WATER POLLUTION ABATEMENT PLAN

FOR

VERAMENDI PRECINCTS 18-2 & 19-1

DECEMBER 4, 2023

Prepared For:
Veramendi PE-Emerald LLC
387 W Mill St, Ste 108
New Braunfels, TX, 78130

Prepared By:

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LJA FILE NO. SA3856-0401-0402

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Veramendi Precincts 18-2 & 19-1						**2. Regulated Entity No.:**			
3. Customer Name: Veramendi PE-Emerald LLC						**4. Customer No.:**			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**		80.45 ac	
9. Application Fee:	$6500		**10. Permanent BMP(s):**			Extended Detention Water Quality Pond & Vegetative Filter Strips			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Comal		**14. Watershed:**			Comal River-Guadalupe River			

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	__	__
Region (1 req.)	__	__	__
County(ies)	__	__	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	__Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

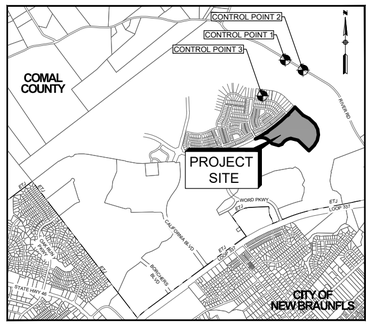
San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	X	__	__	__
Region (1 req.)	__	X	__	__	__
County(ies)	__	X	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge X_New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Priscilla G. Flores, PE. Print Name of Customer/Authorized Agent Priscilla G Flores 3/7/24 Signature of Customer/Authorized Agent Date

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Administratively Complete:		
Received From:		Correct Number of Copies:		
Received By:		Distribution Date:		
EAPP File Number:		Complex:		
Admin. Review(s) (No.):		No. AR Rounds:		
Delinquent Fees (Y/N):		Review Time Spent:		
Lat./Long. Verified:		SOS Customer Verification:		
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):			Signed (Y/N):	
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):	

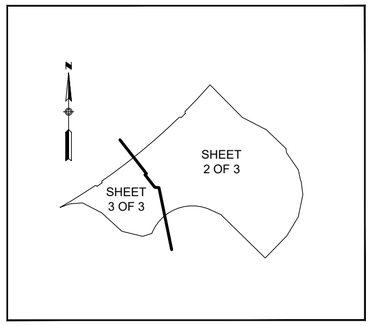
SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE

CERTIFICATE OF APPROVAL

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

_____
PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

_____ ___ _____
DIRECTOR OF PLANNING

_____ ___ _____
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 = 1.00014)
4. BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 NAD83 (NA2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE.

STATE OF TEXAS
COUNTY OF COMAL

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

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

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 WITH THE TERMS AND CONDITIONS IN THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO NEW BRAUNFELS UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF THE CITY OF NEW BRAUNFELS OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
2. UTILITIES WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE BUILDING STRUCTURE ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
3. UTILITIES SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARD AND METER LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
4. EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE OWNER/DEVELOPER'S EXPENSE.
5. DO NOT COMBINE ANY NEW UTILITY EASEMENTS (UE) WITH DRAINAGE EASEMENTS (DE) OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS (UE) WITHOUT WRITTEN APPROVAL FROM NEW BRAUNFELS UTILITIES.
6. NBU IS NOT RESPONSIBLE FOR LANDSCAPING OR IRRIGATION IN UE/LE.

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)

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. BELLOTA TRL
   C. LENTISCO ST
   D. PALMILLA AVE
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 121; LOT 900, BLK 120; LOT 900, BLK 122; LOT 900, BLK 119; LOT 900, BLK 118.
   B. BELLOTA TRL - LOT 900, BLOCK 123; LOT 900, BLK 121; LOT 900, BLK 122.
   C. LENTISCO ST - LOT 901, BLOCK 117; LOT 900, BLK 121; LOT 900, BLK 117; LOT 900, BLK 123.
3. TEN (10) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION CONSTRUCTION WITHIN: A. LOT 900 BLOCK 119. (DDCD 13.3.5)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S6° 04' 06"E	37.82
L2	S12° 00' 43"E	100.00
L3	S30° 16' 26"E	12.08
L4	S5° 41' 02"E	136.91
L5	N65° 59' 17"W	109.97
L6	S72° 46' 02"W	90.00
L7	S85° 44' 51"W	120.00
L8	S69° 30' 30"W	95.65
L9	N55° 42' 46"E	58.00
L10	N45° 17' 29"E	58.00
L11	S44° 42' 31"E	39.00
L12	S42° 59' 25"E	100.04
L13	S44° 42' 31"E	39.25
L14	S62° 39' 38"E	90.66
L15	S48° 55' 50"E	51.17
L16	S44° 21' 07"W	19.51
L17	N62° 45' 07"W	84.91
L18	S30° 36' 17"W	17.64
L19	S81° 31' 28"W	130.65
L20	S57° 00' 07"W	50.00
L21	N54° 16' 43"W	48.40
L22	N55° 59' 49"W	100.04
L23	N54° 16' 43"W	28.51
L24	N34° 17' 14"W	82.52
L25	S34° 17' 14"E	82.52
L26	N37° 44' 35"E	22.51
L27	N51° 53' 16"E	397.97
L28	N7° 51' 03"E	14.79
L29	N44° 42' 31"W	110.17
L30	S46° 27' 43"E	98.05

LINE TABLE		
LINE	DIRECTION	LENGTH
L31	S44° 42' 31"E	39.25
L32	S62° 39' 38"E	90.66
L33	S48° 55' 50"E	51.17
L34	S44° 21' 07"W	28.83
L35	N62° 45' 07"W	84.91
L36	N45° 51' 56"W	75.28
L37	N7° 51' 03"E	14.79
L38	S45° 51' 56"E	75.28
L39	S30° 36' 17"W	17.64
L40	S81° 31' 28"W	130.65
L41	S57° 00' 07"W	50.00
L42	N54° 16' 43"W	48.40
L43	N52° 31' 26"W	97.97
L44	N37° 44' 35"E	24.10
L46	S38° 06' 44"E	131.36
L47	N38° 06' 44"W	138.34
L48	S47° 50' 11"W	60.64
L49	N86° 23' 21"W	38.22

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. (78) RESIDENTIAL LOTS, (8) COMMON SPACE LOTS.

COMMON SPACE NOTES:

LOT 900, BLOCK 117 IS A LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 901, BLOCK 117 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 118 IS A DRAINAGE, LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 119 IS A LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 120 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 121 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 123 IS A DRAINAGE, LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 125 IS A LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT

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

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C1	653.66	405.00	92°28'28"	422.88	S67° 46' 28"W	584.99
C2	380.09	5550.00	3°55'26"	190.12	N58° 07' 39"E	380.01
C3	23.44	15.00	89°32'49"	14.88	S79° 03' 39"E	21.13
C4	23.44	15.00	89°32'49"	14.88	N10° 29' 10"E	21.13
C5	921.70	5550.00	9°30'55"	461.91	N50° 30' 07"E	920.64
C6	23.44	15.00	89°32'49"	14.88	S89° 28' 56"E	21.13
C7	23.44	15.00	89°32'49"	14.88	N0° 03' 54"E	21.13
C8	335.41	5550.00	3°27'46"	167.76	N43° 06' 25"E	335.36
C9	226.84	724.00	17°57'07"	114.36	N53° 41' 04"W	225.92
C10	144.02	601.00	13°43'48"	72.36	N55° 47' 44"W	143.68
C11	449.35	276.00	93°16'57"	292.28	N2° 17' 21"W	401.34
C12	10.07	15.00	38°27'27"	5.23	N25° 07' 24"E	9.88
C13	145.66	50.00	166°54'54"	435.97	N89° 21' 07"E	99.35
C14	10.07	15.00	38°27'27"	5.23	S26° 25' 09"E	9.88
C15	194.64	652.00	17°06'15"	98.05	S54° 12' 00"E	193.91
C16	5.22	776.00	0°23'09"	2.61	S62° 33' 33"E	5.22
C17	22.78	15.00	87°01'44"	14.24	N74° 07' 09"E	20.66
C18	289.72	326.00	50°55'10"	155.21	N56° 03' 53"E	280.28

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C19	117.27	274.00	24°31'21"	59.55	N69° 15' 47"E	116.38
C20	211.09	176.00	68°43'10"	120.33	S88° 38' 18"E	198.66
C21	128.75	369.00	19°59'29"	65.04	S44° 16' 59"E	128.10
C22	54.32	311.00	10°00'28"	27.23	S39° 17' 29"E	54.25
C23	25.65	15.00	97°57'43"	17.24	N86° 43' 26"E	22.63
C24	68.14	276.00	14°08'41"	34.24	N44° 48' 55"E	67.96
C25	142.66	226.00	36°10'05"	73.80	N69° 58' 19"E	140.31
C26	21.00	15.00	80°12'18"	12.63	N47° 57' 12"E	19.32
C27	98.67	151.00	37°26'26"	51.17	N26° 34' 16"E	96.93
C28	23.56	15.00	90°00'00"	15.00	N0° 17' 29"E	21.21
C29	23.56	15.00	90°00'00"	15.00	S89° 42' 31"E	21.21
C30	243.14	776.00	17°57'07"	122.57	S53° 41' 04"E	242.14
C31	131.56	549.00	13°43'48"	66.10	S55° 47' 44"E	131.24
C32	364.69	224.00	93°16'57"	237.22	S2° 17' 21"E	325.73
C33	23.56	15.00	90°00'00"	15.00	S89° 21' 07"W	21.21
C34	210.16	704.00	17°06'15"	105.87	N54° 12' 00"W	209.38
C35	213.38	724.00	16°53'11"	107.47	N54° 18' 32"W	212.61
C36	104.48	226.00	26°29'18"	53.19	N59° 06' 35"W	103.55

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C37	21.00	15.00	80°12'18"	12.63	N32° 15' 05"W	19.32
C38	64.69	99.00	37°26'26"	33.55	N26° 34' 16"E	63.55
C39	110.19	174.00	36°17'01"	57.01	S64° 00' 26"E	108.36
C40	143.00	776.00	10°33'30"	71.70	S51° 08' 41"E	142.80
C41	22.78	15.00	87°01'44"	14.24	S12° 54' 34"E	20.66
C42	243.51	274.00	50°55'10"	130.46	S56° 03' 53"W	235.57
C43	139.53	326.00	24°31'21"	70.85	S69° 15' 47"W	138.47
C44	148.72	124.00	68°43'10"	84.78	N88° 38' 18"W	139.97
C45	24.09	15.00	92°01'18"	15.54	N8° 16' 04"W	21.58
C46	55.30	224.00	14°08'41"	27.79	N44° 48' 55"E	55.16
C47	139.58	174.00	45°57'47"	73.79	N74° 52' 10"E	135.87
C48	350.29	5570.00	3°36'12"	175.20	N43° 11' 29"E	350.24
C50	65.23	291.00	12°50'37"	32.75	N40° 42' 33"W	65.10
C51	538.58	5570.00	5°32'24"	269.50	N52° 26' 19"E	538.37
C52	356.51	5570.00	3°40'02"	178.32	N47° 37' 45"E	356.45

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

DATE OF PREPARATION: 3/28/2024

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 19 UNIT 1 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

_____
OWNER/DEVELOPER: GARRETT MECHLER
VERAMENDI PE - EMERALD, LLC
387 W. MILL STREET, SUITE 200
NEW BRAUNFELS, TEXAS 78132

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

K:\SA\3856-ASA Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\sh_Plat.dwg
User: ngower - Plot Date/Time: Apr. 10, 24 - 10:10:36

SUBDIVISION PLAT OF VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

100 50 0 100 200

SCALE: 1" = 100'

LJA Engineering, Inc.

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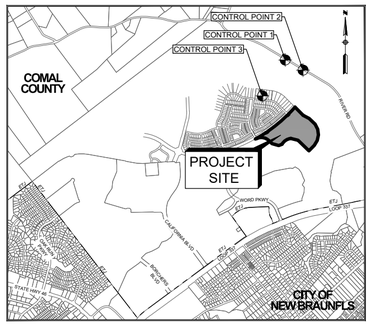
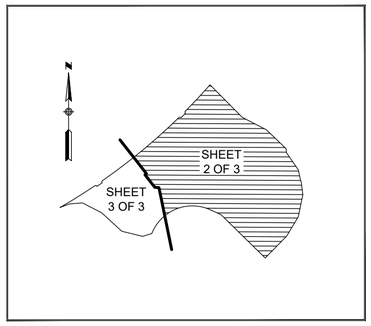
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 3/28/2024



LOCATION MAP
NOT TO SCALE



INDEX MAP
NOT TO SCALE

LEGEND

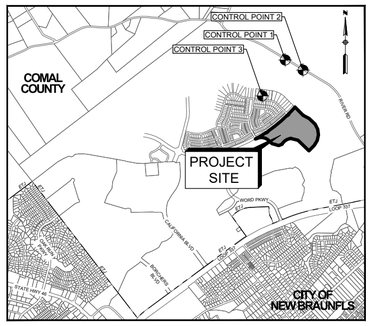
●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
AC	ACRE(S)
DOC	DOCUMENT NUMBER
OPR	OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS
MPR	MAP AND PLAT RECORDS OF COMAL COUNTY, TEXAS
R.O.W.	RIGHT-OF-WAY
VOL.	VOLUME
PG.	PAGE(S)
ESM'T	EASEMENT
ETJ	EXTRATERRITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK

- (A) 20' UTILITY ESM'T
- (B) 10' UTILITY ESM'T
- (C) 20' SEWER ESM'T
- (D) 20' DRAINAGE ESM'T
- (E) VAR. WIDTH DRAINAGE ESM'T
- (F) 20' OFF-LOT DRAINAGE ESM'T
- (A) 20' SANITARY SEWER LINE ESM'T (VOL. 1018, PG. 730, OPR)

K:\SA3856-ASA Properties\0401 Veramendi Precinct 19-11\426 Site Development Plans\DWG-Sheets\sh_Plot.dwg
User: ngower Plot Date/Time: Apr. 10, 24 - 10:10:48

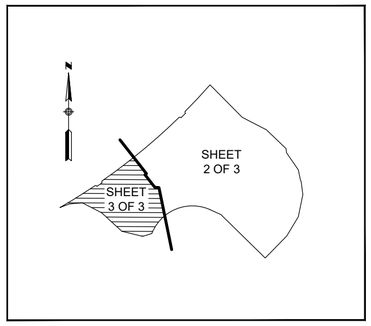
SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP

NOT TO SCALE



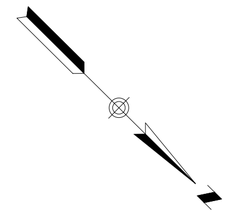
INDEX MAP

NOT TO SCALE

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
AC	ACRE(S)
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)
ESM'T	EASEMENT
ETJ	EXTRATERRITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK

- (A) 20' UTILITY ESM'T
- (B) 10' UTILITY ESM'T
- (C) 20' SEWER ESM'T
- (D) 20' DRAINAGE ESM'T
- (E) VAR. WIDTH DRAINAGE ESM'T
- (F) 20' OFF-LOT DRAINAGE ESM'T
- (A) 20' SANITARY SEWER LINE ESM'T (VOL. 1018, PG. 730, OPR)



100 50 0 100 200

SCALE: 1" = 100'

LJA Engineering, Inc.

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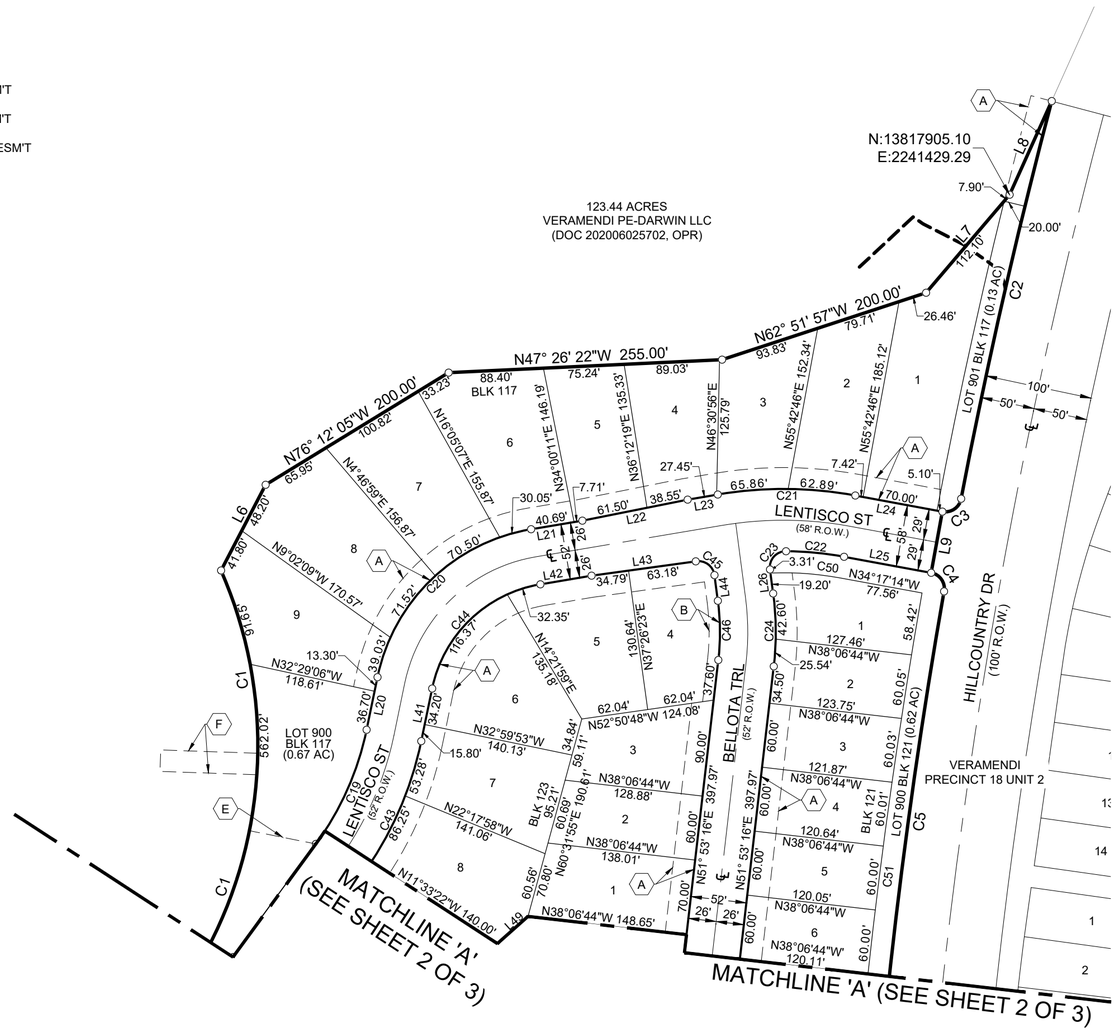
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 3/28/2024



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User: rgower Plot Date/Time: Apr. 10, 24 — 10:10:58

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.

LJA Engineering, Inc.

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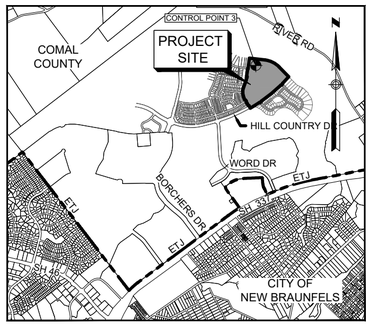
San Antonio, Texas 78230

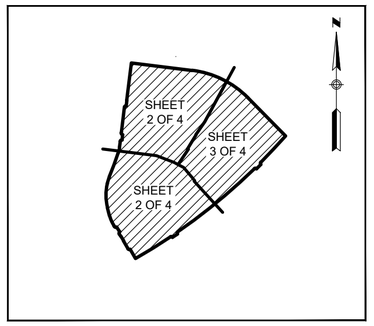
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: DECEMBER 04, 2023



LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE

CERTIFICATE OF APPROVAL

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

_____
PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

_____ ___ _____
DIRECTOR OF PLANNING

_____ ___ _____
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 _____, 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

_____
JACOB GOEBEL
REGISTERED PROFESSIONAL LAND SURVEYOR #XXXX
LJA ENGINEERING, INC.
9830 COLONNADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 78230

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 WITH THE TERMS AND CONDITIONS IN THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO NEW BRAUNFELS UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF THE CITY OF NEW BRAUNFELS OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
2. UTILITIES WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE BUILDING STRUCTURE ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
3. UTILITIES SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARD AND METER LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
4. EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE OWNER/DEVELOPER'S EXPENSE.
5. DO NOT COMBINE ANY NEW UTILITY EASEMENTS (UE) WITH DRAINAGE EASEMENTS (DE) OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS (UE) WITHOUT WRITTEN APPROVAL FROM NEW BRAUNFELS UTILITIES.
6. NBU IS NOT RESPONSIBLE FOR LANDSCAPING OR IRRIGATION IN UE/LE.

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)

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

A SIX (6) FOOT WIDE SIDE WALK IS REQUIRED TO BE CONSTRUCTED ON THE SOUTH SIDE OF HILL COUNTRY DRIVE.

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.

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	S89° 28' 56"E	21.13
C5	921.70	5550.00	9°30'55"	461.91	N50° 30' 07"E	920.64
C6	23.44	15.00	89°32'49"	14.88	N10° 29' 10"E	21.13
C7	23.44	15.00	89°32'49"	14.88	S79° 03' 39"E	21.13
C8	380.03	5550.00	3°55'24"	190.09	N58° 07' 38"E	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	S77° 54' 04"E	21.21
C13	102.94	321.00	18°22'26"	51.92	S23° 42' 52"E	102.50
C14	190.55	471.00	23°10'48"	96.60	S9° 33' 08"W	189.25
C15	190.55	471.00	23°10'48"	96.60	S9° 33' 08"W	189.25
C16	54.41	226.00	13°47'36"	27.34	N13° 53' 48"E	54.28
C17	23.56	15.00	90°00'00"	15.00	S52° 00' 00"W	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	351.53	526.00	38°17'29"	182.61	S63° 51' 16"E	345.03
C21	23.68	15.00	90°27'50"	15.12	S89° 56' 26"E	21.30
C22	335.18	5450.00	3°31'26"	167.64	N43° 03' 56"E	335.13

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
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	23.68	15.00	90°27'50"	15.12	S0° 31' 24"W	21.30
C29	1363.43	5450.00	14°20'01"	685.29	S52° 55' 20"W	1359.87
C30	72.85	474.00	8°48'22"	36.50	N61° 30' 06"E	72.78
C31	115.80	526.00	12°36'48"	58.13	N59° 35' 53"E	115.56
C32	220.44	2526.00	5°00'00"	110.29	N50° 47' 29"E	220.37
C33	106.08	2026.00	3°00'00"	53.05	N46° 47' 29"E	106.07
C34	23.56	15.00	90°00'00"	15.00	S89° 42' 31"E	21.21
C35	197.46	274.00	41°17'29"	103.24	S62° 21' 16"E	193.22
C36	23.56	15.00	90°00'00"	15.00	S3° 17' 29"W	21.21
C37	215.90	2474.00	5°00'00"	108.02	S50° 47' 29"W	215.83
C38	104.35	474.00	12°36'48"	52.39	S59° 35' 53"W	104.14
C39	23.56	15.00	90°00'00"	15.00	N69° 05' 43"W	21.21
C40	238.15	174.00	78°25'05"	141.96	N15° 06' 50"E	219.99
C41	124.72	151.00	47°19'23"	66.16	N30° 39' 41"E	121.20
C42	23.56	15.00	90°00'00"	15.00	N52° 00' 00"E	21.21
C43	23.56	15.00	90°00'00"	15.00	N38° 00' 00"W	21.21
C44	81.77	99.00	47°19'23"	43.38	N30° 39' 41"E	79.46

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C45	309.32	226.00	78°25'05"	184.38	N15° 06' 50"E	285.73
C46	23.56	15.00	90°00'00"	15.00	N20° 54' 17"E	21.21
C48	208.27	333.50	35°46'50"	107.66	S6° 12' 17"E	204.90
C49	66.44	812.50	4°41'08"	33.24	S9° 20' 34"W	66.43
C52	64.40	787.50	4°41'08"	32.22	N9° 20' 34"E	64.38
C53	223.88	358.50	35°46'50"	115.73	N6° 12' 17"W	220.26
C55	51.57	526.00	5°37'03"	25.81	N63° 05' 46"E	51.55
C56	101.99	2450.57	2°23'05"	51.00	N45° 00' 30"E	101.99
C57	48.08	2146.00	1°17'01"	24.04	N46° 52' 57"E	48.08
C58	16.92	3197.78	0°18'11"	8.46	N48° 18' 16"E	16.92
C59	98.28	2804.14	2°00'29"	49.14	N49° 45' 21"E	98.27
C60	115.52	2647.51	2°30'00"	57.77	N52° 02' 26"E	115.51
C61	142.21	646.00	12°36'48"	71.40	S59° 35' 53"W	141.93
C62	292.57	468.50	35°46'50"	151.23	S6° 12' 17"E	287.84
C63	54.18	677.50	4°34'55"	27.10	S9° 23' 40"W	54.16

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N45° 17' 29"E	58.00
L2	N55° 42' 46"E	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	S32° 54' 04"E	10.87
L8	S14° 31' 39"E	74.48
L9	S21° 08' 32"W	66.93
L10	S19° 25' 26"W	100.04
L11	S21° 08' 32"W	16.41
L12	S7° 00' 00"W	56.12
L13	N7° 00' 00"E	52.00
L14	N7° 00' 00"E	52.00
L15	S44° 42' 31"E	105.96
L16	S46° 25' 37"E	100.04
L17	S44° 42' 31"E	105.96
L18	S42° 59' 25"E	100.04
L19	S45° 17' 29"W	51.43
L20	S48° 17' 29"W	88.76
L21	N41° 42' 31"W	136.09
L22	S44° 42' 31"E	114.82
L23	N57° 05' 56"E	34.36
L24	N45° 17' 29"E	51.43
L25	S83° 00' 00"E	35.00
L26	S41° 42' 31"E	136.09
L27	S48° 17' 29"W	55.59
L28	S65° 54' 17"W	10.15
L29	N24° 05' 43"W	108.04
L30	N7° 00' 00"E	65.08
L31	N7° 00' 00"E	65.08
L32	N24° 05' 43"W	108.04

LINE TABLE		
LINE	DIRECTION	LENGTH
L33	N65° 54' 17"E	176.01
L34	S24° 05' 43"E	123.04
L35	S11° 41' 08"W	163.34
L36	S7° 00' 00"W	163.77
L38	N7° 00' 00"E	163.77
L39	N11° 41' 08"E	163.34
L40	N24° 05' 43"W	123.04
L42	N57° 05' 56"E	34.36
L43	N53° 17' 29"E	21.58
L45	S63° 45' 51"W	26.33
L46	S58° 08' 15"W	55.71
L47	N69° 04' 05"W	72.72
L48	N7° 00' 00"E	163.77
L49	N11° 41' 08"E	89.22
L50	N82° 57' 47"W	86.24
L51	N80° 09' 53"W	43.38
L52	N72° 26' 14"W	77.12
L53	N62° 32' 32"W	77.12
L54	N52° 38' 50"W	77.12
L55	N44° 43' 54"W	46.31
L56	N41° 42' 31"W	151.02
L57	N53° 17' 29"E	15.20
L58	S24° 05' 43"E	125.56
L59	N43° 06' 25"E	9.93
L60	N60° 54' 20"E	38.56
L61	S29° 07' 00"E	24.00
L62	S60° 54' 16"W	40.84
L63	N44° 42' 31"W	24.02

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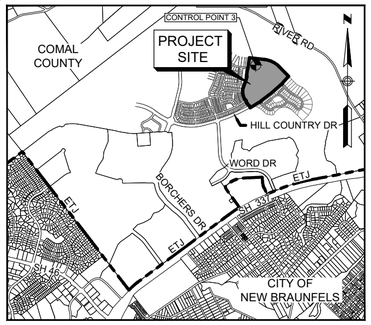
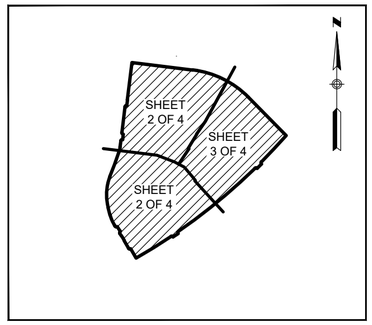
User: ngower

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

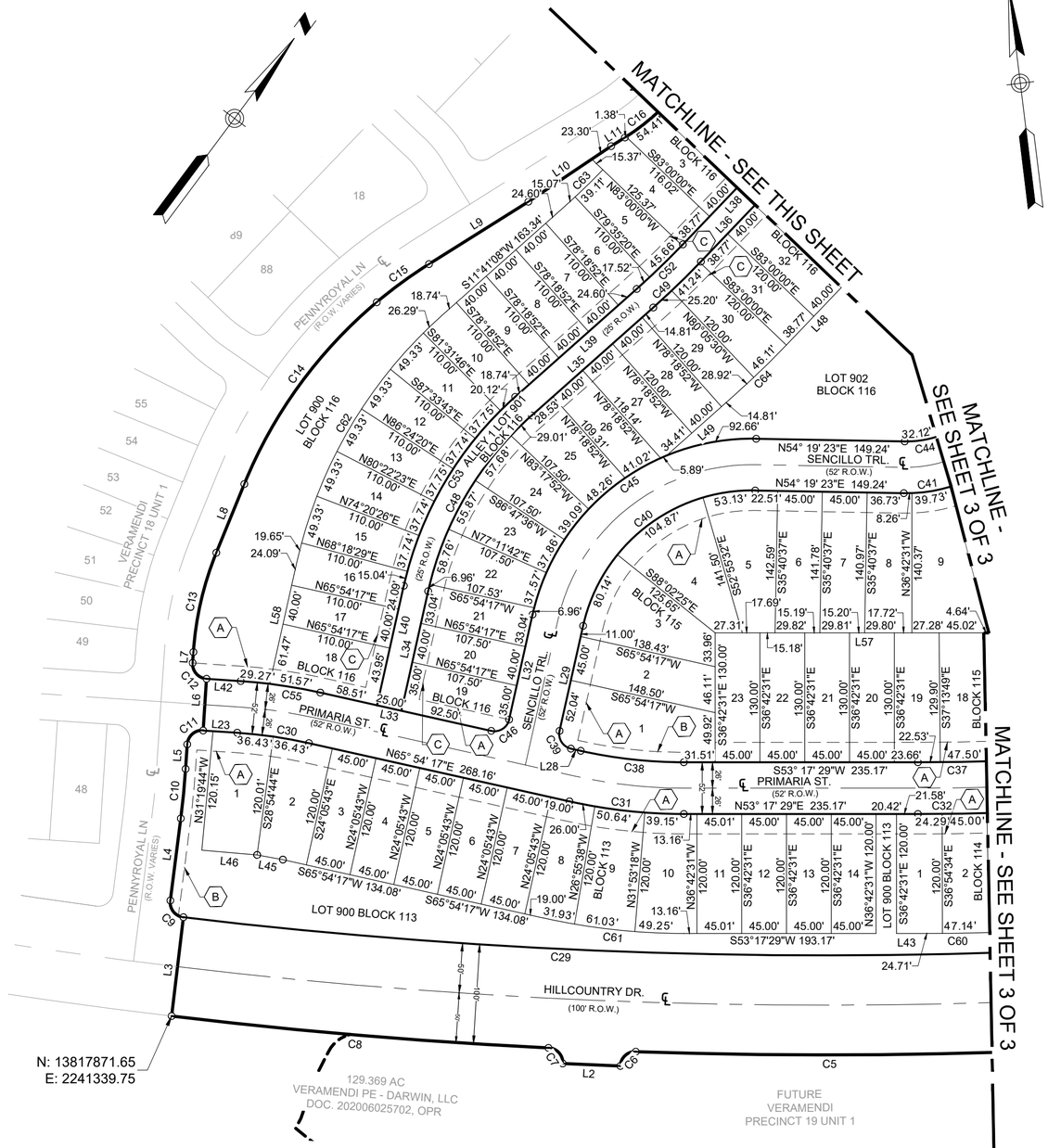
100 50 0 100 200
SCALE: 1" = 100'

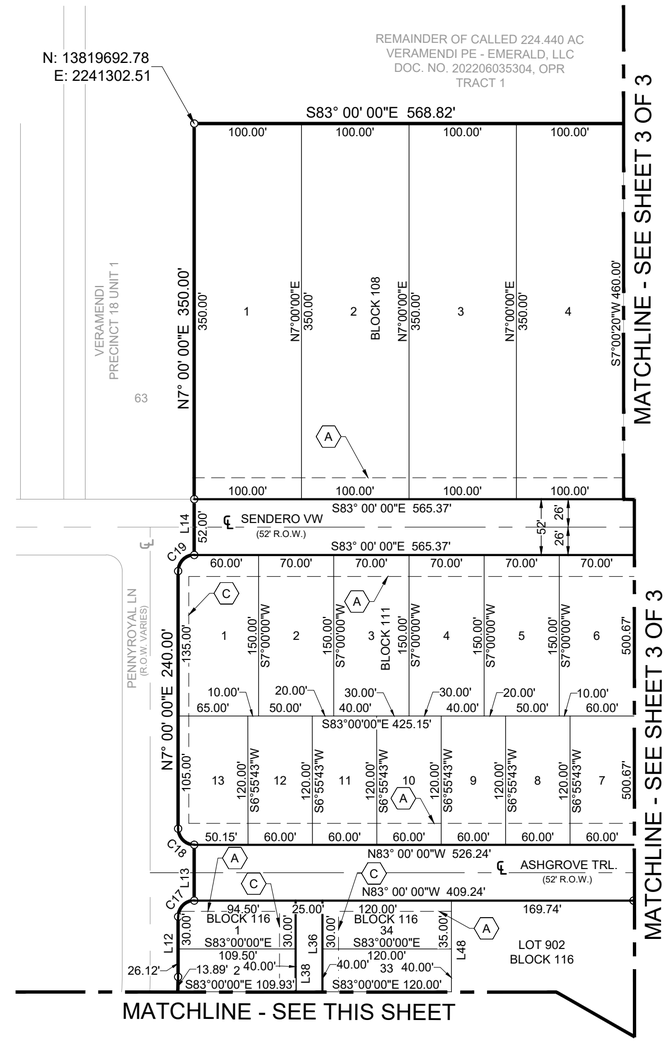
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: DECEMBER 04, 2023

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





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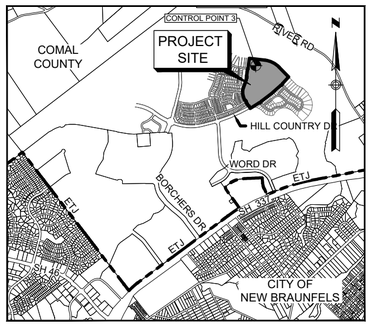
User: ngower

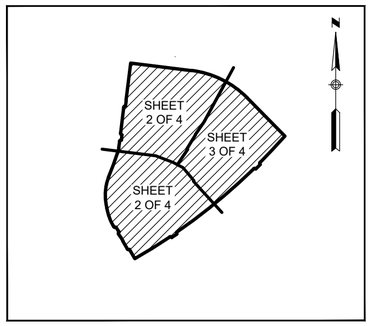
SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 18 UNIT 2

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.



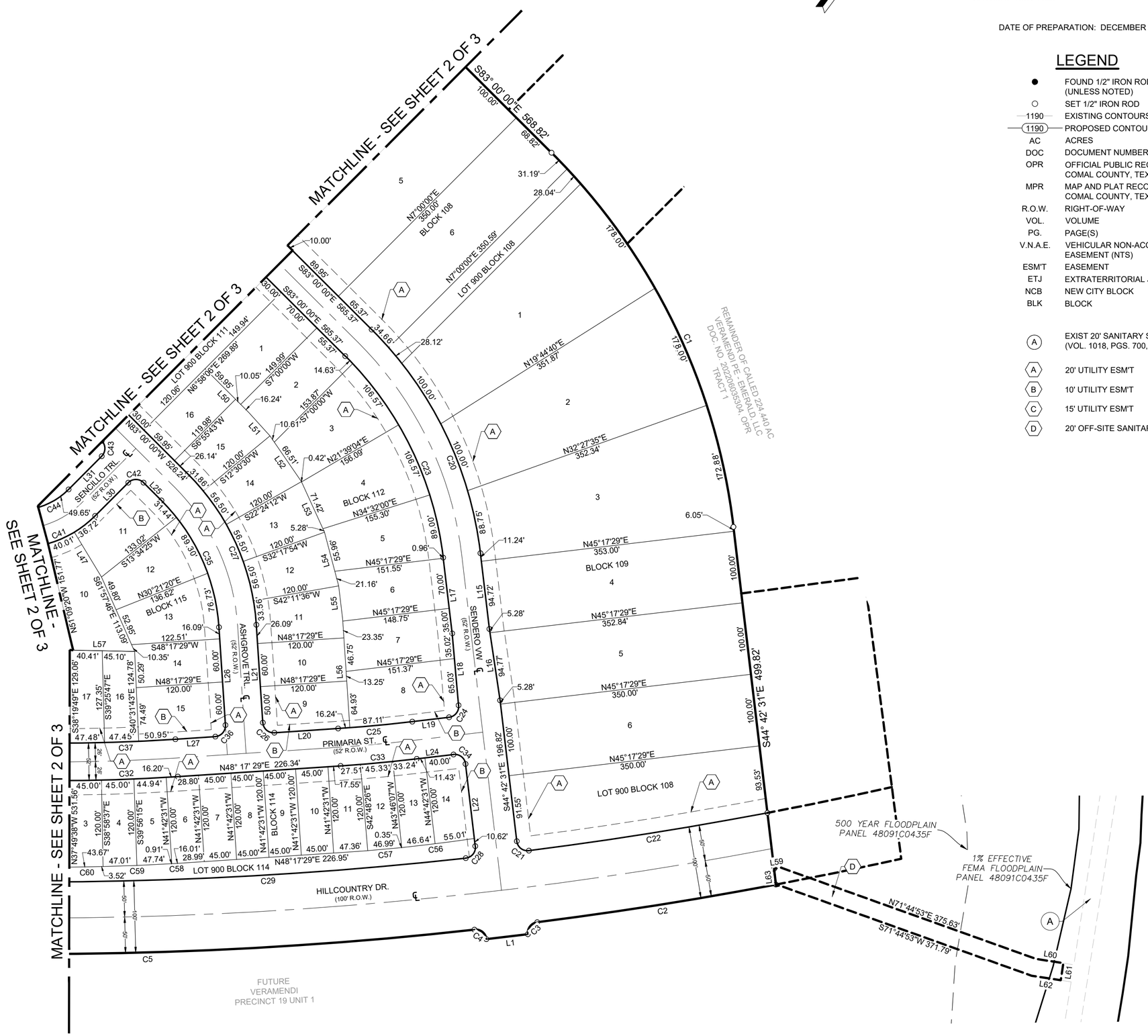
LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE



General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Priscilla G. Flores, PE

Date: 3/7/2024

Signature of Customer/Agent:

Priscilla G Flores

Project Information

1. Regulated Entity Name: Veramendi Precints 18-2 & 19-1
2. County: Comal
3. Stream Basin: Blieders Creek
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   [X] Recharge Zone
   [ ] Transition Zone

6. Plan Type:

   [X] WPAP
   [ ] SCS
   [ ] Modification
   [ ] AST
   [ ] UST
   [ ] Exception Request

7. Customer (Applicant):

Contact Person: Garrett Mechler
Entity: Veramendi PE-Emerald LLC
Mailing Address: 387 W Mill St, Ste 108
City, State: New Braunfels, TX Zip: 78130
Telephone: 830-660-4755 FAX: _____
Email Address: garrett.mechler@asaproperties.us.com

8. Agent/Representative (If any):

Contact Person: Priscilla G. Flores, PE.
Entity: LJA Engineering, LLC
Mailing Address: 9830 Colonnade Blvd Ste 300
City, State: San Antonio, TX Zip: 78230
Telephone: 210-503-2700 FAX: _____
Email Address: pflores@lja.com

9. Project Location:

☐ The project site is located inside the city limits of _____.
☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of New Braunfels
☐ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

3600 LF north of the intersection between Loop 337 and River Rd

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).
☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☐ Survey staking will be completed by this date: _____

14. [X] **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- [X] Area of the site
- [X] Offsite areas
- [X] Impervious cover
- [X] Permanent BMP(s)
- [X] Proposed site use
- [X] Site history
- [X] Previous development
- N/A [ ] Area(s) to be demolished

15. Existing project site conditions are noted below:

- [ ] Existing commercial site
- [ ] Existing industrial site
- [ ] Existing residential site
- [ ] Existing paved and/or unpaved roads
- [ ] Undeveloped (Cleared)
- [X] Undeveloped (Undisturbed/Uncleared)
- [ ] Other: _____

Prohibited Activities

16. [X] I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. [X] I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

- [X] For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- [ ] For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- [ ] For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- [ ] A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- [ ] A request for an extension to a previously approved plan.

19. [X] Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- [ ] TCEQ cashier
- [ ] Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- [X] San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. [X] Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

21. [X] No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

VERAMENDI
PRECINCT 18 UNIT-2 & PRECINCT 19 UNIT-1

CITY OF NEW BRAUNFELS ETJ

LOCATION EXHIBIT

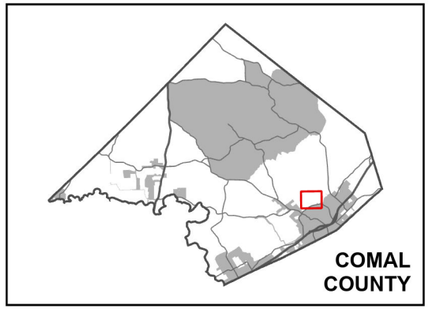
NOVEMBER 2023

LEGEND

PROJECT BOUNDARY

N
W E
S

0 500 1,000 2,000 FEET



AERIAL PHOTOGRAPH: 2023 NEARMAP

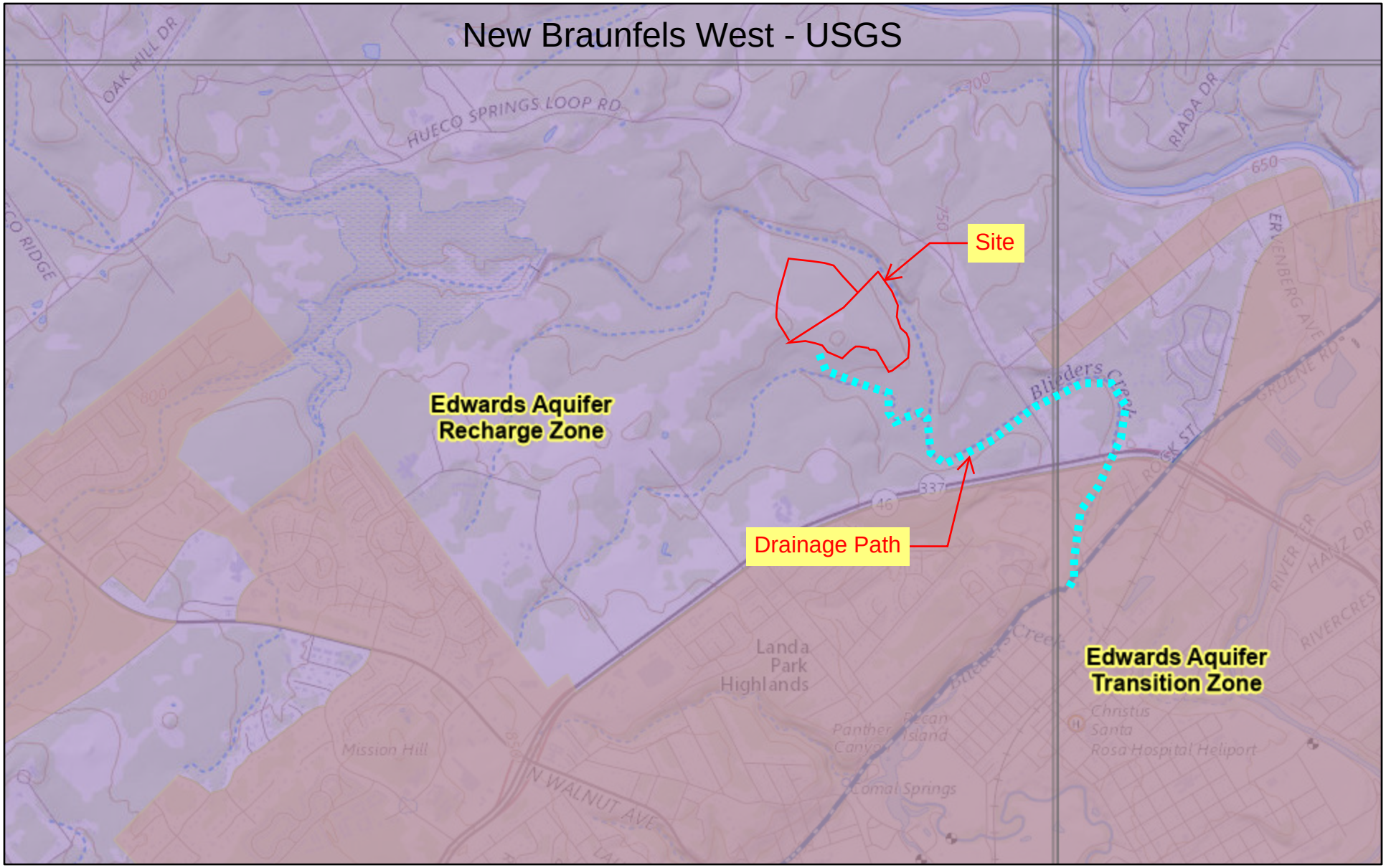
THIS PRODUCT IS FOR INFORMATIONAL PURPOSES AND MAY NOT HAVE BEEN PREPARED FOR OR BE SUITABLE FOR LEGAL, ENGINEERING, OR SURVEYING PURPOSES. IT DOES NOT REPRESENT AN ON-THE-GROUND SURVEY AND REPRESENTS ONLY THE APPROXIMATE RELATIVE LOCATION OF PROPERTY BOUNDARIES.

LJA
9830 Colonnade Boulevard, Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.com

Path: K:\SA3856 ASA Properties\0401 Veramendi Precinct 19-1\GIS\Veramendi 19-1.aprx



Edwards Aquifer Viewer Custom Print



11/27/2023, 11:04:14 AM

1:36,112

0 0.28 0.55 1.1 mi

0 0.42 0.85 1.7 km

Edwards Aquifer Label

Edwards Aquifer Boundary

Edwards Aquifer Boundary central line

City/Place

Groundwater Conservation Districts

Comal Trinity GCD

Edwards Aquifer Authority

TX Counties

7.5 Minute Quad Grid

TCEQ_EDWARDS_OFFICIAL_MAPS

TCEQ, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National

Web AppBuilder for ArcGIS

TCEQ | USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

Attachment C – Project Narrative

The proposed site is located 3600 LF North of the intersection between Loop 337 and River Rd in New Braunfels, Texas. Proposed use for the development will be a Residential (single family). The site is in the New Braunfels ETJ. The Veramendi Precints 18-2 & 19-1 WPAP will consist of a 80.45-acre tract for single family houses, 33.66 acres will be under impervious cover (41.8%). We are treating with the proposed extended detention water quality pond a total of 15.97 acres of the total impervious cover. Also with the vegetated filter strips we are treating a total of 12.05 of impervious cover. The site doesn't receive offsite drainage area. The proposed improvements addressed by this Water Pollution Abatement Plan (WPAP) and SCS Plan are:

A portion of the site will drain towards an existing Water Quality Pond, located south of our site. The existing water quality ponds have enough treatment capacity for the proposed development (please refer to attached approved WPAP). The total impervious cover draining from our site towards the existing Water Quality Pond is 5.65 ac.

(1) 3 Proposed Water Quality Extended Detention Ponds
(2) Existing Water Quality Ponds
(3) Vegetated Filter Strips

The Permanent Pollution Abatement Measures (BMPs) for Veramendi Precinct 18-2 & 19-1 development will consists of one (3) Water Quality Extended Detention Ponds basin designed in accordance with the TCEQ Technical Guidance Manual to remove 89% of the increased Total Suspended Solids (TSS) for the proposed improvements.

Potable water and wastewater disposal are provided New Braunfels Wastewater Treatment Plan. Wastewater is disposed of by conveyance to the existing treatment center operated by New Braunfels Wastewater Treatment Plan.

GEOLOGIC ASSESSMENT (WPAP)

for Regulated Activities / Development
on the Edwards Aquifer Recharge / Transition Zone

VERAMENDI SUBDIVISION
UNITS 18-2 & 19-1
+/- 80 ACRES
NEW BRAUNFELS, TEXAS

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E23171
DECEMBER 22, 2023

Prepared exclusively for

ASA Properties
PO Box 310699
New Braunfels, Texas 78131

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

Frost Geosciences, Inc.
13406 Western Oak
Helotes, Texas 78023
Office (210)-372-1315
Fax (210)-372-1318
www.frostgeosciences.com
TBPE Firm Registration # F-9227
TBPG Firm Registration # 50040

December 22, 2023

ASA Properties
PO Box 310699
New Braunfels, Texas 78131

Attn: Mr. Garrett Mechler, P.E.

SUBJECT:
Geologic Assessment (WPAP)
for the Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
+/- 80 Acres
New Braunfels, Texas
FGS Project № FGS-E23171

Dear Mr. Garrett Mechler, P.E.:

Attached is a copy of the Geologic Assessment Report completed for the above referenced project site as it relates to 30 TAC §213.5(b)(3), effective June 1, 1999. Our investigation was conducted, and this report was prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The results of our investigation, along with any recommendations for Best Management Practices (BMP's), are provided in the following report.

If you have any questions regarding this report, or if Frost GeoSciences, Inc. may be of additional assistance to you on this project, please feel free to call our office. It has been a pleasure to work with you and we wish to thank you for the opportunity to be of service to you on this project. We look forward to being of continued service.

We appreciate the opportunity to perform these services for ASA Properties. Please contact the undersigned if you have questions regarding this report.



Respectfully submitted,
Frost GeoSciences, Inc.

Steve M. Frost, C.P.G, P.G.
President, Senior Geologist

Copies Submitted:
(1) Mr. Garrett Mechler, P.E.; ASA Properties
(6) LJA Engineering
(1) Electronic (pdf) Copy

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GEOLOGIC ASSESSMENT

Texas Commission on Environmental Quality (TCEQ)

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Steve M. Frost, P.G. Telephone: (210) 372-1315

Date: December 22, 2023 Fax: (210) 372-1318

Representing: Frost GeoSciences, Inc. #50040 (Name of Company and TBPG or TBPE registration number)

Signature of the Geologist:



Regulated Entity Name: Veramendi Subdivision, Units 18-2 & 19-1

Project Information

1. Date(s) Geologic Assessment was performed: September 19, 2023
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soil map

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
RUD	C/D	1 to 2
CrD	D/D	0 to 2

**Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site-specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 200'
   Site Geologic Map Scale: 1" = 200'
   Site Soils Map Scale (if more than 1 soil type): 1" = 1000'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☒ Other method(s). Please describe method of data collection: 2023 Aerial Photograph

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

    ☐ The wells are not in use and have been properly abandoned.
    ☐ The wells are not in use and will be properly abandoned.
    ☐ The wells are in use and comply with 16 TAC Chapter 76.

    ☒ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

STRATIGRAPHIC COLUMN

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations, and members modified from Rose (1972); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970). CU, confining unit; AQ, aquifer]

Hydrogeologic subdivision			Group, formation, or member			Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/ permeability type
Upper Cretaceous	Upper confining units		Eagle Ford Group			CU	30 – 50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/ low permeability
			Buda Limestone			CU	40 – 50	Buff, light gray, dense mudstone	Porcelaneous limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability
			Del Rio Clay			CU	40 – 50	Blue-green to yellow-brown clay	Fossiliferous; *Ilymatogyra arietina*	None	None/primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			Karst AQ; not karst CU	2 – 20	Reddish-brown, gray to light tan marly limestone	Marker fossil; *Waconella wacoensis*	None	Low porosity/low permeability
	II		Edwards Group	Person Formation	Cyclic and marine members, undivided	AQ	80 – 90	Mudstone to packstone; *miliolid* grainstone; chert	Thin graded cycles; massive beds to relatively thin beds; crossbeds	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III				Leached and collapsed members, undivided	AQ	70 – 90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable
	IV				Regional dense member	CU	20 – 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V			Kainer Formation	Grainstone member	AQ	50 – 60	*Miliolid* grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/ recrystallization reduces permeability
	VI				Kirschberg evaporite member	AQ	50 – 60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric/one of the most permeable
	VII				Dolomitic member	AQ	110 – 130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, *Toucasia* abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane-fabric/water-yielding
	VIII				Basal nodular member	Karst AQ; not karst CU	50 – 60	Shaly, nodular limestone; mudstone and *miliolid* grainstone	Massive, nodular and mottled, *Exogyra texana*	Large lateral caves at surface; a few caves near Cibolo Creek	Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350 – 500	Yellowish tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/relatively impermeable

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Veramendi Subdivision, Units 18-2 & 19-1 | **PROJECT NUMBER:** FGS-E23171

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-90	29° 44.169'	-98° 08.185'	CD	5	Kep	4	6	1	-	-	-	-	F	10	15	15		X		HILLSIDE
S-1013	29° 44.1877'	-98° 08.2634	F	20	Kep	-	-	-	N45	10	-	-	F	5	30	35			X	HILLSIDE

Datum: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists.
The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

Steve M. Frost, C.P.G, P.G.

Date: 12/22/2023

TCEQ-0585-Table (Rev. 10-01-04)

Sheet 1 of 1

LOCATION

The project site consists of approximately 80 Acres of land within the existing Veramendi Subdivision, located north of Loop 337 and south of River Road in New Braunfels, Texas. An overall view of the area is shown on copies of the site plan, a street map, the USGS Topographic Map, the Edwards Aquifer Recharge Zone Map, the Flood Insurance Rate Map (FIRM), a 1973 aerial photograph from the USDA at a scale of 1"=1000', a geologic map, a 2023 aerial photograph at a scale of 1"=500', and a 2023 aerial photograph with potential recharge features at a scale of 1"=100M, Figures 1 through 9 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Mr. Steve Frost, C.P.G., President and Principal Geologist with Frost GeoSciences, Inc. Mr. Frost is a Licensed Professional Geoscientist in the State of Texas (License # 315) and is a Certified Professional Geologist with the American Institute of Professional Geologist (Certification # 10176).

