VERAMENDI PRECINCT 18 UNIT 2

CONSTRUCTION DOCUMENT SET

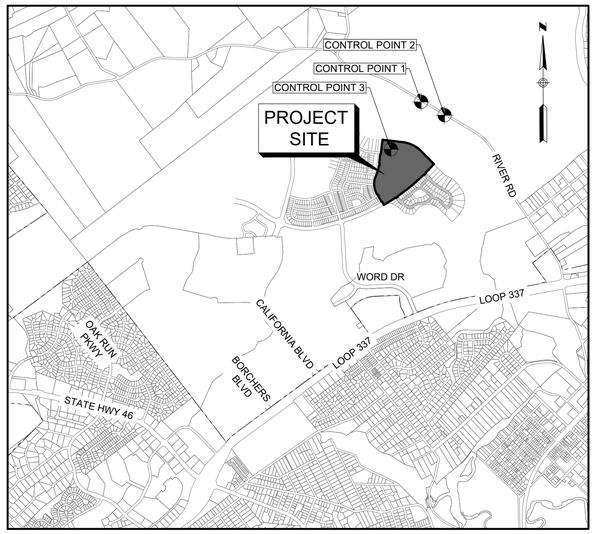
NEW BRAUNFELS, TEXAS 78132

COMAL COUNTY

NBU #: W-236395 / WW-236396

TCEQ SCS #: RN111965133

CONB #: PI2023-0080



LOCATION MAP
1" = 2000'

SUBMITTAL DATE: NOVEMBER 2023

SHEET NO.	DESCRIPTION
1	COVER
2	GENERAL NOTES
3	PLAT (SHEET 1 OF 3)
4	PLAT (SHEET 2 OF 3)
5	PLAT (SHEET 3 OF 3)
6	EXISTING DRAINAGE AREA MAP
7	PROPOSED & ULTIMATE DRAINAGE AREA MAP
8	OVERALL UTILITY LAYOUT
9	S.S.L. 'A2' & 'B1' PLAN & PROFILE STA. 1+00 TO END
10	S.S.L. 'C1' PLAN & PROFILE STA. 1+00 TO END
11	S.S.L. 'D1' PLAN & PROFILE STA. 1+00 TO END
12	S.S.L. 'D2' & 'D3' PLAN & PROFILE STA. 1+00 TO END
13	S.S.L. 'D4' & 'D5' PLAN & PROFILE STA. 1+00 TO END
14	STORM DRAIN 'A' PLAN & PROFILE STA. 1+00 TO END
15	STORM DRAIN 'D' PLAN & PROFILE STA. 1+00 TO END
16	STORM DRAIN 'E' PLAN & PROFILE STA. 1+00 TO END
17	WATER QUALITY POND 'C' SWQ
18	WATER QUALITY POND 'D' SWQ
19	BASIN DETAILS
20	DRAINAGE DETAILS (SHEET 1 OF 3)
21	DRAINAGE DETAILS (SHEET 2 OF 3)
22	DRAINAGE DETAILS (SHEET 3 OF 3)
23	HILLCOUNTRY DR PLAN & PROFILE STA. 19+17.04 TO STA. 27+50
24	HILLCOUNTRY DR PLAN & PROFILE STA. 27+50 TO END
25	SENDERO VW PLAN & PROFILE STA. 1+41 TO STA. 8+50
26	SENDERO VW PLAN & PROFILE STA. 8+50 TO END
27	PRIMARIA ST PLAN & PROFILE STA. 1+44 TO STA. 7+50
28	PRIMARIA ST PLAN & PROFILE STA. 7+50 TO END
29	ASHGROVE TRL PLAN & PROFILE STA. 1+41 TO END
30	SENCILLO TRL PLAN & PROFILE STA. 1+00 TO END
31	ALLEY 1 PLAN & PROFILE STA. 1+00 TO END
32	STREET DETAILS (SHEET 1 OF 2)
33	STREET DETAILS (SHEET 2 OF 2)
34	SIGNAGE LAYOUT (SHEET 1 OF 3)
35	SIGNAGE LAYOUT (SHEET 2 OF 3)
36	SIGNAGE LAYOUT (SHEET 3 OF 3)
37	SIGNAGE DETAILS (SHEET 1 OF 2)
38	SIGNAGE DETAILS (SHEET 2 OF 2)
39	UTILITY LAYOUT (SHEET 1 OF 3)
40	UTILITY LAYOUT (SHEET 2 OF 3)
41	UTILITY LAYOUT (SHEET 3 OF 3)
42	WATER LAYOUT (SHEET 1 OF 3)
43	WATER LAYOUT (SHEET 2 OF 3)
44	WATER LAYOUT (SHEET 3 OF 3)
45	WATER LINE 'A' HILLCOUNTRY PLAN & PROFILE STA. 1+00 TO 12+00
46	WATER LINE 'A' HILLCOUNTRY PLAN & PROFILE STA. 12+00 TO END
47	WATER DETAILS
48	WASTEWATER LAYOUT (SHEET 1 OF 3)
49	WASTEWATER LAYOUT (SHEET 2 OF 3)
50	WASTEWATER LAYOUT (SHEET 3 OF 3)
51	EX. WASTEWATER LINE 'A' PLAN & PROFILE STA. 12+50 TO STA. 22+50
52	EX. WASTEWATER LINE 'A' PLAN & PROFILE STA. 22+50 TO END
53	WASTEWATER LINE 'A' PLAN & PROFILE STA. 1+00 TO STA. 8+50
54	WASTEWATER LINE 'A' PLAN & PROFILE STA. 8+50 TO STA. 16+50
55	WASTEWATER LINE 'A' PLAN & PROFILE STA. 16+50 TO END
56	WASTEWATER LINE 'B' PLAN & PROFILE STA. 1+00 TO END
57	WASTEWATER LINE 'C' & 'F' PLAN & PROFILE STA. 1+00 TO END
58	WASTEWATER LINE 'D' PLAN & PROFILE STA. 1+00 TO END
59	WASTEWATER LINE 'E' PLAN & PROFILE STA. 1+00 TO END
60	WASTEWATER DETAILS (SHEET 1 OF 2)
61	WASTEWATER DETAILS (SHEET 2 OF 2)
62	GRADING PLAN (SHEET 1 OF 3)
63	GRADING PLAN (SHEET 2 OF 3)
64	GRADING PLAN (SHEET 3 OF 3)
65	STORMWATER POLLUTION PREVENTION PLAN
66	SWPPP DETAILS
67	TREE PRESERVATION PLAN (SHEET 1 OF 3)
68	TREE PRESERVATION PLAN (SHEET 2 OF 3)
69	TREE PRESERVATION PLAN (SHEET 3 OF 3)
70	TREE PRESERVATION PLAN CALCULATIONS

NBU NOTES:

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

NBU AS-BUILT REQUIREMENTS:

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

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

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

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

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

NOTES:

- TYPE 3 DEVELOPMENT.
- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER RECORD.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- THIS PROJECT IS WITHIN THE EDWARDS AQUIFER JURISDICTIONAL ZONES.
- NO PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO.48091C0435F EFFECTIVE DATE 9/2/2009.
- 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. NEW BRAUNFELS UTILITY APPROVAL
  3. TCEQ WATER POLLUTION ABATEMENT PLAN APPROVAL
  4. TCEQ SEWAGE COLLECTION SYSTEM APPROVAL

BENCHMARK INFORMATION:

CONTROL POINT 1: SET ⅝" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
NORTHING: 13820751.12
EASTING: 2242380.08
ELEVATION: 732.75'

CONTROL POINT 2: SET ⅝" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
NORTHING: 13820380.93
EASTING: 2243004.12
ELEVATION: 738.93'

CONTROL POINT 3: SET ⅝" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
NORTHING: 13819426.13
EASTING: 2241536.34
ELEVATION: 723.80'

ALL COORDINATES SHOWN HEREON ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT EPOCH 2010.00. COORDINATES ARE IN SURFACE VALUES, AND MAY BE CONVERTED TO GRID BY MULTIPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.999870017.

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 18.

SURVEY OBSERVATIONS WERE MADE ON THE GROUND USING A COMBINATION OF RTK AND STATIC NETWORKS.

THIS INFORMATION PROVIDED BY LJA SURVEYING.

PROPERTY DESCRIPTION

BEING 42.031 ACRES OF LAND, OUT OF THE 244.440 ACRE TRACT DESCRIBED IN DOCUMENT NUMBER 202206035304 IN THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS, IN THE JAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

DEVELOPER: VERAMENDI PE - EMERALD, LLC
2168 OAK RUN PARKWAY
NEW BRAUNFELS, TEXAS 78130
CONTACT PERSON: GARRETT MECHLER
TELEPHONE: (830) 643-5633

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

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

CONTOUR DATA: FIELD SURVEY BY PAPE DAWSON

LJA JOB NO. SA3856.0402

REVISIONS			
NO.	DESCRIPTION	BY	DATE

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

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

10/28/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla G. Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386

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.

CHANNEL MAINTENANCE PLAN

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

- *Inspections.* The channel should be inspected to assure proper operation at least 4 times annually. One of these inspections should occur during or immediately following wet weather.
- *Mowing.* The side slopes and bottom of the channel that are covered with grass must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around the channel must be mowed at least four times annually to limit vegetation height to 12 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed. Vegetation shall be maintained so as to match the intent of the original design of the channel and preserve the flow conveyance capacity. Any woody vegetation which becomes established shall be periodically removed or mulched to ground level. Any removal of brush which results in disturbance of established grades shall be repaired/re-graded and revegetated.
- *Debris, Litter, and Obstruction Removal.* Debris and litter may accumulate in the channel and/or near the drop structure and outfall and should be removed during regular mowing operations and inspections or after large rainfall events. Any other obstructions that impede flow as intended by the original design shall be removed in a timely manner.
- *Erosion Control.* The channel side slopes and embankment may periodically suffer from slumping and erosion. Regrading and re-establishment of vegetation may be required to correct the problems. Vegetation should be re-established to the original design standards. Inspection of sediment deposits along the length of the channel should occur during the stated intervals. All sediment deposits exceeding 12" in depth or which are preventing positive drainage should be removed from the channel at least once annually. All sediment should be removed and disposed of properly.

DRAINAGE MAINTENANCE PLAN

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

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

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

Construction Note
Engineer of Record 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.

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

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANT SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER EAS CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
    - A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
    - B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
    - C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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

INSPECTION AND MAINTENANCE SCHEDULE FOR PERMANENT POLLUTION ABATEMENT MEASURES

Recommended Frequency	*Task to be Performed*		
	1	*2*	*3*
*Annually**	√	√	√

***Inspections to occur quarterly during the first year of operation.**
√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. Inspection frequency in subsequent years is based on the maintenance plan developed in the first year but must occur annually at a minimum.

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

Task No. & Description	*Included in this project*	
1. Cleaning	Yes	No
2. Manual Backflush / Flow Rate Test	Yes	No
3. External Rinsing	Yes	No

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

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

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

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

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

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

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. COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

General Notes

General Notes:

1. All materials and construction procedures within the scope of the project shall be approved by New Braunfels Utilities and comply with the current "New Braunfels Utilities Water Systems Connection/Construction Policy".
2. Contractor shall not proceed with any pipe installation work until they obtain a copy of the plans from the Consultant or Engineer and notify NBU Water Systems Engineering at 830-608-8971 with at least two (2) working days (48 hours) notice. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. The Developer dedicates the water / wastewater mains upon completion by the Contractor and acceptance by the New Braunfels Utilities Water System. NBU will own and maintain said water / wastewater mains which are located within platted utility easements or public ROW of proposed developments. (As applicable).
4. Contractor agrees to assume sole and complete responsibility for job site conditions during the construction of the project, including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours. The contractor shall defend, indemnify and hold the owners and the engineer and his employees, partners officers, directors, or consultants harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting from liability arising from sole negligence of the owner or engineer, engineer's directors, officers, employees, or consultants.
5. Contractor to contact the engineer-of-record (EOR) for any field changes. Any revisions or changes to the approved construction plans will require additional approval by NBU in writing.
6. 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.
7. Contractor shall be responsible for restoring to its original or better condition, any damages done to existing fences, curbs, streets, driveways, landscaping and structures, and existing utilities (not adjusted on plans). Cost of Restorations, if any, shall be the contractor's entire expense.
8. The Contractor shall avoid cutting roots larger than one inch in diameter when excavating near existing trees. Excavation in vicinity of trees shall proceed with caution.
9. Contractor shall procure all permits and licenses, pay all charges, fees and taxes and give all notices necessary and incidental to the due and lawful prosecution of the work.
10. No extra payment shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.
11. Contractor is responsible for removal of all waste materials upon project completion. The contractor shall not permanently place any waste materials in the 100-year flood plain without first obtaining an approved flood plain development permit.
12. The contractor shall not place any materials on the recharge zone of the Edwards aquifer without an approved water pollution abatement plan from the TCEQ 31 TAC 313.4 and 31 TAC 313.9.
13. Barricades and warning signs shall conform to the "Texas manual on uniform traffic control devices" and shall be located to provide maximum protection to the public as well as construction personnel and equipment while providing continuous traffic flow at all times during construction. The contractor is responsible for maintaining all devices during construction.
14. Contractor is required to verify project elevations. The term "match existing" shall be understood to signify both horizontal and vertical alignment.
15. The location of utilities, either underground or overhead, shown within the right of way are approximate and shall be verified by the contractor before beginning construction operations.
16. OSHA regulations prohibit operations that will bring persons or equipment within 10 feet of an energized line. Where workmen and/or equipment have to work close to an energized electrical line, the contractor shall notify the electrical power company involved and make whatever adjustments necessary to ensure the safety of those workmen.
17. It shall be the contractor's responsibility to locate utility service lines as required for construction. Contractors shall call the One Call System for water/wastewater location.
18. Due to federal regulations Title 49, part 192 (8), Gas companies must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.
19. The contractor is fully responsible for the traffic control and will be responsible for furnishing all traffic control devices, and flaggers. The construction methods shall be conducted to provide the least possible interference to traffic so as to permit the continuous movement of the traffic in one direction at all times. The contractor shall clean up and remove from the work area any loose material resulting from contract operations at the end of each workday.
20. Prior to ordering materials to be used in construction, contractor shall provide the engineer with four (4) copies of the source, type, gradation, material specification data and / or shop drawings, as applicable, to satisfy the requirements of the following items and all material items referred to in these listed items:
    a. Water mains and services
    b. Wastewater mains and services
21. Thrust blocks will not be allowed on the system without special approval. Joints will be restrained with restraining systems approved by NBU and restraint length shall be submitted to NBU at the time of plan submittal.
22. Water jetting the backfill within a street will not be permitted. Wastewater trenches subject to traffic shall conform to NBU Connection and Construction Policy Manual.
23. Where the minimum 9 foot separation distance between wastewater lines and water lines / mains cannot be maintained, the installation of wastewater lines shall be in strict accordance with 30 TAC 217.
24. Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation safety protection that complies 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.
25. Utility Trench Compaction with street R.O.W.
    a. All utility trench compaction test within the street pavement section shall be the responsibility of the developer's Geo-technical engineer.
    b. Fill material shall be placed in uniform layers not to exceed twelve inches (12") loose.
    c. Each layer of material shall be compacted as specified and tested for density and moisture in accordance with Text Methods TEX-113-E, TEX-114-E, TEX-115-E.
    d. The number and location of required tests shall be determined by the Geo-technical Engineer and approved by the City of New Braunfels Street Inspector.
    e. Upon completion of testing the Geo-technical Engineer shall provide the City of New Braunfels Street inspector with all testing documentation and a certification stating that the placement of fill material has been completed in accordance with the plans.

VERAMENDI PRECINCT 18 UNIT 2

GENERAL NOTES

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 01_General Notes.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

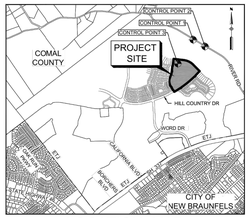
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 2 OF 70 SHEETS

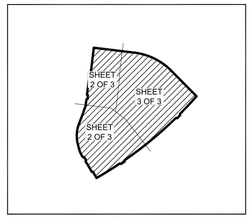
K:\SA3856.0424 Properties\04022 Veramendi Precinct 18-21\06 Site Development Plans\03WC-Sheets\gh_General Notes.dwg
User Name: Priscilla Flores
Last Modified: Feb. 23, 24 - 10:10
Plot Date/Time: Apr 16, 24 - 11:37:24

FOR PERMIT



LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE

CERTIFICATE OF APPROVAL

APPROVED THIS THE _____ DAY OF _____, 20 _____,
BY THE PLANNING AND DEVELOPMENT SERVICES DEPARTMENT OF THE CITY OF NEW BRAUNFELS, TEXAS.

_____
PLANNING DIRECTOR

APPROVED FOR ACCEPTANCE

_____ _____
PLANNING DIRECTOR

_____ _____
CITY ENGINEER

_____ _____
NEW BRUANFELS UTILITIES

SURVEYOR NOTES:
1. MONUMENTS WERE FOUND OR SET AT EACH CORNER OF THE SURVEY BOUNDARY OF THE SUBDIVISION AS NOTED. MONUMENTS AN LOT MARKERS WILL BE SET WITH ½" IRON ROD WITH CAP MARKED "LJA" OR MAG NAIL WITH DISK MARKED "LJA" AFTER THE COMPLETION OF UTILITY INSTALLATION AND STREET CONSTRUCTION UNLESS NOTED OTHERWISE.
2. COORDINATES SHOWN ARE BASED ON THE NORHT 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 (SCALE FACTOR = 0.00014)
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.

STATE OF TEXAS
COUNTY OF BEXAR

I, THE UNDERSIGNED ___GORDON ANDERSON___, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXS, 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 WER PROPERLY PLACED UNDER MY SUPERVISION

_____
GORDON ANDERSON
REGISTERED PROFESSIONAL LAND SURVEYOR #6617
LJA ENGINEERING, INC.
9830 COLONNADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 78230

SUBDIVISION PLAT OF VERAMENDI PRECINCT 18 UNIT 2

BEING 42.0178 ACRES OF LAND, OUT OF THE 244.440 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206035304, AND OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

NBU NOTES:
1. MAINTENANCE OF DEDICATED UTILITY EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER. ANY USE OF AN EASEMENT, OR ANY PORTION OF IT, INCLUDING LANDSCAPING OF DRAINAGE FEATURES, IS SUBJECT TO AND SHALL NOT CONFLICT

DRAINAGE EASEMENT NOTES:
1. DRAINAGE EASEMENTS SHALL "REMAIN FREE OF ALL OBSTRUCTIONS.
2. MAINTENANCE OF DRAINAGE EASEMENT SHOWN OUTSIDE OF LOT LINES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER'S, OR THE PROPERTY OWNER'S ASSOCIATION, OR ITS SUCCESSORS OR ASSIGNS AND NOT THE RESPONSIBILITY OF THE CITY OF NEW BRAUNFELS OR COMAL COUNTY.
3. NO STRUCTURES, WALLS OR OTHER OBSTRUCTIONS OF ANY KIND SHALL BE PLACED WITHIN THE LIMITS OF DRAINAGE EASEMENTS SHOWN ON THIS 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 AND COMAL COUNTY 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.

SIDEWALK NOTES:
1. FOUR (4) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION ALONG:
   A. SENDERO VW
   B. PRIMARIA ST
   C. ASHGROVE TRL
   D. SENCILLO TRL
2. FOUR (4) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
   A. SENDRO VW - LOT 900, BLOCK 108; LOT 900, BLOCK 111; LOT 900, BLOCK 114.
   B. PRIMARIA ST - LOT 900, BLOCK 113; LOT 900, BLOCK, 116.
   C. ASHGROVE TRL - LOT 900, BLOCK 111; LOT 900, BLOCK, 116.
   D. SENCILLO TRL - LOT 902, BLOCK 116.

TEN (10) FOOT WIDE SIDE WALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION CONSTRUCTION WITHIN:
   A. HILL COUNTRY DR - LOT 900, BLOCK 113; LOT 900 BLOCK 114; LOT 7, BLOCK 109
   B. LOT 900, BLOCK 108
   C. LOT 900 BLOCK 111
   D. LOT 900, BLOCK 113

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

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

PLAT NOTES:
1. THIS PLAT IS SUBJECT TO THE REQUIREMENTS AND REGULATIONS OF THE VERAMENDI DEVELOPMENT COMPANY DEVELOPMENT AGREEMENT, RECORDED AS DOCUMENT NO. 201506029547 AND AS AMENDED.
2. THIS PLAT IS LOCATED WITHIN THE NEIGHBORHOOD (MIXED DENSITY) RESIDENTIAL PLANNING AREA.
3. STANDARDS FOR PLANT MATERIALS SHALL CONFORM TO THE STANDARDS OF THE LATEST EDITION OF THE *AMERICAN NATIONAL STANDARD A300 PLANTING AND TRANSPLANTING NURSERY STOCK* PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. TREE REPLACEMENT SHALL OCCUR WITHIN 12 MONTHS OF REMOVAL OF THE HIGH VALUE TREE UNLESS DEFERRED TO AN ADJACENT UNIT. WHERE A REPLACEMENT TREE DOES NOT SURVIVE FOR A PERIOD OF AT LEAST 24 MONTHS, THE ORIGINAL APPLICANT OR CURRENT LANDOWNER SHALL REPLACE THE TREE, PREFERABLY DURING OCTOBER - FEBRUARY, UNTIL THE TREE SURVIVES A 12-MONTH PERIOD.
5. SHOULD ANY TREE DESIGNATED FOR RETENTION IN AN APPROVED TREE PROTECTION PLAN DIE PRIOR TO, OR WITHIN 12 MONTHS OF THE COMPLETION OF CONSTRUCTION WORKS, THE APPLICANT SHALL REPLACE THE DEAD TREE WITH A REPLACEMENT TREE/S EQUAL TO THE TOTAL CALIPER INCHES OF THE DEAD TREE. NO GRADING, TRENCHING OR EQUIPMENT SHALL BE CONDUCTED IN THE AREA IDENTIFIED IN THE ROOT PROTECTION ZONE. ALL WORK TO BE PERFORMED BY HAND OR UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.
6. DURING CONSTRUCTION, THE CLEANING OF EQUIPMENT OR MATERIALS AND/OR THE DISPOSAL OF ANY WASTE MATERIAL, INCLUDING, BUT NOT LIMITED TO PAINT, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR, ETC., UNDER THE CANOPY OR DRIP LINE OF ANY HIGH VALUE TREE SHALL BE PROHIBITED. NO GRADING, TRENCHING OR EQUIPMENT SHALL BE CONDUCTED OR USED IN THE AREA IDENTIFIED IN THE ROOT PROTECTION ZONE. ALL WORK SHALL BE PERFORMED BY HAND OR UNDER THE SUPERVISION OF A CERTIFIED ARBORIST. NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY HIGH VALUE TREE.
7. LOTS TO BE HELD IN COMMON PROPERTY BY A HOMEOWNERS' OR PROPERTY OWNERS' ASSOCIATION SHALL BE SHOWN ON THE PLAT AS A SEPARATE LOT.
8. NO BUILDING SHALL BE SITED WITHIN THE EXTENT OF A SENSITIVE FEATURE AND ASSOCIATED BUFFER. FOR ANY LOT WHICH CONTAINS A HIGH VALUE TREE, AND A BUILDING ENVELOPE WAS NOT APPROVED AS PART OF A FINAL PLAT, THE LOCATION OF A BUILDING ENVELOPE SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO A BUILDING PERMIT BEING ISSUED.
9. FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
10. IMPERVIOUS COVER - THE MAXIMUM CUMULATIVE IMPERVIOUS COVER PERCENTAGE FOR THE PROPERTY AS A WHOLE AND FOR EACH SECTOR PLAN SHALL NOT EXCEED SIXTY-FIVE PERCENT (65%).
11. AMENDMENTS TO THE PARK PROGRAMMING SCHEDULE, INCLUDING BUT NOT LIMITED TO THE PROVISION OF ADDITIONAL IMPROVEMENTS OR SUBSTITUTING IMPROVEMENTS, SHALL BE ADMINISTRATIVELY APPROVED BY THE PARKS DIRECTOR.
12. THIS PLAT WILL COMPLY WITH LOCATION AND AMENITY STANDARDS FOR TRAILS AS SHOWN IN THE SECTOR PLAN.
13. (127) RESIDENTIAL LOTS, (7) COMMON SPACE LOTS.

COMMON SPACE NOTES:
LOT 900, BLOCK 108 IS A LANDSCAPE, PEDESTRIAN AND ACCESS EASEMENT.
LOT 900, BLOCK 111 IS A LANDSCAPE, PEDESTRIAN AND ACCESS EASEMENT.
LOT 900, BLOCK 113 IS A LANDSCAPE, PEDESTRIAN AND ACCESS EASEMENT.
LOT 900, BLOCK 116 IS A LANDSCAPE, PEDESTRIAN AND ACCESS EASEMENT.
LOT 901, BLOCK 116 IS A LANDSCAPE, PEDESTRIAN, UTILITY AND ACCESS EASEMENT.
LOT 902, BLOCK 116 IS A LANDSCAPE, PEDESTRIAN AND ACCESS EASEMENT.

ALL AFOREMENTIONED LOTS TO BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION OR PROPERTY OWNER AND NOT THE CITY OF NEW BRAUNFELS.

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 10/28/2024

STATE OF TEXAS
COUNTY OF COMAL

I (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HERIN AS THE VERAMENDI PRECINCT 18 UNIT 2 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

_____
OWNER/DEVELOPER: COMAL COUNTY WCID 1B DATE
14755 PRESTON ROAD, SUITE 600
DALLAS, TEXAS 75254

STATE OF TEXAS
COUNTY OF COMAL

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____DAY OF _____, 20 _____, BY _____.

_____
NOTARY PUBLIC
THE STATE OF TEXAS

MY COMMISSION EXPIRES:_____

STATE OF TEXAS
COUNTY OF COMAL

I, _____, DO HEREBY CERTIFY THAT FOREGOING INSTRUMENT WAS FILED FOR RECORD IN THE MAP AND PLAT RECORDS, DOC# _____ OF COMAL COUNTY ON THE _____ DAY OF _____, 20 _____ AT _____ M.

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

_____
COUNTY CLERK, COMAL COUNTY, TEXAS

_____
DEPUTY

CURVE TABLE

Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C1	588.11	880.00	38°17'29"	305.51	S63° 51' 16"E	577.23
C2	335.41	5550.00	3°27'46"	167.76	S43° 06' 25"W	335.36
C3	23.44	15.00	89°32'49"	14.88	S0° 03' 54"W	21.13
C4	23.44	15.00	89°32'49"	14.88	N89° 28' 56"W	21.13
C5	921.70	5550.00	9°30'55"	461.91	S50° 30' 07"W	920.64
C6	23.44	15.00	89°32'49"	14.88	S10° 29' 10"W	21.13
C7	23.44	15.00	89°32'49"	14.88	N79° 03' 39"W	21.13
C8	380.03	5550.00	3°55'24"	190.09	S58° 07' 38"W	379.95
C9	23.68	15.00	90°27'50"	15.12	N74° 40' 45"W	21.30
C10	49.98	829.00	3°27'14"	25.00	N31° 10' 27"W	49.97
C11	23.56	15.00	90°00'00"	15.00	N12° 05' 56"E	21.21
C12	23.56	15.00	90°00'00"	15.00	N77° 54' 04"W	21.21
C13	102.94	321.00	18°22'26"	51.92	N23° 42' 52"W	102.50
C14	228.16	471.00	27°45'16"	116.36	N0° 39' 01"W	225.93
C15	65.07	471.00	7°54'54"	32.58	N17° 11' 05"E	65.01
C16	55.78	226.00	14°08'32"	28.03	N14° 04' 16"E	55.64
C17	23.56	15.00	90°00'00"	15.00	N52° 00' 00"E	21.21
C18	23.56	15.00	90°00'00"	15.00	N38° 00' 00"W	21.21
C19	23.56	15.00	90°00'00"	15.00	N52° 00' 00"E	21.21
C20	335.18	5450.00	3°31'26"	167.64	N43° 03' 56"E	335.13
C21	23.68	15.00	90°27'50"	15.12	S89° 56' 26"E	21.30
C22	351.53	526.00	38°17'29"	182.61	S63° 51' 16"E	345.03
C23	316.78	474.00	38°17'29"	164.56	S63° 51' 16"E	310.92
C24	23.56	15.00	90°00'00"	15.00	S0° 17' 29"W	21.21
C25	103.36	1974.00	3°00'00"	51.69	S46° 47' 29"W	103.35
C26	23.56	15.00	90°00'00"	15.00	N86° 42' 31"W	21.21
C27	234.94	326.00	41°17'29"	122.83	N62° 21' 16"W	229.89
C28	23.56	15.00	90°00'00"	15.00	N38° 00' 00"W	21.21

CURVE TABLE

Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C29	81.77	99.00	47°19'23"	43.38	N30° 39' 41"E	79.46
C30	309.32	226.00	78°25'05"	184.38	N15° 06' 50"E	285.73
C31	23.56	15.00	90°00'00"	15.00	N20° 54' 17"E	21.21
C32	51.57	526.00	5°37'03"	25.81	N63° 05' 46"E	51.55
C33	72.85	474.00	8°48'22"	36.50	N61° 30' 06"E	72.78
C34	115.80	526.00	12°36'48"	58.13	N59° 35' 53"E	115.56
C35	220.44	2526.00	5°00'00"	110.29	N50° 47' 29"E	220.37
C36	106.08	2026.00	3°00'00"	53.05	N46° 47' 29"E	106.07
C37	23.56	15.00	90°00'00"	15.00	S89° 42' 31"E	21.21
C38	23.68	15.00	90°27'50"	15.12	S0° 31' 24"W	21.30
C39	1363.43	5450.00	14°20'01"	685.29	S52° 55' 20"W	1359.87
C40	23.56	15.00	90°00'00"	15.00	S3° 17' 29"W	21.21
C41	215.90	2474.00	5°00'00"	108.02	S50° 47' 29"W	215.83
C42	104.35	474.00	12°36'48"	52.39	S59° 35' 53"W	104.14
C43	23.56	15.00	90°00'00"	15.00	N69° 05' 43"W	21.21
C44	238.15	174.00	78°25'05"	141.96	N15° 06' 50"E	219.99
C45	124.72	151.00	47°19'23"	66.16	N30° 39' 41"E	121.20
C46	23.56	15.00	90°00'00"	15.00	N52° 00' 00"E	21.21
C47	197.46	274.00	41°17'29"	103.24	S62° 21' 16"E	193.22
C48	76.26	932.50	4°41'08"	38.15	N9° 20' 34"E	76.24
C49	208.27	333.50	35°46'50"	107.66	S6° 12' 17"E	204.90
C50	66.44	812.50	4°41'08"	33.24	S9° 20' 34"W	66.43
C51	64.40	787.50	4°41'08"	32.22	S9° 20' 34"W	64.38
C52	223.88	358.50	35°46'50"	115.73	S6° 12' 17"E	220.26
C53	292.57	468.50	35°46'50"	151.23	S6° 12' 17"E	287.84
C54	54.18	677.50	4°34'55"	27.10	S9° 23' 40"W	54.16
C55	61.03	646.00	5°24'48"	30.54	S60° 21' 58"W	61.01
C58	350.29	5570.00	3°36'12"	175.20	S43° 11' 29"W	350.24

LINE TABLE

LINE	DIRECTION	LENGTH
L1	S45° 17' 29"W	58.00
L2	S55° 42' 46"W	58.00
L3	N29° 54' 40"W	100.00
L4	N29° 26' 50"W	83.11
L5	N32° 54' 04"W	24.74
L6	N32° 54' 04"W	52.00
L7	N32° 54' 04"W	10.87
L8	N14° 31' 39"W	74.48
L9	N21° 08' 32"E	117.93
L10	N19° 25' 26"E	100.04
L11	N21° 08' 32"E	16.41
L12	N7° 00' 00"E	56.12
L13	N7° 00' 00"E	52.00
L14	N46° 25' 37"W	100.04
L15	N44° 42' 31"W	105.96
L16	S44° 42' 31"E	105.96
L17	S42° 59' 25"E	100.04
L18	S45° 17' 29"W	51.43
L19	S48° 17' 29"W	88.76
L20	N41° 42' 31"W	136.09
L21	N83° 00' 00"W	526.24
L22	S7° 00' 00"W	65.08
L23	S24° 05' 43"E	108.04
L24	S65° 54' 17"W	176.01
L25	S57° 05' 56"W	34.36
L26	N57° 05' 56"E	34.36
L27	N45° 17' 29"E	51.43

LINE TABLE

LINE	DIRECTION	LENGTH
L28	S44° 42' 31"E	114.82
L29	S48° 17' 29"W	55.59
L30	S65° 54' 17"W	10.15
L31	N24° 05' 43"W	108.04
L32	N7° 00' 00"E	65.08
L33	S83° 00' 00"E	35.00
L34	S41° 42' 31"E	136.09
L35	N7° 00' 00"E	270.00
L36	N7° 00' 00"E	270.00
L37	N44° 43' 54"W	46.31
L38	N52° 38' 50"W	77.12
L39	N62° 32' 32"W	77.12
L40	N72° 26' 14"W	77.12
L41	N80° 09' 53"W	43.38
L42	N82° 57' 47"W	86.24
L43	N11° 41' 08"E	89.22
L45	N7° 00' 00"E	163.77
L45	N7° 00' 00"E	163.77
L46	N24° 05' 43"W	110.04
L47	S39° 45' 41"E	13.50
L48	N11° 41' 08"E	163.34
L49	N7° 00' 00"E	150.77
L50	N25° 50' 04"E	13.74
L51	S11° 50' 04"E	13.74
L52	S7° 00' 00"W	150.77
L53	S11° 41' 08"W	163.34
L54	S24° 05' 43"E	110.04

LINE TABLE

LINE	DIRECTION	LENGTH
L55	S8° 25' 45"E	13.50
L56	N83° 00' 00"W	120.00
L57	N83° 00' 00"W	120.00
L58	N83° 00' 00"W	109.50
L59	N83° 00' 00"W	109.93
L60	N83° 00' 00"W	125.37
L61	S44° 27' 35"W	55.01
L62	S45° 38' 46"W	46.64
L63	S46° 51' 56"W	47.34
L64	S48° 02' 19"W	47.36
L65	S48° 17' 29"W	180.00
L66	S48° 17' 29"W	45.00
L67	S49° 13' 50"W	48.65
L68	S50° 12' 14"W	47.01
L69	S51° 13' 30"W	47.19
L70	S53° 08' 45"W	46.29
L71	S52° 14' 45"W	47.14
L72	S64° 47' 18"W	50.48
L73	S58° 08' 15"W	55.71
L76	S29° 07' 00"E	24.00

SHEET 1 OF 3

K:\SA3856.dio properties\DA02 veramendi precinct 18-2\426 site development plans\dwg sheets\pb_PlatSheets.dwg
User: rspaeer Plot Date/Time: Nov. 20, 24 - 10:25:02

VERAMENDI PRECINCT 18 UNIT 2

PLAT (SHEET 1 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 11/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_PlatSheets.dwg

11/20/2024

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 3 OF 70 SHEETS

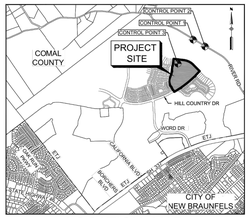
THE STATUS, DATE OF APPROVAL, AND ANY CHANGES MADE TO THE PLAT SHALL BE INDICATED ON THE PLAT SHEET.

FOR PERMIT

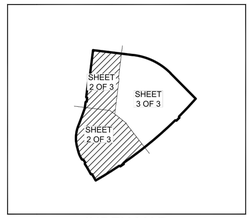
K:\SA3856.dio properties\DA02 veramendi precinct 18-2\426 site development plans\dwg sheets\pb_PlatSheets.dwg
User: rspaeer
Last Modified: Oct. 28, 24 - 16:33
Plot Date/Time: Nov. 20, 24 - 10:25:02

SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 18 UNIT 2

BEING 42.0178 ACRES OF LAND, OUT OF THE 244.440 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206035304, AND OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE

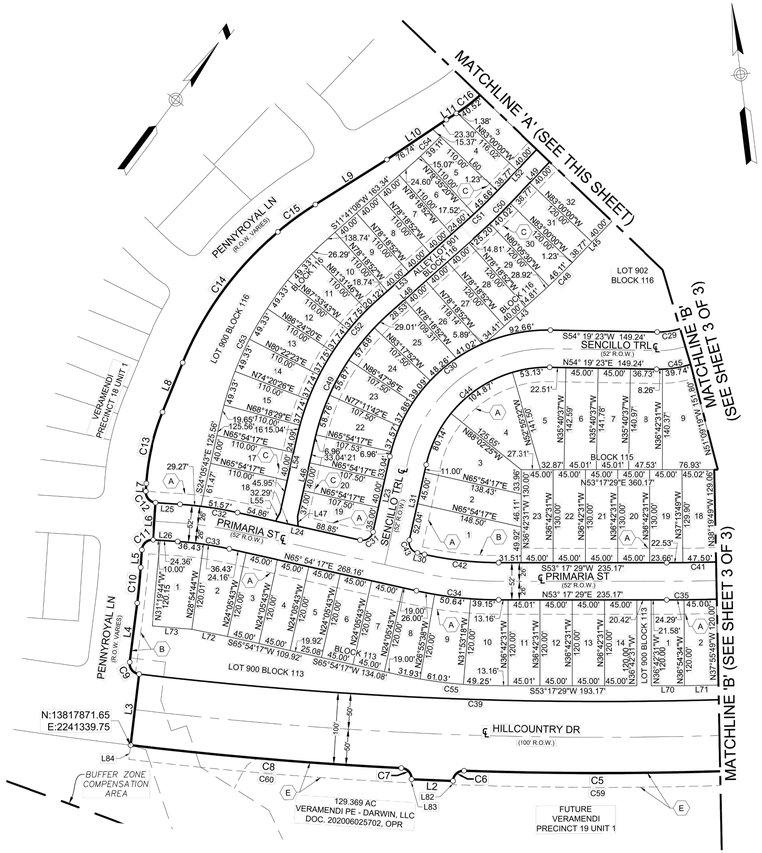


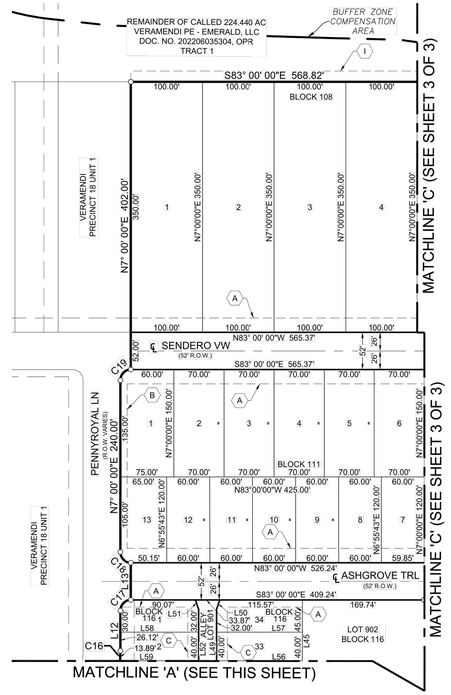
INDEX MAP
NOT TO SCALE

100 50 0 100 200
SCALE: 1" = 100'

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 10/28/2024





LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
1190	EXISTING CONTOURS
(1190)	PROPOSED CONTOURS
AC	ACRES
DOC	DOCUMENT NUMBER
OPR	OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS
MPR	MAP AND PLAT RECORDS OF COMAL COUNTY, TEXAS
R.O.W.	RIGHT-OF-WAY
VOL.	VOLUME
PG.	PAGE(S)
V.N.A.E.	VEHICULAR NON-ACCESS EASEMENT (NTS)
ESM'T	EASEMENT
ETJ	EXTRATERRITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK
(A)	EXIST 20' SANITARY SEWER ESM'T (VOL. 1018, PGS. 700, OPR)
(A)	20' UTILITY ESM'T
(B)	10' UTILITY ESM'T
(C)	15' UTILITY ESM'T
(D)	20' OFF-SITE SANITARY SEWER ESM'T
(E)	20' OFF-SITE UTILITY ESM'T
(F)	OFF-SITE DRAINAGE ESM'T
(G)	OFFSITE DRAINAGE & ACCESS ESM'T
(H)	TEMPORARY ACCESS & DRAINAGE ESM'T (TO EXPIRE UPON INCORPORATION INTO PUBLIC R.O.W.)
(I)	15' OFF-SITE DRAINAGE ESM'T

SHEET 2 OF 3

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User: ngower
Last Modified: Oct. 28, 24 - 16:33
Plot Date/Time: Nov. 20, 24 - 10:25:17

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User: ngower
Plot Date/Time: Nov. 20, 24 - 10:25:17

THE STATUS, DATE OF APPROVAL, AND ANY CHANGES MADE TO THE PLAT SHALL BE INDICATED ON THE PLAT SHEET.

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2
PLAT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_PlatSheets.dwg

11/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

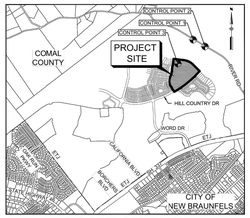
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER:
SA3856.0402

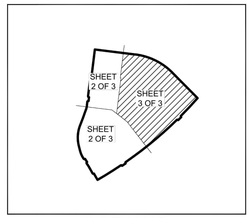
SHEET NO.
4
OF 70 SHEETS

SUBDIVISION PLAT OF VERAMENDI PRECINCT 18 UNIT 2

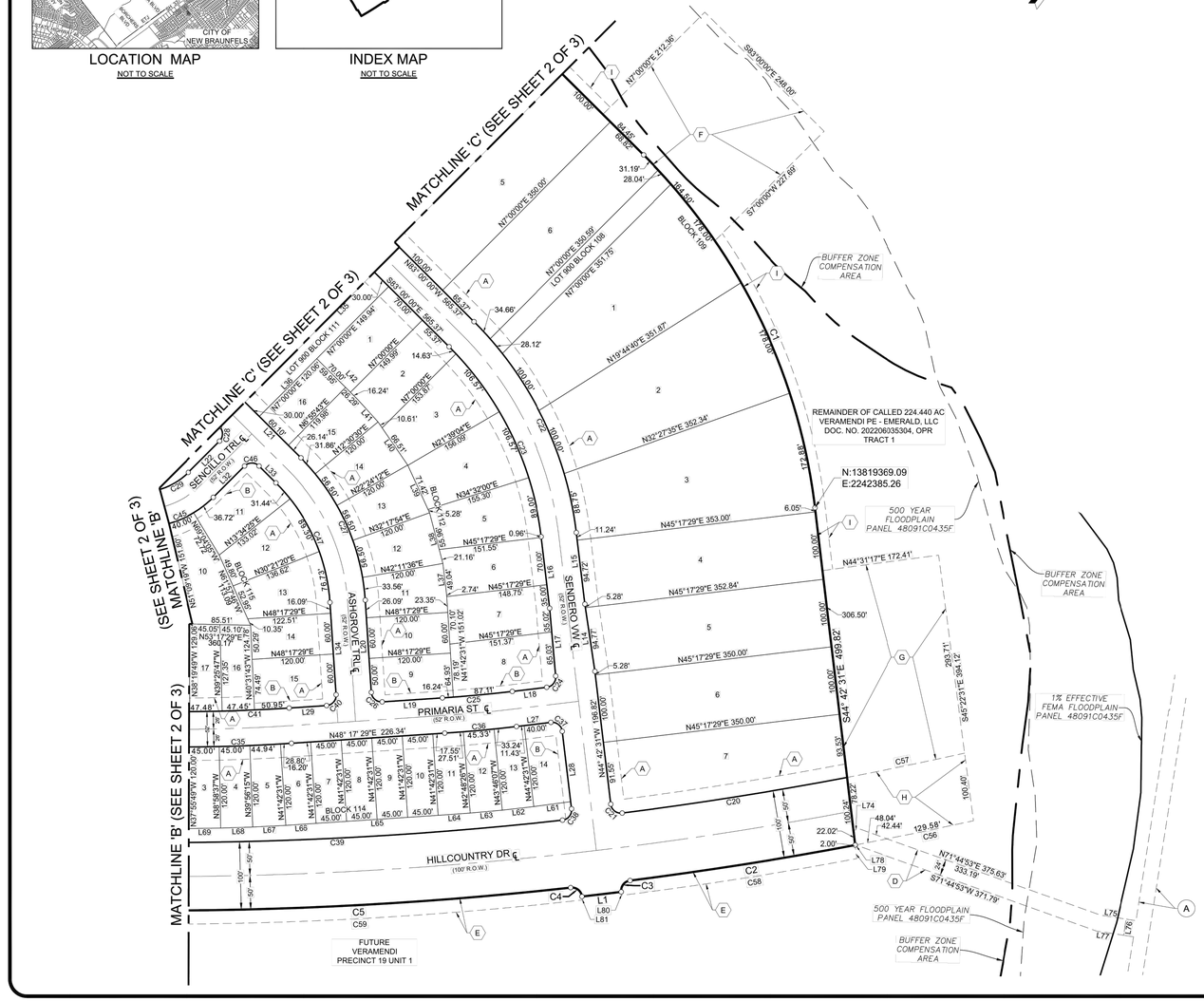
BEING 42.0178 ACRES OF LAND, OUT OF THE 244.440 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206035304, AND OUT OF THE 139.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE



INDEX MAP
NOT TO SCALE


MATCHLINE 'C' (SEE SHEET 2 OF 3)
MATCHLINE 'B' (SEE SHEET 2 OF 3)
MATCHLINE 'C' (SEE SHEET 2 OF 3)
SENCILLO TRL
ASHBROOK TRL
SENDERO VW
PRIMARIA ST
(62' R.O.W.)
HILLCOUNTRY DR
(100' R.O.W.)
BLOCK 111
BLOCK 112
BLOCK 113
BLOCK 114
BLOCK 109
LOT 880 BLOCK 111
LOT 999 BLOCK 108
N:13819369.09
E:2242385.26
REMAINDER OF CALLED 224.440 AC VERAMENDI PE - EMERALD, LLC DOC. NO. 202206035304, OPR TRACT 1
BUFFER ZONE COMPENSATION AREA
500 YEAR FLOODPLAIN PANEL 480091C0435F
1% EFFECTIVE FEMA FLOODPLAIN PANEL 480091C0435F
FUTURE VERAMENDI PRECINCT 19 UNIT 1
N7°00'00"E 212.36'
S83°00'00"E 248.00'
S7°00'00"W 227.66'
N7°00'00"E 350.00'
N7°00'00"E 369.59'
N7°00'00"E 351.75'
N19°44'40"E 351.87'
N32°27'35"E 352.34'
N45°17'29"E 353.00'
N45°17'29"E 352.84'
N45°17'29"E 350.00'
N45°17'29"E 350.00'
S44°42'31"E 498.82'
N44°31'17"E 172.41'
S45°22'31"E 294.12'
S71°44'53"W 371.79'
N71°44'53"E 375.63'
S83°00'00"E 565.37'
N83°00'00"W 565.37'
N7°00'00"E 160.54'
N7°00'00"E 120.00'
N7°00'00"E 168.00'
N7°00'00"E 126.00'
N21°39'04"E 156.00'
N34°37'00"E 155.39'
N32°17'54"E 120.00'
N22°24'12"E 40.00'
N13°34'28"E 73.02'
N39°21'20"E 186.62'
N48°17'29"E 122.51'
N48°17'29"E 120.00'
N48°17'29"E 120.00'
N48°17'29"E 120.00'
N48°17'29"E 151.37'
N48°17'29"E 226.34'
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N38°56'37"W 120.00'
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N35°19'48"W 129.08'
N53°17'29"E 368.17'
N39°29'47"W 127.35'
N40°31'13"W 74.49'
N45°17'29"E 151.55'
N45°17'29"E 148.70'
N42°11'36"E 120.00'
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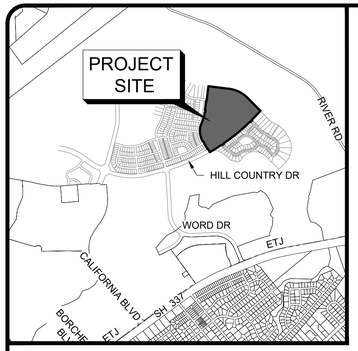
N48°17'29"E 120.00'
N48°17'29



LOCATION MAP
N.T.S.

Veramendi Precinct 18-2 Atlas14 Existing Time of Concentration Table PA_NB

Study Point	Drainage Area	Sheet Flow (max length = 150')					Shallow Concentrated Flow					Channel Flow			Total	Total
		n	L_t(ft)	P_2(in)	S_t%	T_t(min)	Paved/Unpaved	L_{sc}(ft)	S_{sc}%	k	T_{sc}(min)	L(ft)	V(ft/sec)	T_{ch}(min)	T_c(min)	Lag(min)
1	EA1	0.24	100	4.08	1.8	13.2	Unpaved	732	4.0	16.13	3.8	0	6	0.0	**17.0**	**10.2**
2	EB1	0.24	100	4.08	1.7	13.5	Unpaved	1,370	3.4	16.13	7.7	0	6	0.0	**21.2**	**12.7**
2	EB2	0.24	100	4.08	7.0	7.7	Unpaved	1,390	3.0	16.13	8.3	0	6	0.0	**15.9**	**9.5**
3	EC1	0.24	100	4.08	1.7	13.5	Unpaved	910	5.3	16.13	4.1	0	6	0.0	**17.6**	**10.6**
4	ED1	0.24	100	4.08	2.5	11.6	Unpaved	410	7.1	16.13	1.6	0	6	0.0	**13.1**	**7.9**
		Eq. 5.4.1 $T_t = \frac{0.007(nL_t)^{0.8}}{(P_2)^{0.5} S_t^{0.4}}$					Eq 5.4.2 $T_{sc} = \frac{L_{sc}}{3600 K S_{sc}^{0.5}}$					Eq 5.4.3 $T_{ch} = \frac{L_{ch}}{3600 * V}$			Eq 5.4 $T_t+T_{sc}+T_{ch}$	

Veramendi Precinct 18-2 Atlas14 Existing Q Flow Table PA_NB

Study Point	Drainage Area		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Intensity					Flow				
	Area(s)	A (ac.)	C_2	C_{10}	C_{25}	C_{50}	C_{100}	I_2(in/hr)	I_{10}(in/hr)	I_{25}(in/hr)	I_{50}(in/hr)	I_{100}(in/hr)	Q_2(ft³/s)	Q_{10} (ft³/s)	Q_{25}(ft³/s)	Q_{50}(ft³/s)	Q_{100}(ft³/s)
1	EA1	8.84	0.32	0.37	0.41	0.44	0.48	3.97	5.83	7.02	7.98	8.98	11.3	19.2	25.5	31.2	38.2
2	EB1	21.47	0.33	0.38	0.42	0.45	0.49	3.55	5.20	6.26	7.09	7.97	25.1	42.3	56.3	68.2	83.6
3	EB2	18.76	0.33	0.38	0.42	0.45	0.49	4.11	6.05	7.29	8.28	9.33	25.3	42.9	57.2	69.7	85.4
4	EC1	24.25	0.32	0.37	0.41	0.44	0.48	3.90	5.73	6.89	7.84	8.82	29.9	50.8	67.8	82.8	101.7
5	ED1	8.07	0.32	0.37	0.41	0.44	0.48	4.53	6.70	8.10	9.22	10.38	11.6	19.8	26.6	32.5	39.9
Eq 5.3.1 Q=CIA																	

VERAMENDI PRECINCT 18 UNIT 2

EXISTING DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: SH_DAM.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 6 OF 70 SHEETS

FOR PERMIT

P:\LJA3856_GDA Properties\VA002 Veramendi Precinct 18-2\VA06 Site Development Plan\DWG-Sheets\sh_DAM.dwg
Xrefs Attached: None
Last Modified: Mar. 14, 24 - 17:45
Plotted By: Priscilla Flores

Veramendi Precinct 18- & 19-1 Atlas14 Ultimate Time of Concentration Table PA_NB

Study Point	Drainage Area	Sheet Flow (max length = 150')					Shallow Concentrated Flow					Channel Flow			Total	Total
		n	L_t(ft)	P_2(in)	S_t%	T_t(min)	Paved/Unpaved	L_{sc}(ft)	S_{sc}%	k	T_{sc}(min)	L(ft)	V(ft/sec)	T_{ch}(min)	T_c(min)	Lag(min)
	A1	SEE VERAMENDI PRECINCT 18-1 DRAINAGE REPORT FOR TC												10.0	**10.0**	**6.0**
1	A2	0.24	100	4.08	0.8	18.7	Unpaved	12	0.8	16.13	0.1	580	6	1.6	**20.5**	**12.3**
2	A3	0.24	18	4.08	2.0	5.0	Paved	610	2.3	20.32	3.3		6	0.0	**10.0**	**6.0**
	A4	0.24	100	4.08	1.1	16.1	Paved	0	2.3	20.32	0.0	488	6	1.4	**17.4**	**10.4**
	18-1 FLOWS	REFERENCE VERMAMENDI PRECINCT 18-1 FOR BYPASS FLOWS & SWMP REPORT FOR PIPE NETWORK CALC (UW & UZ)														
3	18-1+A3															
4	A1-A5+18-1	CARRY OVER FROM A2									20.5	488	6	1.4	**21.9**	**13.1**
5	B1	0.24	100	4.08	0.8	18.7	Unpaved	50	0.8	16.13	0.6	0	6	0.0		
							Paved	810	1.0	20.32	6.6				**25.9**	**15.5**
	B2	SEE VERAMENDI PRECINCT 18-1 DRAINAGE REPORT FOR TC												12.0	**12.0**	**7.2**
6	C1	0.24	100	4.08	3.0	10.7	Unpaved	178	3.0	16.13	1.1	0	6	0.0		
							Paved	454	0.5	20.32	5.3				**17.1**	**10.3**
7	C1 + C2	CARRY OVER FROM C1									17.1		6	0.0	**17.1**	**10.3**
8	D1	0.24	100	4.08	0.75	18.7	Unpaved	33	0.75	16.13	0.4	0	6	0.0		
							Paved	433	2.00	20.32	2.5				**21.6**	**13.0**
	D1 BYPASS															
	D2	0.24	100	4.08	0.75	18.7	Paved	785	3.0	20.32	3.7	0	6	0.0	**22.4**	**13.4**
9	D2+ D1 BYPASS															
10	D3	0.24	100	4.08	3.75	9.8	Unpaved	182	3.50	16.13	1.0	0	6	0.0		
							Paved	366	2.00	20.32	2.1				**13.0**	**7.8**
11	D4	0.24	100	4.08	2.1	12.4	Unpaved	60	2.1	16.13	0.4	645	6	1.8	**14.6**	**8.8**
12	D5	0.24	100	4.08	0.80	18.2	Unpaved	13	0.8	16.13	0.2	675	6	1.9	**20.3**	**12.2**
13	D6	0.24	22	4.08	2.0	5.0	Paved	680	3.0	20.32	3.2	0	6	0.0	**10.0**	**6.0**
	D3 BYPASS															
	D6 BYPASS															
	D7	0.24	25	4.08	1.4	5.0	Paved	520	2.0	20.32	3.0	0	6	0.0	**10.0**	**6.0**
14	D1 THRU D7															
15	D1 THRU D8	CARRY OVER FROM D2									22.4	0	6	0.0	**22.4**	**13.4**
	E1	0.24	25	4.08	1.4	5.0	Paved	520	2.0	20.32	3.0	0	6	0.0	**10.0**	**6.0**
16	E1+D3 BYPASS															
17	F1	0.24	100	4.08	3.7	9.9	Unpaved	185	3.2	16.13	1.1	0	6	0.0		
							Paved	500	2.40	20.32	2.6				**13.6**	**8.2**
18	F2	0.24	100	4.08	1.6	13.8	Paved	1,050	3.0	20.32	5.0	0	6	0.0	**18.8**	**11.3**
	F2 BYPASS															
	F3	0.24	100	4.08	3.7	9.9	Unpaved	50	3.2	16.13	0.3	0	6	0.0		
							Paved	279	1.50	20.32	1.9				**12.0**	**7.2**
19	F3+ F2 BYPASS															
20	F1 THRU F3	CARRY OVER FROM F2									18.8	0	6	0.0	**18.8**	**11.3**
21	G1	0.24	100	4.08	3.5	10.1	Paved	415	0.5	20.32	4.8	0	6	0.0	**14.9**	**8.9**
22	G1+G2	CARRY OVER FROM G1									14.9	0	6	0.0	**14.9**	**8.9**
		Eq. 5.4.1 $T_t = \frac{0.007(nL_t)^{0.8}}{(P_2)^{0.5} S_t^{0.4}}$					Eq 5.4.2 $T_{sc} = \frac{L_{sc}}{3600 K S_{sc}^{0.5}}$					Eq 5.4.3 $T_{ch} = \frac{L_{ch}}{3600 * V}$			Eq 5.4 $T_t+T_{sc}+T_{ch}$	

Veramendi Precinct 18- & 19-1 Atlas14 Ultimate Q Flow Table PA_NB

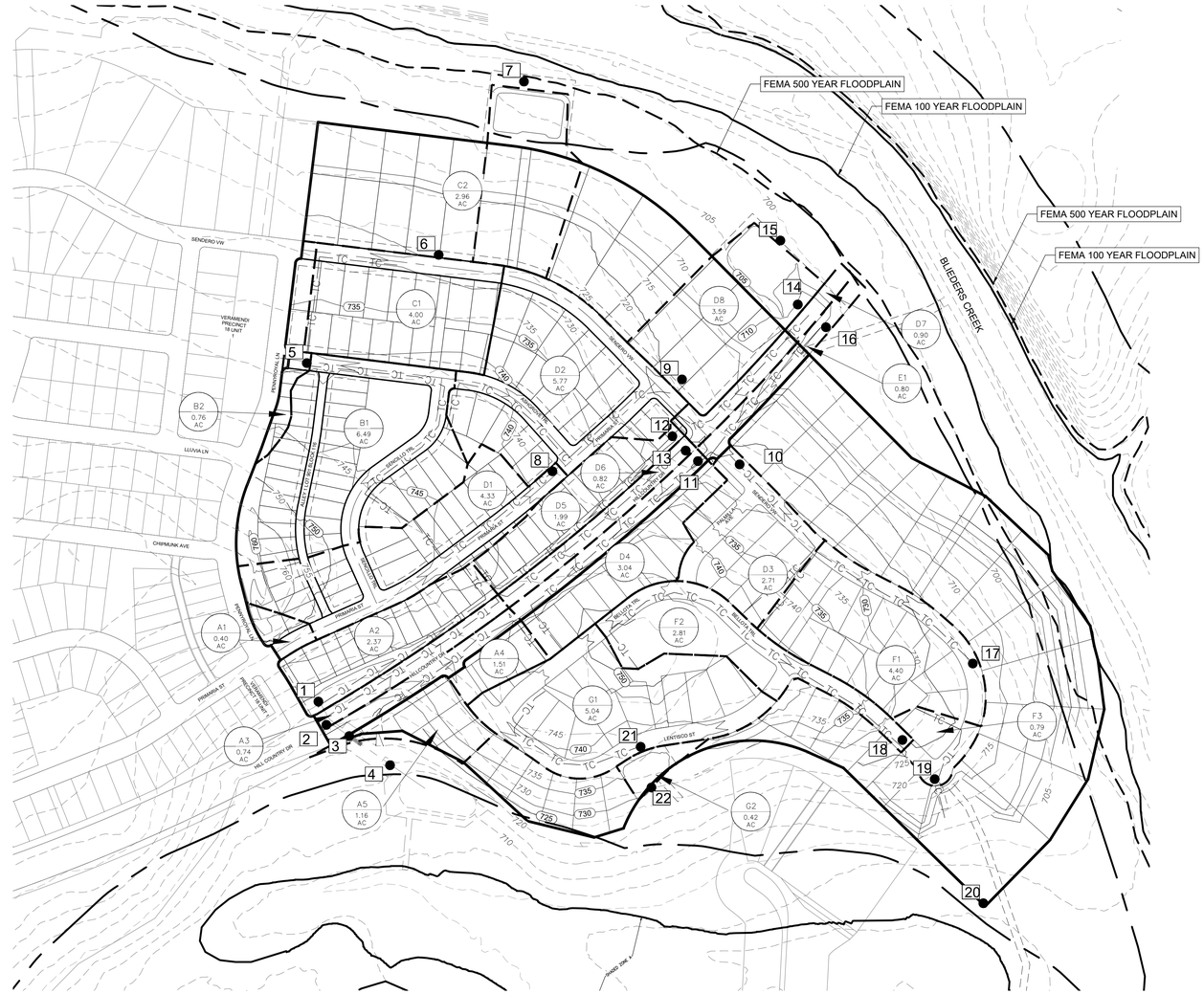
Study Point	Drainage Area		Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Intensity					Flow				
	Area(s)	A (ac.)	C_2	C_{10}	C_{25}	C_{50}	C_{100}	I_2(in/hr)	I_{10}(in/hr)	I_{25}(in/hr)	I_{50}(in/hr)	I_{100}(in/hr)	Q_2(ft^3/s)	Q_{10} (ft^3/s)	Q_{25}(ft^3/s)	Q_{50}(ft^3/s)	Q_{100}(ft^3/s)
	A1	1.93	SEE VERAMENDI PRECINCT 18-1 DRAINAGE REPORT DRAINAGE AREA UW										8.0	13.0	17.0	N/A	24.0
1	A2	2.37	0.44	0.51	0.55	0.58	0.63	3.61	5.30	6.37	7.22	8.12	3.8	6.3	8.3	10.0	12.0
2	A3	0.74	0.62	0.69	0.74	0.77	0.82	5.05	7.50	9.12	10.38	11.70	2.3	3.8	5.0	6.0	7.1
	A4	1.51	0.53	0.60	0.65	0.68	0.73	3.93	5.76	6.94	7.88	8.87	3.1	5.2	6.8	8.1	9.7
	18-1 FLOWS												0.0	3.0	9.0	N/A	22.0
3	18-1+A3												2.3	6.8	14.0	N/A	29.1
4	A1-A5+18-1	7.71	0.50	0.57	0.61	0.65	0.69	3.49	5.11	6.16	6.97	7.84	13.4	25.4	38.1	N/A	63.8
5	B1	6.49	0.51	0.58	0.62	0.66	0.70	3.21	4.70	5.65	6.38	7.19	10.6	17.6	22.8	27.2	32.7
	B2	5.53	SEE VERAMENDI PRECINCT 18-1 DRAINAGE REPORT DRAINAGE AREA US										17.0	29.0	37.0	N/A	54.0
6	C1	4.00	0.54	0.61	0.66	0.69	0.74	3.96	5.81	7.00	7.96	8.95	8.5	14.2	18.3	22.0	26.4
7	C1 + C2	6.96	0.55	0.63	0.67	0.71	0.75	3.96	5.81	7.00	7.96	8.95	15.3	25.3	32.7	39.2	46.9
8	D1	4.33	0.52	0.59	0.64	0.67	0.72	3.52	5.15	6.20	7.02	7.90	7.9	13.2	17.1	20.4	24.5
	D1 BYPASS												0.0	1.3	3.3	5.5	8.6
	D2	5.77	0.54	0.61	0.66	0.70	0.74	3.45	5.06	6.08	6.89	7.75	10.8	17.9	23.2	27.6	33.1
9	D2+ D1 BYPASS												10.8	19.3	26.5	33.2	41.8
10	D3	2.71	0.54	0.61	0.66	0.69	0.74	4.54	6.72	8.13	9.25	10.42	6.7	11.1	14.5	17.4	20.9
11	D4	3.04	0.49	0.56	0.60	0.64	0.68	4.30	6.33	7.64	8.70	9.80	6.4	10.8	14.0	16.9	20.3
12	D5	1.99	0.47	0.54	0.58	0.61	0.66	3.63	5.32	6.40	7.25	8.16	3.4	5.7	7.4	8.9	10.7
13	D6	0.82	0.61	0.69	0.73	0.77	0.82	5.05	7.50	9.12	10.38	11.70	2.5	4.2	5.5	6.6	7.8
	D3 BYPASS												0.0	0.0	0.0	0.4	1.6
	D6 BYPASS												0.0	0.2	0.5	1.0	1.7
	D7	0.90	0.50	0.57	0.61	0.65	0.69	5.05	7.50	9.12	10.38	11.70	2.3	3.8	5.0	6.0	7.3
14	D1 THRU D7												40.0	66.7	86.7	103.8	124.6
15	D1 THRU D8	23.15	0.52	0.59	0.63	0.67	0.71	3.45	5.06	6.08	6.89	7.75	41.5	68.9	89.3	106.6	128.1
	E1	0.80	0.47	0.53	0.58	0.61	0.66	5.05	7.50	9.12	10.38	11.70	1.9	3.2	4.2	5.1	6.1
16	E1+D3 BYPASS												1.9	3.2	4.2	5.5	7.8
17	F1	4.40	0.67	0.74	0.79	0.83	0.88	4.45	6.57	7.94	9.04	10.19	13.0	21.4	27.6	32.9	39.3
18	F2	2.81	0.47	0.53	0.58	0.61	0.66	3.77	5.53	6.66	7.56	8.51	4.9	8.3	10.8	13.0	15.7
	F2 BYPASS												0.0	0.5	1.3	2.3	3.8
	F3	0.79	0.53	0.60	0.64	0.68	0.73	4.70	6.97	8.45	9.61	10.83	2.0	3.3	4.3	5.2	6.2
19	F3+ F2 BYPASS												2.0	3.8	5.6	7.5	10.0
20	F1 THRU F3	8.00	0.58	0.65	0.70	0.74	0.78	3.77	5.53	6.66	7.56	8.51	17.6	29.0	37.3	44.6	53.4
21	G1	5.04	0.52	0.59	0.64	0.67	0.72	4.26	6.26	7.55	8.59	9.68	11.2	18.6	24.2	29.0	34.9
22	G1+G2	6.65	0.47	0.54	0.58	0.62	0.66	4.26	6.26	7.55	8.59	9.68	13.4	22.5	29.3	35.3	42.6

Eq 5.3.1 $Q = CIA$

LEGEND

- AREA (BASIN) ACREAGE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE AREA LIMITS
- TIME OF CONCENTRATION PATH
- FLOW ARROWS
- PROPOSED BOUNDARY
- EXISTING LOT LINES
- PROPOSED LOT LINES
- REFERENCE POINT
- VERAMENDI UNIT 18-2 & 19-1

SCALE IN FEET
SCALE: 1"=200'



REVISIONS NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: Sh_DAMI.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

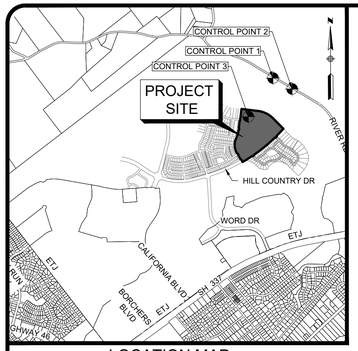
SHEET NO. 7 OF 70 SHEETS

VERAMENDI PRECINCT 18 UNIT 2

PROPOSED & ULTIMATE DRAINAGE AREA MAP

FOR PERMIT

K:\SA3856.404 Properties\0402 Veramendi Precinct 18-2\40 Site Development Plans\DMD-Sheets\sh_DAMI.dwg
Xref: Model Space
Last Modified: Mar. 14, 24 - 17:46
Last Modified By: Nicholas Gonzales



LOCATION MAP
N.T.S.

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 AN CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
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 TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM TESTS SHALL BE TAKEN EVERY 200 FT FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNELS 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. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS.

NEW BRAUNFELS UTILITIES

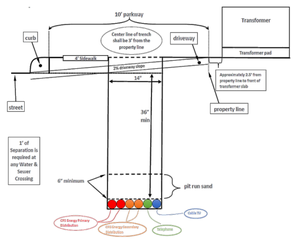
1. R/P BACKFLOW PREVENTION ASSEMBLY TO BE INSTALLED WITH IRRIGATION METERS.

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.

