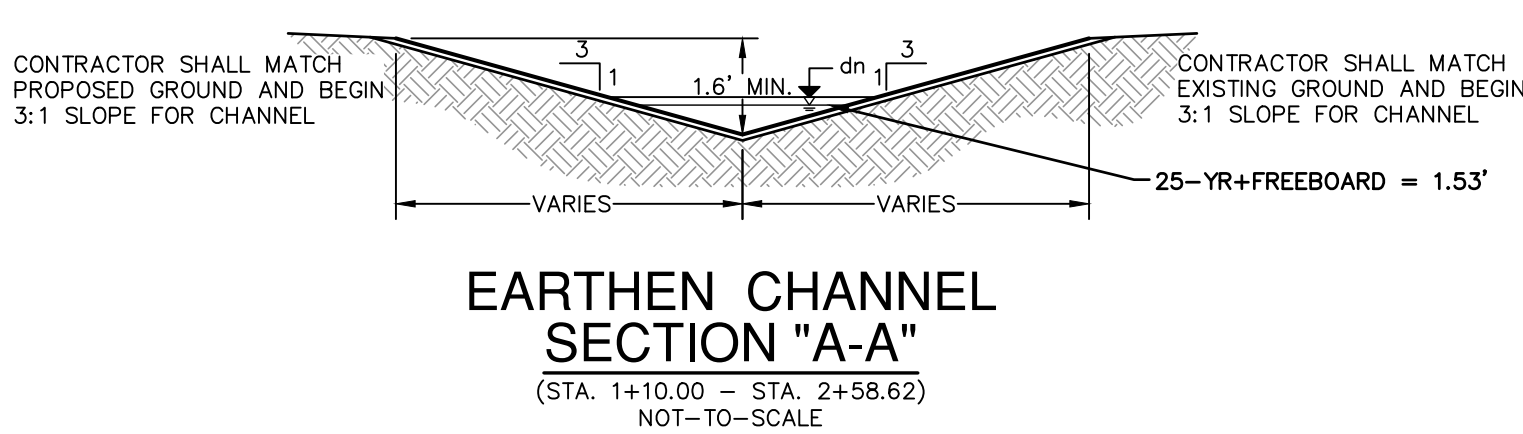
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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.

PAPE-DAWSON ENGINEERS
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1675 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 800.652.5653
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
STORM DRAIN A - PLAN & PROFILE
STA. 3+40.00 TO 5+49.00

PLAT NO.
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GDL
DRAWN CA
SHEET C1.04

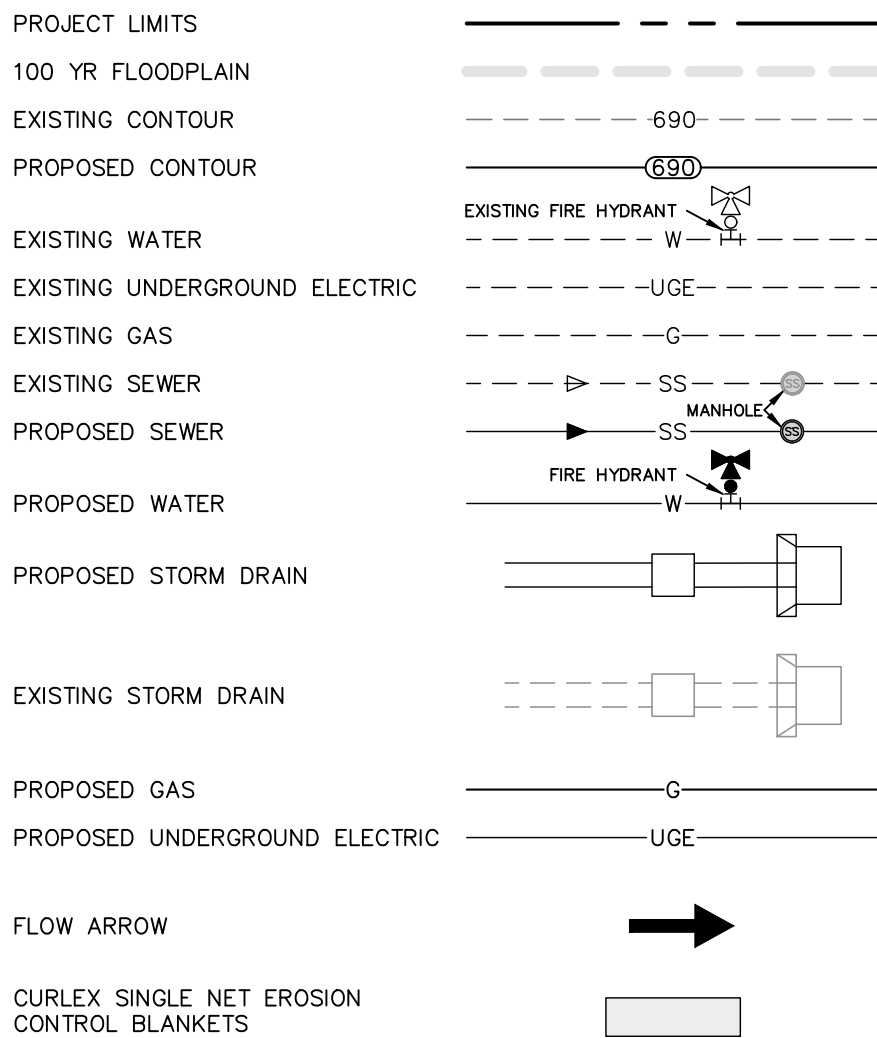
FOR PERMIT



HYDRAULIC CALCULATIONS EARTH CHANNEL
STA. 1+10.00 TO 2+58.62

Q ₂₅	= 6 CFS
n	= 0.035
S	= 0.50 %
dn ₂₅	= 1.03 FT
dn ₂₅ + Fbrd.	= 1.53 FT
V ₂₅	= 1.87 FPS
Q ₂	= 2 CFS
V ₂	= 1.42 FPS
Q ₁₀₀	= 8 CFS
dn ₁₀₀	= 13.8 FT
V ₁₀₀	= 2.01 FPS

DRAINAGE LEGEND



DRAIN "C" ON-GRADE INLET HYDRAULIC CALCULATIONS
CURB INLET TABLE POINT 1 & 2

Q ₂₅	= 3 CFS
S	= 1.85%
L	= 2 ~ 10' INLET
Q ₂₅ CAPTURED	= 3 CFS
Q ₂₅ BYPASS	= 0 CFS

HYDRAULIC CALCULATIONS STORM DRAIN "C"
STA. 2+71.62 TO 3+41.90

Q ₂₅	= 6 CFS
S	= 0.85%
Sf	= 0.07%
D	= 2.00'
V ₂₅	= 5.68 FPS
n	= 0.013
Q ₁₀₀	= 8 CFS
V ₁₀₀	= 6.20 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "C"
STA. 3+41.90 TO 4+01.73

Q ₂₅	= 3 CFS
S	= 4.10%
Sf	= 0.018%
D	= 2.00'
V ₂₅	= 1.88 FPS
n	= 0.013
Q ₁₀₀	= 4 CFS
V ₁₀₀	= 2.08 FPS

DRAINAGE & GRADING NOTES:

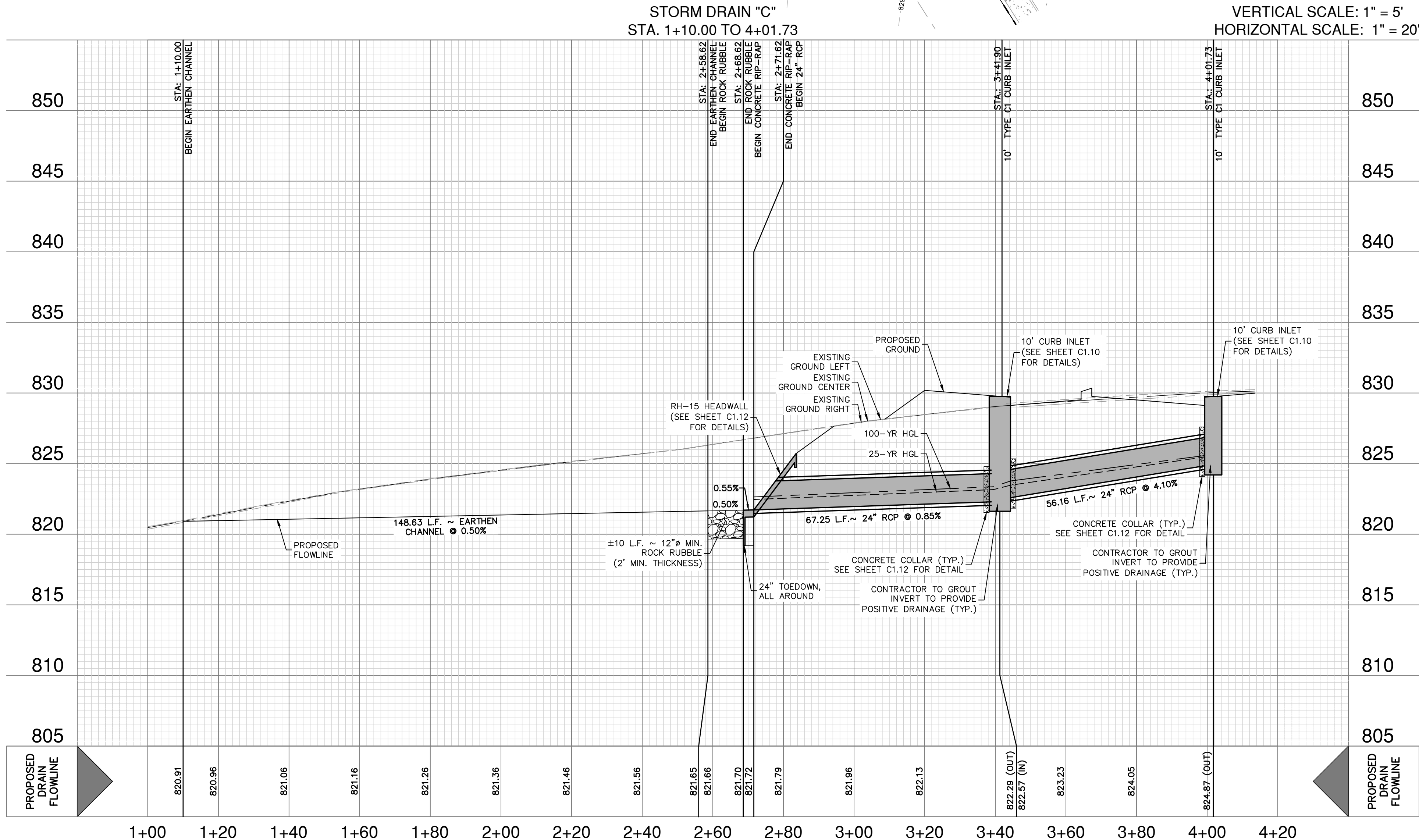
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY 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 THE CITY OF NEW BRAUNFELS 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 "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.

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.



PAPE-DAWSON ENGINEERS

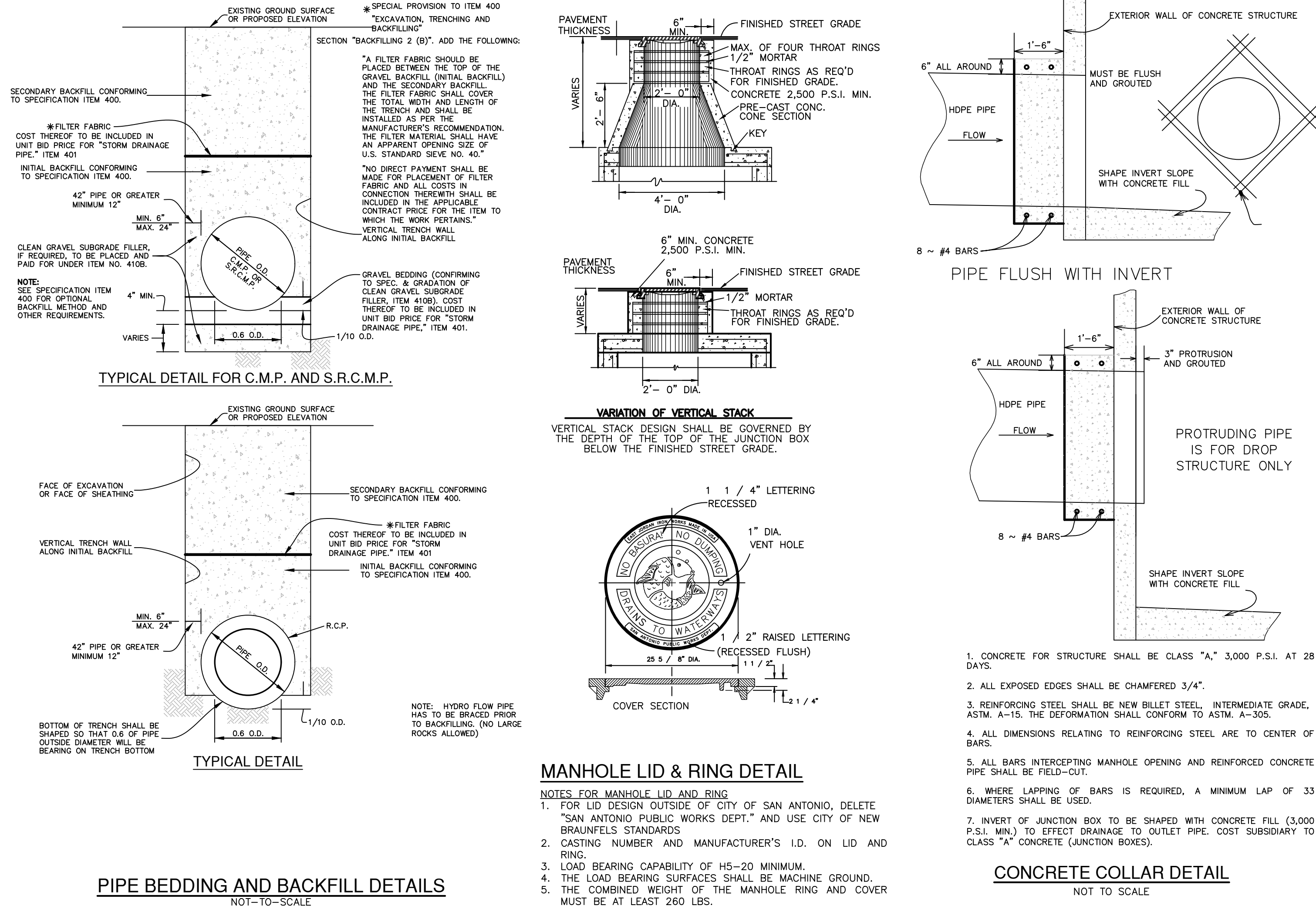
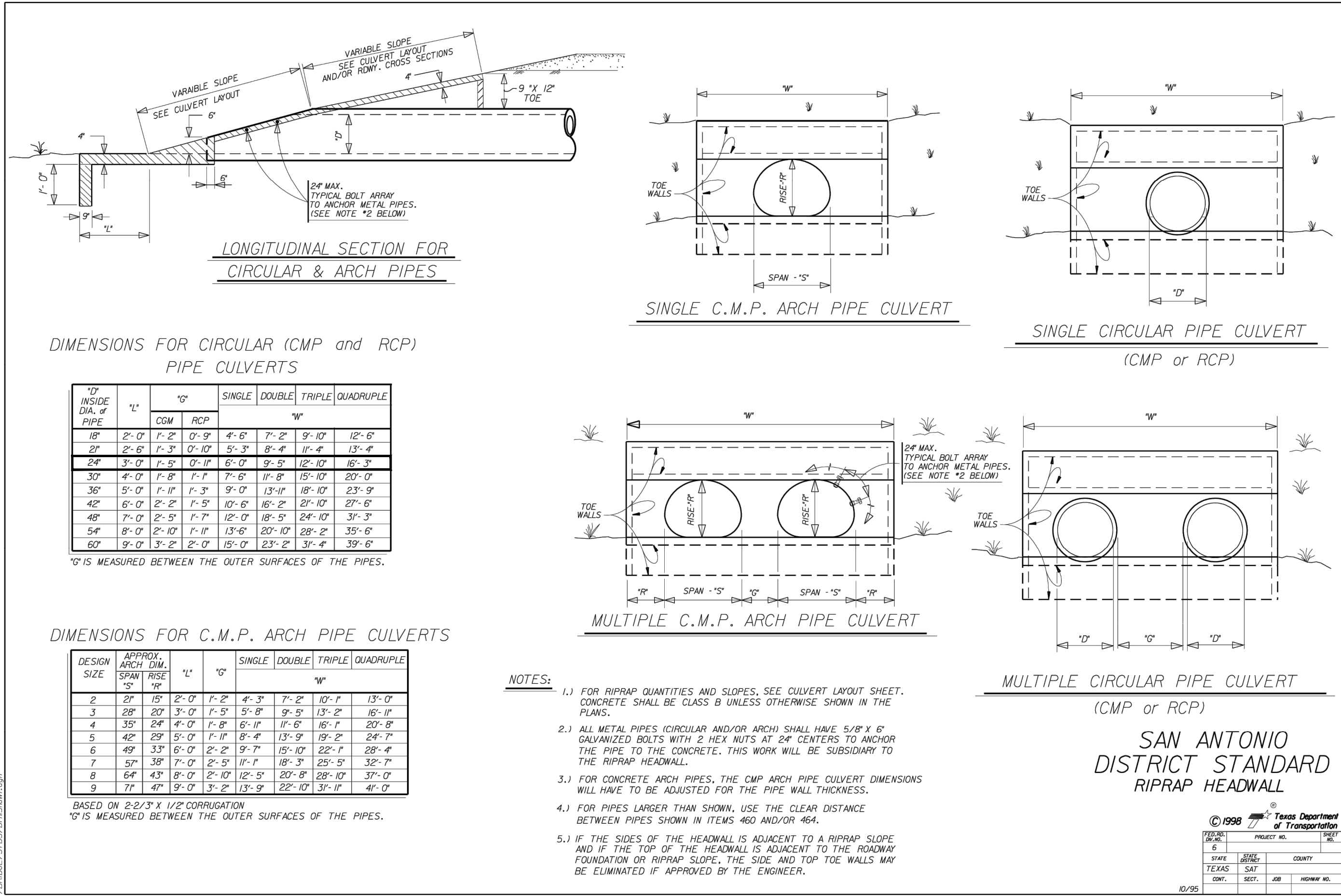
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 800.652.5653
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

STORM DRAIN C - PLAN & PROFILE
STA. 1+10.00 TO 4+01.73

PLAT NO.
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GDL DRAWN CA
SHEET C1.06

FOR PERMIT



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, AND ANY DEVIATIONS 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 MINGWALL 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 THE CITY OF NEW BRUNSWICK 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.

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 MAINTAIN A "CONTIGUOUS" MINIMUM OF 45 FEET 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.

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BASIN WATERSHED AREA	=	830,689 SF (19.07AC.)
RUN OFF DEPTH	=	1.60 IN
REQUIRED CAPTURE VOLUME	=	13,957 CF
BASIN STORM WATER DEPTH	=	3.00 FT
BASIN CAPTURE VOLUME	=	14,334 CF
APPROX DRAWDOWN TIME	=	7.27 hrs



PROJECT LIMITS

100 YR FLOODPLAIN

EXISTING CONTOUR 690

PROPOSED CONTOUR 650

EXISTING WATER

EXISTING UNDERGROUND ELECTRIC UGE

EXISTING GAS G

EXISTING SEWER SS

PROPOSED SEWER SS

PROPOSED WATER W

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

PROPOSED GAS G

PROPOSED UNDERGROUND ELECTRIC UGE

FLOW ARROW

CURLEX SINGLE NET EROSION CONTROL BLANKETS



$Q_{25} = (C_w)(L)(h)^{\frac{3}{2}}$
 $Q_{25} = 119 \text{ cfs}$
 $C = 2.60$
 $L = 64 \text{ ft}$
 $116 = (2.60)(64)(h)^{\frac{3}{2}}$
 $h = 0.80 \text{ ft}$



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

PLAT NO. _____
 JOB NO. 30001-51
 DATE JULY 2024
 DESIGNER GDL
 CHECKED GL DRAWN CA
 SHEET C1.20

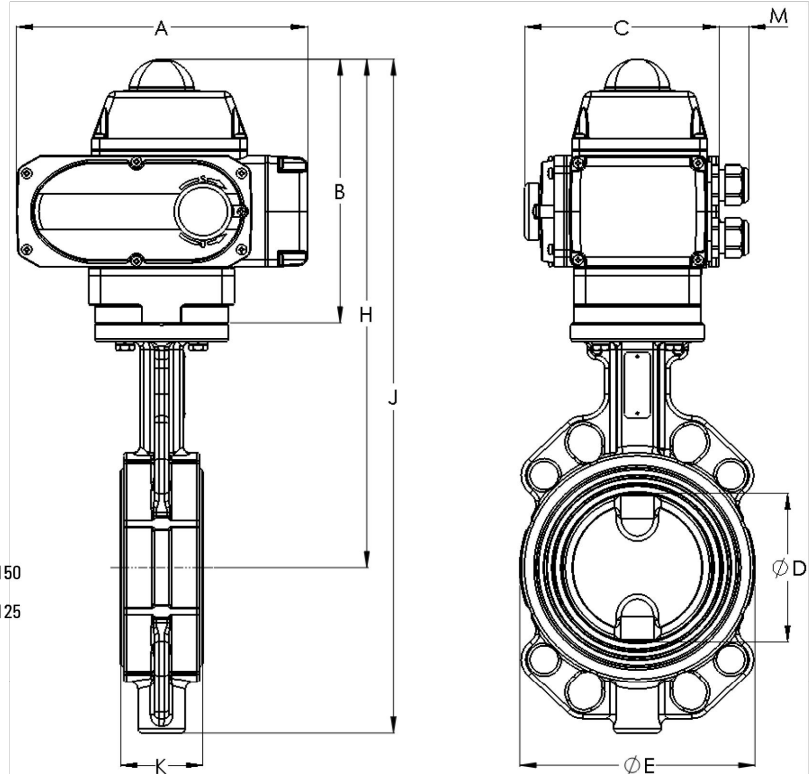
**PAPE-DAWSON
ENGINEERS**

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
 NEW BRAUNFELS DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632-5633
 TEXAS ENGINEERING FIRM #1028860 | TEXAS SURVEYING FIRM #1028860

DI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
WATER QUALITY BASIN PLAN

FOR PERMIT

Dimensions:



Suitable between flanges:

- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125
- EN1092 PN10, PN16
- JIS B 2238 10K, 16K
- BS 10 Table D, Table E

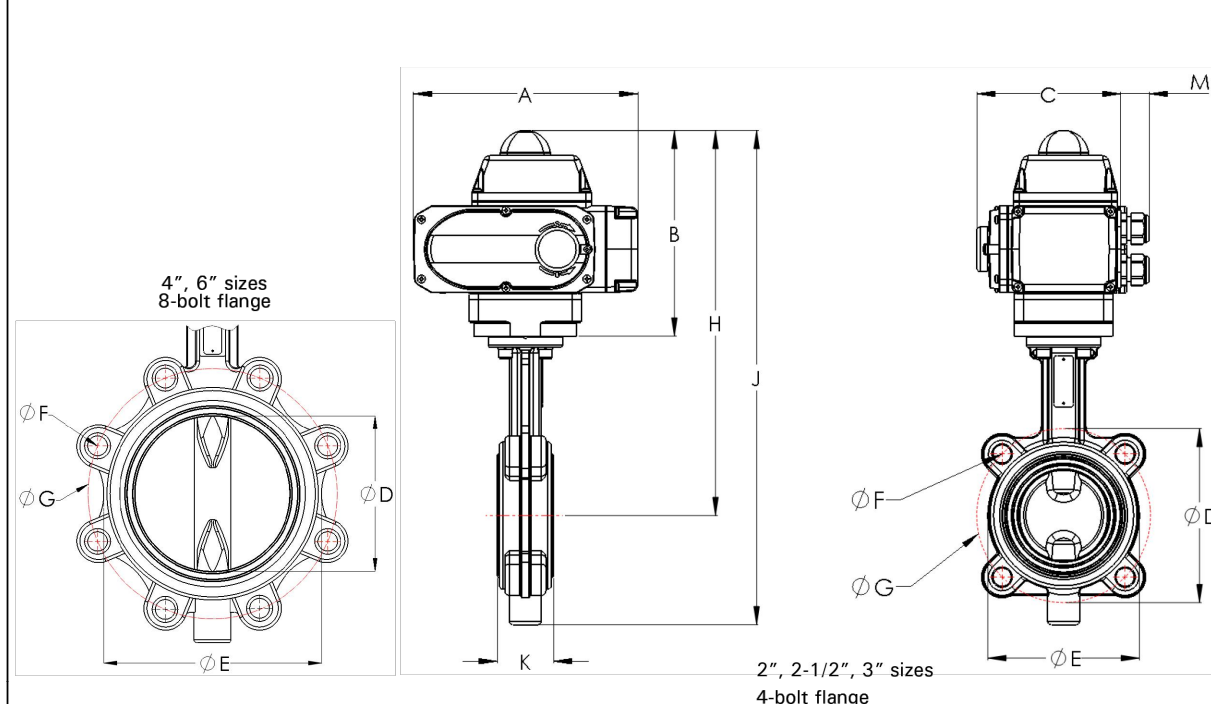
Pipe Size		A	B	C	D	E	H	J	K	M	Weight (AG/DG)
2	inch	6.34	7.09	4.05	1.97	3.90	12.05	15.04	1.81	0.98	10.59/3.3 lb
DN50	mm	161	180	118	50	99	306	382	46	25	4.8/4.3 kg
2-1/2	inch	6.34	7.09	4.05	2.56	4.46	12.36	15.59	1.93	0.98	11.81/6.9 lb
DN65	mm	161	180	118	65	113	314	398	49	25	5.3/4.8 kg
3	inch	6.34	7.09	4.05	3.15	5.07	13.27	17.03	1.93	0.98	13.41/2.4 lb
DN80	mm	161	180	118	80	129	337	432.5	49	25	6.1/5.6 kg
4	inch	6.34	7.09	4.05	3.94	6.17	13.66	18.54	2.20	0.98	17.01/6.0 lb
DN100	mm	161	180	118	100	157	347	471	56	25	7.7/7.3 kg
6	inch	10.08	8.50	6.30	5.91	8.39	16.50	22.24	2.32	0.98	37.23/8.2 lb
DN150	mm	256	216	160	150	213	419	565	59	25	16.9/17.3 kg
8	inch	10.08	8.50	6.30	7.87	10.67	17.48	24.25	2.36	0.98	48.9 lb
DN200	mm	256	216	160	200	271	444	616	60	25	22.2 kg
12	inch	10.08	8.50	6.30	11.81	15.0	19.9	29.4	3.07	0.98	79.4 lb
DN300	mm	256	216	160	300	381	505	747	78	25	36 kg

Doc: 5670.1219

Cornelius, N.C. • USA

www.valworx.com

Dimensions:



Suitable between flanges:

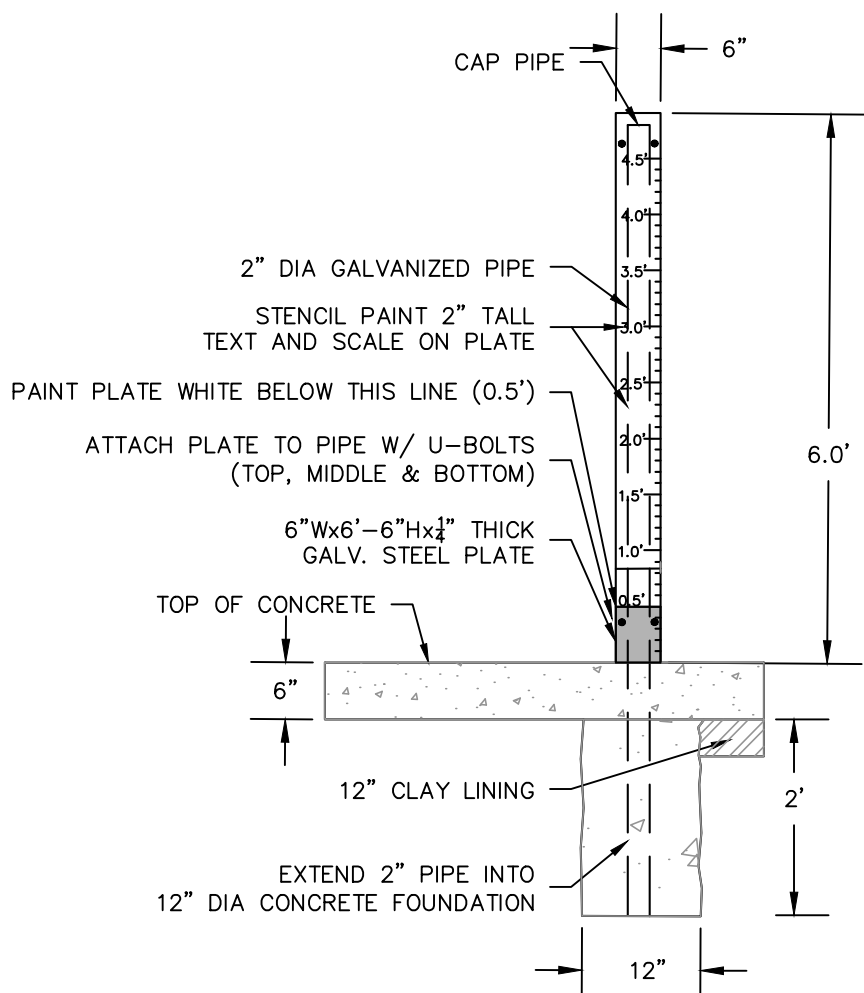
- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125

Pipe Size		A	B	C	D	E	F	G	H	J	K	M	ISO	Weight (AG/DG)
2	inch	6.34	7.09	4.05	1.97	3.74	41/58-11	4.74	12.05	15.04	1.81	0.98	F05	12.7/13.3 lb
2-1/2	inch	6.34	7.09	4.05	2.56	4.13	41/58-11	5.50	12.36	15.59	1.93	0.98	F05	14.5/15.0 lb
3	inch	6.34	7.09	4.05	3.15	4.72	41/58-11	6.00	13.27	17.03	1.93	0.98	F05	17.3/17.8 lb
4	inch	6.34	7.09	4.05	3.94	5.79	41/58-11	7.50	11.97	16.46	2.20	0.98	F05/F07	22.1/22.6 lb
6	inch	10.08	8.50	6.30	5.91	8.07	41/58-11	9.50	16.50	22.24	2.32	0.98	F07	50.0/51.0 lb
8	inch	10.08	8.50	6.30	7.87	10.67	41/58-11	11.81	17.48	24.25	2.36	0.98	F07	79.4 lb

Doc: 5673.0118

Cornelius, N.C. • USA

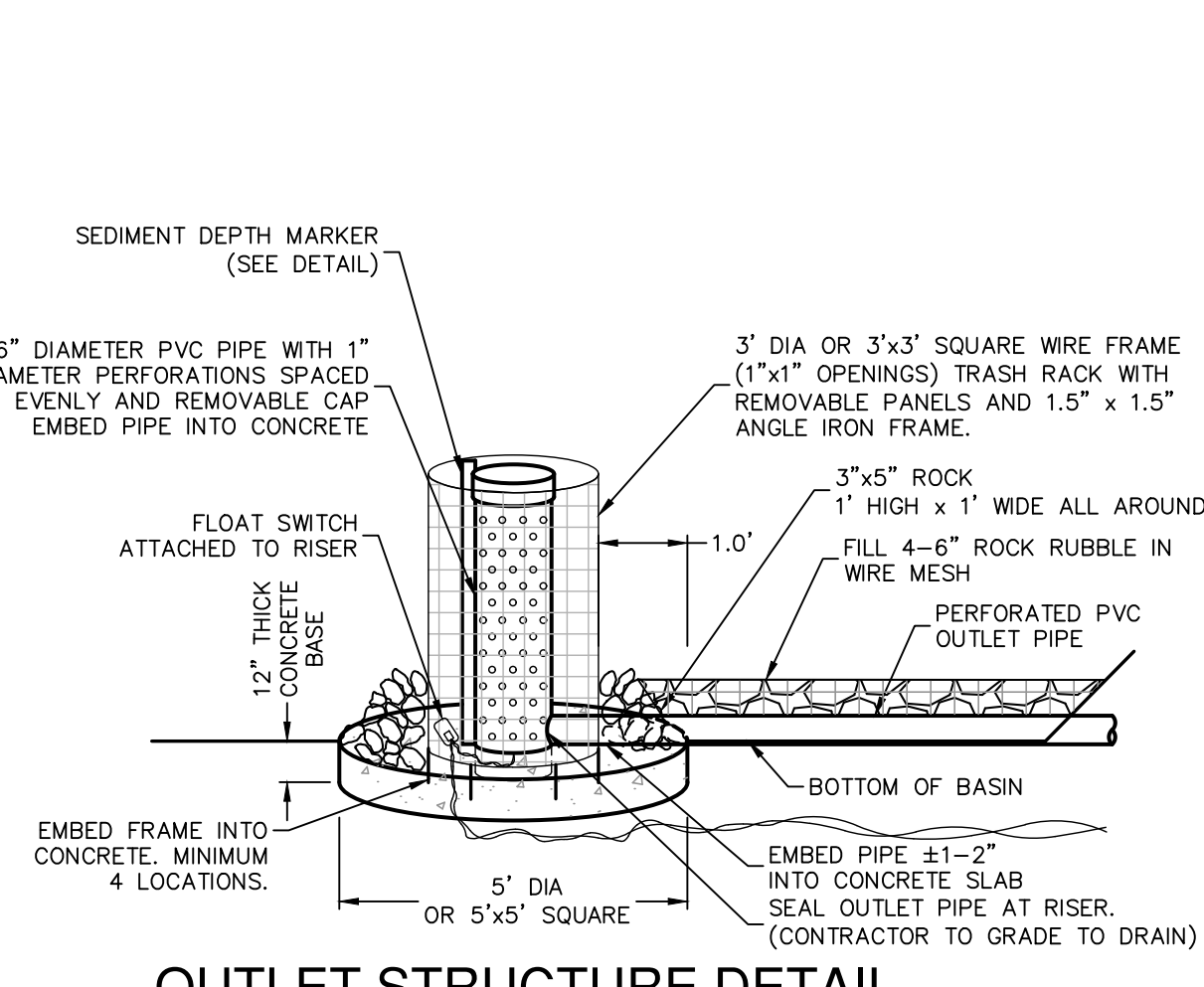
www.valworx.com



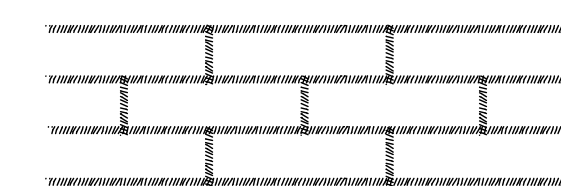
SEDIMENT DEPTH MARKER

NOT TO SCALE

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

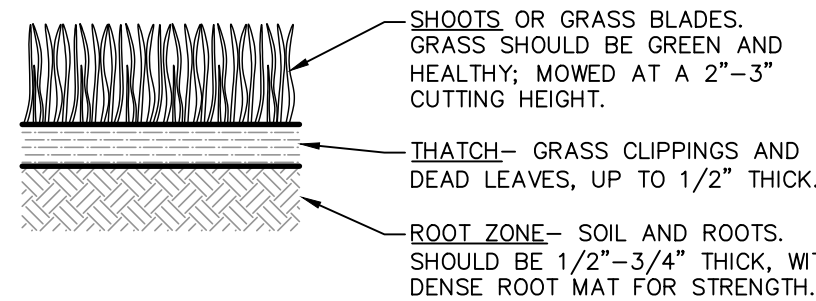
OUTLET STRUCTURE DETAIL
WITH SURFACE OUTFALL PIPE

NOT-TO-SCALE



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

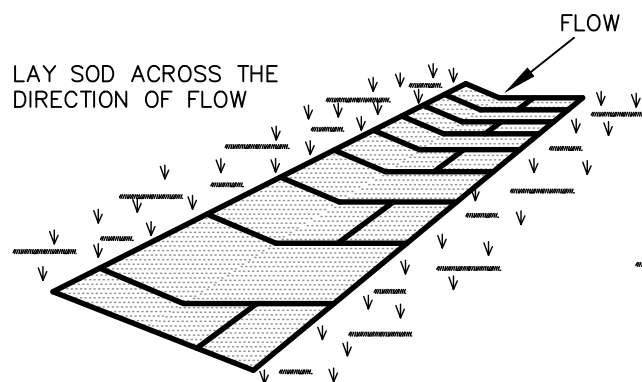
BUTTING - ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



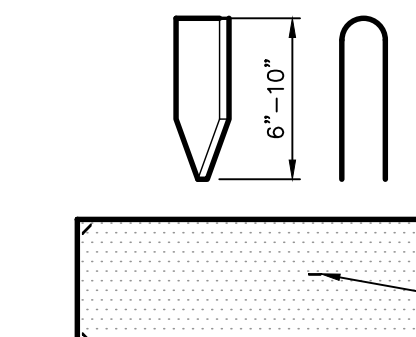
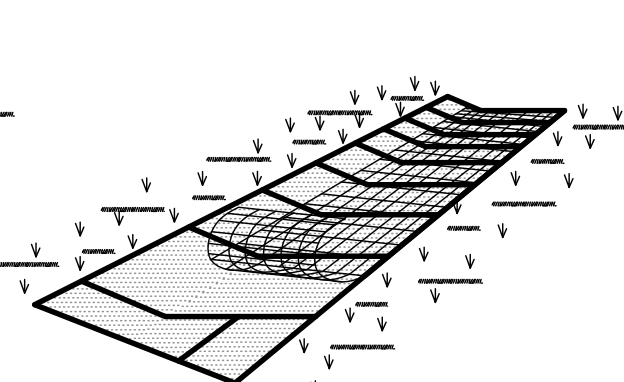
APPEARANCE OF GOOD SOD

NOTES:

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



IN CRITICAL AREAS, SECURE SOD WITH NETTING, USE STAPLES.