Frost GeoSciences, Inc. researched the geology of the area in the immediate vicinity of the project site. The research included, but was not limited to, the Geologic Atlas of Texas, San Antonio Sheet, FIRM maps, Edwards Aquifer Recharge Zone Maps, USGS 7.5 Minute Quadrangle Maps, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the USGS Water-Resources Investigations Report 94-4117, and the USDA Soil Survey of Comal & Hays County, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 50 feet or less, depending on vegetation thickness, was used to inspect the project site. A 2023 aerial photograph, in conjunction with a handheld Global Positioning System with an Estimated Potential Error ranging from 7 to 10 feet, was used to navigate around the property and identify the locations of potential recharge features, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any potential recharge features noted in the field were identified on the Site Geologic Map in Appendix C of this report. A copy of a 2023 aerial photograph at an approximate scale of 1"=100M, indicating the locations of the potential recharge features, is included on Figure 9 in Appendix A. The Geologic Assessment Form (Rev. 2-11-15), Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included on pages 1-5 of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988), the elevation of the project site ranges from 680 feet at the eastern limits of the project site near Blieders Creek to 750 feet in the south-central portion of the project site. These elevations are calculated above mean sea level (AMSL). The surface runoff from the project site flows into unnamed tributaries of Blieders Creek, and Blieders Creek. State Highway 46 (Loop 337) is located south of the project site. River Road is located north of the project site. A copy of the above referenced USGS 7.5 Minute Quadrangle Map, indicating the location of the project site, is included in this report on Figure 3 in Appendix A.

Recharge/Transition Zone

According to the Official Edwards Aquifer Recharge Zone Map, New Braunfels West, Texas Sheet, 2014, the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the Official Edwards Aquifer Recharge Zone Map, indicating the location of the project site, is included on Figure 4 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Comal County, Texas, Community Panel Number 48091C0435F, (Revised 9/02/09) was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned panel indicates that portions of the project site are located within the 100-year floodplain. The project site is located within Zone X Shaded, and Zone X.

Zone X shaded represents areas with a 0.2% annual chance of flooding, areas of 1% annual chance of flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance of flooding. The areas of the property with Zone X Shaded are generally narrow bands located immediately adjacent to areas determined to be within Zone AE.

Zone X represents areas as determined to be outside the 0.2% annual chance floodplain. A copy of the Comal County, Texas, FIRM map, indicating the location of the project site is included in this report on Figure 5 in Appendix A.

Soils

According to the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Comal & Hays County, Texas (1982), the project site is located on the Rumple-Comfort Association (RUD), and the Comfort-Rock Outcrop Complex, Undulating (CrD). A copy of the 1973 aerial photograph (approximate scale: 1”=1000’) from the USDA Soil Survey of Comal & Hays County, Texas (1982) indicating the location of the project site and the soil types is included on Figure 6 in Appendix A.

The Rumple-Comfort Association (RuD) consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. The surface layer of the Rumple Soil is dark reddish brown very cherty clay loam about 10 inches thick. Rounded chert and limestone cobbles and gravel cover about 20 percent of the surface. The subsoil to a depth of 14 inches is dark reddish-brown very cherty clay, and to a depth of 28 inches it is dark reddish-brown extremely stony clay. The underlying material is indurated fractured limestone. The Comfort Soil

is dark brown, neutral, extremely stony clay about 7 inches thick. The subsoil to a depth of 12 inches is dark reddish-brown, mildly alkaline, extremely stony clay. The underlying material is indurated fractured limestone. The soil is noncalcareous throughout. The soils in this association are well drained. Surface runoff is medium, but varies due to the occurrence of caves, fracture zones, and sinks. Permeability is moderately slow. Water erosion is a moderate hazard.

The Comfort-Rock Outcrop Complex consists of shallow, clayey soils and Rock Outcrop on side slopes and on hilltops and ridgetops on uplands in the Edwards Plateau Land Resource Area. The Comfort Extremely Stony Clay makes up 49 to more than 95 percent of the complex, but on the average it makes up 70 percent. Rock Outcrop and areas of soil less than 4 inches deep make up 5 to 36 percent, but the average is 15 percent. Typically, the surface layer of the Comfort soil is dark brown extremely stony clay about 6 inches thick. Cobbles and stones as much as 4 feet across cover about 45 percent of the surface. The subsoil extends to a depth of 13 inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone. The soil is mildly alkaline and noncalcareous throughout. The Comfort Soil is well drained. Surface runoff is slow to medium. Permeability is slow, and the available water capacity is very low. Water erosion is a slight hazard. This soil has a USDA Texture Classification of extremely stony clay, stony clay, very stony clay, and weathered bedrock. The Unified Classification is CH, GC, CL, or SC. The AASHO Classification is A-2-7, and A-7-6. This soil has an average permeability from 0.6 to 0.2 inches/hour.

Narrative Description of the Site Geology

The project site consists of approximately 80 Acres of land within the existing Veramendi Subdivision, located north of Loop 337 and south of River Road in New Braunfels, Texas. An overall view of the area is shown on Figures 1 through 9 in Appendix A. The majority of the project site has a well-developed soil layer on the property with minimal rock outcrops. The variations in the vegetative cover across the project site are visible in the 2023 aerial photographs on Figures 8 and 9 in Appendix A and in the site visit photographs included in Appendix B. Two Potential Recharge Features (PRF's) were identified during our site inspection. None of these are considered sensitive by Frost GeoSciences, Inc. The features are described in the following paragraphs and detailed on the Geologic Assessment Table on page 5.

FAULTS

One fault was noted within the limits of the project site. Potential Recharge Feature (PRF) # S-1013 is a fault crossing the central portion of the project site on a bearing of N 45O. There were no obvious visual indications of fractures or displacements associated with this fault location. This feature is not considered to be sensitive by FGS. This feature scores a 35 on the Geologic Assessment Table.

MANMADE FEATURES IN BEDROCK

Potential Recharge Feature S-90 is a manmade feature in bedrock consisting of an old bulldozer scab. This feature is not considered sensitive by FGS. This feature scores a 15 on the Geologic Assessment Table.

According to the USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988), the elevation of the project site ranges from 680 feet at the eastern limits of the project site near Blieders Creek to 750 feet in the south-central portion of the project site. These elevations are calculated above mean sea level (AMSL). According to topographic data obtained from LJA Engineering, the elevations on the project site range from 685 feet at the

eastern limits of the project site to 753 feet in the central portion of the project site. A copy of the site plan, indicating the boundary of the project site and the elevations, is included on Figure 1 in Appendix A and on the Site Geologic Map in Appendix C of this report.

According to the Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas. U.S. Geological Survey Water Resources Investigations 94-4117 (1994) the project site is located on the Leached and Collapsed Member of the Edwards Person Limestone (Kep).

The Dolomitic Member of the Edwards Kainer Limestone consists of mudstone to grainstone with crystalline limestone and chert. This member is massively bedded and light gray with abundant fossils of Toucasia. Karst features within this member are typically related to structure or bedding planes. Overall thickness ranges from 110 to 130 feet.

The Leached and Collapsed Member of the Edwards Person Limestone consists of crystalline limestone, mudstone to grainstone with chert, and collapsed breccia. This member is stromatolitic limestone. The Leached and Collapsed Member is characterized by bioturbated iron-stained beds separated by massive limestone beds. This member is typically one of the most permeable and has extensive lateral development with large rooms. Overall thickness ranges from 70 to 90 feet thick.

This geologic map indicates that a fault is located on the project site. This fault is on a bearing of N45°. No obvious visual indications of this fault were noted in the field at the time of the site inspection.

A copy of the Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas. U.S. Geological Survey Water Resources Investigations 94-4117 (1994) indicating the location of the project site, is included on Figure 7 in Appendix A.

BEST MANAGEMENT PRACTICES

Based on a visual inspection of the ground surface the overall potential for fluid flow from the surface of the project site into the Edwards Aquifer appears to be low with isolated areas having higher potential around faults. The potential always exists to encounter subsurface features that lack a surface expression. Frost GeoSciences, Inc. recommends that we be included in the pre-construction meeting to inform construction personnel of the potential to encounter subsurface karst features during excavating activities. Construction personnel should also be informed of the proper protocol to follow in the event that a solution cavity and/or cave is encountered during the excavation and development of the property, particularly in the areas around the faults.

DISCLAIMER

This report has been prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04) by a Licensed Texas Professional Geoscientist. All areas of the project site were carefully inspected for features that could contribute to the recharge of the Edwards Aquifer; however, this survey cannot preclude the presence of subsurface karst features that lack surface expression. This report is not intended to be a definitive investigation of all possible geologic or karst features at this site. All conclusions, opinions, and recommendations for Best Management Practices (BMP's) in this report are based on information obtained while researching the project and on the site conditions at the time of our field investigation.

This report has been prepared for and may be relied upon by ASA Properties. This report is based on available known records, a visual inspection of the project site and the work generally accepted for a Geologic Assessment TAC §213.5(b)(3), effective June 1, 1999.

REFERENCES

1. USGS - 7.5 Minute Topographic Quadrangle of New Braunfels West, 1992

2. E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, New Braunfels West (2014).

3. Official Edwards Aquifer Recharge Zone Map, New Braunfels West, 1999

4. The Texas Commission on Environmental Quality (TCEQ) website: Edwards Aquifer Viewer – https://tceq.maps.arcgis.com/apps/webappviewer/index.html.

5. Clark, A.K., Golab, J.A. and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, United States Geological Survey.

6. Clark, A.K., Golab, J.A. and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, United States Geological Survey.

7. Collins, Edward, W., 2000, Geologic Map of the New Braunfels 30 X 60 Minute Quadrangle, Bureau of Economic Geology, The University of Texas at Austin, Texas.

8. Barnes, V.L., 1982, Geologic Atlas of Texas San Antonio Sheet, Bureau of Economic Geology and University of Texas at Austin, Geologic Atlas of Texas.

9. Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Panel Number 48091C0435F, dated September 2, 2009

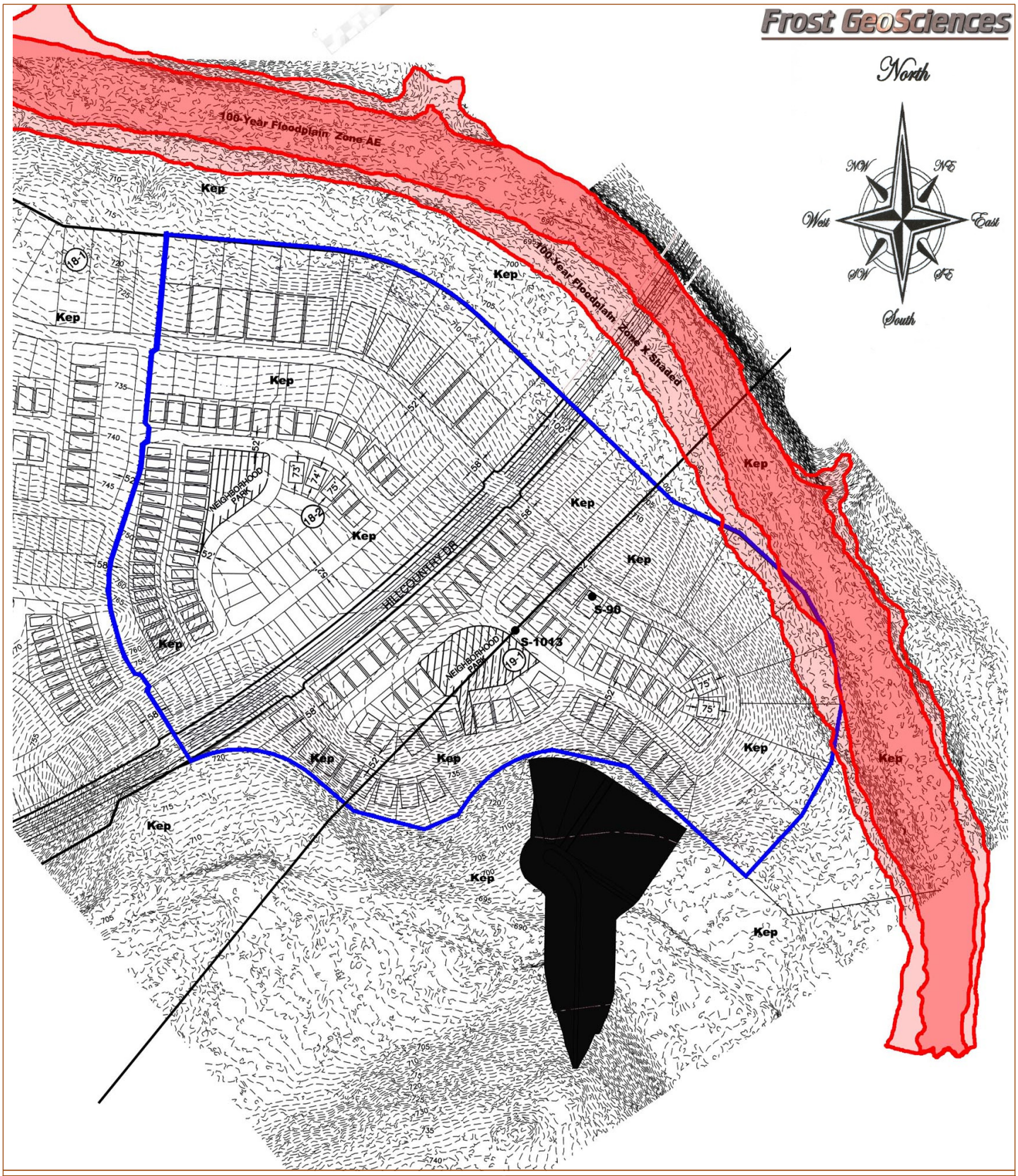
10. United States Department of Agriculture Soil Conservation Service Soil Survey of Hays and Comal County 1984.

11. USDA NRCS Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov (2014)

12. TCEQ-0585-Instructions (Rev. 10-1-04), “Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone”.

APPENDIX A

SITE LOCATION FIGURES

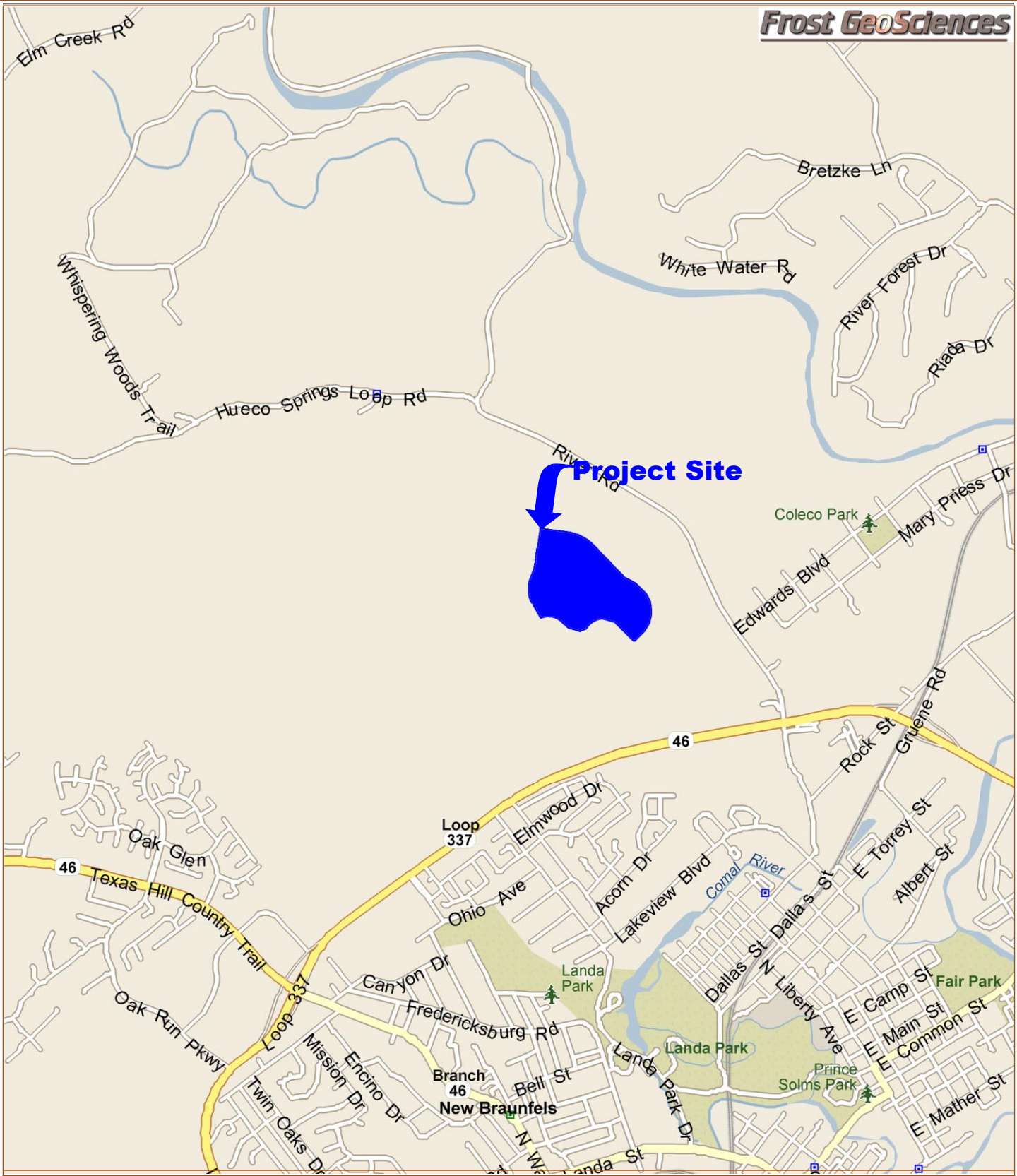


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

Site Plan

PROJECT No.: FGS-E23171

DATE: December 22, 2023

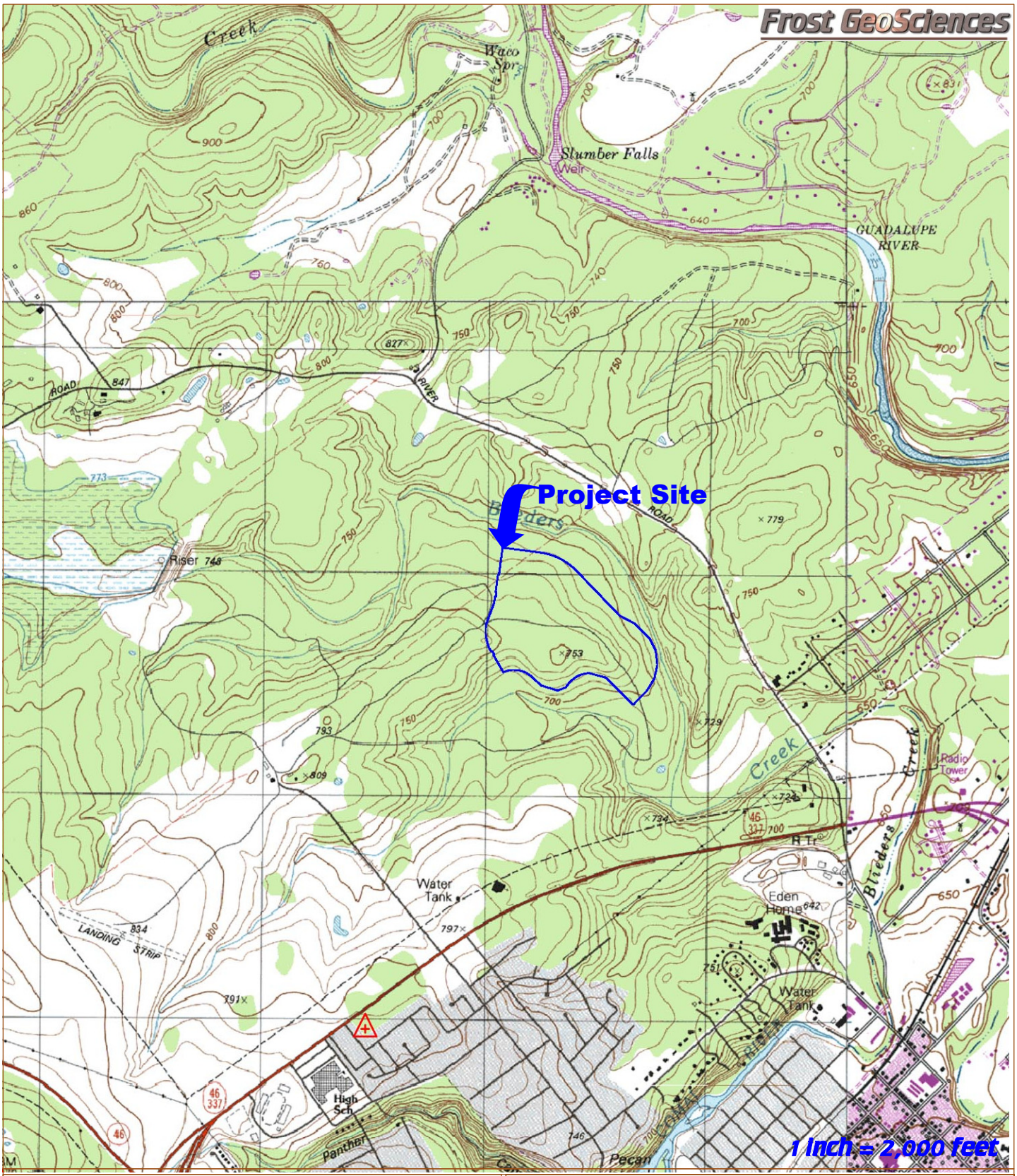


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

Street Map
Microsoft Streets and Trips (2013)

PROJECT No.: FGS-E23171

DATE: December 22, 2023

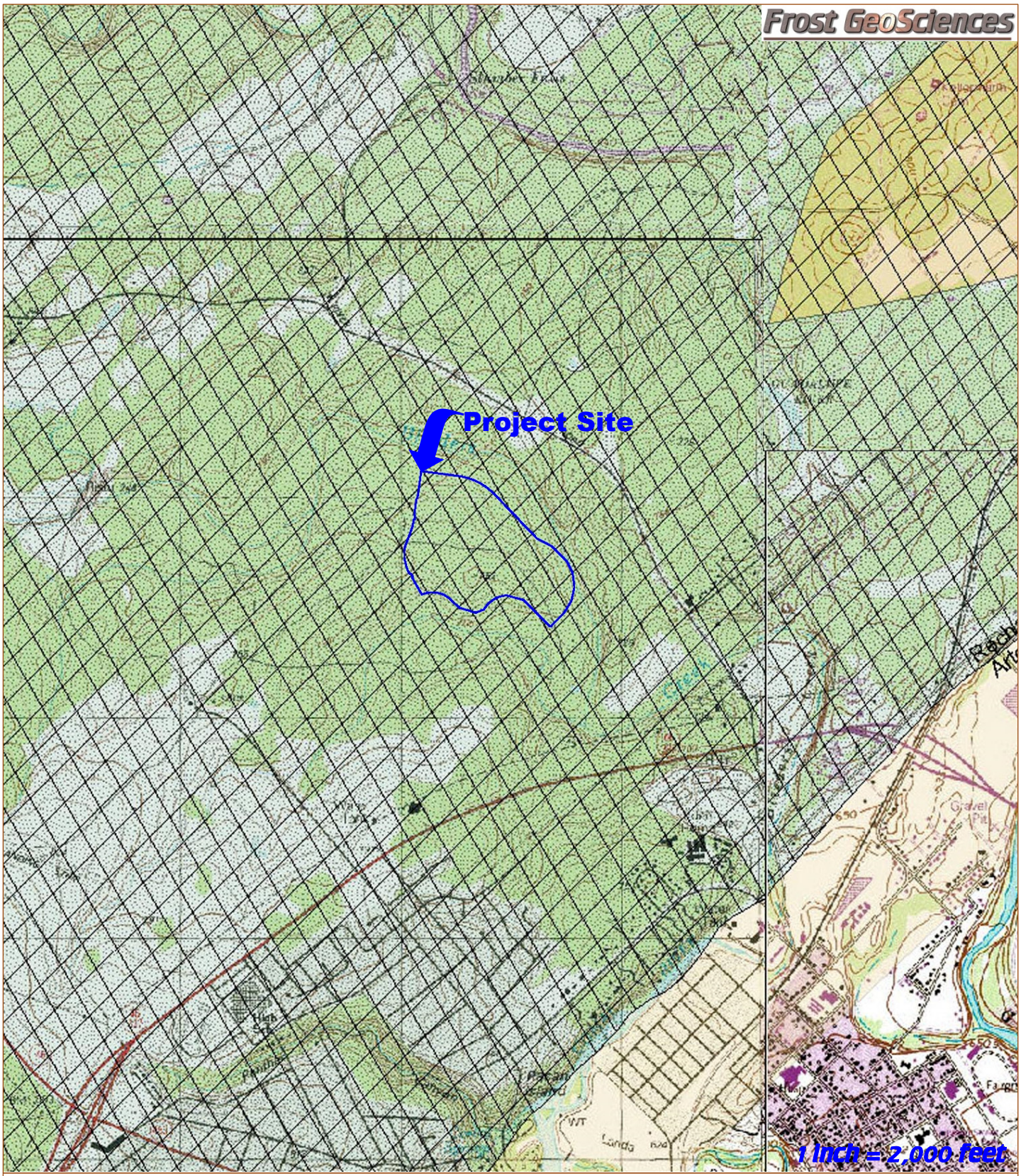


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

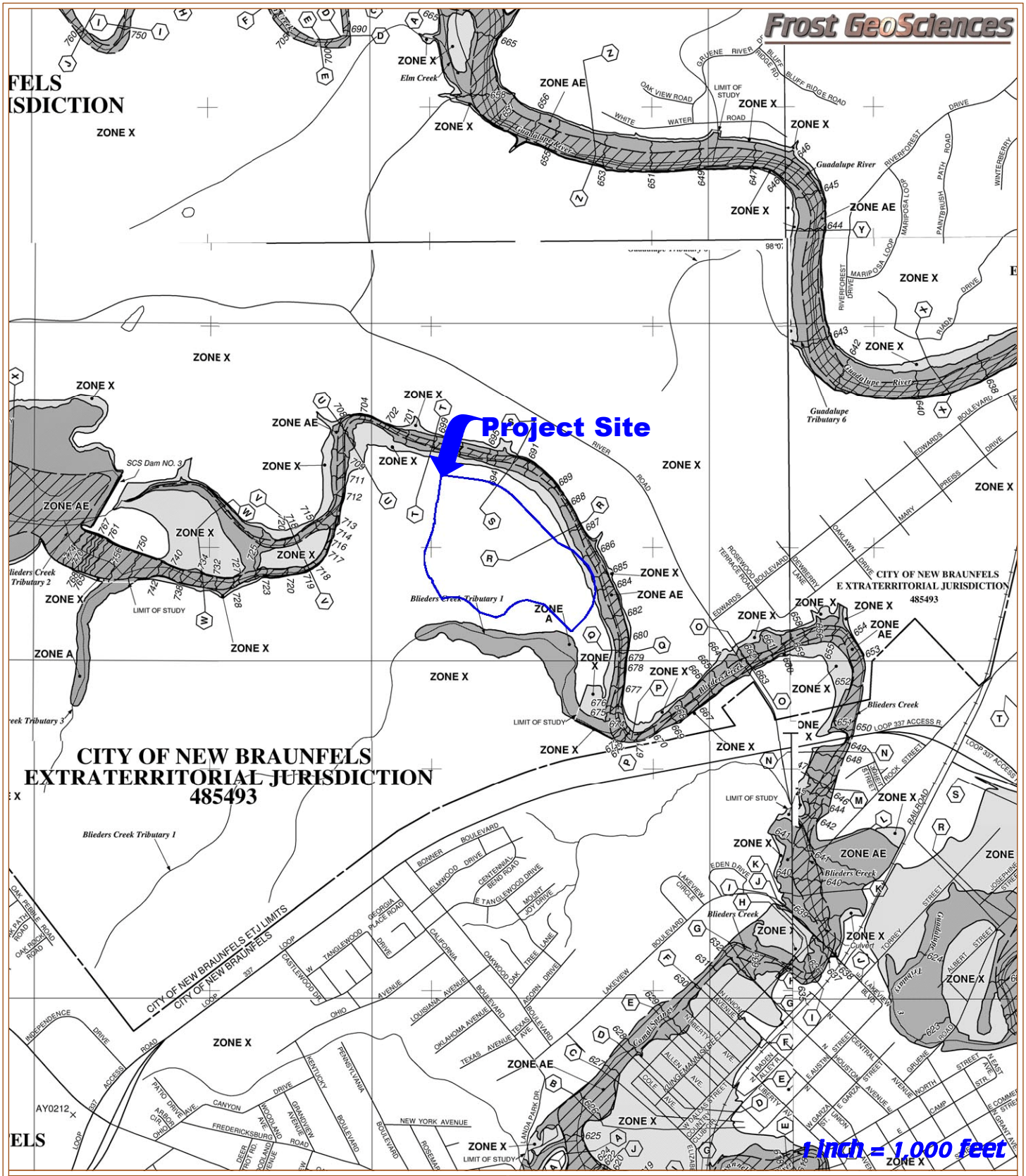
U.S.G.S. 7.5 Minute Quadrangle Map
New Braunfels West, Texas Sheet (1988)

PROJECT No.: FGS-E23171

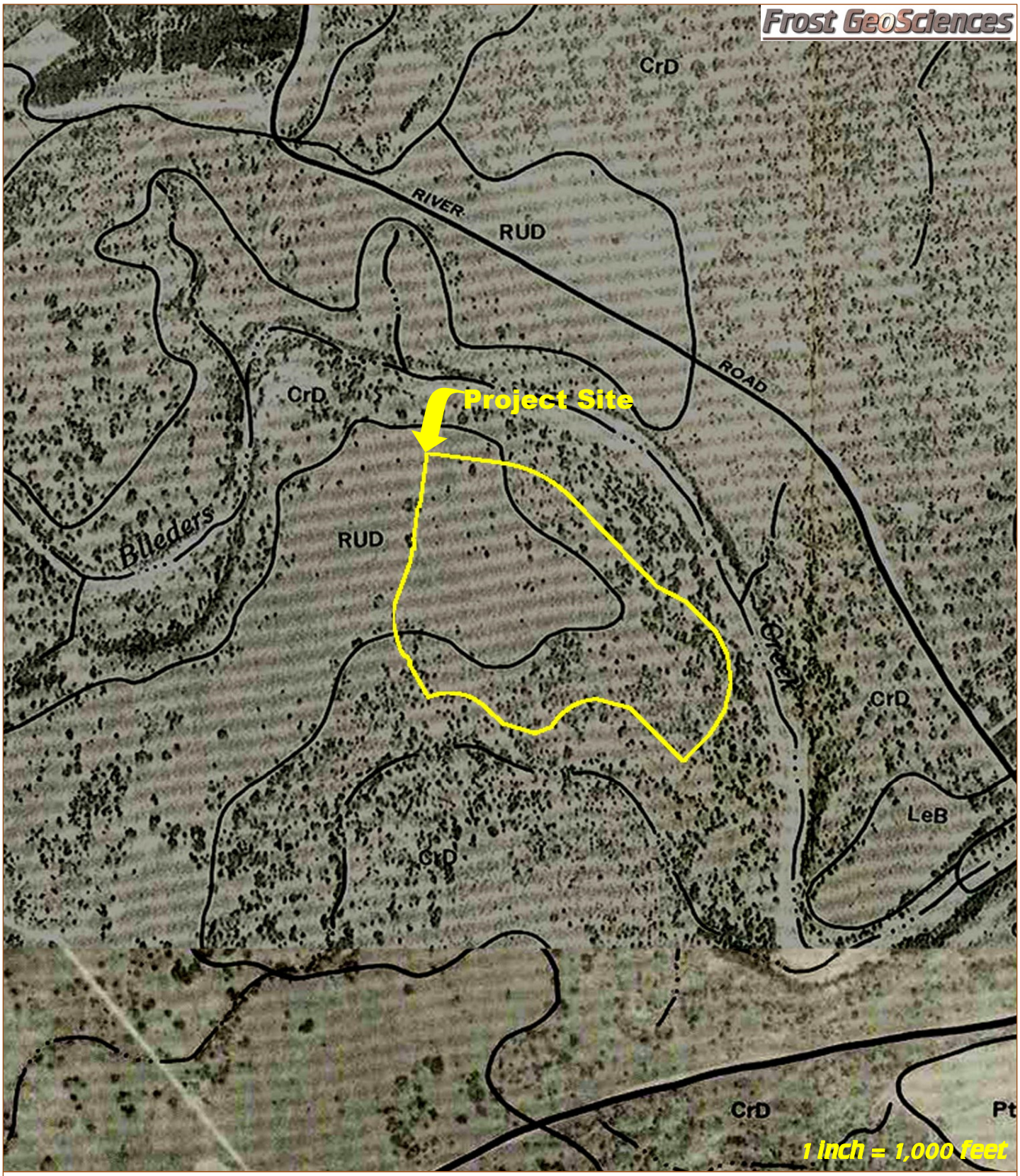
DATE: December 22, 2023



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Veramendi Subdivision, Units 18-2 & 19-1 New Braunfels, Texas	Official Edwards Aquifer Recharge Zone Map New Braunfels West, Texas Sheet (2014) **PROJECT No.:** FGS-E23171 **DATE:** December 22, 2023



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Veramendi Subdivision, Units 18-2 & 19-1 New Braunfels, Texas	Flood Insurance Rate Map (FIRM) Community Panel # 48091C0435F (Revised 9/02/09)
PROJECT No.: FGS-E23171	**DATE:** December 22, 2023

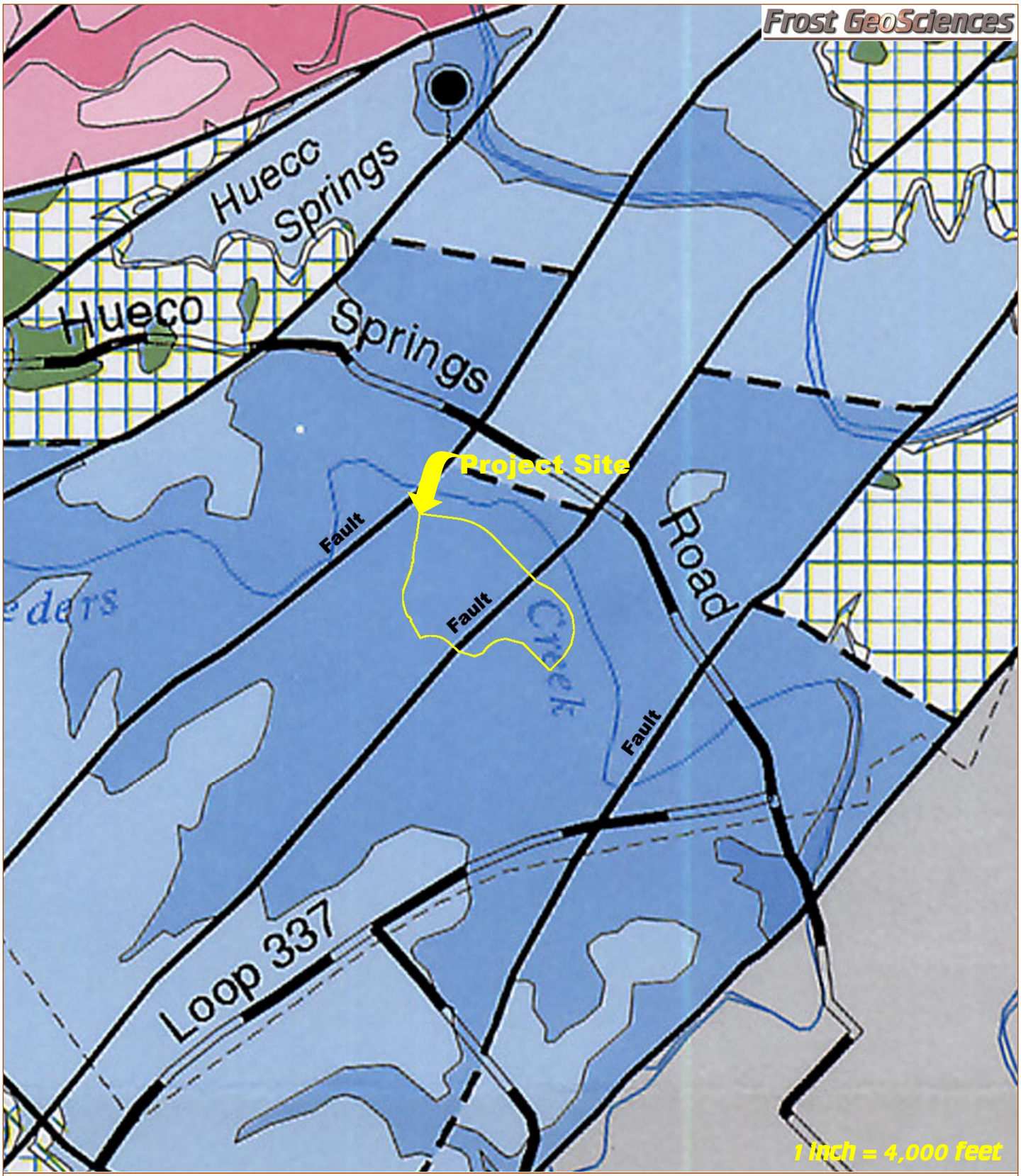


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

1973 Aerial Photograph
United States Department of Agriculture

PROJECT No.: FGS-E23171

DATE: December 22, 2023



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Veramendi Subdivision, Units 18-2 & 19-1 New Braunfels, Texas	U.S. Geological Survey Water Resources Investigations 94-4117 (1994)
PROJECT No.: FGS-E23171	**DATE:** December 22, 2023

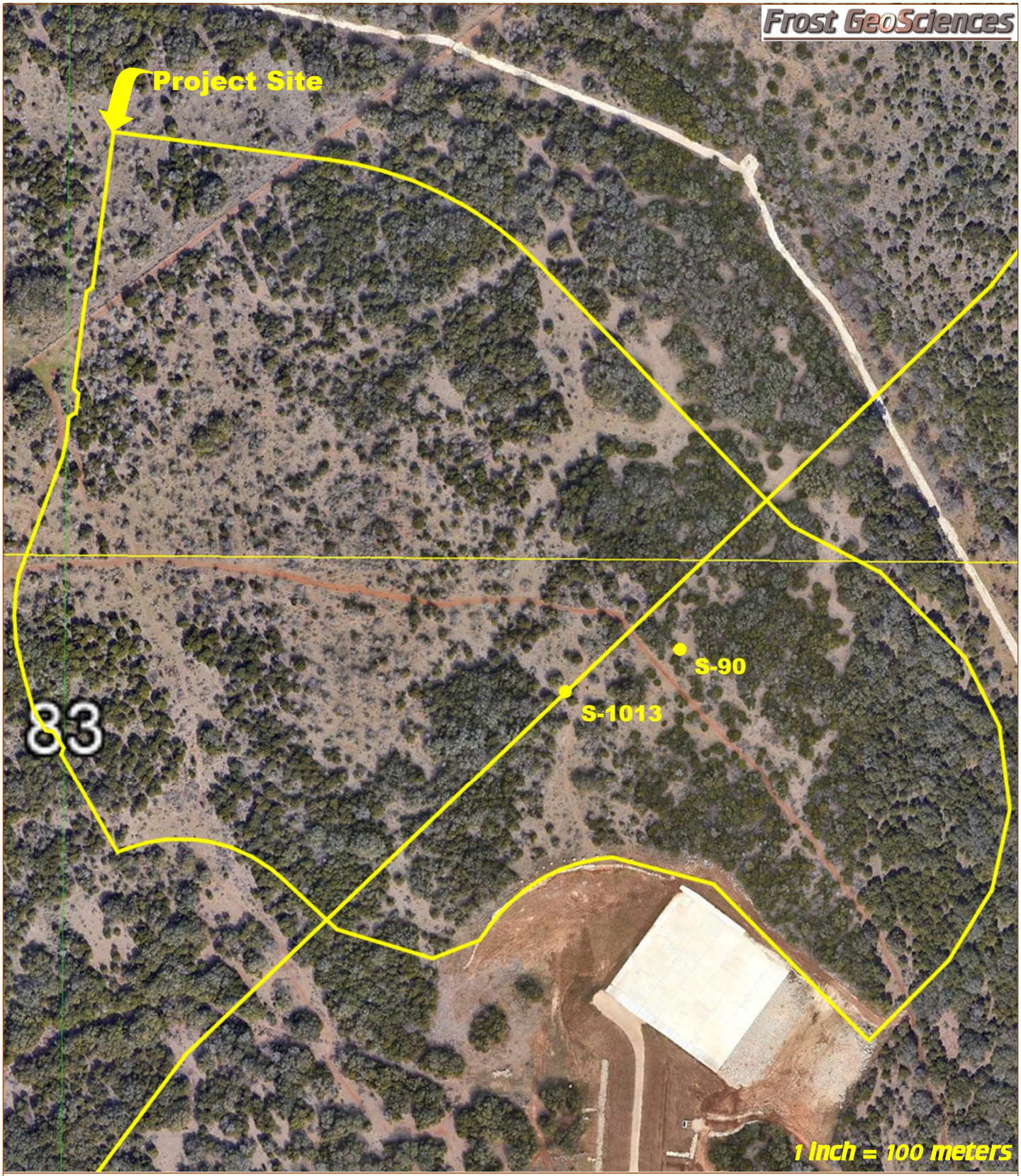


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

2023 Aerial Photograph
Google Earth Aerial Image

PROJECT No.: FGS-E23171

DATE: December 22, 2023



PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Veramendi Subdivision, Units 18-2 & 19-1
New Braunfels, Texas

2023 Aerial Photograph with PRF's
Google Earth Aerial Image

PROJECT No.: FGS-E23171

DATE: December 22, 2023

APPENDIX B

SITE PHOTOGRAPHS

	
Typical view of vegetative cover in the western portion of the project site near Area 1.	**Typical view of vegetative cover in the western portion of the project site near Area 1.**
	
Typical view of vegetative cover in the western portion of the project site near Area 1.	**Typical view of vegetative cover in the western portion of the project site near Area 2.**
	
Typical view of vegetative cover in the western portion of the project site near Area 2.	**Typical view of vegetative cover in the central portion of the project site near Area 3.**

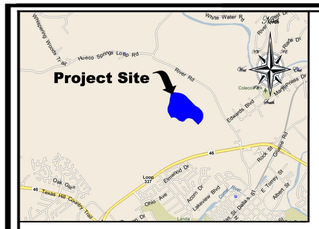
	
Typical view of vegetative cover in the central portion of the project site near Area 3.	**Typical view of vegetative cover in the central portion of the project site near Area 3.**
	
Typical view of vegetative cover in the northern portion of the project site near Area 4.	Typical view of vegetative cover in the northern portion of the project site near Area 4.
	
Typical view of vegetative cover in the central portion of the project site near Area 5.	**Typical view of vegetative cover in the central portion of the project site near Area 5.**

	
View of Potential Recharge Feature # S-90 in the central portion of the project site near Area 5.	**Typical view of vegetative cover in the eastern portion of the project site near Area 6.**
	
Typical view of vegetative cover in the eastern portion of the project site near Area 7.	**Typical view of vegetative cover in the eastern portion of the project site near Area 7.**
	
Typical view of vegetative cover in the southern portion of the project site near Area 8.	**Typical view of vegetative cover in the southern portion of the project site near Area 8.**

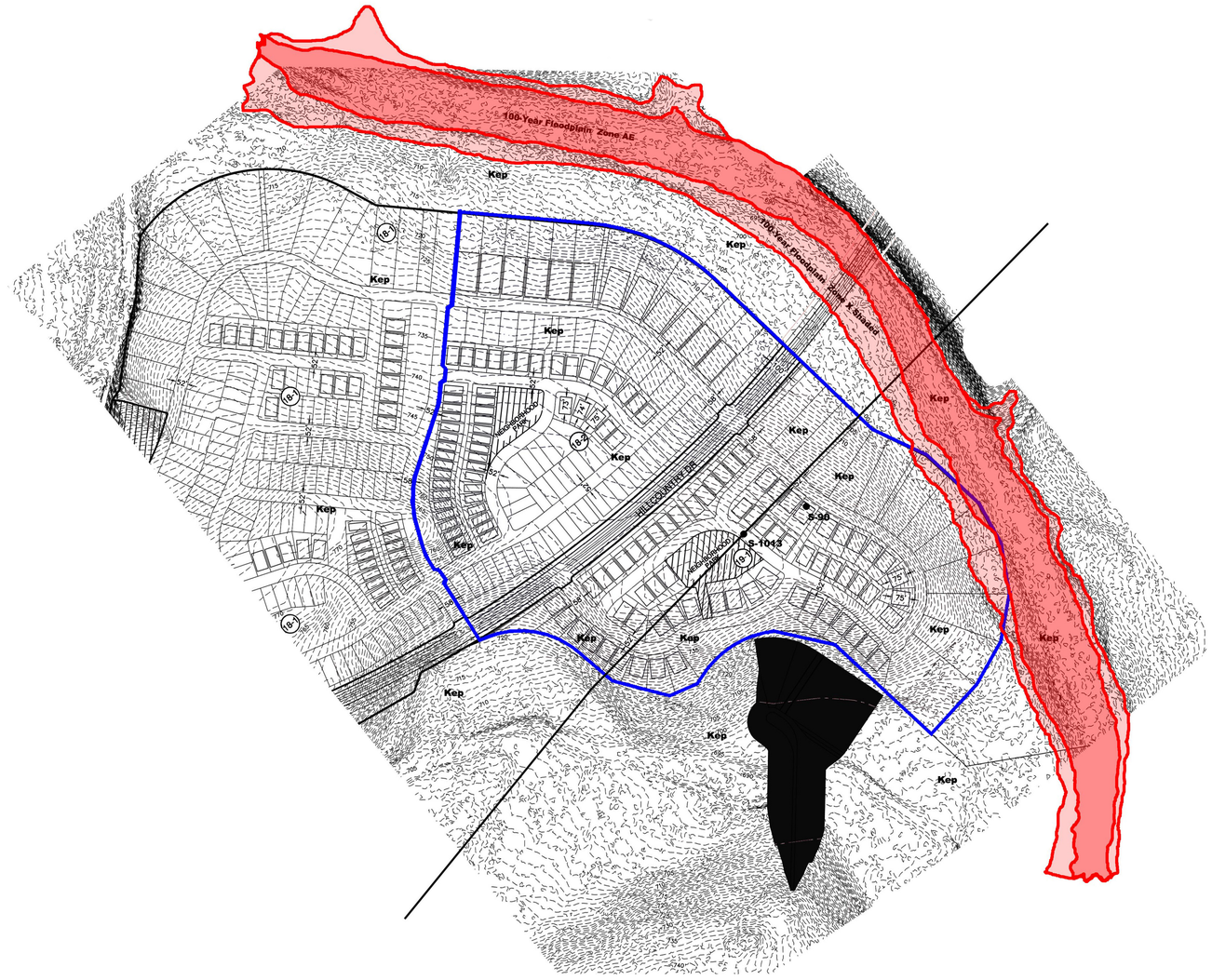
	
Typical view of vegetative cover in the southwestern portion of the project site near Area 9.	**Typical view of vegetative cover in the southwestern portion of the project site near Area 9.**
	
Typical view of vegetative cover in the northwestern portion of the project site near Area 10.	**Typical view of vegetative cover in the northwestern portion of the project site near Area 10.**

APPENDIX C

GEOLOGIC MAP



Location Map



Frost GeoSciences

Geotechnical • Construction Materials
Environmental & Geologic Consulting
WBE - ESBE - SBE
13406 Western Oak Dr. • Helotes, Texas 78023
Phone: 210-372-1315 • Fax 210-372-1318

Site Geologic Map

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
for the
Veramendi Subdivision
Units 18-2 & 19-1
+/- 80 Acres
New
Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-E23171

Legend

Fill	-	Fill Material
Qal	-	Alluvium
Kau	-	Austin Chalk
Kef	-	Eagle Ford Shale
Kbu	-	Buda Limestone
Kdr	-	Del Rio Clay
Kgt	-	Georgetown Limestone
Kep	-	Edwards Person Limestone
Kek	-	Edwards Kainer Limestone
Kgr	-	Glen Rose Formation
S-#	-	Potential Recharge Feature (PRF)
	-	Formation Contact
	-	100-Year Floodplain - Zone A
	-	100-Year Floodplain - Zone AE
	-	Other Flood Hazard Area - Zone X (shaded)

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Comal County, Texas: Panel # 48091C0435F, Revised 9/02/09

Fault Information Obtained From:
Bureau of Economic Geology, Geologic Atlas of Texas, San Antonio Sheet (1983)
U.S. Geological Survey, Water Resources Investigations Report 94-4117 (1994)
Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)

North
NW NE West East SW SE
South

Graphic Scale
200 0 100 200 400
(In Feet)

1 inch = 200 feet
Representative Fraction 1:2400

Contour Interval - 1 foot

STATE OF TEXAS
Steve M. Frost
Geology
License No. 315
LICENSED PROFESSIONAL GEOSCIENTIST
SMF 12/22/2023

Signature of Texas Licensed Geoscientist
Steve Frost, TPG# 315, AIPG # 10176

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Priscilla G. Flores, PE

Date: 3/7/2024

Signature of Customer/Agent:

Priscilla G Flores

Regulated Entity Name: Veramendi Precincts 18-2 & 19-1

Regulated Entity Information

1. The type of project is:

   - [X] Residential: Number of Lots: 205
   - [ ] Residential: Number of Living Unit Equivalents:_____
   - [ ] Commercial
   - [ ] Industrial
   - [ ] Other:_____

2. Total site acreage (size of property): 80.45 AC

3. Estimated projected population:_____

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	1146064	÷ 43,560 =	26.31
Parking		÷ 43,560 =	
Other paved surfaces	320166	÷ 43,560 =	7.35
Total Impervious Cover	1,466,230	÷ 43,560 =	33.66

Total Impervious Cover 33.66 **÷ Total Acreage** 80.45 **X 100 =** 41.8 **% Impervious Cover**

5. [X] **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

6. [X] Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. Type of project:

   [ ] TXDOT road project.
   [ ] County road or roads built to county specifications.
   [ ] City thoroughfare or roads to be dedicated to a municipality.
   [ ] Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:

   [ ] Concrete
   [ ] Asphaltic concrete pavement
   [ ] Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

   Width of R.O.W.: _____ feet.
   L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.

    Width of pavement area: _____ feet.
    L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
    Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

11. [ ] A rest stop will be included in this project.

    [ ] A rest stop will not be included in this project.

12. ☐ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to be generated by the Proposed Project

13. ☒ **Attachment B - Volume and Character of Stormwater**. A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on the area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Wastewater to be generated by the Proposed Project

14. The character and volume of wastewater is shown below:

100 % Domestic	41000 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 41000	

15. Wastewater will be disposed of by:

☐ On-Site Sewage Facility (OSSF/Septic Tank):

- ☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- ☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

- ☐ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
- ☒ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

- ☐ The SCS was previously submitted on_____.
- ☐ The SCS was submitted with this application.
- ☒ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

We have submitted a separate SCS Application

☒ The sewage collection system will convey the wastewater to the New Braunfels Utilities (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 200 '.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): 48091C0435F

19. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

☒ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

22. [X] The drainage patterns and approximate slopes anticipated after major grading activities.

23. [X] Areas of soil disturbance and areas which will not be disturbed.

24. [X] Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. [X] Locations where soil stabilization practices are expected to occur.

26. [ ] Surface waters (including wetlands).

    [X] N/A

27. [ ] Locations where stormwater discharges to surface water or sensitive features are to occur.

    [X] There will be no discharges to surface water or sensitive features.

28. [X] Legal boundaries of the site are shown.

Administrative Information

29. [X] Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

30. [X] Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Attachment A – Factors Affecting Surface Water Quality

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site during construction include:

- Soil erosion due to the clearing of the site
- Oil grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings
- Hydrocarbons from asphalt paving operations
- Miscellaneous trash and litter from construction workers and material wrappings
- Concrete truck washout
- Spills/Overflow from portable toilets

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings
- Dirt and dust which may fall off vehicles
- Miscellaneous trash and litter

Attachment B – Volume and Character of Stormwater

The site is currently undeveloped, with slopes from 2%-20%. The overall runoff coefficient prior to development of the 80.45 acre lot is estimated to be 0.48 based on the existing terrain and slopes. A portion of the site sheet flows across the site and discharge into Blieders Creek, and the other portion of the site will flow thru stormwater system into the extended detention water quality ponds, and eventually into Blieders Creek.

The proposed use for this property will be a single family that consist of 80.45 acres and 33.66 ac (41.8%) of impervious cover for the entire site. A proposed c-value of 0.80 was calculated based on the runoff coefficient from City of New Braunfels.

Attachment C – Suitability Letter from Authorized Agent

No OSSF will be used with this project.

Attachment D – Exception to the Requiered Geologic Assessment

N/A – No sensitive geologic or manmade features were identified in the Geologic Assesment.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 18-2
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	Comal	
Total project area included in plan:	=	80.45	acres
Predevelopment impervious area within the limits of the plan:	*	0.00	acres
Total post-development impervious area within the limits of the plan:	*	28.81	acres
Total post-development impervious cover fraction:	*	0.35	
	P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =	Pond	
Total drainage basin/outfall area =	6.96	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.88	acres
Post-development impervious fraction within drainage basin/outfall area =	0.41	
$L_{M\ THIS\ BASIN}$ =	2505	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	6.96	acres
A_I =	2.88	acres
A_P =	4.08	acres
L_R =	3025	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **3025** lbs. Note $LomL_T$ for this basin

F = **1.00**

EXTENDED DETENTION POND "C"

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 19-1
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	Comal	
Total project area included in plan:	=	80.45	acres
Predevelopment impervious area within the limits of the plan:	*	0.00	acres
Total post-development impervious area within the limits of the plan:	*	28.81	acres
Total post-development impervious cover fraction:	*	0.35	
	P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =	Pond	
Total drainage basin/outfall area =	6.46	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.39	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	2145	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	5.46	acres
A_I =	2.39	acres
A_P =	3.07	acres
L_R =	2505	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **2505** lbs.

F = **1.00**

EXTENDED DETENTION POND "G"

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 18-2
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	Comal	
Total project area included in plan:	=	80.45	acres
Predevelopment impervious area within the limits of the plan:	*	0.00	acres
Total post-development impervious area within the limits of the plan:	*	28.81	acres
Total post-development impervious cover fraction:	*	0.35	
	P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =	Pond	
Total drainage basin/outfall area =	23.16	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	10.70	acres
Post-development impervious fraction within drainage basin/outfall area =	0.46	
$L_{M\ THIS\ BASIN}$ =	9604	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	23.16	acres
A_I =	10.70	acres
A_P =	12.46	acres
L_R =	11195	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **11190** lbs.

F = **1.00**

EXTENDED DETENTION POND "D"

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **85** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	34.23	acres
A_I =	12.05	acres
A_P =	22.18	acres
L_R =	10931	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **12031** lbs.