DS-2

Electric Trench with Joint Utilities

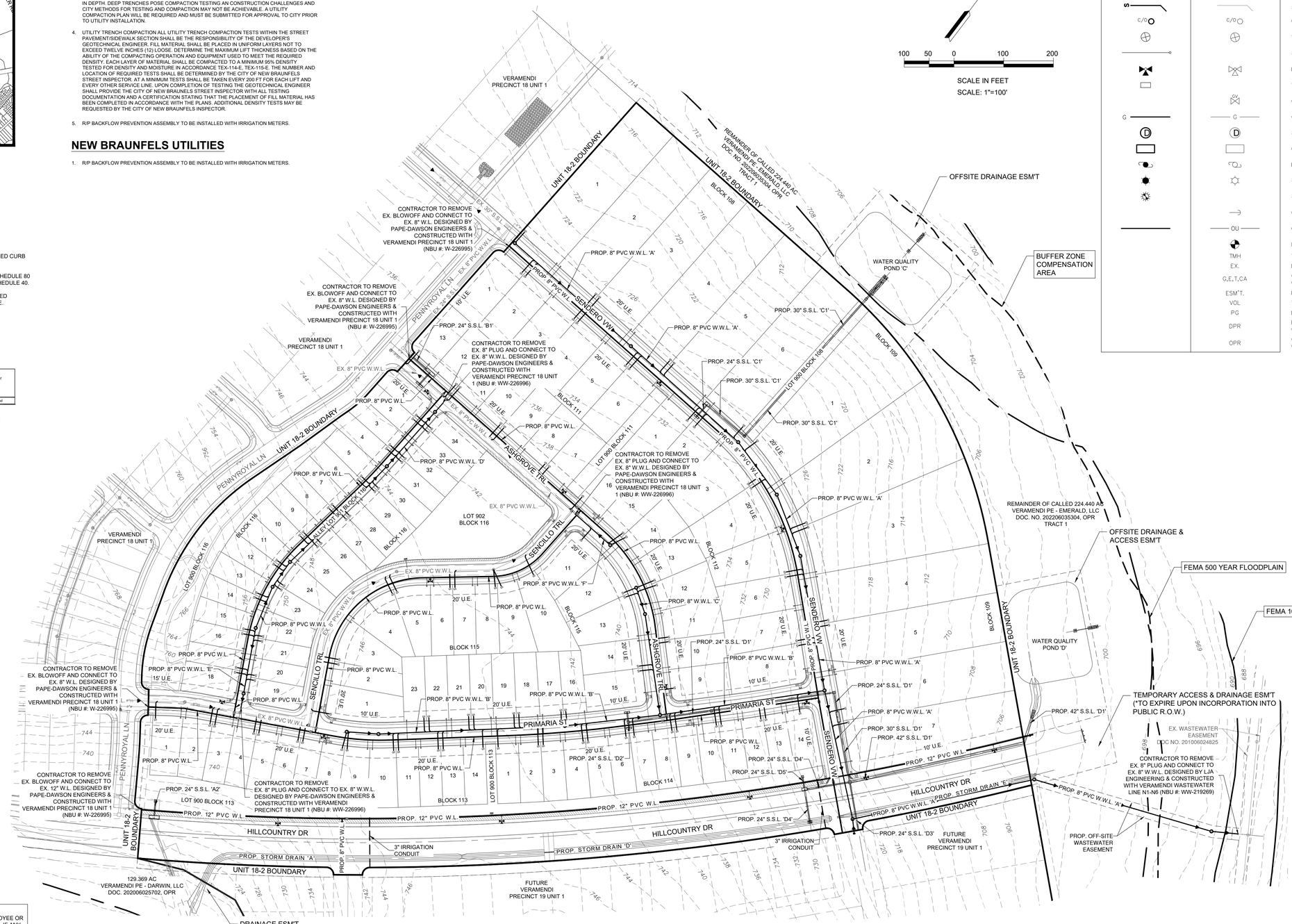


CAUTION:

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

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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.



LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS

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

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

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

OVERALL UTILITY LAYOUT

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 10/28/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 8X_OverallUtilityLayout.dwg

10/28/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

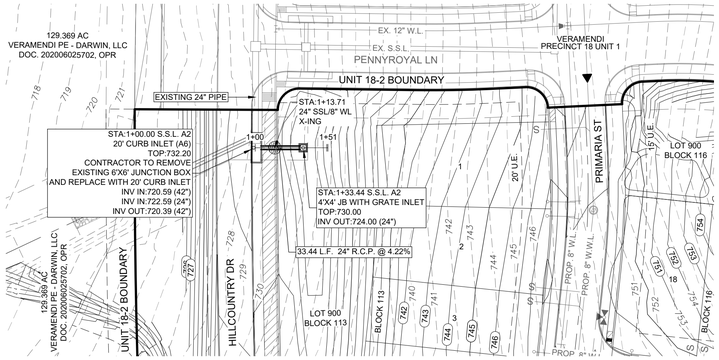
JOB NUMBER: SA3856.0402

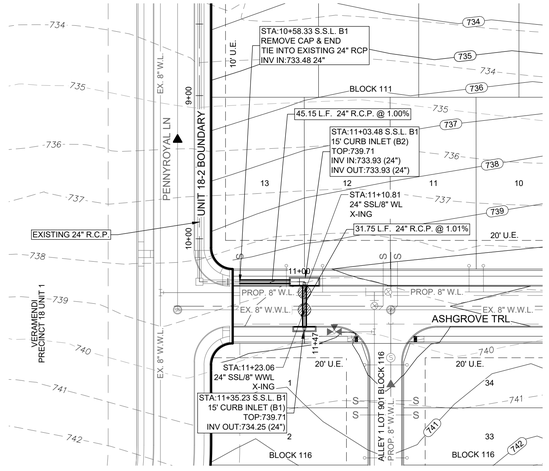
SHEET NO. 8
OF 70 SHEETS

K:\SA3800.dir\properties\0402 veramendi precinct 18-2\428 site development plans\dwg-sheets\ph_01overallUtility.dwg
Plotted: Jul 01, 24 - 11:18
Last Modified: Jul 01, 24 - 11:18
User: Heather Bell
Xrefs: 428_Base.dwg, 428_Topo.dwg

DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATION FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" CONCRETE AND MEET MINIMUM COMPRESIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS ON SHEETS 20-22 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 VEGETATIUON BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
8. ALL WORK SHALL BE PERFORMED WITHIN SITE LIMITS OF CONSTRUCTION.
9. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
10. THE CONTRACTOR WILL BE REQUIRED TO PERFORM TESTING REQUIREMENTS TO SATISFY CITY OF NEW BRAUNFELS INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR.
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
12. ALL DISTURBED AREAS TO BE STABILIZED WITH HYDROMULCH IMMEDIATELY AFTER ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
13. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
14. ALL CONCRETE LINING SHALL BE A MINIMUM OF SIX (6) INCHES THICK AND REINFORCED WITH NO. 4 ROUND BARS @ 18 INCHES ON CENTER EACH WAY OR WELDED WIRE FABRIC OF 6" x 6"-W/D6 x W/D6. THE DEPTH OF ALL TOEDOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES FOR SIDE SLOPES.
15. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
16. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF NEW BRAUNFELS SPECIFICATIONS.
17. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.





LEGEND

50 25 0 50 100

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

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S WW	8" WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
G	G	GAS VALVE
		GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING
EGL_{25}		25 YR ENERGY GRADE LINE
HGL_{25}		25 YR HYDRAULIC GRADE LINE
		100 YR HYDRAULIC GRADE LINE

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TRENCH EXCAVATION SAFETY PROTECTION

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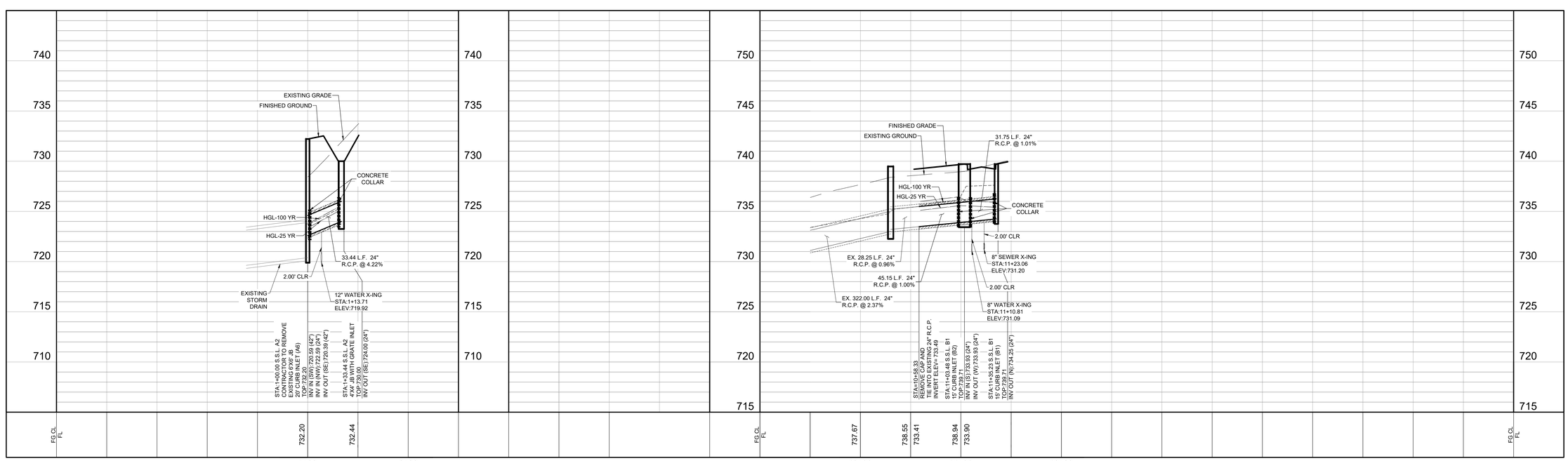
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

S.S.L. 'A2' STA. 1+00 TO END



S.S.L. 'B1' STA. 1+00 TO END

VERAMENDI PRECINCT 18 UNIT 2

S.S.L. 'A2' & S.S.L. 'B1' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: 05_SSL 'A2' & 'B1'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 9 OF 70 SHEETS

FOR PERMIT

P:\LJA3856_ADA Properties\04\02 Veramendi Precinct 18-2\04\5 Site Development Plans\02\MD-Sheets\05_SSL 'A2' & 'B1'.dwg
Plotted: May. 28, '24 – 10:59
Last Modified: May. 28, '24 – 9:41am
Last Modified By: MAP

DRAINAGE & GRADING NOTES:

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6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "D" AS SHOWN IN THE PROFILE.
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11. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
12. ALL DISTURBED AREAS TO BE STABILIZED WITH HYDROMULCH IMMEDIATELY AFTER ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
13. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
14. ALL CONCRETE LINING SHALL BE A MINIMUM OF SIX (6) INCHES THICK AND REINFORCED WITH NO. 4 ROUND BARS @ 18 INCHES ON CENTER EACH WAY OR WELDED WIRE FABRIC OF 6" x 6"-W/D6 x W/D6. THE DEPTH OF ALL TOEDOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES FOR SIDE SLOPES.
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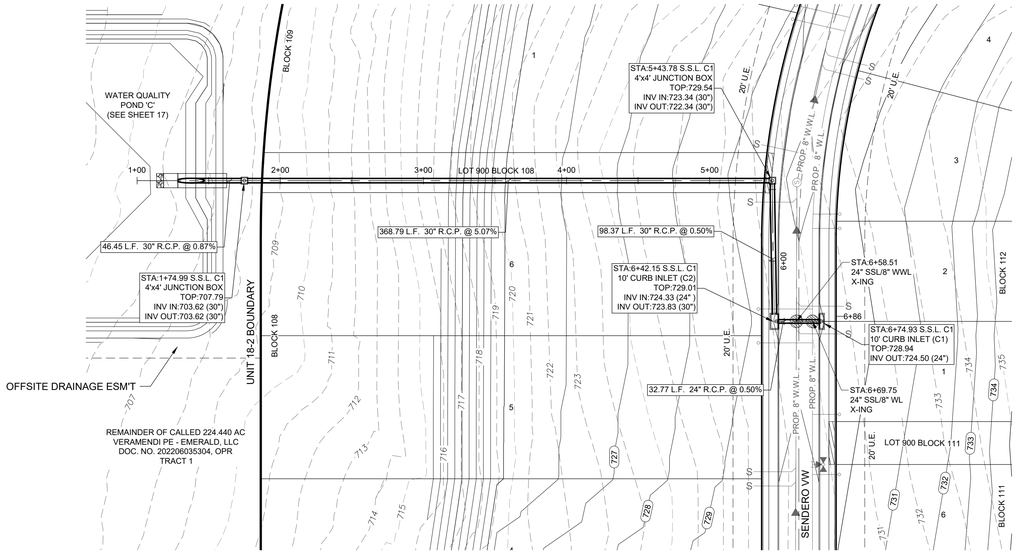

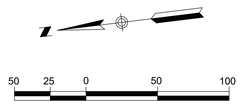

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S C/O	C/O	SANITARY SEWER LATERAL / CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
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		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
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	EX.	EXISTING
	U.E.	UTILITY EASEMENT
ESM'T		EASEMENT
VOL		VOLUME
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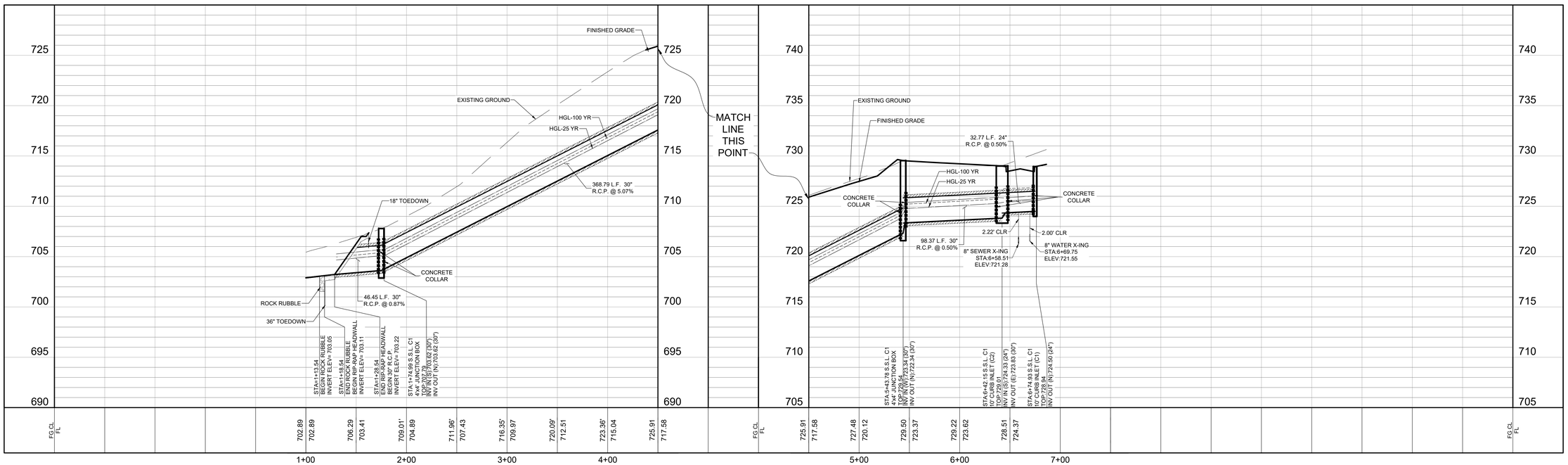
S.S.L. 'C1' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

S.S.L. 'C1' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ss_SSL_C1'.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla G Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 10
OF 70 SHEETS

K:\SA3856.GSA Properties\04\02 Veramendi Precinct 18-2\430 Site Development Plans\GMD-Sheets\ss_SSL 'C1'.dwg
Name: tmorgan
Last Modified: Mar. 15, 24 - 16:36
Date Plotted: Mar. 15, 24 - 16:43

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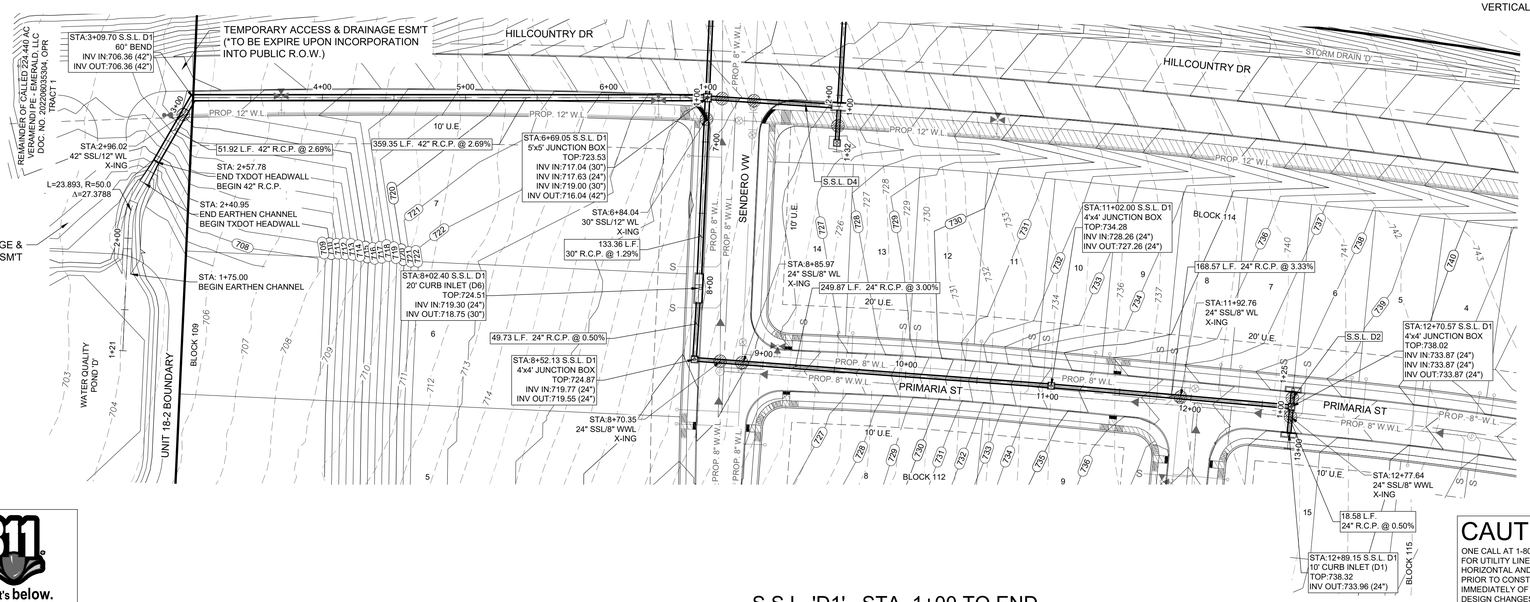

LEGEND

PROPOSED	EXISTING	
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S"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
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EGL_{25}		25 YR ENERGY GRADE LINE
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50 25 0 50 100

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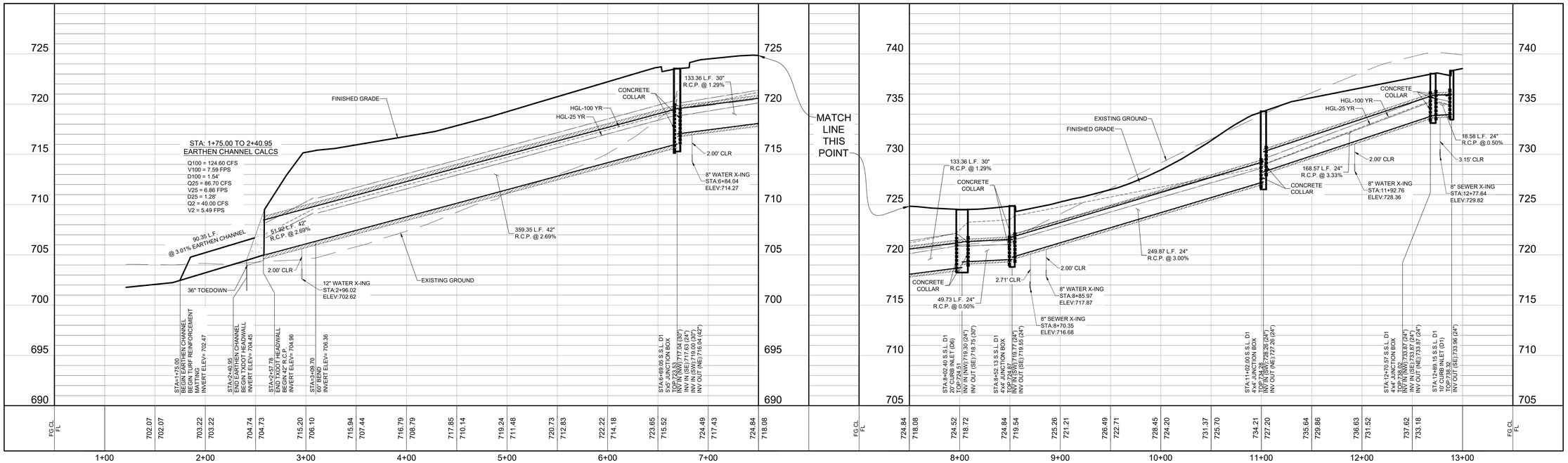
S.S.L. 'D1' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

S.S.L. 'D1' PLAN & PROFILE
STA. 1+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 18_SSL_D1 P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 11
OF 70 SHEETS

K:\SAN\3856.02A Properties\02 Veramendi Precinct 18-21\03 Site Development Plans\CIVIL\Sheets\sh_SSL D1' P&P.dwg
Plotted: May 01, 24 - 14:15
Last Modified: May 01, 24 - 14:14
Xref Scale Factor: 1

DRAINAGE & GRADING NOTES:

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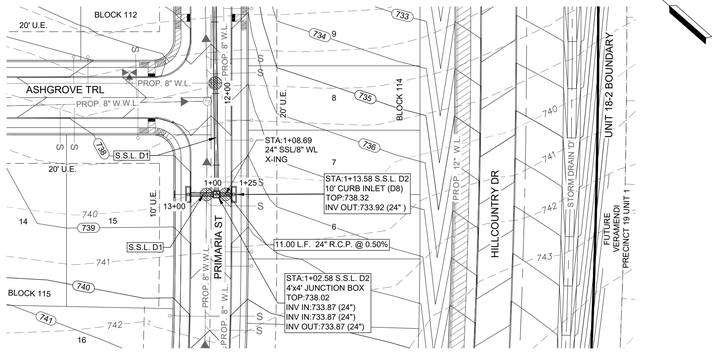

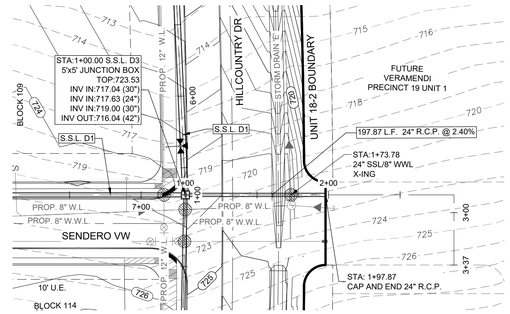

LEGEND

50 25 0 50 100

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

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING
EGL25		25 YR ENERGY GRADE LINE
HGL25		25 YR HYDRAULIC GRADE LINE
		100 YR HYDRAULIC GRADE LINE

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TRENCH EXCAVATION SAFETY PROTECTION

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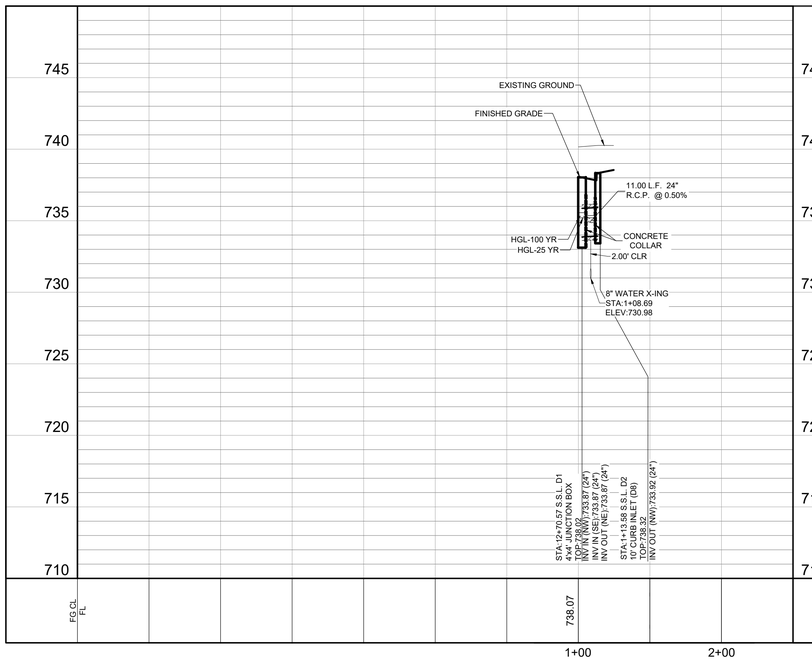
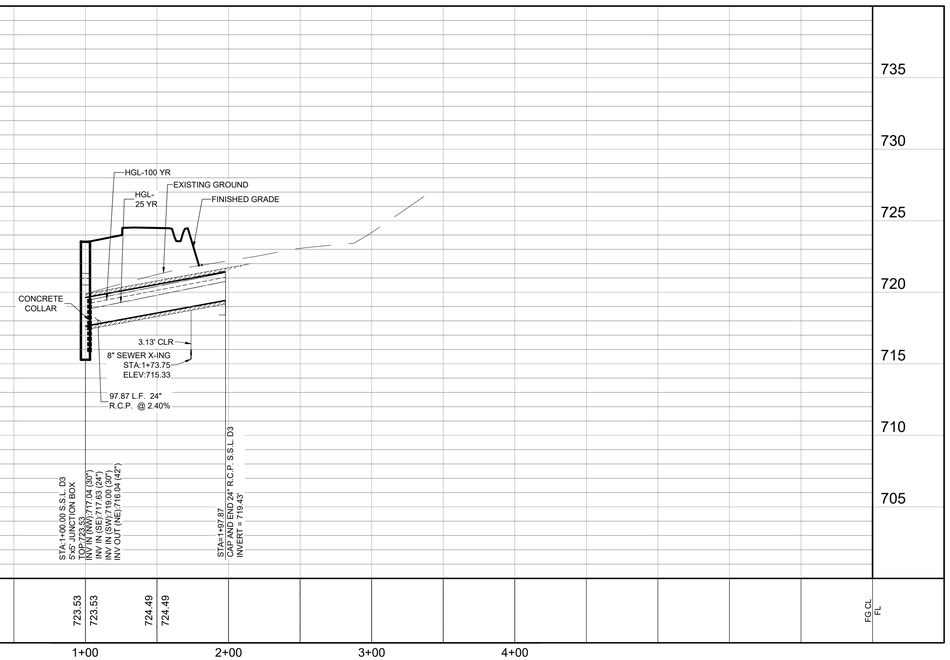
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

S.S.L. 'D2' STA. 1+00 TO END



S.S.L. 'D3' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

S.S.L. 'D2' & S.S.L. 'D3' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ss_SSL 'D2' & 'D3' P&P.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla G Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 12
OF 70 SHEETS

K:\SA3856.KSA Properties\04\02 Veramendi Precinct 18-(7,424) Site Development Plans\DWG-Sheets\ss_SSL 'D2' & 'D3' P&P.dwg
Plotted: Mar 13, 24 - 11:23
Last Modified: Mar 13, 24 - 11:23
By: Priscilla Flores

DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATION FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" CONCRETE AND MEET MINIMUM COMPRESIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS ON SHEETS 20-22 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 VEGETATIUON BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
8. ALL WORK SHALL BE PERFORMED WITHIN SITE LIMITS OF CONSTRUCTION.
9. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
10. THE CONTRACTOR WILL BE REQUIRED TO PERFORM TESTING REQUIREMENTS TO SATISFY CITY OF NEW BRAUFNELS INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR.
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
12. ALL DISTURBED AREAS TO BE STABILIZED WITH HYDROMULCH IMMEDIATELY AFTER ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
13. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
14. ALL CONCRETE LINING SHALL BE A MINIMUM OF SIX (6) INCHES THICK AND REINFORCED WITH NO. 4 ROUND BARS @ 18 INCHES ON CENTER EACH WAY OR WELDED WIRE FABRIC OF 6" x 6"-W/D6 x W/D6. THE DEPTH OF ALL TOEDOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES FOR SIDE SLOPES.
15. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
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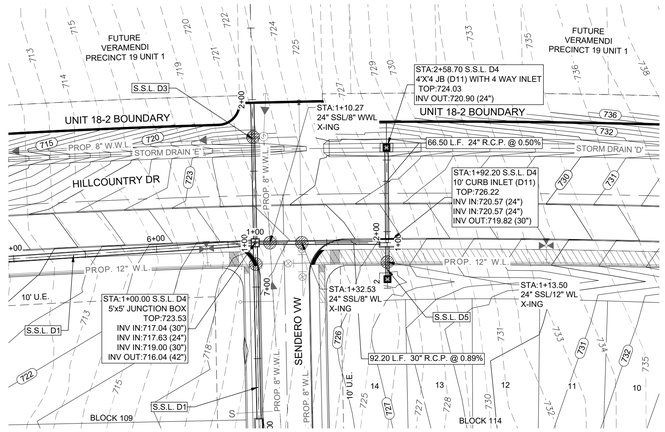

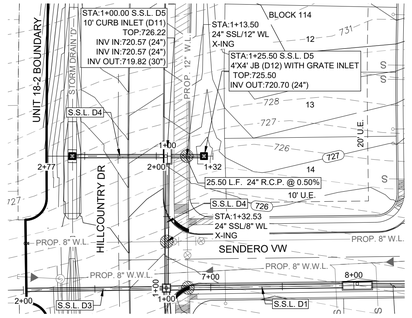

50 25 0 50 100

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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING
EGL25		25 YR ENERGY GRADE LINE
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		100 YR HYDRAULIC GRADE LINE

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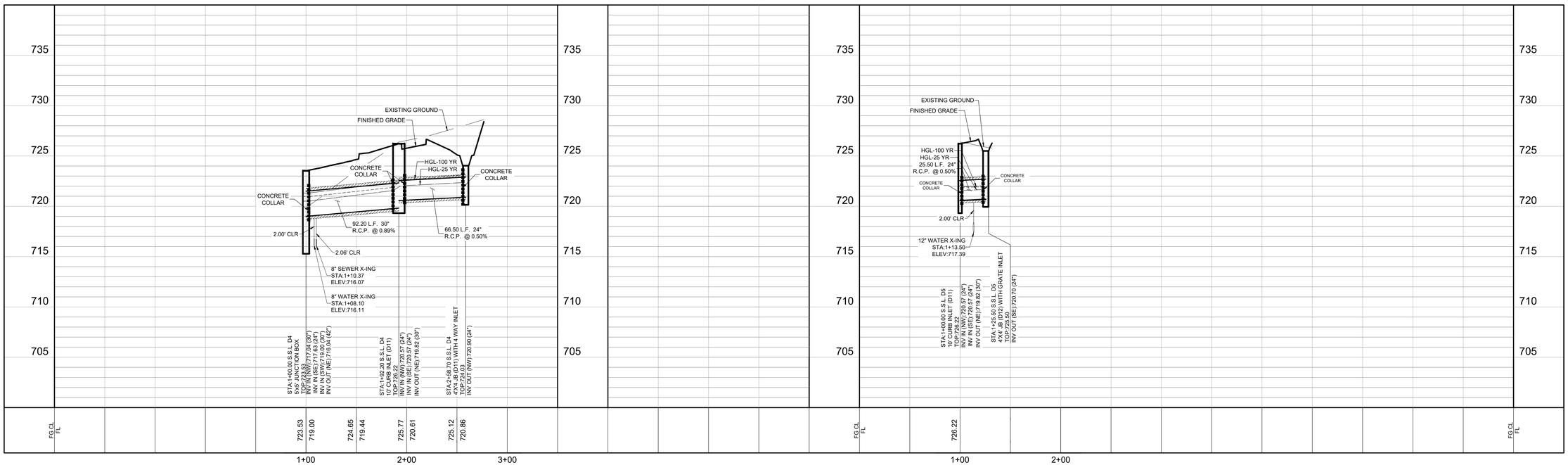
S.S.L. 'D4' STA. 1+00 TO END



S.S.L. 'D5' STA. 1+00 TO END

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

S.S.L. 'D4' & S.S.L. 'D5' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 05_SSL 'D4' & 'D5' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 13
OF 70 SHEETS

P:\LJA3856.402_Project\Civil\02 Veramendi Precinct 18-2\Civil Site Development Plans\DWG-Sheets\05_SSL 'D4' & 'D5' P&P.dwg
Plotted: May 07, 24 - 14:42
Last Modified: May 07, 24 - 14:42
Last Modified By: MAP

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.

2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.

3. ALL STORM SEWER PIPE SHALL BE CL III RCP AS SHOWN ON PROFILE SHEET.

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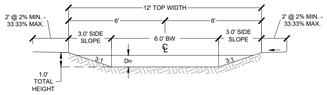
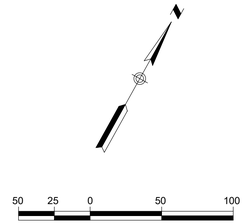


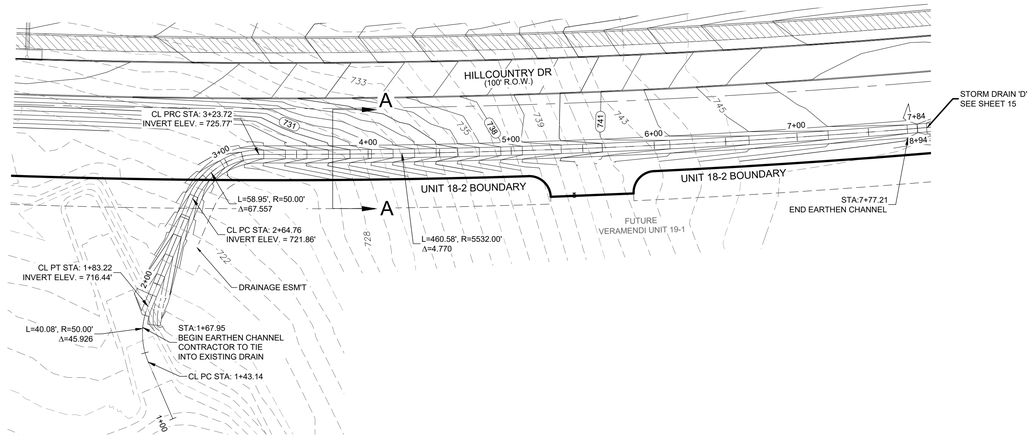
EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+67.95 - STA. 7+77.21



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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"SW	8"SW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
OU	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



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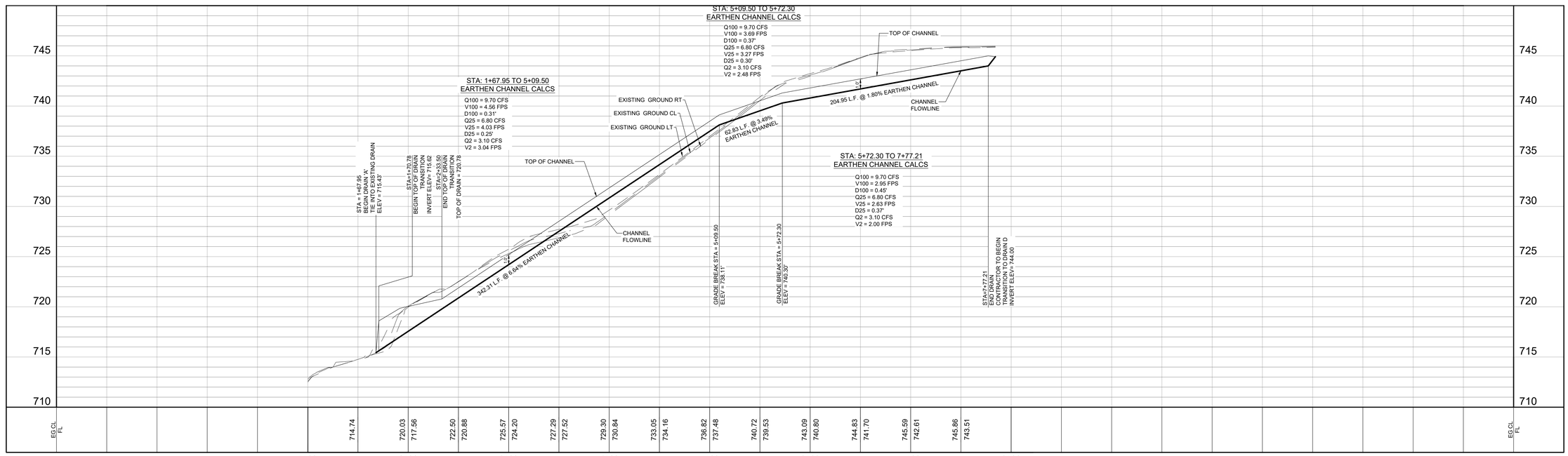
STORM DRAIN 'A' STA. 1+00 TO END



VERAMENDI PRECINCT 18 UNIT 2

STORM DRAIN 'A' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sp_03mm 'A' 1'0" E'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 14 OF 70 SHEETS

FOR PERMIT

P:\LJA3856_KDA Properties\04\02 Veramendi Precinct 18-21\04\5 Site Development Plans\GMD-Sheets\sh_Drain 'A' 1'0" E'.dwg
Plotted: May. 07, 24 - 14:47
Last Modified: May. 07, 24 - 14:47
By: tmiller

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.

2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.

3. ALL STORM SEWER PIPE SHALL BE CL III RCP AS SHOWN ON PROFILE SHEET.

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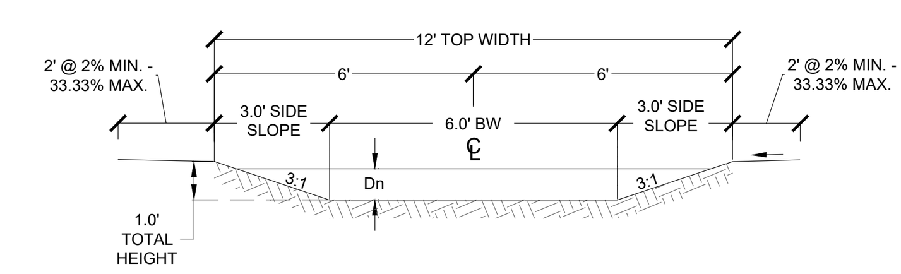
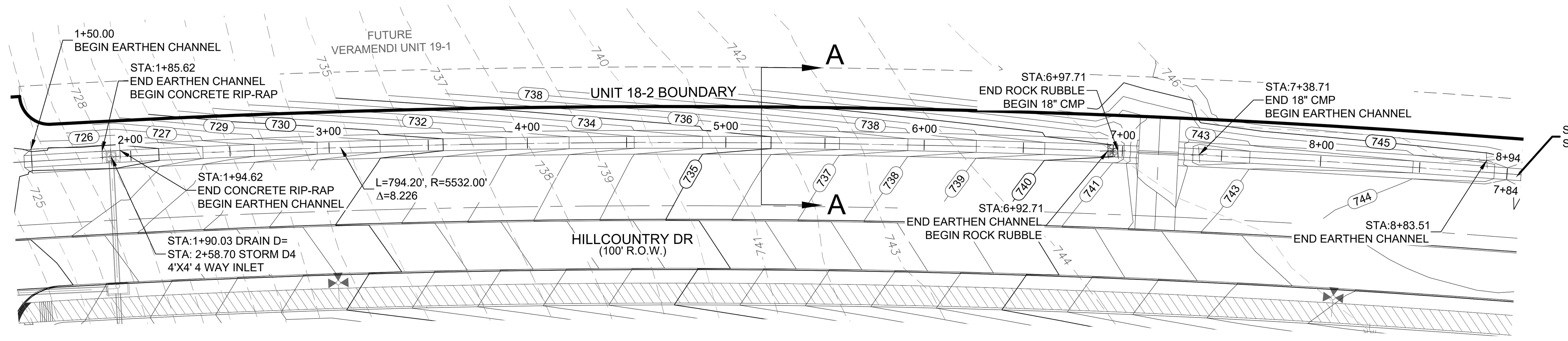


EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+50.00 - STA. 8+83.51

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

LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
		WATER LINE
		SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
		GAS LINE
		STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



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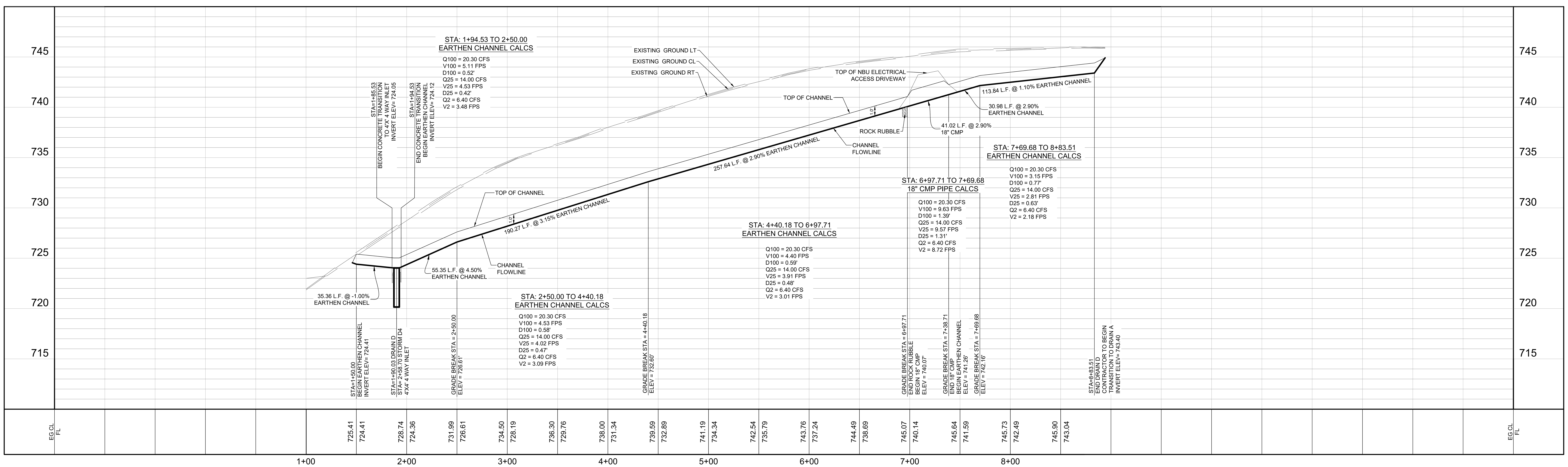
STORM DRAIN 'D' STA. 1+00 TO END



VERAMENDI PRECINCT 18 UNIT 2
STORM DRAIN 'D' PLAN & PROFILE
STA. 1+00 TO END

REVISIONS
NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drain 'A' 'D' 'E'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
09/27/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER:
SA3856.0402

SHEET NO.
15
OF 70 SHEETS

FOR PERMIT

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.

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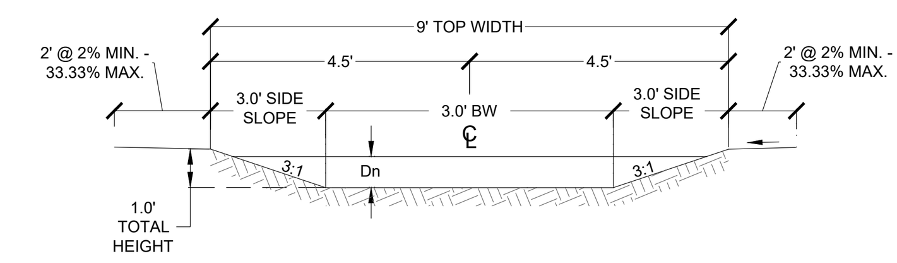
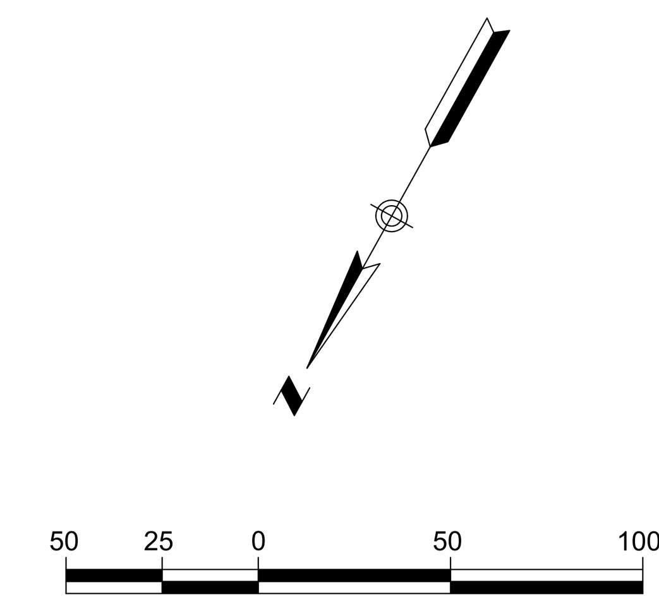
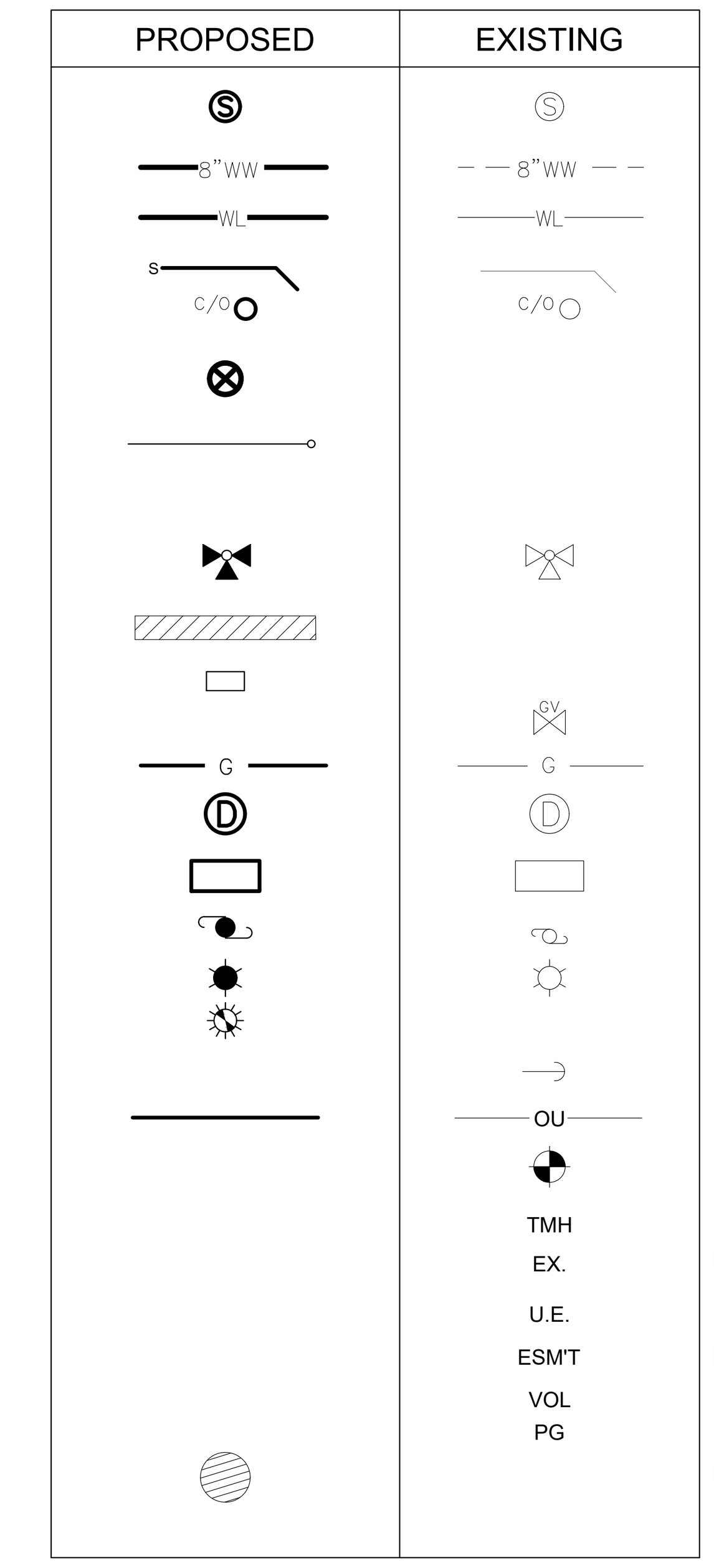


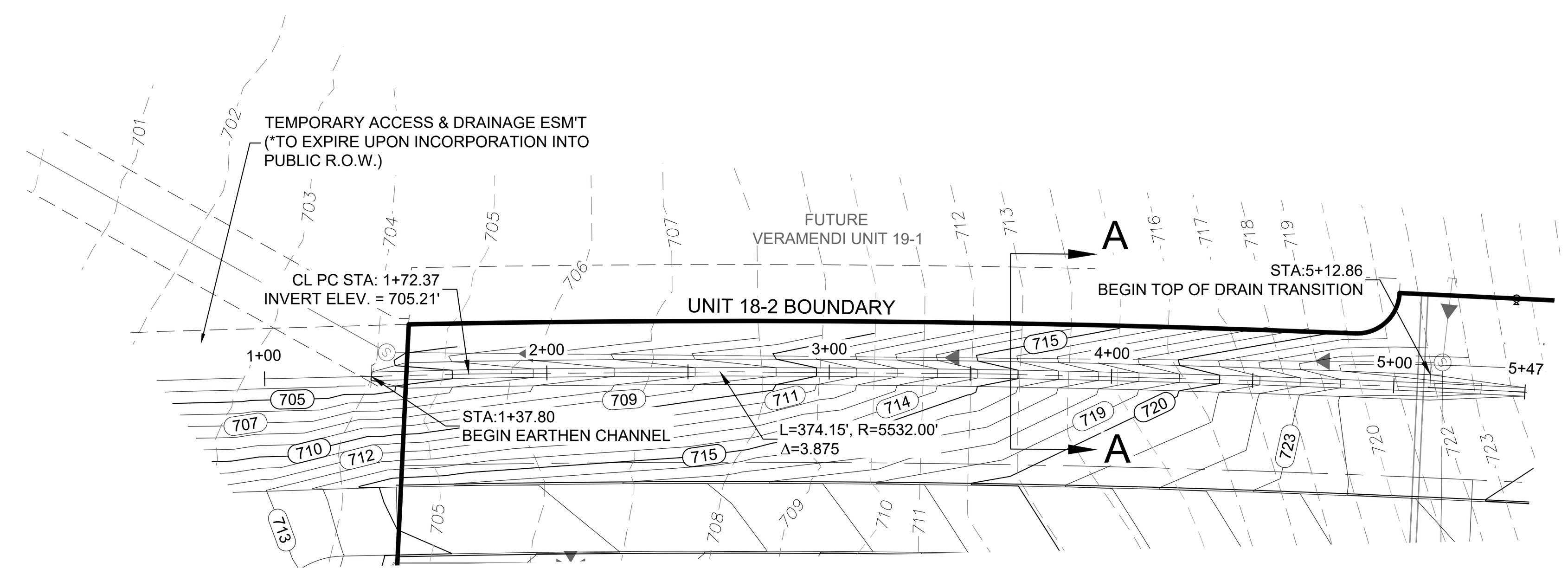
EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+39.20 - STA. 5+81.67



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

LEGEND



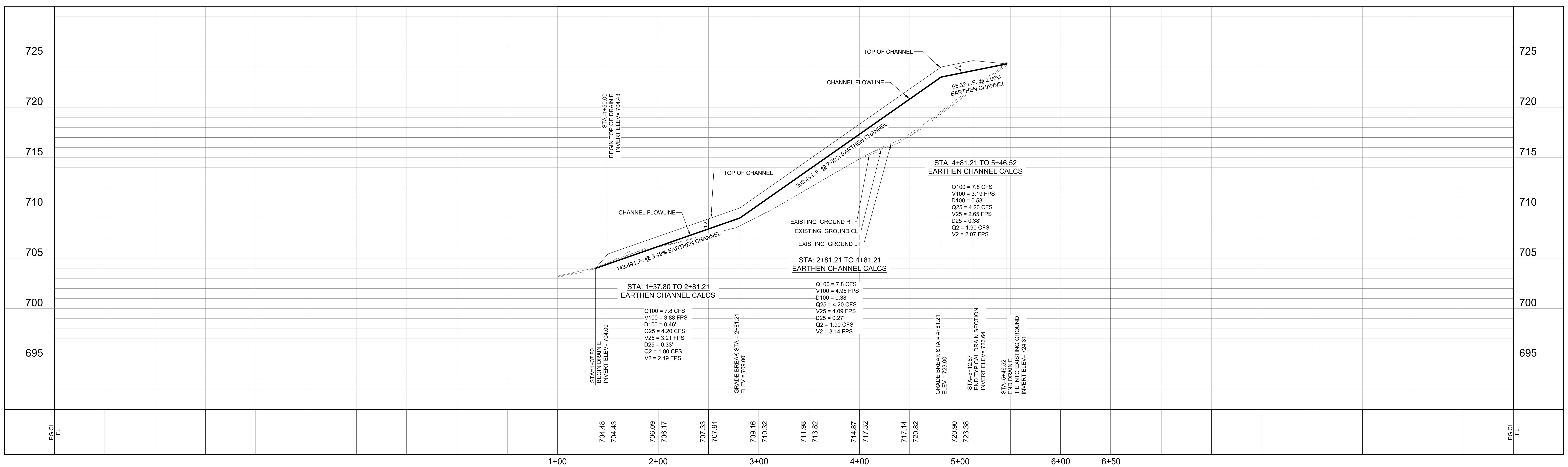


CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

STORM DRAIN 'E' STA. 1+00 TO END

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

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

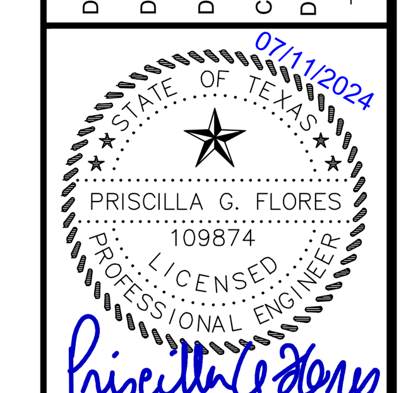


VERAMENDI PRECINCT 18 UNIT 2
STORM DRAIN 'E' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE

REVISIONS

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drain 'A' 'D' 'E'.dwg



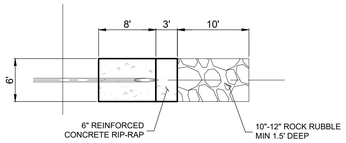
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

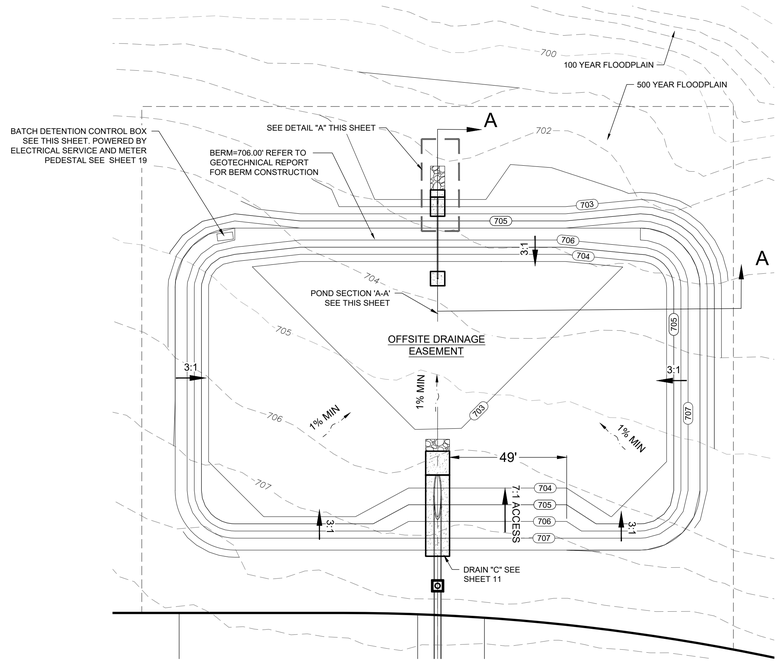
FOR PERMIT

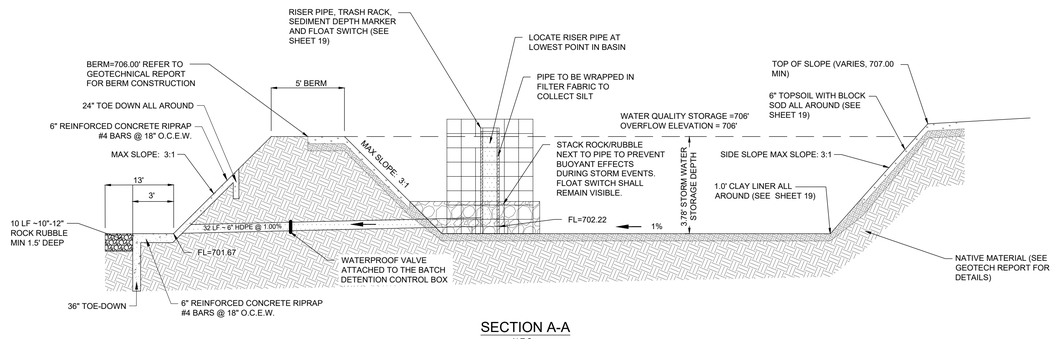
DRAINAGE & GRADING NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATION FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" CONCRETE AND MEET MINIMUM COMPRESIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS ON SHEETS 20-22 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 VEGETATIUON BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "D" AS SHOWN IN THE PROFILE.
7. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
8. ALL WORK SHALL BE PERFORMED WITHIN SITE LIMITS OF CONSTRUCTION.
9. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
10. THE CONTRACTOR WILL BE REQUIRED TO PERFORM TESTING REQUIREMENTS TO SATISFY CITY OF NEW BRAUFNELS INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR.
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
12. ALL DISTURBED AREAS TO BE STABILIZED WITH HYDROMULCH IMMEDIATELY AFTER ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
13. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
14. ALL CONCRETE LINING SHALL BE A MINIMUM OF SIX (6) INCHES THICK AND REINFORCED WITH NO. 4 ROUND BARS @ 18 INCHES ON CENTER EACH WAY OR WELDED WIRE FABRIC OF 6" x 6"-W/D6 x W/D6. THE DEPTH OF ALL TOEDOWNS SHALL BE 36 INCHES UPSTREAM, 24 INCHES DOWNSTREAM, AND 18 INCHES FOR SIDE SLOPES.
15. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
16. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF NEW BRAUNFELS SPECIFICATIONS.
17. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.

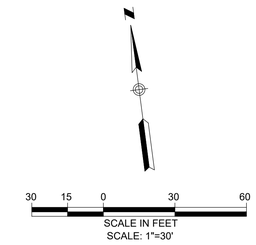


DETAIL "A"
SCALE: 1"=10'





SECTION A-A
N.T.S.



LEGEND

PROPOSED	EXISTING	
580	580	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
580.25	580.25	GROUND ELEVATION

EMERGENCY OVERFLOW WEIR CALCULATION

$Q_{CAP}=C*L*H^{3/2}$
C = 2.6
H = 1.0 FT
L = 50 FT WEIR
$Q_{CAP}=2.6*50*1.0^{3/2}$
Q_{CAP}=330.9 CFS
Q_{OUT}=29.1 CFS
330.0 CFS > 29 CFS = OK

VERAMENDI PRECINCT 18 UNIT 2

WATER QUALITY POND 'C' SWQ

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PDF
DRAWING NAME: 80_Water Quality Ponds.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 17 OF 70 SHEETS

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

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

FOR PERMIT

X:\SA3856_ASA Properties\04Civil Veramendi Precinct 18-21\06 Site Development Plans\DWG Sheets\pln_Water Quality Ponds.dwg
Last Modified: Mar 15, 24 - 16:54
Plot Time: Jul 11, 24 - 11:43 am

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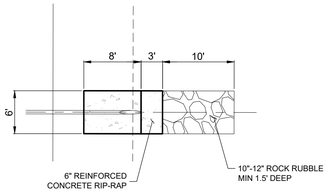
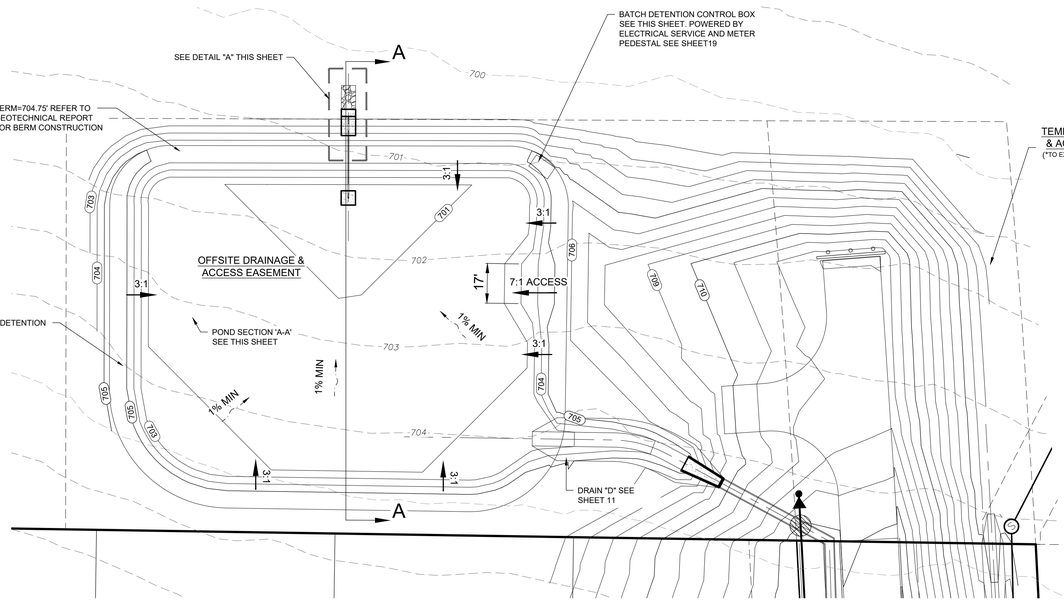
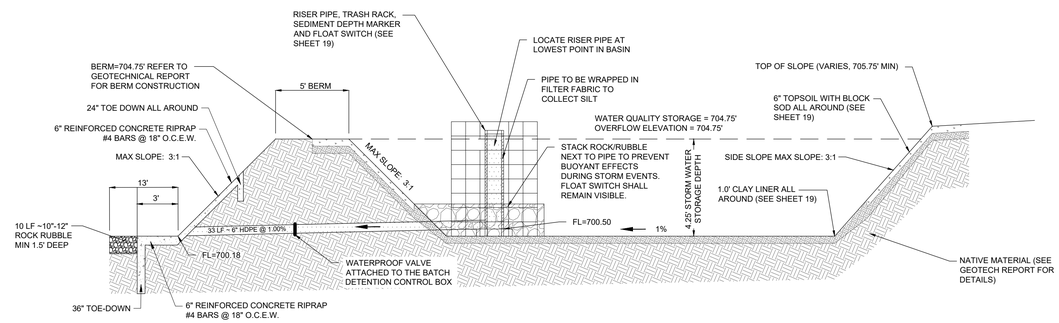


DETAIL "A"
SCALE: 1"=10'

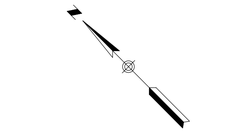




SECTION A-A
N.T.S.

EMERGENCY OVERFLOW WEIR CALCULATION

$Q_{OVF}=C^*L^*H^{3/2}$
C = 2.6
H = 1.0 FT
L = 140 FT WEIR
$Q_{OVF}=2.6^*140^*1.0^{3/2}$
Q_{OVF}=364.0 CFS
Q_{100}=122.8 CFS
364.0 CFS > 122.8 CFS = OK



SCALE IN FEET
SCALE: 1"=30'

LEGEND

PROPOSED	EXISTING	
580	580	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
580.25	580.25	GROUND ELEVATION

VERAMENDI PRECINCT 18 UNIT 2

WATER QUALITY POND 'D' SWQ

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: sh_Water Quality Ponds.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 18
OF 70 SHEETS

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

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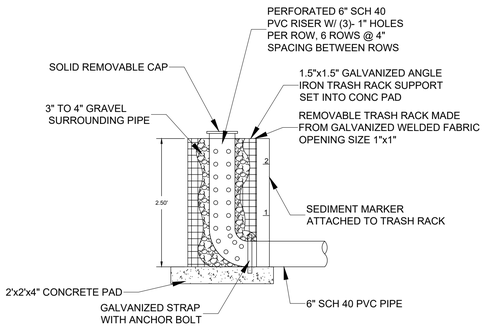
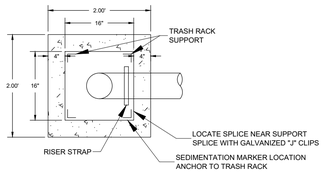
811 Know what's below. Call before you dig.

FOR PERMIT

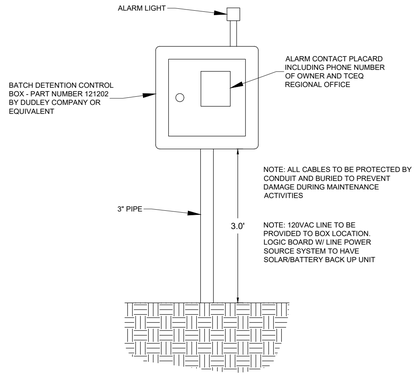
K:\SA3856.A04 Properties\0402 Veramendi Precinct 18-21\438 Site Development Plans\DWG-Sheets\sh_Water Quality Ponds.dwg
Xref Images:
Last Modified: Mar. 15, 24 - 16:54
Last Plotted: 7/11/24 - 16:43:47



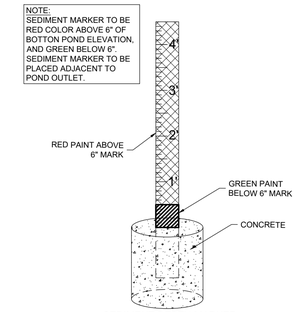
SECTION VIEW OF RISER
NTS



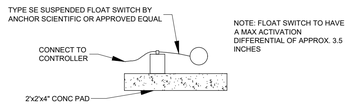
PLAN VIEW OF RISER
NTS



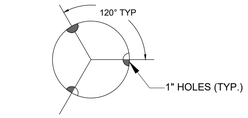
BATCH DETENTION CONTROL BOX
NTS



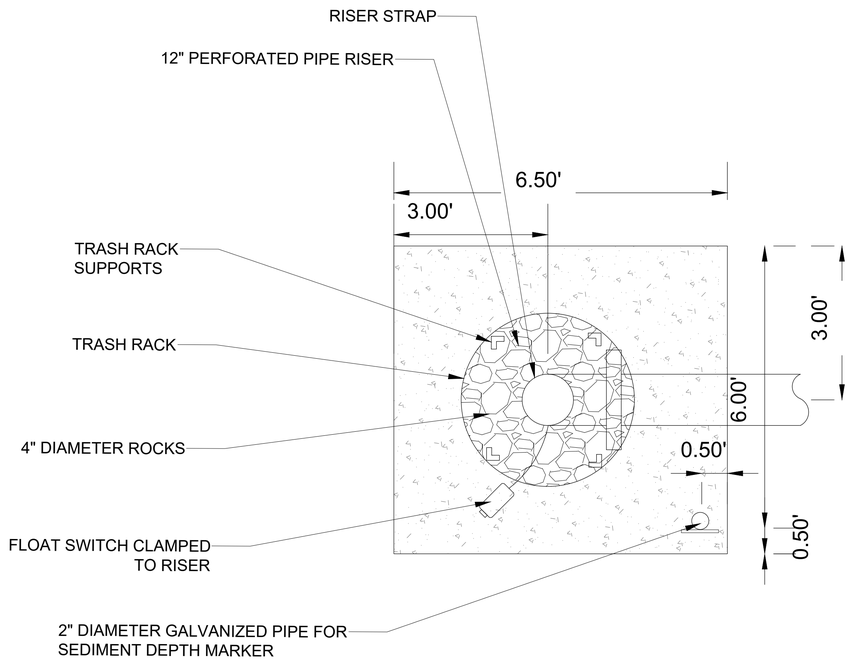
SEDIMENT DEPTH MARKER
N.T.S.



FLOAT SENSOR
NTS



HOLE LAYOUT DETAIL
NTS



PERFORATED RISER PAD
TOP VIEW
N.T.S.

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.

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 8" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
4. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROL TO START DETENTION TIMER #2.
5. DETENTION TIMER #2 TO BE MANUALLY SET TO 19-48 HOURS AND TO BE USER ADJUSTABLE.
6. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 8" BUTTERFLY VALVE IS TO CLOSE.
7. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.