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

- SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH ($\pm 1/4$ " INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
- 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.
- 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.
- SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

- PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
- 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.
- 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

- 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).
- 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)

- 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.
- 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.
- THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).
- ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).
- AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
- 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.
- 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.
- THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

INSPECTION AND MAINTENANCE GUIDELINES

- SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.
- 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:

- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASINS PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
- 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.
- ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASINS SHALL BE REVEGETATED PRIOR TO COMPLETION.

SEQUENCE OF OPERATION

- UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.
- DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
- WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
- UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROL TO START DETENTION TIMER #2.
- DETENTION TIMER #2 TO BE MANUALLY SET TO 19-48 HOURS AND TO BE USER ADJUSTABLE.
- WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
- VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

NOTES TO CONTRACTOR

(EACH PHASE OF BASIN CONSTRUCTION)

- CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

- CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:
 - REINFORCING STEEL FOR BASIN OVERFLOW WALL OR RIPRAP PILOT CHANNEL HAS BEEN SET. CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE AND RISER PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.
 - BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

- WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.

- UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:

- TOP OF BANKWALL AT EACH CORNER OF BASIN
- TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
- SPLASH PAD/INLET PIPES
- OVERFLOW WEIRS

BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.

CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	SPECIFICATION
PERMEABILITY (CM/SEC)	ASTM D 2434	1×10^{-6}
PLASTICITY INDEX OF CLAY (%)	ASTM D 423/D 424	NOT LESS THAN 15
LIQUID LIMIT OF CLAY (%)	ASTM D 2216	NOT LESS THAN 30
CLAY PARTICLES PASSING (%)	ASTM D 422	NOT LESS THAN 30
CLAY COMPACTION (%)	ASTM D 2216	95% OF STANDARD PROCTOR DENSITY

NOTES:

- THE CLAY LINER SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES.

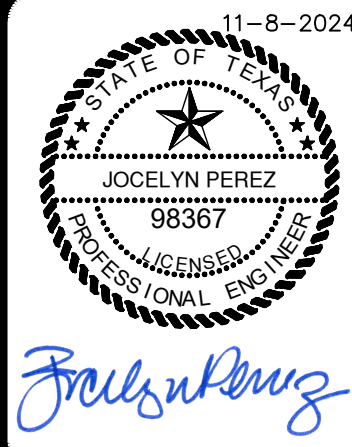
THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

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

EXHIBIT 5

DATE

NO. REVISION

PAPE-DAWSON
ENGINEERSNEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1675 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.652.5653
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #1008860

VERAMENDI - CONFLUENCE DR PHASE 1

NEW BRAUNFELS, TEXAS

BASIN DETAILS

PLAT NO.

JOB NO. 30001-51

DATE JULY 2024

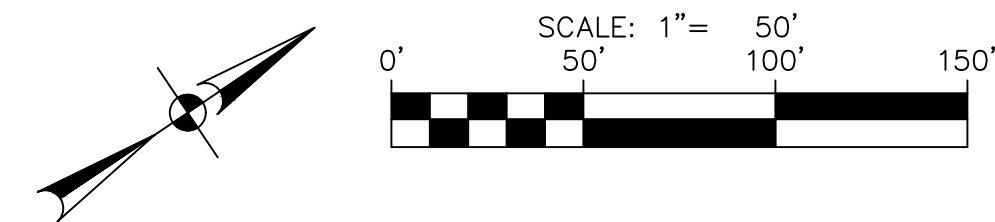
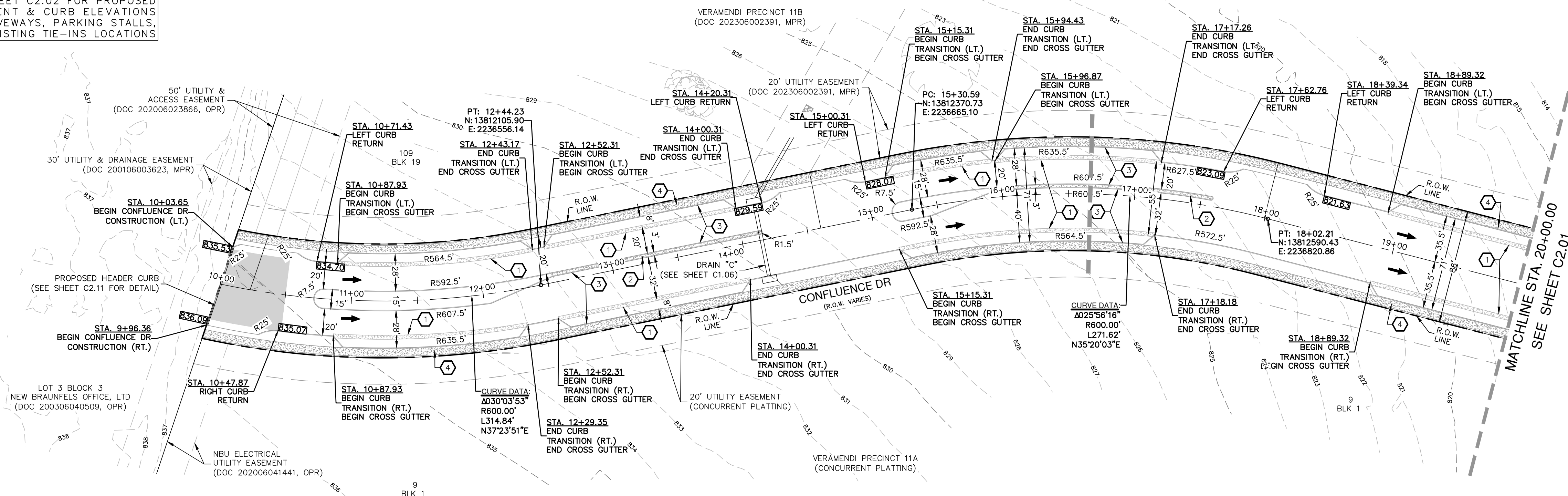
DESIGNER GDL

CHECKED GDL DRAWN CA

SHEET C1.30

FOR PERMIT

NOTE:
SEE SHEET C2.02 FOR PROPOSED
PAVEMENT & CURB ELEVATIONS
AT DRIVEWAYS, PARKING STALLS,
AND EXISTING TIE-INS LOCATIONS

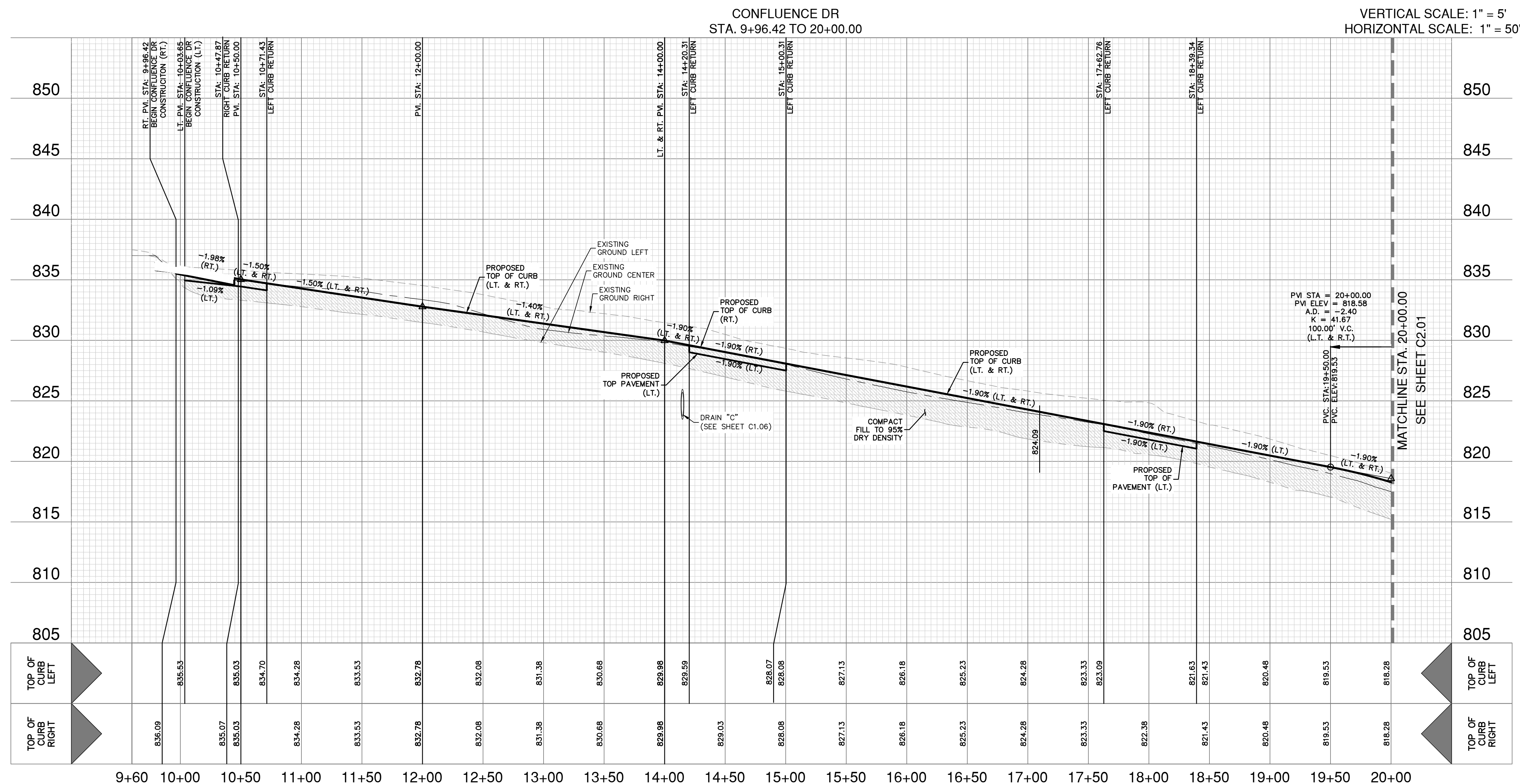


STREET LEGEND

PROJECT LIMITS
EXISTING CONTOUR
CORRECTED EFFECTIVE
100 YR FLOOD PLAIN
PROPOSED 100 YR FLOOD PLAIN
WHEELCHAIR RAMP
CENTERLINE
POINT OF CURVATURE
POINT OF TANGENCY
DRAINAGE FLOW ARROW
TOP OF CURB SPOT ELEVATION
PAVEMENT ELEVATION
WASHOUT CROWN SECTION
SIDEWALK (SEE SHEETS C3.00 & C3.01
FOR DEVELOPER RESPONSIBILITY)

KEYED NOTES

- | | |
|---|--|
| 1 | CROSS GUTTER
(SEE SHEET C2.10 FOR DETAIL) |
| 2 | CONCRETE MEDIAN |
| 3 | CURB AND GUTTER
(ALL AROUND, SEE
SHEET C2.10 FOR DETAIL) |
| 4 | PROPOSED 6' SIDEWALK |



STREET NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-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 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES AND ENCLOSURES, SHALL BE ALLOWED WITHIN THE CLEAR AND CLEAR VISION EASEMENTS. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT SHALL NOT BE 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 OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
4. PER THE VERAMENDI DEVELOPMENT & DESIGN CONTROL DOCUMENT, SECTION 13.3.4, TABLE 13-2, COLLECTORS WERE DESIGNED FOR 30

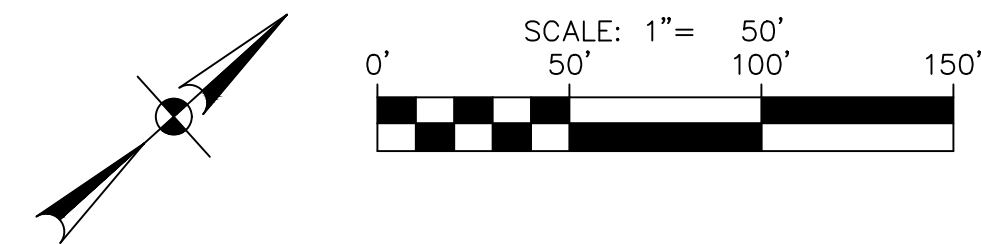
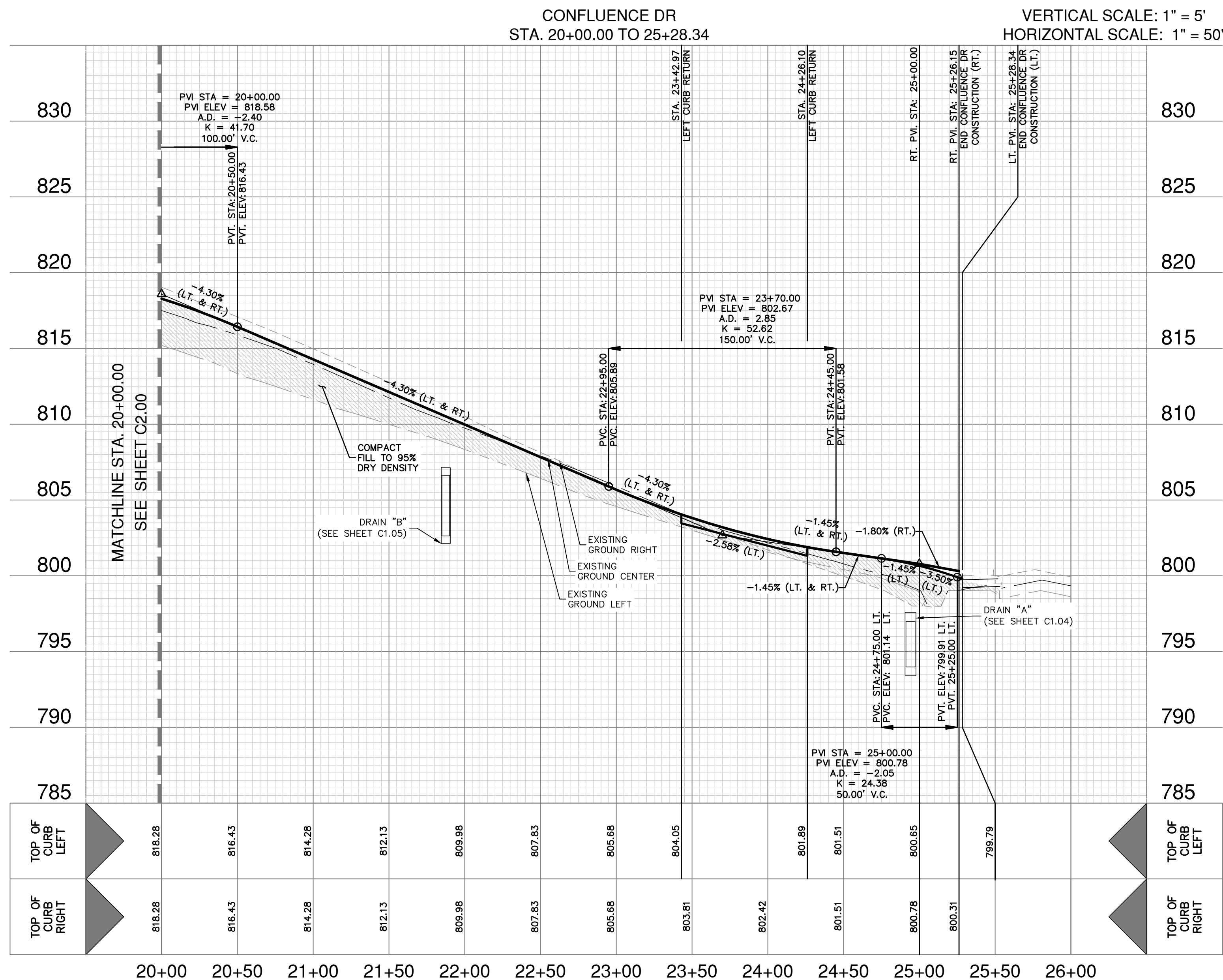
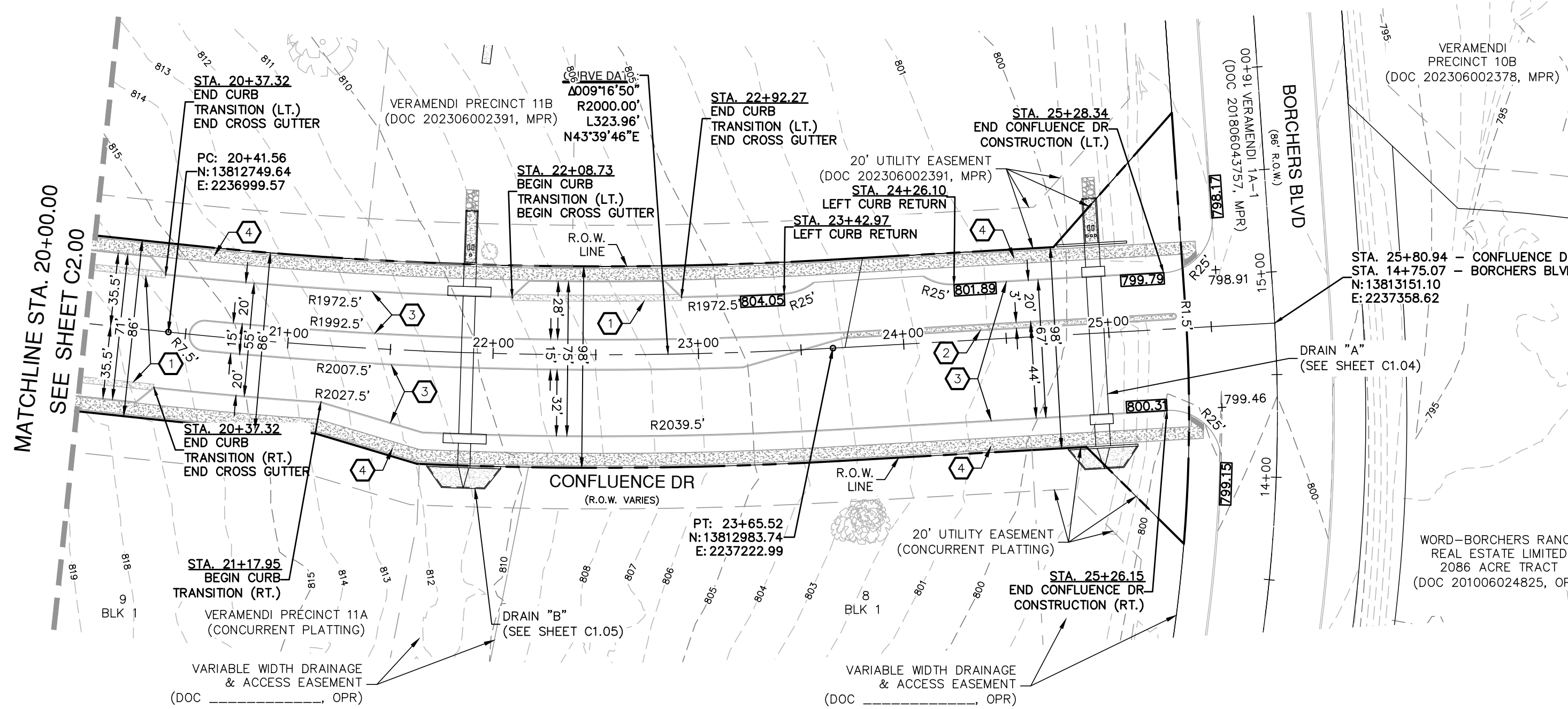
VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

CONFLUENCE DR - PLAN & PROFILE
STA. 9+96.42 TO 20+00.00











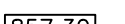



PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C2.00

FOR PERMIT

NOTE:
SEE SHEET C2.02 FOR PROPOSED
PAVEMENT & CURB ELEVATIONS
AT DRIVEWAYS, PARKING STALLS,
AND EXISTING TIE-INS LOCATIONS



STREET LEGEND

PROJECT LIMITS	
EXISTING CONTOUR	 970
CORRECTED EFFECTIVE 100 YR FLOOD PLAIN	
PROPOSED 100 YR FLOOD PLAIN	
WHEELCHAIR RAMP	
CENTERLINE	
POINT OF CURVATURE	
POINT OF TANGENCY	
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	
PAYMENT ELEVATION	
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEETS C3.00 & C3.01 FOR DEVELOPER RESPONSIBILITY)	
DRIVEWAY	

KEYED NOTES

- | | |
|---|--|
| 1 | CROSS GUTTER
(SEE SHEET C2.10 FOR DETAIL) |
| 2 | CONCRETE MEDIAN |
| 3 | CURB AND GUTTER
(ALL AROUND, SEE
SHEET C2.10 FOR DETAIL) |
| 4 | PROPOSED 6' SIDEWALK |

STREET NOTES:

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2. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES AND OBSTRUCTIONS, SHALL BE ALLOWED WITHIN THE CLEAR AREA WITHIN CLEAR VISION EASEMENTS. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT SHALL NOT BE HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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4. PER THE VERAMENDI DEVELOPMENT & DESIGN CONTROL DOCUMENT, SECTION 13.3.4, TABLE 13-2, COLLECTORS WERE DESIGNED FOR 30 MPH.

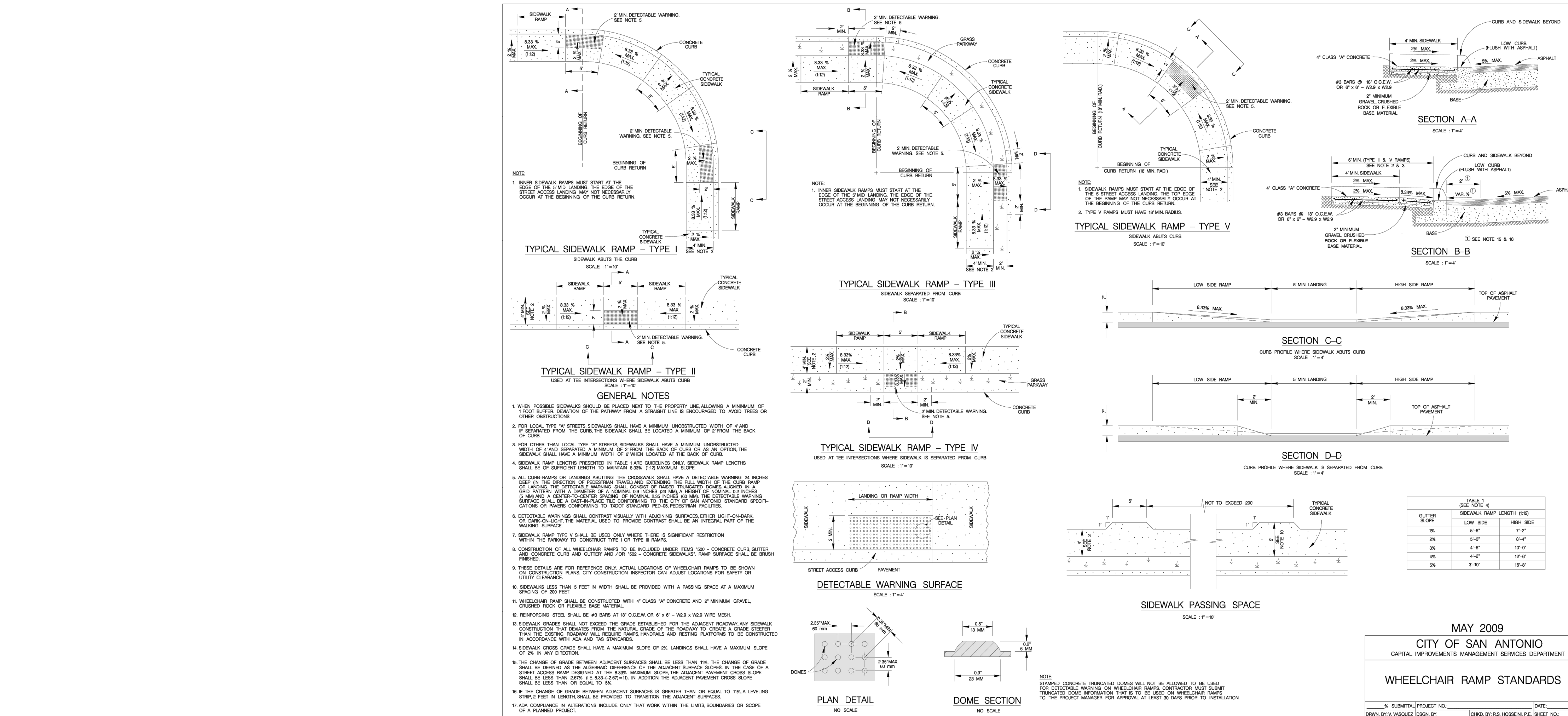
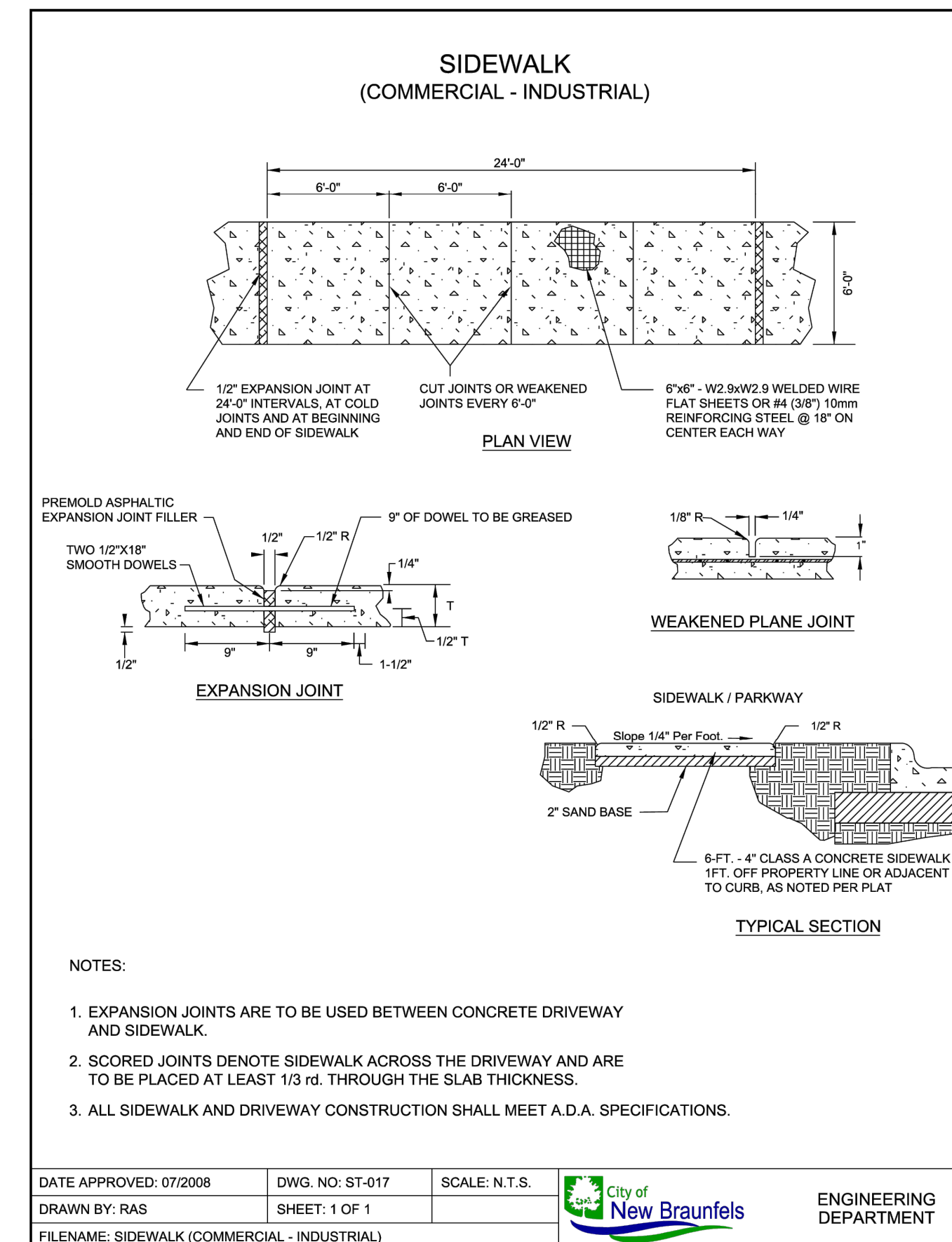
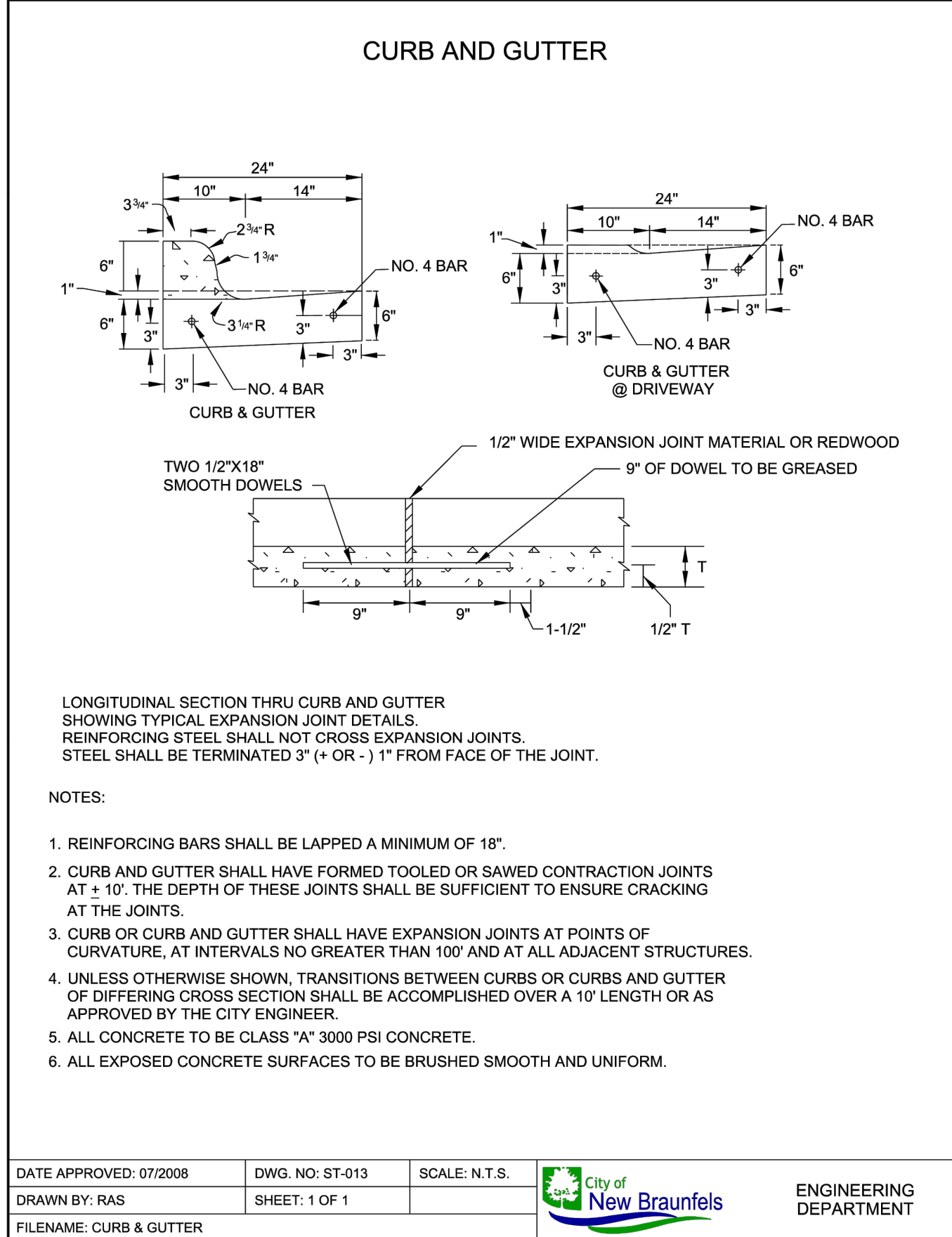
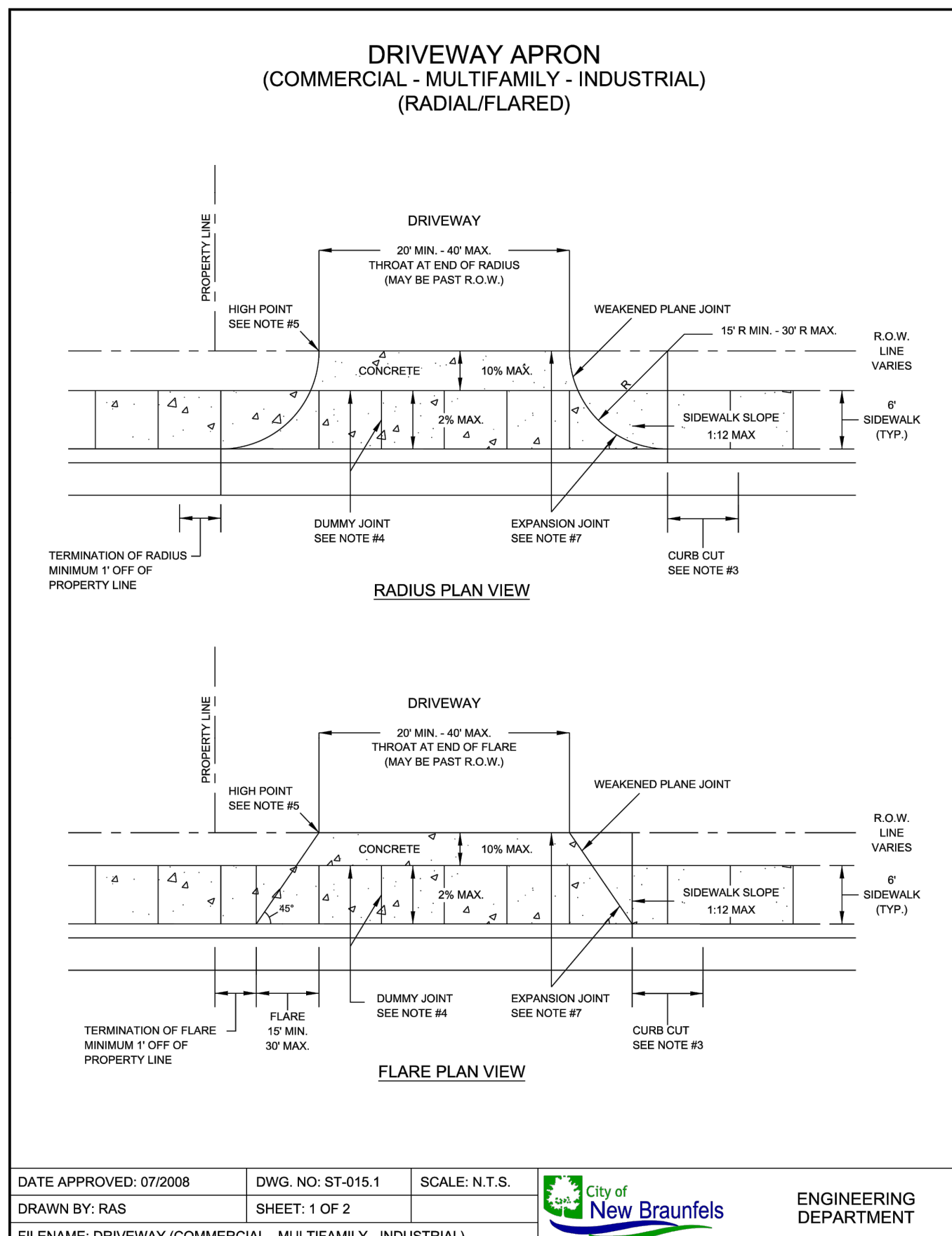
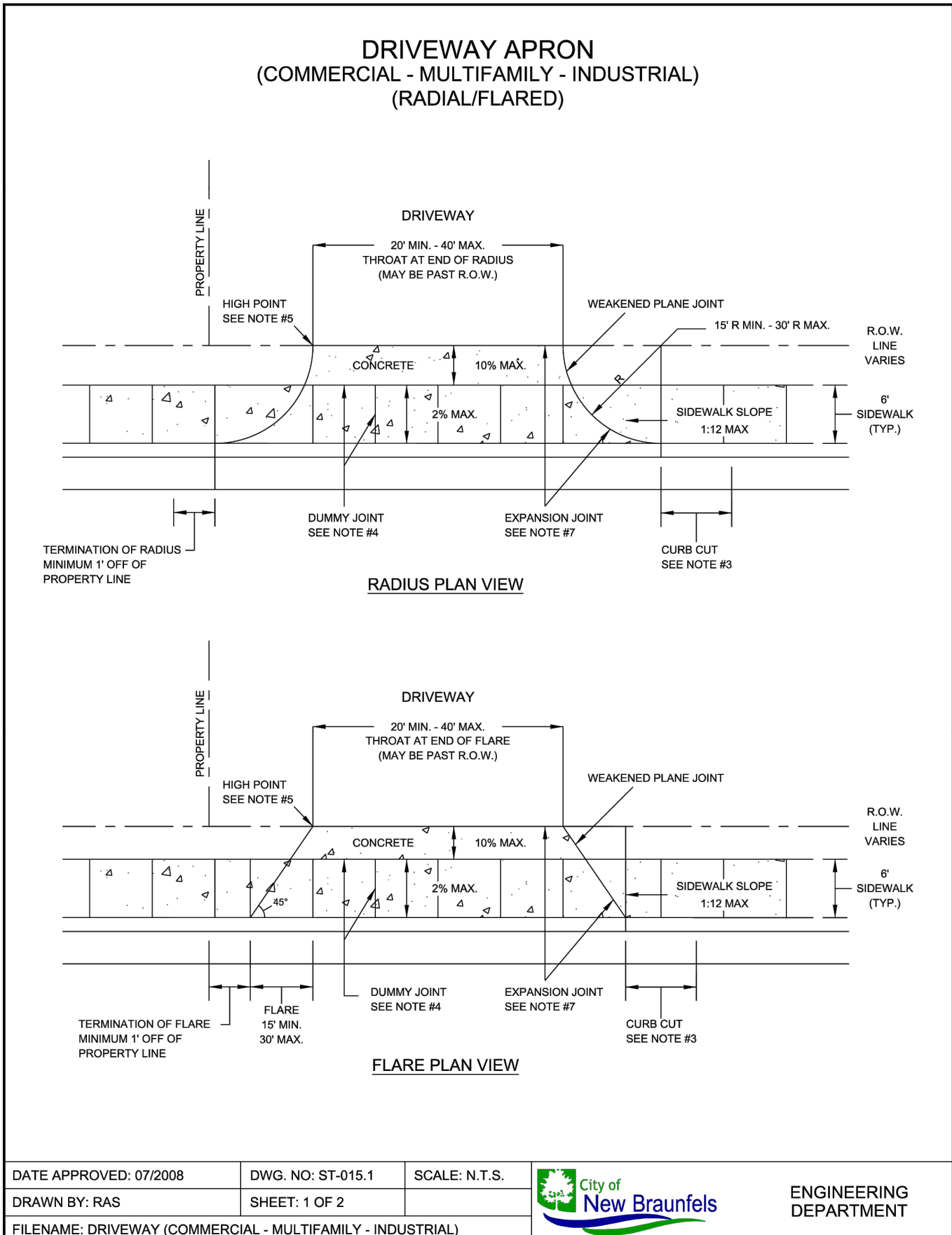
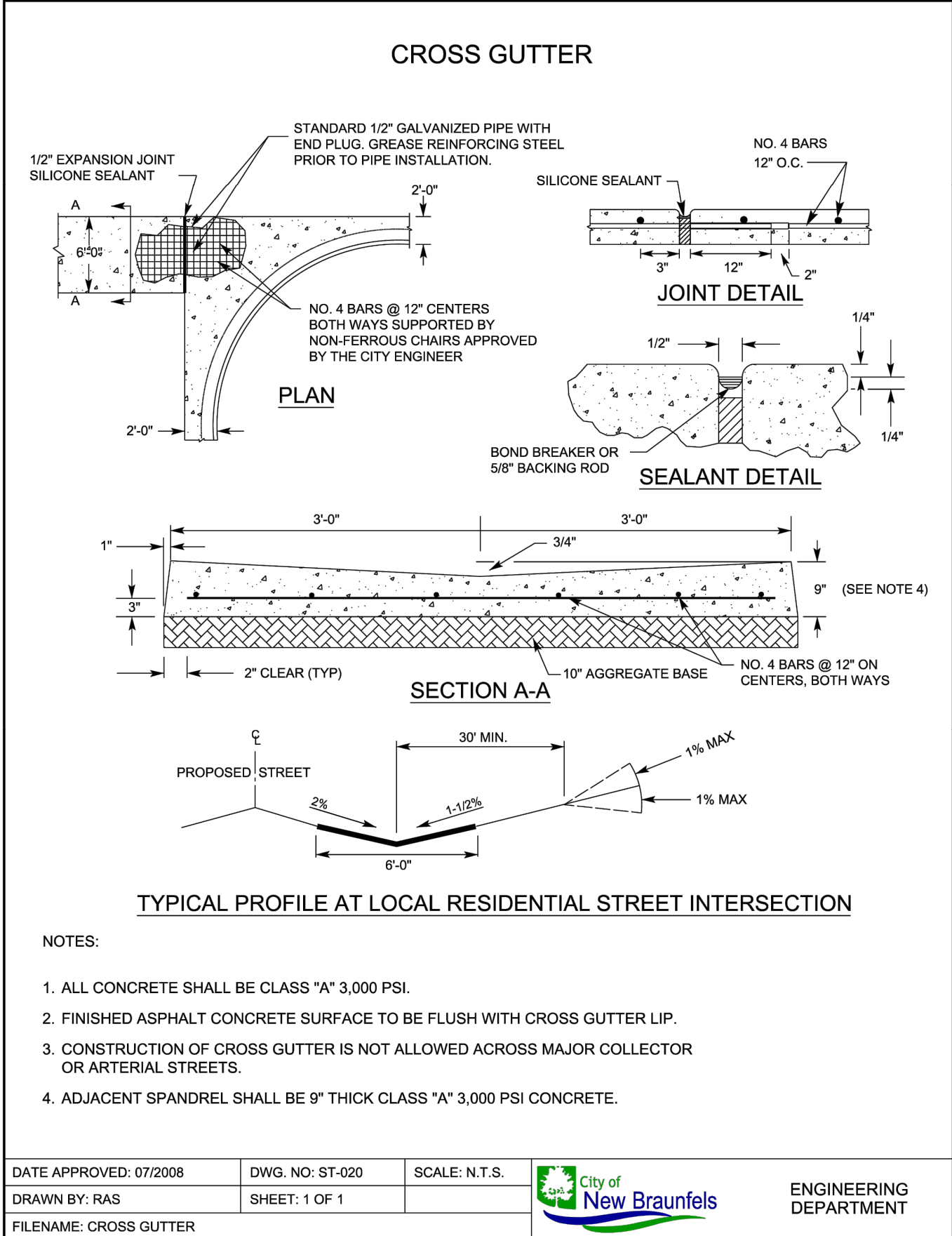
PAPE-DAWSON
PE ENGINEERS

NDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

CONFLUENCE DR - PLAN & PROFILE
STA 20+00.00 TO 25+28.34

PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN C
SHEET C2.01

FOR PERMIT



NO. REVISION

DATE

11-8-2024

JOCelyn PEREZ
98367
PROFESSIONAL ENGINEER

Pape-Dawson
ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1675 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78131 | 800.652.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

STREET DETAILS

PLAT NO.