F = **1.00**

VEGETATED FILTER STRIPS

TOTA AREA TREATED BY VEGETATED FILTER STRIPS = 34.23 AC

TOTAL IMPERVIOUS COVER TREATED BY VEGETATED FILTER STRIPS = 12.05 AC

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
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 (ED), 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 (TAC), 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 ED, 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, TAC, Chapters 213 or any other TCEQ rule applicable to regulated activities over the Edwards Aquifer recharge, transition, and contributing zones, as appropriate. Failure to comply with any condition of the EPA approval, whether or not it 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, TAC § 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 ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

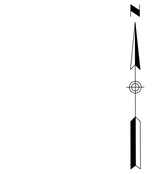
1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
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 any 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 E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
11. The following records shall be maintained and made available to the TCEQ upon request:
    - the dates when major grading activities occur;
    - the dates when construction activities temporarily or permanently cease on a portion of the site; and
    - the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
    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.

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.

TCEQ-0592 (Rev. July 15, 2016) Page 1 of 2

TCEQ-0592 (Rev. July 15, 2016) Page 2 of 2



200 100 0 200 400

SCALE IN FEET

SCALE: 1"=200'

DRAINAGE AREA TREATED BY PROPOSED EXTENDED DETENTION PONDS

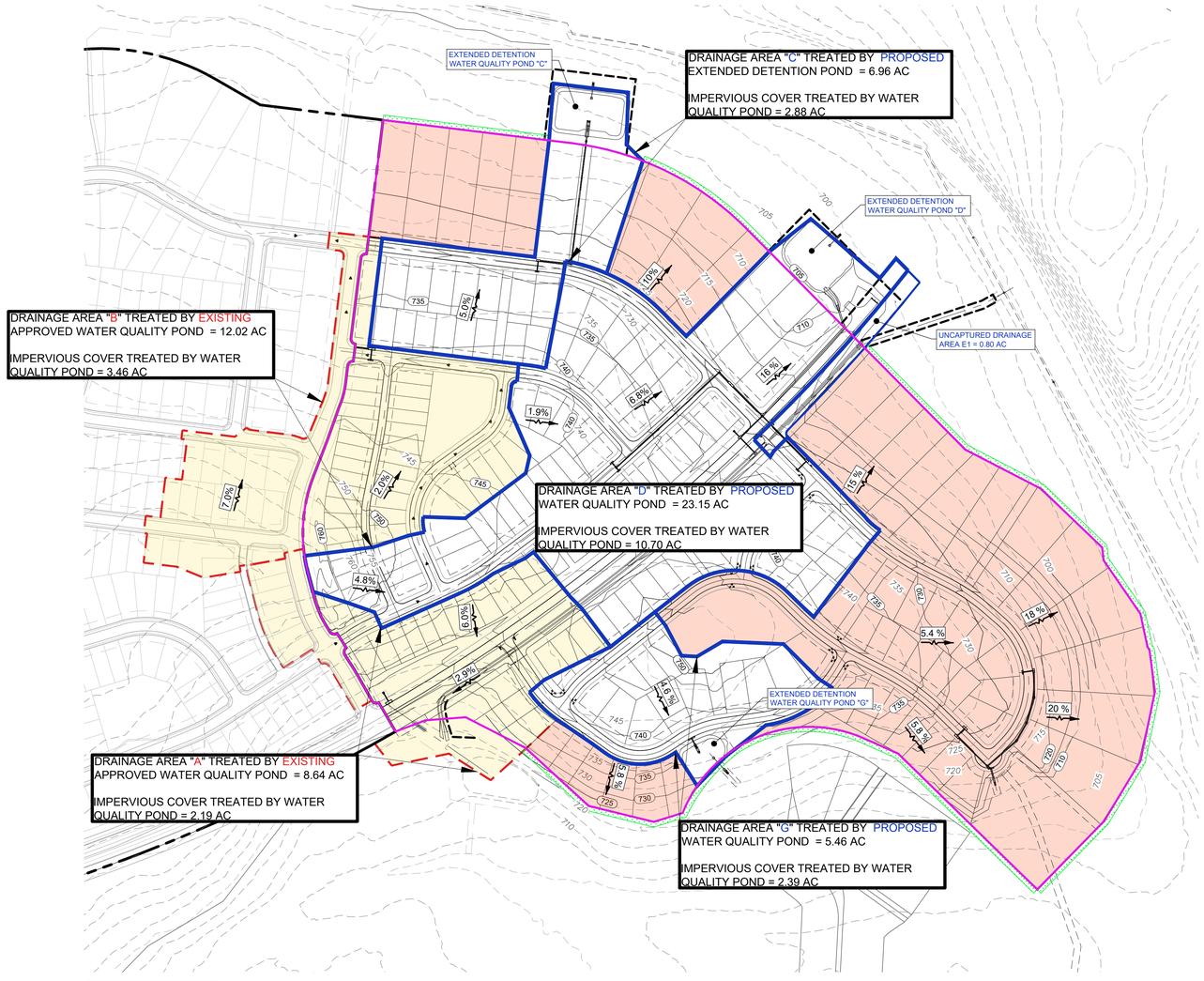
DRAINAGE AREA TREATED BY PROPOSED VEGETATED FILTER STRIPS

DRAINAGE AREA TREATED BY APPROVED EXISTING DETENTION PONDS*

PROPERTY BOUNDARY

LEGEND

- 740 — EXISTING CONTOUR
- 740 — PROPOSED CONTOUR
- X.XX — FLOW ARROWS
- ROCK BERM
- TEMP. SPOILS & STORAGE AREA
- CONCRETE TRUCK WASHOUT PIT
- CONSTRUCTION ENTRANCE
- LOC*SF — LIMITS OF CONSTRUCTION/ SILT FENCE
- I.P. — INLET PROTECTION
- VEGETATED FILTER TRIPS



REQUIRED TSS REMOVAL FOR ENTIRE SITE

TOTAL ACREAGE	PRE-DEVELOPMENT IMPERVIOUS COVER	POST-DEVELOPMENT IMPERVIOUS COVER	POST-DEVELOPMENT IMPERVIOUS COVER TREATED BY EX APPROVED PONDS*	Lm-REQUIRED TSS REMOVAL
80.45 ACRES	0.00 ACRES	28.01 ACRES	5.65 ACRES	25,142 LBS

BREAKDOWN OF TSS BEING TREATED BY PERMANENT BMP'S

PROPOSED BMP	DRAINAGE AREA TO BMP	IMPERVIOUS COVER TO BPM	BMP EFFICIENCY	F	PERCENT OF TOTAL TSS BEING TREATED	TSS BEING REMOVED BY BMP (LBS)
EXTENDED DETENTION POND C	6.96 ACRES	2.88 ACRES	90%	1.0	100.00%	3,025 LBS
EXTENDED DETENTION POND D	23.16 ACRES	10.70 ACRES	90%	1.0	100.00%	11,195 LBS
EXTENDED DETENTION POND G	5.46 ACRES	2.39 ACRES	90%	1.0	100.00%	2,505 LBS
VEGETATED FILTER STRIPS	34.23 ACRES	12.05 ACRES	85%	1.0	100.00%	12,031 LBS
TOTAL						28,756 LBS

*PLEASE REFER TO APPROVED WPAP PROVIDED IN THIS SUBMITTAL

VERAMENDI PRECINCT 18-2 & 19-1
WPAP SITE PLAN EXHIBIT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 2/23/19
DESIGNED BY: KGL
DRAWN BY: MAP
CHECKED BY: BDB
DRAWING NAME:

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
8/28/2024

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

SHEET NO. W1.0

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.
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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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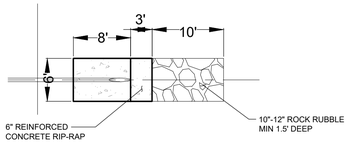
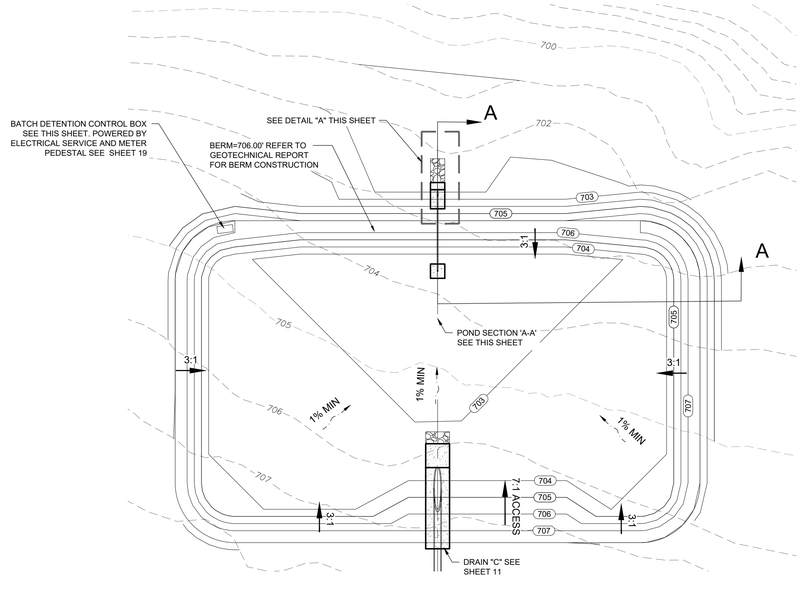
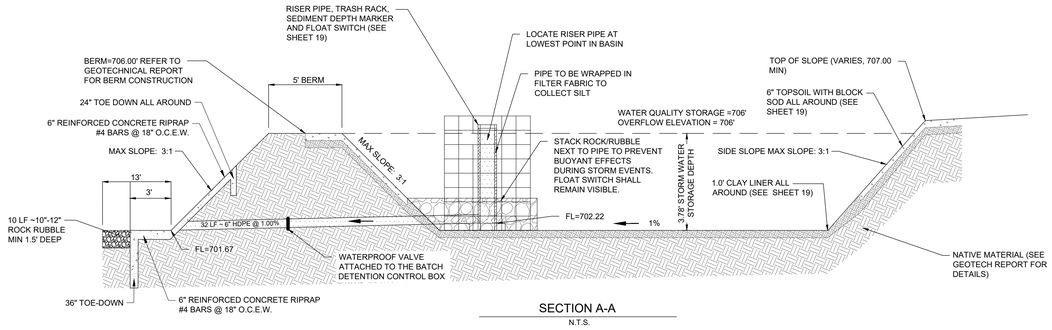
17. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.



DETAIL "A"
SCALE: 1"=10'

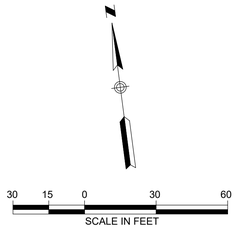




SECTION A-A
N.T.S.

LEGEND

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



SCALE IN FEET
SCALE: 1"=30'

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
$Q_{100}=29.1$ CFS
330.0 CFS > 29 CFS = OK

VERAMENDI PRECINCT 18 UNIT 2

WATER QUALITY POND "C" SWQ

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: 80_Water Quality Ponds.dwg

4/3/23
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. 17 OF 71 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

P:\SA3856_KSA Properties\SA402_Veramendi Precinct 18-21\08 Site Development Plan\CIVIL\Sheets\pln_Water Quality Ponds.dwg
Last Modified: Nov. 29, 23 – 17:59
Plot Date/Time: Nov. 30, 23 – 09:25:21

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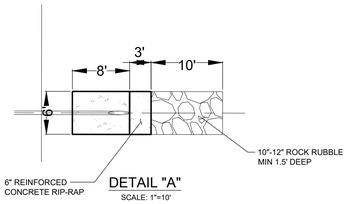
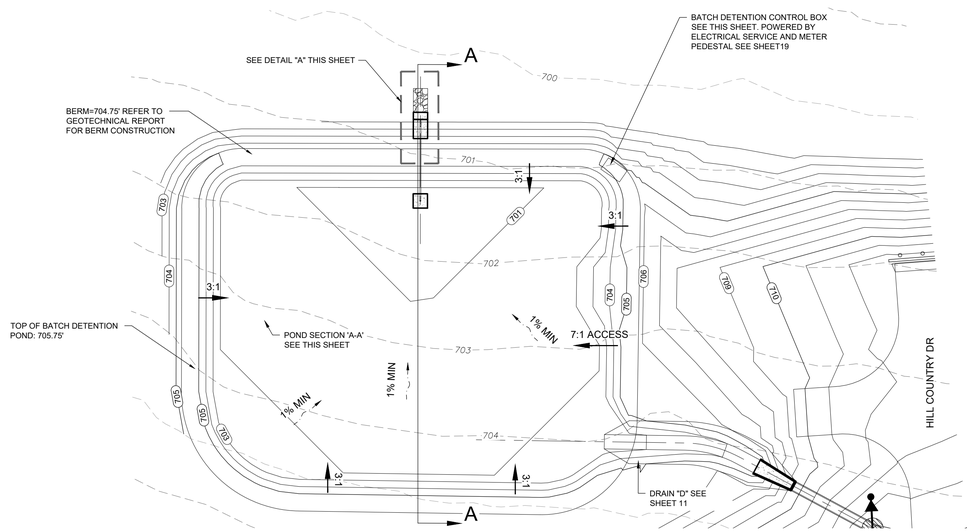
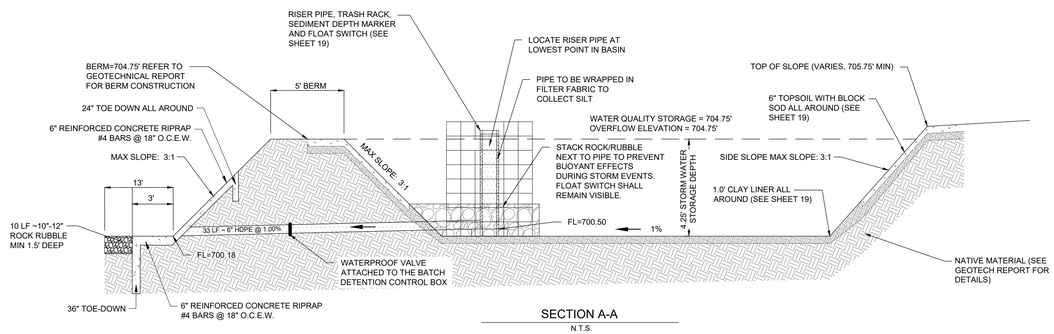


DETAIL "A"
SCALE: 1"=10'

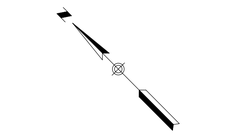




SECTION A-A
N.T.S.

LEGEND

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



30 15 0 30 60
SCALE IN FEET
SCALE: 1"=30'

EMERGENCY OVERFLOW WEIR CALCULATION

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

VERAMENDI PRECINCT 18 UNIT 2

WATER QUALITY POND "D" SWQ

NO.	DESCRIPTION	BY	DATE

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: 18_Water Quality Ponds.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
11/30/23

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 71 SHEETS

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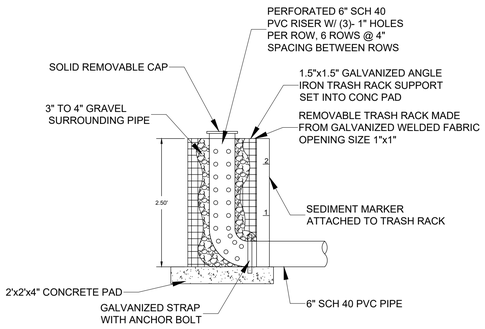
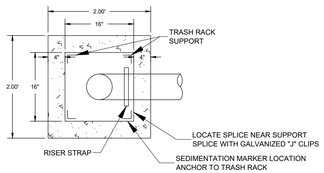
811 Know what's below. Call before you dig.

FOR PERMIT

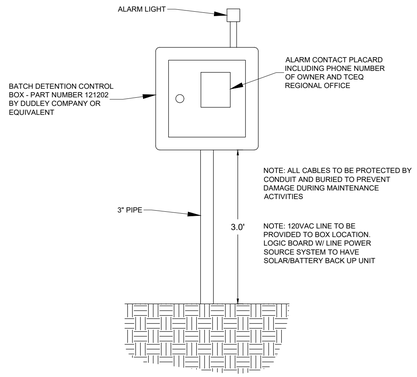
K:\SA3856.402_Properties\0402 Veramendi Precinct 18-21\429 Site Development Plans\DWG\Sheets\ph_Water Quality Ponds.dwg
User: pgflores
Last Modified: Nov. 29, 23 - 17:59
Plot Date/Time: Nov. 29, 23 - 17:59



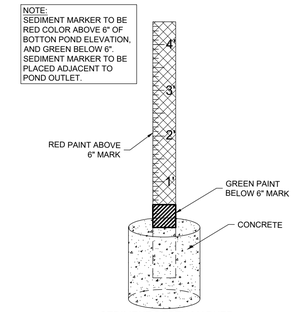
SECTION VIEW OF RISER
NTS



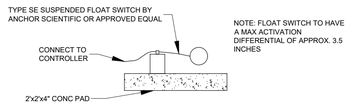
PLAN VIEW OF RISER
NTS



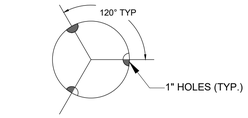
BATCH DETENTION CONTROL BOX
NTS



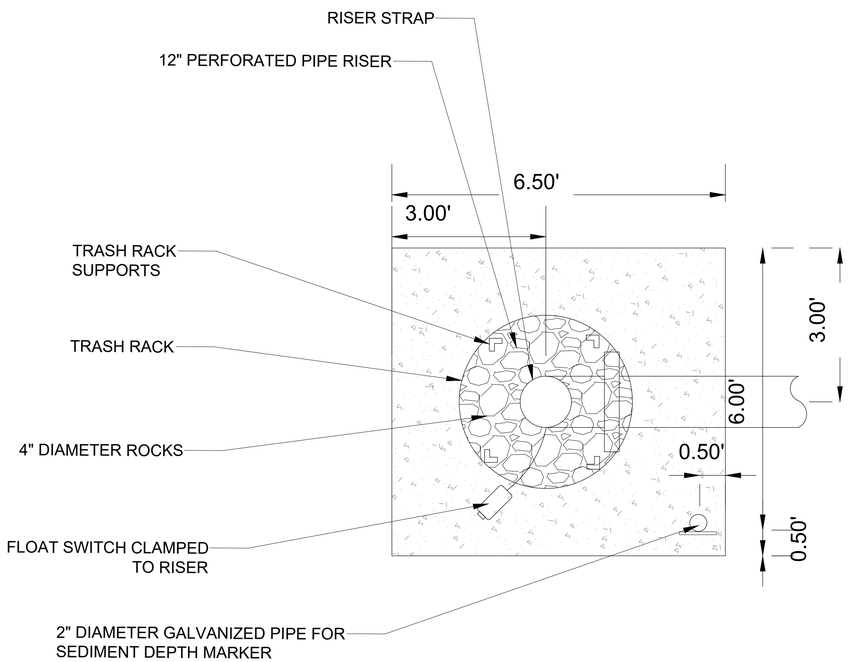
SEDIMENT DEPTH MARKER
N.T.S.



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.

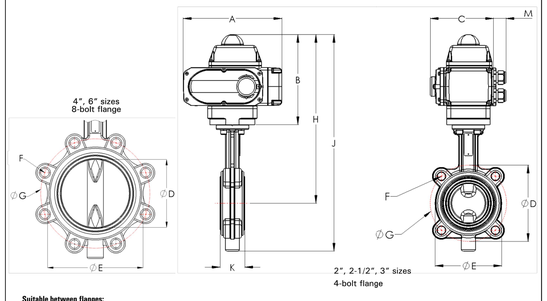
NOTES TO CONTRACTOR
(EACH PHASE OF BASIN CONSTRUCTION)

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

K:\LJA3856.402_Project\Civil\02 Veramendi Precinct 18-21\05 Site Development Plans\CMC-Sheets\Ltr_Basin Details.dwg
Plotted: Nov. 28, 23 – 22:33
Last Modified: Nov. 28, 23 – 22:33
Xref's Attached: No

VERAMENDI PRECINCT 18 UNIT 2

BASIN DETAILS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Basin Details.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
11/30/23

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

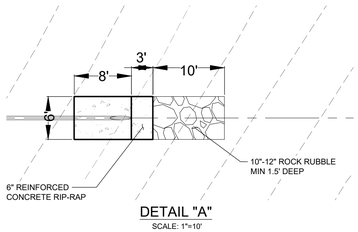
JOB NUMBER: SA3856.0402

SHEET NO. 19 OF 71 SHEETS

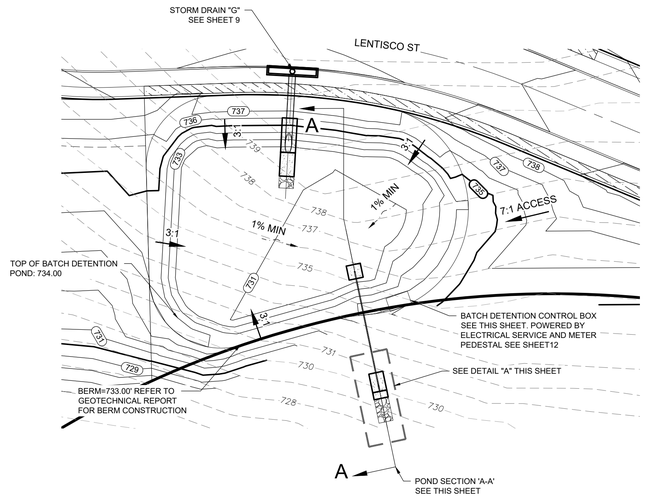
FOR PERMIT

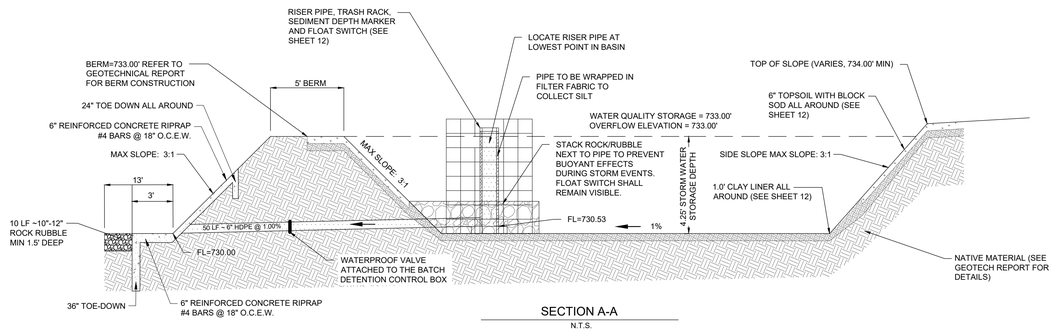
DRAINAGE & GRADING NOTES:

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 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.

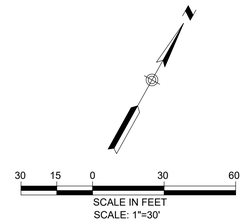


DETAIL "A"
SCALE: 1"=10'





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

$Q_{OVF}=C*L*H^{3/2}$
L=40'
H=1.0'
C=2.6
$Q_{OVF}=2.6*40*1.0^{3/2}$
Q_{OVF}=104 CFS
Q_{OUT}=34.9 CFS
104.0 CFS > 34.9 CFS = OK

VERAMENDI PRECINCT 19 UNIT 1

WATER QUALITY POND G

NO.	DESCRIPTION	BY	DATE

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Pond.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
11/30/23

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

JOB NUMBER:
SA3856.0401

SHEET NO.
11
OF 61 SHEETS

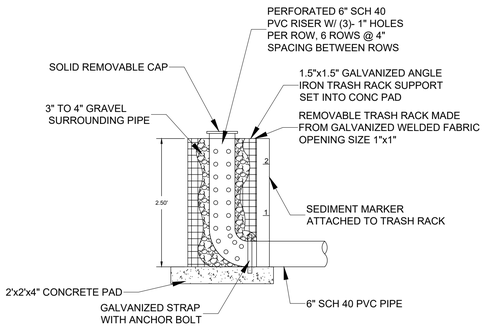
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

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.

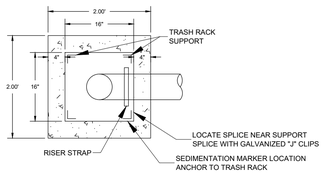
811 Know what's below. Call before you dig.

FOR PERMIT

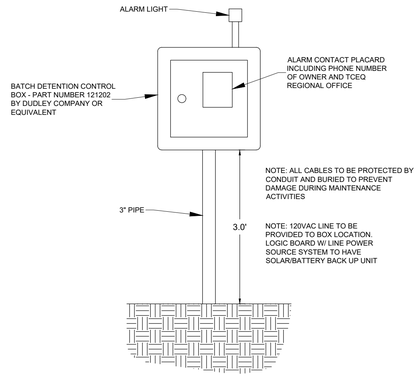
K:\SA\3856.KSA Properties\04Civil Veramendi Precinct 19-T1\06 Site Development Plans\04Wtr-Sheets\sh_Pond.dwg
Xrefs Used:
Last Modified: Nov. 30, 23 - 21:58
Last Plotted: Nov. 30, 23 - 21:58



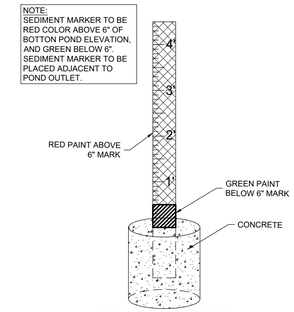
SECTION VIEW OF RISER
NTS



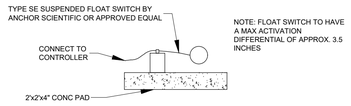
PLAN VIEW OF RISER
NTS



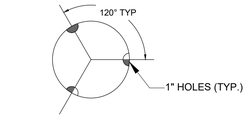
BATCH DETENTION CONTROL BOX
NTS



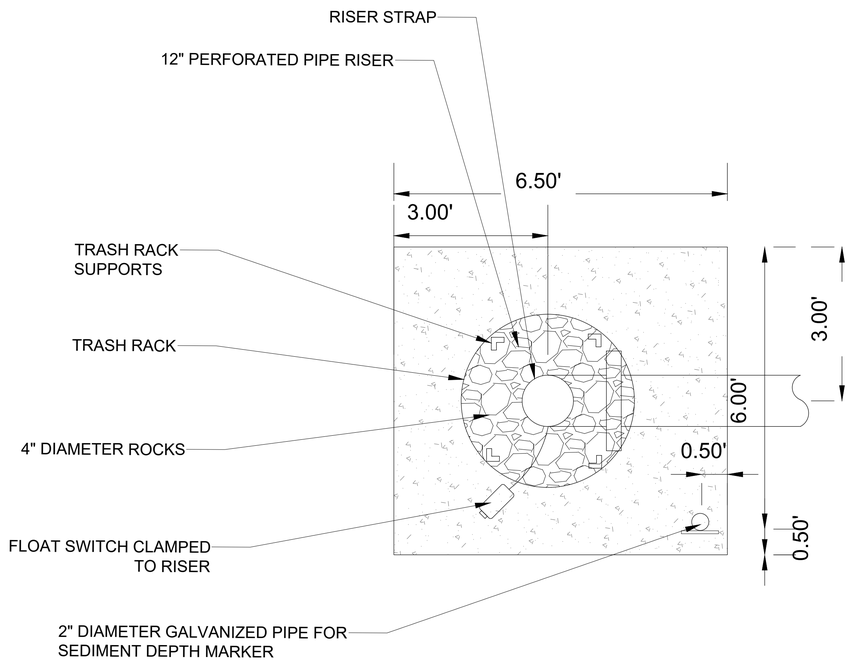
SEDIMENT DEPTH MARKER
N.T.S.



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.
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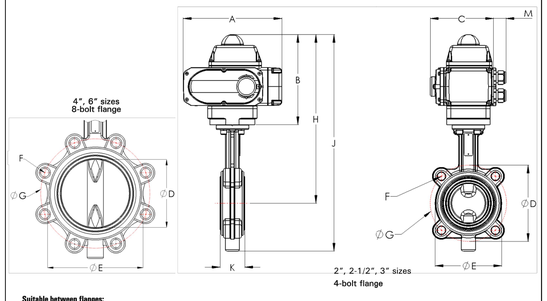
   - REINFORCING STEEL FOR BASIN WALL OR RIPRAP LINER HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE AND RISER PIPE IS IN PLACE.
3. WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM 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 19 UNIT 1

BASIN DETAILS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Basin Details.dwg

11/30/23
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:
SA3856.0401

SHEET NO.
12
OF 61 SHEETS

FOR PERMIT

K:\SA3856.404 Properties\04DT Veramendi Precinct 19-1\426 Site Development Plan\03WC-Sheets\sh_Basin Details.dwg
Plotted: Nov. 30, 23 – 21:56
Last Modified: Nov. 30, 23 – 21:56
Xref's Attached: No

VERAMENDI PRECINCT 19 UNIT 1

CONSTRUCTION DOCUMENT SET

NEW BRAUNFELS, TEXAS 78132

COMAL COUNTY

NBU #: W-236397 / WW-236398

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

REVISIONS			
NO.	DESCRIPTION	BY	DATE

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.

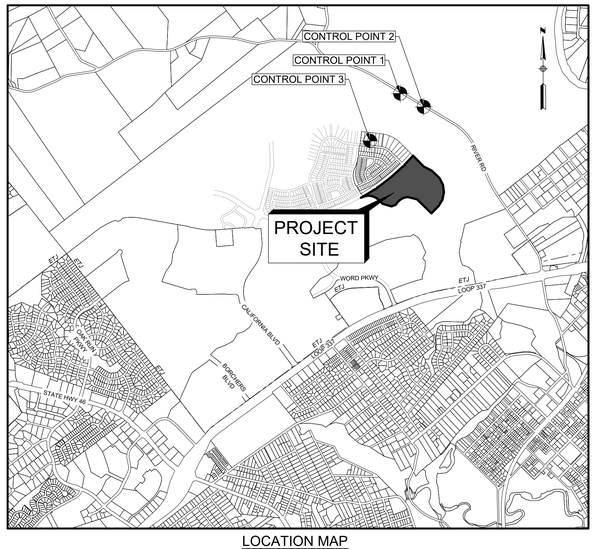
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 18.

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

THIS INFORMATION PROVIDED BY LJA SURVEYING.

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.



LOCATION MAP
1" = 2000'

SUBMITTAL DATE: NOVEMBER 2023

PROPERTY DESCRIPTION

BEING 38.4273 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
387 W. MILL STREET, SUITE 200
NEW BRAUNFELS, TX 78132
CONTACT: 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. SA3856.0401

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024
Priscilla G. Flores

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. 'D3' &'G1' PLAN & PROFILE STA. 1+00 TO END
10	S.S.L. 'F1' & 'F2' PLAN & PROFILE STA. 1+00 TO END
11	WATER QUALITY POND G
12	BASIN DETAILS
13	DRAINAGE DETAILS (SHEET 1 OF 3)
14	DRAINAGE DETAILS (SHEET 2 OF 3)
15	DRAINAGE DETAILS (SHEET 3 OF 3)
16	SENDERO VW PLAN & PROFILE STA 1+00 TO 8+50
17	SENDERO VW PLAN & PROFILE STA 8+50 TO END
18	BELLOTA TRL PLAN & PROFILE STA 1+00 TO 9+00
19	BELLOTA TRL PLAN & PROFILE STA 9+00 TO END
20	LENTISCO ST PLAN & PROFILE STA 1+00 TO 6+50
21	LENTISCO ST PLAN & PROFILE STA 6+50 TO END
22	PAMILLA AVE PLAN & PROFILE STA 1+00 TO END
23	STREET DETAILS (SHEET 1 OF 2)
24	STREET DETAILS (SHEET 2 OF 2)
25	SIGNAGE LAYOUT (SHEET 1 OF 3)
26	SIGNAGE LAYOUT (SHEET 2 OF 3)
27	SIGNAGE LAYOUT (SHEET 3 OF 3)
28	SIGNAGE DETAILS (SHEET 1 OF 2)
29	SIGNAGE DETAILS (SHEET 2 OF 2)
30	UTILITY LAYOUT (SHEET 1 OF 3)
31	UTILITY LAYOUT (SHEET 2 OF 3)
32	UTILITY LAYOUT (SHEET 3 OF 3)
33	WATER LAYOUT (SHEET 1 OF 3)
34	WATER LAYOUT (SHEET 2 OF 3)
35	WATER LAYOUT (SHEET 3 OF 3)
36	WATER DETAILS
37	WASTEWATER LAYOUT (SHEET 1 OF 3)
38	WASTEWATER LAYOUT (SHEET 2 OF 3)
39	WASTEWATER LAYOUT (SHEET 3 OF 3)
40	WASTEWATER LINE 'A' PLAN & PROFILE STA. 1+00 TO STA. 11+00
41	WASTEWATER LINE 'A' PLAN & PROFILE STA. 11+00 TO END
42	WASTEWATER LINE 'B' PLAN & PROFILE STA. 1+00 TO END
43	WASTEWATER LINE 'C' PLAN & PROFILE STA. 1+00 TO STA. 6+00
44	WASTEWATER LINE 'C' PLAN & PROFILE STA. 6+00 TO END
45	WASTEWATER LINE 'D' PLAN & PROFILE STA. 1+00 TO END
46	WASTEWATER LINE 'E' PLAN & PROFILE STA. 1+00 TO END
47	WASTEWATER LINE 'F' PLAN & PROFILE STA. 1+00 TO END
48	WASTEWATER DETAILS (SHEET 1 OF 2)
49	WASTEWATER DETAILS (SHEET 2 OF 2)
50	GRADING PLAN (SHEET 1 OF 3)
51	GRADING PLAN (SHEET 2 OF 3)
52	GRADING PLAN (SHEET 3 OF 3)
53	STORMWATER POLLUTION PREVENTION PLAN (SHEET 1 OF 3)
54	STORMWATER POLLUTION PREVENTION PLAN (SHEET 2 OF 3)
55	STORMWATER POLLUTION PREVENTION PLAN (SHEET 3 OF 3)
56	SWPPP DETAILS
57	TREE PRESERVATION PLAN (SHEET 1 OF 3)
58	TREE PRESERVATION PLAN (SHEET 2 OF 3)
59	TREE PRESERVATION PLAN (SHEET 3 OF 3)
60	TREE PRESERVATION PLAN CALCULATIONS

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 830-608-2 1 8 7 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 E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

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

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
   - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
   - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
   - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

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

   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~~

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.

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.

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1
GENERAL NOTES

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_General Notes.dwg

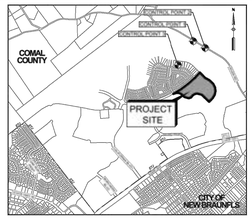
STATE OF TEXAS
PRISCILLA C. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024

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

JOB NUMBER: SA3856.0401

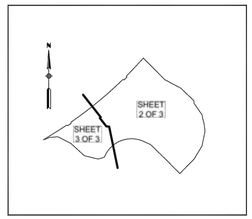
SHEET NO. 2 OF 60 SHEETS

N:\SA3856.AGA Properties\SA01 Veramendi Precinct 19-1\430 Site Development Plans\GWC-Sheets\sh_General Notes.dwg
Mar. 27, 24 - 13:43
Mar. 14, 24 - 14:54:47



LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE

CERTIFICATE OF APPROVAL

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

_____
PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

_____ _____
DIRECTOR OF PLANNING

_____ _____
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 = 1.00014)
4. BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 NAD83 (NA2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE.

STATE OF TEXAS
COUNTY OF COMAL

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

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

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 WITH THE TERMS AND CONDITIONS IN THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO NEW BRAUNFELS UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF THE CITY OF NEW BRAUNFELS OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
2. UTILITIES WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE BUILDING STRUCTURE ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
3. UTILITIES SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARD AND METER LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
4. EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE BUILDER/DEVELOPERS EXPENSE.
5. DO NOT COMBINE ANY NEW UTILITY EASEMENTS (UE) WITH DRAINAGE EASEMENTS (DE) OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS (UE) WITHOUT WRITTEN APPROVAL FROM NEW BRAUNFELS UTILITIES.
6. NBU IS NOT RESPONSIBLE FOR LANDSCAPING OR IRRIGATION IN UE/LE.

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)

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 OWNERS, OR THE PROPERTY OWNERS 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. BELLOTA TRL
   C. LENTISCO ST
   D. PALMILLA AVE
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 121; LOT 900, BLK 120; LOT 900, BLK 122; LOT 900, BLK 119; LOT 900, BLK 118.
   B. BELLOTA TRL - LOT 900, BLOCK 123; LOT 900, BLK 121; LOT 900, BLK 122
   C. LENTISCO ST - LOT 901, BLOCK 117; LOT 900, BLK 121; LOT 900, BLK 117; LOT 900, BLK 123.
3. TEN (10) FOOT WIDE SIDEWALK WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION CONSTRUCTION WITHIN: A. LOT 900 BLOCK 119. (DDCD 13.3.5)

SUBDIVISION PLAT OF VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S6° 04' 06"E	37.82
L2	S12° 00' 43"E	100.00
L3	S30° 16' 26"E	12.08
L4	S5° 41' 02"E	136.91
L5	N65° 59' 17"W	109.97
L6	S72° 46' 02"W	90.00
L7	S85° 44' 51"W	120.00
L8	S69° 30' 30"W	95.65
L9	N55° 42' 46"E	58.00
L10	N45° 17' 29"E	58.00
L11	S44° 42' 31"E	39.00
L12	S42° 59' 25"E	100.04
L13	S44° 42' 31"E	39.25
L14	S62° 39' 38"E	90.66
L15	S48° 55' 50"E	51.17
L16	S44° 21' 07"W	19.51
L17	N62° 45' 07"W	84.91
L18	S30° 36' 17"W	17.64
L19	S81° 31' 28"W	130.65
L20	S57° 00' 07"W	50.00
L21	N54° 16' 43"W	48.40
L22	N55° 59' 49"W	100.04
L23	N54° 16' 43"W	28.51
L24	N34° 17' 14"W	82.52
L25	S34° 17' 14"E	82.52
L26	N37° 44' 35"E	22.51
L27	N51° 53' 16"E	397.97
L28	N7° 51' 03"E	14.79
L29	N44° 42' 31"W	110.17
L30	S46° 27' 43"E	98.05

LINE TABLE		
LINE	DIRECTION	LENGTH
L31	S44° 42' 31"E	39.25
L32	S62° 39' 38"E	90.66
L33	S48° 55' 50"E	51.17
L34	S44° 21' 07"W	28.83
L35	N62° 45' 07"W	84.91
L36	N45° 51' 56"W	75.28
L37	N7° 51' 03"E	14.79
L38	S45° 51' 56"E	75.28
L39	S30° 36' 17"W	17.64
L40	S81° 31' 28"W	130.65
L41	S57° 00' 07"W	50.00
L42	N54° 16' 43"W	48.40
L43	N52° 31' 26"W	97.97
L44	N37° 44' 35"E	24.10
L46	S38° 06' 44"E	131.36
L47	N38° 06' 44"W	138.34
L48	S47° 50' 11"W	60.64
L49	N86° 23' 21"W	38.22

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C1	653.66	405.00	92°28'28"	422.88	S67° 46' 28"W	584.99
C2	380.09	5550.00	3°55'26"	190.12	N58° 07' 39"E	380.01
C3	23.44	15.00	89°32'49"	14.88	S79° 03' 39"E	21.13
C4	23.44	15.00	89°32'49"	14.88	N10° 29' 10"E	21.13
C5	921.70	5550.00	9°30'55"	461.91	N50° 30' 07"E	920.64
C6	23.44	15.00	89°32'49"	14.88	S89° 28' 56"E	21.13
C7	23.44	15.00	89°32'49"	14.88	N0° 03' 54"E	21.13
C8	335.41	5550.00	3°27'46"	167.76	N43° 06' 25"E	335.36
C9	226.84	724.00	17°57'07"	114.36	N53° 41' 04"W	225.92
C10	144.02	601.00	13°43'48"	72.36	N55° 47' 44"W	143.68
C11	449.35	276.00	93°16'57"	292.28	N2° 17' 21"W	401.34
C12	10.07	15.00	38°27'27"	5.23	N25° 07' 24"E	9.88
C13	145.66	50.00	166°54'54"	435.97	N89° 21' 07"E	99.35
C14	10.07	15.00	38°27'27"	5.23	S26° 25' 09"E	9.88
C15	194.64	652.00	17°06'15"	98.05	S54° 12' 00"E	193.91
C16	5.22	776.00	0°23'09"	2.61	S62° 33' 33"E	5.22
C17	22.78	15.00	87°01'44"	14.24	N74° 07' 09"E	20.66
C18	289.72	326.00	50°55'10"	155.21	N56° 03' 53"E	280.28

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C19	117.27	274.00	24°31'21"	59.55	N69° 15' 47"E	116.38
C20	211.09	176.00	68°43'10"	120.33	S88° 38' 18"E	198.66
C21	128.75	369.00	19°59'29"	65.04	S44° 16' 59"E	128.10
C22	54.32	311.00	10°00'28"	27.23	S39° 17' 29"E	54.25
C23	25.65	15.00	97°57'43"	17.24	N86° 43' 26"E	22.63
C24	68.14	276.00	14°08'41"	34.24	N44° 48' 55"E	67.96
C25	142.66	226.00	36°10'05"	73.80	N69° 58' 19"E	140.31
C26	21.00	15.00	80°12'18"	12.63	N47° 57' 12"E	19.32
C27	98.67	151.00	37°26'26"	51.17	N26° 34' 16"E	96.93
C28	23.56	15.00	90°00'00"	15.00	N0° 17' 29"E	21.21
C29	23.56	15.00	90°00'00"	15.00	S89° 42' 31"E	21.21
C30	243.14	776.00	17°57'07"	122.57	S53° 41' 04"E	242.14
C31	131.56	549.00	13°43'48"	66.10	S55° 47' 44"E	131.24
C32	364.69	224.00	93°16'57"	237.22	S2° 17' 21"E	325.73
C33	23.56	15.00	90°00'00"	15.00	S89° 21' 07"W	21.21
C34	210.16	704.00	17°06'15"	105.87	N54° 12' 00"W	209.38
C35	213.38	724.00	16°53'11"	107.47	N54° 18' 32"W	212.61
C36	104.48	226.00	26°29'18"	53.19	N59° 06' 35"W	103.55

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. (78) RESIDENTIAL LOTS, (8) COMMON SPACE LOTS.

COMMON SPACE NOTES:
LOT 900, BLOCK 117 IS A LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 901, BLOCK 117 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 118 IS A DRAINAGE, LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 119 IS A LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 120 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 121 IS A LANDSCAPE, PEDESTRIAN, UTILITY & ACCESS EASEMENT
LOT 900, BLOCK 123 IS A DRAINAGE, LANDSCAPE, PEDESTRIAN & ACCESS EASEMENT
LOT 900, BLOCK 125 IS A LANDSCAPE, PEDESTRIAN & 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. LJA
9830 Colonnade Blvd Phone 210.503.2700
Suite 300 LJA.COM
San Antonio, Texas 78230 FRN-F-1386

DATE OF PREPARATION: 3/28/2024

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 19 UNIT 1 SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

_____
OWNER/DEVELOPER: GARRETT MECHLER
VERAMENDI PE - EMERALD, LLC
387 W. MILL STREET, SUITE 200
NEW BRAUNFELS, TEXAS 78132

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

NOTE
THE VERAMENDI PRECINCT 19 UNIT 1 PLAT WAS APPROVED WITH CONDITIONS AT THE CITY OF NEW BRAUNFELS PLANNING COMMISSION ON XX/XX/XX.

SHEET 1 OF 3

FOR PERMIT

K:\SA3856.ADA Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\sh_Plat CD.dwg
User: mgeiwer Plot Date/Time: Apr. 10, 24 - 10:10:36

K:\SA3856.ADA Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\sh_Plat.dwg
User: mgeiwer Plot Date/Time: Nov. 30, 23 - 2:25:00
Last Modified: Nov. 30, 23 - 2:24:56
Last Plot/Pen: Apr. 11, 24 - 4:47:05

VERAMENDI PRECINCT 19 UNIT 1

PLAT (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_Plat CD.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024

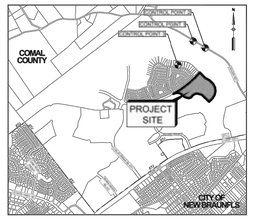
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 3
OF 60 SHEETS

SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE

INDEX MAP
NOT TO SCALE

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
AC	ACRE(S)
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)
ESM'T	EASEMENT
ETJ	EXTRATERRITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK

- (A) 20' UTILITY ESM'T
- (B) 10' UTILITY ESM'T
- (C) 20' SEWER ESM'T
- (D) 20' DRAINAGE ESM'T
- (E) VAR. WIDTH DRAINAGE ESM'T
- (F) 20' OFF-LOT DRAINAGE ESM'T
- (A) 20' SANITARY SEWER LINE ESM'T (VOL. 1018, PG. 730, OPR)

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

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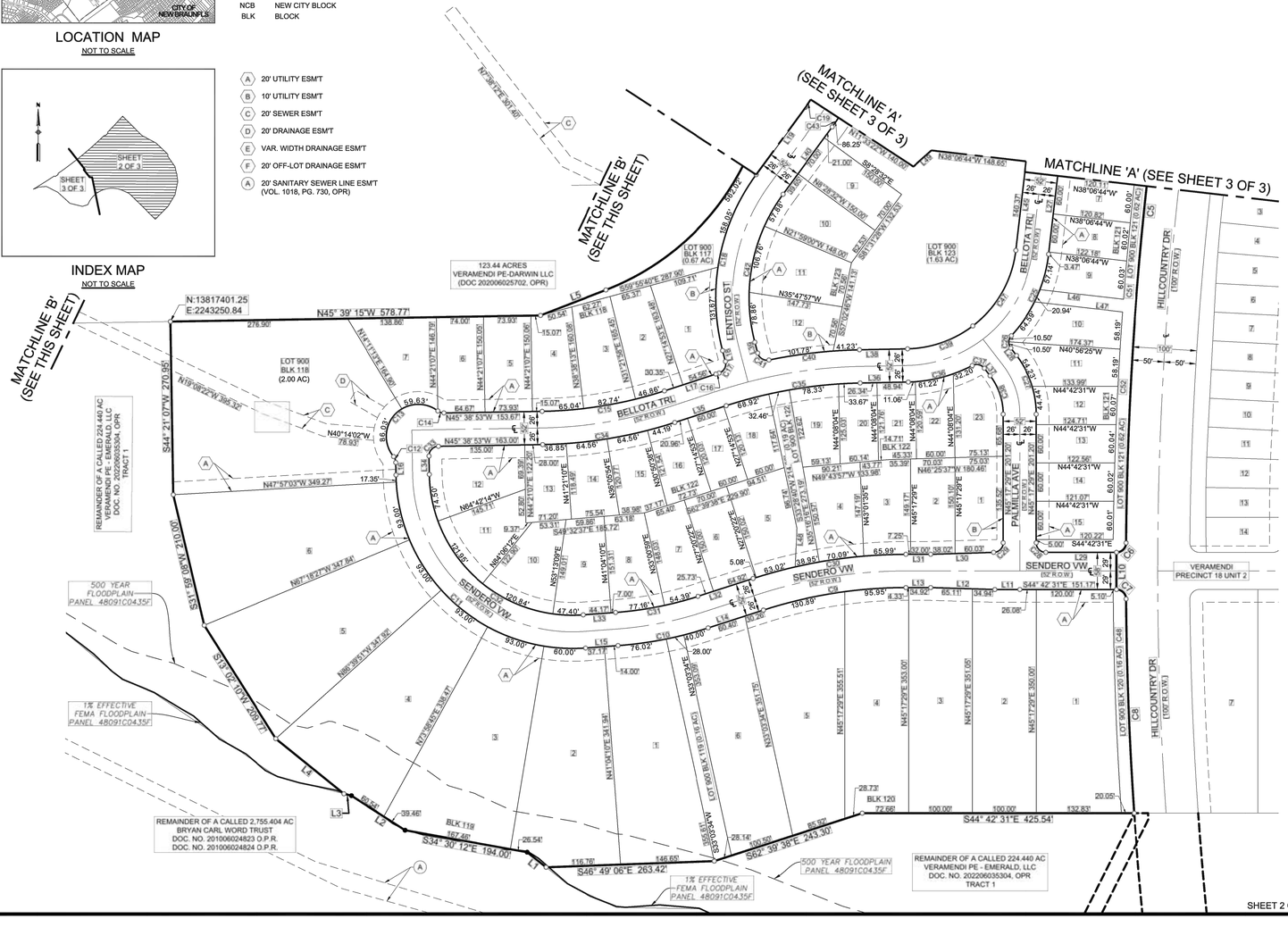
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 3/28/2024



SHEET 2 OF 3

NOTE

THE VERAMENDI PRECINCT 19 UNIT 1 PLAT WAS APPROVED WITH CONDITIONS AT THE CITY OF NEW BRAUNFELS PLANNING COMMISSION ON XX/XX/XX.

VERAMENDI PRECINCT 19 UNIT 1

PLAT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE

REVISIONS

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_Plat CD.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

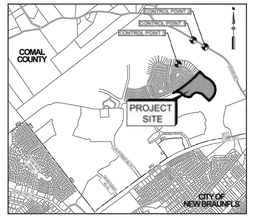
JOB NUMBER: SA3856.0401

SHEET NO. 4 OF 60 SHEETS

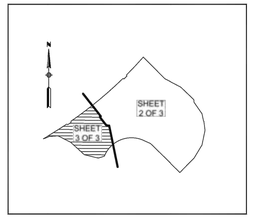
FOR PERMIT

SUBDIVISION PLAT OF VERAMENDI PRECINCT 19 UNIT 1

BEING 38.4273 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 JUAN MARTIN VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE

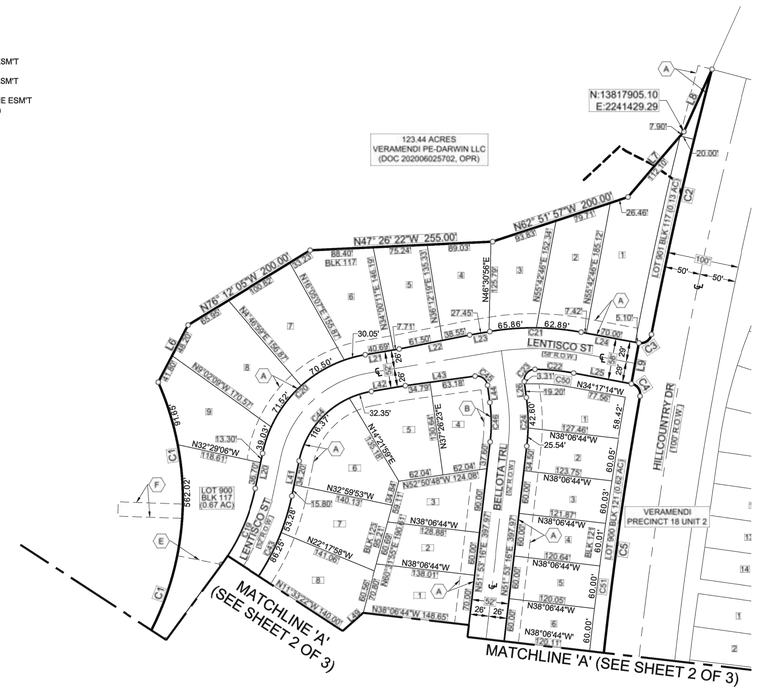


INDEX MAP
NOT TO SCALE

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
AC	ACRE(S)
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)
ESM'T	EASEMENT
ETJ	EXTRATERRITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK

- (A) 20' UTILITY ESM'T
- (B) 10' UTILITY ESM'T
- (C) 20' SEWER ESM'T
- (D) 20' DRAINAGE ESM'T
- (E) VAR. WIDTH DRAINAGE ESM'T
- (F) 20' OFF-LOT DRAINAGE ESM'T
- (A) 20' SANITARY SEWER LINE ESM'T (VOL. 1018, PG. 730, OPR)



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

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FRN-F-1386

DATE OF PREPARATION: 3/28/2024

NOTE
THE VERAMENDI PRECINCT 19 UNIT 1 PLAT WAS APPROVED WITH CONDITIONS AT THE CITY OF NEW BRAUNFELS PLANNING COMMISSION ON XX/XX/XX.

