WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

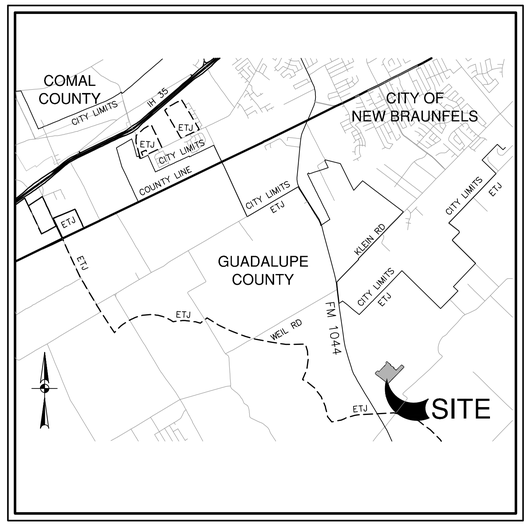
CIVIL CONSTRUCTION PLANS

GVSUD APPROVAL TO CONSTRUCT

Review of these utility plans constitutes general compliance with Green Valley SUD and approved non-standard service agreement. Approval by GVSUD (or its representative) does not constitute approval of the plan design or accuracy of the engineering calculations. Errors in the design or calculations remain the responsibility of the engineer of record whose stamp and signature are affixed to this document. The engineer of record is also responsible for acquiring/completing all reports, plans, reviews and permits prior to commencing construction. If commencement of water/wastewater construction has not started within one (1) year of the date of the approval below, construction plans for these utilities must be resubmitted to GVSUD for review and approval.

Caleb Franke — GVSUD Representative

09/04/2025 — Date



LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

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

NOVEMBER 2023

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

STATE OF TEXAS — JOCELYN PEREZ — 98367 — LICENSED PROFESSIONAL ENGINEER — 5-24-2024

Sheet Index

Sheet Description		Sheet No.
COVER SHEET		C0.00
CONSTRUCTION NOTES		C0.01
PLAT (1 OF 3)		C0.02
PLAT (2 OF 3)		C0.03
PLAT (3 OF 3)		C0.04
MASTER DRAINAGE PLAN - EXISTING CONDITIONS		C1.00
MASTER DRAINAGE PLAN - PROPOSED CONDITIONS		C1.01
MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS		C1.02
WATER QUALITY AND DETENTION BASIN D		C1.03
DRAIN A1 - PLAN & PROFILE	STA 1+02.25 TO 3+40.00	C1.04
DRAIN A1 - PLAN & PROFILE	STA 3+40.00 TO 6+48.13	C1.05
DRAIN A2 - PLAN & PROFILE	STA 1+00.00 TO 1+38.24	C1.06
DRAIN B - PLAN & PROFILE	STA 1+00.00 TO 5+50.00	C1.07
DRAIN B - PLAN & PROFILE	STA 5+50.00 TO 9+88.27	C1.08
DRAIN C - PLAN & PROFILE	STA 1+00.00 TO 2+35.93	C1.09
DRAIN D - PLAN & PROFILE	STA 1+02.73 TO 4+30.00	C1.10
DRAIN E - PLAN & PROFILE	STA 1+00.00 TO 2+10.86	C1.11
DRAINAGE DETAILS		C1.20
DRAINAGE DETAILS		C1.21
DRAINAGE DETAILS		C1.22
BASIN DETAILS		C1.23
BLANC CELLAR - PLAN & PROFILE	STA 7+14.88 TO 14+51.60	C2.00
BLUSH RESERVE - PLAN & PROFILE	STA 1+40.00 TO 9+33.39	C2.01
BOTTLE BLEND - PLAN & PROFILE	STA 1+35.08 TO 2+94.83	C2.02
CHATEAU GDN - PLAN & PROFILE	STA 1+44.85 TO 9+08.89	C2.03
RESERVE POINT - PLAN & PROFILE	STA 1+40.00 TO 9+60.64	C2.04
TANNIN ALLEY - PLAN & PROFILE	STA 8+05.61 TO 18+15.49	C2.05
TYPICAL STREET DETAILS		C2.10
TYPICAL STREET DETAILS		C2.11
TYPICAL STREET DETAILS		C2.12
OVERALL SIGNAGE PLAN		C3.00
TxDOT SIGN MOUNTED DETAILS		C3.10
TxDOT SIGN MOUNTED DETAILS		C3.11
OVERALL WATER DISTRIBUTION PLAN		C4.00
12 INCH WATER MAIN W-01 - PLAN & PROFILE	STA 1+00.00 TO 11+34.72	C4.01
WATER DISTRIBUTION DETAILS		C4.10
WATER DISTRIBUTION DETAILS		C4.11
OVERALL SANITARY SEWER		C5.00
OVERALL SANITARY SEWER		C5.01
SANITARY SEWER LINE A - PLAN & PROFILE	STA 1+00.00 TO 11+50.00	C5.02
SANITARY SEWER LINE A - PLAN & PROFILE	STA 11+50.00 TO 20+50.00	C5.03
SANITARY SEWER LINE A - PLAN & PROFILE	STA 20+50.00 TO 27+17.15	C5.04
SANITARY SEWER LINE B - PLAN & PROFILE	STA 1+00.00 TO 10+69.00	C5.05
SANITARY SEWER LINE C - PLAN & PROFILE	STA 1+00.00 TO 6+50.00	C5.06
SANITARY SEWER LINE C - PLAN & PROFILE	STA 6+50.00 TO 13+68.53	C5.07
SANITARY SEWER LINE D - PLAN & PROFILE	STA 1+00.00 TO 3+36.00	C5.08
SANITARY SEWER DETAILS		C5.10
SANITARY SEWER NOTES		C5.20
OVERALL UTILITY PLAN		C6.00
OVERALL GRADING PLAN		C7.00
OVERALL GRADING PLAN		C7.01
STORM WATER POLLUTION PREVENTION PLAN		C8.00
STORM WATER POLLUTION PREVENTION PLAN DETAILS		C8.01

NOTES:

- TYPE 3 DEVELOPMENT.
- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER RECORD.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
- NO PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0255F EFFECTIVE DATE 11/2/2007.
- GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- FOLLOWING PERMITS ARE REQUIRED PRIOR TO START OF CONSTRUCTION:
  1. CITY OF NEW BRAUNFELS PUBLIC INFRASTRUCTURE PERMIT
  2. GVEC
  3. GBRA
  4. GVSUD

LEGAL DESCRIPTION:

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

PD JOB NO. 30058-05 WINDING CREEK RANCH UNIT 7

HF

SHEET C0.00

FOR PERMIT

Date: June 20, 2023, 8:49 AM - User ID: jmoy
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CONSTRUCTION PLAN NOTES

Revised 03/2020

These notes must appear on the cover and/or "notes" sheet of all subdivision construction plans and on commercial plans where applicable:

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.

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 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).
1. Sawcut existing street and match to new construction.
2. 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.

(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.

PROPOSED CONSTRUCTION SEQUENCE

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

NOTES

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

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.

INSPECTION AND MAINTENANCE SCHEDULE
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**~~

NO. | REVISION | DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
2-22-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00
2672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
CONSTRUCTION NOTES

PLAT NO. ____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C0.01

FOR PERMIT

Date: Feb 22, 2024, 9:10am User ID: ALeddy
File: P:\305\58\05\Design\Civil\CN-30058-05.dwg
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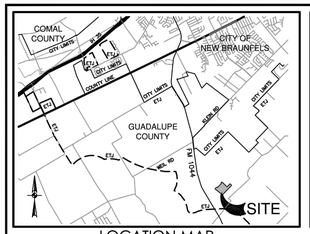
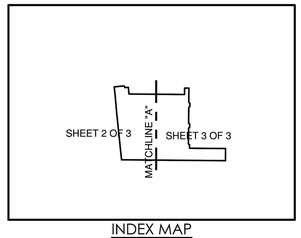


LOCATION MAP
MAPSCO MAP GRID: 123X1
NOT-TO-SCALE



INDEX MAP
SCALE: 1" = 1000

PLAT NOTES:
1. THIS SUBDIVISION IS NOT WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
2. THIS SUBDIVISION IS WITHIN THE EXTRATERRITORIAL JURISDICTION OF THE CITY OF NEW BRAUNFELS, TEXAS.
3. FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
4. THE ELEVATION OF THE LOWEST FLOOR OF A STRUCTURE 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 A FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOIST 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 AND SHALL PREVENT WATER FROM LEAVING THE STREET.
5. THIS SUBDIVISION IS SUBJECT TO THE 2018 CITY OF NEW BRAUNFELS PARK LAND DEDICATION AND DEVELOPMENT ORDINANCE. THIS PLAT IS APPROVED FOR ONE (1) DWELLING UNIT PER BUILDABLE LOT WITH A MAXIMUM OF 111 LOTS WHERE FEES ARE DUE AT THE TIME OF RECORDATION. AT SUCH TIME THAT ADDITIONAL DWELLING UNITS ARE CONSTRUCTED, THE OWNER OF THE LOT SHALL CONTACT THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.
6. THIS UNIT CONTAINS 111 BUILDABLE RESIDENTIAL LOTS.
7. ANY DRIVEWAY CONSTRUCTION ON COUNTY ROADS WITHIN THE UNINCORPORATED AREAS OF GUADALUPE COUNTY MUST BE PERMITTED BY THE GUADALUPE COUNTY ROAD DEPARTMENT.

GVEC NOTE:
1. WHERE UNDERGROUND SERVICES ARE UTILIZED GVEC WILL POSSESS A 5-FOOT-WIDE EASEMENT TO THE SERVICE METER LOCATION. EASEMENT TO FOLLOW SERVICE LINE AND WILL VARY DEPENDING ON LOCATION OF BUILDING OR STRUCTURE.
2. GVEC SHALL HAVE ACCESS TO METER LOCATIONS FROM THE FRONT YARD WITH THE LOCATION NOT BEING WITHIN A FENCED AREA.
3. ANY EASEMENT DESIGNATED AS A GVEC 20' X 20' UTILITY EASEMENT SHALL REMAIN OPEN FOR ACCESS AT ALL TIMES AND SHALL NOT BE WITHIN A FENCED AREA.
4. ALL UTILITY EASEMENTS ARE FOR THE CONSTRUCTION, MAINTENANCE (INCLUDING BUT NOT LIMITED TO REMOVAL OF TREES AND OTHER OBSTRUCTIONS), READING OF METERS, AND REPAIR OF ALL OVERHEAD AND UNDERGROUND UTILITIES.
5. ALL ELECTRIC EASEMENTS, FOR BOTH PRIMARY AND SECONDARY ELECTRIC SERVICE, INCLUDE RIGHTS OF INGRESS AND EGRESS ACROSS THE SUBDIVISION FOR THE PURPOSE OF INSTALLING, SERVICING, AND MAINTAINING THE ELECTRICAL FACILITIES.
6. ANY REQUEST TO SUBSEQUENTLY RELOCATE ANY PORTION OF THE ELECTRIC FACILITIES INSTALLED SHALL BE SUBJECT TO THE COOPERATIVE'S REASONABLE DISCRETION AND THE REQUESTING PARTY SHALL BEAR ALL COSTS ASSOCIATED WITH SUCH RELOCATION.
7. THE COOPERATIVE SHALL ONLY BE REQUIRED TO FILL, GRADE, AND RESTORE GROUND COVER BACK TO ORIGINAL GRADE AS A RESULT OF ANY EXCAVATION BY OR ON BEHALF OF THE COOPERATIVE.

SIDEWALK NOTES:
1. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION ALONG:
   - BLANC CELLAR
   - BLUSH RESERVE
   - BOTTLE BLEND
   - CHATEAU GDN
   - RESERVE POINT
   - TANNIN ALLEY
2. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
   - BOTTLE BLEND- LOT 900 BLOCK 23 AND LOT 900 BLOCK 26
   - CHATEAU GDN- LOT 900 BLOCK 23
   - TANNIN ALLEY- LOT 900 BLOCK 26 AND LOT 900 BLOCK 32

UTILITY PROVIDER NOTE:
THE PROPERTY WILL BE SERVED BY THE FOLLOWING:
GBRA (SEWER)
GVSUD (WATER)
GVEC (ELECTRIC)
AT&T (TELECOMMUNICATIONS)
SPECTRUM

SCHOOL DISTRICT NOTE:
REFERENCED PROPERTY LIES WITHIN THE MARION INDEPENDENT SCHOOL DISTRICT.

COMMON SPACE NOTE:
LOT 900, BLOCK 23, LOT 900, BLOCK 26, AND LOT 900 BLOCK 32 ARE DRAINAGE LOTS, OPEN SPACE, AND UTILITY EASEMENTS.
ALL AFOREMENTIONED LOTS TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION OR PROPERTY OWNER AND NOT THE CITY OF NEW BRAUNFELS.

DRAINAGE EASEMENT NOTES:
1. DRAINAGE EASEMENTS SHALL "REMAIN FREE OF ALL OBSTRUCTIONS."
2. NO STRUCTURES, WALLS OR OTHER OBSTRUCTIONS OF ANY KIND SHALL BE PLACED WITHIN THE LIMITS OF DRAINAGE EASEMENTS SHOWN ON THIS PLAT. NO LANDSCAPING, FENCES, OR OTHER TYPE OF MODIFICATIONS WHICH ALTER THE 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 SHALL HAVE THE RIGHT OF INGRESS AND EGRESS OVER GRANTORS ADJACENT PROPERTY TO REMOVE ANY OBSTRUCTIONS PLACED WITHIN THE LIMITS OF SAID DRAINAGE EASEMENTS AND TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS WITHIN SAID DRAINAGE EASEMENTS.
3. MAINTENANCE OF DRAINAGE EASEMENTS DESIGNATED WITHIN A LOT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

FLOODPLAIN NOTE:
A PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48187C0255F EFFECTIVE DATE 11/2/2007 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

GVSUD NOTE:
THE OWNER OF THE LAND SHOWN ON THIS PLAT AND WHOSE NAME IS SUBSCRIBED HERETO, IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, DEDICATES TO THE GREEN VALLEY SPECIAL UTILITY DISTRICT OF MARION, TEXAS, ITS SUCCESSORS AND ASSIGNS, A PERPETUAL EASEMENT MARKED AS " GVSUD WATERLINE EASEMENT," " GVSUD SEWER EASEMENT" OR " GVSUD REUSE WATER EASEMENT" AS APPLICABLE WITH THE RIGHT TO ERECT, CONSTRUCT, INSTALL, AND LAY AND THEREAFTER ACCESS AND USE, OPERATE, INSPECT, REPAIR, MAINTAIN, REPLACE, UPGRADE, PARALLEL AND REMOVE WATER OR WASTE-WATER TRANSMISSION, COLLECTION AND/OR DISTRIBUTION LINES AND APPURTENANCES AND ANY OTHER FACILITIES NECESSARY TO SERVE GRANTORS' PROPERTY, AS WELL AS THE GRANTEE'S CURRENT AND FUTURE SYSTEM-WIDE CUSTOMERS, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS UNDER, OVER AND ACROSS GRANTOR'S ADJACENT LANDS AND IN ALL STREETS AND BYWAYS FOR THE PURPOSE FOR WHICH THE ABOVE MENTIONED RIGHTS ARE GRANTED, INCLUDING THE RIGHT TO REMOVE FROM SAID LANDS ALL TREES, SHRUBS, GRASSES, PAVEMENTS, FENCES, STRUCTURES, IMPROVEMENTS, OR OTHER OBSTRUCTIONS WHICH MAY INTERFERE WITH THE FACILITY OR THE ACCESS THERETO.

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

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

GBRA NOTES:
1) GBRA (GUADALUPE-BLANCO RIVER AUTHORITY) IS HEREBY DEDICATED THE EASEMENTS AND RIGHTS-OF-WAY IN THE AREAS DESIGNATED ON THIS PLAT AS "SANITARY SEWER" FOR THE PURPOSE OF INSTALLING, CONSTRUCTING, RECONSTRUCTING, OPERATING, MAINTAINING, INSPECTING, REPAIRING, REMOVING, AND RELOCATING BURIED AND/OR EXPOSED SANITARY SEWER FACILITIES AND APPURTENANCES.
2) TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS, GBRA SHALL HAVE THE RIGHT TO REMOVE SAID LANDS OF ALL TREES OR PARTS THEREOF, OR ANY OTHER OBSTRUCTIONS WHICH MAY ENDANGER, OR INTERFERE WITH MAINTENANCE OF, THE FACILITIES AND APPURTENANCES.
3) OTHER UTILITIES, STRUCTURES, GRADING, DRAINAGE, DETENTION/RETENTION PONDS, LANDSCAPING, TREES, ROADS, PARKING LOTS, FENCES, WALLS, CONSTRUCTION OF ANY TYPE, OR ANY OTHER IMPROVEMENTS OR OBSTRUCTIONS, ARE NOT ALLOWED WITHIN 10 FEET OF GBRA UTILITIES.
4) DESIGNS FOR ANY PROPOSED ALTERATIONS OR CROSSINGS OF GBRA EASEMENTS OR GBRA UTILITIES MUST BE APPROVED IN WRITING BY GBRA AND THE INSTALLATION OF SUCH MUST BE INSPECTED AND APPROVED BY GBRA.
5) MAINTENANCE OF EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
6) THE PROPERTY OWNER MUST INSTALL 16 FOOT GATES IN ANY FENCES THAT CROSS GBRA UTILITIES; GATES MUST BE CENTERED ACROSS GBRA UTILITIES.
7) CUSTOMER SANITARY SEWER SERVICES SHALL NOT BE INSTALLED WITHIN FENCED AREAS.

SURVEYOR'S NOTES:
1. MONUMENTS WERE FOUND OR SET AT EACH CORNER OF THE SURVEY BOUNDARY OF THE SUBDIVISION AS NOTED. MONUMENTS AND LOT MARKERS WILL BE SET WITH 5/8" IRON ROD WITH CAP MARKED "PAPE-DAWSON" OR MAG NAIL WITH DISK MARKED "PAPE-DAWSON" AFTER THE COMPLETION OF UTILITY INSTALLATION AND STREET CONSTRUCTION UNLESS NOTED OTHERWISE.
2. COORDINATES SHOWN ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 NAD83 (NA2011) EPOCH 2010.00 FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE DISPLAYED IN GRID VALUES DERIVED FROM THE NGS COOPERATIVE CORS NETWORK.
3. DIMENSIONS SHOWN ARE SURFACE. COMBINED SCALE FACTOR IS 1.00014
4. BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 NAD83 (NA2011) EPOCH 2010.00. FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE.

KNOW ALL MEN BY THESE PRESENTS

I, THE UNDERSIGNED JON COOPER, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE UNDER MY SUPERVISION AND IN COMPLIANCE WITH CITY AND STATE SURVEY REGULATIONS AND LAWS AND MADE ON THE GROUND AND THAT THE CORNER MONUMENTS WERE PROPERLY PLACED UNDER MY SUPERVISION.

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT.

KEITH W. WOOLEY
REGISTERED PROFESSIONAL LAND SURVEYOR #5463
PAPE-DAWSON ENGINEERS, INC.
1672 INDEPENDENCE DR SUITE 102
NEW BRAUNFELS, TEXAS 78132

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

CURVE AND LINE DATA ON SHEET 3 OF 3

SHEET 1 OF 3

SUBDIVISION PLAT OF WINDING CREEK RANCH UNIT 7

BEING 23.439 ACRES OF LAND COMPRISED OF A 193.397 ACRE TRACT, RECORDED IN DOCUMENT NO. 202199023875 OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

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

DATE OF PREPARATION: May 17, 2024

STATE OF TEXAS
COUNTY OF BEXAR
I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE WINDING CREEK RANCH UNIT 7 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL AND GUADALUPE, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND 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: CONTINENTAL HOMES OF TEXAS, L.P.
A TEXAS LIMITED PARTNERSHIP
BY: CHTEX OF TEXAS, INC.
A DELEWARE CORPORATION, ITS GENERAL PARTNER
BY: LESLIE OSTRANDER, P.E., ASSISTANT SECRETARY
5419 N LOOP 1604 E., SAN ANTONIO, TEXAS 78247

STATE OF TEXAS
COUNTY OF BEXAR

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

NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES: _____

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

AGENT FOR GREEN VALLEY SPECIAL UTILITY DISTRICT

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

AGENT FOR GUADALUPE VALLEY ELECTRIC COOPERATIVE, INC.

CERTIFICATE OF APPROVAL

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

PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

_____ _____
DATE DIRECTOR OF PLANNING

_____ _____
DATE CITY ENGINEER

STATE OF TEXAS
COUNTY OF GUADALUPE

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

COUNTY CLERK, GUADALUPE, COUNTY, TEXAS

BY: _____, DEPUTY

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

FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
5-24-2024

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

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
PLAT (1 OF 3)

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C0.02

Civil Job No. 30058-05; Survey Job No. 30058-00
WINDING CREEK RANCH UNIT 7

Date: May 20, 2024, 8:49am User ID: jmay
File: P:\300\58\05\Design\Civil\PLAT-30058-05.dwg

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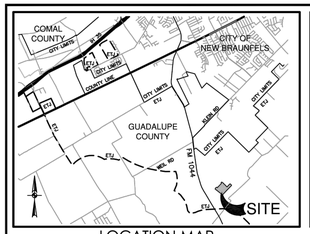
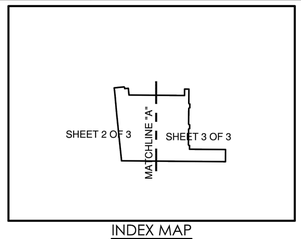
SUBDIVISION PLAT OF WINDING CREEK RANCH UNIT 7

BEING 23.439 ACRES OF LAND COMPRISED OF A 193.397 ACRE TRACT, RECORDED IN DOCUMENT NO. 202199023875 OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.



LOCATION MAP
NOT-TO-SCALE



INDEX MAP
SCALE: 1" = 1000'

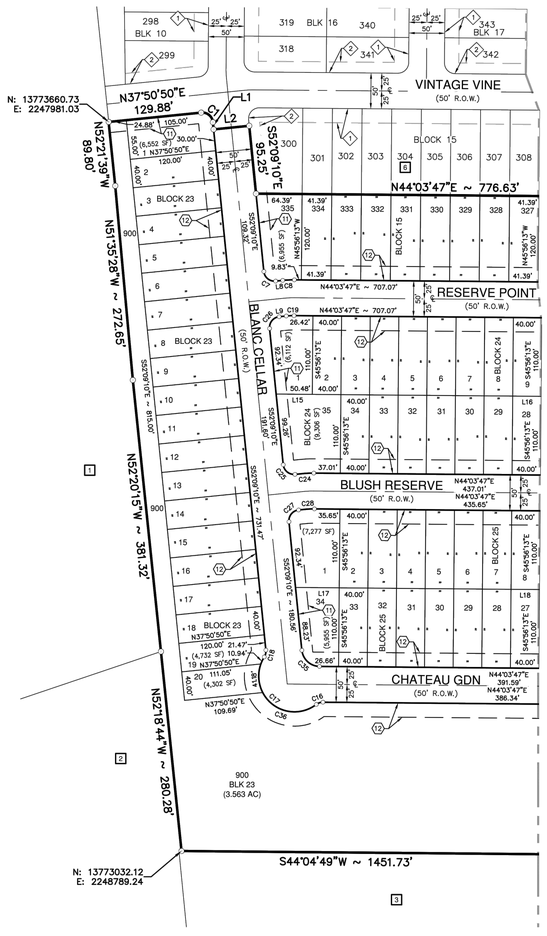
LEGEND

AC	ACRE(S)	VOL	VOLUME
BLK	BLOCK	PG	PAGE(S)
DOC	DOCUMENT NUMBER	ROW	RIGHT-OF-WAY
OPR	OFFICIAL PUBLIC RECORDS	"	REPETITIVE BEARING AND/OR DISTANCE
ETJ	EXTRATERRITORIAL JURISDICTION	●	FOUND 1/2" IRON ROD (UNLESS NOTED OTHERWISE)
OPRGCT	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS	(SURVEYOR)	
		○	SET 1/2" IRON ROD (PD)
		○	SET 1/2" IRON ROD (PD)-ROW

——— – ——— CENTERLINE

- (11) 15' UTILITY EASEMENT
- (12) 20' UTILITY EASEMENT
- (13) VARIABLE WIDTH GVSUD WATERLINE EASEMENT
- 1 20' UTILITY EASEMENT (CONCURRENT PLATTING)
- 2 15' UTILITY EASEMENT (CONCURRENT PLATTING)
- 3 25' TEMPORARY GBRA CONSTRUCTION EASEMENT TO EXPIRE UPON RECORDATION OF FUTURE PLAT (CONCURRENT PLATTING)
- 4 21' GBRA SANITARY SEWER EASMENT TO EXPIRE UPON RECORDATION OF FUTURE PLAT (CONCURRENT PLATTING)
- 5 20' DRAINAGE, ACCESS AND UTILITY EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET, RIGHT-OF-WAY (BY SEPARATE INSTRUMENT)
- 6 30' SANITARY SEWER EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED PUBLIC STREET, RIGHT-OF-WAY & LOTS (BY SEPARATE INSTRUMENT)
- 7 15' UTILITY EASEMENT (BY SEPARATE INSTRUMENT)
- 8 VARIABLE WIDTH DRAINAGE EASEMENT (BY SEPARATE INSTRUMENT)
- 9 20'X20' GVEC EASEMENT (BY SEPARATE INSTRUMENT)

1. PORTION OF 51.773 ACRES DENNIS W. TSCHOEPE (VOL 1307, PG 823, OPR)
2. 30.595 ACRES EDWARD JOSEPH DEML AND GAIL MARIE DEML (VOL 1425, PG 361, OPR)
3. 212.5 ACRES ELTON C. SEEWALD (DOC NO 201999005658, OPR)
4. 45.80 ACRES REBA JOE WIEDNER (DOC NO 201999001898, OPR)
5. 193.397 ACRES 190 WINDING CREEK RANCH INVESTMENS, LTD. (DOC NO 202199023875, OPR)
6. WINDING CREEK RANCH, UNIT 3 (CONCURRENT PLATTING)



SCALE: 1"= 100'
0' 100' 200' 300'

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

DATE OF PREPARATION: May 17, 2024

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

CURVE AND LINE DATA ON SHEET 3 OF 3

SHEET 2 OF 3

WINDING CREEK RANCH UNIT 7

Civil Job No. 30058-05; Survey Job No. 30058-00

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
5-24-2024

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

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

PLAT (2 OF 3)

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

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

FOR PERMIT

Date: May 20, 2024, 8:49am User ID: jmay
File: P:\300\58\05\Design\Civil\PLAT_30058-05.dwg

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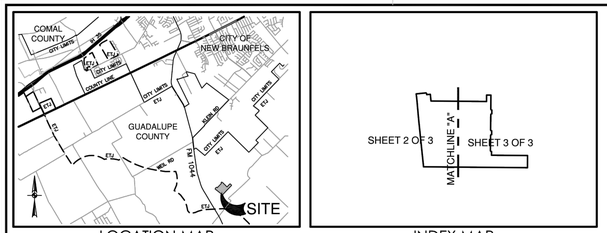
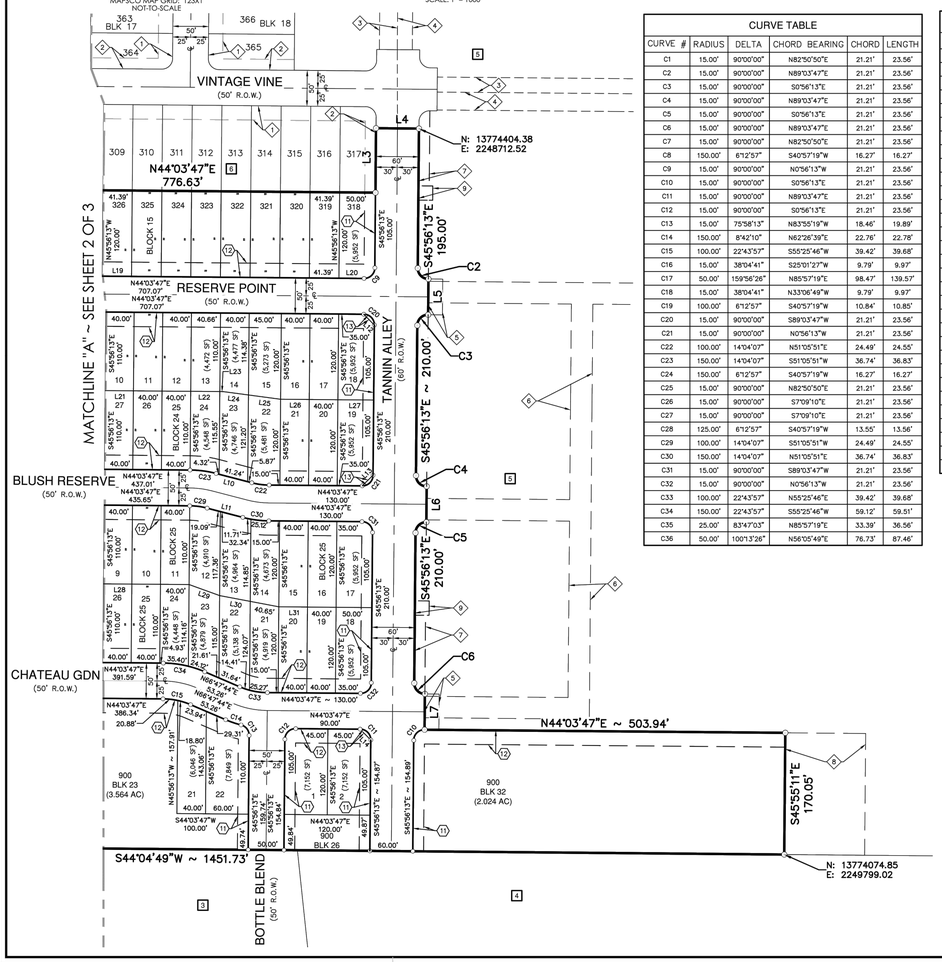


LOCATION MAP
MAPSCO MAP GRID: 123X1
NOT-TO-SCALE

INDEX MAP
SCALE: 1" = 1000



CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	15.00'	90°00'00"	N82°50'50"E	21.21'	23.56'
C2	15.00'	90°00'00"	N89°03'47"E	21.21'	23.56'
C3	15.00'	90°00'00"	S0°56'13"E	21.21'	23.56'
C4	15.00'	90°00'00"	N89°03'47"E	21.21'	23.56'
C5	15.00'	90°00'00"	S0°56'13"E	21.21'	23.56'
C6	15.00'	90°00'00"	N82°50'50"E	21.21'	23.56'
C7	15.00'	90°00'00"	N82°50'50"E	21.21'	23.56'
C8	150.00'	6°12'57"	S40°57'19"W	16.27'	16.27'
C9	15.00'	90°00'00"	N0°56'13"W	21.21'	23.56'
C10	15.00'	90°00'00"	S0°56'13"E	21.21'	23.56'
C11	15.00'	90°00'00"	N89°03'47"E	21.21'	23.56'
C12	15.00'	90°00'00"	S0°56'13"E	21.21'	23.56'
C13	15.00'	75°58'13"	N83°55'19"W	18.46'	19.89'
C14	150.00'	8°42'10"	N62°26'39"E	22.76'	22.78'
C15	100.00'	22°43'57"	S55°25'46"W	39.42'	39.68'
C16	15.00'	38°04'41"	S25°01'27"W	9.79'	9.97'
C17	50.00'	159°56'26"	N85°57'19"E	98.47'	139.57'
C18	15.00'	38°04'41"	N33°06'49"W	9.79'	9.97'
C19	100.00'	6°12'57"	S40°57'19"W	10.84'	10.85'
C20	15.00'	90°00'00"	S89°03'47"W	21.21'	23.56'
C21	15.00'	90°00'00"	N0°56'13"W	21.21'	23.56'
C22	100.00'	14°04'07"	N51°05'51"E	24.49'	24.55'
C23	150.00'	14°04'07"	S51°05'51"W	36.74'	36.83'
C24	150.00'	6°12'57"	S40°57'19"W	16.27'	16.27'
C25	15.00'	90°00'00"	N82°50'50"E	21.21'	23.56'
C26	15.00'	90°00'00"	S7°09'10"E	21.21'	23.56'
C27	15.00'	90°00'00"	S7°09'10"E	21.21'	23.56'
C28	125.00'	6°12'57"	S40°57'19"W	13.55'	13.56'
C29	100.00'	14°04'07"	S51°05'51"W	24.49'	24.55'
C30	150.00'	14°04'07"	N51°05'51"E	36.74'	36.83'
C31	15.00'	90°00'00"	S89°03'47"W	21.21'	23.56'
C32	15.00'	90°00'00"	N0°56'13"W	21.21'	23.56'
C33	100.00'	22°43'57"	N55°25'46"E	39.42'	39.68'
C34	150.00'	22°43'57"	S55°25'46"W	59.12'	59.51'
C35	25.00'	83°47'03"	N85°57'19"E	33.39'	36.56'
C36	50.00'	100°13'26"	N56°05'49"E	76.73'	87.46'

LINE TABLE		
LINE #	BEARING	LENGTH
L1	S52°09'10"E	10.00'
L2	N37°50'50"E	50.00'
L3	N45°56'13"W	90.00'
L4	N44°03'47"E	60.00'
L5	S45°56'13"E	50.00'
L6	S45°56'13"E	50.00'
L7	S45°56'13"E	50.00'
L8	N37°50'50"E	10.00'
L9	N37°50'50"E	10.00'
L10	N58°07'54"E	51.43'
L11	N58°07'54"E	51.43'
L12	S89°03'47"W	21.21'
L13	N0°56'13"W	21.21'
L14	S89°03'47"W	21.21'
L15	N44°03'47"E	90.48'
L16	N44°03'47"E	40.00'
L17	N44°03'47"E	61.07'
L18	N44°03'47"E	40.00'
L19	N44°03'47"E	41.39'
L20	N44°03'47"E	35.00'
L21	N44°03'47"E	40.00'
L22	N44°03'47"E	40.66'
L23	N44°03'47"E	5.00'
L24	N51°11'17"E	35.27'
L25	N51°11'17"E	45.35'
L26	N44°03'47"E	40.00'
L27	N44°03'47"E	50.00'
L28	N44°03'47"E	40.00'
L29	N63°21'55"E	45.38'
L30	N54°19'41"E	43.53'
L31	N44°03'47"E	40.00'

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

CURVE AND LINE DATA ON SHEET 3 OF 3

SHEET 3 OF 3

SUBDIVISION PLAT
OF
WINDING CREEK RANCH UNIT 7

BEING 23.439 ACRES OF LAND COMPRISED OF A 193.397 ACRE TRACT, RECORDED IN DOCUMENT NO. 202199023875 OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

SCALE: 1"= 100'
0' 100' 200' 300'

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

DATE OF PREPARATION: May 17, 2024

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

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

WINDING CREEK RANCH UNIT 7
Civil Job No. 30058-05; Survey Job No. 30058-00

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

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C0.04

FOR PERMIT

Date: May 20, 2024, 8:49am User ID: jmoy
File: P:\300\58\05\Design\Civil\PLAT-30058-05.dwg
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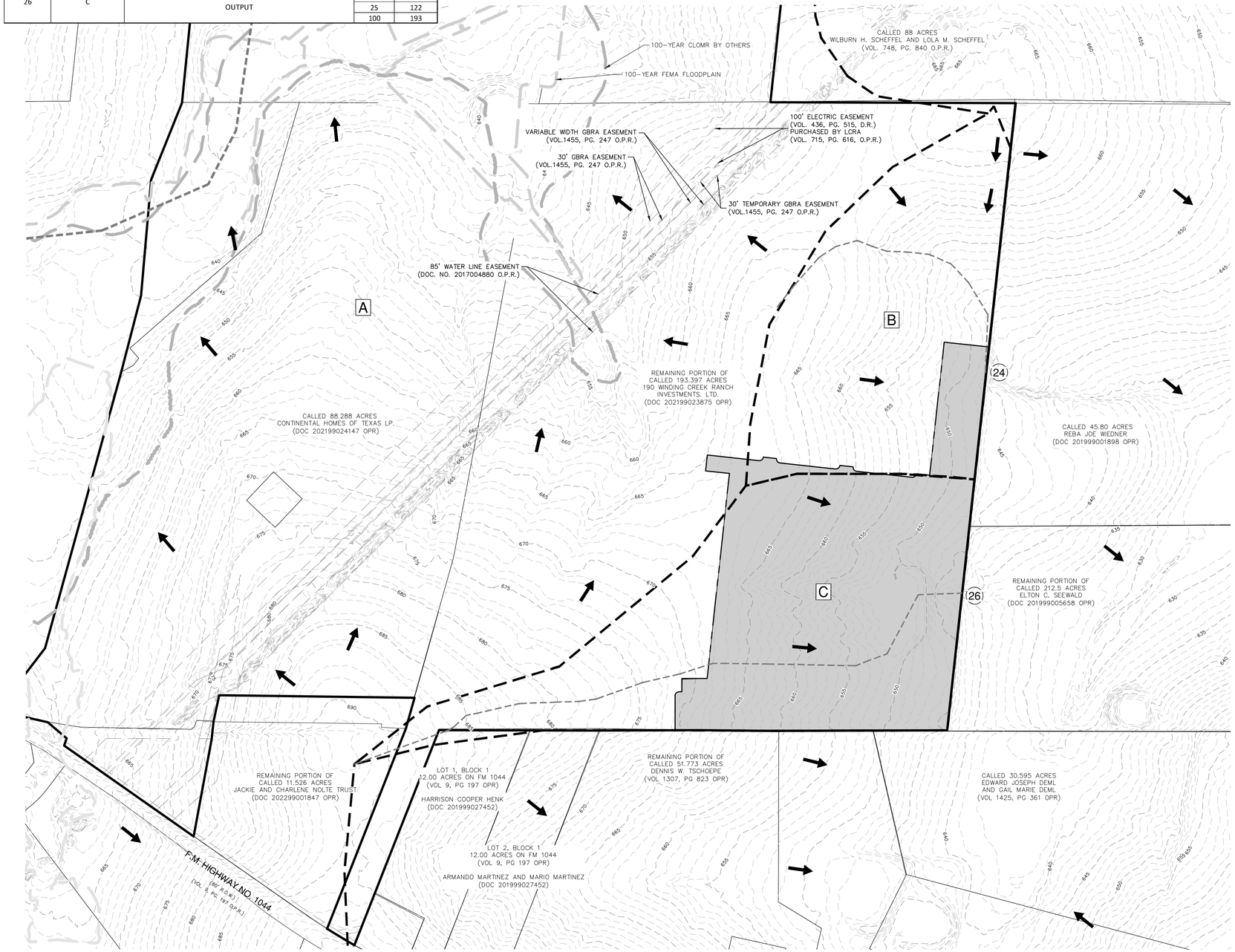
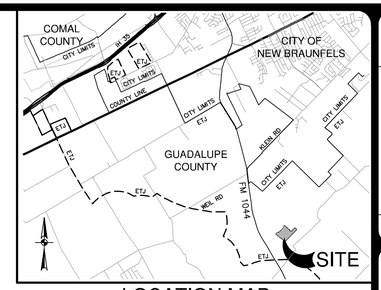
Calc Pt	Drainage Area ID	Drainage Area Acres	Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q (cfs)	Frequency (year)	Total Q (cfs)
23	A	REFERENCE WINDING CREEK RANCH CLOMR LONG CREEK MAIN RIVER STATION 9260					2	2441
							10	4988
							25	6733
							100	9696
24	B	21.46	BASIN HEC-HMS OUTPUT				2	43
							10	90
							25	115
							100	163
26	C	REFERENCE WINDING CREEK RANCH UNIT 3 AREA C HEC-HMS OUTPUT					2	38
							10	84
							25	122
							100	193





LOCATION MAP

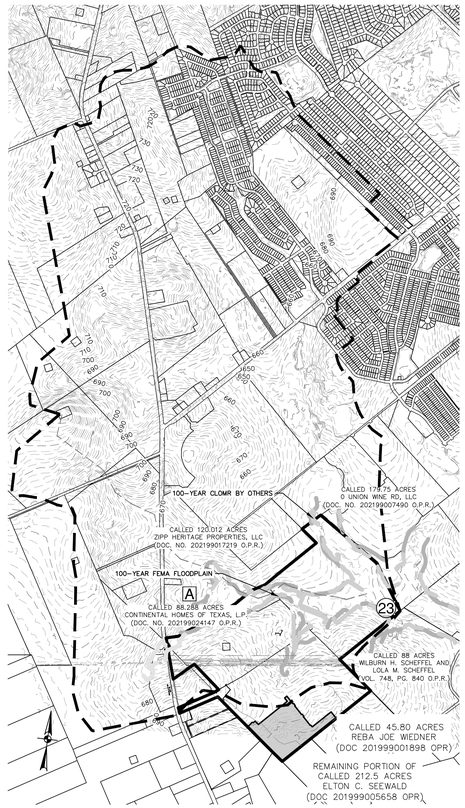
NOT-TO-SCALE

SCALE: 1"= 200'

0' 200' 400' 600'

MASTER DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- 100 YR CLOMR
- 100 YR FLOODPLAIN
- RUNOFF FLOW PATH
- DRAINAGE AREA BOUNDARY
- FHA LOT GRADING TYPE — A,B,C
- PROPOSED DIRECTION OF FLOW
- DRAINAGE CALCULATION POINT — 11
- DRAINAGE AREA — A
- PROJECT LIMITS



OVERALL DRAINAGE

SCALE 1"=1,500'

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
2-22-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288800

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

MASTER DRAINAGE PLAN - EXISTING CONDITIONS

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

FOR PERMIT

Date: Feb 22, 2024, 9:11am User ID: ALeddy
File: P:\300\58\GS\Design\Civil\SDOA-30058-05-EX.dwg

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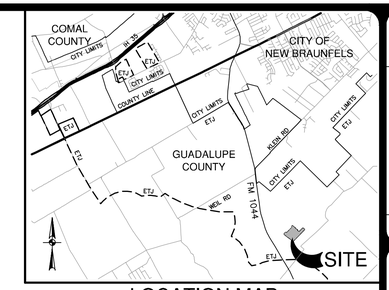
DETAIL "A"

SCALE 1"=60'

MASTER DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- 100 YR CLOMR
- 100 YR FLOODPLAIN
- RUNOFF FLOW PATH
- DRAINAGE AREA BOUNDARY
- FHA LOT GRADING TYPE — A,B,C
- PROPOSED DIRECTION OF FLOW
- DRAINAGE CALCULATION POINT — 11
- DRAINAGE AREA — A
- PROJECT LIMITS



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 200'

0' 200' 400' 600'

Calc Pt	Description	Drainage Area ID	Drainage Area Acres	Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q (cfs)	Frequency (year)	Total Q (cfs)	Inlets on Grade Intercept	Inlets on Grade Bypass
1	WINDING CREEK RANCH UNIT 2 DRAIN A3a-2	A	2.42	17	3.97	0.58	6	2	6		
					5.83	0.64	9	10	9		
					7.02	0.69	12	25	12		
					8.98	0.77	17	100	17		
2	WINDING CREEK RANCH UNIT 3 DRAIN C	B	4.63	17	3.97	0.58	11	2	11		
					5.83	0.64	17	10	17		
					7.02	0.69	22	25	22		
					8.98	0.77	32	100	32		
3	WINDING CREEK RANCH UNIT 3 DRAIN C	A + B	7.05	20	3.65	0.58	15	2	15		
					5.36	0.64	24	10	24		
					6.45	0.69	31	25	31		
					8.23	0.77	45	100	45		
4	WINDING CREEK RANCH UNIT 3 DRAIN C	C	1.43	10	5.05	0.58	4	2	4		
					7.50	0.64	7	10	7		
					9.12	0.69	9	25	9		
					11.70	0.77	13	100	13		
5	WINDING CREEK RANCH UNIT 3 DRAIN C OUTFALL	A + B + C	8.48	20	3.65	0.58	18	2	18		
					5.36	0.64	29	10	29		
					6.45	0.69	38	25	38		
					8.23	0.77	54	100	54		
6	DRAIN A ON-GRADE INLETS	D	4.45	11	4.87	0.58	13	2	13	11	2
					7.23	0.64	21	10	21	14	7
					8.78	0.69	27	25	27	16	11
					11.26	0.77	39	100	39	21	18
7	DRAIN A ON-GRADE INLETS	D(BYPASS) + E	4.70	10	5.05	0.58	14	2	16	13	3
					7.50	0.64	23	10	30	19	11
					9.12	0.69	30	25	41	22	19
					11.70	0.77	42	100	60	28	32
8	DRAIN A CURB INLET	E(BYPASS) + F	1.39	10	5.05	0.58	4	2	7		
					7.50	0.64	7	10	18		
					9.12	0.69	9	25	28		
					11.70	0.77	13	100	45		
9	DRAIN A OUTFALL	D + E + F	10.54	13	4.54	0.58	28	2	28		
					6.72	0.64	45	10	45		
					8.13	0.69	59	25	59		
					10.42	0.77	85	100	85		
10	CHATEAU GDN AND TANNIN ALLEY INTERSECTION	J	1.52	10	5.05	0.58	4	2	4	4	0
					7.50	0.64	7	10	7	7	0
					9.12	0.69	10	25	10	10	0
					11.70	0.77	14	100	14	14	0
11	CHATEAU GDN AND BOTTLE BLEND INTERSECTION	G + (1/2)* J(INTERCEPT)	1.12	10	5.05	0.58	3	2	6	3	3
					7.50	0.64	5	10	9	4	5
					9.12	0.69	7	25	12	6	6
					11.70	0.77	10	100	17	8	9
12	DRAIN C	G(BYPASS) + H	2.81	11	4.87	0.58	8	2	11		
					7.23	0.64	13	10	18		
					8.78	0.69	17	25	23		
					11.26	0.77	24	100	33		
13	DRAIN D ON-GRADE INLETS	I + G(INTERCEPT)	0.20	10	5.05	0.58	1	2	4	4	0
					7.50	0.64	1	10	5	5	0
					9.12	0.69	1	25	7	6	1
					11.70	0.77	2	100	10	8	2
14	DRAIN D EARTHEN CHANNEL	K	0.47	10	5.05	0.58	1	2	1		
					7.50	0.64	2	10	2		
					9.12	0.69	3	25	3		
					11.70	0.77	4	100	4		
15	DRAIN D OUTFALL	K + L + I(INTERCEPT)	0.90	10	5.05	0.58	3	2	6		
					7.50	0.64	4	10	9		
					9.12	0.69	6	25	12		
					11.70	0.77	8	100	16		
16	DRAIN E ON-GRADE INLETS	N + J(BYPASS)	0.04	10	5.05	0.70	1	2	1	1	0.0
					7.50	0.78	1	10	1	1	0.0
					9.12	0.83	1	25	1	1	0.0
					11.70	0.91	1	100	1	1	0.0
17	OFFSITE FLOW	P + N(BYPASS)	0.17	10	5.05	0.70	1	2	1		
					7.50	0.78	1	10	1		
					9.12	0.83	1	25	1		
					11.70	0.91	2	100	2		
18	OFFSITE FLOW	M	1.07	10	5.05	0.60	3	2	3		
					7.50	0.67	5	10	5		
					9.12	0.71	7	25	7		
					11.70	0.80	10	100	10		
19	OFFSITE FLOW	Q	0.94	10	5.05	0.25	1	2	1		
					7.50	0.30	2	10	2		
					9.12	0.34	3	25	3		
					11.70	0.41	5	100	5		
24	WATER QUALITY AND DETENTION BASIN D	J + O + N	19.94	SEE HEC-HMS CALCULATIONS FOR PROPOSED BASIN				2	12		
								10	61		
								25	92		
								100	137		
25	COMBINED DETENTION AND WATER QUALITY BASIN C	A + B + C + D + E + F + G + H + I + K + L	26.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT				2	31		
								10	82		
								25	117		
								100	186		
26	EXISTING COMBINED DETENTION AND WATER QUALITY BASIN C OUTFALL	A + B + C + D + E + F + G + H + I + K + L + P + I(BYPASS)	27.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT				2	32		
								10	83		
								25	119		
								100	190		

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
TBPE FIRM #470 | TBPLS FIRM #10028800
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800
10172 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

MASTER DRAINAGE PLAN - PROPOSED CONDITIONS

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

FOR PERMIT

Date: May 20, 2024, 8:50am User ID: jmoy
File: P:\300\581\05\Design\Civil\SD\A--30058--05--PROP.dwg

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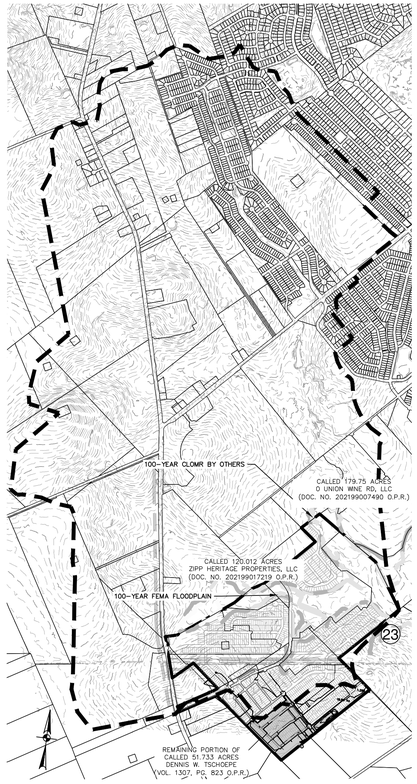
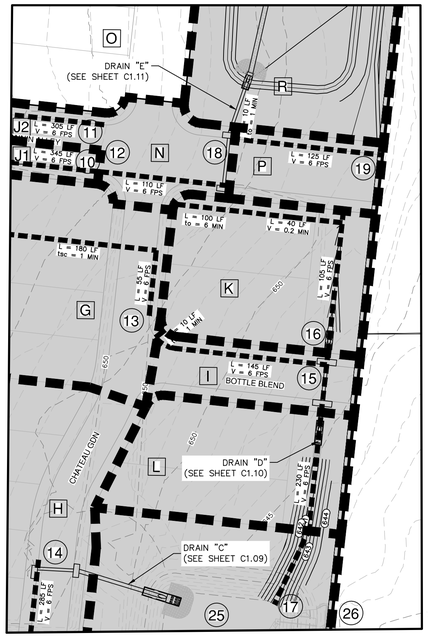


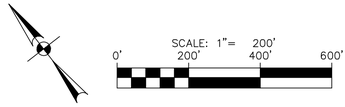
OVERALL DRAINAGE

SCALE 1"=1,500'



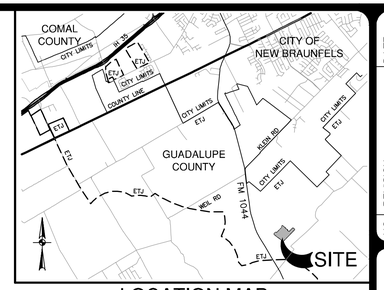
DETAIL "A"

SCALE 1"=60'



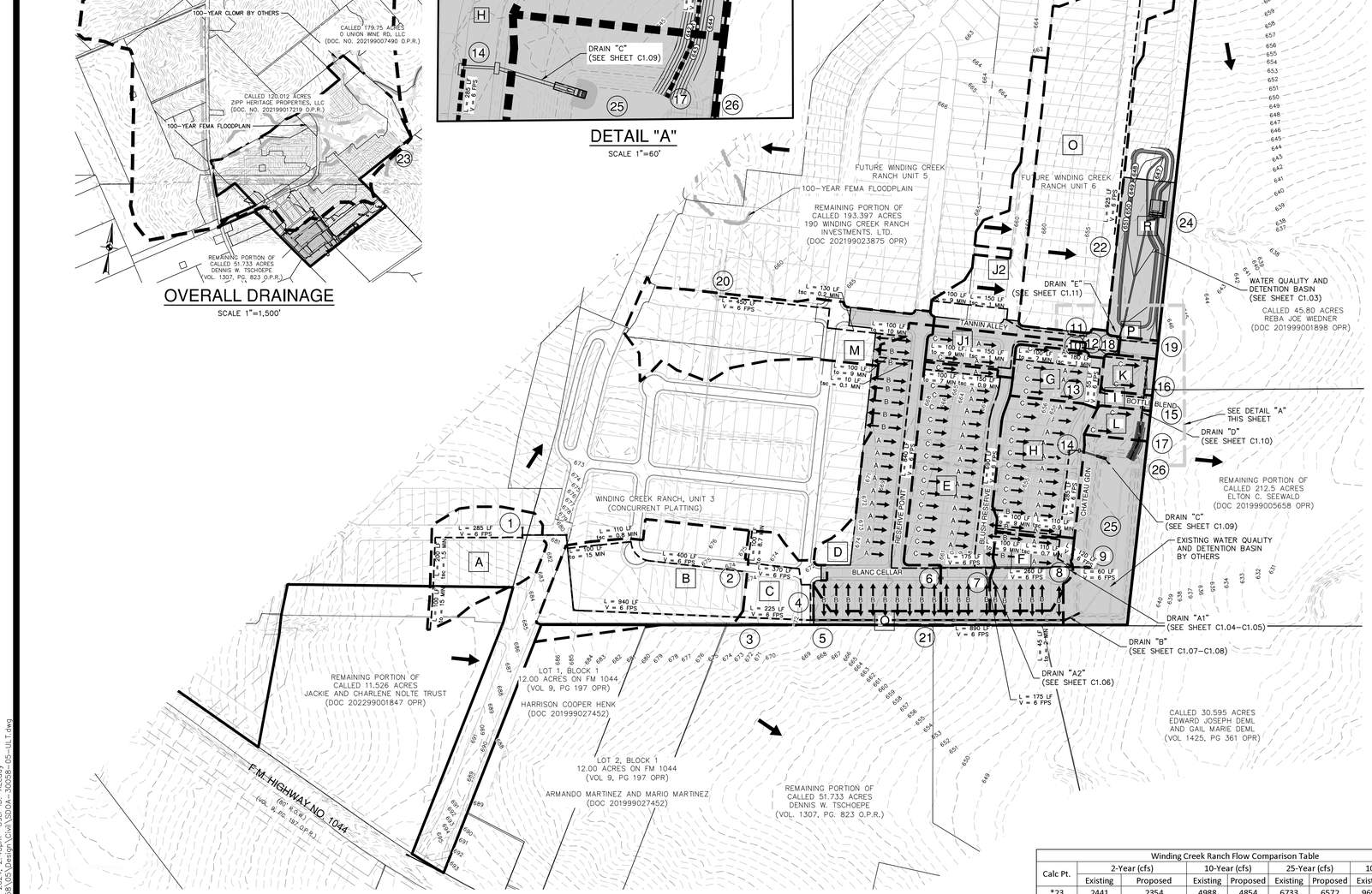
MASTER DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- 100 YR CLOMR
- 100 YR FLOODPLAIN
- RUNOFF FLOW PATH
- DRAINAGE AREA BOUNDARY
- FHA LOT GRADING TYPE — A,B,C
- PROPOSED DIRECTION OF FLOW
- DRAINAGE CALCULATION POINT — 11
- DRAINAGE AREA — A
- PROJECT LIMITS