JOB NO. 30001-51

DATE JULY 2024

DESIGNER GDL

CHECKED GDL

DRAWN CA

SHEET C2.10

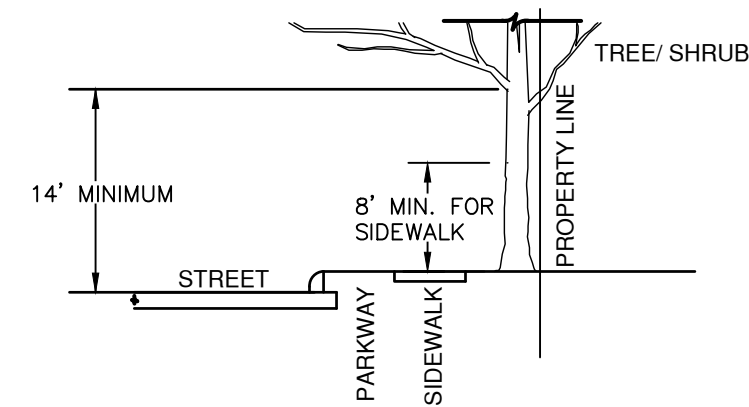
MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS

TABLE 1
(SEE NOTE 6)
SIDEWALK RAMP LENGTH (F.T.)
GUTTER SLOPE LOW SIDE HIGH SIDE
1% 5'-0" 7'-0"
2% 5'-0" 8'-4"
3% 4'-0" 10'-0"
4% 4'-0" 12'-0"
5% 3'-0" 16'-0"

FOR PERMIT

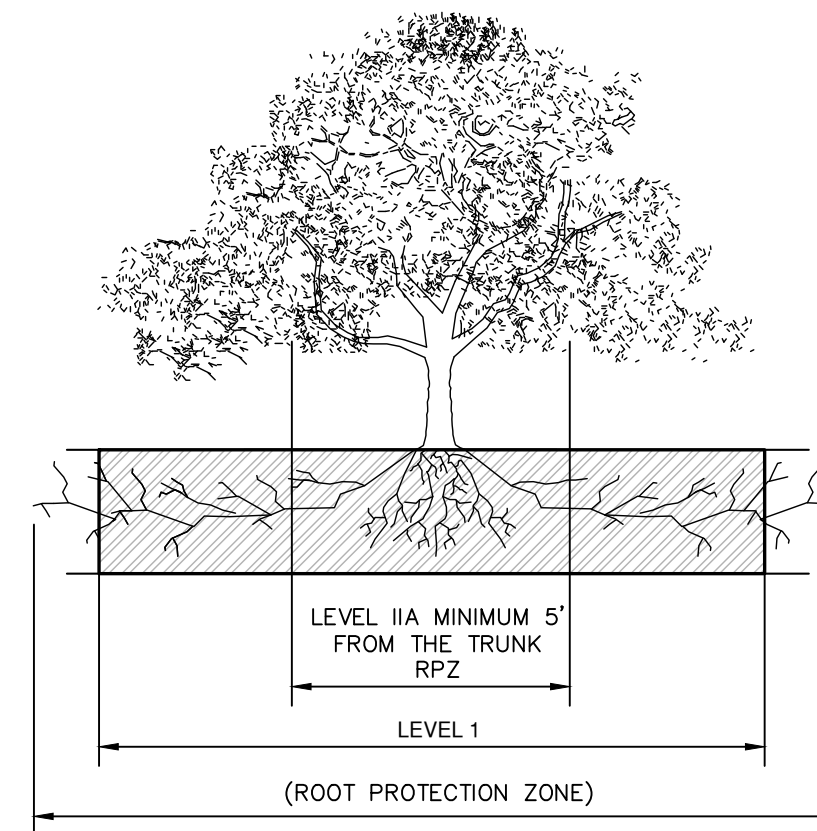


APPROVED DATE: 05/18/2017	DWG. NO.: ST-019	SCALE: AS NOTED
DRAWN BY: RC	CONTACT: GF	SHEET: 1 OF 1

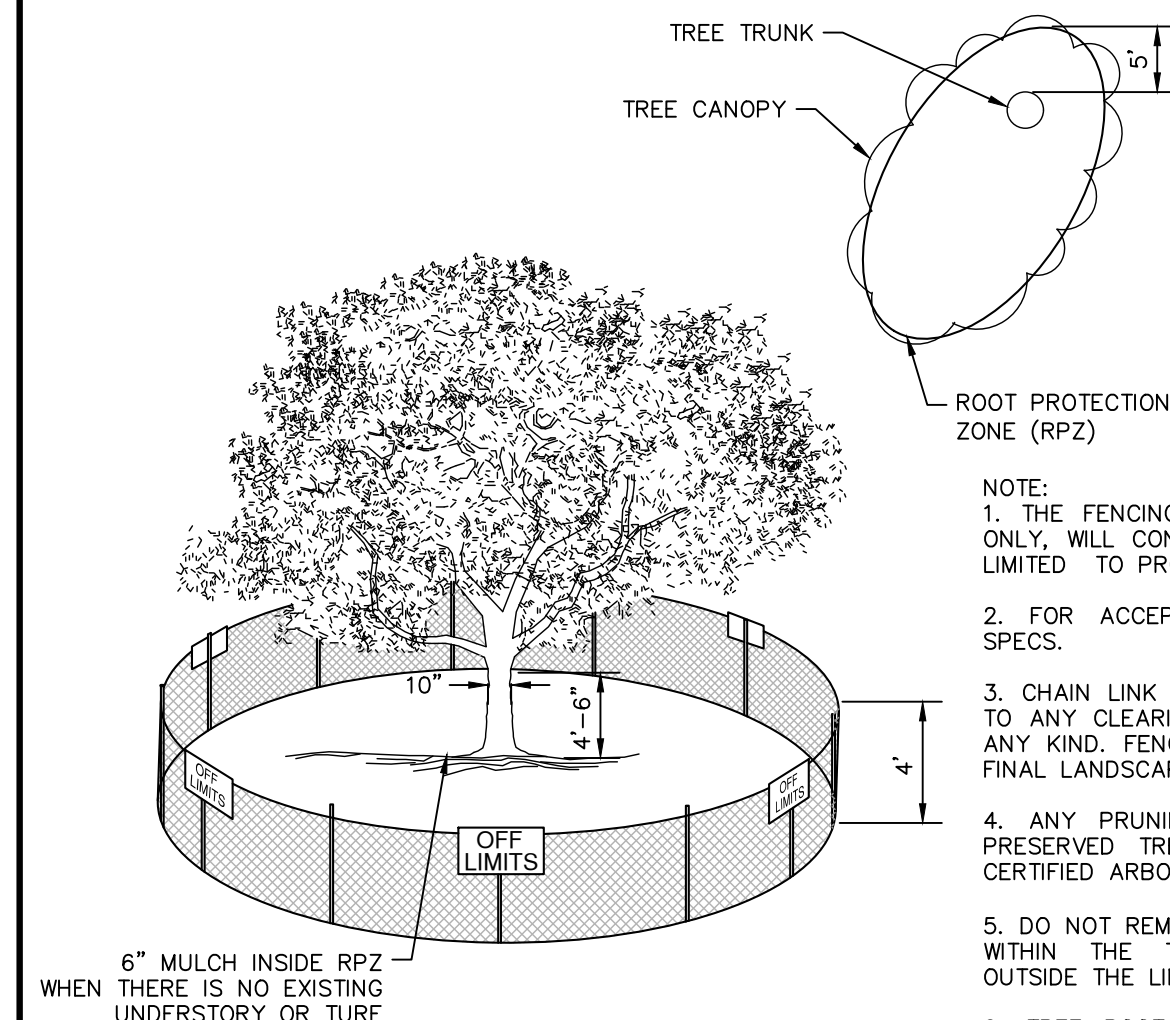


BRANCH CLEARANCE DETAIL

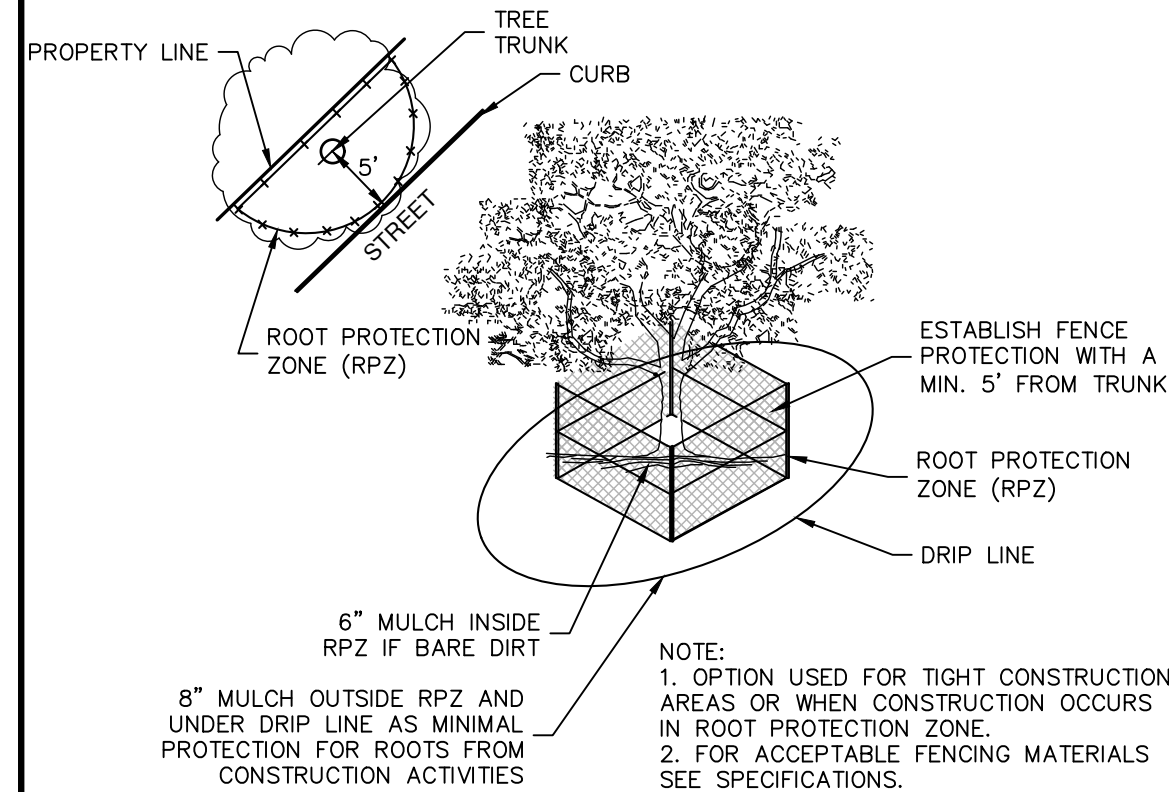
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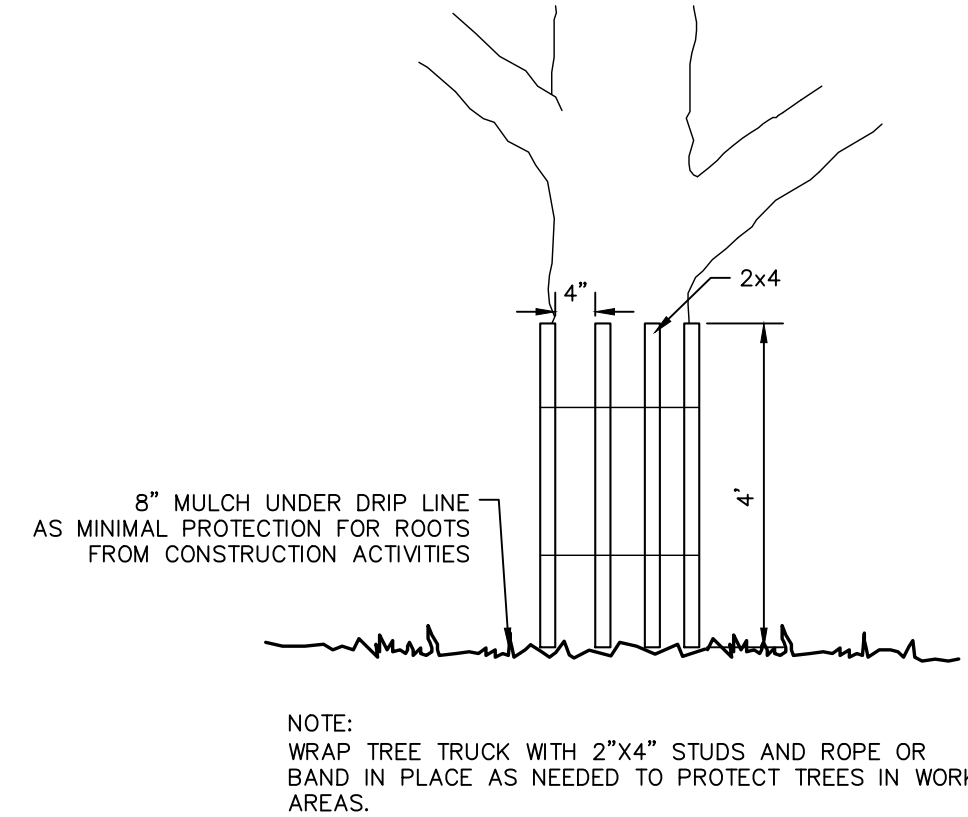
ELEVATION
NOT TO SCALE



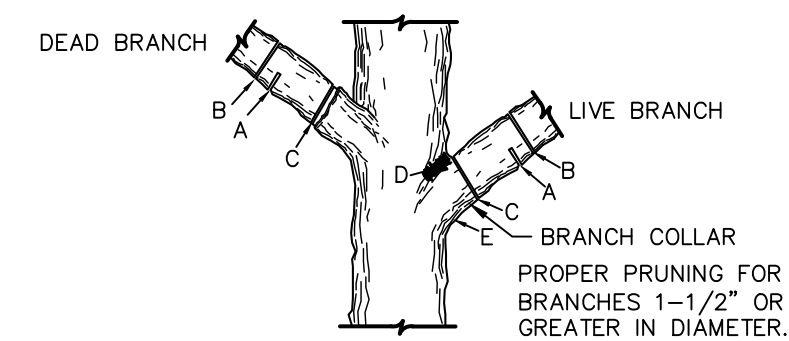
TREE PROTECTION ZONE
NOT TO SCALE



LEVEL II A FENCE PROTECTION
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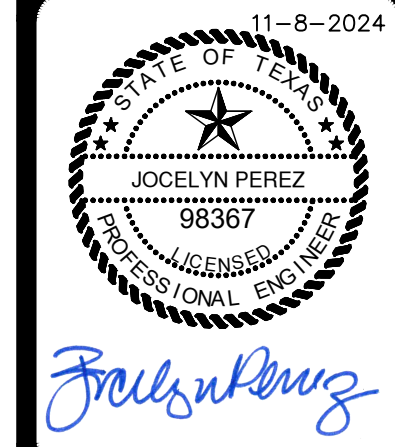


LEVEL II B FENCE PROTECTION
NOT TO SCALE



BRANCH PRUNING

NOT TO SCALE

[illegible]

**PAPE-DAWSON
ENGINEERS**

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1672 INDEPENDENCE DR. STE. 102 | NEW BRAUNFELS, TX 78132 | 830.632.5533
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

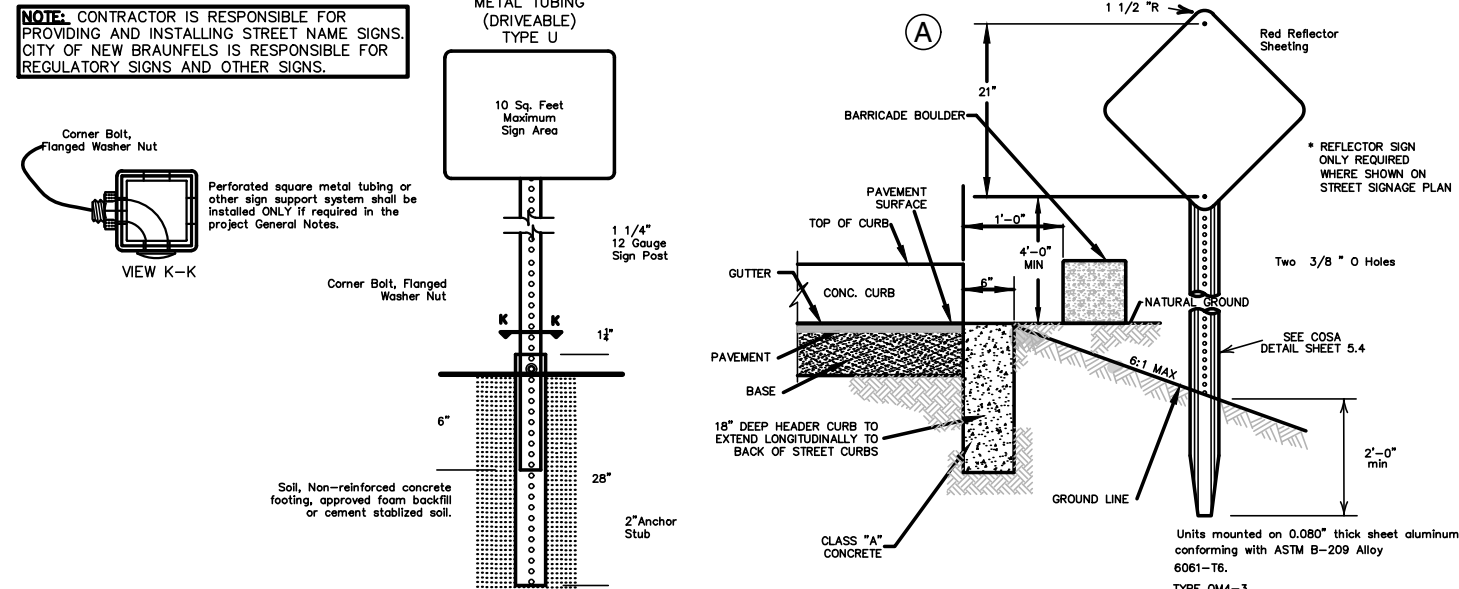
VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
STREET DETAILS

PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C2.12

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.

NOTE: CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING STREET NAME SIGNS. CITY OF NEW BRAUNFELS IS RESPONSIBLE FOR REGULATORY SIGNS AND OTHER SIGNS.



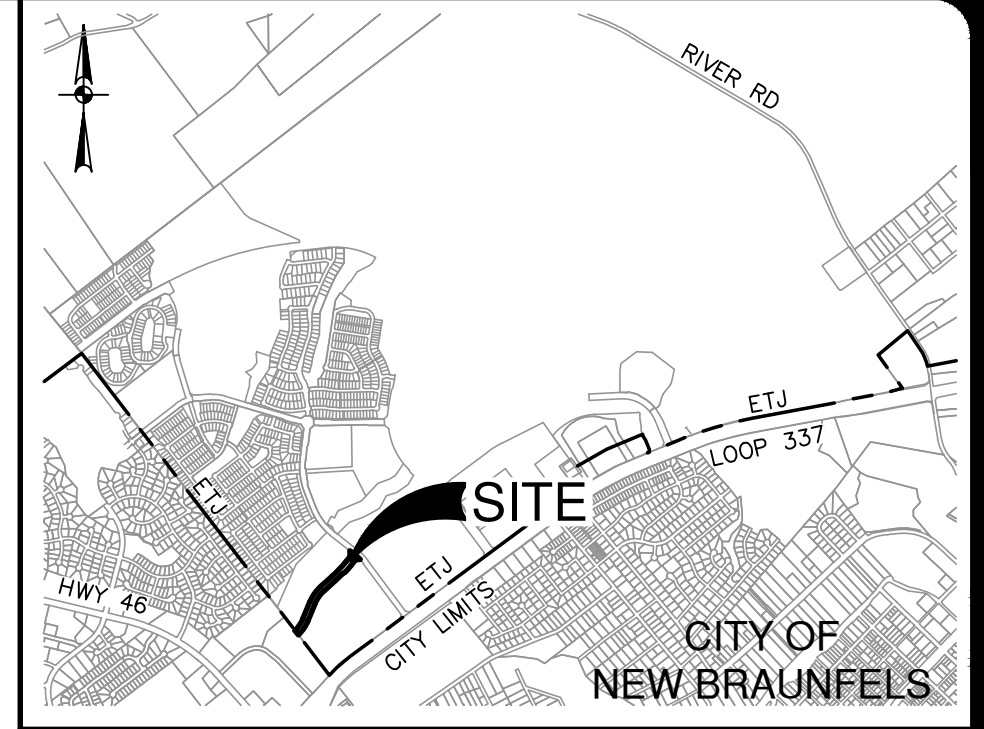
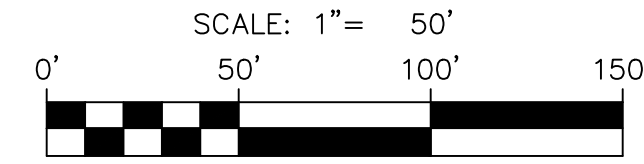
BARRICADE BOULDER AND HEADER CURB DETAIL

KEYED NOTES:

- BIKE LANE ARROW (SEE SHEET C3.12 FOR DETAILS)
- BIKE LANE SYMBOL (SEE SHEET C3.12 FOR DETAILS)
- LEFT WHITE ARROW ITEM 536.09
- 8" SOLID WHITE LINE WITH TYPE I-C REFL. MARKERS AT 20' O.C.
- 4" BROKEN WHITE LINE
- RIGHT WHITE ARROW (SEE SHEET C3.12 FOR DETAILS)

SIDEWALK NOTES:

SIDEWALKS ON BOTH SIDES OF THE RIGHT-OF-WAY SHALL BE 6' WIDE AND CONSTRUCTED AT THE TIME OF BUILDING PERMIT WITH ADJACENT DEVELOPMENT. THE SIDEWALKS MAY MEANDER WITHIN BOTH THE STREET RIGHT-OF-WAY AND/OR FUTURE ADJACENT PEDESTRIAN EASEMENTS.



LOCATION MAP

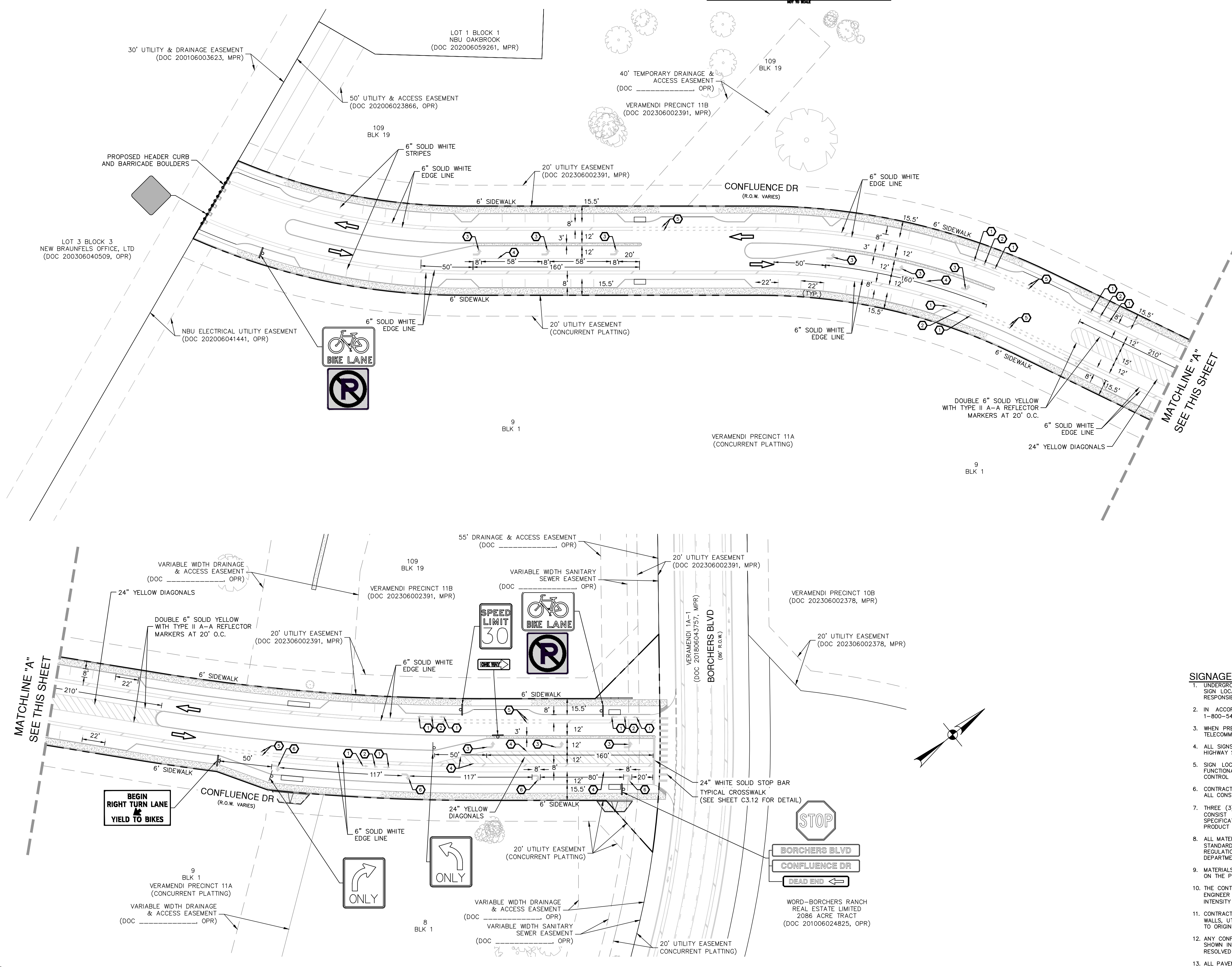
NOT-TO-SCALE

LEGEND

	UNIT BOUNDARY
	CURB INLET
	TRAFFIC FLOW ARROW
	SIDEWALK (SITEBUILDER RESPONSIBILITY)
	SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)
	STANDARD COMAL COUNTY NAME SIGN 9XSTD (NOTE: STREETS MUST SHOW BLOCK NUMBERS)
	R2-1 24X30
	R1-1 30"X30"
	OM4-3 END OF ROAD MARKER
	R3-5R (30" x 36")
	R3-5L (30" x 36")
	R4-4 (36" x 30")
	R3-17 (24" x 18")
	R8-3 (30" x 30")
	R6-1R (36" x 12")
	W14-1P (30" x 12")

SIGNAGE NOTES:

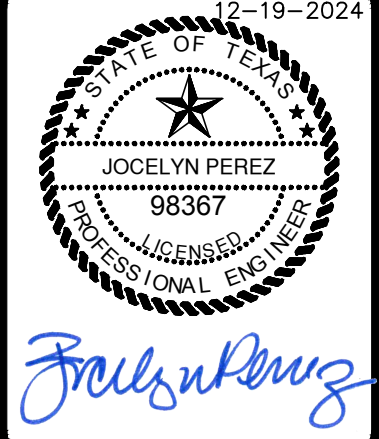
- UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT. CONTRACTOR SHALL HAVE THE UTILITIES MARKED PRIOR TO INSTALLATION OF THE SIGN POST. SIGN LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SIGNS TO AVOID UTILITIES. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES BEFORE COMMENCING WORK.
- IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION ACT THE TELEPHONE NUMBER FOR A UTILITY LOCATOR IS 1-800-545-6005. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS FOR UTILITY LOCATORS, AS NEEDED.
- WHEN PREPARING HOLES FOR POSTS, CARE SHALL BE TAKEN SO AS NOT TO RUPTURE EXISTING DRAINAGE STRUCTURES, SPRINKLER SYSTEMS, TELECOMMUNICATIONS FACILITIES, ELECTRICAL CONDUITS AND PUBLIC UTILITIES.
- ALL SIGNS SHALL COMPLY WITH THE SIGN DESIGNS PRESENTED IN STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS OR THE MILLENNIUM STANDARD HIGHWAY SIGN DESIGNS, IF A MILLENNIUM SIGN IS SPECIFIED ON THE PLANS.
- SIGN LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. SIGNS SHALL BE LOCATED IN THE FIELD TO PROVIDE APPROPRIATE FUNCTIONALITY. SIGN LOCATIONS SHALL COMPLY WITH GUIDELINES AND REQUIREMENTS PRESENTED IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- CONTRACTOR SHALL FURNISH AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, LIGHTING, OR WARNING DEVICES REQUIRED TO COMPLETE THE WORK. ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THREE (3) COPIES OF EQUIPMENT SUBMITTALS FOR ALL TRAFFIC SIGN COMPONENTS SHALL BE SENT TO THE ENGINEER. SUBMITTALS SHALL CONSIST OF THE APPROPRIATE COMBINATION OF CATALOG SHEETS, MATERIAL LISTS, MANUFACTURER'S BROCHURES, TECHNICAL BULLETINS, SPECIFICATIONS, DIAGRAMS, OR PRODUCT SAMPLES NECESSARY TO DESCRIBE A SYSTEM, PRODUCT, OR ITEM. SPECIFIC ITEM NUMBERS AND PRODUCT CODES WILL BE CLEARLY IDENTIFIED WHEN MULTIPLE PRODUCTS ARE LISTED ON THE SAME SHEET.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL CONFORM TO APPLICABLE CITY OF NEW BRAUNFELS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), TEXAS DOT STANDARD SPECIFICATIONS, CITY BUILDING CODE AND REGULATIONS AS WELL AS PROVISIONS APPLICABLE TO THE PROJECT AND AS OTHER SAFETY CODES AND INSPECTION REQUIREMENTS OF THE FIRE DEPARTMENT.
- MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, UN-DEPRECIATED STOCK. ALL EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE ON THE PLANS.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE FOR MOUNTING. ALL SIGNS WITH A WHITE BACKGROUND SHALL BE FABRICATED WITH ENGINEER GRADE REFLECTIVE SHEETING (TXDOT TYPE A). ALL SIGNS WITH NON-WHITE BACKGROUNDS SHALL BE FABRICATED WITH HIGH SPECIFIC INTENSITY REFLECTIVE SHEETING (ALL TYPE C TXDOT TSP-(4)-(08)).
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION, OR BETTER, ANY DAMAGE DONE TO EXISTING BUILDINGS, RETAINING WALLS, UTILITIES, FENCES, PAVEMENT, CURBS OR DRIVEWAYS (NO SEPARATE PAY ITEM). CONTRACTOR SHALL RESTORE THE CONSTRUCTION AREA TO ORIGINAL CONDITION, OR BETTER, PRIOR TO FINAL INSPECTION.
- ANY CONFLICT BETWEEN ANY DEFINITION, MATERIAL SPECIFICATION, CONSTRUCTION SPECIFICATION, MEASUREMENT AND PAYMENT PROCEDURE, ETC., SHOWN IN THIS PLAN SET AND ANY TEXAS DEPARTMENT OF TRANSPORTATION OR CITY OF NEW BRAUNFELS STANDARD SPECIFICATION SHALL BE RESOLVED ONLY BY THE ENGINEER AND THE ENGINEER'S DECISION SHALL BE FINAL AND BINDING.
- ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AS PER TXDOT ITEM NO. 666.