SHEET 3 OF 3

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1
PLAT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: sh_Plat CD.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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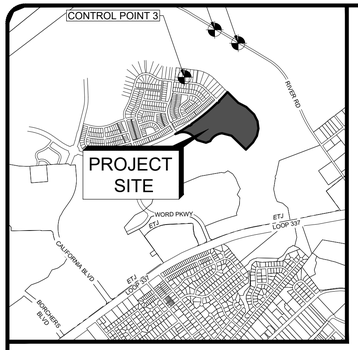
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 5
OF 60 SHEETS

K:\SA3856 ASA Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\sh_Plat CD.dwg
User: mgwarr Plot Date/Time: Apr 10, 24 - 10:10:58
Last Modified: Nov 30, 23 - 22:00
Plot Date/Time: Apr 10, 24 - 13:34:14



LOCATION MAP
SCALE: 1" = 2000'



LEGEND

A / X.X	AREA (BASIN) ACREAGE
740	EXISTING CONTOUR
740	PROPOSED CONTOUR
	DRAINAGE AREA LIMITS
TC TC TC	TIME OF CONCENTRATION PATH
	FLOW ARROWS
	PROPOSED BOUNDARY
	EXISTING LOT LINES
	PROPOSED LOT LINES
A	REFERENCE POINT

200 100 0 200 400

SCALE IN FEET
SCALE: 1"=200'

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					Eq 5.4.2					Eq 5.4.3			Eq 5.4	

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(ft^3/s)	Q_{10} (ft^3/s)	Q_{25}(ft^3/s)	Q_{50}(ft^3/s)	Q_{100}(ft^3/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

VERAMENDI PRECINCT 19 UNIT 1

EXISTING DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: SA_DAM Existing & Ultimate.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
4/11/2024

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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 6 OF 60 SHEETS

FOR PERMIT

P:\LJA3856_SCA Properties\04401 Veramendi Precinct 19-1\426 Site Development Plan\GIMS-Sheets\sh_DAM Existing & Ultimate.dwg
Last Modified: Mar. 28, 24 – 11:46
Plotted By: Jo_Ann Ayala – 11:46 AM

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

Study Point	Drainage Area	Sheet Flow (max length = 150') n	L_f(ft)	P_2(in)	S_f%	T_f(min)	Shallow Concentrated Flow Paved/Unpaved	L_{sc}(ft)	S_{sc}%	k	T_{sc}(min)	Channel Flow L(ft)	V(ft/sec)	T_{ch}(min)	Total T_c(min)	Total 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	**25.9**	**15.5**
							Paved	810	1.0	20.32	6.6					
	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	**17.1**	**10.3**
							Paved	454	0.5	20.32	5.3					
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	**21.6**	**13.0**
							Paved	433	2.00	20.32	2.5					
	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	**13.0**	**7.8**
							Paved	366	2.00	20.32	2.1					
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	**13.6**	**8.2**
							Paved	500	2.40	20.32	2.6					
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	**12.0**	**7.2**
							Paved	279	1.50	20.32	1.9					
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 $T_f = \frac{0.007(nL_f)^{0.8}}{(P_2)^{0.5}S_f^{0.4}}$					Eq 5.4.2 $T_{sc} = \frac{L_{sc}}{3600KS_{sc}^{0.5}}$					Eq 5.4.3 $T_{ch} = \frac{L_{ch}}{3600 * V}$			Eq 5.4 $T_f+T_{sc}+T_{ch}$	

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

Study Point	Drainage Area Area(s)	A (ac.)	Coefficient C_2	Coefficient C_{10}	Coefficient C_{25}	Coefficient C_{50}	Coefficient C_{100}	Intensity I_2(in/hr)	I_{10}(in/hr)	I_{25}(in/hr)	I_{50}(in/hr)	I_{100}(in/hr)	Flow Q_2(ft³/s)	Q_{10} (ft³/s)	Q_{25}(ft³/s)	Q_{50}(ft³/s)	Q_{100}(ft³/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

- A / X.X — AREA (BASIN) ACREAGE
- 740 — EXISTING CONTOUR
- 740 — PROPOSED CONTOUR
- DRAINAGE AREA LIMITS
- TC — TC — TC — TIME OF CONCENTRATION PATH
- FLOW ARROWS
- PROPOSED BOUNDARY
- EXISTING LOT LINES
- A — PROPOSED LOT LINES
- REFERENCE POINT

200 100 0 200 400

SCALE IN FEET

SCALE: 1"=200'



VERAMENDI PRECINCT 19 UNIT 1

PROPOSED / ULTIMATE DRAINAGE AREA MAP

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: 3b_DMP Existing & Ultimate.dwg

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 04/11/2024

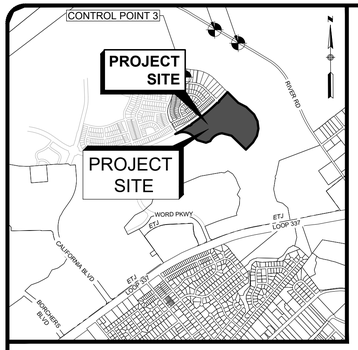
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 7 OF 60 SHEETS

FOR PERMIT

K:\LJA3856_SDL Properties\10401 Veramendi Precinct 19-1\026 Site Development Plans\03WD-Sheets\sh_LJAM Existing & Ultimate.dwg
Layout Tab: 3b_DMP Existing & Ultimate
Last Modified: Mon, 29, 24 - 11:46
Last Plotted: Mon, 29, 24 - 14:36:45



LOCATION MAP

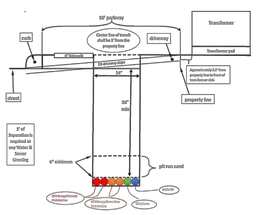
SCALE: 1" = 2000'

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
		DUAL 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
P.U.E.		PUBLIC UTILITY EASEMENT
ESM'T		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING

DS-2

Electric Trench with Joint Utilities



CONDUIT NOTES:

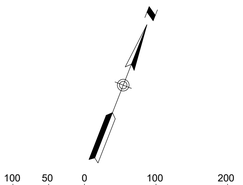
1. CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
2. CONDUITS SHALL BE PVC WITH MINIMUM BURY OF 30 INCHES. SCHEDULE 80 TO BE USED FOR CPS CONDUITS, ALL OTHER CONDUITS ARE SCHEDULE 40.
3. ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED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

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.





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 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.

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 19 UNIT 1

OVERALL UTILITY LAYOUT

NO.	DESCRIPTION	BY	DATE

DATE: 3/27/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Overall Utility Layout.dwg

04/11/2024
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

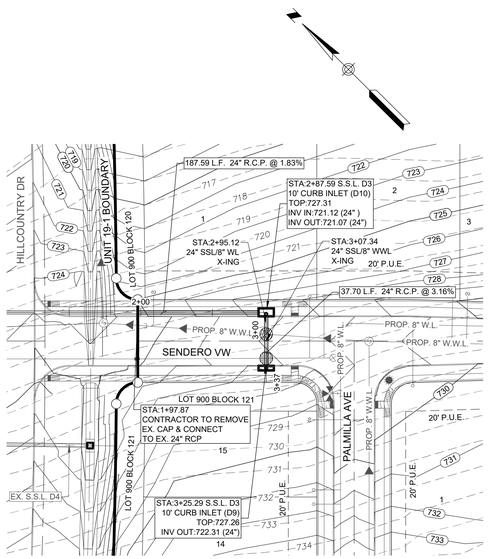
JOB NUMBER: SA3856.0401

SHEET NO. 8 OF 60 SHEETS

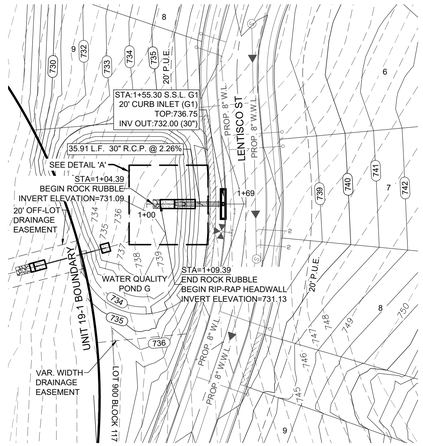
K:\LJA3856_SCH_Properties\04DT Veramendi Precinct 19-1\Y26 Site Development Plans\GWC-Sheets\sh_Overall Utility Layout.dwg
Plotted: Mar 28, 24 – 12:04
Last Modified: Mar 27, 24 – 14:32
Last Modified By: Priscilla Flores

DRAINAGE & GRADING NOTES:

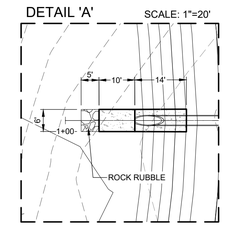
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY 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 (SHEET 13-15) 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.



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



S.S.L. 'G1' STA. 1+00 TO END



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
		DUAL 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
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
100 YR		25 YEAR ENERGY GRADE LINE
HGL		25 YEAR HYDRAILIC GRADE LINE

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

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.

TRENCH EXCAVATION SAFETY PROTECTION

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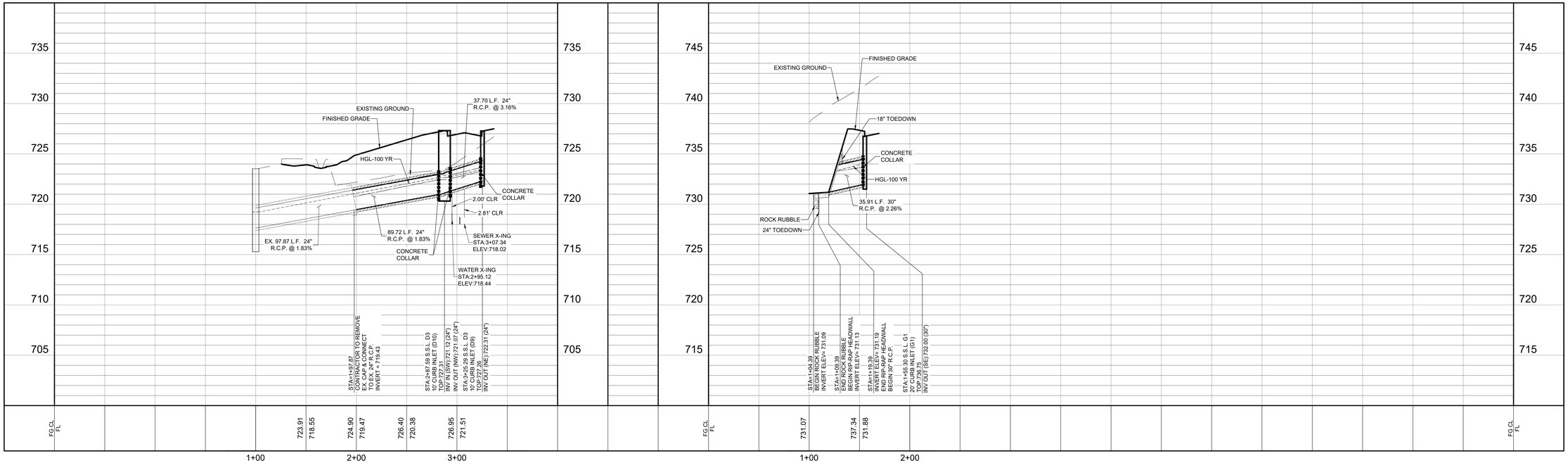


FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

S.S.L. 'D3' & S.S.L. 'G1' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: st_SSL 'D3' & 'G1' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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

JOB NUMBER: SA3856.0401

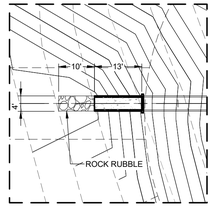
SHEET NO. 9 OF 60 SHEETS

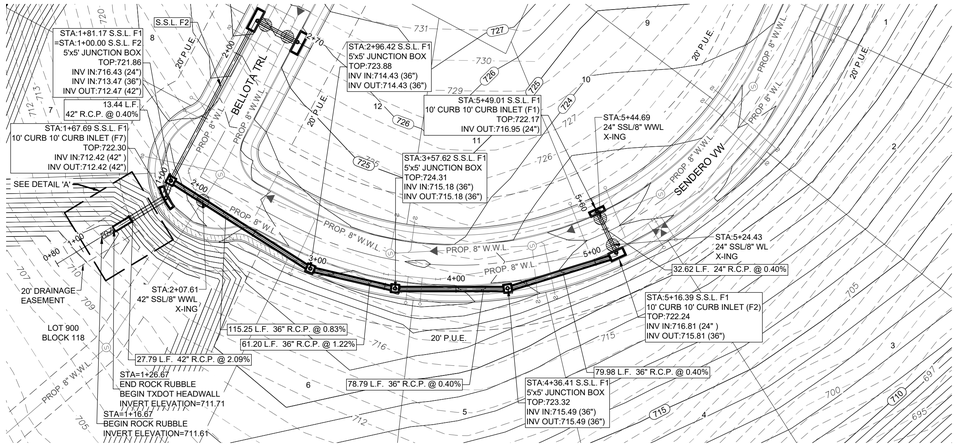
K:\SA3856.401 Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\st_SSL 'D3' &'G1' P&P.dwg
User: jacob.fox
Last Modified: Mar 25, 24 - 12:02
Last Plotted: Mar 31, 24 - 13:06 xs

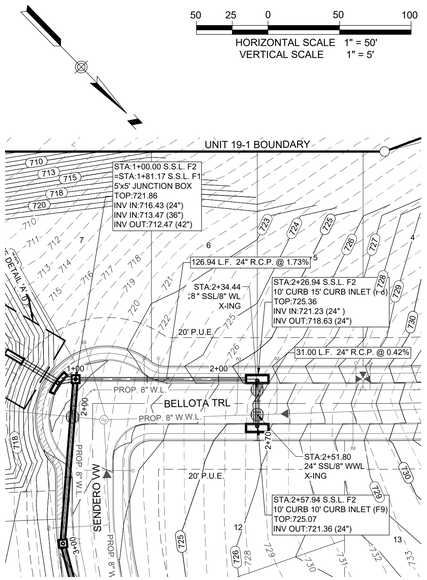
DRAINAGE & GRADING NOTES:

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 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 'B' SCALE: 1"=20'







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

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
		DUAL 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
		TOP OF MANHOLE
	EX.	EXISTING
	P.U.E.	PUBLIC UTILITY EASEMENT
		EASEMENT
	ESM'T	
	VOL	VOLUME
	PG	PAGE
100 YR HGL		25 YEAR ENERGY GRADE LINE 25 YEAR HYDRAILIC GRADE LINE

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.

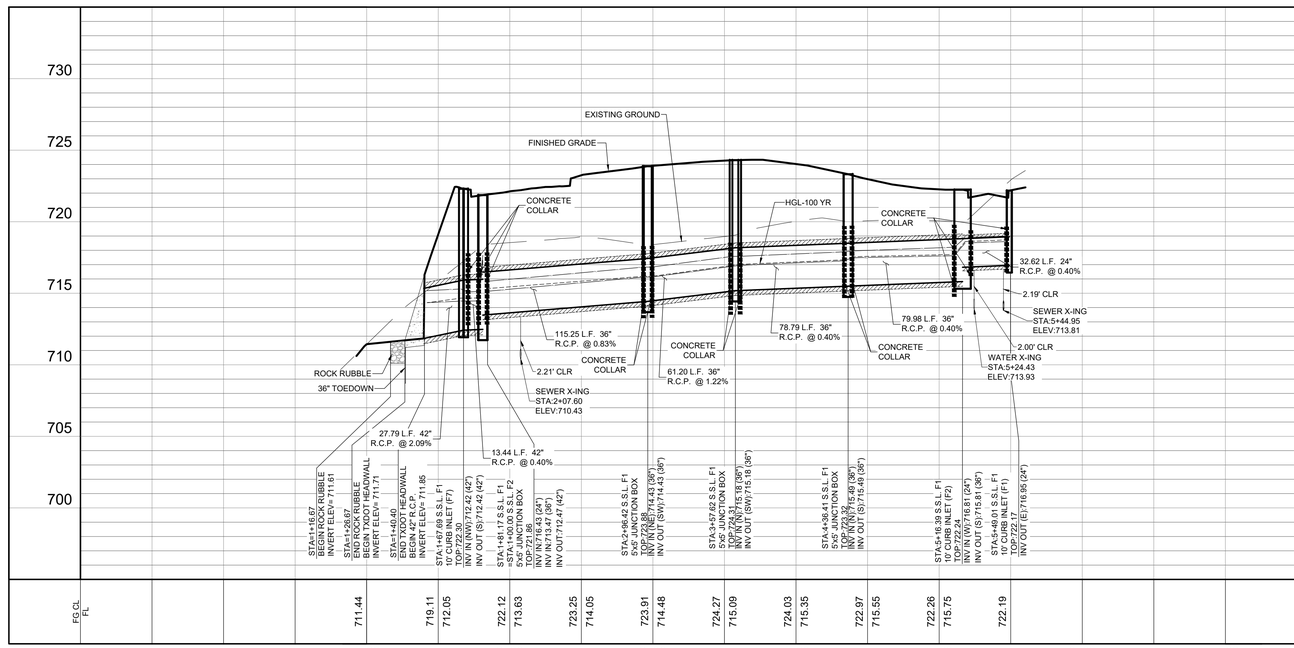
LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

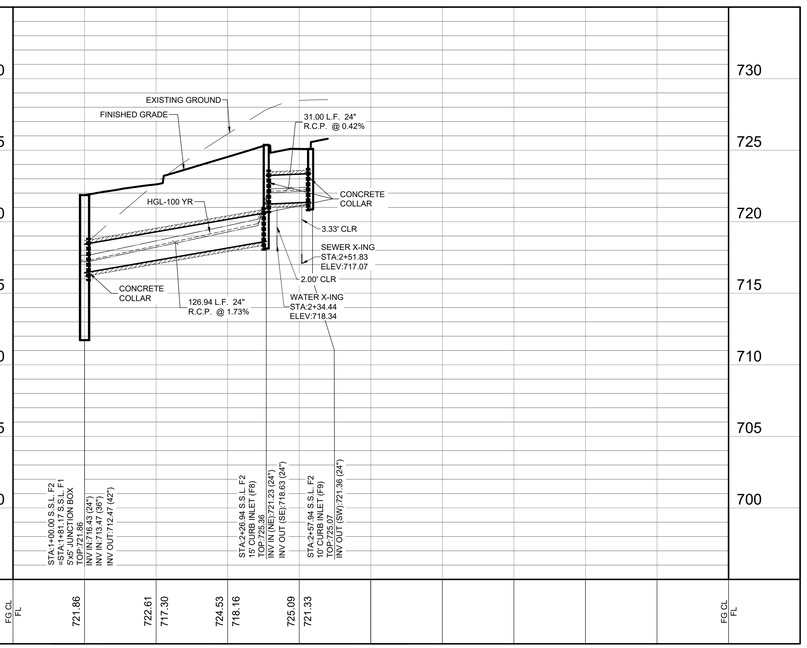
TRENCH EXCAVATION SAFETY PROTECTION

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.

S.S.L. 'F1' STA. 1+00 TO END



S.S.L. 'F2' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

S.S.L. 'F1' & S.S.L. 'F2' PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: 05_SSL 'F1' & 'F2' P&P.dwg

4/11/2024
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: SA3856.0401

SHEET NO. 10
OF 60 SHEETS

X:\SA3856 AGA Properties\04Pl Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\Ph_05L 'F1' & 'F2' P&P.dwg
Name: Nathan Gonzalez
Last Modified: Mar. 28, 24 - 12:09
Plot Date/Time: Apr. 11, 24 - 13:57

DRAINAGE & GRADING NOTES:

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8. ALL WORK SHALL BE PERFORMED WITHIN SITE LIMITS OF CONSTRUCTION.
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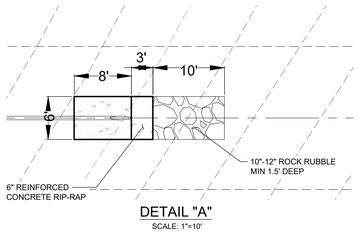
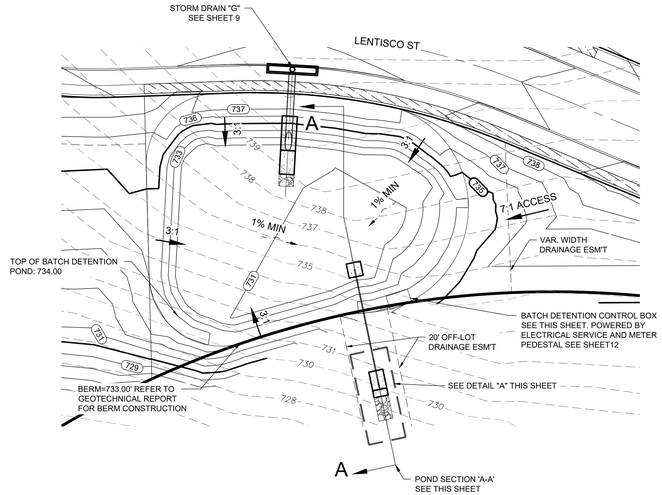
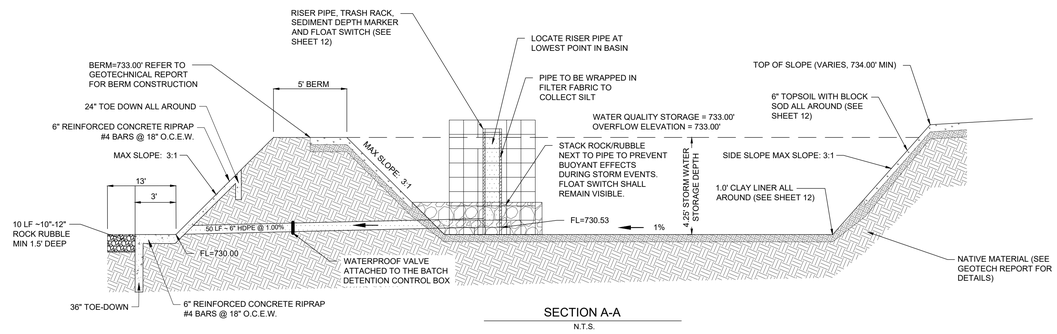
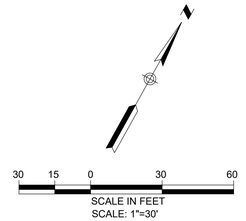


DETAIL "A"
SCALE: 1"=10'





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

$Q_{OVF}=C*L*H^{3/2}$
L=40'
H=1.0'
C=2.6
$Q_{OVF}=2.6*40*1.0^{3/2}$
Q_{OVF}=104 CFS
Q_{100}=34.9 CFS
104.0 CFS > 34.9 CFS = OK

VERAMENDI PRECINCT 19 UNIT 1

WATER QUALITY POND G

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Pond.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
4/11/2024

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

JOB NUMBER: SA3856.0401

SHEET NO. 11 OF 60 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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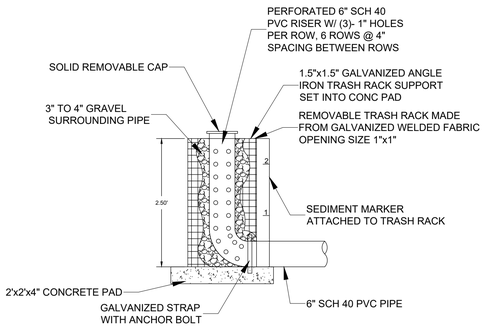
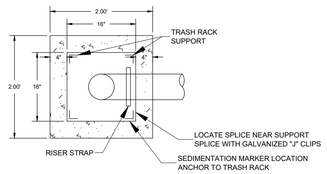
811 Know what's below. Call before you dig.

FOR PERMIT

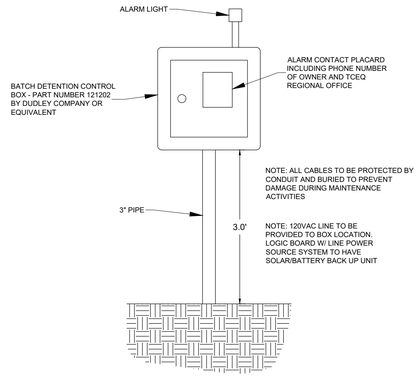
K:\SA3856_IDA_Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\sh_Pond.dwg
Last Modified: Mar 28, 24 - 15:11
Last Plotted: Mar 31, 24 - 14:11



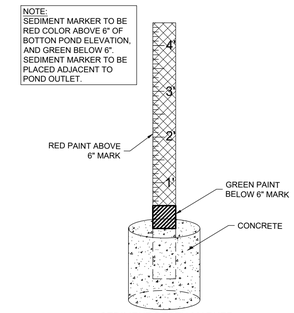
SECTION VIEW OF RISER
NTS



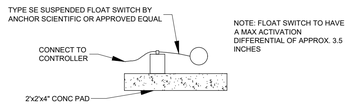
PLAN VIEW OF RISER
NTS



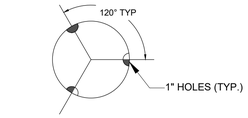
BATCH DETENTION CONTROL BOX
NTS



SEDIMENT DEPTH MARKER
N.T.S.



FLOAT SENSOR
NTS



HOLE LAYOUT DETAIL
NTS

NOTES:

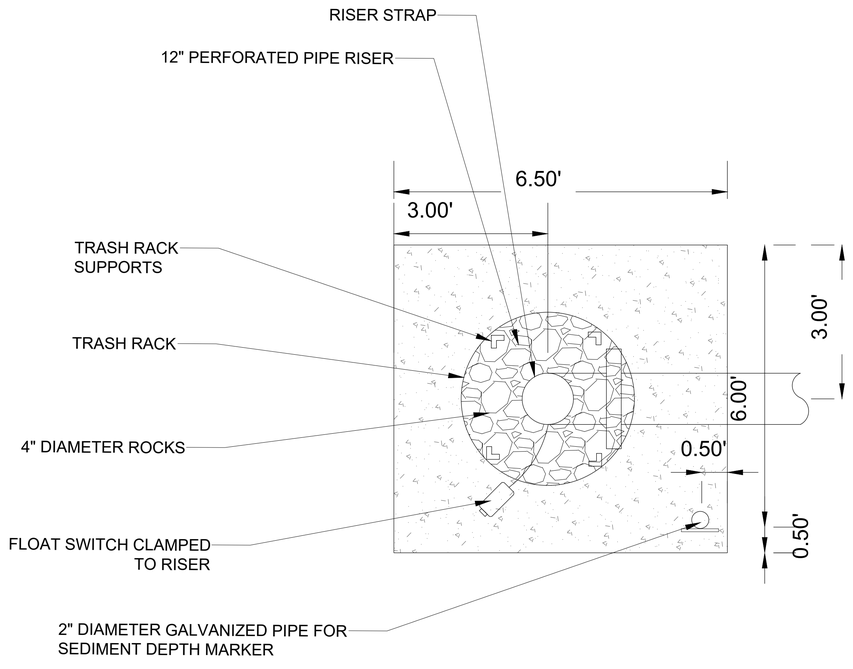
1. CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASINS PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.
2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S (FILTERSTRIPS AND BASINS) MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
3. ALL AREAS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

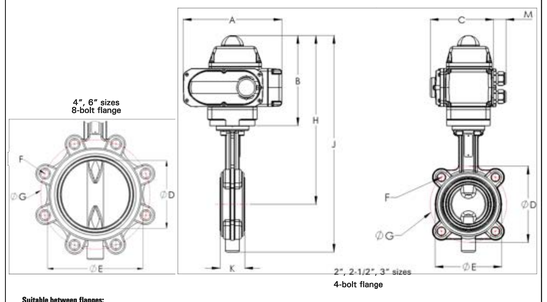


PERFORATED RISER PAD
TOP VIEW
N.T.S.

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 19 UNIT 1

BASIN DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Basin Details.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 12 OF 60 SHEETS

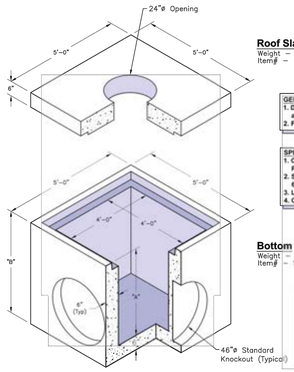
FOR PERMIT

H:\LJA3856 AGA Properties\04Ø1 Veramendi Precinct 19-1\Ø6 Site Development Plans\03WC-Sheets\sh_Basin Details.dwg
Last Modified: Nov. 30, 23 - 21:56
Plot Date/Time: Apr. 11, 24 - 14:41:24

Oldcastle Precast®

Water

4'-0"x4'-0" I.D. Junction Box
Model: JB-440



Roof Slab
Weight – 2,200 Lbs.
Item# – 1208240

GENERAL NOTES:
1. Different Height of Bodies are Available by Request.
2. Frames and Covers Also Available.

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

Bottom
Weight – See Table
Item# – See Table

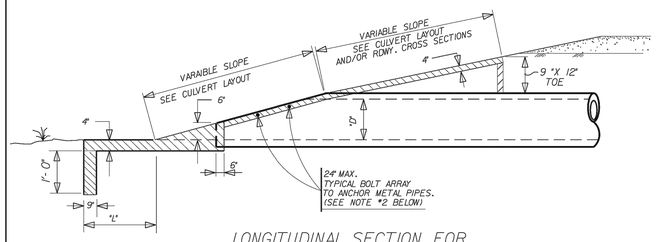
Bottom Section

A	B	Weight	Item #
18"	24"	3900 Lbs.	1204800
21"	30"	4175 Lbs.	1204860
30"	36"	5450 Lbs.	1204960
36"	42"	5975 Lbs.	1205060
42"	48"	6400 Lbs.	1205160
48"	54"	7275 Lbs.	1205260
54"	60"	7950 Lbs.	1205100
60"	66"	8625 Lbs.	1205140

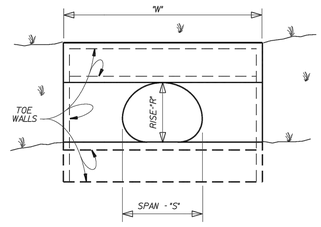
For more information about our products please visit us on the web at: oldcastleprecast.com
© 2013 Oldcastle Precast, Inc.
JB-9

Texas Region

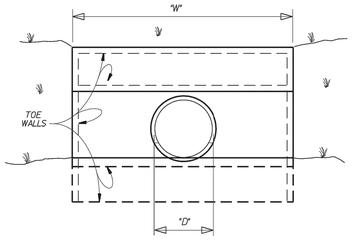
888-9 Oldcastle (888-965-3227)



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT

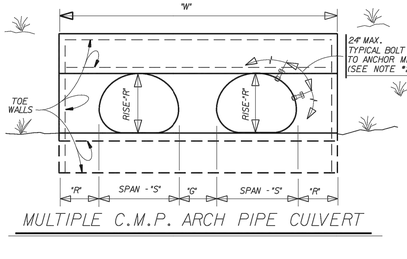


SINGLE CIRCULAR PIPE CULVERT
(CMP or RCP)

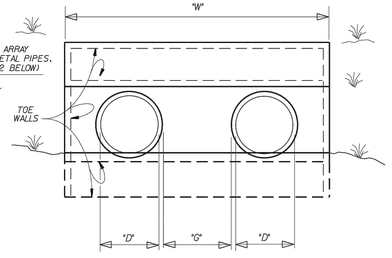
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"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.

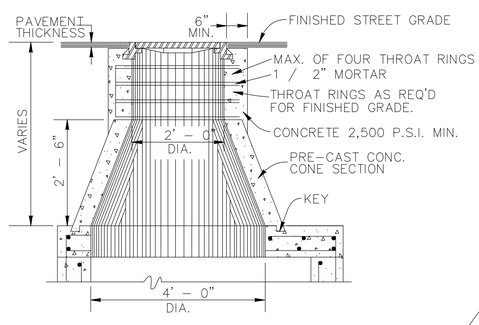
5.) IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

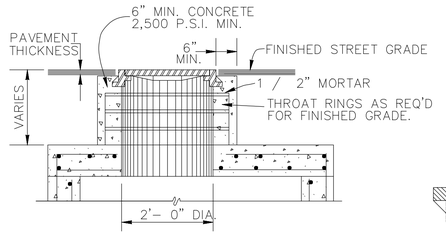
SAN ANTONIO DISTRICT STANDARD
RIPRAP HEADWALL

© 1998 Texas Department of Transportation

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6			
STATE	STATE DISTRICT	COUNTY	
TEXAS	SAT		
CONT.	SECT.	JOB	HIGHWAY NO.

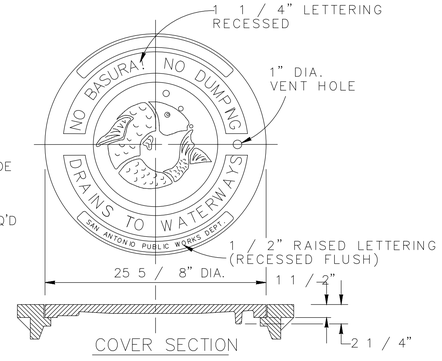
10/95





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.



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.

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1
DRAINAGE DETAILS (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drainage Details.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

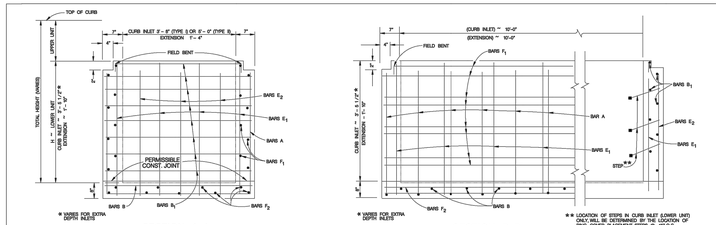
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 13 OF 60 SHEETS

K:\LJA3856 ADA Properties\Q401 Veramendi Precinct 19-1\426 Site Development Plans\03WC-Sheets\sh_Drainage Details.dwg
Xrefs Attached: None
Last Modified: Nov. 30, 23 – 21:55
Plot Scale/Time: As Is, 1:1 – 13:51 AM

STRUCTURE DESIGN
Z:\BRIDGE\STDS\10-95\sht1.dgn



SECTION A–A

* VARIES FOR EXTRA DEPTH INLETS

SECTION B–B

* VARIES FOR EXTRA DEPTH INLETS

** LOCATION OF STEPS IN CURB INLET (LOWER UNIT) ONLY WILL BE DETERMINED BY THE LOCATION OF RING COVER PLACEMENT STEPS @ 16" O.C.

REINFORCING STEEL

LOWER UNIT 10'X 3' – 8" (TYPE I)

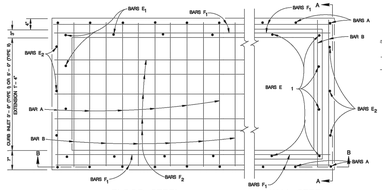
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-6"
B_1	VARIES	#4	12"	4'-6"
E_1	20	#4	16"±	VARIES
E_2	6	#4	16"±	VARIES
F_1	VARIES	#4	12"±	10'-10"
F_2	9	#4	—	10'-10"

LOWER UNIT 10'X 5' – 0" (TYPE II)

BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'-10"
B_1	VARIES	#4	12"	5'-10"
E_1	22	#4	16"±	VARIES
E_2	8	#4	16"±	VARIES
F_1	VARIES	#4	12"±	10'-10"
F_2	11	#4	—	10'-10"

GENERAL NOTES

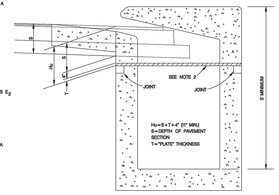
1. S' INLETS AND S' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE 'C' AND EXTENSION TYPE II, S–C.
2. TYPE C–II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN–LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A–615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 /4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK–FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 465 "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 SIZE OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".



FLOOR STEEL

WALL STEEL

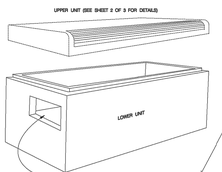
PLAN



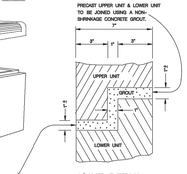
PHASE CONSTRUCTION

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

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "H" 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 PAVING OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE AND CONSTRUCT THE UPPER PORTION OF THE CURB INLET AND /OR EXTENSION.

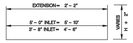


PRECAST UPPER UNIT & LOWER UNIT TO BE JOINED USING A NON–SHRINKAGE CONCRETE GROUT.

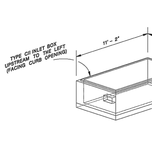


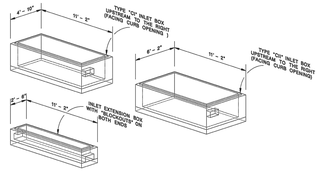
JOINT DETAIL

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.



BARS A
(LOWER UNIT)



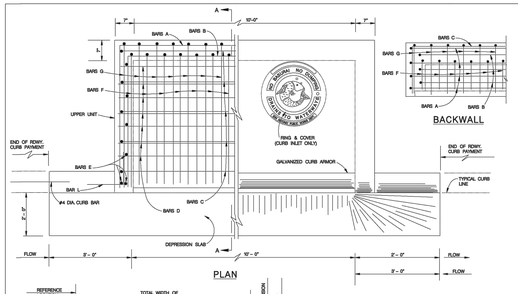


CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

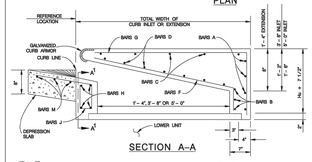
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS

SHEET 1 OF 3

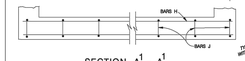
% SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY:	DSGN. BY:	CHKD. BY:
		SHEET NO.: OF



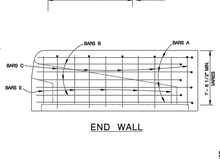
PLAN

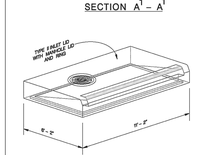


SECTION A–A

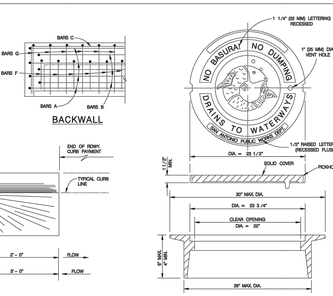


SECTION A^1 – A^1





CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

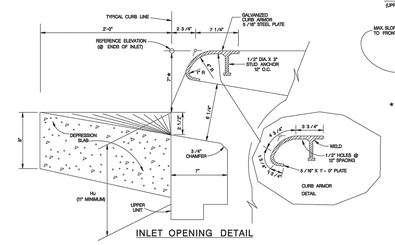


MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF 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 280 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.



INLET OPENING DETAIL

REINFORCING STEEL (FOR Hu=11")

UPPER UNIT 10' X 3'-8" (TYPE I)

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	10'-10"	53
B	3	#4	——	10'-10"	33
C	5	#4	11"	10'-2"	44
D	7	#4	6"	10'-10"	55
E	10	#4	11"	1'-7"	9
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	4	#4	——	10'-10"	29
J	12	#4	12"	3'-8"	28
L	4	#4	——	2'-7"	5
M	3	#4	——	14'-8"	29
TOTAL WEIGHT					620 LBS.

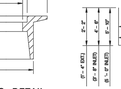
UPPER UNIT 10' X 5' (TYPE II)

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	22'-0"	60
B	3	#4	——	22'-0"	43
C	7	#4	11"	12'-2"	64
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-7"	13
F	21	#6	6"	4'-8"	179
G	22	#6	6"	7'-2"	231
H	4	#4	——	10'-10"	29
J	12	#4	12"	3'-8"	28
L	4	#4	——	2'-7"	5
M	3	#4	——	14'-8"	29
TOTAL WEIGHT					759 LBS.

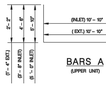
CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

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



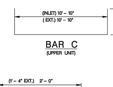
BARS A
(UPPER UNIT)



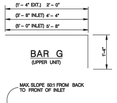
BARS B
(UPPER UNIT)



BAR C
(UPPER UNIT)



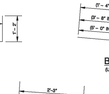
BAR F
(UPPER UNIT)



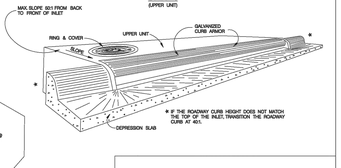
BAR G
(UPPER UNIT)



BAR J
(UPPER UNIT)



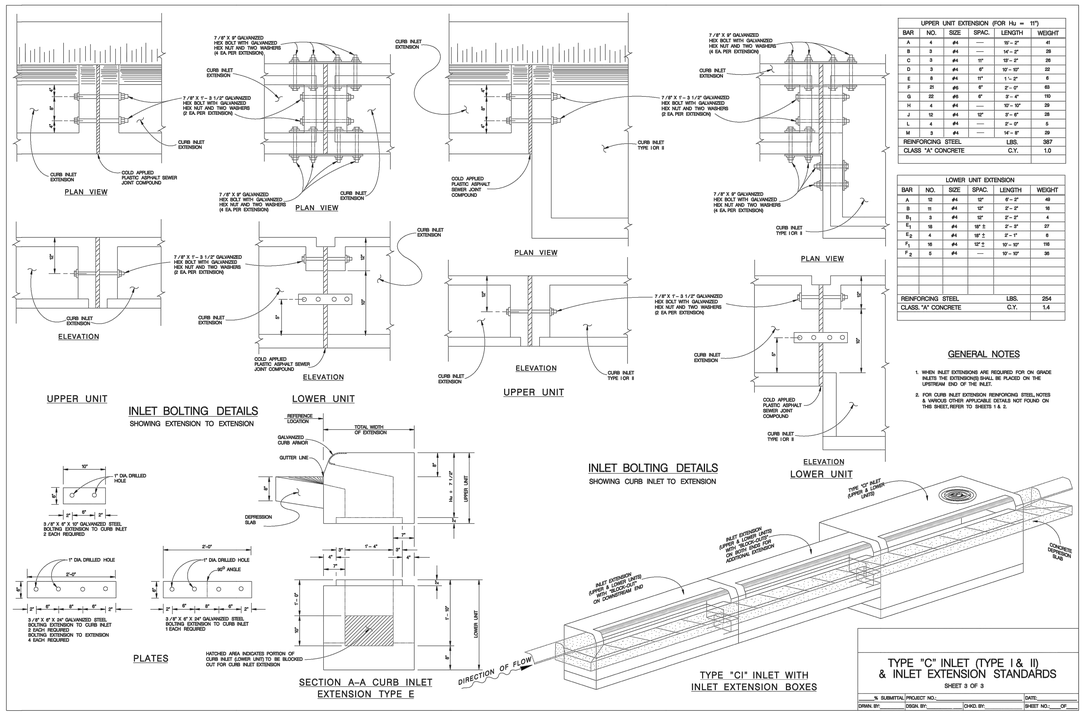
BAR L
(UPPER UNIT)



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

SHEET 2 OF 3

% SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY:	DSGN. BY:	CHKD. BY:
		SHEET NO.: OF

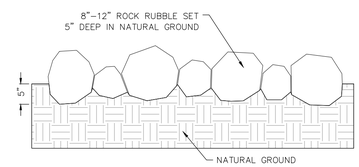


UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	——	10'- 2"	41
B	3	#4	——	14'- 2"	28
C	3	#4	11"	10'- 2"	28
D	3	#4	6"	10'- 10"	22
E	8	#4	11"	1'- 7"	6
F	21	#6	6"	2'- 0"	63
G	22	#6	6"	3'- 4"	110
H	4	#4	——	10'- 10"	29
J	12	#4	12"	3'- 8"	28
L	4	#4	——	2'- 7"	5
M	3	#4	——	14'- 8"	29
REINFORCING STEEL				LBS.	397
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	5'- 2"	49
B	11	#4	12"	5'- 2"	16
B_1	3	#4	12"	5'- 2"	4
E_1	16	#4	16" ±	5'- 2"	27
E_2	4	#4	16" ±	5'- 2"	5
F_1	16	#4	12" ±	10'- 10"	116
F_2	9	#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.



ROCK RUBBLE DETAIL
N.T.S.

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

SHEET 3 OF 3

% SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY:	DSGN. BY:	CHKD. BY:
		SHEET NO.: OF

VERAMENDI PRECINCT 19 UNIT 1

DRAINAGE DETAILS (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
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
04/11/2024

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

JOB NUMBER: SA3856.0401

SHEET NO. 14 OF 60 SHEETS

FOR PERMIT

K:\SA3856.GDA Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\CIVIL-Sheets\sh_Drainage Details.dwg
Last Modified: Nov. 30, 23 - 21:55
Last Plotted: Apr. 11, 24 - 14:31

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 completion of this standard for other uses or projects. All responsibility for the use or modification of this standard is assumed by the user.

DATE:
FILE:

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

Dimensions					Variable Reinforcing				Estimated Quantities (2) per ft of wing length (2–wings)	
					Bars J1		Bars J2			
Maximum Wingwall Height Hw	W	X	Y	Z	Size	Spa	Size	Spa	Reinf Lb/Ft)	Conc (CY/Ft)
2'-6"	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"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	2'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-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 8" wide by 1'-0" 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.

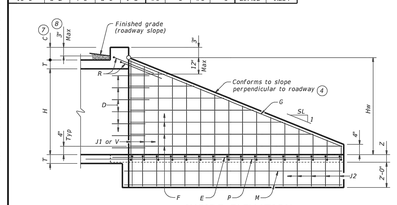
MATERIAL NOTES:

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.

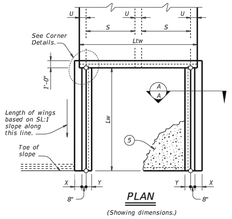
GENERAL NOTES:

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.

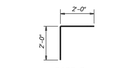
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out–to–out of bars.



INSIDE ELEVATION



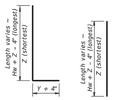
PLAN
(Showing dimensions.)



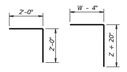
BARS R



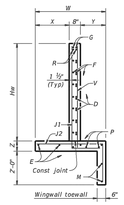
BARS D



BARS J1 BARS V

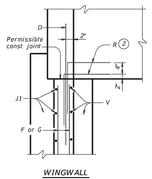


BARS L BARS J2

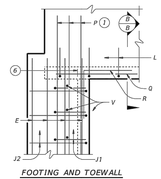


SECTION A–A

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

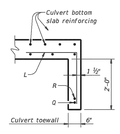


WINGWALL



FOOTING AND TOEWALL

CORNER DETAILS



SECTION B–B (3)

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

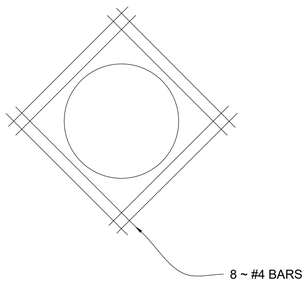
SW-0

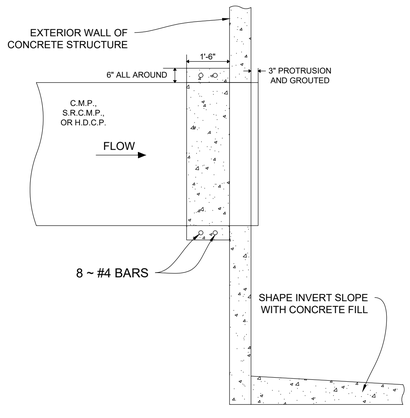
FILE: CD-SW0-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

P:\SA3856 KSA Properties\04D1 Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\sh_Drainage Details.dwg
Plotted: Apr 11, 24 - 11:12:49
Last Modified: Nov 30, 23 - 21:55
Xref Path: Apr 11, 24 - 11:12:49

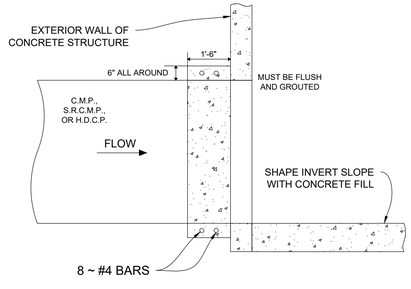
NOTES:

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 19 UNIT 1

DRAINAGE DETAILS (SHEET 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 4/11/2024
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
04/11/2024

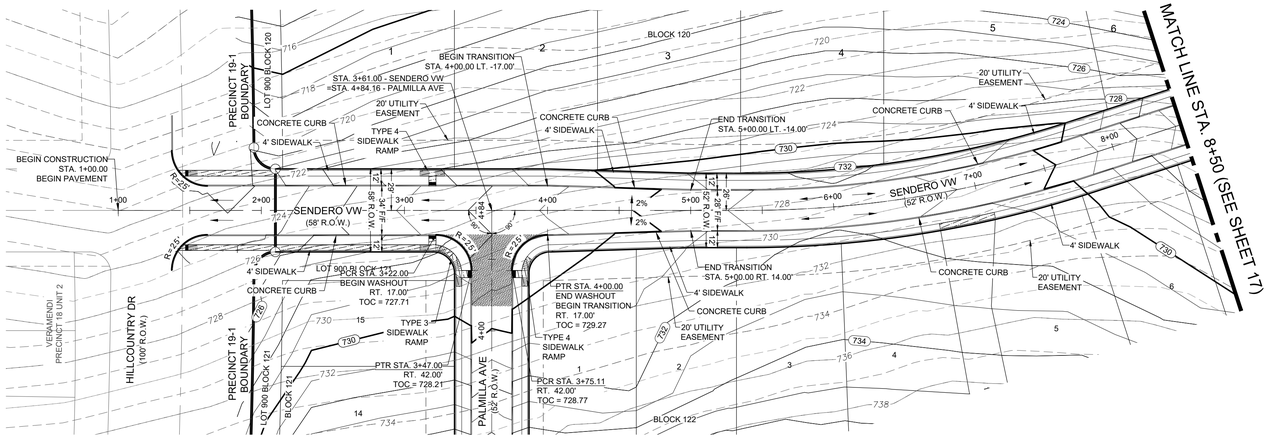
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

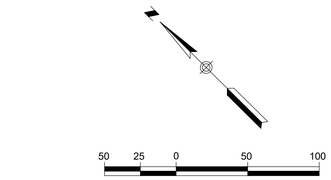
JOB NUMBER: SA3856.0401

SHEET NO. 15
OF 60 SHEETS

GENERAL NOTES:

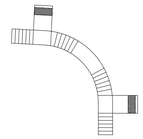
1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 23.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 23 & 24 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

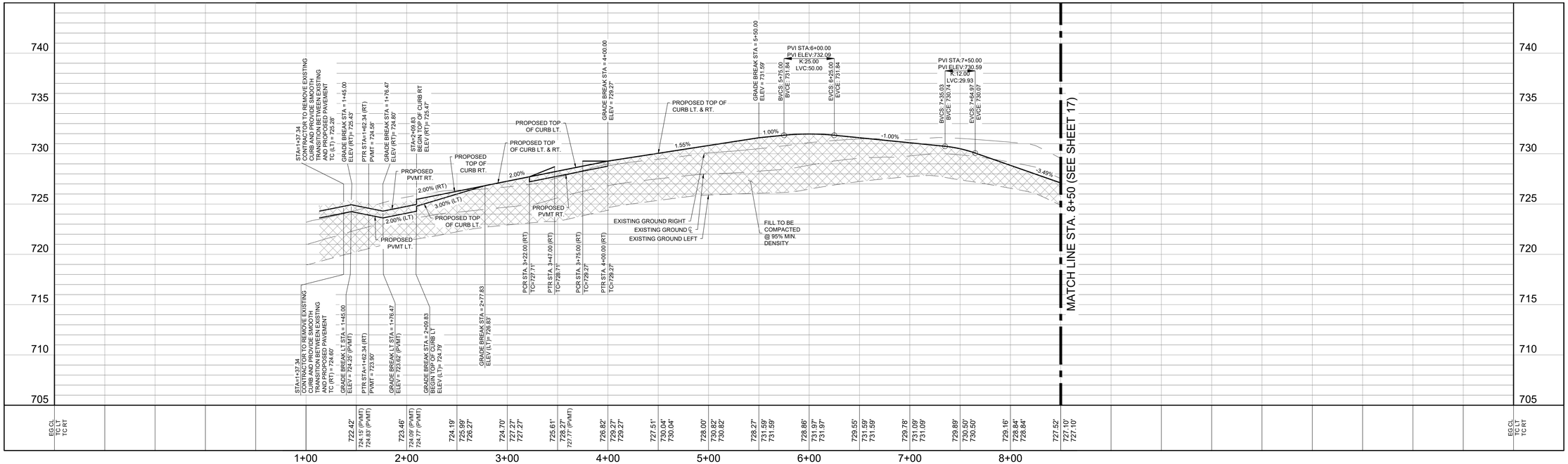
- PROPOSED CONTOUR
- FLOW ARROW
- GRASSED DRAIN FLOW
- PROPOSED STREET GRADE
- EXISTING GROUND LEFT
- EXISTING GROUND CENTERLINE
- EXISTING GROUND RIGHT
- SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
- SIDEWALK (DEVELOPER'S RESPONSIBILITY)
- G,E,T,CA — GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
- BSL — BUILDING SETBACK LINE
- ESMT. — EASEMENT
- LT. — LEFT
- RT. — RIGHT
- WASHOUT CROWN
- WASHOUT FLOW ARROW
- EG CL — EXISTING GRADE CENTER LINE
- TC — TOP OF CURB
- ELEV — TOP OF CURB ELEVATION


TYPE 3 ADA RAMP


TYPE 4 ADA RAMP

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.

SENDERO VW STA. 1+00 TO STA. 8+50



FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

SENDERO VW PLAN & PROFILE STA. 1+00 TO STA. 8+50

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Sheet P&P_Sendero VW.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: SA3856.0401

SHEET NO. 16 OF 60 SHEETS

H:\SA3856 AGA Properties\Draft\ Veramendi Precinct 19-1 (1416 Site Development Plans\GWC-Sheets\sh_Sheet P&P_Sendero VW.dwg
Xrefs Attached: None
Last Modified: Mar. 28, 24 - 10:21
Plot Date/Time: Apr. 11, 24 - 11:57:47

GENERAL NOTES:

1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 23.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
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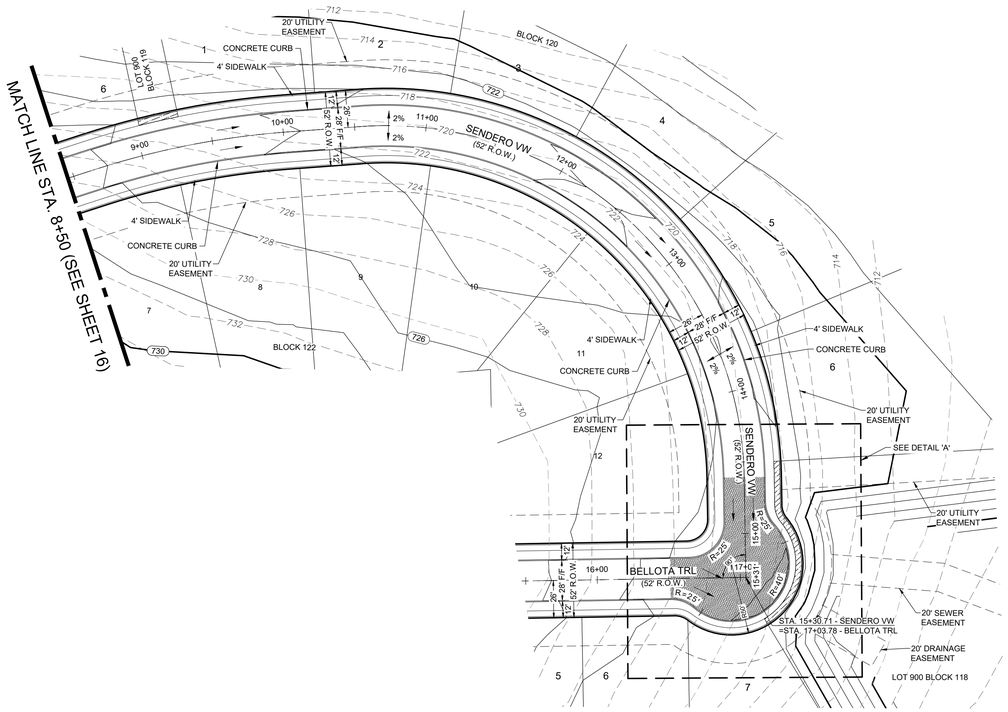
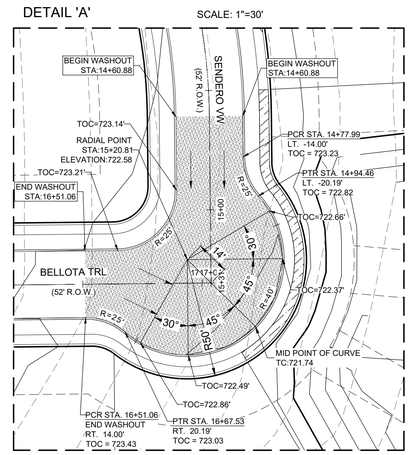
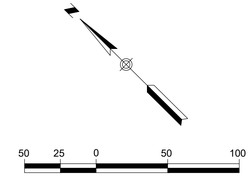
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).