LOCATION MAP

NOT-TO-SCALE



Calc Pt	Description	Drainage Area ID	Drainage Area Acres	Time of Conc. (minutes)	Intensity (in/hr)	C	Discharge Q (cfs)	Frequency (year)	Total Q (cfs)	Inlets on Grade Intercept	Inlets on Grade Bypass
1	WINDING CREEK RANCH UNIT 2 DRAIN A3a-2	A	2.42	17	3.97	0.58	6	2	6		
					5.83	0.64	9	10	9		
					7.02	0.69	12	25	12		
					8.98	0.77	17	100	17		
2	WINDING CREEK RANCH UNIT 3 DRAIN C	B	4.63	17	3.97	0.58	11	2	11		
					5.83	0.64	17	10	17		
					7.02	0.69	22	25	22		
					8.98	0.77	32	100	32		
3	WINDING CREEK RANCH UNIT 3 DRAIN C	A + B	7.05	20	3.65	0.58	15	2	15		
					5.36	0.64	24	10	24		
					6.45	0.69	31	25	31		
					8.23	0.77	45	100	45		
4	WINDING CREEK RANCH UNIT 3 DRAIN C	C	1.43	10	5.05	0.58	4	2	4		
					7.50	0.64	7	10	7		
					9.12	0.69	9	25	9		
					11.70	0.77	13	100	13		
5	WINDING CREEK RANCH UNIT 3 DRAIN C OUTFALL/DRAIN "B"	A + B + C	8.48	20	3.65	0.58	18	2	18		
					5.36	0.64	29	10	29		
					6.45	0.69	38	25	38		
					8.23	0.77	54	100	54		
6	DRAIN A ON-GRADE INLETS	D	4.45	11	4.87	0.58	13	2	13	11	2
					7.23	0.64	21	10	21	14	7
					8.78	0.69	27	25	27	16	11
					11.26	0.77	39	100	39	21	18
7	DRAIN A ON-GRADE INLETS	D(BYPASS) + E	4.70	10	5.05	0.58	14	2	16	13	3
					7.50	0.64	23	10	30	19	11
					9.12	0.69	30	25	41	22	19
					11.70	0.77	42	100	60	28	32
8	DRAIN A CURB INLET	E(BYPASS) + F	1.39	10	5.05	0.58	4	2	7		
					7.50	0.64	7	10	18		
					9.12	0.69	9	25	28		
					11.70	0.77	13	100	45		
9	DRAIN A OUTFALL	D + E + F	10.54	13	4.54	0.58	28	2	28		
					6.72	0.64	45	10	45		
					8.13	0.69	59	25	59		
					10.42	0.77	85	100	85		
10	TANNIN ALLEY CAPACITY CHECK	J1	0.96	11	4.87	0.58	3	2	3		
					7.23	0.64	4	10	4		
					8.78	0.69	6	25	6		
					11.26	0.77	8	100	8		
11	TANNIN ALLEY CAPACITY CHECK	J2	2.58	11	4.87	0.58	7	2	7		
					7.23	0.64	12	10	12		
					8.78	0.69	16	25	16		
					11.26	0.77	22	100	22		
12	TANNIN ALLEY AND CHATEAU GDN INTERSECTION	J1 + J2	3.54	11	4.87	0.58	10	2	10	10	0
					7.23	0.64	16	10	16	16	0
					8.78	0.69	21	25	21	20	1
					11.26	0.77	31	100	31	28	3
13	CHATEAU GDN AND BOTTLE BLEND INTERSECTION	G + (1/2)* (J1+J2)(INTERCEPT)	1.12	10	5.05	0.58	3	2	8	4	4
					7.50	0.64	5	10	14	7	7
					9.12	0.69	7	25	17	10	7
					11.70	0.77	10	100	24	12	12
14	DRAIN C	G(BYPASS) + H	2.81	11	4.87	0.58	8	2	12		
					7.23	0.64	13	10	20		
					8.78	0.69	17	25	24		
					11.26	0.77	24	100	36		
15	DRAIN D ON-GRADE INLETS	I + G(INTERCEPT)	0.20	10	5.05	0.58	1	2	5	5	0
					7.50	0.64	1	10	8	7	1
					9.12	0.69	1	25	12	9	3
					11.70	0.77	2	100	14	10	4
16	DRAIN D EARTHEN CHANNEL	K	0.47	10	5.05	0.58	1	2	1		
					7.50	0.64	2	10	2		
					9.12	0.69	3	25	3		
					11.70	0.77	4	100	4		
17	DRAIN D OUTFALL	K + L + I(INTERCEPT)	0.90	10	5.05	0.58	3	2	7		
					7.50	0.64	4	10	11		
					9.12	0.69	6	25	14		
					11.70	0.77	8	100	18		
18	DRAIN E ON-GRADE INLETS	N+ J1(BYPASS) + J2(BYPASS)	0.19	11	4.87	0.70	1	2	1	1	0
					7.23	0.78	1	10	1	1	0
					8.78	0.83	1	25	2	2	0
					11.26	0.91	2	100	5	4	1
19	OFFSITE FLOW	P + N(BYPASS)	0.17	10	5.05	0.70	1	2	1		
					7.50	0.78	1	10	1		
					9.12	0.83	1	25	1		
					11.70	0.91	2	100	3		
20	OFFSITE FLOW	M	4.41	11	4.87	0.58	12	2	12		
					7.23	0.64	20	10	20		
					8.78	0.69	27	25	27		
					11.26	0.77	38	100	38		
21	OFFSITE FLOW	Q	0.94	10	5.05	0.25	1	2	1		
					7.50	0.30	2	10	2		
					9.12	0.34	3	25	3		
					11.70	0.41	5	100	5		
22	OFFSITE FLOW	O + (1/2)* (J1+J2)(INTERCEPT)	9.00	11	4.87	0.58	25	2	30		
					7.23	0.64	42	10	50		
					8.78	0.69	55	25	65		
					11.26	0.77	78	100	92		
23		M + S	REFERENCE WINDING CREEK RANCH CLOMR LONG CREEK MAIN RIVER STATION 9260*					2	2354		
								10	4854		
								25	6572		
								100	9520		
24	WATER QUALITY AND DETENTION BASIN D	J1 + J2 + O + N + R	17.33	SEE HEC-HMS CALCULATIONS FOR PROPOSED BASIN				2	21		
								10	76		
								25	104		
								100	146		
25	COMBINED DETENTION AND WATER QUALITY BASIN C	A + B + C + D + E + F + G + H + I + K + L	26.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT				2	31		
								10	82		
								25	117		
								100	186		
26	EXISTING COMBINED DETENTION AND WATER QUALITY BASIN C OUTFALL	A + B + C + D + E + F + G + H + I + K + L + P + I(BYPASS)	27.20	REFERENCE WINDING CREEK RANCH UNIT 3 HEC-HMS OUTPUT				2	32		
								10	84		
								25	121		
								100	193		

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

NO.	REVISION	DATE

5-24-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING F-HM #470 | TEXAS SURVEYING F-HM #10028800

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

MASTER DRAINAGE PLAN - ULTIMATE CONDITIONS

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

FOR PERMIT

Date: May 24, 2024, 2:40pm User ID: ALeady
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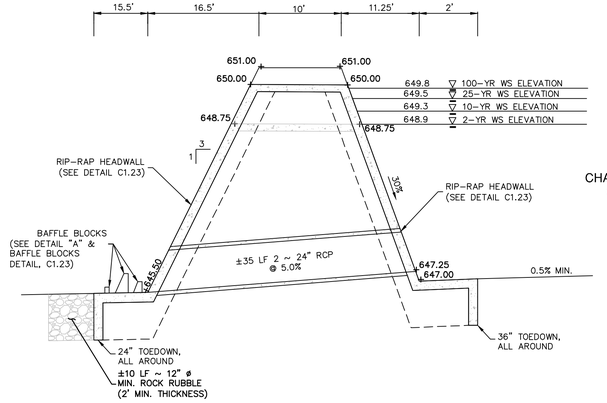
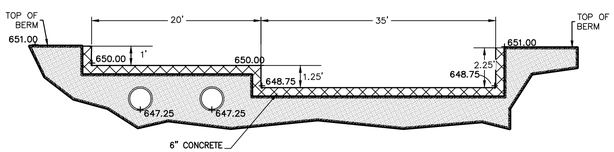


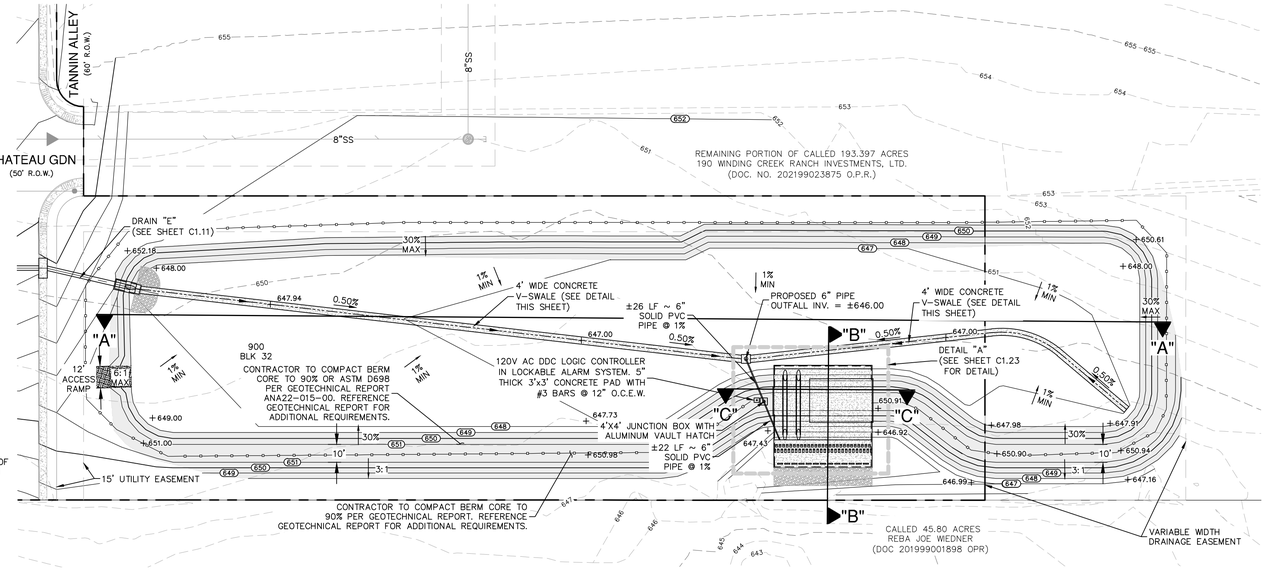
BASIN OUTFALL SECTION B-B

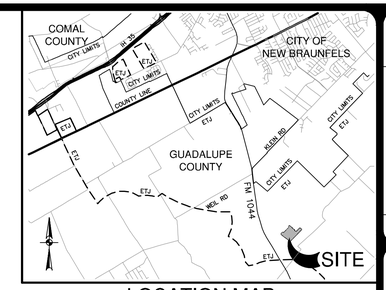
NOT-TO-SCALE



SECTION C-C

NOT-TO-SCALE





LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 40'

0' 40' 80' 120'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690 —
- PROPOSED CONTOUR — 690 —
- PROPOSED WATER — W —
- PROPOSED SEWER — SS —
- PROPOSED STORM DRAIN
- FLOW ARROW
- GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT — P.U.E.
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- BASIN FENCE

STAGE STORAGE DISCHARGE TABLE PER STORM EVENT

Stage Storage Discharge Table per Storm Event				
Storm Event	Max Elev (ft)	Storage (ac-ft)	Storage Vol. (cf)	Peak Discharge (cfs)
2-yr	648.9	2	87,120	18.3
10-yr	649.3	2.7	117,612	71.6
25-yr	649.5	2.9	126,324	100.3
100-yr	649.8	3.2	139,392	142.3

FLOW COMPARISON TABLE

Storm Event	Existing Flows (cfs)	Proposed Flows (cfs)	Ulitmate Flows (cfs)	Existing vs. Proposed Flow Comparison (cfs)	Existing vs. Ultimate Flow Comparison (cfs)
2-yr	43	12	19	-31	-24
10-yr	90	58	72	-32	-18
25-yr	115	90	101	-25	-14
100-yr	163	135	144	-28	-19

DETENTION POND & WATER QUALITY CALCULATIONS

Detention Pond - Stage Storage Table					
Stage Elev.	Incremental Height (ft)	Surface Area (sf)	Incremental Vol. (cf)	Cumulative Vol. (cf)	
646	0	0	-	-	Water Quality
647	1	25,072	12,536	12,536	
647.25	0.25	30,962	7,004	19,540	
647.25	0	30,962	-	-	Detention
648	0.75	48,633	29,849	49,389	
649	1	55,357	51,995	101,384	
650	1	59,838	57,597	158,981	
651	1	64,358	62,098	221,079	

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

WATER QUALITY SIZING

Table 4 - Water Quality Volume Calculations

Water Quality Capture Volume	
Subdivision Area =	13.76 ac
IC =	65 %
	8.94 ac
Runoff Capture =	0.50 in
WQV =	16,233 cf
WQV(1.2) =	19,480 cf
Required EDV =	19,480 cf
Provided EDV =	**19,540 cf**

BASIN DRAWDOWN IS CONTROLLED BY THE 6" OUTLET PIPE @ 1.0% SLOPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 19.1 HOURS AFTER BEING HELD FOR 12 HOURS PER TCEQ TECHNICAL GUIDANCE MANUAL (TGM). BASIN TO EMPTY WITHIN 36 HOURS.

OVERFLOW WEIR CALCULATIONS

$Q_{100} = (Cw)(L)(h)^{3/2}$

$Q_{100} = 173.6$

$C = 3.087$

$L = 55$ ft

$173.6 = (3.087)(55)(h)^{3/2}$

$h = 1.01$ ft

SEQUENCE OF OPERATION

1. UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.
2. DETENTION TIMER #1 TO BE MANUALLY SET TO 12 HOURS AND TO BE USER ADJUSTABLE VALUE.
3. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 7 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

DRAINAGE & GRADING NOTES:

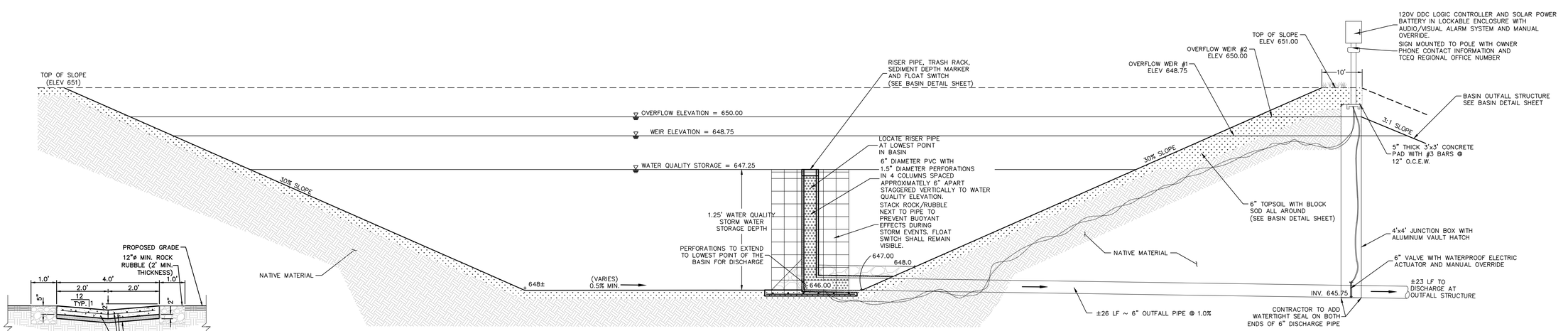
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY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

TRENCH EXCAVATION SAFETY PROTECTION:

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

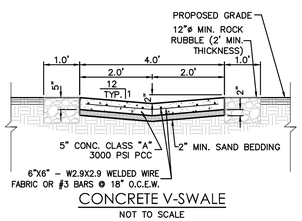
CAUTION!!

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



SECTION "A-A"

N.T.S.



CONCRETE V-SWALE

NOT TO SCALE

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

NO. | REVISION | DATE

5-24-2024

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

WATER QUALITY AND DETENTION BASIN D

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C1.03

FOR PERMIT

Date: May 24, 2024, 2:41pm User ID: ALeady
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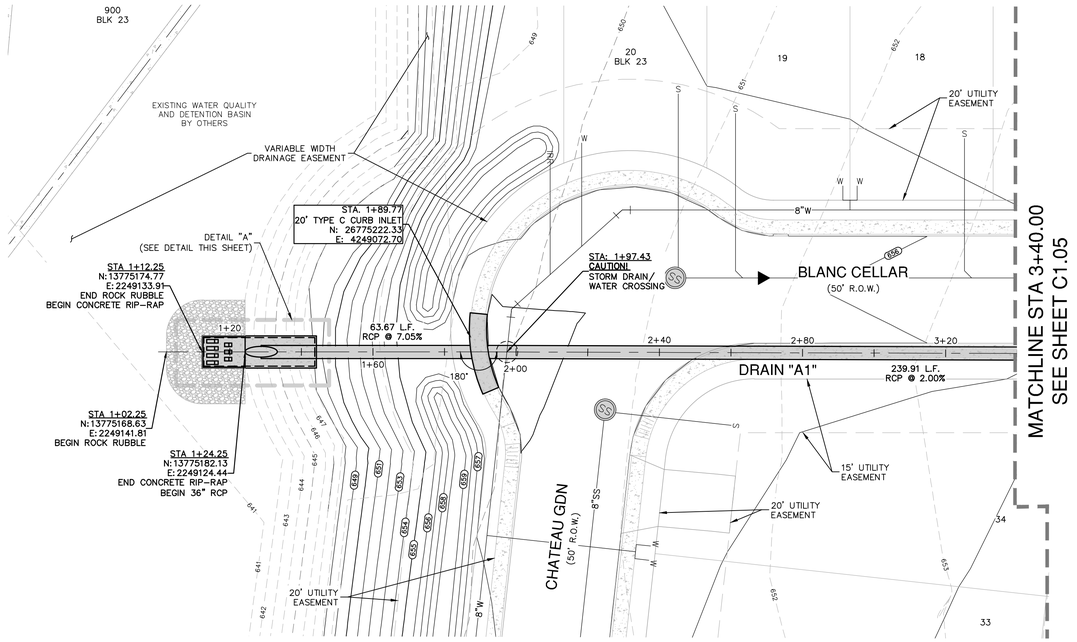
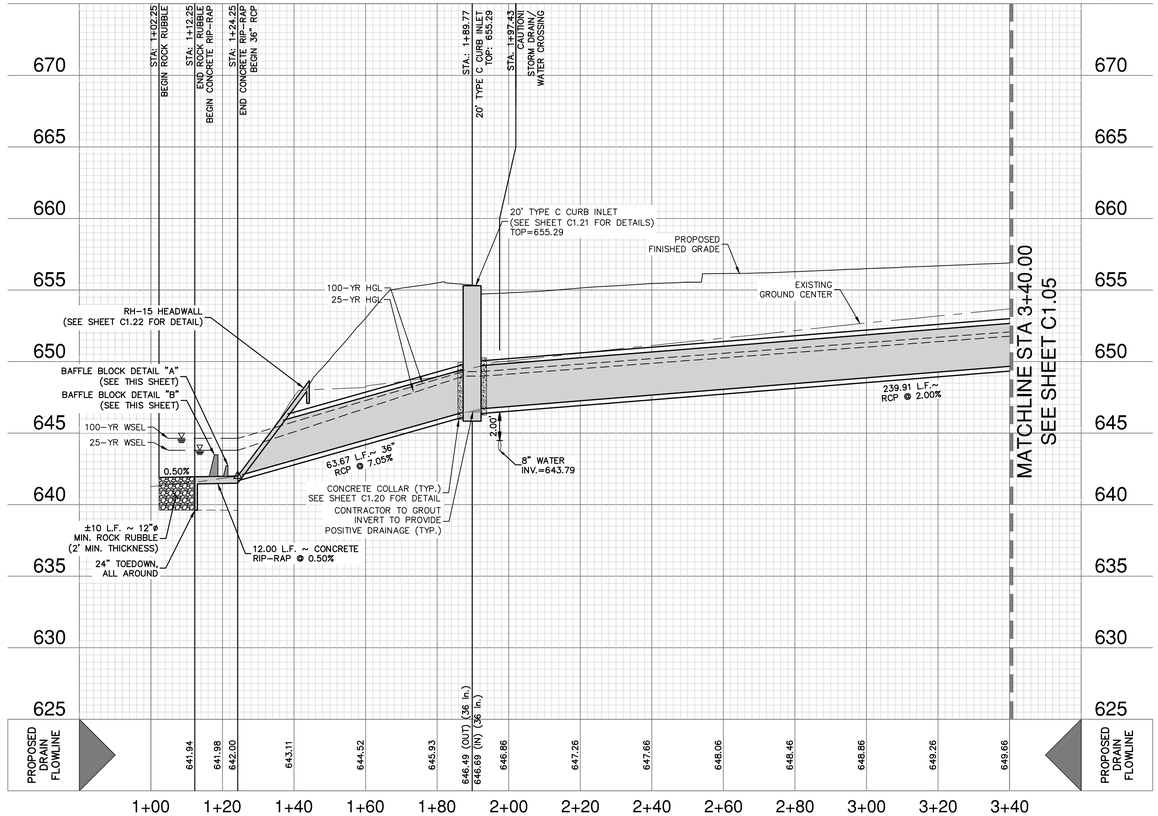
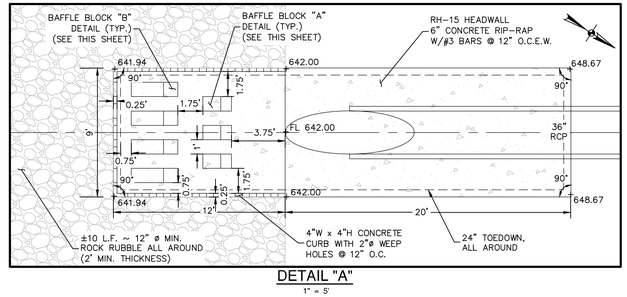


DRAIN "A1"
STA 1+02.25 TO 3+40.00

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





DETAIL "A"
1" = 5'

SCALE: 1"= 20' 0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 690
- PROPOSED CONTOUR 690
- EXISTING FIRE HYDRANT
- EXISTING WATER W
- EXISTING UNDERGROUND ELECTRIC UGE
- EXISTING GAS G
- EXISTING SEWER SS MANHOLE
- PROPOSED SEWER SS
- PROPOSED WATER FIRE HYDRANT W
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

HYDRAULIC CALCULATIONS – 20' CURB INLET

TOTAL Q_{25} = 28 CFS

Q_{25} = 28 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

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

$$L = \frac{28 \text{ CFS}}{(0.7)\ (0.52)\sqrt{2}\ (32.2)\ (0.54)}$$

L = 13.04' USE 20' FT.

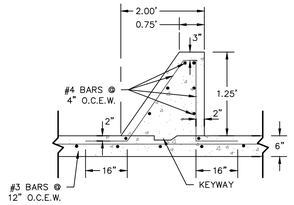
CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{28}{(3.087)(20)}\right)^{2/3} = 0.59 \text{ FT.}$$

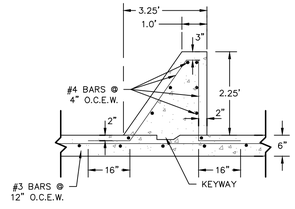
h = 0.59' < 0.79' OK

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+24.25 TO 1+89.77	
Q25	= 59 CFS
S	= 7.05%
Sf	= 0.78%
V25	= 13.41 FPS
n	= 0.013
D	= 3.0'
Q2	= 28 CFS
V2	= 18.18 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+89.77 TO 4+39.04	
Q25	= 38 CFS
S	= 2.00%
Sf	= 0.33%
V25	= 6.59 FPS
n	= 0.013
D	= 3.0'
Q2	= 24 CFS
V2	= 6.73 FPS



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



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

WATER PONDING WIDTH:

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

DRAINAGE & GRADING NOTES:

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6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
TBPE FIRM #470 | TBPLS FIRM #100288-00
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAIN A1 - PLAN & PROFILE
STA 1+02.25 TO 3+40.00

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

FOR PERMIT

Date: May 24, 2024, 2:43pm User ID: ALeddy
File: P:\300\58\05\Design\Civil\SDA1-30058-05.dwg
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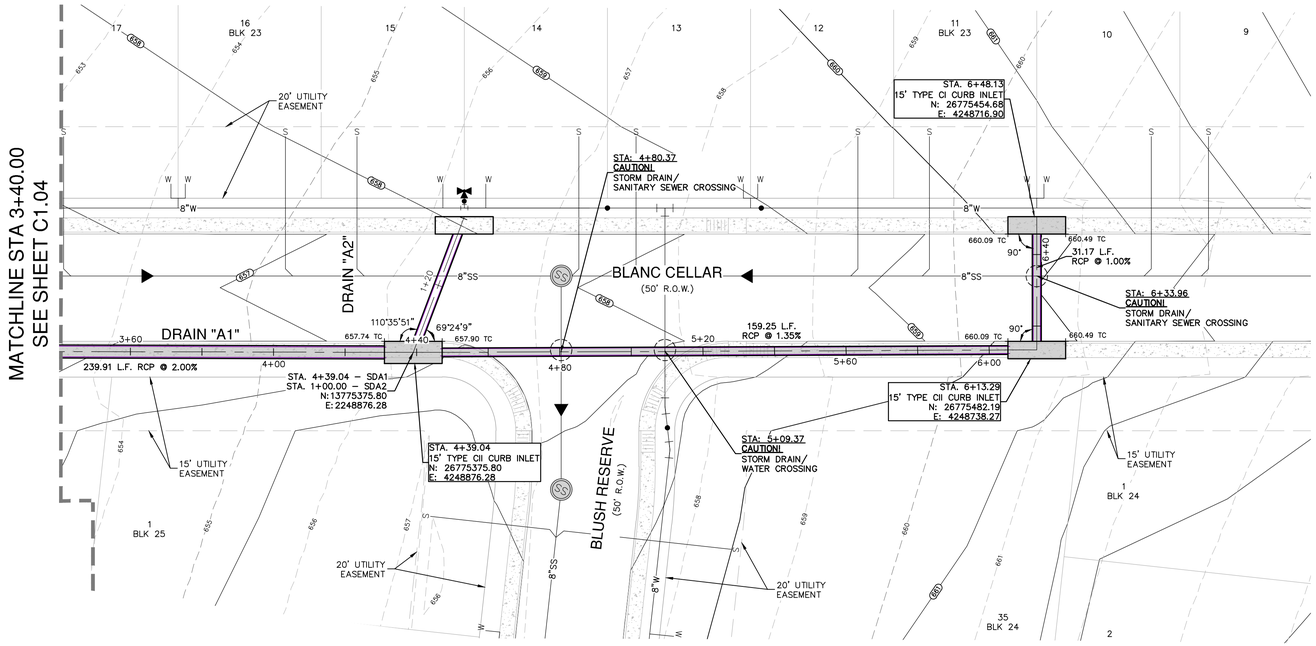
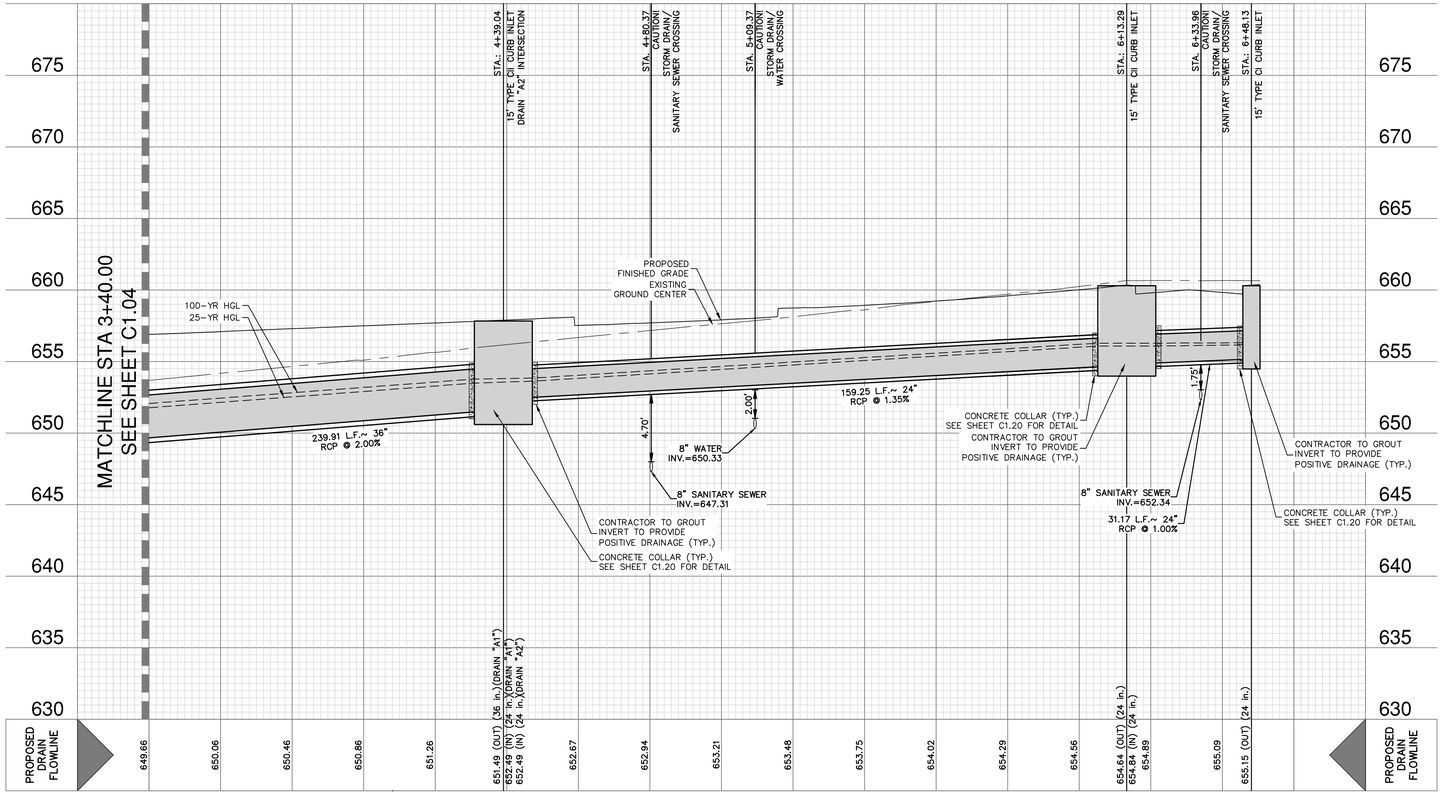


DRAIN "A1"
STA 3+40.00 TO 6+48.13

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



SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 690
- PROPOSED CONTOUR 690
- EXISTING FIRE HYDRANT
- EXISTING WATER W
- EXISTING UNDERGROUND ELECTRIC UGE
- EXISTING GAS G
- EXISTING SEWER SS MANHOLE
- PROPOSED SEWER SS
- PROPOSED WATER FIRE HYDRANT W
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- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 1+89.77 TO 4+39.04	
Q25	= 38 CFS
S	= 2.00%
Sf	= 0.33%
V25	= 6.59 FPS
n	= 0.013
D	= 3.0'
Q2	= 24 CFS
V2	= 6.73 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 4+39.04 TO 6+13.29	
Q25	= 16 CFS
S	= 1.35%
Sf	= 0.50%
V25	= 8.77 FPS
n	= 0.013
D	= 2.0'
Q2	= 11 CFS
V2	= 7.99 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "A1" STA. 6+13.29 TO 6+48.13	
Q25	= 8 CFS
S	= 1.00%
Sf	= 0.13%
V25	= 3.91 FPS
n	= 0.013
D	= 2.0'
Q2	= 6 CFS
V2	= 3.56 FPS

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

DRAIN "A1" ON-GRADE INLETS
(STA. 4+13.29)
HYDRAULIC CALCULATIONS
Q25/2 =20.5
S = 1.0%
L = 15' INLET
Q_CAPTURED = 11 CFS
Q_BYPASS = 9.5 CFS

WATER PONDING WIDTH:

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

DRAINAGE & GRADING NOTES:

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7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAIN A1 - PLAN & PROFILE
STA 3+40.00 TO 6+48.13

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

FOR PERMIT

Date: May 24, 2024, 2:44pm User ID: ALeddy
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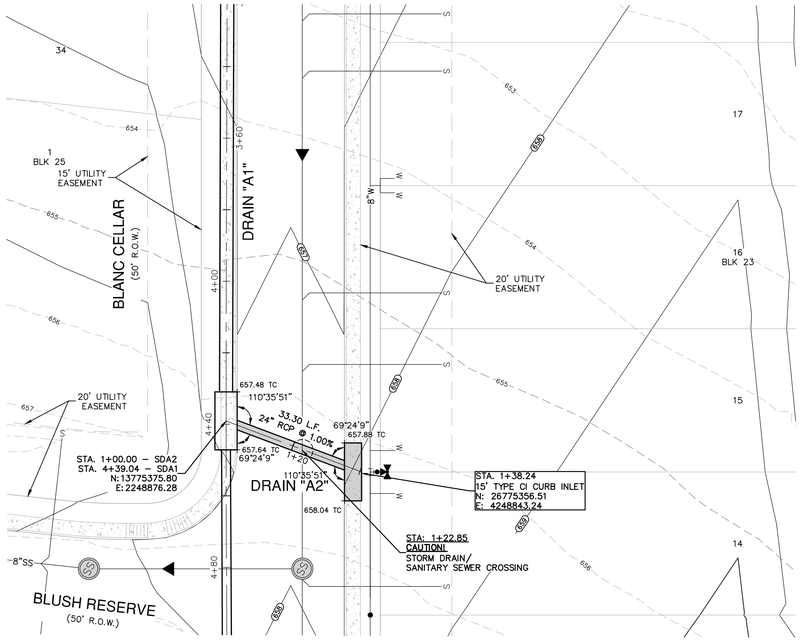
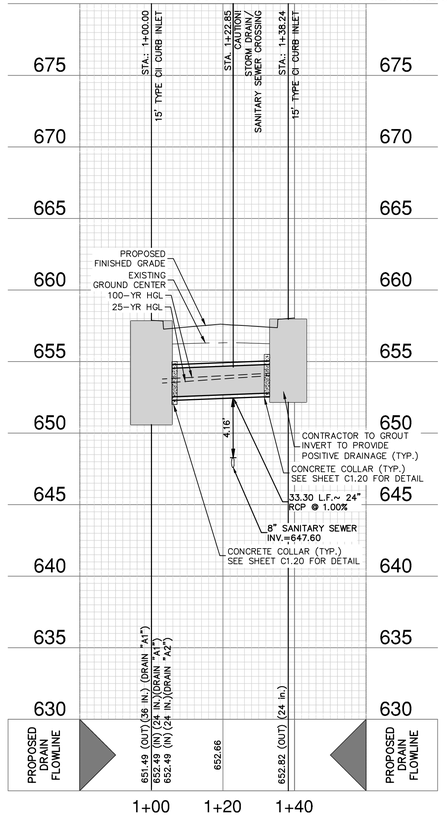


DRAIN "A2" VERTICAL SCALE: 1" = 5'
STA 1+00.00 TO 1+38.24 HORIZONTAL SCALE: 1" = 20'



SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 690
- PROPOSED CONTOUR 690
- EXISTING FIRE HYDRANT
- EXISTING WATER W
- EXISTING UNDERGROUND ELECTRIC UGE
- EXISTING GAS G
- EXISTING SEWER SS MANHOLE
- PROPOSED SEWER SS
- FIRE HYDRANT
- PROPOSED WATER W
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

HYDRAULIC CALCULATIONS STORM DRAIN "A2" STA. 1+00.00 TO 1+38.24	
Q25	= 11 CFS
S	= 1.00%
Sf	= 0.24%
V25	= 6.97 FPS
n	= 0.013
D	= 2.0'
Q2	= 7 CFS
V2	= 6.20 FPS

DRAIN "A2" ON-GRADE INLET
(STA. 1+35.50)
HYDRAULIC CALCULATIONS
Q25/2 =20.5 CFS
S = 1.0%
L = 15' INLET
Q_CAPTURED = 11 CFS
Q_BYPASS = 9.5 CFS

WATER PONDING WIDTH:

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

DRAINAGE & GRADING NOTES:

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

CAUTION!!

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAIN A2 - PLAN & PROFILE
STA 1+00.00 TO 1+38.24

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

FOR PERMIT

Date: May 20, 2024, 8:56am User ID: jmay
File: P:\30058-05\Design\Civil\SDA2-30058-05.dwg

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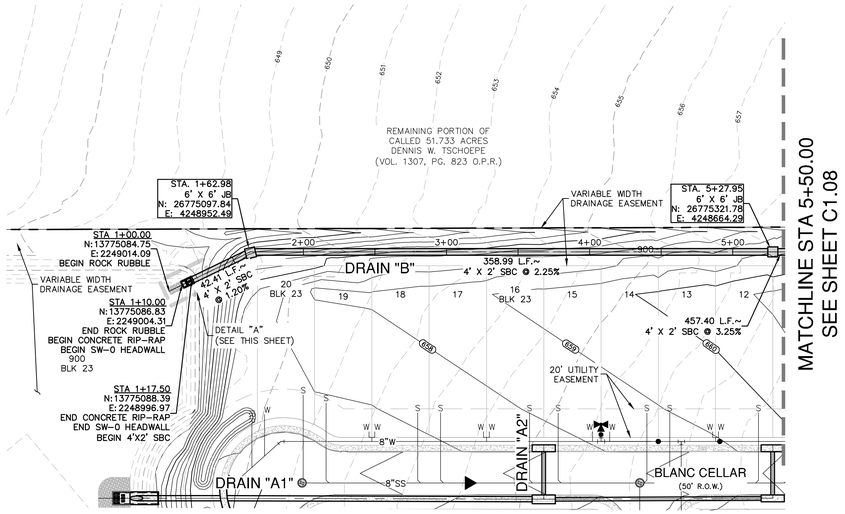
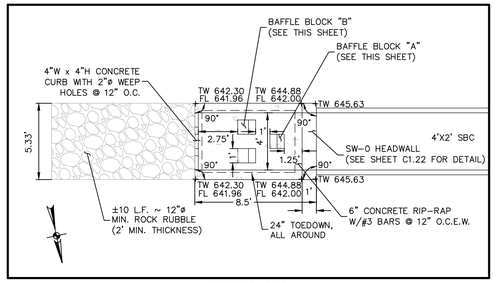
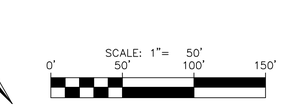




DETAIL "A"
1" = 5'



DRAINAGE LEGEND

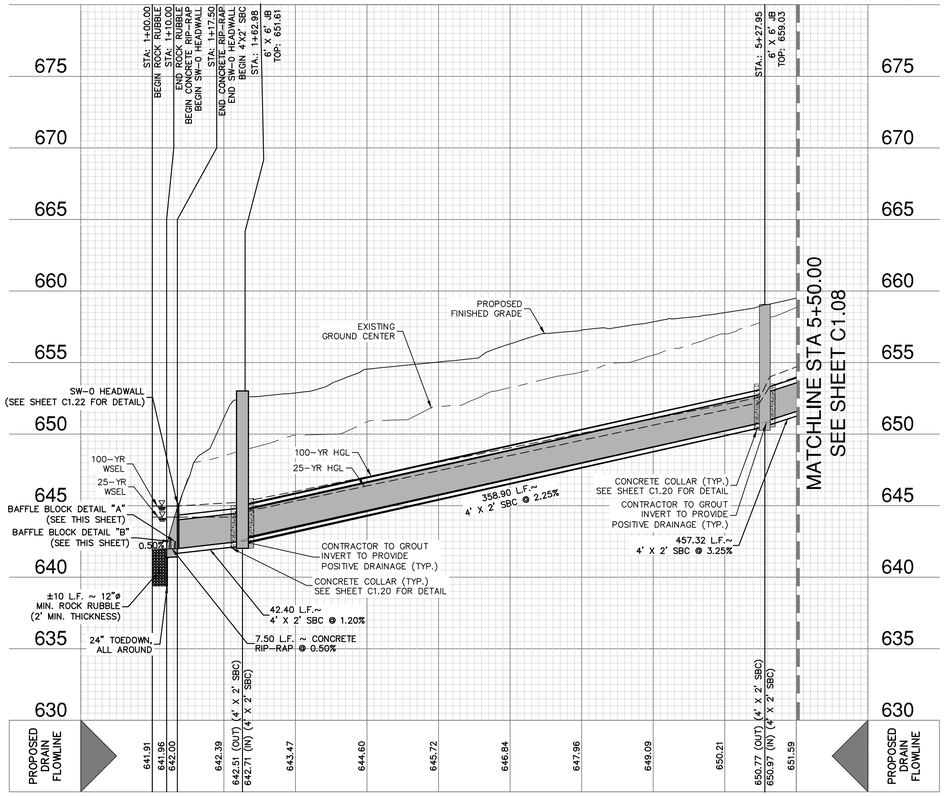
- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690 —
- PROPOSED CONTOUR — 690 —
- EXISTING FIRE HYDRANT — W —
- EXISTING WATER — W —
- EXISTING UNDERGROUND ELECTRIC — UGE —
- EXISTING GAS — G —
- EXISTING SEWER — SS — MANHOLE
- PROPOSED SEWER — SS —
- PROPOSED WATER — FIRE HYDRANT — W —
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

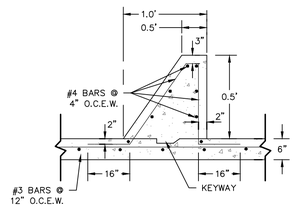
HYDRAULIC CALCULATIONS STORM DRAIN "B" STA. 1+17.50 TO 1+62.98	
Q25	= 38 CFS
S	= 1.25%
Sf	= 0.30%
V25	= 4.75 FPS
n	= 0.013
D	= 2.0'
Q2	= 18 CFS
V2	= 7.14 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "B" STA. 1+62.98 TO 5+27.95	
Q25	= 38 CFS
S	= 2.25%
Sf	= 0.30%
V25	= 4.92 FPS
n	= 0.013
D	= 2.0'
Q2	= 18 CFS
V2	= 3.35 FPS

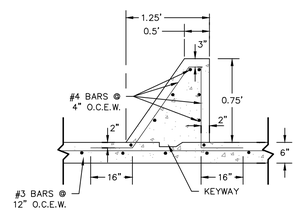
DRAIN "B"
STA 1+00.00 TO 5+50.00

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





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



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

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING F-NUM 470 | TEXAS SURVEYING F-NUM 100288-00
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Nov 22, 2023, 1:30pm User ID: ALeddy
File: P:\300\58\05\Design\Civil\SDB-30058-05.dwg

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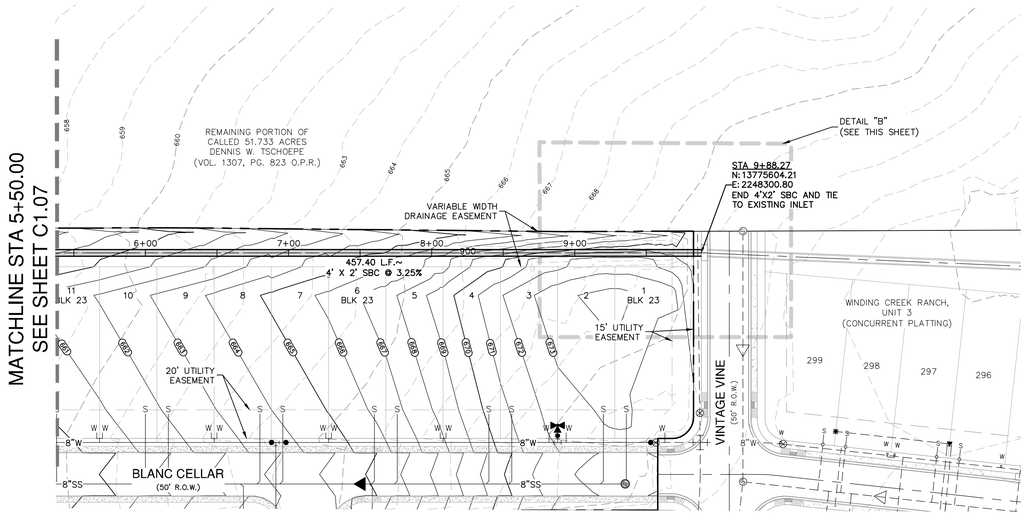
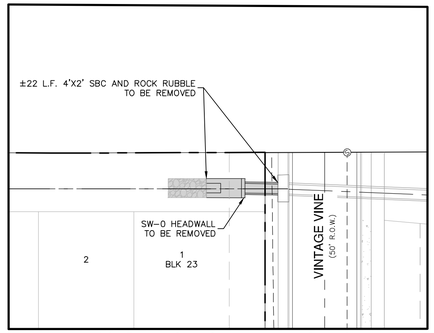
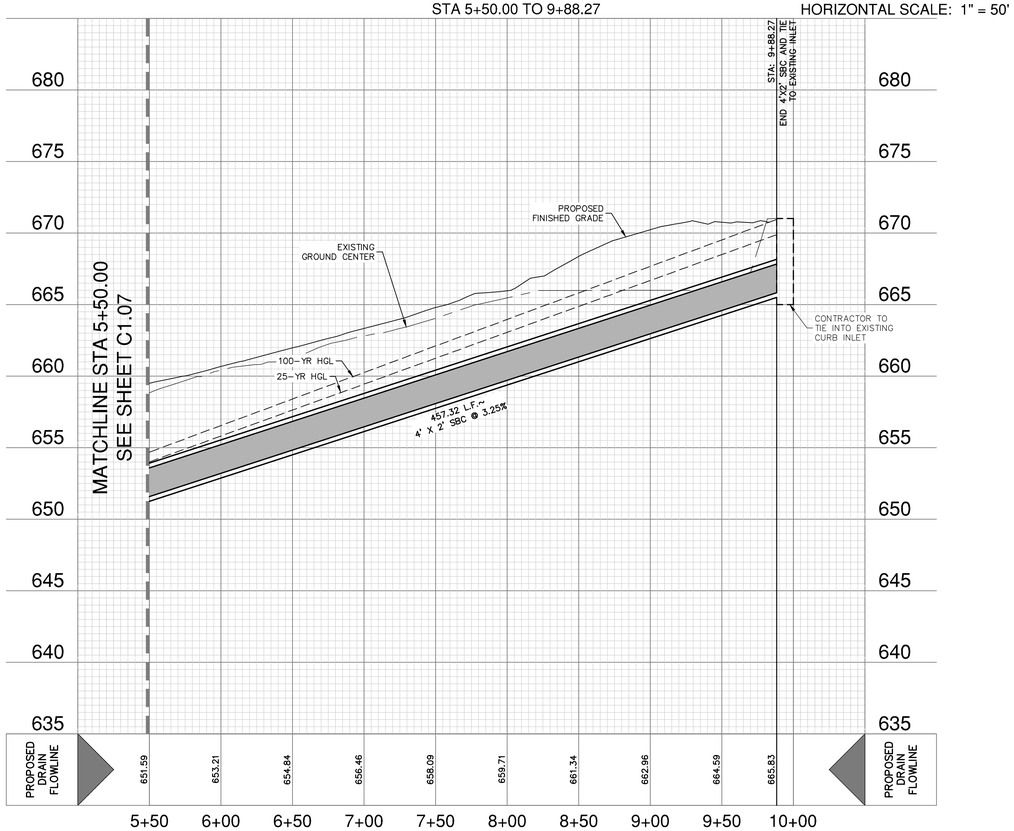




DETAIL "B": EXISTING DRAIN DEMOLITION
SCALE: 1" = 30'

DRAIN "B"
STA 5+50.00 TO 9+88.27

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



SCALE: 1"= 50'
0' 50' 100' 150'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690
- PROPOSED CONTOUR — 690
- EXISTING FIRE HYDRANT
- EXISTING WATER — W
- EXISTING UNDERGROUND ELECTRIC — UGE
- EXISTING GAS — G
- EXISTING SEWER — SS
- PROPOSED SEWER — SS — MANHOLE
- PROPOSED WATER — W — FIRE HYDRANT
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

HYDRAULIC CALCULATIONS STORM DRAIN "B"

STA. 5+27.95 TO 9+88.27

Q25	= 38 CFS
S	= 3.25%
Sf	= 0.30%
V25	= 8.08 FPS
n	= 0.013
D	= 2.0'
Q2	= 18 CFS
V2	= 6.65 FPS

DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
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DATE | NO. | REVISION

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Nov 22, 2023, 1:30pm User ID: ALeddy
File: P:\300\58\05\Design\Civil\SDB-30058-05.dwg
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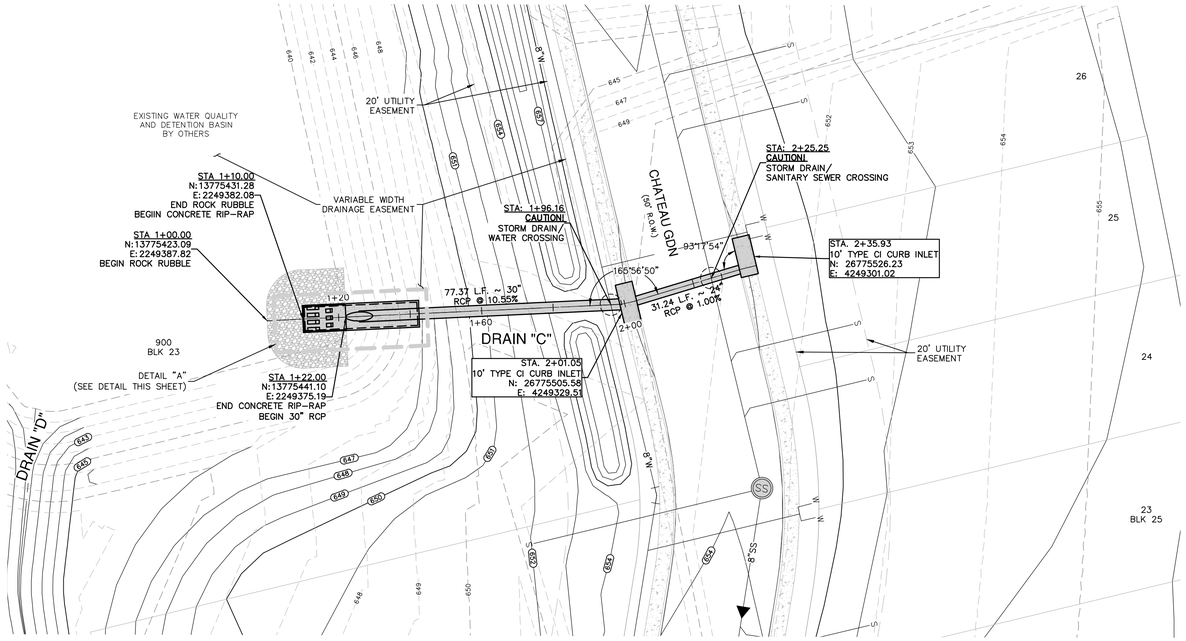
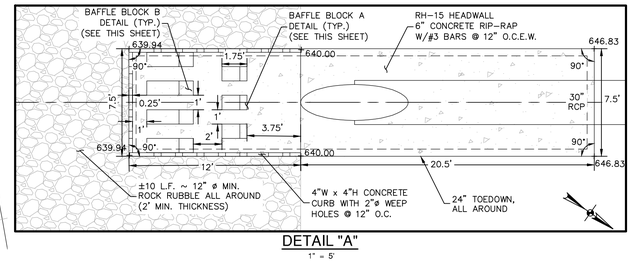




DETAIL "A"
1" = 5'

SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 690
- PROPOSED CONTOUR 690
- EXISTING FIRE HYDRANT
- EXISTING WATER W
- EXISTING UNDERGROUND ELECTRIC UGE
- EXISTING GAS G
- EXISTING SEWER SS
- PROPOSED SEWER SS MANHOLE
- PROPOSED WATER W FIRE HYDRANT
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

HYDRAULIC CALCULATIONS – 10' CURB INLET

TOTAL Q_{25} = 24 CFS

Q_{25} = 12 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

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

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

L = 5.59' USE 10' FT.