Date: Dec 19, 2024, 1:52pm User ID: ebltner
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DATE
NO. REVISION



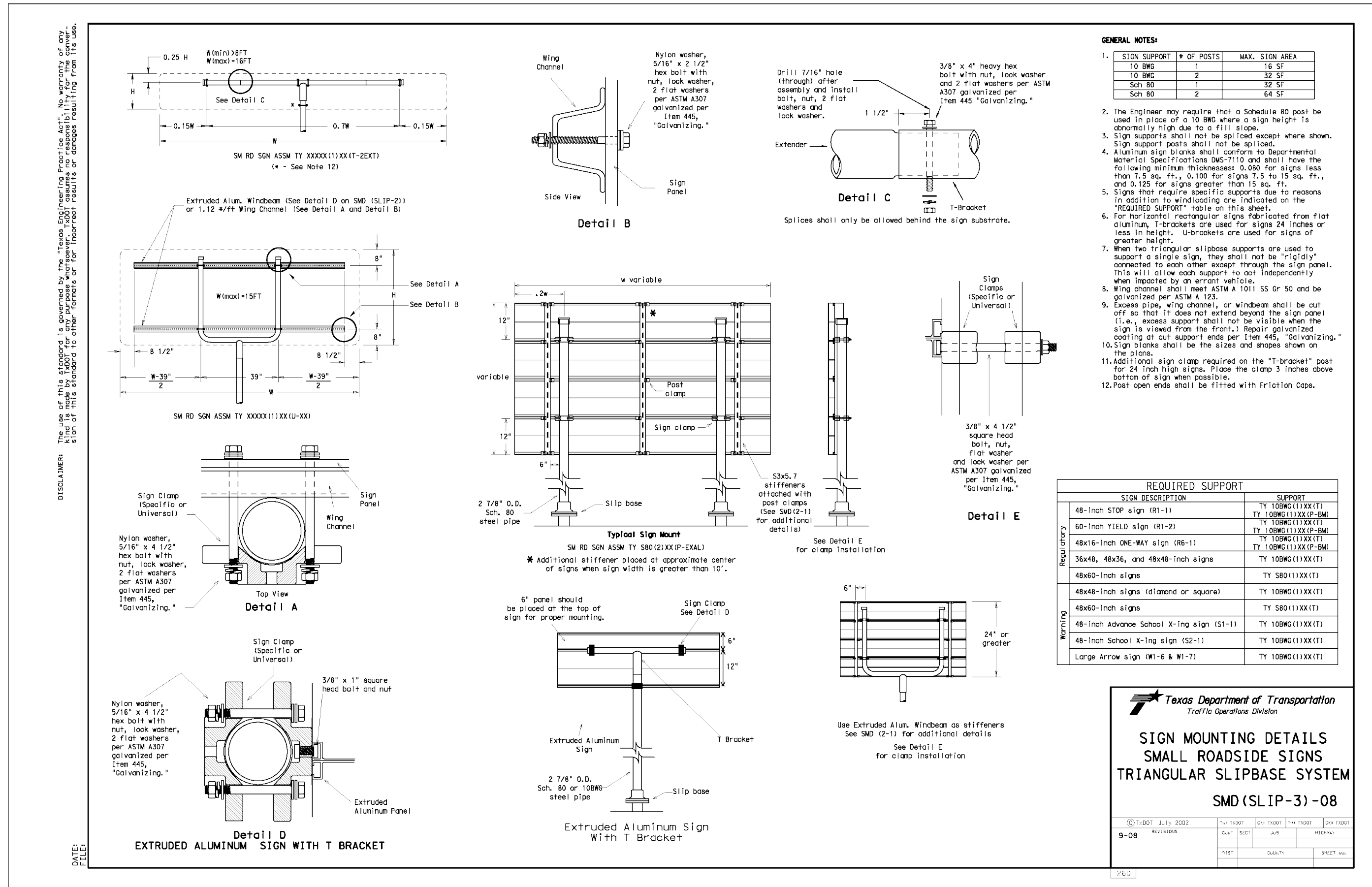
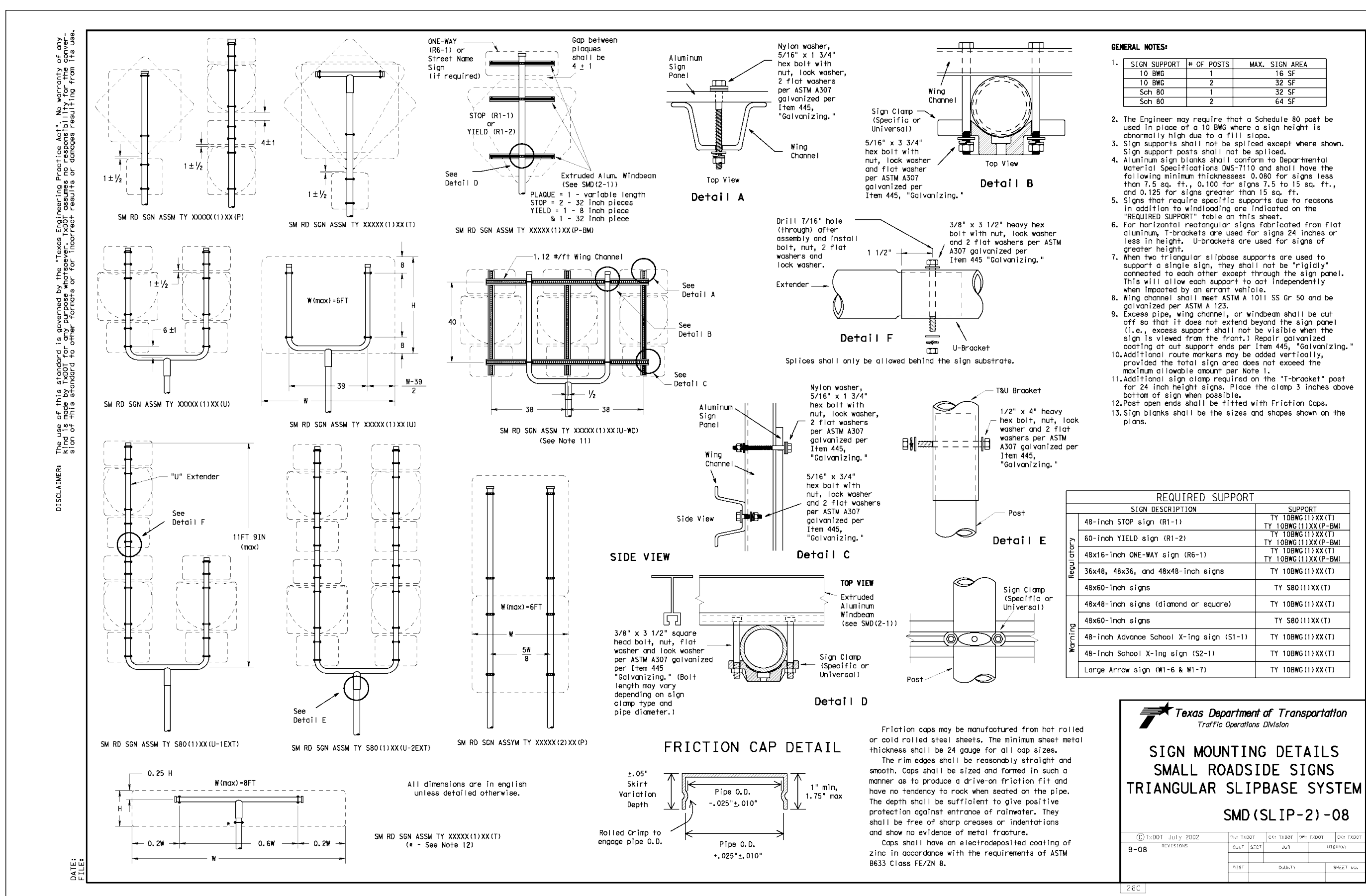
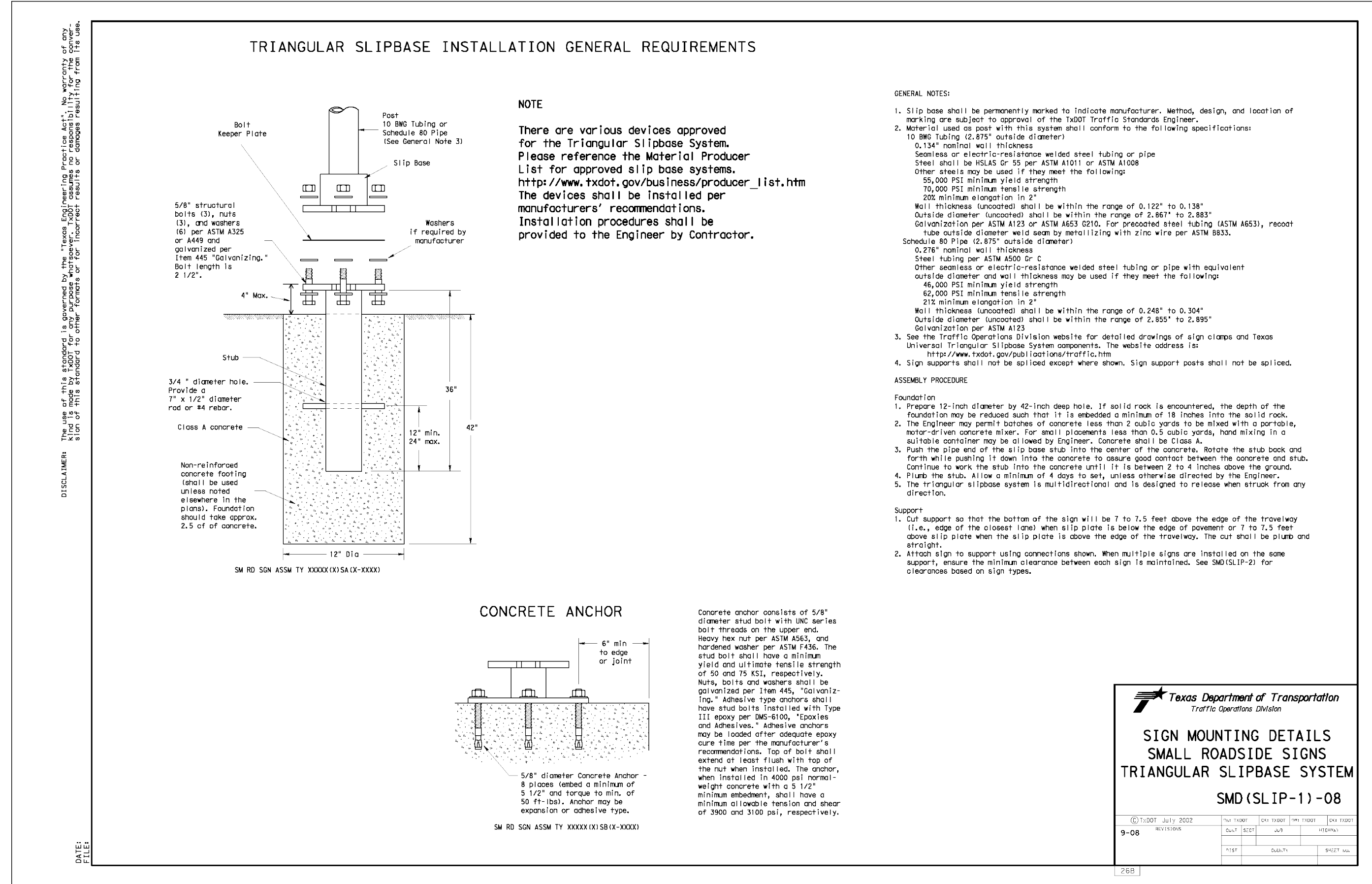
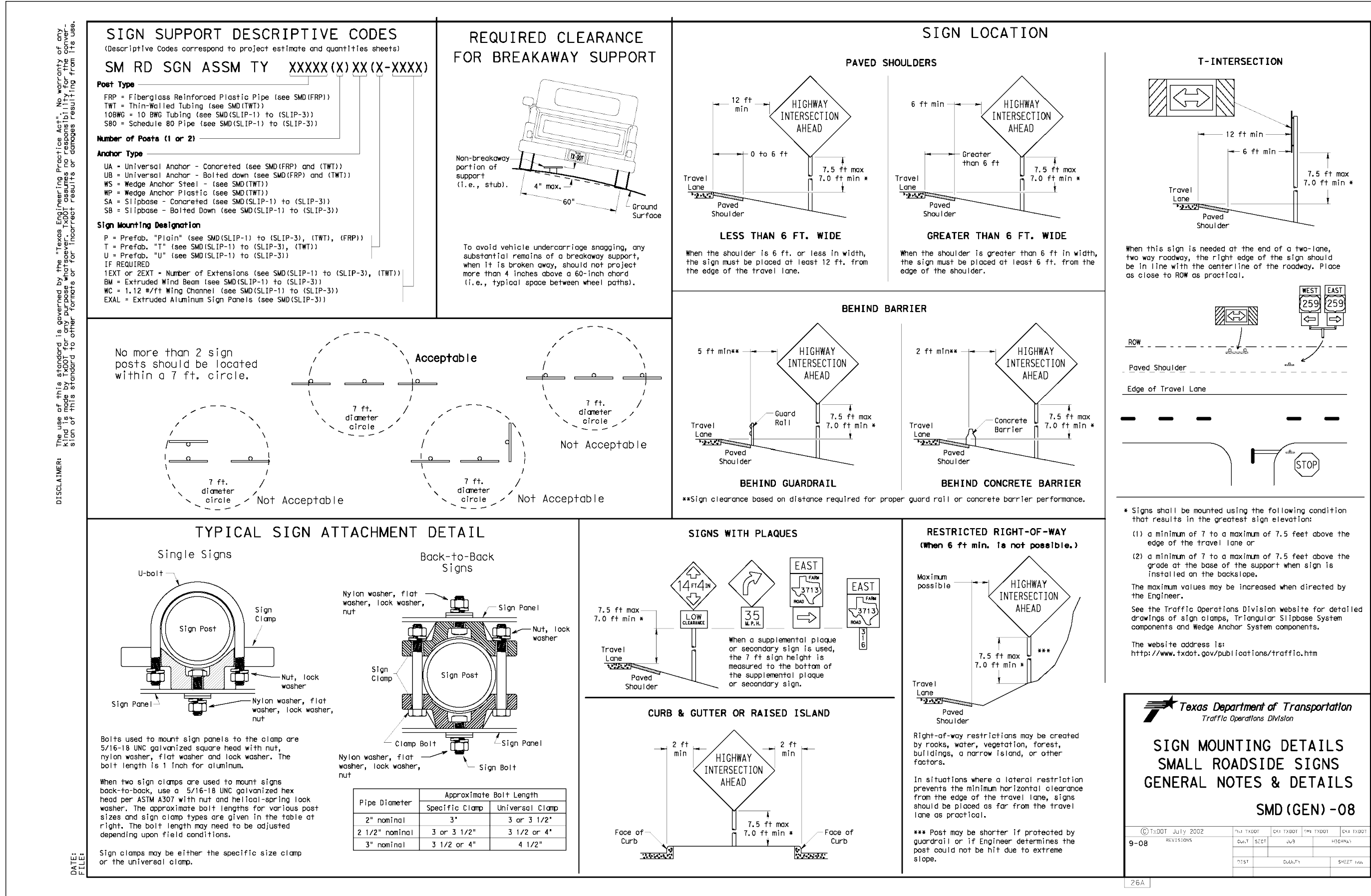
Pape-Dawson
ENGINEERS

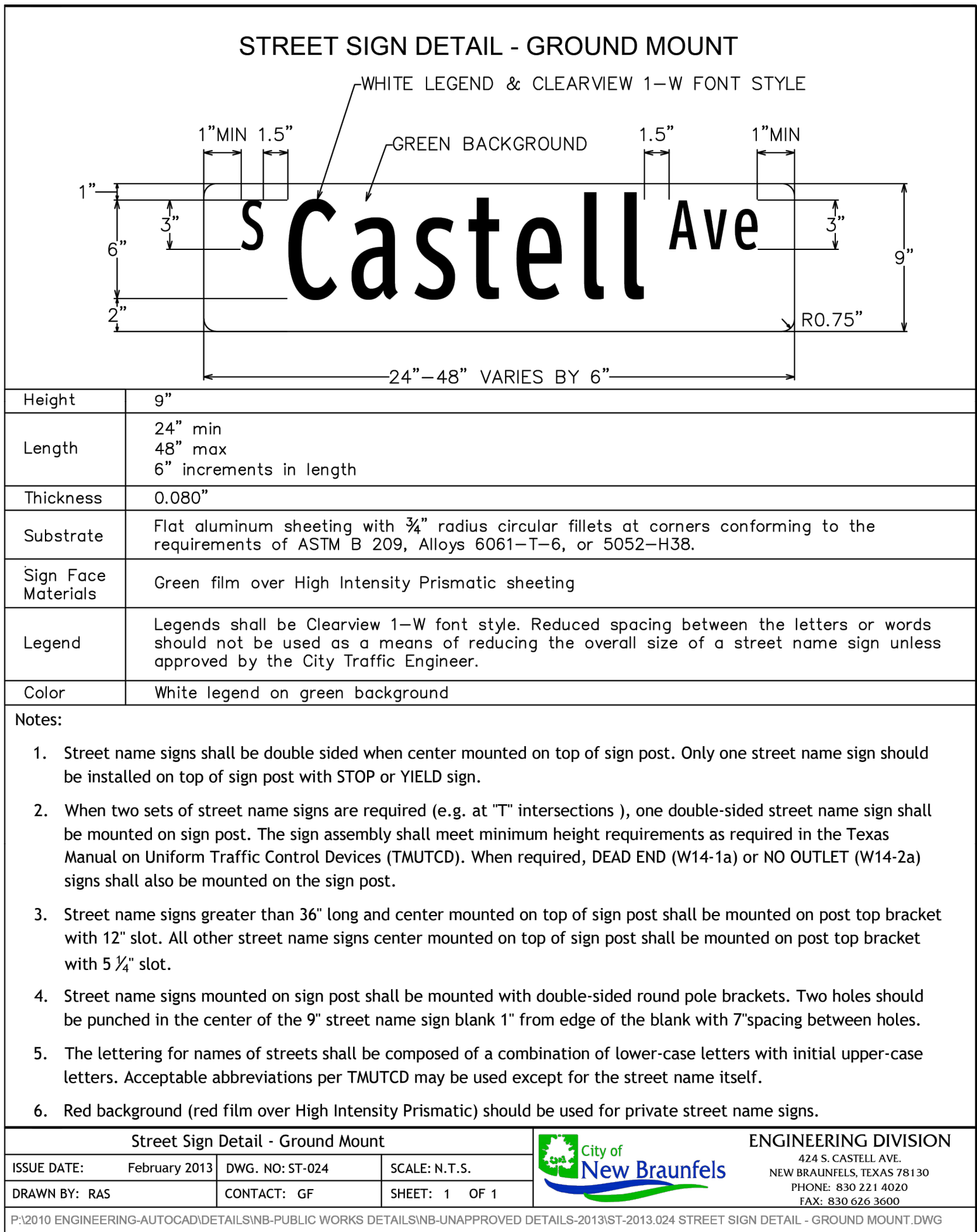
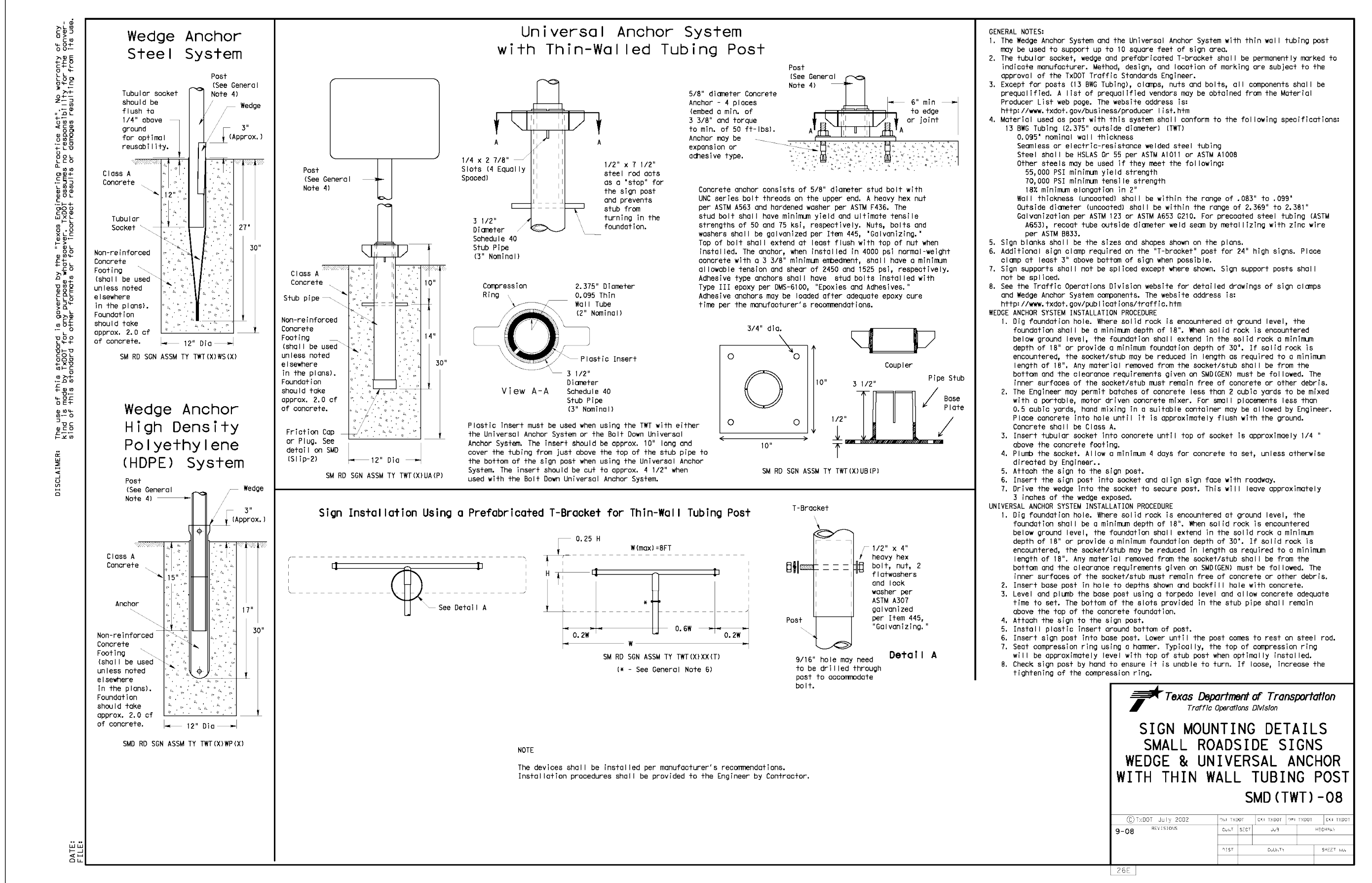
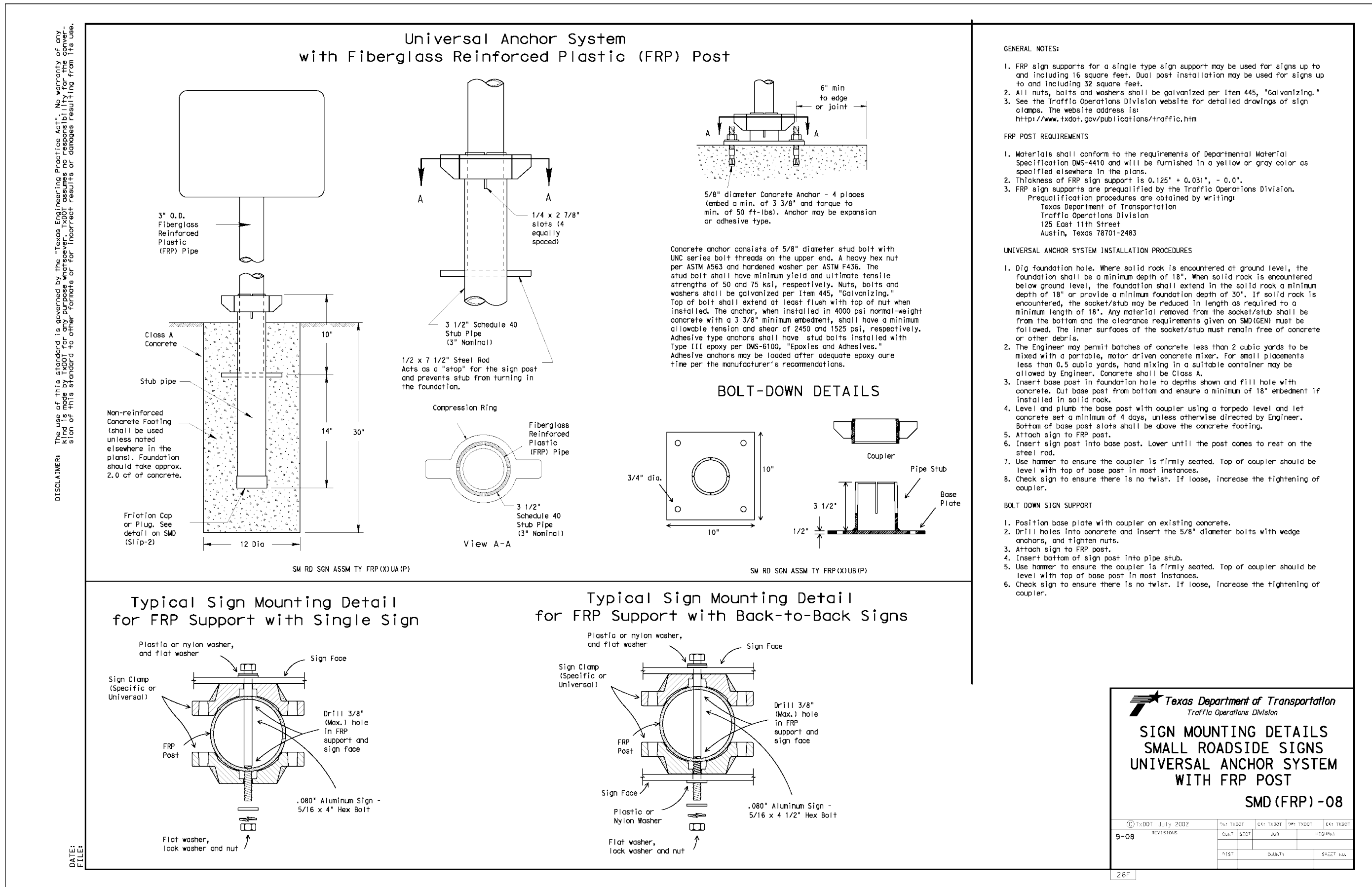
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5653
TEXAS ENGINEERING FIRM #470 1 TEXAS SURVEYING FIRM #1028860

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
OVERALL SIGNAGE PLAN

PLAT NO.	
JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	GA
DRAWN	GA
SHEET	C3.00

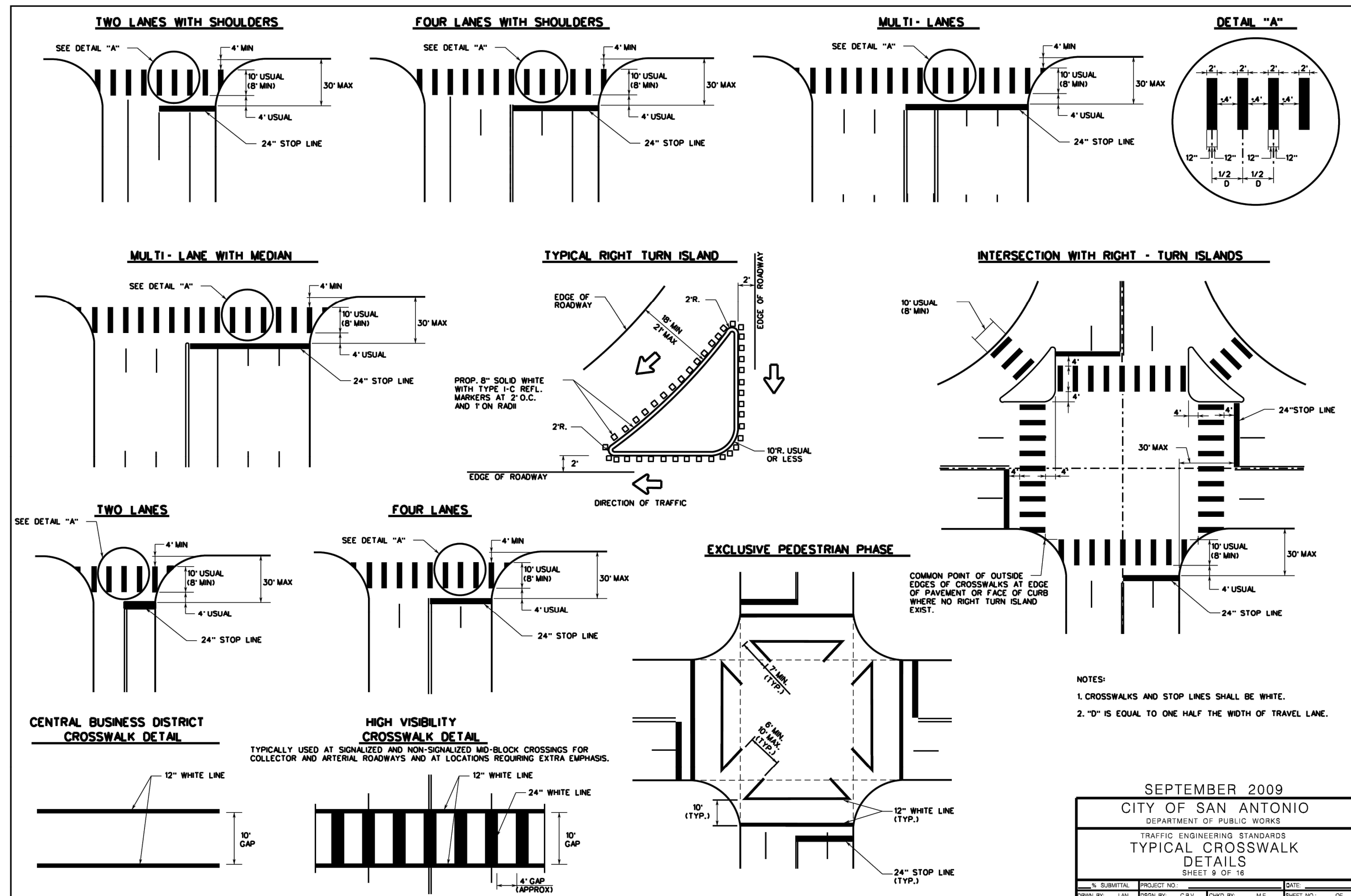
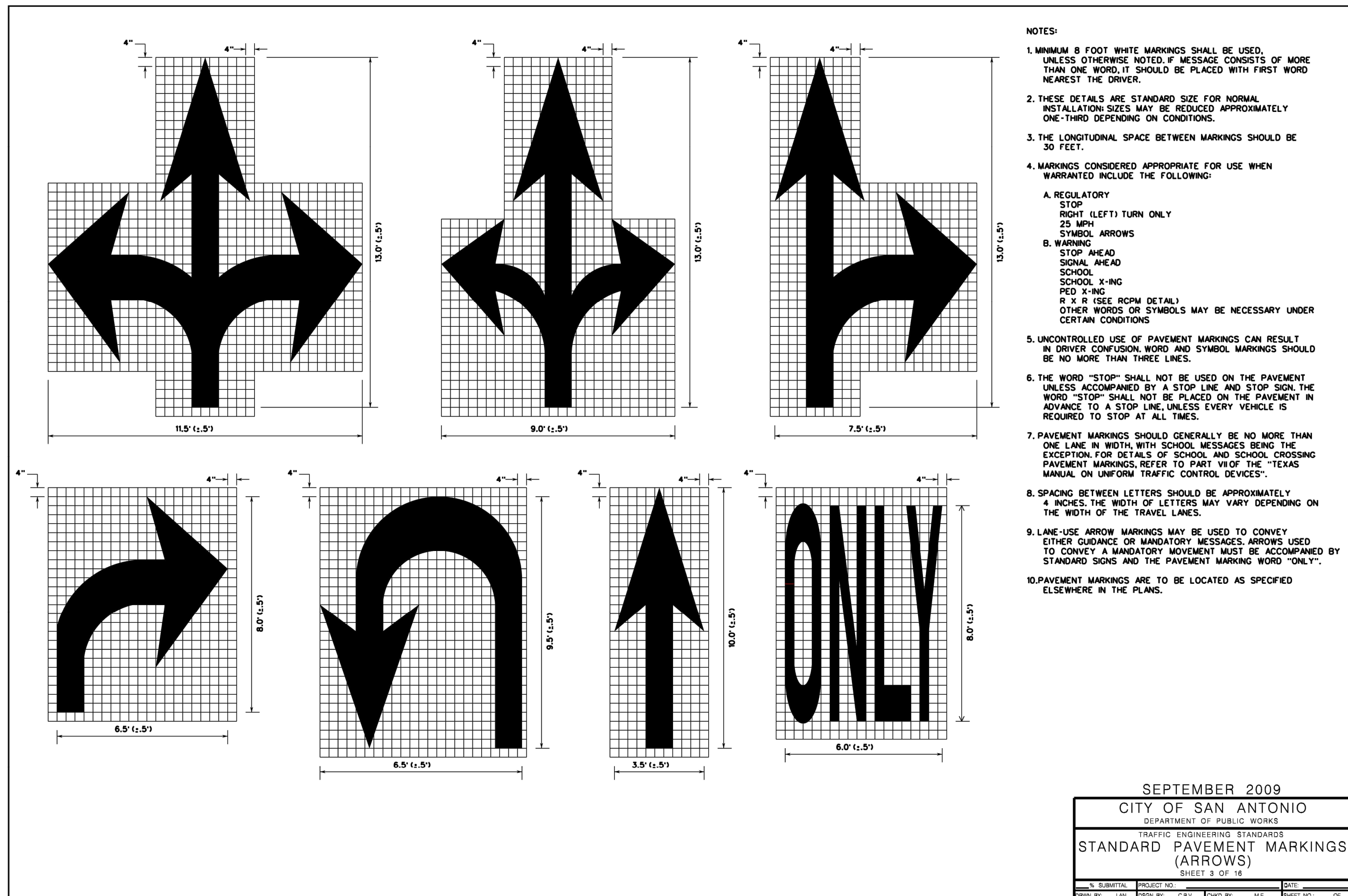
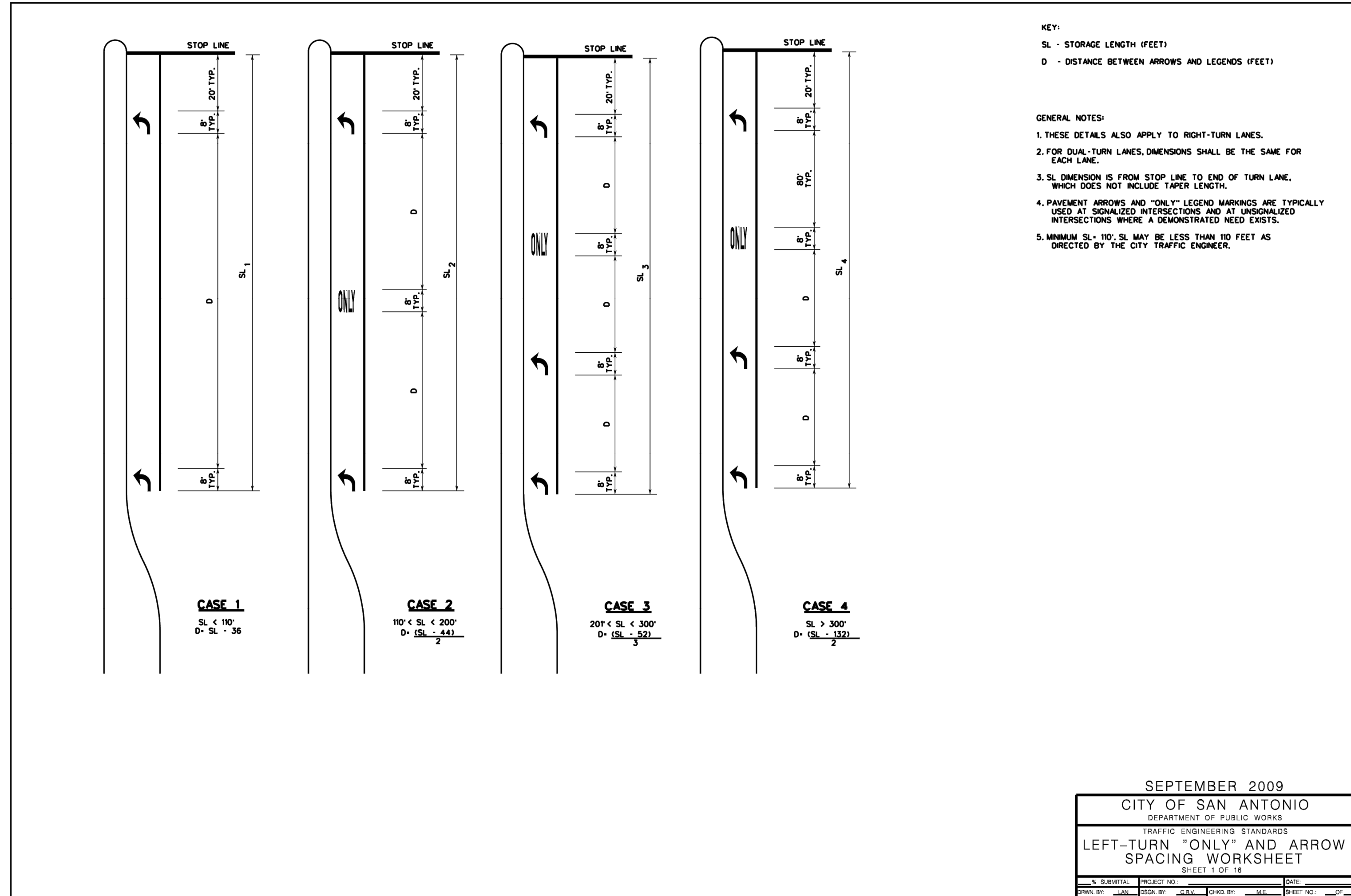
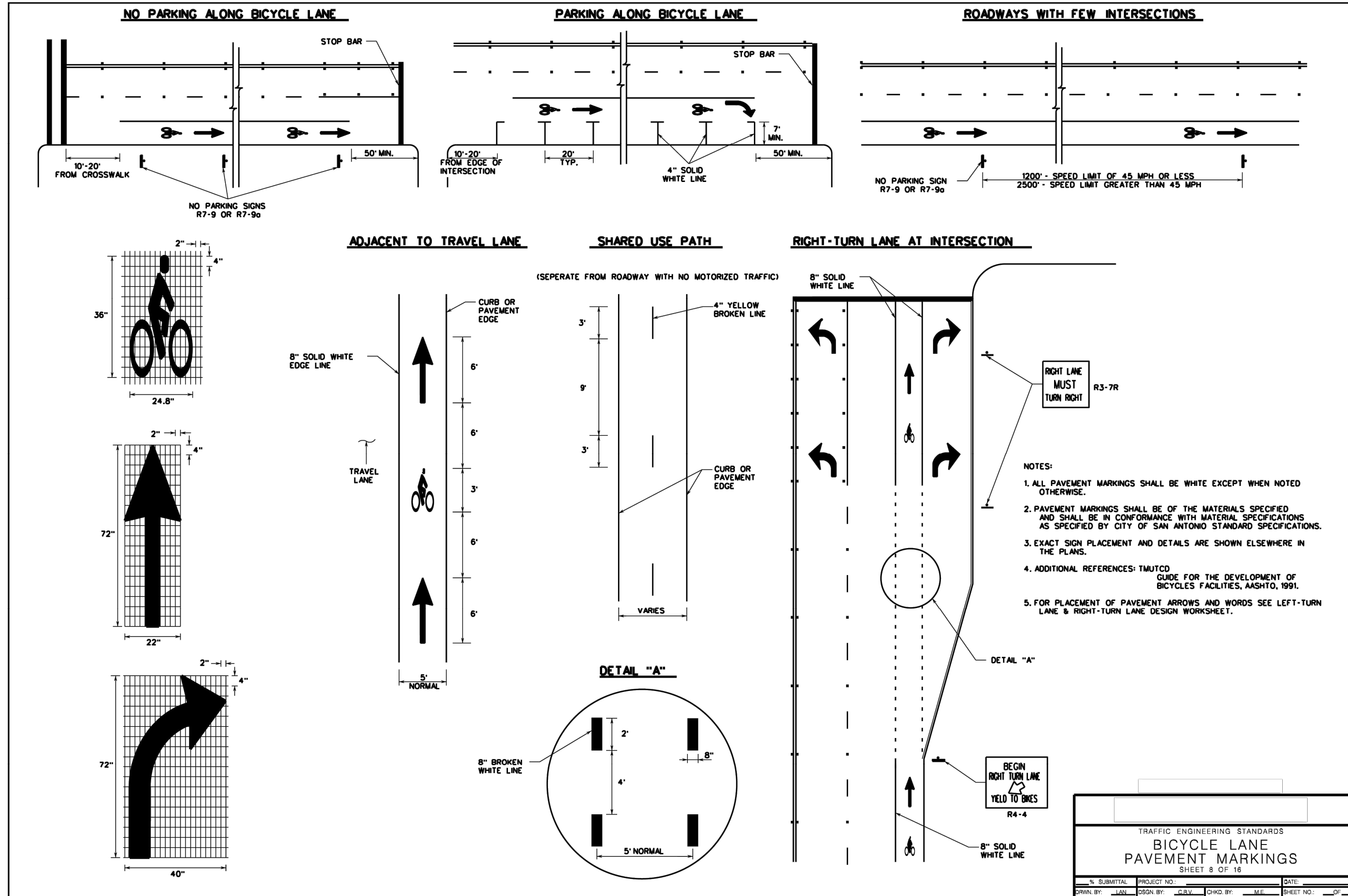
FOR PERMIT





Date: Nov 08, 2024, 10:46am User: ID: carcher
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DATE

NO. REVISION

11-8-2024

JOCELYN PEREZ
98367
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.832.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

SIGNAGE DETAILS

PLAT NO.