SENDERO VW STA. 8+50 TO END

DETAIL 'A' SCALE: 1"=30'

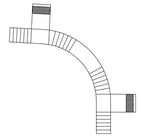




HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

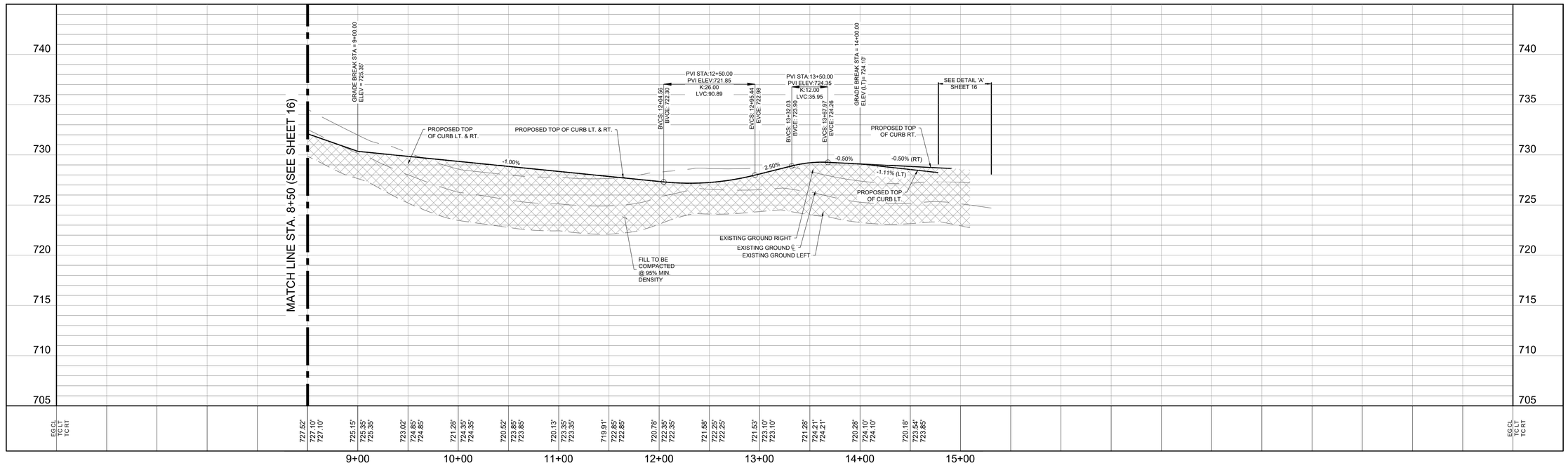
800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
G,E,T,CA	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
BSL	BUILDING SETBACK LINE
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	TOP OF CURB ELEVATION



TYPE 3 ADA RAMP



TYPE 4 ADA RAMP



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VERAMENDI PRECINCT 19 UNIT 1

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Sheet P&P_Sendero VW.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
4/11/2024

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

JOB NUMBER: SA3856.0401

SHEET NO. 17 OF 60 SHEETS

FOR PERMIT

K:\SA\3856 VDA Properties\04Ø1 Veramendi Precinct 19-1\1436 Site Development Plans\GMD-Sheets\sh_Sheet P&P_Sendero VW.dwg
Plotted: Mar. 28, 24 - 15:21
Last Modified: Mar. 28, 24 - 15:21
By: Priscilla Flores

GENERAL NOTES:

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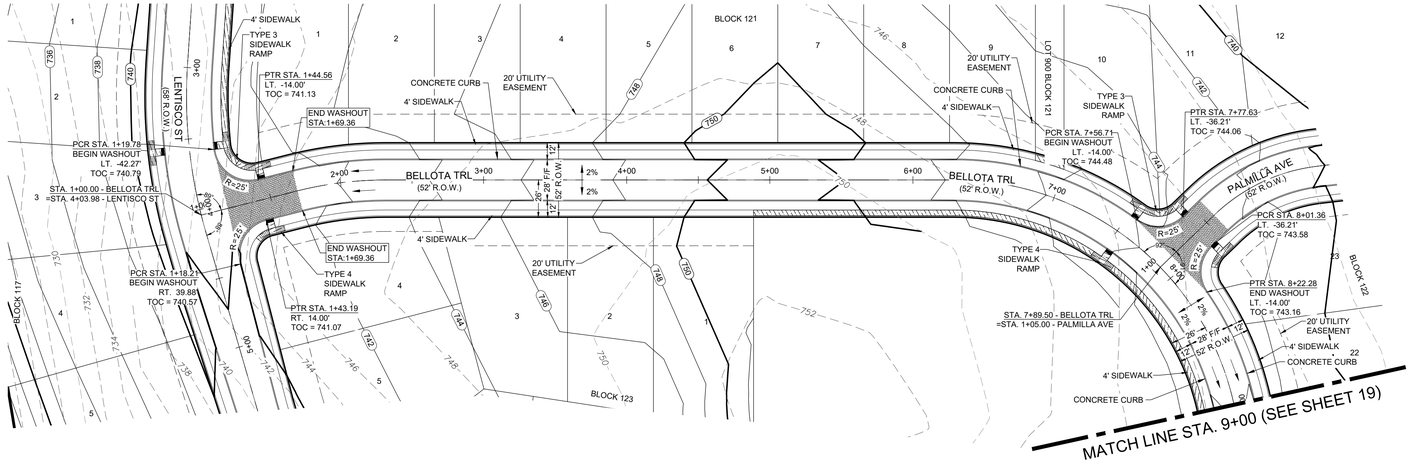
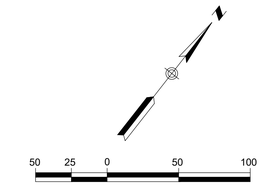




HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

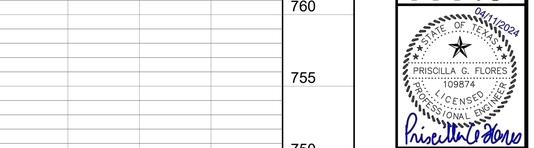
800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
G,E,T,CA	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
BSL	BUILDING SETBACK LINE
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
	TYPE I ADA RAMPS
	TYPE II ADA RAMPS

VERAMENDI PRECINCT 19 UNIT 1

BELLOTA TRL PLAN & PROFILE STA. 1+00 TO 9+00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: ...\8 - Sheet Files\...Bellota TRL.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: SA3856.0401

SHEET NO. 18 OF 60 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.

BELLOTA TRL STA. 1+00 TO 9+00

FOR PERMIT

P:\SA3856_KDA Properties\04Ph Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\sh_Sheet Pkg_Bellota TRL.dwg
Last Modified: Mar. 27, 24 - 14:28
Plot Date/Time: Apr. 11, 24 - 14:54:54

GENERAL NOTES:

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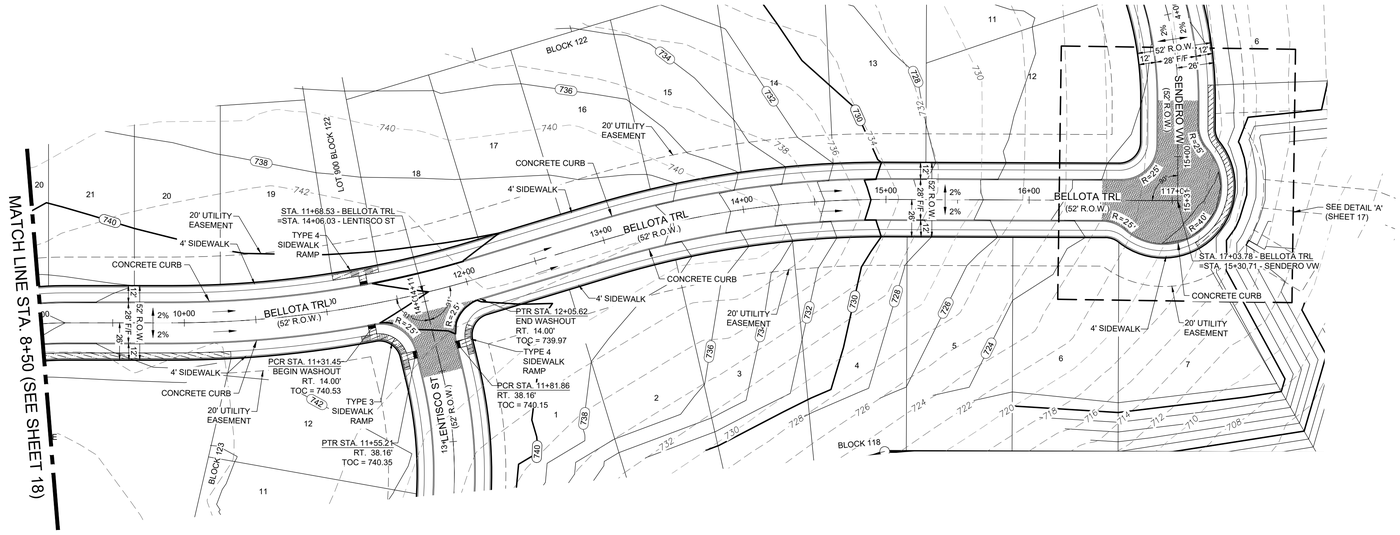

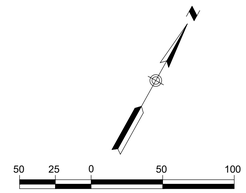

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
G,E,T,CA	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
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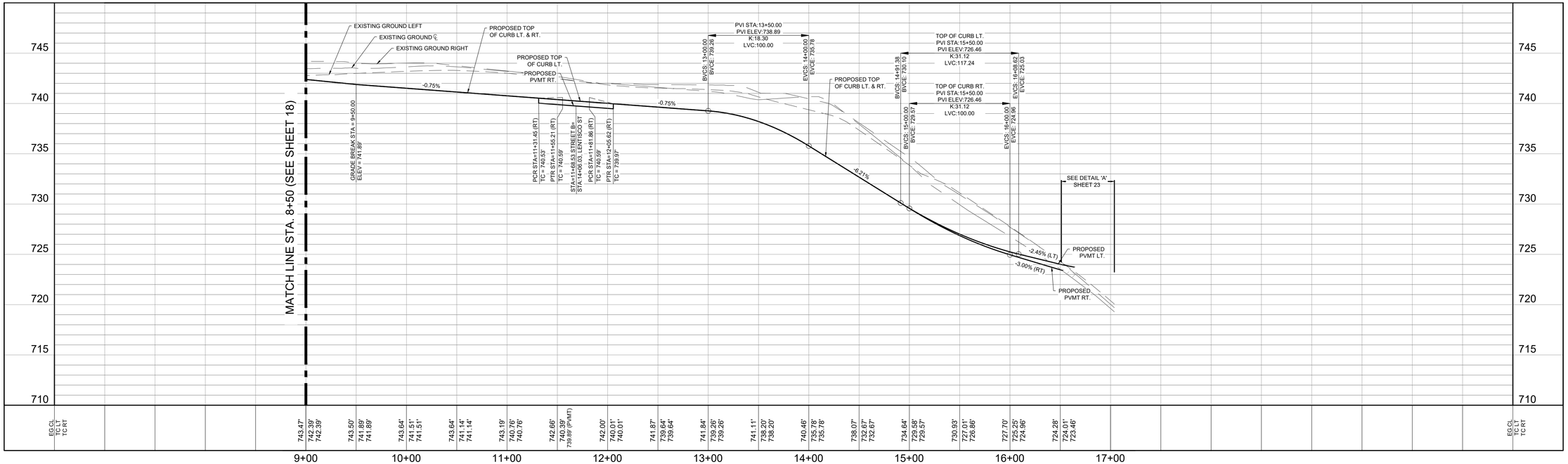
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION
	TYPE I ADA RAMPS
	TYPE II ADA RAMPS

BELLOTA TRL STA. 9+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

BELLOTA TRL PLAN & PROFILE STA. 9+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: ...\Sheet Pdf\...Bellota TRL.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 19 OF 60 SHEETS

P:\SA3856 KDA Properties\04Ph Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\sh_Sheet Pdf_Bellota TRL.dwg
Last Modified: Mar. 27, 24 - 14:28
Plot Date/Time: Apr. 11, 24 - 13:53:43

GENERAL NOTES:

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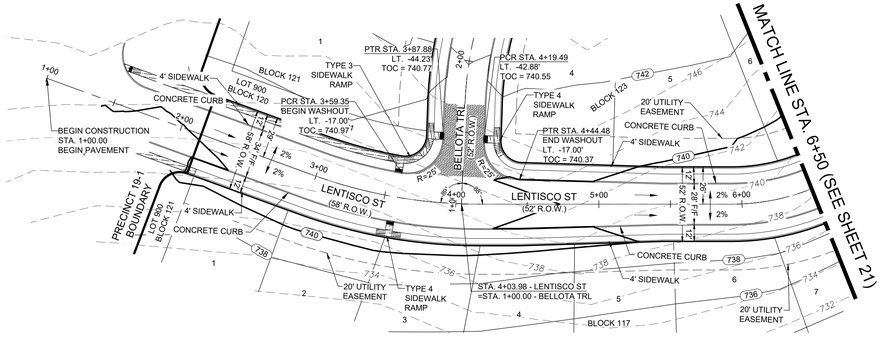
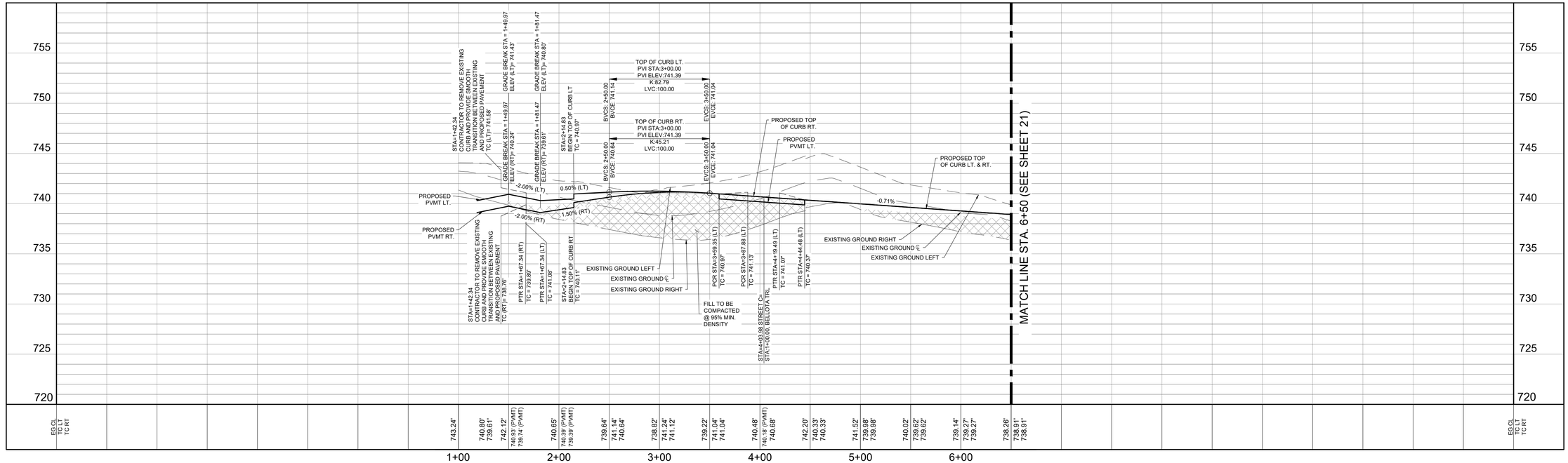
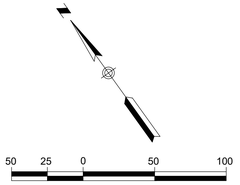


LENTISCO ST STA. 1+00 TO 6+50





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

LEGEND

800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
G,E,T,CA	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
BSL	BUILDING SETBACK LINE
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
	TYPE I ADA RAMPS
	TYPE II ADA RAMPS

VERAMENDI PRECINCT 19 UNIT 1

LENTISCO ST PLAN & PROFILE
STA. 1+00 TO 6+50

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: ...sh_Sheet Pdf\P_Lentisco ST.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 20 OF 60 SHEETS

FOR PERMIT

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.

P:\SA3856 KDA Properties\04Dl Veramendi Precinct 19-1\426 Site Development Plans\GIMC-Sheets\sh_Sheet Pdf\P_Lentisco ST.dwg
Xref Name: Apr_4_24 - 13:54:49
Last Modified: Mar. 28, 24 - 15:35
Plot Style Table: Apr_4_24 - 13:54:49

GENERAL NOTES:

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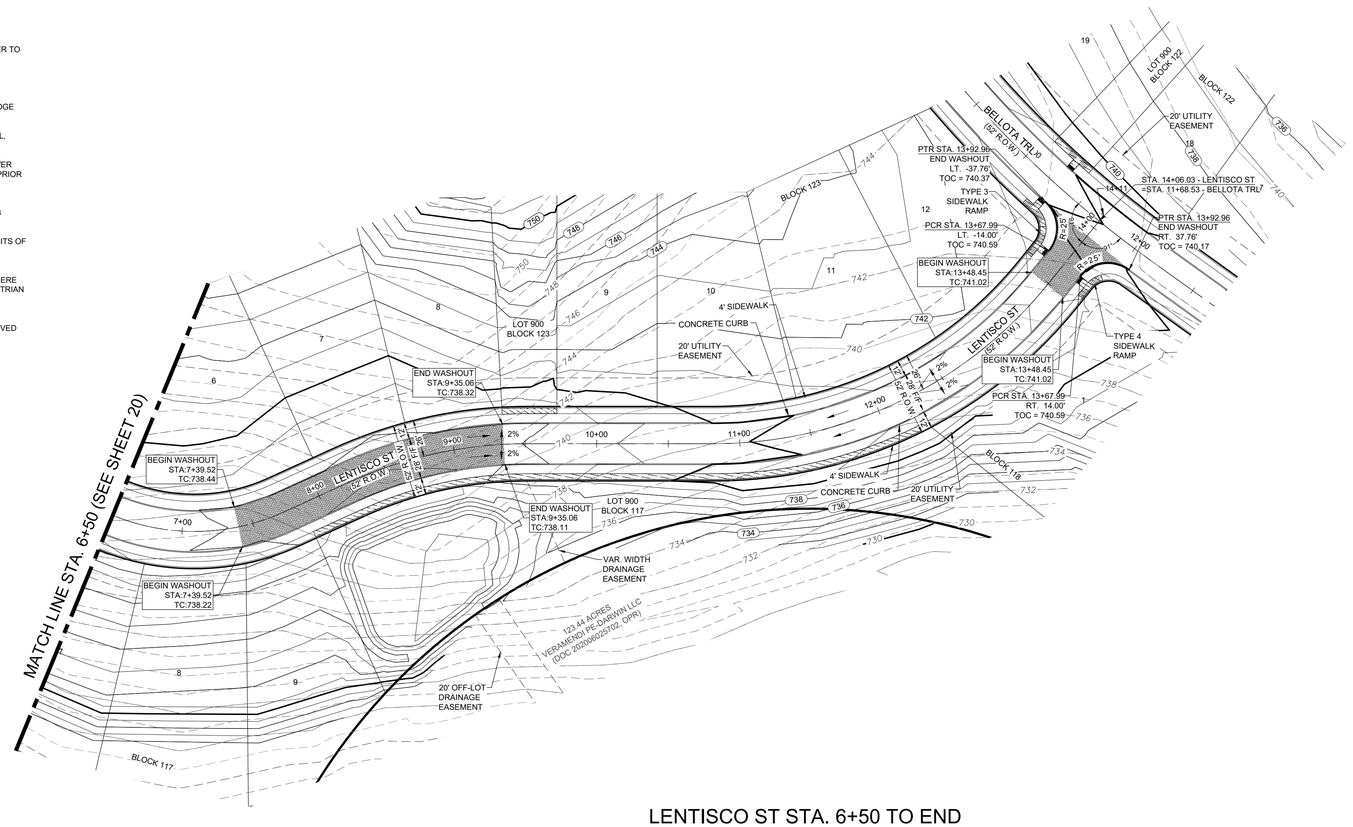

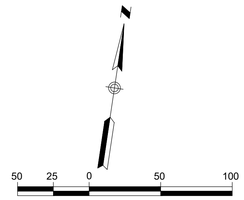

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
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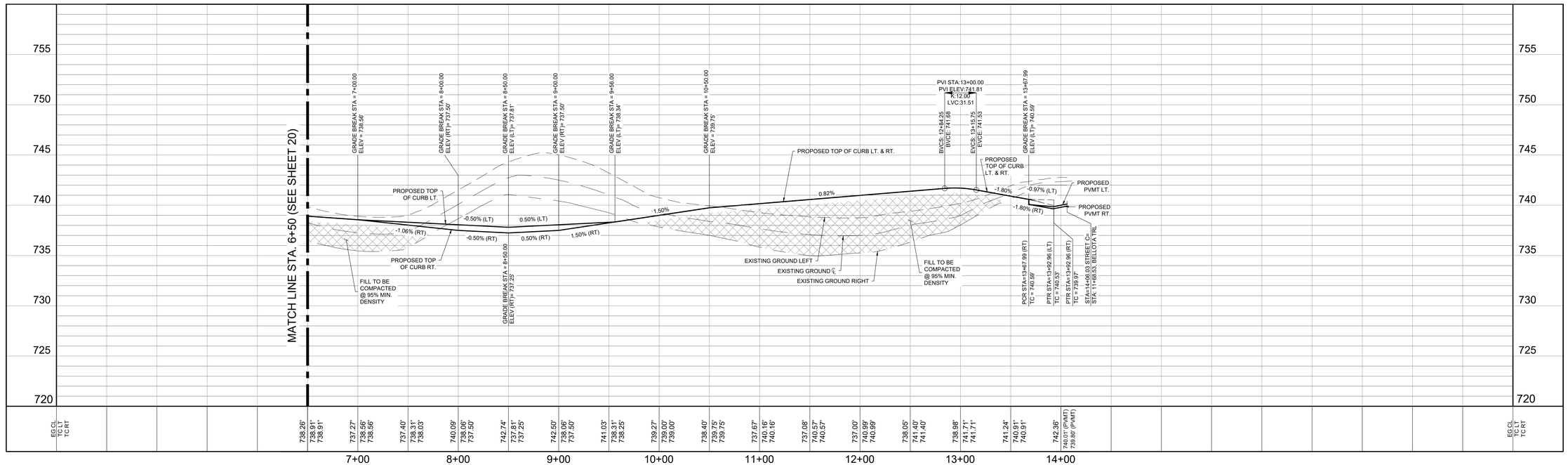
ESM'T.	EASEMENT
LT.	LEFT
RT.	RIGHT
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION
	TYPE I ADA RAMPS
	TYPE II ADA RAMPS

LENTISCO ST STA. 6+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.

VERAMENDI PRECINCT 19 UNIT 1

LENTISCO ST PLAN & PROFILE
STA. 6+50 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: ...\9 - Sheet Files\...Lentisco ST.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 21 OF 60 SHEETS

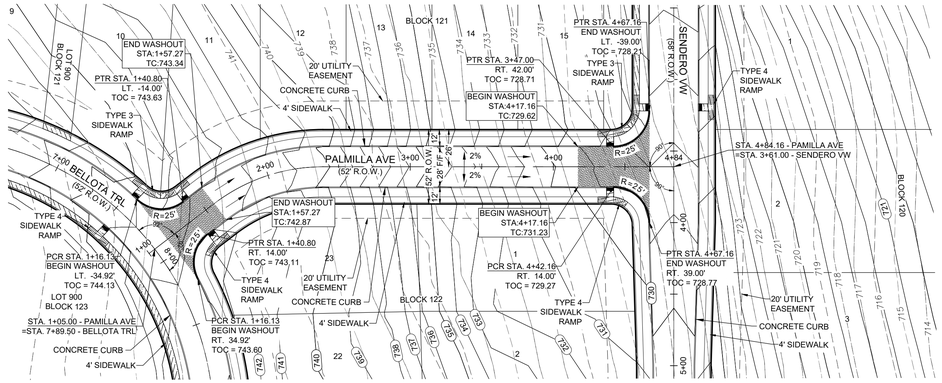
FOR PERMIT

P:\LJA3856_KDA Properties\04\01 Veramendi Precinct 19-1\426 Site Development Plans\GWC-Sheets\sh_Sheet Files\...Lentisco ST.dwg
Last Modified: Mar. 28, 24 - 15:35
Plot Date/Time: Apr. 11, 24 - 13:51

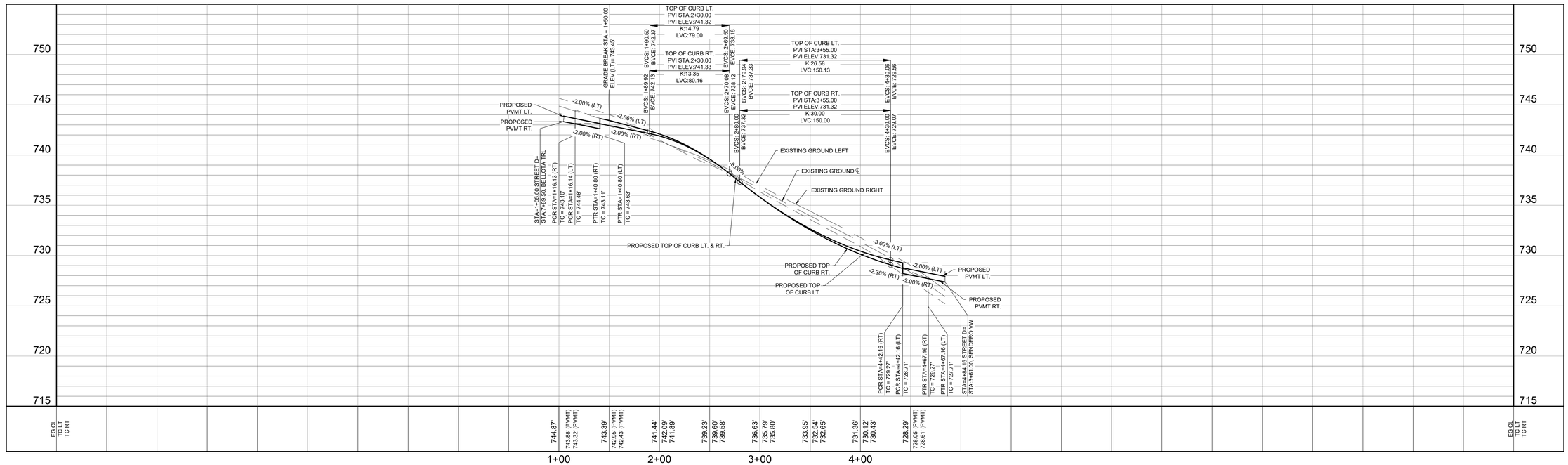
GENERAL NOTES:

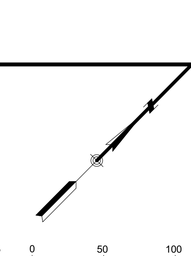
1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 23.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 23 & 24 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).

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.



PAMILLA AVE STA. 1+00 TO END





50 25 0 50 100

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

LEGEND

800	PROPOSED CONTOUR
2%	FLOW ARROW
	GRASSED DRAIN FLOW
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
	EXISTING GROUND CENTERLINE
	EXISTING GROUND RIGHT
	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
	SIDEWALK (DEVELOPER'S RESPONSIBILITY)
G,E,T,CA	GAS, ELECTRIC, TELEPHONE & CABLE TV EASEMENT
BSL	BUILDING SETBACK LINE
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
	TYPE I ADA RAMPS
	TYPE II ADA RAMPS

VERAMENDI PRECINCT 19 UNIT 1

PAMILLA AVE PLAN & PROFILE
STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Sheet P&P - Pamilla AVE.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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Suite 300
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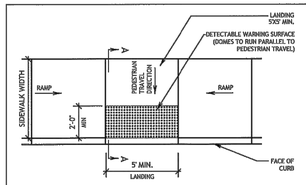
TBPE No. F-1386

JOB NUMBER: SA3856.0401

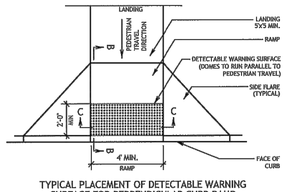
SHEET NO. 22 OF 60 SHEETS

FOR PERMIT

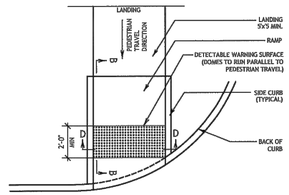
P:\LJA3856 JCA Properties\VAR\ Veramendi Precinct 19-1\426 Site Development Plans\GMC-Sheets\sh_Sheet P&P_Pamilla AVE.dwg
Last Modified: Mar. 27, 24 – 14:31
Plot By: Priscilla Flores



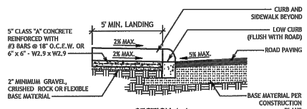
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



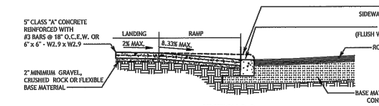
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



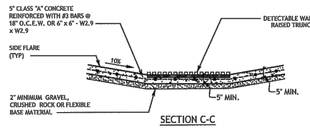
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



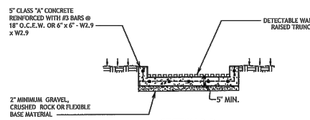
SECTION A-A



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 ELSEMENTS 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 2.63% (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. FUNNEL DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
6. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

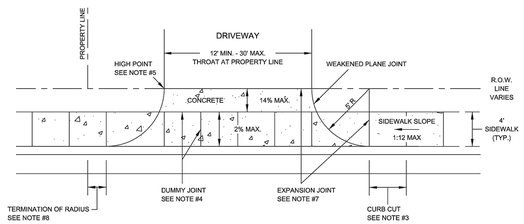
City of New Braunfels

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

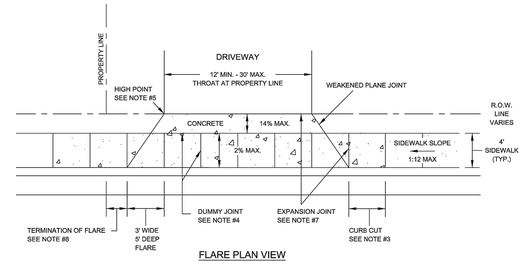
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

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

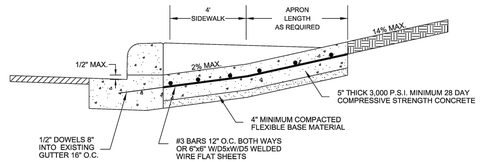


FLARE PLAN VIEW

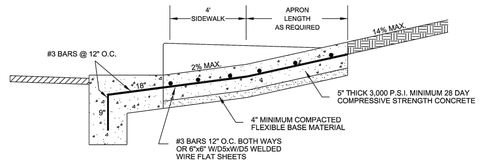
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



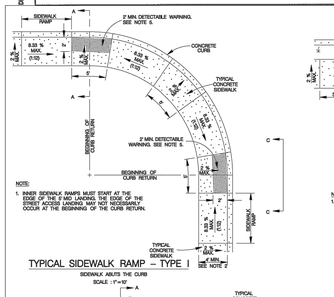
NO EXISTING CURB STRUCTURAL SECTION

NOTES:

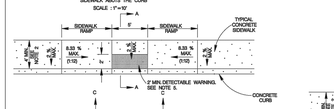
1. WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.
2. PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED 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



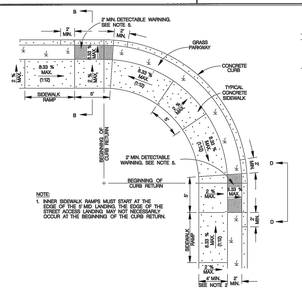
TYPICAL SIDEWALK RAMP – TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SIDEWALK ABUTS THE CURB
SCALE : 1"=10'

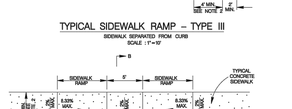
GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER, DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND BE SEPARATED FROM THE CURB.THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2'FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR AS AN OPTION,THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET. THE SURFACE SHALL CONSIST OF A TRUNCATED DOME PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM) A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE A CAST-IN-PLACE TILE CONFORMING TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS OR PAVERS CONFORMING TO TXDOT STANDARD PED-XS, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND /OR "502 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. 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 2.63% (I.E.8.33-(-2.67)=11). IN ADDITION,THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. 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.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS,BOUNDARIES OR SCOPE OF A PLANNED PROJECT.



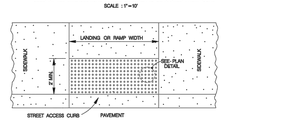
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1"=10'

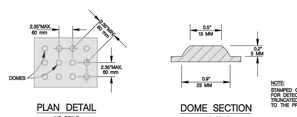


TYPICAL SIDEWALK RAMP – TYPE IV

USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1"=10'

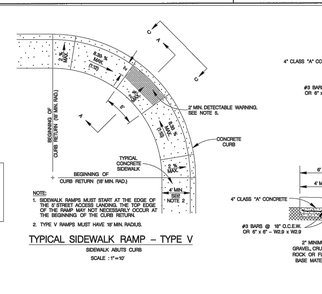


DETECTABLE WARNING SURFACE
SCALE : 1"=4'



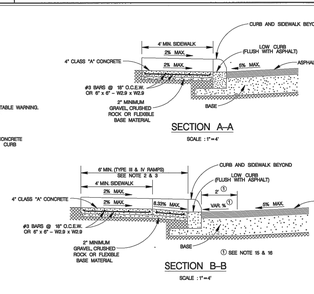
PLAN DETAIL
NO SCALE

DOME SECTION
NO SCALE

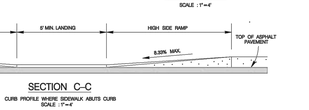


TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB
SCALE : 1"=10'

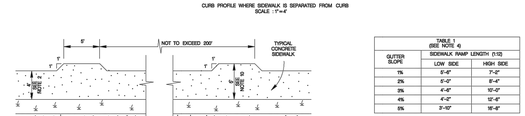


SECTION A-A
SCALE : 1"=4'



SECTION B-B
SCALE : 1"=4'

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'-0"
2%	5'-0"	6'-4"
3%	4'-4"	10'-0"
4%	4'-0"	12'-4"
5%	3'-10"	16'-8"

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

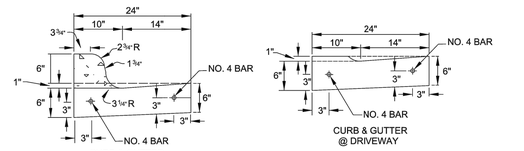
WHEELCHAIR RAMP STANDARDS

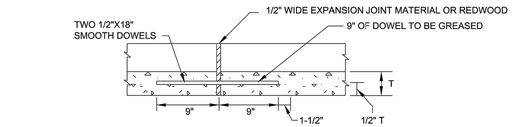
# SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY: V. VASQUEZ	DESIGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.

SHEET NO.: OF

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.

CURB AND GUTTER





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

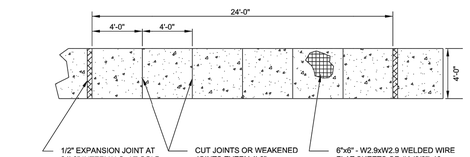
NOTES:

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

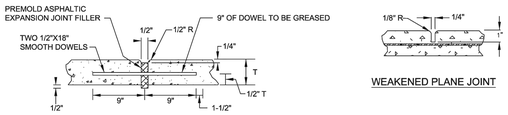
DATE APPROVED: 07/2008	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CURB & GUTTER		

City of New Braunfels ENGINEERING DEPARTMENT

SIDEWALK
(RESIDENTIAL)

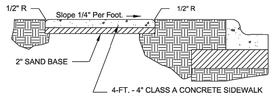


PLAN VIEW



EXPANSION JOINT

WEAKENED PLANE JOINT



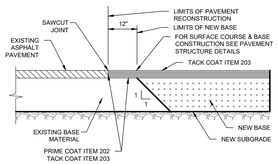
TYPICAL SECTION

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.

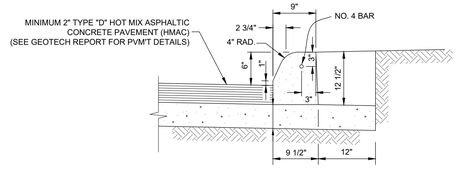
DATE APPROVED: 07/2008	DWG. NO: ST-016	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: SIDEWALK (RESIDENTIAL)		

City of New Braunfels ENG



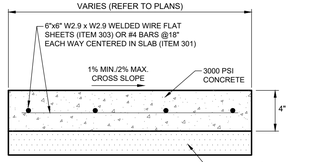
PAVEMENT TIE-IN DETAIL

N.T.S.



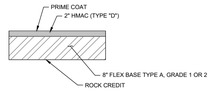
STANDARD CURB DETAIL

N.T.S.



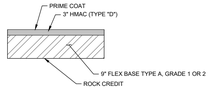
SIDEWALK DETAIL

N.T.S.



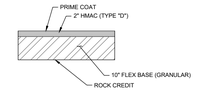
TEMPORARY PAVEMENT DETAIL

N.T.S.



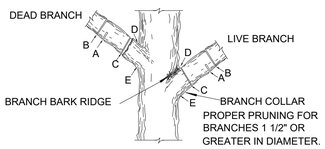
MINOR ARTERIAL SECTION

N.T.S.



LOCAL PAVEMENT 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.

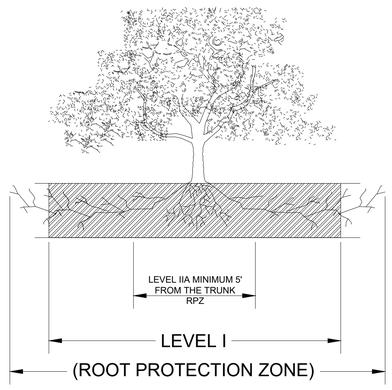
C. FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS

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

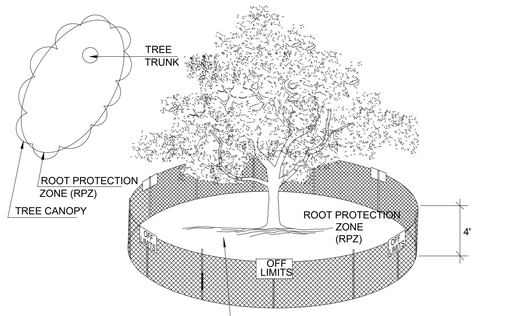
N. T. S.



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.

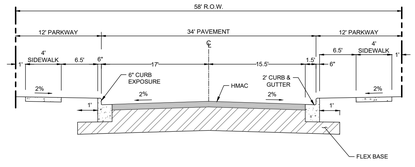


NOTE:

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.



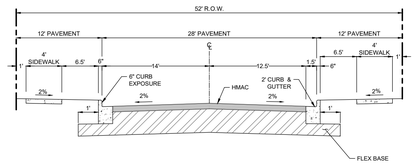
LOCAL B TYPICAL STREET SECTION

N.T.S.

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

SENDERO VW
LENTISCO ST

NOTE: SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO LIME TREATMENT.



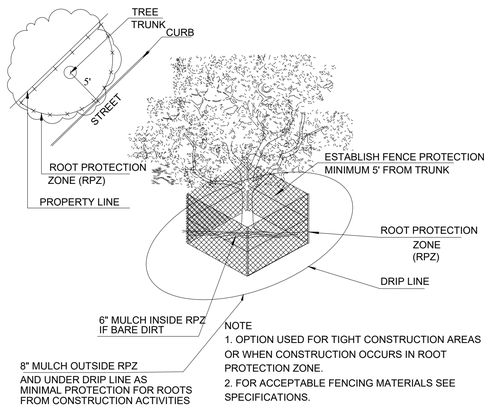
LOCAL A TYPICAL STREET SECTION

N.T.S.

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

SENDERO VW
BELLOTA TRL
PALMILLA AVE
LENTISCO ST

NOTE: SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO LIME TREATMENT.

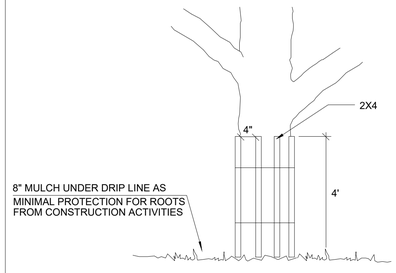


NOTE

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.

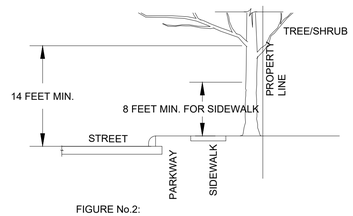


FIGURE No.2:

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 19 UNIT 1

STREET DETAILS (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Street Details.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

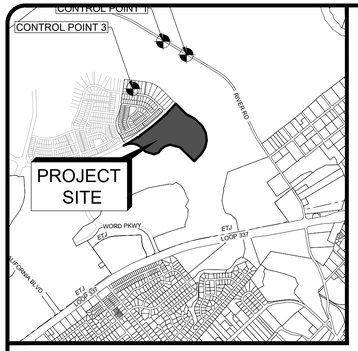
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

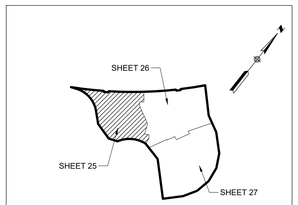
SHEET NO. 24 OF 60 SHEETS

FOR PERMIT

K:\SA3856.401 Properties\0401 Veramendi Precinct 19-TV\26 Site Development Plans\CAD\Sheets\sh_Street Details.dwg
User: jmcdonald
Last Modified: Apr. 05, 24 - 14:07
Last Xref: Apr. 01, 24 - 15:14:04



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

SIDEWALK TO BE BUILT BY DEVELOPER

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-(4)-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.

TRENCH EXCAVATION SAFETY PROTECTION:

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

SIDEWALK NOTES:

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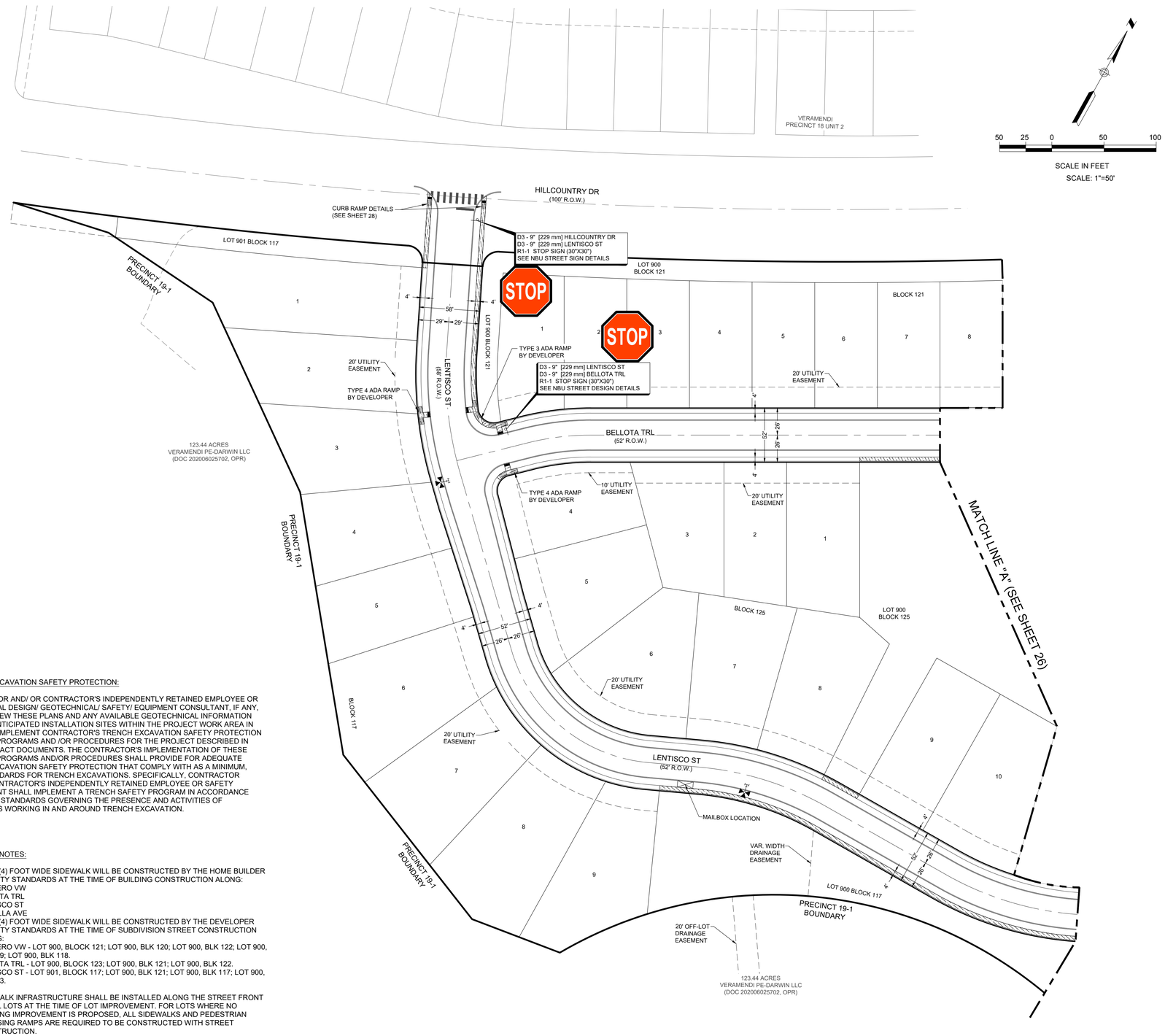

50 25 0 50 100
SCALE IN FEET
SCALE: 1"=50'

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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

SIGNAGE LAYOUT (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage Layout.dwg

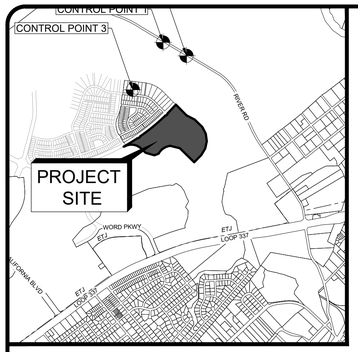
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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

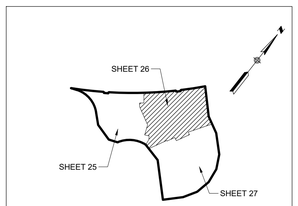
JOB NUMBER: SA3856.0401

SHEET NO. 25 OF 60 SHEETS

K:\SA3856 GSA Properties\04Ø1 Veramendi Precinct 19-1\Ø2Ø Site Development Plans\CIVIL-Sheets\sh_Signage Layout.dwg
Plotted: Mar 28, 24 - 10:35
Last Modified: Mar 28, 24 - 10:35
Xrefs Attached: Mar 14, 24 - 14:14:45



LOCATION MAP
SCALE: 1" = 2000'



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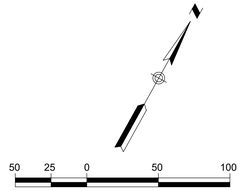

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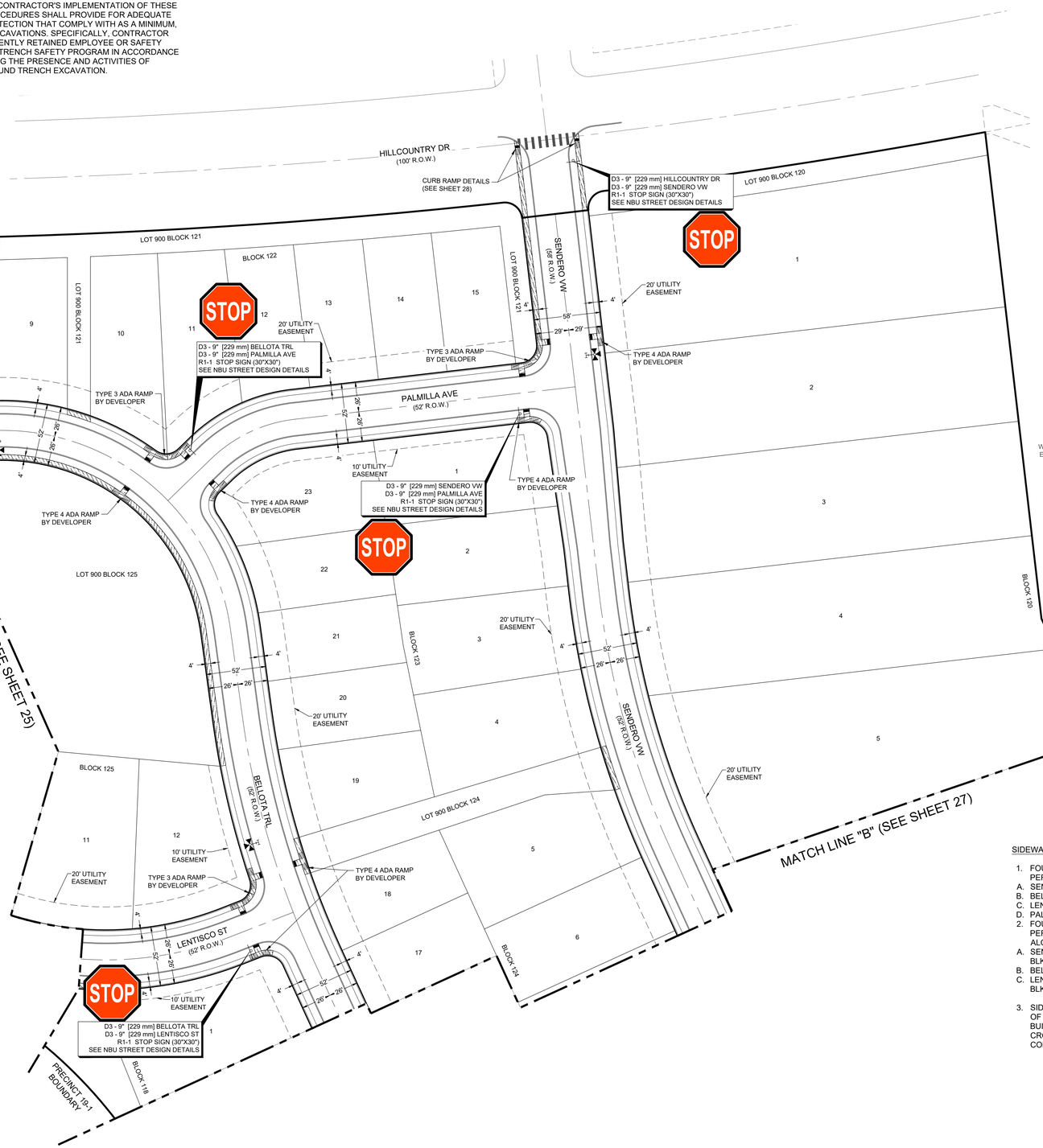

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VERAMENDI PRECINCT 19 UNIT 1

SIGNAGE LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
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Phone 210.503.2700
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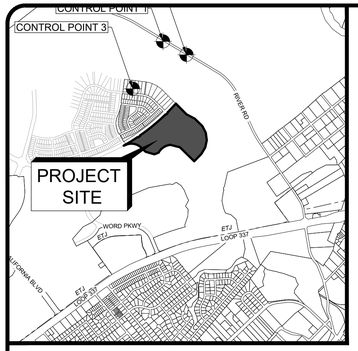
TBPE No. F-1386

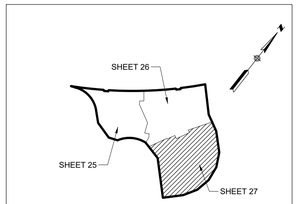
JOB NUMBER: SA3856.0401

SHEET NO. 26 OF 60 SHEETS

K:\SJ3856 ADL Properties\Q400 Veramendi Precinct 19-1\Y426 Site Development Plans\DWG-Sheet\sh_Signage Layout.dwg
Xrefs: SPCS_ADL_Plan
Last Modified: Mar. 25, 24 - 15:35
Last Plotted: Mar. 11, 24 - 13:30



LOCATION MAP
SCALE: 1" = 2000'



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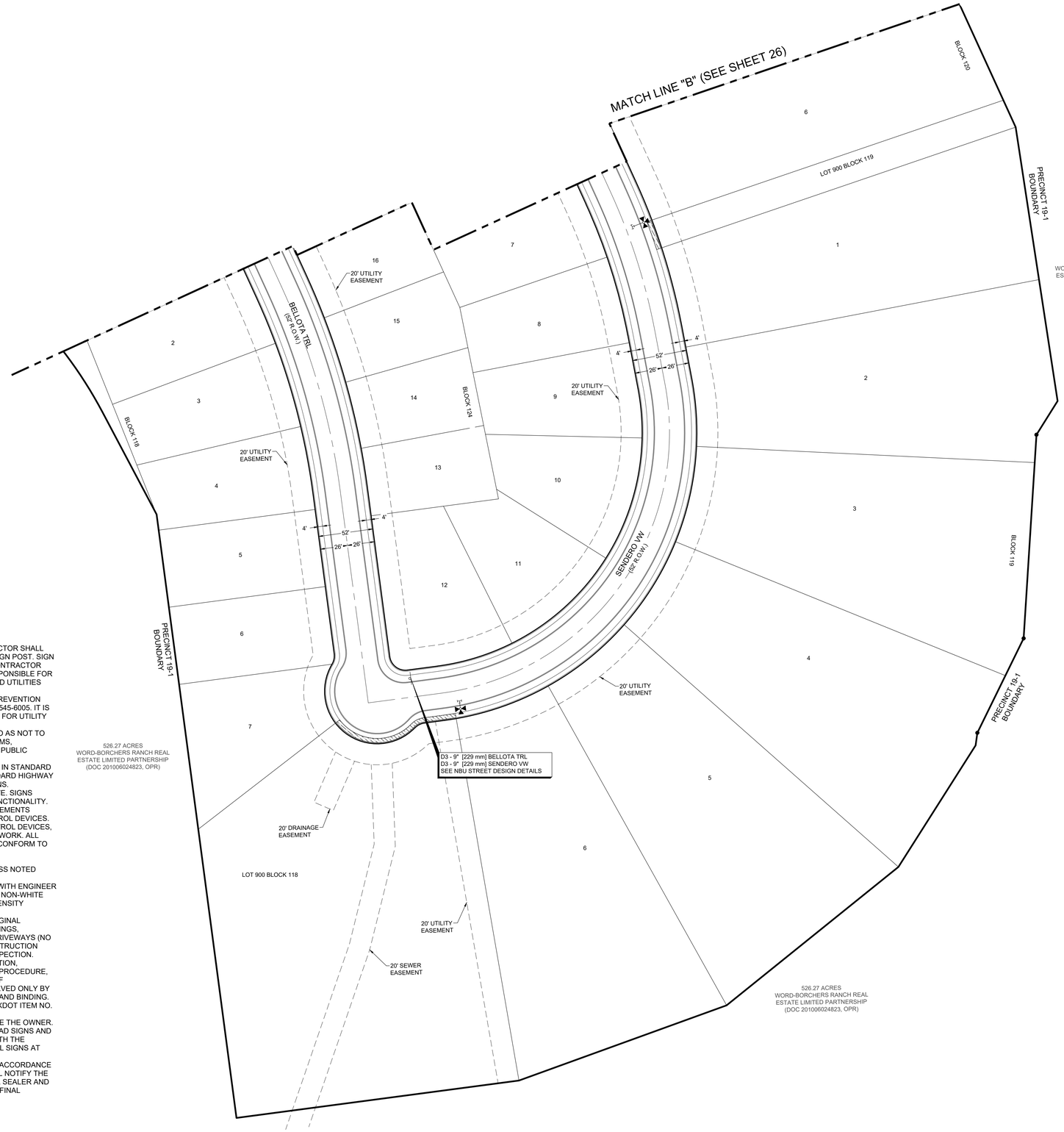

50 25 0 50 100
SCALE IN FEET
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VERAMENDI PRECINCT 19 UNIT 1

SIGNAGE LAYOUT (SHEET 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 8K_Signage Layout.dwg

STATE OF TEXAS
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TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 27
OF 60 SHEETS

K:\SA3856_ASI Properties\2401 Veramendi Precinct 19-1\426 Site Development Plans\CAD\Sheets\LJA_Signage Layout.dwg
Layout: 8K_Signage Layout
Last Modified: Mar. 28, 24 - 15:35
Last Modified: Apr. 04, 24 - 13:30:37

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation assumes no responsibility for the use of this standard as 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))
TOBMC = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

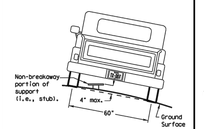
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WA = 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. "Plate" (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
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

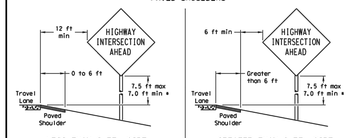
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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 pathsi.