CHECK WITH WEIR FORMULA

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

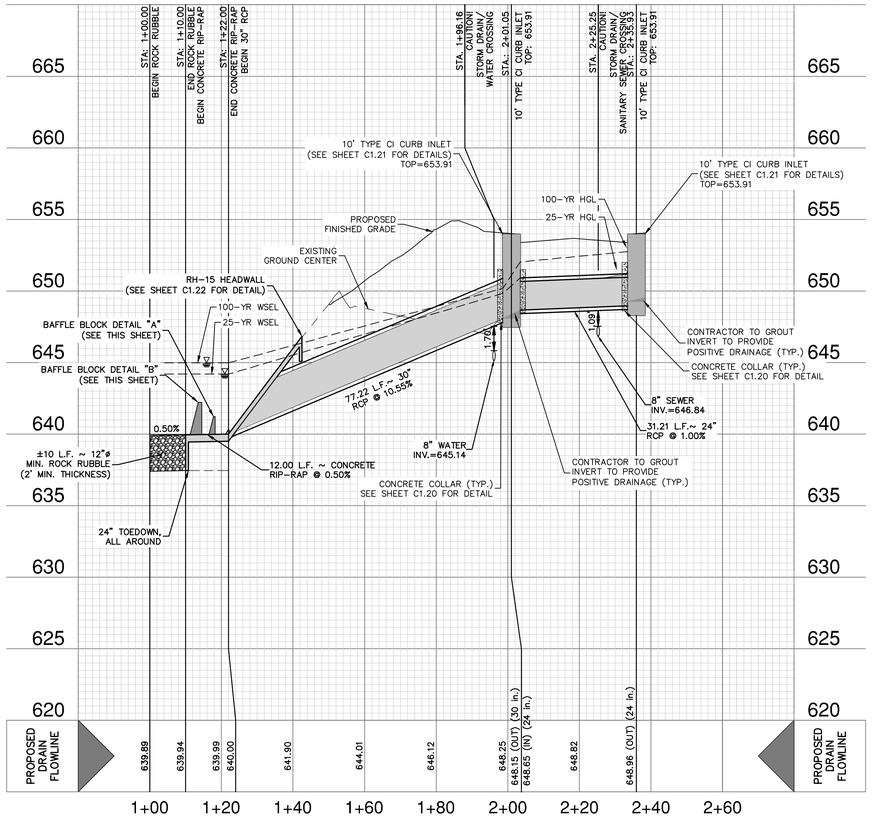
h = 0.53' < 0.79' OK

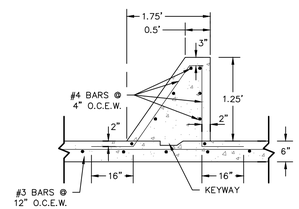
HYDRAULIC CALCULATIONS STORM DRAIN "D" STA. 1+22.00 TO 2+01.05	
Q25	= 24 CFS
S	= 10.55%
Sf	= 0.34%
V25	= 4.89 FPS
n	= 0.013
D	= 2.5'
Q2	= 12 CFS
V2	= 5.38 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "D" STA. 2+01.05 TO 2+35.89	
Q25	= 12 CFS
S	= 1.00%
Sf	= 0.28
V25	= 3.82 FPS
n	= 0.013
D	= 2.0'
Q2	= 6 CFS
V2	= 4.61 FPS

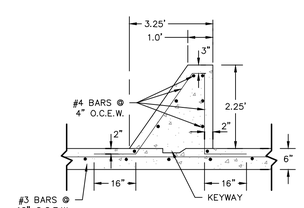
DRAIN "C"
STA 1+00.00 TO 2+35.93

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





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



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

DRAINAGE & GRADING NOTES:

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

CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

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

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Nov 22, 2023, 1:31pm User ID: ALeddy
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CAUTION!!

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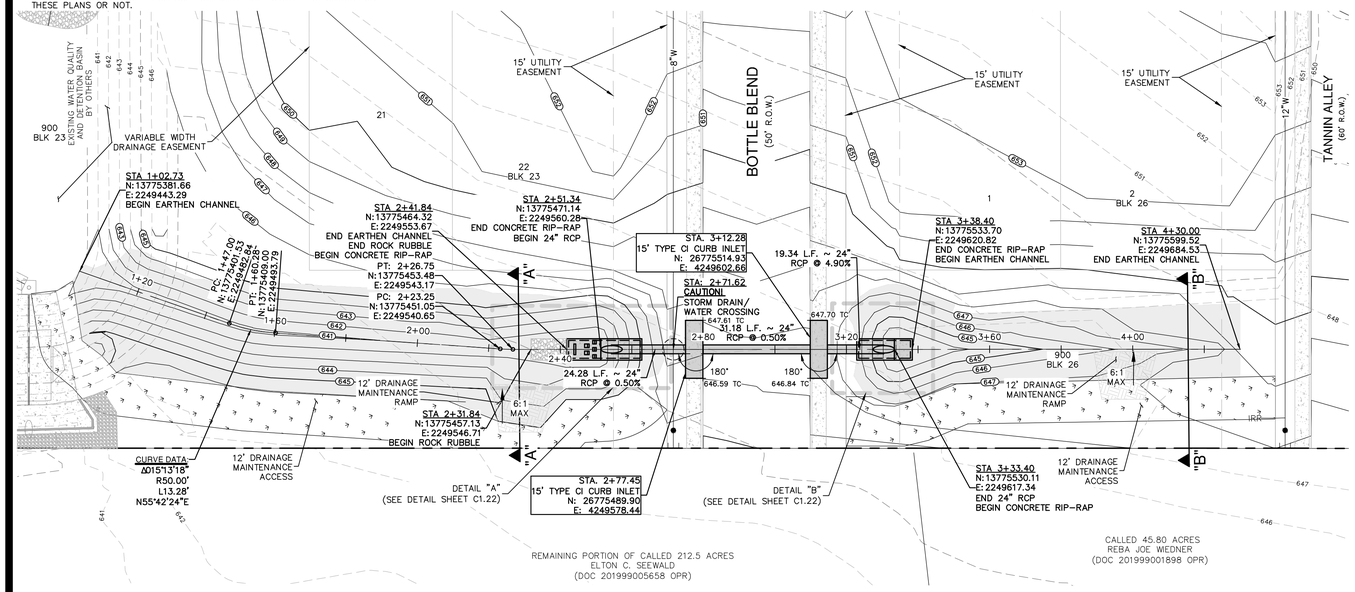
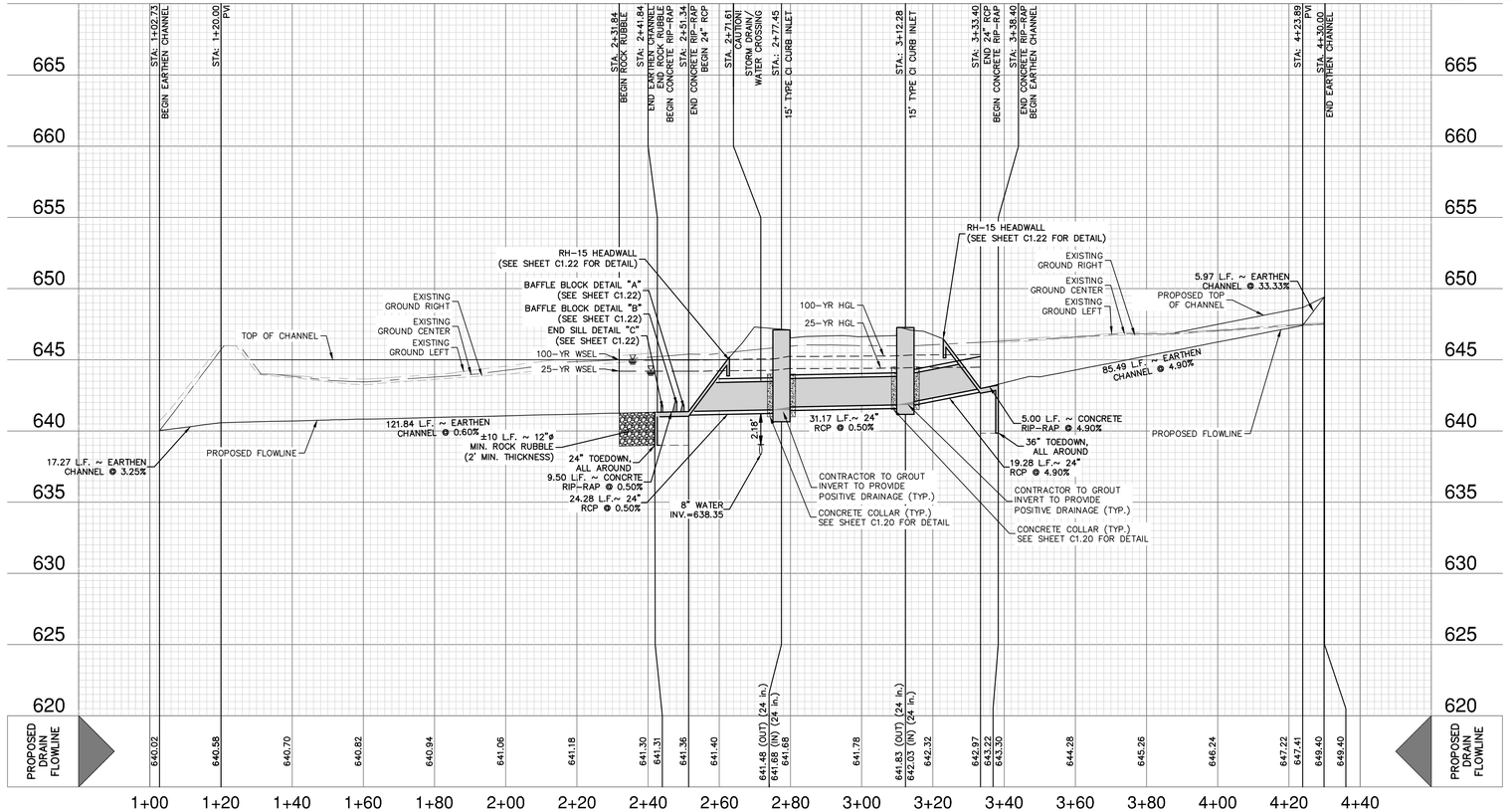


DRAIN "D"
STA 1+02.73 TO 4+30.00

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



HYDRAULIC CALCULATIONS EARTH CHANNEL	
STA. 1+02.73 TO 1+20.00	
Q_{25} =	14 CFS
Bw =	0 FT
n =	0.035
S =	3.25%
dn_{25} =	1.01 FT
V_{25} =	4.57 FPS
dn25+Fbrd.=	1.51 FT
Q_2 =	7 CFS
V_2 =	3.84 FPS
Q_{100} =	18 CFS
dn_{100} =	1.10 FT
V_{100} =	4.96 FPS

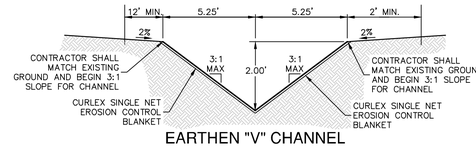
HYDRAULIC CALCULATIONS EARTH CHANNEL	
STA. 1+20.00 TO 2+41.84	
Q_{25} =	14 CFS
Bw =	0 FT
n =	0.035
S =	0.60%
dn_{25} =	1.38 FT
V_{25} =	2.45 FPS
dn25+Fbrd.=	1.88 FT
Q_2 =	7 CFS
V_2 =	2.08 FPS
Q_{100} =	18 CFS
dn_{100} =	1.51 FT
V_{100} =	2.63 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "D"	
STA. 2+51.34 TO 2+77.45	
Q_{25}	= 12 CFS
S	= 0.50%
Sf	= 0.23%
V25	= 3.82 FPS
n	= 0.013
D	= 2.0'
Q2	= 6 CFS
V2	= 2.85 FPS
Q100	= 14 CFS
V100	= 4.46 FPS

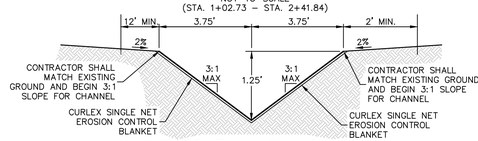
SCALE: 1"= 20' (0' 20' 40' 60')

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR (690)
- PROPOSED CONTOUR (690)
- EXISTING FIRE HYDRANT
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UGE)
- EXISTING GAS (G)
- EXISTING SEWER (SS, MANHOLE)
- PROPOSED SEWER (SS, MANHOLE)
- PROPOSED WATER (FIRE HYDRANT, W)
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS



EARTHEN "V" CHANNEL
SECTION "A-A"
NOT-TO-SCALE
(STA. 1+02.73 – STA. 2+41.84)



EARTHEN "V" CHANNEL
SECTION "B-B"
NOT-TO-SCALE
(STA. 3+38.40 – 4+30.00)

DRAIN "D" ON-GRADE INLETS
(STA. 2+77.45 AND 3+12.28)
HYDRAULIC CALCULATIONS
$Q_{25}/2$ =6.0
S = 5.8%
L = 15' INLET
Q_CAPTURED = 4.5 CFS
Q_BYPASS = 1.5 CFS

HYDRAULIC CALCULATIONS STORM DRAIN "D"	
STA. 2+77.45 TO 3+12.28	
Q_{25}	= 7.5 CFS
S	= 0.50%
Sf	= 0.096%
V25	= 2.39 FPS
n	= 0.013
D	= 2.0'
Q2	= 3.5 CFS
V2	= 3.92 FPS
Q100	= 9 CFS
V100	= 2.87 FPS

HYDRAULIC CALCULATIONS STORM DRAIN "D"	
STA. 3+12.28 TO 3+33.40	
Q_{25}	= 3 CFS
S	= 4.90%
Sf	= 0.018%
V25	= 1.21 FPS
n	= 0.013
D	= 2.0'
Q2	= 1 CFS
V2	= 2.77 FPS
Q100	= 4 CFS
V100	= 1.27 FPS

HYDRAULIC CALCULATIONS EARTH CHANNEL	
STA. 3+38.40 TO 4+23.89	
Q_{25} =	3 CFS
Bw =	0 FT
n =	0.035
S =	4.90%
dn_{25} =	0.53 FT
V_{25} =	3.56 FPS
dn25+Fbrd.=	1.03 FT
Q_2 =	1 CFS
V_2 =	2.72 FPS
Q_{100} =	4 CFS
dn_{100} =	0.58 FT
V_{100} =	3.96 FPS

WATER PONDING WIDTH:

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

DRAINAGE & GRADING NOTES:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
2-22-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING F-RMI 1470 | TEXAS SURVEYING F-RMI #100280-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Feb 22, 2024, 9:14am User ID: ALeddy
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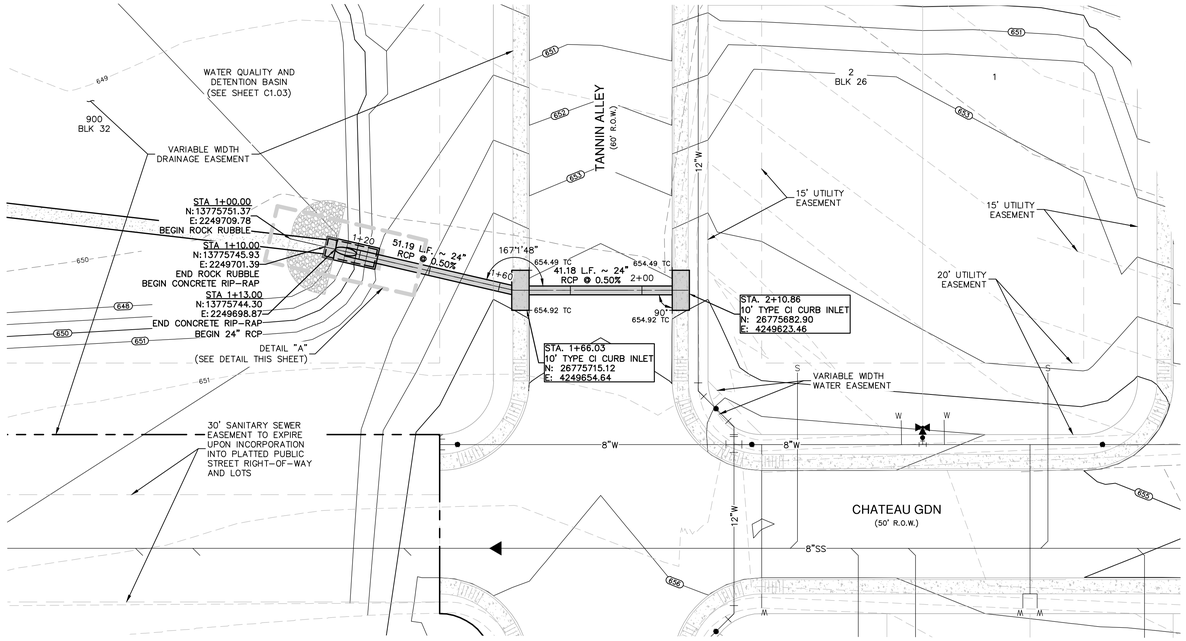
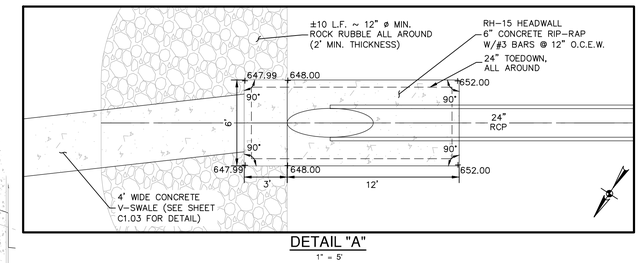




DETAIL "A"
1" = 5'

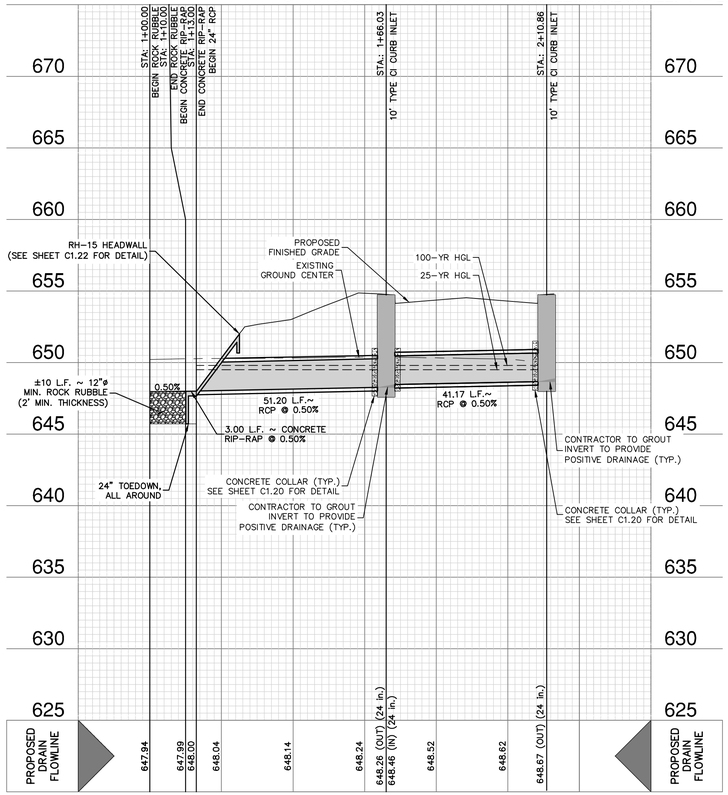
SCALE: 1"= 20'
0' 20' 40' 60'

DRAINAGE LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR — 690 —
- PROPOSED CONTOUR — 690 —
- EXISTING FIRE HYDRANT — W —
- EXISTING WATER — W —
- EXISTING UNDERGROUND ELECTRIC — UGE —
- EXISTING GAS — G —
- EXISTING SEWER — SS — MANHOLE
- PROPOSED SEWER — SS —
- PROPOSED WATER — FIRE HYDRANT — W —
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOW ARROW
- CURLEX SINGLE NET EROSION CONTROL BLANKETS
- DRAINAGE MAINTENANCE ACCESS

DRAIN "E"
STA 1+00.00 TO 2+10.86

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



HYDRAULIC CALCULATIONS STORM DRAIN "E"
STA. 1+13.00 TO 1+66.03

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

HYDRAULIC CALCULATIONS STORM DRAIN "E"
STA. 1+66.03 TO 2+10.86

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

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

DRAINAGE & GRADING NOTES:

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4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
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6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.

CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
2-22-2024

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

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Feb 22, 2024, 9:15am User ID: ALeddy
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American Excelsior Company®
Earth Science Division

Proud Participant in NTPEP and Proud Member of: AASHTO, NTPEP, Green Cover Council, IECA

Product Participant of: QDOR Performance Verified

CURLEX® EROSION CONTROL BLANKETS INSTALLATION GUIDELINES

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

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

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

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

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

W0315R1116

American Excelsior Company®
Earth Science Division

Proud Participant in NTPEP and Proud Member of: AASHTO, NTPEP, Green Cover Council, IECA

Product Participant of: QDOR Performance Verified

MATERIAL SPECIFICATIONS
CURLEX® I

Materials:

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

Typical Roll Sizes:

Width:	4.0 ft (1.2 m)	8.0 ft (2.4 m)	16.0 ft (4.9 m)
Length:	112.5 ft (34.29 m)	112.5 ft (34.29 m)	112.5 ft (34.29 m)
Area:	50.0 yd² (41.8 m²)	100.0 yd² (83.6 m²)	200.0 yd² (167.2 m²)
Weight:	36.5 lb (16.6 kg)	73.0 lb (33.1 kg)	146.0 lb (66.2 kg)

Description:

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

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

Physical Properties:

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

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

MADE IN THE U.S.A.

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

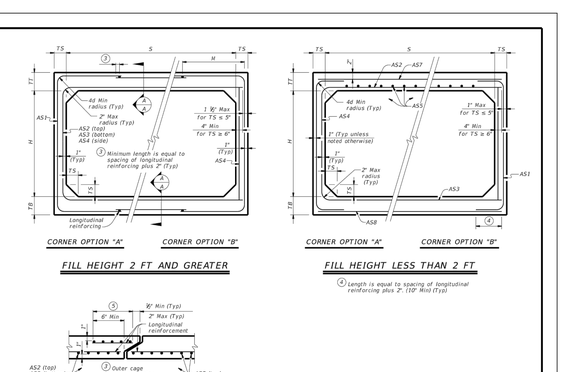
W0516R1116

BOX DATA

SECTION DIMENSIONS S (Ft.)	H (Ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (Ft.)	W (Min) (in.)	REINFORCING (sq. in. / Ft.)[2] AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)[1]
4	2	7.5	6	5	< 2	38	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	–	–	–	3.6
4	2	5	5	5	3 – 5	38	0.13	0.13	0.13	0.12	–	–	–	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	–	–	–	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	–	–	–	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	–	–	–	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	–	–	–	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	–	–	–	3.6
4	3	7.5	6	5	< 2	–	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	–	–	–	4.1
4	3	5	5	5	3 – 5	38	0.12	0.16	0.16	0.12	–	–	–	4.1
4	3	5	5	5	10	38	0.12	0.14	0.14	0.12	–	–	–	4.1
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	–	–	–	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	–	–	–	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	–	–	–	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	–	–	–	4.1
4	4	7.5	6	5	< 2	–	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	–	–	–	4.6
4	4	5	5	5	3 – 5	38	0.12	0.18	0.18	0.12	–	–	–	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	–	–	–	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	–	–	–	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	–	–	–	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	–	–	–	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	–	–	–	4.6

[1] For box length = 8'-0"

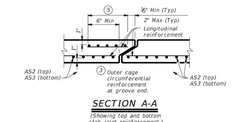
[2] AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT

[4] Length is equal to spacing of longitudinal reinforcing plus 2". (10" Mind (Typ)



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

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

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

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS
PRECAST
4'-0" SPAN

SCP-4

FILE	sc04ds1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.

DISCLAIMER
The use of this standard is governed by the "Texas Engineering Practice Act". No liability of any kind is assumed by the Texas Department of Transportation or any employee for the use of these standards for any purpose not intended by the Department.

DATE
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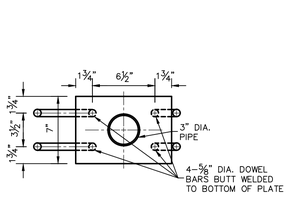
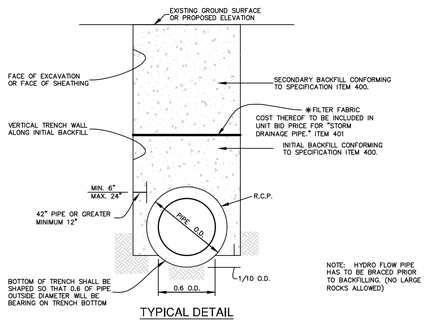


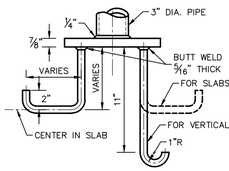
TYPICAL DETAIL FOR C.M.P. AND S.R.C.M.P.

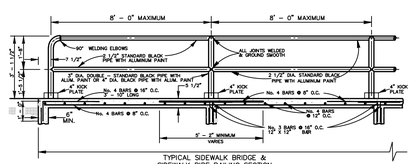


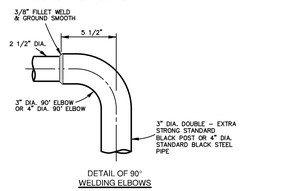
NOTE: HYDRO FLOW PIPE HAS TO BE BRACED PRIOR TO BACKFILLING. (NO LARGE ROCKS ALLOWED)

TYPICAL DETAIL

PIPE ANCHORAGE DETAIL
NOT-TO-SCALE

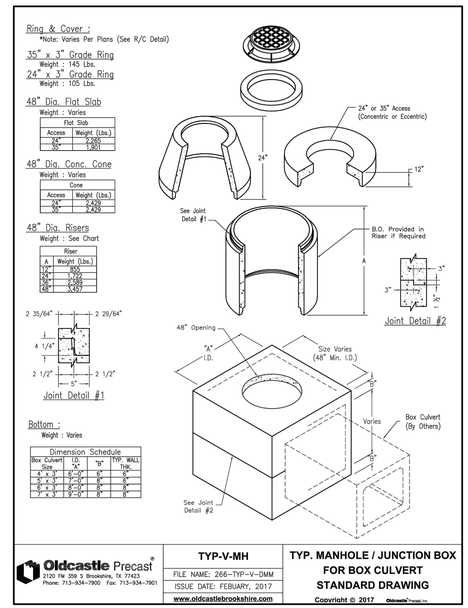






DETAIL OF 90° WELDING ELBOWS

PIPE RAILING DETAIL
NOT-TO-SCALE



Oldcastle Precast®
2120 FM 359 S Brookshire, TX 77423
Phone: 713-934-7900 Fax: 713-934-7901

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

TYP. MANHOLE / JUNCTION BOX FOR BOX CULVERT STANDARD DRAWING

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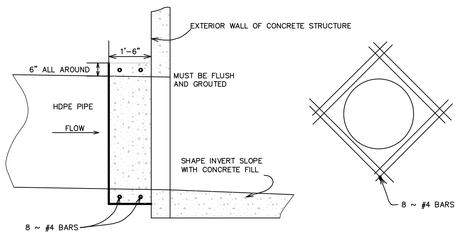
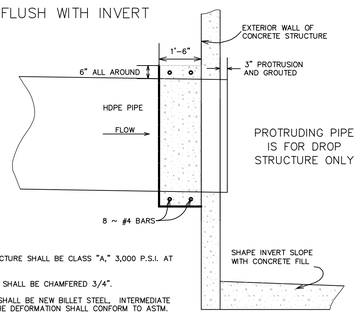
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER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



PIPE FLUSH WITH INVERT



CONCRETE COLLAR DETAIL
NOT TO SCALE

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-22-2023

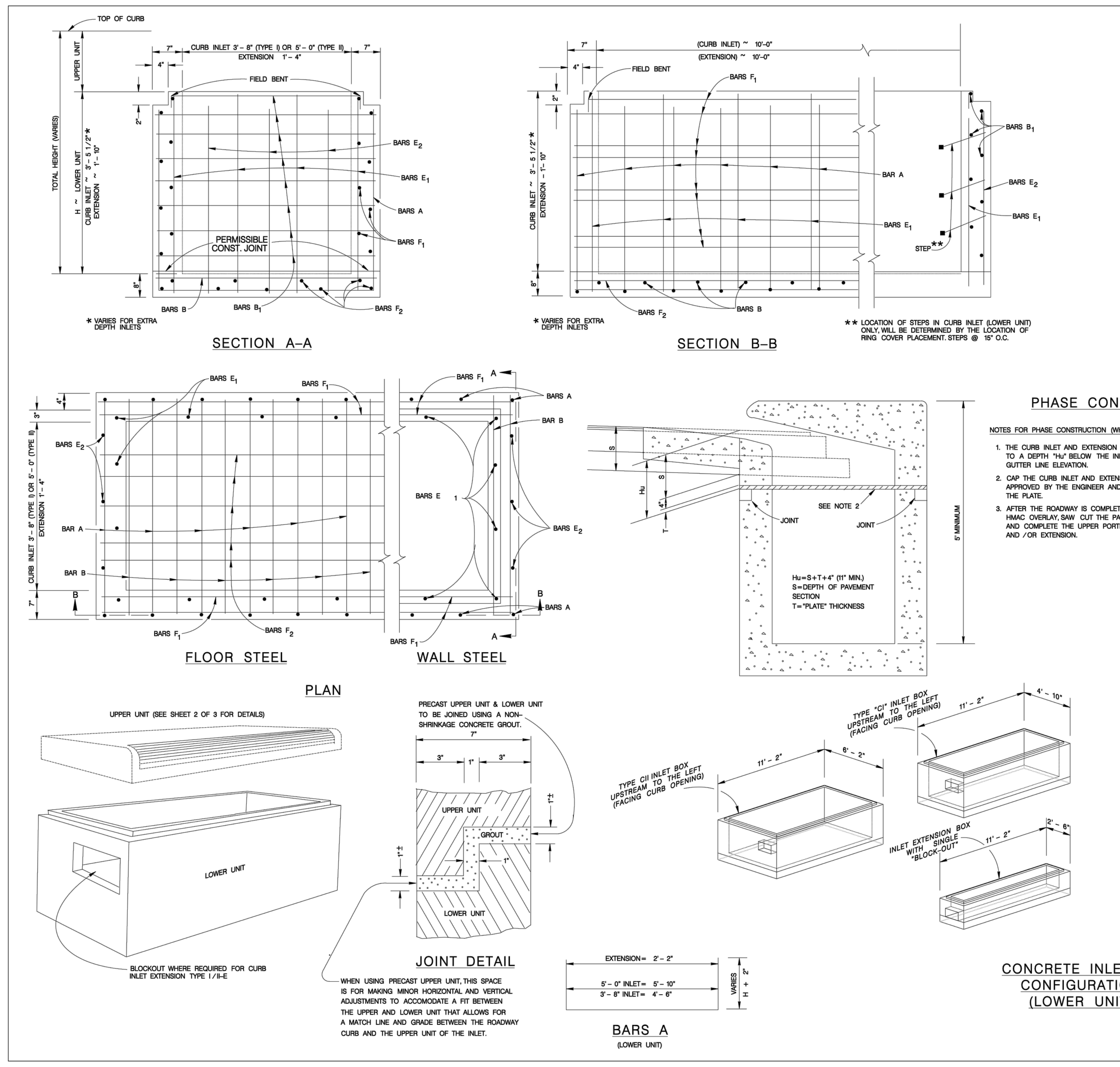
PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAINAGE DETAILS

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

FOR PERMIT



REINFORCING STEEL

LOWER UNIT 10' X 3' – 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-6"
B_1	VARIES	#4	12"	4'-6"
E_1	20	#4	18"±	VARIES
E_2	6	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'-10"
F_2	9	#4	—	10'-10"

LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'-10"
B_1	VARIES	#4	12"	5'-10"
E_1	22	#4	18"±	VARIES
E_2	8	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'-10"
F_2	11	#4	—	10'-10"

GENERAL NOTES

1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (IL-C).
2. TYPE C-II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN-LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 /4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BEND.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

PHASE CONSTRUCTION

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

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hu" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND /OR EXTENSION.

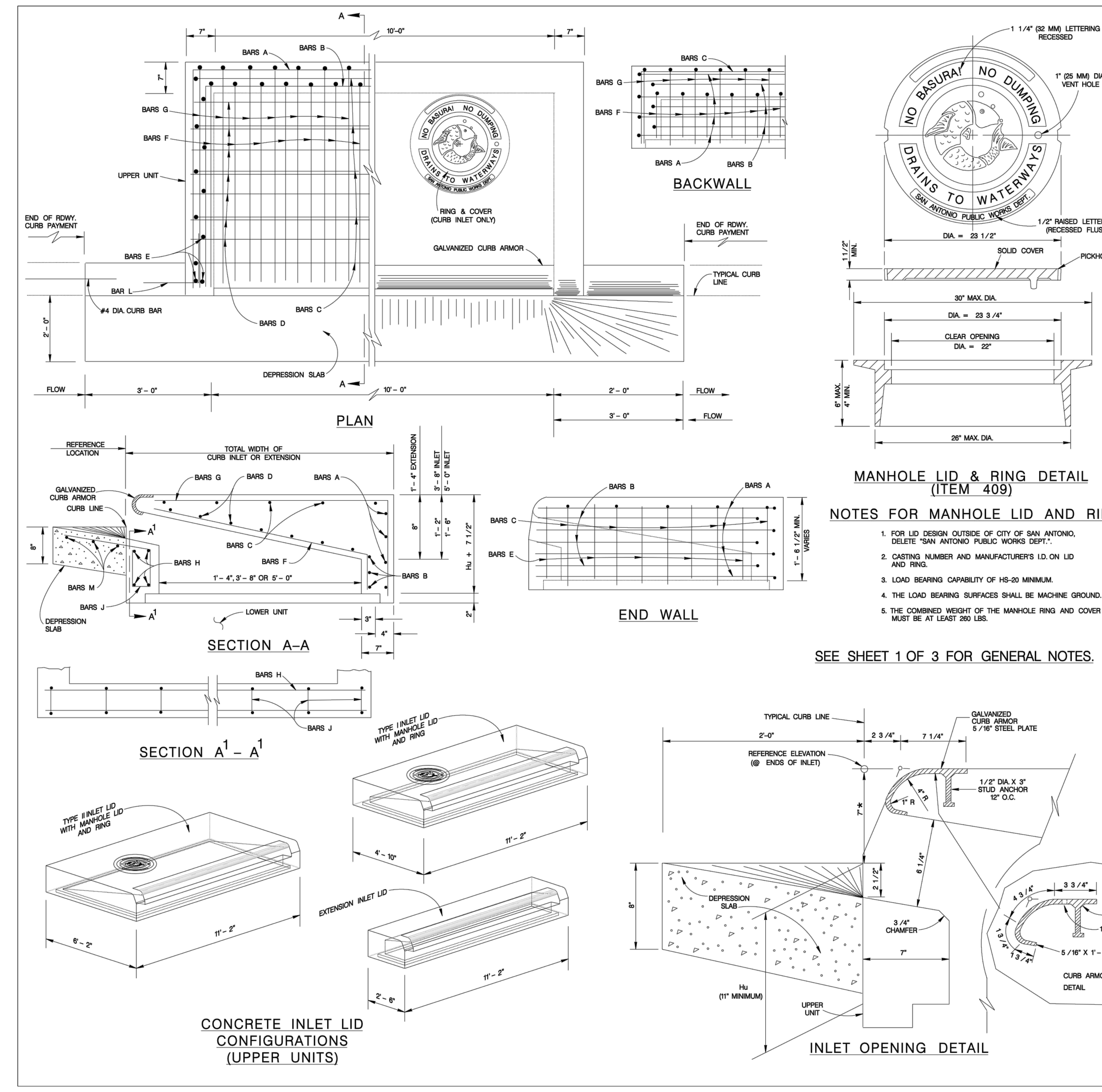
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS

SHEET 1 OF 3

____% SUBMITTAL | PROJECT NO.:____ | DATE:____
DRWN. BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.:____OF____



REINFORCING STEEL (FOR Hu = 11")

UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'-10"	53
B	3	#4	—	18'-10"	38
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-2"	9
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	22'-6"	60
B	3	#4	—	21'-6"	43
C	7	#4	11"	13'-2"	62
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-2"	13
F	21	#6	6"	5'-8"	179
G	22	#6	6"	7'-0"	231
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
TOTAL WEIGHT					759 LBS.

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

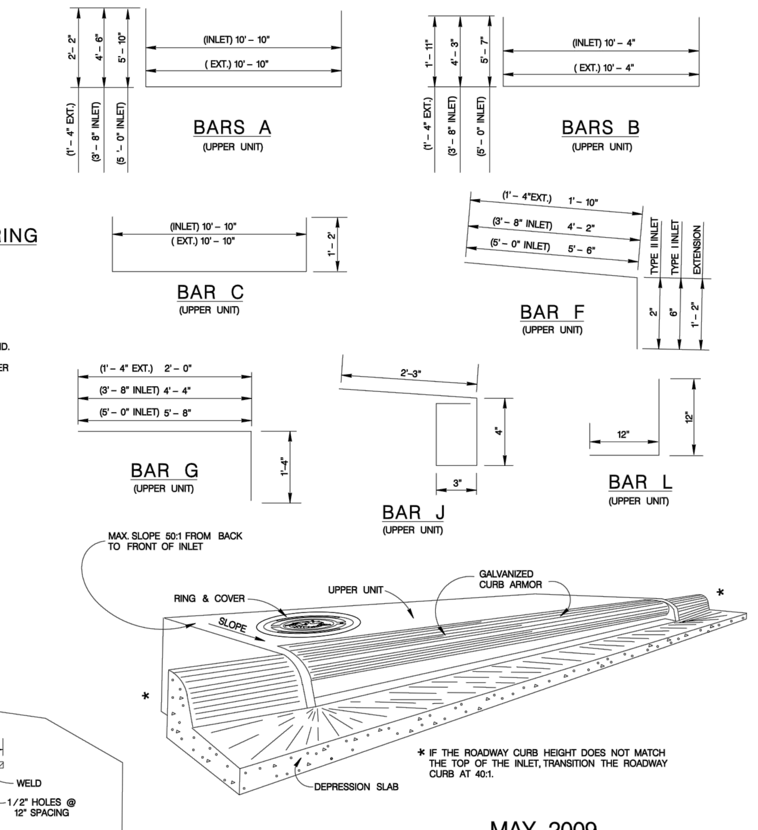
UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
10' EXTENSION	1.0

MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

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

SEE SHEET 1 OF 3 FOR GENERAL NOTES.



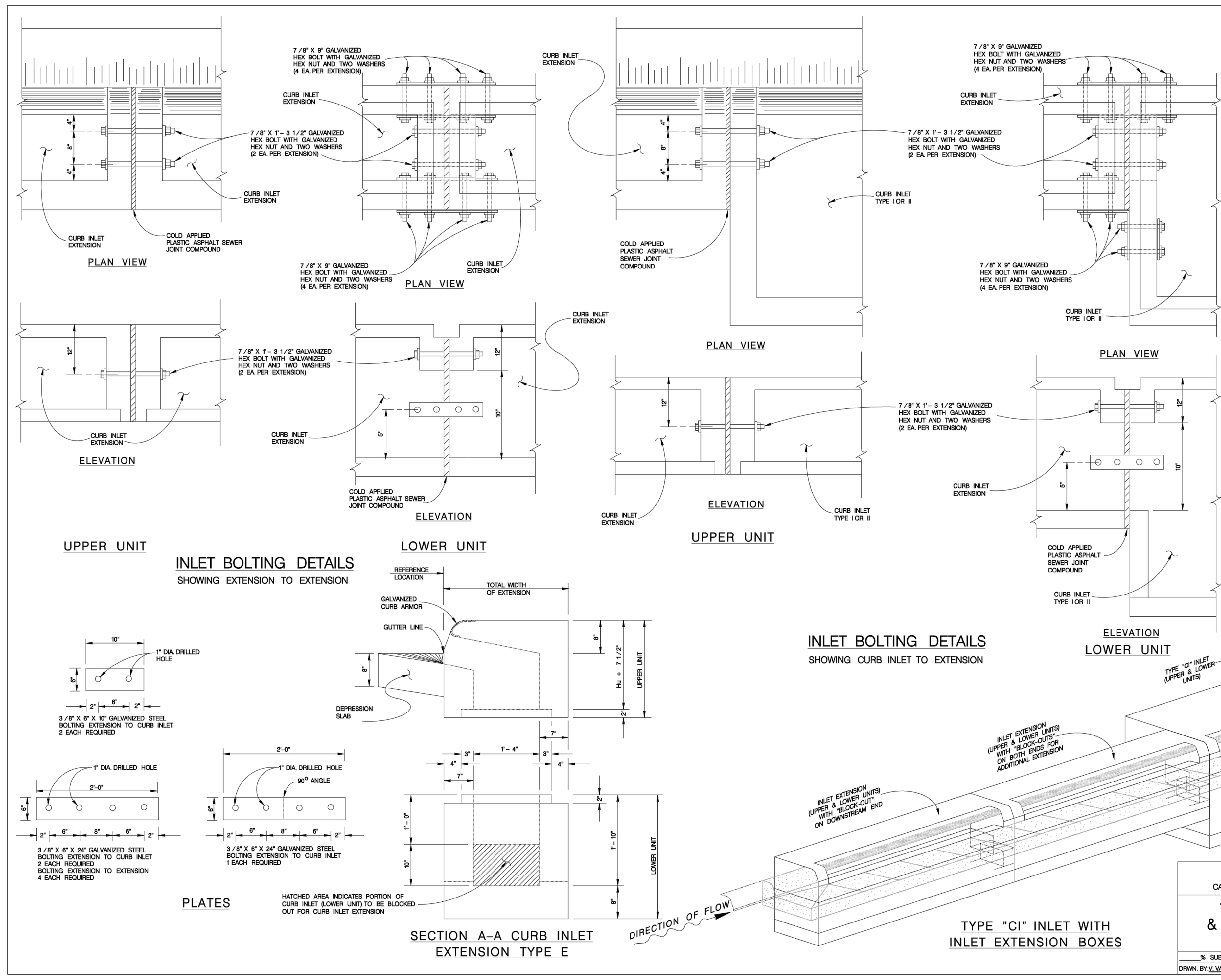
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS

SHEET 2 OF 3

____% SUBMITTAL | PROJECT NO.:____ | DATE:____
DRWN. BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.:____OF____



UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	15'-2"	41
B	3	#4	—	14'-2"	28
C	3	#4	11"	13'-2"	26
D	3	#4	6"	10'-10"	22
E	8	#4	11"	1'-2"	6
F	21	#6	6"	2'-0"	63
G	22	#6	6"	3'-4"	110
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6'-2"	49
B	11	#4	12"	2'-2"	16
B_1	3	#4	12"	2'-2"	4
E_1	18	#4	18"±	2'-3"	27
E_2	4	#4	18"±	2'-1"	6
F_1	16	#4	12"±	10'-10"	116
F_2	5	#4	—	10'-10"	36
REINFORCING STEEL				LBS.	254
CLASS. "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL, NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

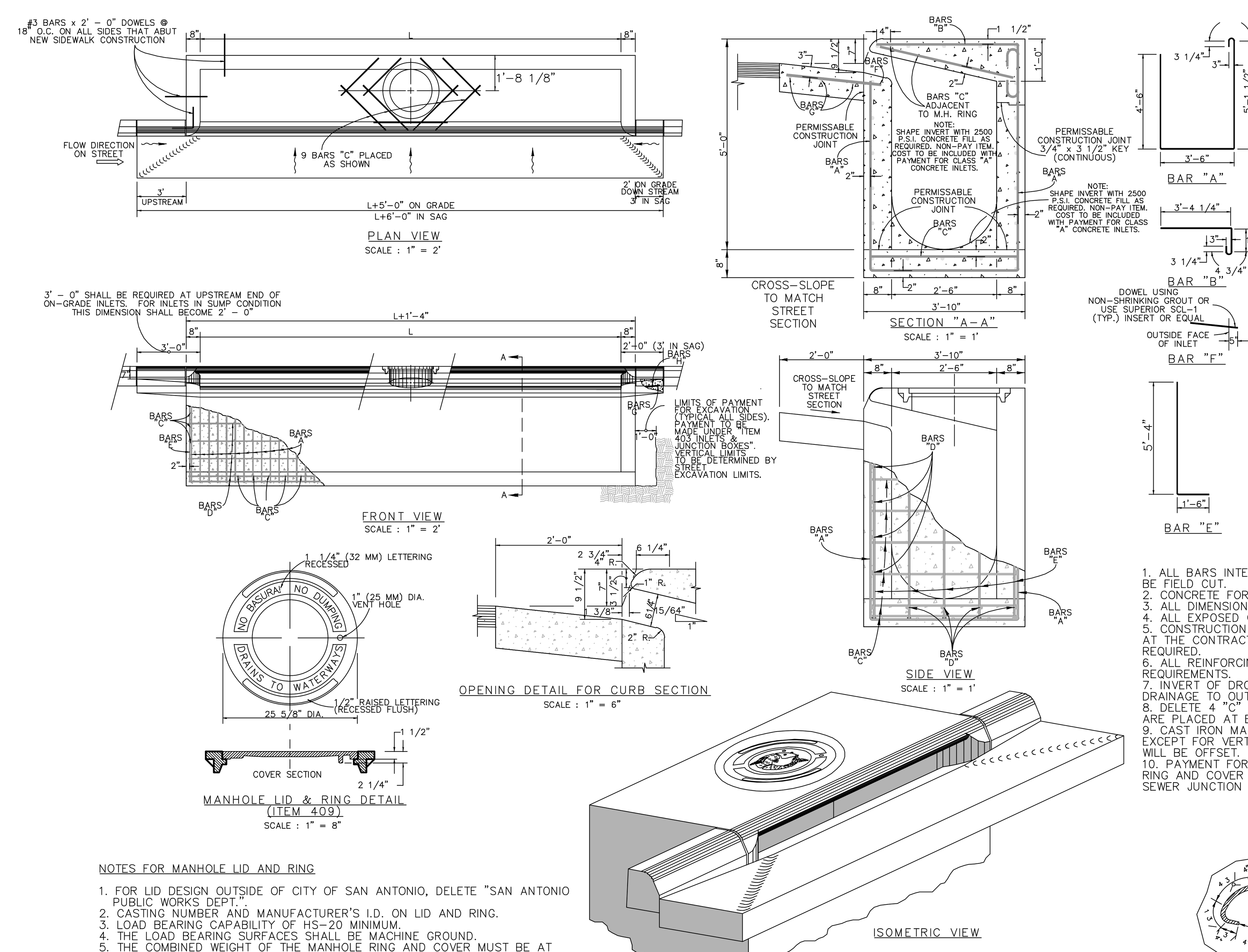
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS

SHEET 3 OF 3

____% SUBMITTAL | PROJECT NO.:____ | DATE:____
DRWN. BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.:____OF____



L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=5'-0"	A	15	4	5" O.C.	13'-9 1/2"	138
	B	15	4	5" O.C.	5'-1 3/4"	52
	C	30	4	9" O.C.	3'-6"	70
	D	22	4	10" O.C.	6'-1"	89
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	6	5	12" O.C.	2'-3"	27
	G	3	4	12" O.C.	9'-8"	20
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=3.53 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=438 LBS.

L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=10'-0"	A	27	4	5" O.C.	13'-9 1/2"	249
	B	27	4	5" O.C.	5'-1 3/4"	93
	C	37	4	9" O.C.	3'-6"	87
	D	22	4	10" O.C.	11'-1"	163
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	12	5	12" O.C.	2'-3"	27
	G	3	4	12" O.C.	14'-8"	30
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=5.75 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=704 LBS.

L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=15'-0"	A	39	4	5" O.C.	13'-9 1/2"	359
	B	39	4	5" O.C.	5'-1 3/4"	134
	C	43	4	9" O.C.	3'-6"	101
	D	22	4	10" O.C.	16'-1"	236
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	17	5	12" O.C.	2'-3"	38
	G	3	4	12" O.C.	19'-8"	40
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=7.97 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=963 LBS.

L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=20'-0"	A	51	4	5" O.C.	13'-9 1/2"	470
	B	51	4	5" O.C.	5'-1 3/4"	175
	C	50	4	9" O.C.	3'-6"	117
	D	22	4	10" O.C.	21'-1"	310
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	22	5	12" O.C.	2'-3"	50
	G	3	4	12" O.C.	24'-8"	50
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=10.19 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=1227 LBS.

L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=25'-0"	A	63	4	5" O.C.	13'-9 1/2"	580
	B	63	4	5" O.C.	5'-1 3/4"	217
	C	57	4	9" O.C.	3'-6"	133
	D	22	4	10" O.C.	26'-1"	383
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	27	5	12" O.C.	2'-3"	61
	G	3	4	12" O.C.	24'-8"	60
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=12.41 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=1489 LBS.

L	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=30'-0"	A	75	4	5" O.C.	13'-9 1/2"	691
	B	75	4	5" O.C.	5'-1 3/4"	258
	C	63	4	9" O.C.	3'-6"	147
	D	22	4	10" O.C.	31'-1"	457
	E	10	4	10 1/2" O.C.	6'-10"	46
	F	32	5	12" O.C.	2'-3"	72
	G	3	4	12" O.C.	34'-8"	70
	H	5	5	12" O.C.	1'-8"	9

* CONCRETE TOTAL=14.63 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=1750 LBS.

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY MANHOLE AND REINFORCED CONC. PIPE.
* INCLUDES CONCRETE GUTTER FOR ON GRADE INLET. REDUCE BY .05 C.Y. FOR INLETS IN SUMP.

GENERAL NOTES

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

NOTES FOR MANHOLE LID AND RING

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

TYPE "C" INLET STANDARDS

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAINAGE DETAILS

NO.	REVISION	DATE

STATE OF TEXAS — JOCELYN PEREZ — 98367 — LICENSED PROFESSIONAL ENGINEER — 11-22-2023

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

PLAT NO. ________
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C1.21

Date: Nov 22, 2023, 1:33pm User ID: ALeddy
File: P:\300\58\05\Design\Civil\SDDT-30058-05.dwg

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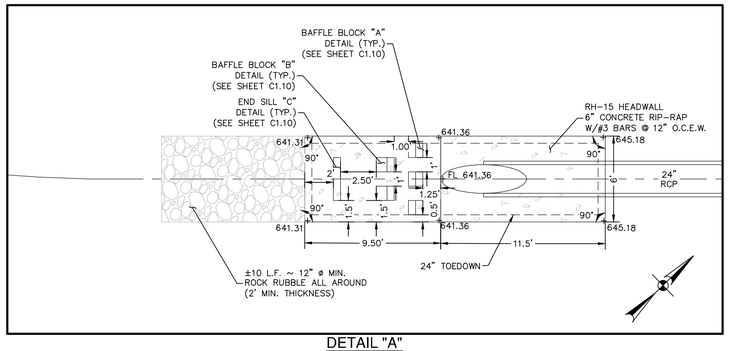
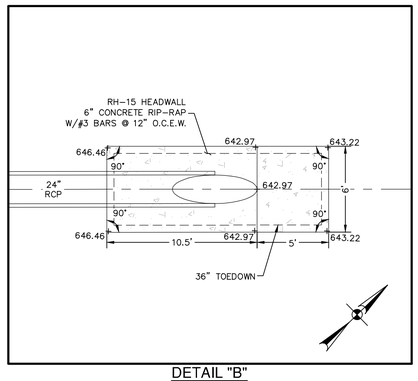
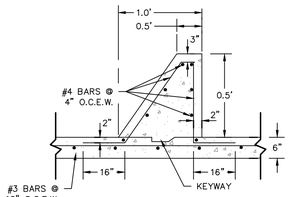


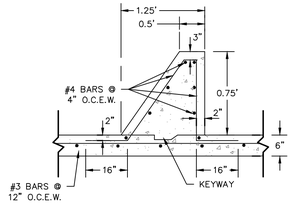
DETAIL "A"
1" = 5'



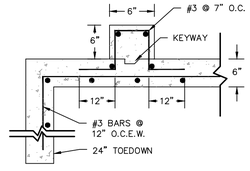
DETAIL "B"
1" = 5'



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

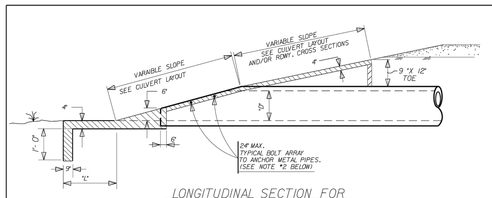


BAFFLE BLOCK "B" DETAIL SECTION
NOT-TO-SCALE

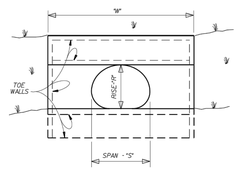


TYPICAL END SILL DETAIL "C"
NOT-TO-SCALE

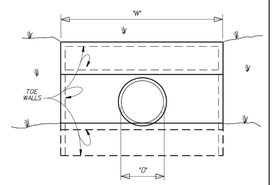
STRUCTURE DESIGN DRIVEN BY CWC\DESIGN\SW-0.dgn



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT

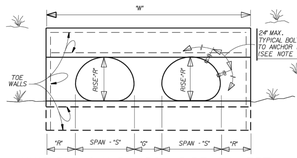


SINGLE CIRCULAR PIPE CULVERT
(CMP or RCP)

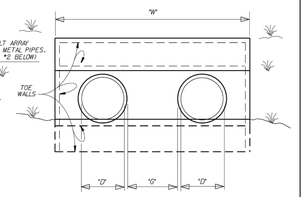
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"D" CSM	"D" RCP	SINGLE "W"	DOUBLE "W"	TRIPLE "W"	QUADRUPLE "W"
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-0"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-8"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-10"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	22'-0"	27'-6"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	31'-3"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	35'-6"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	39'-6"

"D" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.