JOB NO. 30001-51

DATE JULY 2024

DESIGNER GDL

CHECKED GDL

DRAWN CA

SHEET C3.12

FOR PERMIT

Pipe Restraint Length Calculations				
Source: EBAA Iron, Restraint Length Calculator v 7.1.2				
Assumptions:				
Soil Type	Safety Factor	Trench Type	Depth of Bury	Test Pressure
CH	1.5 to 1.0	5	4 ft	200 psi
Minimum Restraint Lengths in Feet				
8" Waterline		12" Waterline		24" Waterline
Main	Branch	Main	Branch	Main Branch
Horizontal Bends				
11.25 Degrees	3		4	4
22.5 Degrees	6		8	8
45 Degrees	12	17		17
Misc. Fittings				
8"x6" Tee	59 (6" Branch)			
8"x8" Tee	78			
12"x6" Tee		59 (6" Branch)		
12"x8" Tee	78	58		
Dead End/ Gate Valve	78	110		
Vertical Bends (assumes low side depth of 10')				
	High Side	Low Side	High Side	Low Side
11.25 Degrees	8	2	11	2
22.5 Degrees	16	3	22	4
45 Degrees	32	5	46	7

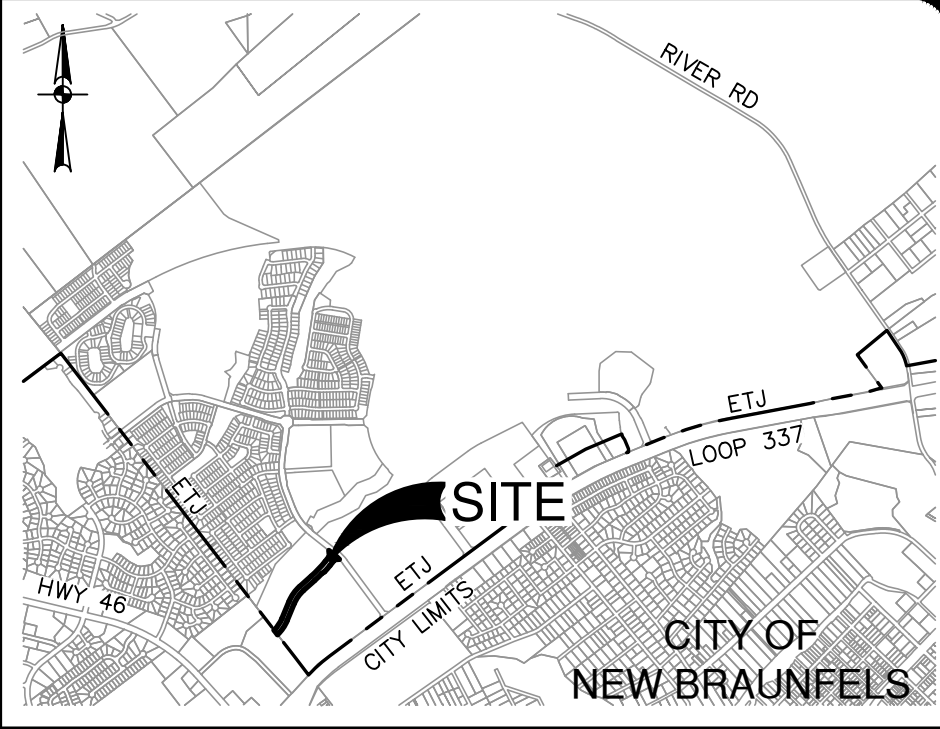
WATER NBU JOB NO. W-XXXXXX			
ITEM	UNIT	QUANTITY	
24" WATER LINE	LF	1824	
12" WATER LINE	LF	94	
8" WATER LINE	LF	200	
FIRE HYDRANT	EA	4	
24" GATE VALVE	EA	3	
12" GATE VALVE	EA	1	
8" GATE VALVE	EA	2	
6" GATE VALVE	EA	4	
AIR RELEASE VALVE	EA	1	
DRAIN VALVE	EA	2	

NBU BACKFLOW PREVENTION NOTE
TCEQ (CSI) CUSTOMER SERVICE INSPECTION WILL BE COMPLETED BY NBU WATER PROTECTION SPECIALIST PERSONNEL WHERE ADDITIONAL BACKFLOW PREVENTION ASSEMBLIES MAY BE REQUIRED TO BE INSTALLED PER WATER SERVICE(S) AND/OR WATER USING EQUIPMENT. ANY QUESTIONS REGARDING BACKFLOW PREVENTION AND CROSS CONNECTION CONTROL, CONTACT NBU BACKFLOW PREVENTION SPECIALIST AT 830.688.8880.

NOTE:
FOR PAVEMENT DESIGN SECTION SEE GEOTECHNICAL ENGINEERING REPORT.

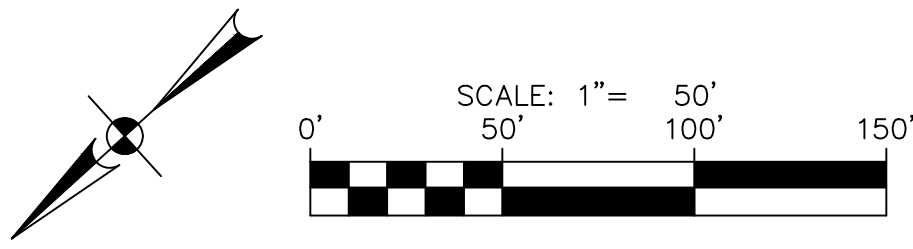
CAUTION!!!
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JOINT RESTRAINT NOTE:
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY THE DEVELOPER'S ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE JOINT RESTRAINTS WITH THE DEVELOPER'S ENGINEER.



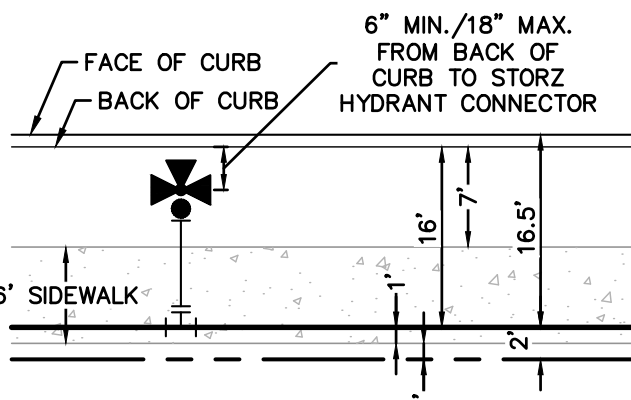
LOCATION MAP

NOT-TO-SCALE



WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	EXISTING FIRE HYDRANT
EXISTING UNDERGROUND ELECTRIC	EXISTING GAS
EXISTING SEWER	EXISTING SEWER
PROPOSED SEWER	PROPOSED SEWER
PROPOSED WATER	PROPOSED WATER
PROPOSED STORM DRAIN	PROPOSED STORM DRAIN
PROPOSED GAS	PROPOSED GAS
PROPOSED UNDERGROUND ELECTRIC	PROPOSED UNDERGROUND ELECTRIC



FIRE HYDRANT DETAIL

NOT TO SCALE

CITY OF NEW BRAUNFELS UTILITY NOTES

- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
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- 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.

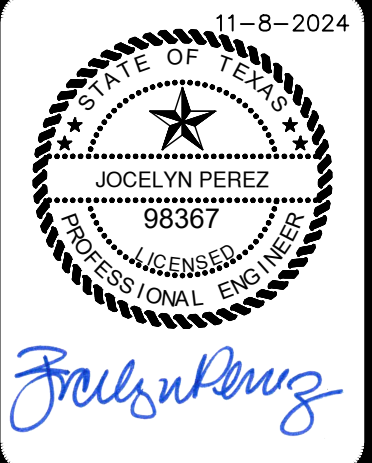
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TRENCH EXCAVATION SAFETY PROTECTION:

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DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.682.5653
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #1028860

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

WATER LINE W-01 - PLAN & PROFILE
STA. 1+00.00 TO 10+50.00

PLAT NO.	
JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	CA
DRAWN	CA
SHEET	C4.00

FOR PERMIT

Date: Nov 08, 2024, 10:47am User: JD - cercher
File: P:\30001\51\Design\City\W01_30001-51.dwg

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Pipe Restraint Length Calculations				
Source: EBAA Iron, Restraint Length Calculator v 7.1.2				
Assumptions:				
Soil Type	Safety Factor	Trench Type	Depth of Bury	Test Pressure
CH	1.5 to 1.0	5	4 ft	200 psi
Minimum Restraint Lengths in Feet				
8" Waterline		12" Waterline		24" Waterline
Main	Branch	Main	Branch	Main Branch
11.25 Degrees	3		4	4
22.5 Degrees	6		8	8
45 Degrees	12		17	17
Misc. Fittings				
8"x6" Tee	59 (6" Branch)			
8"x8" Tee	78			
12"x6" Tee		59 (6" Branch)		
12"x8" Tee	78	58		
Dead End/ Gate Valve	78	110		
Vertical Bends (assumes low side depth of 10)				
	High Side	Low Side	High Side	Low Side
11.25 Degrees	8	2	11	2
22.5 Degrees	16	3	22	4
45 Degrees	32	5	46	7

WATER NBU JOB NO. W-XXXXX	UNIT	QUANTITY
ITEM		
24" WATER LINE	LF	1824
12" WATER LINE	LF	94
8" WATER LINE	LF	200
FIRE HYDRANT	EA	4
24" GATE VALVE	EA	3
12" GATE VALVE	EA	1
8" GATE VALVE	EA	2
6" GATE VALVE	EA	4
AIR RELEASE VALVE	EA	1
DRAIN VALVE	EA	2

1 - 24" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 2" PERMANENT BLOWOFF
(SEE NBU STANDARD DETAIL 253)

1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 2" PERMANENT BLOWOFF
(SEE NBU STANDARD DETAIL 253)

NBU BACKFLOW PREVENTION NOTE

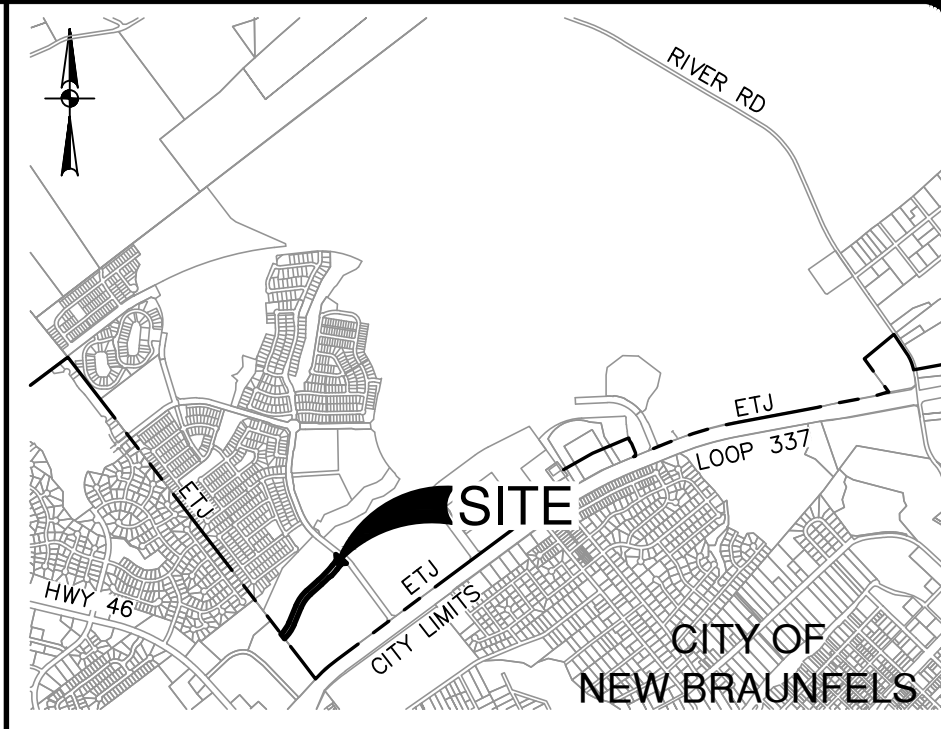
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NOTE:
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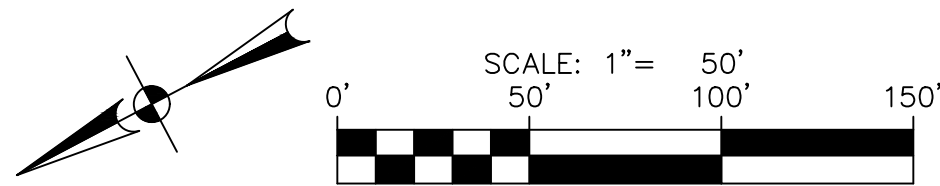
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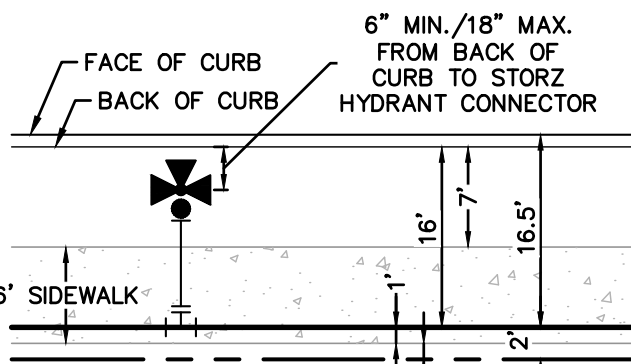
LOCATION MAP

NOT-TO-SCALE



WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	EXISTING FIRE HYDRANT
EXISTING UNDERGROUND ELECTRIC	EXISTING GAS
EXISTING SEWER	PROPOSED SEWER
PROPOSED WATER	PROPOSED STORM DRAIN
PROPOSED GAS	PROPOSED UNDERGROUND ELECTRIC



FIRE HYDRANT DETAIL

NOT TO SCALE

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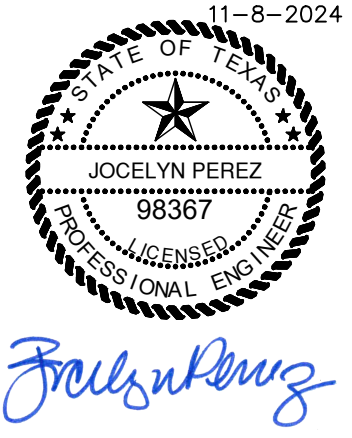
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DATE	
NO.	
REVISION	



PAPE-DAWSON
ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5653
TEXAS ENGINEERING FIRM #470 1 TEXAS SURVEYING FIRM #10028800

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

WATER LINE W-01 - PLAN & PROFILE
STA. 10+50.00 TO 16+57.59

JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	✓
DRAWN	CA
SHEET	C4.01

FOR PERMIT

Date: Nov 08, 2024, 10:49am User: JD_cercher
File: P:\300\01\51\Design\City\W02&W03-30001-51.dwg

Pipe Restraint Length Calculations
Source: EBAA Iron, Restraint Length Calculator v 7.1.2

Assumptions:				
Soil Type	Safety Factor	Trench Type	Depth of Bury	Test Pressure
CH	1.5 to 1.0	5	4 ft	200 psi

Minimum Restraint Lengths in Feet

8" Waterline		12" Waterline		24" Waterline	
Main	Branch	Main	Branch	Main	Branch

Horizontal Bends

11.25 Degrees	3		4		4
22.5 Degrees	6		8		8
45 Degrees	12		17		17

Misc. Fittings

8"x6" Tee	59 (6" Branch)	
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Dead End/ Gate Valve	78	110

Vertical Bends (assumes low side depth of 10)

	High Side	Low Side	High Side	Low Side
11.25 Degrees	8	2	11	2
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WATER NBU JOB NO. W-XXXXXX		
ITEM	UNIT	QUANTITY
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NOTE:
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FOR CHLORINATION INJECTION
2 - 1" CORPORATION STOP, C.C.XLP
1 - 1" COPPER TUBING, CUT AS REQUIRED
2 - 1" COMP. 1 1/4 COUPLING, CORP. STOP
2 - 1 1/4" THD. SOLID CAPS, THR.

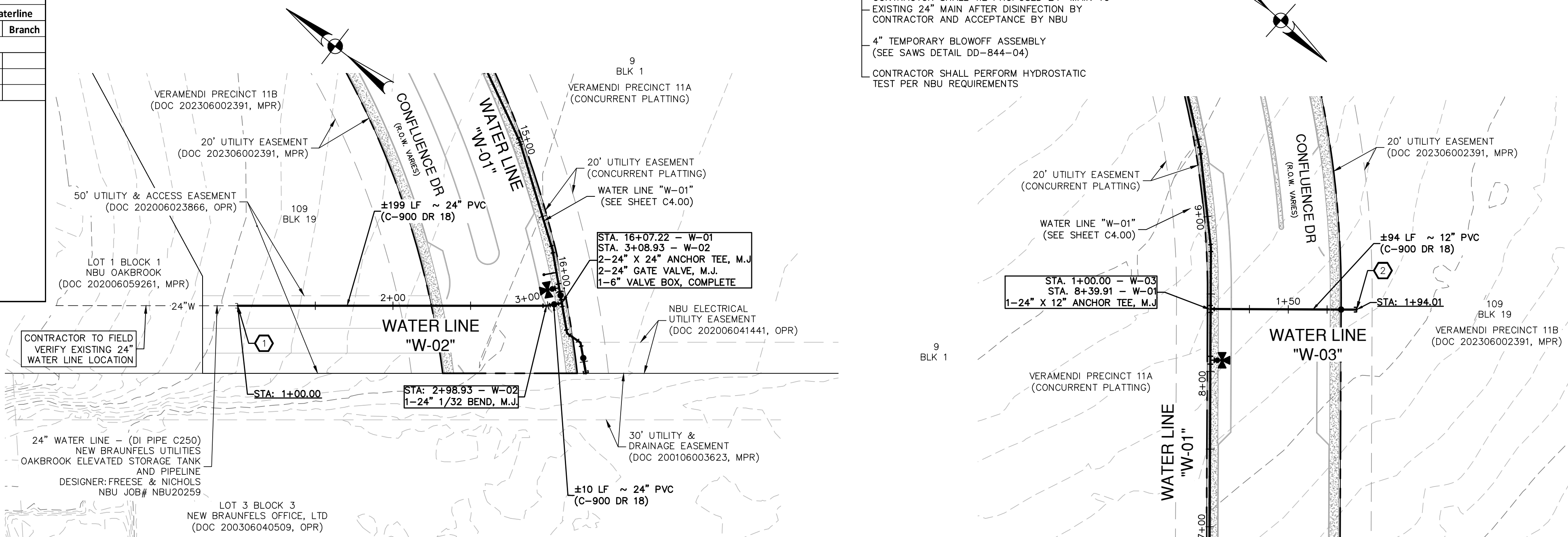
24" VALVE SHALL REMAIN CLOSED UNTIL NEW MAINS HAVE BEEN DISINFECTED BY CONTRACTOR AND ACCEPTED BY NBU

CONTRACTOR SHALL TIE PROPOSED 24" MAIN TO EXISTING 24" MAIN AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY NBU

4" TEMPORARY BLOWOFF ASSEMBLY (SEE SAWS DETAIL DD-844-04)

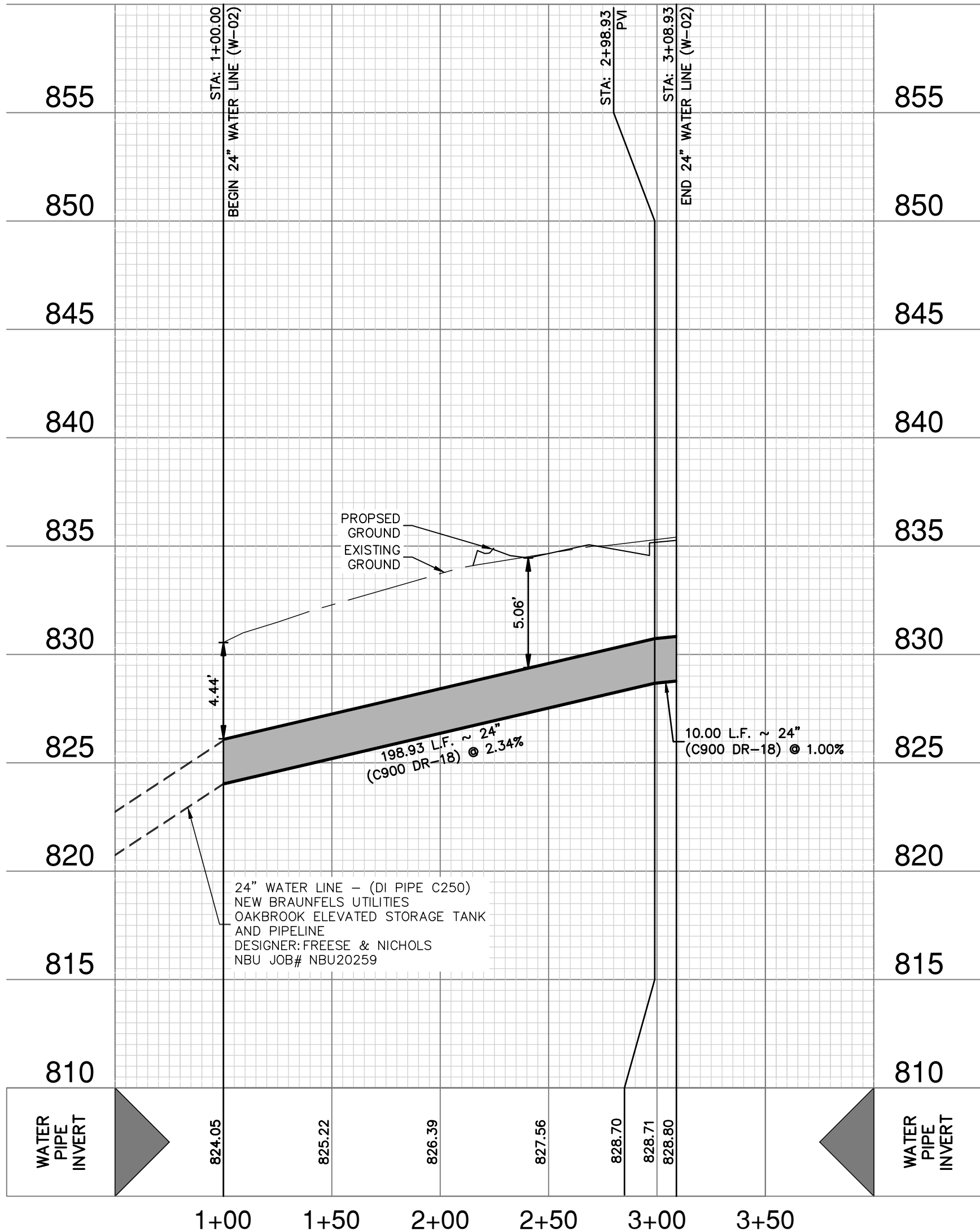
CONTRACTOR SHALL PERFORM HYDROSTATIC TEST PER NBU REQUIREMENTS

1 - 12" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 2" PERMANENT BLOWOFF
(SEE NBU STANDARD DETAIL 253)



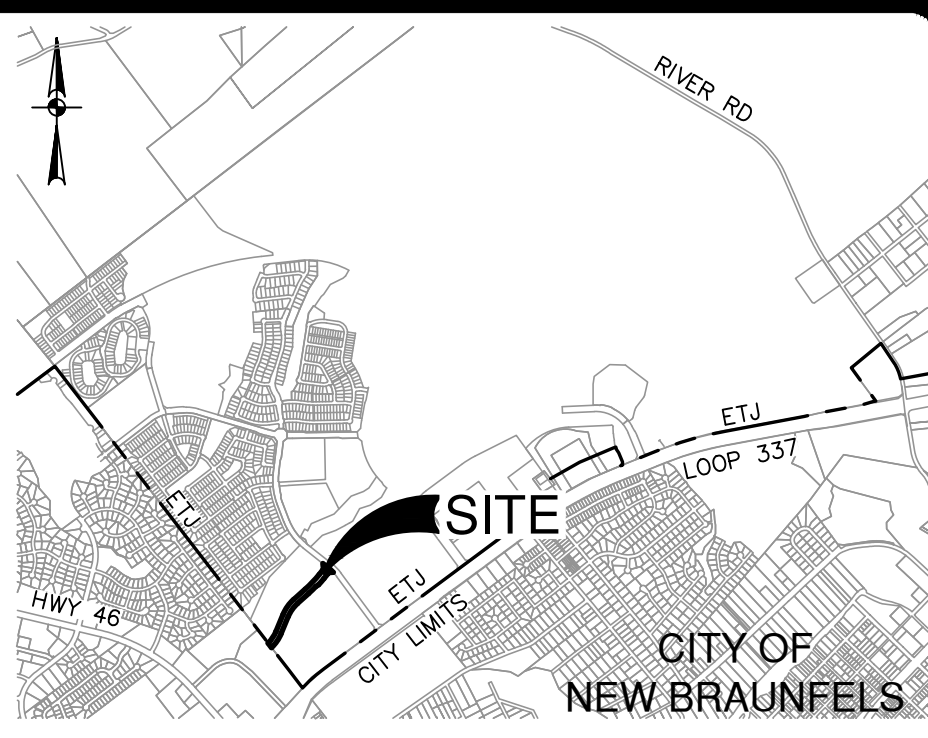
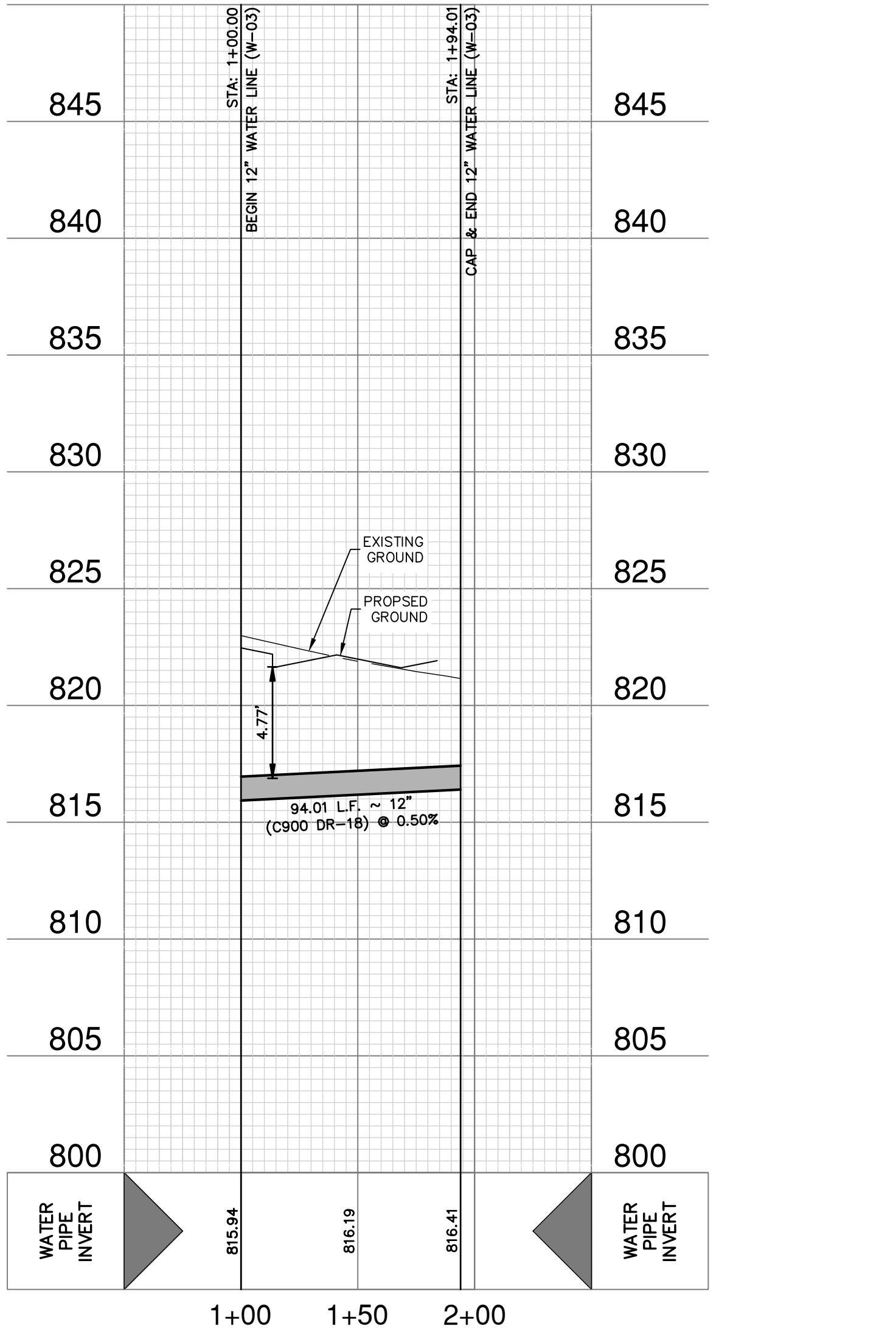
WATER LINE "W-02"
STA. 1+00.00 TO 3+08.93

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



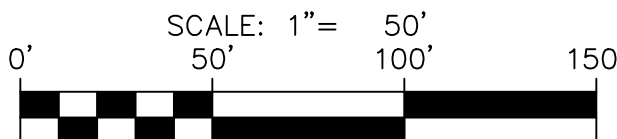
WATER LINE "W-03"
STA. 1+00.00 TO 1+94.01

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



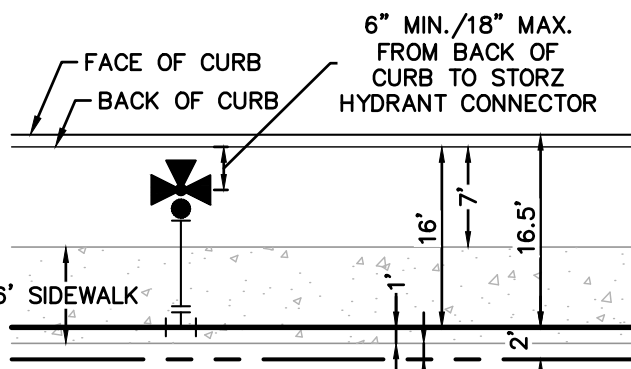
LOCATION MAP

NOT-TO-SCALE



WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	EXISTING FIRE HYDRANT
EXISTING UNDERGROUND ELECTRIC	EXISTING TRENCHES - POSE
EXISTING GAS	EXISTING SEWER
PROPOSED SEWER	PROPOSED WATER
PROPOSED STORM DRAIN	PROPOSED GAS
PROPOSED GAS	PROPOSED UNDERGROUND ELECTRIC



FIRE HYDRANT DETAIL

NOT TO SCALE

CITY OF NEW BRAUNFELS UTILITY NOTES

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- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
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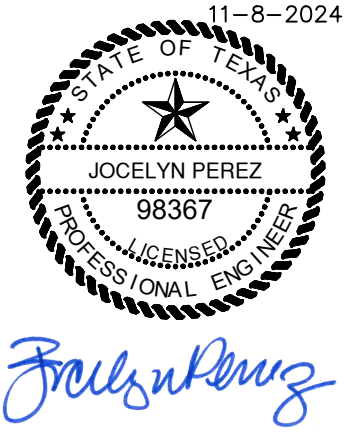
CAUTION!!

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.