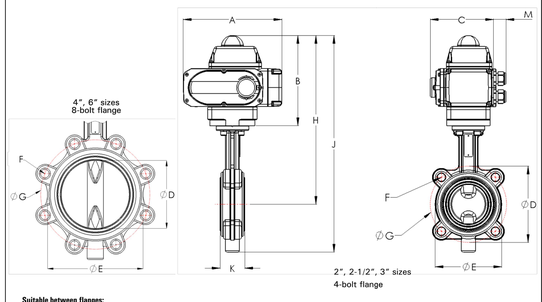
NOTES TO CONTRACTOR
(EACH PHASE OF BASIN CONSTRUCTION)

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:
   - REINFORCING STEEL FOR BASIN WALL OR RIPRAP LINER HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE AND RISER PIPE IS IN PLACE.
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.

Valworx

SERIES 5673

Dimensions:



Suitable between flanges:

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

Pipe Size		A	B	C	D	E	F	G	H	J	K	M	ISO	Weight (AC/DC)
2	inch	6.4	6.2	4.7	2.0	3.7	4| 5/8-11	4.7	11.1	14.1	1.8	1.0	F05	12.7 / 13.3 lbs
	mm	162.0	157.0	118.5	50.0	95.0	--	120.5	283.0	359.0	46.0	25.0		5.8 / 6.0 kg
2-1/2	inch	6.4	6.2	4.7	2.6	4.1	4| 5/8-11	5.5	11.5	14.7	1.9	1.0	F05	14.5 / 15.0 lbs
	mm	162.0	157.0	118.5	65.0	105.0	--	139.7	291.0	373.0	49.0	25.0		6.6 / 6.8 kg
3	inch	6.4	6.2	4.7	3.2	4.7	4| 5/8-11	6.0	12.4	16.1	1.9	1.0	F05	17.3 / 17.8 lbs
	mm	162.0	157.0	118.5	80.0	120.0	--	152.4	314.0	410.0	49.0	25.0		7.8 / 8.1 kg
4	inch	6.4	6.2	4.7	3.9	5.8	8| 5/8-11	7.5	12.8	17.2	2.2	1.0	F05/F07	22.1 / 22.6 lbs
	mm	162.0	157.0	118.5	100.0	147.0	--	190.5	324.0	438.0	56.0	25.0		10.0 / 10.3 kg
6	inch	10.1	8.5	6.3	5.9	8.1	8| 3/4-10	9.5	14.2	19.8	2.3	1.0	F07	50.0 / 51.0 lbs
	mm	256.0	216.0	160.0	150.0	205.0	--	241.3	360.0	502.0	59.0	25.0		22.7 / 23.1 kg

VERAMENDI PRECINCT 18 UNIT 2

BASIN DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Basin Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

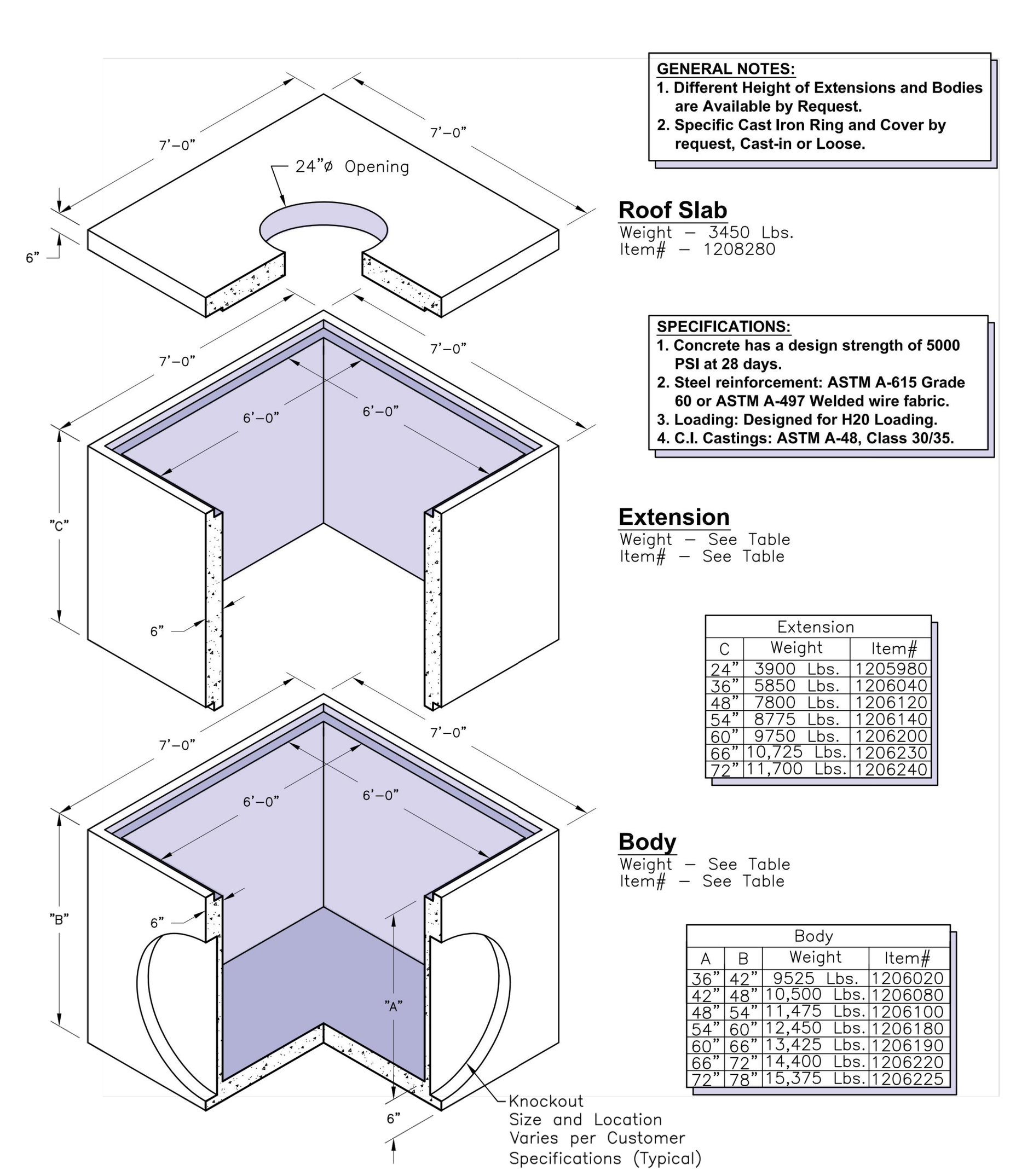
JOB NUMBER: SA3856.0402

SHEET NO. 19 OF 70 SHEETS

FOR PERMIT

H:\LJA3856_GSA Properties\04002 Veramendi Precinct 18-21\026 Site Development Plan\02WD-Sheets\sh_Basin Details.dwg
Xrefs Attached: Mar. 15, 24 – 17:51
Last Modified: Mar. 15, 24 – 17:51
Plotted By: Priscilla Flores

Oldcastle Precast® | *Water* | **6'-0"x6'-0" I.D. Junction Box** Model: JB-660

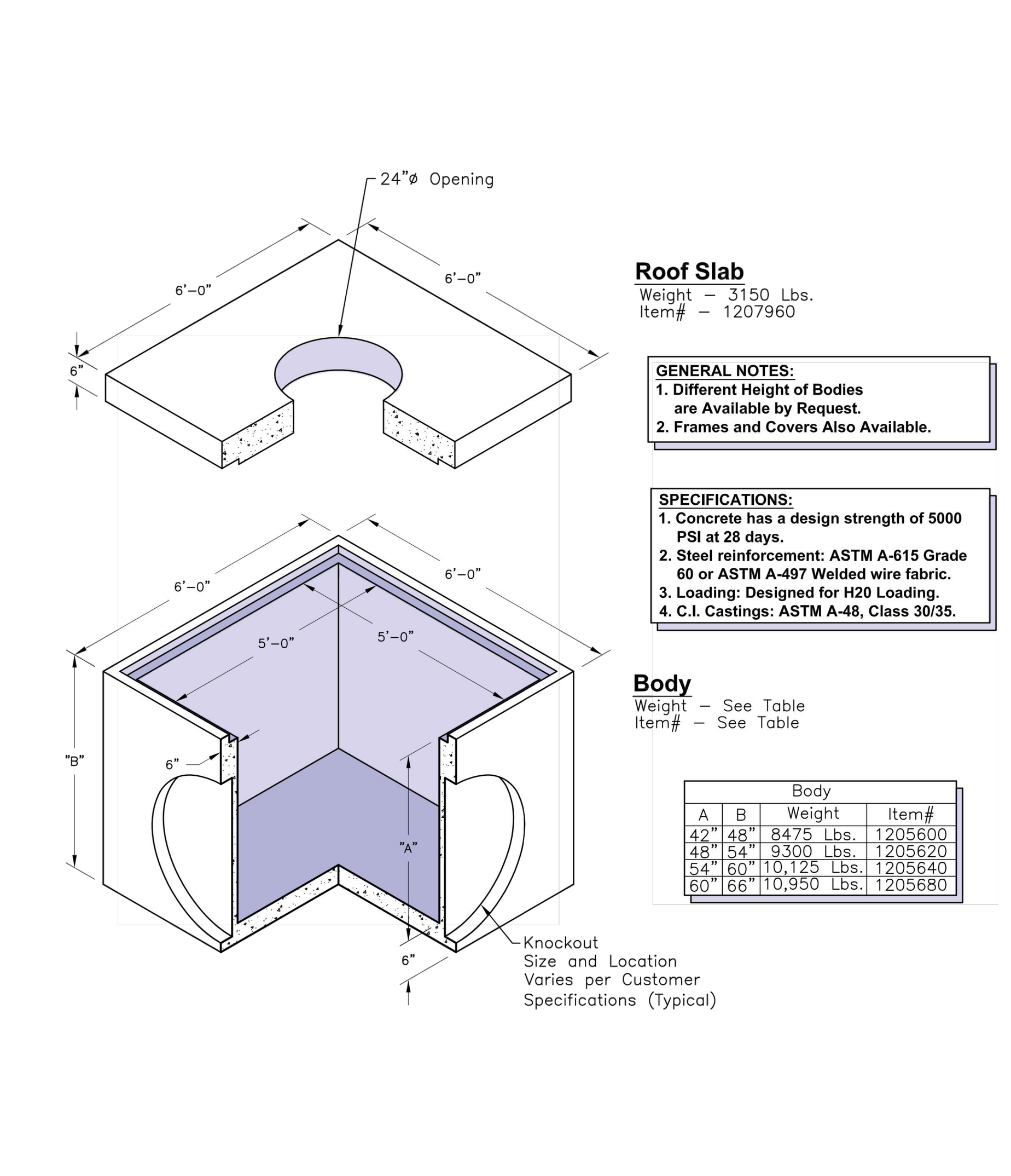


Texas Region | For more information about our products please visit us on the web at: oldcastleprecast.com | 888-9 Oldcastle (888-965-3227)

© 2013 Oldcastle Precast, Inc.

JB-12

Oldcastle Precast® | *Water* | **5'-0"x5'-0" I.D. Junction Box** Model: JB-550



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

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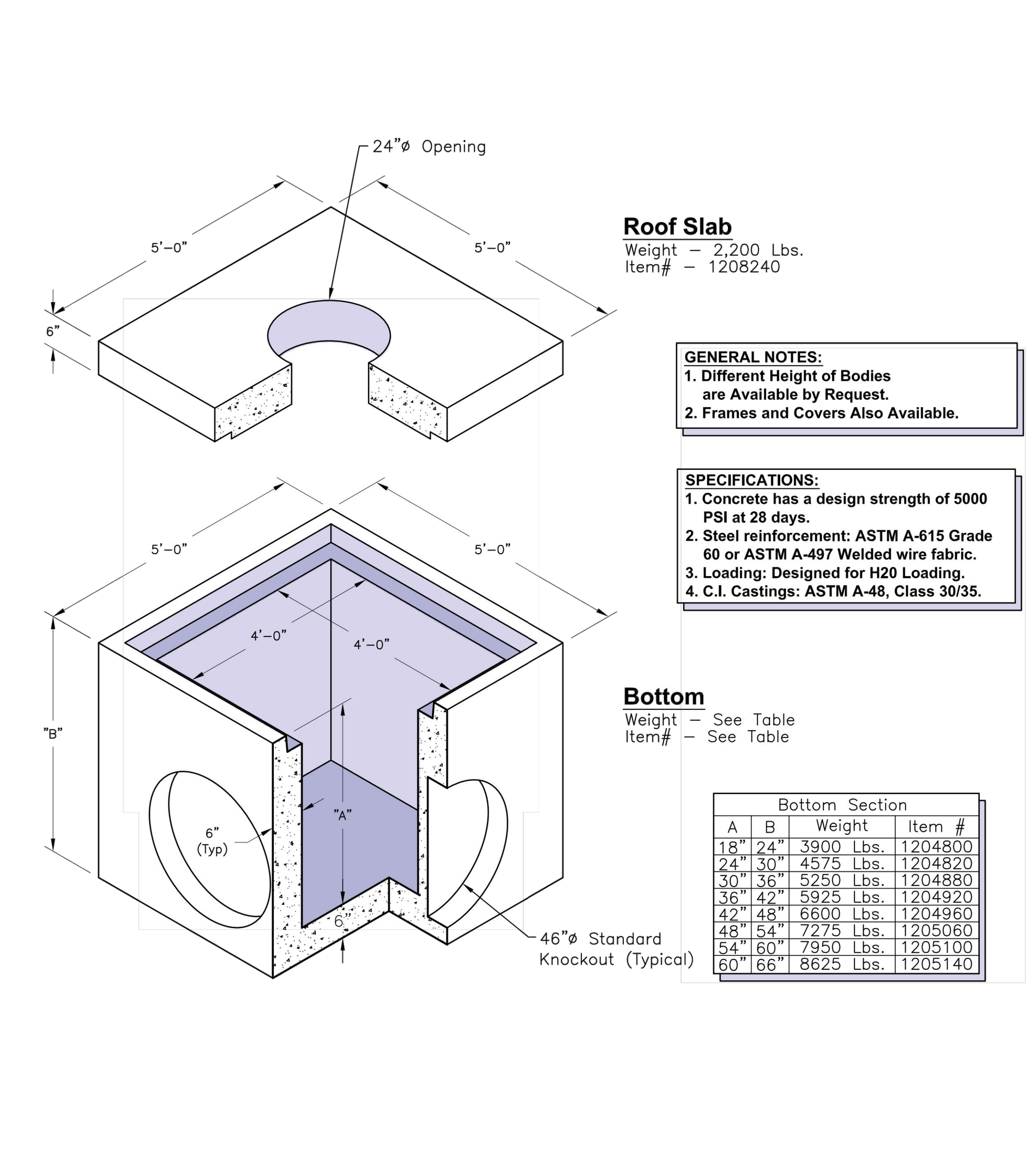
JB-11

Oldcastle Precast® | *Water* | **4'-0"x4'-0" I.D. Junction Box** Model: JB-440



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

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JB-9

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

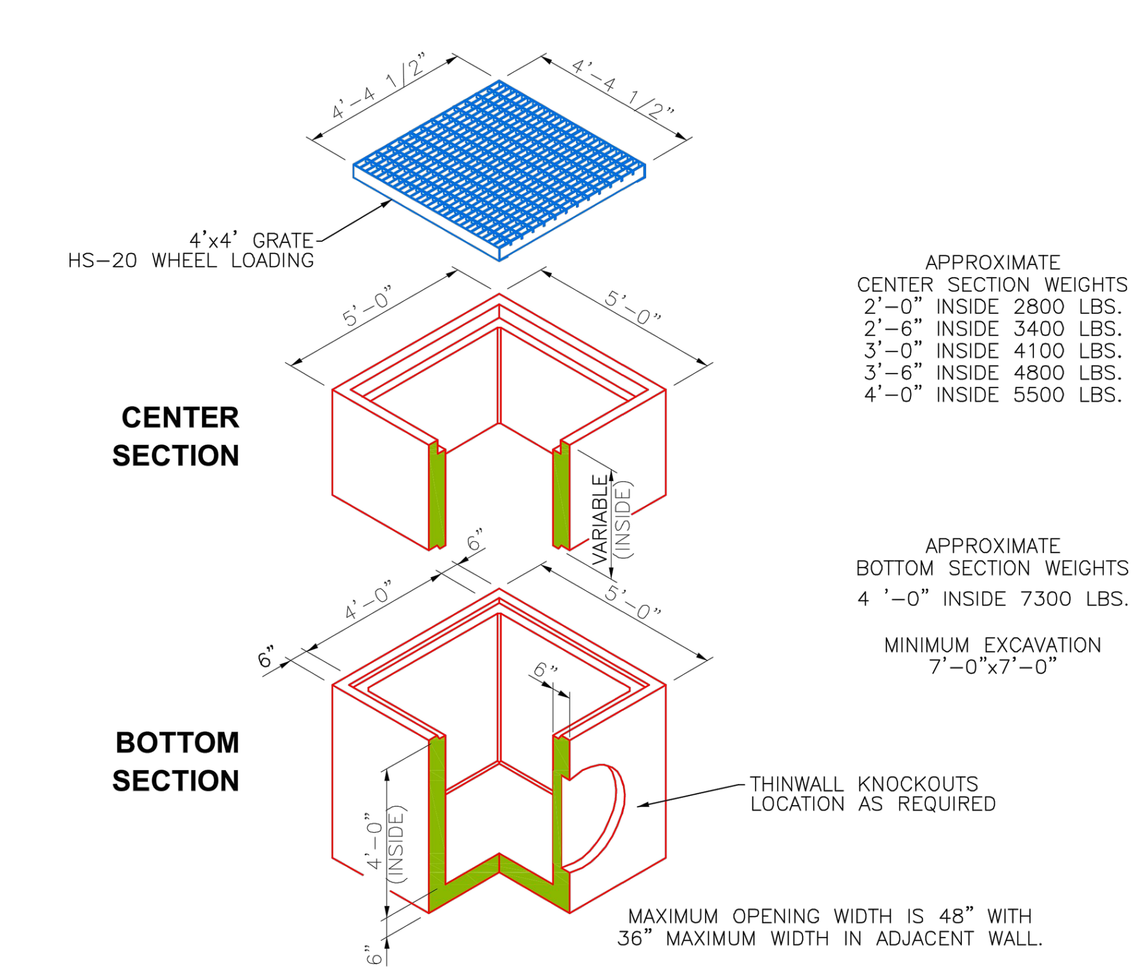
WATER TABLE IS AT 3'–0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN

THE STANDARD DESIGN IS BASED ON THE TOP AT GRADE AND THE BASE AT 8'–0" MAX. 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.

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



Oldcastle Precast® | GI44 | 4'-0"x4'-0" GRATE INLET

FILE NAME: 44GI.dwg

ISSUE DATE: March, 2005

1900 Rilling Road San Antonio, TX 78214
Phone: (210) 923–4523 Fax: (210) 921–0473
www.oldcastlesanantonio.com

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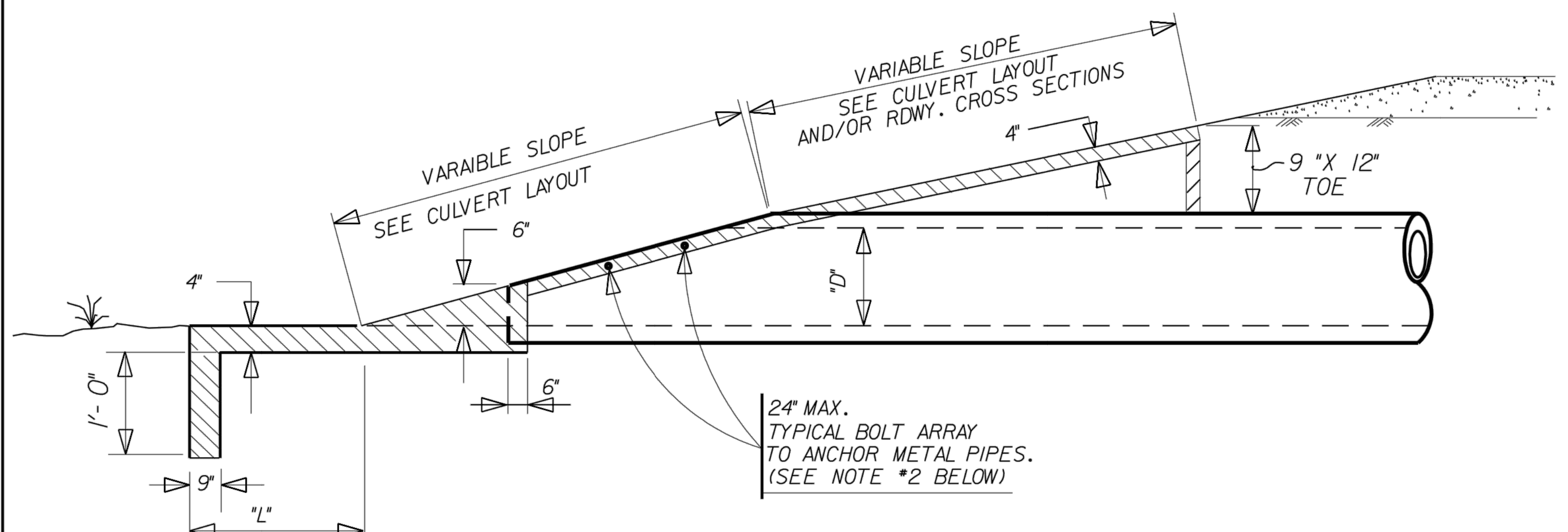
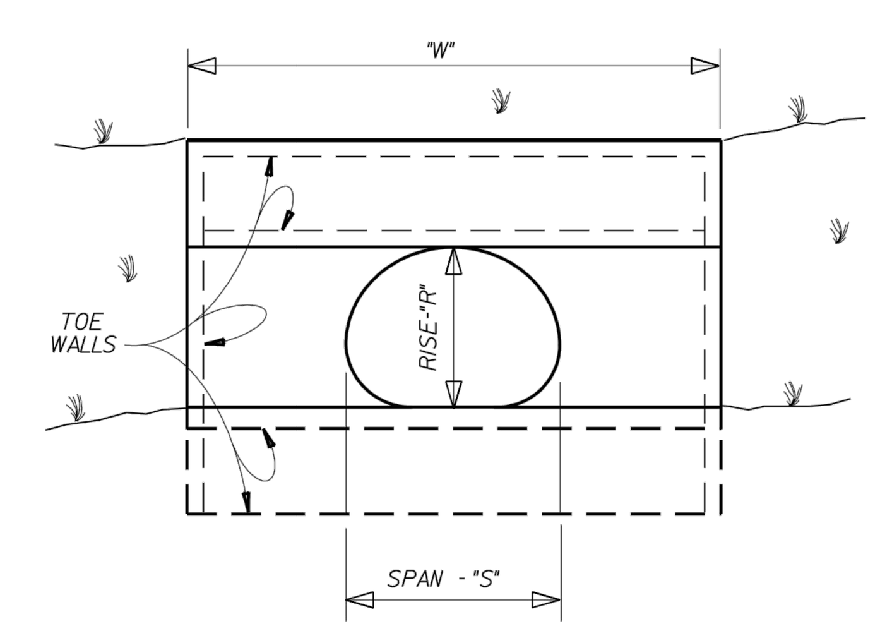
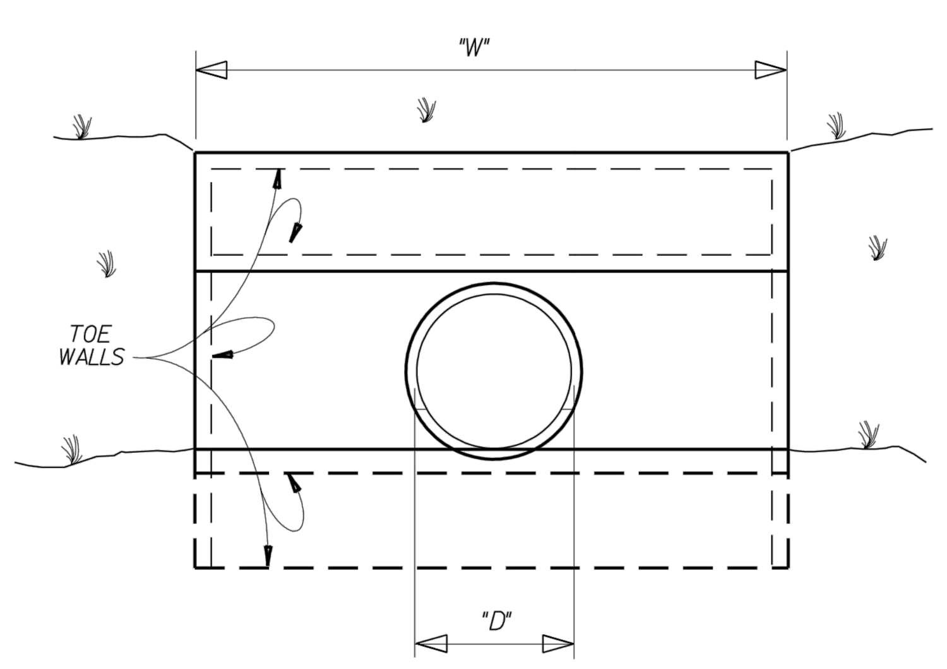


LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT



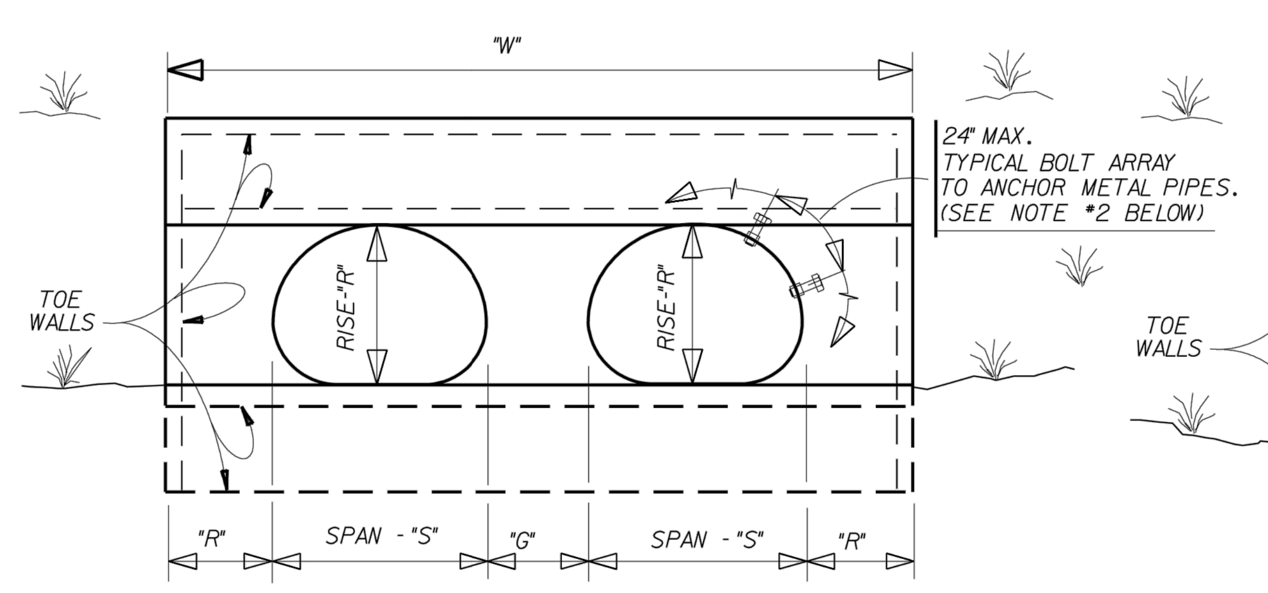
SINGLE CIRCULAR PIPE CULVERT

(CMP or RCP)

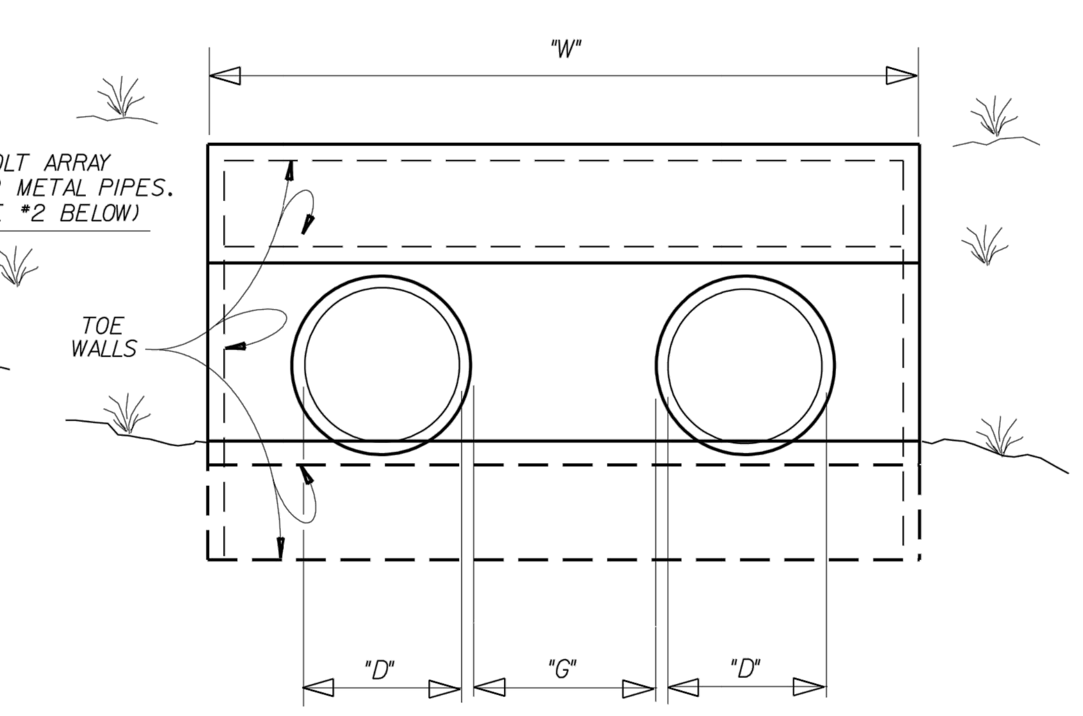
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'- 0"	1'- 2"	0'- 9"	4'- 6"	7'- 2"	9'- 10"	12'- 6"
21"	2'- 6"	1'- 3"	0'- 10"	5'- 3"	8'- 4"	11'- 4"	13'- 4"
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"	21'- 10"	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"

"G" 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.		"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	SPAN "S"	RISE "R"			"W"			
2	21"	15"	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'- 8"	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
"G" 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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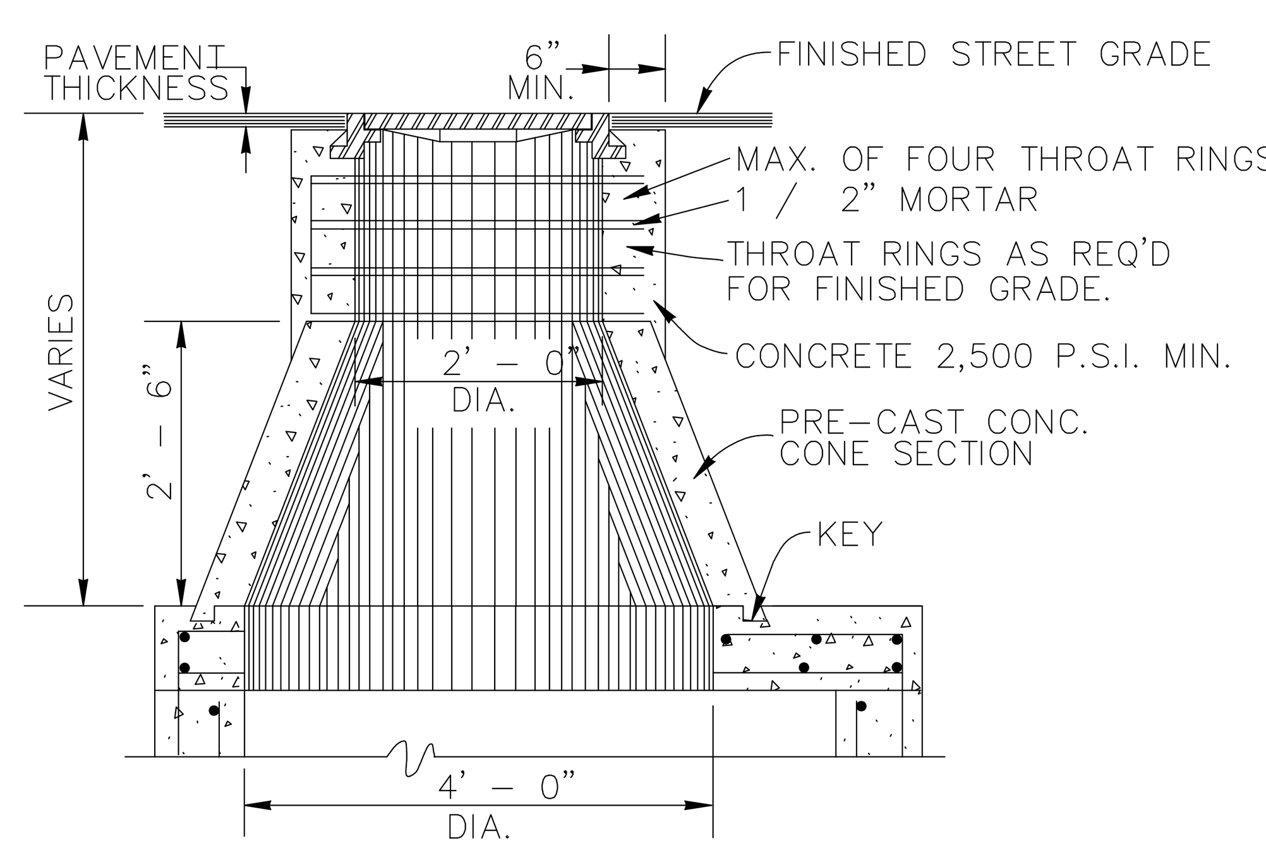
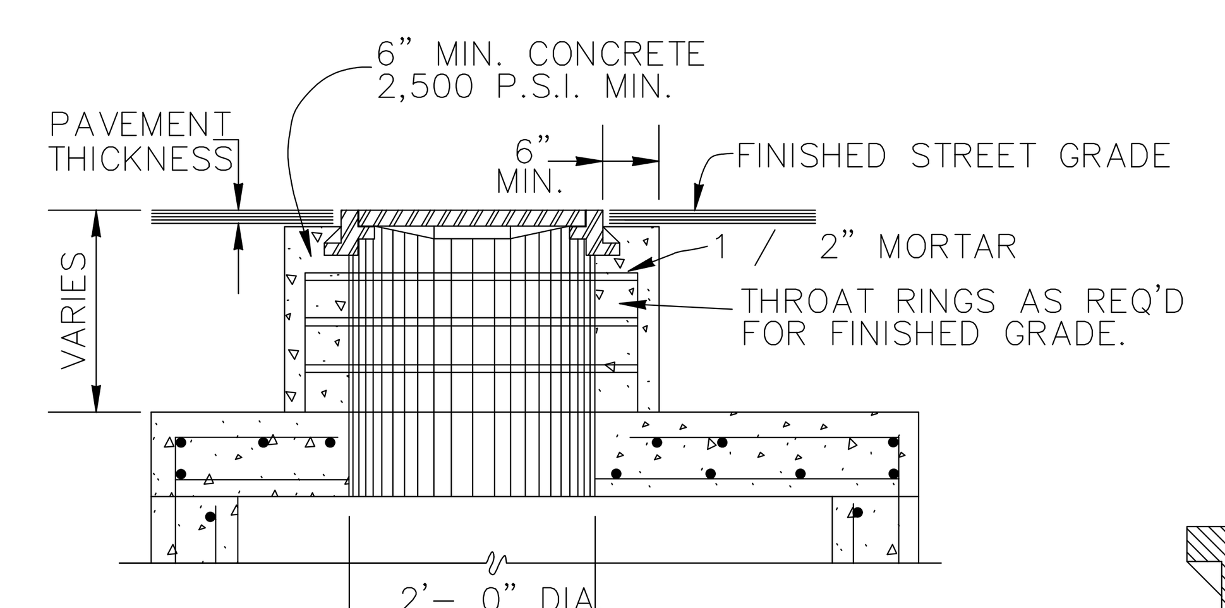
FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6			
STATE	STATE DISTRICT	COUNTY	
TEXAS	SAT		
CONT.	SECT.	JOB	HIGHWAY NO.

10/95

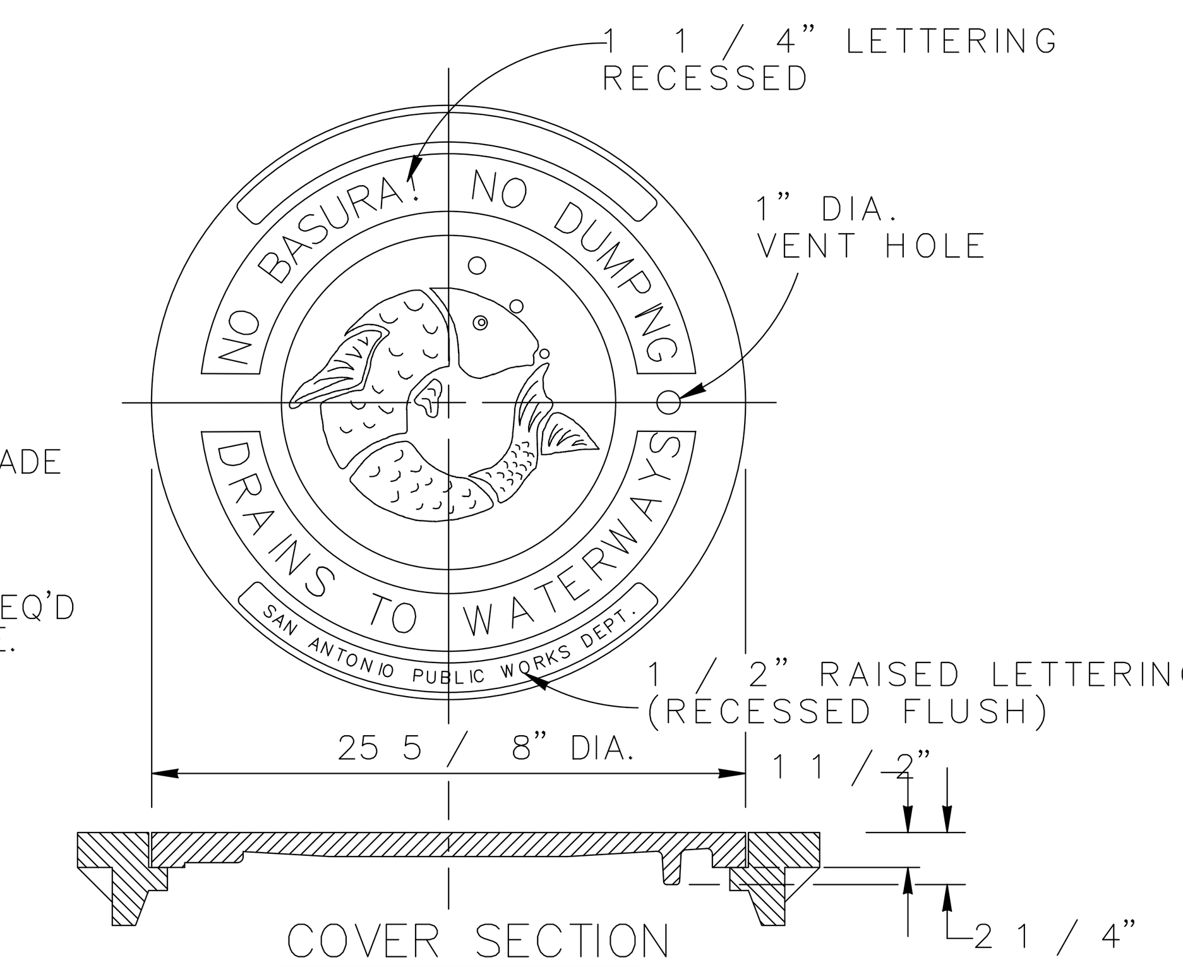
STRUCTURE DESIGN
BRIDGE/STDS/RPHDWL.dgn





VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.



COVER SECTION

MANHOLE LID & RING DETAIL

NOTES FOR MANHOLE LID AND RING
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT." AND USE CITY OF NEW BRAUNFELS STANDARDS
2. CASTING NUMBER AND MANUFACTURE'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF H5–20 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.

VERAMENDI PRECINCT 18 UNIT 2
DRAINAGE DETAILS (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drainage Details.dwg

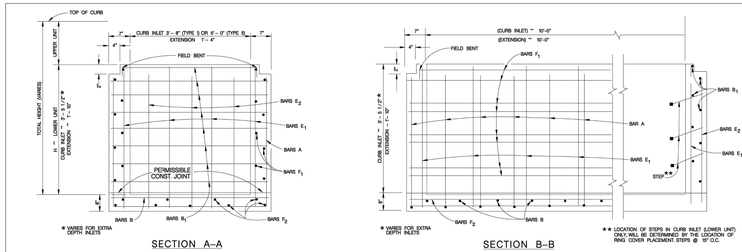
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. **20** OF 70 SHEETS

FOR PERMIT



SECTION A–A

SECTION B–B

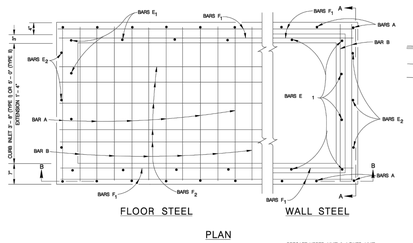
REINFORCING STEEL

LOWER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	
A	12	#4	12"	VARIES	
B	11	#4	12"	4'-8"	
B_1	VARIES	#4	12"	4'-8"	
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"	

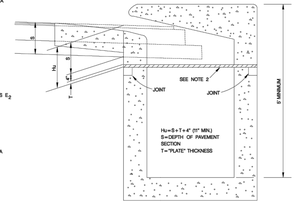
LOWER UNIT 10' X 5'-0" (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	
A	15	#4	12"	VARIES	
B	11	#4	12"	5'-10"	
B_1	VARIES	#4	12"	5'-10"	
E_1	22	#4	18"±	VARIES	
E_2	8	#4	18"±	VARIES	
F_1	VARIES	#4	12"±	10'-10"	
F_2	11	#4	----	10'-10"	

GENERAL NOTES

1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (5–C).
2. TYPE C-8 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 40 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".



FLOOR STEEL

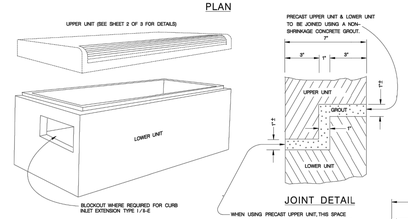


WALL STEEL

PHASE CONSTRUCTION

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

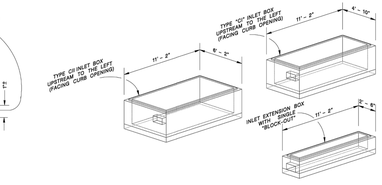
1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hu" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL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



PLAN

JOINT DETAIL

WHEN USING PRECAST UPPER UNIT, THIS SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.



CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

BARS A
(LOWER UNIT)

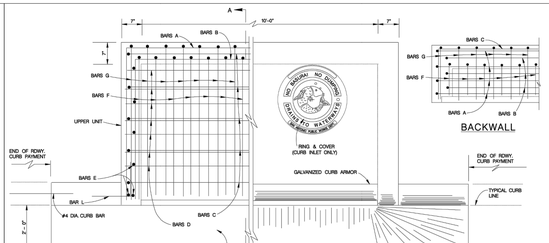
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

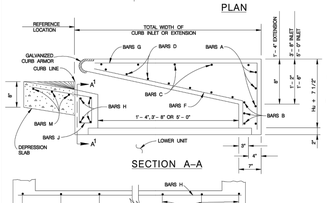
TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 1 OF 3

___% SUBMITTAL | PROJECT NO.: ___ | DATE: ___

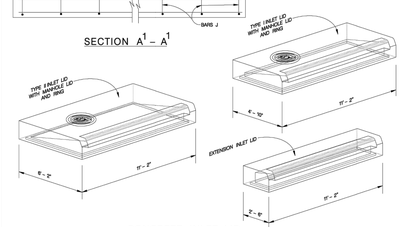
DRAWN BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.: ___ OF ___



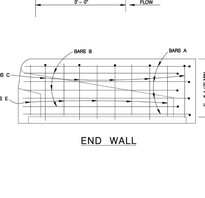
PLAN



SECTION A–A

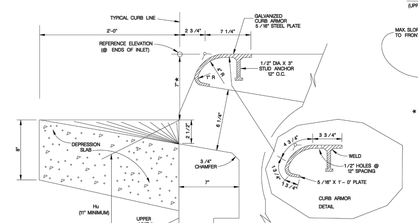


SECTION A^1 – A^1



END WALL

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

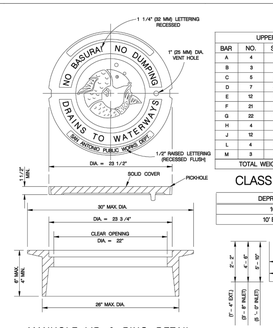


INLET OPENING DETAIL

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.



MANHOLE LID & RING DETAIL (ITEM 409)

REINFORCING STEEL (FOR Hu = 11")

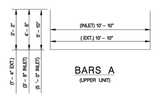
UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	18'-10"	53
B	3	#4	----	18'-10"	38
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	16	#4	11"	1'-2"	13
F	21	#6	6"	4'-8"	147
G	22	#5	6"	5'-8"	187
H	4	#4	----	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	----	2'-0"	5
M	3	#4	----	14'-8"	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	#5	6"	7'-2"	235
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.

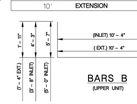
CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

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

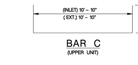
UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
10' EXTENSION	1.0



BARS A
(UPPER UNIT)

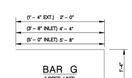


BARS B
(UPPER UNIT)

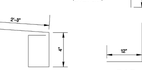


BAR C
(UPPER UNIT)

BAR F
(UPPER UNIT)

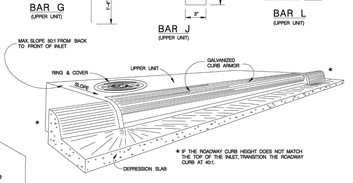


BAR G
(UPPER UNIT)



BAR J
(UPPER UNIT)

BAR L
(UPPER UNIT)



SEE SHEET 3 OF 3 FOR GENERAL NOTES.

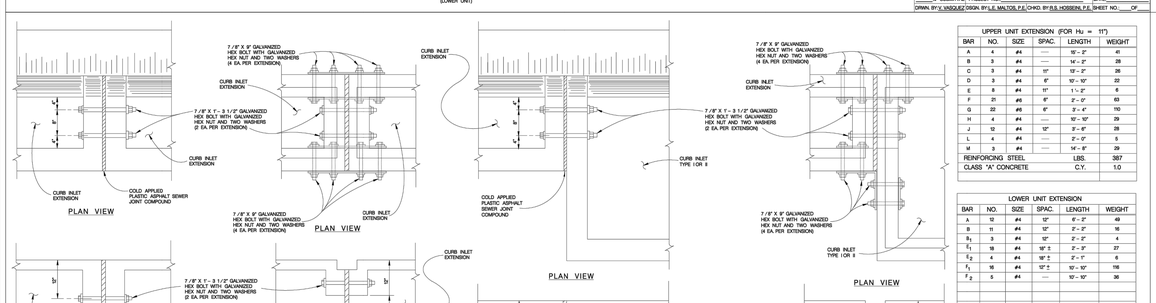
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

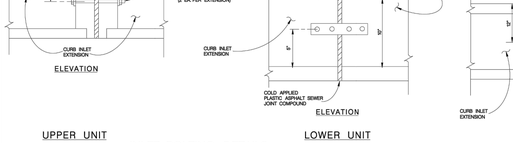
TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 2 OF 3

___% SUBMITTAL | PROJECT NO.: ___ | DATE: ___

DRAWN BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.: ___ OF ___



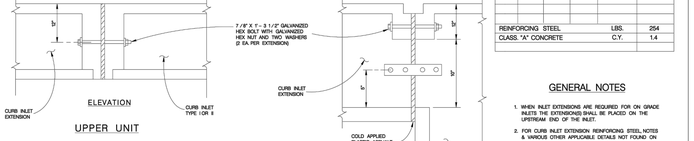
INLET BOLTING DETAILS
SHOWING EXTENSION TO EXTENSION



PLATES

SECTION A–A CURB INLET EXTENSION TYPE E

INLET BOLTING DETAILS
SHOWING CURB INLET TO EXTENSION



TYPE "CI" INLET WITH INLET EXTENSION BOXES

UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	16'– 2"	41
B	3	#4	----	14'– 2"	28
C	3	#4	11"	13'– 2"	26
D	3	#4	6"	10'– 10"	22
E	5	#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
F_1	18	#4	18" ±	2'– 3"	27
F_2	4	#4	18" ±	2'– 1"	6
F_1	18	#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

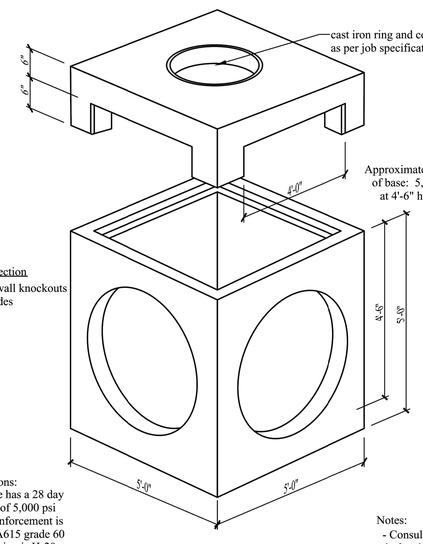
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 3 OF 3

___% SUBMITTAL | PROJECT NO.: ___ | DATE: ___

DRAWN BY: V. VASQUEZ | DSGN. BY: L.E. MALTOS, P.E. | CHKD. BY: R.S. HOSSEINI, P.E. | SHEET NO.: ___ OF ___

4' x 4' x var 4-Way Inlet



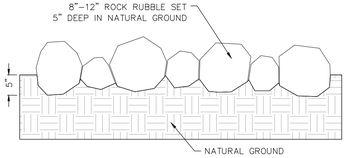
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

Capital Precast

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR: 4' x 4' x var 4-Way Inlet
JOB:
DRAWN: RW | DATE: 12/1/2015 | Rev. No.:
FILE: catalog/areainlets/4x4 area inlet
SHEET: 1 OF 1



ROCK RUBBLE DETAIL
N.T.S.

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drainage Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 21
OF 70 SHEETS

VERAMENDI PRECINCT 18 UNIT 2

DRAINAGE DETAILS (SHEET 2 OF 3)

FOR PERMIT

K:\LJA\3856_SCA Properties\Vol02 Veramendi Precinct 18-2\Vol06 Site Development Plan\Vol06-Sheets\sh_Drainage Details.dwg
Xrefs Attached:
Last Modified: Mar 15, 24 – 17:55
Last Plotted: Jul 11, 24 – 15:57:21

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 whatever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

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

Dimensions					Variable Reinforcing				Estimated Quantities per ft. of wing length (2-wings) ③	
					Bars J1		Bars J2			
Maximum Wingwall Height Hw	W	X	Y	Z	Size	Spa	Size	Spa	Reinf Lb/Ft)	Conc (CY/Ft)
2'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	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"	11'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#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	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

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

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)

Hw = 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.

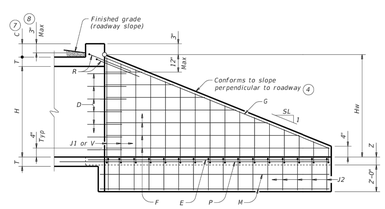
1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated 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, provide a 6" wide by 1'-6" deep 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 1'-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 3" above finished grade.
   - For structures with bridge rail, construct curbs flush with finished grade.

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

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.

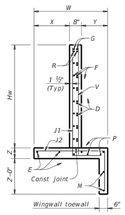
GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and 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.

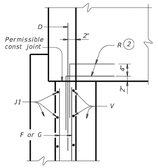


INSIDE ELEVATION

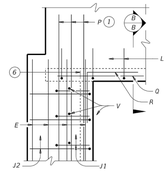
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)



SECTION A-A

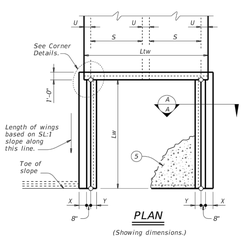


WINGWALL

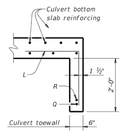


FOOTING AND TOEWALL

CORNER DETAILS



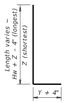
PLAN
(Showing dimensions.)



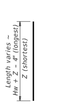
SECTION B-B ⑤

BARS R

BARS D



BARS J1



BARS V

BARS L

BARS J2

Texas Department of Transportation — Bridge Division Standard

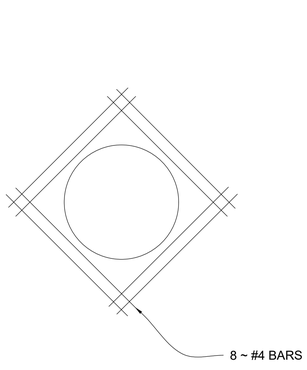
CONCRETE WINGWALLS WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

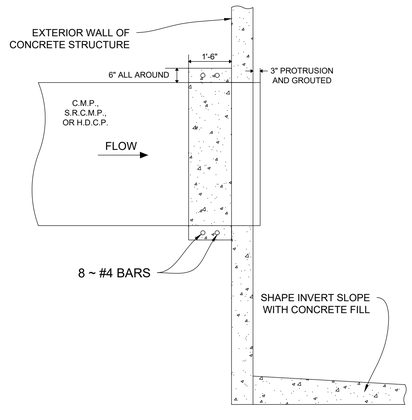
SW-0

FILE: CD-SW0-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

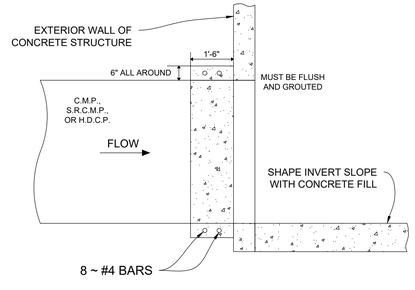
NOTES:

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 0.33 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).





PROTRUDING PIPE FOR DROP STRUCTURES



PIPE FLUSH WITH INVERT

CONCRETE COLLAR DETAIL
(NOT TO SCALE)

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

DRAINAGE DETAILS (SHEET 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drainage Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

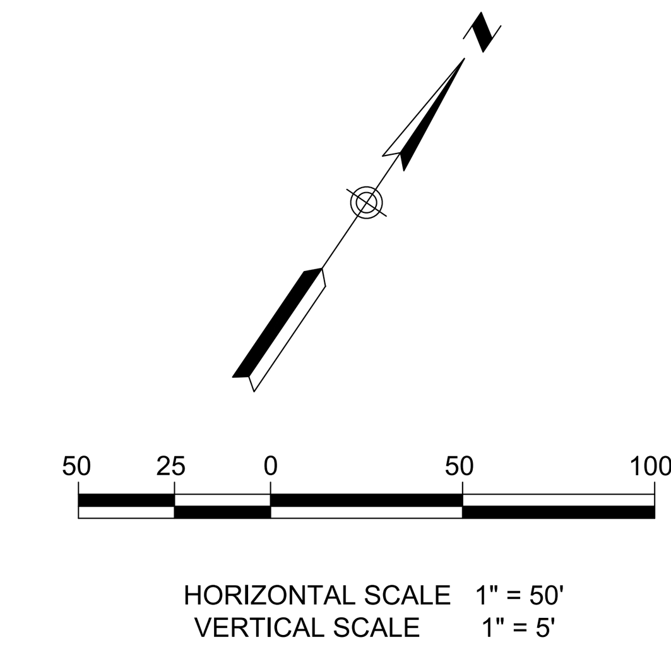
JOB NUMBER: SA3856.0402

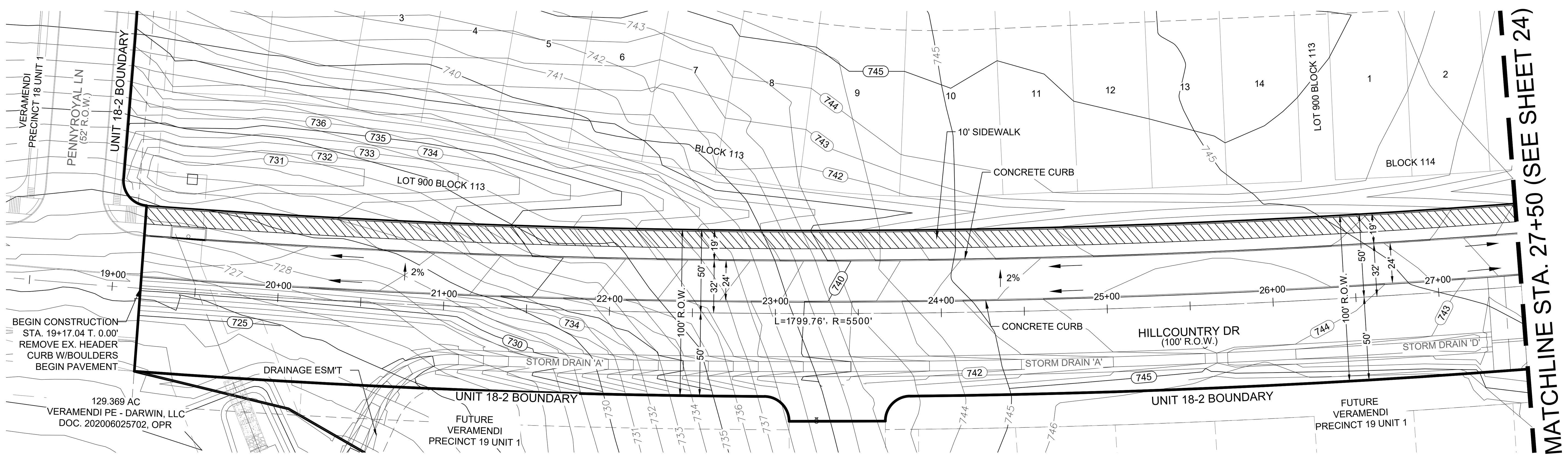
SHEET NO. 22
OF 70 SHEETS

K:\LJA3856_SDA Properties\0402 Veramendi Precinct 18-2\0426 Site Development Plan\0360-Sheets\sh_Drainage Details.dwg
Xref Drawings:
Last Modified: Mar. 15, 24 – 17:55
Plotted By: Jul. 11, 24 – 15:50

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 32 & 33 FOR STREET AND PAVEMENT SECTION DETAIL, CONCRETE CURB DETAIL, AND SIDEWALK DETAIL.
5. CONTRACTOR TO FIELD VERIFY ALL MATCH EXISTING ELEVATIONS, SEWER MANHOLE INVERTS, STORM DRAIN INVERTS, AND ALL OTHER UTILITIES PRIOR TO UTILITY WORK AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
6. CONTRACTOR IS TO MATCH EXISTING PAVEMENT, SIDEWALK, AND CURB ELEVATIONS.
7. NO GRADING OR OTHER CONSTRUCTION IS PERMITTED OUTSIDE OF LIMITS OF CONSTRUCTION.
8. SIDEWALK INFRASTRUCTURE SHALL BE INSTALLED ALONG THE STREET FRONT OF ALL LOTS AT THE TIME OF LOT IMPROVEMENT. FOR LOTS WHERE NO BUILDING IMPROVEMENT IS PROPOSED, ALL SIDEWALKS AND PEDESTRIAN CROSSING RAMPS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).

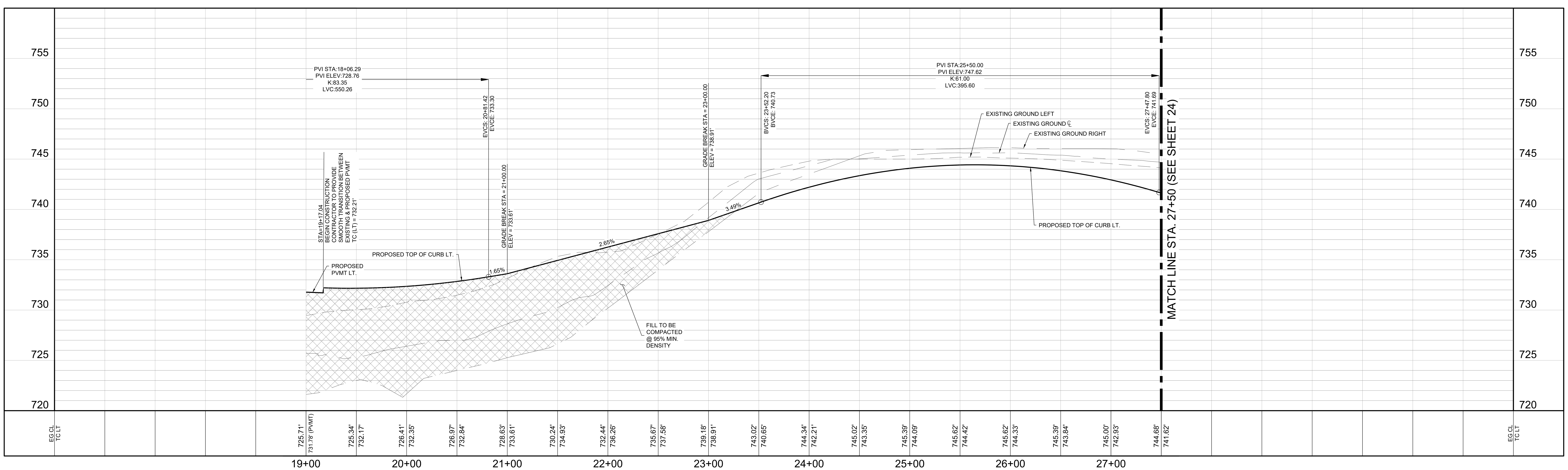




LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESMT.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

HILL COUNTRY DR STA. 19+17.04 TO STA. 27+50



VERAMENDI PRECINCT 18 UNIT 2

HILL COUNTRY DR PLAN & PROFILE
STA. 19+17.04 TO STA. 27+50

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_Street P&P_Hill Country Dr.dwg

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 09/27/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

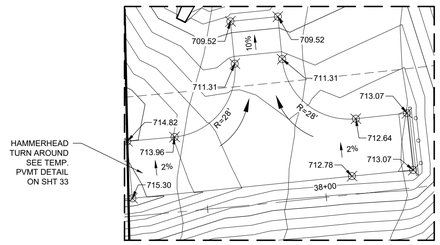
SHEET NO. 23 OF 70 SHEETS

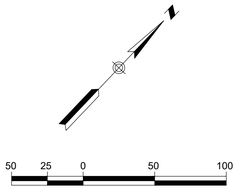
FOR PERMIT

GENERAL NOTES:

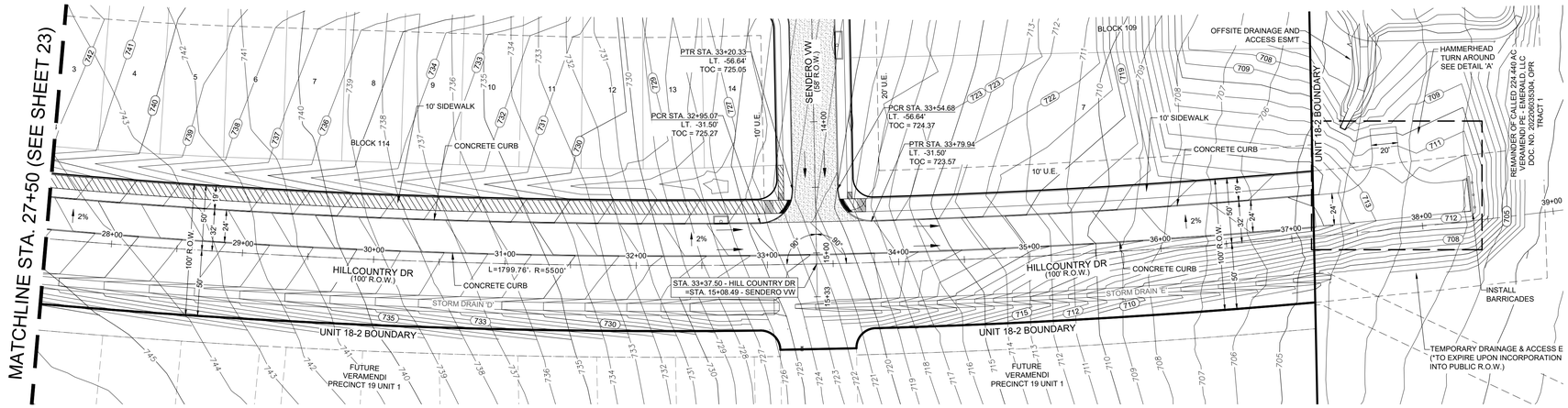
1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 32 & 33 FOR STREET AND PAVEMENT SECTION DETAIL, CONCRETE CURB DETAIL, AND SIDEWALK DETAIL.
5. CONTRACTOR TO FIELD VERIFY ALL MATCH EXISTING ELEVATIONS, SEWER MANHOLE INVERTS, STORM DRAIN INVERTS, AND ALL OTHER UTILITIES PRIOR TO UTILITY WORK AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
6. CONTRACTOR IS TO MATCH EXISTING PAVEMENT, SIDEWALK, AND CURB ELEVATIONS.
7. NO GRADING OR OTHER CONSTRUCTION IS PERMITTED OUTSIDE OF LIMITS OF CONSTRUCTION.
8. SIDEWALK INFRASTRUCTURE SHALL BE INSTALLED ALONG THE STREET FRONT OF ALL LOTS AT THE TIME OF LOT IMPROVEMENT. FOR LOTS WHERE NO BUILDING IMPROVEMENT IS PROPOSED, ALL SIDEWALKS AND PEDESTRIAN CROSSING RAMPS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).

DETAIL 'A' SCALE: 1"=30'





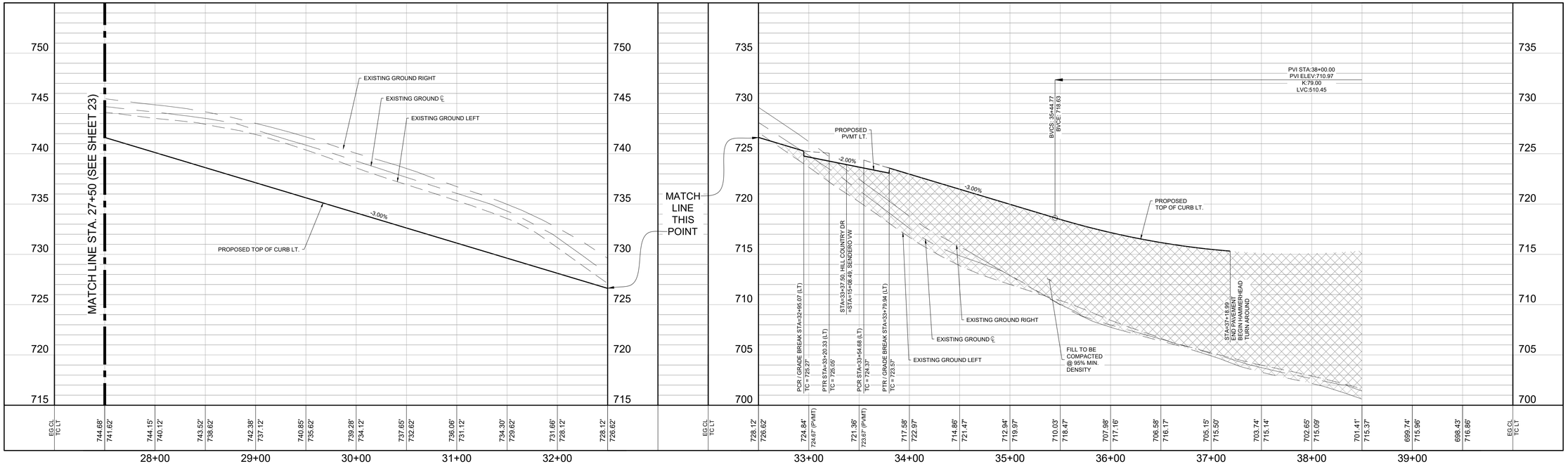
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'



LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

HILL COUNTRY DR STA. 27+50 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

HILL COUNTRY DR PLAN & PROFILE
STA. 27+50 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...\Sheet Files\...Hill Country Dr.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
7/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 24 OF 70 SHEETS

P:\LJA3856_SDA Properties\04\02 Veramendi Precinct 18-2\04 Site Development Plan\DWG Sheets\ph_Street P&P Hill Country Dr.dwg
Xref Drawings:
Last Modified: Jun. 24, 24 - 11:02
Plot By: Priscilla Flores - Jun. 24, 24 - 11:02

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
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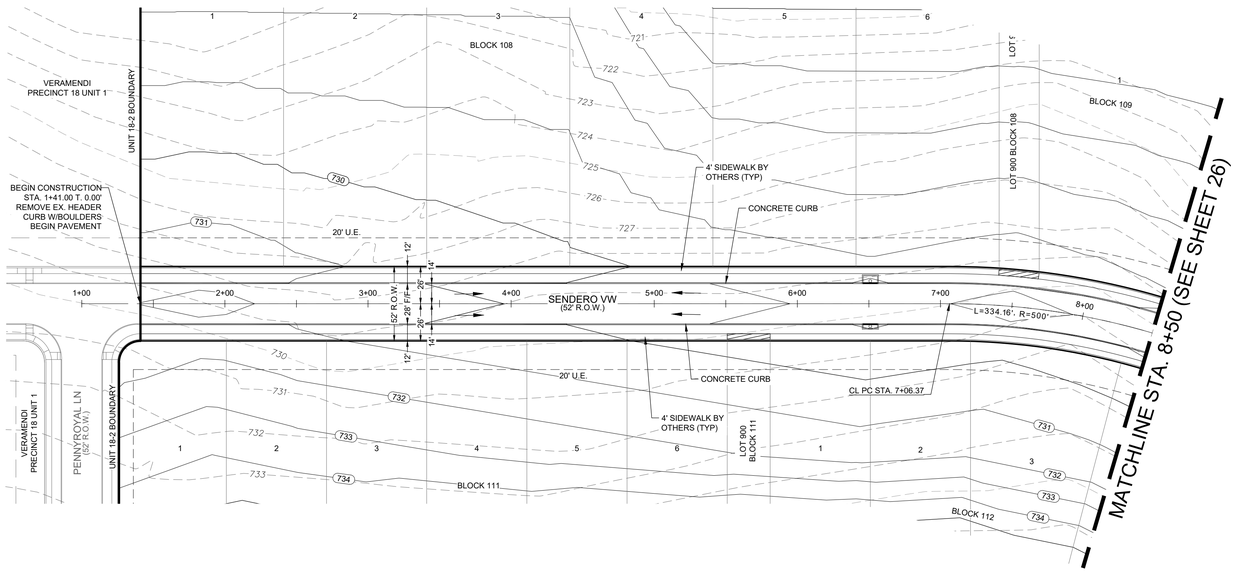
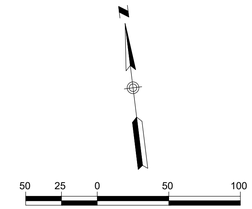
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).