MULTIPLE C.M.P. ARCH PIPE CULVERT



MULTIPLE CIRCULAR PIPE CULVERT
(CMP or RCP)

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH DIM. SPAN "S"	APPROX. ARCH DIM. RISE "R"	"L"	"D"	SINGLE "W"	DOUBLE "W"	TRIPLE "W"	QUADRUPLE "W"
2	17"	13"	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-10"	12'-5"	20'-7"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

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

NOTES:

1.) FOR RIPRAP QUANTITIES AND SLOPES, SEE CULVERT LAYOUT SHEET. CONCRETE SHALL BE CLASS B UNLESS OTHERWISE SHOWN IN THE PLANS.

2.) ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WORK WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.

3.) FOR CONCRETE ARCH PIPES, THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.

4.) FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN ITEMS 460 AND/OR 464.

5.) IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

SAN ANTONIO DISTRICT STANDARD
RIPRAP HEADWALL

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FEDERAL AID NO.	PROJECT NO.	SHEET NO.
6		
STATE	DIST.	COUNTY
TEXAS	SAT	
CONT.	SECT.	JOB	HIGHWAY NO.

10/95

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM 14770 | TEXAS SURVEYING FIRM #100288000

NO. REVISION DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-22-2023

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

DRAINAGE DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN BH
SHEET C1.22

FOR PERMIT

TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)

Maximum Wingwall Height Hw	W	X	Y	Z	Variable Reinforcing Bars /1 Size	/1 Spa	Bars /2 Size	/2 Spa	Estimated Quantities per ft. of wing length (2-wings) ③ Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-3"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-3"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-3"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-3"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-3"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING (2-wings)

Bar	Size	No.	Spa
D	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
H	#4	4	–
P	#4	–	1'-0"
R	#5	6	–
V	#6	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	–	1'-0"
Q	#4	1	–
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

He = H + T + C - 0.250'
Lw = (Hw - 0.333') (SL)

For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total Wingwall Area (two wings - SF) = (Hw + 0.333') (Lw)

He = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1/#2" clear cover and #" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432 "Riprap" unless otherwise shown on the plans or directed by the Engineer, reinforce the top of the cast-in-place reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 5'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

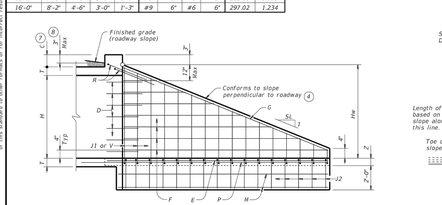
⑧ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 8" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

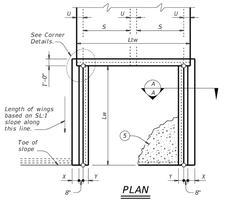
MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

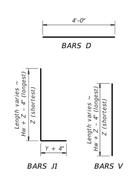
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

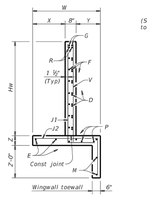


INSIDE ELEVATION

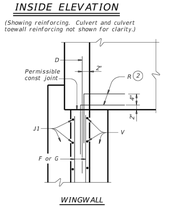


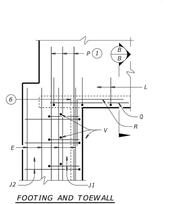
PLAN
(Showing dimensions.)



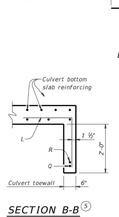


SECTION A-A





CORNER DETAILS



SECTION B-B ⑤

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

SW-O

File: sw-0date-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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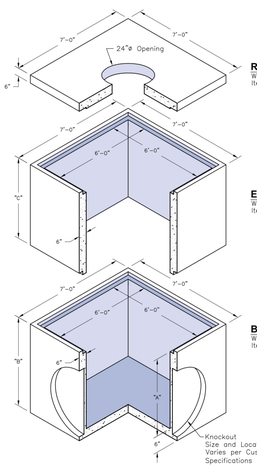
DATE: Nov 22, 2023, 1:33pm User ID: ALeady
File: P:\300\58\05\Design\Civil\SD0T-30058-05.dwg

Oldcastle Precast

Water

6'-0"x6'-0" I.D. Junction Box
Model: JB-660



GENERAL NOTES:
1. Different Height of Extensions and Bodies are Available by Request.
2. Specific Cast Iron Ring and Cover by request, Cast-in or Loose.

Roof Slab
Weight – 3450 Lbs.
Item# – 1208280

SPECIFICATIONS:
1. Concrete has a design strength of 5000 PSI at 28 days.
2. Steel reinforcement: ASTM A-615 Grade 60 or ASTM A-497 Welded wire fabric.
3. Loading: Designed for H20 Loading.
4. C.I. Castings: ASTM A-48, Class 30/35.

Extension
Weight – See Table
Item# – See Table

Extension C	Weight	Item#
24"	1900 Lbs.	1206080
30"	2800 Lbs.	1206040
48"	4800 Lbs.	1206130
54"	8775 Lbs.	1206140
60"	9750 Lbs.	1206230
66"	10,725 Lbs.	1206250
72"	11,700 Lbs.	1206240

Body
Weight – See Table
Item# – See Table

Body A	B	Weight	Item#
36"	42"	9925 Lbs.	1206020
42"	48"	10,900 Lbs.	1206080
48"	54"	11,875 Lbs.	1206100
54"	60"	12,450 Lbs.	1206180
60"	66"	13,425 Lbs.	1206190
66"	72"	14,400 Lbs.	1206220
72"	78"	15,375 Lbs.	1206245

For more information about our products please visit us on the web at: oldcastleprecast.com
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Texas Region
888-9 Oldcastle (888-965-3227)

ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 psi.

REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60, A706 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS

STANDARD STRUCTURAL DESIGN IS BASED ON AASHTO HS 20 WHEEL LOADING

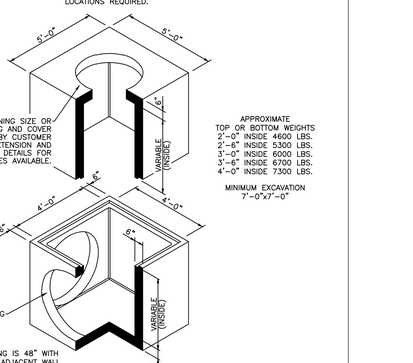
WATER TABLE IS AT 3'-0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN

THE STANDARD DESIGN IS BASED ON THE TOP AT ANY ELEVATION BETWEEN FINISHED GRADE AND 5'-0" BELOW GRADE.

THE STRUCTURE SHALL BE PLACED ON A COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES.

SPECIAL DESIGNS BASED ON OTHER LOADINGS OR DEEPER INSTALLATION DEPTHS ARE AVAILABLE ON REQUEST.

PIPE OPENINGS CAN BE PROVIDED IN THE SIZE AND LOCATIONS REQUIRED.



APPROXIMATE TOP OR BOTTOM WEIGHTS
2'-0" INSIDE 4600 LBS.
2'-6" INSIDE 5300 LBS.
3'-0" INSIDE 6000 LBS.
3'-6" INSIDE 6700 LBS.
4'-0" INSIDE 7300 LBS.

MINIMUM EXCAVATION
7'-0"x7'-0"

Oldcastle Precast
1900 Rilling Road San Antonio, TX 78214
Phone: (210) 923-4523 Fax: (210) 721-0473

44-J-2PC
FILE NAME: 44J2D.dwg
ISSUE DATE: March, 2005
www.oldcastlesanantonio.com

4'-0"x4'-0" 2-PIECE JUNCTION BOX

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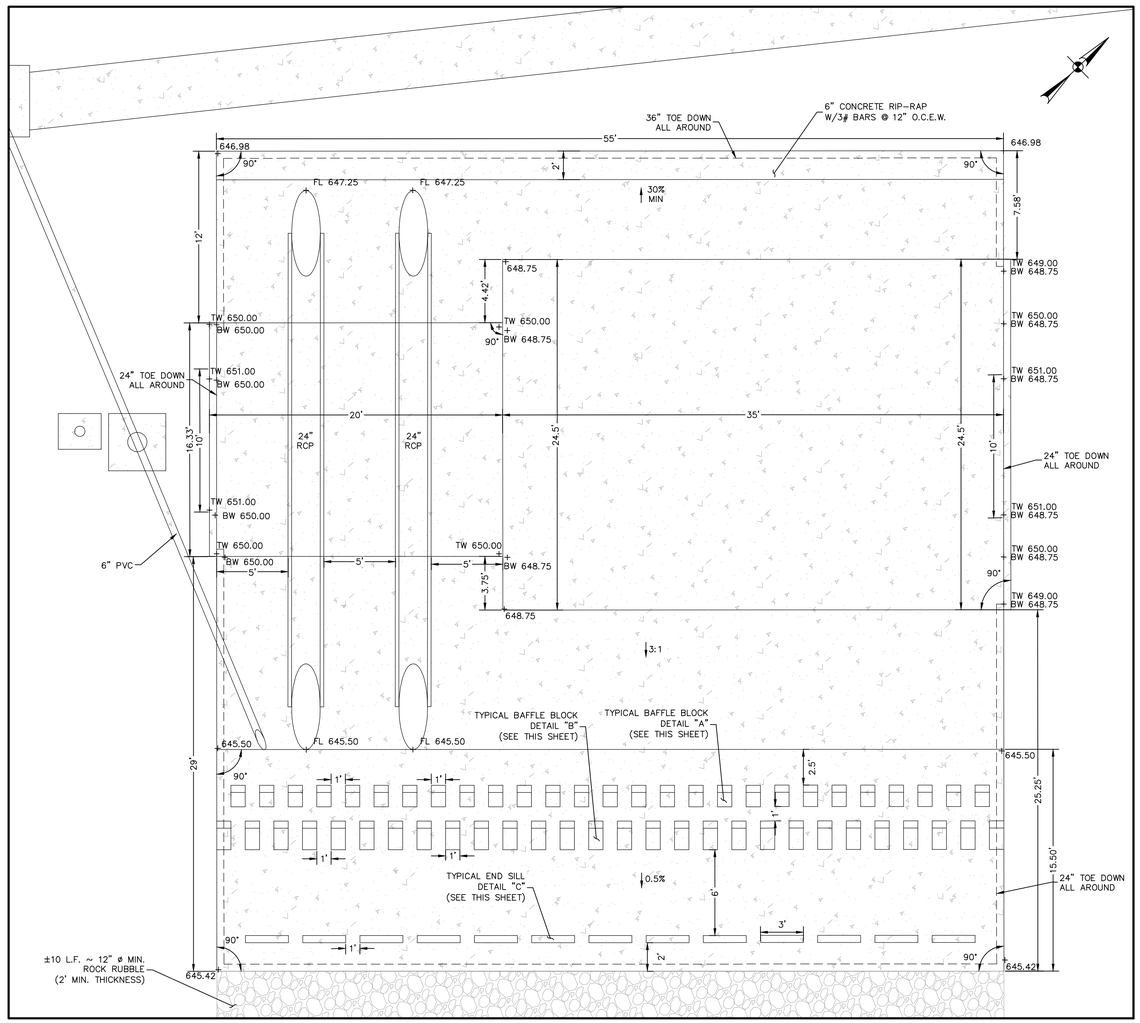
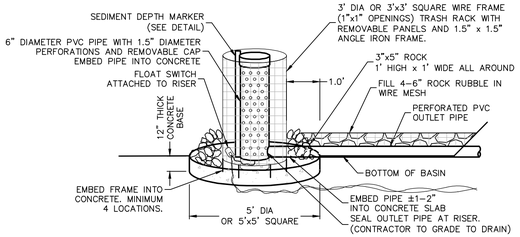


DETAIL "A"
1" = 5'



OUTLET STRUCTURE DETAIL WITH SURFACE OUTFALL PIPE

NOT-TO-SCALE

NOTES

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

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:

a. 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.

b. BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3. 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.

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

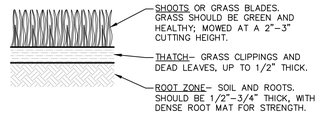
- TOP OF BANK/WALL AT EACH CORNER OF BASIN
- TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
- SPLASH PAD/INLET PIPES
- OVERFLOW WEIRS

5. 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.

6. THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 24.1 HOURS. CONTRACTOR TO SET BUTTERFLY VALVE TO FULLY OPEN TO BE CONTROLLED DDC CONTROLLER.

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

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

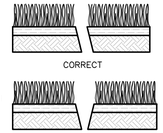


APPEARANCE OF GOOD SOD

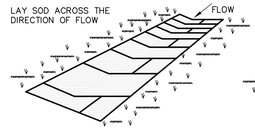
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

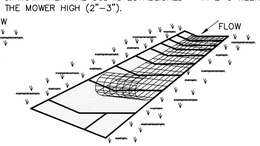
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

3. MOW WHEN THE SOD IS ESTABLISHED – IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

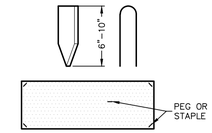


SOD INSTALLATION





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

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

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

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

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

1. 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.

2. 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.

3. 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).

4. 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).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. 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.

7. 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.

8. 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.

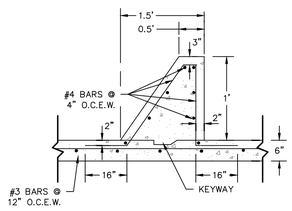
INSPECTION AND MAINTENANCE GUIDELINES

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

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

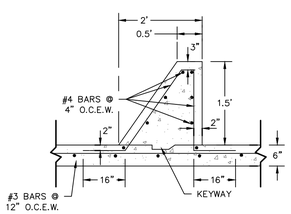
SOD INSTALLATION DETAIL

NOT-TO-SCALE



BAFFLE BLOCK "A" DETAIL SECTION

NOT-TO-SCALE



BAFFLE BLOCK "B" DETAIL SECTION

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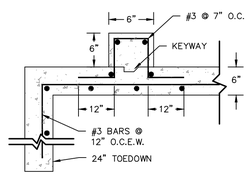
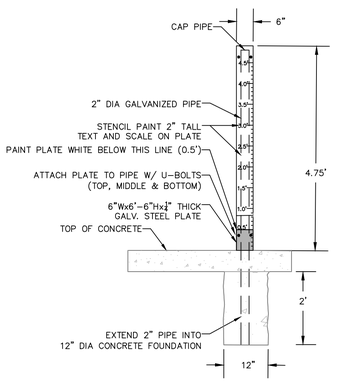


TYPICAL END SILL DETAIL "C" SECTION

NOT-TO-SCALE



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.

NOTES:

1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASINS PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASINS) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASINS SHALL BE REVEGATATED PRIOR TO COMPLETION.

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM I 470 | TEXAS SURVEYING FIRM #100288-00
167 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

BASIN DETAILS

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

FOR PERMIT

Date: Nov 22, 2023, 1:33pm User ID: ALaddy
File: P:\300\58\05\Design\Civil\SDT-30058-05.dwg

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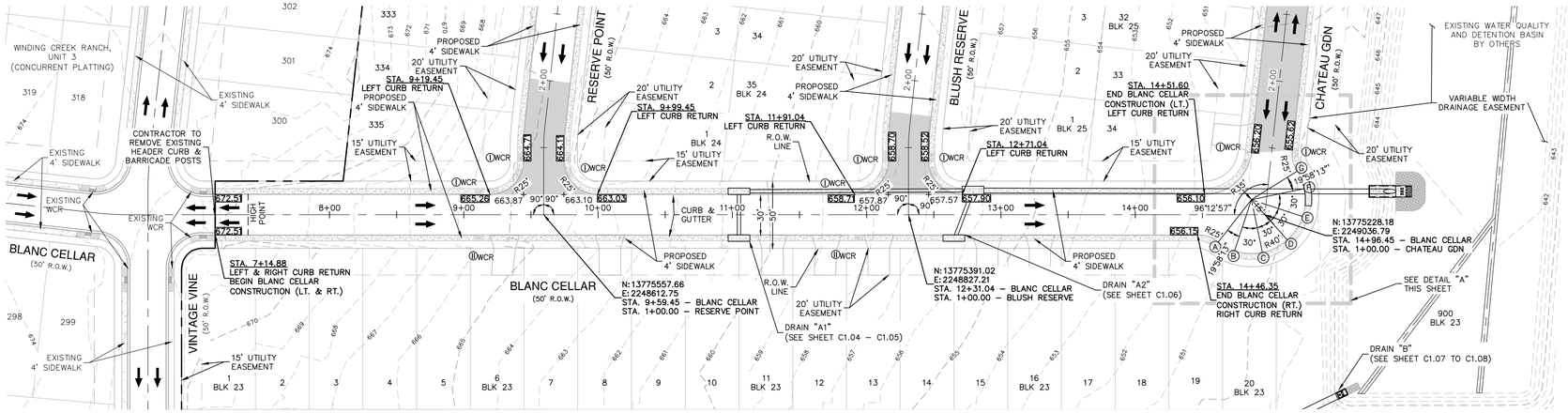

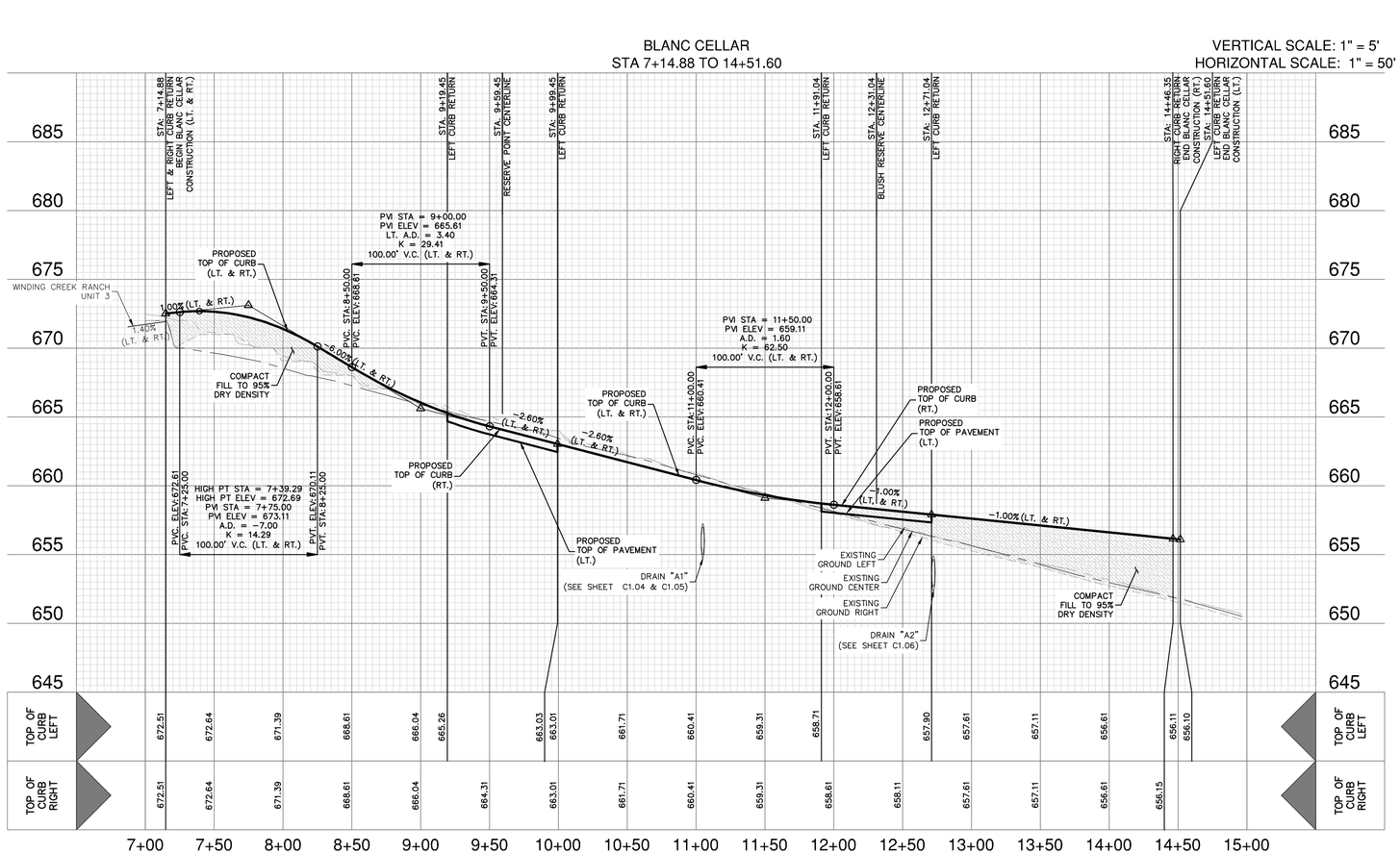

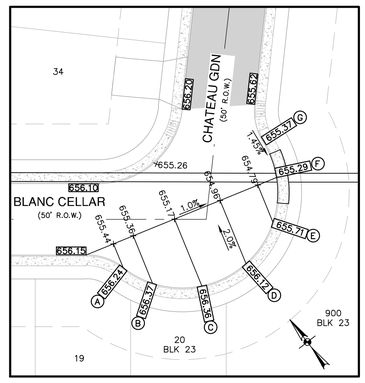

DETAIL "A"

SCALE: 1" = 30'

SCALE: 1"= 50'

0' 50' 100' 150'

STREET LEGEND

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

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 VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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 CITY OF NEW BRAUNFELS CODE, SECTION 118–46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING F-14781 | TEXAS SURVEYING F-NM # 100288000

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: May 20, 2024, 8:57am User ID: jmay
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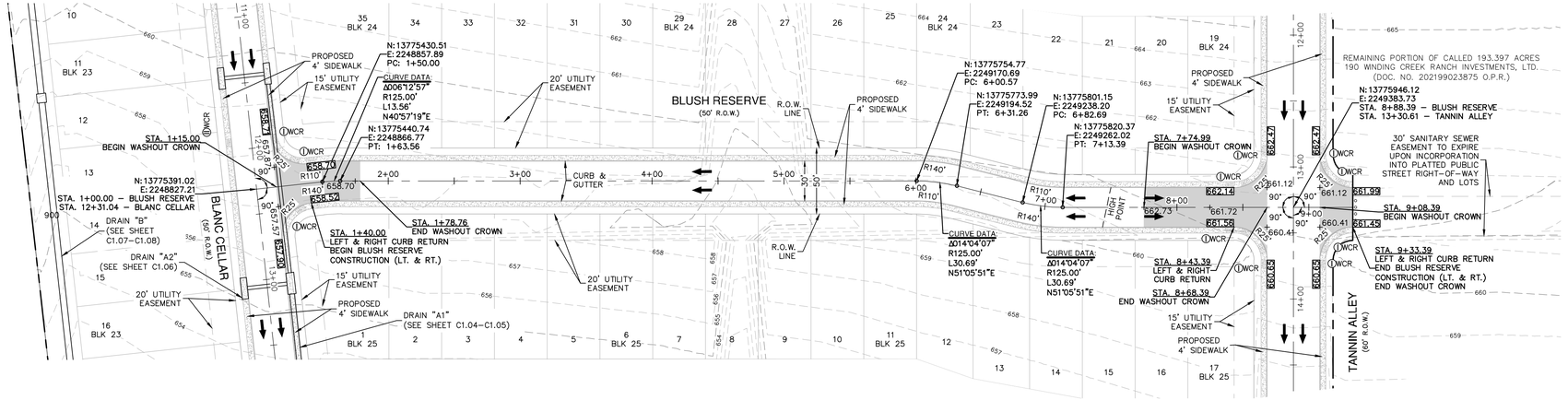


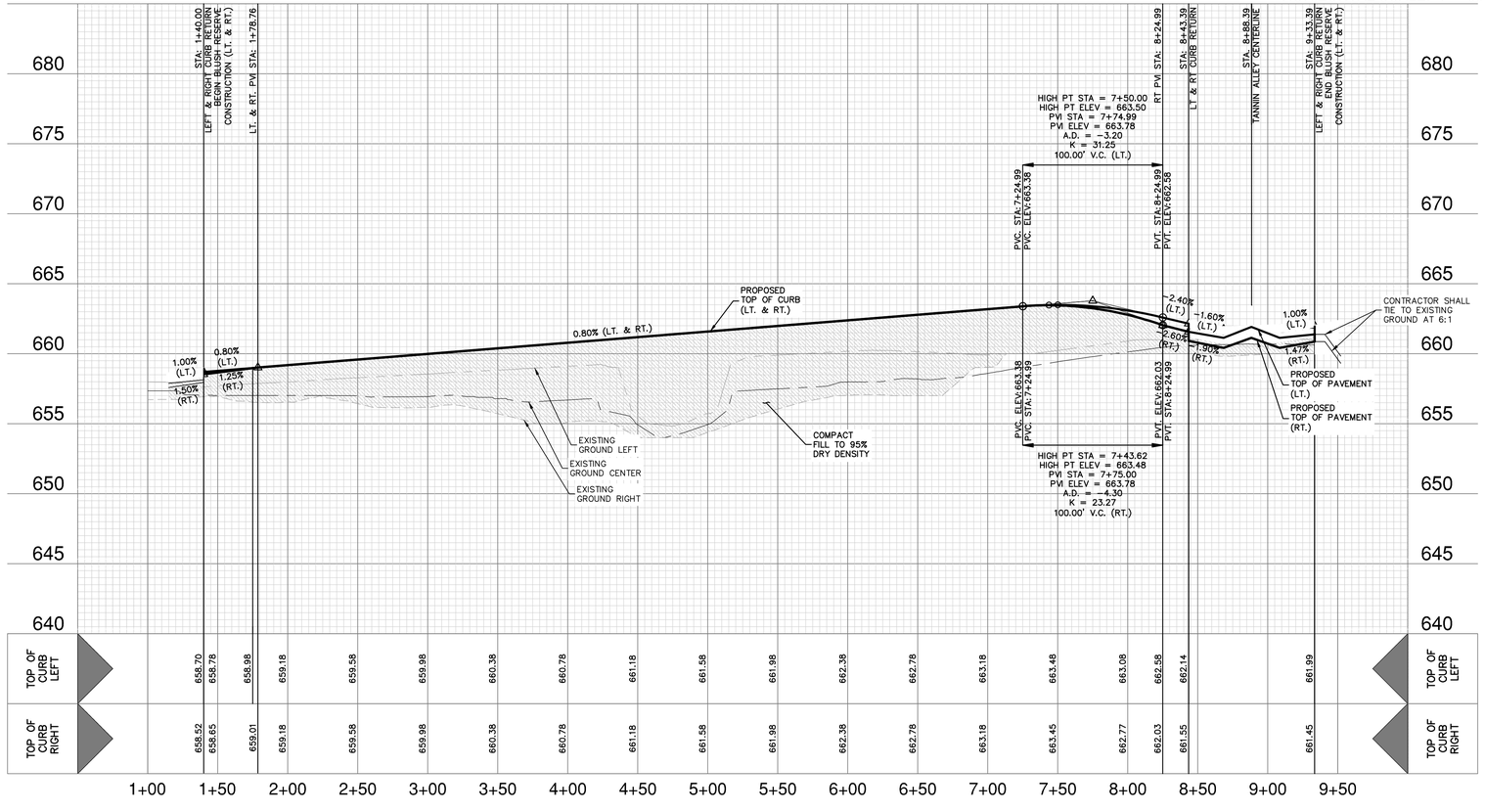
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

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

BLUSH RESERVE
STA 1+40.00 TO 9+33.39

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



STREET NOTES:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM 470 | TEXAS SURVEYING FIRM #100288-00
10172 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Nov 22, 2023, 1:35pm User ID: ALeddy
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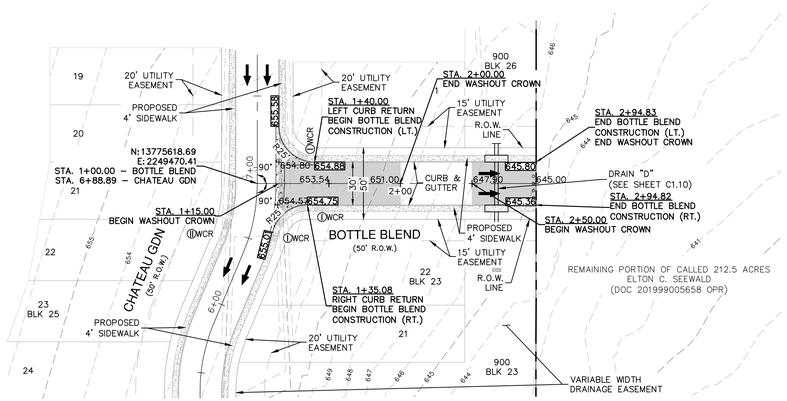
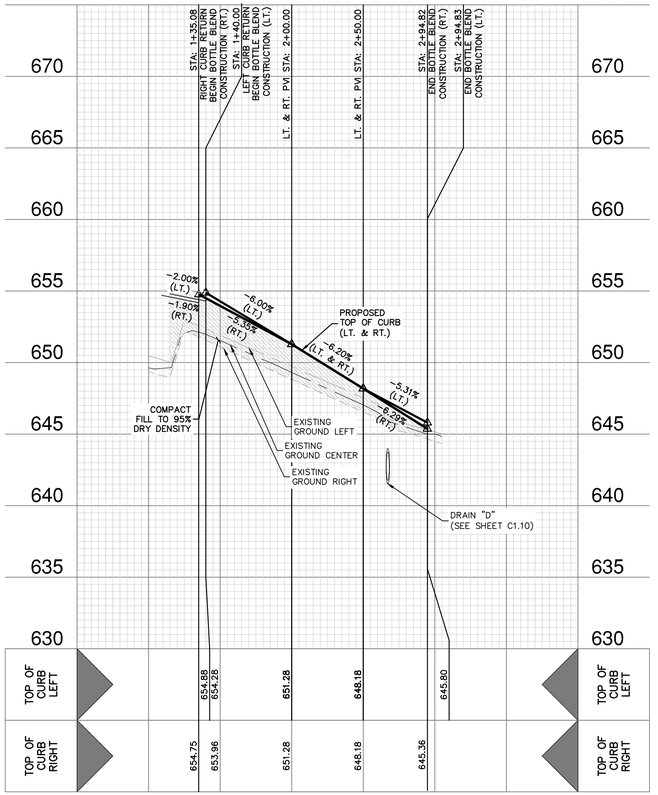
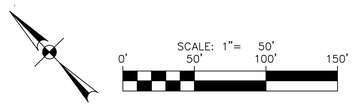


BOTTLE BLEND
STA 1+35.08 TO 2+94.83

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





STREET LEGEND

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

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 VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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4. PER CITY OF NEW BRAUNFELS CODE, SECTION 118–46, LOCAL STREETS WERE DESIGNED FOR 20 MPH.

FOR PERMIT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00
10172 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

BOTTLE BLEND - PLAN & PROFILE
STA 1+35.08 TO 2+94.83

PLAT NO. ____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.02

Date: Nov 22, 2023, 1:36pm User ID: ALeddy
File: P:\3001\58\05\Design\Civil\ST-30058-05-BOTTLE BLEND.dwg

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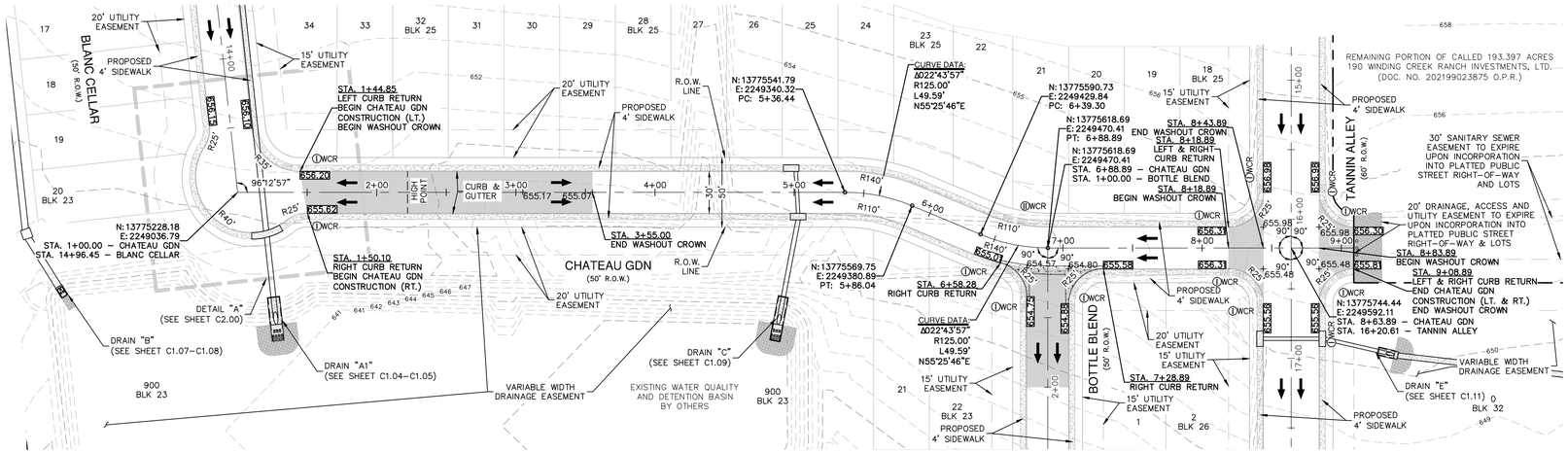

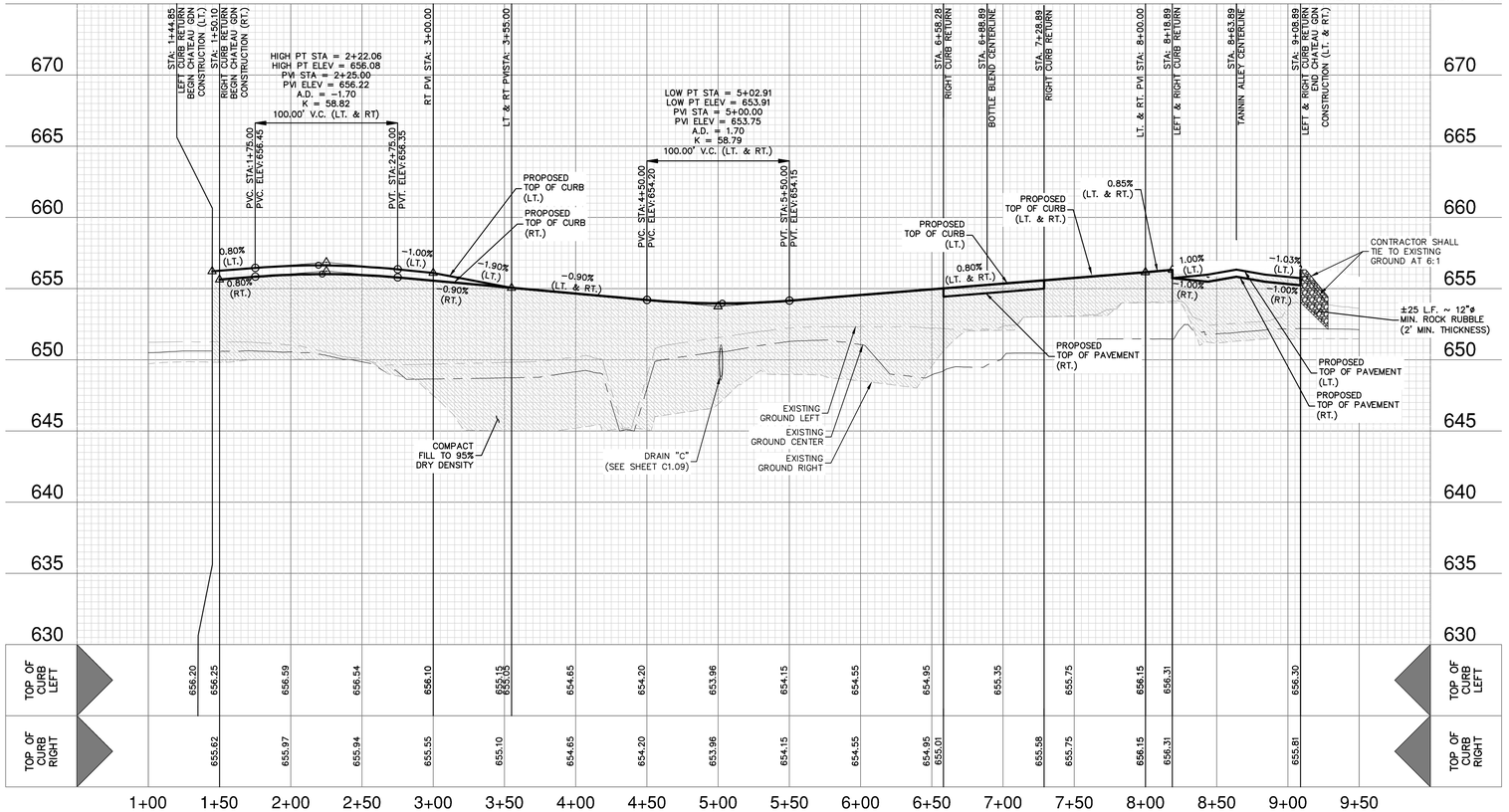

STREET LEGEND

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

STREET NOTES:

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

NO.	REVISION	DATE

STATE OF TEXAS — JOCELYN PEREZ — 98367 — LICENSED PROFESSIONAL ENGINEER — 11-22-2023

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

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

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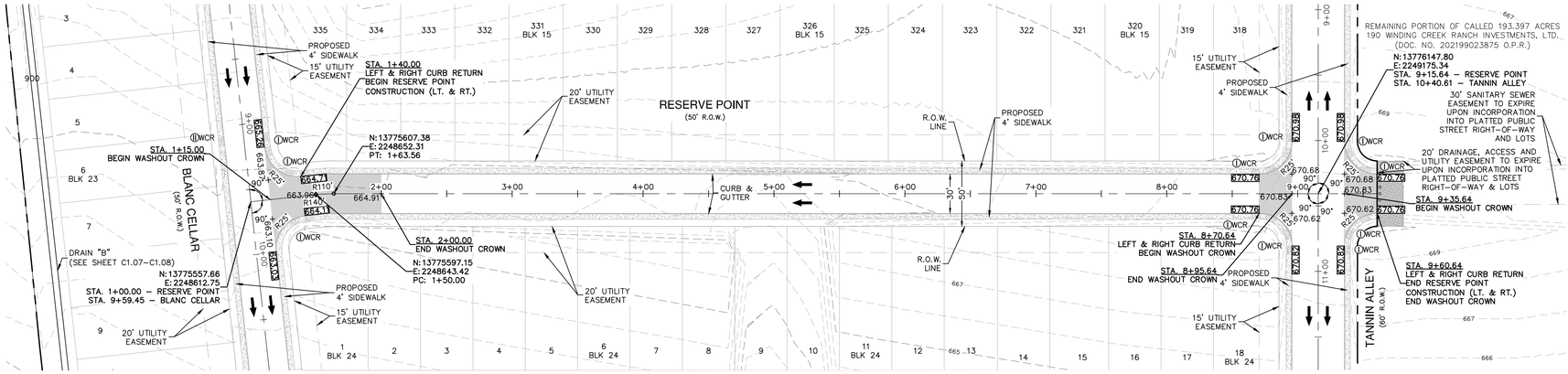
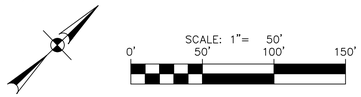


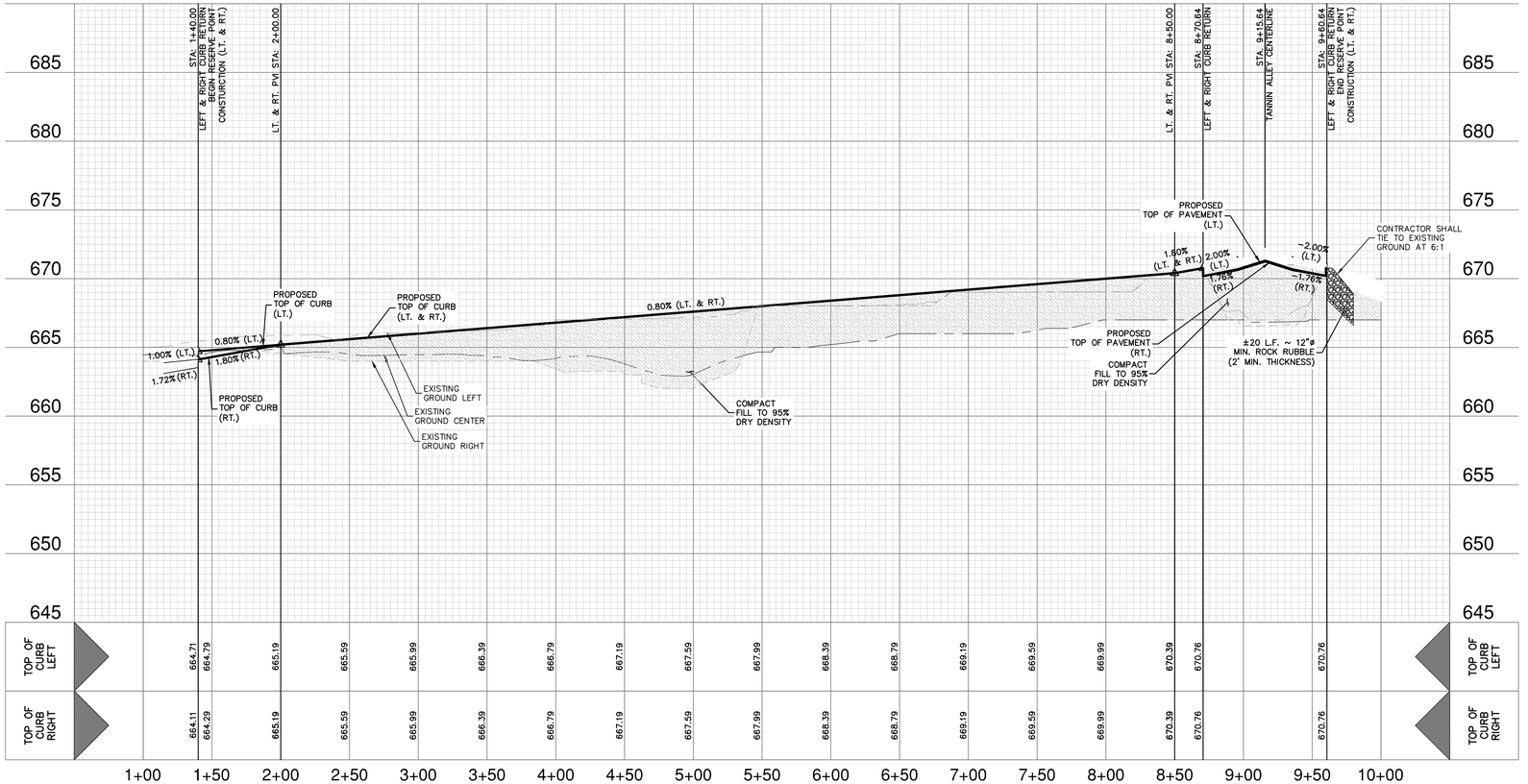


STREET LEGEND

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

RESERVE POINT
STA 1+40.00 TO 9+60.64

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



STREET NOTES:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

RESERVE POINT - PLAN & PROFILE
STA 1+40.00 TO 9+60.64

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

FOR PERMIT

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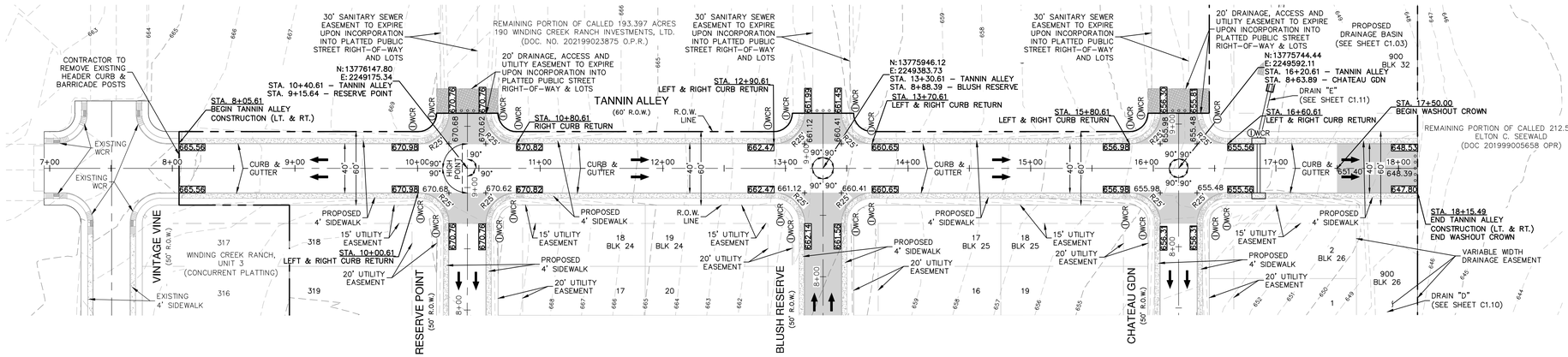
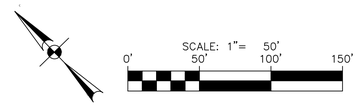
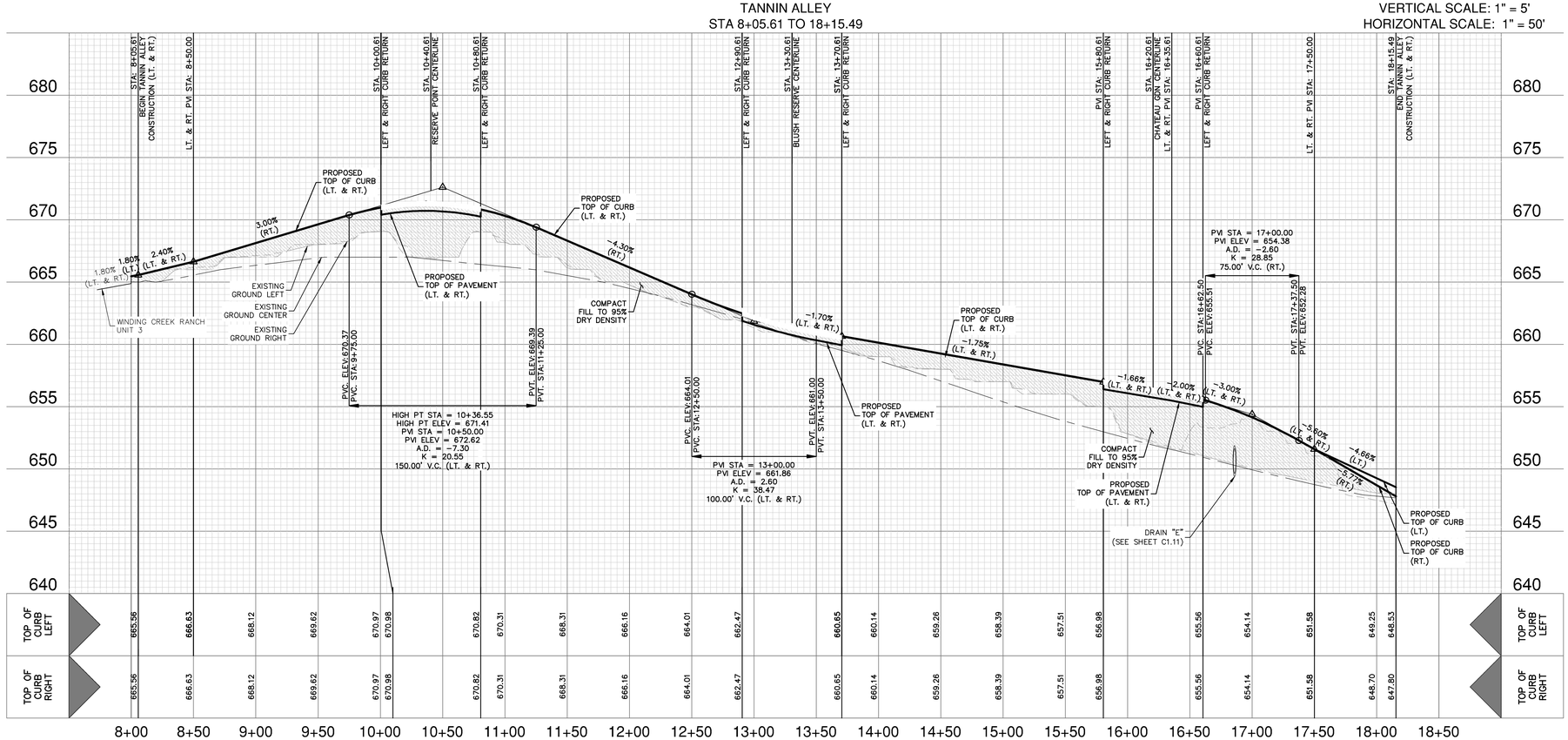




STREET LEGEND

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



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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM 470 | TEXAS SURVEYING FIRM #100288-00
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

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

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

Date: Nov 22, 2023, 1:38pm User ID: ALeddy
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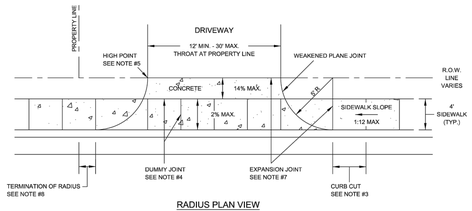
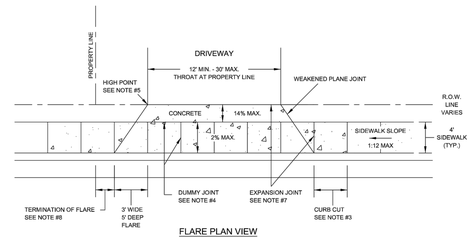
FOR PERMIT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



RADIUS PLAN VIEW

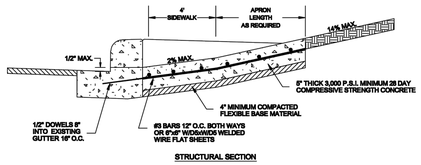


FLARE PLAN VIEW

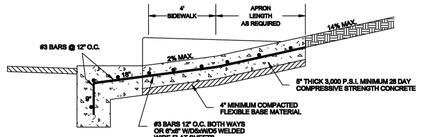
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(ONE OR TWO FAMILY RESIDENTIAL)



STRUCTURAL SECTION



NO EXISTING CURB STRUCTURAL SECTION

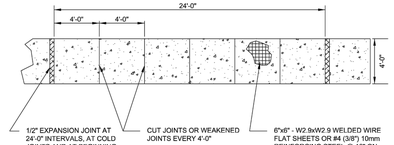
NOTES:

1. **WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.**
2. **PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED PROVIDED CROSS SLOPE OF SIDEWALK IS NO GREATER THAN 2%.**
3. **CURB CUT LENGTH NO GREATER THAN AS REQUIRED TO MATCH SLOPE OF ADJACENT SIDEWALK.**
4. **DUMMY JOINTS TO BE PROVIDED AT MINIMUM 4-FT. INTERVALS PERPENDICULAR TO THE CURB LINE WITHIN THE SIDEWALK AREA AND PARALLEL TO THE SIDEWALK AREA.**
5. **PROVIDE A MINIMUM 7" HIGH POINT. HIGH POINT HEIGHT SHALL BE MEASURED FROM THE GUTTER FLOW LINE TO THE DRIVEWAY APRON. NOTE HIGH POINT MAY OCCUR OUTSIDE OF ROW.**
6. **DRIVEWAY THROAT TRANSITION MAY OCCUR OUTSIDE OF ROW.**
7. **PROVIDE EXPANSION JOINTS AT ALL SIDEWALK AND DRIVEWAY THROAT JOINTS. EXPANSION JOINTS SHALL BE PLACED USING 1/2" ASPHALTIC MATERIAL WITH 1/2" DOWELS 18" O.C.**
8. **THE TANGENT POINT OF THE DRIVEWAY CURB RETURN AT THE PUBLIC ROADWAY LINE OR FLARE SHALL BE A MINIMUM DISTANCE OF 1' OFF THE PROPERTY PROJECTED PERPENDICULAR TO THE STREET CENTERLINE, EXCEPT SINGLE FAMILY OR ZERO LOT LINE LOTS. ON SINGLE FAMILY ZERO LOT LINE LOTS WHERE THE DRIVE IS ON THE ZERO LOT LINE, THE TANGENT POINT OR FLARE SHALL BE NO GREATER THAN 3' BEYOND THE ADJOINING PROPERTY LINE PROJECTED PERPENDICULAR TO THE STREET CENTERLINE.**
9. **ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.**

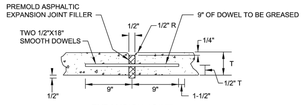
DATE APPROVED: 7/08	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (Residential - Radial/Flares)		
P:\CURRENT NEW BRAUNFELS DETAILS\2009\		

City of New Braunfels — ENGINEERING DEPARTMENT

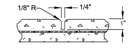
SIDEWALK
(RESIDENTIAL)



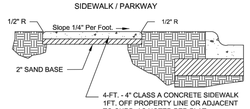
PLAN VIEW



EXPANSION JOINT



WEAKENED PLANE JOINT



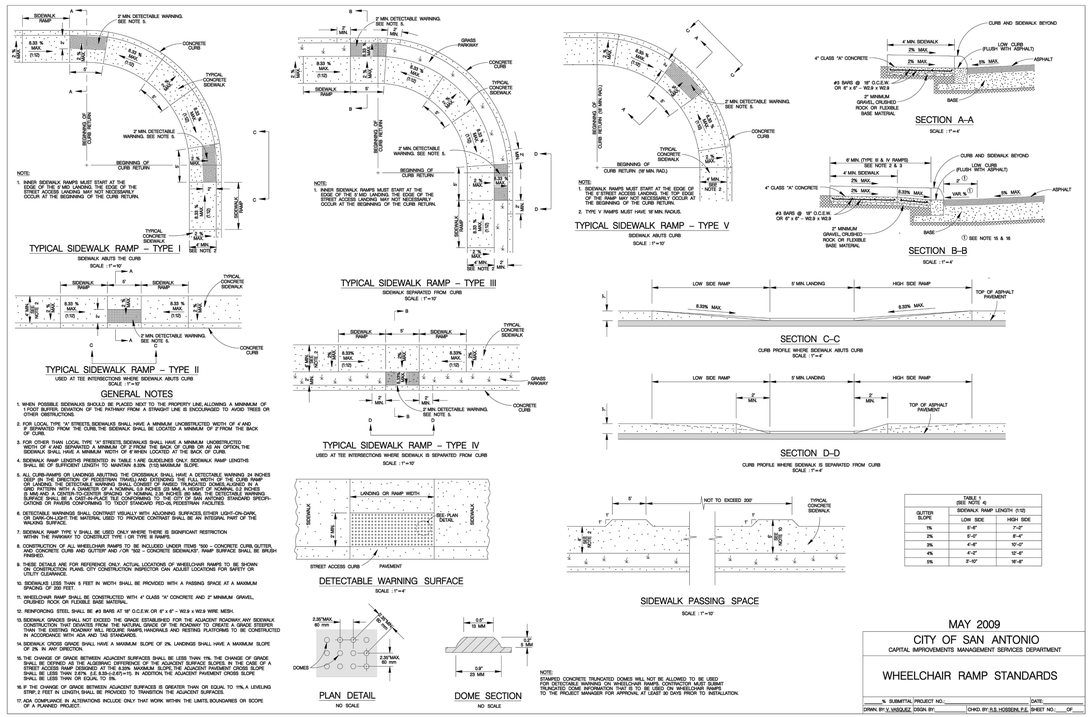
TYPICAL SECTION

NOTES:

1. EXPANSION JOINTS ARE TO BE USED BETWEEN CONCRETE DRIVEWAY AND SIDEWALK.
2. SCORED JOINTS DENOTE SIDEWALK ACROSS THE DRIVEWAY AND ARE TO BE PLACED AT LEAST 1/3 rd. THROUGH THE SLAB THICKNESS.
3. ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.