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

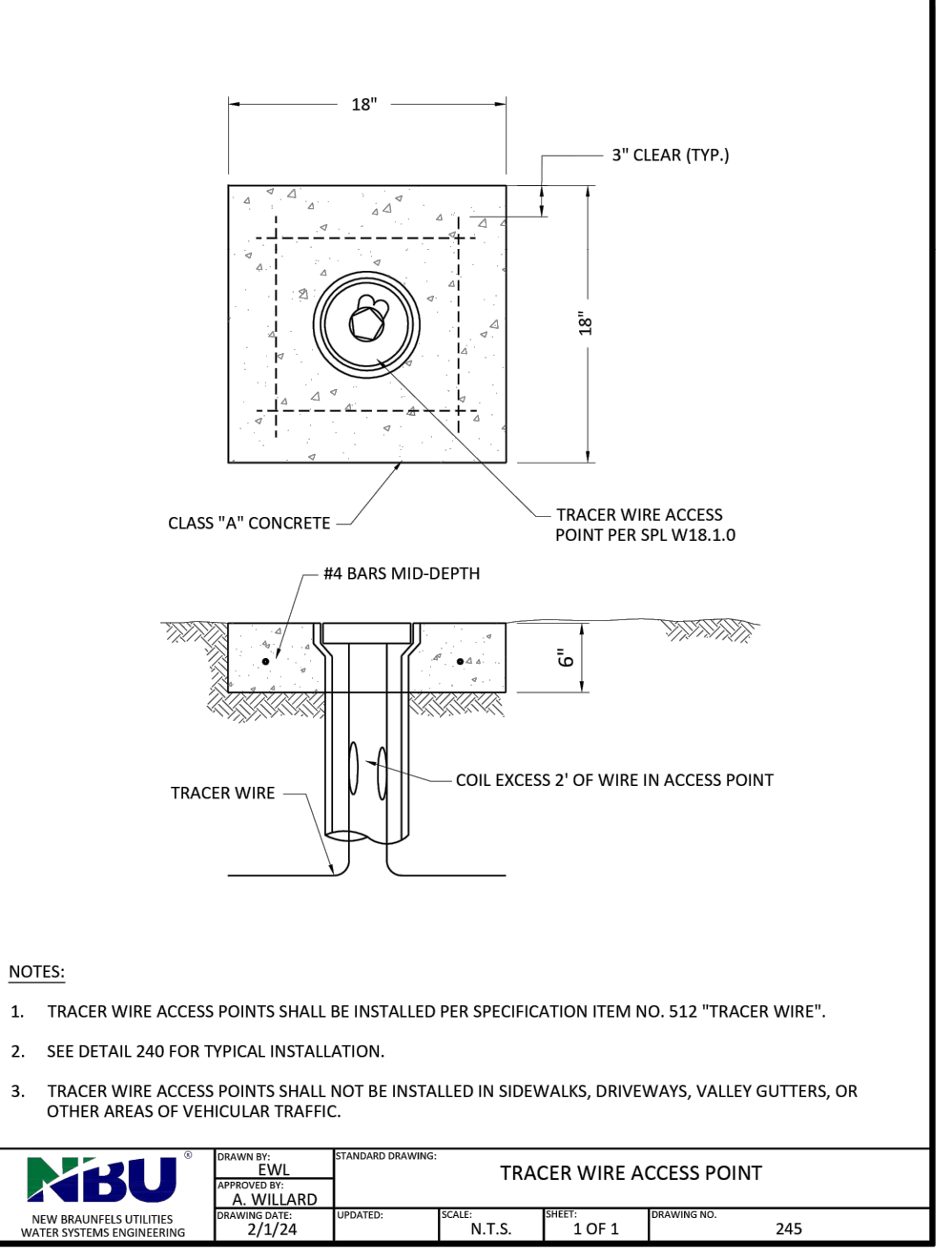
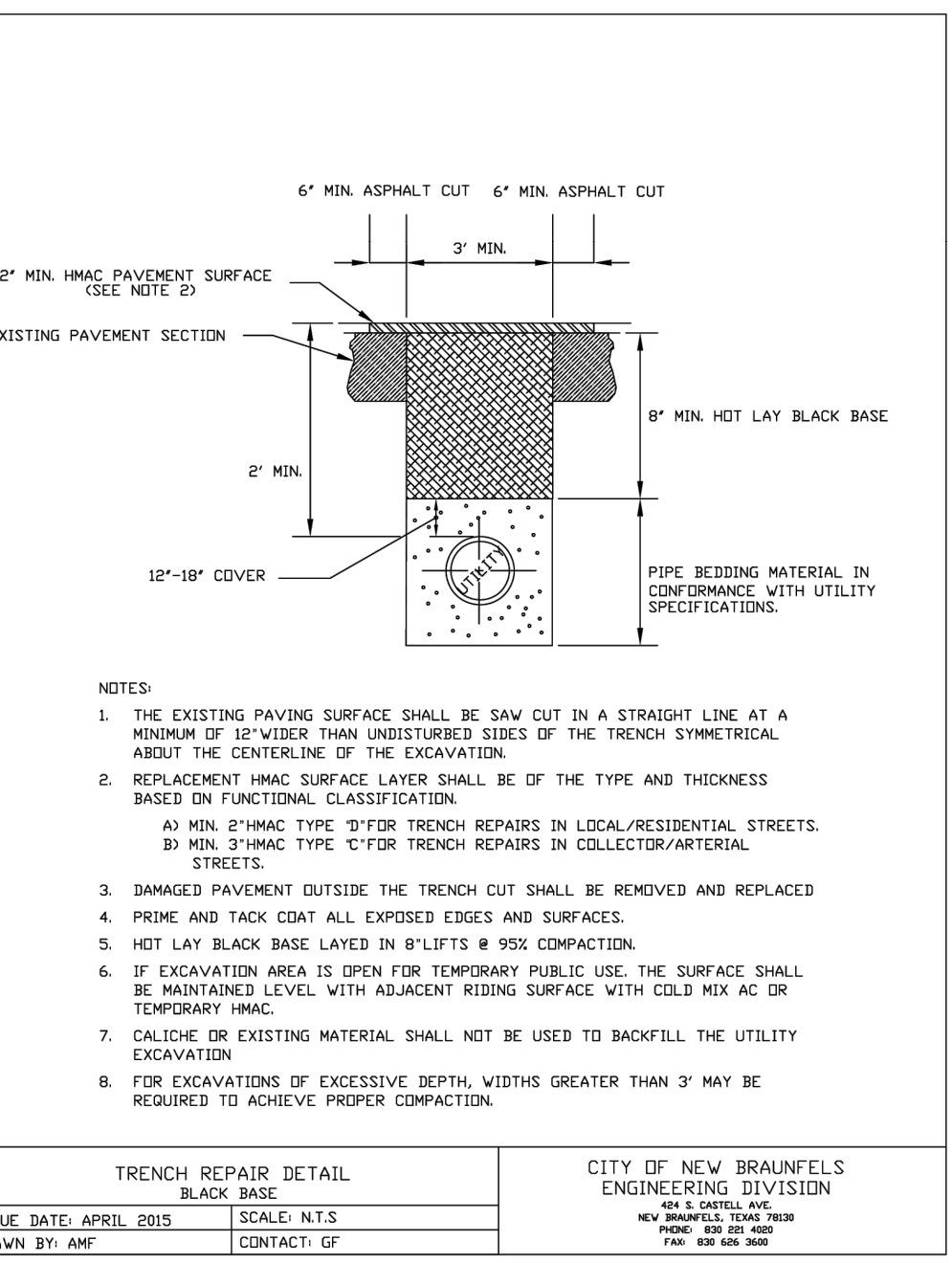
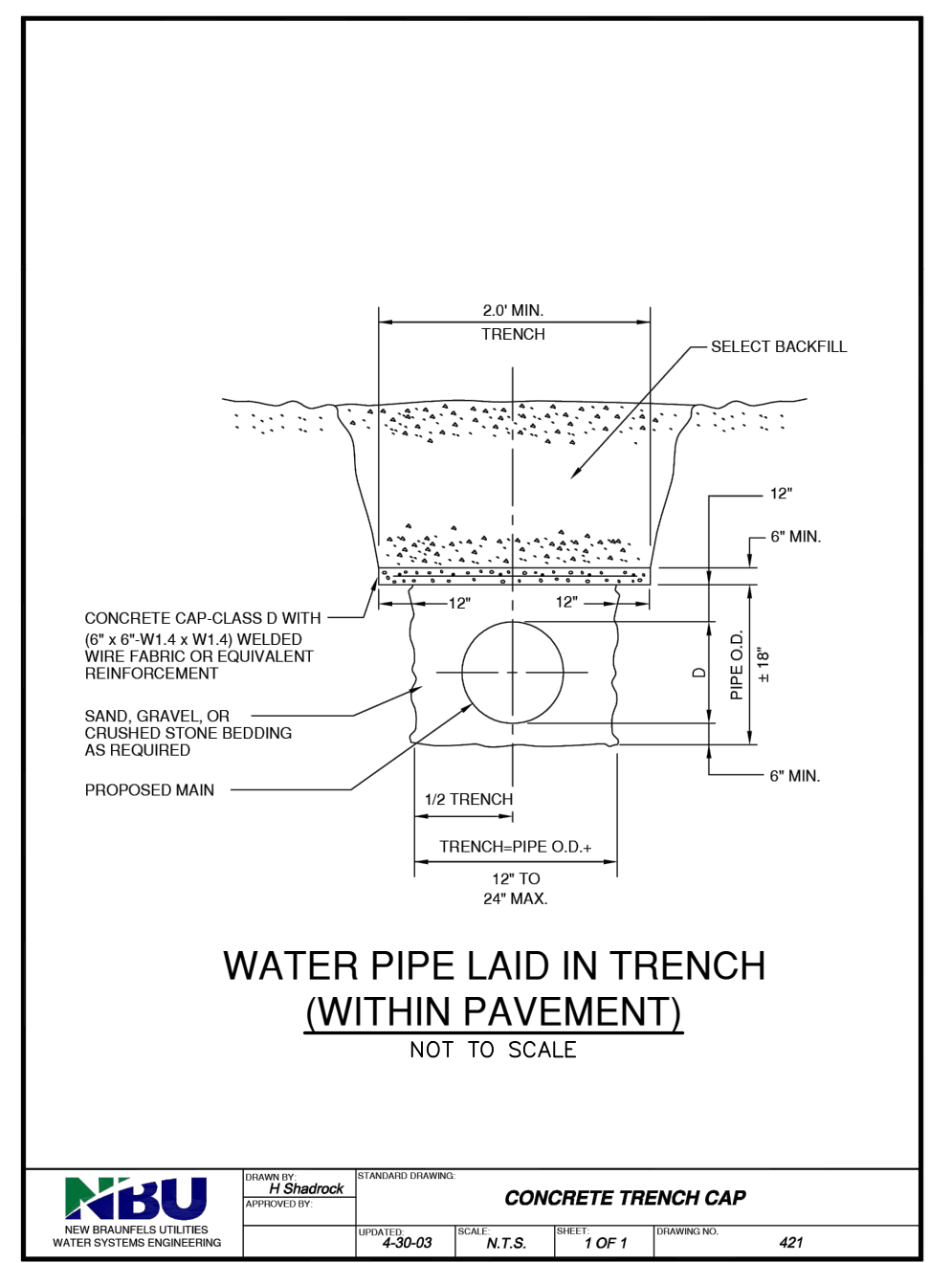
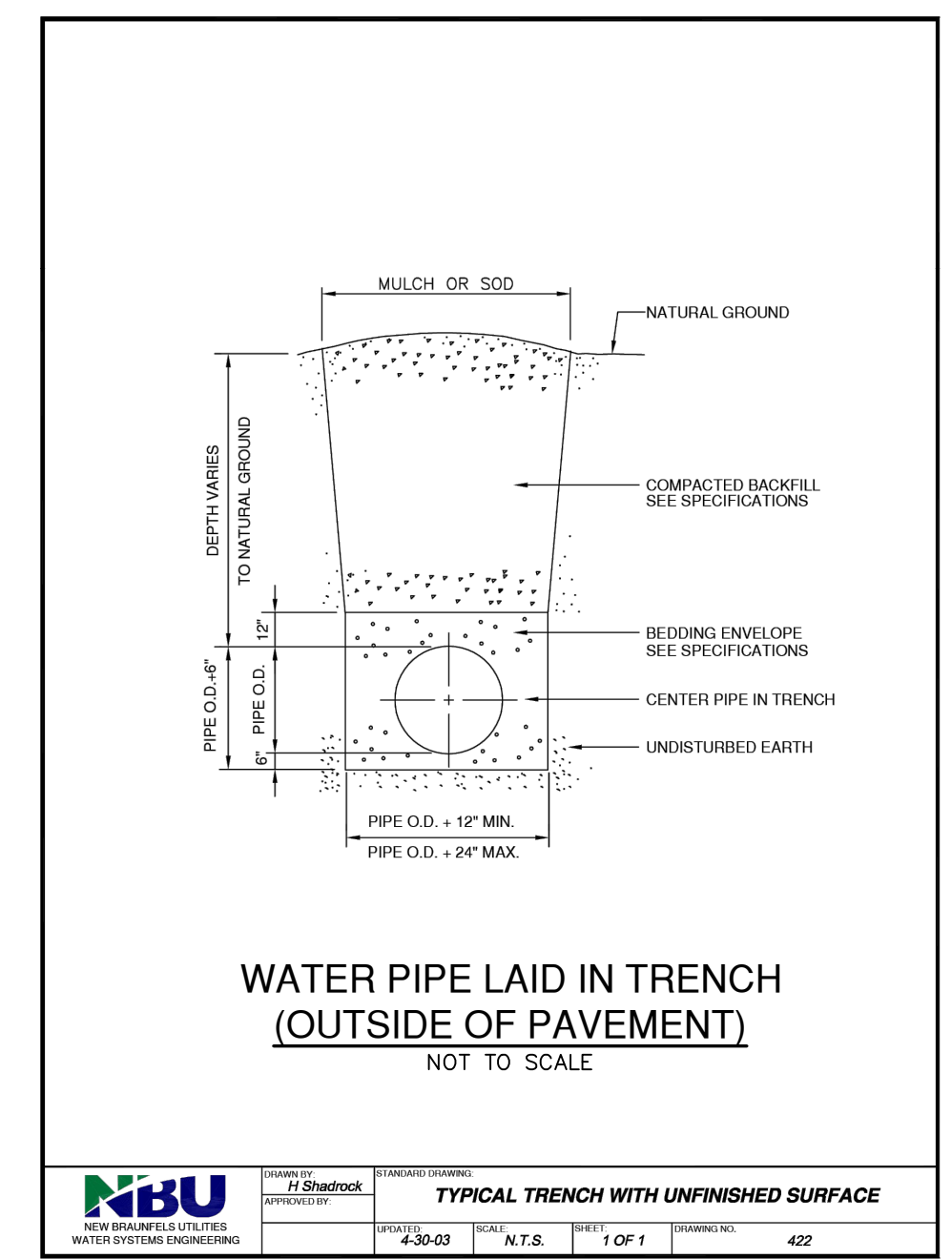
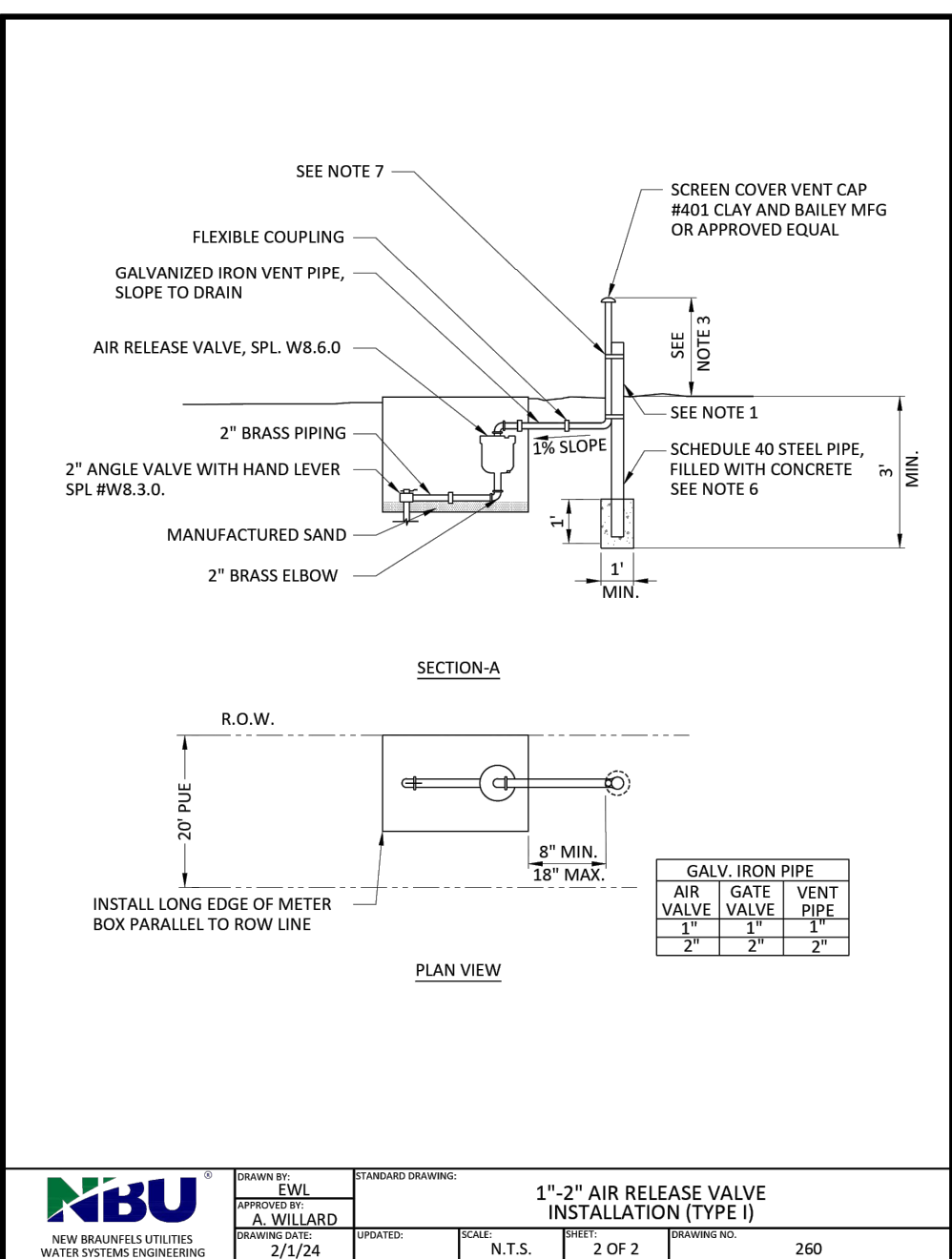
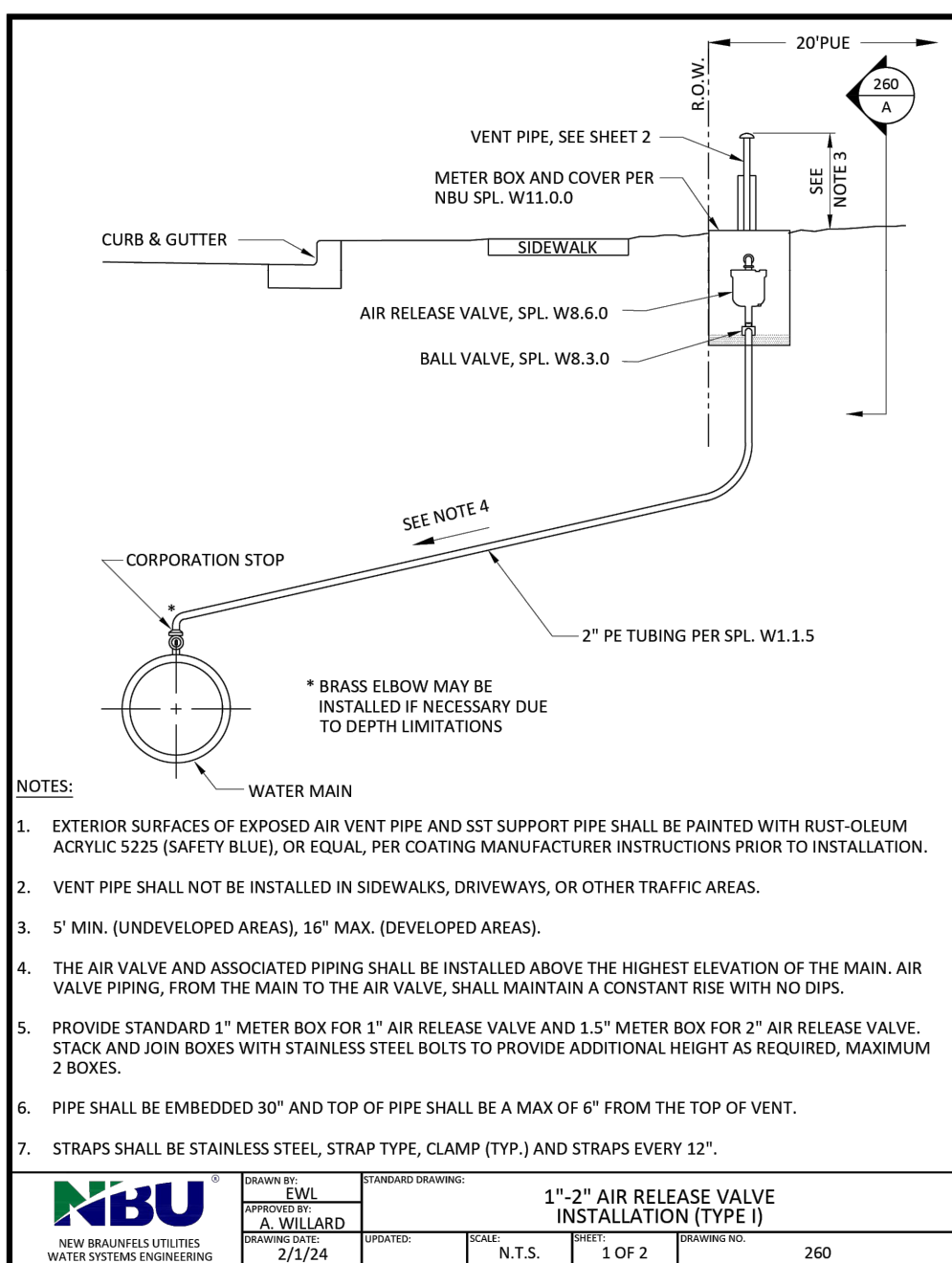
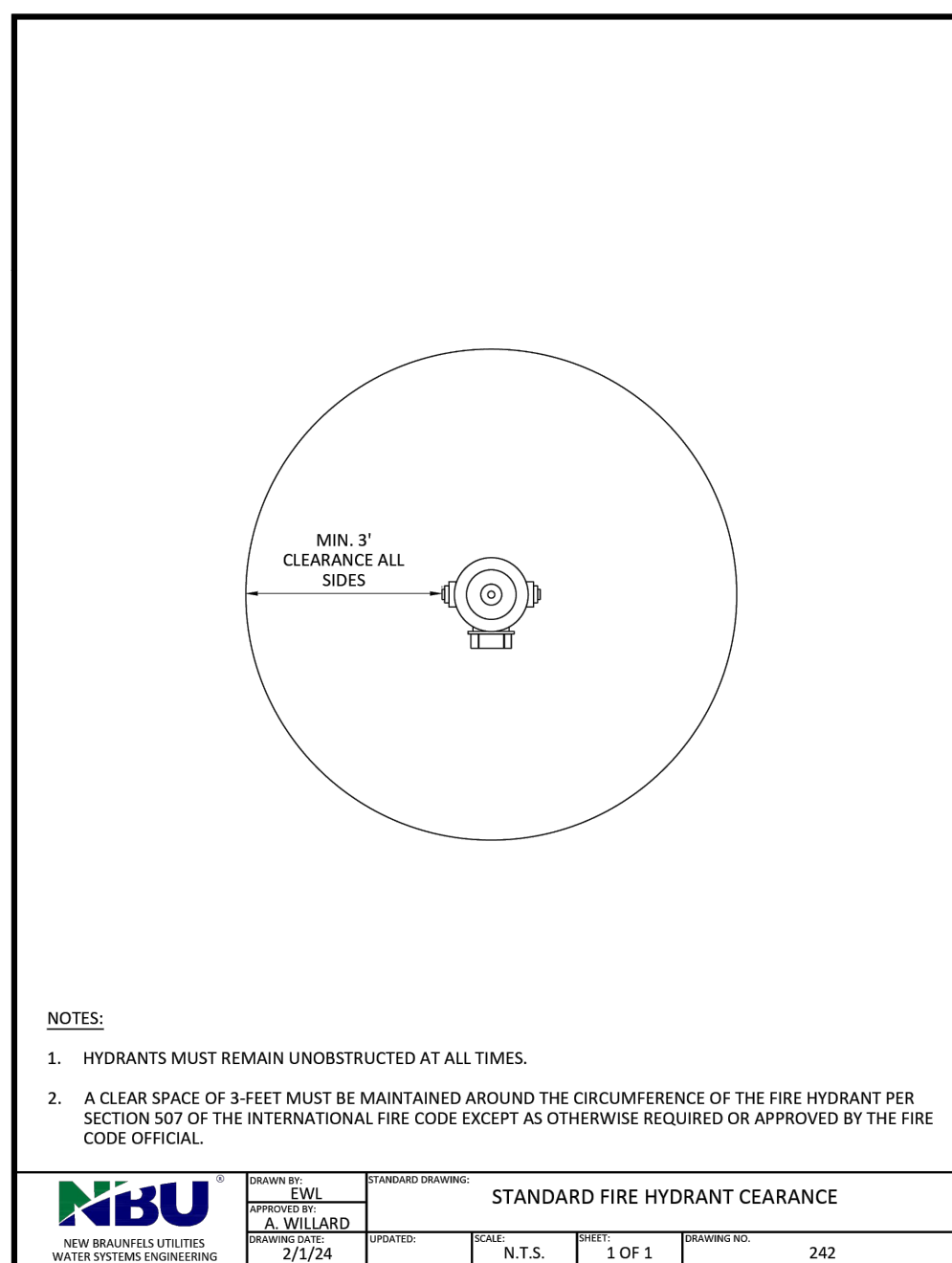
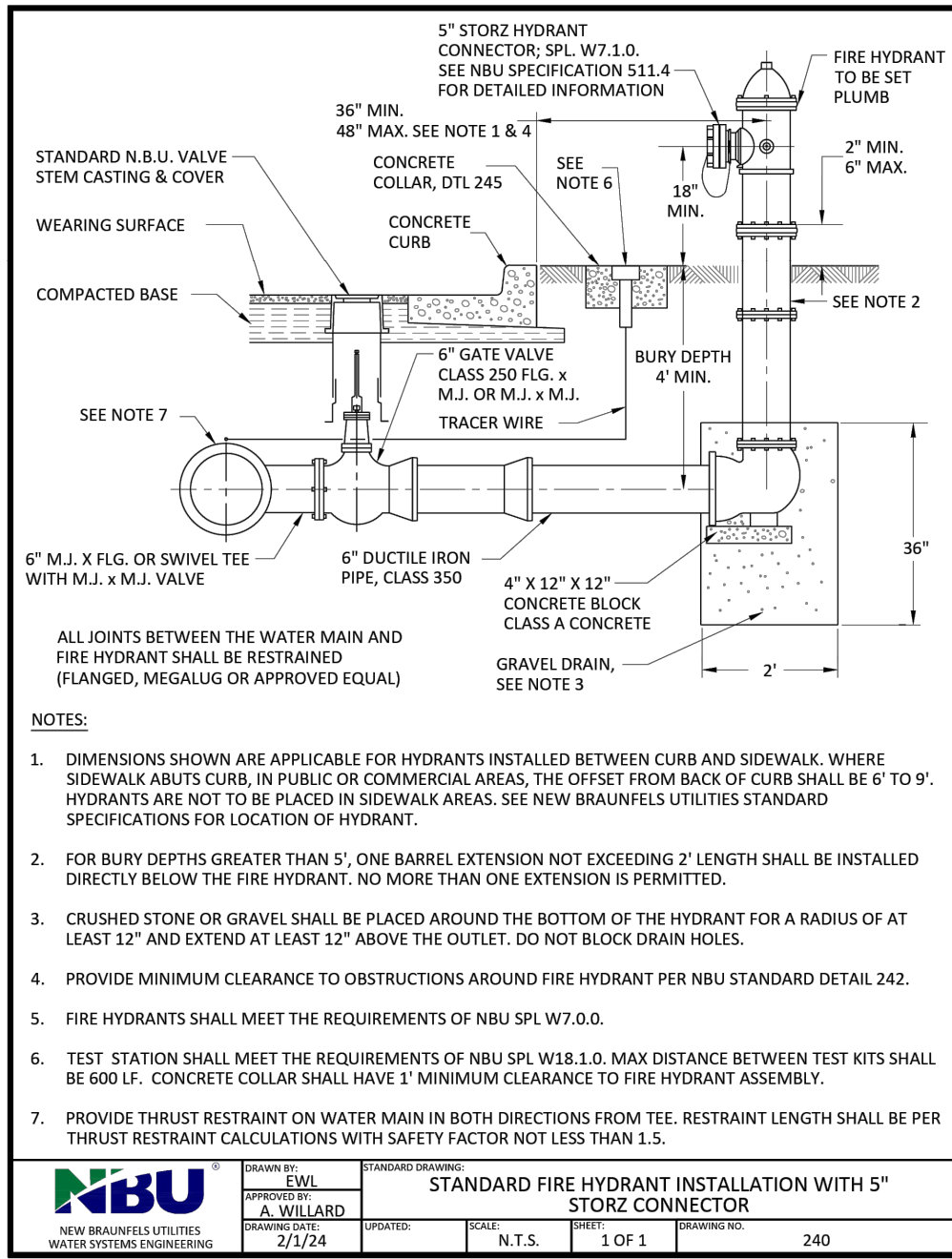
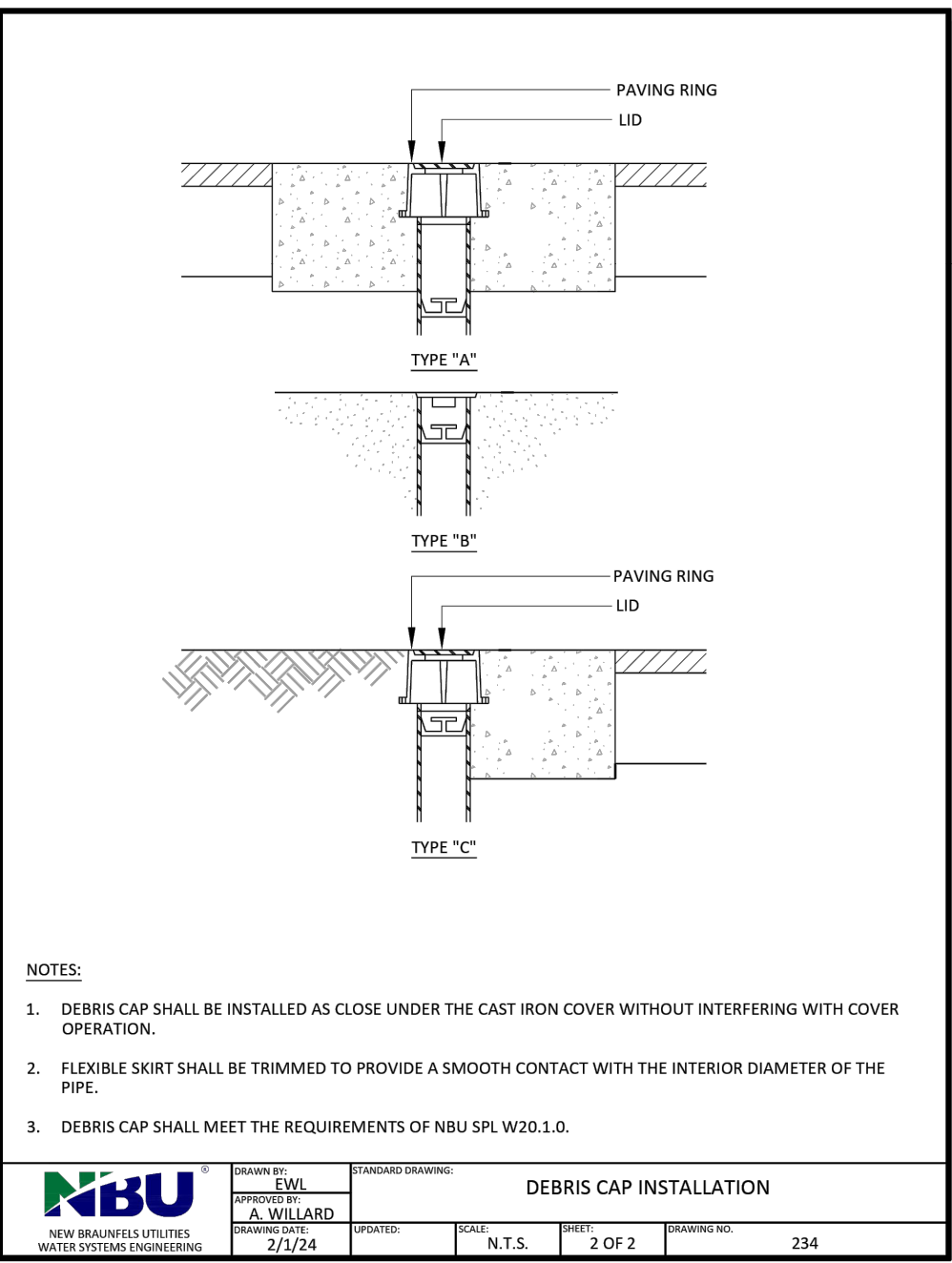
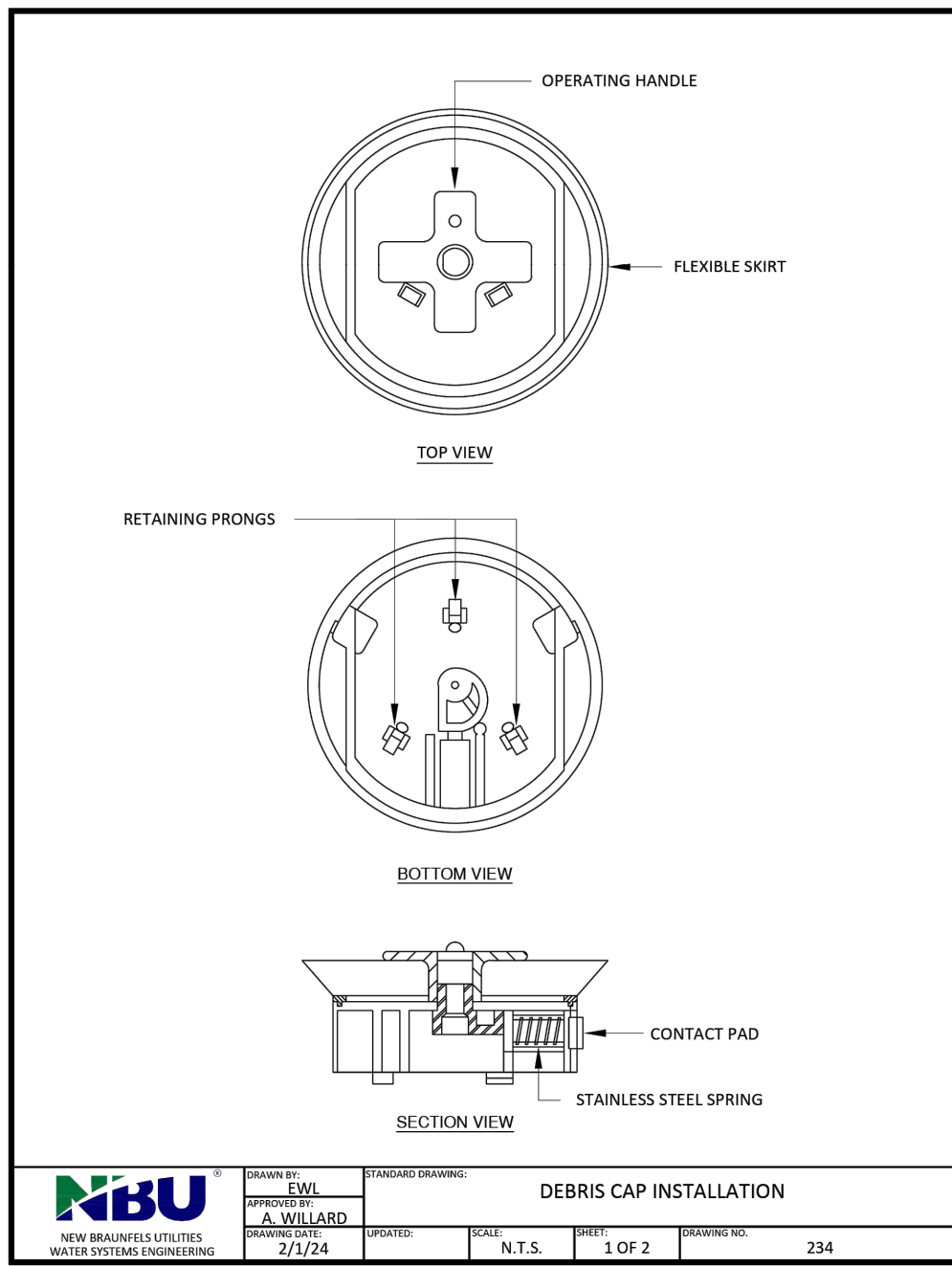
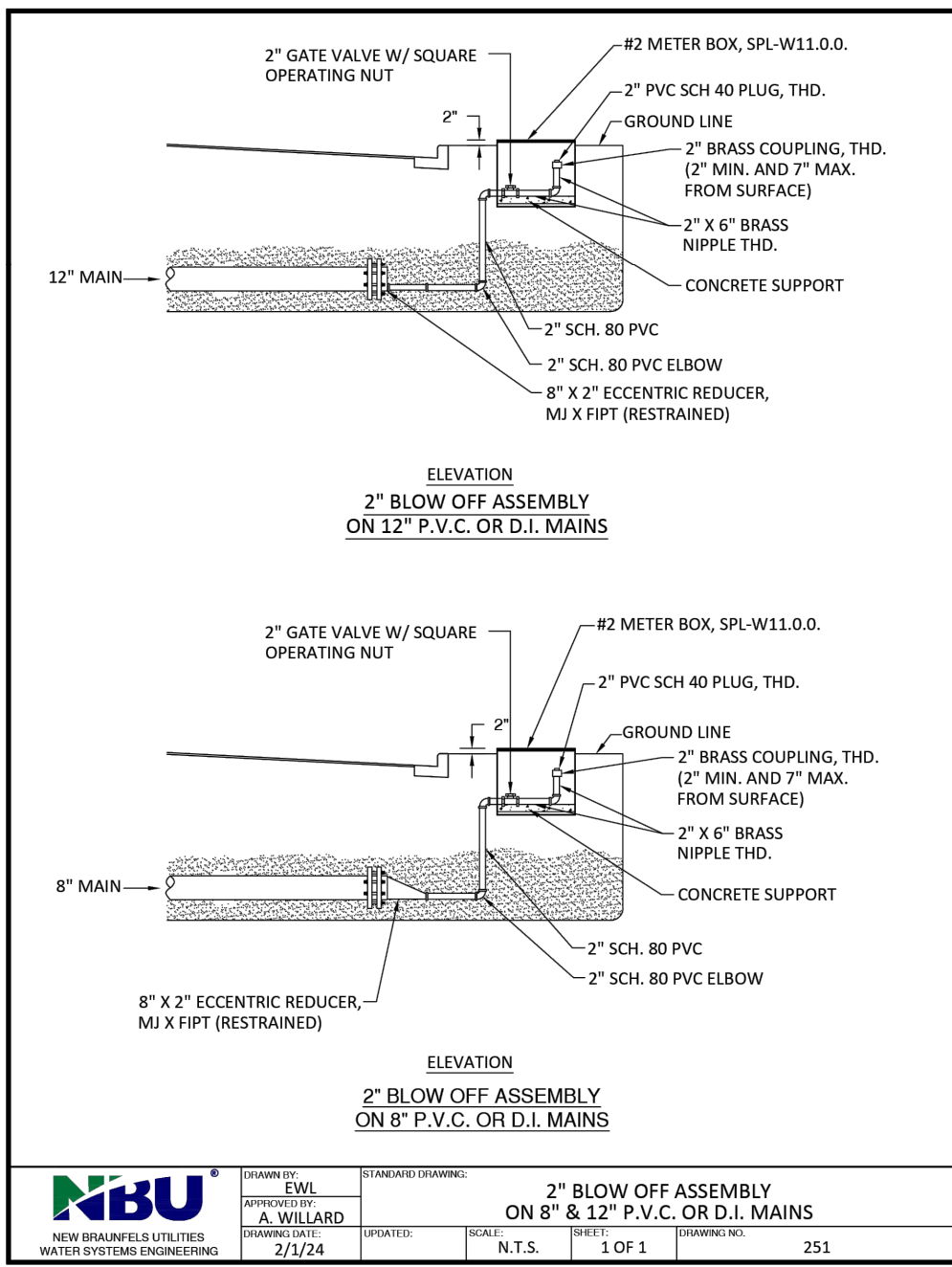
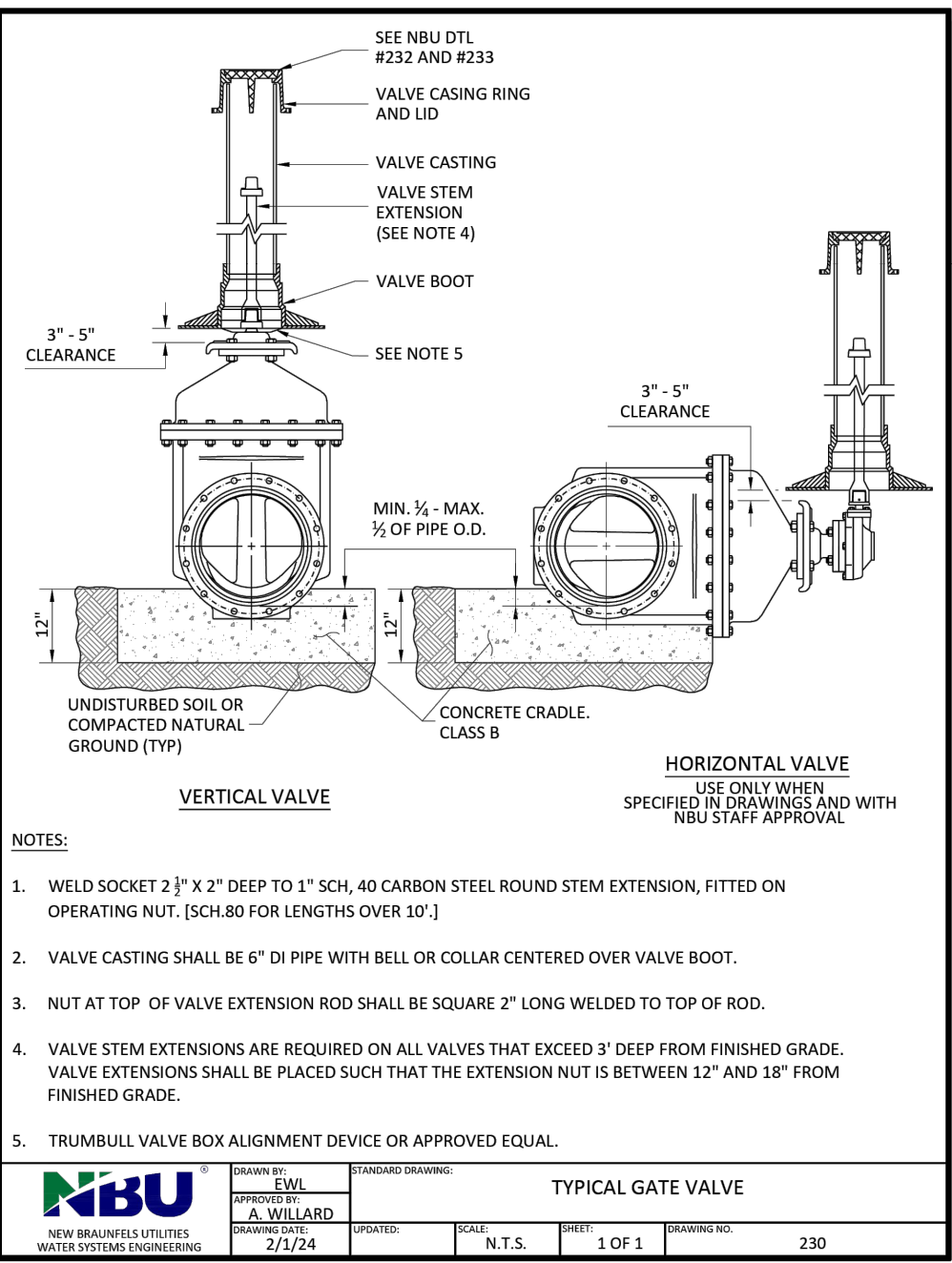
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5653
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1028860