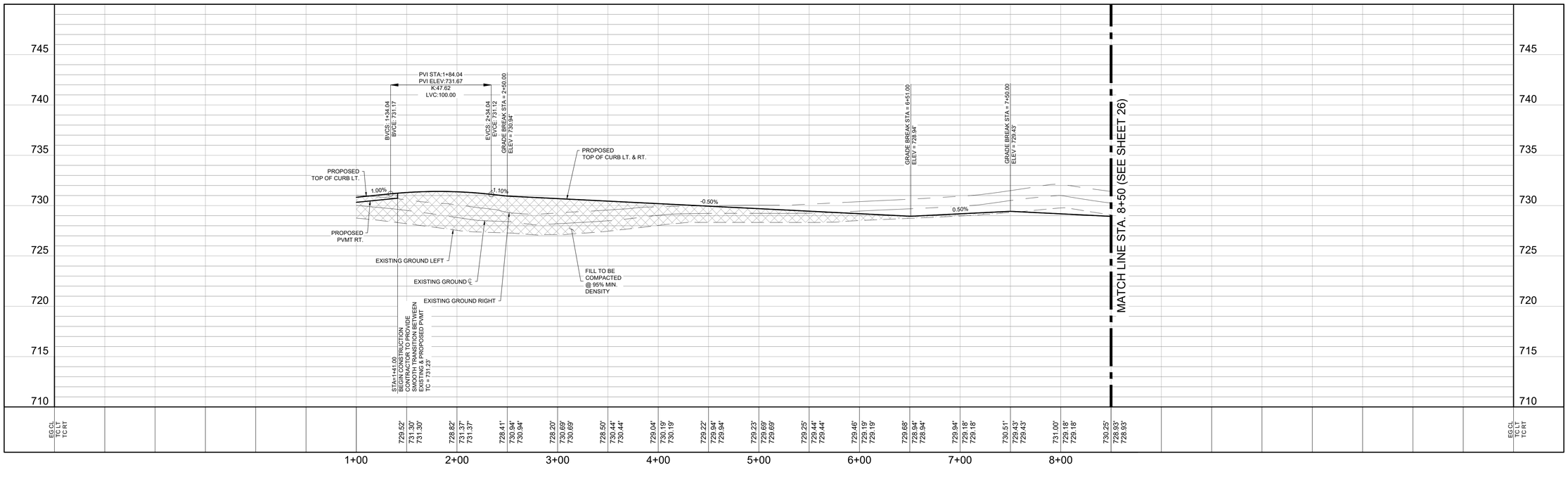


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

SENDERO VW STA. 1+41 TO STA. 8+50



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

SENDERO VW PLAN & PROFILE
STA. 1+41 TO STA. 8+50

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 06_Street Plan_Sendero Vw.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
7/11/2024

LJA Engineering, Inc.
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 25 OF 70 SHEETS

P:\LJA3856_SDA Properties\04\02 Veramendi Precinct 18-2\04 Site Development Plans\02\06-Sheets\sh_Street P&P_Sendero Vw.dwg
Last Modified: Jun. 24, 24 - 11:07
Plotted By: Jun. 24, 24 - 11:07

GENERAL NOTES:

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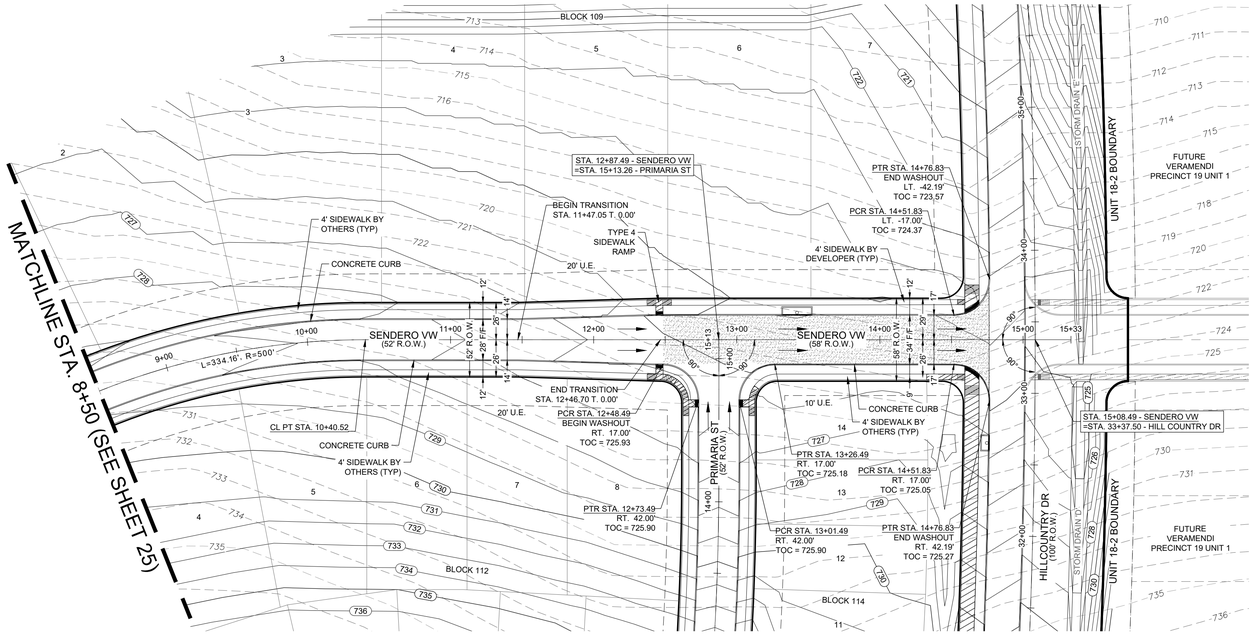

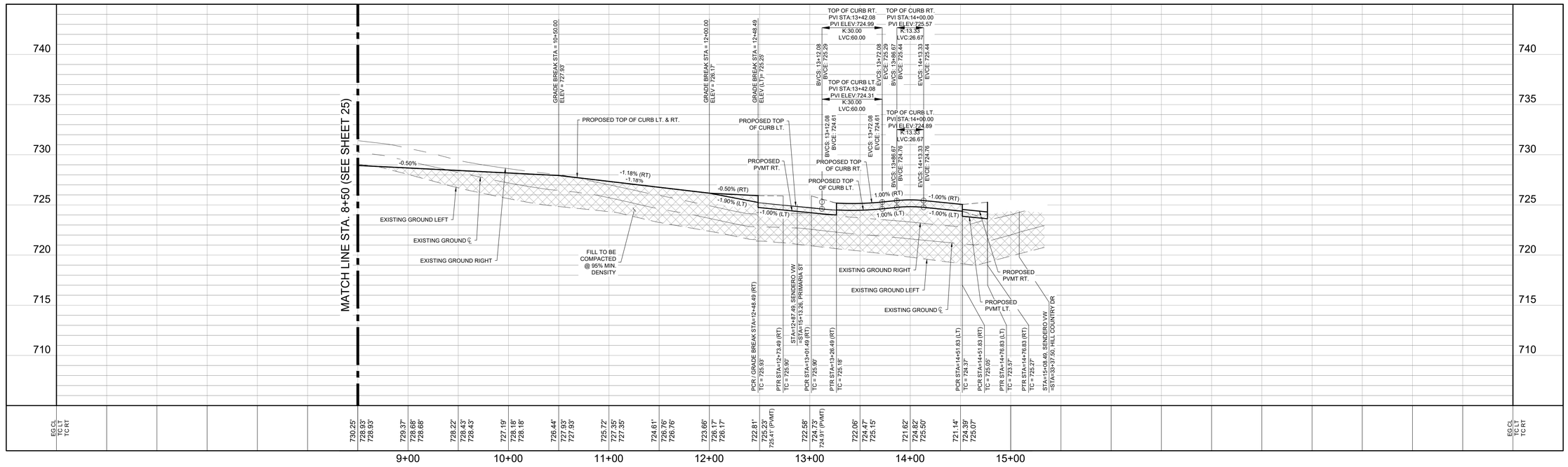

SENDERO VW STA. 8+50 TO END

50 25 0 50 100

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

LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

VERAMENDI PRECINCT 18 UNIT 2

SENDERO VW PLAN & PROFILE
STA. 8+50 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 06_Street Plan_Sendero Vw.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 26 OF 70 SHEETS

FOR PERMIT

P:\LJA ENGINEERING\Projects\SA402 Veramendi Precinct 18-2\06 Site Development Plans\DWG Sheets\06_Street Plan_Sendero Vw.dwg
Last Modified: Jun. 24, 2024 - 11:07
Plot Date/Time: Jul. 11, 2024 - 08:52

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
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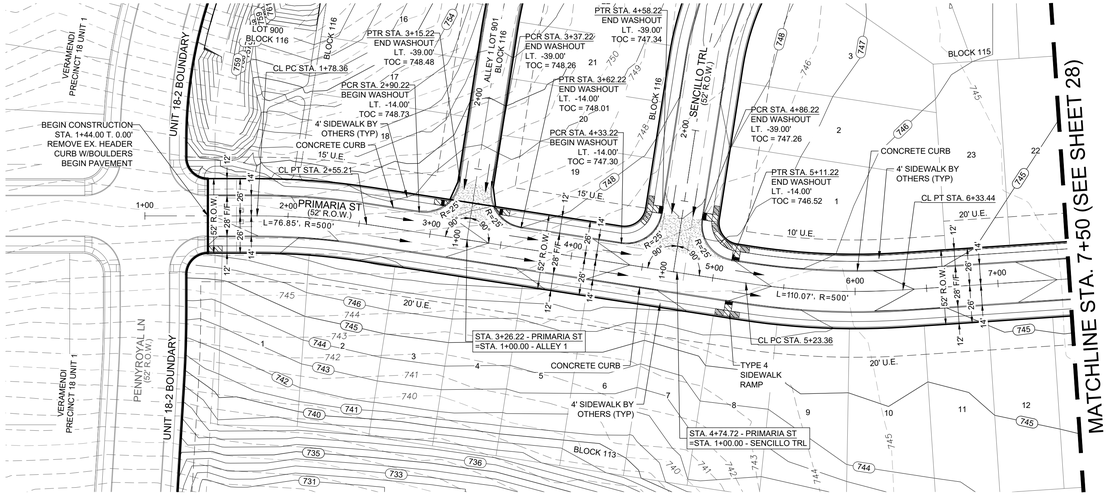
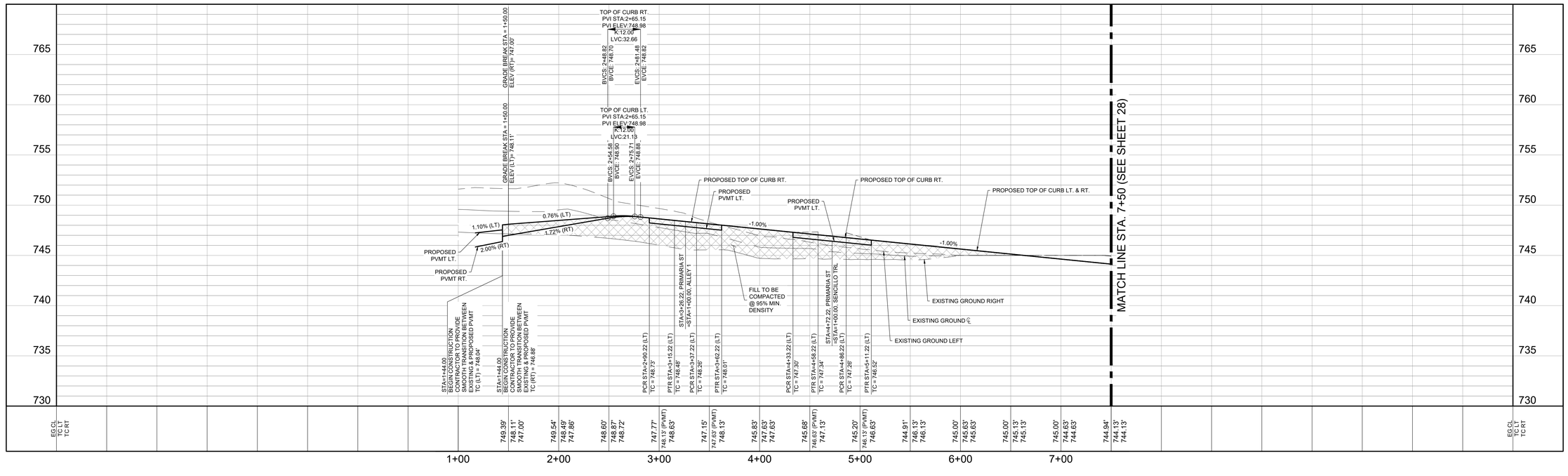
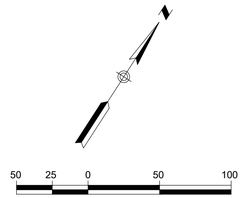


PRIMARIA ST STA. 1+44 TO STA. 7+50





LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

VERAMENDI PRECINCT 18 UNIT 2

PRIMARIA ST PLAN & PROFILE
STA. 1+44 TO STA. 7+50

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...\Sheet Files\27_Primaria St.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
7/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 27 OF 70 SHEETS

FOR PERMIT

P:\LJA3856_GSA Properties\04\02 Veramendi Precinct 18-2\04 Site Development Plan\DWG Sheets\sh_Street P&P_Primaria St.dwg
Initials: mpc
Last Modified: Jun. 24, 24 – 11:10
Full Path: P:\...\sh_Street P&P_Primaria St.dwg

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
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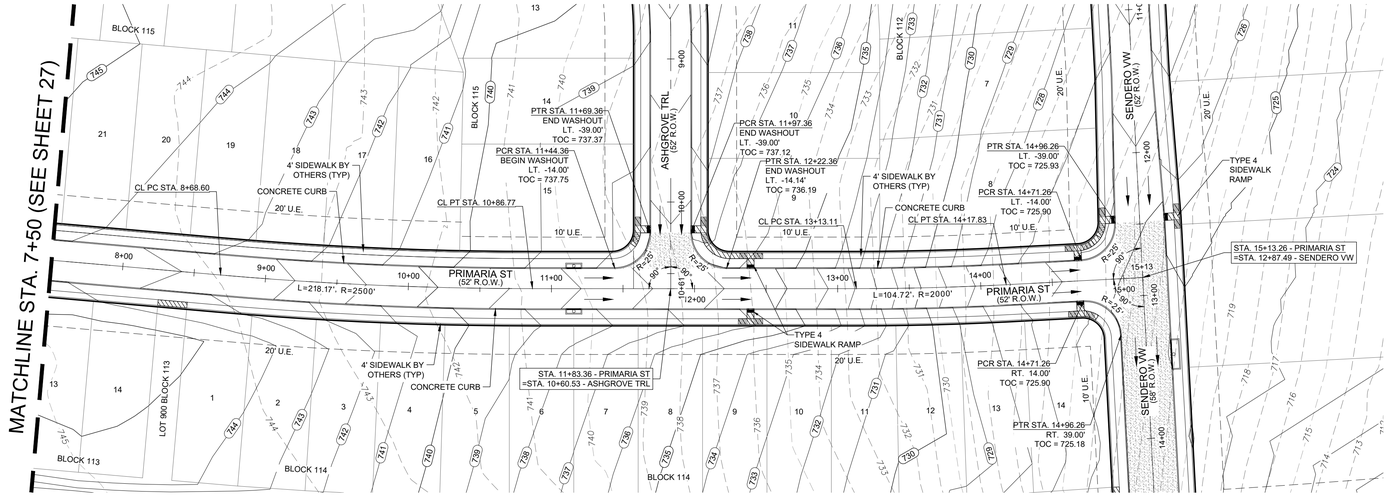
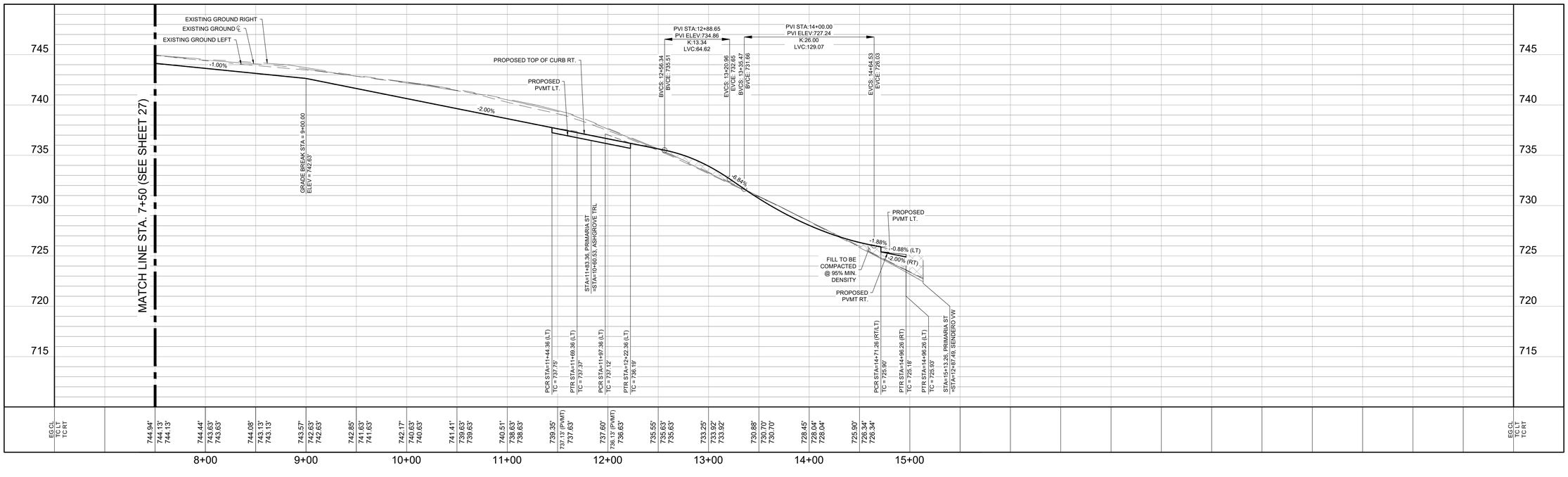
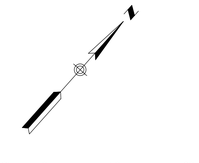


PRIMARIA ST STA. 7+50 TO END





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

LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

VERAMENDI PRECINCT 18 UNIT 2

PRIMARIA ST PLAN & PROFILE
STA. 7+50 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...ts_Sheet Files\P&P_Primaria St.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 28 OF 70 SHEETS

FOR PERMIT

K:\LJA3856_SA_Properties\VA402_Veramendi Precinct 18-2\VA06 Site Development Plan\DWG-Sheets\ph_Sheet Files\P&P_Primaria St.dwg
Xrefs Attached:
Last Modified: Jun. 24, 24 - 11:10
Plotted By: Jun. 24, 24 - 11:10

GENERAL NOTES:

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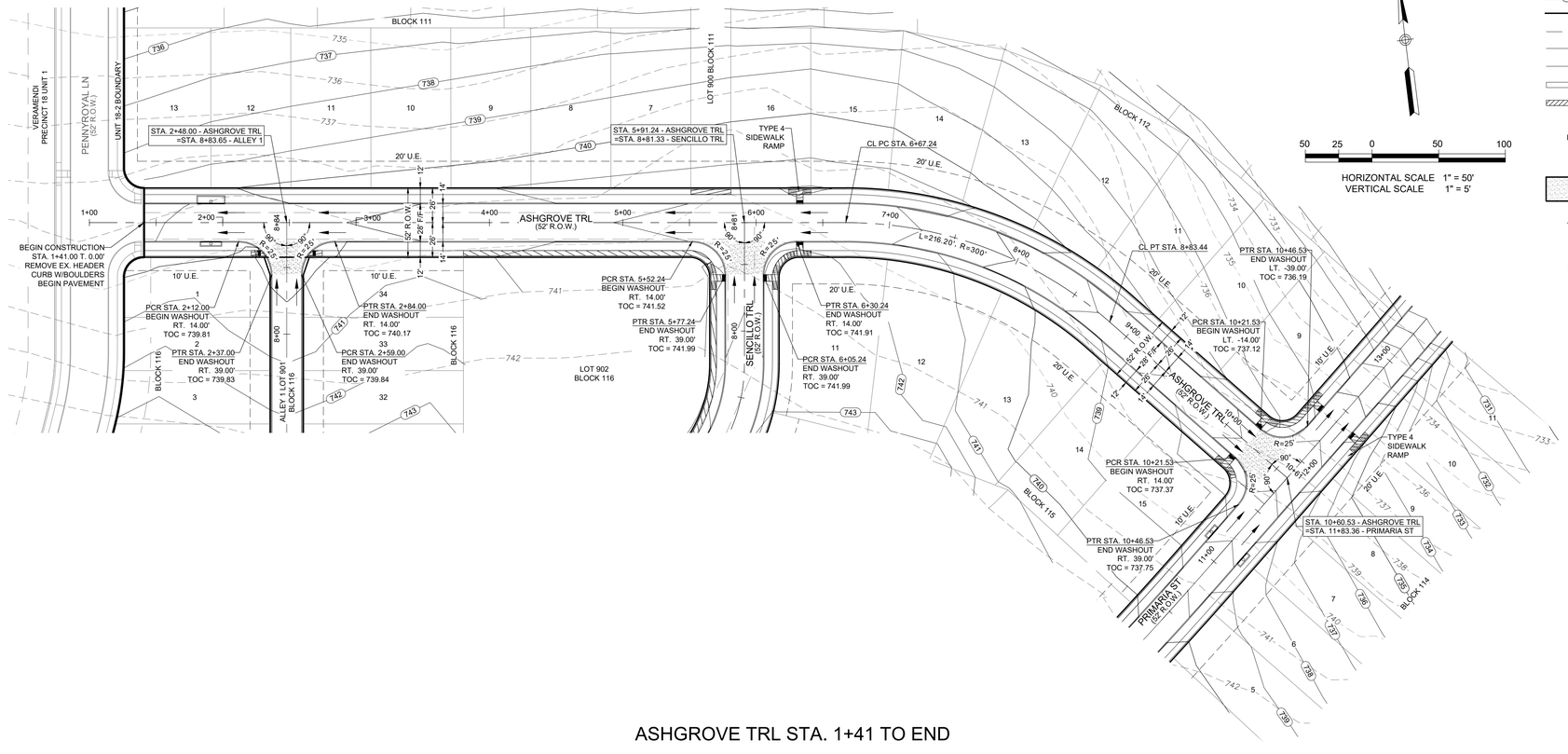
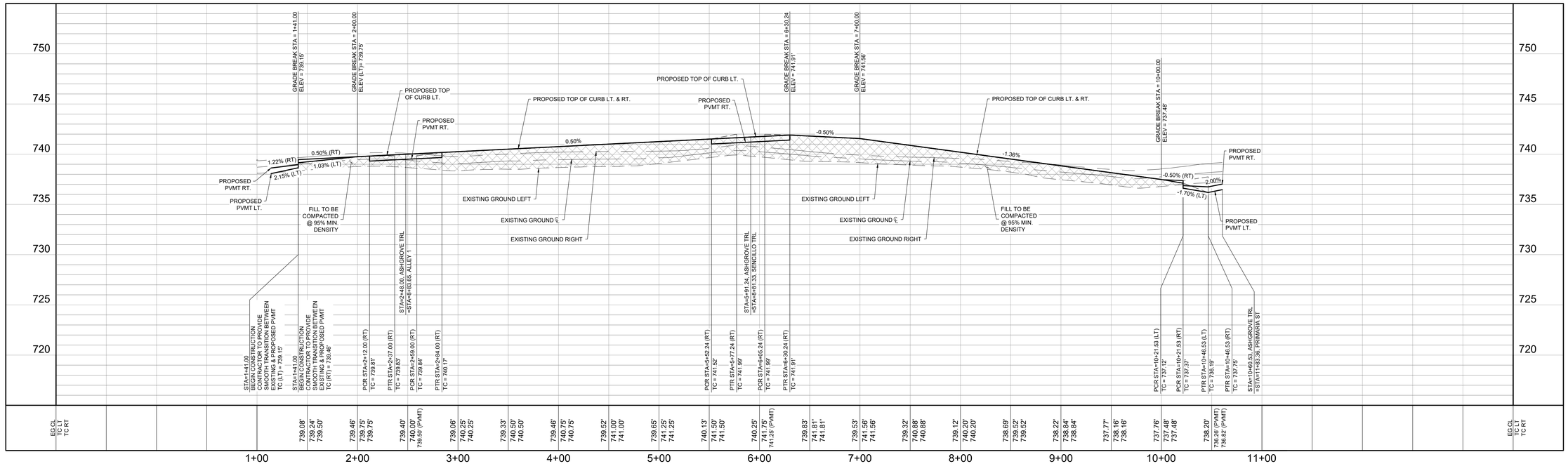


LEGEND

- 800 — PROPOSED CONTOUR
- PROPOSED STREET GRADE
- EXISTING GROUND LEFT
- EXISTING GROUND CENTERLINE
- EXISTING GROUND RIGHT
- SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
- SIDEWALK (DEVELOPER'S RESPONSIBILITY)
- U.E. — UTILITY EASEMENT
- ESM'T. — EASEMENT
- LT. — LEFT
- RT. — RIGHT
- WASHOUT CROWN
- WASHOUT FLOW ARROW
- EG CL — EXISTING GRADE CENTER LINE
- TC — TOP OF CURB
- ELEV — PAVEMENT ELEVATION

ASHGROVE TRL STA. 1+41 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

ASHGROVE TRL PLAN & PROFILE
STA. 1+41 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 30_Sheet PMP_Ashgrove Trl.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

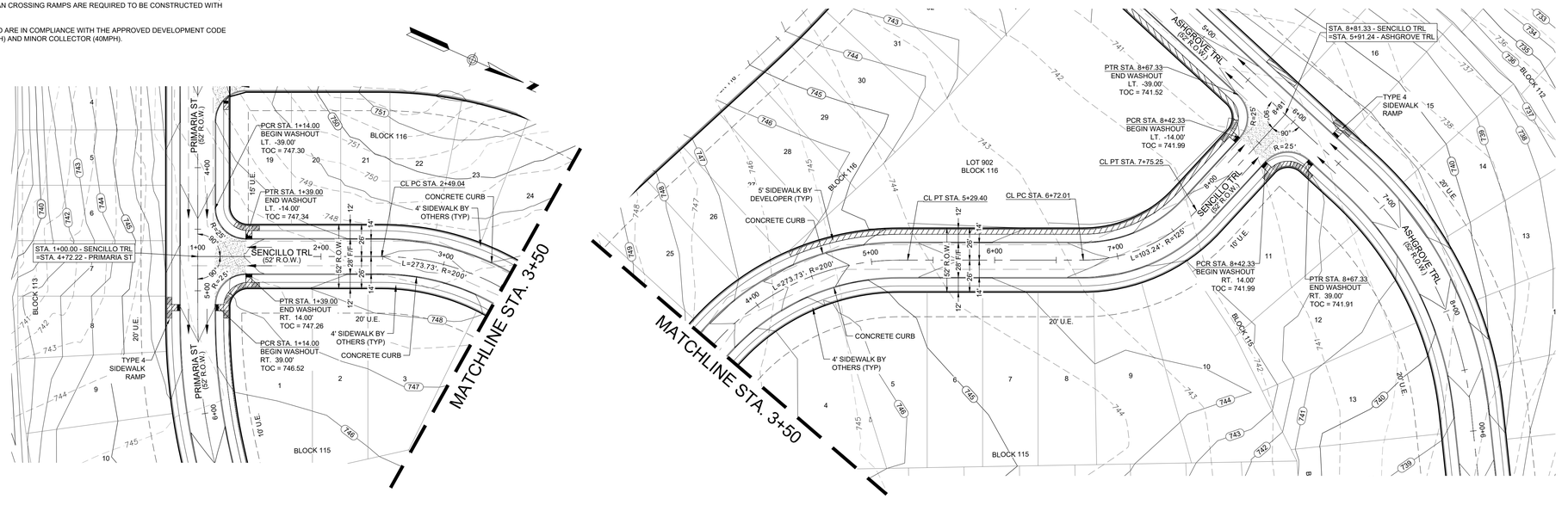
JOB NUMBER: SA3856.0402

SHEET NO. 29 OF 70 SHEETS

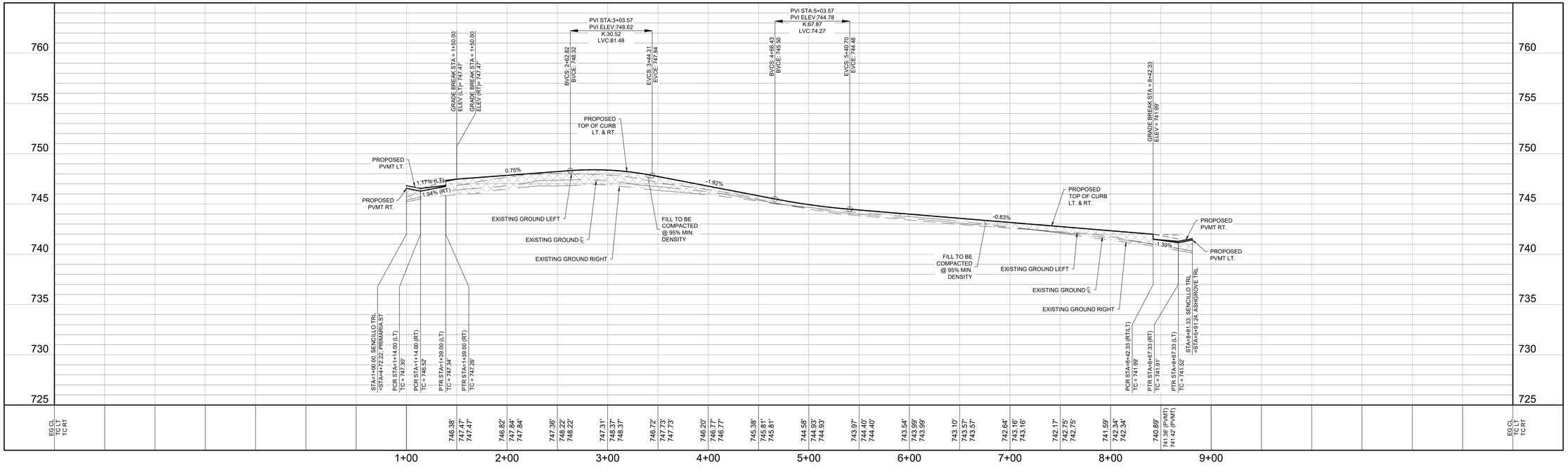
P:\LJA3856_KDA Properties\04\02 Veramendi Precinct 18-21\04 Site Development Plans\GMD-Sheets\plh_Sheet PMP_Ashgrove Trl.dwg
Plotted: Jun. 24, 24 – 11:13
Last Modified: Jun. 24, 24 – 10:53
Last Modified By: jun.kim

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 32 & 33 FOR STREET AND PAVEMENT SECTION DETAIL, CONCRETE CURB DETAIL, AND SIDEWALK DETAIL.
5. CONTRACTOR TO FIELD VERIFY ALL MATCH EXISTING ELEVATIONS, SEWER MANHOLE INVERTS, STORM DRAIN INVERTS, AND ALL OTHER UTILITIES PRIOR TO UTILITY WORK AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
6. CONTRACTOR IS TO MATCH EXISTING PAVEMENT, SIDEWALK, AND CURB ELEVATIONS.
7. NO GRADING OR OTHER CONSTRUCTION IS PERMITTED OUTSIDE OF LIMITS OF CONSTRUCTION.
8. SIDEWALK INFRASTRUCTURE SHALL BE INSTALLED ALONG THE STREET FRONT OF ALL LOTS AT THE TIME OF LOT IMPROVEMENT. FOR LOTS WHERE NO BUILDING IMPROVEMENT IS PROPOSED, ALL SIDEWALKS AND PEDESTRIAN CROSSING RAMPS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).



SENCILLO TRL STA. 1+00 TO END



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

LEGEND

- 800 — PROPOSED CONTOUR
- PROPOSED STREET GRADE
- EXISTING GROUND LEFT
- EXISTING GROUND CENTERLINE
- EXISTING GROUND RIGHT
- SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
- SIDEWALK (DEVELOPER'S RESPONSIBILITY)
- U.E. — UTILITY EASEMENT
- ESM'T. — EASEMENT
- LT. — LEFT
- RT. — RIGHT
- WASHOUT CROWN
- WASHOUT FLOW ARROW
- EG CL — EXISTING GRADE CENTER LINE
- TC — TOP OF CURB
- ELEV — PAVEMENT ELEVATION

VERAMENDI PRECINCT 18 UNIT 2

SENCILLO TRL PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...\Sheet Files\P&P_Sencillo Trl.dwg

STATE OF TEXAS
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07/11/2024

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JOB NUMBER: SA3856.0402

SHEET NO. 30 OF 70 SHEETS

FOR PERMIT

P:\LJA ENGR. SA\Projects\SA402 Veramendi Precinct 18-21\06 Site Development Plan\02WD-Sheets\pln_Street P&P_Sencillo Trl.dwg
Last Modified: Jun. 24, 24 - 11:34
Plotted: Jun. 24, 24 - 11:34

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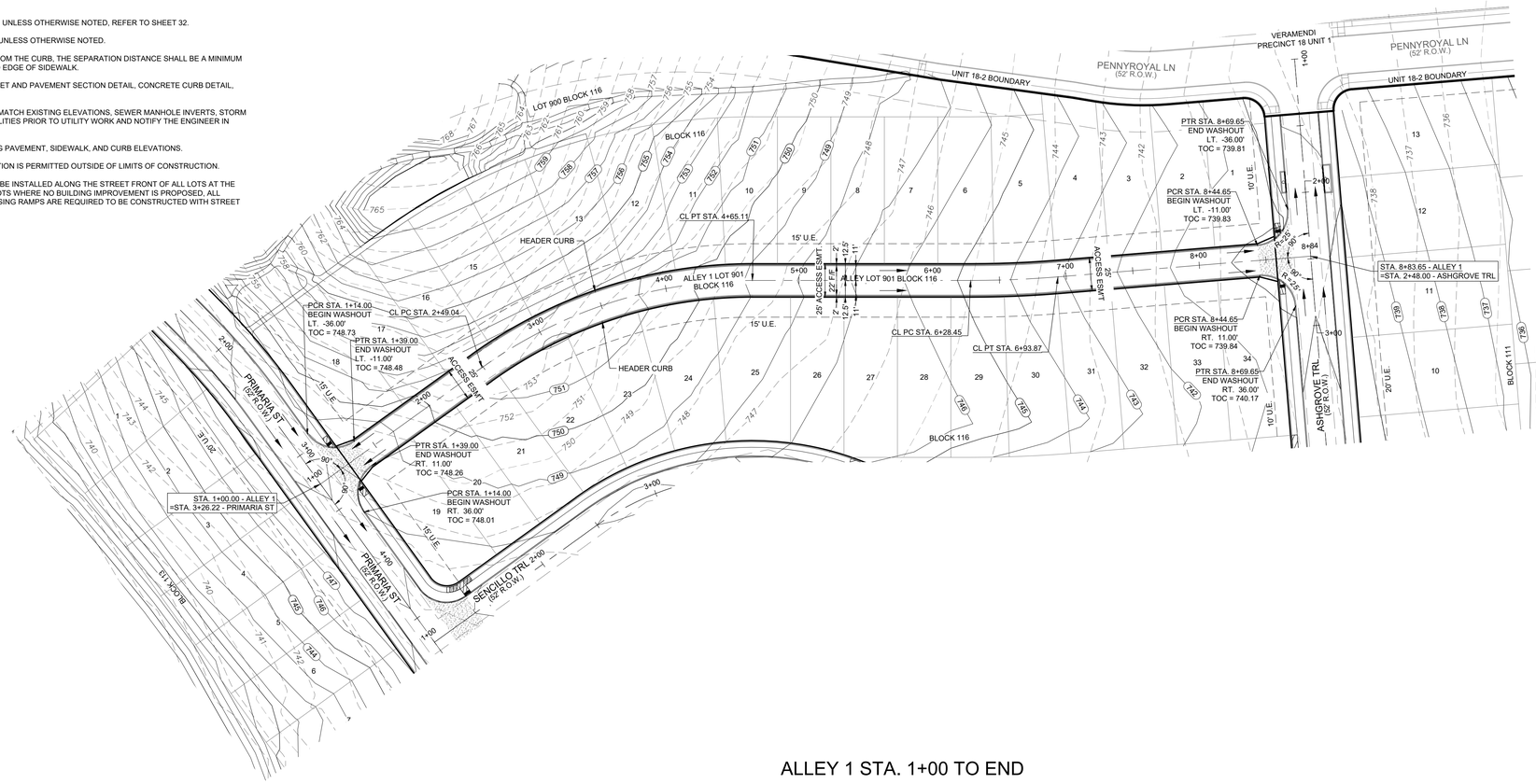
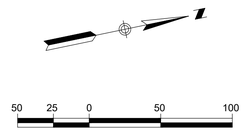


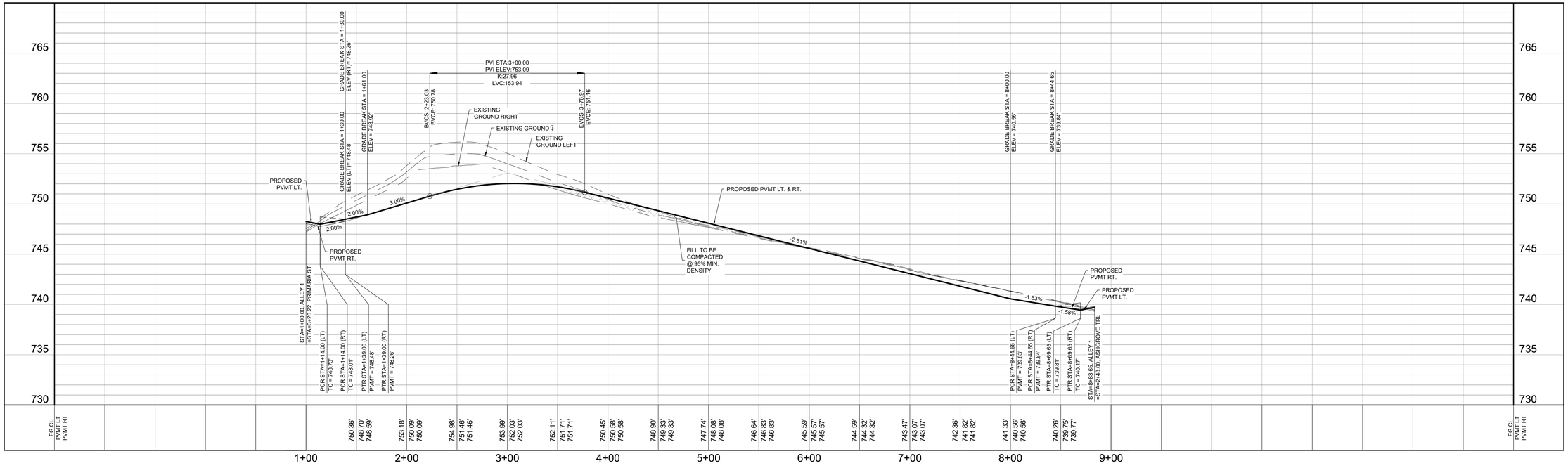


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
U.E.	UTILITY EASEMENT
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

ALLEY 1 STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

ALLEY 1 PLAN & PROFILE
STA. 1+00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: s:\...\Sheet P&P_Alley 1.dwg

07/11/2024
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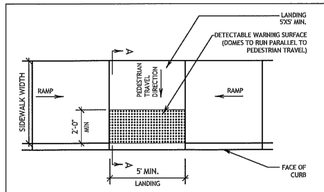
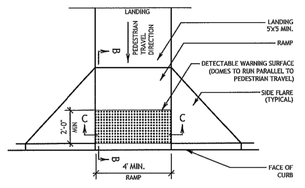
JOB NUMBER: SA3856.0402

SHEET NO. 31
OF 70 SHEETS

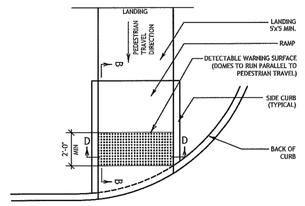
K:\SA3856.0GA Properties\0402 Veramendi Precinct 18-2\426 Site Development Plans\DWG-Sheets\sh_Street P&P_Alley 1.dwg
Xrefs Attached:
Last Modified: Jun. 24, 24 - 11:37
Last Plotted: Jul. 11, 24 - 14:34



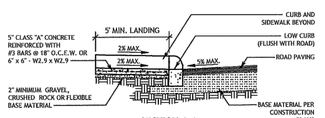
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



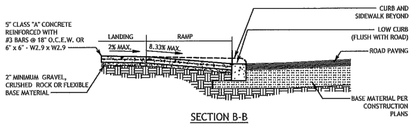
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



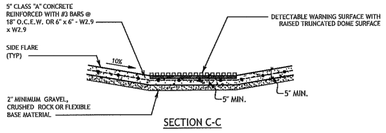
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



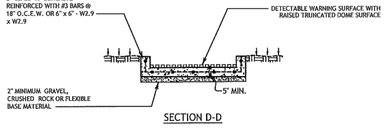
SECTION A-A



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

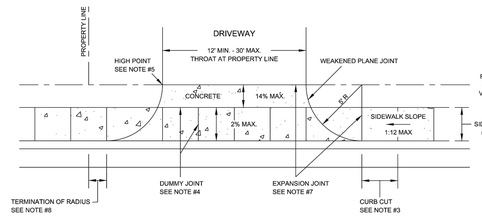
1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN 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 PRODUCT IS 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

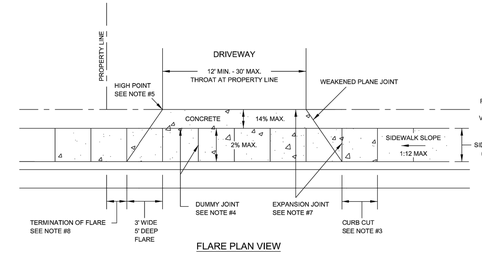
CURB RAMP STANDARDS

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

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



RADIUS PLAN VIEW

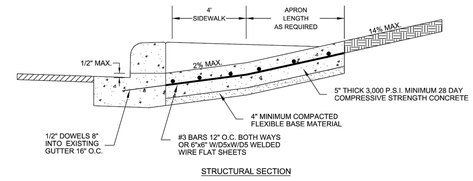


FLARE PLAN VIEW

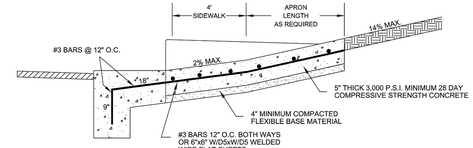
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



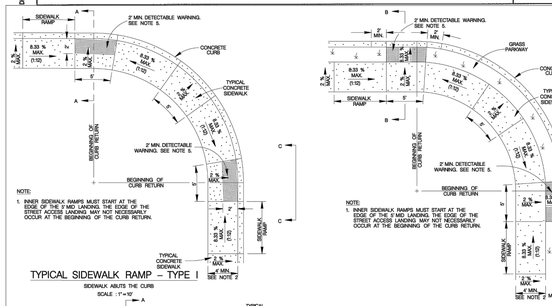
NO EXISTING CURB STRUCTURAL SECTION

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 16" 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.

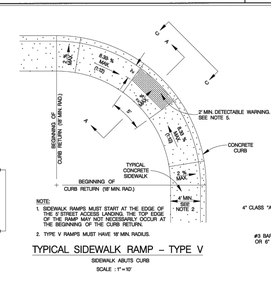
DATE APPROVED: 04/2016	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

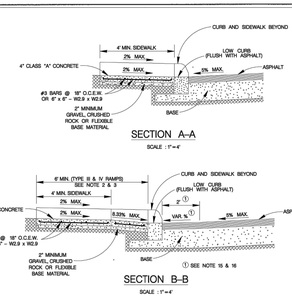


TYPICAL SIDEWALK RAMP – TYPE I
SIDEWALK ABUTS THE CURB
SCALE: 1"=10'

TYPICAL SIDEWALK RAMP – TYPE III
SIDEWALK SEPARATED FROM CURB
SCALE: 1"=10'

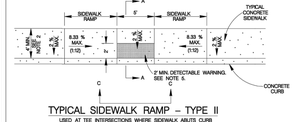


TYPICAL SIDEWALK RAMP – TYPE V
SIDEWALK CURB
SCALE: 1"=10'

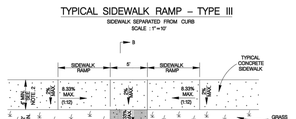


SECTION A–A
SCALE: 1"=4'

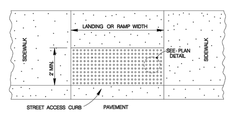
SECTION B–B
SCALE: 1"=4'



TYPICAL SIDEWALK RAMP – TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE: 1"=10'



TYPICAL SIDEWALK RAMP – TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=10'



DETECTABLE WARNING SURFACE
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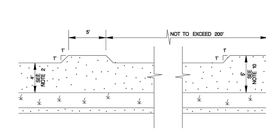
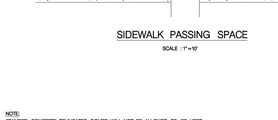
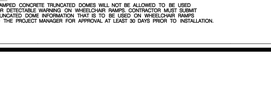


SECTION C–C
CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE: 1"=4'

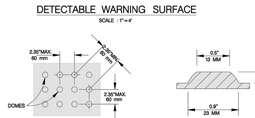


SECTION D–D
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=4'



SIDEWALK PASSING SPACE
SCALE: 1"=10'

TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	6'-4"
3%	4'-6"	10'-0"
4%	4'-3"	12'-6"
5%	3'-10"	16'-8"



PLAN DETAIL
NO SCALE

DOME SECTION
NO SCALE

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

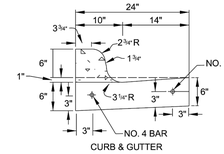
MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

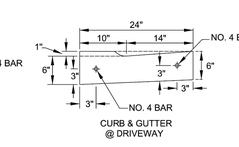
% SUBMITTAL	PROJECT NO.:	DATE:
DRAWN BY: V. VASQUEZ	DSGN BY:	CHKD. BY: R.S. HOSSEINI, P.E.

SHEET NO.: OF

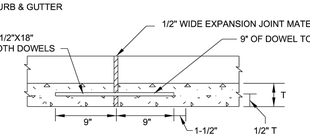
CURB AND GUTTER



CURB & GUTTER



CURB & GUTTER
@ DRIVEWAY



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.

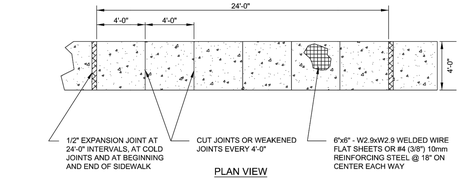
NOTES:

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.

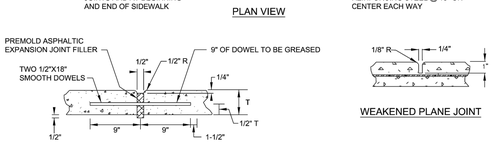
DATE APPROVED: 07/2008	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CURB & GUTTER		

City of New Braunfels ENGINEERING DEPARTMENT

SIDEWALK
(RESIDENTIAL)

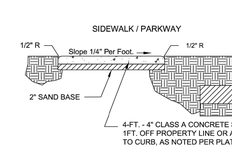


PLAN VIEW



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

VERAMENDI PRECINCT 18 UNIT 2

STREET DETAILS (SHEET 1 OF 2)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: KG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: lib\Street Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.533.2700
LJA.COM
TBPE No. F-1386

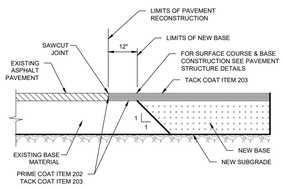
JOB NUMBER: SA3856.0402

SHEET NO. 32 OF 70 SHEETS

FOR PERMIT

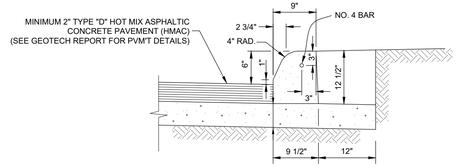
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

K:\SJ\3800-ASA Properties\3802 Veramendi Precinct 18-21\400 Site Development Plans\CAD-Sheets\Lib\Street Details.dwg
Xref: Drawing1
Last Modified: Apr. 05, 24 - 14:16
Last Saved By: Rachel Gonzales



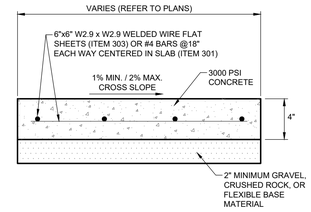
PAVEMENT TIE-IN DETAIL

N.T.S.



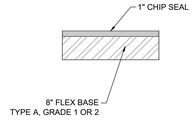
STANDARD CURB DETAIL

N.T.S.



SIDEWALK DETAIL

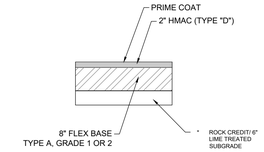
N.T.S.



NBU ELECTRICAL ACCESS DRIVEWAY PAVEMENT DETAIL

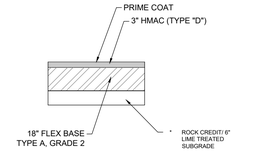
N.T.S.

* REFER TO GEOTECHNICAL ENGINEERING STUDY PREPARED ON 9/27/2024 PROJECT NO. ANA24-000-00 FOR SUBGRADE OPTIONS. IF FILL GRADING IS COMPLETED UTILIZING SELECT FILL IN ACCORDANCE WITH THE SELECT FILL SECTION OF THE REPORT, OR IF NATIVE, INTACT ROCK IS EXPOSED PRIOR TO FILL PLACEMENT (IF NECESSARY), THE LIME TREATED SUBGRADE MAY BE ELIMINATED FROM THE PAVEMENT SECTION AND THE ROCK SUBGRADE MAY BE UTILIZED.



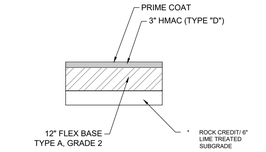
TEMPORARY PAVEMENT DETAIL

N.T.S.



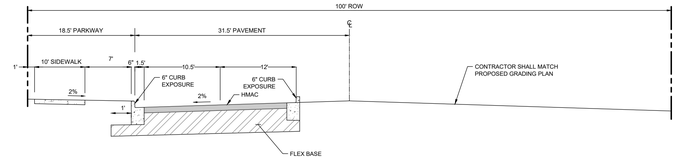
HILL COUNTRY DR SECTION

N.T.S.



LOCAL B, LOCAL A & ALLEY PAVEMENT SECTION

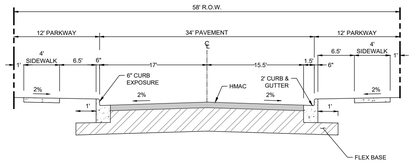
N.T.S.



HILL COUNTRY DR CROSS SECTION

N.T.S.

MINOR ARTERIAL
NEIGHBORHOOD CENTER, RESORT, NEIGHBORHOOD (MIXED DENSITY)
RESIDENTIAL AND PARK PLANNING AREAS

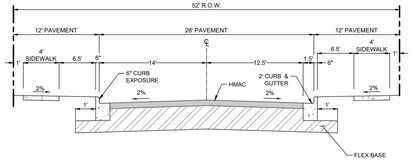


LOCAL B TYPICAL STREET SECTION

N.T.S.

LOCAL STREET WITH INFORMAL ON-STREET PARKING NEIGHBORHOOD CENTER, RESORT, NEIGHBORHOOD (MIXED DENSITY) RESIDENTIAL AND PARK PLANNING AREAS

(SENDERO VW)

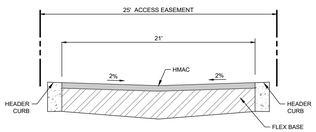


LOCAL A TYPICAL STREET SECTION

N.T.S.

LOCAL STREET WITH INFORMAL ON-STREET PARKING NEIGHBORHOOD CENTER, RESORT, NEIGHBORHOOD (MIXED DENSITY) RESIDENTIAL AND PARK PLANNING AREAS

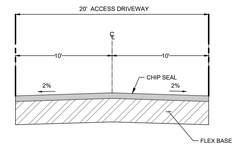
(PRIMARIA ST)
(ASHGROVE TRL)
(SENDERO VW)
(SENCILO TRL)



ALLEY TYPICAL STREET SECTION

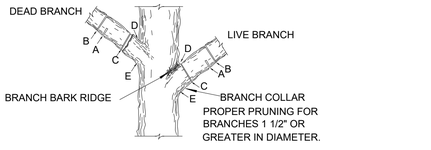
N.T.S.

(ALLEY-1)



NBU ELECTRICAL ACCESS DRIVEWAY STREET SECTION

N.T.S.



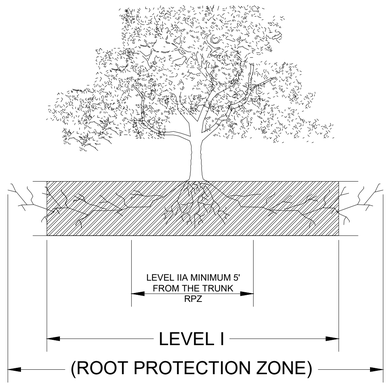
NOTE: DO NOT CUT FROM D to E.

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
D. BRANCH RIDGES - INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.

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

1.4 BRANCH PRUNING DETAIL

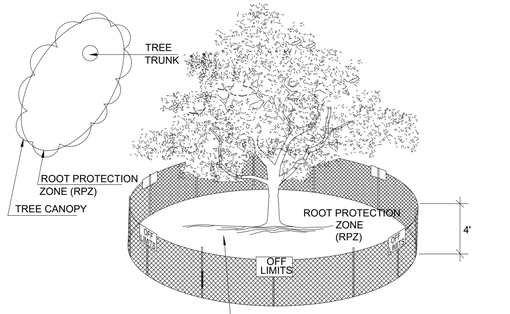
N. T. S.



ELEVATION

N. T. S.

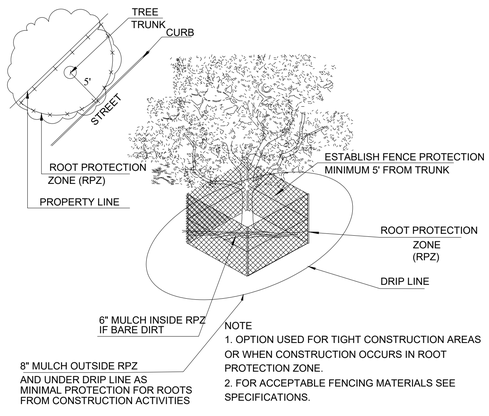
ROOT PROTECTION ZONE-THE ROOT PROTECTION ZONE IS A CIRCULAR AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE. EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.



NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED TO PROJECT BOUNDARY.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

LEVEL I & FENCE PROTECTION

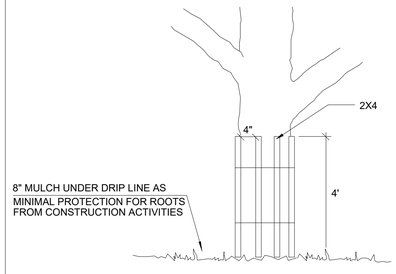
N. T. S.



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

N. T. S.



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

1.1.4 LEVEL II B FENCE PROTECTION

N. T. S.

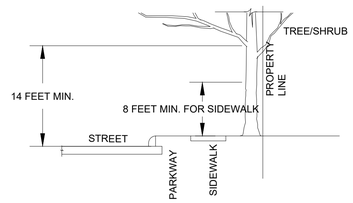


FIGURE No.2:

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

N. T. S.

VERAMENDI PRECINCT 18 UNIT 2

STREET DETAILS (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Street Details.dwg

11/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

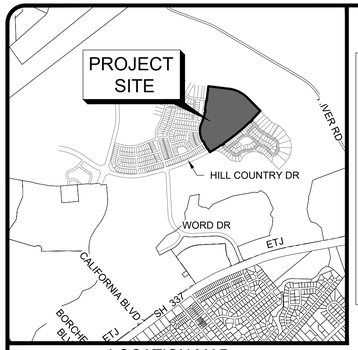
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

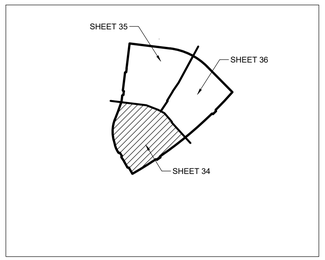
SHEET NO. 33 OF 70 SHEETS

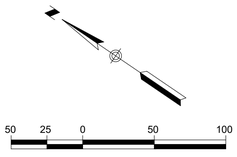
FOR PERMIT

K:\SA3856.eve projects\0402 veramendi precinct 18-2\026 site development plan\dwg- sheet\sh_Street Details.dwg
Last Saved By: ...
Last Modified: Nov. 19, 24 - 15:44
Last Plotted: Wed, Nov 20, 24 - 14:30:29



LOCATION MAP
N.T.S.





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. MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, UN-DEPRECIATED STOCK. ALL EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE ON THE PLANS.
8. 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-(41-08).
9. CONTRACTING 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.
10. 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 STANDARD SPECIFICATIONS SHALL BE RESOLVED ONLY BY THE ENGINEER AND THE ENGINEER'S DECISION SHALL BE FINAL AND BINDING.
11. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AS PER TXDOT ITEM NO. 666.
12. COMAL COUNTY WILL INSTALL COUNTY ROAD SIGNS AND INVOICE THE OWNER. THE CONTRACTOR IS TO INSTALL PAVEMENT MARKINGS. ALL ROAD SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED ENGINEERING PLANS. THE COUNTY WILL INSPECT ALL SIGNS AT FINAL INSPECTION.
13. THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 24 HOUR PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE COUNTY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

SIDEWALK TO BE BUILT BY DEVELOPER

SIDEWALK NOTES:

1. FOUR (4) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION ALONG:
   A. SENDERO VW
   B. PRIMARIA ST
   C. ASHGROVE TRL
   D. SENCILLO TRL
2. FOUR (4) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
   A. SENDERO VW - LOT 900, BLOCK 108; LOT 900, BLOCK 111; LOT 900, BLOCK 113.
   B. PRIMARIA ST - LOT 900, BLOCK 113; LOT 900, BLOCK 116.
   C. ASHGROVE TRL - LOT 900, BLOCK 111; LOT 902, BLOCK 116.
   D. SENCILLO TRL - LOT 902, BLOCK 116.
3. TEN (10) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION CONSTRUCTION WITHIN:
   A. HILL COUNTRY DR - LOT 900, BLOCK 113.
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VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE LAYOUT (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage_layout.dwg

01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

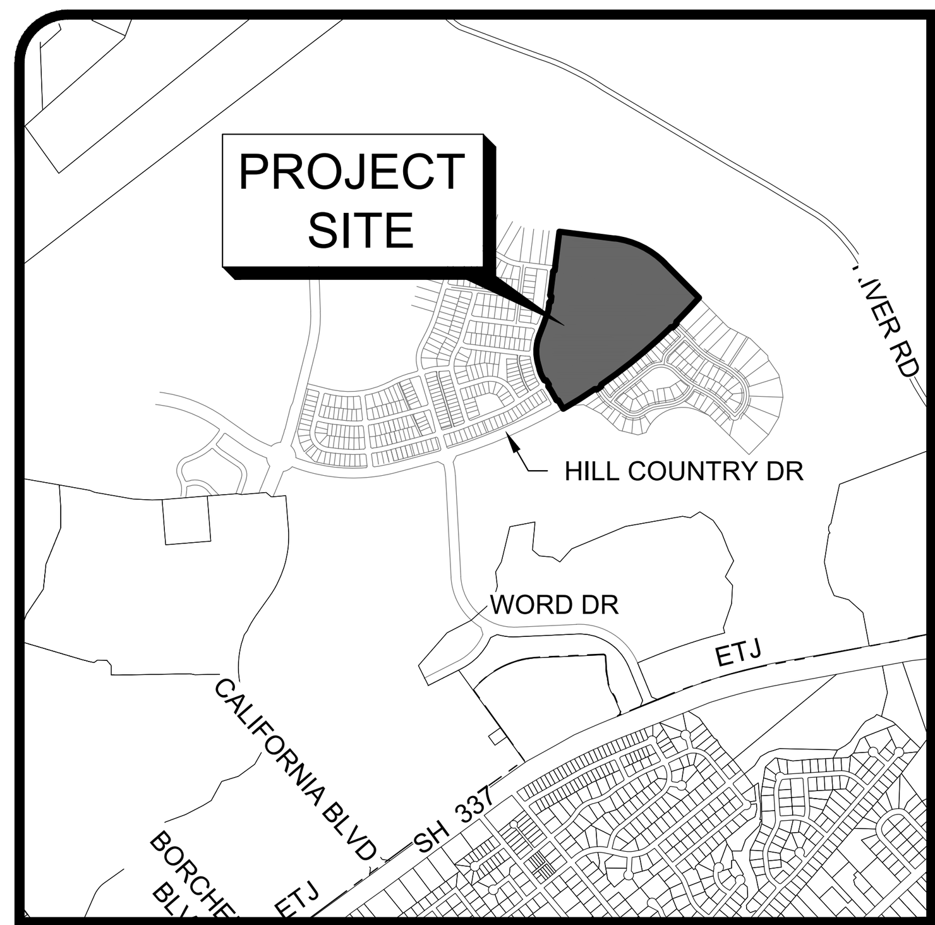
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

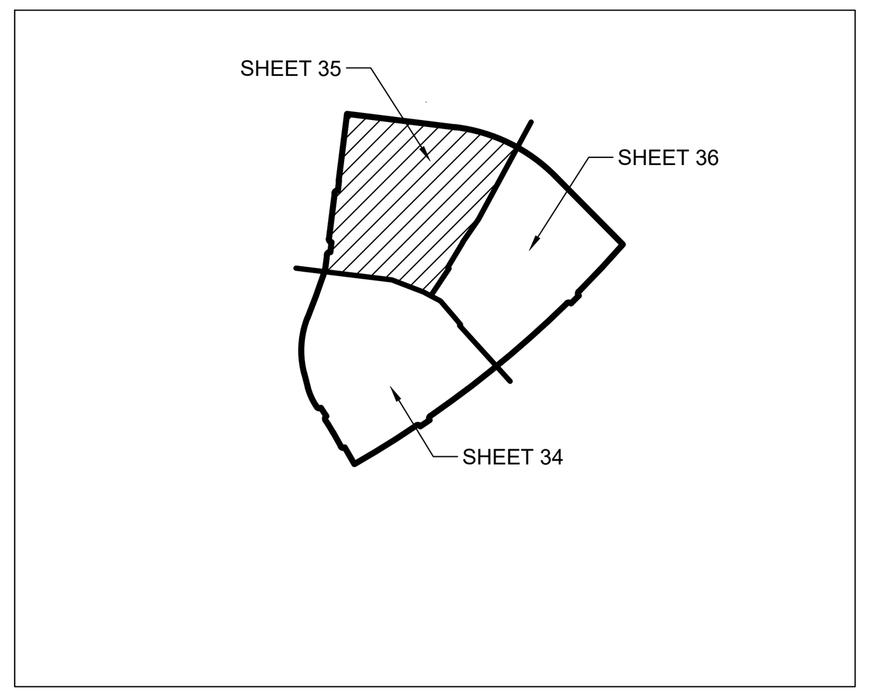
SHEET NO. 34
OF 70 SHEETS

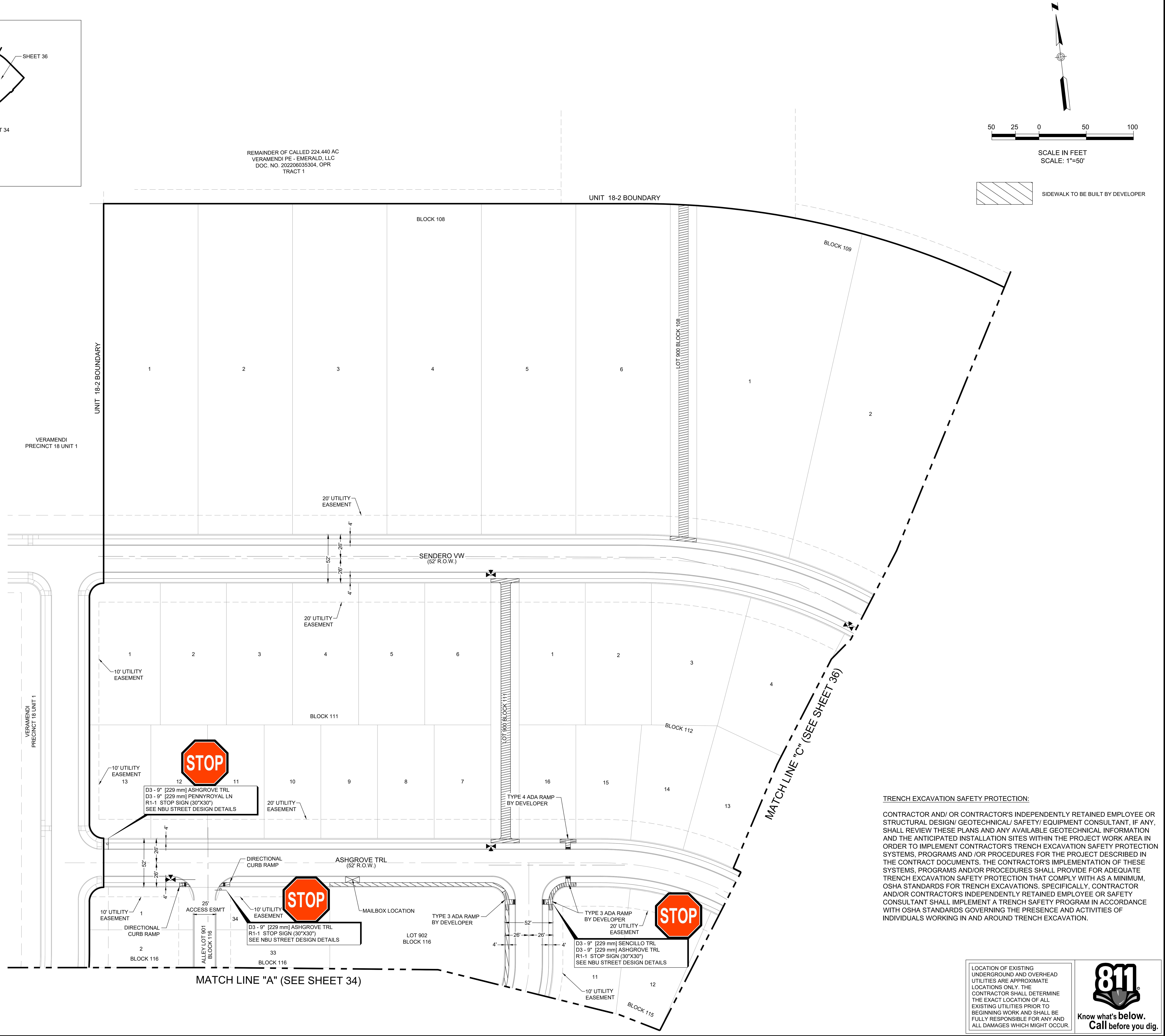
FOR PERMIT

K:\SA3856 IGA Properties\04\02 Veramendi Precinct 18-21\430 Site Development Plans\GMD-Sheets\sh_Signage_layout.dwg
Plotted: Sep. 17, 24 – 12:02
Last Modified: Sep. 17, 24 – 12:02
By: Brad Rose



LOCATION MAP
N.T.S.