DATE APPROVED: 07/2008	DWG. NO: ST-016	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: SIDEWALK (RESIDENTIAL)		

City of New Braunfels — ENGINEERING DEPARTMENT



MAY 2009

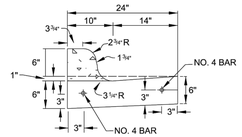
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

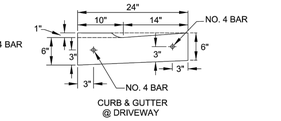
WHEELCHAIR RAMP STANDARDS

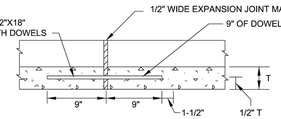
4. SUBMITTAL PROJECT NO.:		DATE:
DRAWN BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: S.S. HOSSEINI, P.E.

SHEET NO.: ___ OF ___

CURB AND GUTTER







LONGITUDINAL SECTION THRU CURB AND GUTTER
SHOWING TYPICAL EXPANSION JOINT DETAILS.
REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS.
STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

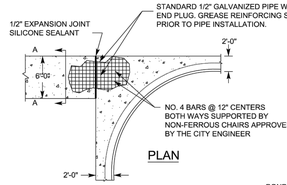
NOTES:

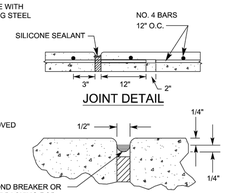
1. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 18".
2. CURB AND GUTTER SHALL HAVE FORMED TOOLED OR SAWED CONTRACTION JOINTS AT ± 10'. THE DEPTH OF THESE JOINTS SHALL BE SUFFICIENT TO ENSURE CRACKING AT THE JOINTS.
3. CURB OR CURB AND GUTTER SHALL HAVE EXPANSION JOINTS AT POINTS OF CURVATURE, AT INTERVALS NO GREATER THAN 100' AND AT ALL ADJACENT STRUCTURES.
4. UNLESS OTHERWISE SHOWN, TRANSITIONS BETWEEN CURBS OR CURBS AND GUTTER OF DIFFERING CROSS SECTION SHALL BE ACCOMPLISHED OVER A 10' LENGTH OR AS APPROVED BY THE CITY ENGINEER.
5. ALL CONCRETE TO BE CLASS "A" 3000 PSI CONCRETE.
6. ALL EXPOSED CONCRETE SURFACES TO BE BRUSHED SMOOTH AND UNIFORM.

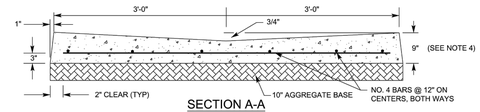
DATE APPROVED: 07/2008	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CURB & GUTTER		

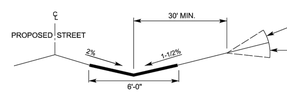
City of New Braunfels — ENGINEERING DEPARTMENT

CROSS GUTTER









TYPICAL PROFILE AT LOCAL RESIDENTIAL STREET INTERSECTION

NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI.
2. FINISHED ASPHALT CONCRETE SURFACE TO BE FLUSH WITH CROSS GUTTER LIP.
3. CONSTRUCTION OF CROSS GUTTER IS NOT ALLOWED ACROSS MAJOR COLLECTOR OR ARTERIAL STREETS.
4. ADJACENT SPANDREL SHALL BE 9" THICK CLASS "A" 3,000 PSI CONCRETE.

DATE APPROVED: 07/2008	DWG. NO: ST-020	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CROSS GUTTER		

City of New Braunfels — ENGINEERING DEPARTMENT

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
2-22-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

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

PLAT NO. ___
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C2.10

FOR PERMIT

Date: Feb 22, 2024, 9:15am User ID: ALeady
File: P:\300\58\05\Design\Civil\STD7-30058-05.dwg

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NOTES:

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

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

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

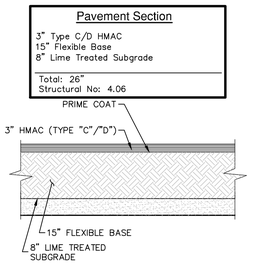
4. SUBGRADE SOILS SHALL BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO LIME TREATMENT.

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

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

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

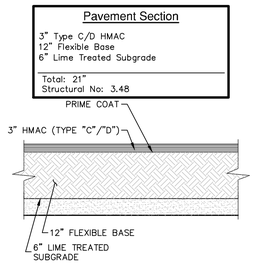
TREATED SUBGRADE SOILS SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AT A MOISTURE CONTENT WITHIN THE RANGE OF OPTIMUM MOISTURE CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY TEX-113-E."



RESIDENTIAL COLLECTOR

NOT TO SCALE

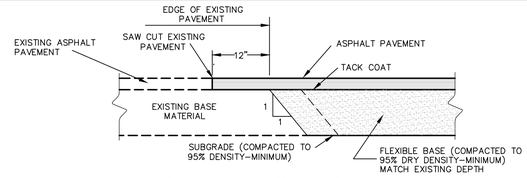
TANNIN ALLEY: STA 8+05.61 TO 18+15.49



LOCAL A

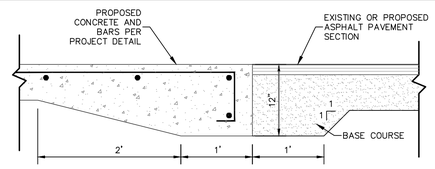
NOT TO SCALE

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



PAVEMENT JUNCTURE DETAIL

NOT TO SCALE



CONCRETE/ASPHALT JUNCTURE DETAIL

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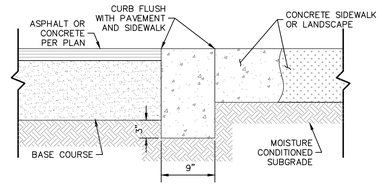
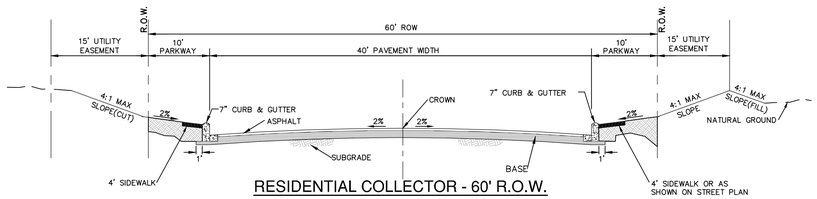


HEADER CURB DETAIL

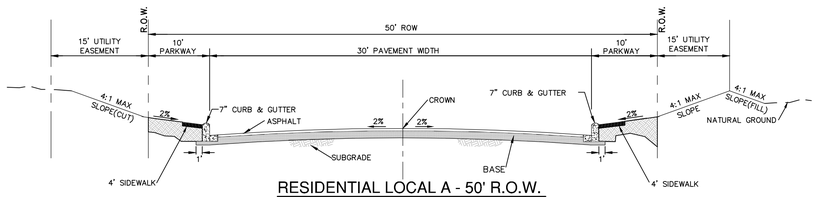
NOT-TO-SCALE



RESIDENTIAL COLLECTOR - 60' R.O.W.
TYPICAL STREET SECTION

NOT-TO-SCALE

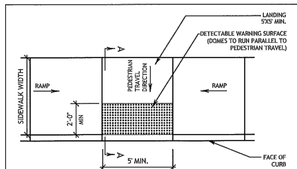
TANNIN ALLEY: STA 8+05.61 TO 18+15.49



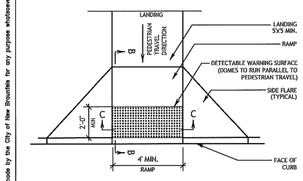
RESIDENTIAL LOCAL A - 50' R.O.W.
TYPICAL STREET SECTION

NOT-TO-SCALE

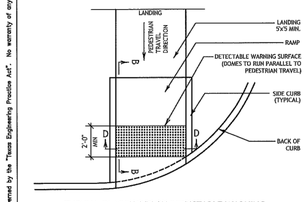
BLANC CELLAR: STA 7+14.88 TO 14+51.60
BLUSH RESERVE: STA 1+40.00 TO 9+33.39
BOTTLE BLEND: STA 1+35.08 TO 2+94.83
CHATEAU GDN: STA 1+44.85 TO 9+08.89
RESERVE POINT: STA 1+40.00 TO 9+60.64



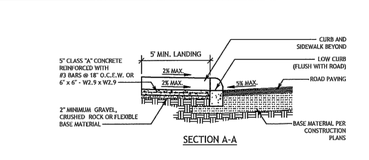
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



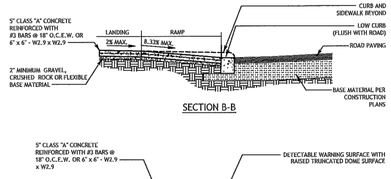
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



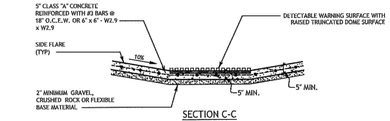
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



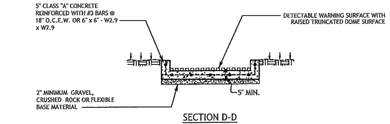
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

CURB RAMP NOTES

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMPS ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE WALK WAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS). CITY ENGINEER OR BUILDING OFFICIAL MAY ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
3. THE MINIMUM STANDARD SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 118-49 OF THE NEW BRAUNFELS CODE OF ORDINANCES.
4. ALL LANDINGS WHERE REQUIRED SHALL BE 5'X 5' (60"X60") MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
5. RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1V:12H). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
6. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1V:10H) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED IN-LIEU OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
8. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' (48"X48") WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
9. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
10. EXISTING FEATURES THAT COMPLY WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
11. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
12. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PRE-MOLD OR BOARD JOINT OF 1/2" UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
13. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
16. ADA RAMP SHALL BE CONSTRUCTED WITH 5" CLASS "A" CONCRETE WITH 2" MINIMUM GRAVEL,CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" - W2.9 X W2.9 WIRE MESH.
17. THE EXTENTS OF ADA COMPLIANCE IN ALTERATIONS SHALL BE WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
6. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS-4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

City of New Braunfels

ENGINEERING DIVISION
550 LANDA STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3600

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

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
2-22-2024

PAPE-DAWSON ENGINEERS
TBPE FIRM #470 | TBPLS FIRM #10028800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

TYPICAL STREET DETAILS

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

FOR PERMIT

Date: Feb 22, 2024, 9:16am User ID: ALeady
File: P:\30\58\05\Design\Civil\STDT-30058-05.dwg

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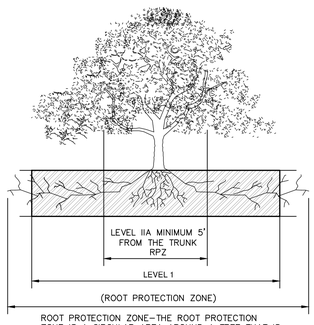
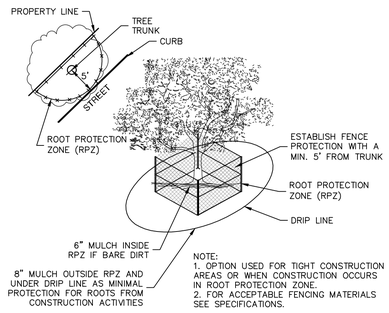


ROOT PROTECTION ZONE–THE ROOT PROTECTION ZONE IS A CIRCULAR AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE. EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.

ELEVATION
NOT TO SCALE



NOTE:
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

LEVEL II A FENCE PROTECTION
NOT TO SCALE

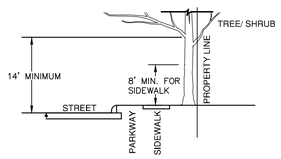


FIGURE NO. 2

A MINIMUM BRANCH CLEARANCE OF 14 FEET ABOVE STREET ELEVATION MUST BE MAINTAINED FROM THE PROPERTY LINE TO THE CURB LINE AS PRESCRIBED BY PROJECT MANAGER.

BRANCH CLEARANCE DETAIL
NOT TO SCALE

NOTE:
WRAP TREE TRUCK WITH 2"X4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

LEVEL II B FENCE PROTECTION
NOT TO SCALE

TREE PROTECTION ZONE
NOT TO SCALE

NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY, WILL CONFORM TO THE DRIP LINE AND IS LIMITED TO PROJECT BOUNDARY.

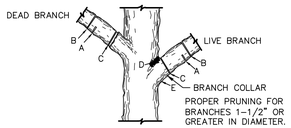
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECS.

3. CHAIN LINK FENCE SHALL BE ERECTED PRIOR TO ANY CLEARING, GRUBBING OR SITE WORK OF ANY KIND. FENCING SHALL STAY ERECTED UNTIL FINAL LANDSCAPE OPERATIONS COMMENCE.

4. ANY PRUNING TO PROVIDE CLEARANCE TO PRESERVED TREES MUST BE APPROVED BY A CERTIFIED ARBORIST.

5. DO NOT REMOVE ANY TREES OVER 1" CALIPER WITHIN THE TREE PROTECTION FENCING OR OUTSIDE THE LIMITS OF CONSTRUCTION.

6. TREE ROOT CUTS SHALL BE MECHANICALLY CUT AT THE DIRECTION OF A CERTIFIED ARBORIST. CUTS SHALL BE CLEAN CUTS, WITHOUT PULLING OR TEARING.



PROPER PRUNING FOR BRANCHES 1–1/2" OR GREATER IN DIAMETER.

NOTE:
DO NOT CUT FROM D TO E.

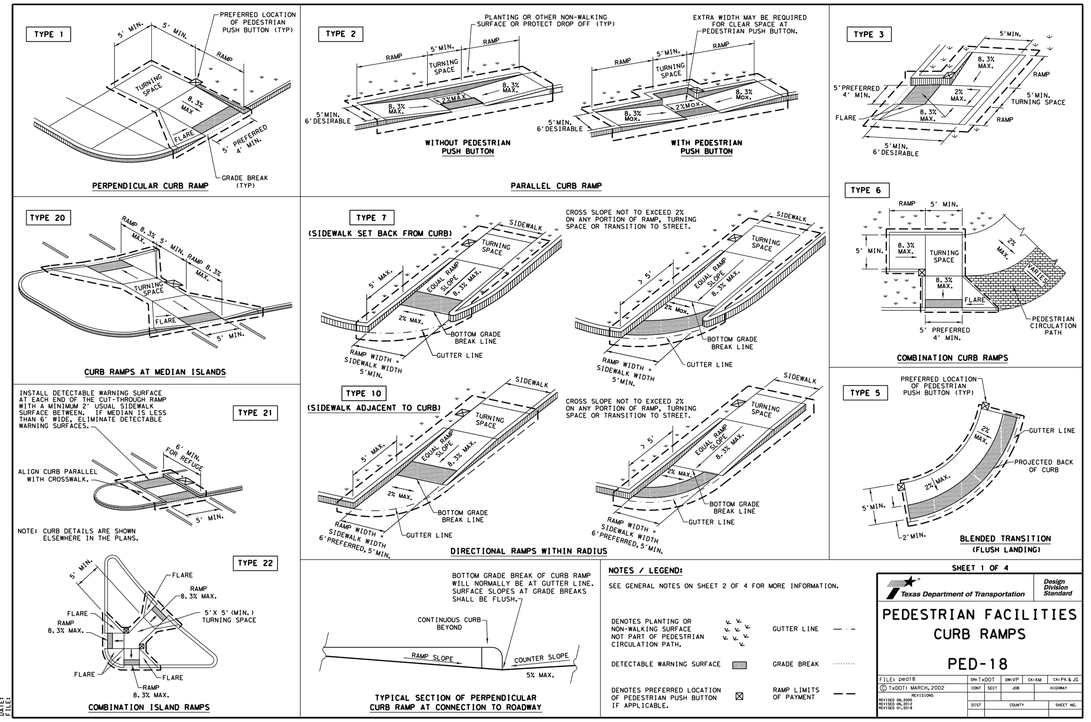
A. FIRST CUT – TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
B. SECOND CUT – TO REDUCE THE WEIGHT OF BRANCH.
C. FINAL CUT – ALLOW FOR HEALING COLLAR BUT NO STUBS

FOR OAKS ONLY:
PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

BRANCH PRUNING
NOT TO SCALE

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS RESULTING FROM THE USE OF THIS STANDARD OR FOR ANY ENGINEERING PERFORMED OR DATA PREPARED BY OTHERS FROM WHICH THIS STANDARD MAY BE ADAPTED.

DATED:
FILE:



NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.
DETECTABLE WARNING SURFACE
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.
GUTTER LINE
GRADE BREAK
RAMP LIMITS OF PAYMENT

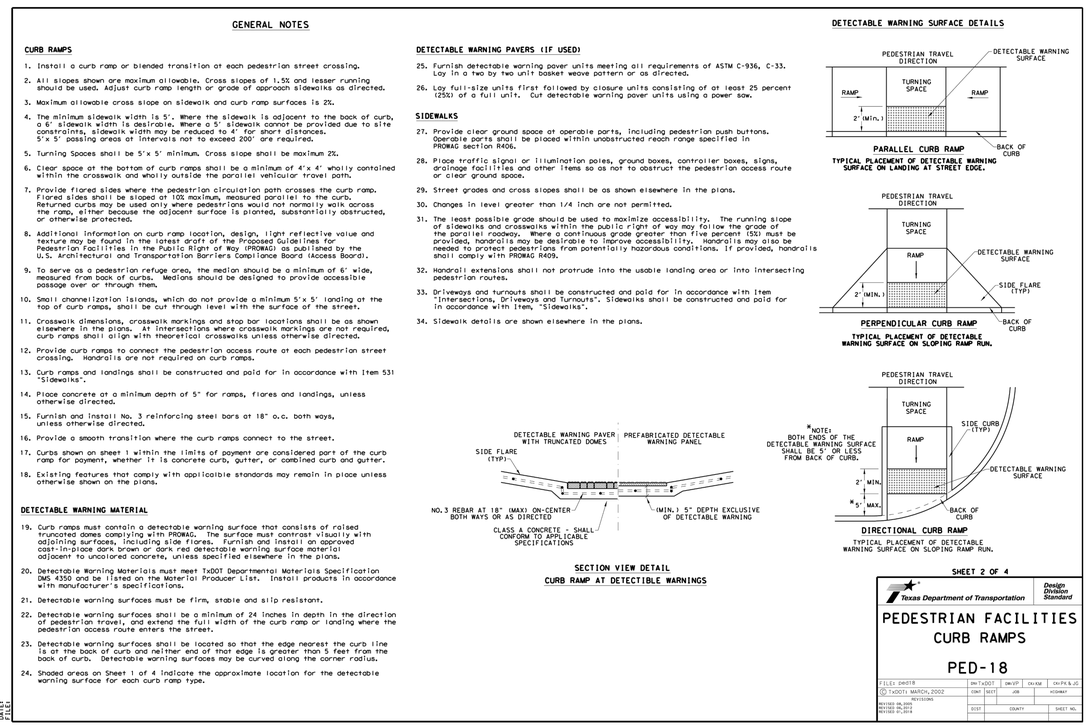
SHEET 1 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	DW: AM	CK: PK & JD
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11/1/02 DN, CK, DW, CK	DIST	COUNTY		SHEET NO.
11/15/23 DN, CK, DW, CK				
11/15/23 VP, JD, PK				



SHEET 2 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	CK: VP	DW: AM	CK: PK & JD
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11/1/02 DN, CK, DW, CK	DIST	COUNTY		SHEET NO.
11/15/23 DN, CK, DW, CK				
11/15/23 VP, JD, PK				

NO. REVISION — DATE

STATE OF TEXAS — JOCELYN PEREZ — 98367 — LICENSED PROFESSIONAL ENGINEER — 11-22-2023

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

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

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

FOR PERMIT

Date: Nov 22, 2023, 1:39pm User ID: AlexG
File: P:\3001\58\05\Design\Civil\STD-30058-05.dwg

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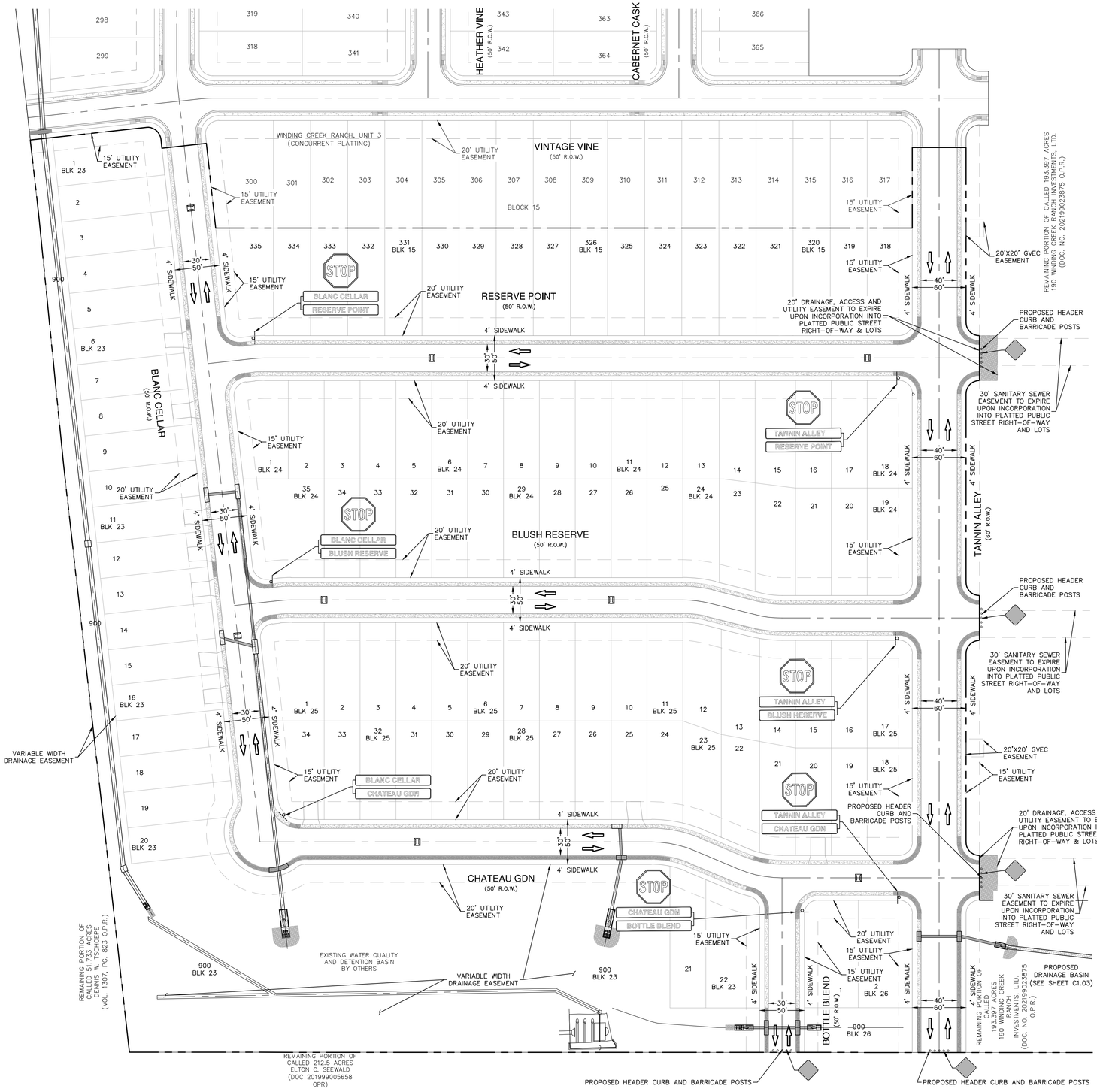

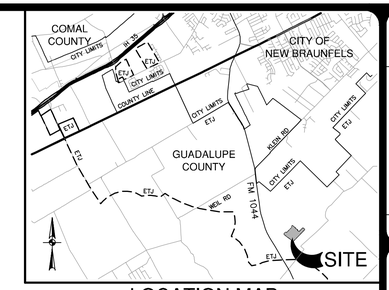

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 60'
0' 60' 120' 180'

LEGEND

- UNIT BOUNDARY
- CURB INLET
- TRAFFIC FLOW ARROW
- SIDEWALK (HOMEBUILDER RESPONSIBILITY)
- SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)
- Street Name — STANDARD COMAL COUNTY NAME SIGN 9XSTD (NOTE: STREETS MUST SHOW BLOCK NUMBERS)
- STOP — R1-1 30"X30"
- W11-2 30"X30"
- OM4-3 END OF ROAD MARKER
- TYPE II BLUE RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)

INSTALLATION

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REGULATORY AND WARNING SIGNS, STREET 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.

MOUNTING

THE WEDGE ANCHOR STEEL SYSTEM AND THIN-WALLED TUBING POST SHALL BE USED FOR SIGNS WITH UP TO 10 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) TRAFFIC STANDARDS SMD (GEN) – 08 AND SMD (TWT) – 08.

THE TRIANGULAR SLIP BASE SYSTEM AND 10 BWG TUBING POST SHALL BE USED FOR SIGNS THAT HAVE 10 TO 16 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS SMD (GEN) – 08 AND SMD (SLIP-1 – 3) – 08.

OBJECT MARKERS MATERIALS AND INSTALLATION SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS D & OM (1 – 5) – 10.

MATERIALS

SIGN MATERIALS INCLUDING ALUMINUM SIGN BLANKS AND SIGN FACE MATERIALS SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS TSR (1 – 5) – 08 AND DEPARTMENTAL MATERIAL SPECIFICATIONS DMS-7110 AND DMS-8300.

1. THE CITY OF NEW BRAUNFELS WILL INSPECT ALL SIGNS AT FINAL INSPECTION.

SIGNAGE NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, UN-DEPRECIATED STOCK. ALL EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE ON THE PLANS.
10. 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).
11. 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.
12. 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.
13. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AS PER TXDOT ITEM NO. 666.

SIDEWALK NOTES:

1. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION ALONG:
   a. BLANC CELLAR
   b. BLUSH RESERVE
   c. BOTTLE BLEND
   d. CHATEAU GDN
   e. RESERVE POINT
   f. TANNIN ALLEY
2. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
   a. CHATEAU GDN– LOT 900 BLOCK 23.
   b. BOTTLE BLEND– LOT 900 BLOCK 26 AND LOT 900 BLOCK 23.
   c. TANNIN ALLEY– LOT 900 BLOCK 26 AND NORTHEAST SIDE OF NON-DWELLING.
   d. VINTAGE VINE– LOT 900 BLOCK 23.

DRIVEWAY NOTE:

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
6-26-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM 470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

OVERALL SIGNAGE PLAN

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

FOR PERMIT

Date: Jun 27, 2024, 8:07am User ID: jmay
File: P:\300\58\05\Design\Civil\SGOA-30058-05.dwg

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Phenolic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
SB0 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

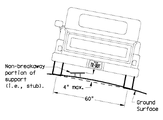
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
IEXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
EW = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EAAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

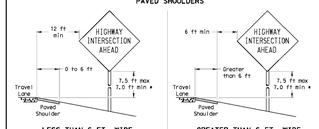
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is driven away, should not project more than 4 inches above a 60 inch chord (i.e., typical space between wheel pads).

SIGN LOCATION

PAVED SHOULDERS



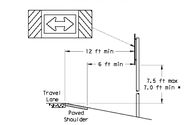
LESS THAN 6 FT. WIDE

When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.

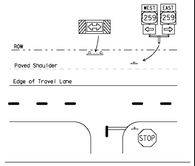
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

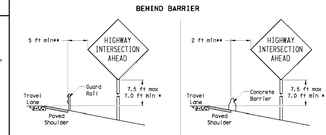
T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

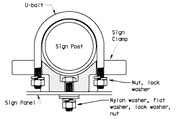
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

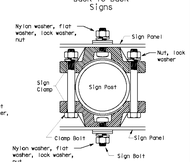
The website address is:
https://www.txdot.gov/publications/traffic.html

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



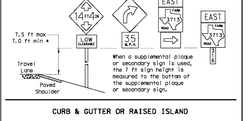
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

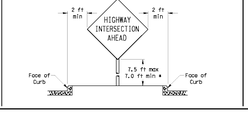
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

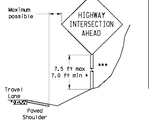


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)

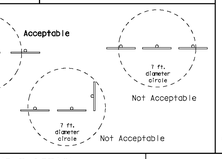


Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

DISPLACEMENT OF SIGN POSTS



FRICTION CAP DETAIL

Friction caps may be manufactured from hot rolled or cold rolled sheet steels. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp crosses or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-DM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-DM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-DM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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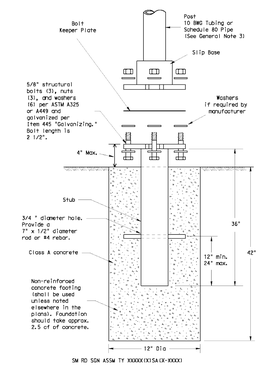
26A

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(1)XX(A-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138".
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210, for pregalvanized tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the followings:
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

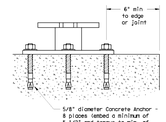
Foundation

1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the traveiway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the traveiways. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(1)X8 (X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per SMD-8100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. The stud shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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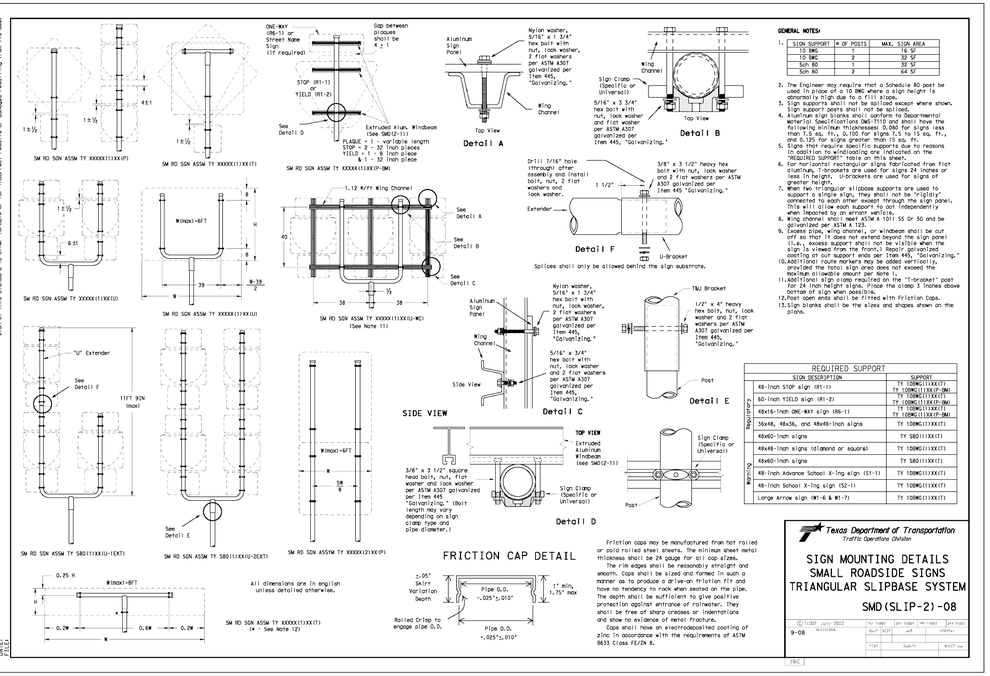
26B



GENERAL NOTES:

1. | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
   |---|---|---|
   | 10 BWG | 1 | 16 SF |
   | 10 BWG | 2 | 32 SF |
   | Sch 80 | 1 | 32 SF |
   | Sch 80 | 2 | 64 SF |
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to those listed are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when imposed by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable sign area per Note 1.
11. Additional sign clamps required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with friction caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(FP-DM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(FP-DM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(FP-DM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
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	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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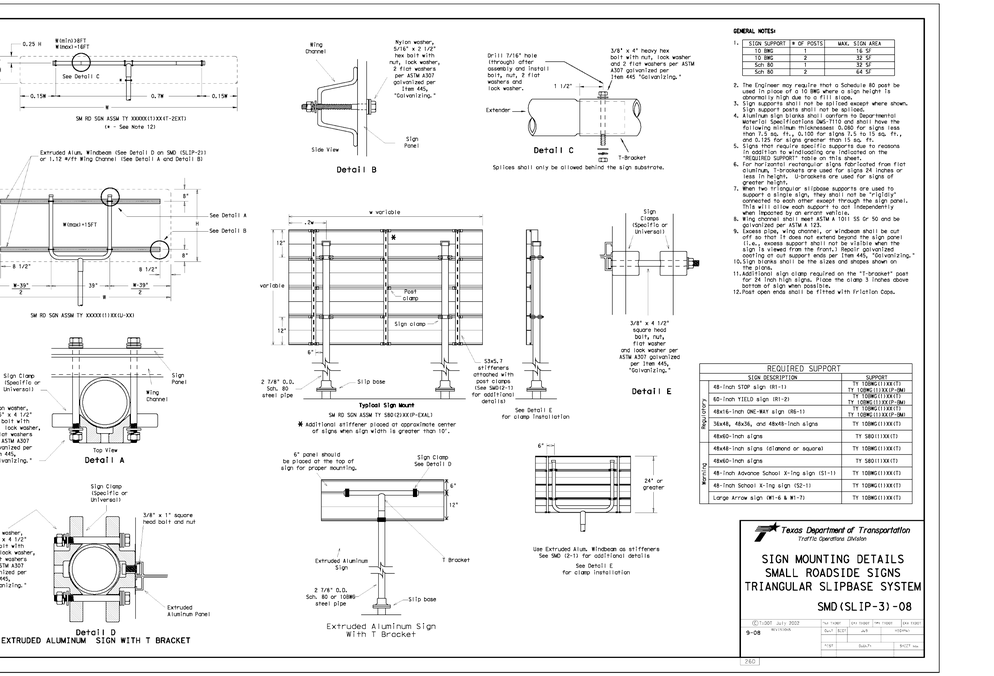
26C



GENERAL NOTES:

1. | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
   |---|---|---|
   | 10 BWG | 1 | 16 SF |
   | 10 BWG | 2 | 32 SF |
   | Sch 80 | 1 | 32 SF |
   | Sch 80 | 2 | 64 SF |
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to those listed are indicated on the "REQUIRED SUPPORT" table on this sheet.
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7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when imposed by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamps required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with friction caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
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	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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26D

NO.	REVISION	DATE

11-22-2023

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800
10801 N. MOPAC EXPWY, BUILDING 3, SUITE 200, AUSTIN, TX 78759 | 512.454.8711
2000 NW LOOP 410, SUITE 100, SAN ANTONIO, TX 78213 | 210.375.9000
2000 WEST LOOP SOUTH, SUITE 1850, HOUSTON, TX 77027 | 713.622.9264
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM 1470 | TEXAS SURVEYING FIRM #10028800

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

TXDOT SIGN MOUNTED DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C3.10

FOR PERMIT

Date: Nov 22, 2023, 1:39pm User ID: AlexG
File: P:\30015.05\05\Design\Civil\SGDT-30058-05.dwg

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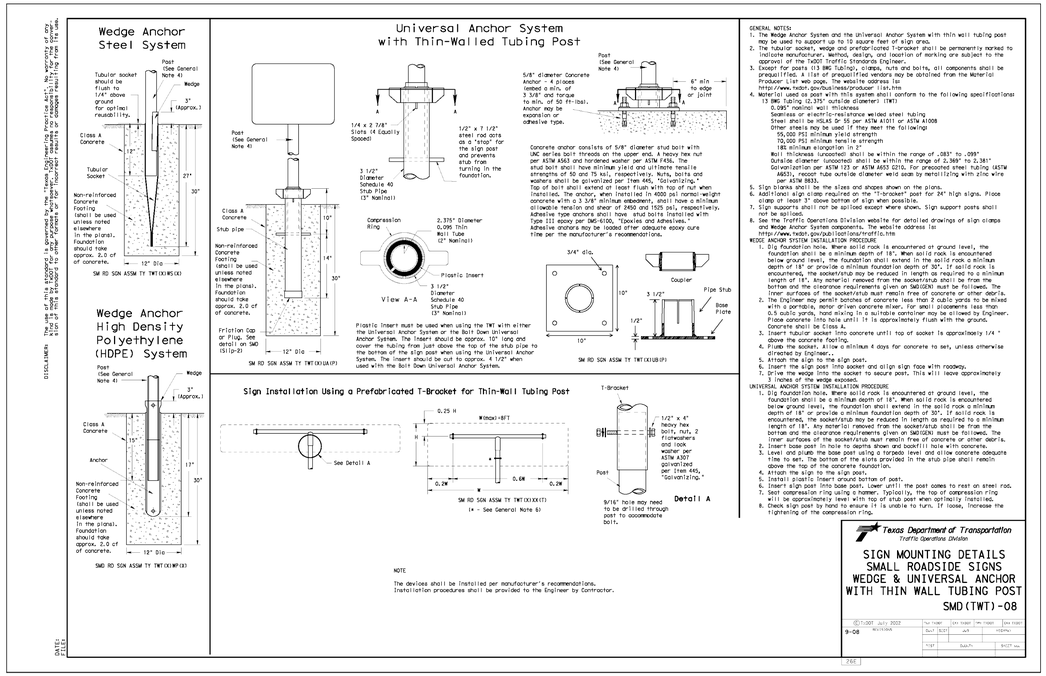
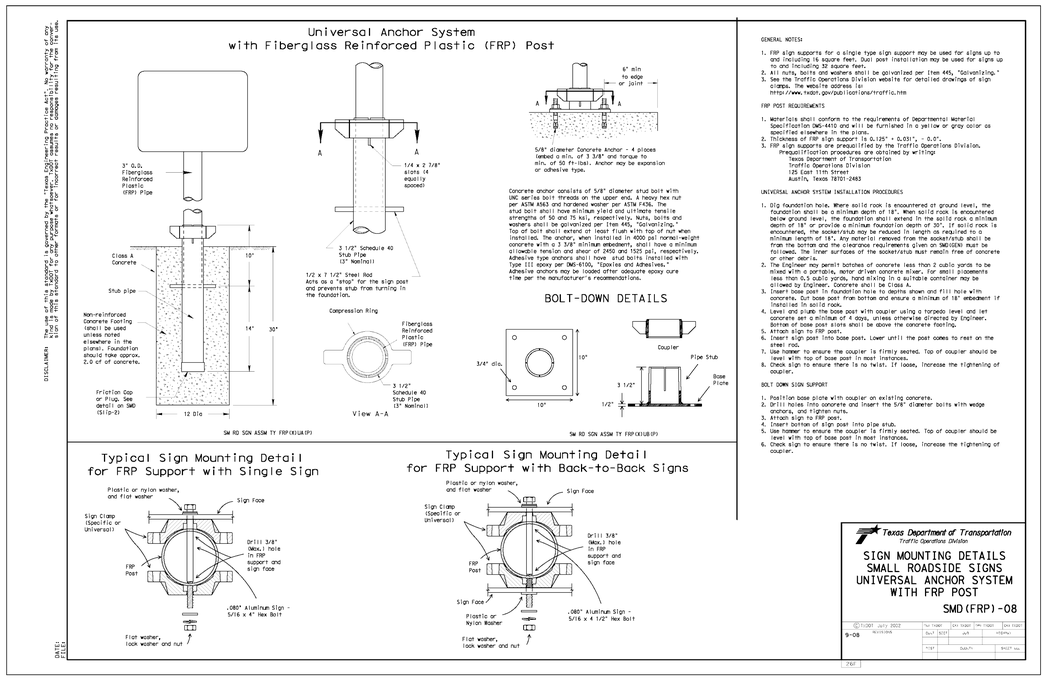
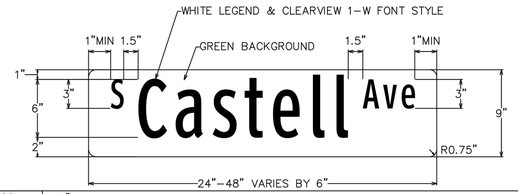




STREET SIGN DETAIL - GROUND MOUNT



Height	9"
Length	24" min 48" max 6" increments in length
Thickness	0.080"
Substrate	Flat aluminum sheeting with ¾" radius circular fillets at corners conforming to the requirements of ASTM B 209, Alloys 6061–T–6, or 5052–H38.
Sign Face Materials	Green film over High Intensity Prismatic sheeting
Legend	Legends shall be Clearview 1–W font style. Reduced spacing between the letters or words should not be used as a means of reducing the overall size of a street name sign unless approved by the City Traffic Engineer.
Color	White legend on green background

Notes:

1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall be mounted on sign post. The sign assembly shall meet minimum height requirements as required in the Texas Manual on Uniform Traffic Control Devices (TMUTCD). When required, DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall also be mounted on the sign post.
3. Street name signs greater than 36" long and center mounted on top of sign post shall be mounted on post top bracket with 12" slot. All other street name signs center mounted on top of sign post shall be mounted on post top bracket with 5 ¼" slot.
4. Street name signs mounted on sign post shall be mounted with double-sided round pole brackets. Two holes should be punched in the center of the 9" street name sign blank 1" from edge of the blank with 7"spacing between holes.
5. The lettering for names of streets shall be composed of a combination of lower-case letters with initial upper-case letters. Acceptable abbreviations per TMUTCD may be used except for the street name itself.
6. Red background (red film over High Intensity Prismatic) should be used for private street name signs.

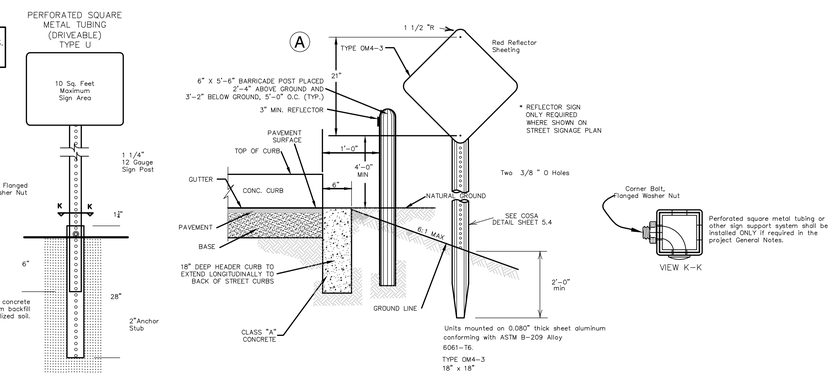
Street Sign Detail - Ground Mount			
ISSUE DATE:	February 2013	DWG. NO: ST-024	SCALE: N.T.S.
DRAWN BY: RAS		CONTACT: GF	SHEET: 1 OF 1

City of New Braunfels

ENGINEERING DIVISION
424 S. CASTELL AVE.
NEW BRAUNFELS, TEXAS 78130
PHONE: 830.221.4020
FAX: 830.626.3500

P:\2010 ENGINEERING-AUTOCAD\DETAILS\NB-PUBLIC WORKS DETAILS\NB-UNAPPROVED DETAILS-2013\ST-2013.024 STREET SIGN DETAIL - GROUND MOUNT.DWG

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



BARRICADE POST AND HEADER CURB DETAIL
NOT TO SCALE

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM 1470 | TEXAS SURVEYING FIRM #100288-00

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
11-22-2023

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

TXDOT SIGN MOUNTED DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C3.11

FOR PERMIT

Date: Nov 22, 2023, 1:39pm User ID: AlAddy
File: P:\3001\58\05\Design\Civil\SGDT-30058-05.dwg

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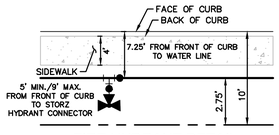
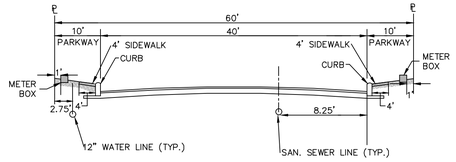
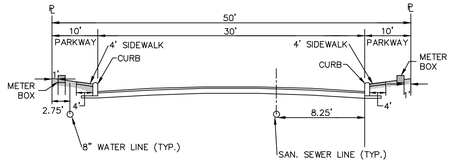


FIRE HYDRANT DETAIL
NOT TO SCALE

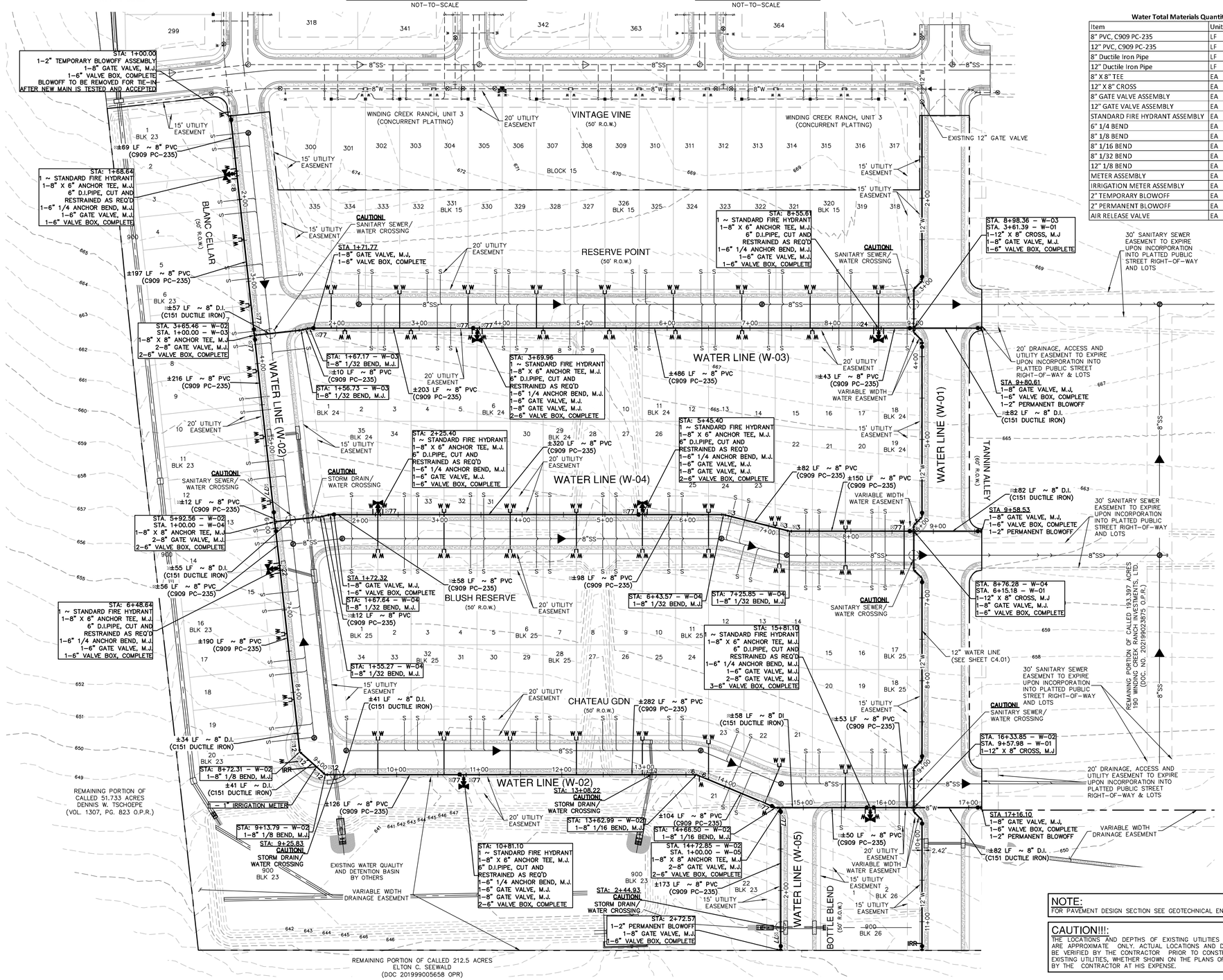


RESIDENTIAL COLLECTOR SECTION
NOT-TO-SCALE



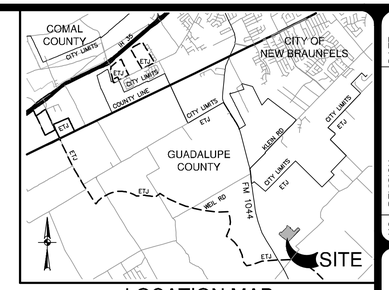
LOCAL STREET SECTION
NOT-TO-SCALE

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



Water Total Materials Quantities

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



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 60'
0' 60' 120' 180'

WATER LEGEND

PROJECT LIMITS
EXISTING FIRE HYDRANT
EXISTING WATER
EXISTING UNDERGROUND ELECTRIC (UGE)
EXISTING GAS (G)
EXISTING SEWER (SS, MANHOLE)
PROPOSED SEWER
PROPOSED WATER
FIRE HYDRANT
PROPOSED 1" SINGLE SERVICE WITH 5/8" METER
SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) (IRR)
PRESSURE RELEASE VALVE (TO BE INSTALLED BY HOMEBUILDER) (*)
JOINT RESTRAINT (⊠)
PROPOSED STORM DRAIN
EXISTING STORM DRAIN
PROPOSED UNDERGROUND ELECTRIC (UGE)

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

CITY OF NEW BRAUNFELS NOTES

1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
4. UTILITY TRENCH COMPACTION – ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") 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:
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:
FOR PAVEMENT DESIGN SECTION SEE GEOTECHNICAL ENGINEERING REPORT.