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS

WATER LINE W-02 & W-03 - PLAN & PROFILE

JOB NO.	30001-51
DATE	JULY 2024
DRAWN	GDL
CHECKED	JD
SHEET	C4.02

FOR PERMIT



CITY OF NEW BRAUNFELS NOTES

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DATE: _____

NO. _____

REVISION _____

11-8-2024

JOCelyn PEREZ
98367
PROFESSIONAL ENGINEER

Frederick

PAPE-DAWSON ENGINEERS

NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT. WORTH | DALLAS
1672 INDEPENDENCE DR. STE. 102 | NEW BRAUNFELS, TX 78132 | 830.652.5653
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

VERAMENDI - CONFLUENCE DR PHASE 1

NEW BRAUNFELS, TEXAS

WATER DETAILS

PLAT NO. _____

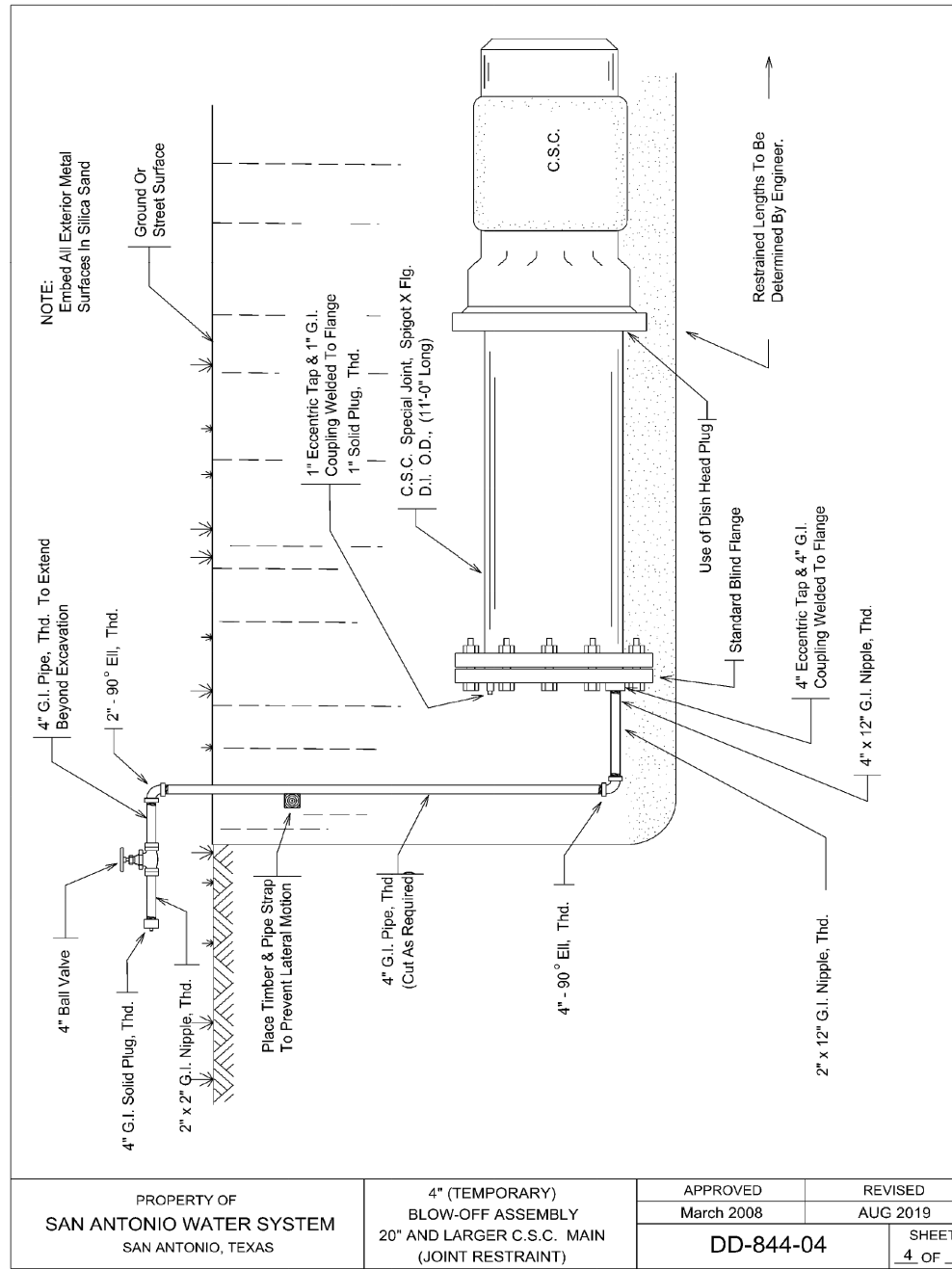
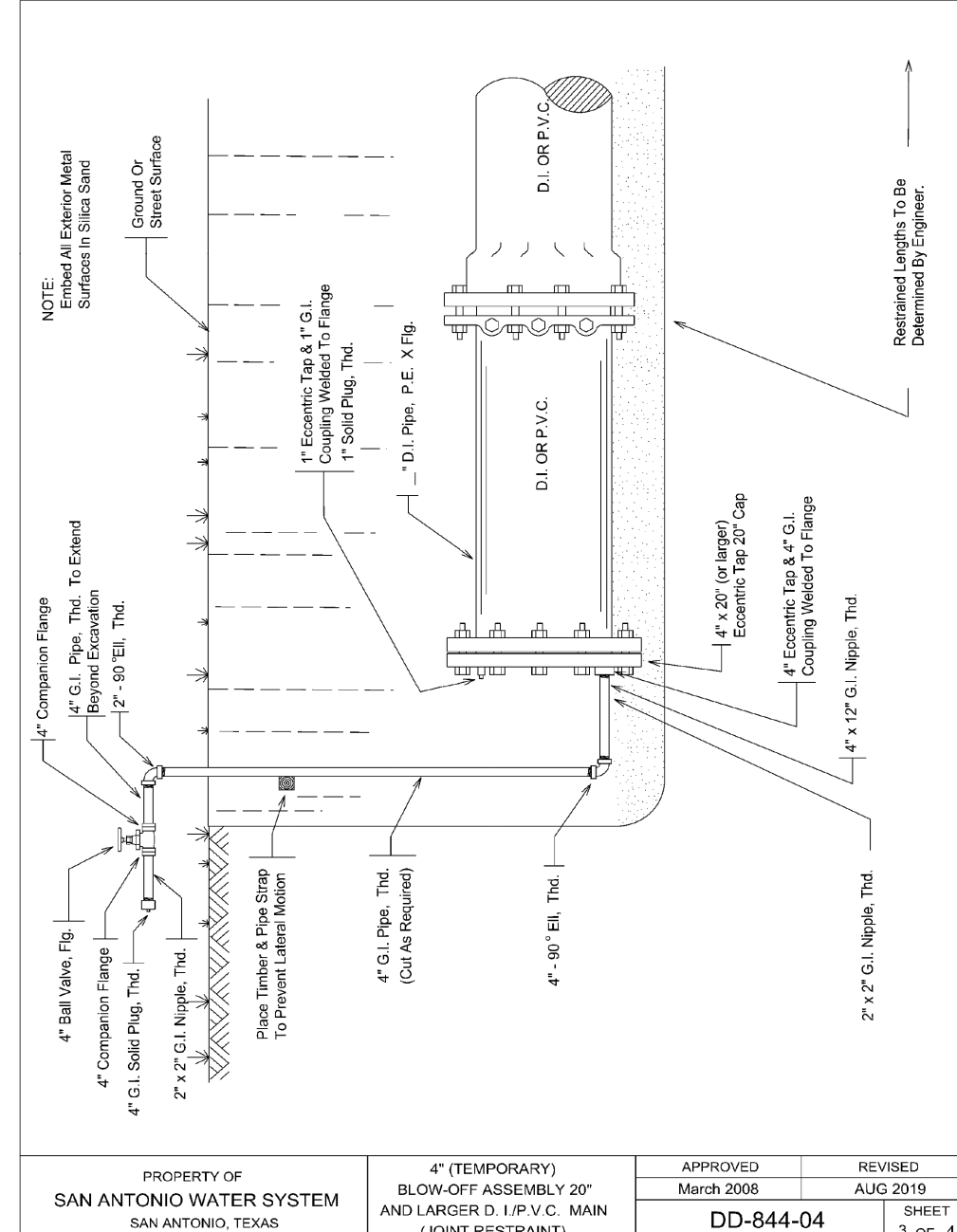
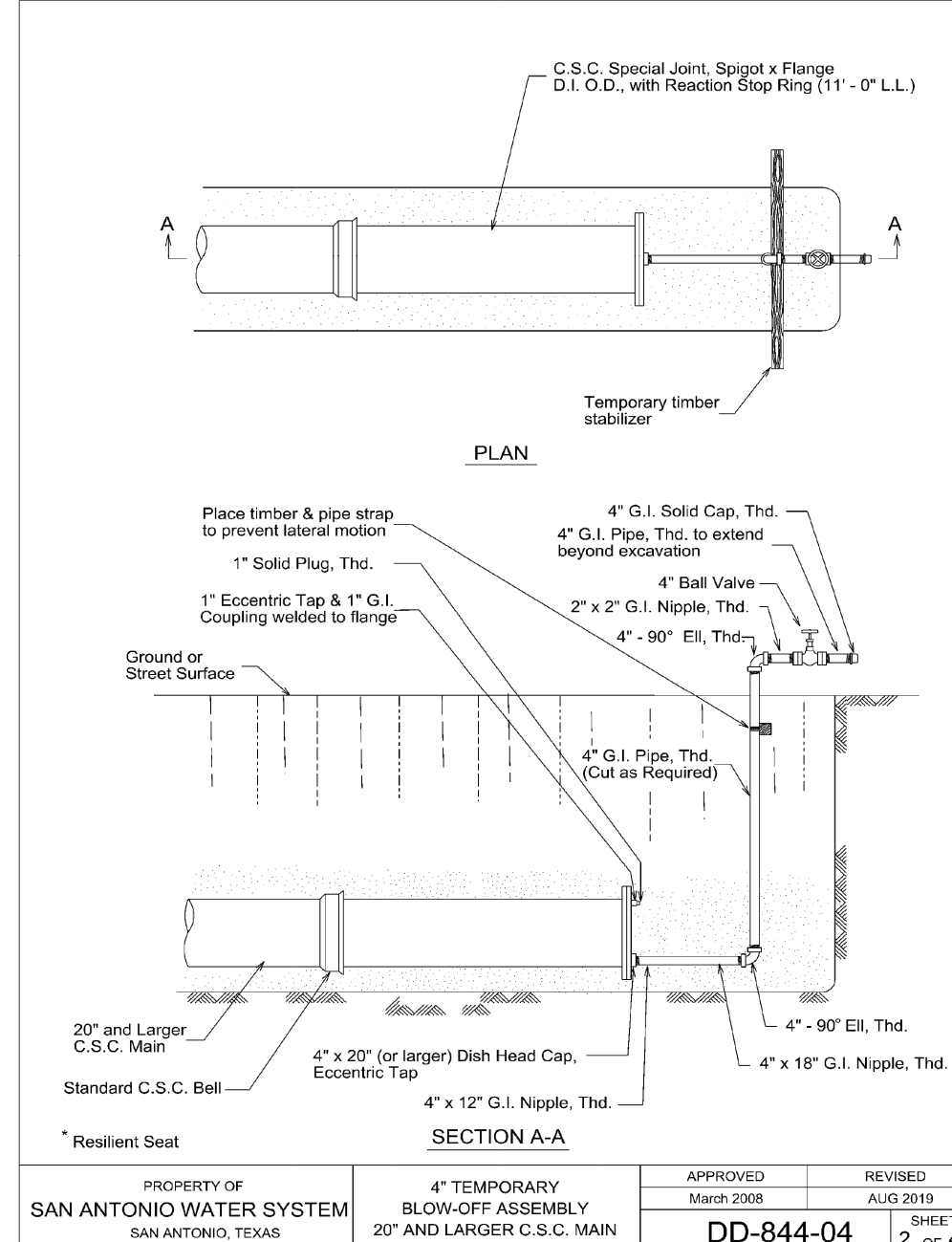
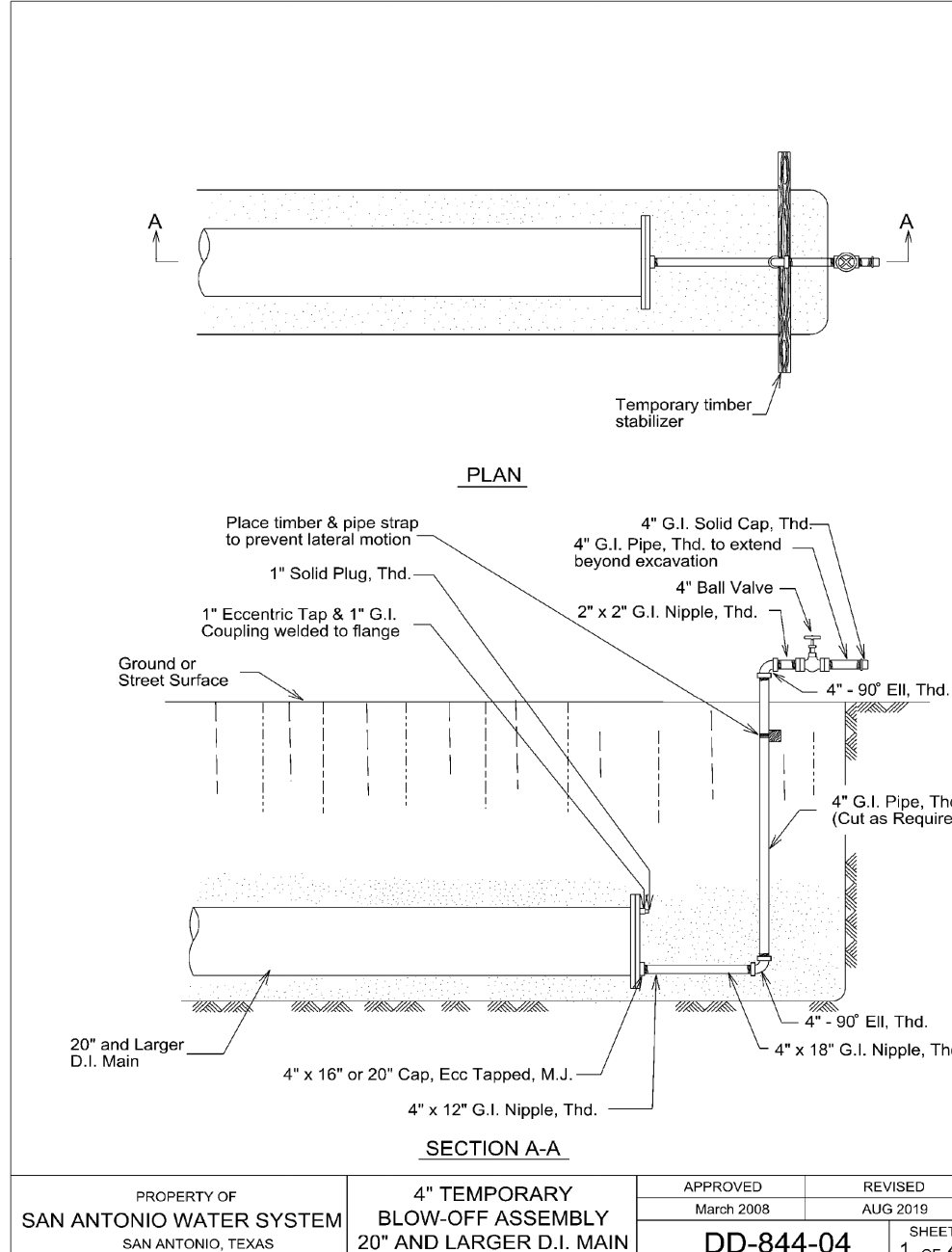
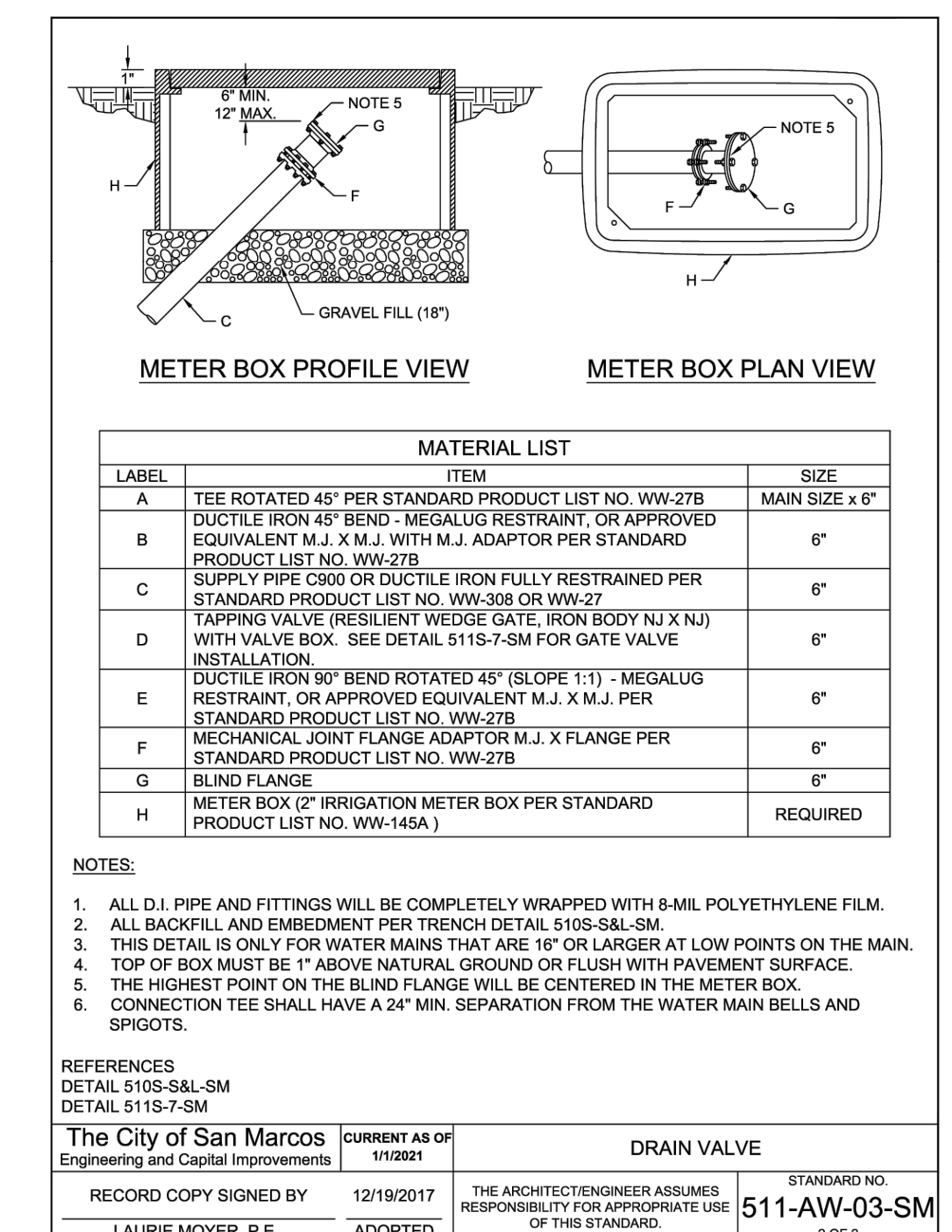
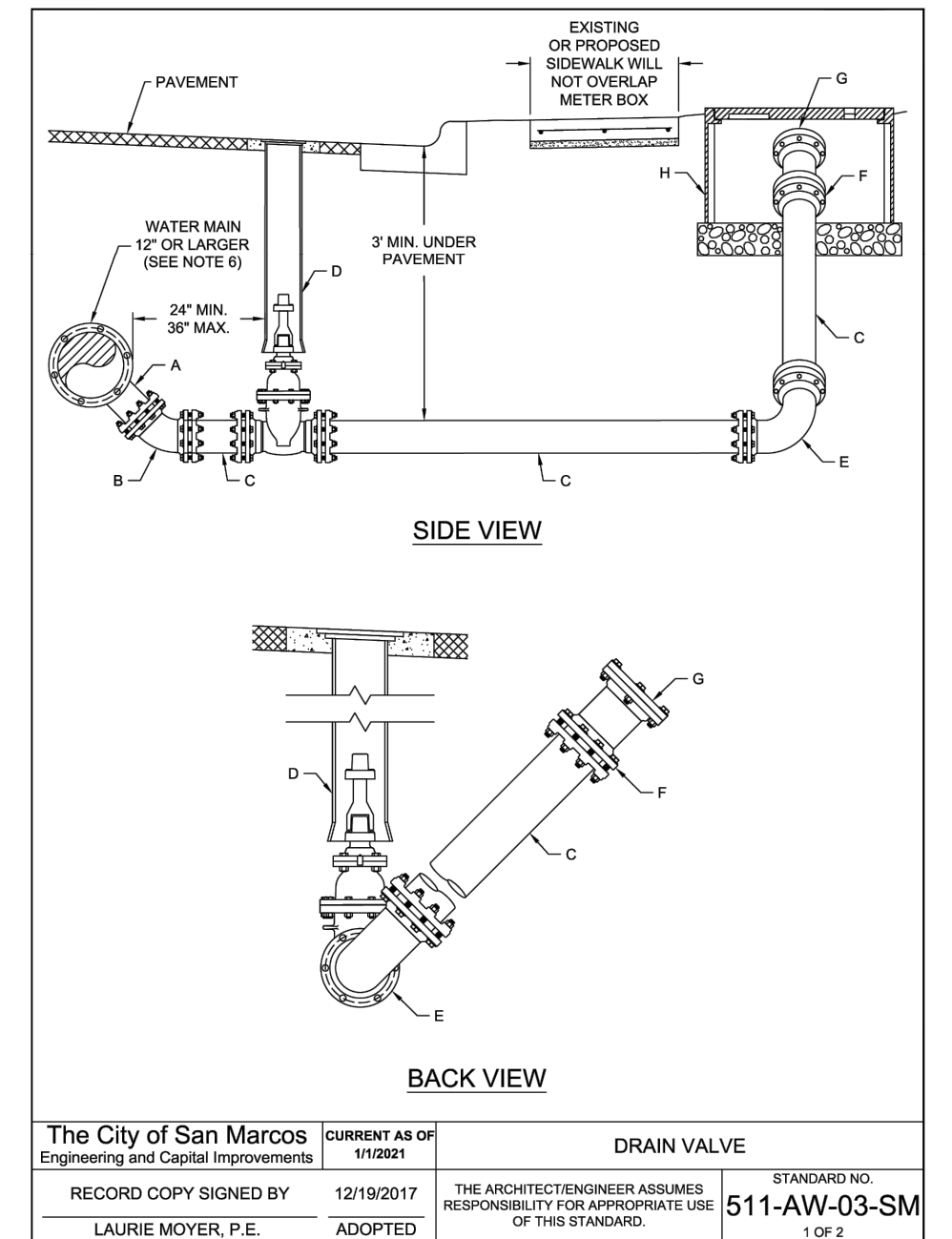
JOB NO. 30001-51

DATE JULY 2024

DESIGNER GDL

CHECKED *GL* DRAWN CA

SHEET C4.10



NBU General Notes

General Notes

8. All materials and construction procedures within the scope of the project shall conform to the applicable codes, standards, and specifications of the New Brunswick Utilities and Water Systems Connection/Construction Policy." Contractor shall not proceed with any pipe installation work until they obtain a permit from the City of New Brunswick, New Jersey, Department of Public Works Engineering at 830-680-8971 with at least two (2) working days (48 hours) before the start of work. If the Contractor does not obtain a permit, it HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRUNSWICK UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL OF THE CONTRACT AND PAYMENT OF THE EXPENSE OF THE CONTRACTOR.
9. The Developer disdicates the water/sewerage system upon completion by the Contractor and acceptance by the New Brunswick Utilities Water System. NBUI will own and maintain said water / wastewater mains which are located on the easement or easements or ROW of adjoining developments. (As applicable).
10. Contractor agrees to assume sole and complete responsibility for job site safety and the construction of the project including safety of all persons and property. This requirement shall apply continuously and not be limited to the working hours of the project. The Contractor shall be responsible for the owners and the engineer and his employees, partners, officers, directors, or consultants harmless from any and all liability, real or alleged, in connection with the performance of the project. The Contractor shall be liable arising from sole negligence of the owner or engineer, engineer's employee, employee, partner, officer, director, or consultant.
11. Contractor to contact the engineer-of-record (EOR) for any field changes. Any revisions or changes to the approved construction plans will require approval by the EOR and/or by the NBUI. The Contractor and/or Contractor and/or Contractor's independently retained employee or safety professional shall be responsible for ensuring that the project complies with all standards governing the presence and activities of individuals working in and around trench excavation.
12. The Contractor shall be responsible for restoring to its original or better condition, any damage to existing fences, curbs, streets, driveways, landscaping and structures, and existing utilities (not adjusted in plans). Cost of Restoration, shall be borne by the Contractor.
13. The Contractor shall avoid cutting roots larger than one (1) inch in diameter during the project. If roots exist, they shall be removed in vicinity of roots and proceed with caution.
14. Contractor shall procure all permits and licenses, pay all charges and fees, and obtain all notices required, and incident in violation of any laws or lawful prosecution of the work.
15. The Contractor shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.
16. The Contractor shall be responsible for the removal of materials upon project completion. The contractor shall not permanently place any waste materials on the road plan without first obtaining an approved flood plain development permit.

Page 1 of 3

NBU General Notes**NBU Water Notes**

1. The point of delivery for oil owned and maintained water line is typically the water meter located at the curb or the containment backflow device, or hydrant meter as set determined by NBU.
2. Water infrastructure must be constructed in accordance with the NBU Water Main Specifications.
3. All water mains shall be constructed of AWWA C900 DR 14 PVC, AWWA C900 DR 18 PVC or Kopper culvert 1-250 Ductile Iron Pipe.
4. All water service lines shall be constructed of AWWA C900 constructed of 1-inch ASST B88 Type T minimum C900 tubing - 1 inch AWWA C900 SDGR STS.
5. All 2-inch service lines may be constructed of AWWA C900 SDGR STS polyethylene tubing.
6. If there are less than a minimum of 45 inches of cover to finished grade, concrete encasement will be required if minimum cover cannot be met.
7. Pipe bedding of water lines shall be compliant with NBU specification No. 1.
8. Contractor shall install line stoppers at their cost for an outage during which the water main will be closed. Line stoppers shall be installed at every joint. Line stoppers will be required based on the following criteria:
 - a. If the number of residential customers affected by more than 20 and no other lost time factor.
 - b. If any commercial customers are affected by the outage then the use of line stoppers will be determined on a case by case basis.
9. All locations where excavation is required for the installation of line stoppers will be determined on a case by case basis.
10. All locations may require a permit to allow stopper and may not be known until construction commences.
11. Contractor will keep the area top of road, around, and within the water meter box free of objects and debris.
12. Placement of meter boxes or vaults in sidewalks, driveways, drive alleys, parking areas, or other areas exposed to vehicular traffic is not permitted unless approved by the contractor and NBU. The contractor shall pay for the contractor's and/or developer's expense.
13. Meter boxes shall be constructed of reinforced concrete. Any meter boxes that are not set at the final grade will be adjusted at contractor's and/or developer's expense.
14. Meter boxes for 8-inch and 1-inch meters shall be DWV Plastic DWV30C-14AF-1MP.
15. Meter boxes for 1.5" meters shall be DWV Plastics DWV30C-14AF-1MP.
16. Meter boxes for 2" meters shall be DWV Plastics DWV1730R-12AF-1MP.
17. Throat boxes are not permitted without special approval. Joints must be sealed with construction sealant. All meter boxes and throat boxes shall be submitted to NBU at the time of plan submission.
18. Contractor shall install tracer wire on top of non-ferric water mains in accordance with NBU specifications. Tracer wire shall be attached to valve and exit at a top of pipe access point. The tracer wire should be attached to the top of the pipe using tape. Excess wire should be coiled and secured with wire across the street.

Page 1 of 2

NBU General Notes

- Standards governing the presence and activities of individuals working in and around trench excavation.
23. Utility Trench Compaction with street R.O.W.
- a. All utility trench compaction test within the street pavement section shall be the responsibility of the developer's Geo-technical engineer.
 - b. Each layer shall be placed in uniform layers not to exceed twelve inches (12") loose.
 - c. Every layer of material shall be compacted as specified and tested for density and moisture in accordance with Text Methods TEX-113-E, TEX-114-E, TEX-115-E.
 - d. The number and location of required tests shall be determined by the Geo-technical Engineer and approved by the City of New Braunfels Street Inspector.
 - e. Upon completion of testing the Geo-technical Engineer shall provide the City of New Braunfels Street Inspector with all testing documentation and a written statement that the trench compaction and fill material has been completed in accordance with the plans.

Page 3 of 3

[illegible]

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288600

VERAMENDI - CONFLUENCE DR PHASE 1

NEW BRAUNFELS, TEXAS

WATER NOTES

PLAT NO. _____
JOB NO. 30001-51
DATE JULY 2024
DESIGNER GDL
CHECKED GL DRAWN CA
SHEET C4.12

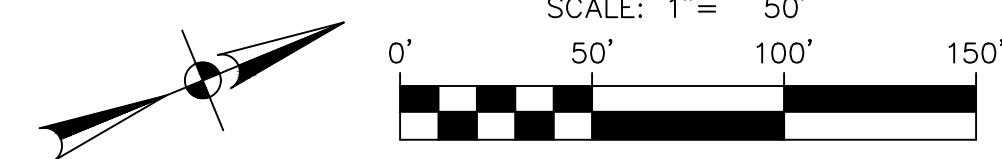
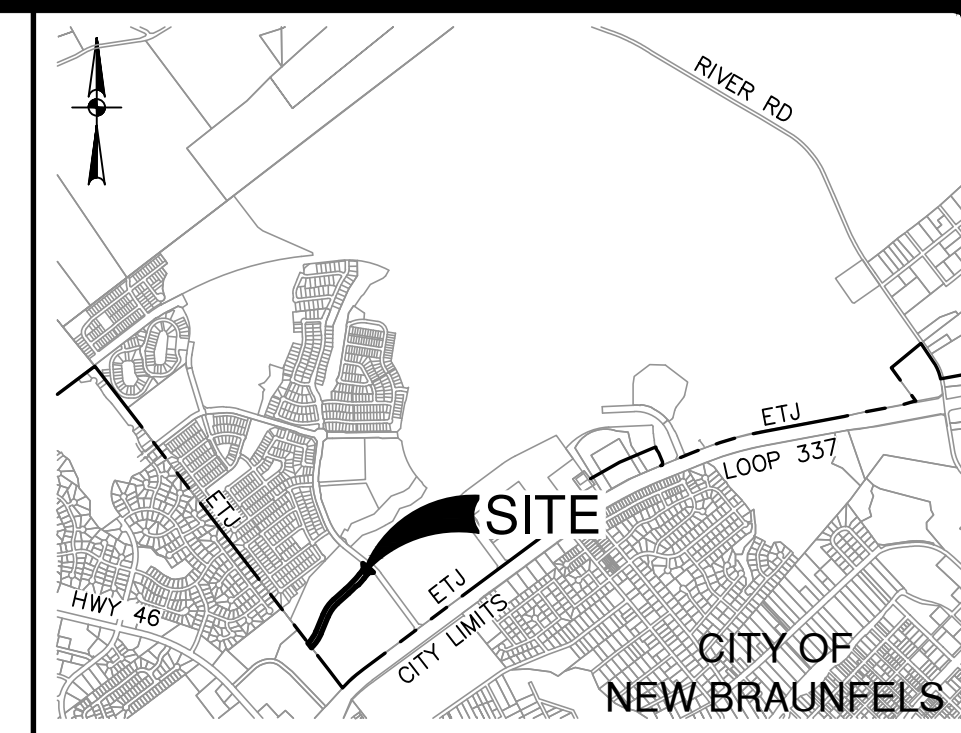
FLOODPLAIN NOTE

1. NO PORTION OF ANY LOT ON THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48091C0435F EFFECTIVE DATE 9/2/2009.

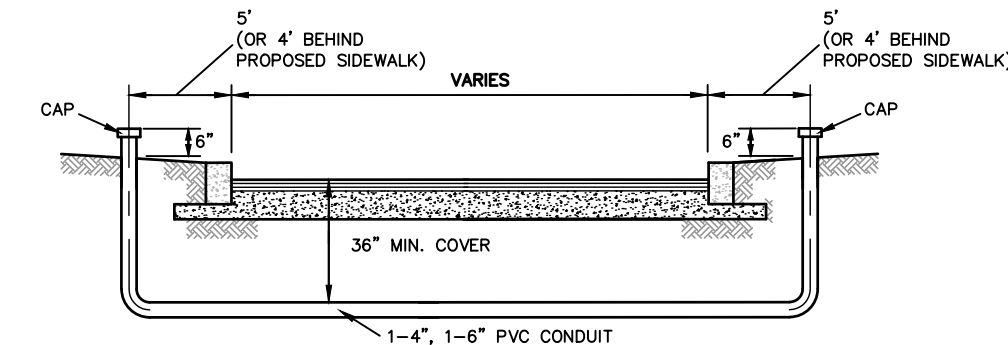
CITY OF NEW BRAUNFELS NOTES

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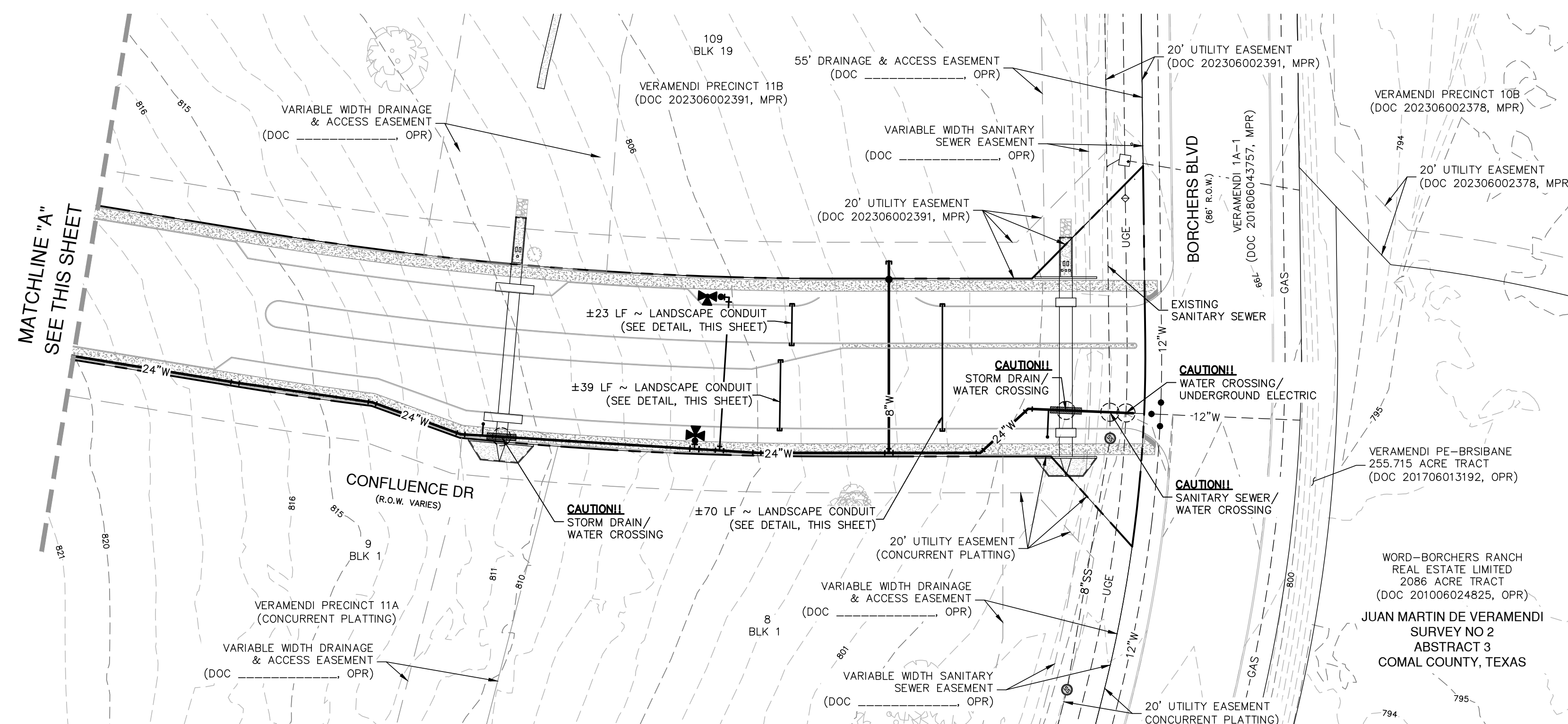
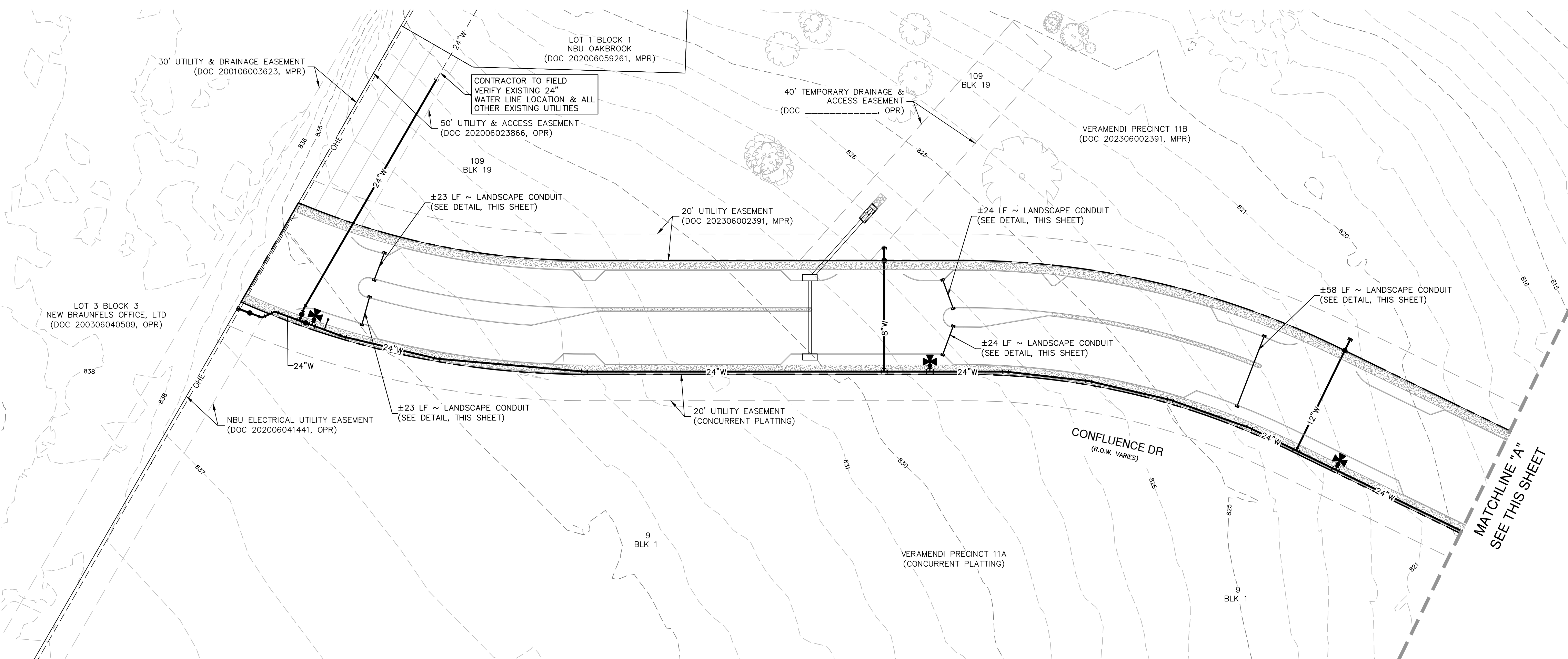
FOR PERMIT