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   C. ASHGROVE TRL
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VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SignageLayout.dwg

01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
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Phone 210.503.2700
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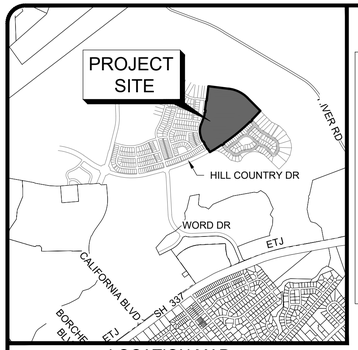
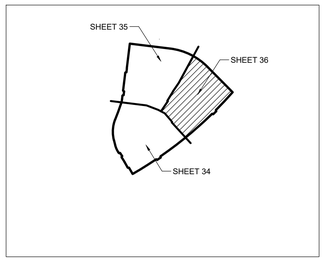
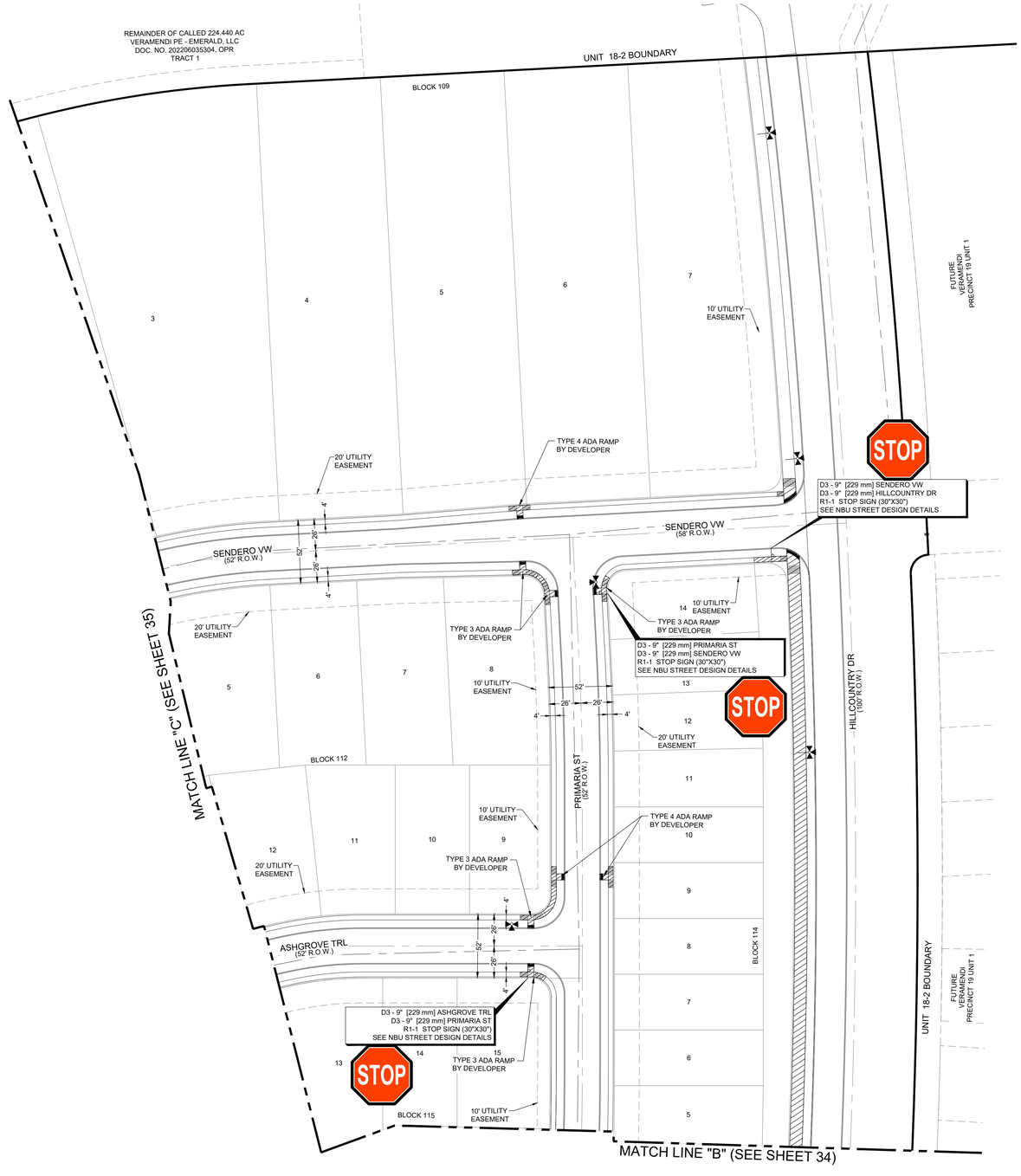
TBPE No. F-1386

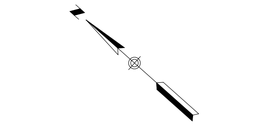
JOB NUMBER: SA3856.0402

FOR PERMIT









SIDEWALK TO BE BUILT BY DEVELOPER

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VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE LAYOUT (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_03signage_layout.dwng

01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
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Phone 210.503.2700
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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 36 OF 70 SHEETS

FOR PERMIT

P:\LJA3856_ADA Properties\04\02 Veramendi Precinct 18-2\04 Site Development Plans\03\C-Sheets\sh_03signage_layout.dwg
Plotted: Sep. 17, 24 – 12:02
Last Modified: Sep. 17, 24 – 12:02
Xref's Attached: No

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 the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

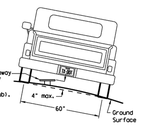
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SBO = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

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. "Post" (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
- (TEXT or ZEXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT)))
- BW = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 #/ft W/Ig Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

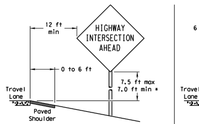
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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

SIGN LOCATION

PAVED SHOULDERS



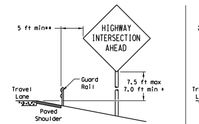
LESS THAN 6 FT. WIDE

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.

BEHIND BARRIER

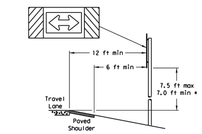


BEHIND GUARDRAIL

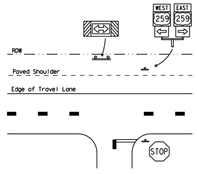
BEHIND CONCRETE BARRIER

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

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.



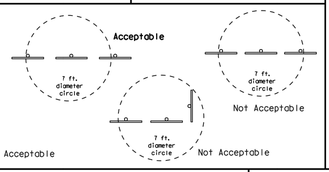
- Signs shall be mounted using the following condition that results in the greatest sign elevation:
  - (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

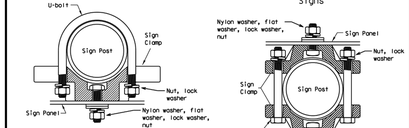
See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/trafftc.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL



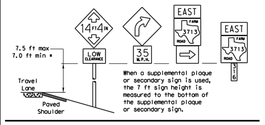
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

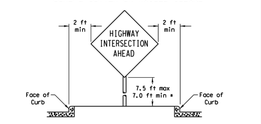
Sign clamps may be either the specific size clamp or the universal clamp.

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"

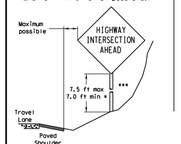
SIGNS WITH PLAQUES



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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
GENERAL NOTES & DETAILS
SMD(GEN)-08

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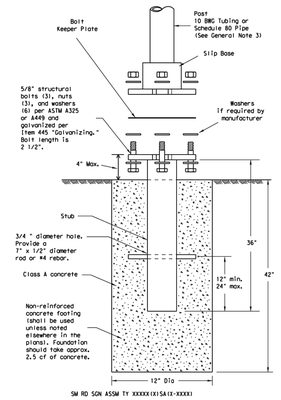
DATE:
FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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:

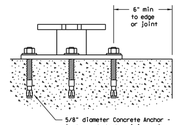
1. Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   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 precoated steel 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 following:
   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/trafftc.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, gas-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 traveltway (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 traveltway. 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(X)SB(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 DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt 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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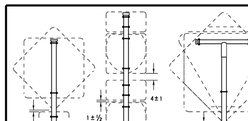
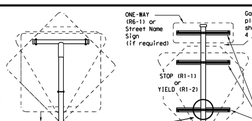
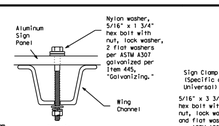
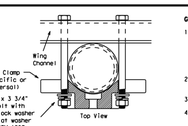






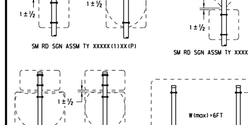


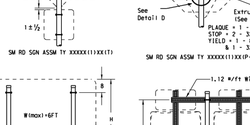
GENERAL NOTES:

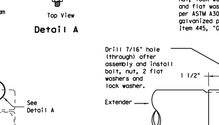
1. SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA

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

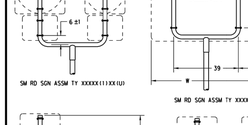
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material 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 other than those listed in the loading criteria 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 impacted 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 amount per Note 1.
11. Additional sign clamp 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.

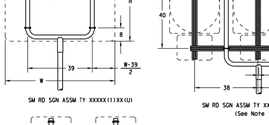


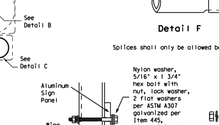


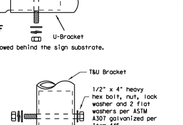


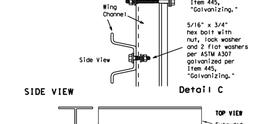
Splices shall only be allowed behind the sign substrate.

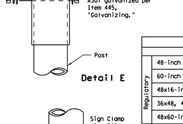






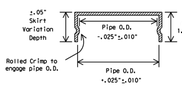






REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(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)
Warning	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

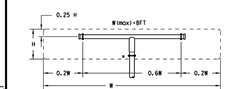
FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. 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 creases 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.



All dimensions are in english unless detailed otherwise.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-2)-08

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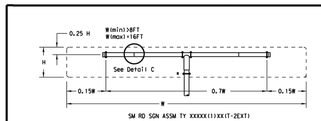
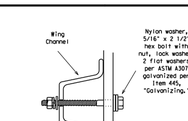
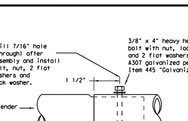
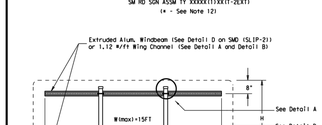
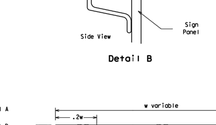


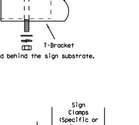


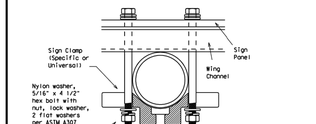


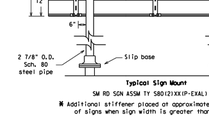
Splices shall only be allowed behind the sign substrate.

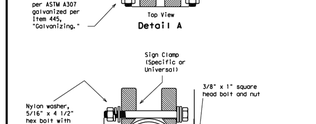


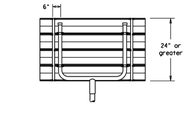












REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
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	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BW)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB01(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
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	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)
Warning	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

GENERAL NOTES:

1. SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA

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 other than those listed in the loading criteria 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 impacted 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 clamp 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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-3)-08

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VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE DETAILS (SHEET 1 OF 2)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/14/2024
DESIGNED BY: NKS
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage Details.dwg

07/31/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 37 OF 70 SHEETS

K:\SJ\SMD ASA Properties\Q402 Veramendi Precinct 18-21\06 Site Development Plans\CAD-Sheets\sh_Signage Details.dwg
By: Nicholas Kelly Mar. 14, 24 - 16:01
Last Modified: Mar. 14, 24 - 16:01
File Name: sh_Signage Details.dwg

FOR PERMIT

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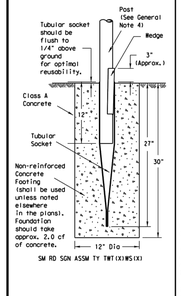
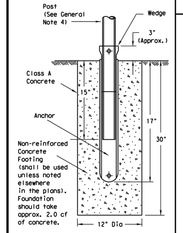
Wedge Anchor Steel System



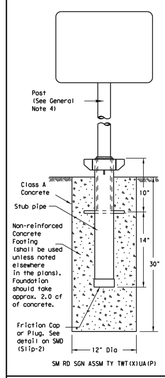
SM RD SGN ASSM TY TWT(XX)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

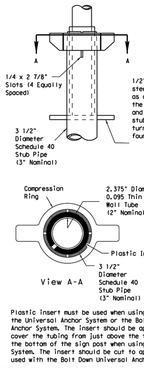


SMD RD SGN ASSM TY TWT(X)HP(X)

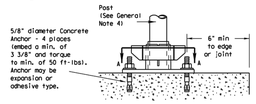
Universal Anchor System with Thin-Walled Tubing Post



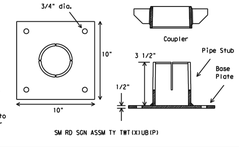
SM RD SGN ASSM TY TWT(XX)UA(P)



Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.



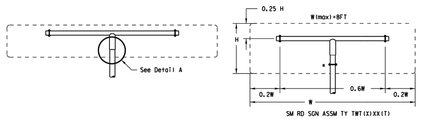
SM RD SGN ASSM TY TWT(XX)UB(P)

GENERAL NOTES:
1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   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
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

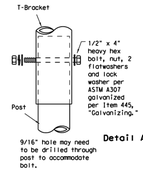
WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
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. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post



SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)



Detail A

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

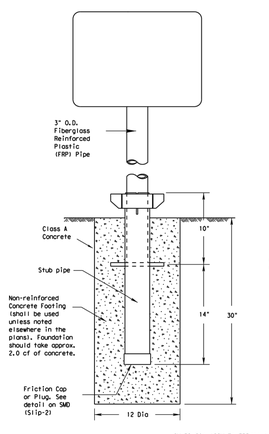
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST
SMD(TWT)-08

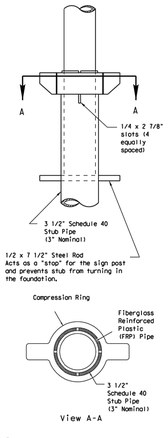
©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26E

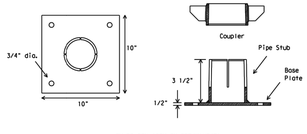
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



SM RD SGN ASSM TY FRP(X)UA(P)



BOLT-DOWN DETAILS



SM RD SGN ASSM TY FRP(X)UB(P)

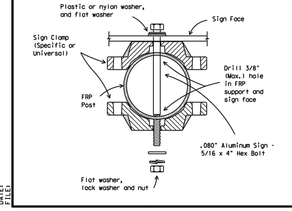
GENERAL NOTES:
1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS
1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are detailed by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

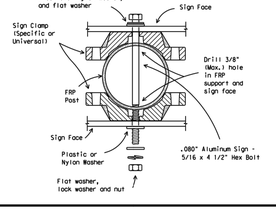
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
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. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

BOLT DOWN SIGN SUPPORT
1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



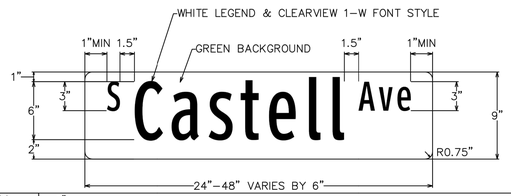
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM WITH FRP POST
SMD(FRP)-08

©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26F

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

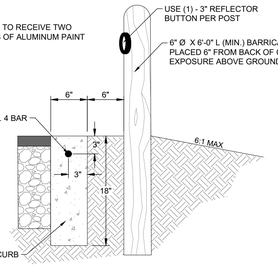
Notes:
1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall 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: 830.626.3000

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

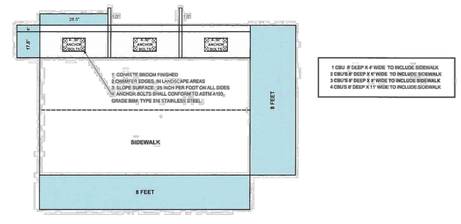
NOTE:
1. POSTS TO RECEIVE TWO COATS OF ALUMINUM PAINT



HEADER CURB & BARRICADE POST DETAIL

N.T.S.

UNITED STATES POSTAL SERVICE



1 CBU: 8'-0 DEEP X 4'-6 WIDE TO INCLUDE SIDEWALK
2 CBU'S: 8'-0 DEEP X 8'-6 WIDE TO INCLUDE SIDEWALK
3 CBU'S: 8'-0 DEEP X 8'-6 WIDE TO INCLUDE SIDEWALK
4 CBU'S: 8'-0 DEEP X 11'-6 WIDE TO INCLUDE SIDEWALK

VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE DETAILS (SHEET 2 OF 2)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/14/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sn_Signage Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

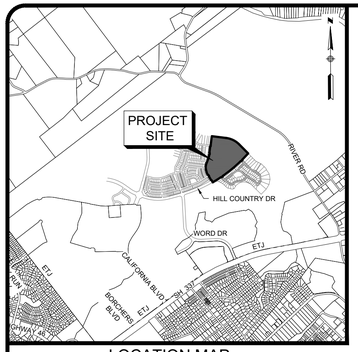
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

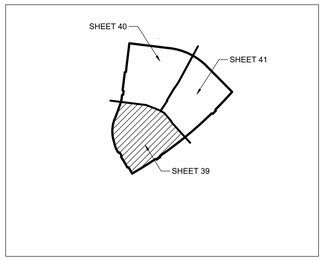
SHEET NO. 38 OF 70 SHEETS

FOR PERMIT

K:\SOLIDGE_USA Properties\VM22 Veramendi Precinct 18-21\430 Site Development Plans\GMD-Sheets\sn_Signage Details.dwg
Plotted: Mar. 14, 24 - 16:01
Last Modified: Mar. 14, 24 - 16:01
Xref Dependencies:



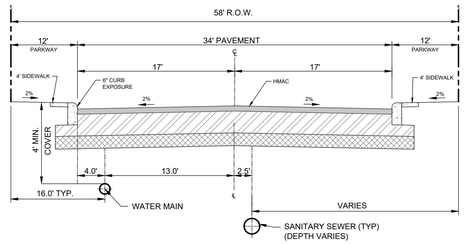
LOCATION MAP
N.T.S.



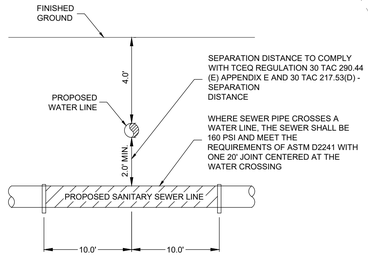
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

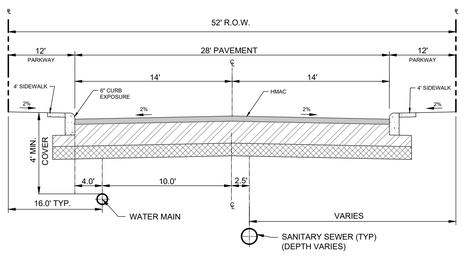
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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



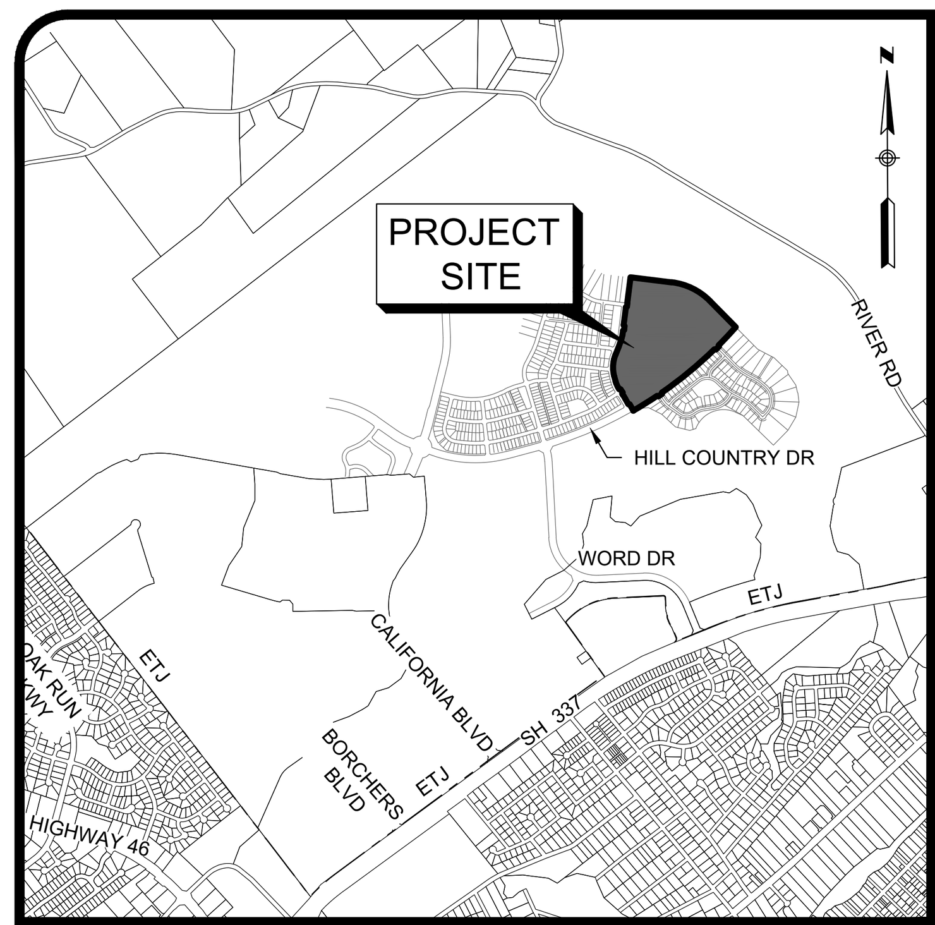
STANDARD 58' ROW STREET SECTION (UTILITIES)
N.T.S.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

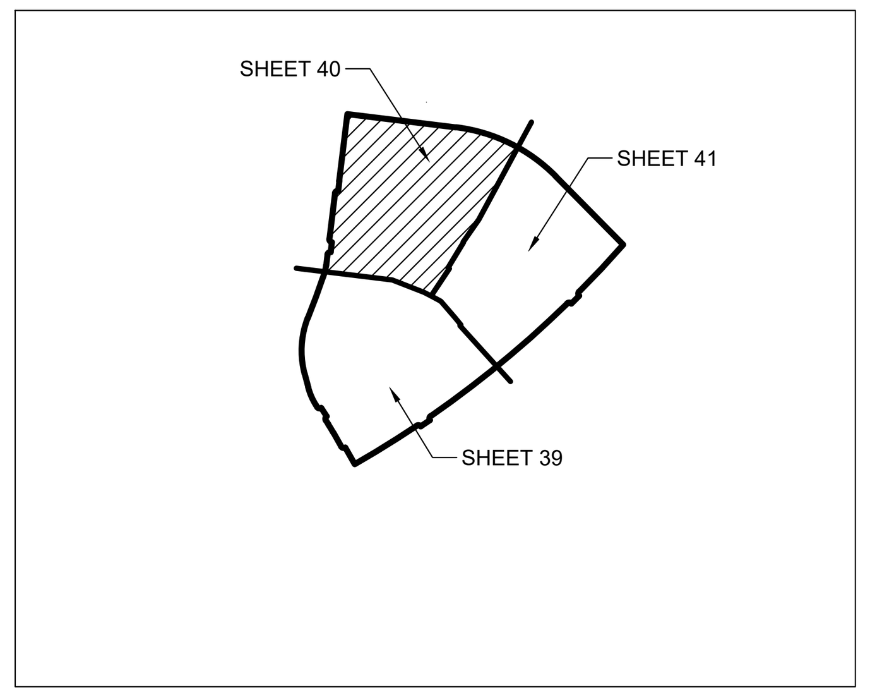


STANDARD 52' ROW STREET SECTION (UTILITIES)
N.T.S.



LOCATION MAP

N.T.S.



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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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 TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

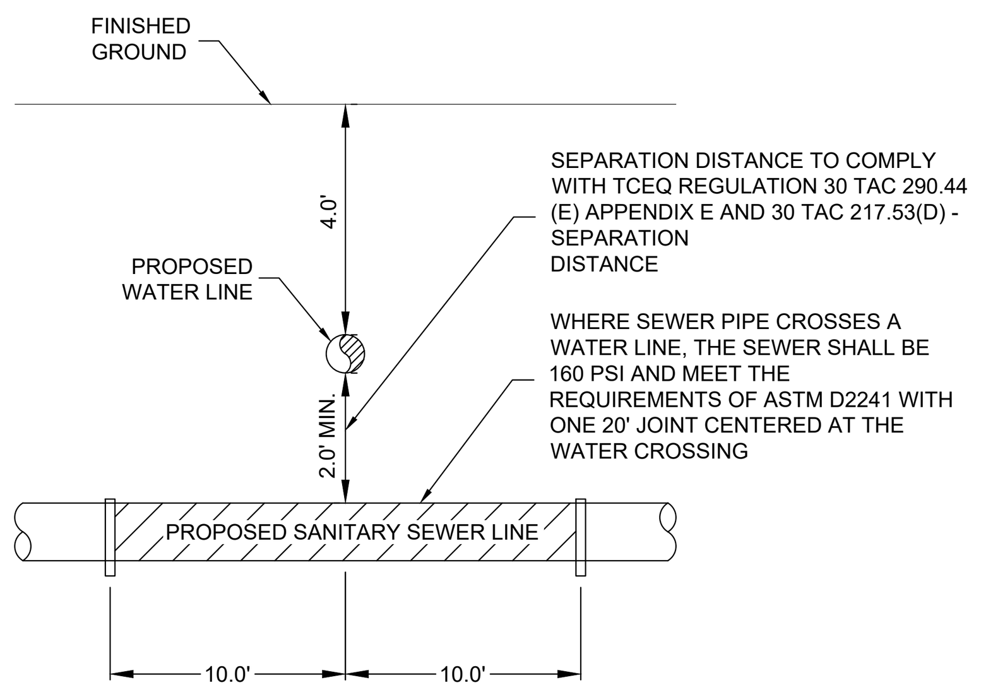
50 25 0 50 100

SCALE IN FEET

SCALE: 1"=50'

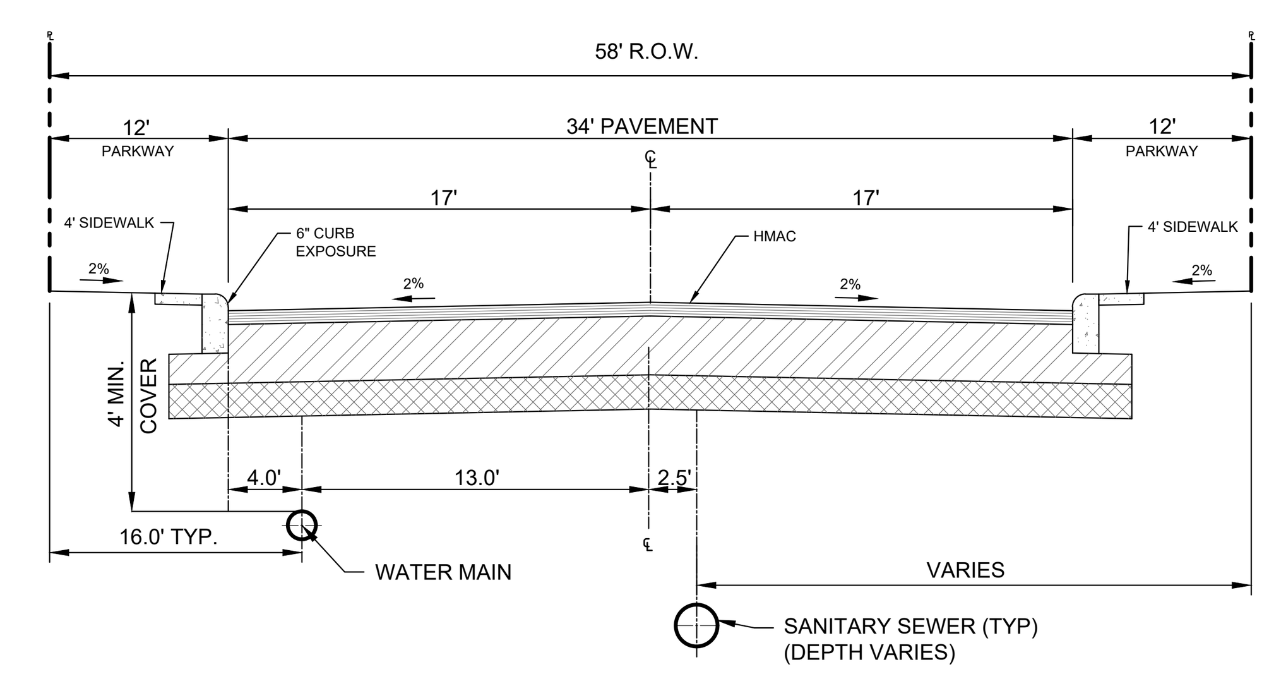
LEGEND

PROPOSED	EXISTING	
Ⓢ	Ⓢ	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
⊗		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
Ⓓ	Ⓓ	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



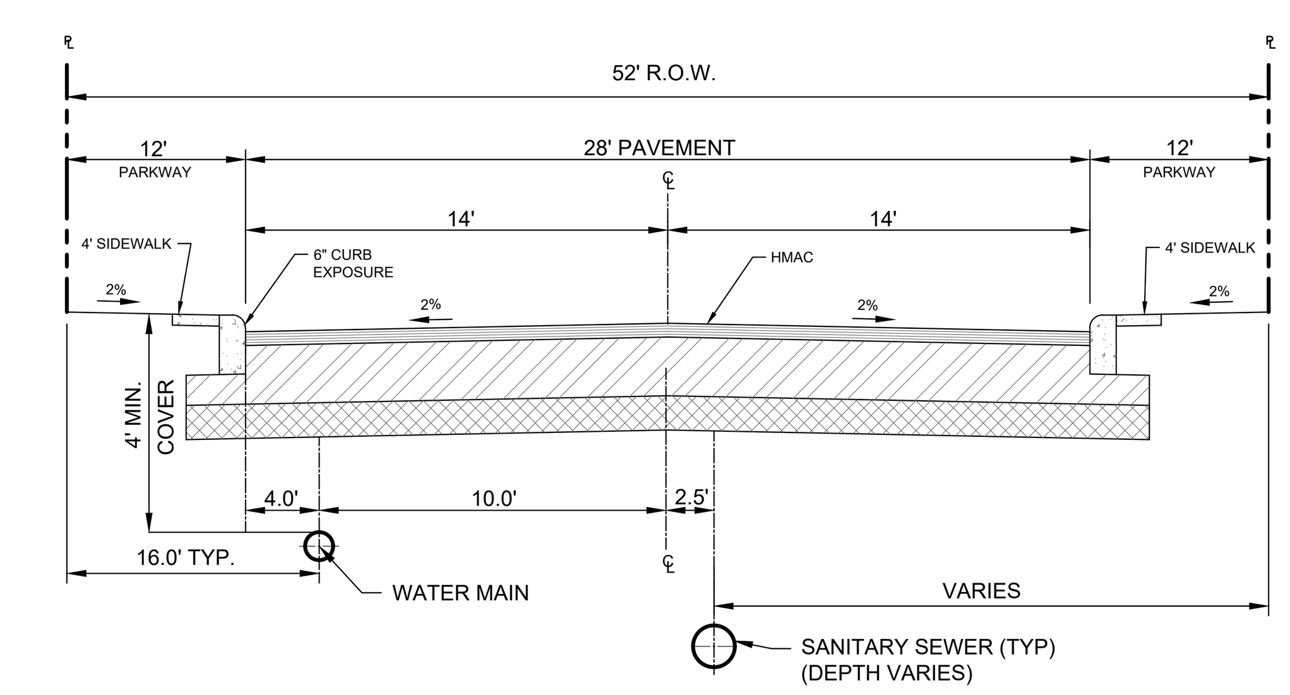
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NTS



STANDARD 58' ROW STREET SECTION (UTILITIES)

N.T.S.



STANDARD 52' ROW STREET SECTION (UTILITIES)

N.T.S.

GENERAL NOTES

1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL DD-834-01.
2. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
3. ALL VALVES SHALL READ "OPEN RIGHT".
4. ALL FIRE HYDRANTS SHALL BE PAINTED APPROPRIATE NBU COLORS.
5. FIRE HYDRANTS AND VALVE BOXES TO BE RAISED TO THE PROPOSED TOP OF PAVEMENT OR GROUND ELEVATION.
6. ALL WATER PIPE TO BE C-900, DR-18, CLASS 150 UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL VERIFY GRAVITY INVERTS PRIOR TO CONSTRUCTION AND NOTIFY CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 95% COMPACTION ON ALL UTILITY TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PREFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
9. CONTRACTOR TO REFERENCE MOST CURRENT NBU DETAILS & SPECIFICATIONS. FOR SEWER MANHOLES REFERENCE NBU STANDARD SPECIFICATION ITEM NO. 852.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING NBU STANDARD SPECIFICATION 804 FOR EXCAVATION, TRENCHING AND BACKFILLING REQUIREMENTS AND STANDARD SPECIFICATION 812 FOR WATER/SEWER SEPARATION REQUIREMENTS.

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 AN CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
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 EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM TESTS SHALL BE TAKEN EVERY 200 FT FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNELS 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.

NEW BRAUNFELS UTILITIES

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

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

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

VERAMENDI PRECINCT 18 UNIT 2

UTILITY LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE:	7/11/2024
DESIGNED BY:	NG
DRAWN BY:	NG
CHECKED BY:	PGF
DRAWING NAME:	sh_Utility.dwg

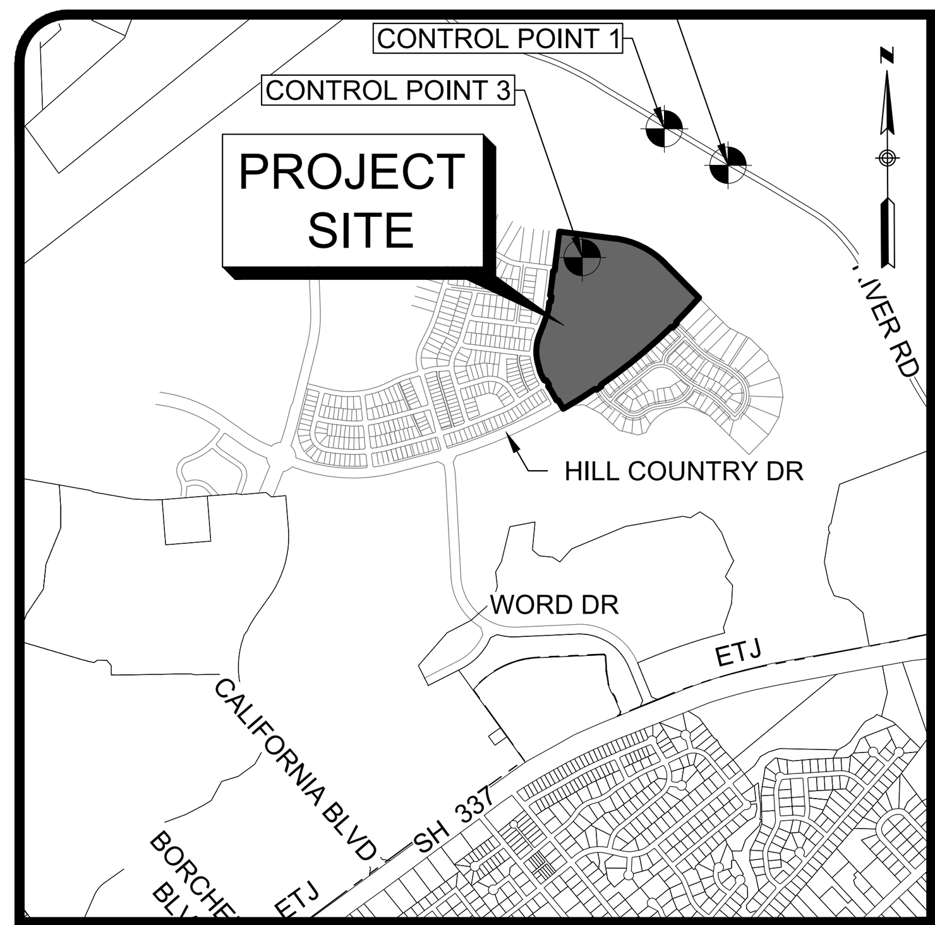
STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

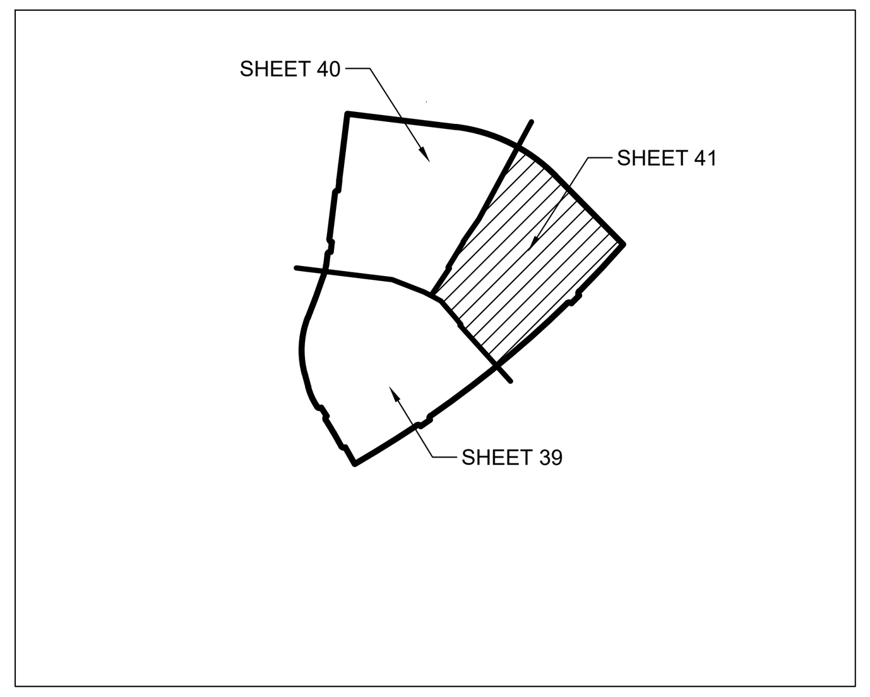
SHEET NO. 40 OF 70 SHEETS

FOR PERMIT



LOCATION MAP

N.T.S.



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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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 TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

SCALE IN FEET

SCALE: 1"=50'

GENERAL NOTES

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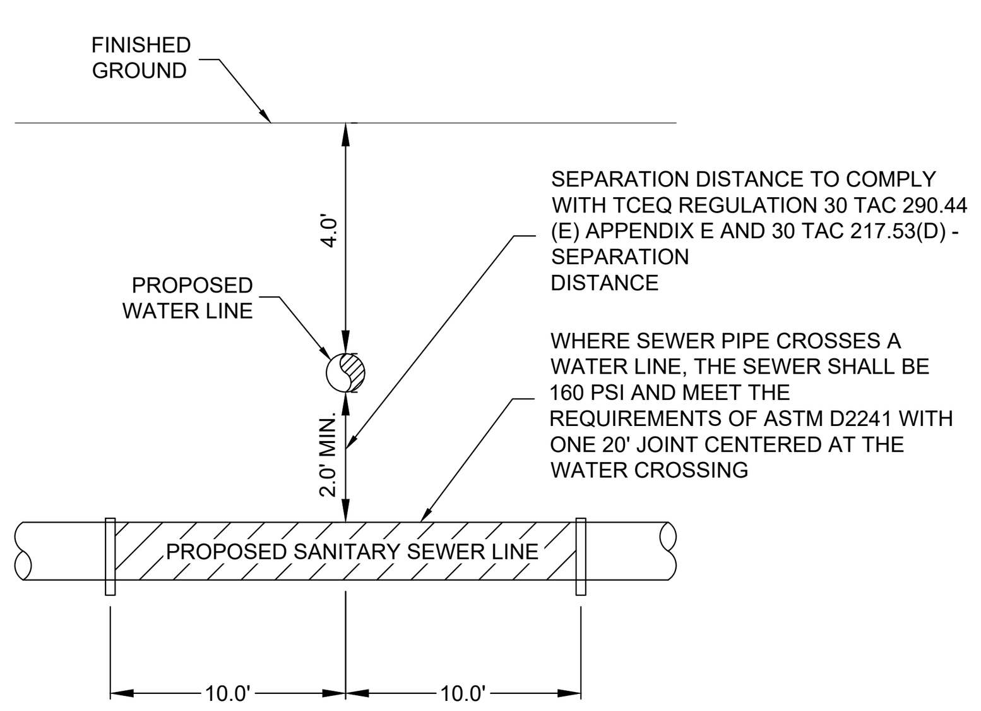
NEW BRAUNFELS UTILITIES

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

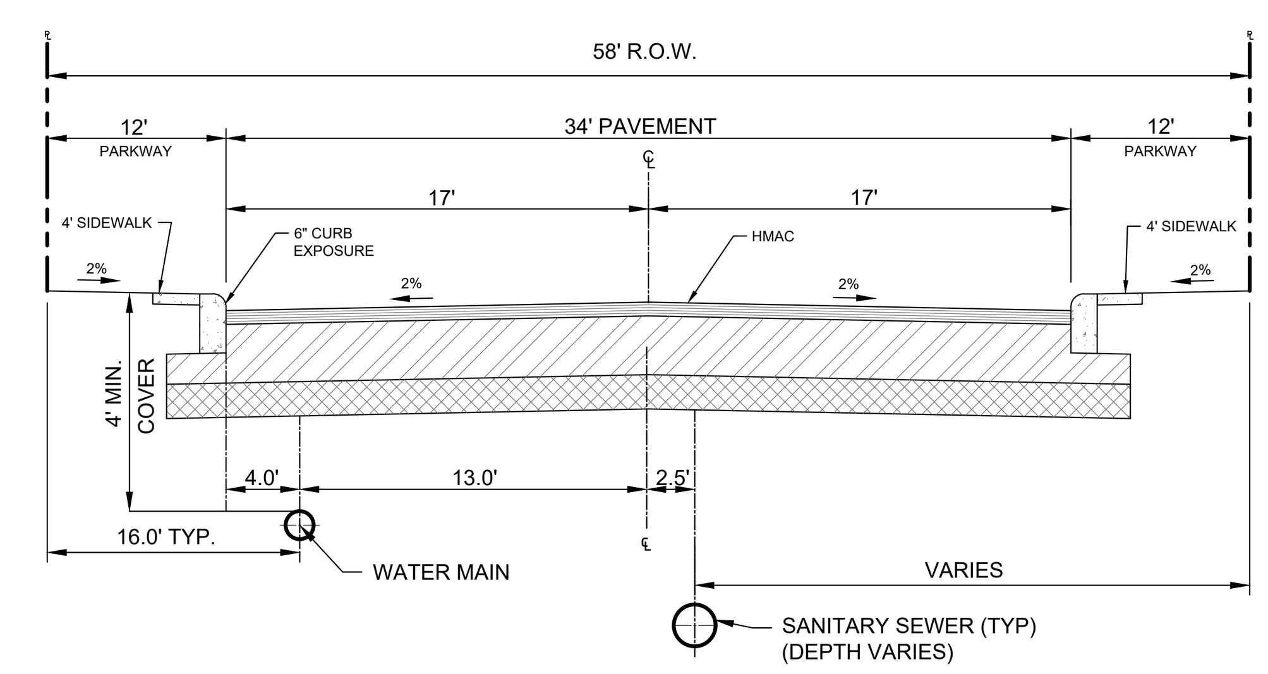


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NTS

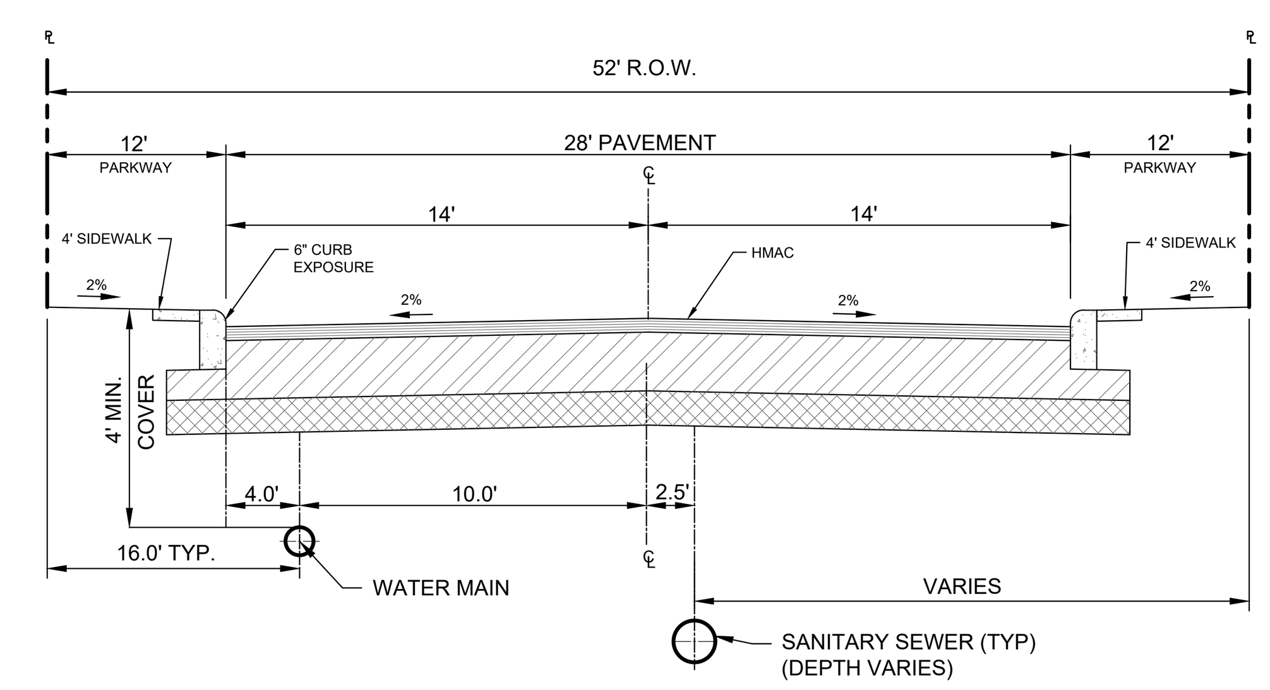
LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	G	GAS LINE
		STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS



STANDARD 58' ROW STREET SECTION (UTILITIES)

N.T.S.



STANDARD 52' ROW STREET SECTION (UTILITIES)

N.T.S.

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

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

VERAMENDI PRECINCT 18 UNIT 2

UTILITY LAYOUT (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

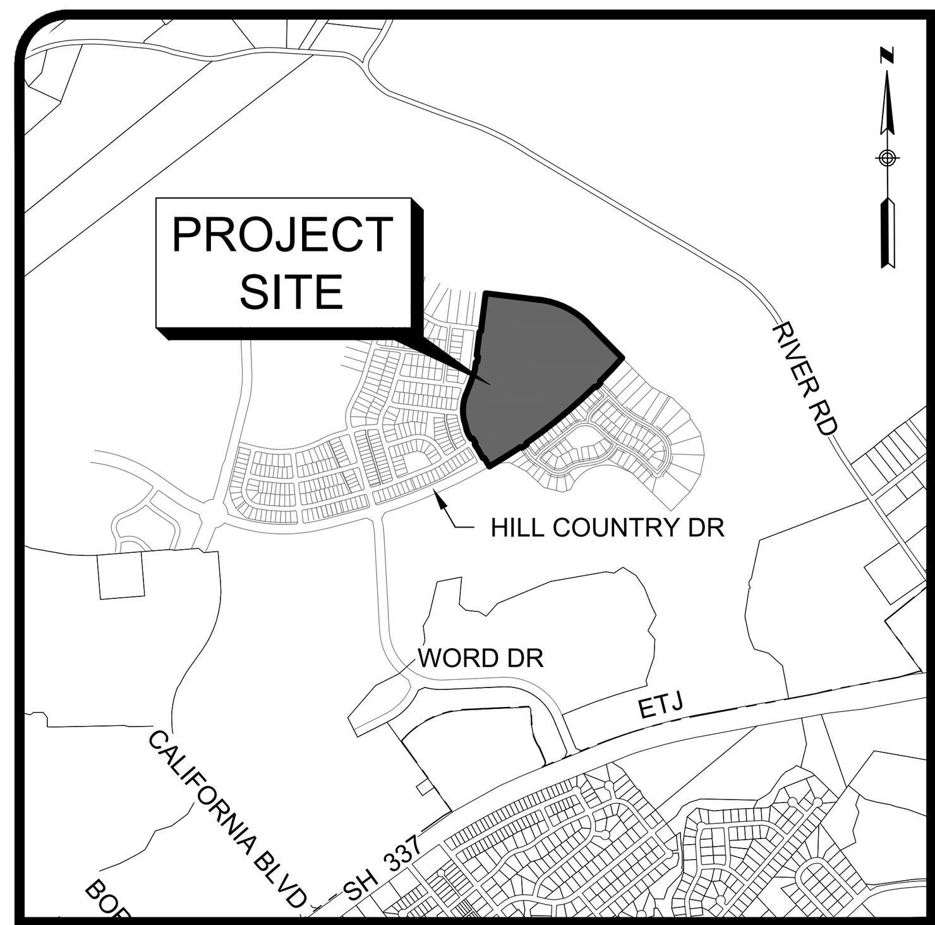
DATE:	10/28/2024
DESIGNED BY:	NG
DRAWN BY:	NG
CHECKED BY:	PGF
DRAWING NAME:	sh_Utility.dwg

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 10/28/2024

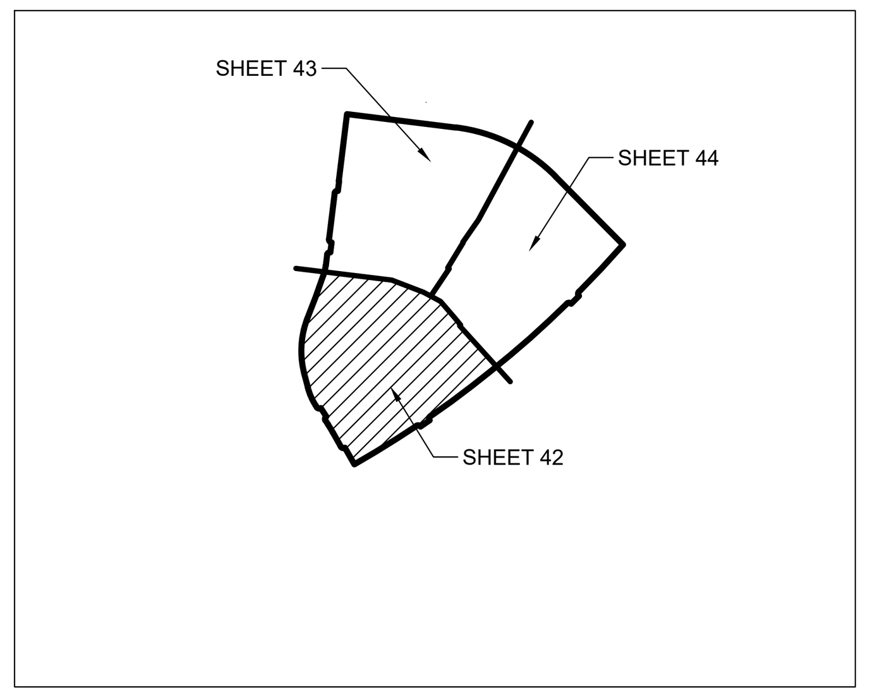
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

FOR PERMIT



LOCATION MAP
N.T.S.



TRENCH EXCAVATION SAFETY PROTECTION

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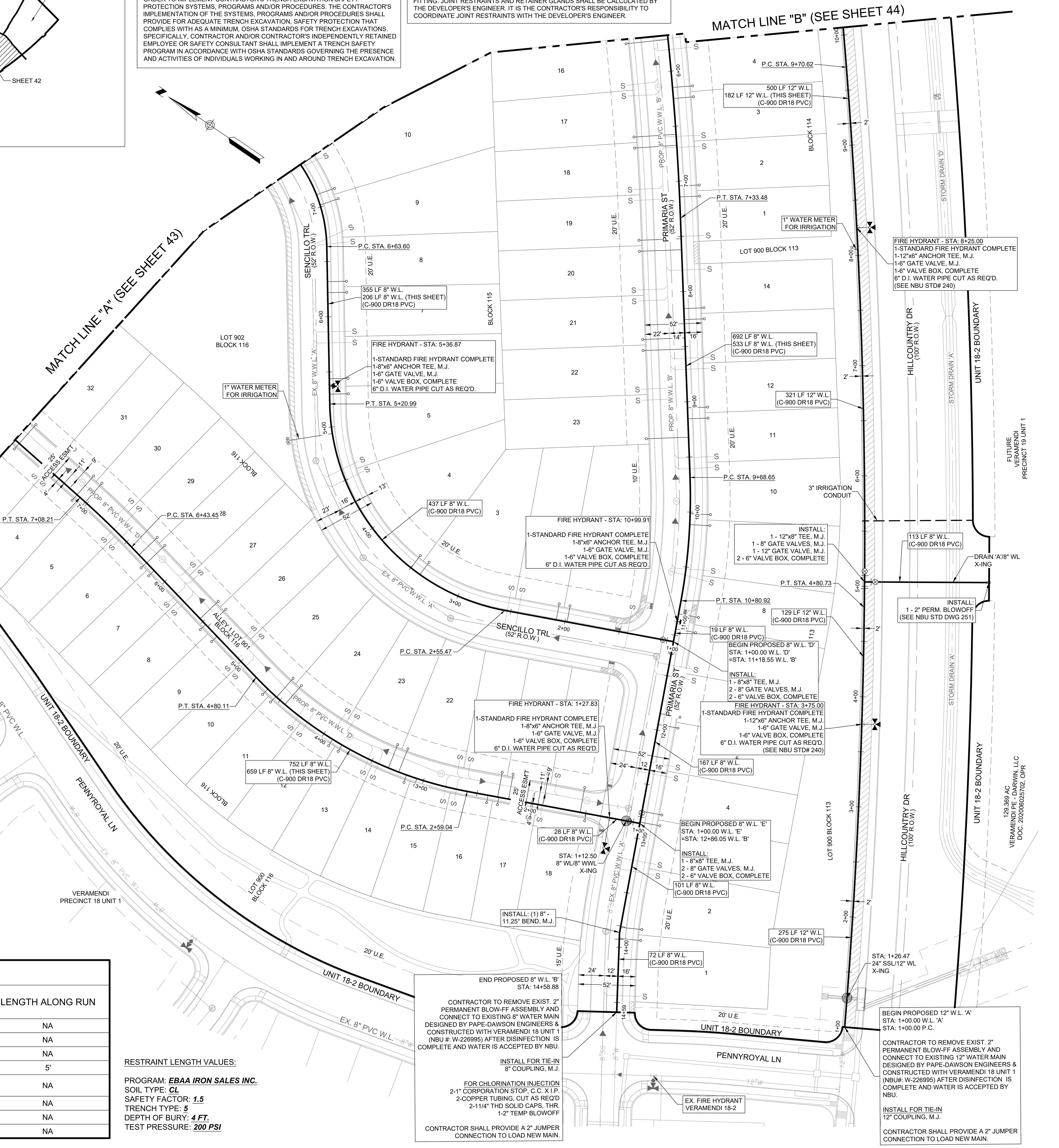
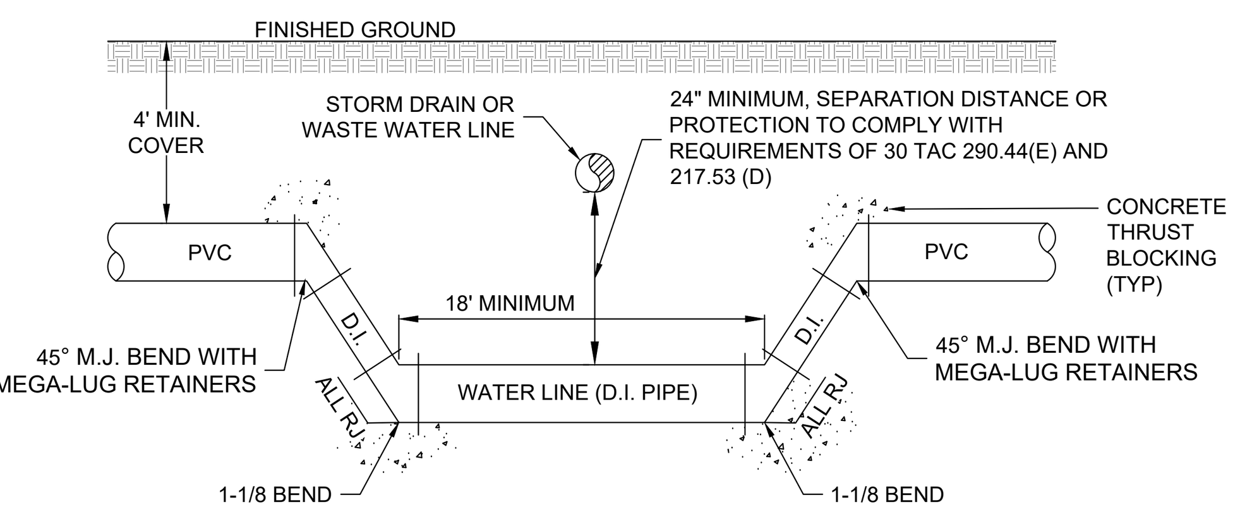
JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOIN RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL ENSURE THAT ALL TEE'S, BEND'S, VALVE'S, ETC. HAVE A MINIMUM OF 5' OF PIPE WITH NO JOINTS AT 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.



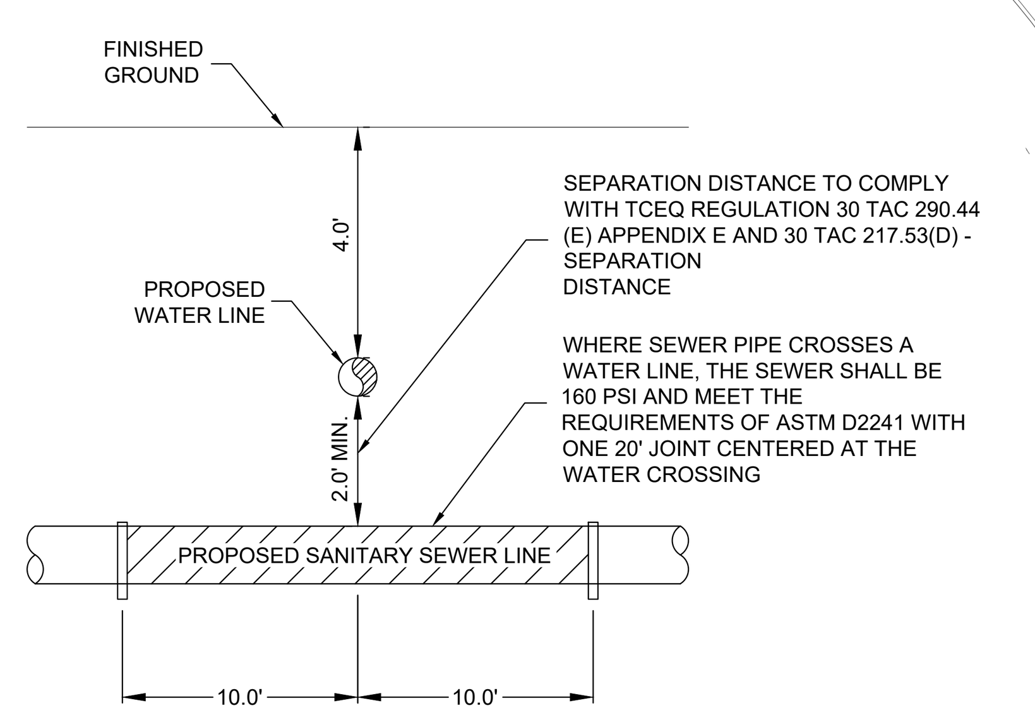
LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS



TYPICAL WATER CROSSING DETAIL B
NTS

NOTE:
1. 18' MINIMUM WATER PIPE SEGMENT TO BE CENTERED UNDER WASTEWATER LINE.
2. WASTEWATER PIPE WITHIN NINE FEET OF WATER PIPE ON EITHER SIDE SHALL BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE RATED PIPE.
3. STEEL CASING TO BE USED UNDER STORM DRAIN.
4. ALL AMENITY CENTERS SHALL HAVE R/P BACKFLOW PREVENTION ASSEMBLY CALLED OUT AND DETAILED ON DOMESTIC SERVICES



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

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

JOINT RESTRAINT TABLE

JOINT (TYPE)	PIPE MATERIAL	PIPE SIZE	RESTRAINT DISTANCE	LENGTH ALONG RUN
11.25°BEND	PVC	8"	3'	NA
22.5°BEND	PVC	8"	5'	NA
45°BEND	PVC	8"	10'	NA
TEE	PVC	8"x8"x8"	36'	5'
VERTICAL OFFSET SYSTEM RETURN	DI	8"	4' LOWER BENDS 21' UPPER BENDS	NA
GATE VALVE	PVC	8"	NA	NA
DEAD END	PVC	12"	97'	NA
DEAD END	PVC	8"	68'	NA

RESTRAINT LENGTH VALUES:

PROGRAM: ***EBAA IRON SALES INC.***
SOIL TYPE: ***CL***
SAFETY FACTOR: ***1.5***
TRENCH TYPE: ***5***
DEPTH OF BURY: ***4 FT.***
TEST PRESSURE: ***200 PSI***

NOTES:

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

CITY OF NEW BRAUNFELS NOTES

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NEW BRAUNFELS UTILITIES

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

NBU PRESSURE ZONE:

- PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 4.

WATER (NBU JOB NO. W-236395)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5434
12" WATER LINE	LF	1807
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 1" METER	EA	2
LUEs	EA	129
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	15
12" GATE VALVE	EA	4

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

VERAMENDI PRECINCT 18 UNIT 2
WATER LAYOUT (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 10/28/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: th_Water Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
10/28/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

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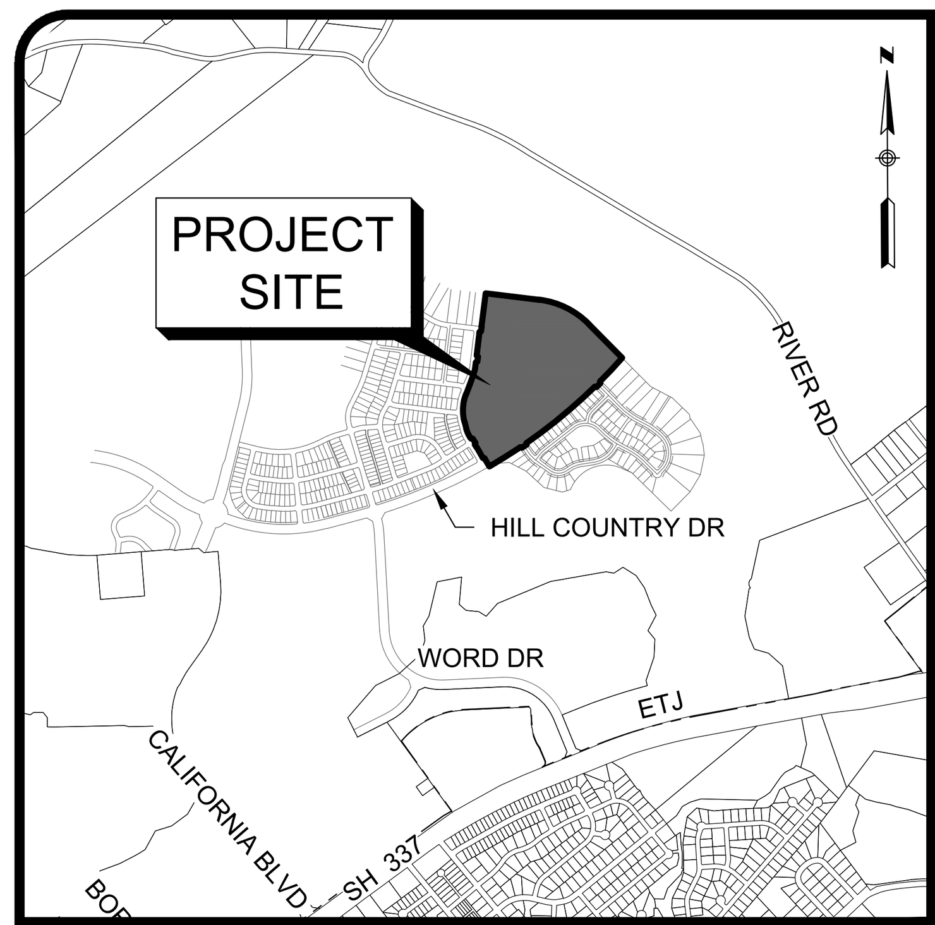
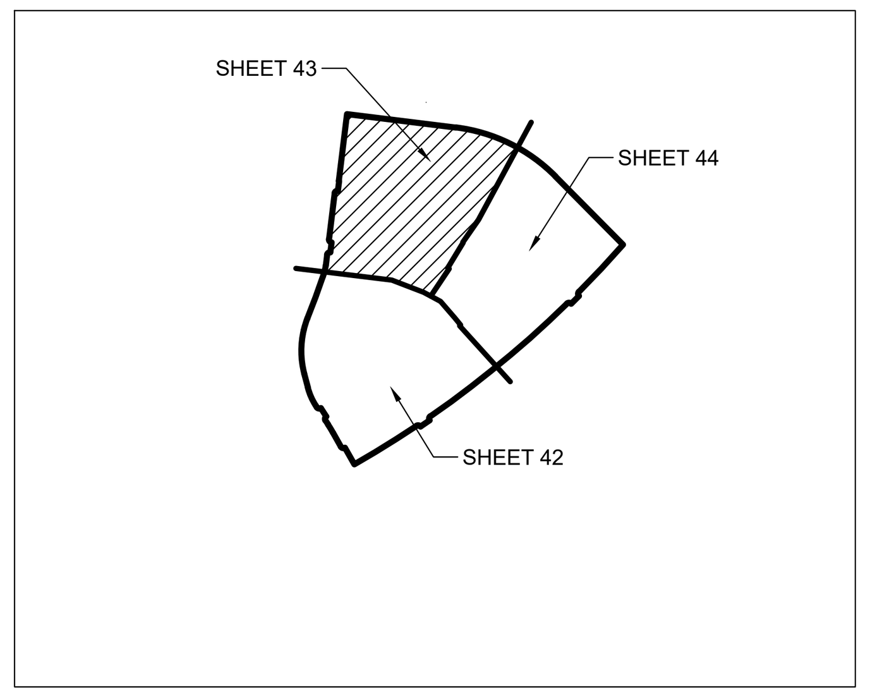


LOCATION MAP

N.T.S.