SIGN LOCATION

PAVED SHOULDERS



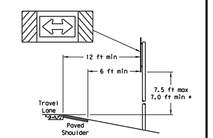
LESS THAN 6 FT. WIDE

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

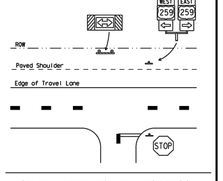
GREATER THAN 6 FT. WIDE

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

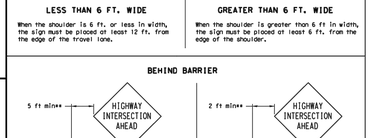
T-INTERSECTION



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



BEHIND BARRIER



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

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

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

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

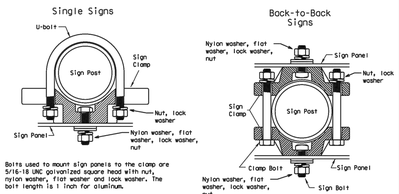
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

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

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

TYPICAL SIGN ATTACHMENT DETAIL



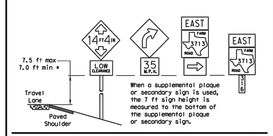
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

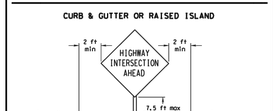
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



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

CURB & GUTTER OR RAISED ISLAND



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



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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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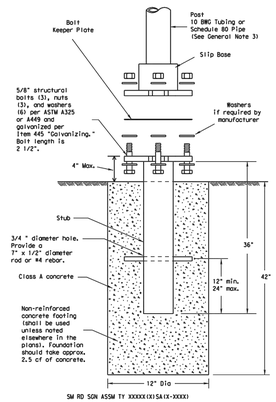
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. https://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:

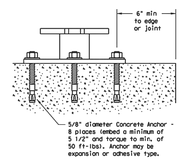
1. Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   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 followings
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is:
   http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

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

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the traveleay (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 traveleay. 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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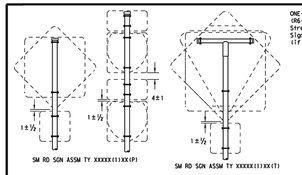
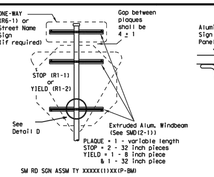
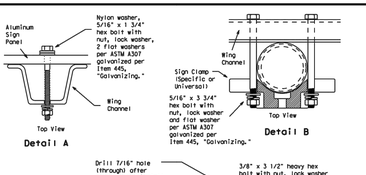
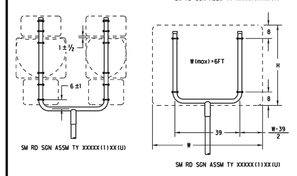
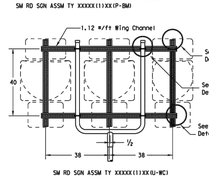
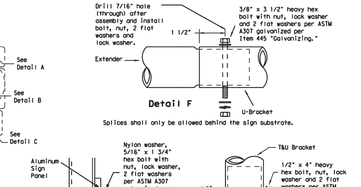




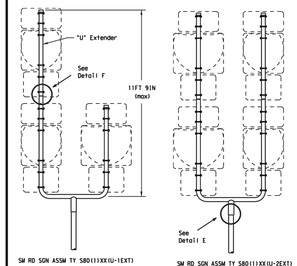


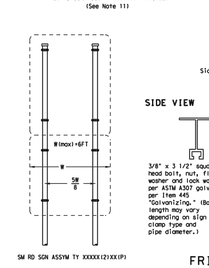


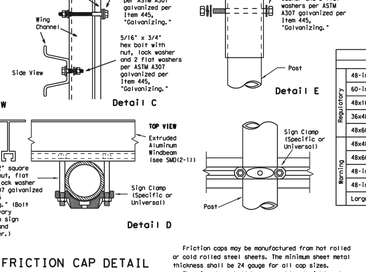




Splices shall only be allowed behind the sign substrate.







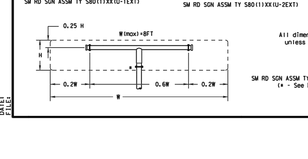
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-Inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-Inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-Inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-Inch signs	TY 10BWG(1)XX(T)
	48x60-Inch signs	TY S80(1)XX(T)
	48x48-Inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-Inch signs	TY S80(1)XX(T)
Warning	48-Inch Advance School X-Ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-Inch School X-Ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

GENERAL NOTES:

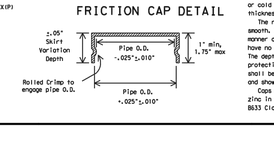
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specification DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 1.5 sq. ft., 0.100 for signs 1.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require lengthening due to reasons in addition to installing are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when 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.



All dimensions are in english unless detailed otherwise.



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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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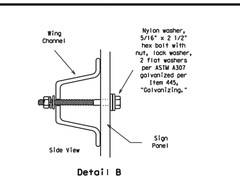
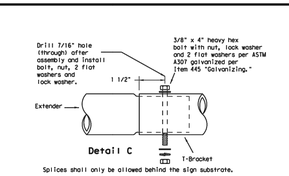
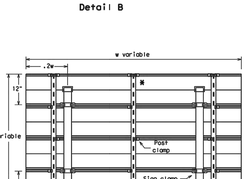
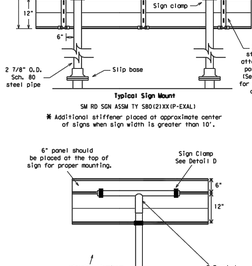
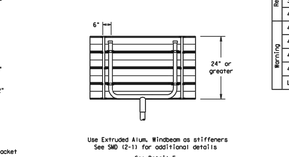


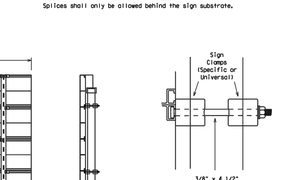


Splices shall only be allowed behind the sign substrate.









REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-Inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-Inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-Inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-Inch signs	TY 10BWG(1)XX(T)
	48x60-Inch signs	TY S80(1)XX(T)
	48x48-Inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-Inch signs	TY S80(1)XX(T)
Warning	48-Inch Advance School X-Ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-Inch School X-Ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specification DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 1.5 sq. ft., 0.100 for signs 1.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require lengthening due to reasons in addition to installing are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when 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 high 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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NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage Details.dmg

4/11/2024
STATE OF TEXAS
PRISCILLA C. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla C 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: SA3856.0401

SHEET NO. 28 OF 60 SHEETS

VERAMENDI PRECINCT 19 UNIT 1

SIGNAGE DETAILS (SHEET 1 OF 2)

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Login Name: nathan.gonzales
Last Modified: Mar. 27, 24 - 14:35
Print Date/Time: Mar. 27, 24 - 14:35:22

FOR PERMIT

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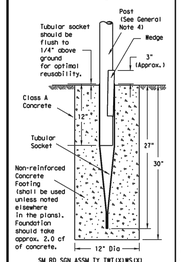
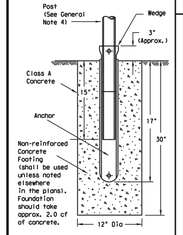
DATE:
DATE:

Wedge Anchor Steel System



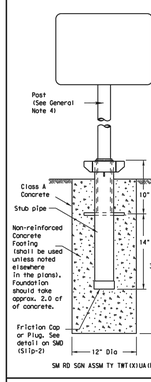
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

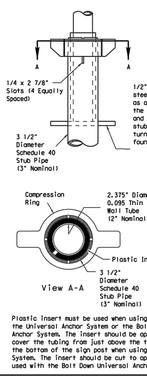


SM RD SGN ASSM TY TWT(X)MP(X)

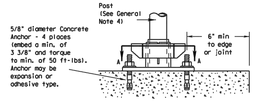
Universal Anchor System with Thin-Walled Tubing Post



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

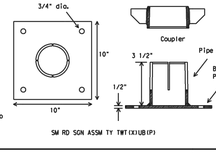


Plastic Insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The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



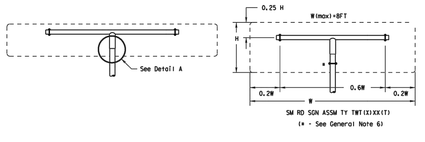
1/2" x T 1/2" steel rod acts as a "stop" for the sign post and prevents stub from turning in the foundation.

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(X)UB(P)

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)

NOTE

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

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. 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.

Texas Department of Transportation
Traffic Operations Division

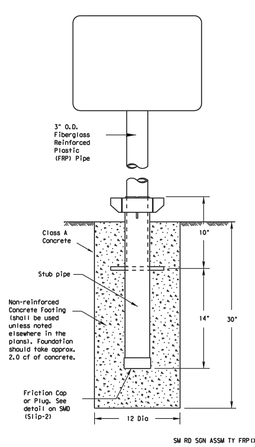
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

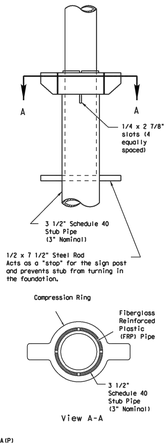
©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

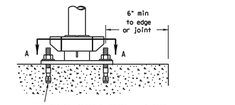
26E

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



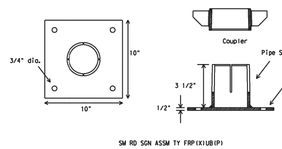
SM RD SGN ASSM TY FRP(X)UA(P)





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.

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 obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

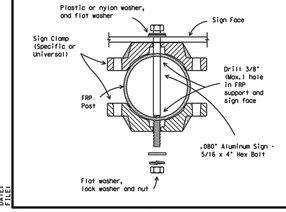
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

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.

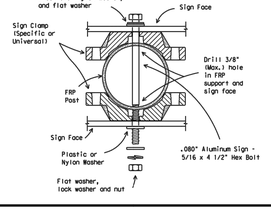
BOLT DOWN SIGN SUPPORT

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

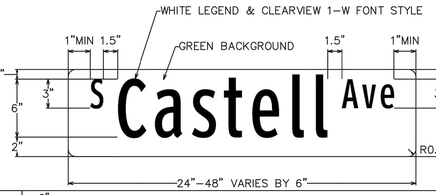
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

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:

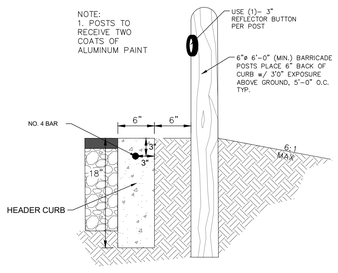
1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall be mounted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

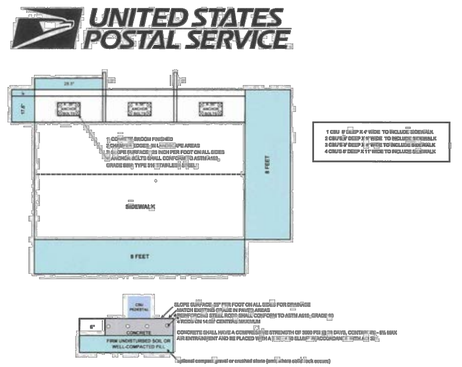
City of New Braunfels
ENGINEERING DIVISION
424 S. CASTELL AVE.
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3600

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.



VERAMENDI PRECINCT 19 UNIT 1
SIGNAGE DETAILS (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 81_Signage Details.dwg

STATE OF TEXAS
PRISCILLA C. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
4/11/2024

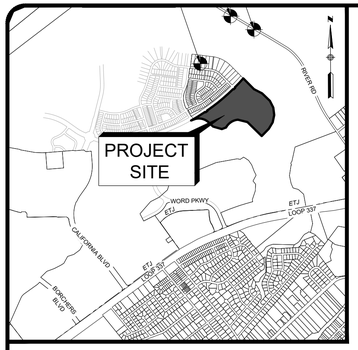
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

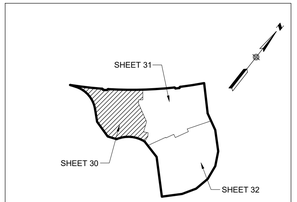
SHEET NO. 29 OF 60 SHEETS

FOR PERMIT

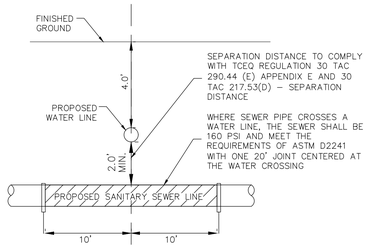
P:\SA3856.AGA Properties\SA401 Veramendi Precinct 19-1\1400 Site Development Plans\GWC-Sheets\sh_Signage Details.dwg
Plotted: Mar. 27, 24 - 14:35
Last Modified: Mar. 27, 24 - 14:35
Xref Dependencies: None



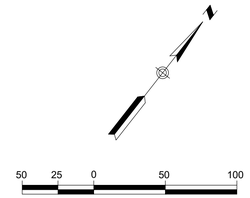
LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

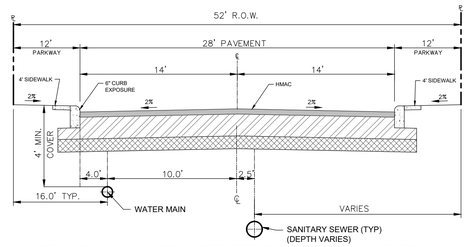


CITY OF NEW BRAUNFELS NOTES

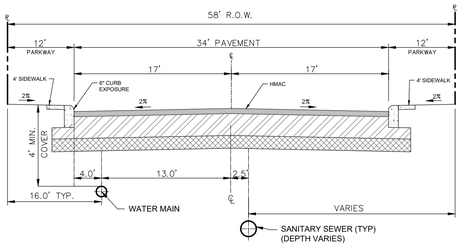
1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5–FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGES AND CITY METHODS 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.

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.



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



STANDARD 58' ROW STREET SECTION (UTILITIES)
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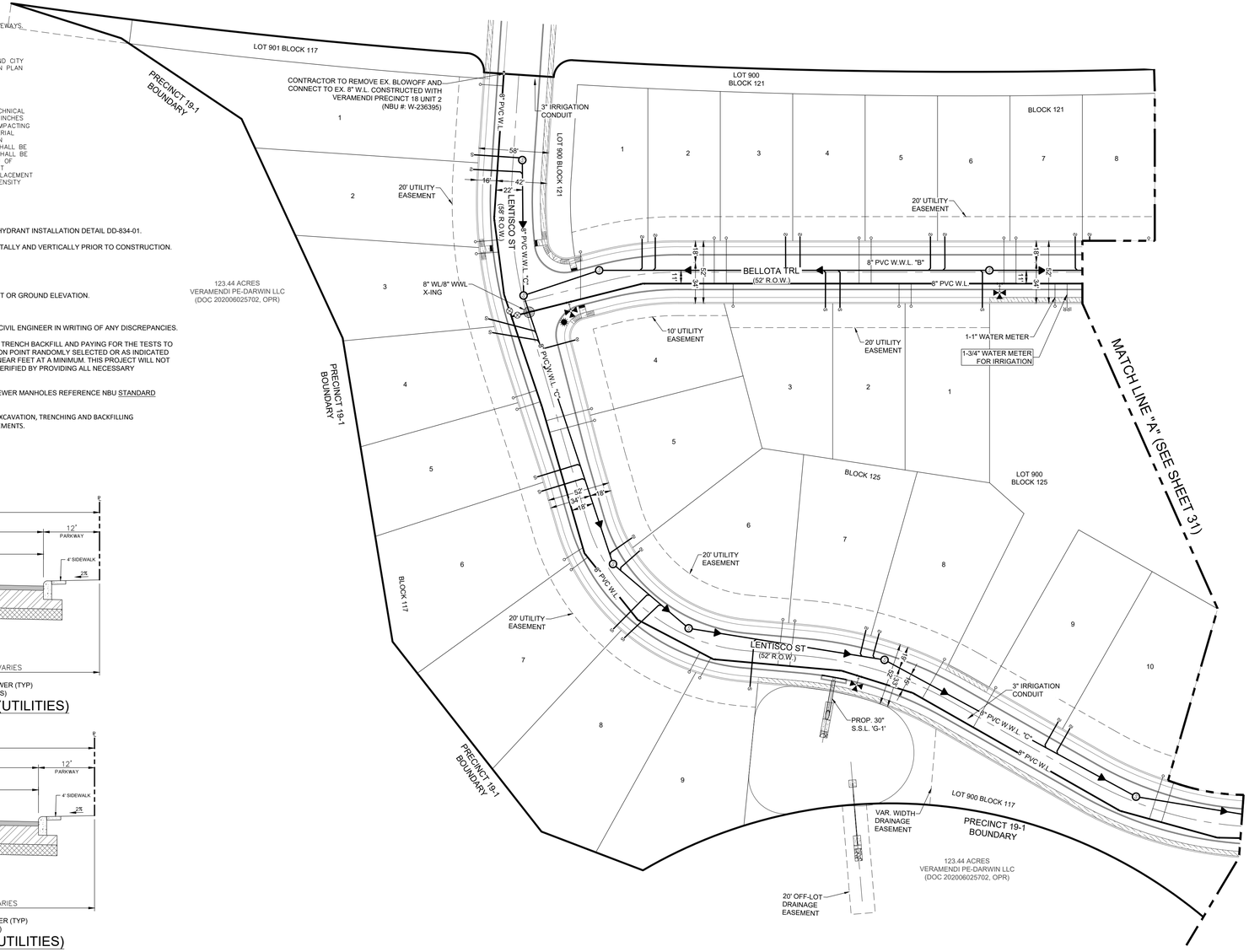

LEGEND

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
		DUAL 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
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

TRENCH EXCAVATION SAFETY PROTECTION
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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

UTILITY LAYOUT (SHEET 1 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/28/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 80_Utility Layout.dwg

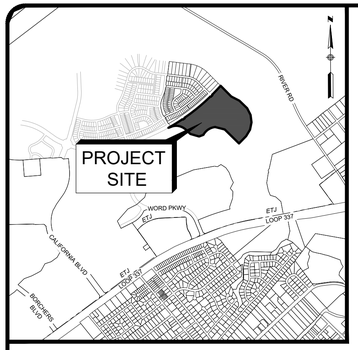
STATE OF TEXAS
PRISCILLA C. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024

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

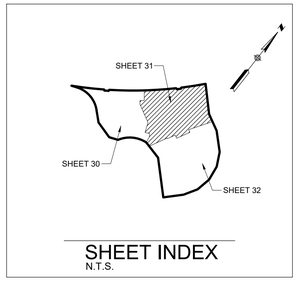
JOB NUMBER: SA3856.0401

SHEET NO. 30 OF 60 SHEETS

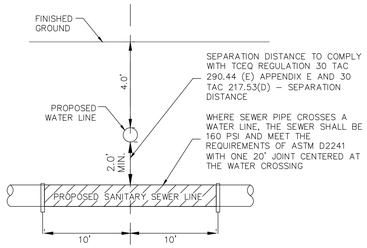
K:\SA3856.LJA_Properties\04Ø1 Veramendi Precinct 19-1\42Ø Site Development Plans\Ø8Ø-Sheets\ø8_Utility Layout.dwg
Plotted: Mar. 28, 24 – 10:49
Last Modified: Mar. 28, 24 – 10:49
Xrefs Used: None



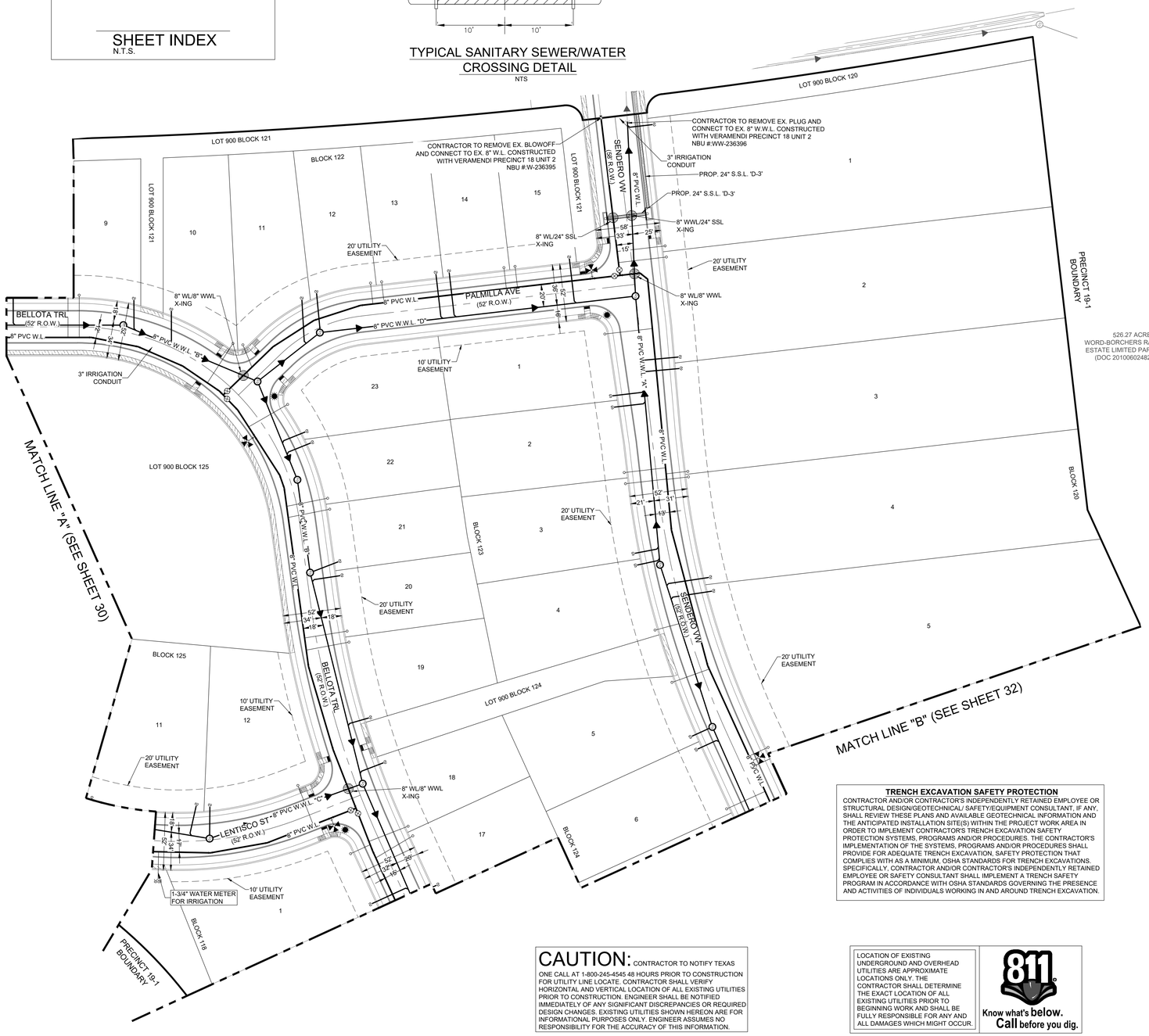
LOCATION MAP
SCALE: 1" = 2000'

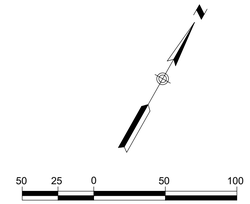


SHEET INDEX
N.T.S.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS





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
		DUAL 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
	P.U.E.	PUBLIC UTILITY EASEMENT
ESM'T		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING

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.

GENERAL NOTES

1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL DD-834-01.
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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.

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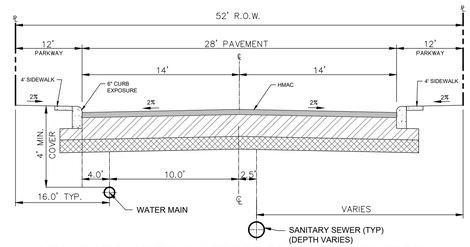
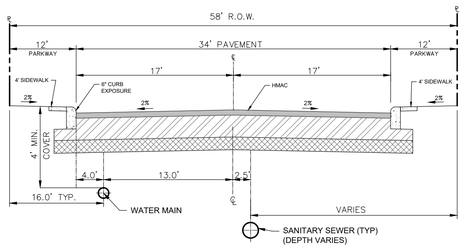


STANDARD 52' ROW STREET SECTION (UTILITIES)
N.T.S.



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

VERAMENDI PRECINCT 19 UNIT 1

UTILITY LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/28/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Utility Layout.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

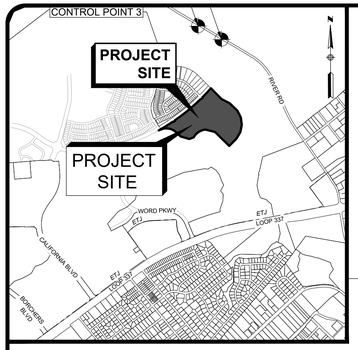
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

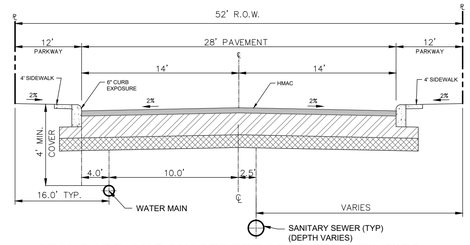
SHEET NO. 31
OF 60 SHEETS

FOR PERMIT

K:\SA3856.401 Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\CIVIL\Sheets\sh_Utility Layout.dwg
Last Saved By: ajohnson
Last Modified: Mar. 28, 24 - 15:49
Last Plotted: Mar. 31, 24 - 15:31



LOCATION MAP
SCALE: 1" = 2000'



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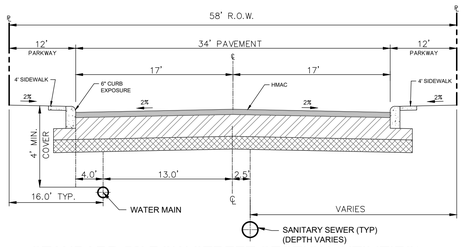

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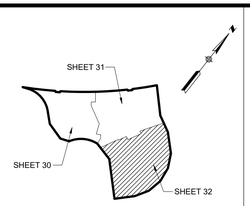

SHEET INDEX
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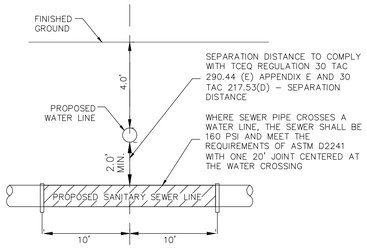

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

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
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		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
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		GUY WIRE
OU	OU	OVERHEAD ELECTRIC
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	PG	PAGE
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50 25 0 50 100
SCALE IN FEET
SCALE: 1"=50'

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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

UTILITY LAYOUT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/26/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 90_Utility Layout.dwg

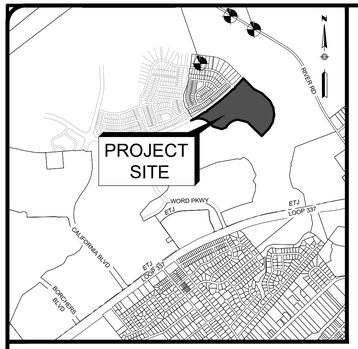
STATE OF TEXAS
PRISCILLA C. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024

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

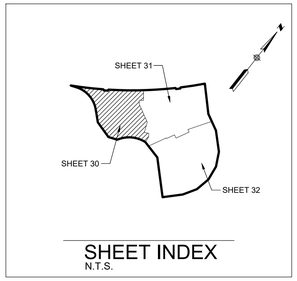
JOB NUMBER: SA3856.0401

SHEET NO. 32 OF 60 SHEETS

N:\SA3856.AGA Properties\Civil\1 Veramendi Precinct 19--1\1400 Site Development Plans\GWC--Sheets\90_Utility Layout.dwg
Mar. 28, 24 - 10:49
Last Modified: Mar. 14, 24 - 13:52:25
Plot Date/Time:



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

JOINT RESTRAINT TABLE

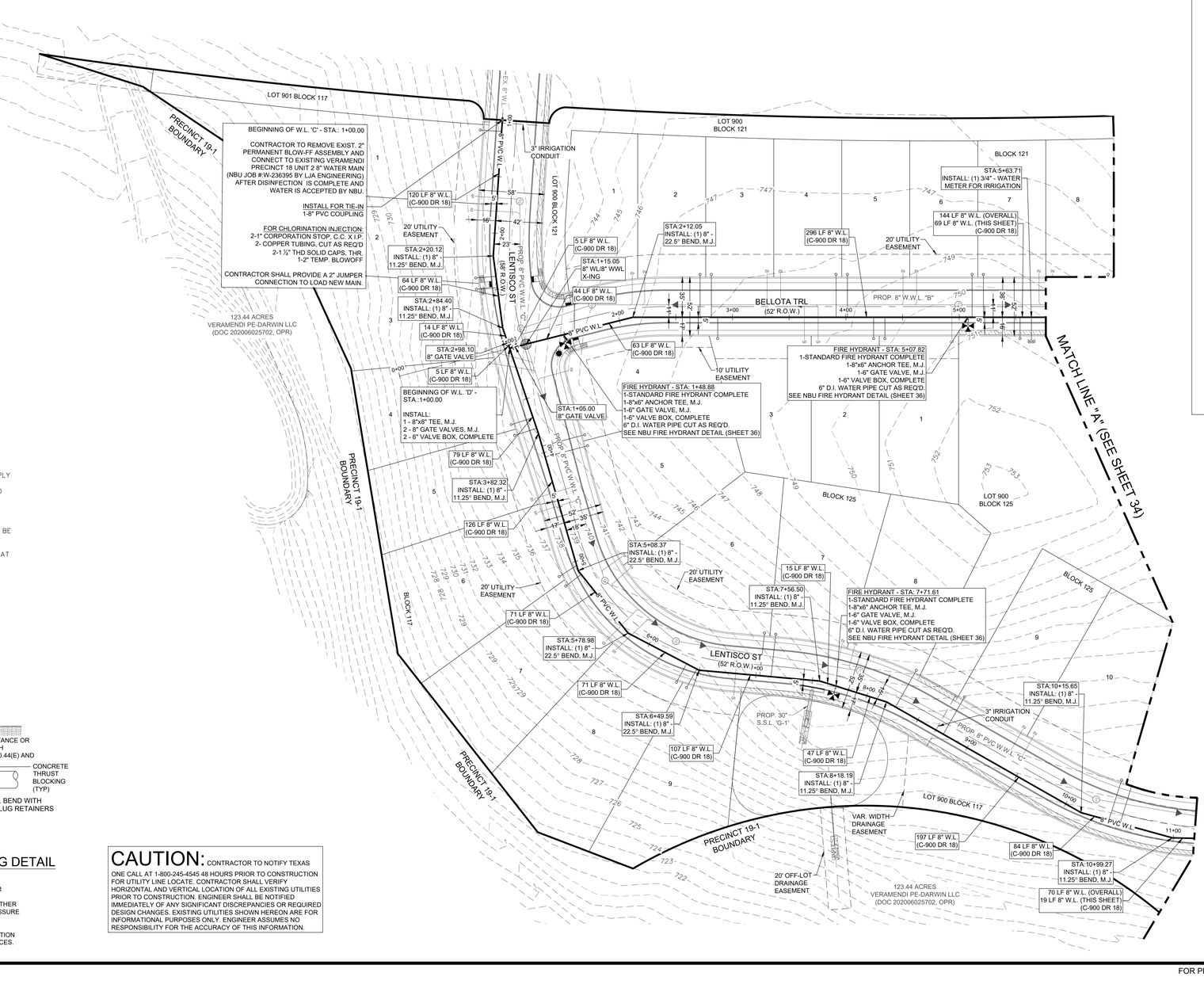
JOINT (TYPE)	PIPE MATERIAL	PIPE SIZE	RESTRAINT DISTANCE	LENGTH ALONG RUN
11.25°BEND	PVC	8"	3'	NA
22.5°BEND	PVC	8"	5'	NA
45°BEND	PVC	8"	10'	NA
TEE	PVC	8"x8"x8"	36'	5'
VERTICAL OFFSET SYSTEM RETURN	DI	8"	4' LOWER BENDS 21' UPPER BENDS	NA
GATE VALVE	PVC	8"	NA	NA

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***

WATER (NBU JOB NO. W-236397)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	4560
1" SINGLE SERVICE & 5/8" METER	EA	78
1" IRRIGATION SERVICE & 3/4" METER	EA	2
LUEs	EA	78
FIRE HYDRANT	EA	9
6" GATE VALVE	EA	9
8" GATE VALVE	EA	9

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



NOTE:

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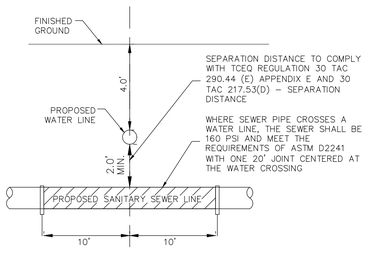
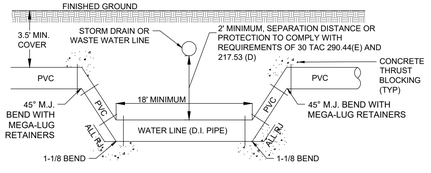
NBU PRESSURE ZONE:

PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 4.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



TYPICAL WATER/ STORM DRAIN CROSSING DETAIL
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.

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.

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
		DUAL 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
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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 ACHEVABLE. 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 CERTIFICATON 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.

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.

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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

WATER LAYOUT (SHEET 1 OF 3)

REVISIONS NO.	DESCRIPTION	BY	DATE

DATE: 3/22/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Water Layout.dwg

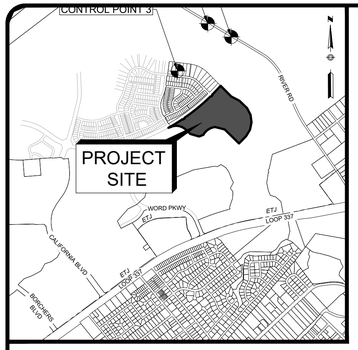
04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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

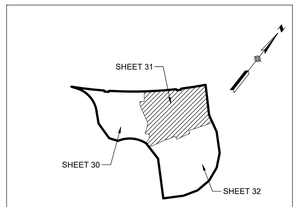
JOB NUMBER: SA3856.0401

SHEET NO. 33 OF 60 SHEETS

K:\SA3856-ADI Properties\Q400 Veramendi Precinct 19-1\426 Site Development Plans\QAR-Sheets\sh_Water Layout.dwg
Last Modified: Mar 25, 24 - 15:56
Last Plotted: Mar 25, 24 - 15:57



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

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JOINT (TYPE)	PIPE MATERIAL	PIPE SIZE	RESTRAINT DISTANCE	LENGTH ALONG RUN
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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

RESTRAINT LENGTH VALUES:

PROGRAM: ***EBAA IRON SALES INC.***
SOIL TYPE: ***CL***
SAFETY FACTOR: ***1.5***
TRENCH TYPE: ***5***
DEPTH OF BURY: ***4 FT.***
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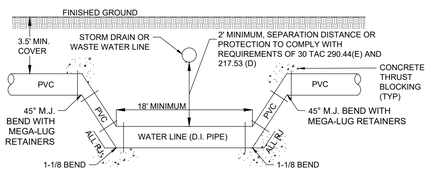
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



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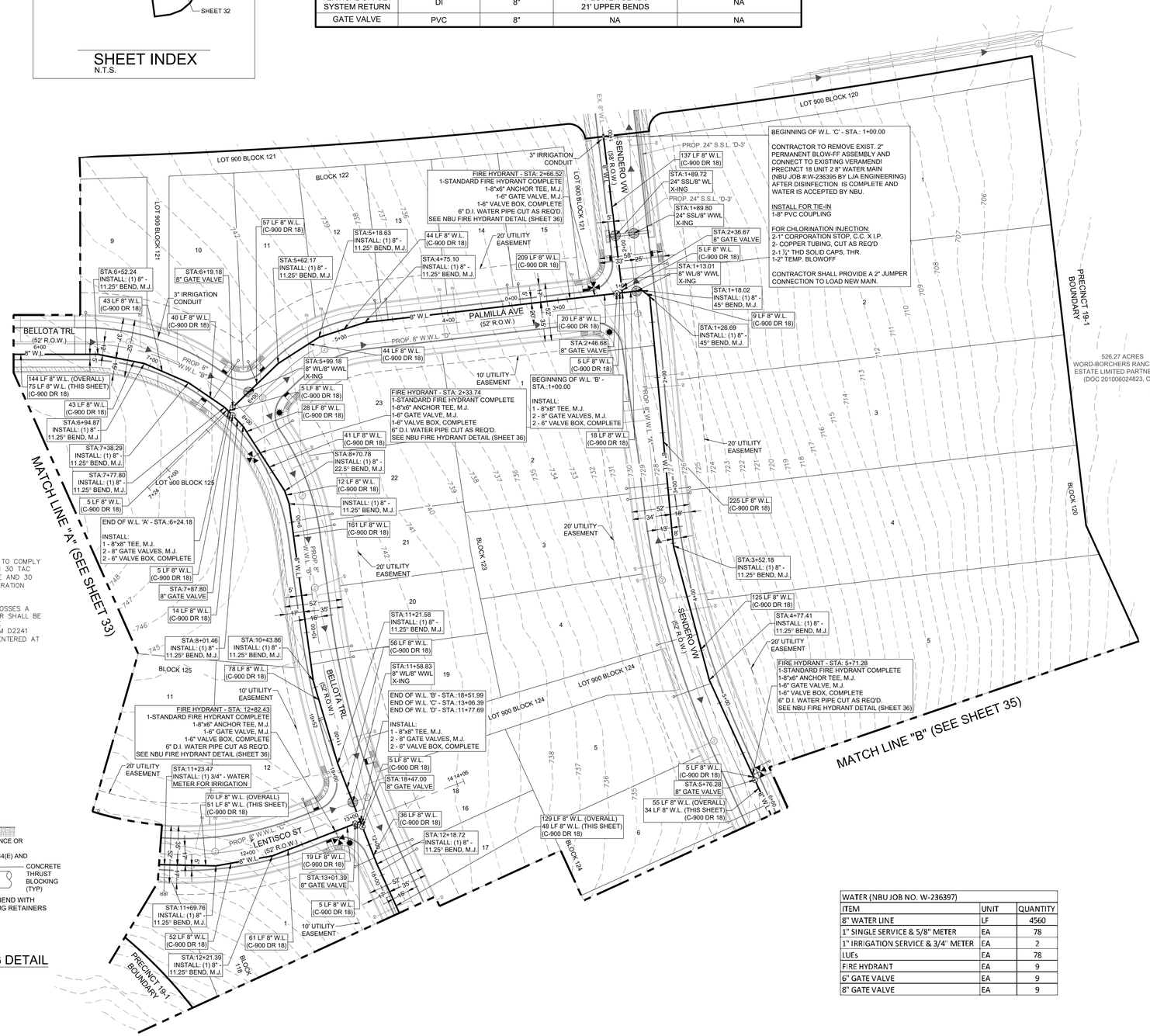

WATER (NBU JOB NO. W-236397)		
ITEM	UNIT	QUANTITY
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1" SINGLE SERVICE & 5/8" METER	EA	78
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6" GATE VALVE	EA	9
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50 25 0 50 100
SCALE IN FEET
SCALE: 1"=50'

LEGEND

PROPOSED	EXISTING	
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	PG	PAGE
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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

WATER LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/22/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 36_Water Layout.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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

JOB NUMBER: SA3856.0401

SHEET NO. 34 OF 60 SHEETS

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Last Modified: Mar. 28, 24 - 15:56
Last Plotted: Apr. 11, 24 - 13:31:39

VERAMENDI PRECINCT 19 UNIT 1

WATER LAYOUT (SHEET 3 OF 3)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 3/22/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Water Layout.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

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9830 Colonnade Blvd
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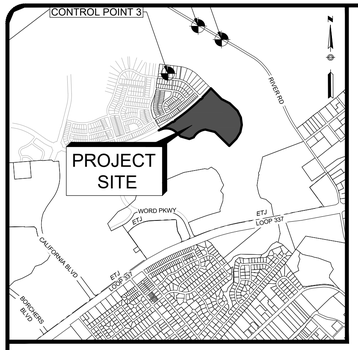
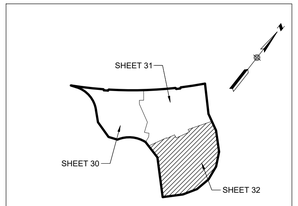
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 35 OF 60 SHEETS



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

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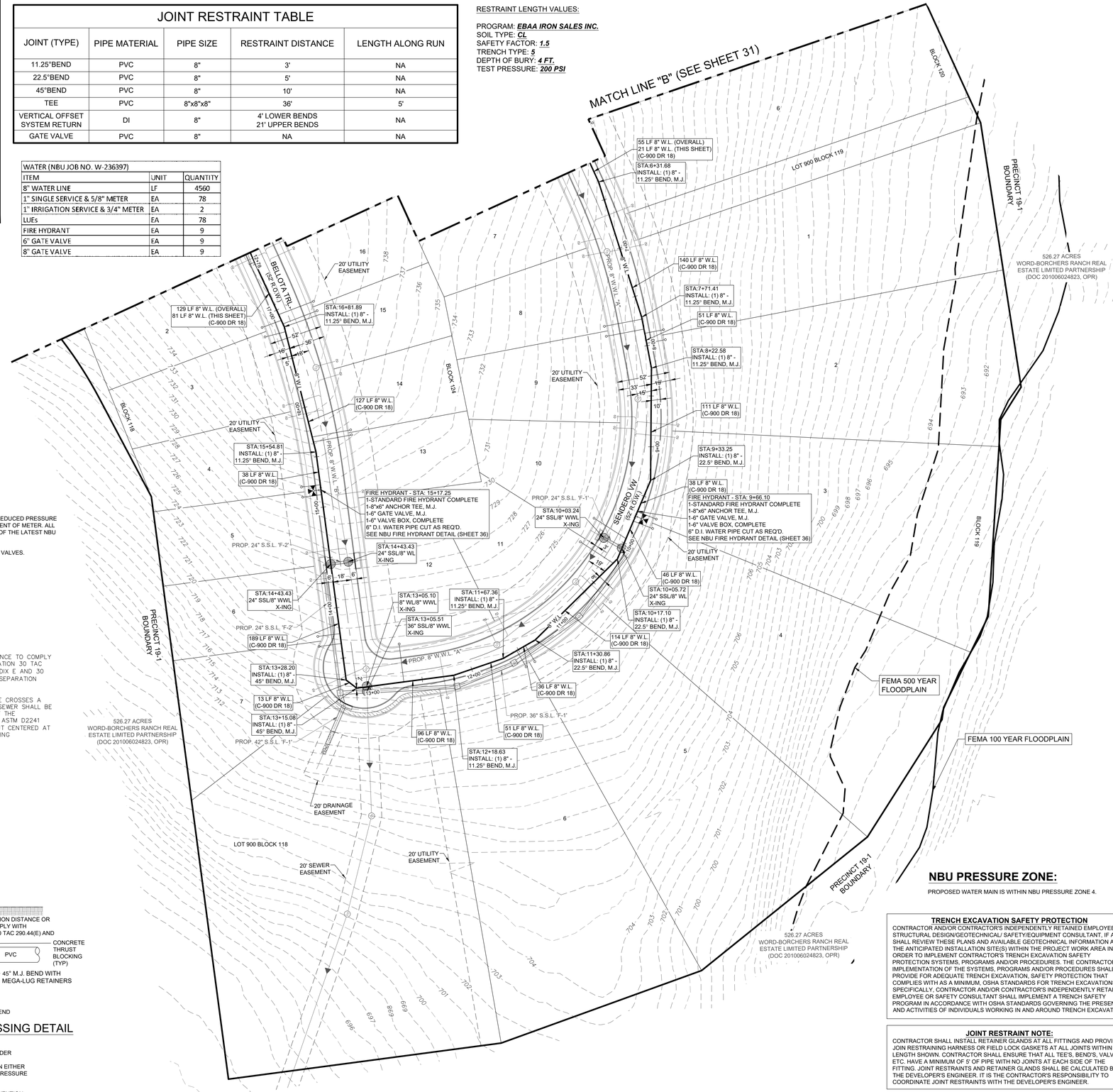

50 25 0 50 100
SCALE IN FEET
SCALE: 1"=50'

LEGEND

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8"WL	8"WL	WATER LINE
S		SANITARY SEWER LATERAL
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		WATER METER
		GAS VALVE
G	G	GAS LINE
Ⓓ	Ⓓ	STORM SEWER MANHOLE
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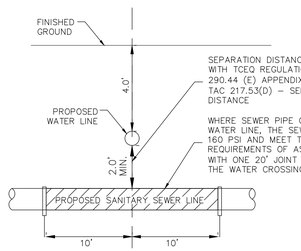
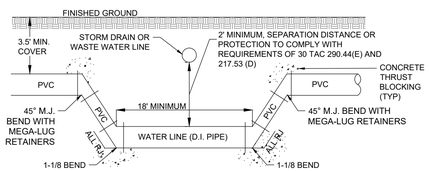


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



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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.

NBU PRESSURE ZONE:

PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 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.

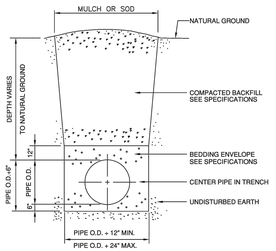
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

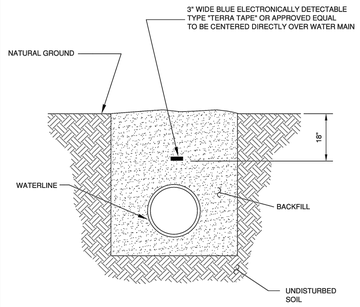
LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

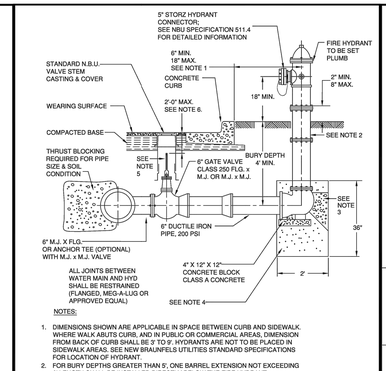
FOR PERMIT

P:\LJA ENGINEERING, INC\Projects\SA3856.0401 Veramendi Precinct 19-1\Civil\06 Site Development Plans\GWC-Sheets\sh_Water Layout.dwg
Last Modified: Mar 28, 24 - 15:56
Last Plotted: Apr 01, 24 - 13:54



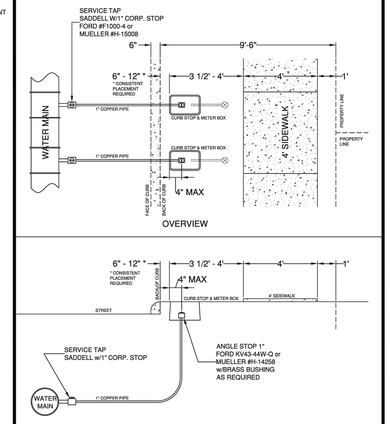


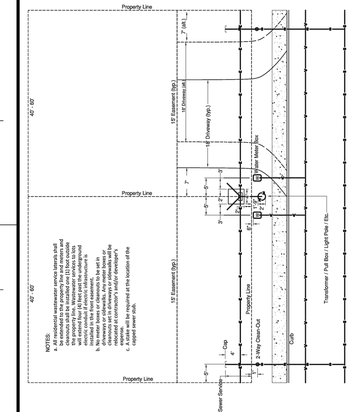
WATERLINE SURFACE IDENTIFICATION DETAIL
NOT TO SCALE

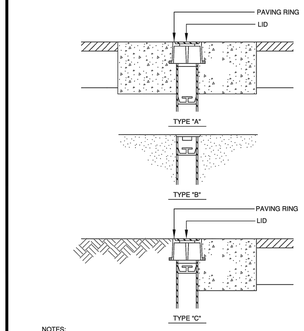


NOTES:

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 10'.
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.

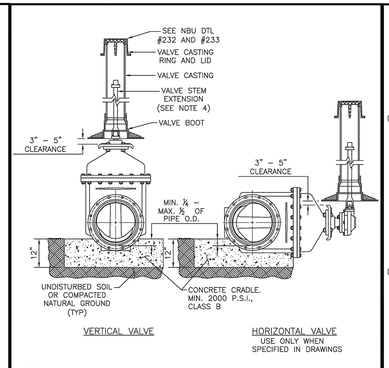






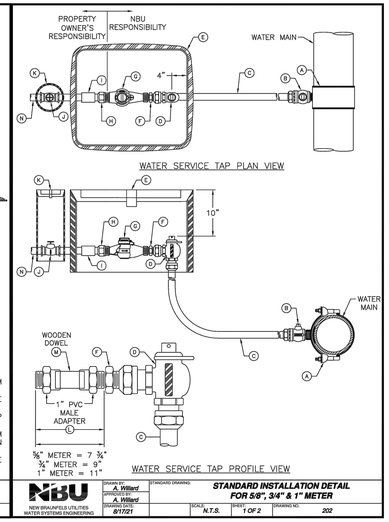
NOTES:

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 #HM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDRAD LOCATION COIL.



NOTES:

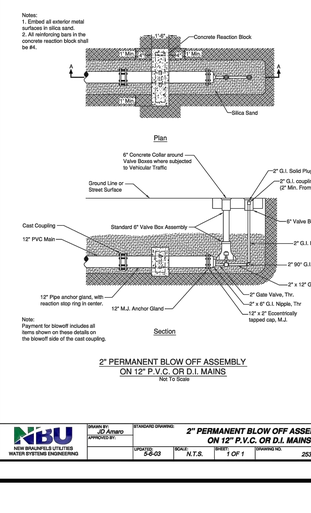
1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
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.



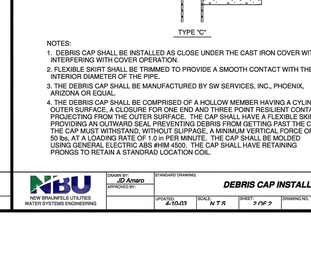
Water Notes

WATER NOTES:

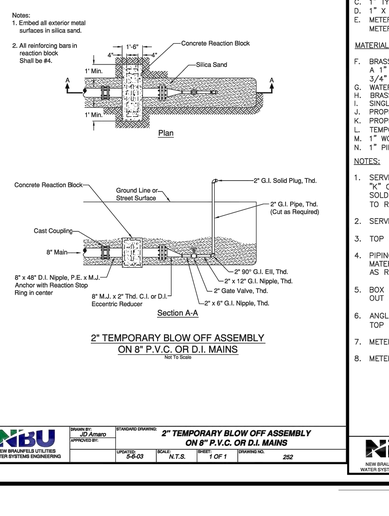
1. All water mains shall be AWWA C900 (class 150 or greater).
2. Water services shall be single 1" copper tubing.
3. Water line is to be constructed in accordance with the NBU Systems Connection & Construction Policy.
4. Water main shall have a minimum of 42 inches of cover, otherwise concrete encasement will be required.
5. Each unit in a duplex, triplex, fourplex, or condominium shall be provided with an individual water meter. A master meter can be considered for separate buildings, however, those buildings must be plumbed to allow separate meters for future consideration.
6. Contractor will keep the area on top of and around the water meter box free of all objects and debris.
7. Initial backfill of water lines shall be manufactured sand or pea gravel as per NBU Systems Connection & Construction Policy.
8. Secondary backfill of water lines shall generally consist of material removed from the trench and shall be free from brush, debris and trash or stones having any dimension larger than 6" inches at the largest dimension.
9. Hydrostatic testing is done from valve to valve.
10. No meter boxes to be set in driveways or sidewalks. Any meter boxes set in driveways or sidewalks will be relocated at contractor's and/or developer's expense.
11. Meter boxes must be set at the 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. Acceptable meter boxes are D13-BAMR and D15-BAMR. New residential lots are required to use the D15-BAMR meter boxes (double AMR). Commercial lots should choose which box applies to the domestic and/or irrigation meter layout.
13. 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.
14. Contractor shall place tracer wire on top of the water mains. Tracer wire should run from valve to valve and exit at the valve box. The tracer wire should be attached to the top of the pipe using tape. Excess wire should be left within valve boxes to be placed within lid of cover.
15. Water quality shall be protected 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
16. All backflow prevention assemblies shall be tested upon installation and report sent to NBU via the online tracking system, contact NBU backflow prevention specialist for more details. Email questions to crossconnection@nbutexas.com
17. All residential and commercial properties shall have a Customer Service Inspection certificate (CSI Inspection) completed upon completion of the building or home structure. Contact 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



2" PERMANENT BLOW OFF ASSEMBLY
ON 12" P.V.C. OR D.I. MAINS
Not To Scale



2" TEMPORARY BLOW OFF ASSEMBLY
ON 8" P.V.C. OR D.I. MAINS
Not To Scale

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 #9109–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.

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.