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NO.	REVISION	DATE

8-28-2025

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288000

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

OVERALL WATER DISTRIBUTION PLAN

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

FOR PERMIT

Date: Aug 28, 2025, 3:51pm User ID: jmay
File: P:\300\58\05\Design\Civil\WT0A-30058-05.dwg

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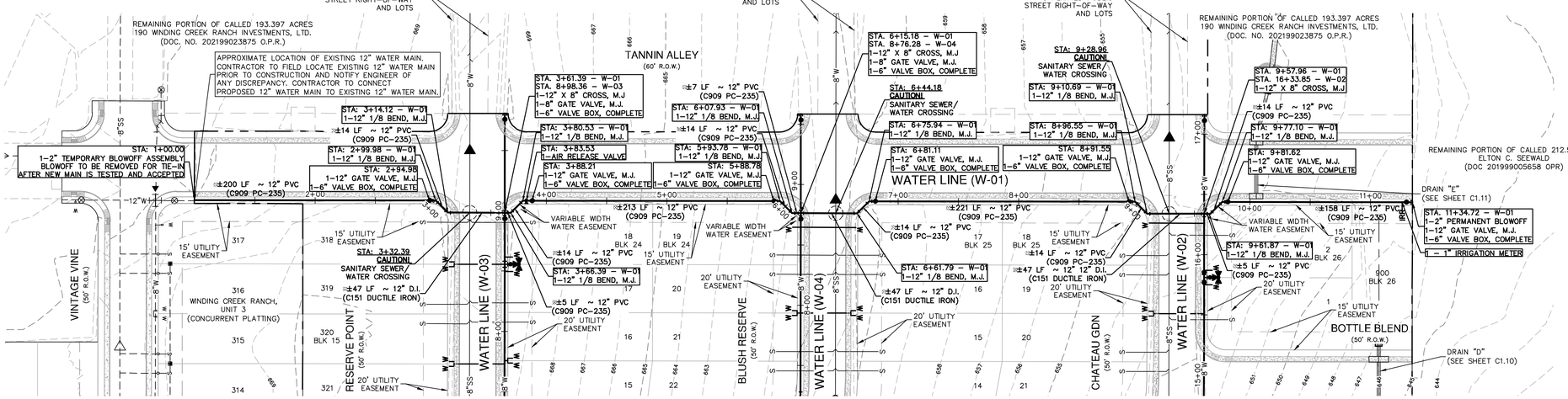
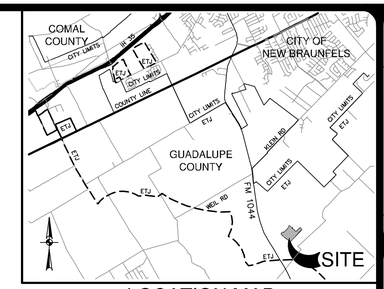
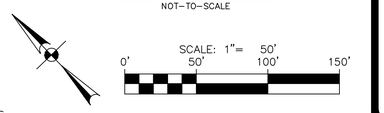




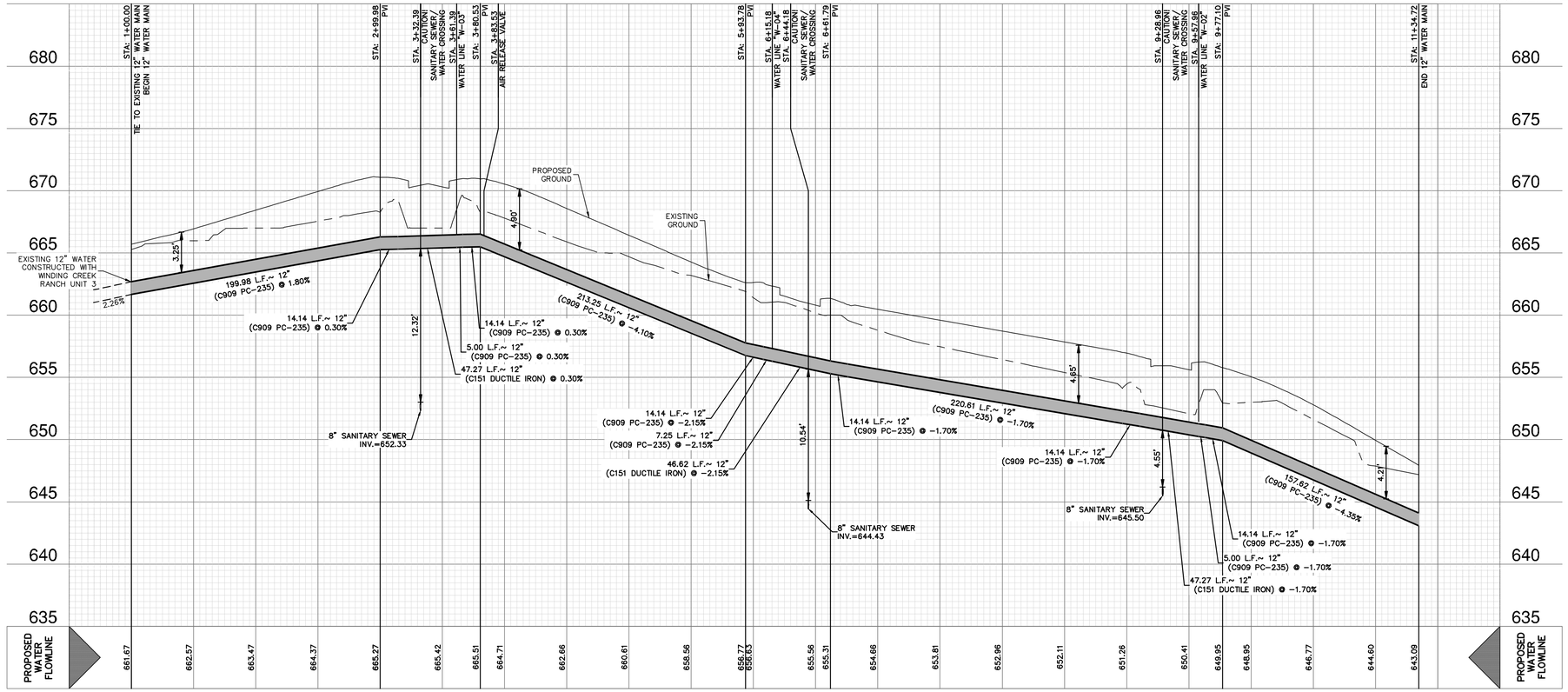
LOCATION MAP
NOT-TO-SCALE



FIRE HYDRANT DETAIL
NOT TO SCALE

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

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



WATER LEGEND

- PROJECT LIMITS
- EXISTING WATER (EXISTING FIRE HYDRANT)
- EXISTING UNDERGROUND ELECTRIC (UGE)
- EXISTING GAS (G)
- EXISTING SEWER (SS, MANHOLE)
- PROPOSED SEWER (SS, FIRE HYDRANT)
- PROPOSED WATER
- PROPOSED 1" SINGLE SERVICE WITH 5/8" METER
- SINGLE IRRIGATION SERVICE (REF. PLAN VIEW FOR SIZE) (IRR)
- PRESSURE RELEASE VALVE (TO BE INSTALLED BY HOMEBUILDER) *
- JOINT RESTRAINT ⊠
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- EXISTING STORM DRAIN
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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
8-28-2025

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5663
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288000

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C4.01

FOR PERMIT

Date: Aug 28, 2025, 3:52pm User ID: jmay
File: P:\300\58\05\Design\Civil\12 INCH WATER LINE W-01-30058-05.dwg
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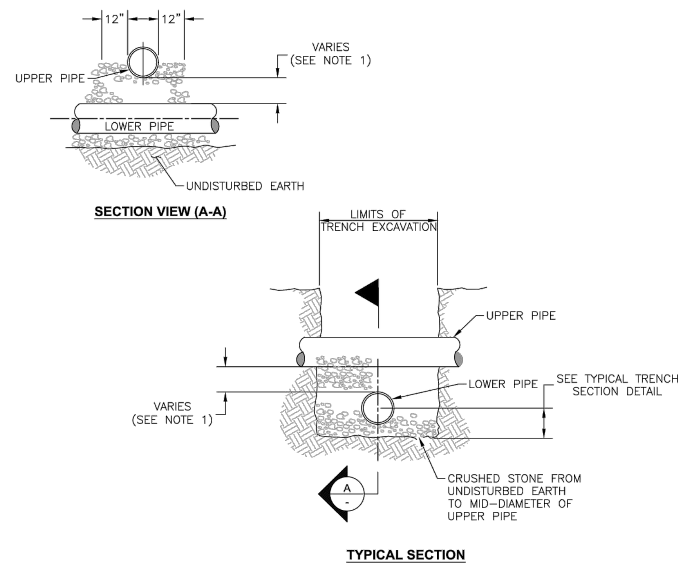
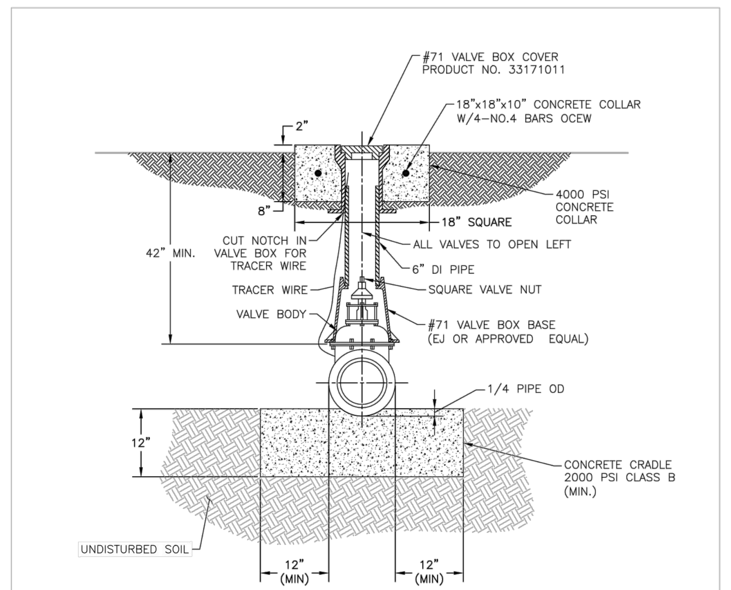


NOTES:

1. MAINTAIN A MINIMUM 5 FOOT HORIZONTAL AND 2 FOOT VERTICAL SEPARATION FROM BETWEEN UTILITIES AND WATER AND WASTEWATER PIPES AND SERVICES. GAS, ELECTRIC, CABLE, ETC. TO BE LOCATED OPPOSITE SIDES OF PROPERTIES.
2. UTILITY CROSSINGS SEPARATED BY LESS THAN 5 FEET SHALL BE ENCASED WITH A MINIMUM OF 6 INCHES OF CONCRETE.
3. SPECIFICATIONS: BEDDING MATERIAL MUST BE APPROVED BY AUTHORIZED GVSUD PERSONNEL, BEFORE START OF JOB.
4. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE MAIN SHALL BE ENCASED WITH STEEL PIPE AND/OR 6 INCHES CONCRETE ENCASEMENT TO WITHIN 10 FEET OUTSIDE OF CREEK OR DRAINAGE DITCH AREA.
5. PIPE JOINTS SHALL BE AT LEAST 9 FEET HORIZONTALLY FROM CROSSINGS.

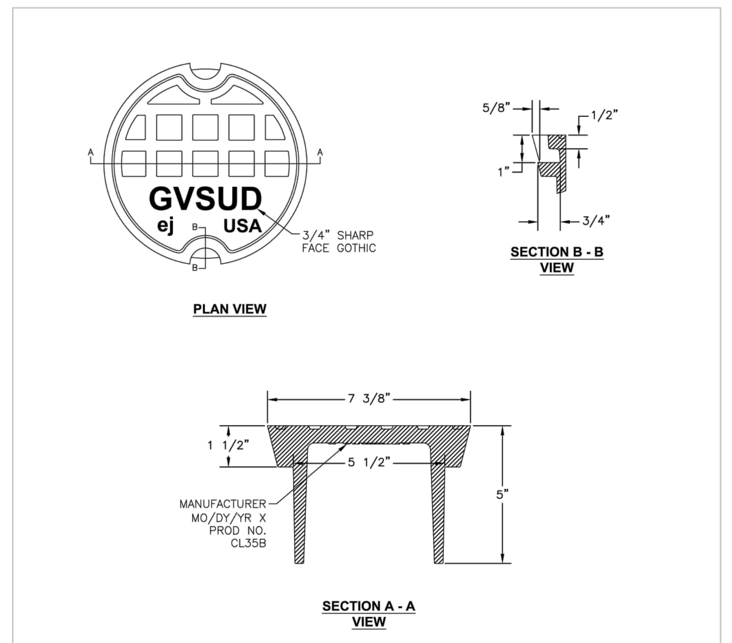
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
UTILITIES CROSSING DETAIL
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-10



NOTES:

1. WELD 2 1/2 INCH X 2 INCH DEEP SOCKET TO 1 INCH (SCHEDULE 40) ROUND STEM EXTENSION AND ON OPERATING NUT. FOR PIPE EXTENSIONS OVER 10 FEET, STEM EXTENSION SHALL BE A SCHEDULE 80 PIPE.
2. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3 FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18 TO 24 INCHES FROM FINISHED GRADE.
3. CONCRETE COLLARS TO BE INSTALLED ON ALL VALVE BOXES LOCATED OUTSIDE PAVEMENT. SEE APPROPRIATE VALVE BOX ADJUSTMENT DETAILS.
4. GATE VALVES SHALL BE MUELLER TYPE OR APPROVED EQUAL.
5. FOR VALVE DEEPER THAN 5 FEET, ADD EXTENSION.
6. VALVE TURNS UNDERNEATH CAP.

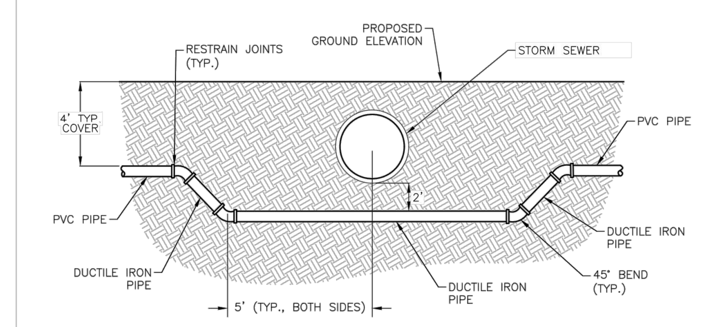
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
NON-RISING STEM VERTICAL GATE VALVE WITH BOX ASSEMBLY
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-11



NOTES:

1. VALVE BOX COVER SHALL BE EJ GROUP, INC. $71 VALVE BOX COVER PRODUCT NUMBER 33171011, OR APPROVED EQUIVALENT WITH GVSUD LOGO.
2. TYPICAL FILLET IS 3/16 INCH RADIUS.
3. LETTERING SHALL BE 3/4 INCH SHARP FACE GOTHIC AND LOCATED AS SHOWN.
4. LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION, CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING AND PAINT WITH BLACK ASPHALT COATING.

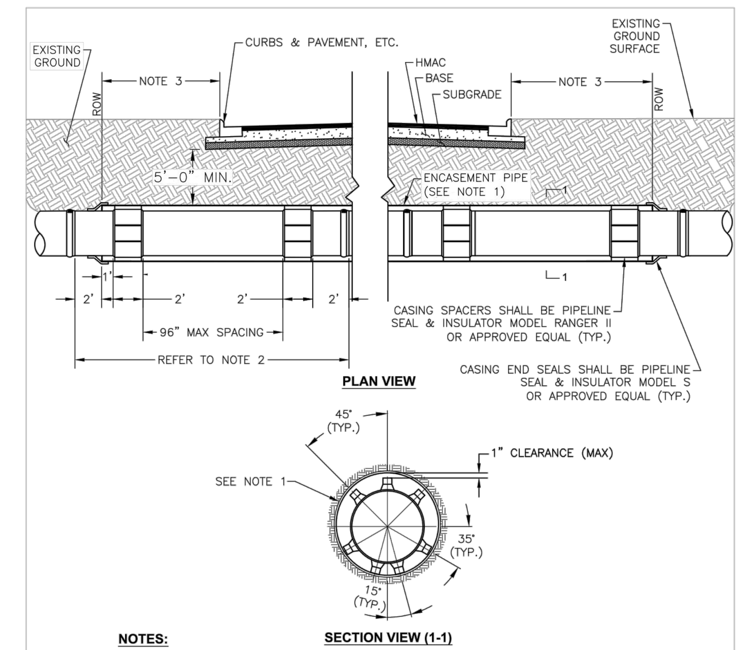
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE BOX CASTING LID
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-12



NOTES:

1. MAINTAIN 24 INCH (MIN.) SEPARATION FROM STORM SEWER LINE.
2. 45° BENDS MUST BE THRUST BLOCKED AND RESTRAINED AT BOTTOM BENDS. SEE STANDARD DETAIL.

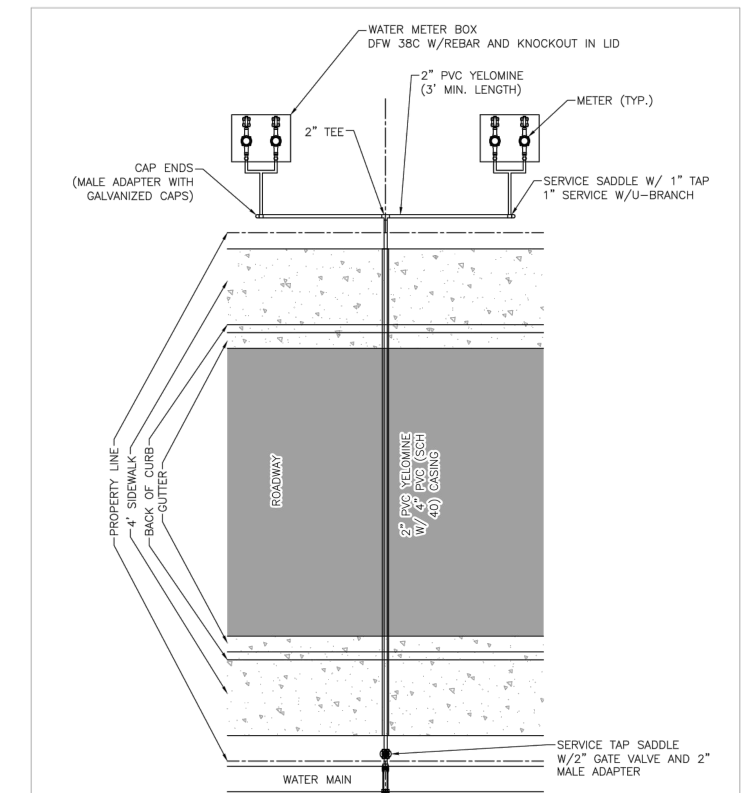
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STORM SEWER CROSSING
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-17



NOTES:

1. ENCASEMENT PIPE SHALL BE NEW STEEL PIPE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C200, LATEST EDITION.
2. ALL PIPE JOINTS WITHIN THE CASING ARE TO BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
3. FOR ROADWAY CROSSINGS, THE ENDS OF THE CASING PIPE SHALL EXTEND TO THE RIGHT OF WAY LINES.
4. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED PIPE CLASS RATING AS SHOWN ON THE PLANS.
5. REFER TO SPECIFICATION 02300 FOR CASING PIPE THICKNESS.

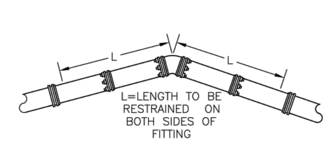
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TYPICAL JACKING, BORING, AND TUNNELING DETAIL
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-9



NOTE:

1. MALE ADAPTOR AND TEE SHALL BE HARCO TYPE FITTINGS OR APPROVED EQUAL.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
MULTI-DWELLING UNIT WATER SERVICE DETAIL
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-32



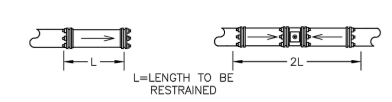
RESTRAINED LENGTH FOR BENDS

PIPE SIZE (INCHES)	BEND ANGLE (DEG)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	90	23
6	45	9
6	22.5	5
6	11.25	2
8	90	30
8	45	12
8	22.5	6
8	11.25	3
12	90	43
12	45	18
12	22.5	8
12	11.25	4
16	90	63
16	45	26
16	22.5	13
16	11.25	7
24	90	85
24	45	35
24	22.5	17
24	11.25	9

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
BEND RESTRAINED LENGTH DESIGN
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-18



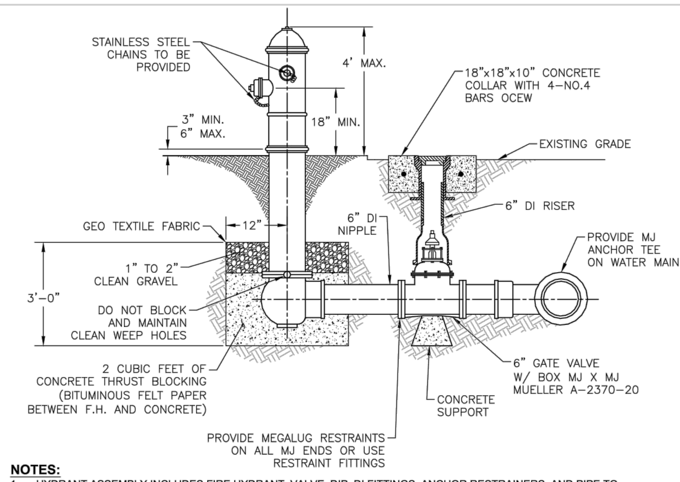
RESTRAINED LENGTH FOR DEAD ENDS/INLINE VALVES

PIPE SIZE (INCHES)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
4	42
6	59
8	77
12	109
16	142
24	202

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

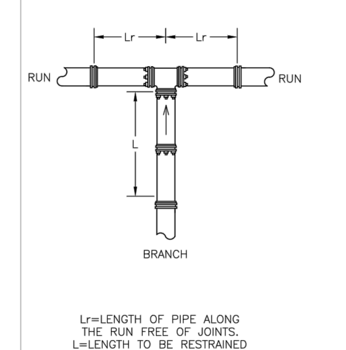
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
VALVE AND DEAD END RESTRAINED LENGTH DESIGN
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-20



NOTES:

1. HYDRANT ASSEMBLY INCLUDES FIRE HYDRANT, VALVE, DIP, DI FITTINGS, ANCHOR RESTRAINERS, AND PIPE TO DISTRIBUTION SYSTEM.
2. FIRE HYDRANTS SHALL HAVE A MINIMUM OF 3 FEET OF CLEARANCE SURROUNDING HYDRANT.
3. HYDRANTS SHALL BE A MINIMUM DISTANCE OF 3 FEET BEHIND THE CURB OR 3 FEET FROM THE R.O.W. UNDER NO CIRCUMSTANCES SHALL VALVES OR HYDRANTS BE PLACED IN A CURB OR SIDEWALK. IN AREAS WITHOUT CURBS OR SIDEWALKS, HYDRANT SHALL BE PLACED 3-6 FEET FROM THE DISTRIBUTION SYSTEM.
4. FOR BURY DEPTHS GREATER THAN 5 FEET, ONE BARREL EXTENSION NOT EXCEEDING 3 FEET IN LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
5. 1 CU FOOT (MIN) OF CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND WEEP HOLE FOR A RADIUS OF 12 INCHES AND EXTEND 12 INCHES ABOVE THE OUTLET.
6. VALVE, DUCTILE IRON PIPE, AND STANDARD FIRE HYDRANT SYSTEM SHALL BE RESTRAINT JOINT CONTINUOUSLY TOGETHER.
7. FIRE HYDRANT SHALL BE 6 INCH (3) WAY HYDRANT WITH BREAK AWAY BOLTS (SHOE TYPES) PROVIDED WITH STORZ CONNECTION. DEPTH OF BURY SHALL BE 42 INCHES MINIMUM. FIRE HYDRANTS MUST BE SET PLUMB. HOSE CONNECTION MUST FACE ROADWAY.
8. HYDRANT ASSEMBLY SHALL BE RESTRAINED FROM TEE TO HYDRANT.
9. IN THE CITY OF CIBOLO'S CITY LIMITS, FIRE HYDRANTS SHALL BE MUELLER TYPE AND SHALL BE 1 FOOT MINIMUM AND 7 FEET MAXIMUM FROM THE BACK OF CURB.
10. HYDRANTS UPPER BARREL SHALL BE FACTORY PAINTED RED WITH BONNET AND CAPS COATED PER CURRENT NFPA 291 STANDARDS.
11. HYDRANTS LOCATED IN RURAL AREAS SHALL HAVE 6' TALL POLLARD WATER FLEXIFLAG #PP68802.

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STANDARD HYDRANT ASSEMBLY INSTALLATION
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-22



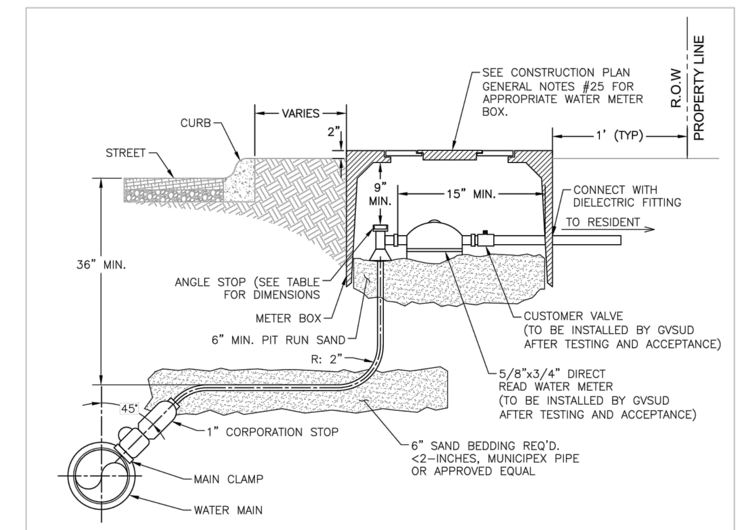
NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

RESTRAINED LENGTH FOR TEES

PIPE SIZE (INCHES)	BRANCH SIZE (INCHES)	LENGTH OF RUN (FEET)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	4	0	42
6	4	5	7
6	4	10	1
6	6	0	59
6	6	5	35
6	6	10	11
8	4	0	42
8	4	5	1
8	6	0	59
8	6	5	28
8	6	10	1
8	8	0	77
8	8	5	53
8	8	10	30
8	8	15	6
12	4	0	42
12	4	5	1
12	6	0	59
12	6	5	13
12	6	10	1
12	8	0	77
12	8	5	42
12	8	10	7
12	8	15	1
12	12	0	109
12	12	5	86
12	12	10	63
12	12	15	39
16	4	0	42
16	4	5	1
16	6	0	59
16	6	5	1
16	8	0	78
16	8	5	39
16	8	10	1
16	12	0	110
16	12	5	84
16	12	10	59
16	12	15	33
16	12	20	7
16	16	0	142
16	16	5	123
16	16	10	104
16	16	15	85
16	16	20	65
24	24	5	169
24	24	10	136
24	24	15	103
24	24	20	70

GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TEE RESTRAINED LENGTH DESIGN
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-21

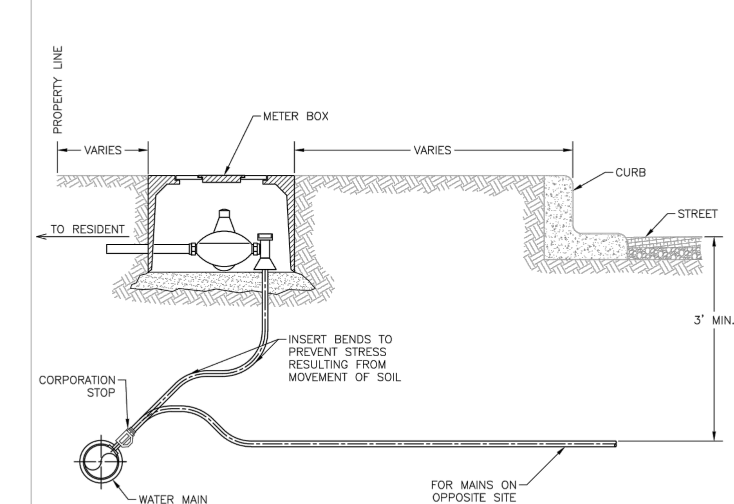


MAIN SIZE	METER SIZE	MAIN SADDLE	CORPORATION	ANGLE STOP
<12"	5/8" OR 3/4"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"x 3/4"
<12"	1"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"X1"

NOTES:

1. FITTINGS SHALL BE MUELLER OR APPROVED EQUAL.
2. A TRACER WIRE SHALL BE INSTALLED ON THE SERVICE LINE TAPED AT 10-INCH INCREMENTS.

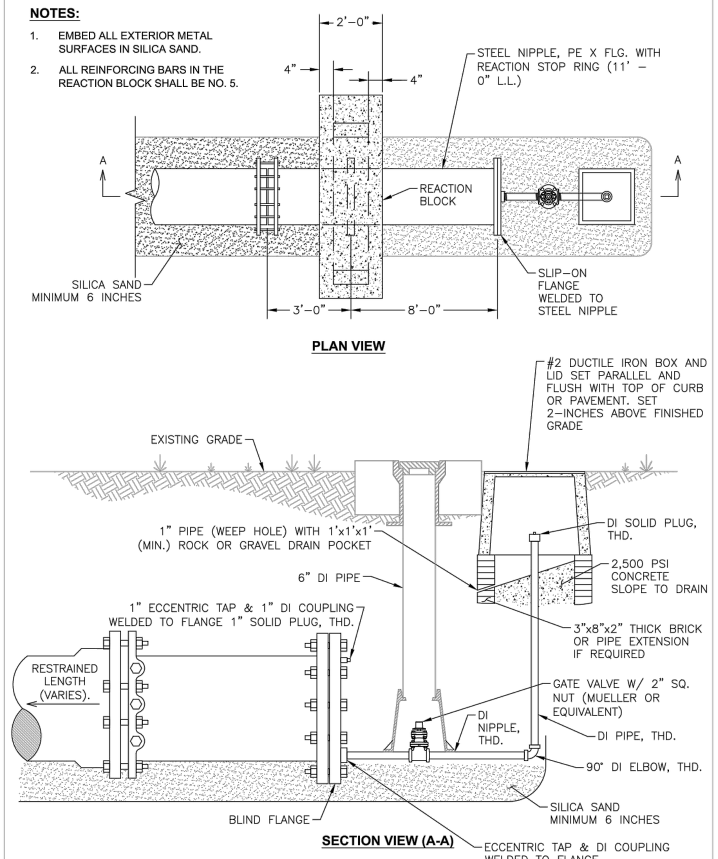
GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
STANDARD SERVICE CONNECTION
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-23



GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
TYPICAL SERVICE LOCATION DETAIL
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-24

NOTES:

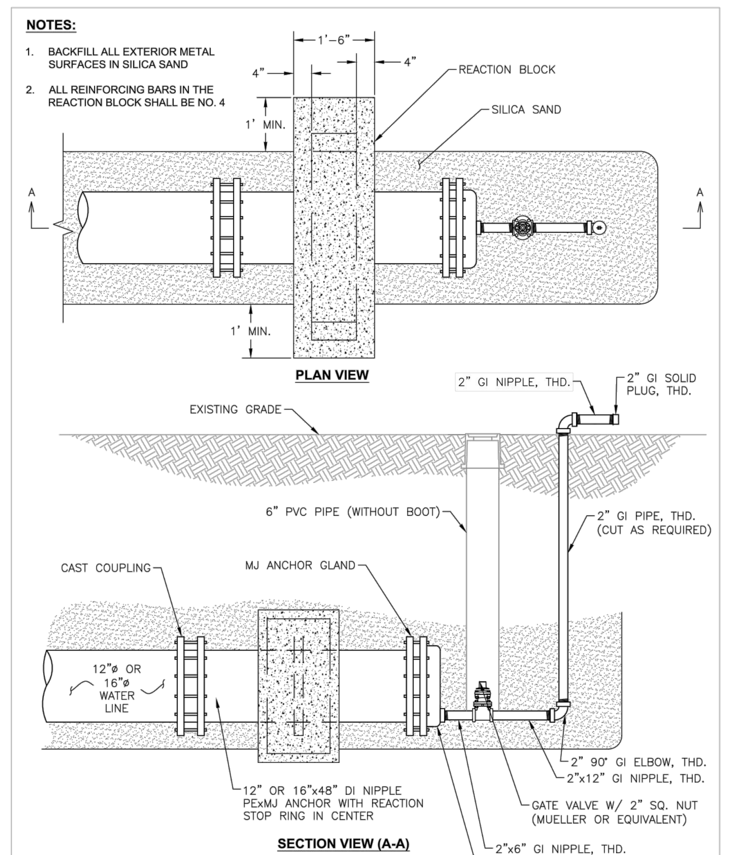
1. EMBED ALL EXTERIOR METAL SURFACES IN SILICA SAND.
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 5.



GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" & 4" PERMANENT URBAN BLOW-OFF ASSEMBLY
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-28

NOTES:

1. BACKFILL ALL EXTERIOR METAL SURFACES IN SILICA SAND
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 4



GREEN VALLEY SPECIAL UTILITY DISTRICT
STANDARD DETAILS
2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" TO 16" MAINS
REVISED: AUGUST 2023
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
DETAIL NO. W-25

GVSUD CONSTRUCTION PLAN GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS FOR THE WATER SYSTEM SHALL CONFORM TO THE WATER STANDARDS AND DESIGN CRITERIA OF GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD).
2. PVC MAINS 12-INCHES AND BELOW SHALL CONFORM TO AWWA C-909 PRESSURE CLASS 235 OR ABOVE DEPENDING ON SYSTEM PRESSURES. PVC MAIN GREATER THAN 12 INCHES SHALL CONFORM TO AWWA C-900 DR 18 OR ABOVE DEPENDING ON SYSTEM PRESSURES. WATER MAINS SHALL HAVE AN ABSOLUTE MINIMUM DEPTH OF 5-FEET BELOW ROADWAY LEVEL AND 42-INCHES IN ALL OTHER AREAS.
3. ALL WATER MAIN DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINT AND CONFORM TO ANSI/AWWA C-153 OR C-110. ALL BOLTS SHALL HAVE KOPR KOTE OR APPROVED EQUAL ANTI-SEIZE CORROSION RESISTANT COATING. VALVES SHALL BE ATTACHED TO TEES BY FOSTER ADAPTOR OR ANCHOR NIPPLE. FOSTER ADAPTER, ANCHOR NIPPLE, OR FORD UNI-FLANGE RETAINER GLANDS AND THRUST BLOCKS SHALL BE USED ON ALL FITTINGS AND VALVES.
4. TRACER WIRE SHALL BE INSTALLED ON ALL PIPELINES INCLUDING SERVICE LINES AND BROUGHT INTO VALVE AND METER BOXES FOR LOCATING PURPOSES. INSULATED WATER PROOF CONNECTORS SHALL BE USED TO SPLICE WIRES TOGETHER. A 12-INCH-WIDE DETECTABLE METAL TAPE SHALL BE PLACED ABOVE BEDDING INITIAL BACKFILL.
5. EXCEEDING MAXIMUM DEFLECTION IS PROHIBITED. THE ANGULAR DEFLECTION AT BELL-SPIGOT JOINTS SHOULD NOT EXCEED ONE (1) DEGREE. THIS WILL PRODUCE A 4-INCH OFFSET FOR EVERY 20-FOOT SECTION OF PIPE. JOINT DEFLECTION IS ACHIEVED AFTER THE JOINT IS ASSEMBLED IN STRAIGHT ALIGNMENT AND DEFLECTED TO THE REFERENCE MARK. THE BELL SHOULD BE BRACED TO ALLOW THE FREE END TO MOVE LATERALLY UNDER STEADY PRESSURE USING A PRY BAR OR OTHER SUITABLE MEANS. CARE SHOULD BE TAKEN NOT TO EXCEED THE MAXIMUM DEFLECTION ALLOWED OR TO DAMAGE THE PIPE WITH MACHINERY. ABRUPT CHANGES IN DIRECTION SHALL BE ACCOMPLISHED WITH FITTINGS.
6. OVER STRESSING THE BELL BY OVER INSERTING THE JOINTS, OVERBELLING, AND PASSING THE INSERTION REFERENCE MARK IS PROHIBITED AND WILL REQUIRE REMOVAL AND REINSTALLATION.
7. STANDARD FIRE HYDRANT SHALL INCLUDE HYDRANT, 6-INCH RESILIENT GATE VALVE AND BOX, ANCHOR FITTINGS, DUCTILE IRON PIPE, AND ALL APPURTENANCES. HYDRANTS SHALL BE LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN. ONLY MUELLER HYDRANTS AND EJ SHALL BE USED IN CITY OF CIBOLO'S JURISDICTION. HYDRANT UPPER BARREL SHALL BE FACTORY PAINTED RED. HYDRANTS SHALL HAVE A STORTZ CONNECTION ON STEAMER NOZZLE. FITTINGS FOR PLUG SHALL BE FULLY RESTRAINED AND TIED TO VALVE.

Page 1 of 4

GVSUD CONSTRUCTION PLAN GENERAL NOTES

8. VALVES SHALL BE AWWA APPROVED RESILIENT WEDGE SEATED GATE VALVE, OPEN LEFT, AND LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN.
9. VALVES ARE PROHIBITED IN ADA RAMPS, CURBS, AND ROADWAYS. VALVES ARE PROHIBITED IN SIDEWALKS IN CITY OF NEW BRAUNFELS.
10. METER BOXES ARE PROHIBITED IN ANY SIDEWALKS, DRIVEWAYS, OR ROADWAYS.
11. SMALL SERVICE TAPS SHALL BE EITHER 1-INCH OR 2 INCH AND SHALL BE REHAU MUNICIPEX WITH CTS 200 PSI PLASTIC INSERT. SMALL SERVICE TAPS TO BE MADE WITH SINGLE BRASS STRAP TAPPING SADDLE WITH IRON PIPE THREADS. EXCEPTION: IF LOCATED WITHIN CITY OF CIBOLO- SERVICE TAPS TO BE MADE WITH DOUBLE STAINLESS STRAP EPOXY COATING SADDLES WITH IRON PIPE THREADS.
12. CASING REQUIRED FOR ALL LONG SMALL SERVICES. 1 INCH SERVICE REQUIRES 3 INCH CASING AND 2 INCH SERVICE REQUIRES 4 INCH CASING. CASING SHALL BE PVC SCHEDULE 40 OR APPROVED EQUAL.
13. SINGLE 5/8" & ¾" METER BOXES SHALL BE DFW36C 16" X 11". DUAL 5/8" & ¾" METER BOXES SHALL BE DFW38C 17" X 15". 1-INCH METER BOXES SHALL BE DFW65C-14-1A 15 1/4" X 30 3/8". ALL METER BOXES SHALL BE PLASTIC WITH LIDS HAVING REBAR, ARM, AND KNOCKOUT.
14. THE FORD U BRANCH IS TO BE USED ON ALL DUAL SERVICES (U48-43Q) WITH THE 5/8" X 3/4" FEMALE THREAD ANGLE HEAD. ALL OTHER ANGLE HEADS WILL BE THE FORD Q NUT. ALL CORPORATION STOPS WILL BE IPS X Q NUT. ALL BRASS VALVES TO BE 'BALL' TYPE MINIMUM 200 PSI PRESSURE RATING. "CC" THREADED CORPORATION STOPS PROHIBITED.
15. TAPPING MACHINES UTILIZED FOR INSTALLING ANY TYPE OF TAP 1-INCH TO 2-INCHES WILL BE OF THE PURGE TYPE, WHICH AT THE TIME OF TAPPING SHALL EXPEL ALL CHIPS AND RESIDUE TO ATMOSPHERE THROUGH AN APPROPRIATE OUTLET AND/OR BE ABLE TO RETAIN THE COUPON.
16. ALL WATER MAIN, PIPE, CASINGS, FITTINGS, AND VALVES SHALL BE LAID IN MANUFACTURED SAND EMBEDMENT PER DETAILS. THE SAND SHALL FULLY ENCASE ALL PIPES, INCLUDING FITTINGS AND VALVES, BY A MINIMUM OF 12-INCHES. ALL FITTINGS AND VALVES ARE TO RECEIVE THRUST BLOCKING, FOSTER ADAPTER, ANCHOR NIPPLE, FORD UNI-FLANGE RETAINER GLAND JOINT RESTRAINTS, AND BELL JOINT RESTRAINTS WHEN SPECIFIED BY GVSUD OR THE DISTRICT'S ENGINEER.
17. CONTRACTOR TO CURB CUT V'S FOR VALVES AND X'S FOR METERS.
18. PRIOR TO CONSTRUCTION OF THE SEWER AND WATER MAINS, ALL R.O.W. ROADWAYS AND PARKWAY SHALL HAVE REFERENCE SURVEY STAKING AND BE EXCAVATED OR PROPERLY FILLED TO SUB-GRADE ELEVATION.

Page 2 of 4

GVSUD CONSTRUCTION PLAN GENERAL NOTES

19. SURVEY STAKING OFFSETS ARE REQUIRED FOR ALL WATER MAIN AND APPURTENANCES.
20. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED. CONTRACTOR SHALL INVESTIGATE AND FIELD VERIFY UTILITY LOCATIONS A MINIMUM OF 300 LF AHEAD OF CROSSING AND TIE-IN LOCATIONS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR MAINTENANCE PROTECTION OF THE EXISTING UTILITIES, WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
21. ALL WASTEWATER PIPES CROSSING THE POTABLE WATER DISTRIBUTION SYSTEM WILL BE HELD IN STRICT ACCORDANCE WITH TCEQ RULES AND REGULATIONS. PROPOSED SUB-GRADE LIMITS AND DIMENSIONS MUST BE SHOWN ON THE PLANS, AND CONSTRUCTION PROCEDURES WILL BE INSPECTED TO VERIFY COMPLIANCE WITH TCEQ 290.44(E).
22. OTHER UTILITIES SHALL NOT BE LOCATED CLOSER THAN 3-FEET TO WATER MAINS.
23. THE GREEN VALLEY INSPECTOR SHALL BE NOTIFIED AT LEAST FORTY-EIGHT HOURS PRIOR TO BACK FILLING OR TESTING.
24. A FIELD PRE-CONSTRUCTION MEETING SHALL BE HELD BEFORE CONSTRUCTION BEGINS AND MATERIAL SHALL BE AVAILABLE ON-SITE FOR INSPECTION.
25. CONTRACTOR SHALL CHLORINATE NEW MAINS PER TCEQ AND ANSI/AWWA C651 AND DECHLORINATE DURING FLUSHING PER ANSI/AWWA C655; THE CONTRACTOR SHALL COORDINATE WITH THE GVSUD INSPECTOR TO WITNESS CHLORINATING AND PRESSURE TESTING OF NEW MAINS. ALL TEST RESULTS MUST BE PROVIDED TO GVSUD.
26. OPERATION OF EXISITNG VALVES IN THE GVSUD WATER DISTRIBUTION SYSTEM SHALL ONLY BE AS APPROVED BY GVSUD AND IN THE PRESENCE OF GVSUD PERSONNEL. THE CONTRACTOR SHALL NOTIFY GVSUD WHEN A VALVE NEEDS TO BE OPERATED AND MAY ONLY OPERATE A VALVE IN THE PRESENCE OF THE GVSUD INSPECTOR.
27. NEW WATER MAINS AND APPURTENANCES SHALL PASS PRESSURE TESTING AND PASS THE MINIMUM PUBLIC HEALTH STANDARDS FOR BACTERIOLOGICAL QUALITY TESTING PRIOR TO ANY TIE IN TO THE EXISTING GVSUD WATER SYSTEM AS REQUIRED BY TCEQ AND ANSI/AWWA.
28. HYDROSTATIC PRESSURE TESTING SHALL BE EVERY 200 LF (MAX) OF LINE OR AS APPROVED BY THE ENGINEER. ALL ERRORS OF WORKMANSHIP SHALL BE CORRECTED IMMEDIATELY. ALL PARTS OF THE PIPELINE SHALL BE BACKFILLED AND BRACED SUFFICIENTLY TO PREVENT MOVEMENT UNDER PRESSURE.
29. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH AND CONFINED SPACE ENTRY SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION AND ALL RELATED WORK. ANY

Page 3 of 4

GVSUD CONSTRUCTION PLAN GENERAL NOTES

TRENCH PROTECTION SAFETY VIOLATION WILL BE DOCUMENTED AND WILL RESULT IN AN IMMEDIATE WORK STOPPAGE BY THE GVSUD INSPECTOR AT MINUMUM UNTIL THE NEXT WORKDAY.

30. CONTRACTOR MUST PROTECT ALL UNATTENDED TRENCHES AND EXCAVATIONS WITH TEMPORARY FENCING.
31. NO TREES MAY BE PLANTED IN THE AREAS DESIGNATED AS WATER OR UTILITY EASEMENTS, OR AREAS WHERE WATER MAINS AND WATER SERVICE CROSSINGS EXIST OR ARE PLANNED TO BE CONSTRUCTED.
32. ALL GARBAGE OR SPOIL MATERIAL FROM THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
33. CONTRACTOR SHALL PROVIDE "AS-BUILT" WATER LINE PLANS AT THE PRELIMINARY WALK THRU FOR THE GVSUD INSPECTOR AND ENGINEER. THE PLANS SHALL LIST MATERIAL MANUFACTURERS, LINE LENGTH FROM FITTING TO FITTING, AND TAP LOCATIONS.
34. GPS FILES SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AND GVSUD INSPECTOR FOR THE PLAN OF RECORD. CONTRACTOR SHALL PROVIDE AN ASCII COMMA DELIMITED OR EXCEL FILE CONTAINING THREE-DIMENSIONAL GPS SURVEY POINTS WITH FOUR (4) DECIMAL PLACES OF PRECISION, LESS THAN FOUR (4) INCHES OF HORIZONTAL POSITION ACCURACY, AND LESS THAN EIGHT (8) INCHES OF VERTICAL POSITION ACCURACY. POINTS SHALL BE PROVIDED FOR A MINIMUM OF THREE (3) CONTROL POINTS AND ALL FITTINGS, APPURTENANCES, ENCASEMENTS, VAULTS, AND TANKS. THE ENGINEER SHALL FURNISH PLAN OF RECORD DRAWINGS TO GVSUD FOR APPROVAL HAVING FINAL MEASUREMENTS AND THAT MATCH THE GPS 'X', 'Y', AND 'Z' COORDINATES.
35. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL THE INFORMATION AS REQUIRED SO THAT THE ENGINEER CAN SUPPLY GVSUD THE GIS PACKAGE FOR APPROVAL.
36. A FINAL WALK THRU FOR FINAL FIELD ACCPETANCE WILL BE SCHEDULED WITH THE CONTRACTOR AFTER THE PRELIMINARY WALK THRU PUNCH LIST ITEMS HAVE BEEN COMPLETED AND AFTER THE GIS PACKAGE IS APPROVED AND ACCEPTED BY GVSUD.
37. GVSUD CONTACT NUMBER: 830-914-2330

REVISED: JULY 22,2022

Page 4 of 4

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
11-22-2023

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

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

PLAT NO. ________
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C4.10

Date: Nov 22, 2023, 1:40pm User ID: ALeddy
File: P:\300\58\05\Design\Civil\WTDT-30058-05.dwg

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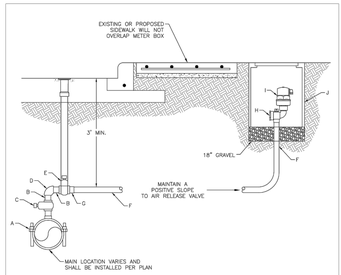
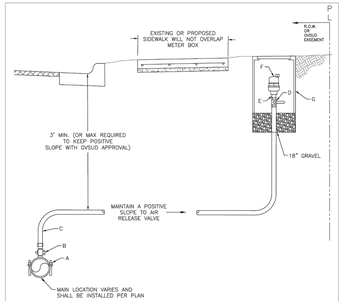
FOR PERMIT



MATERIAL LIST***	
LABEL	ITEM
A*	2" TAPPING SADDLE/SLEEVE
B	2" BRASS NIPPLE - THREADED
C**	2" BRASS CORPORATION STOP, MIP X FIP
D	2" BRASS 90° BEND, FIP
E	2" VALVE, RESILIENT WEDGE GATE, IRON BODY, FIP X FIP, WITH VALVE BOX
F	2" MUNICIPEX WATER SERVICE LINE
G	2" BRASS ADAPTER, MIP X CTS COMPRESSION
H	2" BRASS STOP, ANGLED OR STRAIGHT, CTS COMPRESSION X FIP
I	2" AIR RELEASE VALVE
J	DFW38CNP-J26-AF1MS VALVE BOX

* SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
** ALL FITTING CONNECTED TO POLYETHYLENE PIPE WILL REQUIRE A STAINLESS STEEL INSERT.
*** MATERIAL LIST TO BE IN ACCORDANCE WITH GVSUD STANDARD PRODUCT LIST.

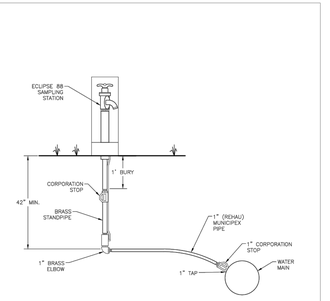
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	2" AIR RELEASE VALVE	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-30



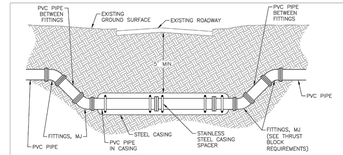
MATERIAL LIST**	
LABEL	ITEM
A*	1" TAPPING SADDLE/SLEEVE
B	1" CORPORATION STOP (COMPRESSION-TYPE FITTING)
C	1" MUNICIPEX WATER SERVICE LINE
D	1" BRASS BALL VALVE WITH LEVER HANDLE
E	1" BRASS NIPPLE, THREADED
F	1" AIR RELEASE VALVE
G	DFW38CNP-J26-AF1M1MS VALVE BOX

* SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
** MATERIAL LIST TO BE IN ACCORDANCE WITH GVSUD STANDARD PRODUCT LIST.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	1" AIR RELEASE VALVE	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-29



GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	WATER SAMPLING STATION DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-33



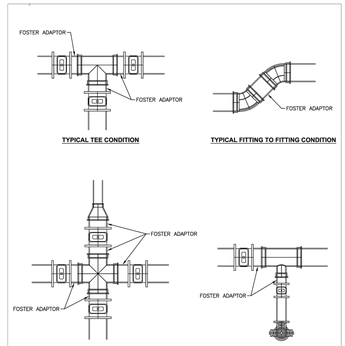
ROADWAY BORE DETAIL

NOTES:

1. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 18 FEET ON EACH SIDE.
2. FOR A PIPE 20 FEET IN LENGTH, A MINIMUM OF 4 SPACERS ARE REQUIRED. FOR A PIPE 13 FEET IN LENGTH, A MINIMUM OF 3 SPACERS ARE REQUIRED.
3. FOR ENCASED PIPE LOCATED IN PROXIMITY TO SANITARY SEWERS, SPACERS SHALL CONFORM TO TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290, SUBCHAPTER D.
4. AT ANY ROADWAY CROSSING THE PIPE SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 5 FEET OF COVER FROM THE BOTTOM OF THE BASE MATERIAL.
5. FOR ROAD WAY CROSSINGS, THE ENDS OF THE CASING PIPE SHALL EXTEND TO THE RIGHT OF WAY LINES.
6. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED CLASS RATING OF PIPE AS SHOWN ON THE PLANS.
7. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
8. DUCTILE IRON PIPE AMERICAN ZINC COATED AWWA/ANSI C-151 MAY BE USED IN LIEU OF STEEL CASING WHEN APPROVED BY GVSUD.