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45°BEND	PVC	8"	10'	NA
TEE	PVC	8"x8"x8"	36'	5'
VERTICAL OFFSET SYSTEM RETURN	DI	8"	4' LOWER BENDS 21' UPPER BENDS	NA
GATE VALVE	PVC	8"	NA	NA
DEAD END	PVC	12"	97'	NA
DEAD END	PVC	8"	68'	NA

RESTRAINT LENGTH VALUES:

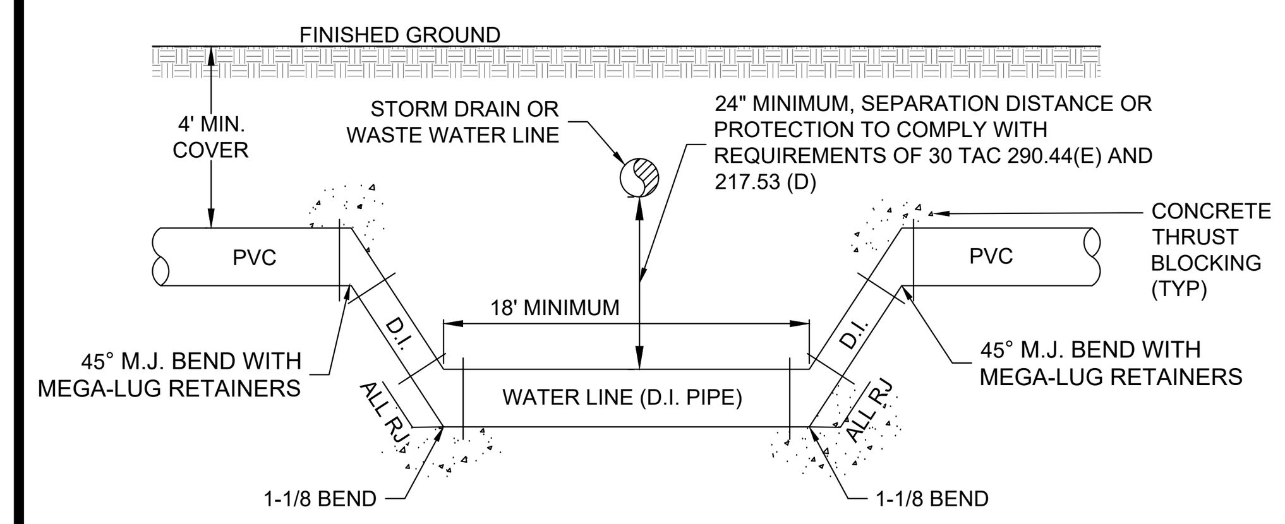
PROGRAM: ***EBAA IRON SALES INC.***
SOIL TYPE: ***CL***
SAFETY FACTOR: ***1.5***
TRENCH TYPE: ***5***
DEPTH OF BURY: ***4 FT.***
TEST PRESSURE: ***200 PSI***

SCALE IN FEET

SCALE: 1"=50'

LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESMT.
	ESMT.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNTY, TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS

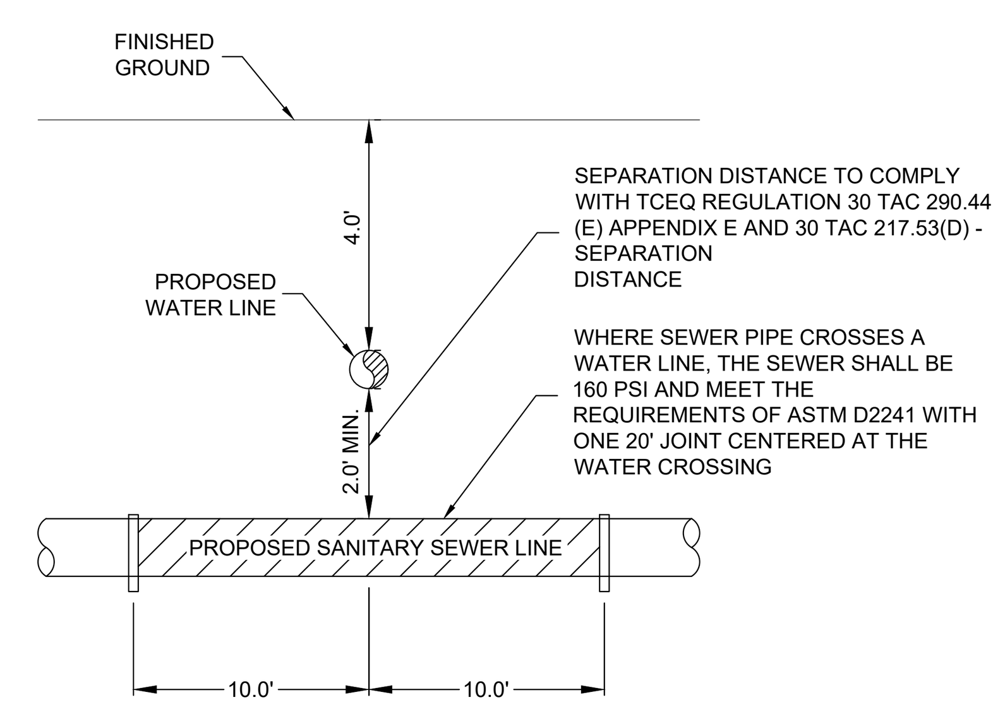


TYPICAL WATER CROSSING DETAIL B

NTS

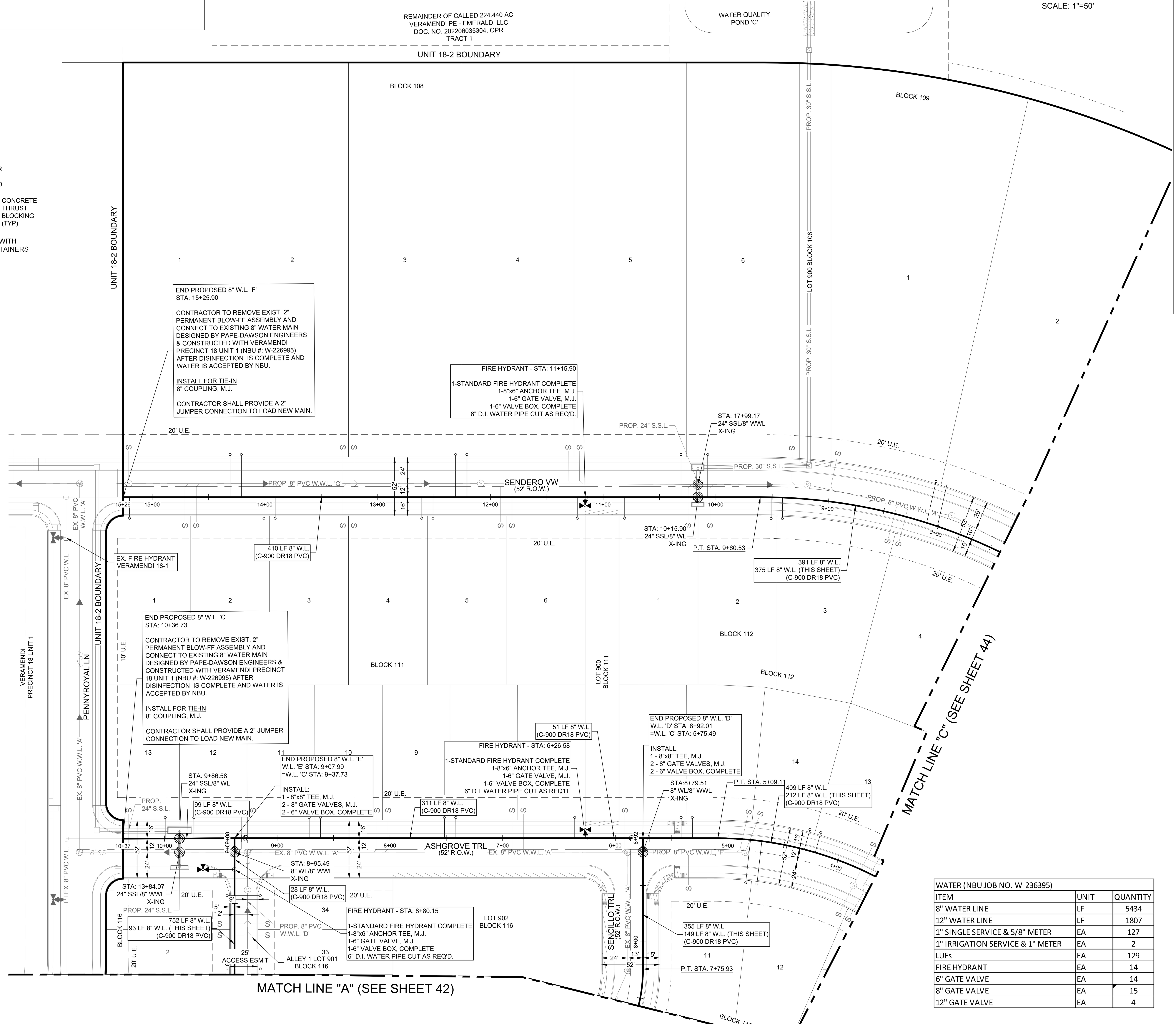
NOTE:

1. 18' MINIMUM WATER PIPE SEGMENT TO BE CENTERED UNDER WASTEWATER LINE.
2. WASTEWATER PIPE WITHIN NINE FEET OF WATER PIPE ON EITHER SIDE SHALL BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE RATED PIPE.
3. STEEL CASING TO BE USED UNDER STORM DRAIN.
4. ALL AMENITY CENTERS SHALL HAVE R/P BACKFLOW PREVENTION ASSEMBLY CALLED OUT AND DETAILED ON DOMESTIC SERVICES



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NTS



NOTES:

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

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 AN CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
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 TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM TESTS SHALL BE TAKEN EVERY 200 FT FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNELS 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.

NEW BRAUNFELS UTILITIES

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

NBU PRESSURE ZONE:

- PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 4.

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

WATER (NBU JOB NO. W-236395)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5434
12" WATER LINE	LF	1807
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 1" METER	EA	2
LUEs	EA	129
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	15
12" GATE VALVE	EA	4

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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOIN RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL ENSURE THAT ALL TEE'S, BEND'S, VALVE'S, ETC. HAVE A MINIMUM OF 5' OF PIPE WITH NO JOINTS AT EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY THE DEVELOPER'S ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE JOINT RESTRAINTS WITH THE DEVELOPER'S ENGINEER.

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

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

VERAMENDI PRECINCT 18 UNIT 2

WATER LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE

REVISIONS

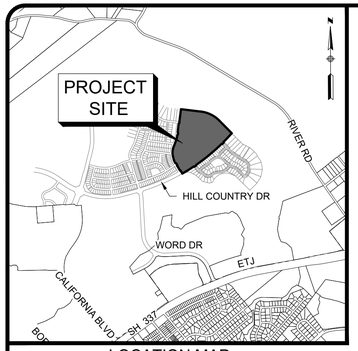
DATE: 10/28/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: th. Water Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
10/28/2024

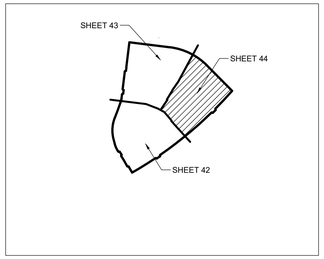
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

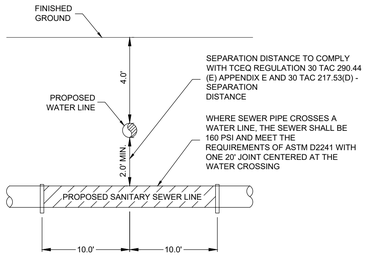
JOB NUMBER: SA3856.0402

FOR PERMIT

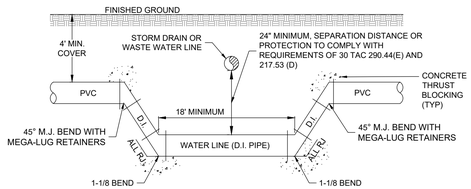


LOCATION MAP
N.T.S.





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



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TYPICAL WATER CROSSING DETAIL B
NTS

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JOINT RESTRAINT TABLE

JOINT (TYPE)	PIPE MATERIAL	PIPE SIZE	RESTRAINT DISTANCE	LENGTH ALONG RUN
11.25°BEND	PVC	8"	3'	NA
22.5°BEND	PVC	8"	5'	NA
45°BEND	PVC	8"	10'	NA
TEE	PVC	8"x8"x8"	36'	5'
VERTICAL OFFSET SYSTEM RETURN	DI	8"	4' LOWER BENDS 21' UPPER BENDS	NA
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RESTRAINT LENGTH VALUES:

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TRENCH TYPE: ***5***
DEPTH OF BURY: ***4 FT.***
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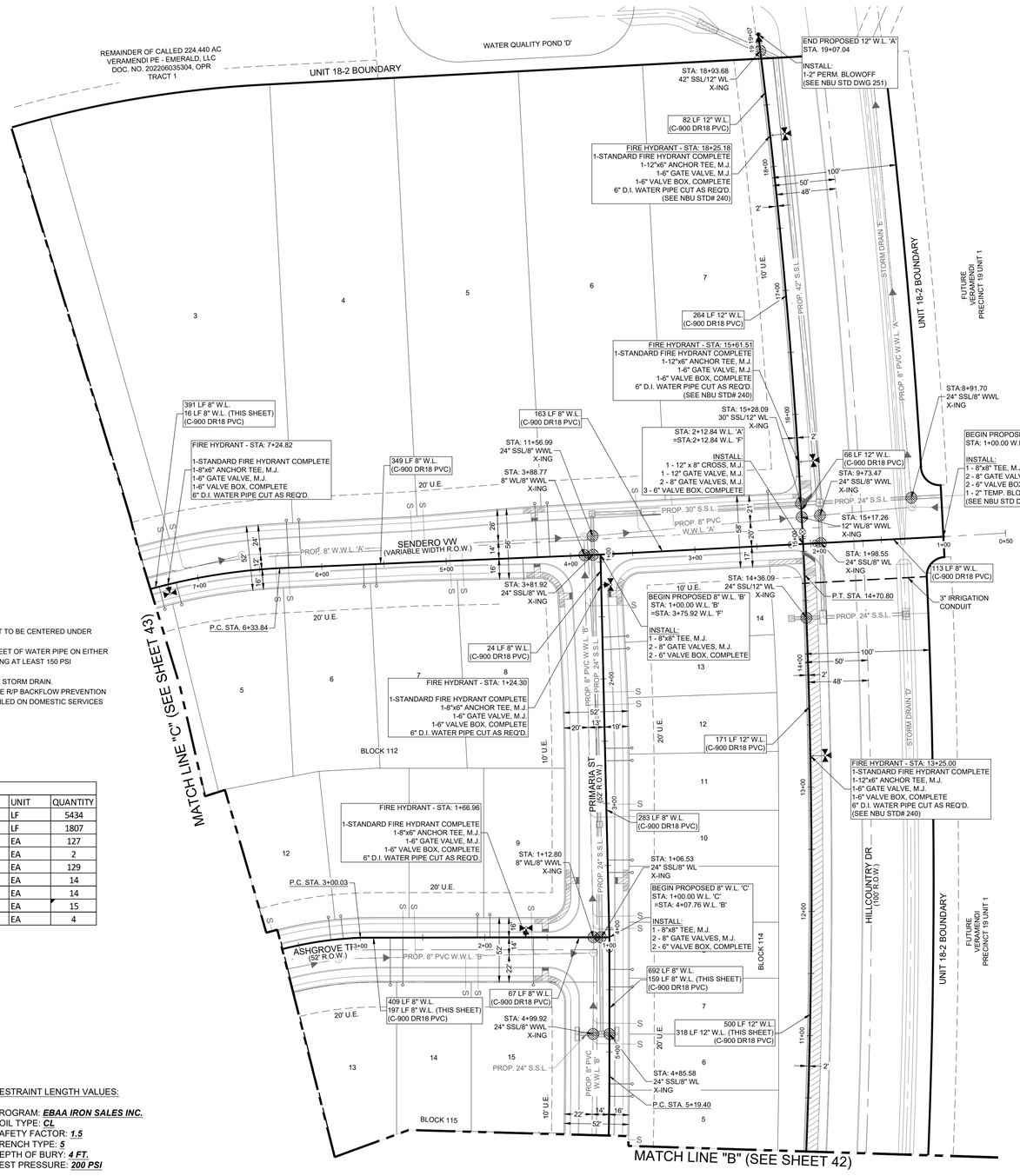

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
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		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
OU	OU	OVERHEAD ELECTRIC
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NOTES:

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VERAMENDI PRECINCT 18 UNIT 2

WATER LAYOUT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 10/28/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 06_Water Layout.dwg

10/28/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 44 OF 70 SHEETS

FOR PERMIT

K:\SA3856 sos projects\UMD2 verramendi precinct 18-21\06 site development plans\dwg-sheets\sh_Water Layout.dwg
Last Modified: Oct 28, 24 - 15:31
Plotted: Oct 28, 24 - 15:31

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.

NEW BRAUNFELS UTILITIES

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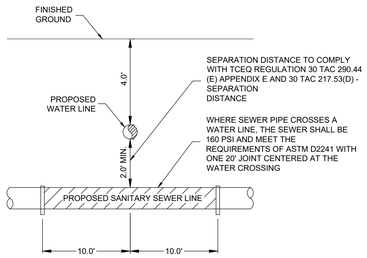
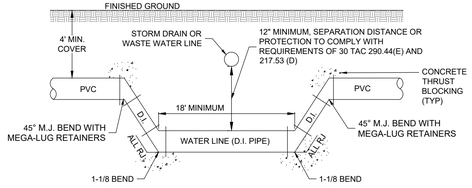


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



TYPICAL WATER CROSSING DETAIL B
NTS

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ITEM	UNIT	QUANTITY
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NOTE:
1. 18' MINIMUM WATER PIPE SEGMENT TO BE CENTERED UNDER WASTEWATER LINE.
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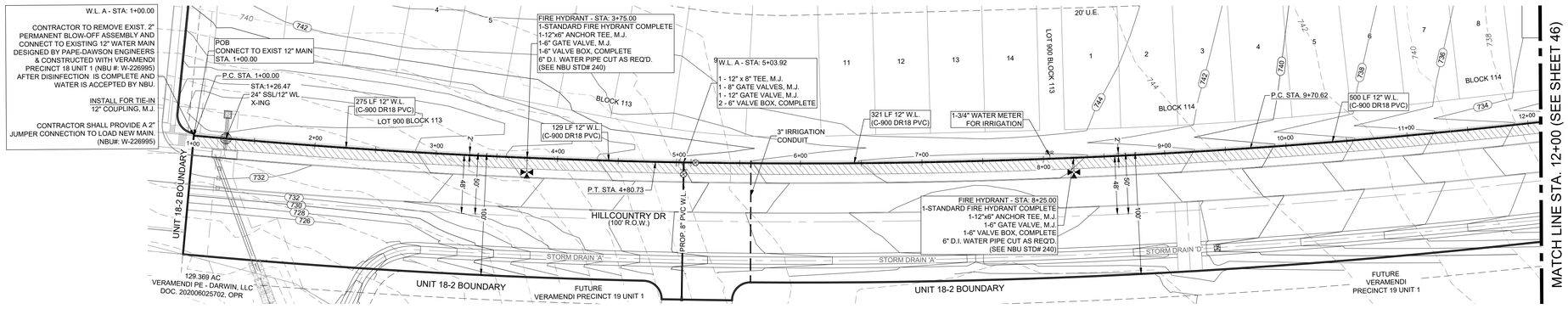

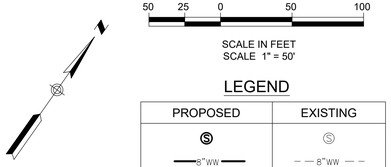

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
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	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESMT	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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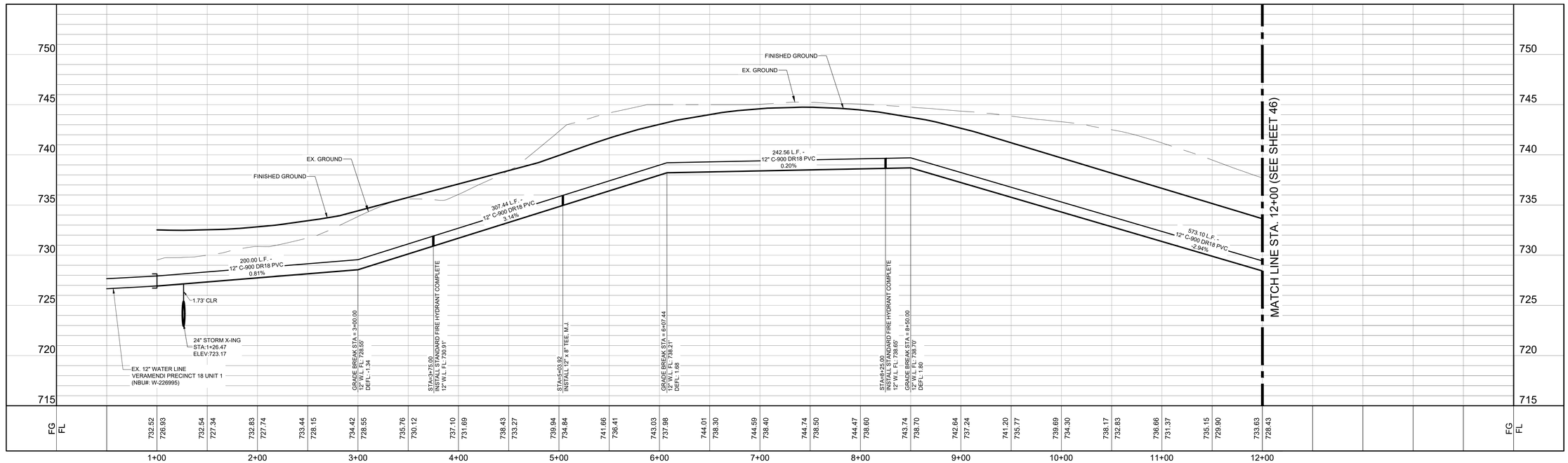
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

WATER LINE 'A' HILL COUNTRY STA. 1+00 TO 12+00



FOR PERMIT

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 45 OF 70 SHEETS

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: ML
CHECKED BY: PGF
DRAWING NAME: sh_Water P&P_Hill Country.dwg

09/27/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

VERAMENDI PRECINCT 18 UNIT 2

WATER LINE 'A' HILL COUNTRY PLAN & PROFILE
STA. 1+00 TO 12+00

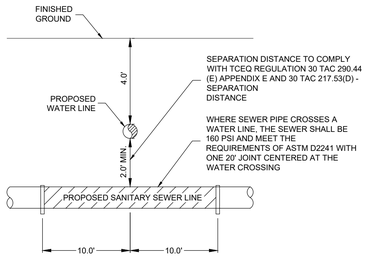
K:\SAJDOB_KSA Projects\SA02 Veramendi Precinct 18-21\400 Site Development Plans\Civil\Sh_Water P&P_Hill Country.dwg
Plotted: Sep 26, 24 - 14:42:47
Last Modified: Aug 28, 24 - 19:17
By: Nathan Gonzales

GENERAL NOTES:

1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL DD-834-01.
2. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
3. ALL VALVES SHALL READ "OPEN RIGHT".
4. ALL FIRE HYDRANTS SHALL BE PAINTED APPROPRIATE SAWS COLORS.
5. FIRE HYDRANTS AND VALVE BOXES TO BE RAISED TO THE PROPOSED TOP OF PAVEMENT OR GROUND ELEVATION.
6. ALL WATER PIPE TO BE C-900, DR-18, CLASS 235 UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL VERIFY GRAVITY INVERTS PRIOR TO CONSTRUCTION AND NOTIFY CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES.
8. CONTRACTOR TO REFERENCE MOST CURRENT SAWS DETAILS & SPECIFICATIONS. FOR SEWER MANHOLES REFERENCE SAWS STANDARD SPECIFICATION ITEM NO. 852.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING SAWS STANDARD SPECIFICATION 804 FOR EXCAVATION, TRENCHING AND BACKFILLING REQUIREMENTS AND STANDARD SPECIFICATION 812 FOR WATER/SEWER SEPARATION REQUIREMENTS.

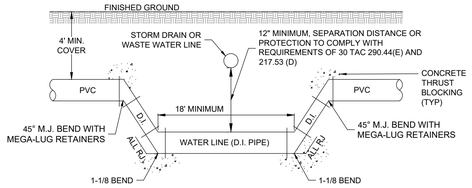
NEW BRAUNFELS UTILITIES

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



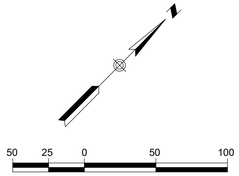
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

WATER (NBU JOB NO. W-236395)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5434
12" WATER LINE	LF	1807
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 3/4" METER	EA	2
LUEs	EA	129
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	15
12" GATE VALVE	EA	4



TYPICAL WATER CROSSING DETAIL B
NTS

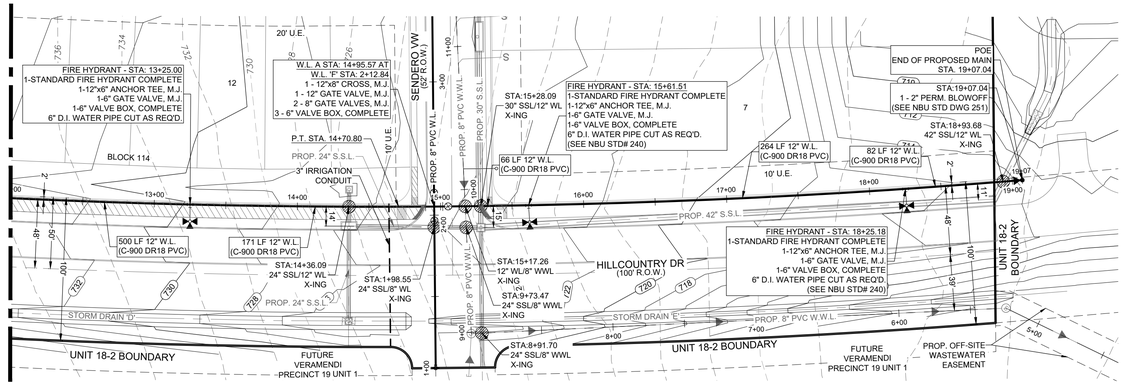
NOTE:
1. 18' MINIMUM WATER PIPE SEGMENT TO BE CENTERED UNDER WASTEWATER LINE.
2. WASTEWATER PIPE WITHIN NINE FEET OF WATER PIPE ON EITHER SIDE SHALL BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE RATED PIPE.
3. STEEL CASING TO BE USED UNDER STORM DRAIN.
4. ALL AMENITY CENTERS SHALL HAVE R/P BACKFLOW PREVENTION ASSEMBLY CALLED OUT AND DETAILED ON DOMESTIC SERVICES



SCALE IN FEET
SCALE 1" = 50'

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



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

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

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

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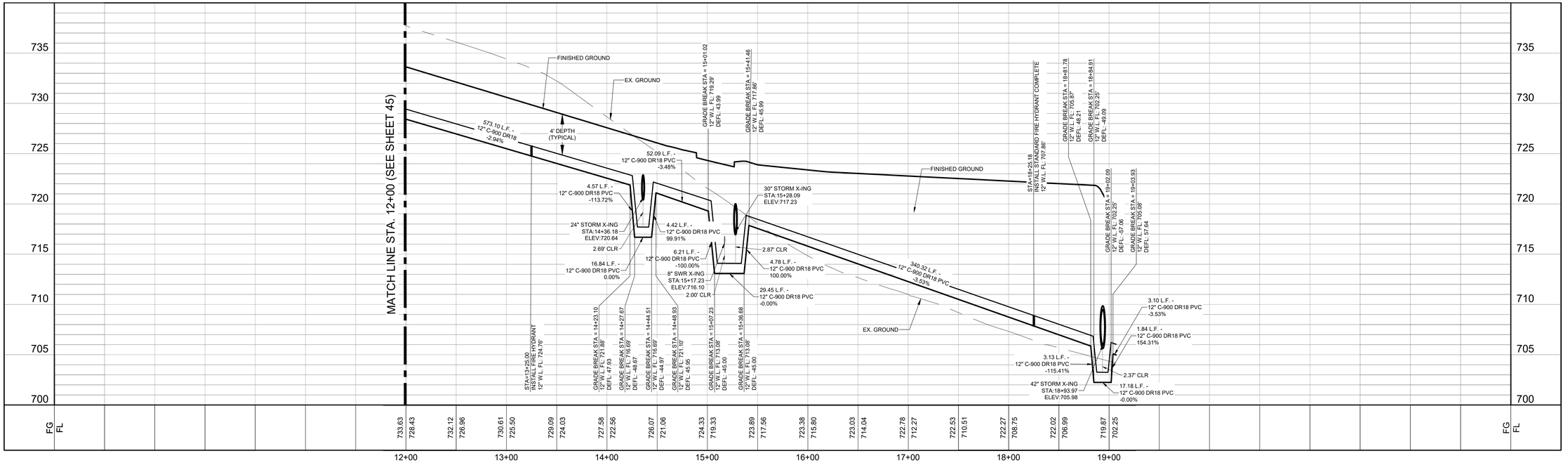
WATER LINE 'A' HILL COUNTRY 12+00 TO END



FOR PERMIT

K:\SA3856.402A Properties\0402 Veramendi Precinct 18-21\436 Site Development Plans\DWG-Sheets\pn_Water P&P_Hill Country.dwg
Plotted: Sep 26, 24 - 10:17
Last Modified: Aug 28, 24 - 19:17
Last Saved By: Nic Gallegos

VERAMENDI PRECINCT 18 UNIT 2

WATER LINE 'A' HILL COUNTRY PLAN & PROFILE
12+00 TO END

NO.	DESCRIPTION	BY	DATE

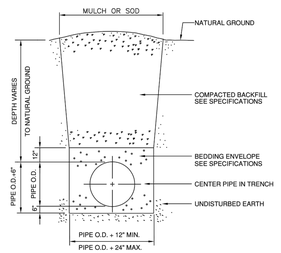
DATE: 9/20/2024
DESIGNED BY: NG
DRAWN BY: ML
CHECKED BY: PGF
DRAWING NAME: 00_Master P&P_Hill Country.dwg

09/27/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

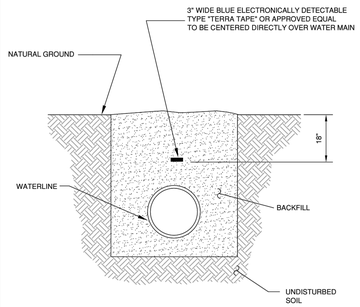
SHEET NO. 46
OF 70 SHEETS



TYPICAL TRENCH WITH UNFINISHED SURFACE

DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: TYPICAL TRENCH WITH UNFINISHED SURFACE	
UPDATED: 4-30-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 422

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

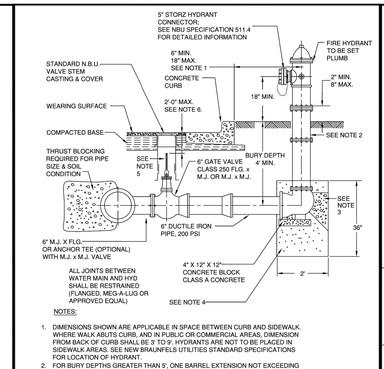


WATERLINE SURFACE IDENTIFICATION DETAIL

NOT TO SCALE

DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: PLACEMENT OF INDUCTIVE TRACER DETECTION TAPE	
UPDATED: 5-23-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 424

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

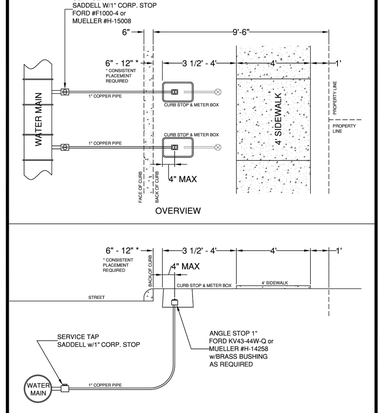


NOTES:

1. DIMENSIONS SHOWN ARE APPLICABLE IN SPACE BETWEEN CURB AND SIDEWALK. WHERE WALK ABUTS CURB, AND IN PUBLIC OR COMMERCIAL AREAS, DIMENSION FROM BACK OF CURB SHALL BE 3' TO 9'. HYDRANTS ARE NOT TO BE PLACED IN SIDEWALK AREAS. SEE NEW BRAUNFELS UTILITIES STANDARD SPECIFICATIONS FOR LOCATION OF HYDRANT.
2. FOR BURY DEPTHS GREATER THAN 5', ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
3. CONCRETE BLOCKING WITH A MIN. 1 1/2 FT² BEARING AREA. CLASS A CONCRETE. DO NOT BLOCK DRAIN HOLES.
4. CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND THE BOTTOM OF THE HYDRANT FOR A RADIUS OF AT LEAST 12" AND EXTEND AT LEAST 12" ABOVE THE OUTLET. DO NOT BLOCK DRAIN HOLES.
5. WELD SOCKET 2 1/2" X 2" DEEP TO 1" SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 15'.
6. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18" AND 24" FROM FINISHED GRADE.

DRAWN BY: D.Amaro	APPROVED BY:	STANDARD DRAWING: STANDARD FIRE HYDRANT INSTALLATION WITH 5" STORZ CONNECTOR	
DRAWING DATE: 4-10-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 240

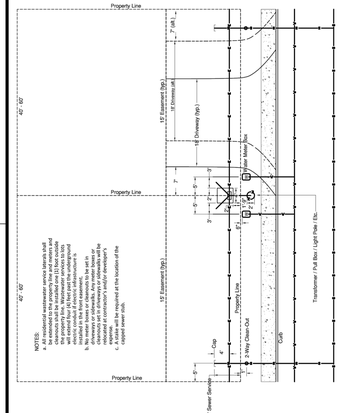
NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING



SERVICE TAP: METER BOX PLACEMENT BETWEEN SIDEWALK AND CURB

DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: SERVICE TAP: METER BOX PLACEMENT BETWEEN SIDEWALK AND CURB	
UPDATED: 5-3-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 243

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING



NARROW LOT WATER & SEWER SERVICE ALIGNMENT SCENARIO

DRAWN BY: D. A.	APPROVED BY: N. P.	STANDARD DRAWING: NARROW LOT WATER & SEWER SERVICE ALIGNMENT SCENARIO	
DATE: 12/20/18	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 410

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

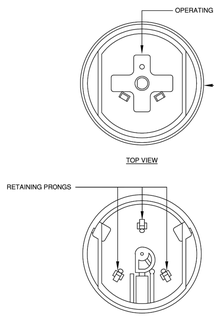
FLOODPLAIN NOTE:

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

NOTES:

PER NBU WATER NOTES (DATED 5/16/19)

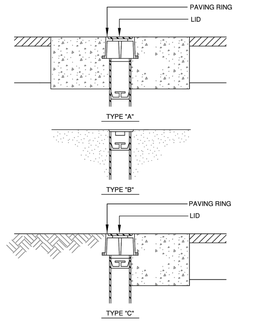
1. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
2. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH, NO ROCKS OR STONES HAVING ANY DIMENSION LARGER THAN 6 INCHES AT THE LARGEST DIMENSION.



DEBRIS CAP INSTALLATION

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: DEBRIS CAP INSTALLATION	
UPDATED: 4-10-03	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO.: 234

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING



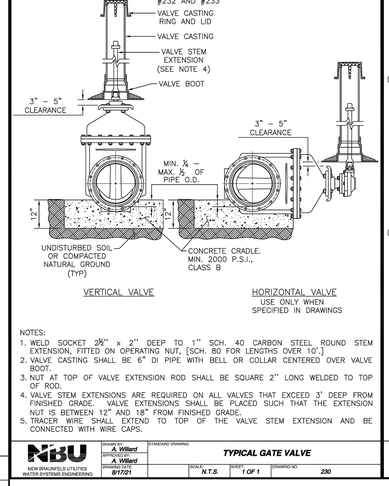
NOTES:

1. DEBRIS CAP SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATION.
2. FLEXIBLE SKIRT SHALL BE TRIMMED TO PROVIDE A SMOOTH CONTACT WITH THE INTERIOR DIAMETER OF THE PIPE.
3. THE DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, INC., PHOENIX, ARIZONA OR EQUAL.
4. THE DEBRIS CAP SHALL BE COMPRISED OF A HOLLOW MEMBER HAVING A CYLINDRICAL OUTER SURFACE, A CLOSURE FOR ONE END AND THREE POINT RESILIENT CONTACT PADS PROJECTING FROM THE OUTER SURFACE. THE CAP SHALL HAVE A FLEXIBLE SKIRT PROVIDING AN OUTWARD SEAL PREVENTING DEBRIS FROM GETTING PAST THE CAP. THE CAP MUST WITHSTAND, WITHOUT SLIPPAGE, A MINIMUM VERTICAL FORCE OF 50 lbs, AT A LOADING RATE OF 1.0 in PER MINUTE. THE CAP SHALL BE MOLDED USING GENERAL ELECTRIC ABS #NM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDRAD LOCATION COIL.

DEBRIS CAP INSTALLATION

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: DEBRIS CAP INSTALLATION	
UPDATED: 4-10-03	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO.: 234

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING



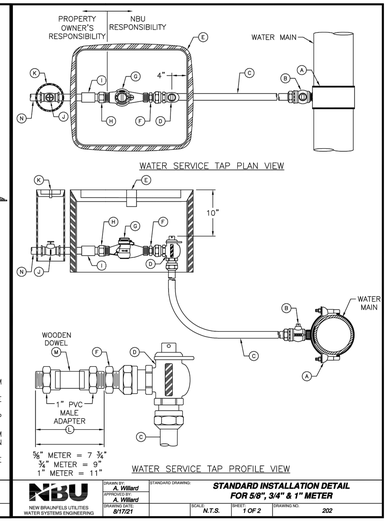
NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.
5. TRACER WIRE SHALL EXTEND TO TOP OF THE VALVE STEM EXTENSION AND BE CONNECTED WITH WIRE CAPS.

TYPICAL GATE VALVE

DRAWN BY: A. Willard	APPROVED BY: A. Willard	STANDARD DRAWING: TYPICAL GATE VALVE	
DRAWING DATE: 8/17/21	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 230

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING



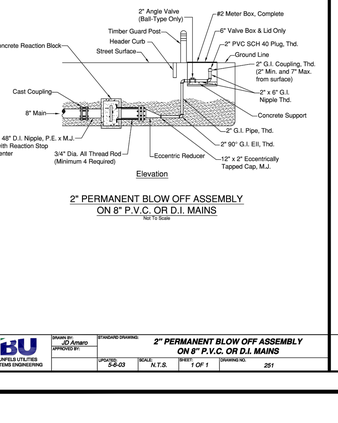
STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER

DRAWN BY: A. Willard	APPROVED BY: A. Willard	STANDARD DRAWING: STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER	
DRAWING DATE: 8/17/21	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO.: 202

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

NBU Water Notes

1. The point of delivery for an owned and maintained water line is typically the domestic or irrigation water meter, fire line up to the containment backflow device, or hydrant meter or as determined by NBU.
2. Water infrastructure must be constructed in accordance with the NBU Water Connection Policy.
3. All water mains shall be constructed of AWWA C900 DR 14 PVC, AWWA C900 DR 18 PVC or minimum CL 250 Ductile Iron Pipe.
4. All residential water services shall be single services constructed of 1-inch ASTM B88 Type K Copper tubing. 1-inch AWWA C901 SDR9 CTS polyethylene tubing may be permitted with special approval from NBU only.
5. All 2-inch service lines shall be constructed of AWWA C901 SDR9 CTS polyethylene tubing.
6. Water mains shall have a minimum of 48 inches of cover to finished grade. Concrete encasement will be required if minimum cover cannot be met.
7. Pipe bedding of water lines shall be compliant with NBU specification No. 120, "Utility Trenching and Backfill".
8. Contractor shall install line stoppers at their cost for an outage during construction if system valves are not available or the existing valves do not function. Line stoppers will be required based on the following criteria:
   a. If the number of residential customers affected is greater than 20 and expected to last more than 4 hours.
   b. If any commercial customers are affected by the outage then the use of line stoppers will be determined on a case by case basis.
   c. If any critical care customers are affected by the outage then the use of line stoppers will be determined on a case by case basis.
   d. System conditions may require a line stopper and may not be known until construction commences.
9. Contractor will keep the area on top of, around, and within the water meter box free of all objects and debris.
10. Placement of meter boxes or vaults in sidewalks, driveways, drive aisles, parking areas, or other areas exposed to vehicular traffic is not permitted. Any meter boxes or vaults set in these areas will be relocated at the contractor's and/or developer's expense.
11. Meter boxes or vaults must be set at proposed grade. Any meter boxes that are not set at the final grade will be adjusted at contractor's and/or developer's expense.
12. Meter boxes for 5/8-inch and 1-inch meters must be DFW Plastics DFW38C-14-AF1MP.
13. Meter boxes for 1.5" meters must be DFW Plastics DFW65C-14-AF1MP.
14. Meter boxes for 2" meters must be DFW Plastics DFW1730F-12-AF1MP.
15. Thrust blocks are not permitted without special approval. Joints must be restrained with restraining systems approved by NBU and restraint length shall be submitted to NBU at the time of plan submittal.
16. Contractor shall install tracer wire on top of non-ferrous water mains in accordance with NBU specifications. Tracer wire should run from valve to valve and exit at a tracer wire access point. The tracer wire should be attached to the top of the pipe using tape. Excess wire should be coiled within the tracer wire access point riser.
17. Contractor shall coordinate with the assigned water/wastewater inspector for completion of the Field Acceptance Checklist. All testing and acceptance shall conform to NBU Specifications, including but not limited to:
    a. Bacteriological Testing
    b. Hydrostatic Testing (performed valve to valve)
18. The NBU water system shall be protected from hazards with appropriate backflow prevention assemblies installed on all irrigation systems, fire suppression systems and multi-unit complexes along with multi-level properties on the domestic meter containment. NBU can assist with the decision on appropriate backflow assemblies on a case-by-case basis. Contact NBU backflow prevention specialist for more details. Email questions to crossconnection@nbutexas.com
19. All backflow prevention assemblies shall be tested upon installation and reports sent to NBU via the online tracking system. Contact an NBU backflow prevention specialist for more details. Email questions to crossconnection@nbutexas.com
20. All residential and commercial properties shall have a Customer Service Inspection certificate (CSI Inspection) completed upon completion of the building or home structure. Contact an NBU backflow prevention specialist for more details. Email questions to crossconnection@nbutexas.com



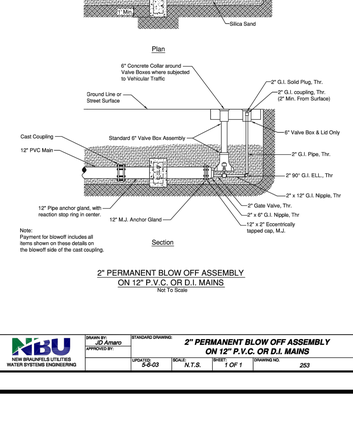
2" PERMANENT BLOW OFF ASSEMBLY ON 8" P.V.C. OR D.I. MAINS

Not To Scale

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: 2" PERMANENT BLOW OFF ASSEMBLY ON 8" P.V.C. OR D.I. MAINS	
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 251

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

Notes:
1. Embed all exterior metal surfaces in silica sand.
2. All reinforcing bars in concrete reaction block shall be #4.



Note:
Payment for blowoff includes all items shown on these details on the blowoff side of the cast coupling.

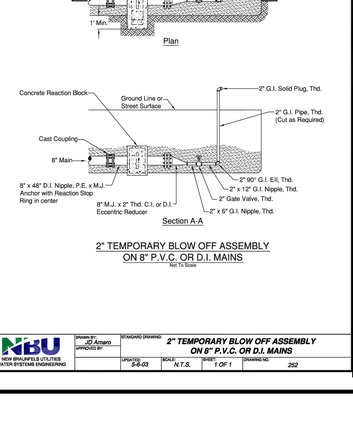
2" PERMANENT BLOW OFF ASSEMBLY ON 12" P.V.C. OR D.I. MAINS

Not To Scale

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: 2" PERMANENT BLOW OFF ASSEMBLY ON 12" P.V.C. OR D.I. MAINS	
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 253

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

Notes:
1. Embed all exterior metal surfaces in silica sand.
2. All reinforcing bars in reaction block Shall be #4.



2" TEMPORARY BLOW OFF ASSEMBLY ON 8" P.V.C. OR D.I. MAINS

Not To Scale

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: 2" TEMPORARY BLOW OFF ASSEMBLY ON 8" P.V.C. OR D.I. MAINS	
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 252

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

MATERIALS LIST:

A. 1" SERVICE CLAMP
B. 1" CORPORATION STOP
C. 1" TYPE "K" COPPER WATER SERVICE PIPE
D. 1" X 1" ANGLE METER STOP
E. METER BOX AND LID – DFW PLASTICS #DFW1600X.12.1A2 (STANDARD)
   METER BOX AND LID – DFW PLASTICS #DFW1219-10-3EA (INCIDENTAL TRAFFIC RATED)

MATERIALS TO BE INSTALLED BY PLUMBER:

F. BRASS METER BUSHING – SIZE AS REQUIRED TO CONNECT ANGLE METER STOP TO METER. A 1" X 3/4" METER BUSHING IS REQUIRED AT THE ANGLE STOP FOR FOR ALL 5/8" AND 3/4" METERS.
G. WATER METER PURCHASED FROM NBU
H. BRASS WATER METER COUPLING MALE IPT x SWIVEL COUPLING NUT
I. SINGLE CHECK BACKFLOW DEVICE
J. PROPERTY OWNER'S CUT OFF VALVE – 1" BRASS GATE VALVE
K. PROPERTY OWNER'S CUT OFF VALVE BOX AND LID – NDS #D109-G
L. TEMPORARY METER SPACER (REQUIRED TO ASSURE METER WILL FIT APPROPRIATELY)
M. 1" WOODEN DOWEL (SHOW ADDRESS ON DOWEL USING WATERPROOF MARKER)
N. 1" PIPE MEETING CITY OF NEW BRAUNFELS PLUMBING CODE REQUIREMENTS

NOTES:

1. SERVICE PIPE SHALL BE COPPER TUBE SIZE. IT SHALL BE ANNEALED SEAMLESS TYPE "K" COPPER TUBING MEETING THE CURRENT ASTM B88 STANDARD WITH NO SWEAT OR SOLDERED JOINTS AND PLACED IN A STRAIGHT HORIZONTAL ALIGNMENT AND ALLOWED TO RELAX AND "SNAKE" LOOSELY IN THE TRENCH.
2. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
3. TOP OF BOXES SHOULD BE 2" ABOVE GROUND OR FLUSH WITH PAVEMENT SURFACE.
4. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY THE SPECIFICATIONS; BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SPECIFICATIONS.
5. BOX CONSISTENTLY SPACED 6"–12" BEHIND CURB OR 6" FROM PROPERTY LINE AND OUT OF VEHICULAR TRAFFIC AREA.
6. ANGLE STOP PLACED A MAXIMUM OF 4" FROM BACK OF BOX THAT FACES CURB. TOP OF ANGLE STOP SHOULD BE A MINIMUM OF 10" FROM THE TOP OF METER BOX.
7. METER SIZES TO BE SHOWN ON PLANS.
8. METER BOX CUT OUTS SHALL NOT EXCEED TWO TIMES THE PIPE DIAMETER.

STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER

DRAWN BY: A. Willard	APPROVED BY: A. Willard	STANDARD DRAWING: STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER	
DRAWING DATE: 8/17/21	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO.: 202

NBU — NEW BRAUNFELS UTILITIES, WATER SYSTEMS ENGINEERING

VERAMENDI PRECINCT 18 UNIT 2

WATER DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/31/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 31_Water Details.dwg

07/11/2024

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 47 OF 70 SHEETS

FOR PERMIT

I:\SUBDIVISION\SA3856 Property\SA3856 Veramendi Precinct 18-21\430 Site Development Plans\DWG-Sheets\31_Water Details.dwg
Plotted: Jul. 03, 24 - 14:48
Last Modified: Jul. 03, 24 - 14:45
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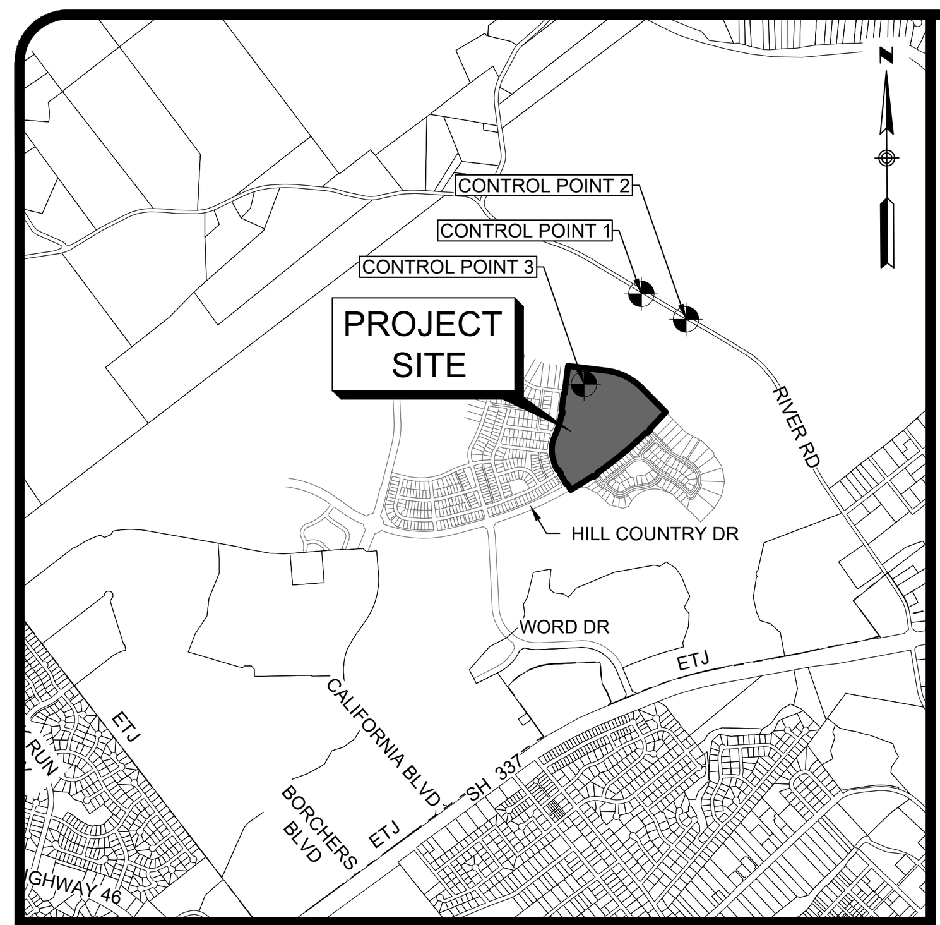
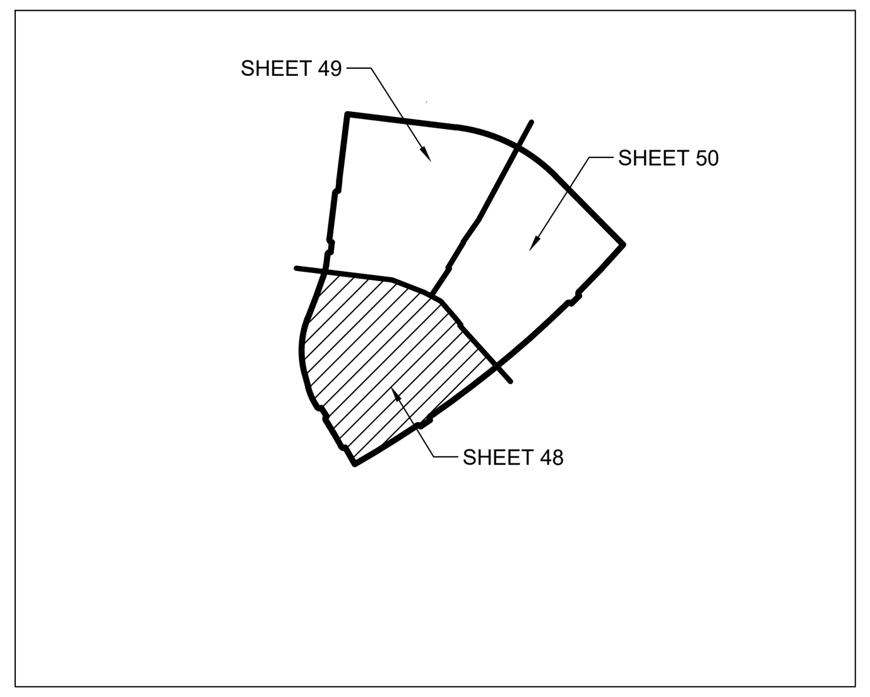
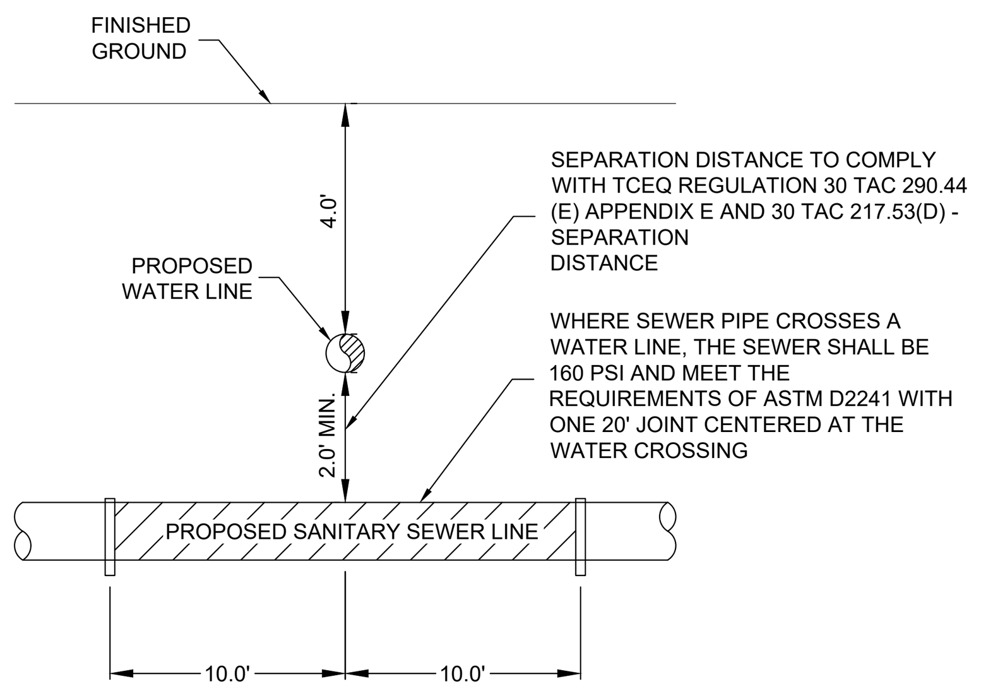


LOCATION MAP
N.T.S.



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

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



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

50 25 0 50 100
SCALE IN FEET
SCALE 1" = 50'

LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
8" WW	8" WW	SANITARY SEWER LINE
WL	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
		STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
TMH		TOP OF MANHOLE
EX.		EXISTING
U.E.		UTILITY EASEMENT
ESM'T		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.
9. MANHOLES MUST BE CONSTRUCTED OF OR LINED WITH CORROSION RESISTANT MATERIAL. WHERE NEW CONSTRUCTION CONNECTS TO AN EXISTING MANHOLE THAT IS NOT CONSTRUCTED OF A CORROSION RESISTANT MATERIAL. THE EXISTING MANHOLE MUST BE LINED WITH OR REPLACED WITH A CORROSION RESISTANT MATERIAL.

WASTEWATER (NBU JOB NO. WW-236396)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4313
6" WASTEWATER SERVICE	EA	127
LUEs	EA	127
48" MANHOLE	EA	23

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

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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LAYOUT (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

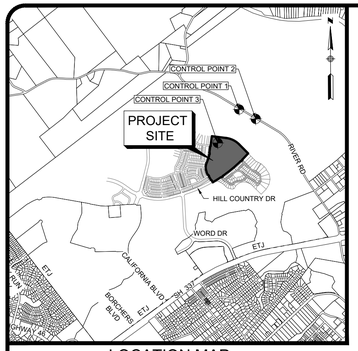
DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_WastewaterLayout.dwg

09/27/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

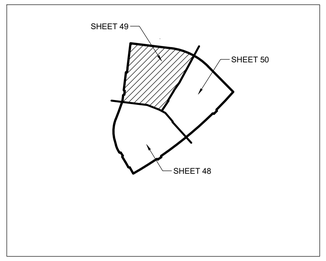
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

FOR PERMIT



LOCATION MAP
N.T.S.



WASTEWATER (NBU JOB NO. WW-236396)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4313
6" WASTEWATER SERVICE	EA	127
LUEs	EA	127
48" MANHOLE	EA	23

50 25 0 50 100

SCALE IN FEET
SCALE 1" = 50'

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 LED)
		GUY WIRE
OU	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESMT	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

NOTES:

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TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

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

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

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LAYOUT (SHEET 2 OF 3)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_03wastewater_layout.dwg

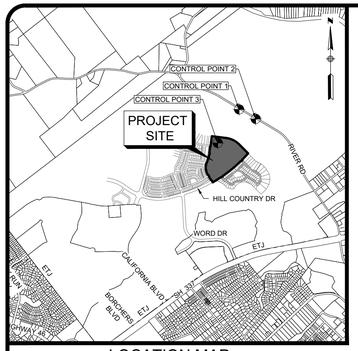
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colorado Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

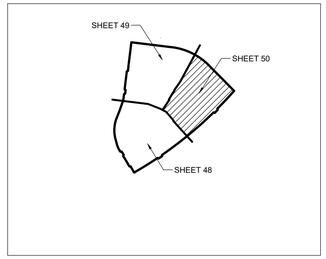
JOB NUMBER: SA3856.0402

SHEET NO. 49
OF 70 SHEETS

K:\SA3800_ASA Properties\0402 Verramendi Precinct 18-2\426 Site Development Plans\DWG-Sheets\sh_Wastewaterlayout.dwg
Last Modified: Jul 10, 24 - 14:58
Last Modified By: mpatel



LOCATION MAP
N.T.S.



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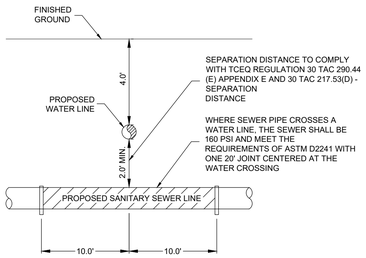
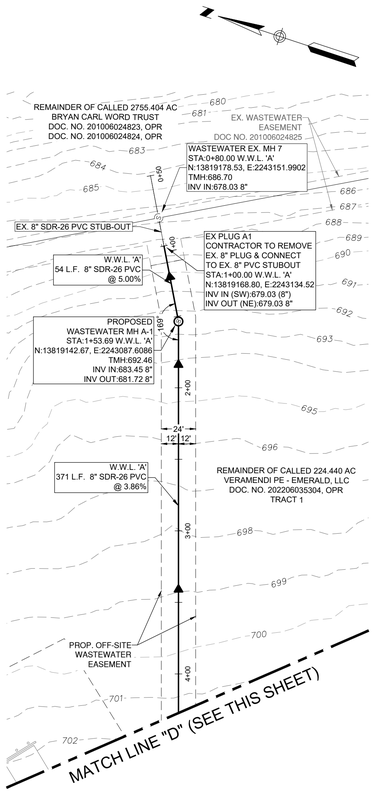
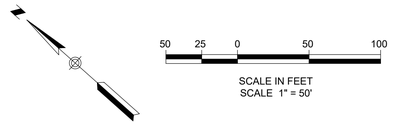


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

WASTEWATER (NBU JOB NO. WW-236396)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4313
6" WASTEWATER SERVICE	EA	127
LUEs	EA	127
48" MANHOLE	EA	23





LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
TMH	TOP OF MANHOLE	
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
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9. MANHOLES MUST BE CONSTRUCTED OF OR LINED WITH CORROSION RESISTANT MATERIAL. WHERE NEW CONSTRUCTION CONNECTS TO AN EXISTING MANHOLE THAT IS NOT CONSTRUCTED OF A CORROSION RESISTANT MATERIAL. THE EXISTING MANHOLE MUST BE LINED WITH OR REPLACED WITH A CORROSION RESISTANT MATERIAL.

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

TRENCH EXCAVATION SAFETY PROTECTION

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VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LAYOUT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 10/28/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_03wastewaterLayout.dwg

10/28/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

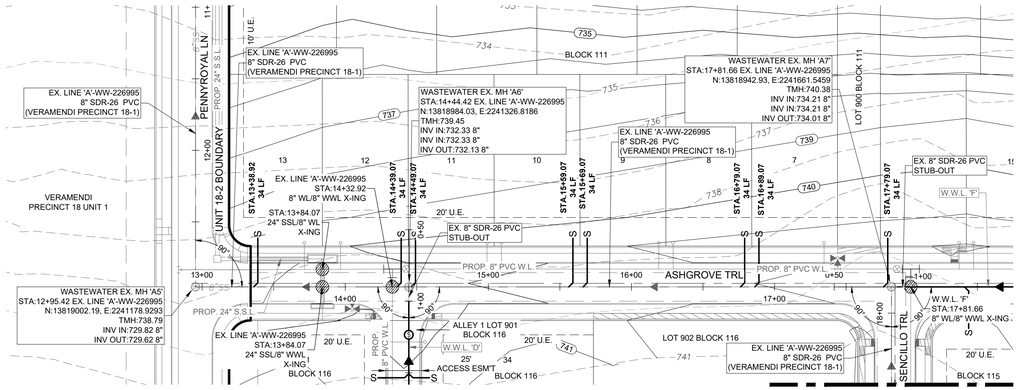
SHEET NO. 50 OF 70 SHEETS

FOR PERMIT

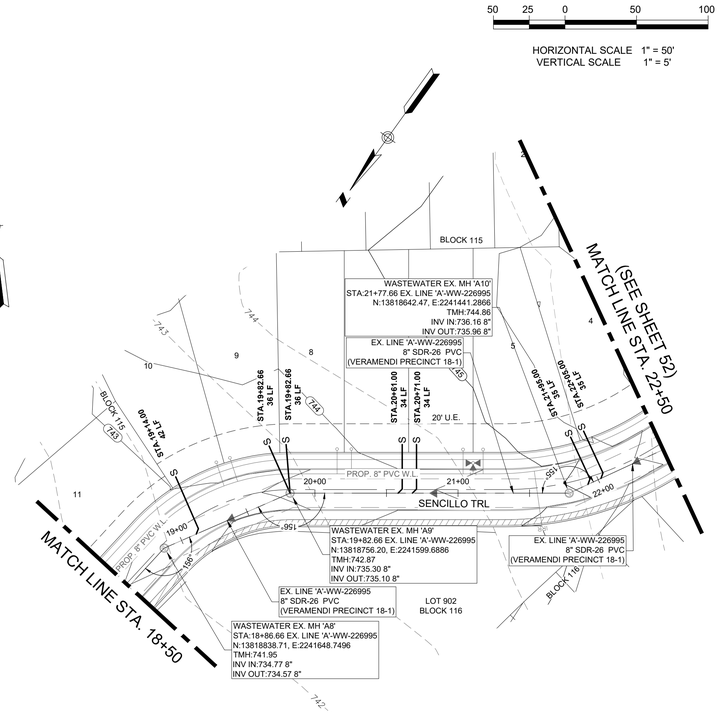
K:\SA3856.xxx projects\0402 veramendi precinct 18-21\426 site development plans\dwg\sheets\sh_06stwaterLayout.dwg
Plotted: Oct. 28, 24 - 15:24
Last Modified: Oct. 28, 24 - 15:24
Data Backfrom: Oct. 28, 24 - 14:54

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.
9. MANHOLE MUST BE CONSTRUCTED OF OR LINED WITH CORROSION RESISTANT MATERIAL. WHERE NEW CONSTRUCTION CONNECTS TO AN EXISTING MANHOLE THAT IS NOT CONSTRUCTED OF A CORROSION RESISTANT MATERIAL, THE EXISTING MANHOLE MUST BE LINED WITH OR REPLACED WITH CORROSION RESISTANT MATERIAL.