	DRAWN BY	STANDARD DRAWING				
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	H Shadrock	TYPICAL TRENCH WITH UNFINISHED SURFACE				
	APPROVED BY	UPDATED	SCALE	SHEET	DRAWING NO.	
		4-30-03	N.T.S.	1 OF 1	422	

	DRAWN BY	STANDARD DRAWING				
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	H Shadrock	PLACEMENT OF INDUCTIVE TRACER DETECTION TAPE				
	APPROVED BY	UPDATED	SCALE	SHEET	DRAWING NO.	
		5-23-03	N.T.S.	1 OF 1	424	

	DRAWN BY	STANDARD DRAWING				
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	JD Amaro	STANDARD FIRE HYDRANT INSTALLATION WITH 5" STORZ CONNECTOR				
	APPROVED BY	ORIGINATED	REVISION DATE	SCALE	SHEET	DRAWING NO.
		4-10-03	5-22-12	N.T.S.	1 OF 1	240

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

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

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

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

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

	DRAWN BY	STANDARD DRAWING				
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	A. Willard	STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER				
	APPROVED BY	ORIGINATED	SCALE	SHEET	DRAWING NO.	
	A. Willard	6/17/21	N.T.S.	2 OF 2	202	

	DRAWN BY	STANDARD DRAWING				
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	A. Willard	STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER				
	APPROVED BY	ORIGINATED	SCALE	SHEET	DRAWING NO.	
	A. Willard	6/17/21	N.T.S.	1 OF 2	202	

VERAMENDI PRECINCT 19 UNIT 1

WATER DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/29/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 36_Water Details.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109574
LICENSED
PROFESSIONAL ENGINEER

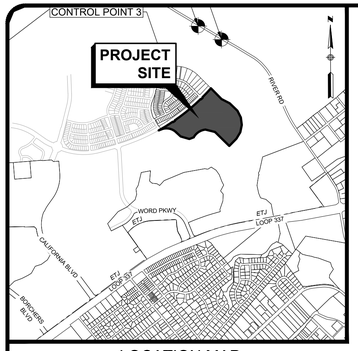
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

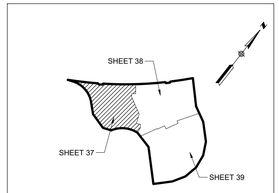
SHEET NO. 36 OF 60 SHEETS

FOR PERMIT

K:\SA3856.01 Properties\2401 Veramendi Precinct 19-TV\05 Site Development Plans\CAD\Sheets\05_Water Details.dwg
Last Modified: Feb. 07, 24 - 14:39
Last Saved By: Ana Mata - 12/21/23



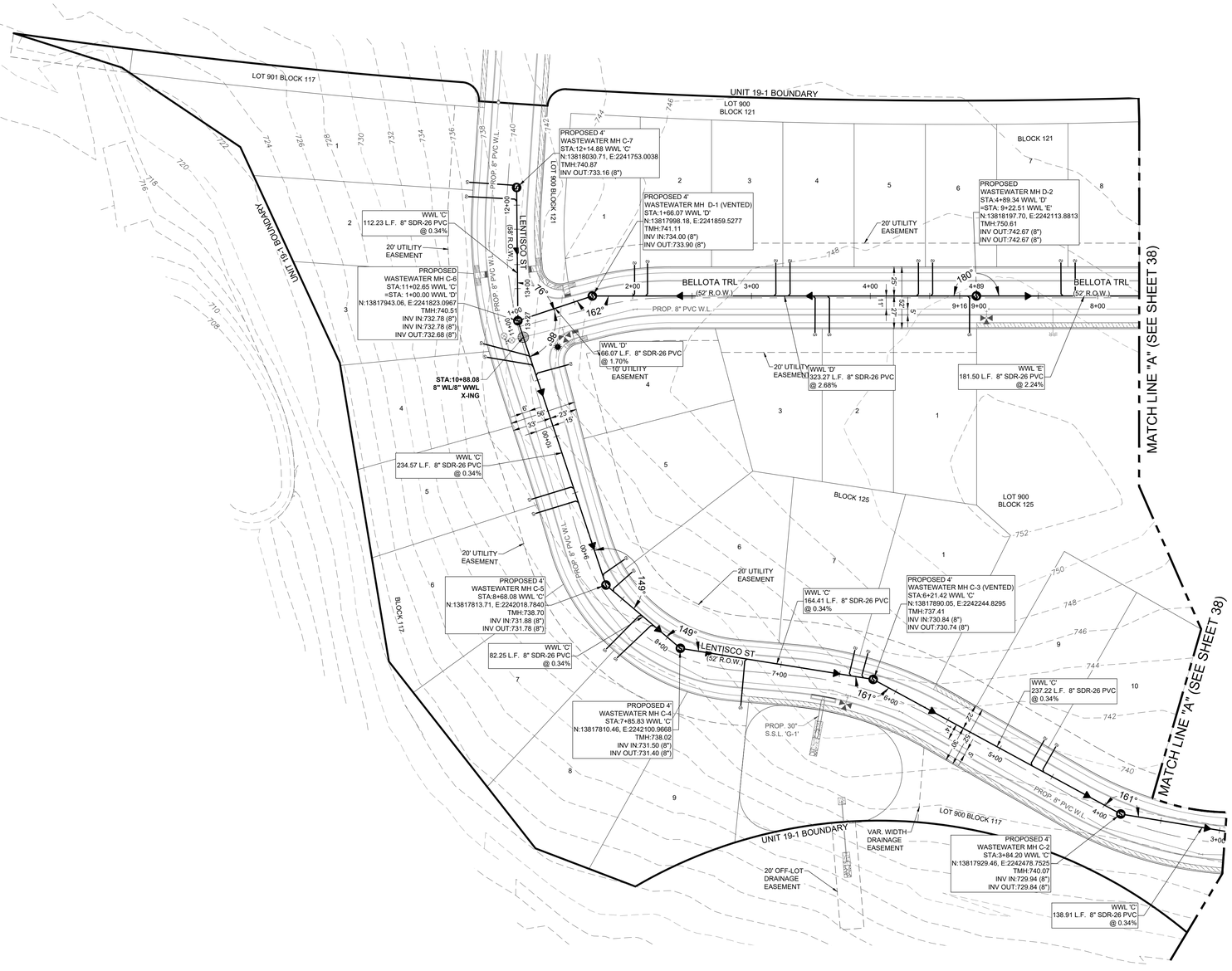
LOCATION MAP
SCALE: 1" = 2000'

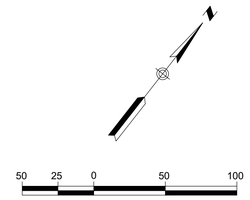


SHEET INDEX
N.T.S.

HORIZONTAL AND VERTICAL CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
1	13,820,751.12	2,242,380.08	732.75'	SET 5/8" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
2	13,820,380.93	2,243,004.12	738.93'	SET 5/8" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
3	13,819,426.13	2,241,536.34	723.80'	SET 5/8" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"

WASTEWATER (NBU JOB NO. WW-236398)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	5299
LUEs	EA	78
6" WASTEWATER SERVICE	EA	78
48" MANHOLE	EA	28





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 C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL 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
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

NOTES:

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

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LAYOUT (SHEET 1 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 2/14/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 06_Wastewater Layout.dwg

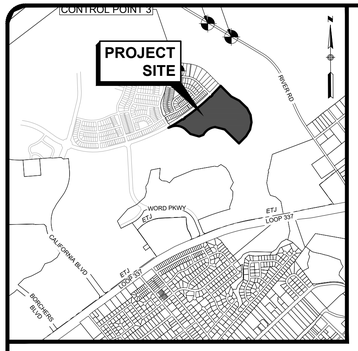
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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

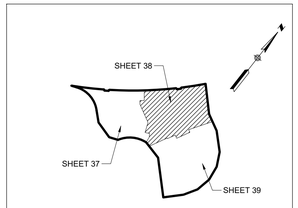
JOB NUMBER: SA3856.0401

SHEET NO. 37 OF 60 SHEETS

K:\SA3856-ASL Properties\0401 Veramendi Precinct 19-TX\26 Site Development Plan\DWG\Sheets\06_Wastewater Layout.dwg
Last Modified: Mar 29, 24 - 15:56
Last Modified By: Priscilla Flores - 15:56:37



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

HORIZONTAL AND VERTICAL CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
1	13,820,751.12	2,242,380.08	732.75'	SET 5/8" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
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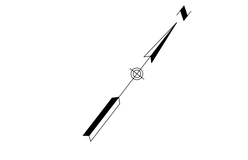
WASTEWATER (NBU JOB NO. WW-236398)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	5299
LUEs	EA	78
6" WASTEWATER SERVICE	EA	78
48" MANHOLE	EA	28



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
8		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT (INSTALL BY HOME BUILDER)
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL 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
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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LAYOUT (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 2/14/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sb_1\ww\ww_layout.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9630 Colonnade Blvd
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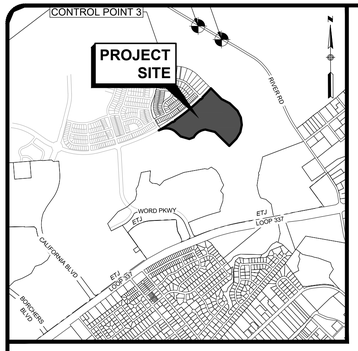
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 38 OF 60 SHEETS

K:\SA3856.GDL Properties\0401 Veramendi Precinct 19-1\426 Site Development Plan\CIVIL\Sheets\sh_Wastewater Layout.dwg
Last Modified: Mar 28, 24 - 15:56
Last Plotted: Apr 01, 24 - 14:34:45



LOCATION MAP
SCALE: 1" = 2000'

HORIZONTAL AND VERTICAL CONTROL POINTS

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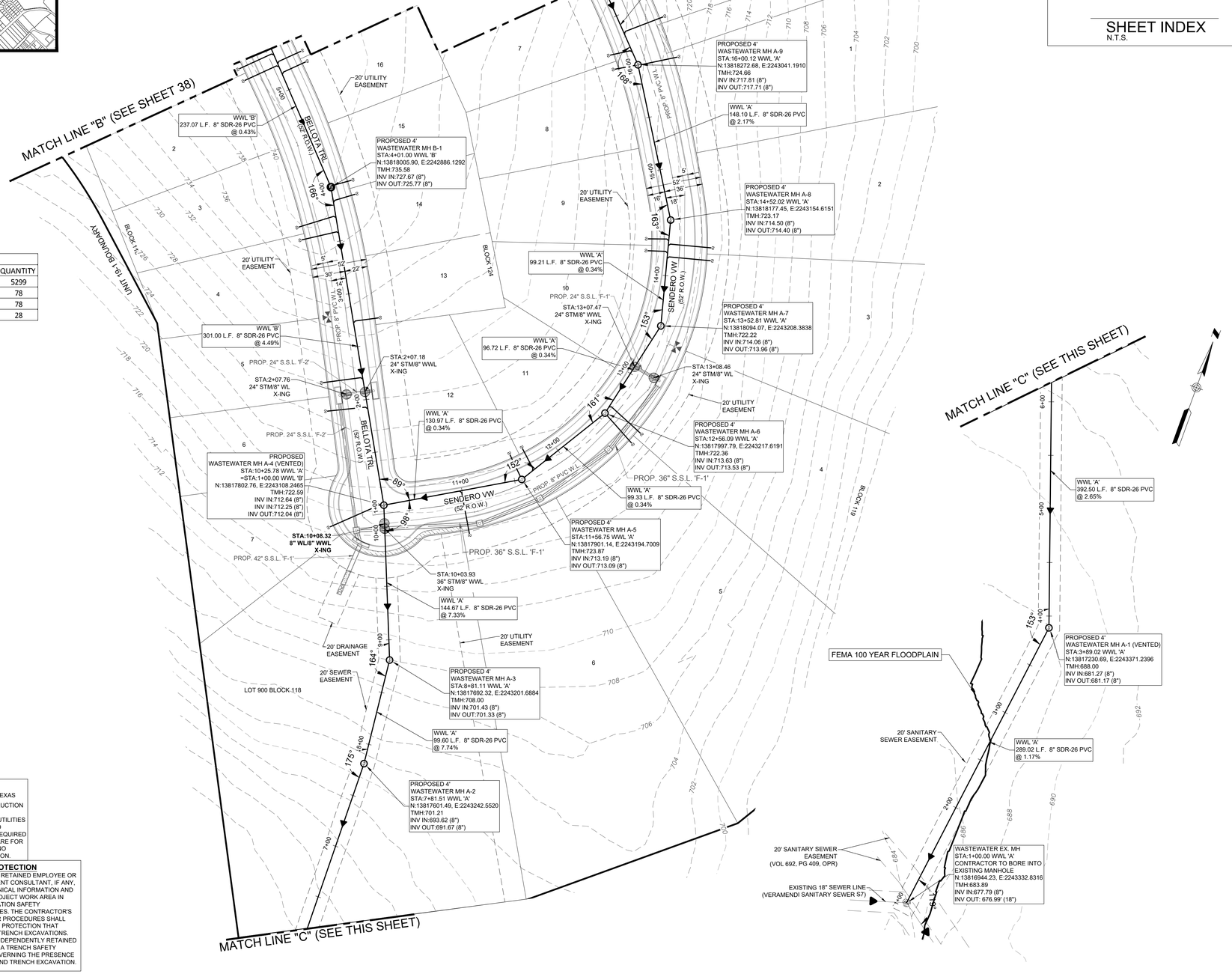

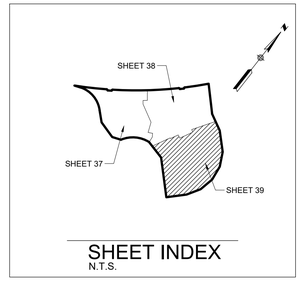

SHEET INDEX
N.T.S.

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

LEGEND

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S	S	SANITARY SEWER MANHOLE
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G	G	GAS LINE
D	D	STORM SEWER MANHOLE
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		POWER POLE
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		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
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	ESM'T	EASEMENT
	VOL	VOLUME
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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LAYOUT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 2/14/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Wastewater Layout.dwg

04/11/2024
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
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TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 39 OF 60 SHEETS

K:\SA3856_SCS_Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\DWG-Sheets\sh_Wastewater Layout.dwg
Xrefs Attached: None
Last Modified: Mon, 28, 24 - 15:56
Last Plotted: Apr 11, 24 - 14:23:27

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LINE 'A' PLAN & PROFILE
STA. 1+00 TO STA. 11+00

LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		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
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
TMH		TOP OF MANHOLE
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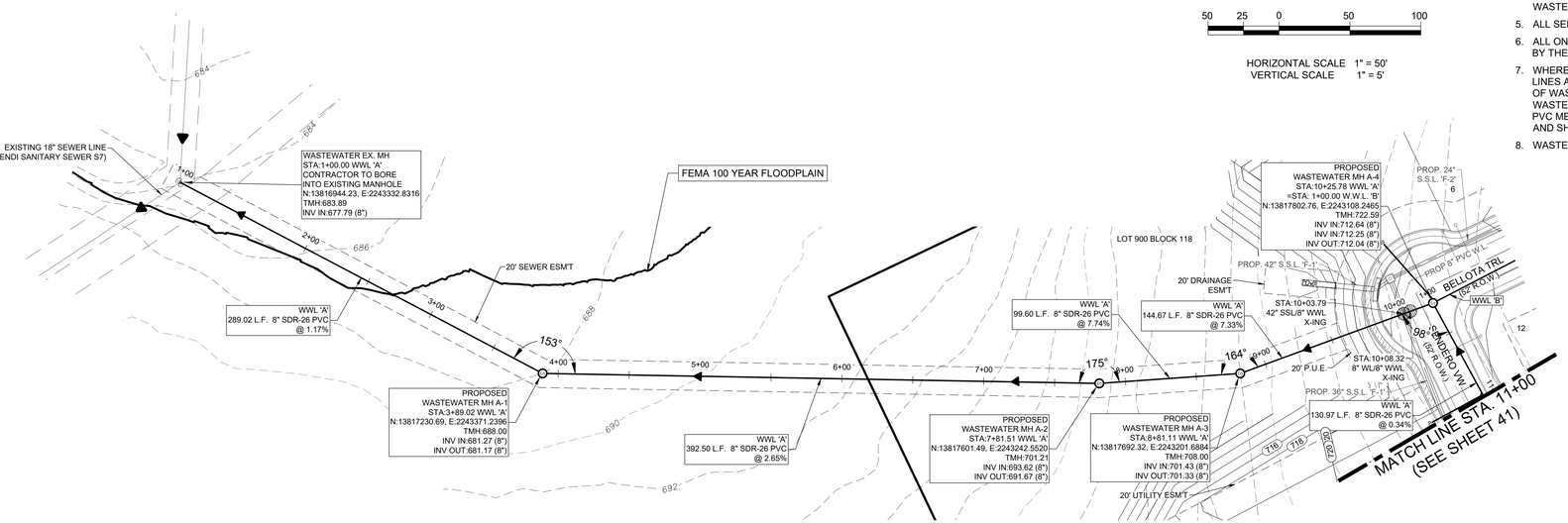
P.U.E.		PUBLIC UTILITY EASEMENT
ESM'T.		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING



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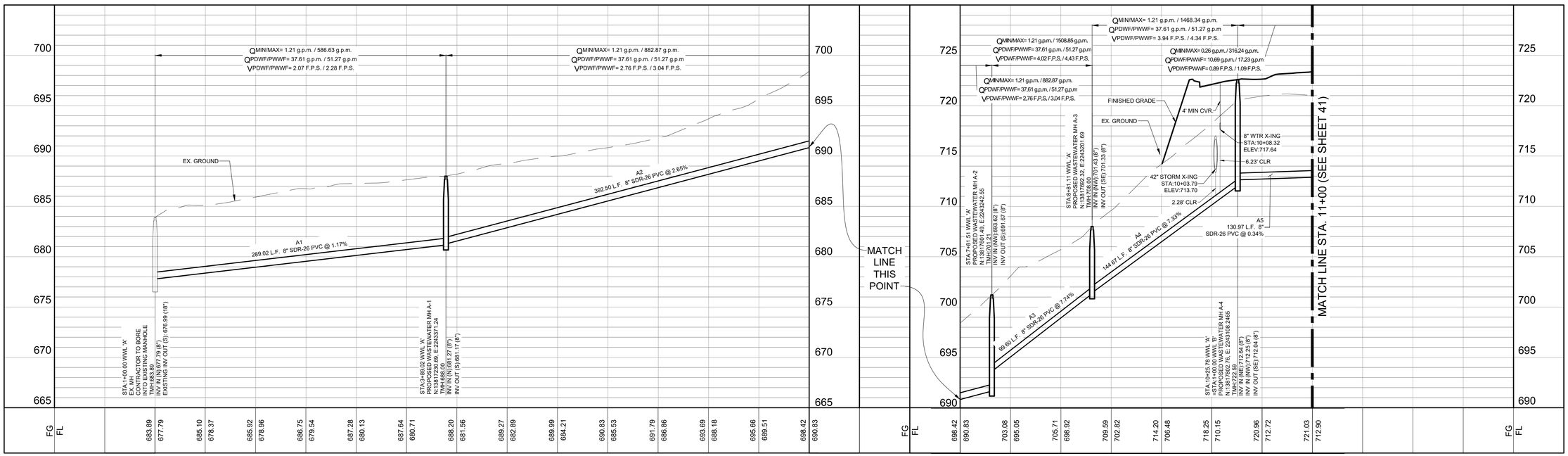

FOR PERMIT

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_VWL 'A' P&P.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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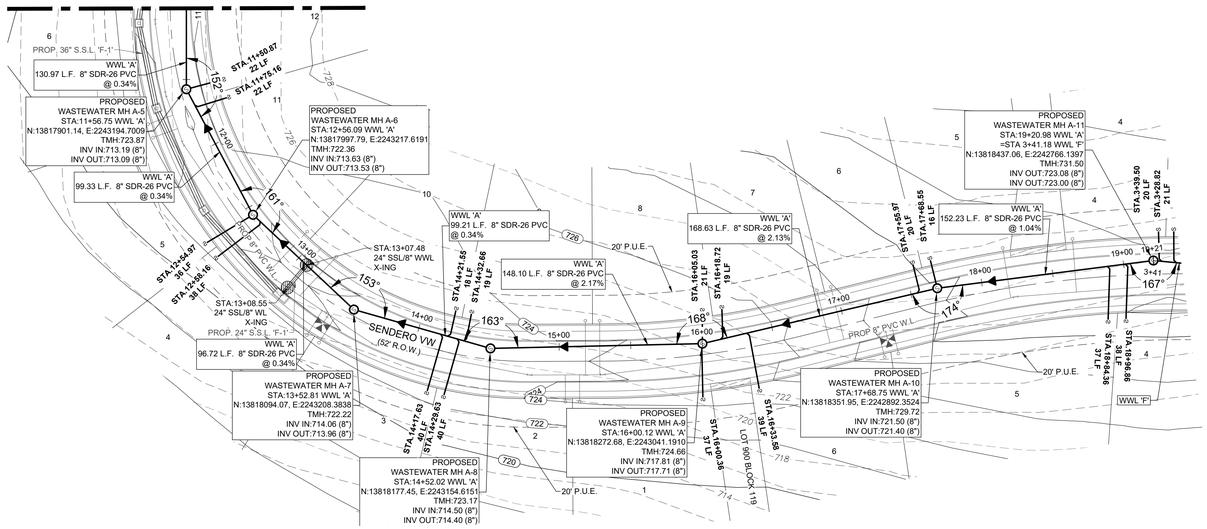
JOB NUMBER: SA3856.0401

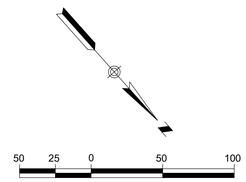
SHEET NO. 40 OF 60 SHEETS

K:\SA3856.JDA Properties\Civil\01 Veramendi Precinct 19-1\1\Civil Site Development Plans\DWG-Sheets\sh_WWL 'A' P&P.dwg
Plotted By: Priscilla Flores
Last Modified: Mar. 28, 24 - 15:59
Last Modified By: Mar. 11, 24 - 11:35:56

LEGEND

PROPOSED	EXISTING	
ⓦ	ⓦ	SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
⊗	○	WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		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
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
TMH		TOP OF MANHOLE
	EX.	EXISTING
P.U.E.	P.U.E.	PUBLIC UTILITY EASEMENT
ESM'T.	ESM'T.	EASEMENT
VOL	VOL	VOLUME
PG	PG	PAGE
		UTILITY X-ING





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

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.

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.

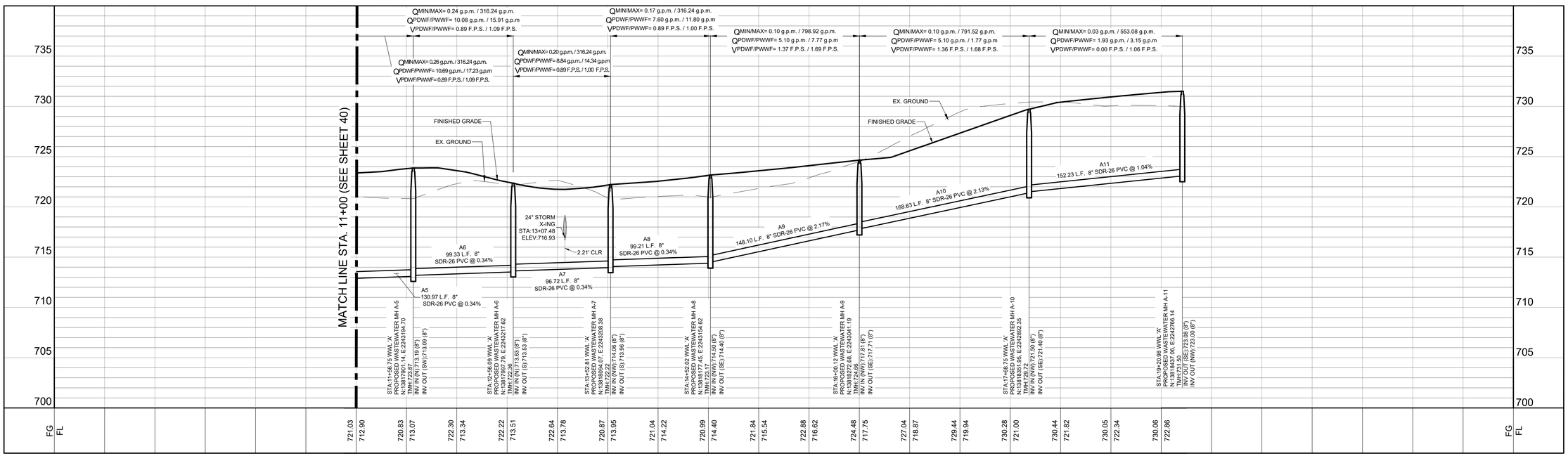
811 Know what's below. Call before you dig.

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.

WASTEWATER LINE 'A' STA. 11+00 TO END



FOR PERMIT

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sn_VWL 'A' P&P.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 41 OF 60 SHEETS

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LINE 'A' PLAN & PROFILE
STA. 11+00 TO END

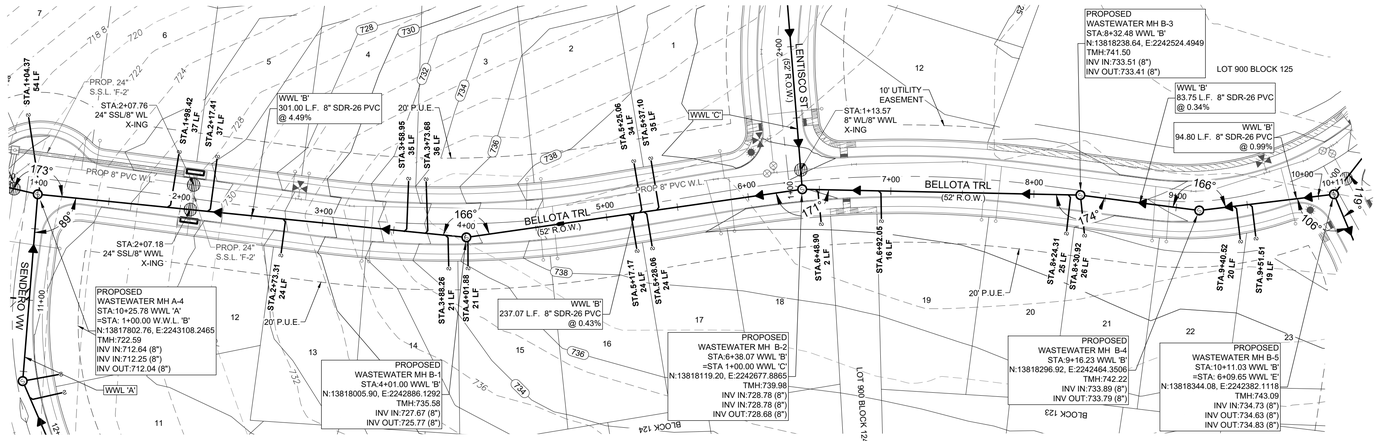
K:\SA3856_EDA Properties\Q400 Veramendi Precinct 19-1\1-VDS Site Development Plans\DWG-Sheets\sn_WWL 'A' P&P.dwg
Xref: SA3856_Proplot.dwg
Last Modified: Mar. 28, 24 - 15:59
Last Plotted: Mar. 11, 24 - 14:36

VERAMENDI PRECINCT 19 UNIT 1

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

LEGEND

PROPOSED	EXISTING	
(MH)	(MH)	SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		WATER METER
		GAS VALVE
G	G	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER PLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OHE	OVERHEAD ELECTRIC
		BENCHMARK
TMH		TOP OF MANHOLE
EX.		EXISTING
P.U.E.		PUBLIC UTILITY EASEMENT
ESM'T.		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING



HORIZONTAL SCALE 1" = 50'
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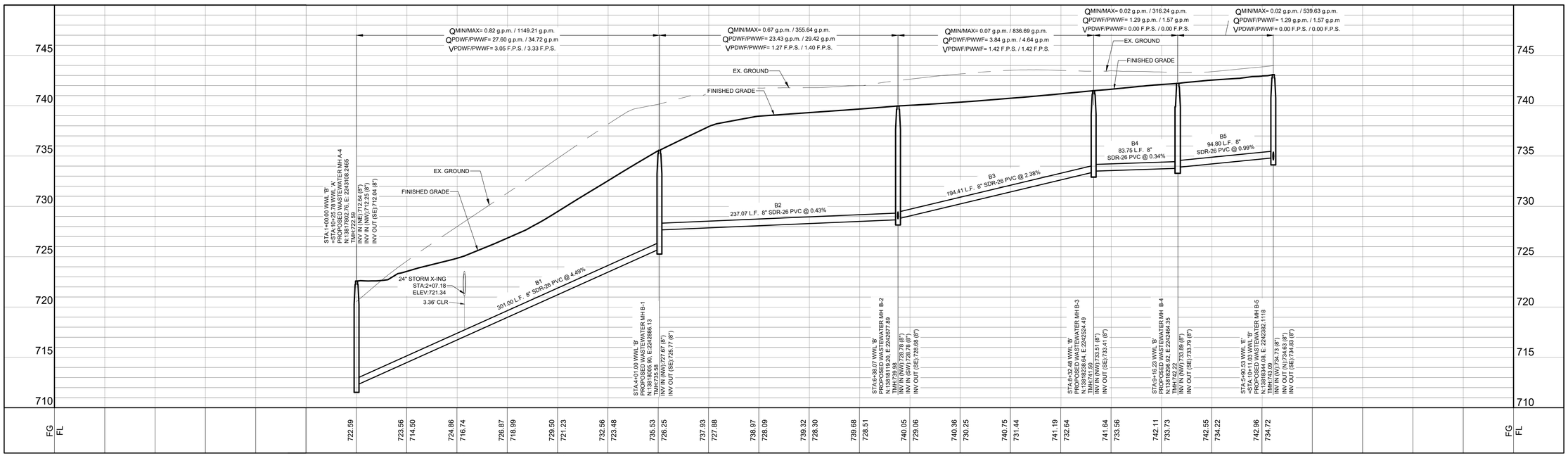
WASTEWATER LINE 'B' STA. 1+00 TO END



FOR PERMIT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_LWWL 'B' P&P.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 42 OF 60 SHEETS

K:\SA3856.ASA Properties\Civil\01 Veramendi Precinct 19-1\Civil Site Development Plans\DWG-Sheets\sh_WWL 'B' P&P.dwg
Login Name: priscilla.flores
Last Modified: Feb. 15, 24 - 15:47
Last Plotted: Apr. 11, 24 - 14:39:33

GENERAL NOTES:

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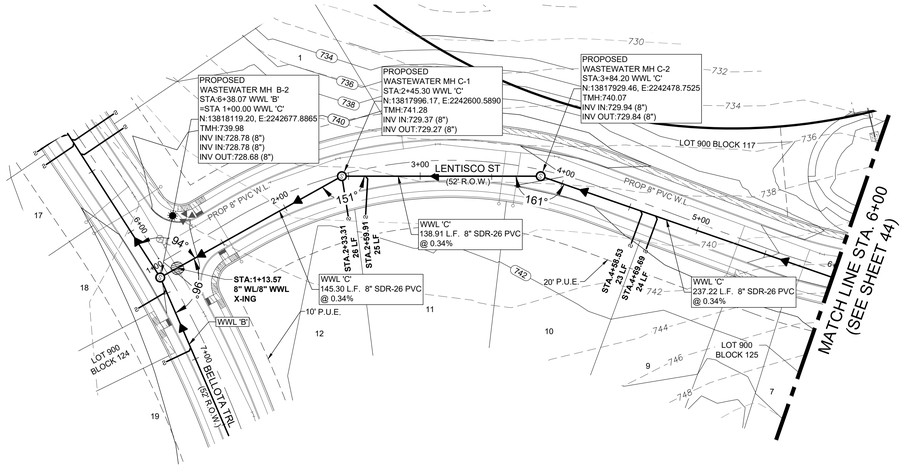

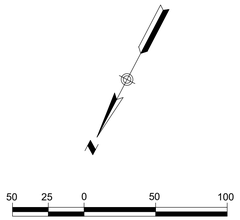

LEGEND

PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		WATER METER
		GAS VALVE
G	G	GAS LINE
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		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
TMH	TMH	TOP OF MANHOLE
EX.	EX.	EXISTING
P.U.E.	P.U.E.	PUBLIC UTILITY EASEMENT
ESM'T.	ESM'T.	EASEMENT
VOL	VOL	VOLUME
PG	PG	PAGE
		UTILITY X-ING

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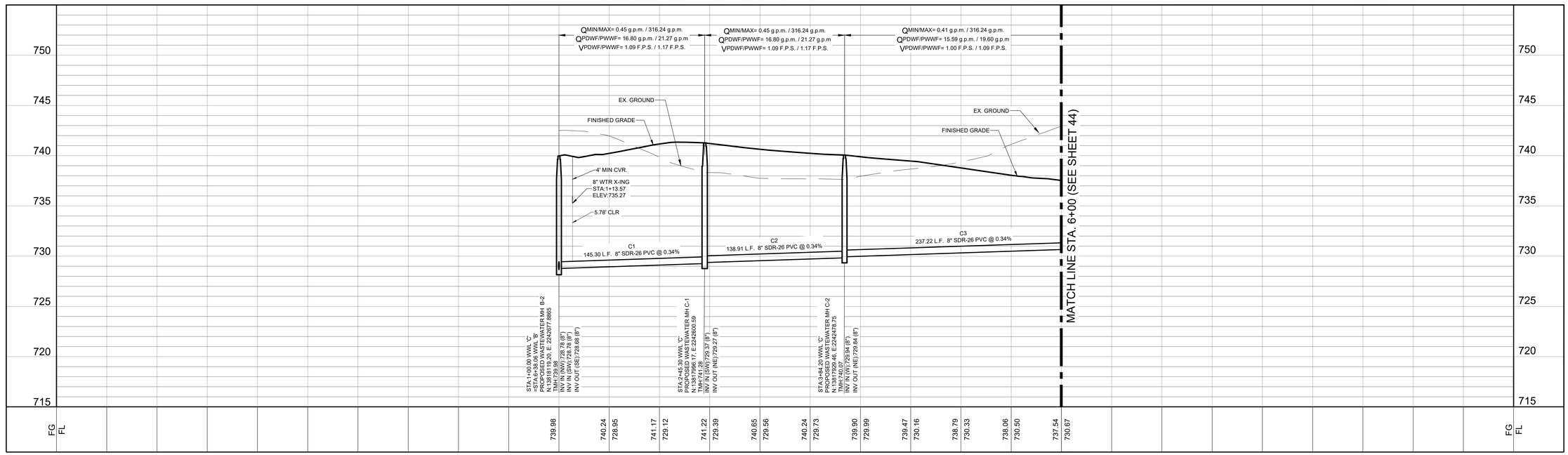
WASTEWATER LINE 'C' STA. 1+00 TO STA. 6+00



FOR PERMIT

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sa_WWL 'C' P&P.dwg

04/11/2024
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: SA3856.0401

SHEET NO. 43 OF 60 SHEETS

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LINE 'C' PLAN & PROFILE
STA. 1+00 TO STA. 6+00

K:\SA3856 JGA Properties\Civil\01 Veramendi Precinct 19-1\Y2K Site Development Plans\DWG-Sheets\sa_WWL 'C' P&P.dwg
Xref: SDS_Plan
Last Modified: Feb. 15, 24 - 15:49
Last Modified: Apr. 11, 24 - 13:30:38

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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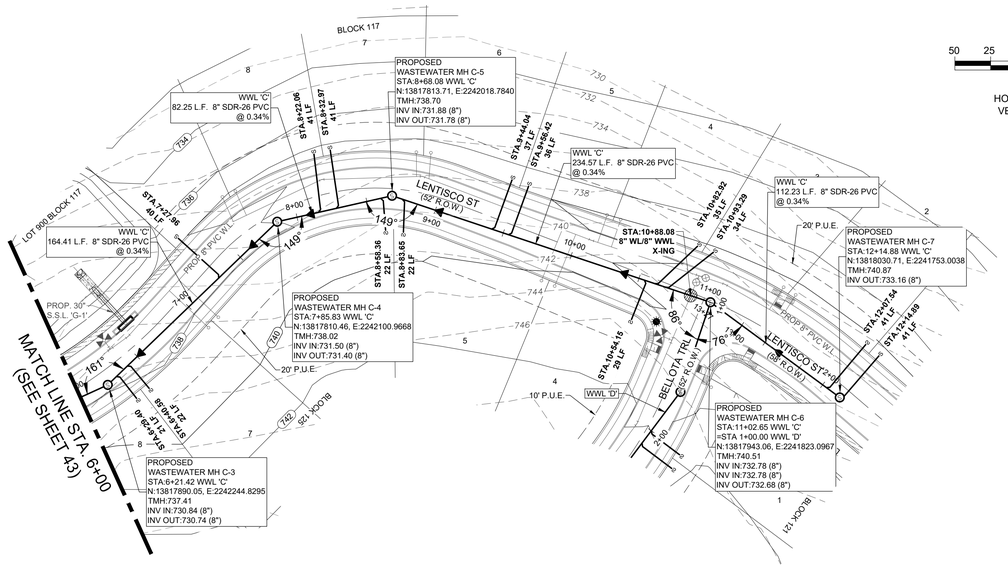

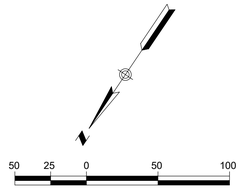

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

PROPOSED	EXISTING	
MH	MH	SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT
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		DUAL WATER SERVICE
		FIRE HYDRANT
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G	G	GAS LINE
D	D	STORM SEWER MANHOLE
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		STREET LIGHT (100 WATT LED)
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		GUY WIRE
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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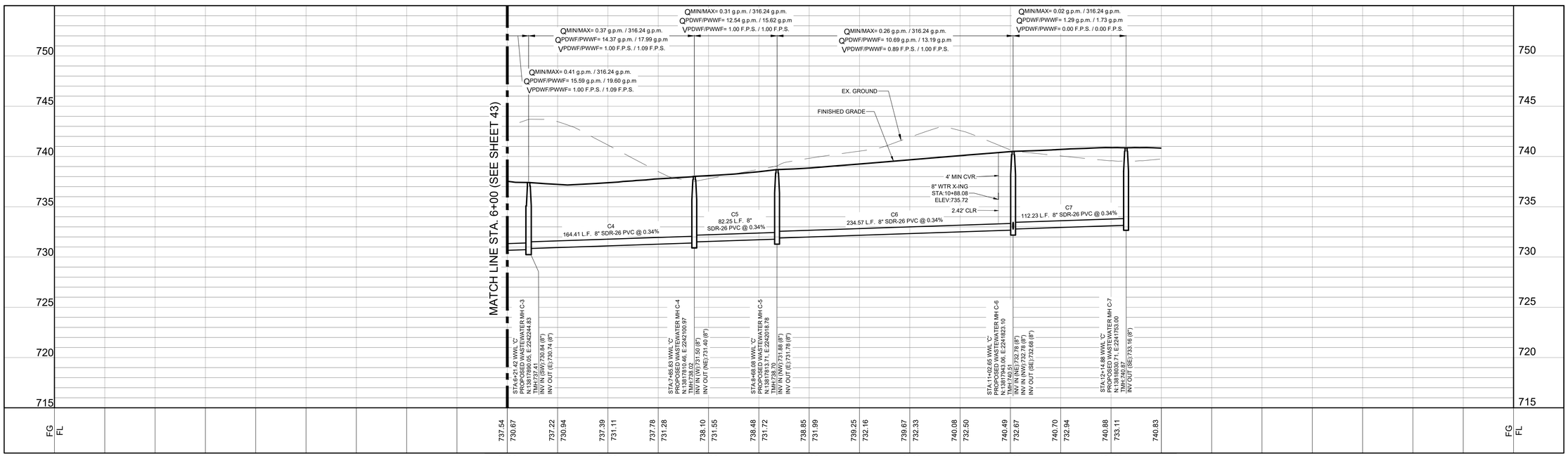
WASTEWATER LINE 'C' STA. 6+00 TO END



FOR PERMIT

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 44

04/11/2024
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
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TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 44 OF 60 SHEETS

VERAMENDI PRECINCT 19 UNIT 1

WASTEWATER LINE 'C' PLAN & PROFILE STA. 6+00 TO END

K:\SA3856.ADA Properties\Civil\01 Veramendi Precinct 19-1\Civil Site Development Plans\DWG-Sheets\sh_WWL 'C' P&P.dwg
Layout: 44 PLAN & PROFILE
Last Modified: Feb. 15, 24 - 15:49
Last Modified By: Priscilla Flores

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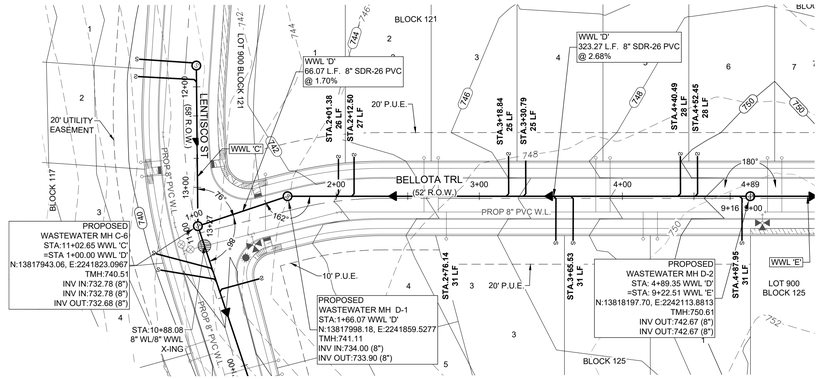
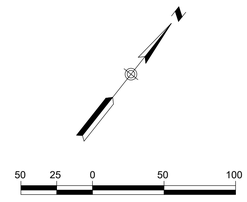




LEGEND

PROPOSED	EXISTING	
SS	SS	SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		WATER METER
GV	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
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
TMH		TOP OF MANHOLE
EX.	EX.	EXISTING
P.U.E.		PUBLIC UTILITY EASEMENT
ESM'T.		EASEMENT
VOL		VOLUME
PG		PAGE
		UTILITY X-ING

TRENCH EXCAVATION SAFETY PROTECTION

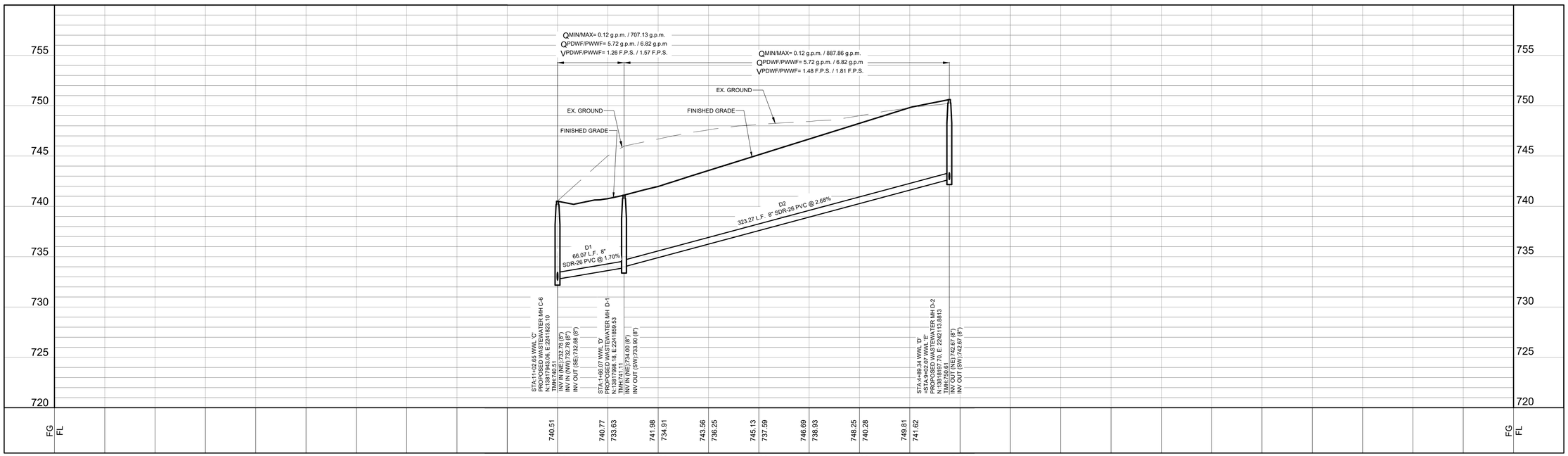
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

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 'D' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: ss_HWL 'D' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
4/11/2024

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

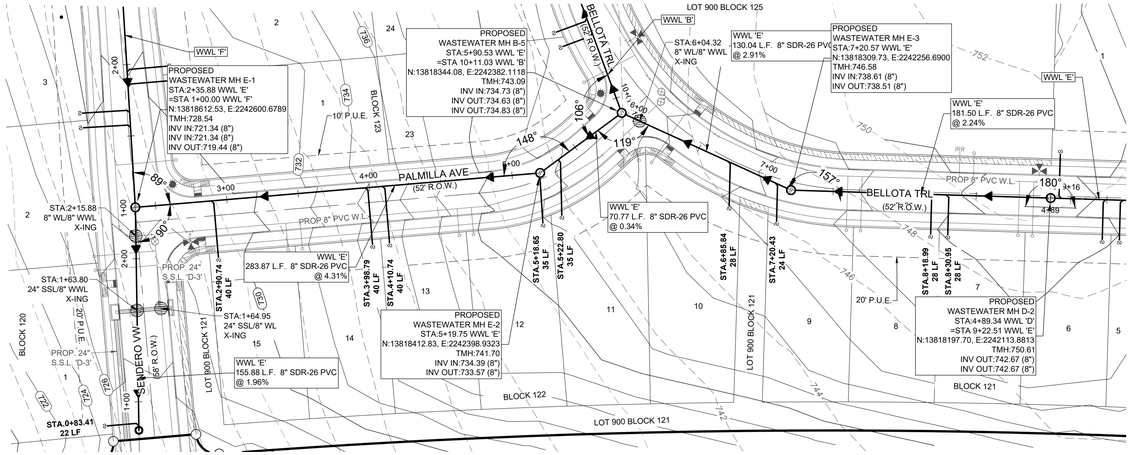
JOB NUMBER: SA3856.0401

SHEET NO. 45 OF 60 SHEETS

K:\SA3856.ADA Properties\Civil\01 Veramendi Precinct 19-1\Y4\06 Site Development Plans\DWG-Sheets\ss_HWL 'D' P&P.dwg
Last Modified: Feb. 15, 24 - 15:54
Last Modified: Apr. 11, 24 - 13:31:45

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
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
		CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		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
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM't.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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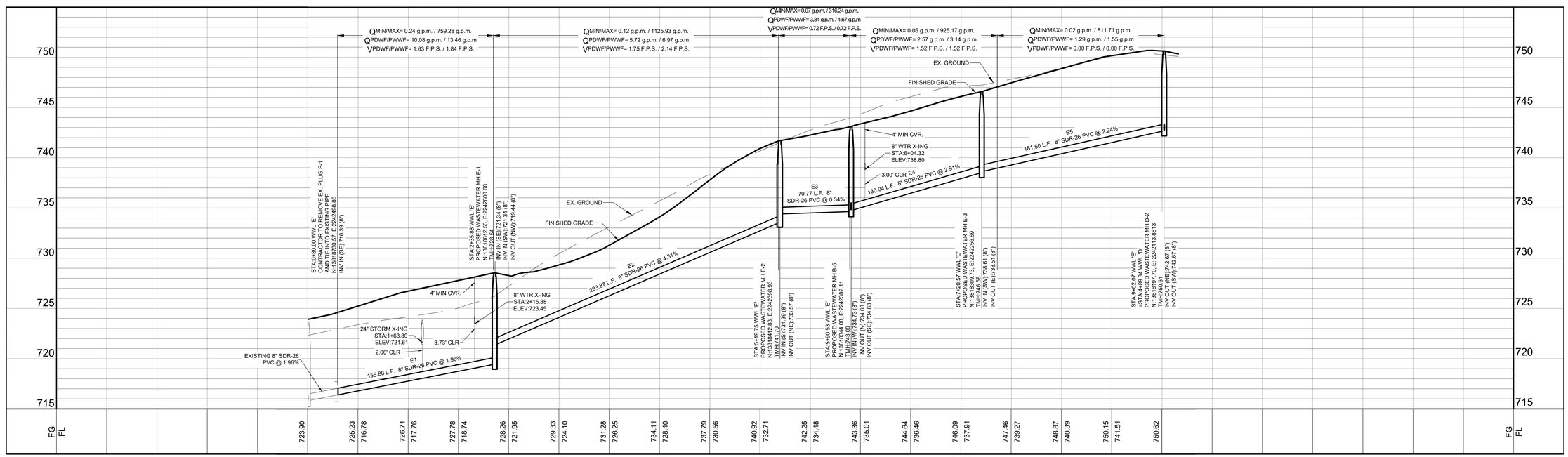
811 Know what's below. Call before you dig.

WASTEWATER LINE 'E' STA. 1+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.

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VERAMENDI PRECINCT 19 UNIT 1

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

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sn_LWL 'E' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
04/11/2024

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

JOB NUMBER: SA3856.0401

SHEET NO. 46 OF 60 SHEETS

FOR PERMIT

K:\SA3856.ADA Properties\Civil\01 Veramendi Precinct 19-1\1\Civil Site Development Plans\DWG-Sheets\sn_LWL 'E' P&P.dwg
Last Modified: Feb. 15, 24 - 15:55
Last Modified By: ng.ada
Last Modified: Mar. 11, 24 - 14:30:44

GENERAL NOTES:

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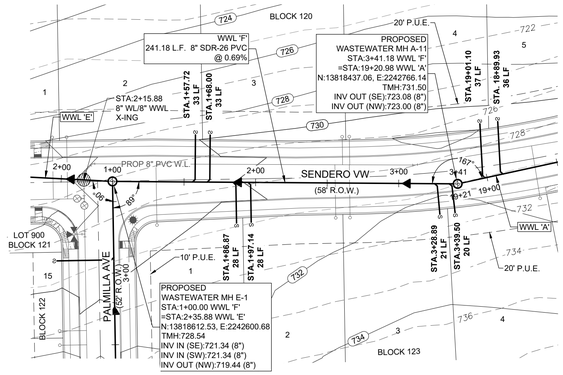

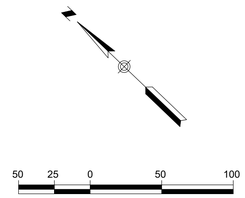

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

PROPOSED	EXISTING	
SSMH	SSMH	SANITARY SEWER MANHOLE
WW	WW	SANITARY SEWER LINE
		4" CONDUIT FOR WATER SERVICE
WL	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		DUAL WATER SERVICE
		FIRE HYDRANT
		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
OHE	OHE	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	P.U.E.	PUBLIC UTILITY EASEMENT
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

VERAMENDI PRECINCT 19 UNIT 1

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

NO.	DESCRIPTION	BY	DATE

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_WWL 'F' P&P.dwg

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.