WATER LINE IN ENCASEMENT PIPE			
WATER LINE SIZE (INCHES)	NOM. DIA. STEEL (INCHES)	ENCASEMENT PIPE THICKNESS (INCHES)	PIPE WEIGHT (LBS./FT.)
6	18	0.375	70.59
8	24	0.375	94.62
12	24	0.375	94.62
16	30	0.375	118.65
20	36	0.438	166.19
24	42	0.438	194.02
30	48	0.50	259.02
36	54	0.50	291.07

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER ROADS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-7



NOTE:

1. FOSTER ADAPTORS, OR APPROVED EQUAL, REQUIRED AT ALL FITTING TO FITTING CONNECTIONS AND FITTING TO VALVE CONNECTIONS.
2. ANCHOR COUPLINGS MAY BE SUBSTITUTED FOR FOSTER ADAPTORS AT GVSUD'S DISCRETION.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	MECHANICAL JOINT ADAPTOR DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-31

NO.	REVISION	DATE

11-22-2023

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

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

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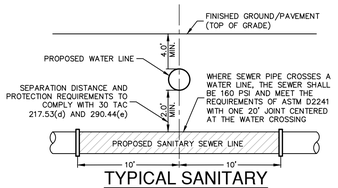
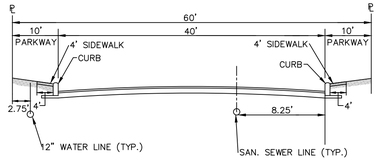


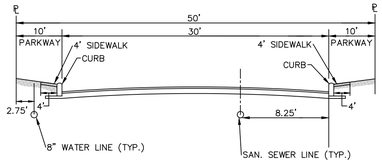
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



RESIDENTIAL COLLECTOR SECTION

NOT-TO-SCALE

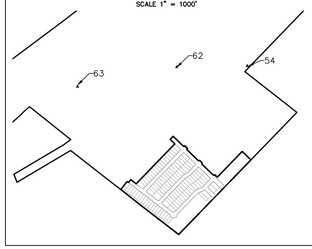


LOCAL STREET SECTION

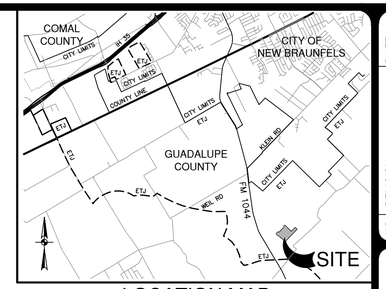
NOT-TO-SCALE

BENCHMARK LOCATION MAP

SCALE 1" = 1000'



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



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 60'

0' 60' 120' 180'

TRENCH EXCAVATION SAFETY PROTECTION:

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

SEWER LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GAS
- EXISTING SEWER
- PROPOSED SEWER
- MANHOLE
- FIRE HYDRANT
- PROPOSED WATER
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- PROPOSED STORM DRAIN
- PROPOSED GAS
- PROPOSED UNDERGROUND ELECTRIC

GBRA NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: HTTP://WWW.GBRA.ORG/OPERATIONS/DEVELOPER-RESOURCES/
2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES, MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
6. PVC MALE ADAPTERS ARE NOT ALLOWED.
7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
8. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES,INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30"OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾"CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.
2. MANHOLES LOCATED WITHIN A 100-YR FLOODPLAIN MUST BE GASKETED AND BOLTED DOWN TO PREVENT INFLOW

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.

CITY OF NEW BRAUNFELS NOTES

1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
4. UTILITY TRENCH COMPACTION – ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") 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.

DRY UTILITY CROSSING NOTE:

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

MATCHLINE "A" - SEE SHEET C5.01

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288800
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603

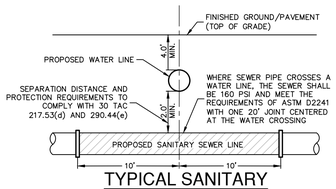
WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

OVERALL SANITARY SEWER

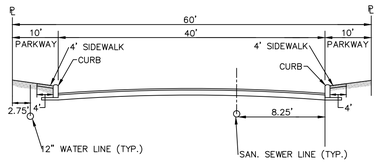
PLAT NO.	
JOB NO.	30058-05
DATE	NOVEMBER 2023
DESIGNER	CL
CHECKED HF	DRAWN JM
SHEET	C5.00

FOR PERMIT



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



RESIDENTIAL COLLECTOR SECTION

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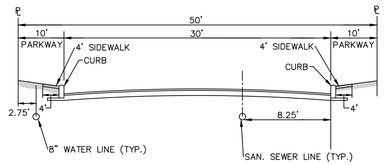

LOCAL STREET SECTION

NOT-TO-SCALE

CITY OF NEW BRAUNFELS NOTES

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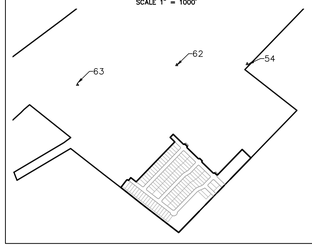
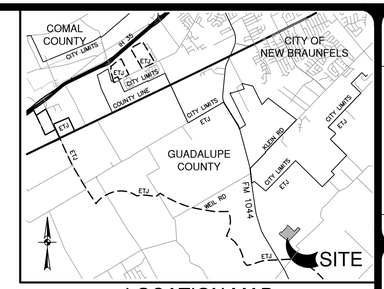
BENCHMARK LOCATION MAP

SCALE 1" = 1000'



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

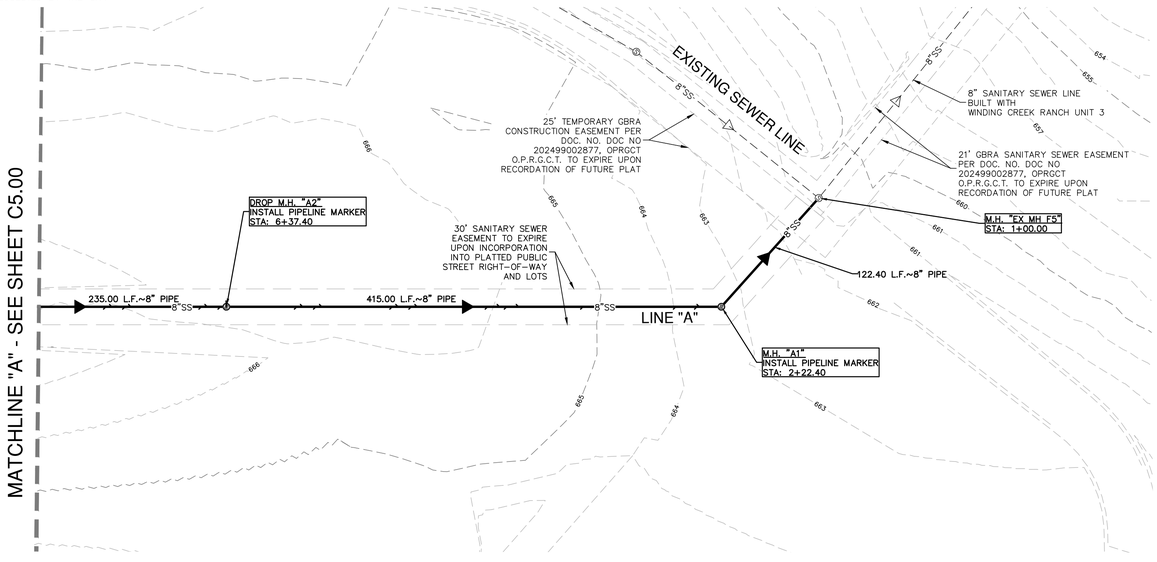


LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 60'

0' 60' 120' 180'



SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER (EXISTING FIRE HYDRANT)
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GAS
- EXISTING SEWER (MANHOLE)
- PROPOSED SEWER
- PROPOSED WATER (FIRE HYDRANT)
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- PROPOSED STORM DRAIN
- PROPOSED GAS
- PROPOSED UNDERGROUND ELECTRIC

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3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
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5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
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7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
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9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
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14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾"CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
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18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.
2. MANHOLES LOCATED WITHIN A 100-YR FLOODPLAIN MUST BE GASKETED AND BOLTED DOWN TO PREVENT INFLOW

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

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

OVERALL SANITARY SEWER

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

FOR PERMIT

Date: Jul 17, 2024, 11:52am User ID: jmay
File: P:\3001\681051\Design\Civil\SSOA-30058-05.dwg
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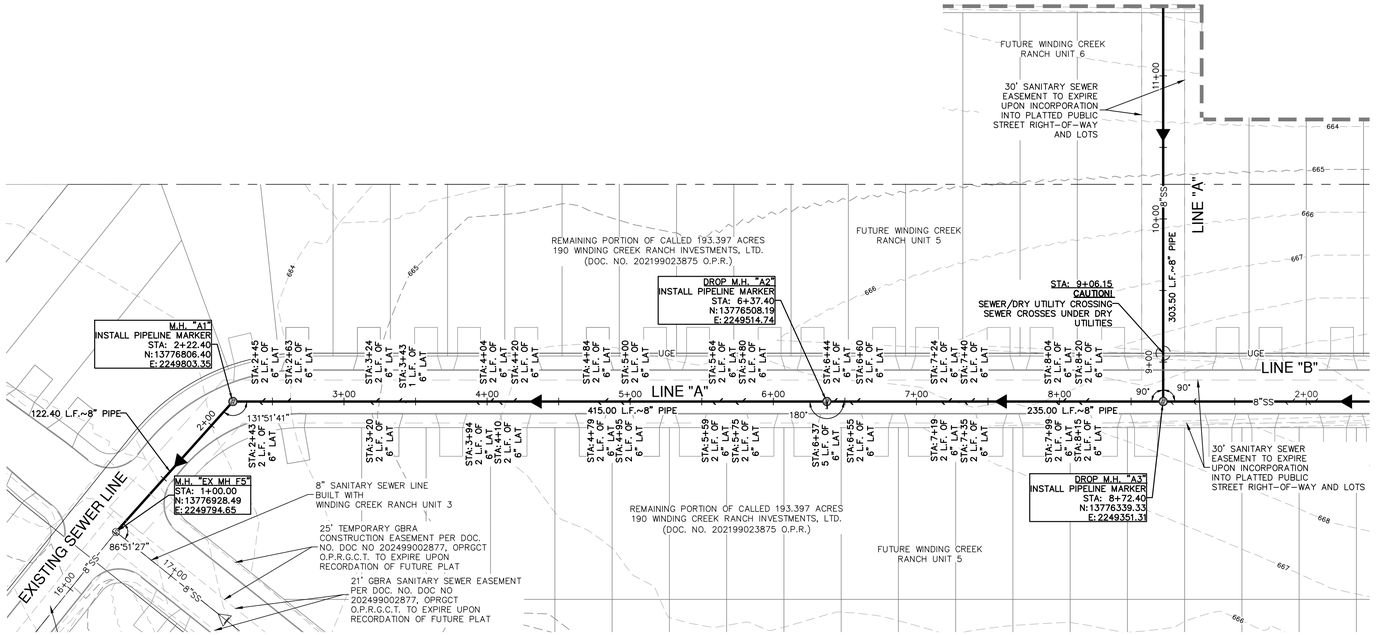
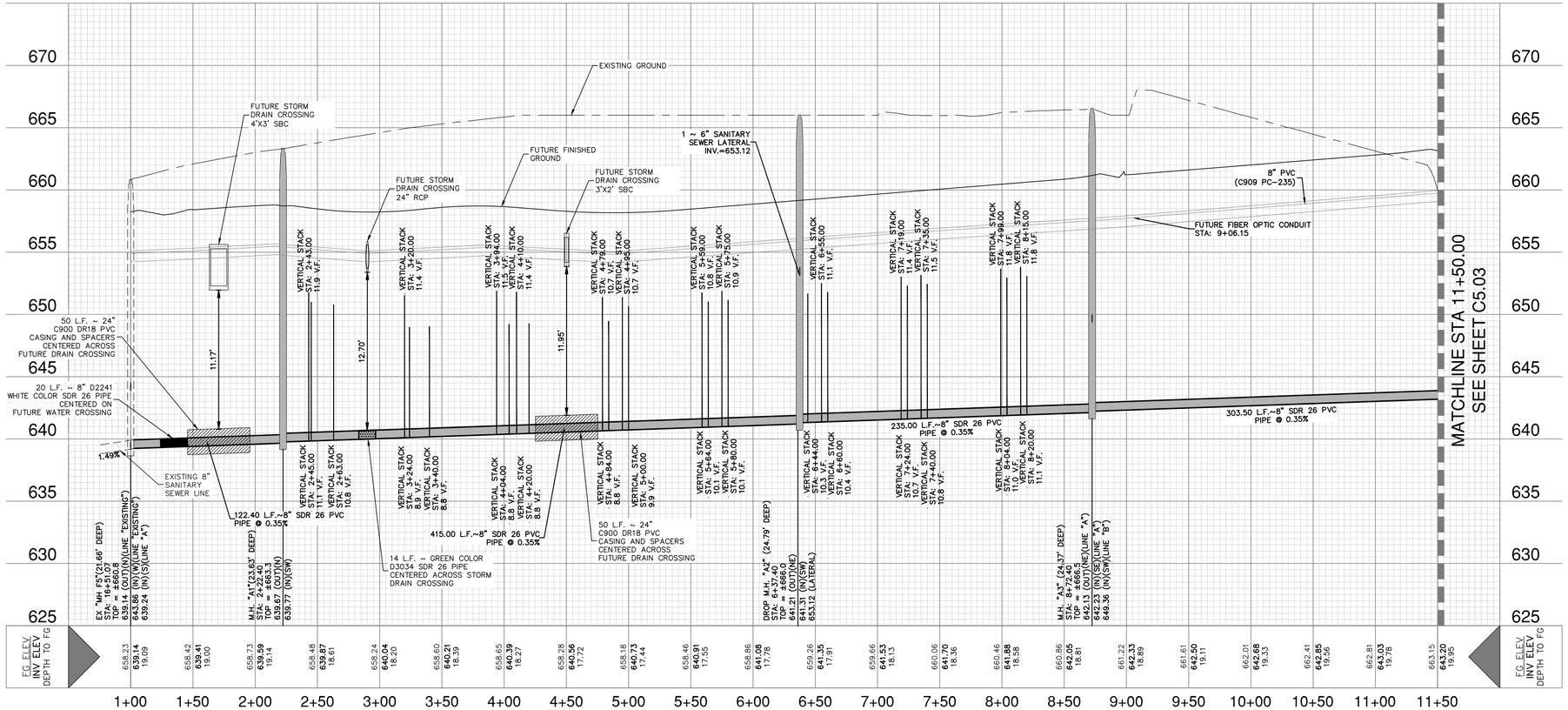
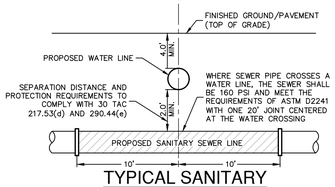


SANITARY SEWER LINE "A"
STA 1+00.00 TO 11+50.00

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



SCALE: 1"= 50'
0' 50' 100' 150'



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

NOTES:

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SEWER LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER — W —
- EXISTING UNDERGROUND ELECTRIC — UGE —
- EXISTING GAS — G —
- EXISTING SEWER — SS —
- PROPOSED SEWER — SS — (MANHOLE)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER — W —
- PROPOSED SEWER LATERAL — S —
- FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX
- PROPOSED STORM DRAIN
- PROPOSED GAS — G —
- PROPOSED UNDERGROUND ELECTRIC (SEE GVEC PLANS FOR FINAL ALIGNMENT. ELECTRIC SHOWN FOR REFERENCE ONLY.) — UGE —

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NO.	REVISION	DATE

7-17-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 1+00.00 TO 11+50.00

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

FOR PERMIT

Date: Jul 17, 2024, 11:53am User ID: jmay
File: P:\30058-05\Design\Civil\SSA-30058-05.dwg

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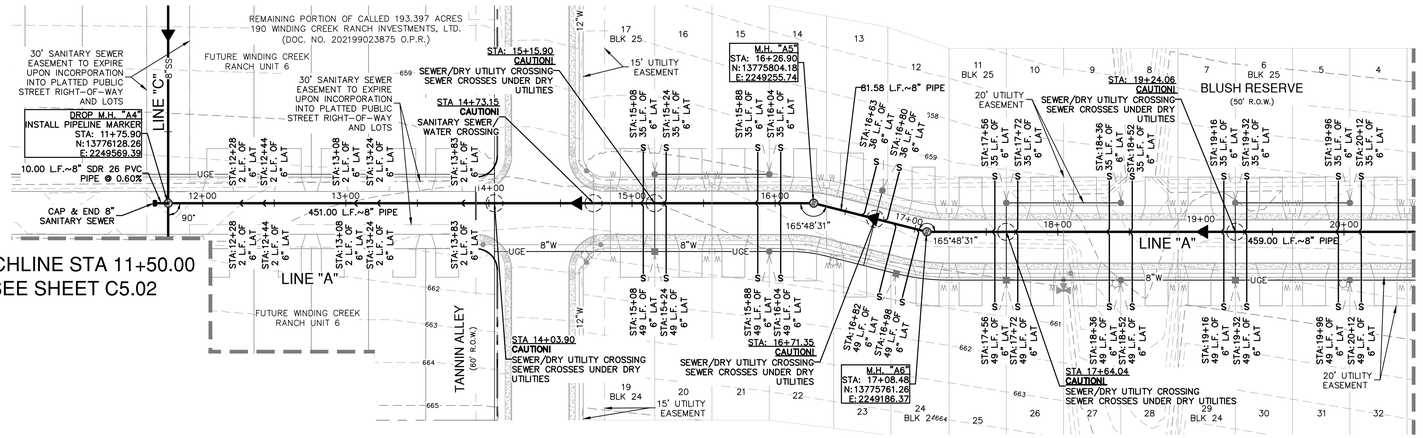
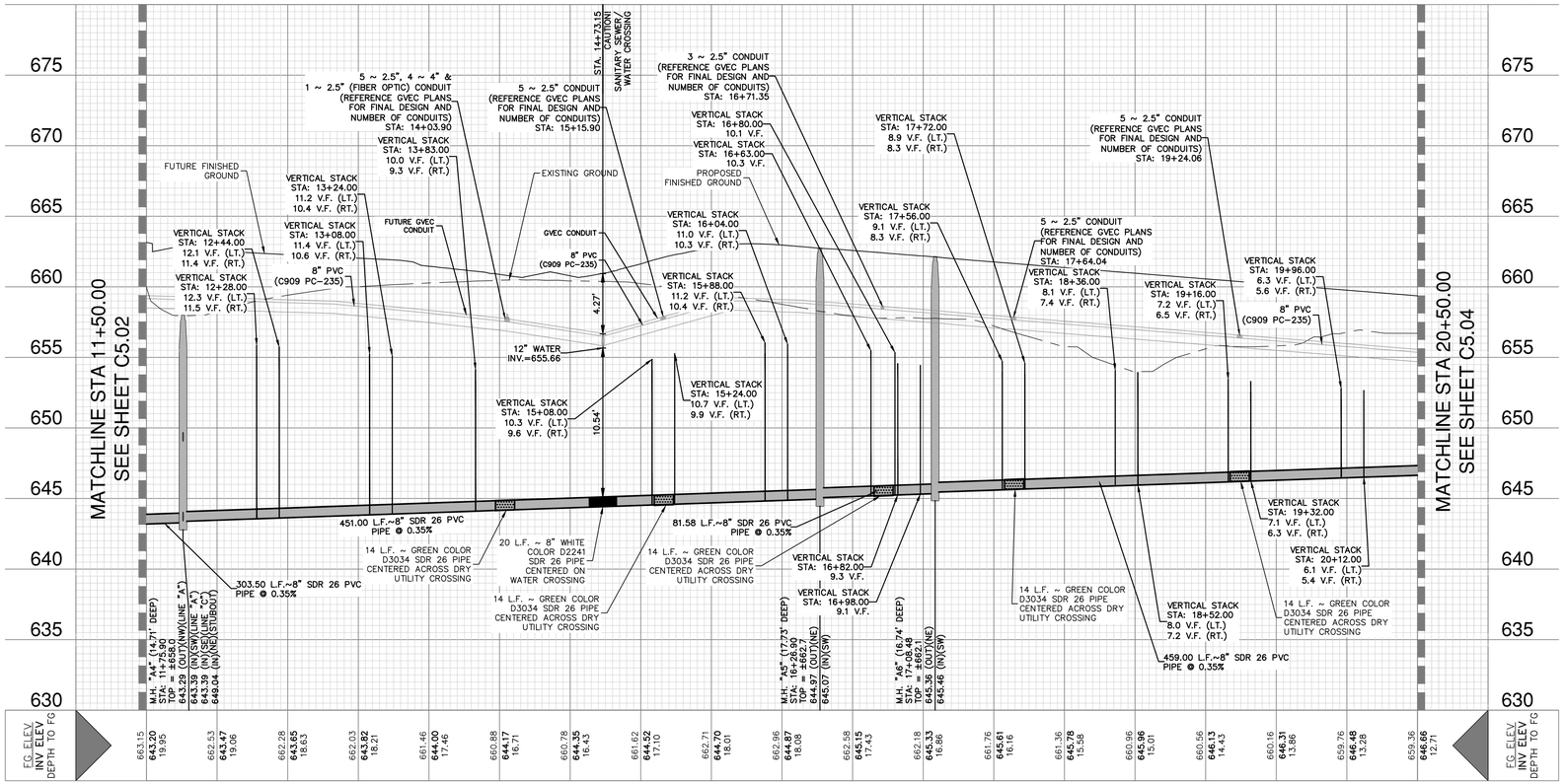
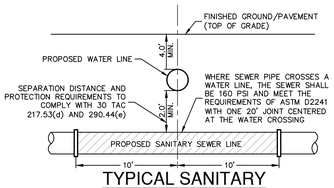


SANITARY SEWER LINE "A"
STA 11+50.00 TO 20+50.00

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





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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SCALE: 1"= 50'
0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UGE)
- EXISTING GAS (G)
- EXISTING SEWER (SS)
- PROPOSED SEWER (SS) MANHOLE
- PROPOSED WATER (W) FIRE HYDRANT
- PROPOSED SEWER LATERAL (S)
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
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9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES,INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30"OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

TRENCH EXCAVATION SAFETY PROTECTION:

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE A - PLAN & PROFILE
STA 11+50.00 TO 20+50.00

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.03

FOR PERMIT

Date: Jul 17, 2024, 11:53am User ID: jmay
File: P:\300\SB\05\Design\Civil\SSA-30058-05.dwg

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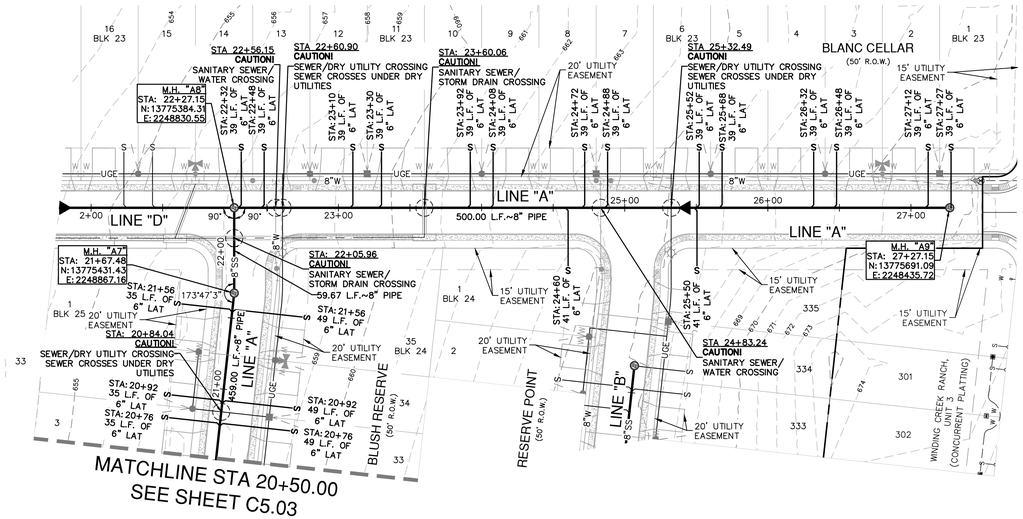

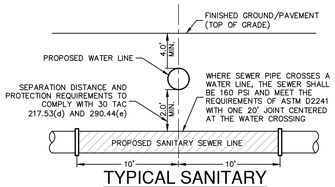

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER (EXISTING FIRE HYDRANT)

EXISTING UNDERGROUND ELECTRIC

EXISTING GAS

EXISTING SEWER

PROPOSED SEWER (MANHOLE)

PROPOSED WATER (FIRE HYDRANT)

PROPOSED SEWER LATERAL

FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)

PROPOSED STORM DRAIN

PROPOSED GAS

PROPOSED UNDERGROUND ELECTRIC (SEE GVEC PLANS FOR FINAL ALIGNMENT. ELECTRIC SHOWN FOR REFERENCE ONLY.)

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2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
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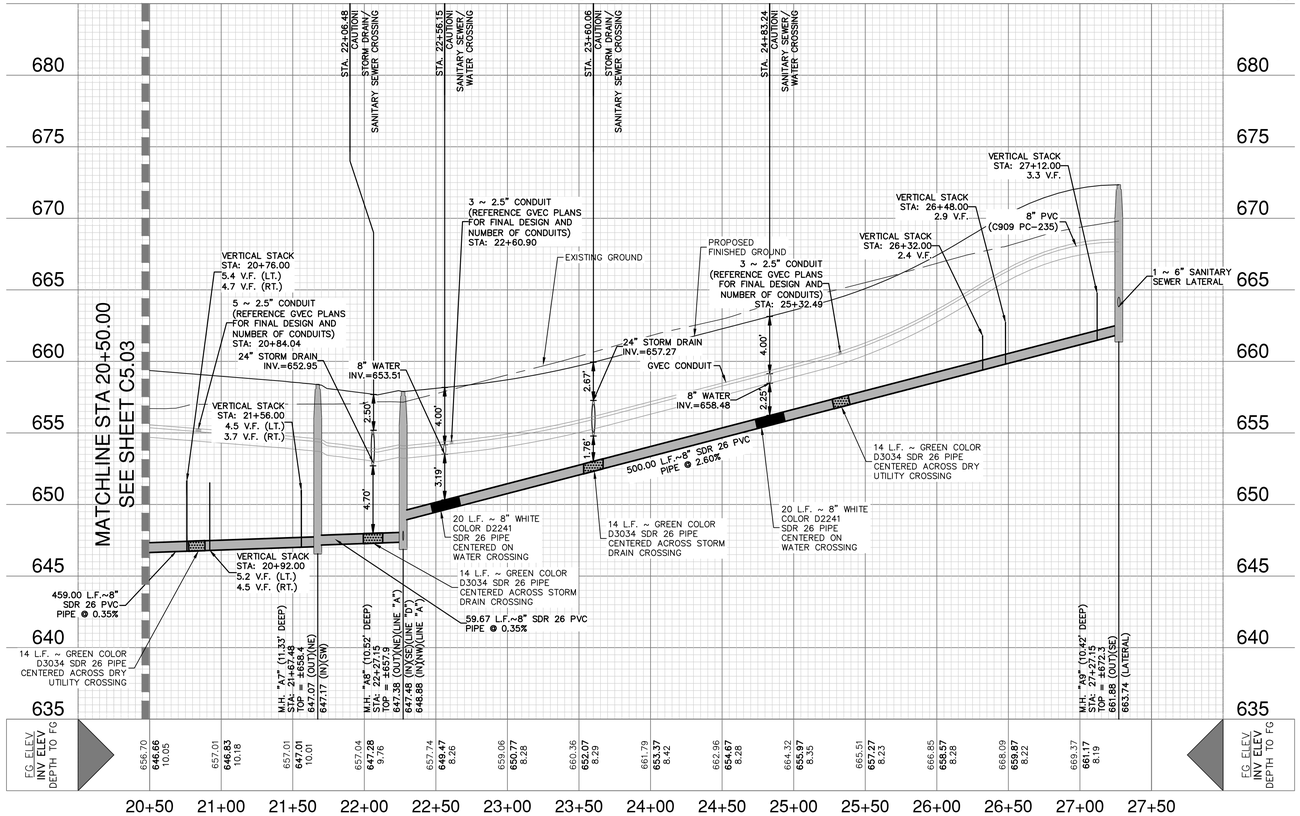
SANITARY SEWER LINE "A"
STA 20+50.00 TO 27+17.15

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



NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.
2. MANHOLES LOCATED WITHIN A 100-YR FLOODPLAIN MUST BE GASKETED AND BOLTED DOWN TO PREVENT INFLOW

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.

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Jul 17, 2024, 11:53am User ID: jmay
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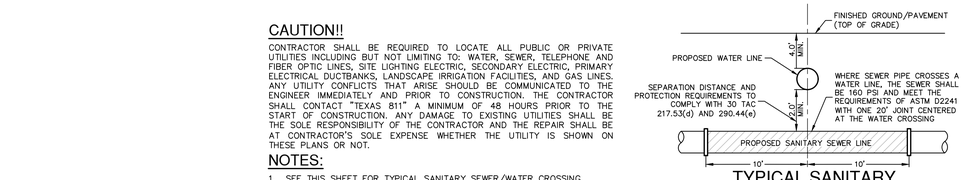
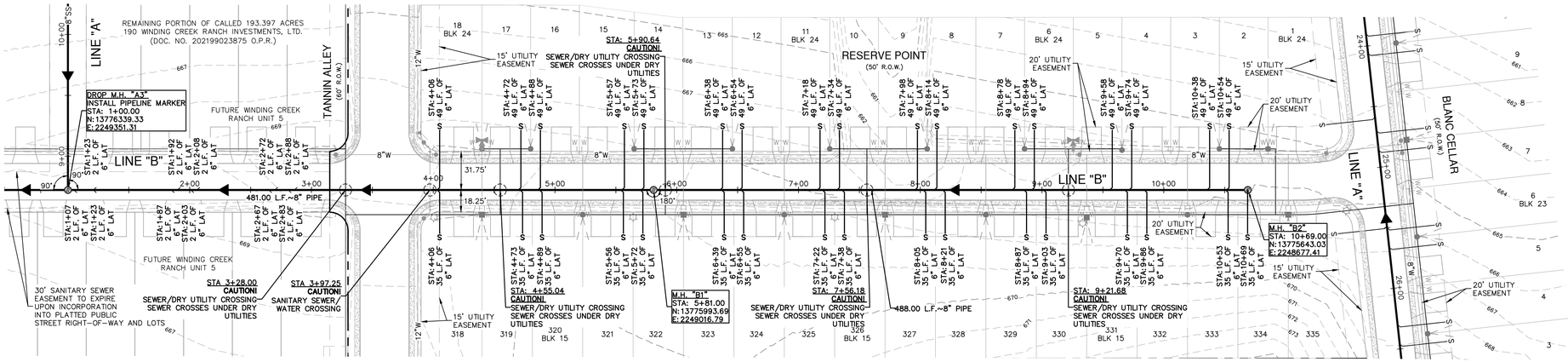
VERTICAL STACK NOTE:

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



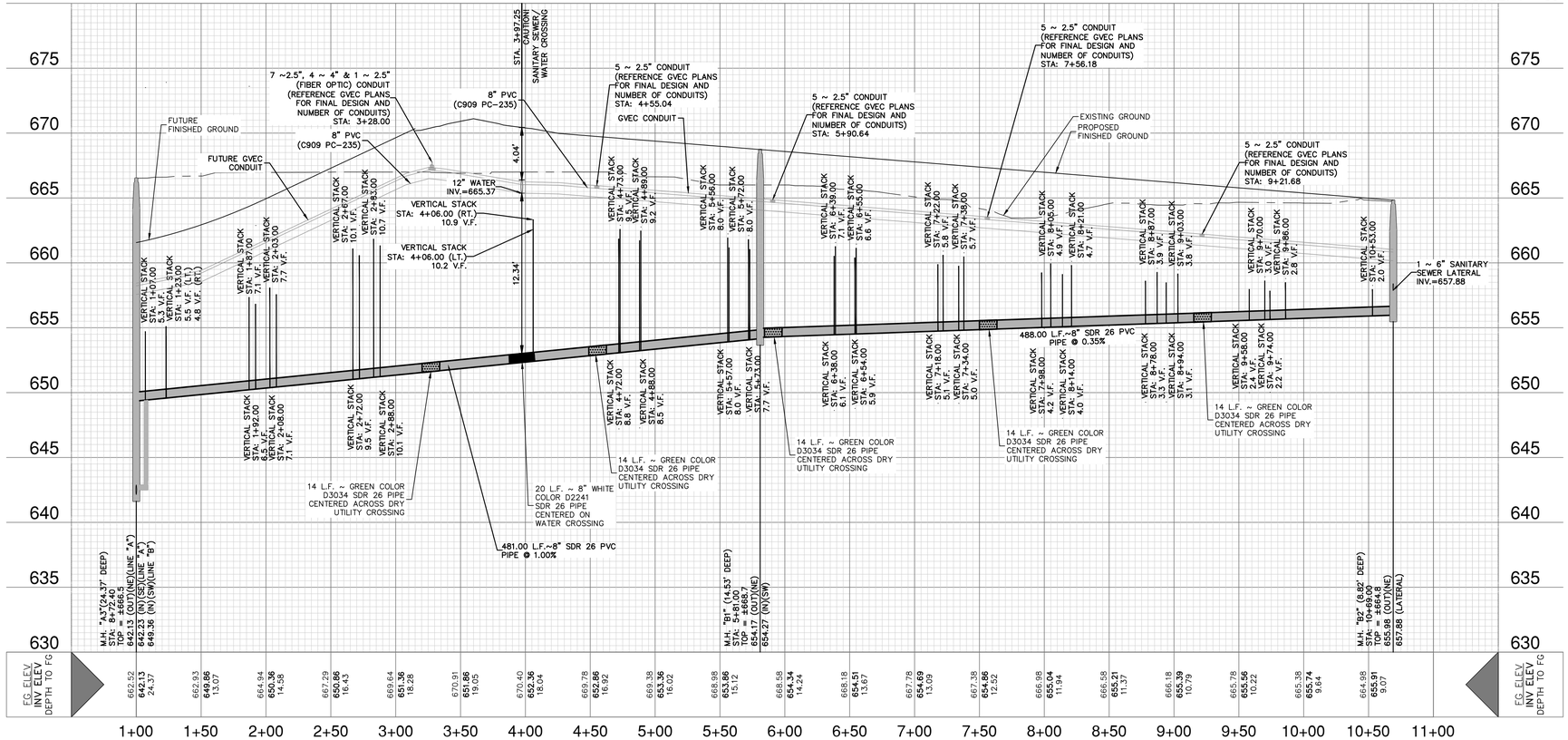
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



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

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



SEWER LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UGE)
- EXISTING GAS (G)
- EXISTING SEWER (SS)
- PROPOSED SEWER (SS) MANHOLE
- PROPOSED WATER FIRE HYDRANT (W)
- PROPOSED SEWER LATERAL (S)
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- PROPOSED STORM DRAIN
- PROPOSED GAS (G)
- PROPOSED UNDERGROUND ELECTRIC (SEE GVEC PLANS FOR FINAL ALIGNMENT. ELECTRIC SHOWN FOR REFERENCE ONLY.) (UGE)

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Jul 17, 2024, 11:54am User ID: jmay
File: P:\305\58\05\Design\Civil\SSB-30058-05.dwg

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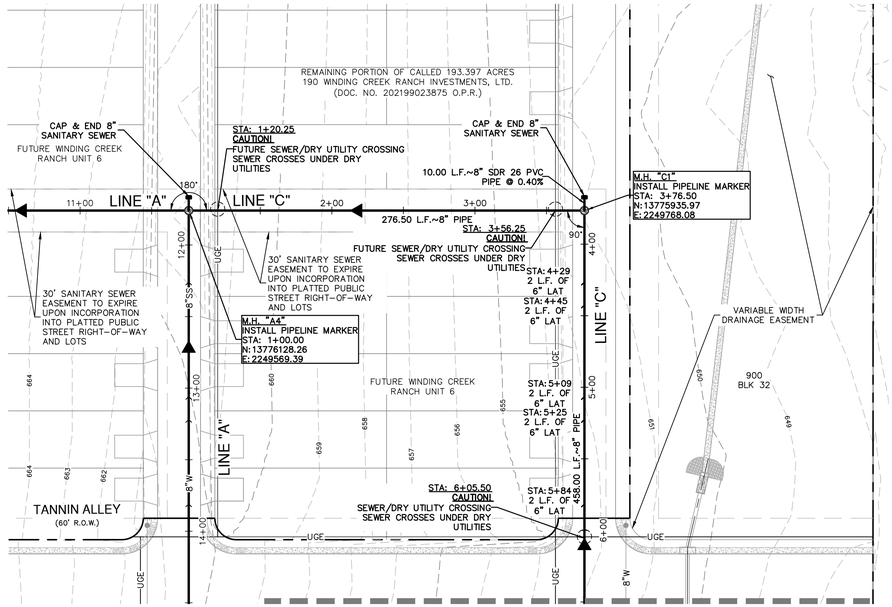
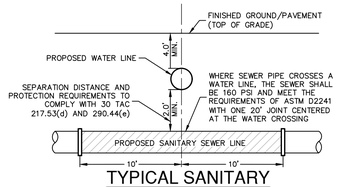


MATCHLINE STA 6+50.00
SEE SHEET C5.07



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

NOTES:

1. SEE THIS SHEET FOR TYPICAL SANITARY SEWER/WATER CROSSING DETAIL.
2. MANHOLES LOCATED WITHIN A 100-YR FLOODPLAIN MUST BE GASKETED AND BOLTED DOWN TO PREVENT INFLOW

VERTICAL STACK NOTE:

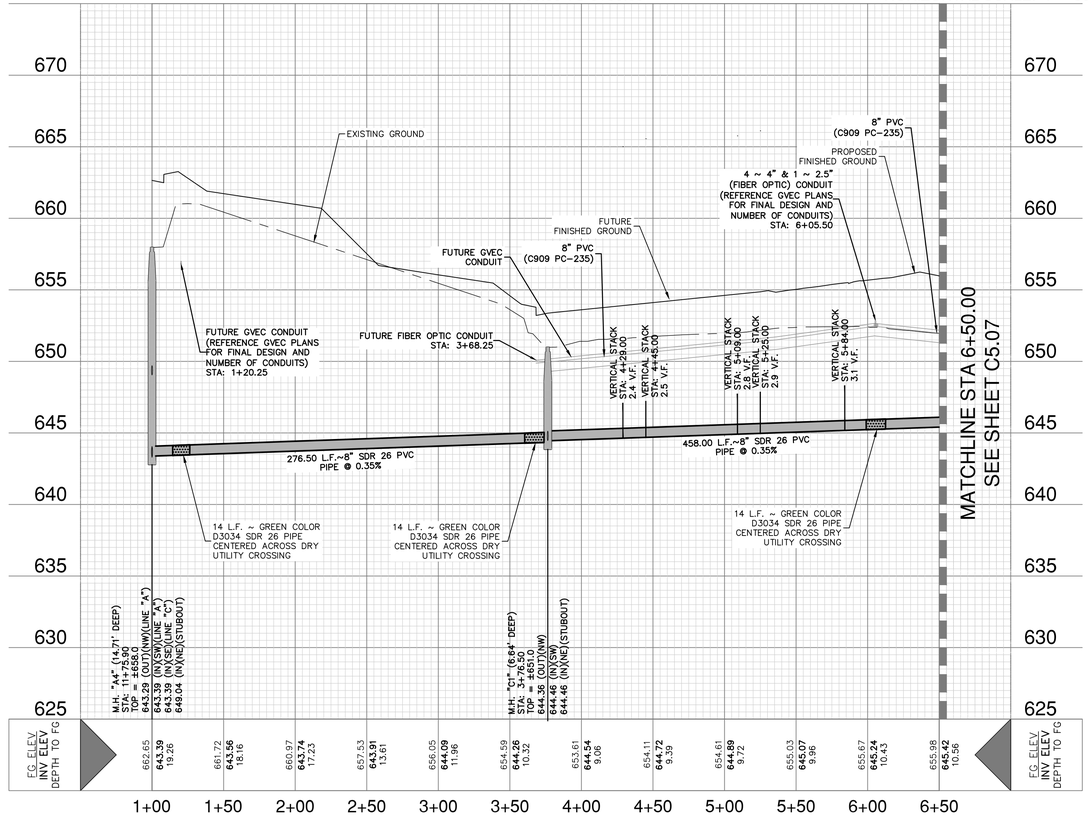
FOR VERTICAL STACKS ON FUTURE LOTS, CONTRACTOR TO CAP VERTICAL STACKS AT SPECIFIED LENGTHS AS SHOWN IN PROFILE VIEW.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. 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.

SANITARY SEWER LINE "C"
STA 1+00.00 TO 6+50.00

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



SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — W —

EXISTING UNDERGROUND ELECTRIC — UGE —

EXISTING GAS — G —

EXISTING SEWER — SS —

PROPOSED SEWER — SS — MANHOLE

PROPOSED WATER — W — FIRE HYDRANT

PROPOSED SEWER LATERAL — S

FINISHED FLOOR ELEVATION FOR SEWER — FF = XXXX.XX

PROPOSED STORM DRAIN

PROPOSED GAS — G —

PROPOSED UNDERGROUND ELECTRIC (SEE GVEC PLANS FOR FINAL ALIGNMENT. ELECTRIC SHOWN FOR REFERENCE ONLY.) — UGE —

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6. PVC MALE ADAPTERS ARE NOT ALLOWED.
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NO.	REMISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE C - PLAN & PROFILE
STA 1+00.00 TO 6+50.00

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.06

FOR PERMIT

Date: Jul 17, 2024, 11:55am User ID: jmay
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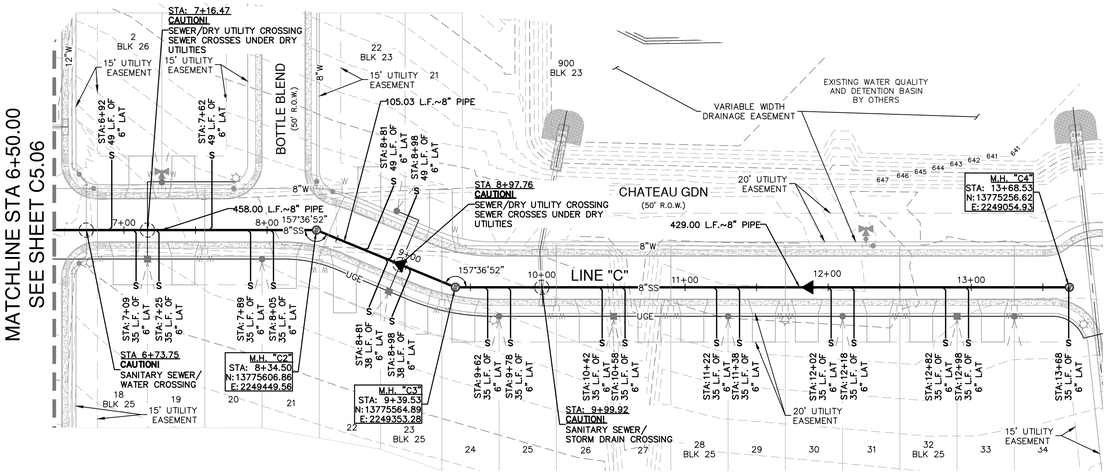

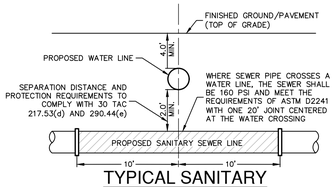

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER (EXISTING FIRE HYDRANT)
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GAS
- EXISTING SEWER
- PROPOSED SEWER (MANHOLE)
- PROPOSED WATER (FIRE HYDRANT)
- PROPOSED SEWER LATERAL
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- PROPOSED STORM DRAIN
- PROPOSED GAS
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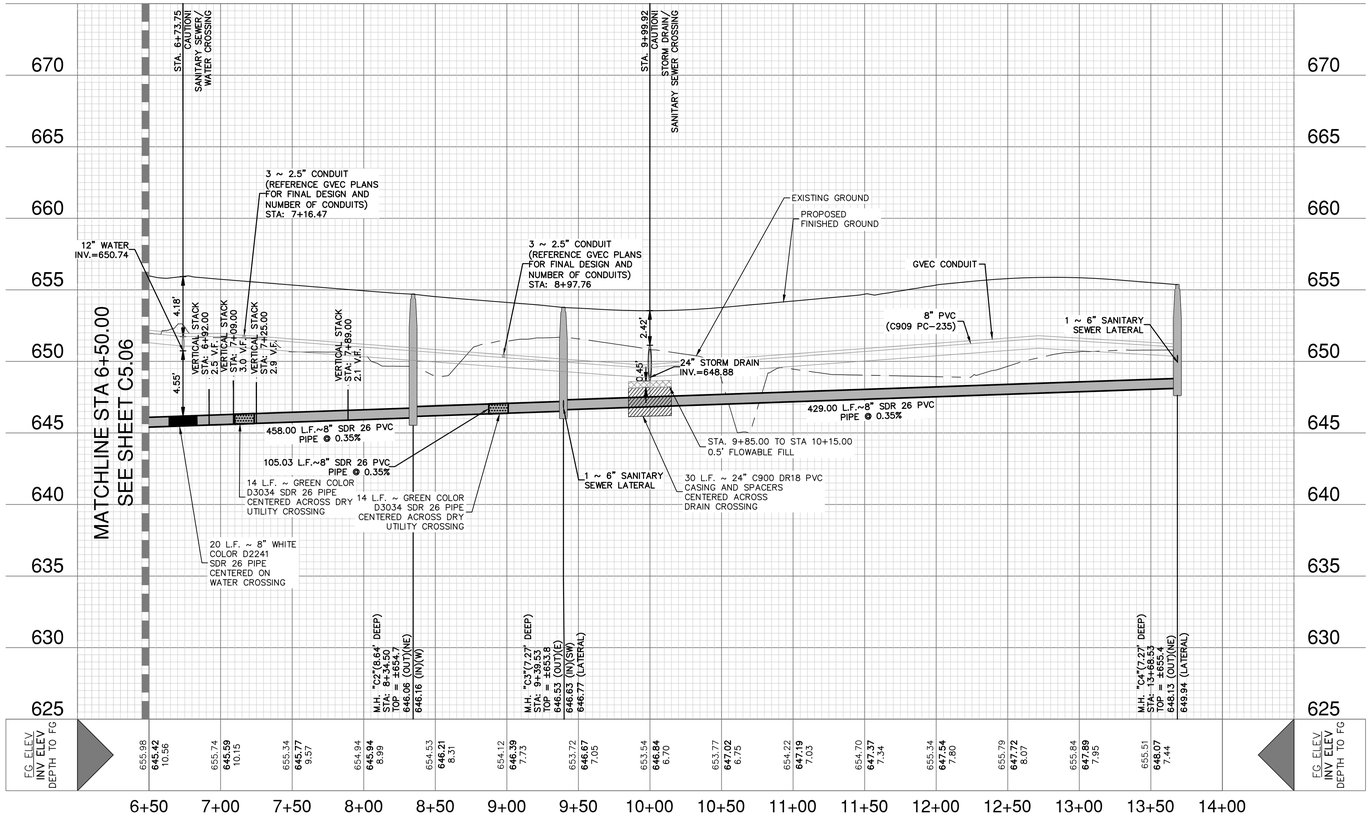
SANITARY SEWER LINE "C"
STA 6+50.00 TO 13+68.53

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



NOTES:

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NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

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

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

FOR PERMIT

Date: Jul 17, 2024, 11:55am User ID: jmay
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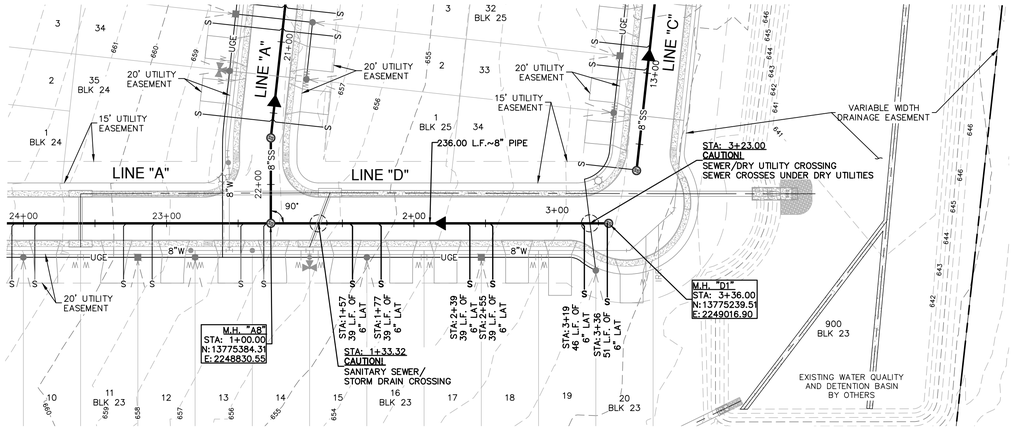

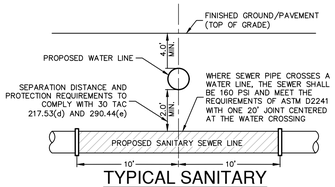

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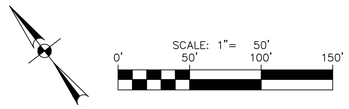

SEWER LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UGE)
- EXISTING GAS (G)
- EXISTING SEWER (SS)
- PROPOSED SEWER (SS) MANHOLE
- PROPOSED WATER (W) FIRE HYDRANT
- PROPOSED SEWER LATERAL (S)
- FINISHED FLOOR ELEVATION FOR SEWER (FF = XXXX.XX)
- PROPOSED STORM DRAIN
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12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES,INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30"OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾" CHAMFER STRIPS.
16. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
17. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
18. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

TRENCH EXCAVATION SAFETY PROTECTION:

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

DRY UTILITY CROSSING NOTE:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER LINE D - PLAN & PROFILE
STA 1+00.00 TO 3+36.00

PLAT NO. ____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.08

FOR PERMIT

Date: Jul 17, 2024, 11:56am User ID: jmay
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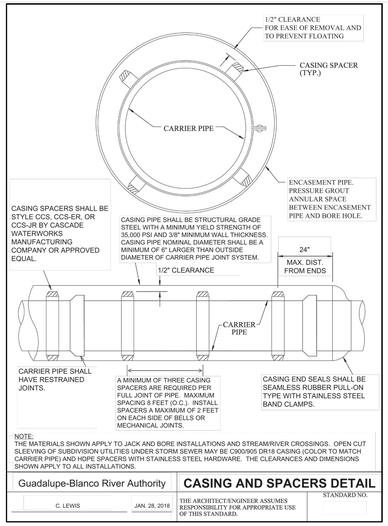
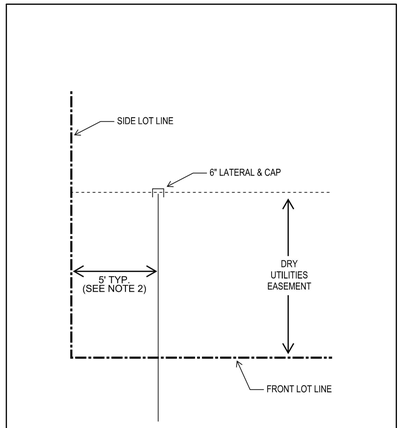


NOTE:
THE MATERIALS SHOWN APPLY TO JACK AND BORE INSTALLATIONS AND STREAM/RIVER CROSSINGS. OPEN CUT SLEEVING OF SUBDIVISION UTILITIES UNDER STORM SEWER MAY BE C900/905 DR18 CASING (COLOR TO MATCH CARRIER PIPE) AND HDPE SPACERS WITH STAINLESS STEEL HARDWARE. THE CLEARANCES AND DIMENSIONS SHOWN APPLY TO ALL INSTALLATIONS.

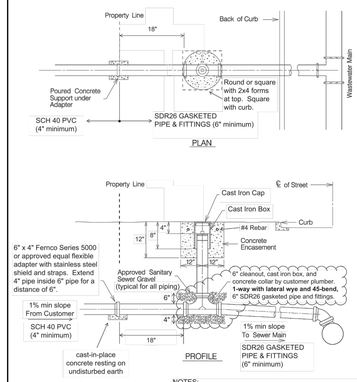
Guadalupe-Blanco River Authority	**CASING AND SPACERS DETAIL**	
C. LEWIS JAN. 28, 2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO.



NOTES:
1. REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE 8 FT WHERE LOT CORNER IS SHARED WITH DRY UTILITIES AND 10 FT WHERE SHARED WITH FIRE HYDRANT OR AIR RELEASE VALVE.

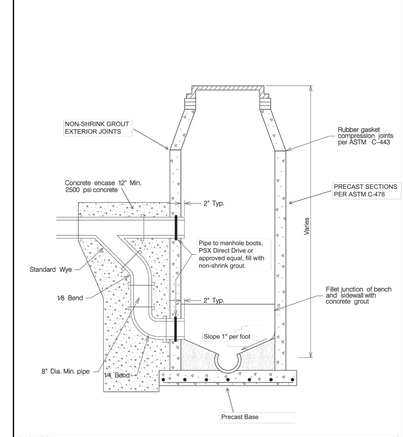
WASTEWATER LATERAL LAYOUT DETAIL (N.T.S.)