MATCH LINE STA. 18+50



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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S C/O	C/O	SANITARY SEWER LATERAL / CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
OU	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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TRENCH EXCAVATION SAFETY PROTECTION

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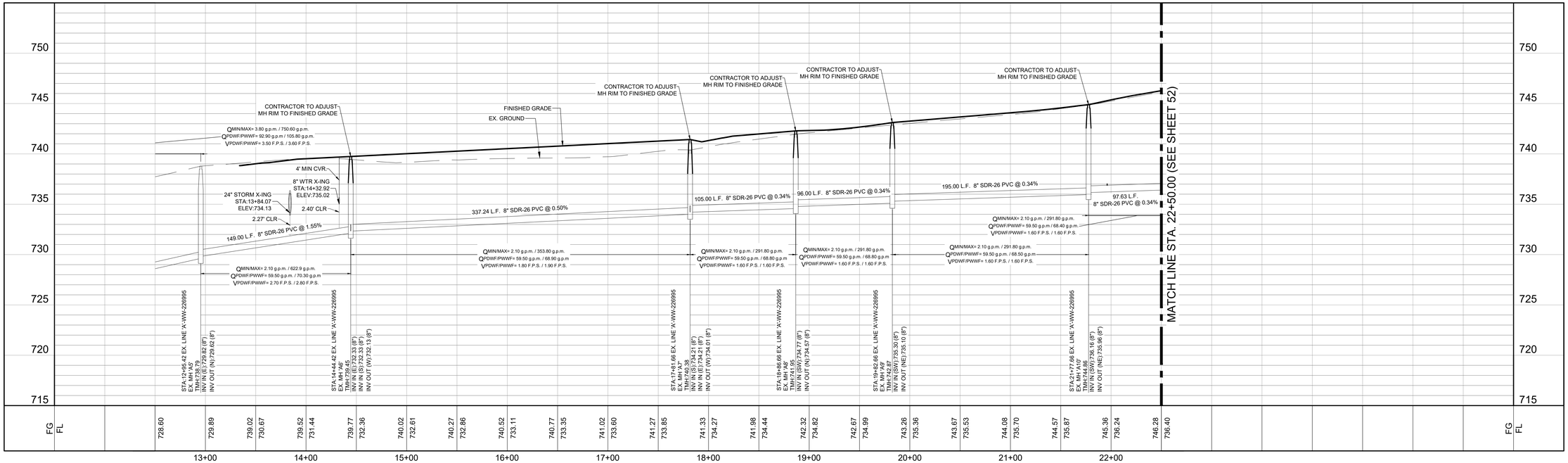
EX. WASTEWATER LINE 'A' STA. 12+50 TO STA. 22+50



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

EX. WASTEWATER LINE 'A' PLAN & PROFILE
STA. 12+50 TO STA. 22+50

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 80_SWWL EX. LINE A'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 51
OF 70 SHEETS

K:\SA3856.A01 Properties\0402 Veramendi Precinct 18-2\450 Site Development Plans\DWG-Sheets\ph_WW EX. LINE 'A'.dwg
Last Modified: May 22, 24 - 10:05
Last Modified By: M.PLATA - M.PLATA

GENERAL NOTES:

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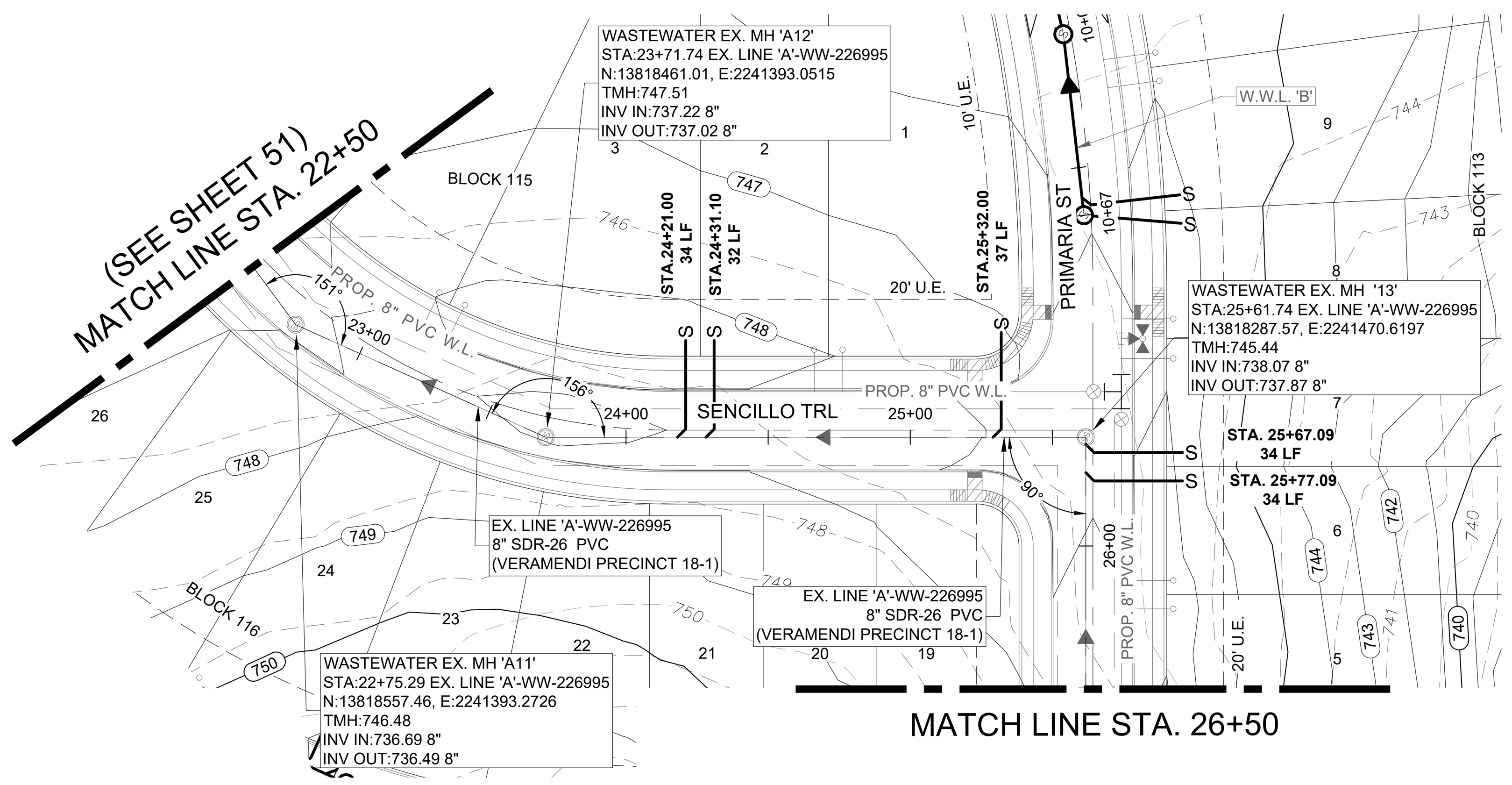

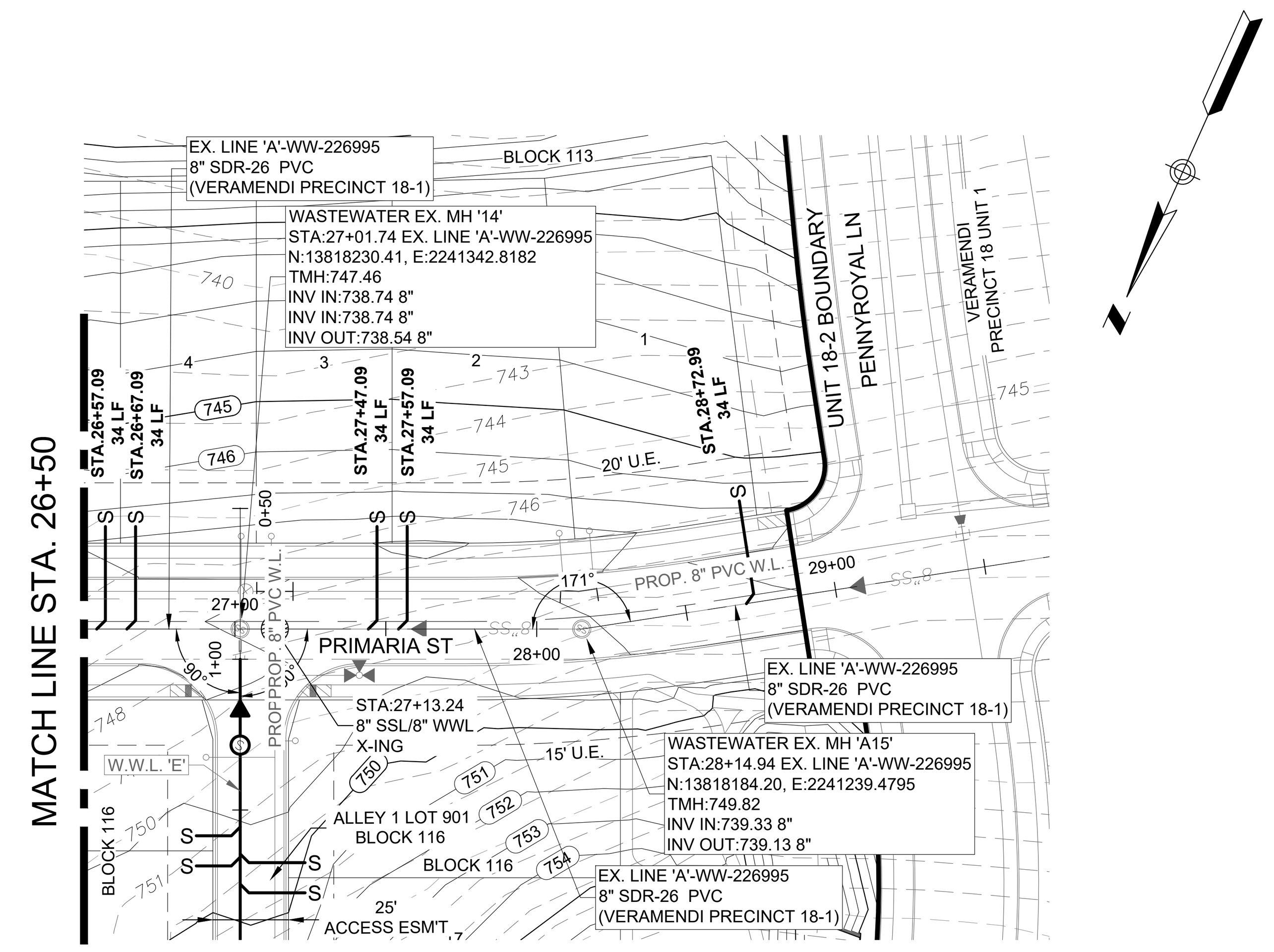

HORIZONTAL SCALE 1" = 50'
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LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
		WATER LINE
		SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
		GAS LINE
		STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
		OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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EX. WASTEWATER LINE 'A' STA. 22+50 TO END

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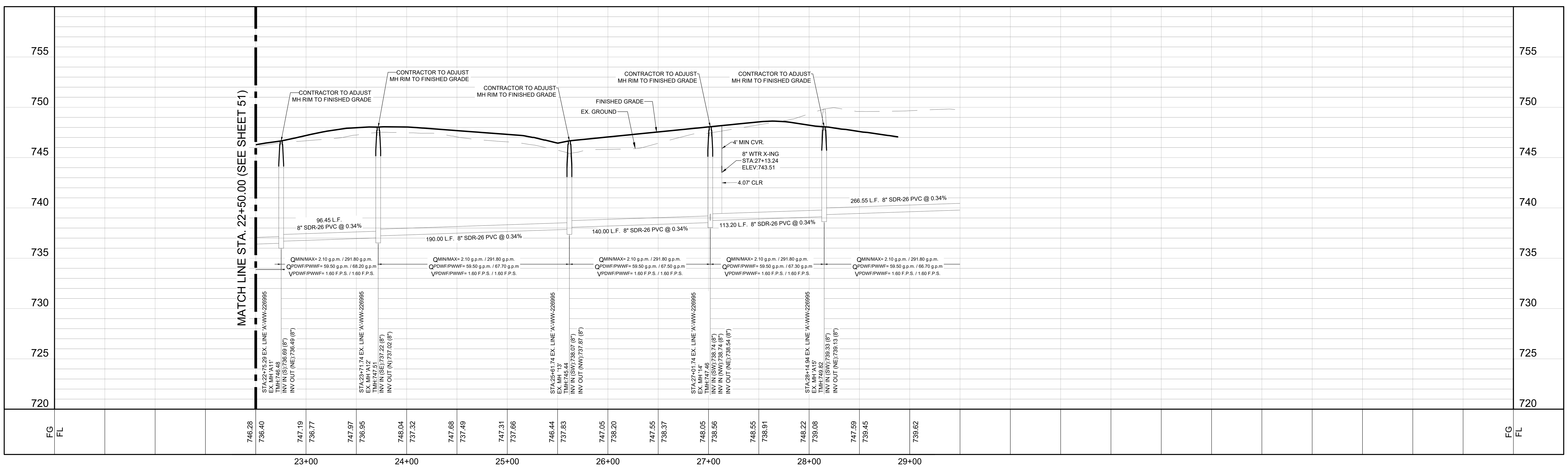

VERAMENDI PRECINCT 18 UNIT 2

EX. WASTEWATER LINE 'A' PLAN & PROFILE STA. 22+50 TO END

REVISIONS: NO. | DESCRIPTION | BY | DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_WWL EX. LINE 'A'.dwg

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

FOR PERMIT

GENERAL NOTES:

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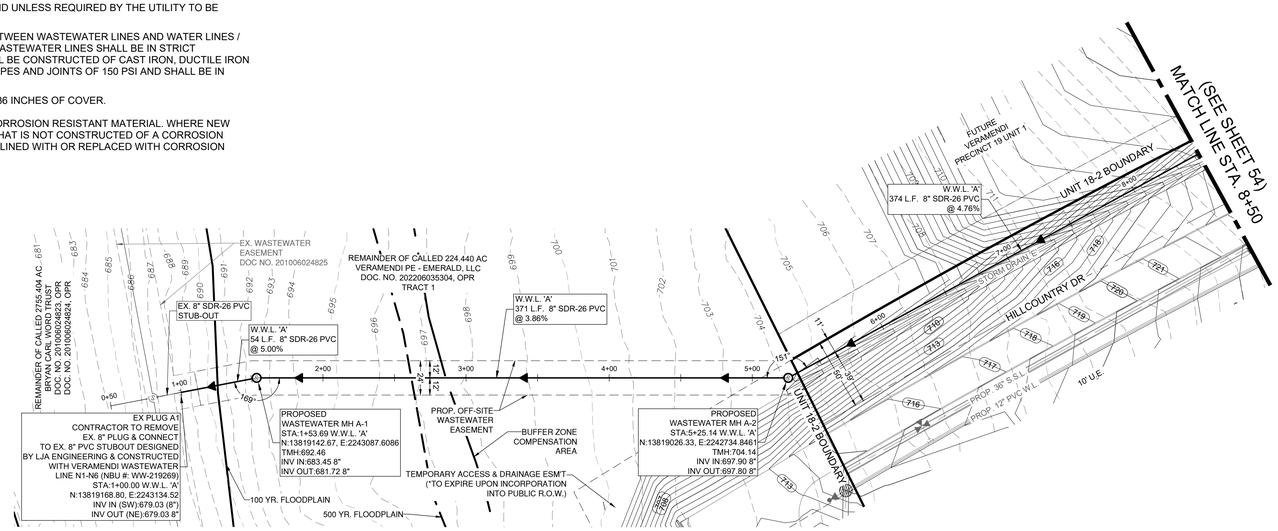

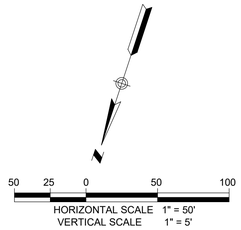

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
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	VOL	VOLUME
	PG	PAGE
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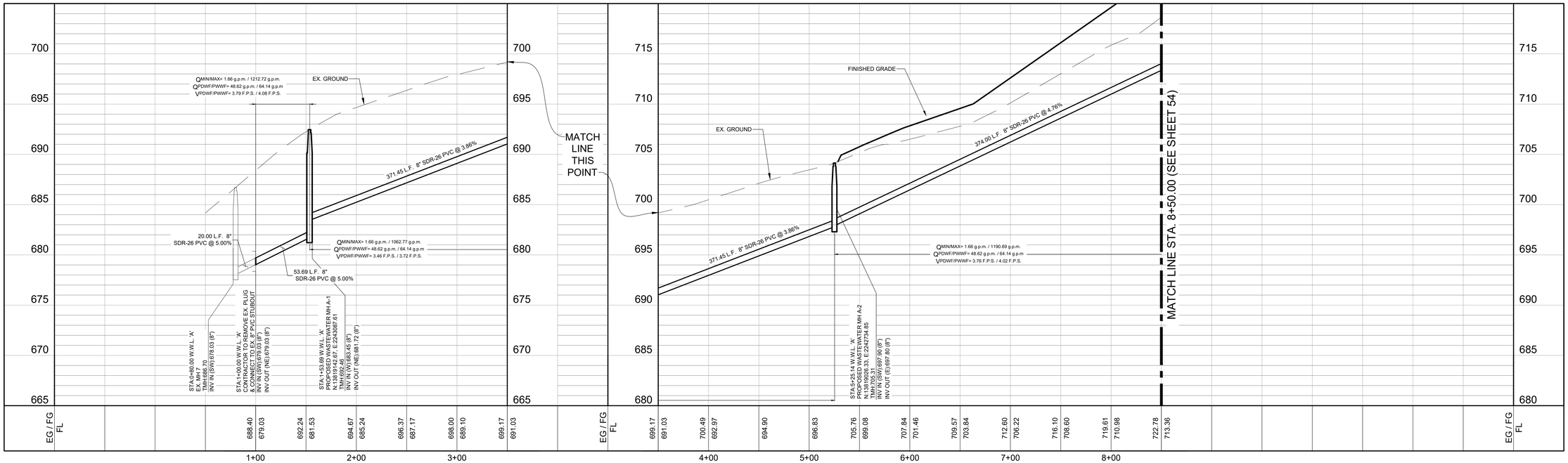
WASTEWATER LINE 'A' STA. 1+00.00 TO STA. 8+50.00



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'A' PLAN & PROFILE STA. 1+00.00 TO STA. 8+50.00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_WWL_'A' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
7/11/2024

LJA Engineering, Inc.
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Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 53 OF 70 SHEETS

K:\SA3856.02A Properties\0402 Veramendi Precinct 18-21\430 Site Development Plans\QMD-Sheets\sh_WWL 'A' P&P.dwg
User: brodriguez
Last Modified: May 22, 24 - 10:54
Layout Name: 24 x 36 - Vertical

GENERAL NOTES:

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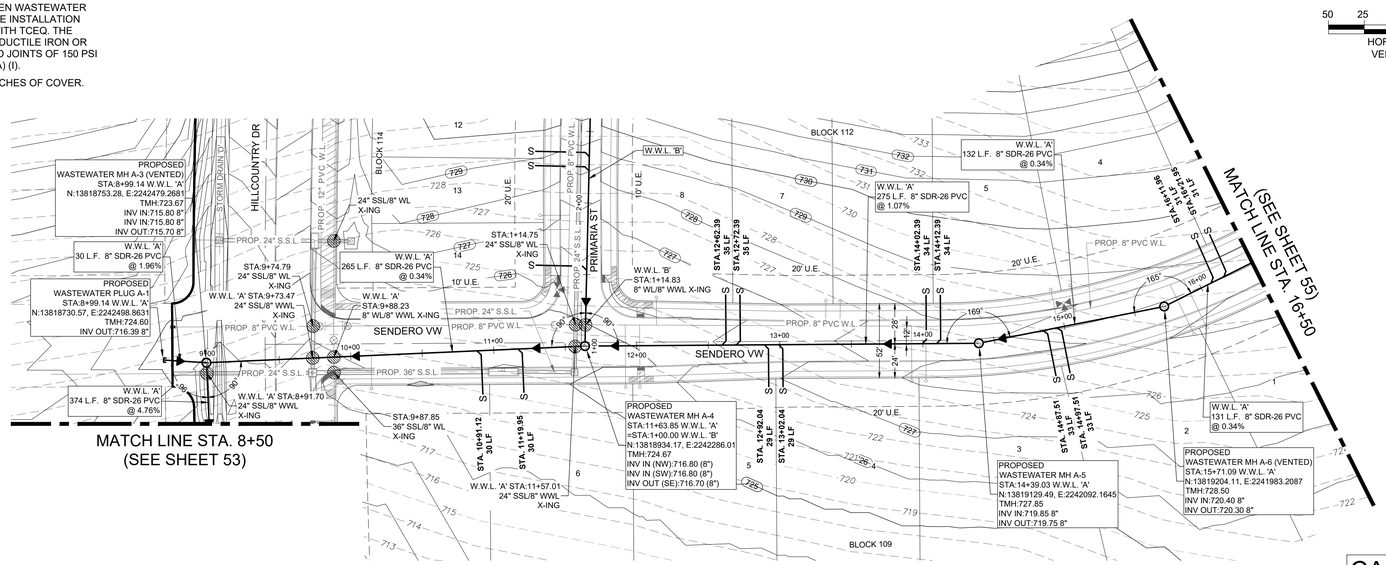

LEGEND

PROPOSED	EXISTING	
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8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
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		WATER METER
		GAS VALVE
G	G	GAS LINE
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		CURB INLET
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	EX.	EXISTING
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	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

50 25 0 50 100

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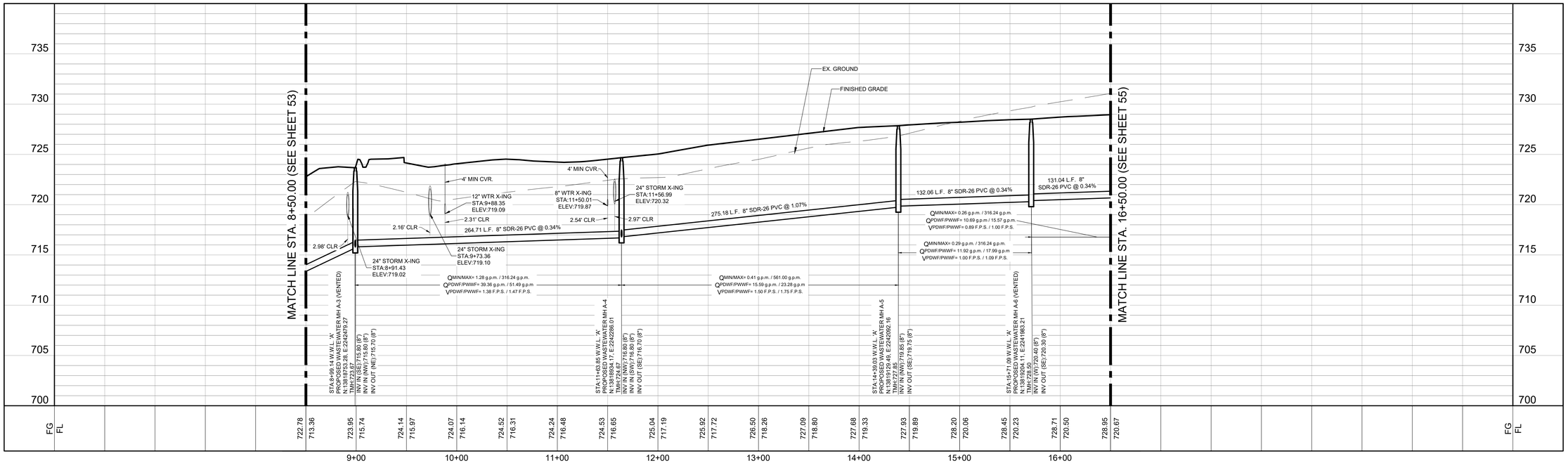
WASTEWATER LINE 'A' STA. 8+50.00 TO STA. 16+50



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'A' PLAN & PROFILE
STA. 8+50.00 TO STA. 16+50

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 85_WWL 'A' P&P.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
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LJA.COM
TBPE No. F-1386

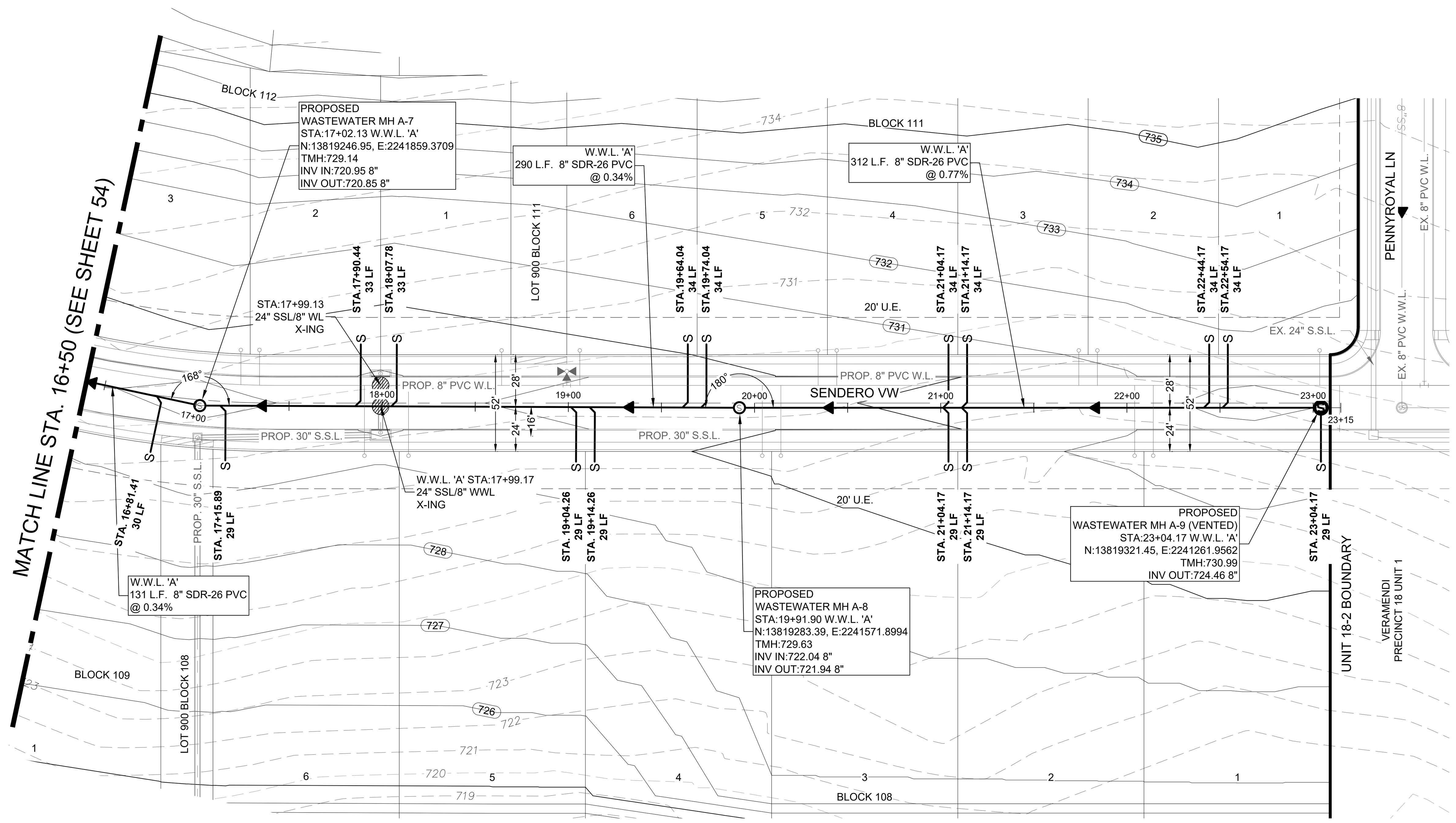
JOB NUMBER: SA3856.0402

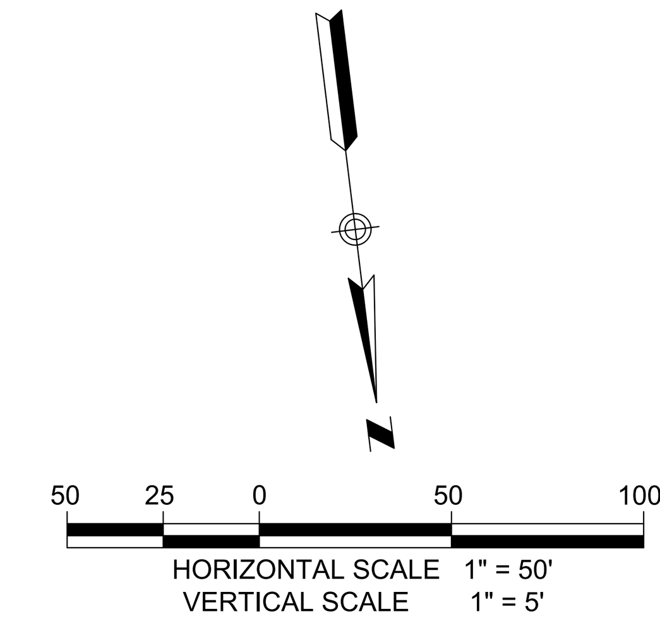
SHEET NO. 54
OF 70 SHEETS

K:\SA3856.62A Properties\0402 Veramendi Precinct 18-21\438 Site Development Plans\GMD-Sheets\ph_WWL 'A' P&P.dwg
Xref Dependencies:
Last Modified: May. 22, 24 - 10:54
Last Plotted: May. 22, 24 - 10:54

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.





LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
8" WW	8" WW	SANITARY SEWER LINE
WL	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
		STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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

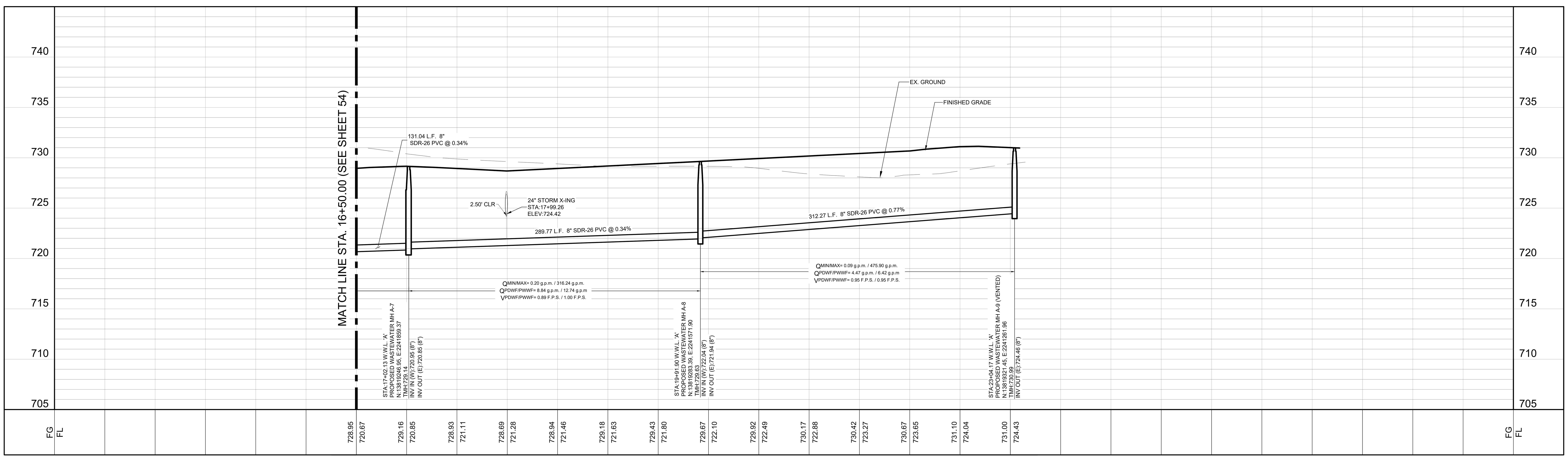
811 Know what's below. Call before you dig.

WASTEWATER LINE 'A' STA. 16+50 TO END

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

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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

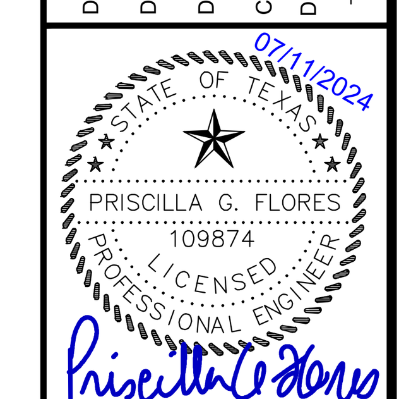


VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'A' PLAN & PROFILE STA. 16+50 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_WWL 'A' P&P.dwg



LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 55 OF 70 SHEETS

FOR PERMIT

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
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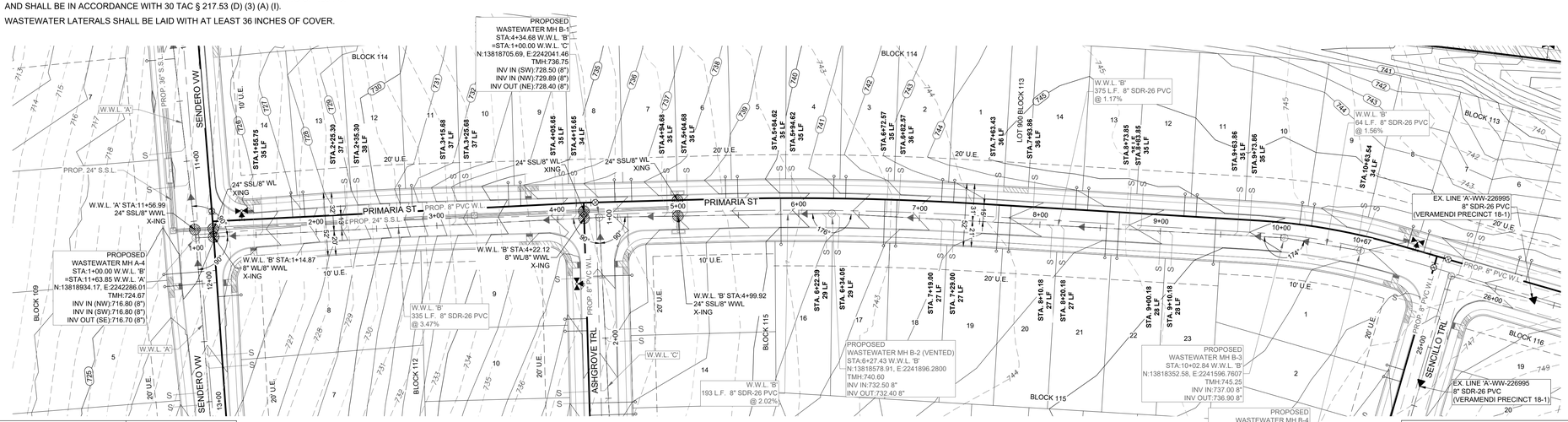

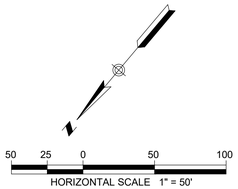

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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WASTEWATER LINE 'B' STA. 1+00 TO END

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

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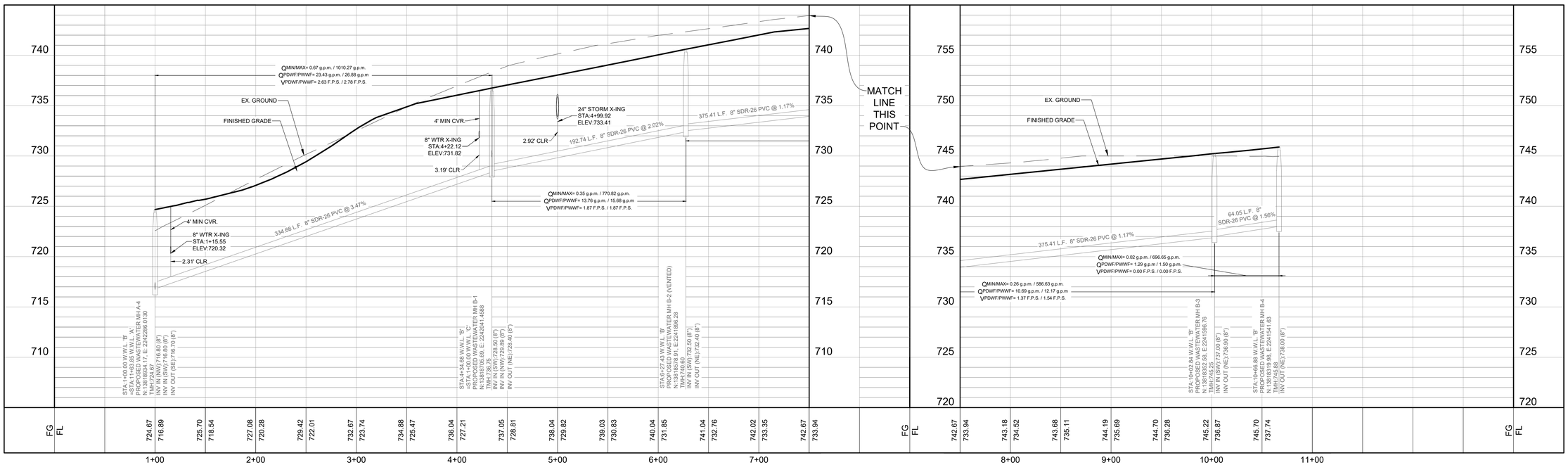

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'B' PLAN & PROFILE STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: s:\...\WWL 'B' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
7/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 56
OF 70 SHEETS

K:\SJ\3856_KSA Properties\10402 Veramendi Precinct 18-21\426 Site Development Plans\DWG-Sheets\plh_WWL 'B' P&P.dwg
Xref Scale Factor: 1
Last Modified: May. 22, 24 - 11:14
Plotted: May. 24, 24 - 11:43

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
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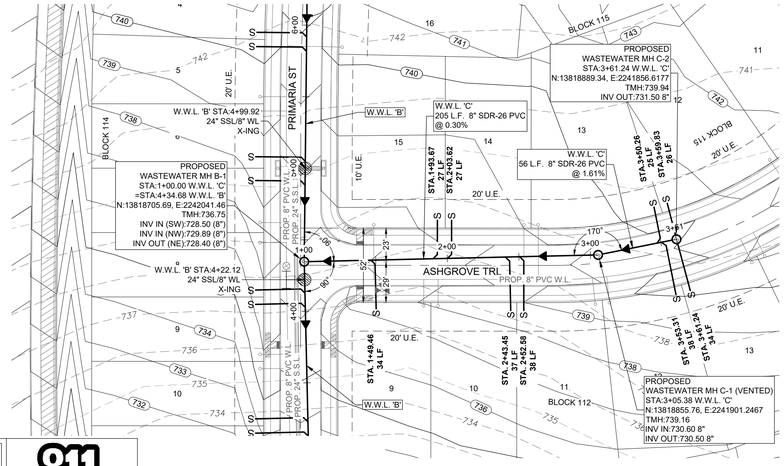
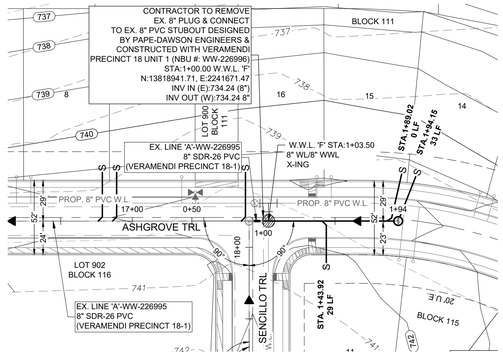
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.
9. MANHOLE MUST BE CONSTRUCTED OF OR LINED WITH CORROSION RESISTANT MATERIAL. WHERE NEW CONSTRUCTION CONNECTS TO AN EXISTING MANHOLE THAT IS NOT CONSTRUCTED OF A CORROSION RESISTANT MATERIAL, THE EXISTING MANHOLE MUST BE LINED WITH OR REPLACED WITH CORROSION RESISTANT MATERIAL.



WASTEWATER LINE 'C' STA. 1+00.00 TO END



WASTEWATER LINE 'F' STA. 1+00.00 TO END

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S	S	SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

50 25 0 50 100

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

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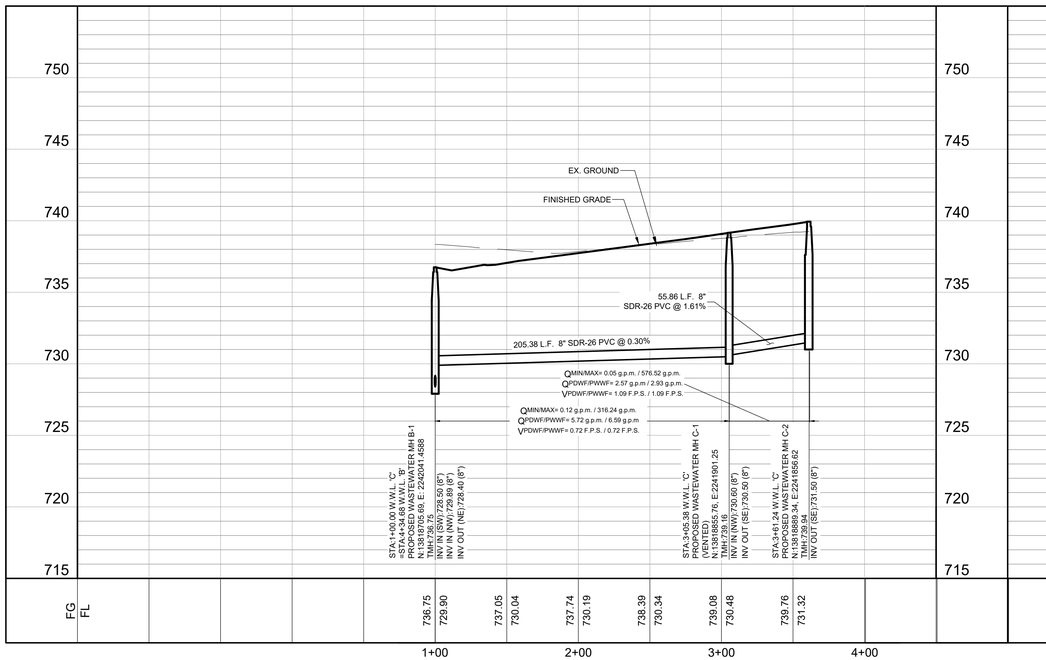
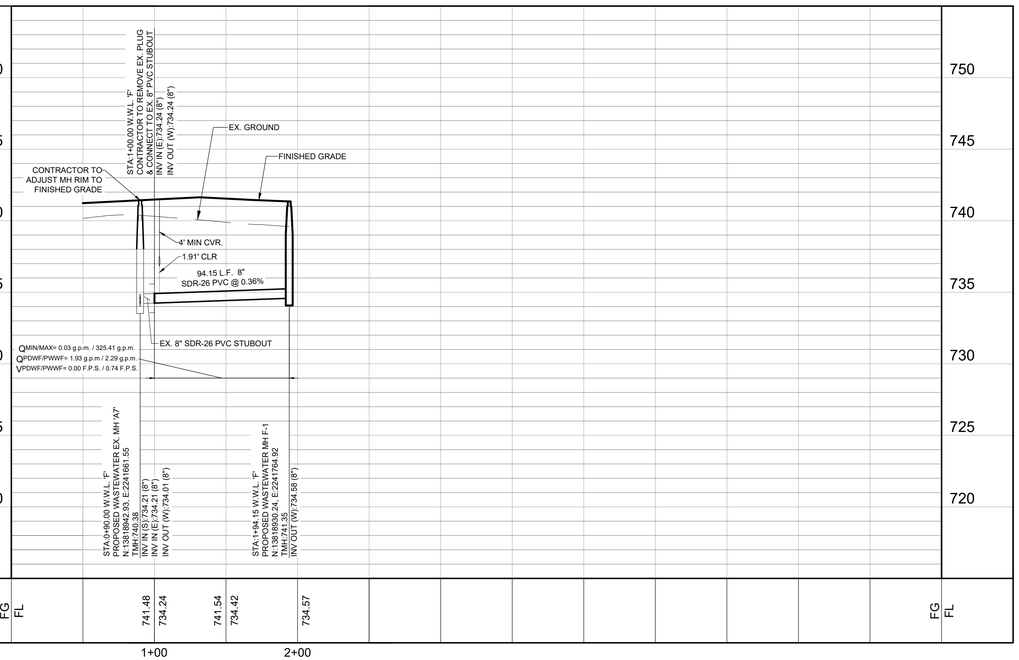


WASTEWATER LINE 'C' STA. 1+00.00 TO END



WASTEWATER LINE 'F' STA. 1+00.00 TO END

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'C' & 'F' PLAN & PROFILE
STA. 1+00.00 TO END

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: 90_WWL 'C' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 57 OF 70 SHEETS

K:\SA3856.401 Properties\3402 Veramendi Precinct 18-2\428 Site Development Plans\CAD\Sheets\wls_WWL 'C' P&P.dwg
User: mpacheco
Last Modified: May 22, 24 - 14:41
Last Saved By: mpacheco

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
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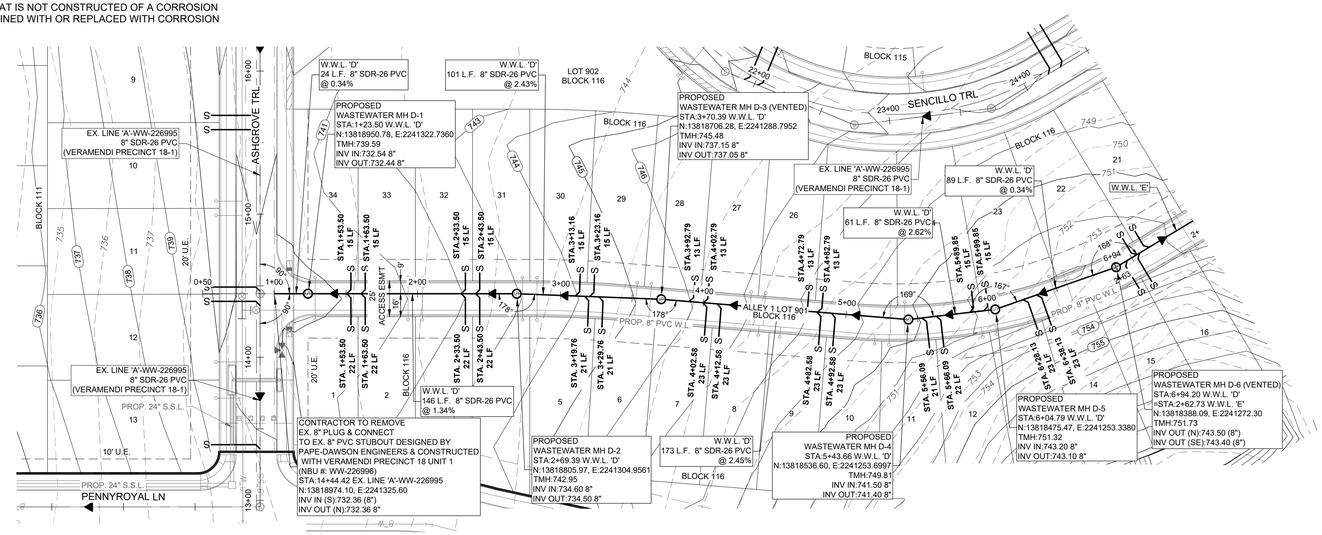

WASTEWATER LINE 'D' STA. 1+00.00 TO END

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S WW	8" WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S	C/O	SANITARY SEWER LATERAL
C/O		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

50 25 0 50 100

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

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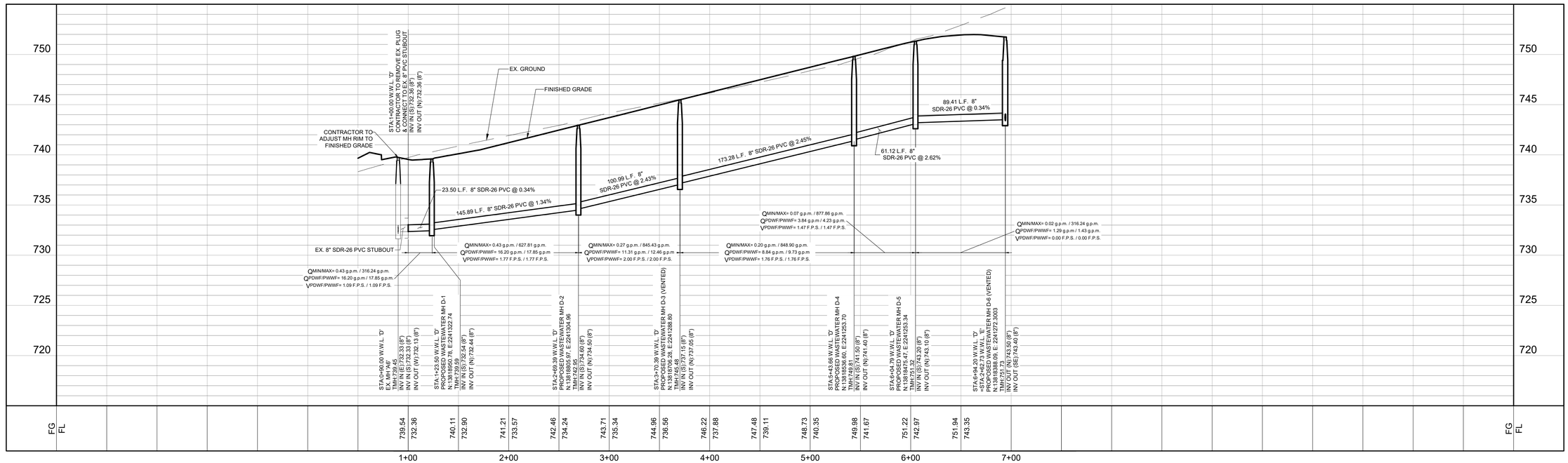


FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'D' PLAN & PROFILE STA. 1+00.00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 80_WWL 'D' P&P.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

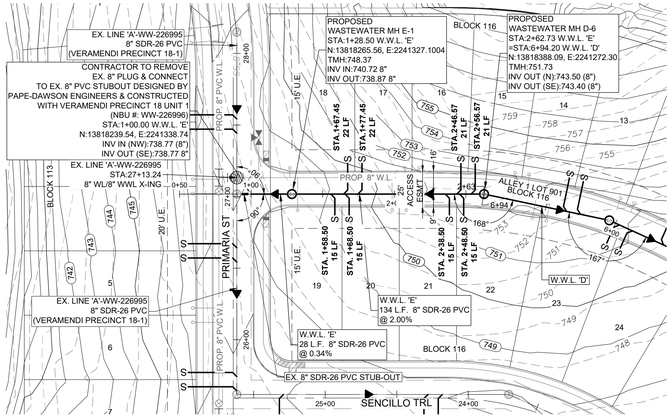
JOB NUMBER: SA3856.0402

SHEET NO. 58
OF 70 SHEETS

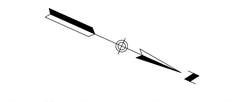
P:\LJA DRIVE_EAA Properties\Q402 Veramendi Precinct 18-2\Q06 Site Development Plan\Q060-Sheets\ph_WWL 'D' P&P.dwg
Last Saved By: Nicholas Gonzalez
Last Modified: May 22, 24 - 15:46
Last Plotted: Jul 11, 24 - 11:53:3

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN.) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT.
6. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
7. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) (3) (A) (I).
8. WASTEWATER LATERALS SHALL BE LAID WITH AT LEAST 36 INCHES OF COVER.
9. MANHOLE MUST BE CONSTRUCTED OF OR LINED WITH CORROSION RESISTANT MATERIAL. WHERE NEW CONSTRUCTION CONNECTS TO AN EXISTING MANHOLE THAT IS NOT CONSTRUCTED OF A CORROSION RESISTANT MATERIAL, THE EXISTING MANHOLE MUST BE LINED WITH OR REPLACED WITH CORROSION RESISTANT MATERIAL.



LEGEND



PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		PROPOSED SIDEWALK BY DEVELOPER
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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

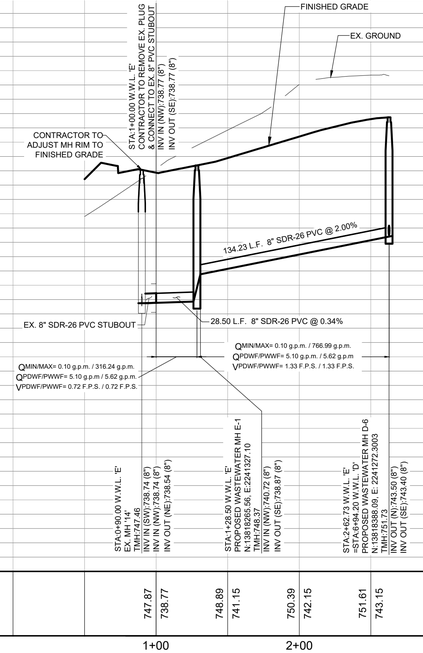
811 Know what's below. Call before you dig.

WASTEWATER LINE 'E' STA. 1+00.00 TO END

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 AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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 TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER LINE 'E' PLAN & PROFILE STA. 1+00.00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 05_WWL 'E' P&P.dwg

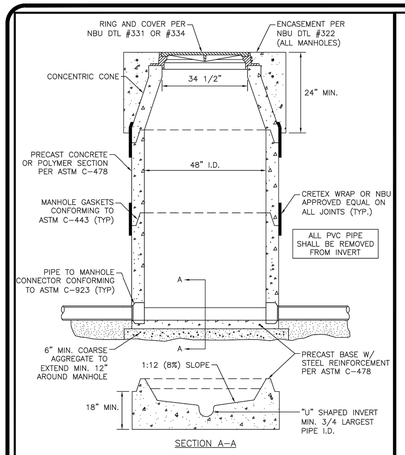
07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 59
OF 70 SHEETS

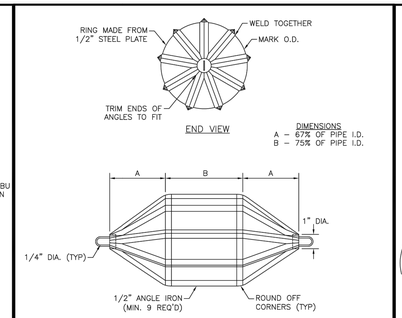
K:\SA3856.ASA Properties\2402 Veramendi Precinct 18-21\Civil Site Development Plans\2402-Sheets\sh_WWL 'E' P&P.dwg
Xref: Dependents:
Last Modified: May 22, 24 - 15:53
Last Saved By: M. Hall



SECTION A–A

*CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	WASTEWATER MANHOLE ON PRECAST BASE	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 328



END VIEW

DIMENSIONS
A – 67% OF PIPE I.D.
B – 75% OF PIPE I.D.

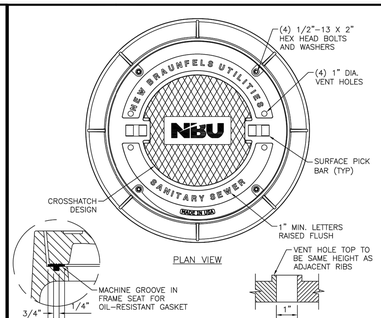
SIDE OR TOP VIEW

MANDREL REQUIREMENTS:

1. O.D. NOT LESS THAN 95% OF THE I.D. OF THE PIPE, AS SPECIFIED BY THE ASTM, AWWA, UNI-BELL OR ANSI.
2. ABLE TO WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
3. ODD NUMBER OF RUNNERS OR LEGS.

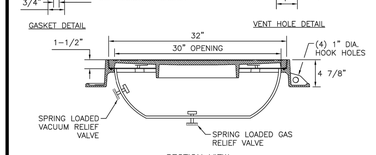
*THIS INFORMATION IS PROVIDED AS A REFERENCE. ALL DEFLECTION TESTING SHALL BE DONE IN ACCORDANCE WITH TCEQ CHAPTER 217.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	GO, NO GO DEFLECTION TESTING MANDREL	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 350



PLAN VIEW

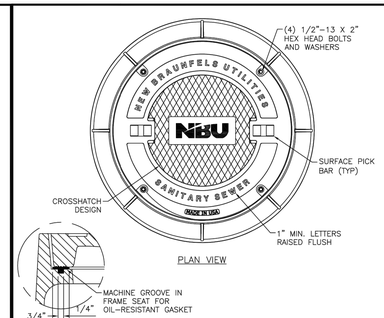
GASKET DETAIL — VENT HOLE DETAIL



SECTION VIEW

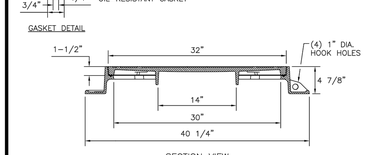
MATERIAL: CAST GRAY IRON ASTM A=48, CLASS 35B

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	VENTED SANITARY SEWER MANHOLE COVER	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 334



PLAN VIEW

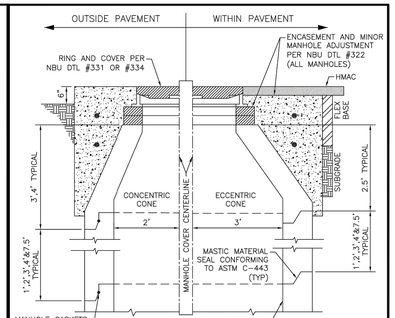
GASKET DETAIL



SECTION VIEW

MATERIAL: CAST GRAY IRON ASTM A=48, CLASS 35B

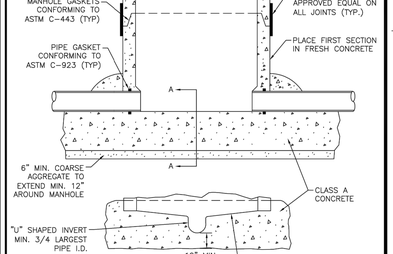
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SANITARY SEWER MANHOLE COVER	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 331



NOTES:

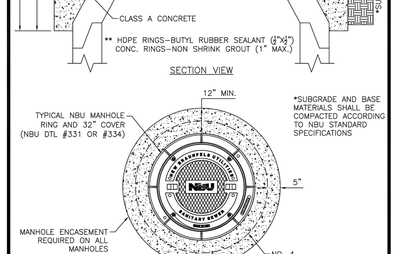
1. MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED ONLY WITH THE WRITTEN APPROVAL OF THE INSPECTOR. GASKETS SHALL NOT BE REUSED.
2. ANY COMBINATION OF REMOVING THE CONCRETE RINGS, AND / OR THE MANHOLE CONE, AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR ROADWAY RECONSTRUCTION.
3. WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF STEEL SUITABLE TO SUPPORT ALL IMPOSED LOADS SHALL BE USED TO COVER THE OPENING. THE STEEL PLATE SHALL BE SET IN MORTAR TO PREVENT LEAKAGE.
4. SUBGRADE AND BASE MATERIALS SHALL BE COMPACTED TO 95% AND 100% DENSITIES, RESPECTIVELY, COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED.
5. MANHOLE SHALL BE SET SO RING AND COVER MATCH STREET SLOPE.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	MAJOR MANHOLE ADJUSTMENT	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 321

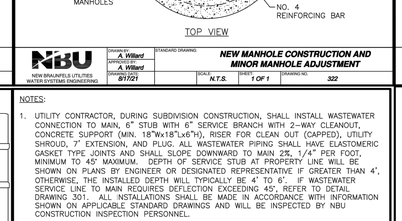


SECTION A–A

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	WASTEWATER MANHOLE ON CAST IN PLACE FOUNDATION	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 327

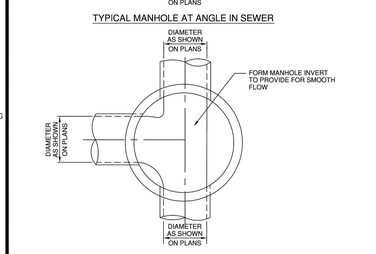


SECTION VIEW

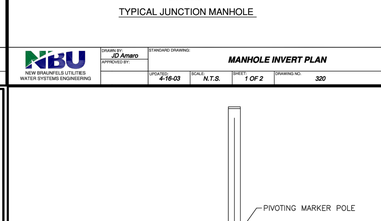


TOP VIEW

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENT	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 322

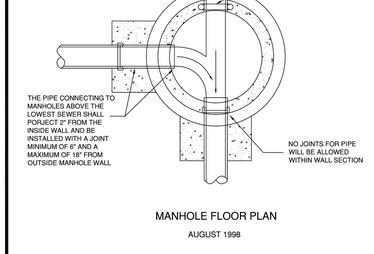


TYPICAL MANHOLE AT ANGLE IN SEWER



TYPICAL JUNCTION MANHOLE

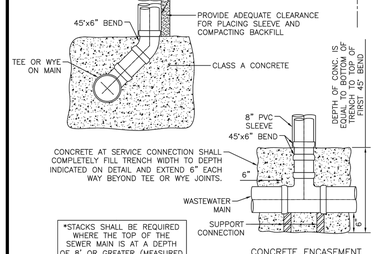
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: JD Amaro	APPROVED BY:	UPDATED: 4-16-03	STANDARD DRAWING:	MANHOLE INVERT PLAN	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO: 320



MANHOLE FLOOR PLAN

AUGUST 1998

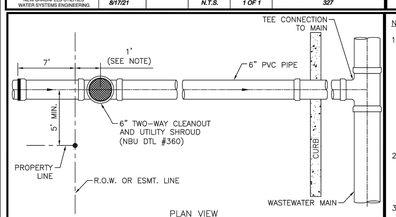
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	APPROVED BY:	UPDATED: 5-5-03	STANDARD DRAWING:	STANDARD MANHOLE MANHOLE FLOOR PLAN	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO: 320



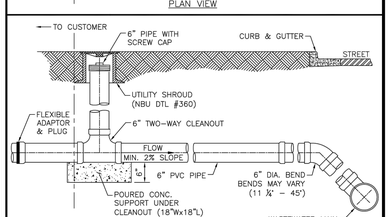
*STACKS SHALL BE REQUIRED WHERE THE TOP OF THE SEWER MAIN IS AT A DEPTH OF 8' OR GREATER (MEASURED FROM TOP OF SEWER MAIN TO FINISHED GRADE)

CONCRETE ENCASEMENT FOR SERVICE CONNECTION

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	WASTEWATER DEEP SERVICE CONNECTION DETAIL	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 301



PLAN VIEW



PROFILE VIEW

*CLEANOUT SHALL NOT BE PLACED WITHIN SIDEWALK OR DRIVEWAY. IF SIDEWALK EXISTS AT EDGE OF PROPERTY LINE, CLEANOUT CAN BE LOCATED UP TO 1' WITHIN PROPERTY. CONSISTENT PLACEMENT IS REQUIRED.

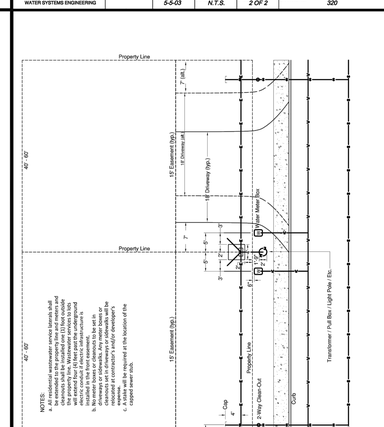
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SINGLE WASTEWATER SERVICE CONNECTION DETAIL	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO: 302

NOTES:

1. UTILITY CONTRACTOR, DURING SUBDIVISION CONSTRUCTION, SHALL INSTALL WASTEWATER CONNECTION TO MAIN, 6" STUB WITH 6" SERVICE BRANCH WITH 2–WAY CLEANOUT, CONCRETE SUPPORT (MIN. 18"Wx18"Lx6"H), RISER FOR CLEAN OUT (CAPPED), UTILITY SHROUD, 7' EXTENSION, AND PLUG. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN 2%, 1/4" PER FOOT, MINIMUM TO 45° MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER OR DESIGNATED REPRESENTATIVE IF GREATER THAN 4', OTHERWISE, THE INSTALLED DEPTH WILL TYPICALLY BE 4' TO 6'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, REFER TO DETAIL DRAWING 301. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY NBU CONSTRUCTION INSPECTION PERSONNEL.
2. CUSTOMER SHALL REMOVE PLUG, INSTALL 4" WASTEWATER LINE [EXTEND 4" PIPE 6" MINIMUM INTO 6" PIPE AND JOINT WITH FLEXIBLE ADAPTOR]. IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY TO SEWER MAIN ADJACENT TO PROPERTY, PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.
3. CUSTOMER IS RESPONSIBLE FOR PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF FINAL ACCEPTANCE, THAT CONNECTIONS TO NBU SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIALS. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT 2–WAY CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.
4. NBU ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO NBU'S WASTEWATER SYSTEM. FOR MAINTENANCE PURPOSES, NBU'S RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2–WAY CLEANOUT OR THE PROPERTY LINE, WHICHEVER IS CLOSER TO WASTEWATER MAIN.
5. PIPING IN STREET RIGHT–OF–WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY NBU STANDARD SPECIFICATION; MATERIALS SHALL BE AS SPECIFIED; BACKFILL ABOVE THE GRANULAR BEDDING. SERVICE LINES IN THESE AREAS SHALL HAVE A MINIMUM COVER BELOW FINAL STREET GRADE OF 42"; ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SINGLE WASTEWATER SERVICE CONNECTION DETAIL	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO: 302

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	UTILITY SHROUD FOR SEWER CLEANOUT ASSEMBLY	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 360



NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: O. A.	APPROVED BY: N. P.	DATED: 12/20/18	STANDARD DRAWING:	NARROW LOT WATER & SEWER SERVICE ALIGNMENT SCENARIO	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 410

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER DETAILS (SHEET 1 OF 2)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/22/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Wastewater Details.dwg

07/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 60 OF 70 SHEETS

FOR PERMIT

K:\SA3856.GSA Properties\GA02 Veramendi Precinct 18-21\430 Site Development Plans\CMD-Sheets\sh_Wastewater Details.dwg
Plotted: Mar 15, 24 - 12:16
Last Modified: Mar 15, 24 - 12:16
By: Bradley Hall

Texas Commission on Environmental Quality
Organized Sewage Collection System
General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director, nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code, Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the Executive Director, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, Texas Administrative Code, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the Executive Director's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, Texas Administrative Code § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the Executive Director to any part of Title 30 Texas Administrative Code, Chapters 213 and 217, or any other TCEQ applicable regulation.

1. This Organized Sewage Collection System (SCS) must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules and any local government standard specifications.

2. All contractors conducting regulated activities associated with this proposed regulated project must be provided with copies of the SCS plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors must be required to keep on-site copies of the plan and the approval letter.

3. A written notice of construction must be submitted to the presiding TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.

4. Any modification to the activities described in the referenced SCS application following the date of approval may require the submittal of an SCS application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval.

5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. These controls must remain in place until the disturbed areas have been permanently stabilized.

6. If any sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The applicant must immediately notify the appropriate regional office of the TCEQ of the feature discovered. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing and the applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the

executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

7. Sewer lines located within or crossing the 5-year floodplain of a drainage way will be protected from inundation and stream velocities which could cause erosion and scouring of backfill. The trench must be capped with concrete to prevent scouring of backfill, or the sewer lines must be encased in concrete. All concrete shall have a minimum thickness of 6 inches.

8. Blasting procedures for protection of existing sewer lines and other utilities will be in accordance with the National Fire Protection Association criteria. Sand is not allowed as bedding or backfill in trenches that have been blasted. If any existing sewer lines are damaged, the lines must be repaired and retested.

9. All manholes constructed or rehabilitated on this project must have watertight size on size resilient connectors allowing for differential settlement. If manholes are constructed within the 100-year floodplain, the cover must have a gasket and be bolted to the ring. Where gasketed manhole covers are required for more than three manholes in sequence or for more than 1500 feet, alternate means of venting will be provided. Bricks are not an acceptable construction material for any portion of the manhole.

   The diameter of the manholes must be a minimum of four feet and the manhole for entry must have a minimum clear opening diameter of 30 inches. These dimensions and other details showing compliance with the commission's rules concerning manholes and sewer line/manhole inverts described in 30 TAC §217.55 are included on Plan Sheet __ of __.

   It is suggested that entrance into manholes in excess of four feet deep be accomplished by means of a portable ladder. The inclusion of steps in a manhole is prohibited.

10. Where water lines and new sewer line are installed with a separation distance closer than nine feet (i.e., water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §290.44(e) (Water Distribution).

11. Where sewers lines deviate from straight alignment and uniform grade all curvature of sewer pipe must be achieved by the following procedure which is recommended by the pipe manufacturer: ________________________________.

    If pipe flexure is proposed, the following method of preventing deflection of the joint must be used: ________________________________.

    Specific care must be taken to ensure that the joint is placed in the center of the trench and properly bedded in accordance with 30 TAC §217.54.

12. New sewage collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the extensions. Such stub outs must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new stub-outs must be constructed sufficiently to extend beyond the end of the street pavement. All stub-outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle and in accordance with accepted plumbing techniques.

    If no stub-out is present an alternate method of joining laterals is shown in the detail on Plan Sheet __ of __. (For potential future laterals).

    The private service lateral stub-outs must be installed as shown on the plan and profile sheets on Plan Sheet __ of __ and marked after backfilling as shown in the detail on Plan Sheet __ of __.

13. Trenching, bedding and backfill must conform with 30 TAC §217.54. The bedding and backfill for flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II or III. Rigid pipe bedding must comply with the requirements of ASTM C 12 (ANSI A 106.2) classes A, B or C.

14. Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E).

15. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be:
    (a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:
        (1) *Low Pressure Air Test.*
            (A) A low pressure air test must follow the procedures described in American Society For Testing And Materials (ASTM) C-828, ASTM C-924, or ASTM F-1417 or other procedure approved by the executive director, except as to testing times as required in Table C.3 in subparagraph (C) of this paragraph or Equation C.3 in subparagraph (B)(ii) of this paragraph.
            (B) For sections of collection system pipe less than 36 inch average inside diameter, the following procedure must apply, unless a pipe is to be tested as required by paragraph (2) of this subsection.
                (i) A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the pipe.
                (ii) Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

Equation C.3
$$T = \frac{0.085 \times D \times K}{Q}$$

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds
K = 0.000419 X D X L, but not less than 1.0
D = average inside pipe diameter in inches

L = length of line of same size being tested, in feet
Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface

            (C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following Table C.3:

Pipe Diameter *(inches)*	**Minimum Time** *(seconds)*	**Maximum Length for Minimum Time** *(feet)*	**Time for Longer Length** *(seconds/foot)*
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

            (D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.
            (E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure.
            (F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.
            (G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.
        (2) *Infiltration/Exfiltration Test.*
            (A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole.
            (B) An owner shall use an infiltration test in lieu of an exfiltration test when pipes are installed below the groundwater level.
            (C) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch diameter per mile of pipe per 24 hours at a minimum test head of two feet above the crown of a pipe at an upstream manhole, or at least two feet above existing groundwater level, whichever is greater.
            (D) For construction within a 25-year flood plain, the infiltration or exfiltration must not exceed 10 gallons per inch diameter per mile of pipe per 24 hours at the same minimum test head as in subparagraph (C) of this paragraph.
            (E) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall undertake remedial action in order to reduce

the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action.
    (b) If a gravity collection pipe is composed of flexible pipe, deflection testing is also required. The following procedures must be followed:
        (1) For a collection pipe with inside diameter less than 27 inches, deflection measurement requires a rigid mandrel.
            (A) *Mandrel Sizing.*
                (i) A rigid mandrel must have an outside diameter (OD) not less than 95% of the base inside diameter (ID) or average ID of a pipe, as specified in the appropriate standard by the ASTMs, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.
                (ii) If a mandrel sizing diameter is not specified in the appropriate standard, the mandrel must have an OD equal to 95% of the ID of a pipe. In this case, the ID of the pipe, for the purpose of determining the OD of the mandrel, must equal be the average outside diameter minus two minimum wall thicknesses for OD controlled pipe and the average inside diameter for ID controlled pipe.
                (iii) All dimensions must meet the appropriate standard.
            (B) *Mandrel Design.*
                (i) A rigid mandrel must be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed.
                (ii) A mandrel must have nine or more odd number of runners or legs.
                (iii) A barrel section length must equal at least 75% of the inside diameter of a pipe.
                (iv) Each size mandrel must use a separate proving ring.
            (C) *Method Options.*
                (i) An adjustable or flexible mandrel is prohibited.
                (ii) A test may not use television inspection as a substitute for a deflection test.
                (iii) If requested, the executive director may approve the use of a deflectometer or a mandrel with removable legs or runners on a case-by-case basis.
        (2) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection.
        (3) A deflection test method must be accurate to within plus or minus 0.2% deflection.
        (4) An owner shall not conduct a deflection test until at least 30 days after the final backfill.
        (5) Gravity collection system pipe deflection must not exceed five percent (5%).
        (6) If a pipe section fails a deflection test, an owner shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.

16. All manholes must be tested to meet or exceed the requirements of 30 TAC §217.58.
    (a) All manholes must pass a leakage test.
    (b) An owner shall test each manhole (after assembly and backfilling) for leakage, separate and independent of the collection system pipes, by hydrostatic exfiltration testing, vacuum testing, or other method approved by the executive director.
        (1) Hydrostatic Testing.