UTILITY LEGEND

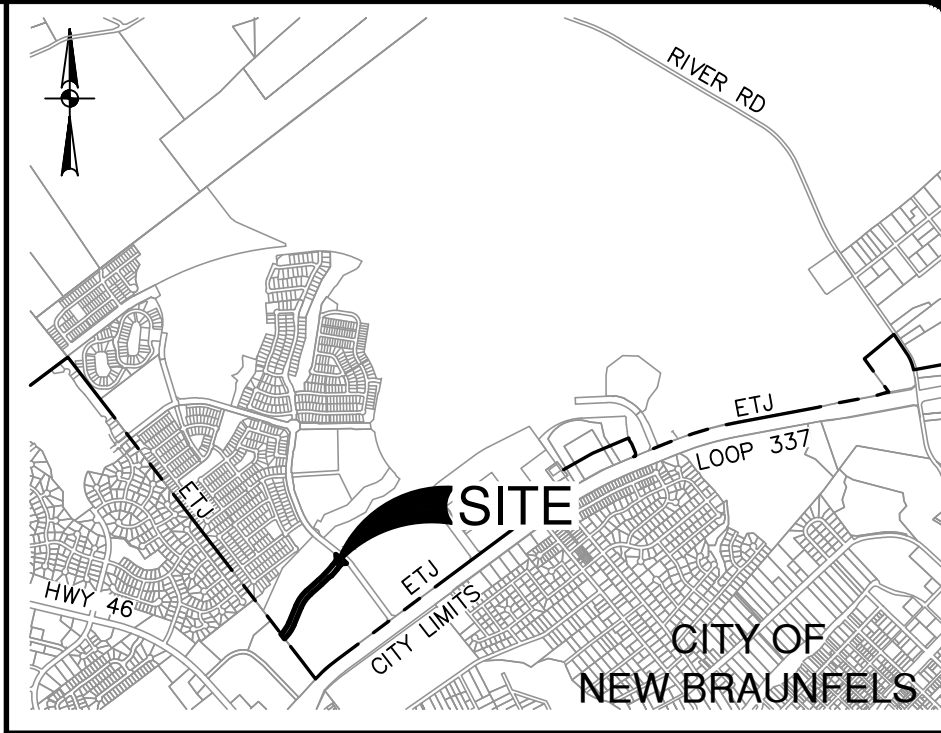
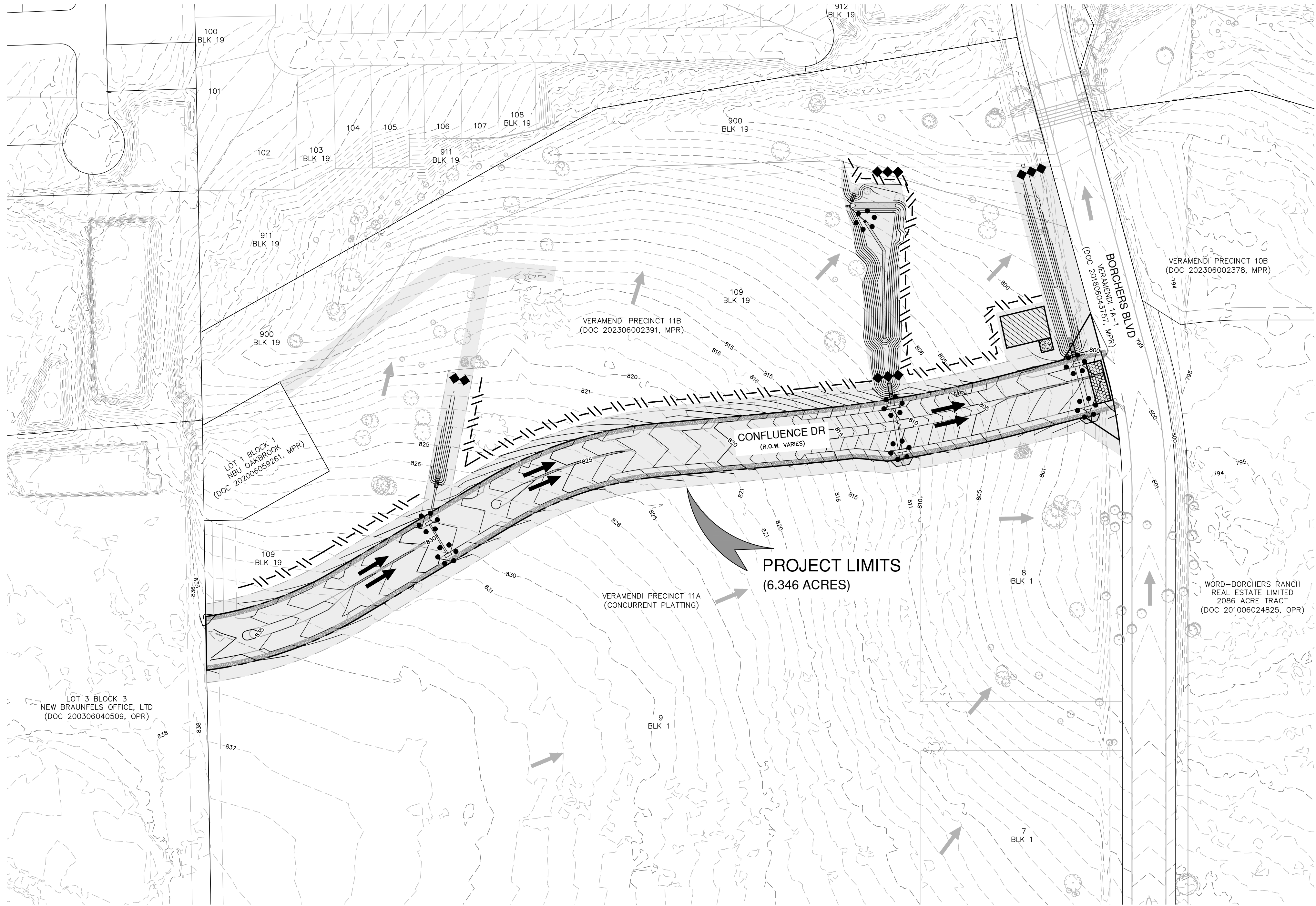


TYPICAL CONDUIT DETAIL



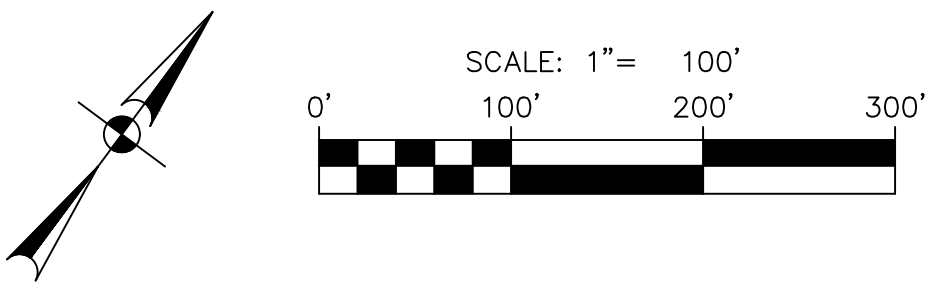
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LOCATION MAP

NOT-TO-SCALE



SWPPP LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	-976-
PROPOSED CONTOUR	-970-
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	
ROCK BERM	
GRAVEL FILTER BAGS	
GRATE INLET PROTECTION	
SEDIMENT CONTROL ROLLS	
LIMITS OF DISTURBED AREA	
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	

GENERAL NOTES

- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
- CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
- STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
- RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
- ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
- FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
- STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
- AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
- BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
- BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
- UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
- WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS. OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIPS.
- SHADED AREA [] DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.
- NBU WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.
- PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.
- ACCESS TO VERAMENDI ROADWAY C WILL BE PROVIDED BY BORCHERS BLVD FROM LOOP 337. NO CONSTRUCTION TRAFFIC SHALL ACCESS THE SITE FROM OAK RUN PARKWAY THROUGH THE OAK RUN SUBDIVISION.

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

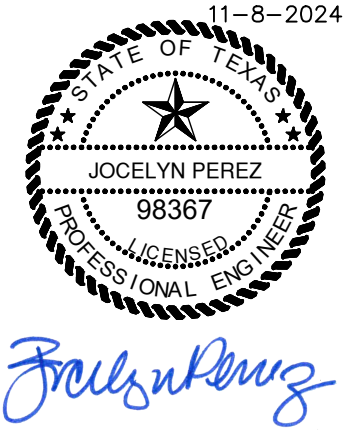
THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

NO.	REVISION	DATE



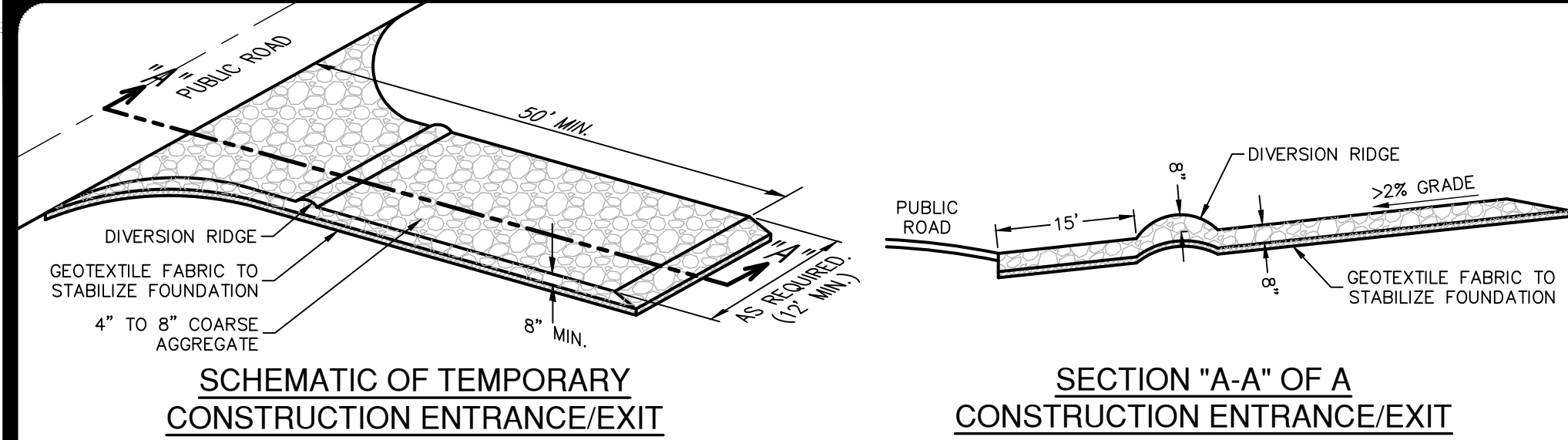
PAPE-DAWSON ENGINEERS
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1077 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.652.5653
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #1028860

VERAMENDI - CONFLUENCE DR PHASE 1 NEW BRAUNFELS, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.	
JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	✓ DRAWN CA
SHEET	C8.00

FOR PERMIT

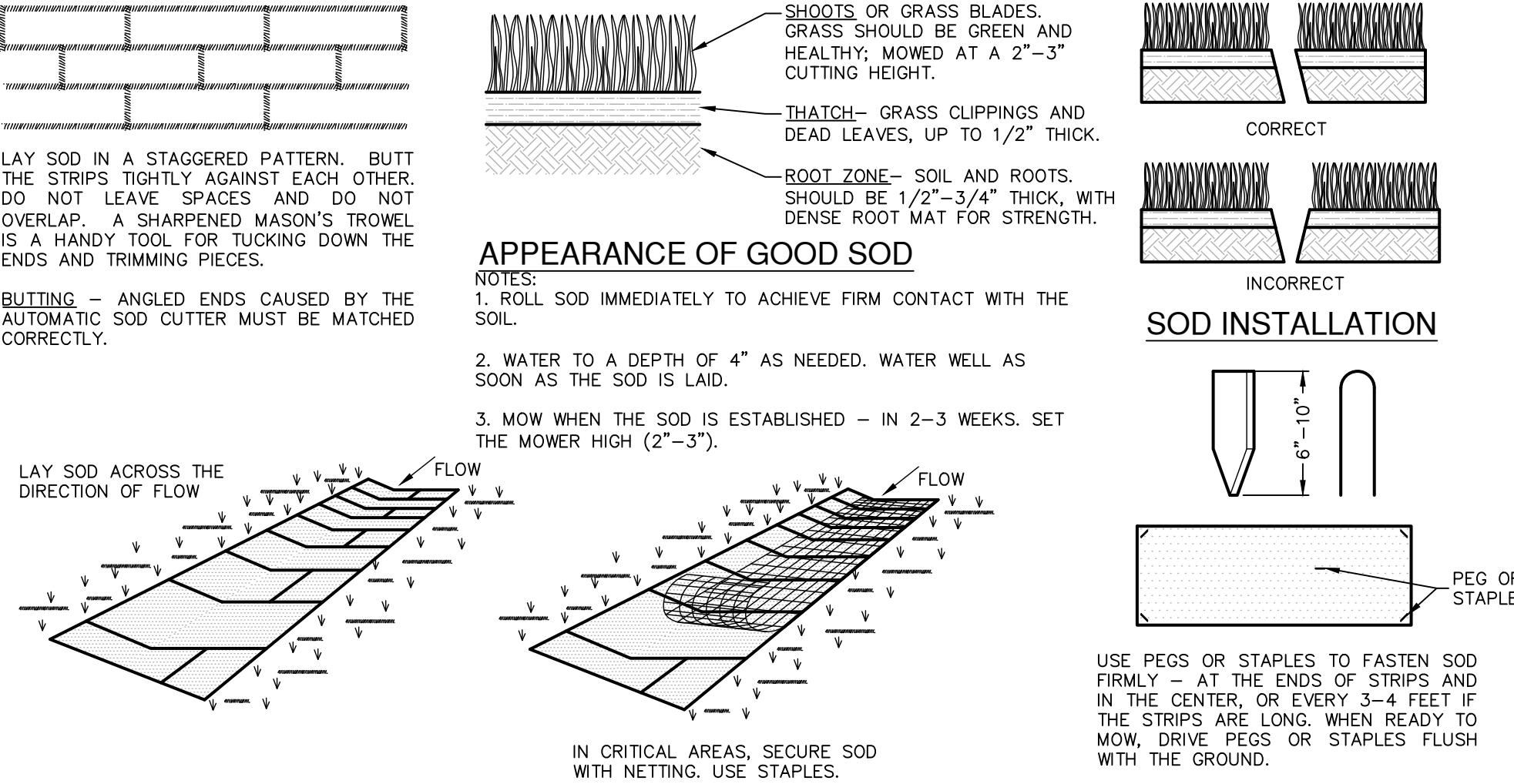


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH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

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



- MATERIALS**
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
 2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY 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 AN INVERTER SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.
 4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

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

INSTALLATION IN CHANNELS

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

SOD INSTALLATION DETAIL

NOT-TO-SCALE

COMMON TROUBLE POINTS

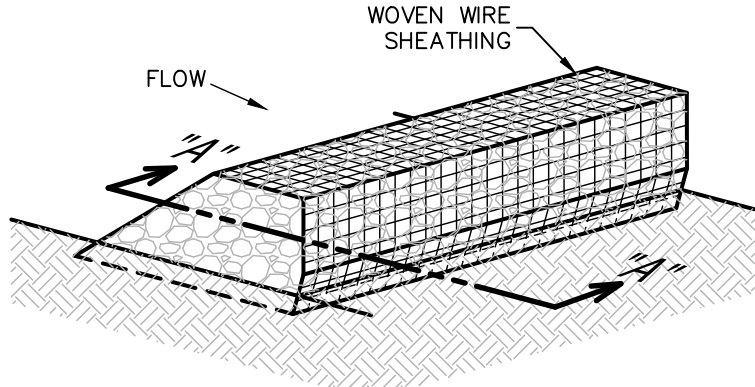
1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY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

5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

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

ISOMETRIC PLAN VIEW



ROCK BERMS

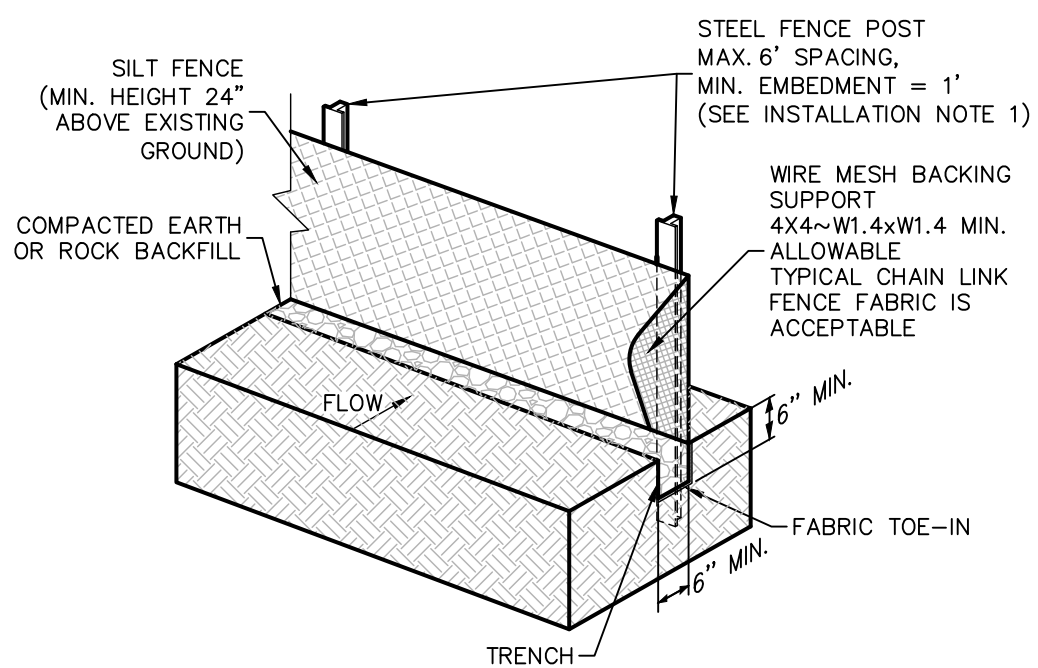
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE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

INSPECTION AND MAINTENANCE GUIDELINES

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

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

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

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

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

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/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.

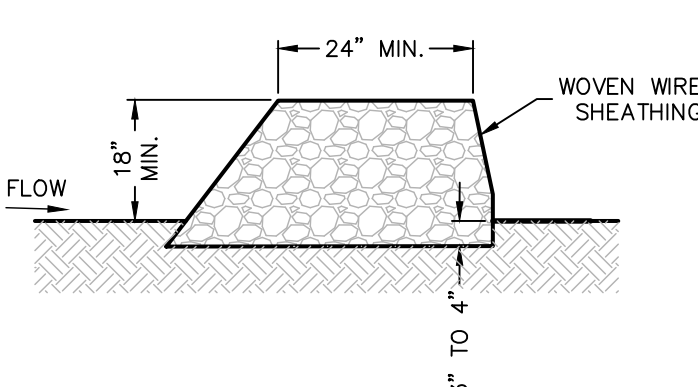
INSTALLATION

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

SECTION "A-A"



MATERIALS

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

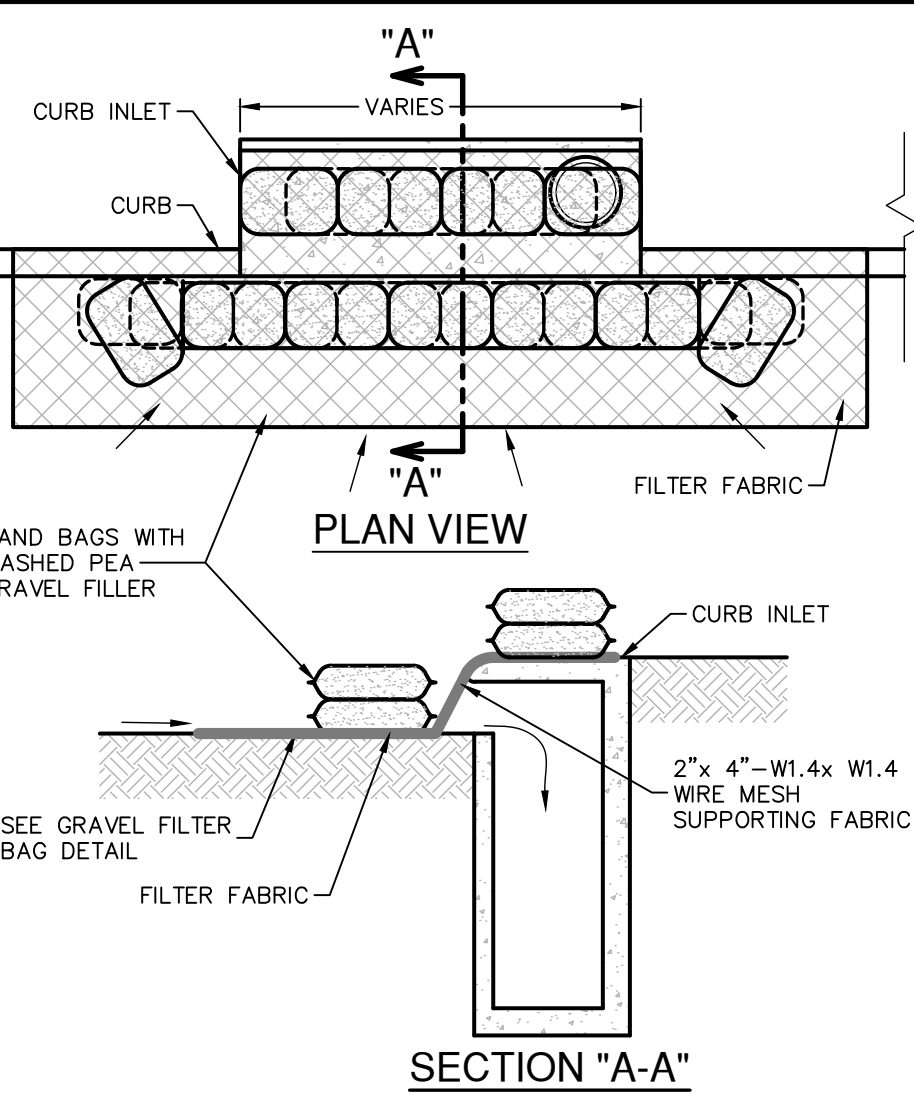
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

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

COMMON TROUBLE POINTS

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



GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH 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.

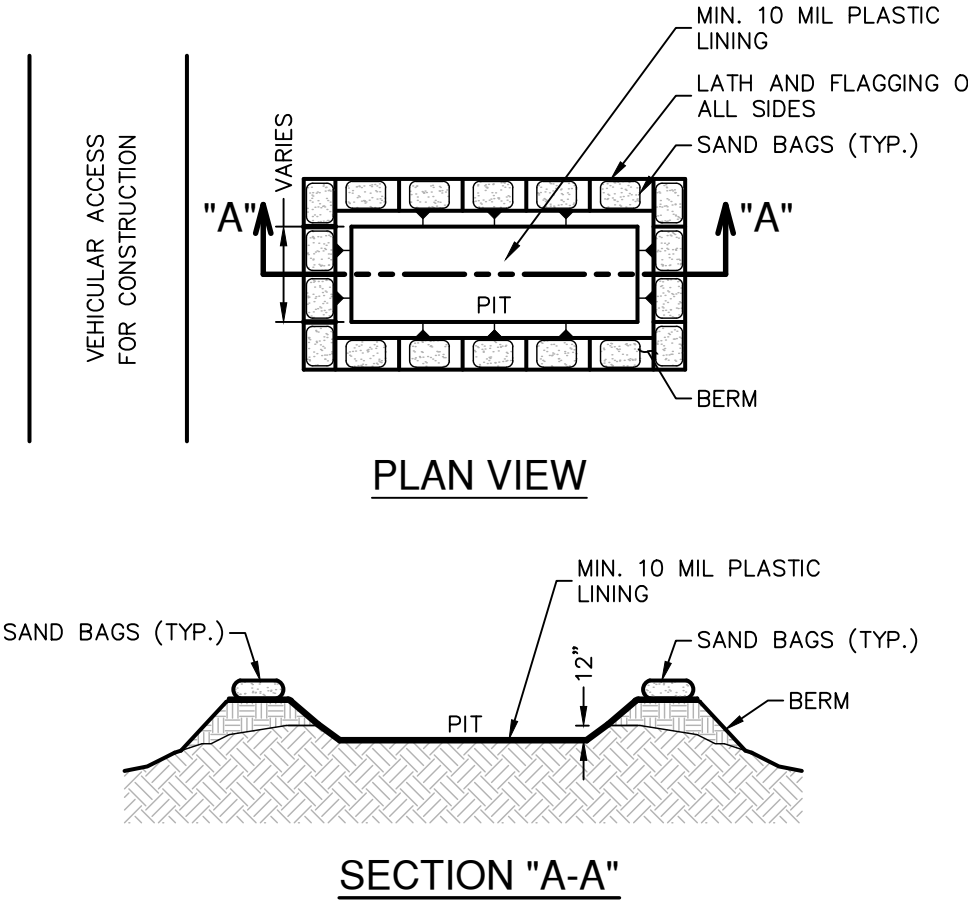
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

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

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



GENERAL NOTES

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

MATERIALS

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

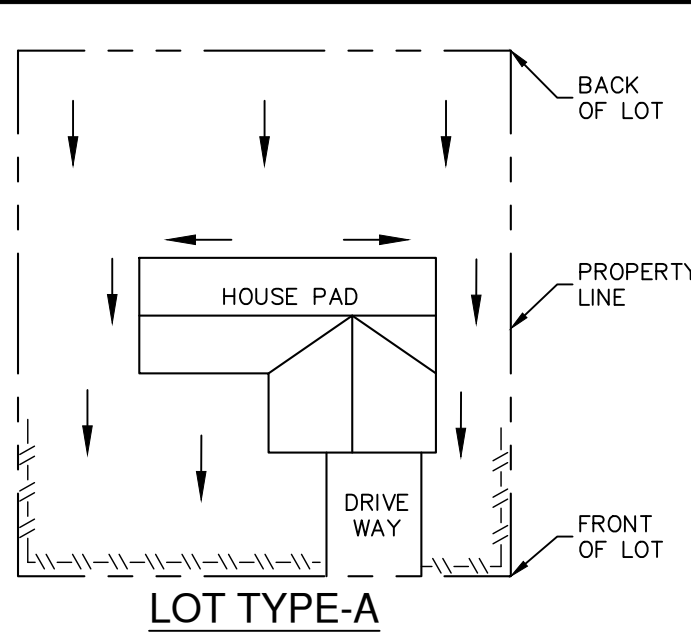
MAINTENANCE

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

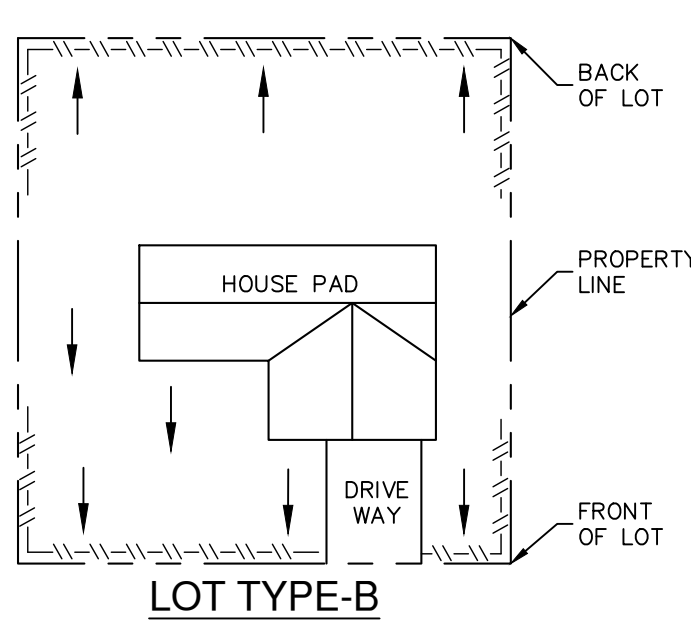
CONCRETE TRUCK WASHOUT

PIT DETAIL

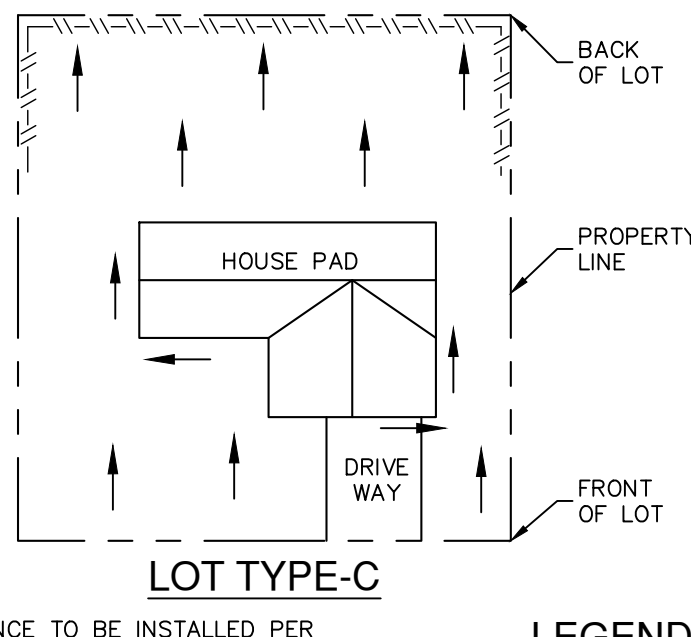
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LOT TYPE-A



LOT TYPE-B



LOT TYPE-C

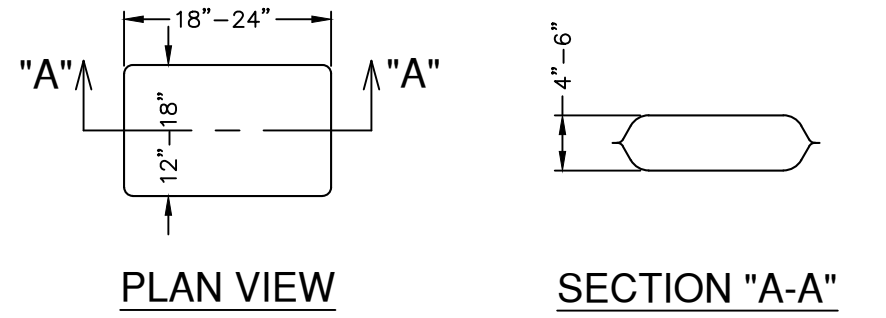
NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNDRAINAGE SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

LEGEND

--- SILT FENCE DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

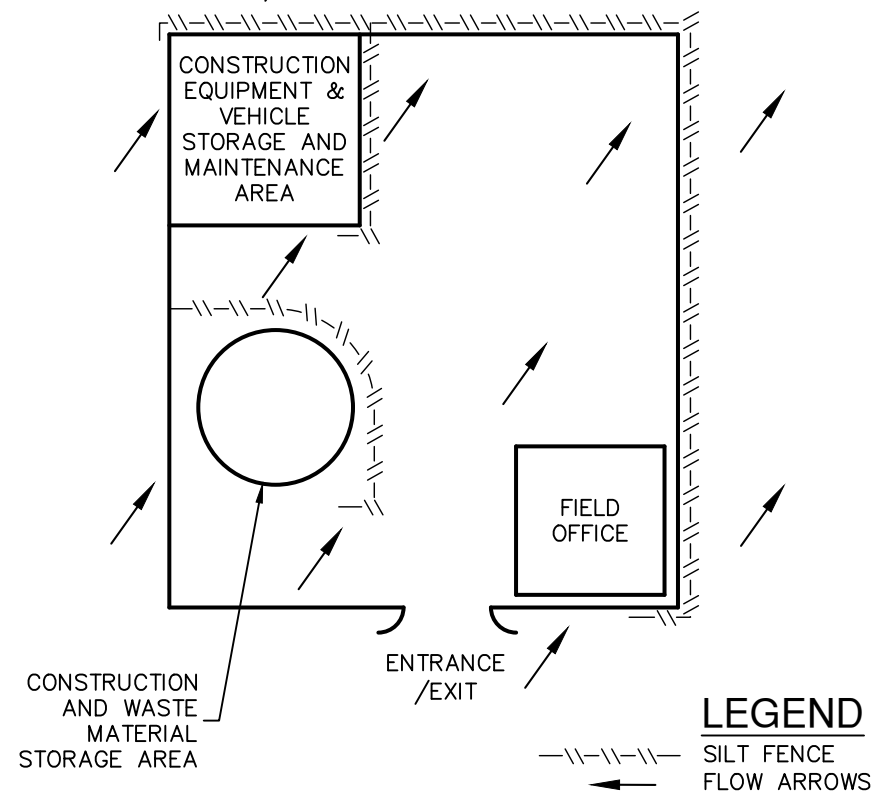
NOT-TO-SCALE



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

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



LEGEND

--- SILT FENCE FLOW ARROWS

CONSTRUCTION STAGING AREA

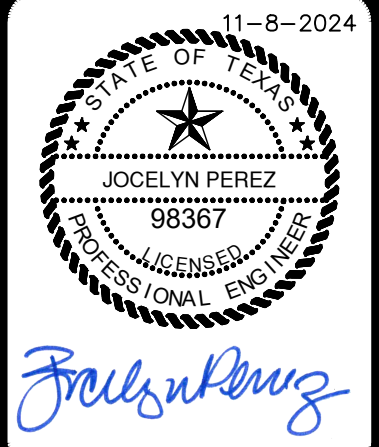
NOT-TO-SCALE

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

EXHIBIT 3

DATE	
NO.	
REVISION	



PAPE-DAWSON ENGINEERS
NEW BRAUNFELS - CONFLUENCE DR PHASE 1
STORM WATER POLLUTION PREVENTION DETAILS
NEW BRAUNFELS | SAN ANTONIO | AUSTIN | HOUSTON | FT WORTH | DALLAS
1075 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78132 | 830.652.5653
TEXAS ENGINEERING FIRM #479 1 TEXAS SURVEYING FIRM #1028860

VERAMENDI - CONFLUENCE DR PHASE 1
NEW BRAUNFELS, TEXAS
STORM WATER POLLUTION PREVENTION DETAILS

PLAT NO.	
JOB NO.	30001-51
DATE	JULY 2024
DESIGNER	GDL
CHECKED	CA
DRAWN	CA
SHEET	C8.10

FOR PERMIT