GUADALUPE-BLANCO RIVER AUTHORITY, 12/15/2021



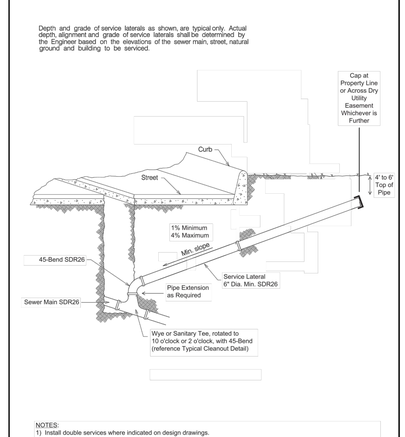
NOTES:
1) Cleanouts are not allowed within driveways.
2) Tapping saddles are not allowed.
3) Cleanout risers shall be installed plumb/level. Top of concrete shall be 2" above finish grade. Vertical and horizontal edges of exposed concrete shall be formed with 3/4" chamfer strips.
4) Customer plumber must install a separate 2-way cleanout (4" minimum size) at customer facility.
5) Use TXDOT Grade 4 crushed stone coarse aggregate bedding for all piping, 4" minimum below pipe, 6" minimum above pipe.
6) Obtain GBRA inspection prior to backfill (830-379-5822). Minimum 48-hours notice is required.

Guadalupe-Blanco River Authority	TYPICAL CLEANOUT DETAIL	APPROVED C. LEWIS	REVISED JAN. 28, 2018
			SHEET



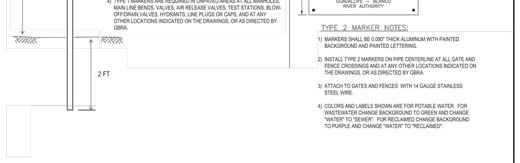
NOTES:
1) A wastewater collection system pipe, including service laterals, entering a manhole more than 24" above the manhole out invert must have an external drop pipe. Internal drops are not allowed.
2) Reference standard precast manhole detail for additional requirements.

Guadalupe-Blanco River Authority	**DROP MANHOLE**	APPROVED C. LEWIS	REVISED JAN. 28, 2018
			SHEET



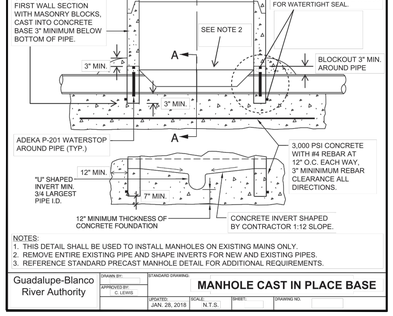
NOTES:
1) Install double services where indicated on design drawings.
2) Cleanout to be installed by customer plumber.
3) Pipe and fittings shall be gasketed. Tees and 90-bends are not allowed.
4) Pressure rated pipe and fittings shall be installed for sewer mains and laterals that cross water lines (use ASTM D2241 SDR26). Center both water and sewer pipe lengths at all crossings. Comply with TCEQ Rules.
5) Tapping saddles are not allowed.

Guadalupe-Blanco River Authority	LATERAL DETAIL	APPROVED C. LEWIS	REVISED JAN. 28, 2018
			SHEET



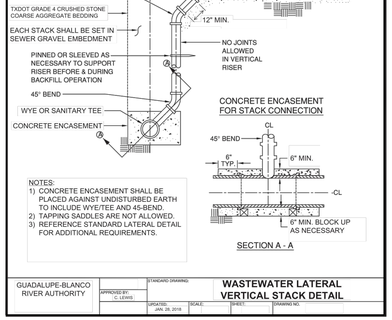
PIPELINE MARKERS

Guadalupe-Blanco River Authority, 01/30/2018



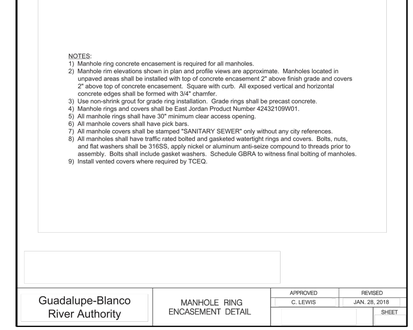
NOTES:
1. THIS DETAIL SHALL BE USED TO INSTALL MANHOLES ON EXISTING MAINS ONLY.
2. REMOVE ENTIRE EXISTING PIPE AND SHAPE INVERTS FOR NEW AND EXISTING PIPES.
3. REFERENCE STANDARD PRECAST MANHOLE DETAIL FOR ADDITIONAL REQUIREMENTS.

Guadalupe-Blanco River Authority	DRAWN BY:	STANDARD DRAWING	**MANHOLE CAST IN PLACE BASE**
	APPROVED BY: C. LEWIS	UPDATED: JAN. 28, 2018	SCALE: N.T.S. SHEET: DRAWING NO:



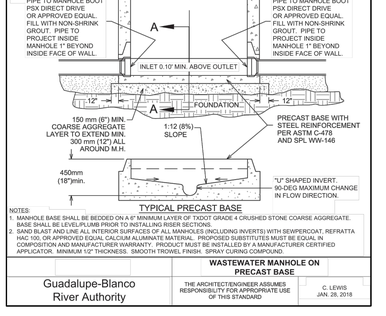
NOTES:
1) CONCRETE ENCASEMENT SHALL BE PLACED AGAINST UNDISTURBED EARTH TO INCLUDE WYE/TEE AND 45-BEND.
2) TAPPING SADDLES ARE NOT ALLOWED.
3) REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.

GUADALUPE-BLANCO RIVER AUTHORITY	STANDARD DRAWING:	**WASTEWATER LATERAL VERTICAL STACK DETAIL**
	APPROVED BY: C. LEWIS	UPDATED: JAN. 28, 2018 SCALE: SHEET: DRAWING NO:



NOTES:
1) Manhole ring concrete encasement is required for all manholes.
2) Manhole rim elevations shown in plan and profile views are approximate. Manholes located in unpaved areas shall be installed with top of concrete encasement 2" above finish grade and covers 2" above top of concrete encasement. Square with curb. All exposed vertical and horizontal concrete edges shall be formed with 3/4" chamfer.
3) Use non-shrink grout for grade ring installation. Grade rings shall be precast concrete.
4) Manhole rings and covers shall be East Jordan Product Number 4243210WW01.
5) All manhole rings shall have 30" minimum clear access opening.
6) All manhole covers shall have pick bars.
7) All manhole covers shall be stamped "SANITARY SEWER" only without any city references.
8) All manholes shall have traffic-rated bolted and gasketed watertight rings and covers. Bolts, nuts, and flat washers shall be 316SS, apply nickel or aluminum anti-seize compound to threads prior to assembly. Bolts shall include gasket washers. Schedule GBRA to witness final bolting of manholes.
9) Install vented covers where required by TCEQ.

Guadalupe-Blanco River Authority	MANHOLE RING ENCASEMENT DETAIL	APPROVED C. LEWIS	REVISED JAN. 28, 2018
			SHEET



NOTES:
1. MANHOLE BASE SHALL BE BEDDED ON A 6" MINIMUM LAYER OF TXDOT GRADE 4 CRUSHED STONE COARSE AGGREGATE. BASE SHALL BE LEVEL/PLUMB PRIOR TO INSTALLING RISER SECTIONS.
2. SAND BLAST AND LINE ALL INTERIOR SURFACES OF ALL MANHOLES (INCLUDING INVERTS) WITH SEWPERCOAT, REFRATTA HAC 100, OR APPROVED EQUAL CALCIUM ALUMINATE MATERIAL. PROPOSED SUBSTITUTES MUST BE EQUAL IN COMPOSITION AND MANUFACTURER WARRANTY. PRODUCT MUST BE INSTALLED BY A MANUFACTURER CERTIFIED APPLICATOR. MINIMUM 1/2" THICKNESS. SMOOTH TROWEL FINISH. SPRAY CURING COMPOUND.

Guadalupe-Blanco River Authority	**WASTEWATER MANHOLE ON PRECAST BASE**	
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	C. LEWIS JAN. 28, 2018

NOTE:
TRACING WIRE TEST STATIONS ARE REQUIRED AT ALL FIRE HYDRANTS OR OTHERWISE TO ACHIEVE 500 LF MAX SPACING. TEST STATIONS SHALL BE COLOR CODED COPPERHEAD MODEL RB14TP. INSTALL WITHIN VALVE BOX CONCRETE COLLARS WITH 6" MINIMUM CONCRETE COVER ON ALL SIDES. LEAVE 12" WIRE SLACK INSIDE TEST STATIONS. NOT REQUIRED FOR STRAIGHT RUNS BETWEEN MANHOLES.

TYPICAL PIPE TRENCH

Guadalupe-Blanco River Authority, 02/05/2018

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED PROFESSIONAL ENGINEER
5-24-2024

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

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

SANITARY SEWER DETAILS

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.10

FOR PERMIT

Date: May 24, 2024, 2:46pm User ID: ALeddy
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SEWER NOTES:

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

GBRA NOTES:

MATERIALS

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

TESTING

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

CONSTRUCTION NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: HTTPS://WWW.GBRA.ORG/OPERATIONS/DEVELOPER-RESOURCES/ COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AN PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
2. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
3. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
4. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
5. PVC MALE ADAPTERS ARE NOT ALLOWED.
6. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
7. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
8. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
9. ALL PIPING SHALL BE INSTALLED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
10. INSTALL CONCRETE THRUST BLOCKING AND MECHANICAL RESTRAINTS FOR PRESSURE PIPING SYSTEMS.
11. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCH VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
12. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES, INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER LATERALS AND FIRE HYDRANT LEADS.
13. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30" OR LARGER.
14. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
15. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾" CHAMFER STRIPS.
16. EXISTING FACILITIES THAT ARE DISTURBED SHALL BE RESTORED AND TESTED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS. THE CONTRACTOR SHALL ADJUST EXISTING WATER AND WASTEWATER FACILITIES TO PROPOSED FINISH GRADES INCLUDING BUT NOT LIMITED TO MANHOLES, CLEANOUTS, VALVES, HYDRANTS, APPURTENANCES, ETC.
17. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
18. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00 PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
19. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

AS-BUILT AND RECORD DRAWINGS:

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

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

NO.	REVISION	DATE

2-22-2024

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288-00
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS

SANITARY SEWER NOTES

PLAT NO. _____
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C5.20

FOR PERMIT

Date: Feb 22, 2024, 9:21am User ID: ALeddy
File: P:\30\58\05\Design\Civil\SSNT-30058-05.dwg
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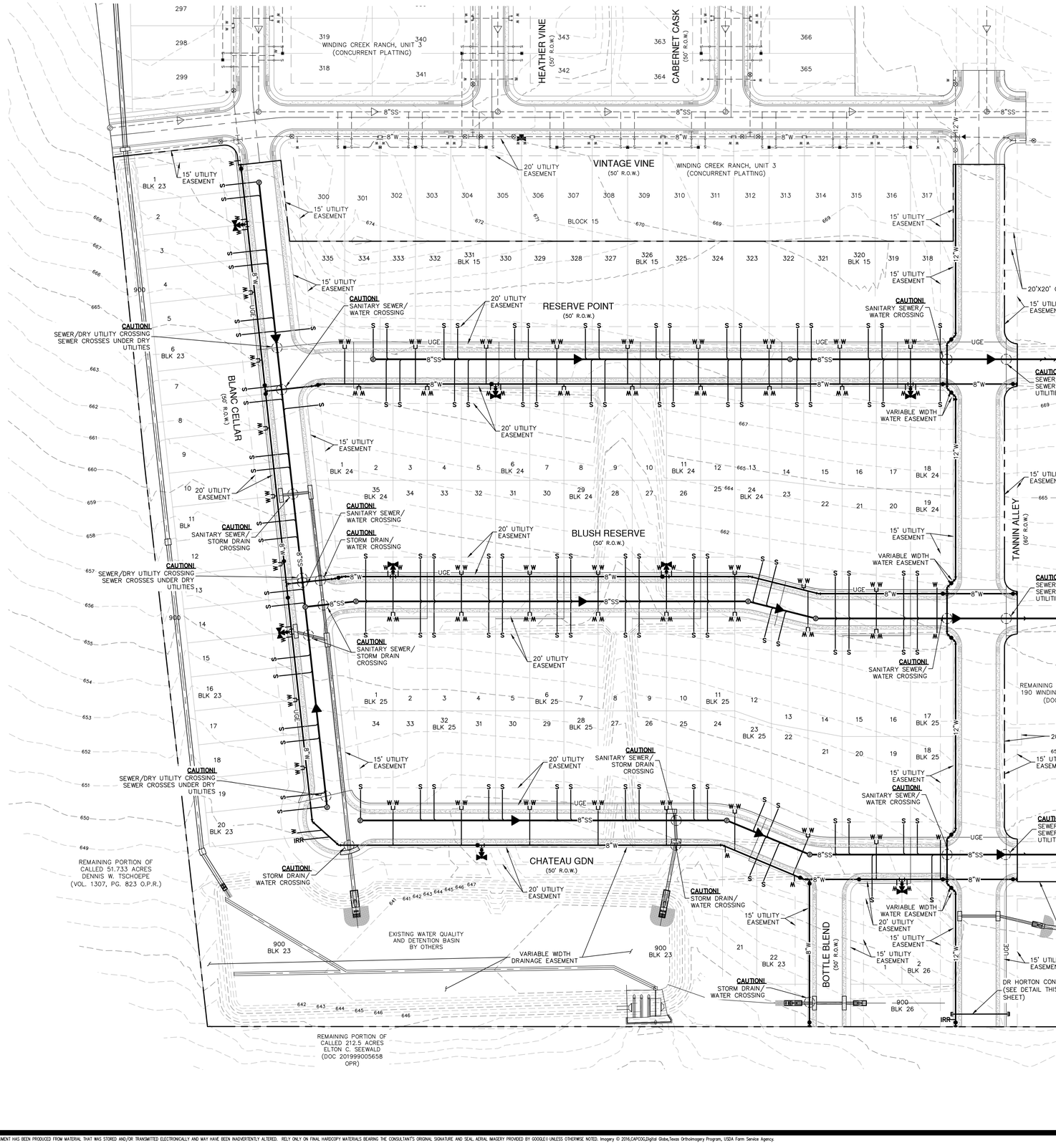
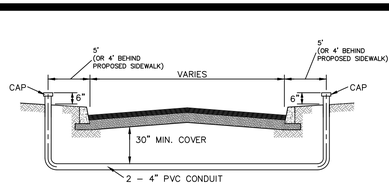




TYPICAL CONDUIT DETAIL (D.R. HORTON)

NOT TO SCALE

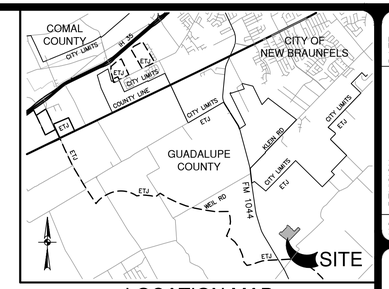
NOTE:

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

1. 2–4" P.V.C. SCHEDULE 40 CONDUITS, GREY WITH LONG SWEEPS, UNLESS OTHERWISE NOTED.

CONDUIT NOTES:

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



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 60'

0' 60' 120' 180'

UTILITY LEGEND

- PROJECT LIMITS
- EXISTING FIRE HYDRANT
- EXISTING WATER — W —
- EXISTING UNDERGROUND ELECTRIC — UGE —
- EXISTING GAS — G —
- EXISTING SEWER — SS —
- PROPOSED SEWER — SS — MANHOLE
- PROPOSED WATER — W — FIRE HYDRANT
- PROPOSED WYE & LATERAL
- SINGLE WATER SERVICE
- STREET LIGHTS — SL
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED GAS — G —
- PROPOSED UNDERGROUND ELECTRIC — UGE —

CITY OF NEW BRAUNFELS NOTES

1. NO VALVES, HYDRANTS, CLEANOUTS ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5–FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
4. UTILITY TRENCH COMPACTION – ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") 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.
5. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5–FEET IN DEPTH LOCATED IN PUBLIC RIGHT–OF–WAY OR EASEMENTS. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

CAUTION!!

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

TRENCH EXCAVATION SAFETY PROTECTION:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
7-17-2024

PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #100288000

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

OVERALL UTILITY PLAN

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

FOR PERMIT

Date: Jul 17, 2024, 11:56am User ID: jmay
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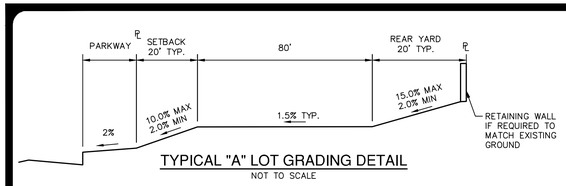
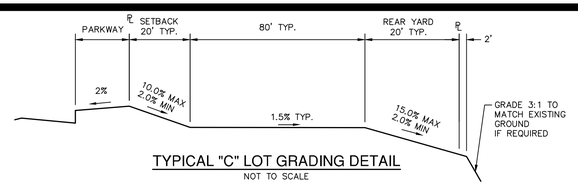


TYPICAL "A" LOT GRADING DETAIL

NOT TO SCALE

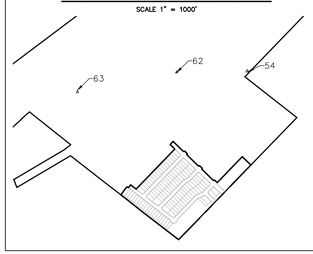


TYPICAL "C" LOT GRADING DETAIL

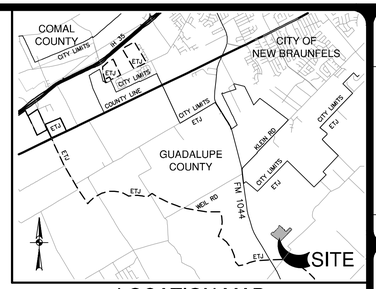
NOT TO SCALE

BENCHMARK LOCATION MAP

SCALE 1" = 1000'



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

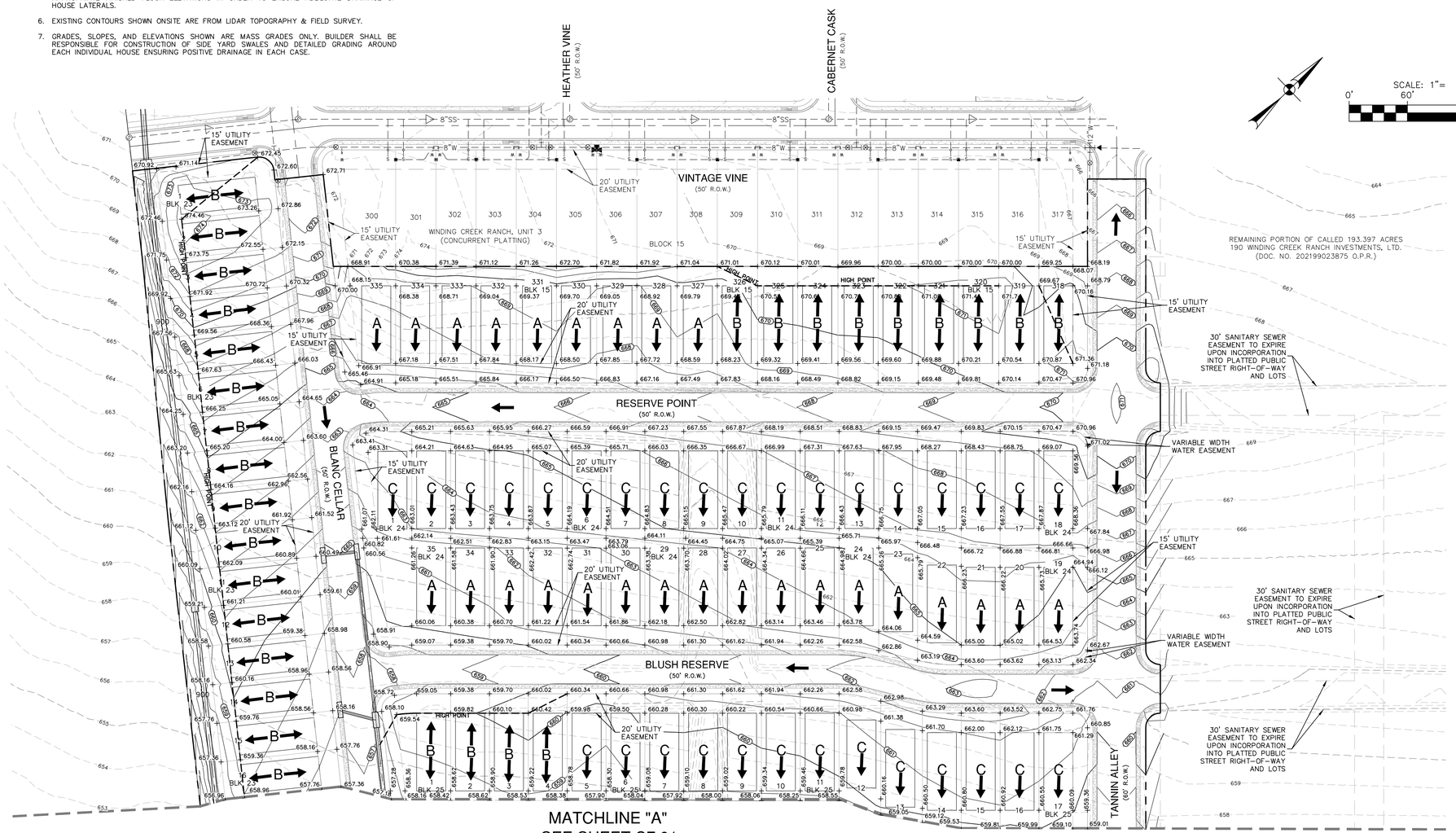


LOCATION MAP

NOT-TO-SCALE

RESIDENTIAL GRADING NOTES:

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



SCALE: 1"= 60'

0' 60' 120' 180'

GRADING LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- 100 YR ULTIMATE DEVELOPMENT FLOODPLAIN
- EXISTING CONTOUR (976)
- PROPOSED CONTOUR (970)
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- TREES TO REMAIN
- RETAINING WALL
- MINIMUM FINISHED FLOOR ELEVATIONS (SEE FINISHED FLOOR ELEVATION NOTE) 1234.56
- HIGH POINT ELEVATION

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/– ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
20. STRIPPING OF VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE PERIOD OF TIME PER THE THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC.12.2(N).

FINISHED FLOOR NOTE:

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM 470 | TEXAS SURVEYING FIRM #100288000
10127 MORNINGSIDE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5603

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

OVERALL GRADING PLAN

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

FOR PERMIT

Date: May 20, 2024, 9:05am User ID: jmoy
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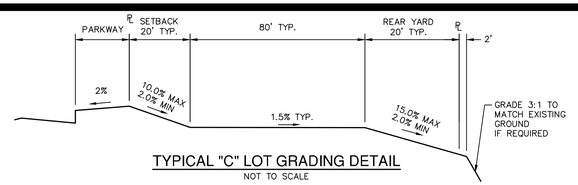
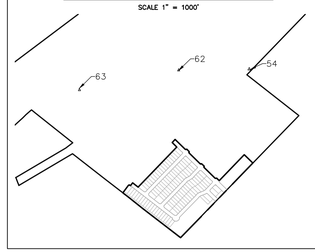
TYPICAL "A" LOT GRADING DETAIL
NOT TO SCALE



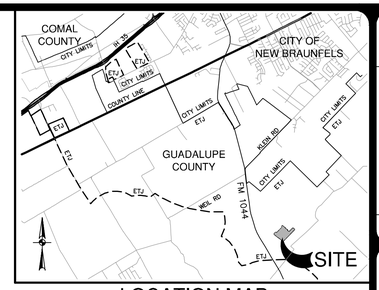
TYPICAL "C" LOT GRADING DETAIL
NOT TO SCALE

BENCHMARK LOCATION MAP

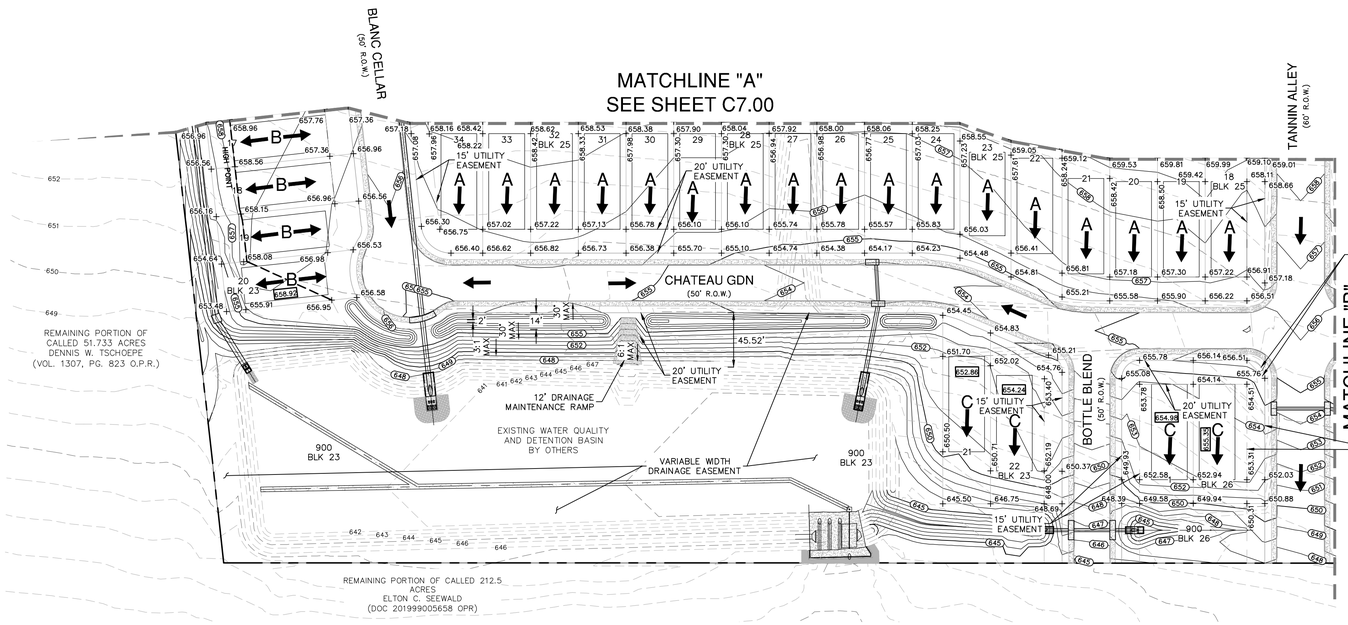
SCALE 1" = 1000'



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



LOCATION MAP
NOT-TO-SCALE



SCALE: 1"= 60'
0' 60' 120' 180'

GRADING LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- 100 YR ULTIMATE DEVELOPMENT FLOODPLAIN
- EXISTING CONTOUR (976)
- PROPOSED CONTOUR (970)
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- TREES TO REMAIN
- RETAINING WALL
- MINIMUM FINISHED FLOOR ELEVATIONS (SEE FINISHED FLOOR ELEVATION NOTE) 1234.56
- HIGH POINT ELEVATION

GRADING NOTES:

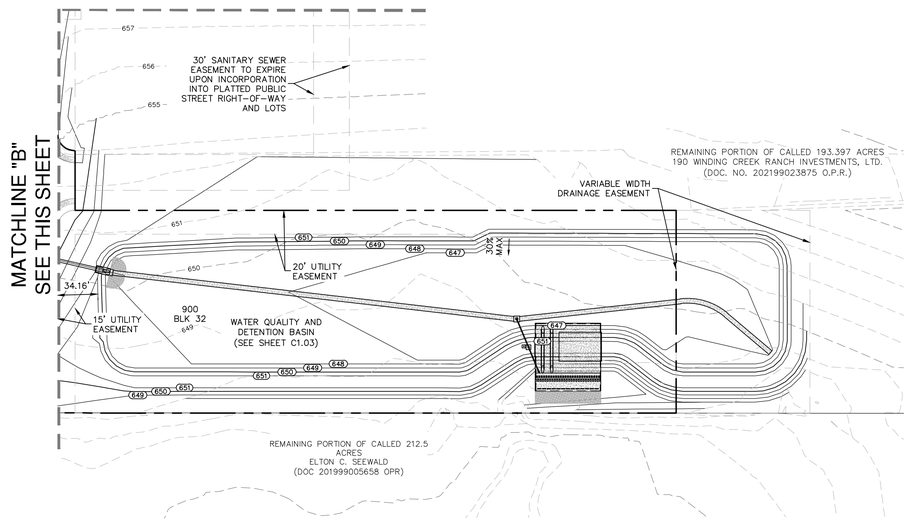
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/– ONE–TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT–OF–WAY WITHOUT A PERMIT.
20. STRIPPING OF VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE PERIOD OF TIME PER THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC.12.2(N).

FINISHED FLOOR NOTE:

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

RESIDENTIAL GRADING NOTES:

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



DATE
NO. REVISION

5-24-2024
STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
TBPELS FIRM #10028800
TBPE FIRM #470 | TBPLS FIRM #10028800
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800
672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

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

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

FOR PERMIT

Date: May 20, 2024, 9:06am User ID: jmay
File: P:\300\58\05\Design\Civil\GR0A-30058-05.dwg

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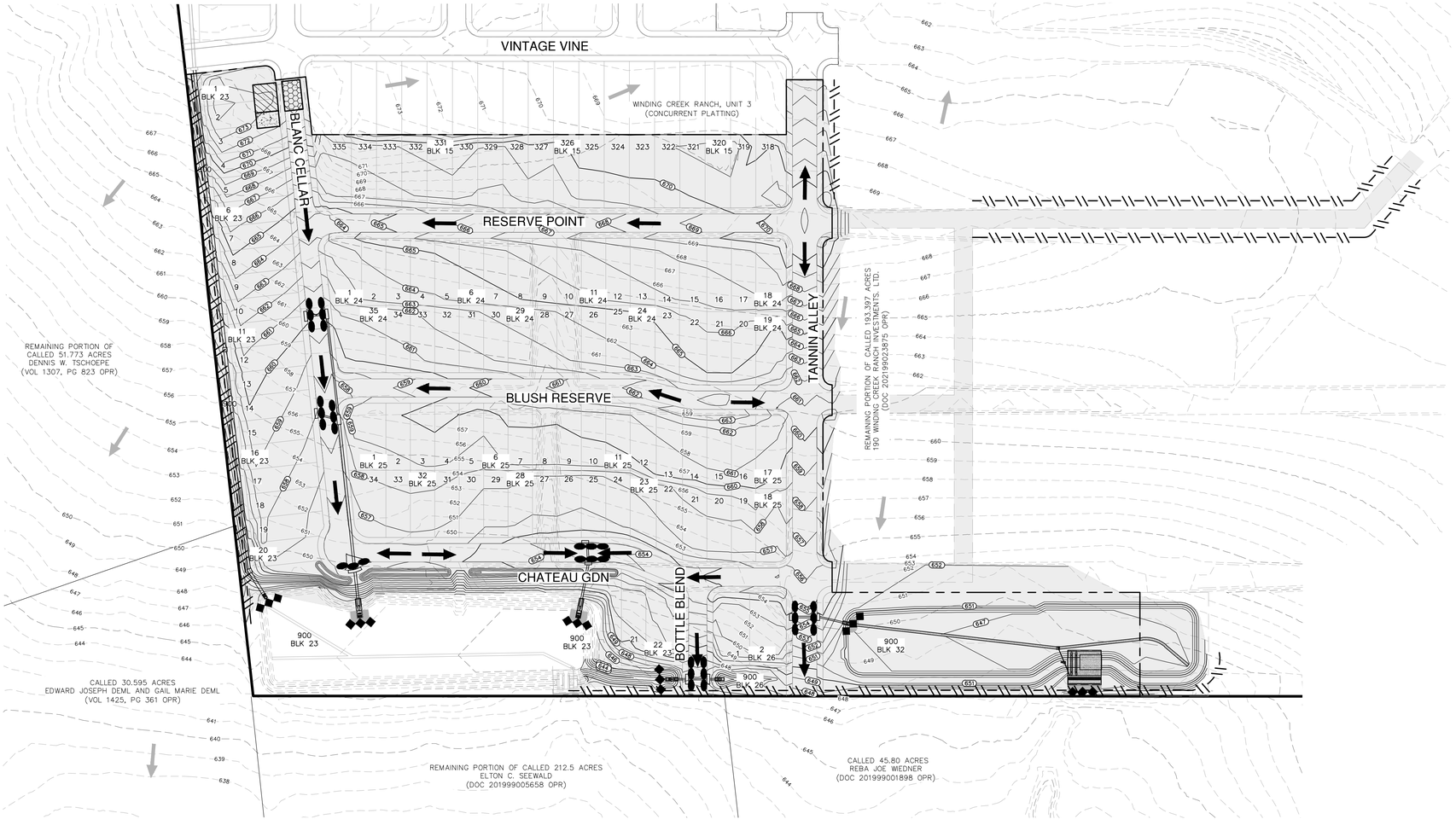

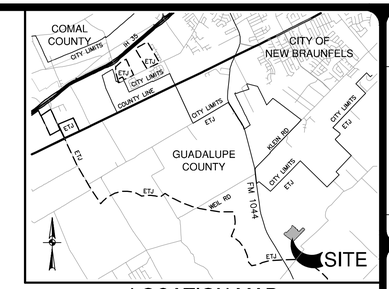

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 100' 0' 100' 200' 300'

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

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

13. SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.

14. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.

15. CPS ENERGY 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.

16. 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 STABILIZATION.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

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

NO.	REVISION	DATE

STATE OF TEXAS
JOCELYN PEREZ
98367
LICENSED
PROFESSIONAL ENGINEER
5-24-2024

PAPE-DAWSON ENGINEERS
TEXAS ENGINEERING FIRM 470 | TEXAS SURVEYING FIRM #100288800
1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633

WINDING CREEK RANCH UNIT 7

NEW BRAUNFELS, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.
JOB NO. 30058-05
DATE NOVEMBER 2023
DESIGNER CL
CHECKED HF DRAWN JM
SHEET C8.00

FOR PERMIT

Date: May 20, 2024, 9:06am User ID: jmay
File: P:\300\58\05\Design\Civil\SWPPP-30058-05.dwg

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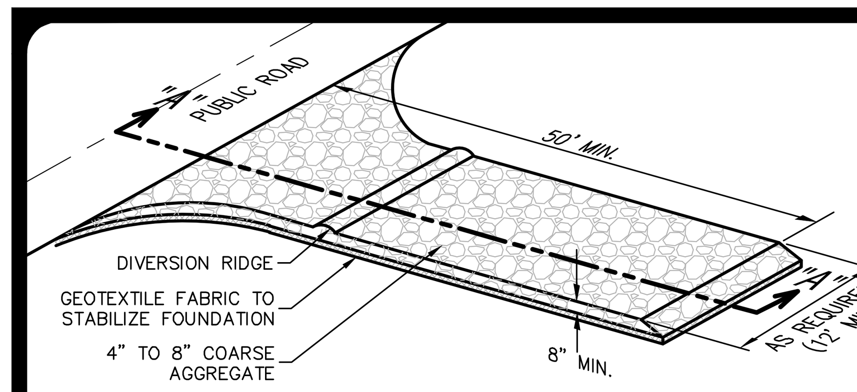
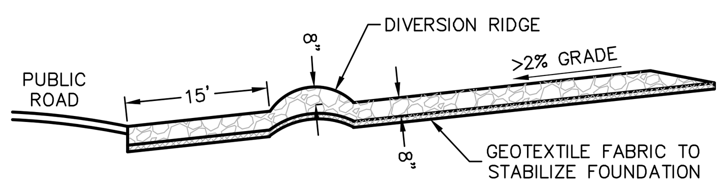


SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



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

MATERIALS
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.

3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD^2, A MULLEN BURST RATING OF 140 LB/IN^2, 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.

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.

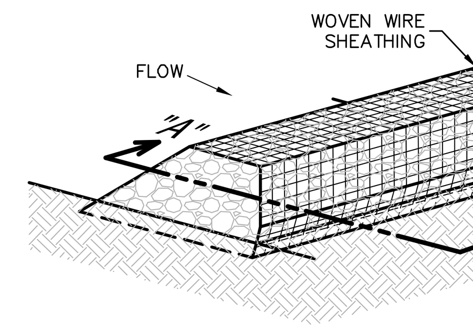
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

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.

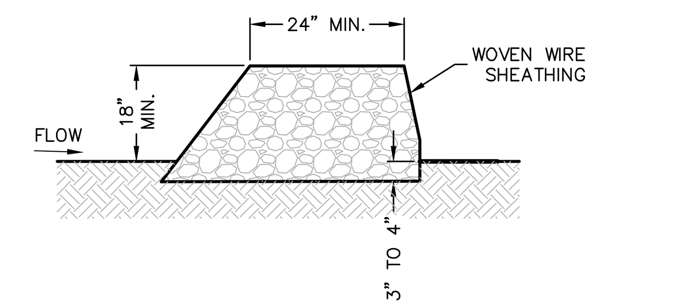
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

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

INSPECTION AND MAINTENANCE GUIDELINES
1. INSPECTION SHOULD BE MADE WEEKLY BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

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.

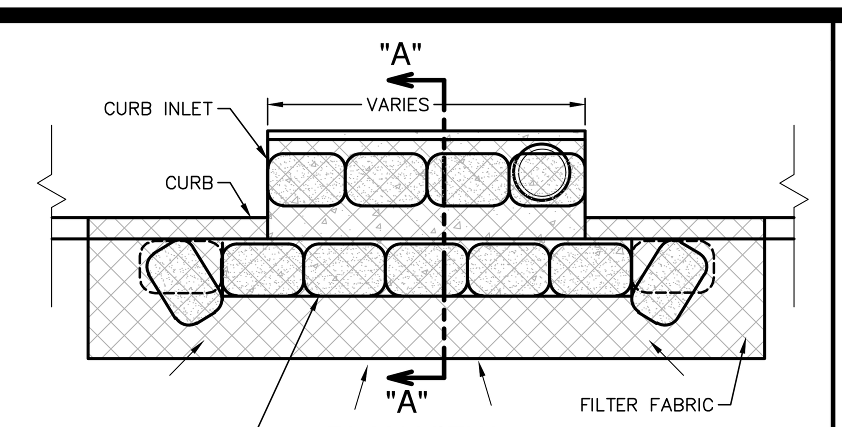
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

COMMON TROUBLE POINTS
1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

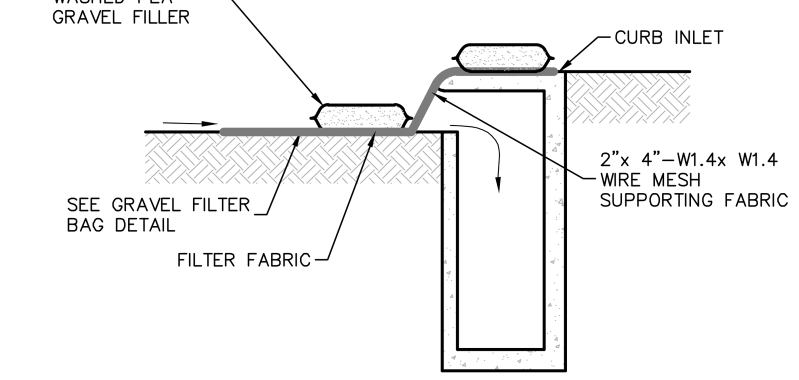
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE 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. 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.

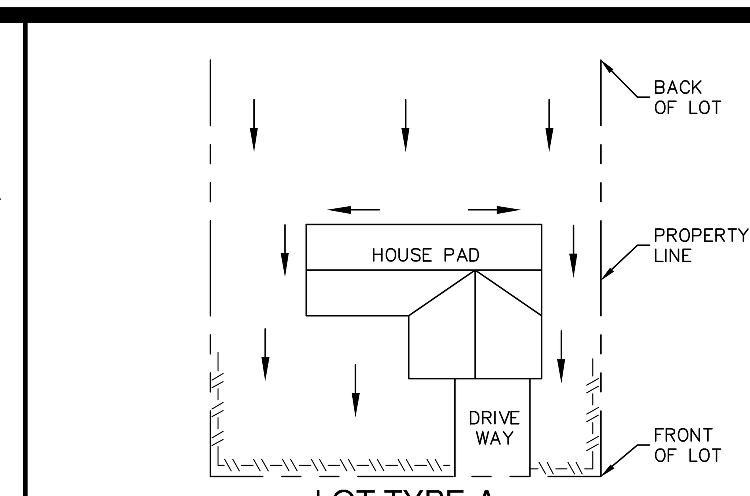
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

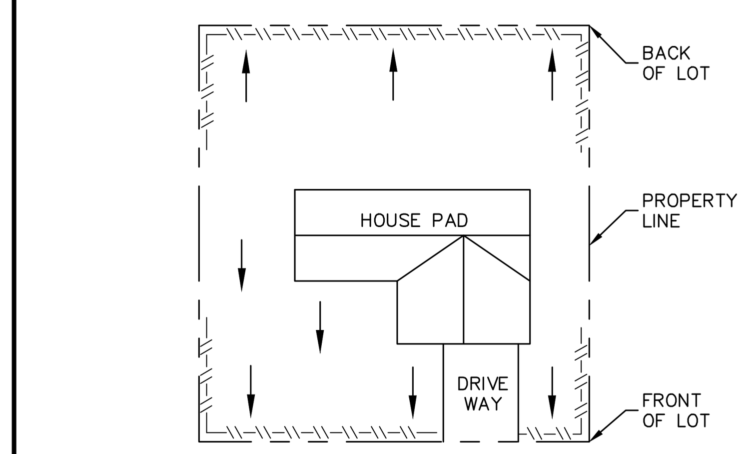
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

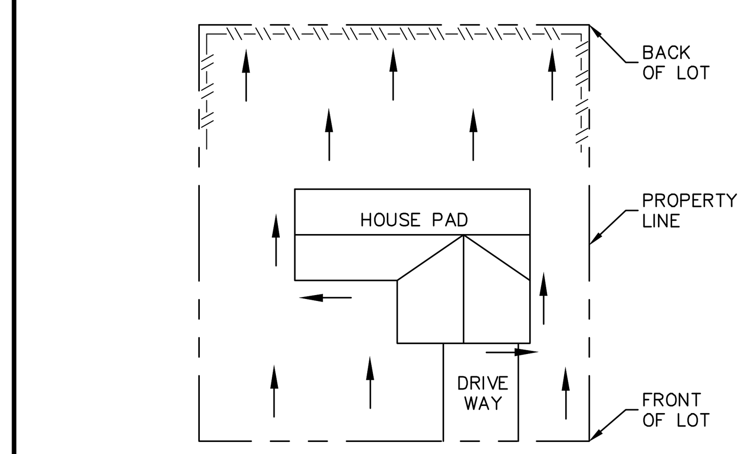
NOT-TO-SCALE



LOT TYPE-A



LOT TYPE-B



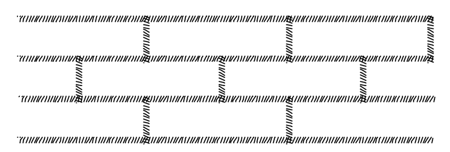
LOT TYPE-C

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

LEGEND
- —\\—\\—\\— SILT FENCE
- ← DRAINAGE FLOW

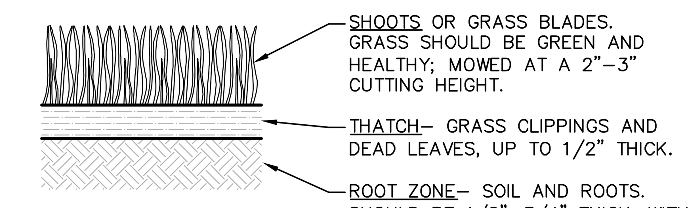
TYPICAL HOUSE LOT LAYOUTS

NOT-TO-SCALE



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

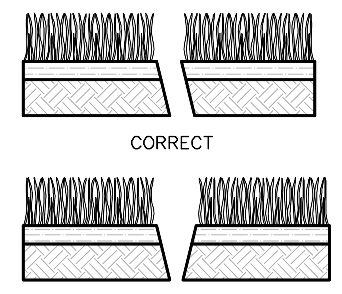
BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



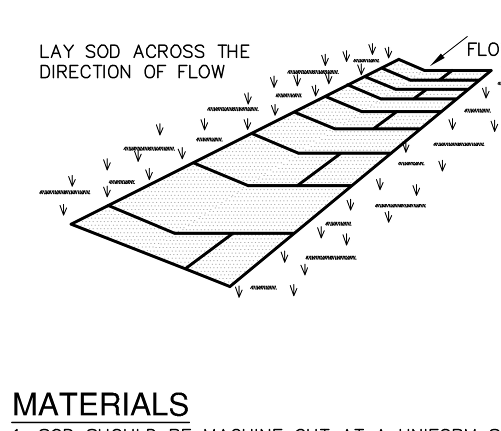
APPEARANCE OF GOOD SOD
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

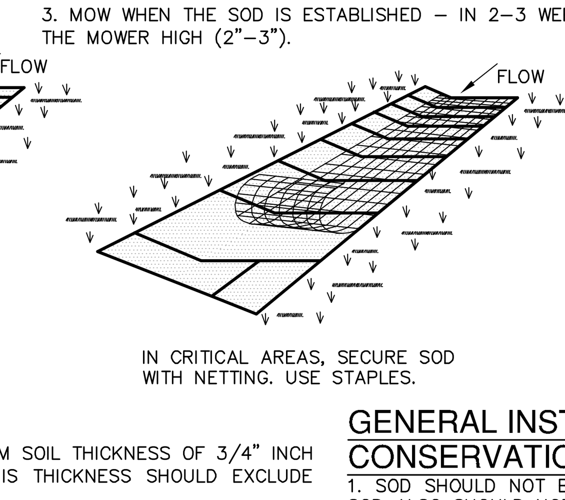
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

3. MOW WHEN THE SOD IS ESTABLISHED – IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

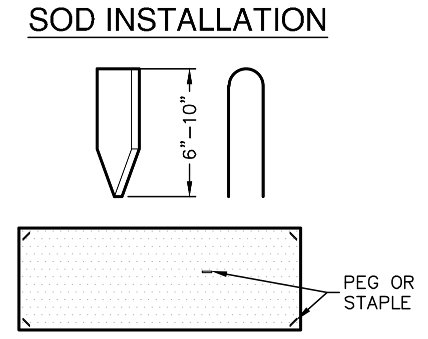


SOD INSTALLATION





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
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

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

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS
1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)
1. 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.

2. 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.

3. 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).

4. 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).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. 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.

7. 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.

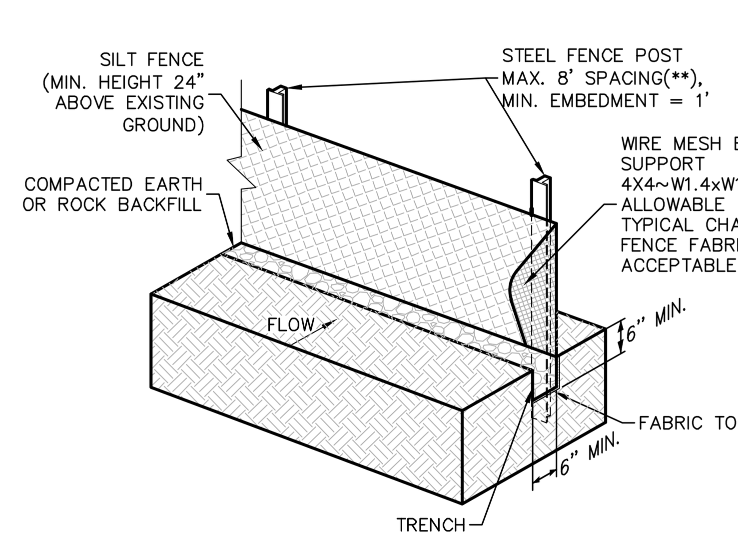
8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

INSPECTION AND MAINTENANCE GUIDELINES
1. SOD SHOULD BE INSPECTED WEEKLY TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT-TO-SCALE



**STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET. (RG-348, SECTION 1.4.3)

ISOMETRIC PLAN VIEW

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

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

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

MATERIALS
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 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.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS
1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES
1. INSPECT ALL FENCING WEEKLY.

2. REMOVE SEDIMENT WHEN BUILDUP APPROACHES 6 INCHES, BUT NOT TO EXCEED 50% OF HEIGHT.

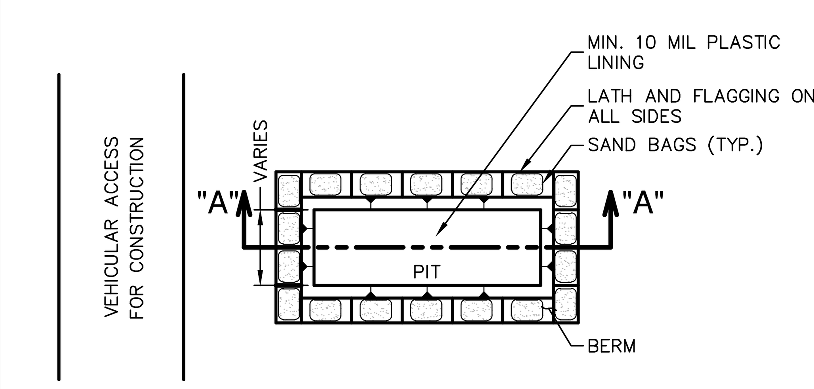
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

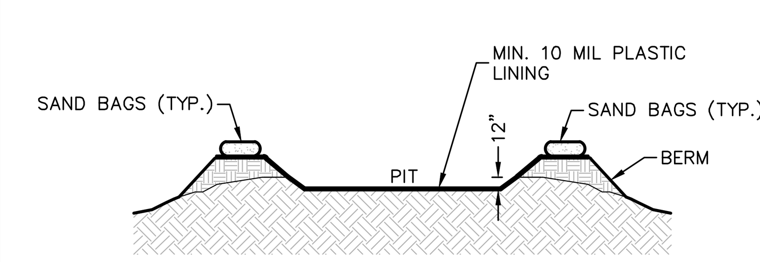
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES
1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

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

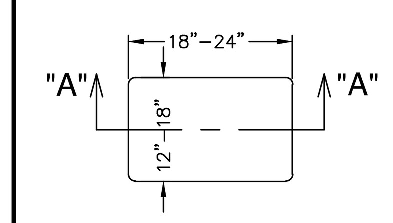
MAINTENANCE
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

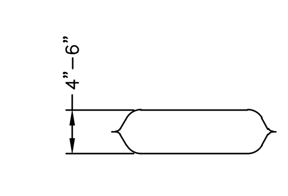
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

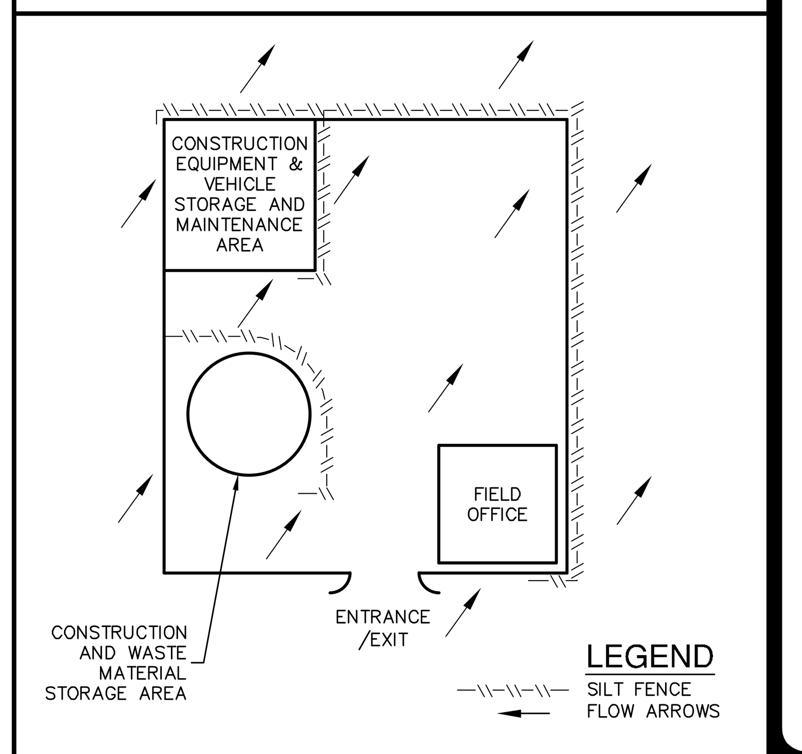
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



LEGEND
- —\\—\\—\\— SILT FENCE
- ← FLOW ARROWS

CONSTRUCTION STAGING AREA

NOT-TO-SCALE

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

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

NO.	REVISION	DATE

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

WINDING CREEK RANCH UNIT 7
NEW BRAUNFELS, TEXAS
STORM WATER POLLUTION PREVENTION PLAN DETAILS

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

FOR PERMIT

Date: Nov 22, 2023, 1:48pm User ID: ALeddy
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