            (A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.
            (B) To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water, and maintain the test for at least one hour.
            (C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.
        (2) Vacuum Testing.
            (A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.
            (B) No grout must be placed in horizontal joints before testing.
            (C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.
            (D) An owner shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.
            (E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's recommendations.
            (F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.
            (G) A test does not begin until after the vacuum pump is off.
            (H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

17. All private service laterals must be inspected and certified in accordance with 30 TAC §213.5(c)(3)(I). After installation of and, prior to covering and connecting a private service lateral to an existing organized sewage collection system, a Texas Licensed Professional Engineer, Texas Registered Sanitarian, or appropriate city inspector must visually inspect the private service lateral and the connection to the sewage collection system, and certify that it is constructed in conformity with the applicable provisions of this section. The owner of the collection system must maintain such certifications for five years and forward copies to the appropriate regional office upon request. Connections may only be made to an approved sewage collection system.

Austin Regional Office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

WASTEWATER NOTES:

1. The contractor shall maintain service to existing wastewater system at all times during construction.
2. A minimum of 8" wastewater pipe and fittings (P.V.C. SDR-26, ASTM, D-3034, D-3212, F-477) are required on new installation.
3. All residential wastewater service laterals shall be extended to the property line and a cleanout shall be installed at the property line. Services to lots will extend four (4) feet past the underground electric conduit if electric is installed in the front easement. All sewer cleanouts that lead to NBU mains shall be installed with a protective utility shroud and pivoting marker pole during time of construction.
4. Pipe bedding of wastewater lines shall be manufactured sand or pea gravel as per NBU specifications.
5. Secondary backfill of wastewater lines shall generally consist of materials removed from the trench and shall be free from brush, debris and trash, no rocks or stones having any dimension larger than 6 inches at the largest dimension.
6. All wastewater pipes shall have compression or mechanical joints as per 30 TAC §217.53 (c) (2).
7. For wastewater lines less than 24" in diameter, select initial backfill material shall be placed in two lifts.
   a. The first lift shall be spread uniformly and simultaneously on each side and under the shoulders of the pipe to the mid point or spring line of the pipe.
   b. The second lift shall be placed to a depth as shown on the pipe backfill detail. For pipes larger than 24", 12" maximum lifts shall be used.
8. All manholes must be water tight, either monolithic, cast-in-place concrete structures or prefabricated manholes specifically approved by NBU. The manholes shall have water-tight rings and covers. Wherever they are within the 100 year floodplain, the manhole covers shall be bolted. Every third manhole in sequence shall have an alternate means of venting. 30 TAC §213.5 (c) (3) (A) and 30 TAC §217.55 (o).
9. All manholes shall be constructed so that the top of the ring is two inches (2") above surrounding ground except when located in paved area. In paved areas, the manhole ring shall be flush with pavement.
10. All new manholes, unless approved by NBU Engineering, are to have covers with 32" openings.
11. Wastewater pipe connections to pre-cast manholes will be compression joints or mechanical "boot type" joint as approved by NBU.
12. Wastewater lines shall be tested from manhole to manhole.
13. In areas where a new wastewater manhole is to be constructed over an existing wastewater system, it shall be the contactor's responsibility to test the existing manholes before construction. After the proposed manhole(s) has been built, the contractor shall re-test the existing system to the satisfaction of the construction inspector. (no separate pay item).
14. Where the minimum 9 foot separation distance between wastewater lines and water lines / mains cannot be maintained, the installation of wastewater lines shall be in strict accordance with TCEQ. The wastewater line shall be constructed of cast iron, ductile iron or PVC meeting the ASTM specification for both pipes and joints of 150 psi and shall be in accordance with 30 TAC §217.53 (d) (3) (A) (i).
15. No testing will be performed prior to 30 days from complete installation of the wastewater lines. The following sequence will be strictly adhered to:
    a. Pull mandrel
    b. Perform Air test
    c. Cleaning of any debris
    d. Flushing of system
    e. TV Inspection (within 72 hours of flushing)
16. A minimum of 3 feet of cover is to be maintained over the wastewater main and laterals at subgrade, otherwise concrete encasement will be required.
17. Wastewater main connections made directly to existing manholes will require successful testing of the manhole in accordance with NBU Connection & Construction Policy Manual.
18. TCEQ and EPA require erosion and sedimentation control for construction of wastewater collection systems. Developer or authorized representative shall provide erosion and sedimentation control as notes on the project's plan and profile sheets. All temporary erosion and sedimentation controls shall be removed by the Contractor at final acceptance of the project by NBU Water Systems.
19. All manholes not within paved streets shall have locking concrete collar to secure ring and cover to manhole cone per NBU Detail drawing #329.
20. All manholes over the Edwards Aquifer Recharge Zone shall have locking concrete collar to secure ring and cover to manhole cone per NBU detail drawing #329.

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.

VERAMENDI PRECINCT 18 UNIT 2

WASTEWATER DETAILS (SHEET 2 OF 2)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/22/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Wastewater Details.dwg

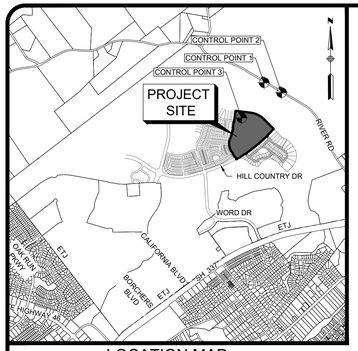
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024
Priscilla G. Flores

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

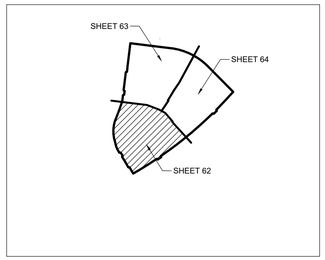
JOB NUMBER: SA3856.0402

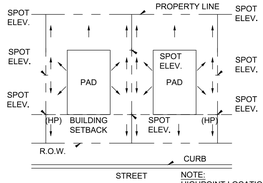
SHEET NO. 61 OF 70 SHEETS

FOR PERMIT



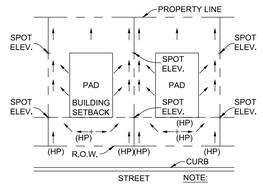
LOCATION MAP
N.T.S.





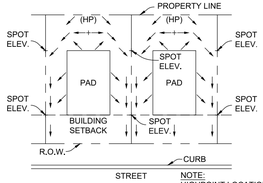
NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "B" LOT GRADING
N.T.S.



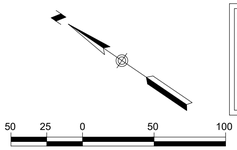
NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "C" LOT GRADING
N.T.S.



NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "A" LOT GRADING
N.T.S.



SCALE IN FEET
SCALE: 1"=50'

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

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

LEGEND

PROPOSED	EXISTING	
800	800	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
706.41	801.33	GROUND ELEVATION
TOW 706.41	EX TOW 706.41	TOP OF RETAINING WALL ELEVATION
BOW 706.41	EX BOW 706.41	BOTTOM OF RETAINING WALL ELEVATION
706.41 ME		MATCH EXISTING GROUND
A		LOT DRAINS TO FRONT
B		LOT DRAINS 1/2 TO FRONT AND 1/2 TO REAR
C		LOT DRAINS TO REAR
Am		LOT TYPE A MODIFIED
Bm		LOT TYPE B MODIFIED
Cm		LOT TYPE C MODIFIED
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESMT.
	ESMT.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		RETAINING WALL

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 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. 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. 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. 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. 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. CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. 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).
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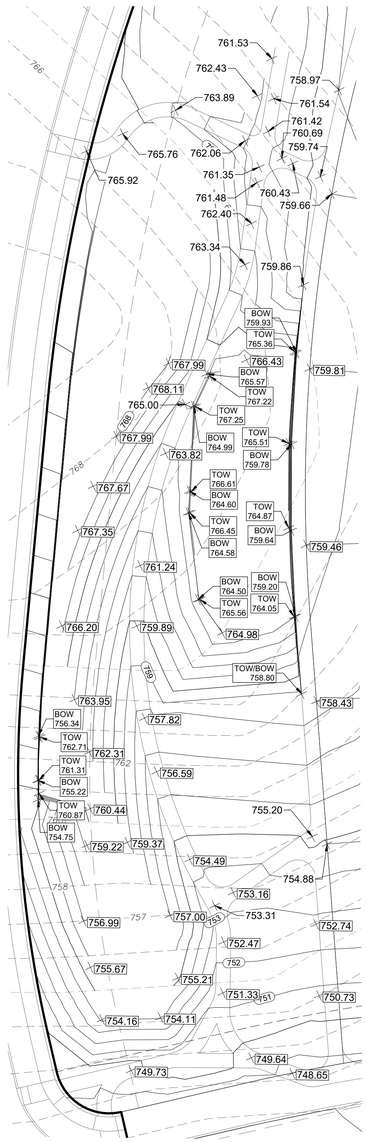
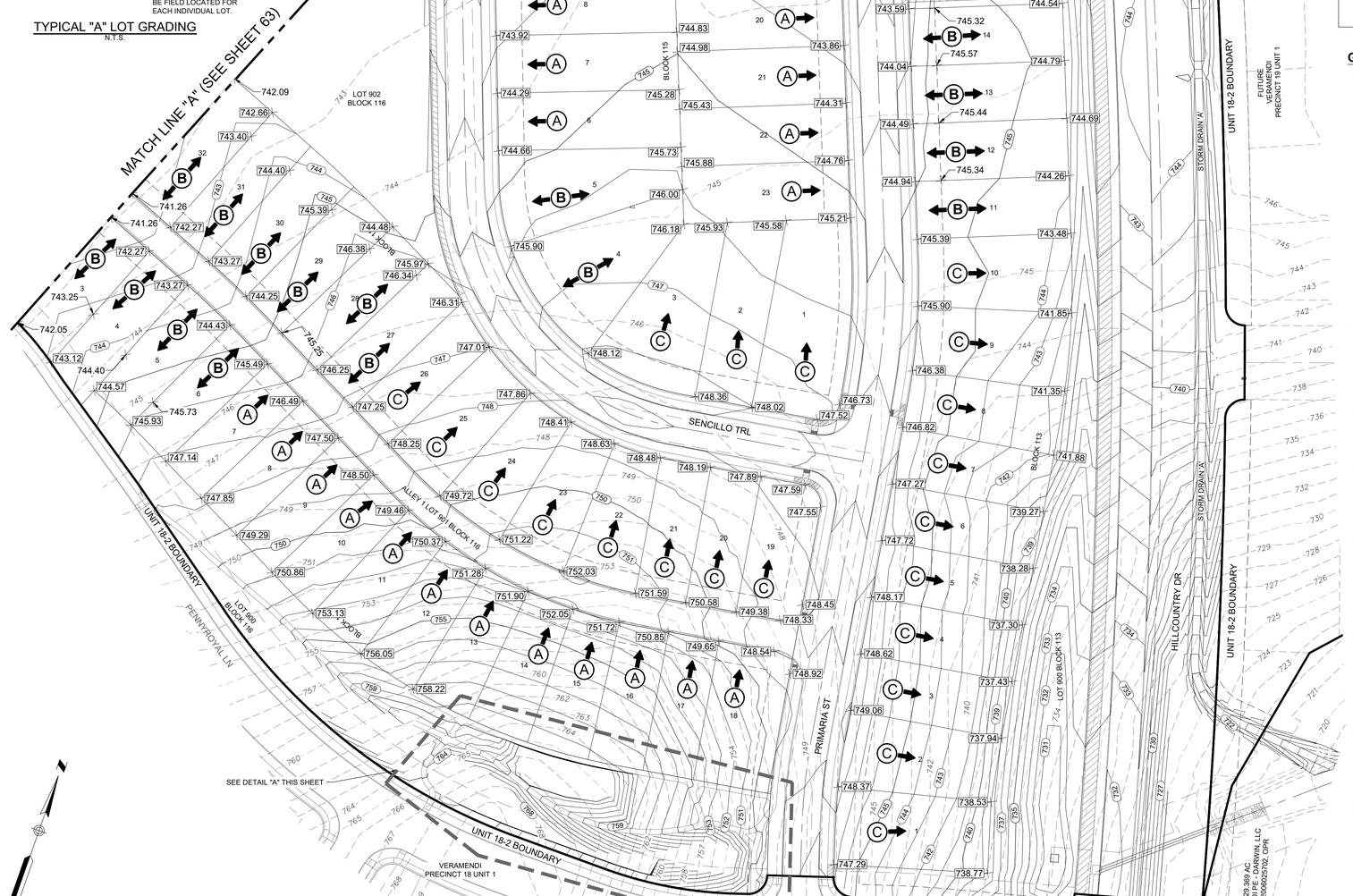


DETAIL "A"
SCALE: 1"=20'



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

GRADING PLAN (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sh_Grading Plan.dwg

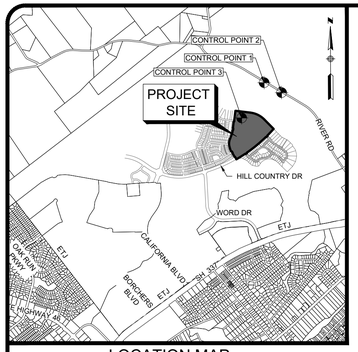
01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

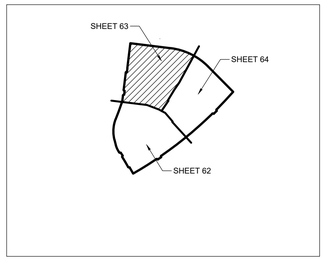
JOB NUMBER: SA3856.0402

SHEET NO. 62
OF 70 SHEETS

I:\CLS\3856 IGA Properties\Civil\2 Veramendi Precinct 18-21\430 Site Development Plans\GMD-Sheets\sh_Grading Plan.dwg
User: nguyen
Last Modified: Dec. 23, 24 - 16:22
Date Plotted: Dec. 23, 24 - 16:22



LOCATION MAP
N.T.S.



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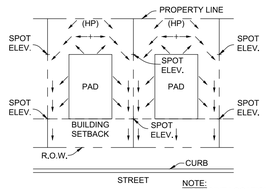
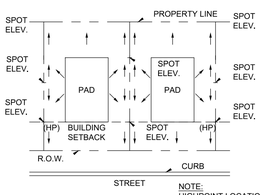
811 Know what's below. Call before you dig.

SCALE IN FEET
SCALE: 1"=50'



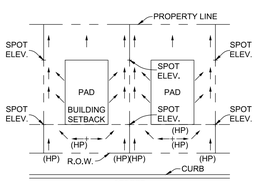
NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "A" LOT GRADING
N.T.S.



NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "B" LOT GRADING
N.T.S.



NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "C" LOT GRADING
N.T.S.

LEGEND

PROPOSED	EXISTING	
800	800	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
706.41	801.33	GROUND ELEVATION
706.41 ME		MATCH EXISTING GROUND
A		LOT DRAINS TO FRONT
B		LOT DRAINS 1/2 TO FRONT AND 1/2 TO REAR
C		LOT DRAINS TO REAR
Am		LOT TYPE A MODIFIED
Bm		LOT TYPE B MODIFIED
Cm		LOT TYPE C MODIFIED
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		RETAINING WALL

GRADING NOTES

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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.
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LOT	BLOCK	WATER SURFACE ELEVATION	FINAL FLOOR ELEVATION
1	108	727.86	730.76
2	108	727.86	730.42
3	108	727.86	730.15
4	108	724.88	729.20
5	108	724.88	728.22
6	108	724.88	728.04
1	109	724.88	728.21
2	109	724.88	728.00
3	109	722.51	726.62
4	109	722.51	726.19
5	109	722.51	725.61
6	109	722.51	724.95
7	109	720.27	723.65

VERAMENDI PRECINCT 18 UNIT 2

GRADING PLAN (SHEET 2 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE:	12/23/2024
DESIGNED BY:	NG
DRAWN BY:	TM
CHECKED BY:	PGF
DRAWING NAME:	90_Grading Plan.dwg

01/07/2025

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

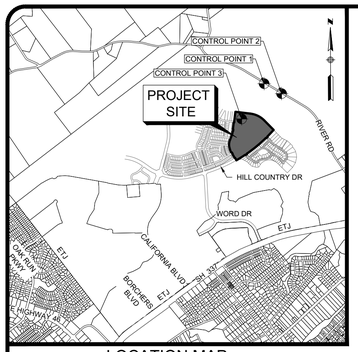
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

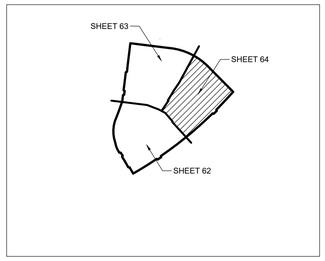
SHEET NO. 63 OF 70 SHEETS

FOR PERMIT

K:\SA3856 - KDA Properties\04002 Verramendi Precinct 18-21\438 Site Development Plans\DWG-Sheets\pln_Grading Plan.dwg
Last Modified: Dec. 23, 24 - 16:22
Last Modified: Dec. 23, 24 - 16:22



LOCATION MAP
N.T.S.



50 25 0 50 100

SCALE IN FEET
SCALE: 1"=50'

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NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "A" LOT GRADING
N.T.S.

NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "B" LOT GRADING
N.T.S.

NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

TYPICAL "C" LOT GRADING
N.T.S.

LEGEND

PROPOSED	EXISTING	
800	800	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
706.41	801.33	GROUND ELEVATION
706.41 ME		MATCH EXISTING GROUND
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B		LOT DRAINS 1/2 TO FRONT AND 1/2 TO REAR
C		LOT DRAINS TO REAR
Am		LOT TYPE A MODIFIED
Bm		LOT TYPE B MODIFIED
Cm		LOT TYPE C MODIFIED
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		RETAINING WALL

LOT	BLOCK	WATER SURFACE ELEVATION	FINAL FLOOR ELEVATION
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811 Know what's below. Call before you dig.

VERAMENDI PRECINCT 18 UNIT 2

GRADING PLAN (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: 90_Grading Plan.dwg

01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
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San Antonio, Texas 78230
Phone 210.503.2700
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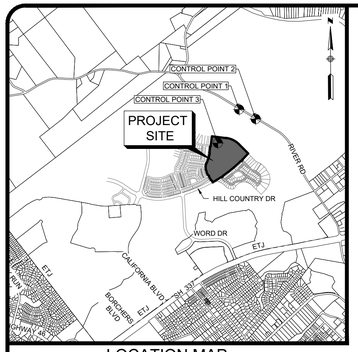
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 64
OF 70 SHEETS

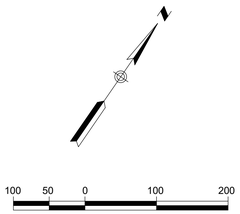
FOR PERMIT

K:\SA3856 ADI Properties\04 Veramend Precinct 18-2\438 Site Development Plans\DWG-Sheets\04_Grading Plan.dwg
Plotted: Dec 23, 24 - 16:22
Last Modified: Dec 23, 24 - 16:22
by Priscilla.Flores



LOCATION MAP
N.T.S.

SWPPP MODIFICATIONS		
DATE	SIGNATURE	MODIFICATIONS



SCALE 1" = 100'

LEGEND

- GRASSED DRAIN FLOW
- PAVEMENT DRAIN FLOW
- 800 EXISTING CONTOUR
- 800 PROPOSED CONTOUR
- STAGING AREA
- CONCRETE WASHOUT PIT
- STABILIZED CONSTRUCTION EXIT
- TEMPORARY BARRICADE
- SF SILT FENCE
- LOC LIMITS OF CONSTRUCTION
- RB ROCK BERM
- I.P. INLET PROTECTION SEE DETAIL SHEET 66

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, EASEMENTS 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. NBU WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.
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 AS STABILIZATION.
17. ACCESS TO VERAMENDI PRECINCT 19 UNIT 1 WILL BE PROVIDED FROM VERAMENDI WORD PKWAY.

VERAMENDI PRECINCT 18 UNIT 2

STORMWATER POLLUTION PREVENTION PLAN

NO.	DESCRIPTION	BY	DATE

DATE: 12/23/2024
DESIGNED BY: NG
DRAWN BY: PGF
CHECKED BY: PGF
DRAWING NAME: sh_SWPPP.dwg

01/07/2025
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 65
OF 70 SHEETS

FOR PERMIT

K:\SA3856_KDA Properties\0402 Veramendi Precinct 18-2\438 Site Development Plans\DWG-Sheets\sh_SWPPP.dwg
Last Modified: Dec. 20, 24 - 10:08
Last Plotted: Dec. 23, 24 - 10:42

SEDIMENTATION AND EROSION CONTROLS

A. SILT FENCE

1. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT², AND BRINDELL HARDNESS EXCEEDING 140.
2. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. INSPECT ALL FENDING WEEKLY, AND AFTER ANY RAINFALL. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

B. TRIANGULAR SEDIMENT FILTER DIKE

1. THE DIKE STRUCTURE SHALL BE CONSTRUCTED OF 6" X 6", 6 GAUGE WELDED WIRE MESH, 18 INCHES PER SIDE, AND WRAPPED WITH GEOTEXTILE FABRIC THE SAME COMPOSITION AS THAT USED FOR SILT FENCES.
2. FILTER FABRIC SHOULD LAP OVER ENDS SIX (6) INCHES TO COVER DIKE TO DIKE JUNCTION; EACH JUNCTION SHOULD BE SECURED BY SHOAT RINGS.
3. POSITION DIKE PARALLEL TO THE CONTOURS, WITH THE END OF EACH SECTION CLOSELY ABUTTING THE ADJACENT SECTIONS.
4. FASTENING - THE FABRIC SKIRT MAY BE TOED- IN WITH 6 INCHES OF COMPACTED MATERIAL, OR 12 INCHES OF THE FABRIC SKIRT SHOULD EXTEND UPHILL AND BE SECURED WITH A MINIMUM OF 3 INCHES OF OPEN GRADED ROCK, OR WITH STAPLES OR NAILS. IF THESE TWO OPTIONS ARE NOT FEASIBLE THE DIKE STRUCTURE MAY BE TRENCHED IN 4 INCHES.
5. TRIANGULAR SEDIMENT FILTER DIKES SHOULD BE INSTALLED ACROSS EXPOSED SLOPES DURING CONSTRUCTION WITH ENDS OF THE DIKE TIED INTO EXISTING GRADES TO PREVENT FAILURE AND SHOULD INTERCEPT NO MORE THAN ONE ACRE OF RUNOFF.
6. WHEN MOVED TO ALLOW VEHICULAR ACCESS, THE DIKES SHOULD BE REINSTALLED AS SOON AS POSSIBLE, BUT ALWAYS AT THE END OF THE WORKDAY.
7. INSPECTION SHOULD BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR. INSPECT AND REALIGN DIKES AS NEEDED TO PREVENT GAPS BETWEEN SECTIONS.
8. ACCUMULATED SILT SHOULD BE REMOVED AFTER EACH RAINFALL, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.

C. TEMPORARY CONSTRUCTION ENTRANCE/EXIT

1. AGGREGATE SIZE - 4 TO 8 INCHES WASHED, COARSE STONE.
2. LENGTH - AT LEAST 50 FEET.
3. THICKNESS - MINIMUM 8 INCHES.
4. WIDTH - MINIMUM WIDTH SHALL BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
5. WASHING - WHEN NECESSARY, IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM 4 INCH DIAMETER WASHED STONE OR COMMERCIAL RACK SHALL BE INSTALLED WHICH DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE - IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
8. FABRIC - PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

D. INTERCEPTOR SWALE

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

E. ROCK BERMS

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 (FIGURE 1-28), 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. 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.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
7. 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.
8. REPAIR ANY LOOSE WIRE SHEATHING. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
9. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

F. SANDBAG BERMS

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

G. STONE OUTLET SEDIMENT TRAP

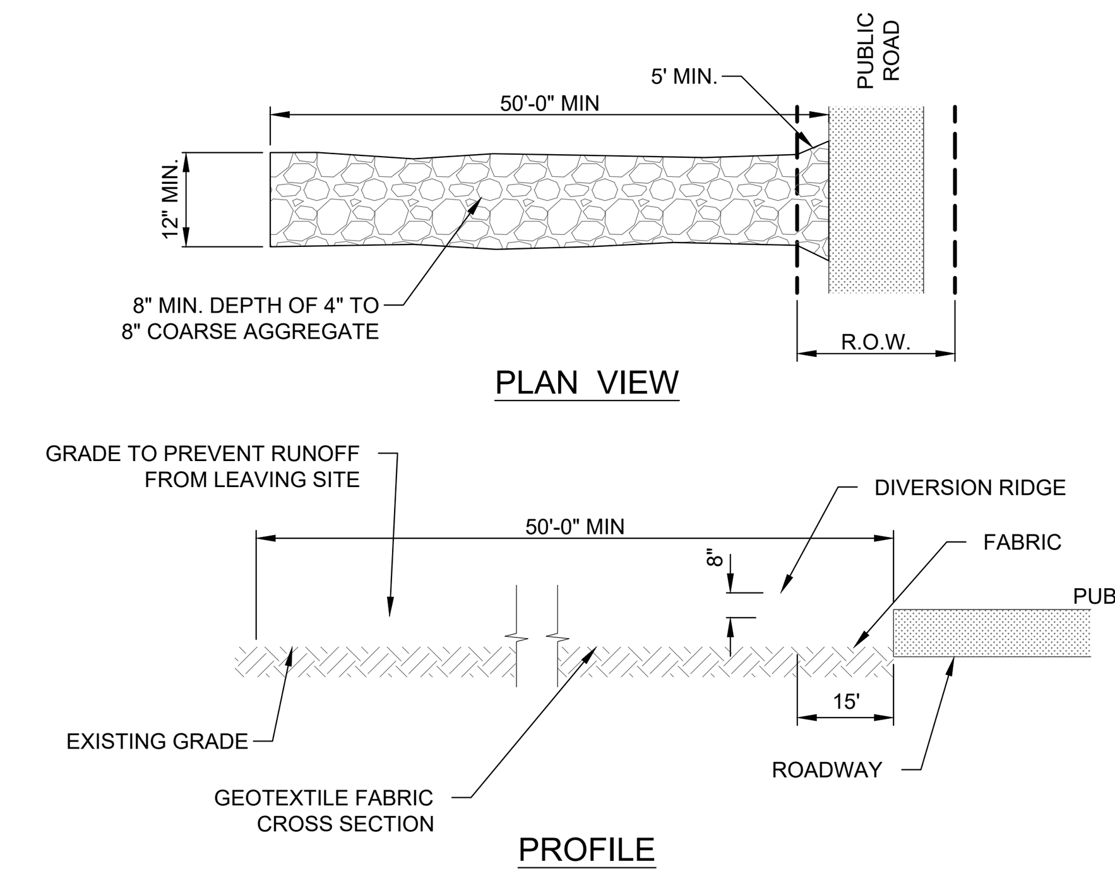
1. ALL AGGREGATE SHOULD BE AT LEAST 3 INCHES IN DIAMETER AND SHOULD NOT EXCEED A VOLUME OF 0.5 CUBIC FOOT.
2. EARTH EMBANKMENT: PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL. COMPACT EACH LAYER TO 95 PERCENT STANDARD PROCTOR DENSITY. DO NOT PLACE MATERIAL ON SURFACES THAT ARE MUDDY OR FROZEN. SIDE SLOPES FOR THE EMBANKMENT ARE TO BE 3:1. THE MINIMUM WIDTH OF THE EMBANKMENT SHOULD BE 3 FEET.
3. A GAP IS TO BE LEFT IN THE EMBANKMENT IN THE LOCATION WHERE THE NATURAL CONFLUENCE OF RUNOFF CROSSES THE EMBANKMENT LINE. THE GAP IS TO HAVE A WIDTH IN FEET EQUAL TO 6 TIMES THE DRAINAGE AREA IN ACRES.
4. GEOTEXTILE COVERED ROCK CORE: A CORE OF FILTER STONE HAVING A MINIMUM HEIGHT OF 1.5 FEET AND A MINIMUM WIDTH AT THE BASE OF 3 FEET SHOULD BE PLACED ACROSS THE OPENING OF THE EARTH EMBANKMENT AND SHOULD BE COVERED BY GEOTEXTILE FABRIC WHICH SHOULD EXTEND A MINIMUM DISTANCE OF 2 FEET IN EITHER DIRECTION FROM THE BASE OF THE FILTER STONE CORE.
5. FILTER STONE EMBANKMENT: FILTER STONE SHOULD BE PLACED OVER THE GEOTEXTILE AND IS TO HAVE A SIDE SLOPE WHICH MATCHES THAT OF THE EARTH EMBANKMENT OF 3:1 AND SHOULD COVER THE GEOTEXTILE/ROCK CORE A MINIMUM OF 6INCHES WHEN INSTALLATION IS COMPLETE. THE CREST OF THE OUTLET SHOULD BE AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. REPAIR SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. TRASH AND OTHER DEBRIS SHOULD BE REMOVED AFTER EACH RAINFALL TO PREVENT CLOGGING OF THE OUTLET STRUCTURE. SEDIMENT SHOULD BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO HALF OF THE DESIGN DEPTH OF THE TRAP.

A. SEDIMENT BASINS

1. THE DRAINAGE AREA FOR A SEDIMENT BASIN SHALL BE LESS THAN 100 ACRES.
2. THE BASIN SHOULD INCLUDE A PERMANENT STAKE TO INDICATE THE SEDIMENT LEVEL IN THE POOL AND MARKED TO INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME (NOT THE TOP OF THE STAKE). SEDIMENT SHALL BE REMOVED WHEN SEDIMENT REACHES 50% STORAGE CAPACITY.
3. PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF THE MATERIAL. COMPACT EACH LAYER TO 95 PERCENT STANDARD PROCTOR DENSITY. DO NOT PLACE MATERIAL ON SURFACES THAT ARE MUDDY OR FROZEN. SIDE SLOPES FOR THE EMBANKMENT SHOULD BE 3:1 (H:V). MINIMUM WIDTH OF THE EMBANKMENT AT THE TOP SHALL BE 8 FEET.
4. AN EMERGENCY SPILLWAY SHOULD BE INSTALLED ADJACENT TO THE EMBANKMENT ON UNDISTURBED SOIL AND SHOULD BE SIZED TO CARRY THE FULL AMOUNT OF FLOW GENERATED BYA 10-YEAR, 3-HOUR STORM WITH 1 FOOT OF FREEBOARD LESS THE AMOUNT WHICH CAN BE CARRIED BY THE PRINCIPAL OUTLET CONTROL DEVICE. THE EMERGENCY SPILLWAY SHOULD BE LINED WITH RIPRAP AS SHOULD THE SWALE LEADING FROM THE SPILLWAY TO THE NORMAL WATERCOURSE AT THE BASE OF THE EMBANKMENT.
5. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. REPAIR SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.TRASH AND OTHER DEBRIS SHOULD BE REMOVED AFTER EACH RAINFALL TO PREVENT CLOGGING OF THE OUTLET STRUCTURE.
6. ACCUMULATED SILT SHOULD BE REMOVED AND THE BASIN SHOULD BE RE- GRADED TO ITS ORIGINAL DIMENSIONS AT SUCH POINT THAT THE CAPACITY OF THE IMPOUNDMENT HAS BEEN REDUCED TO 75% OF ITS ORIGINAL STORAGE CAPACITY.

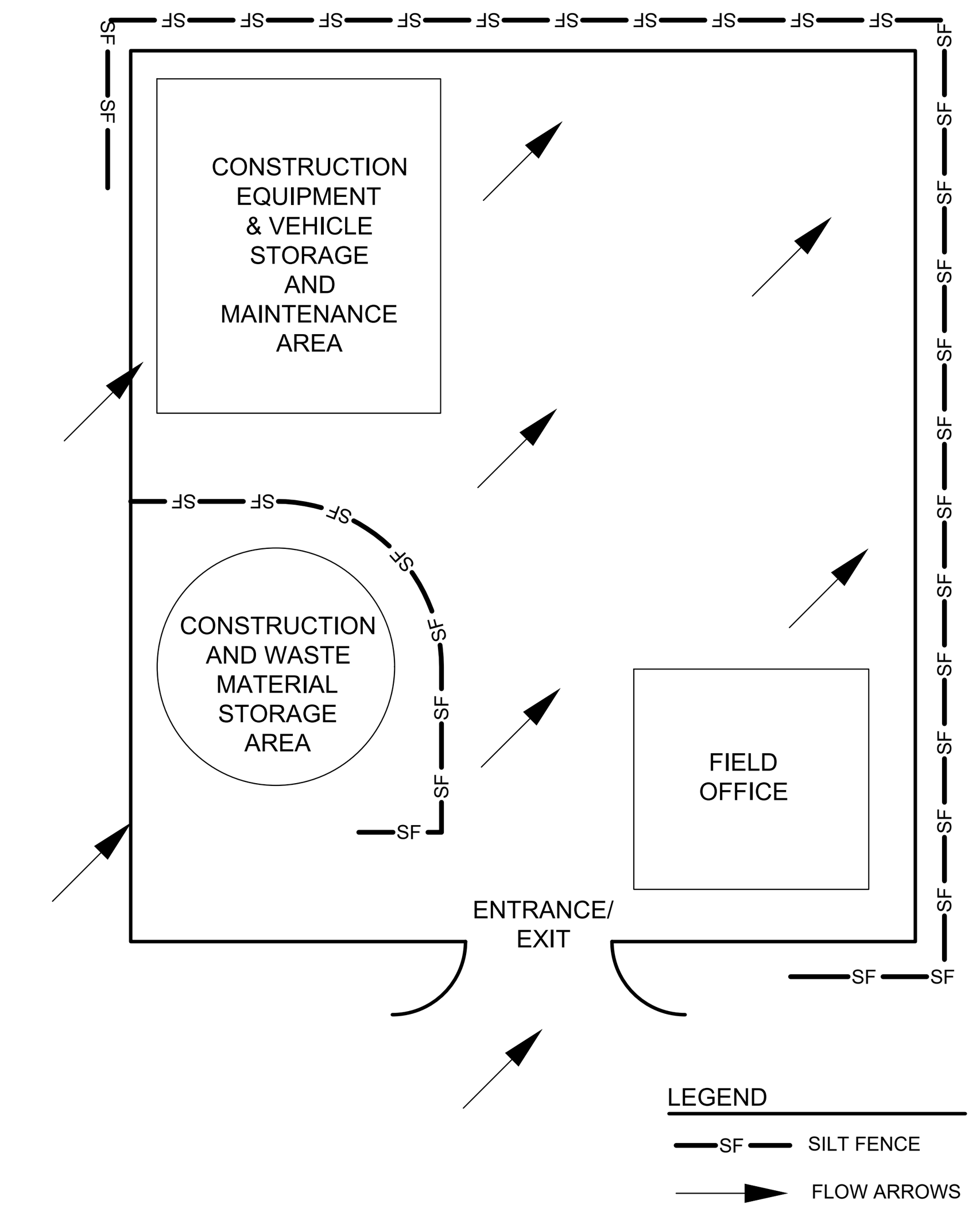
ADDITIONAL NOTES:

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



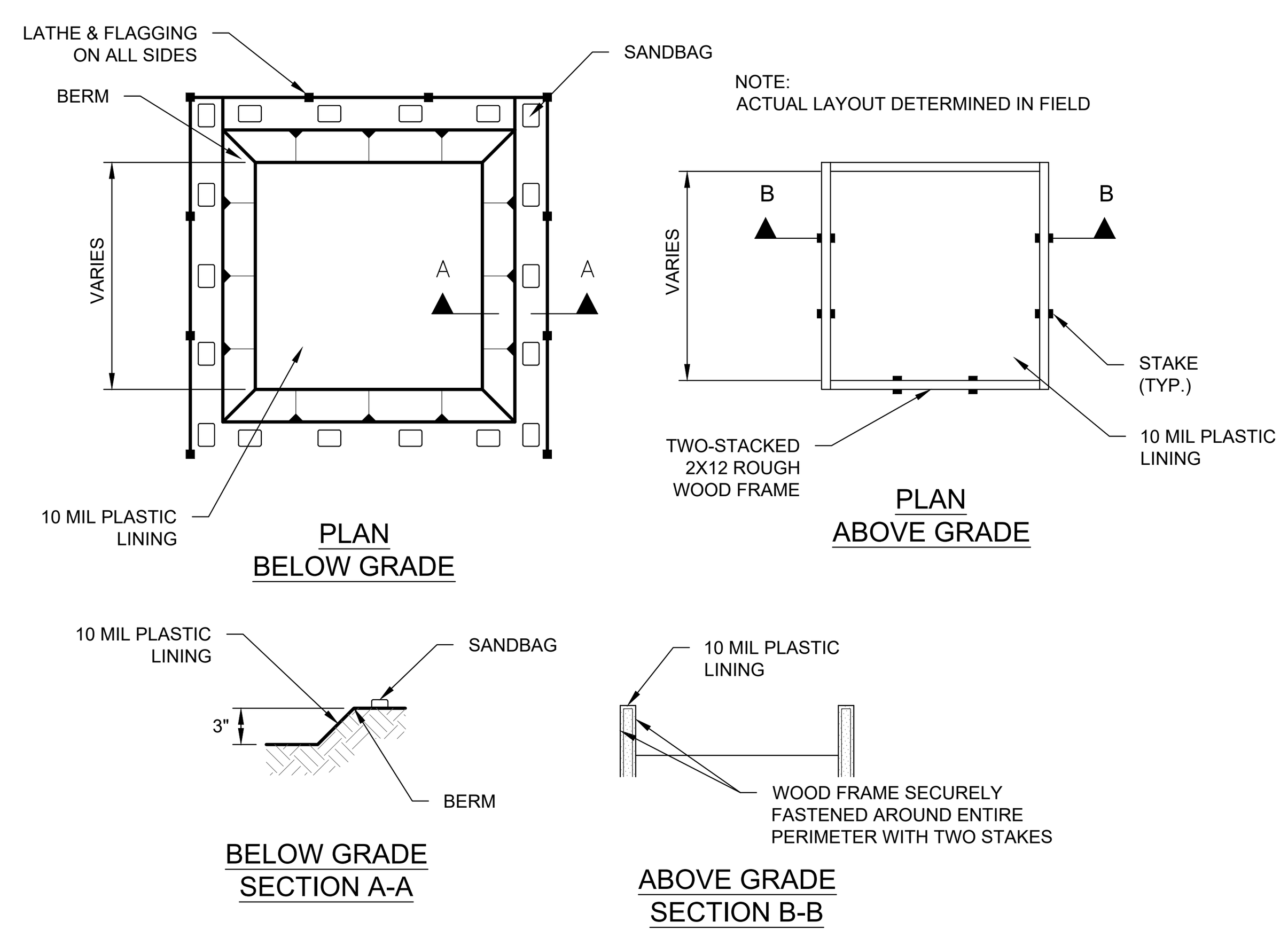
66.01 STABILIZED CONSTRUCTION EXIT

N.T.S.



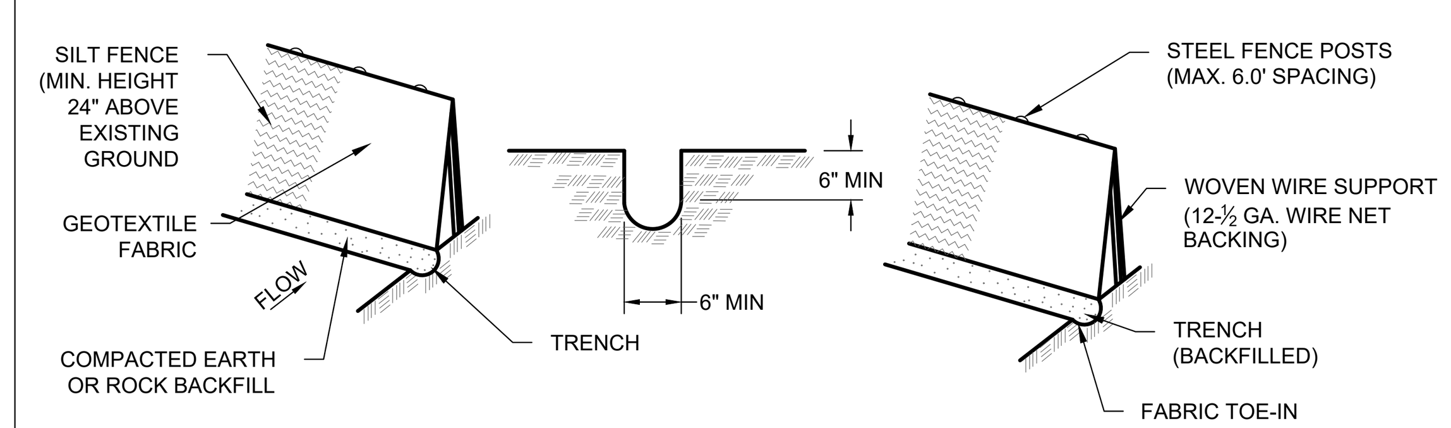
CONSTRUCTION STAGING AREA

N.T.S.



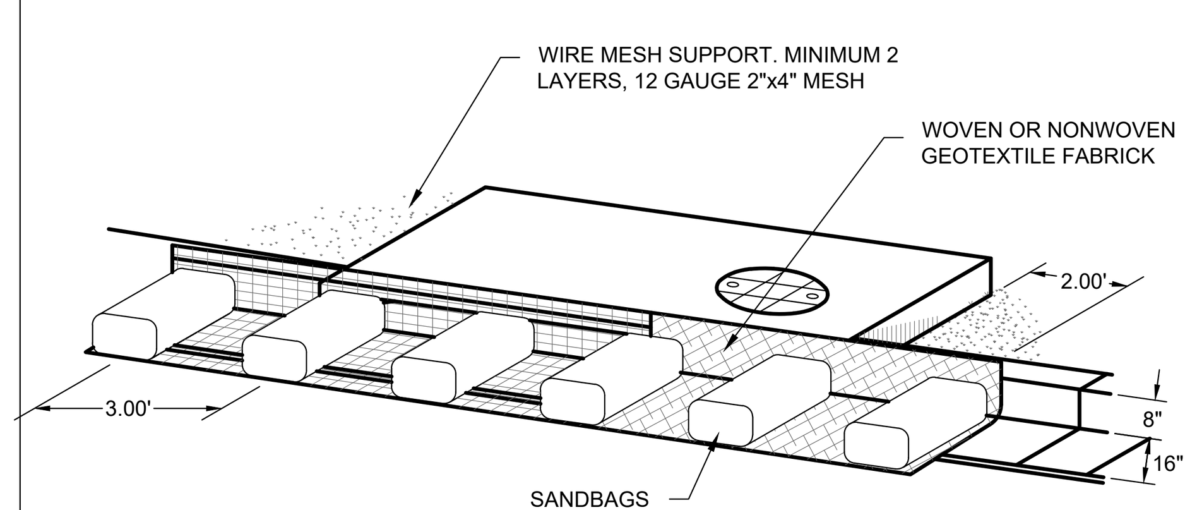
66.02 CONCRETE WASHOUT AREA

N.T.S.

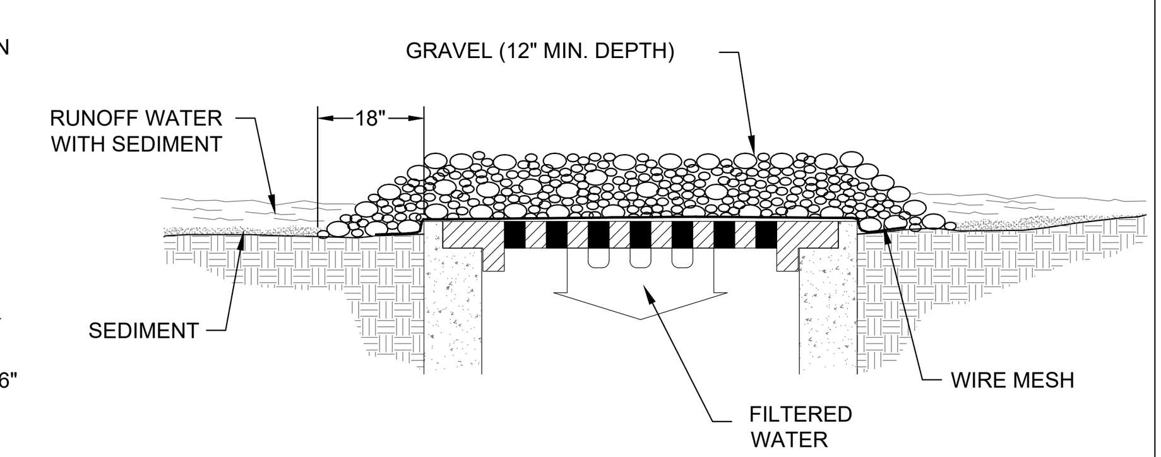


66.03 SILT FENCE

N.T.S.



CURB INLET PROTECTION



GRATE INLET PROTECTION

NOTES:

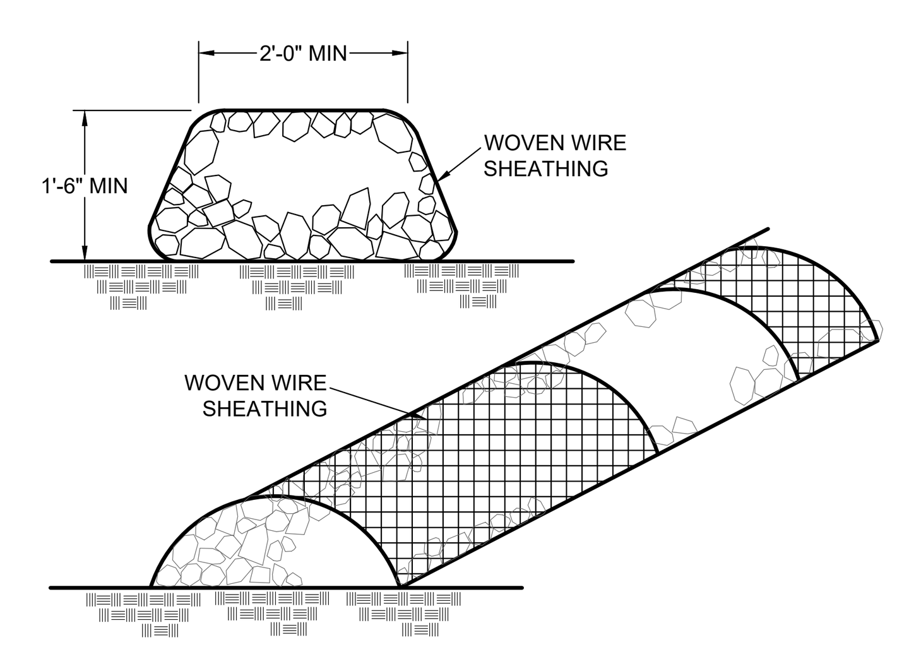
1. WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEN END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CHORD.
2. INLET PROTECTION SHALL BE PLACED OVER THE MOUTH OF THE INLET WITH A 2 FOOT OVERLAP ON EITHER SIDE.
3. THE FABRIC COVER AND SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE.
4. THE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

NOTES:

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

66.04 INLET PROTECTION

N.T.S.



NOTES:

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

66.05 ROCK BERM

N.T.S.

VERAMENDI PRECINCT 18 UNIT 2

SWPPP DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 7/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SWPPP Details.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
07/11/2024

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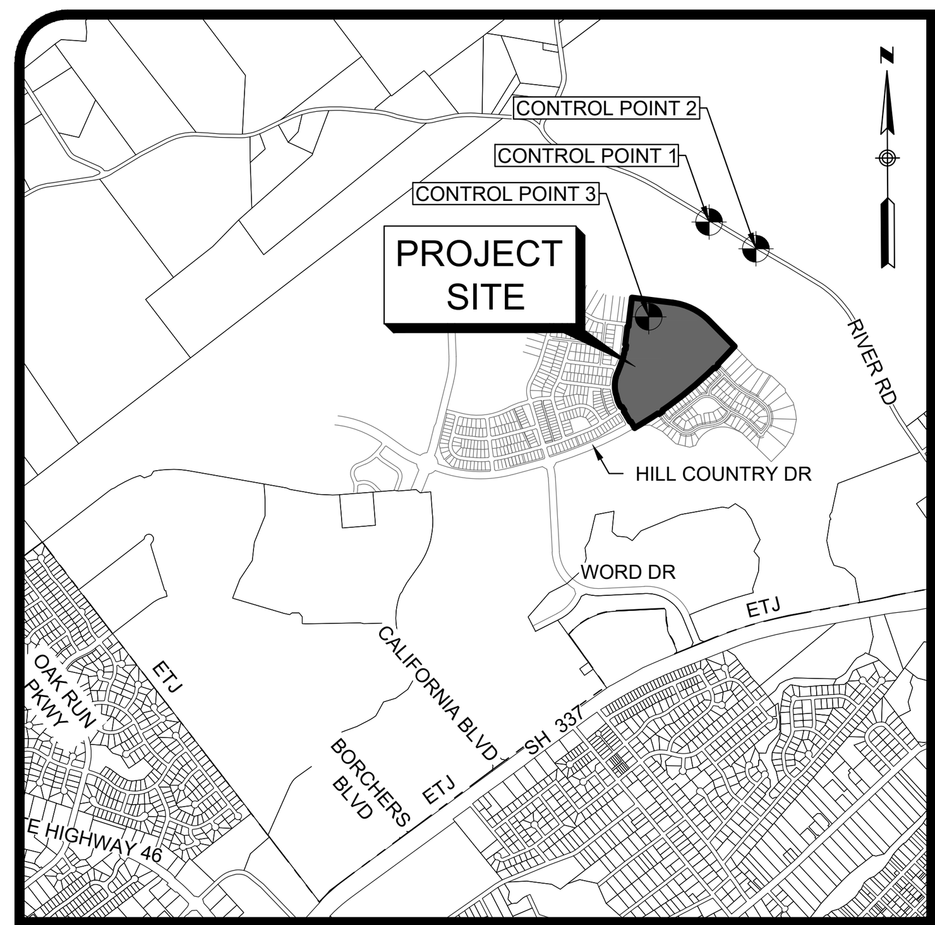
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

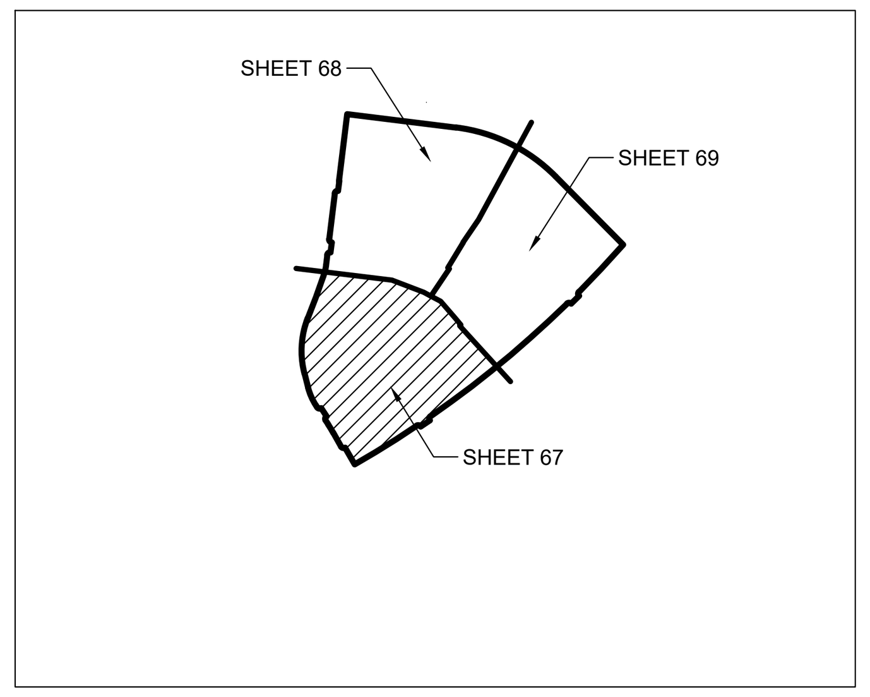
SHEET NO. 66 OF 70 SHEETS

FOR PERMIT



LOCATION MAP

N.T.S.



50 25 0 50 100

SCALE IN FEET

SCALE: 1"=50'

NOTES

1. ALL TREE PROTECTION FENCING SHALL CONSIST OF LEVEL I FENCING PROTECTION UNLESS OTHERWISE NOTED.
2. NO CONSTRUCTION SHALL OCCUR WITHIN THE ONE HALF (½) ROOT PROTECTION ZONE.
3. REFER TO SHEET 33 FOR PROTECTION DETAILS

LEGEND

- 800 — EXISTING CONTOUR
- (800) — PROPOSED CONTOUR
- UNIT 1 BOUNDARY
- LIMITS OF POTENTIAL WALLS
- TP — TREE PROTECTION FENCING
- TREE SIGNIFICANT (PRESERVE)
- TREE SIGNIFICANT (REMOVE)

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sh_Tree Preservation Plan.dwg

09/27/2024
STATE OF TEXAS
PRISCILLA G. FLORES
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LICENSED PROFESSIONAL ENGINEER

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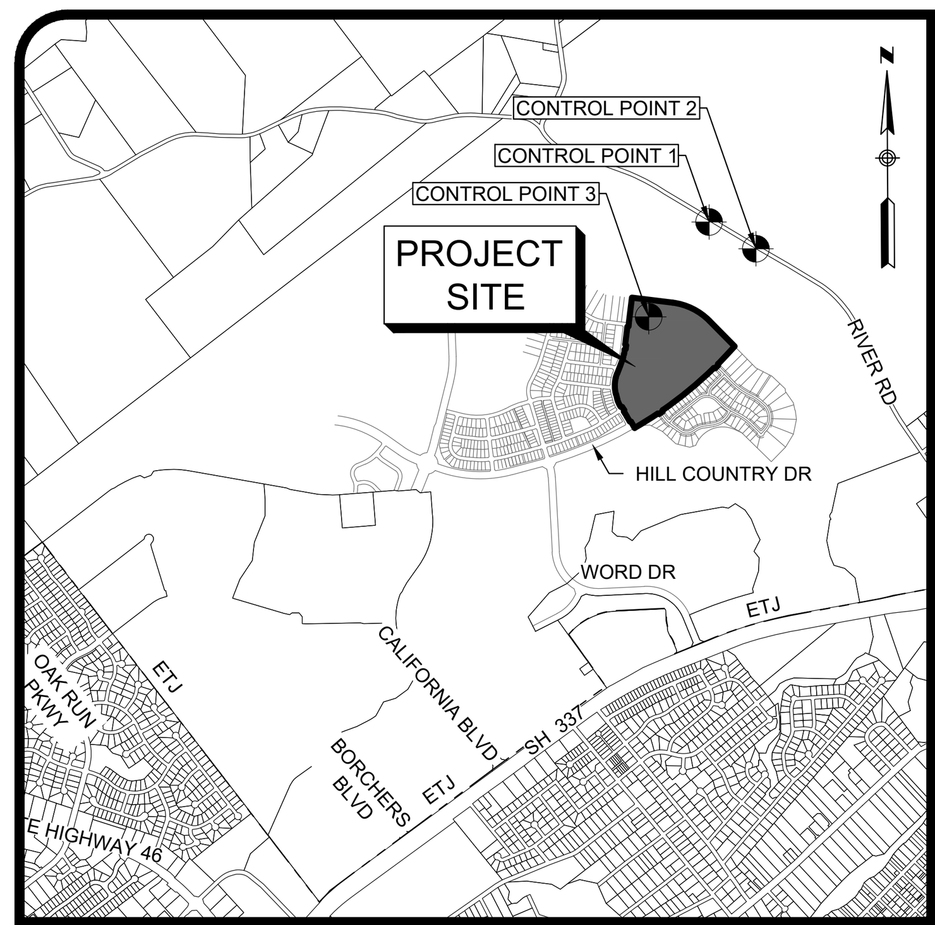
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

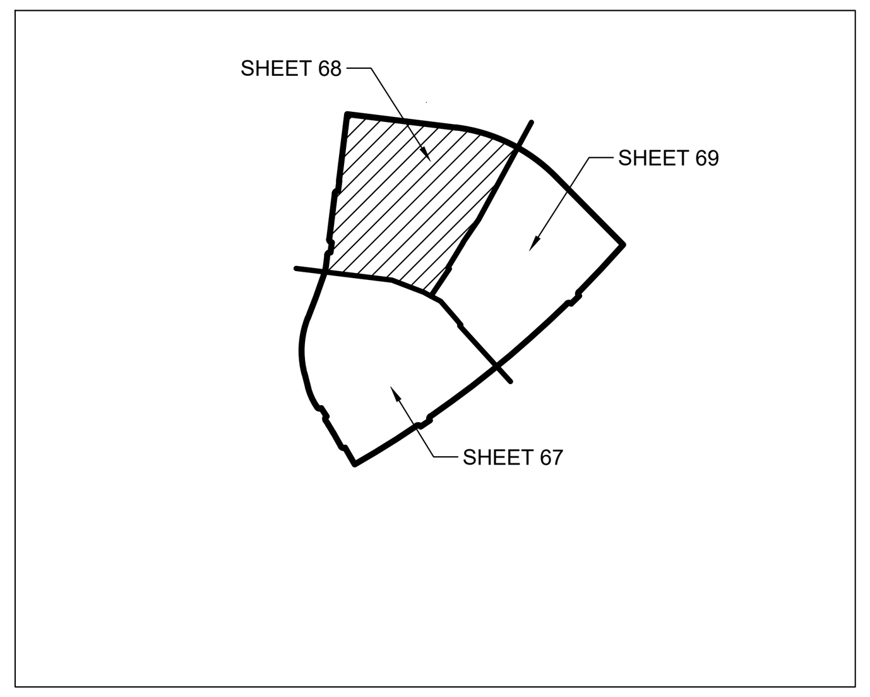
JOB NUMBER: SA3856.0402

SHEET NO. 67 OF 70 SHEETS

FOR PERMIT

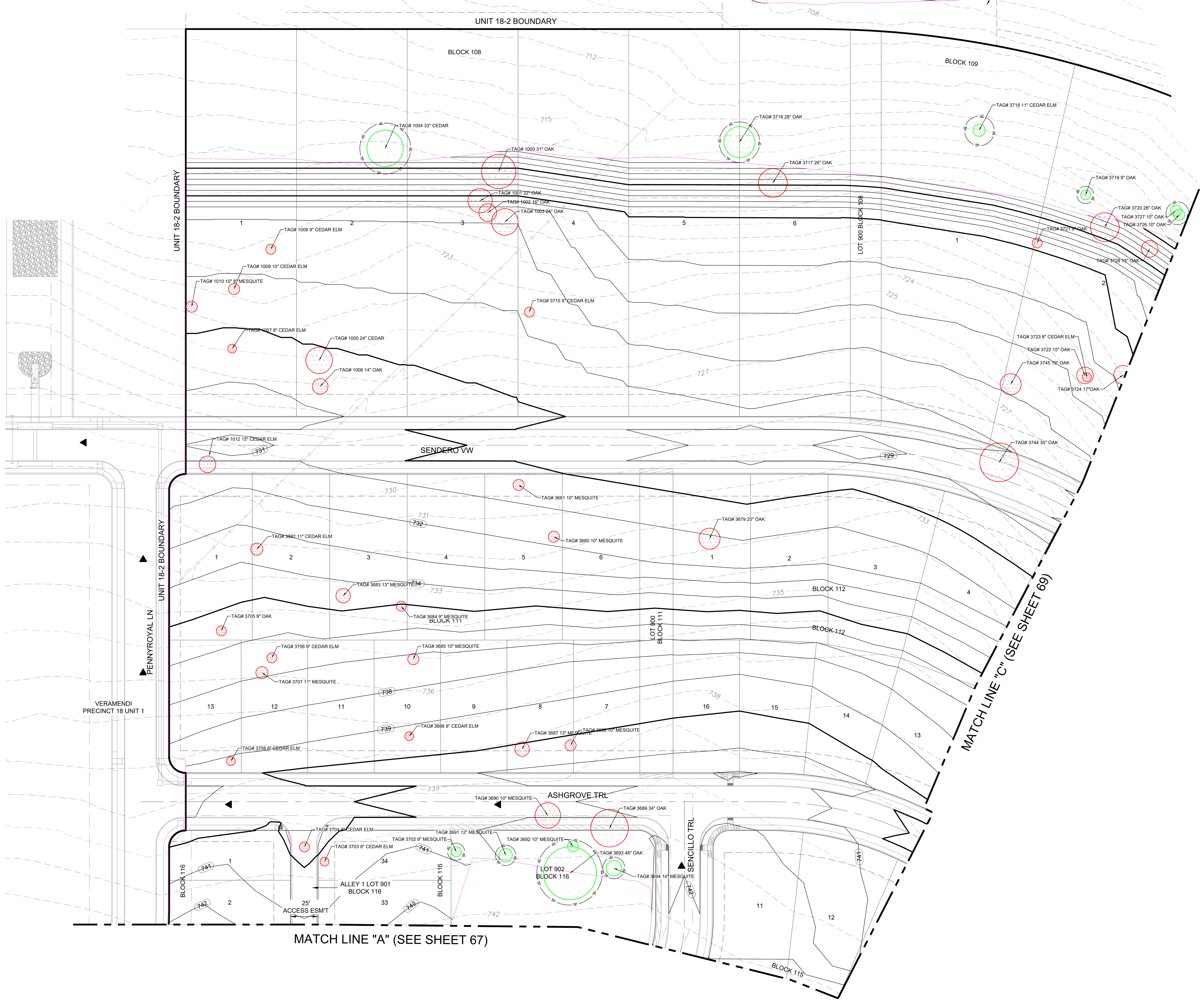


LOCATION MAP
N.T.S.



NOTES

1. ALL TREE PROTECTION FENCING SHALL CONSIST OF LEVEL I FENCING PROTECTION UNLESS OTHERWISE NOTED.
2. NO CONSTRUCTION SHALL OCCUR WITHIN THE ONE HALF (½) ROOT PROTECTION ZONE.
3. REFER TO SHEET 33 FOR PROTECTION DETAILS



LEGEND

800	EXISTING CONTOUR
(800)	PROPOSED CONTOUR
	UNIT 1 BOUNDARY
	LIMITS OF POTENTIAL WALLS
TP	TREE PROTECTION FENCING
	TREE SIGNIFICANT (PRESERVE)
	TREE SIGNIFICANT (REMOVE)

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 2 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sh_Tree Preservation Plan.dwg

09/27/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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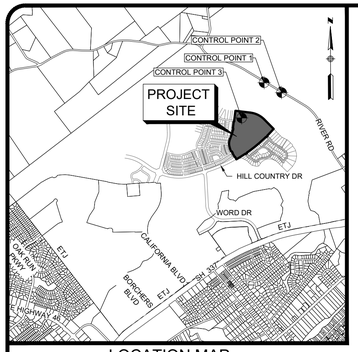
LJA.COM
TBPE No. F-1386

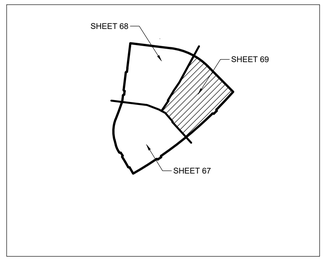
JOB NUMBER: SA3856.0402

SHEET NO. 68 OF 70 SHEETS

FOR PERMIT



LOCATION MAP
N.T.S.



50 25 0 50 100

SCALE IN FEET
SCALE: 1"=50'

LEGEND

800	EXISTING CONTOUR
800	PROPOSED CONTOUR
	UNIT 1 BOUNDARY
	LIMITS OF POTENTIAL WALLS
TP	TREE PROTECTION FENCING
	TREE SIGNIFICANT (PRESERVE)
	TREE SIGNIFICANT (REMOVE)

NOTES

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VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: s3c_Tree Preservation Plan.dwg

09/27/2024

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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 69
OF 70 SHEETS

FOR PERMIT

K:\SA3856.0402 Properties\0402 Veramendi Precinct 18-2\426 Site Development Plans\DWG-Sheets\s3c_Tree Preservation Plan.dwg
User: tmontes
Last Modified: Sep. 11, 24 - 11:56
Last Plotted: Sep. 26, 24 - 14:43:43

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
1000	31" OAK		31	
1001	22" OAK		22	
1002	16" OAK		16	
1003	24" OAK		24	
1004	33" CEDAR			33
1005	24" CEDAR		24	
1006	14" OAK		14	
1007	8" CEDAR ELM		8	
1008	9" CEDAR ELM		9	
1009	10" CEDAR ELM		10	
1010	10" 8" MESQUITE		10	
1012	15" CEDAR ELM		15	
3175	12" CEDAR ELM			12
3176	12" OAK			12
3177	36" OAK			36
3178	22" OAK			22
3179	15" OAK			15
3180	25" OAK			25
3181	8" OAK			8
3182	12" OAK			12
3183	22" OAK			22
3184	12" OAK		12	
3185	24" OAK		24	
3186	40" OAK		40	
3194	30" OAK		30	
3207	30" OAK		30	
3208	8" CEDAR ELM		8	
3209	17" CEDAR		17	
3212	11" MESQUITE		11	
3213	9" MESQUITE		9	
3214	10" MESQUITE		10	
3215	9" MESQUITE		9	
3216	13" MESQUITE		13	
3217	9" MESQUITE		9	
3218	9" MESQUITE		9	
3219	8" CEDAR ELM		8	
3220	13" MESQUITE		13	
3228	11" MESQUITE		11	
3229	10" MESQUITE		10	
3233	11" MESQUITE		11	
3234	9" MESQUITE		9	
3235	12" MESQUITE		12	
3236	9" MESQUITE		9	
3654	27" OAK		27	
3655	15" OAK		15	
3656	15" OAK		15	
3657	24" OAK		24	
3658	20" OAK		20	
3659	31" OAK		31	
3660	12" CEDAR ELM		12	
3661	9" CEDAR ELM		9	
3662	16" OAK		16	
3663	19" OAK		19	
3664	12" OAK		12	
3665	12" OAK		12	
3666	19" OAK		19	
3667	16" OAK		16	
3668	33" OAK		33	
3669	25" OAK		25	
3670	31" OAK		31	
3671	10" OAK		10	
3672	10" OAK		10	
3673	10" OAK		10	
3674	9" OAK		9	
3675	16" OAK		16	
3676	11" OAK		11	
3677	9" MESQUITE		9	
3678	15" OAK		15	
3679	25" OAK		25	
3680	10" MESQUITE		10	
3681	10" MESQUITE		10	
3682	11" CEDAR ELM		11	

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3683	13" MESQUITE		13	
3684	9" MESQUITE		9	
3685	10" MESQUITE		10	
3686	8" CEDAR ELM		8	
3687	13" MESQUITE		13	
3688	10" MESQUITE		10	
3689	34" OAK		34	
3690	10" MESQUITE		10	
3691	12" MESQUITE			12
3692	10" MESQUITE			10
3693	48" OAK			48
3694	14" MESQUITE			14
3695	8" CEDAR ELM			8
3696	12" MESQUITE			12
3697	16" Mesquite		16	
3698	14" MESQUITE			14
3699	12" MESQUITE		12	
3700	11" OAK		11	
3701	12" OAK		12	
3702	9" MESQUITE			9
3703	8" CEDAR ELM		8	
3704	9" CEDAR ELM		9	
3705	9" OAK		9	
3706	9" CEDAR ELM		9	
3707	11" MESQUITE		11	
3708	8" CEDAR ELM		8	
3709	12" MESQUITE		12	
3710	11" MESQUITE		11	
3711	8" MESQUITE		8	
3712	10" MESQUITE			10
3713	9" MESQUITE			9
3714	10" MESQUITE			10
3715	9" CEDAR ELM		9	
3716	28" OAK			28
3717	26" OAK		26	
3718	11" CEDAR ELM			11
3719	9" OAK			9
3720	26" OAK		26	
3721	9" OAK		9	
3722	15" OAK		15	
3723	8" CEDAR ELM		8	
3724	17"OAK		17	
3725	15" OAK		15	
3726	10" OAK			10
3727	10" OAK			10
3728	15" OAK		15	
3729	9" OAK		9	
3730	8" OAK		8	
3731	11" OAK		11	
3732	13" OAK		13	
3733	11" OAK		11	
3734	13" OAK		13	
3735	14" OAK		14	
3736	16" OAK		16	
3737	12" OAK		12	
3738	19" OAK		19	
3739	15" OAK		15	
3740	15" OAK		15	
3741	23" OAK		23	
3742	9" OAK		9	
3743	9" OAK		9	
3744	35" OAK		35	
3745	19" OAK		19	
4108	8" MESQUITE		8	
4109	15" OAK			15
4110	10" OAK			10
4111	14" OAK			14
4112	13" OAK			13
4113	10" OAK			10
4114	23" OAK			23
4115	8" OAK			8

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 9/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sht_Tree Preservation Plan.dwg

09/27/2024

STATE OF TEXAS
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JOB NUMBER: SA3856.0402

SHEET NO. 70 OF 70 SHEETS

FOR PERMIT

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Xrefs Imported
Last Modified: Sep. 11, 24 -- 11:56
Dwg Plotted: Sep. 26, 24 -- 8:54 a.m.