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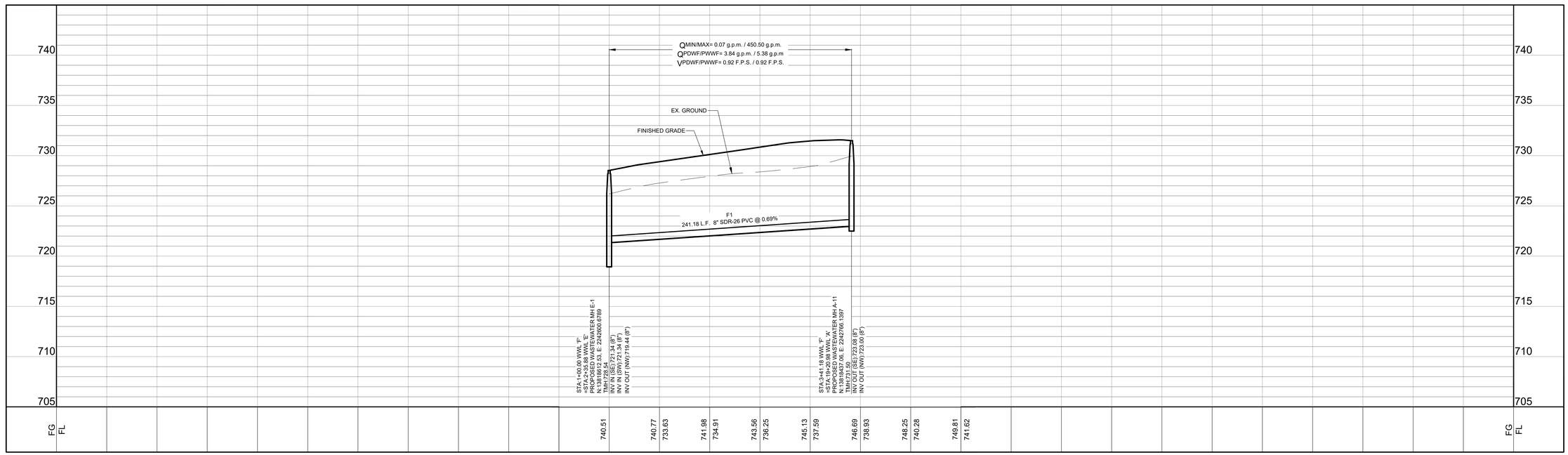
WASTEWATER LINE 'F' STA. 1+00 TO END



FOR PERMIT

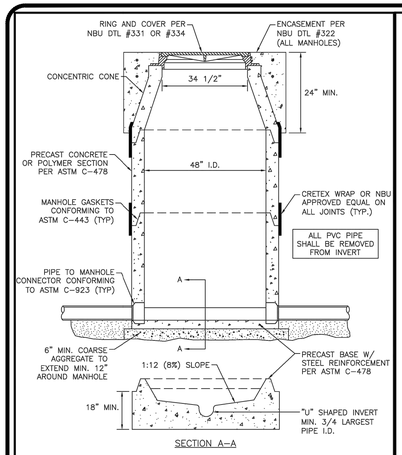
04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

JOB NUMBER: SA3856.0401

SHEET NO. 47 OF 60 SHEETS

K:\SA3856 JDA Properties\Q400 Veramendi Precinct 19-1\Y426 Site Development Plans\DWG-Sheets\sh_WWL 'F' P&P.dwg
Last Modified: Feb. 15, 24 - 15:58
Last Modified: Apr. 11, 24 - 13:33:43

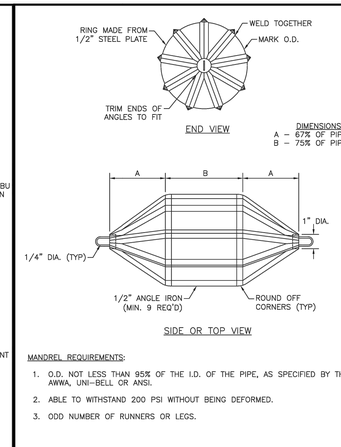


SECTION A–A

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

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 328

WASTEWATER MANHOLE ON PRECAST BASE



SIDE OR TOP VIEW

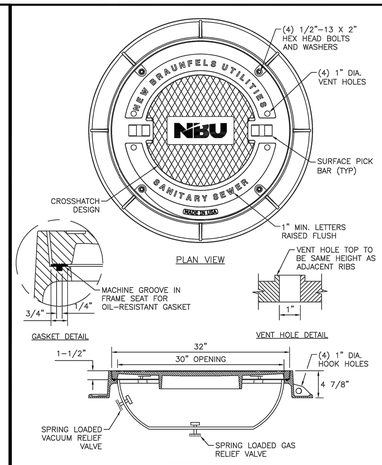
MANDREL REQUIREMENTS:

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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 350

GO, NO GO DEFLECTION TESTING MANDREL

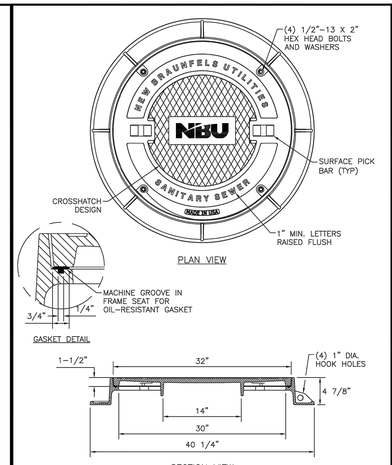


SECTION VIEW

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

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 334

VENTED SANITARY SEWER MANHOLE COVER

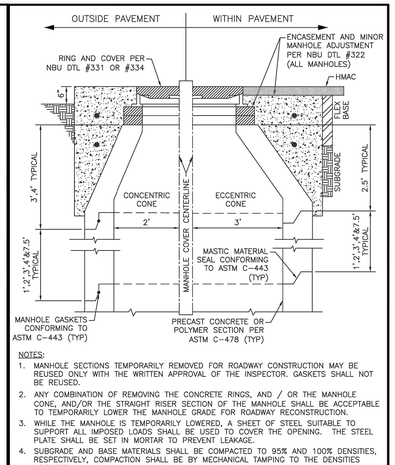


SECTION VIEW

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

NBU	DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING:	UPDATED: 5-5-03	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO.: 331

SANITARY SEWER MANHOLE COVER

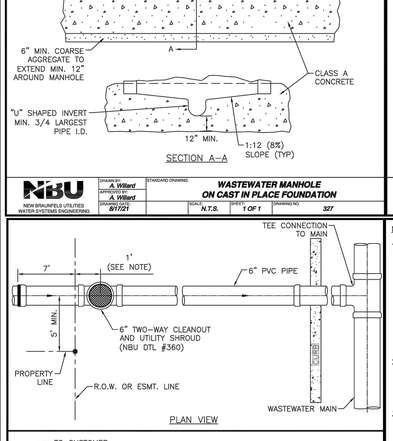


NOTES:

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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 321

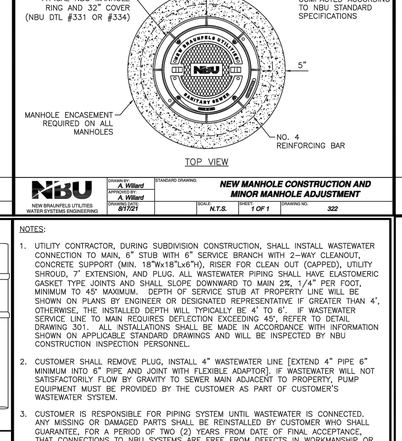
MAJOR MANHOLE ADJUSTMENT



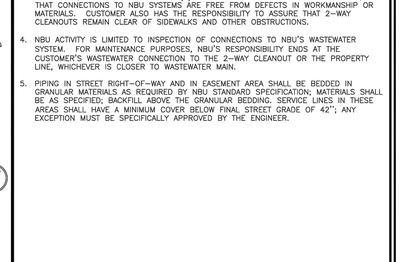
SECTION A–A

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 327

WASTEWATER MANHOLE ON CAST IN PLACE FOUNDATION



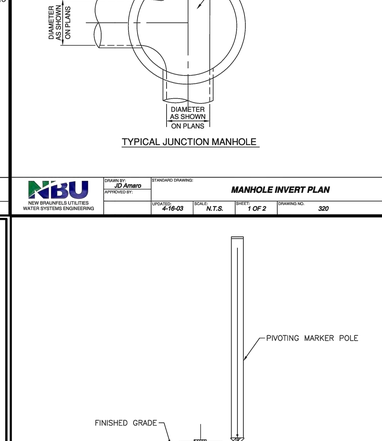
SECTION VIEW



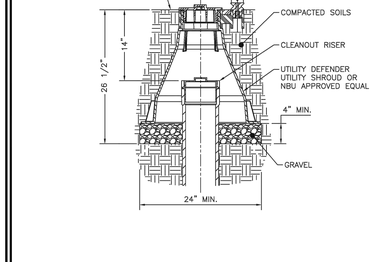
TOP VIEW

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 322

NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENT



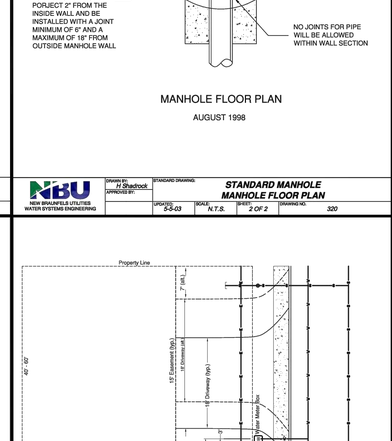
TYPICAL MANHOLE AT ANGLE IN SEWER



TYPICAL JUNCTION MANHOLE

NBU	DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING:	UPDATED: 4-16-03	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO.: 320

MANHOLE INVERT PLAN

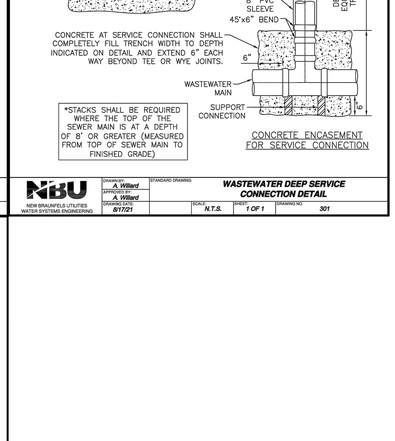


MANHOLE FLOOR PLAN

AUGUST 1998

NBU	DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING:	UPDATED: 5-5-03	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO.: 320

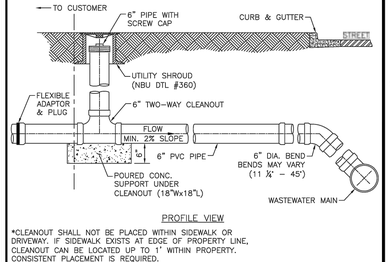
STANDARD MANHOLE MANHOLE FLOOR PLAN



CONCRETE ENCASEMENT FOR SERVICE CONNECTION

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 301

WASTEWATER DEEP SERVICE CONNECTION DETAIL



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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO.: 302

SINGLE WASTEWATER SERVICE CONNECTION DETAIL

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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO.: 302

SINGLE WASTEWATER SERVICE CONNECTION DETAIL

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 360

UTILITY SHROUD FOR SEWER CLEANOUT ASSEMBLY

Property Line
7' (Min.)
40'-00"
15' Easement (typ)
15' Driveway (typ)
Water Meter Box
Property Line
42'-00"
18' Easement (typ)
NOTES:
a. All residential wastewater service laterals built with this standard shall be installed and cleanouts shall be installed per (3) foot outside of the property line. Cleanouts shall be installed with shovel flow (4) feet past the underground electrical service, gas service, and water service.
b. No meter boxes or driveways to be set in sidewalks. Meter boxes or driveways or cleanouts set in driveways or sidewalks will be replaced at the customer's or builder's expense.
c. Cleanouts to be required at the location of the capped sewer stub.
Property Line
Property Line
Property Line
Property Line
Water Meter
2' Wide
Property Line
Transformer / Pull Box / Light Pole / Etc.
2'-6"
2'-6"
5'-0"
5'-0"
2'-6"
2'-6"
5'-0"
5'-0"
2'-6"
2'-6"
5'-0"
5'-0"

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)(iii) 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 (e) (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 (e).
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 19 UNIT 1
WASTEWATER DETAILS (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Wastewater Details.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

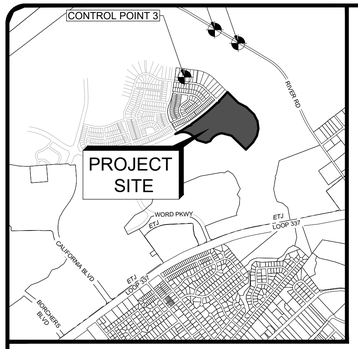
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

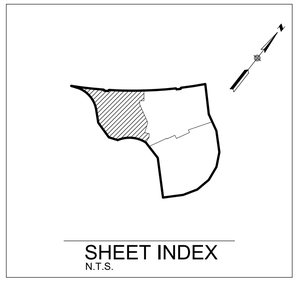
SHEET NO. 49 OF 60 SHEETS

FOR PERMIT

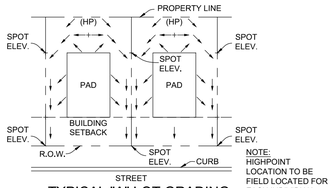
K:\SA\3856.ASA Properties\0401 Veramendi Precinct 19-71\429 Site Development Plans\[PWD-Sheet]\sh_Wastewater Details.dwg
Xrefs: 3856_ASA Properties
Last Modified: Mar 22, 24 - 14:25
Last Plotted: Mar 11, 24 - 13:32



LOCATION MAP
SCALE: 1" = 2000'

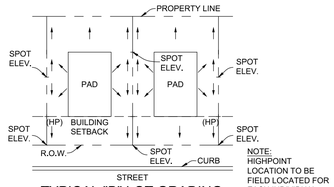


SHEET INDEX
N.T.S.



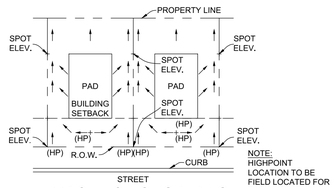
TYPICAL "A" LOT GRADING
N.T.S.

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



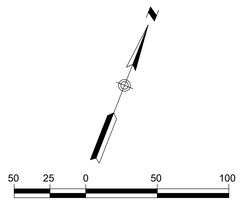
TYPICAL "B" LOT GRADING
N.T.S.

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

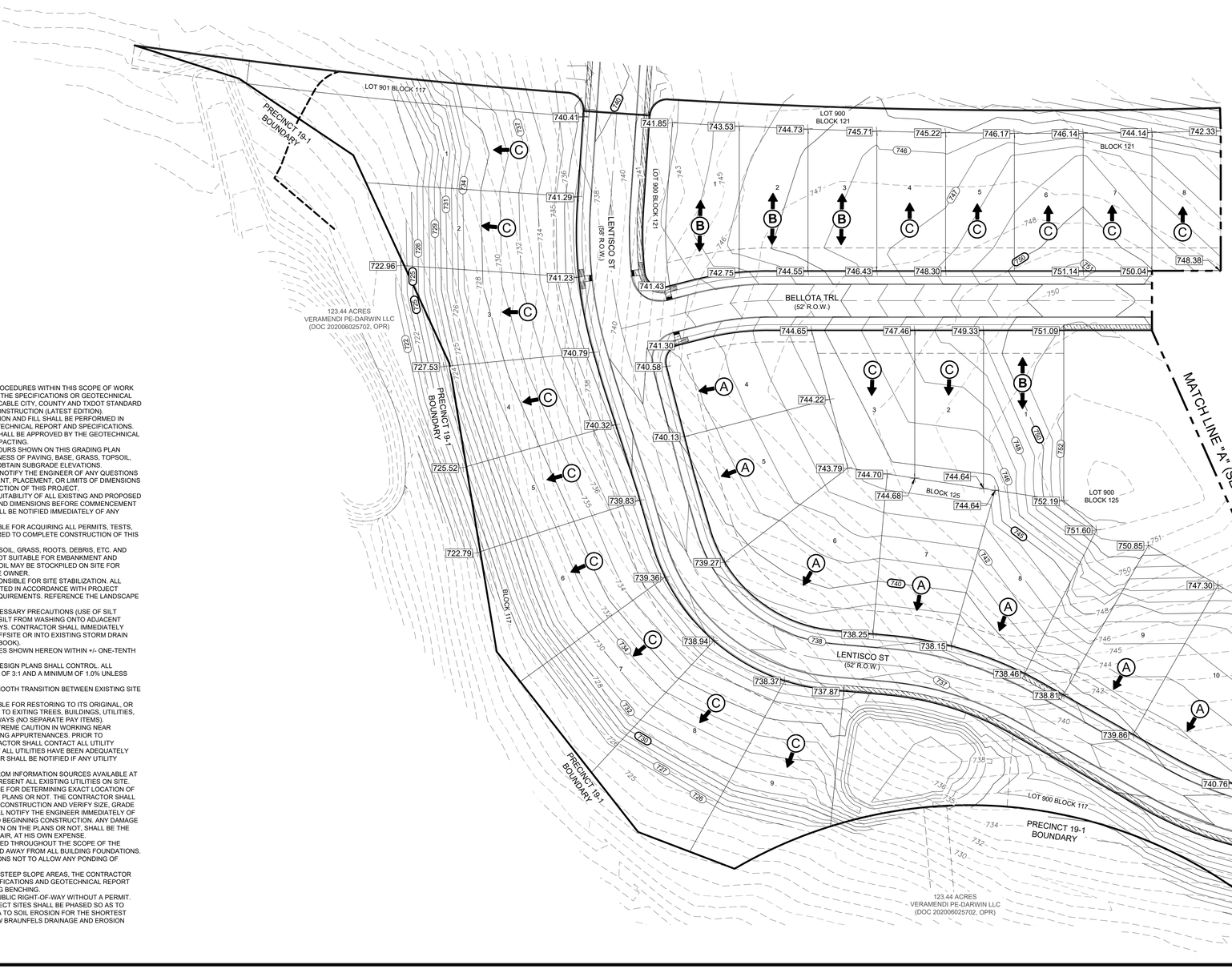


TYPICAL "C" LOT GRADING
N.T.S.

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



SCALE IN FEET
SCALE: 1"=50'



LEGEND

PROPOSED	EXISTING	
800	800	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
706.41	EG: 801.33	GROUND ELEVATION
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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
		SIGNIFICANT TREE PRESERVED
		HERITAGE TREE PRESERVED

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

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

GRADING PLAN (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Grading.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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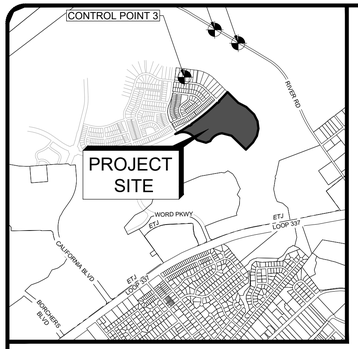
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

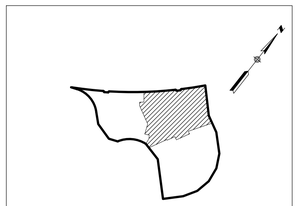
JOB NUMBER: SA3856.0401

SHEET NO. 50 OF 60 SHEETS

K:\SA3856 HZA Properties\0401 Veramendi Precinct 19-1\12d Site Development Plans\GMD-Sheets\sh_Grading.dwg
Plotted: Mar. 27, 24 - 15:30
Last Modified: Mar. 27, 24 - 15:30
Xref Dependencies: Xp: 24 - 24 - 24 - 24 - 24 - 24



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
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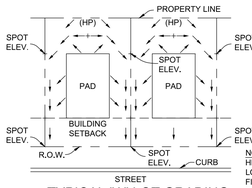

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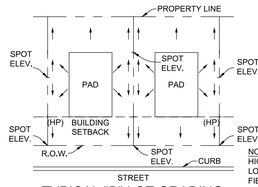

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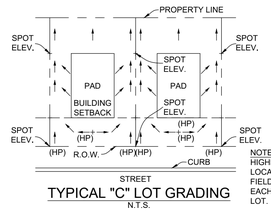

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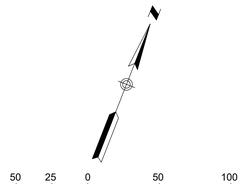

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LEGEND

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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

GRADING PLAN (SHEET 2 OF 3)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 11/30/2023
DESIGNED BY: KG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Grading.dwg

04/11/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
9830 Colonnade Blvd
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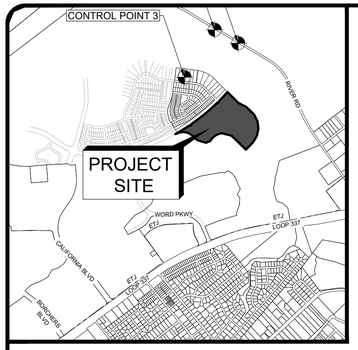
LJA.COM
TBPE No. F-1386

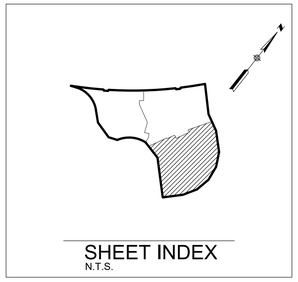
JOB NUMBER: SA3856.0401

SHEET NO. 51 OF 60 SHEETS

K:\SA3856.EGA Properties\Civil\01 Veramendi Precinct 19-1\126 Site Development Plans\DWG-Sheets\sh_Grading.dwg
Xrefs: SPCS_Feet.dwt
Last Modified: Mar. 27, 24 – 15:30
Last Plotted: Mar. 27, 24 – 15:30



LOCATION MAP
SCALE: 1" = 2000'



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N.T.S.

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

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N.T.S.

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

FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

GRADING PLAN (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/30/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Grading.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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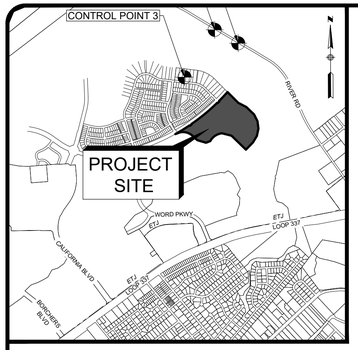
TBPE No. F-1386

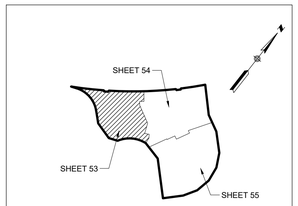
JOB NUMBER: SA3856.0401

SHEET NO. 52 OF 60 SHEETS

P:\SA3856_KSA Properties\04Ph Veramendi Precinct 19-1\426 Site Development Plans\GMC-Sheets\sh_Grading.dwg
User: Priscilla Flores
Last Modified: Mar. 27, 24 - 15:50
Plot Date/Time: Apr. 11, 24 - 13:42:45



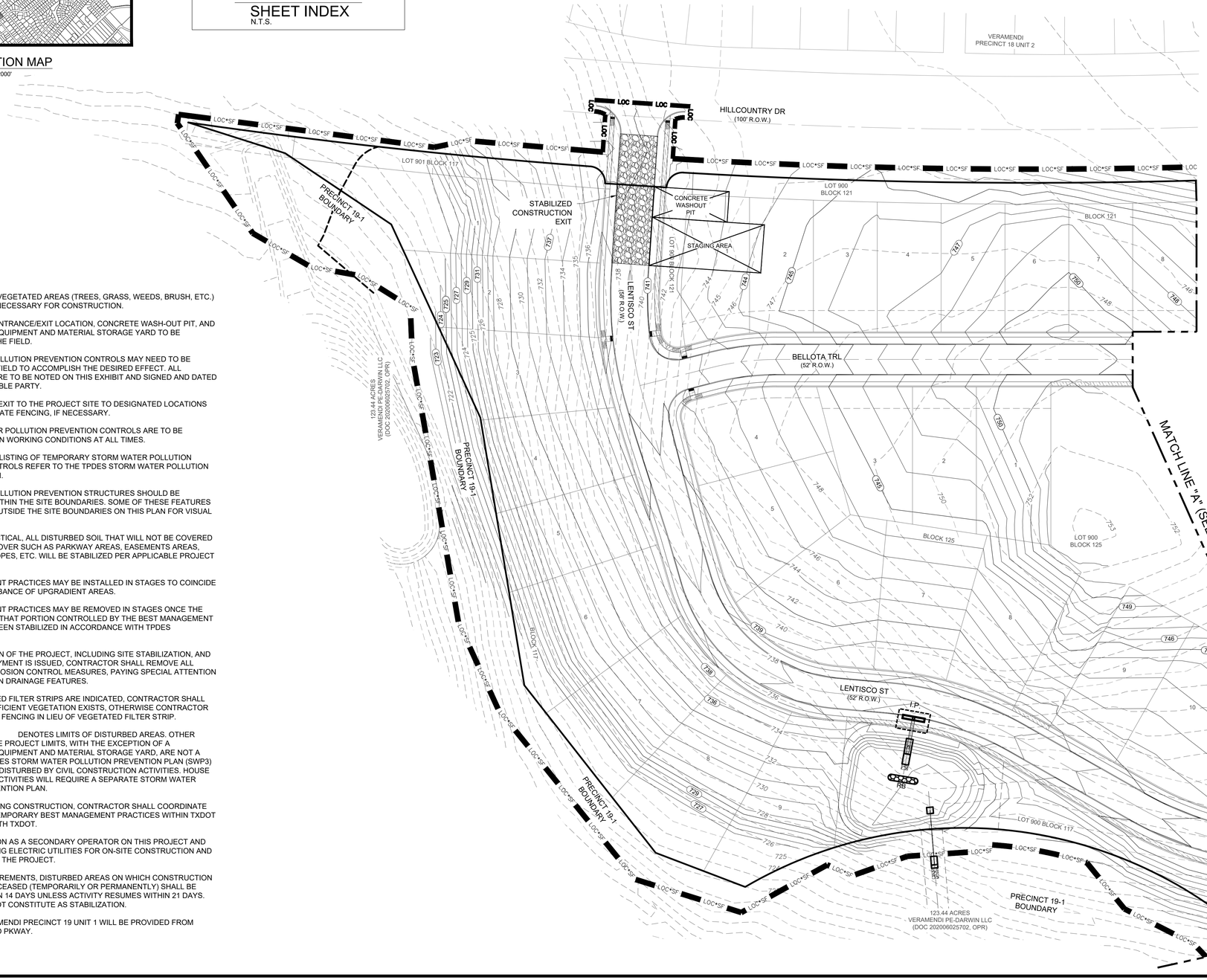
LOCATION MAP
SCALE: 1" = 2000'

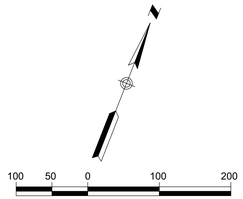


SHEET INDEX
N.T.S.

SWPPP MODIFICATIONS

DATE	SIGNATURE	MODIFICATIONS





SCALE IN FEET
SCALE: 1"=50'

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
		FLOODPLAIN
SF		LIMITS OF CONSTRUCTION
LOC/SF		SILT FENCE
TP		LIMITS OF CONST./SILT FENCE
IP		TREE PROTECTION
RB		INLET PROTECTION
SCE		ROCK BERM
		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		PORTABLE TOILET
		TPDES CONST. SITE NOTICE
		FUELING POINT
		TREE TO REMAIN
		TREE TO BE REMOVED
630	630	CONTOURS
ST	ST	STORM SEWER LINE
ST	WW	WASTEWATER LINE
ST	WL	WATER LINE
I.P.		INLET PROTECTION
TP		TREE PROTECTION

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.

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 19 UNIT 1

STORM WATER POLLUTION PREVENTION PLAN (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/9/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SWPPP.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 53 OF 60 SHEETS

K:\SA3856 LJA Properties\04\01 Veramendi Precinct 19-1\430 Site Development Plans\GMC-Sheets\sh_SWPPP.dwg
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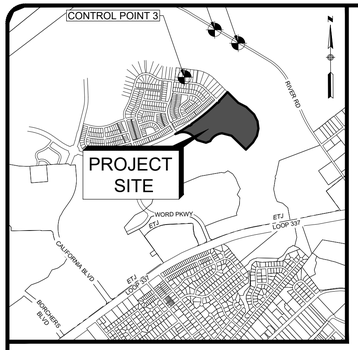
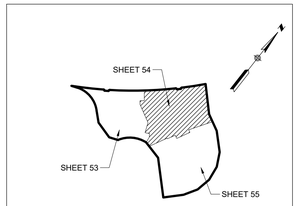
Last Modified: Mar. 27, 24 - 10:33
Xref Dependencies: No Xrefs - 11:30:44



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.



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

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
		FLOODPLAIN
		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
RB		ROCK BERM
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		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		PORTABLE TOILET
		TPDES CONST. SITE NOTICE
		FUELING POINT
		TREE TO REMAIN
		TREE TO BE REMOVED
630	630	CONTOURS
ST	ST	STORM SEWER LINE
ST	WW	WASTEWATER LINE
ST	WL	WATER LINE
I.P.		INLET PROTECTION
TP		TREE PROTECTION

SWPPP MODIFICATIONS

DATE	SIGNATURE	MODIFICATIONS

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.

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VERAMENDI PRECINCT 19 UNIT 1

STORMWATER POLLUTION PREVENTION PLAN (SHEET 2 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/9/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SWPPP.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
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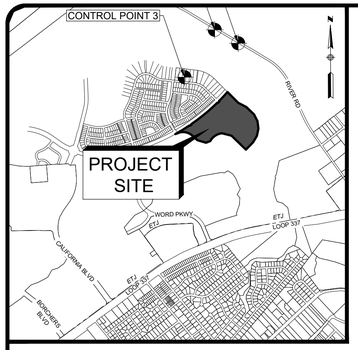
TBPE No. F-1386

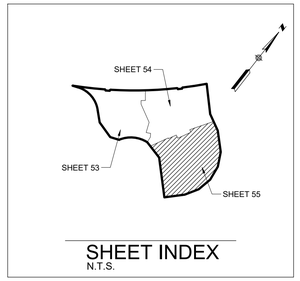
JOB NUMBER: SA3856.0401

SHEET NO. 54 OF 60 SHEETS

FOR PERMIT



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
N.T.S.

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
		FLOODPLAIN
		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
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RB		ROCK BERM
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		PORTABLE TOILET
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630	630	CONTOURS
ST	ST	STORM SEWER LINE
ST	WW	WASTEWATER LINE
ST	WL	WATER LINE
I.P.		INLET PROTECTION
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SWPPP MODIFICATIONS

DATE	SIGNATURE	MODIFICATIONS

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FOR PERMIT

VERAMENDI PRECINCT 19 UNIT 1

STORMWATER POLLUTION PREVENTION PLAN
(SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 11/8/2023
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SWPPP.dwg

04/11/2024
STATE OF TEXAS
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TBPE No. F-1386

JOB NUMBER:
SA3856.0401

SHEET NO.
55
OF 60 SHEETS

K:\SA3856.401 Properties\0401 Veramendi Precinct 19-1\426 Site Development Plans\SWPP\Sheets\sh_SWPPP.dwg
Last Modified: Mar 27, 24 - 15:33
Last Plotted: Mar 31, 24 - 14:30

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/FT', 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

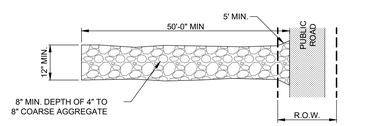
1. ALL AGGREGATE SHOULD BE AT LEAST 3 INCHES IN DIAMETER AND SHOULD NOT EXCEED A VOLUME OF 0.5 CUBIC FOOT.
2. EARTH EMBANKMENT: PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF 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 SHOULD BE 3:1 (H:V). MINIMUM WIDTH OF THE EMBANKMENT AT THE TOP SHALL BE 8 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

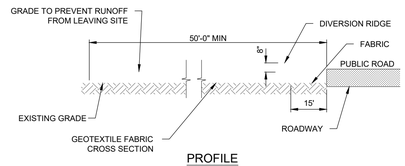
1. THE DRAINAGE AREA FOR A SEDIMENT BASIN SHALL BE LESS THAN 100 ACRES.
2. THE BASIN SHOULD INCLUDE A PERMANENT STAKE TO INDICATE THE SEDIMENT LEVEL IN THE POOL AND MARKED TO INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME (NOT THE TOP OF THE STAKE). SEDIMENT SHALL BE REMOVED WHEN SEDIMENT 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.



PLAN VIEW



PROFILE

56.01 STABILIZED CONSTRUCTION EXIT

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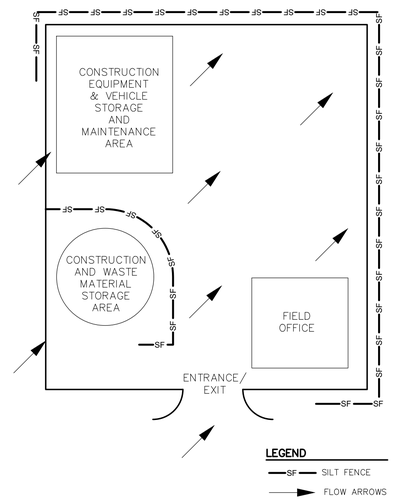
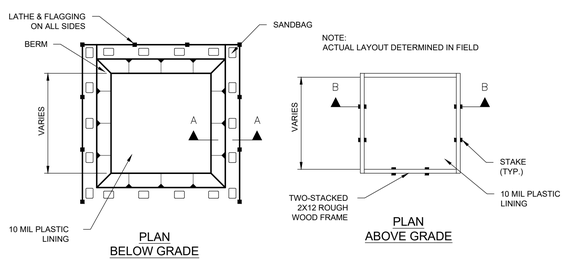
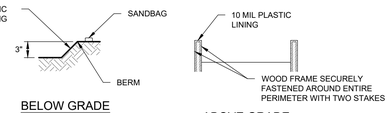


CONSTRUCTION STAGING AREA

N.T.S.





56.02 CONCRETE WASHOUT AREA

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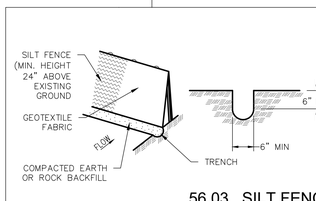

56.03 SILT FENCE

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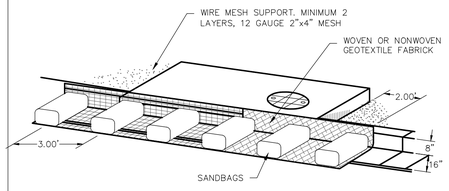
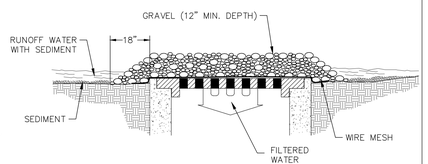


CURB INLET PROTECTION

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.



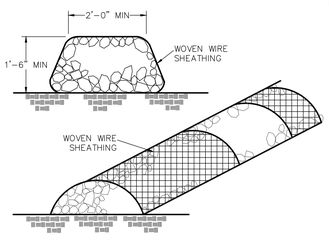
GRATE INLET PROTECTION

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.

56.04 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.

56.05 ROCK BERM

N.T.S.

VERAMENDI PRECINCT 19 UNIT 1

SWPPP DETAILS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 4/11/2024
DESIGNED BY: KG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SWPPP Details.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
4/11/2024

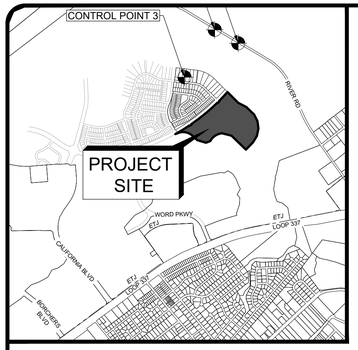
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0401

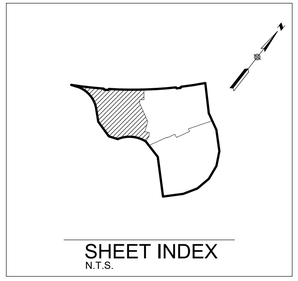
SHEET NO. 56 OF 60 SHEETS

FOR PERMIT

K:\SA3856.ASA Properties\Civil\01 Veramendi Precinct 19-1\1-Civil 3D Site Development Plans\1)Civil-Sheets\sh_SWPPP Details.dwg
Last Modified: Feb. 07, 24 - 14:33
Last Plotted: Apr. 11, 24 - 14:37:51



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
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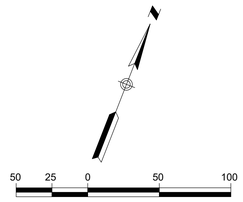

LEGEND

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



NOTES

1. ALL TREE PROTECTION FENCING SHALL CONSIST OF LEVEL I FENCING PROTECTION UNLESS OTHERWISE NOTED.
2. NO CONSTRUCTION SHALL OCCUR WITHIN THE ONE HALF (1/2) ROOT PROTECTION ZONE.
3. REFER TO SHEET 24 FOR PROTECTION DETAILS

VERAMENDI PRECINCT 19 UNIT 1

TREE PRESERVATION PLAN (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/27/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Tree Preservation Plan.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
04/11/2024

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9830 Colonnade Blvd
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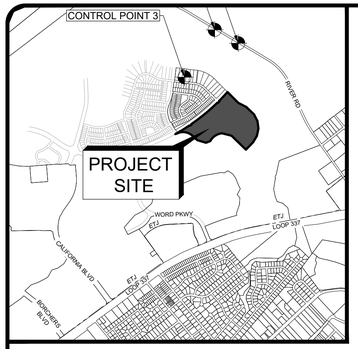
TBPE No. F-1386

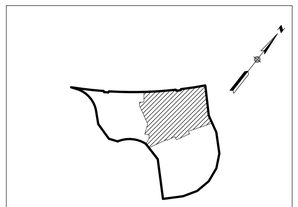
JOB NUMBER: SA3856.0401

SHEET NO. 57 OF 60 SHEETS

FOR PERMIT



LOCATION MAP
SCALE: 1" = 2000'



SHEET INDEX
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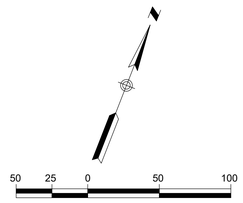

SCALE IN FEET
SCALE: 1"=50'

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

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 24 FOR PROTECTION DETAILS

VERAMENDI PRECINCT 19 UNIT 1

TREE PRESERVATION PLAN
(SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/27/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: 4A_Tree Preservation Plan.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109574
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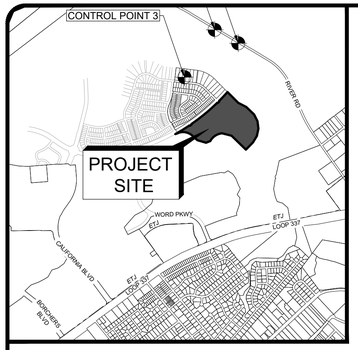
TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 58 OF 60 SHEETS

FOR PERMIT

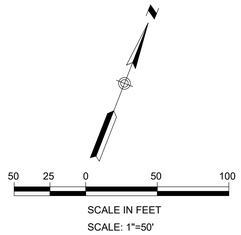
K:\SA3856.401 Properties\401 Veramendi Precinct 19-1\426 Site Development Plans\GMD-Sheets\4A_Tree Preservation Plan.dwg
User: jessica.ramirez
Last Modified: Mar. 27, 24 - 17:12
Plot Style: Plot.ctb Plot Scale: 1:1 Plot By: JR



LOCATION MAP
SCALE: 1" = 2000'

SHEET INDEX
N.T.S.





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

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 24 FOR PROTECTION DETAILS

VERAMENDI PRECINCT 19 UNIT 1

TREE PRESERVATION PLAN (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/27/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Tree Preservation Plan.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
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TBPE No. F-1386

JOB NUMBER: SA3856.0401

SHEET NO. 59 OF 60 SHEETS

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

CONSTRUCTION DOCUMENT SET

NEW BRAUNFELS, TEXAS 78132

COMAL COUNTY

NBU #: W-236395 / WW-236396

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

REVISIONS			
NO.	DESCRIPTION	BY	DATE

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.

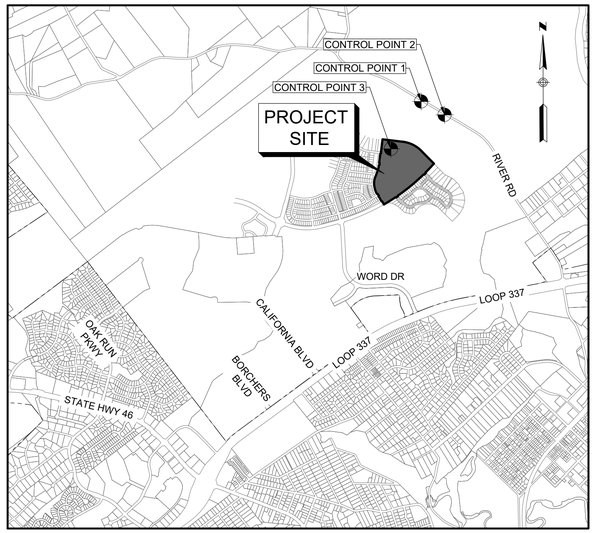
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 18.

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

THIS INFORMATION PROVIDED BY LJA SURVEYING.

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.



LOCATION MAP
1" = 2000'

SUBMITTAL DATE: NOVEMBER 2023

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

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024
Priscilla G Flores

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

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~~

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.

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

X:\SA3856 sas prop\eta\GM02 vet\mendi precinct 18-2\426 site development plans\dwg-sheets\gn_General Notes.dwg
Plotted: Mar. 20, 24 – 10:10
Last Modified: Feb. 23, 24 – 10:10
Xref Dependencies: Mar. 20, 24 – 10:10

VERAMENDI PRECINCT 18 UNIT 2

GENERAL NOTES

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_General Notes.dwg

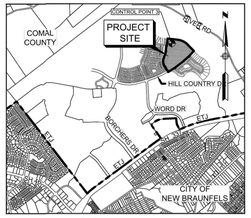
STATE OF TEXAS
PRISCILLA G. FLORES
103874
LICENSED
PROFESSIONAL ENGINEER
3-20-2024

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

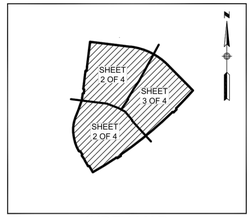
SHEET NO. 2 OF 70 SHEETS

FOR PERMIT



LOCATION MAP

NOT TO SCALE



INDEX MAP

NOT TO SCALE

CERTIFICATE OF APPROVAL

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

_____
PLANNING COMMISSION CHAIRPERSON

APPROVED FOR ACCEPTANCE

_____ _____
DIRECTOR OF PLANNING

_____ _____
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 _____, 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

_____
JACOB GOEBEL
REGISTERED PROFESSIONAL LAND SURVEYOR #XXXX
LJA ENGINEERING, INC.
9830 COLONNADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 78230

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 WITH THE TERMS AND CONDITIONS IN THE EASEMENT, MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO NEW BRAUNFELS UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF THE CITY OF NEW BRAUNFELS OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
2. UTILITIES WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE BUILDING STRUCTURE ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
3. UTILITIES SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARD AND METER LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
4. EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE OWNER/DEVELOPER'S EXPENSE.
5. DO NOT COMBINE ANY NEW UTILITY EASEMENTS (UE) WITH DRAINAGE EASEMENTS (DE) OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS (UE) WITHOUT WRITTEN APPROVAL FROM NEW BRAUNFELS UTILITIES.
6. NBU IS NOT RESPONSIBLE FOR LANDSCAPING OR IRRIGATION IN UE/LE.

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)

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 OWNERS 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 SECTONS 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

A SIX (6) FOOT WIDE SIDE WALK IS REQUIRED TO BE CONSTRUCTED ON THE SOUTH SIDE OF HILL COUNTRY DRIVE.

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: DECEMBER 04, 2023

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
14765 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

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N45° 17' 29"E	58.00
L2	N55° 42' 46"E	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	S32° 54' 04"E	10.87
L8	S14° 31' 39"E	74.48
L9	S21° 08' 32"W	66.93
L10	S19° 25' 26"W	100.04
L11	S21° 08' 32"W	16.41
L12	S7° 00' 00"W	56.12
L13	N7° 00' 00"E	52.00
L14	N7° 00' 00"E	52.00
L15	S44° 42' 31"E	105.96
L16	S46° 25' 37"E	100.04
L17	S44° 42' 31"E	105.96
L18	S42° 59' 25"E	100.04
L19	S45° 17' 29"W	51.43
L20	S48° 17' 29"W	88.76
L21	N41° 42' 31"W	136.09
L22	S44° 42' 31"E	114.82
L23	N57° 05' 56"E	34.36
L24	N45° 17' 29"E	51.43
L25	S83° 00' 00"E	35.00
L26	S41° 42' 31"E	136.09
L27	S48° 17' 29"W	55.59
L28	S65° 54' 17"W	10.15
L29	N24° 05' 43"W	108.04
L30	N7° 00' 00"E	65.08
L31	N7° 00' 00"E	65.08
L32	N24° 05' 43"W	108.04

LINE TABLE		
LINE	DIRECTION	LENGTH
L33	N65° 54' 17"E	176.01
L34	S24° 05' 43"E	123.04
L35	S11° 41' 08"W	163.34
L36	S7° 00' 00"W	163.77
L38	N7° 00' 00"E	163.77
L39	N11° 41' 08"E	163.34
L40	N24° 05' 43"W	123.04
L42	N57° 05' 56"E	34.36
L43	N53° 17' 29"E	21.58
L45	S83° 45' 51"W	26.33
L46	S58° 08' 15"W	55.71
L47	N69° 04' 05"W	72.72
L48	N7° 00' 00"E	163.77
L49	N11° 41' 08"E	89.22
L50	N82° 57' 47"W	86.24
L51	N80° 09' 53"W	43.38
L52	N72° 26' 14"W	77.12
L53	N62° 32' 32"W	77.12
L54	N52° 38' 50"W	77.12
L55	N44° 43' 54"W	46.31
L56	N41° 42' 31"W	151.02
L57	N53° 17' 29"E	15.20
L58	S24° 05' 43"E	125.56
L59	N43° 06' 25"E	9.93
L60	N60° 54' 20"E	38.56
L61	S29° 07' 00"E	24.00
L62	S60° 54' 16"W	40.84
L63	N44° 42' 31"W	24.02

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	S89° 28' 56"E	21.13
C5	921.70	5550.00	9°30'55"	461.91	N50° 30' 07"E	920.64
C6	23.44	15.00	89°32'49"	14.88	N10° 29' 10"E	21.13
C7	23.44	15.00	89°32'49"	14.88	S79° 03' 39"E	21.13
C8	380.03	5550.00	3°55'24"	190.09	N58° 07' 38"E	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	S77° 54' 04"E	21.21
C13	102.94	321.00	18°22'26"	51.92	S23° 42' 52"E	102.50
C14	190.55	471.00	23°10'48"	96.60	S9° 33' 08"W	189.25
C15	190.55	471.00	23°10'48"	96.60	S9° 33' 08"W	189.25
C16	54.41	226.00	13°47'36"	27.34	N13° 53' 48"E	54.28
C17	23.56	15.00	90°00'00"	15.00	S52° 00' 00"W	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	351.53	526.00	38°17'29"	182.61	S63° 51' 16"E	345.03
C21	23.68	15.00	90°27'50"	15.12	S89° 56' 26"E	21.30
C22	335.18	5450.00	3°31'26"	167.64	N43° 03' 56"E	335.13

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
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	23.68	15.00	90°27'50"	15.12	S0° 31' 24"W	21.30
C29	1363.43	5450.00	14°20'01"	685.29	S52° 55' 20"W	1359.87
C30	72.85	474.00	8°48'22"	36.50	N61° 30' 06"E	72.78
C31	115.80	526.00	12°36'48"	58.13	N59° 35' 53"E	115.56
C32	220.44	2526.00	5°00'00"	110.29	N50° 47' 29"E	220.37
C33	106.08	2026.00	3°00'00"	53.05	N46° 47' 29"E	106.07
C34	23.56	15.00	90°00'00"	15.00	S89° 42' 31"E	21.21
C35	197.46	274.00	41°17'29"	103.24	S62° 21' 16"E	193.22
C36	23.56	15.00	90°00'00"	15.00	S3° 17' 29"W	21.21
C37	215.90	2474.00	5°00'00"	108.02	S50° 47' 29"W	215.83
C38	104.35	474.00	12°36'48"	52.39	S59° 35' 53"W	104.14
C39	23.56	15.00	90°00'00"	15.00	N69° 05' 43"W	21.21
C40	238.15	174.00	78°25'05"	141.96	N15° 06' 50"E	219.99
C41	124.72	151.00	47°19'23"	66.16	N30° 39' 41"E	121.20
C42	23.56	15.00	90°00'00"	15.00	N52° 00' 00"E	21.21
C43	23.56	15.00	90°00'00"	15.00	N38° 00' 00"W	21.21
C44	81.77	99.00	47°19'23"	43.38	N30° 39' 41"E	79.46

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C45	309.32	226.00	78°25'05"	184.38	N15° 06' 50"E	285.73
C46	23.56	15.00	90°00'00"	15.00	N20° 54' 17"E	21.21
C48	208.27	333.50	35°46'50"	107.66	S6° 12' 17"E	204.90
C49	66.44	812.50	4°41'08"	33.24	S9° 20' 34"W	66.43
C52	64.40	787.50	4°41'08"	32.22	N9° 20' 34"E	64.38
C53	223.88	358.50	35°46'50"	115.73	N6° 12' 17"W	220.26
C55	51.57	526.00	5°37'03"	25.81	N63° 05' 46"E	51.55
C56	101.99	2450.57	2°23'05"	51.00	N45° 00' 30"E	101.99
C57	48.08	2146.00	1°17'01"	24.04	N46° 52' 57"E	48.08
C58	16.92	3197.78	0°18'11"	8.46	N48° 18' 16"E	16.92
C59	98.28	2804.14	2°00'29"	49.14	N49° 45' 21"E	98.27
C60	115.52	2647.51	2°30'00"	57.77	N52° 02' 26"E	115.51
C61	142.21	646.00	12°36'48"	71.40	S59° 35' 53"W	141.93
C62	292.57	468.50	35°46'50"	151.23	S6° 12' 17"E	287.84
C63	54.18	677.50	4°34'55"	27.10	S9° 23' 40"W	54.16

SHEET 1 OF 3

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 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/21/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sb_PlatSheets.dwg

3/21/2024
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. 3

OF 70 SHEETS

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Plotted: Mar. 21, 24 - 10:36
Last Modified: Mar. 21, 24 - 10:36
Xref Name: Mar. 21, 24 - 9:52 AM

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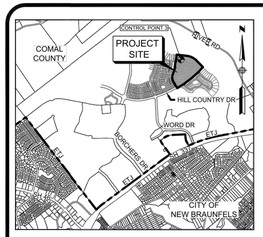
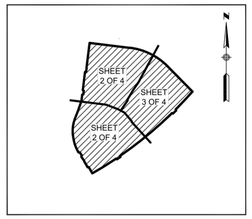
User: ngomez



LOCATION MAP
NOT TO SCALE



INDEX MAP
NOT TO SCALE

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.

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

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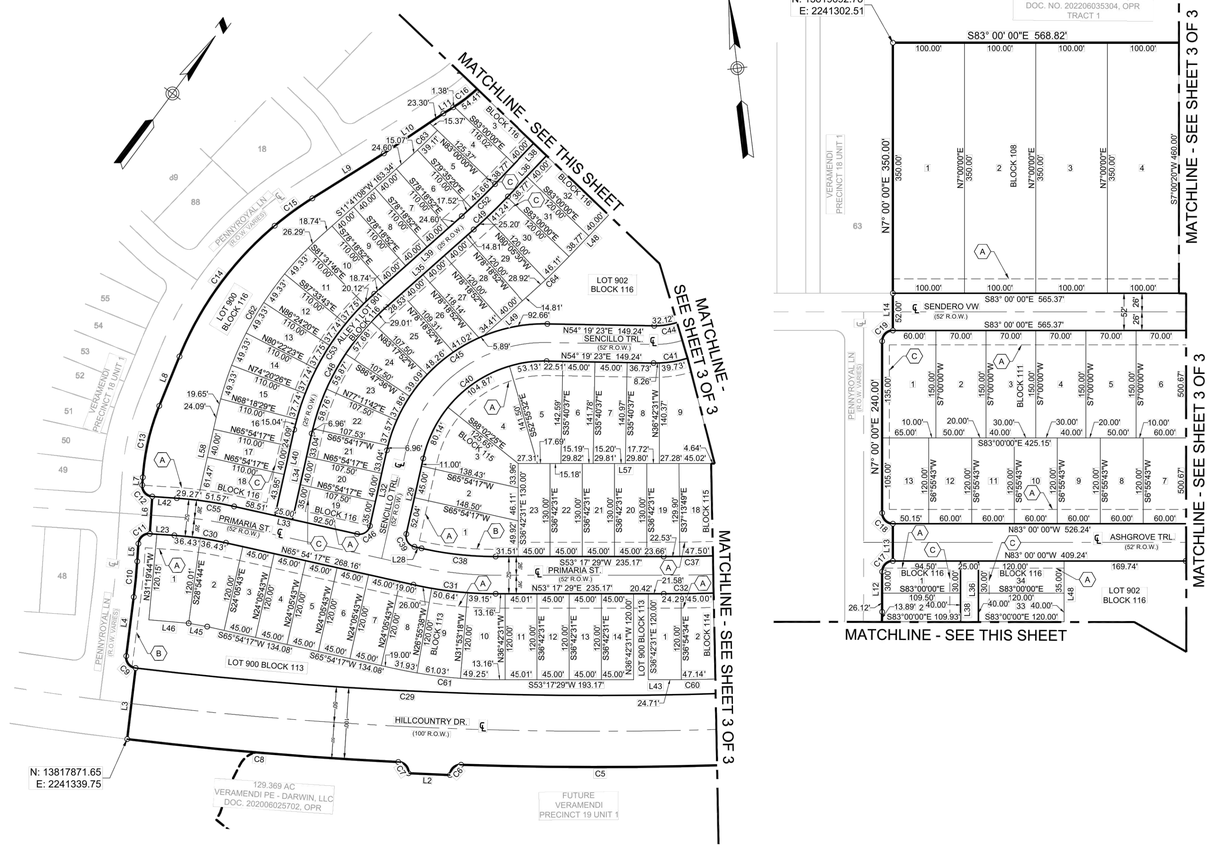
FRN-F-1386

DATE OF PREPARATION: DECEMBER 04, 2023

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



SHEET 2 OF 3

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User: mpoirier

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/21/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_PlatSheets.dwg

3/21/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
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Priscilla G Flores

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TBPE No. F-1386

JOB NUMBER:
SA3856.0402

SHEET NO.
4
OF 70 SHEETS

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

FOR PERMIT

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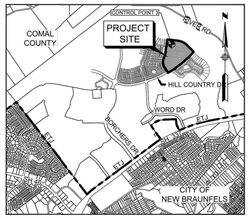
User: mpoirier
Last Modified: Mar. 21, 24 – 10:36
File Name: sh_PlatSheets.dwg

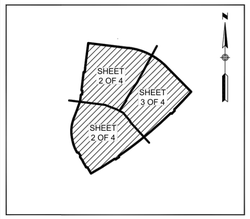
VERAMENDI PRECINCT 18 UNIT 2
PLAT (SHEET 2 OF 3)

SUBDIVISION PLAT
OF
VERAMENDI PRECINCT 18 UNIT 2

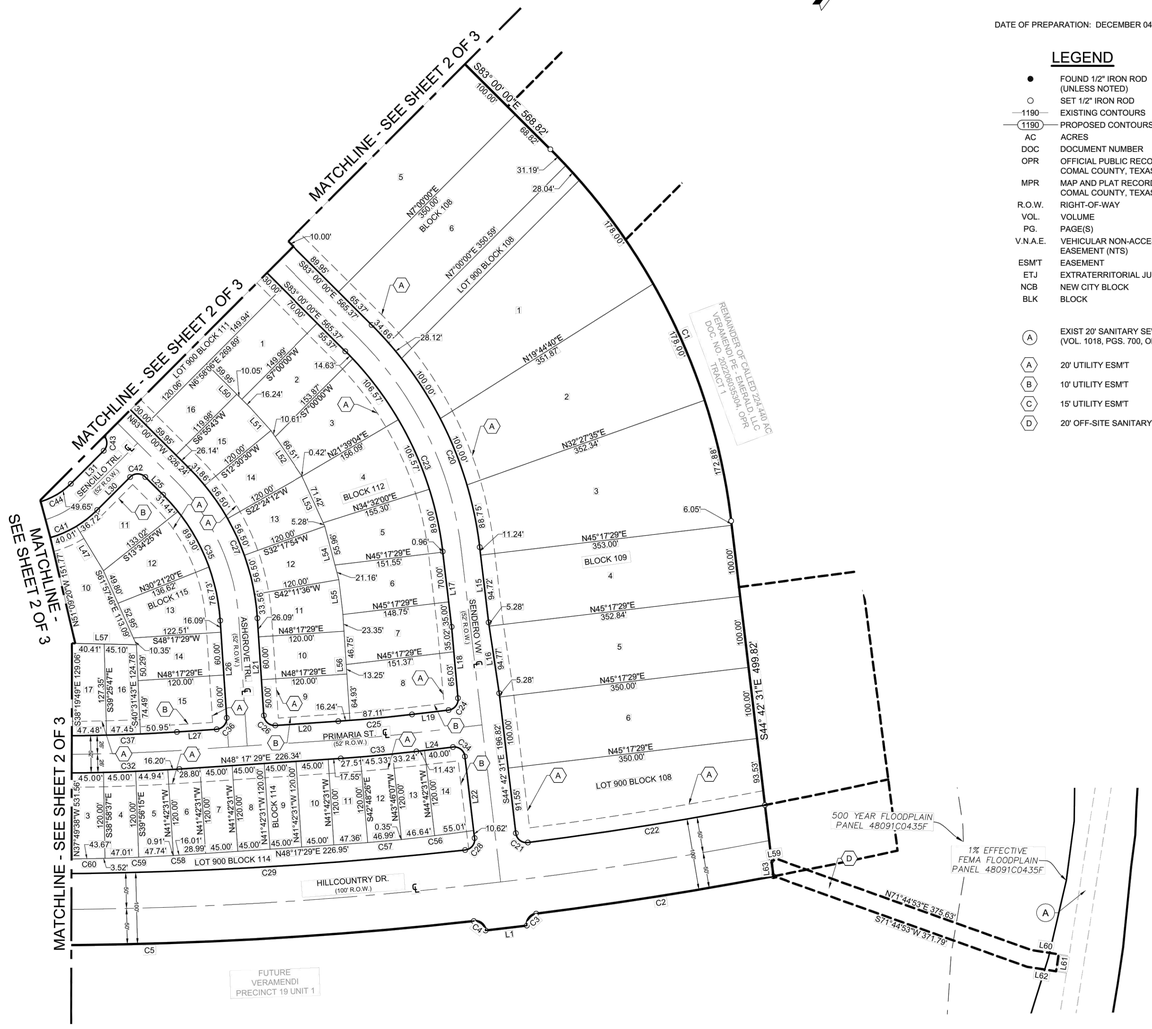
BEING 42.0178 ACRES OF LAND, OUT OF THE 244.440 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206035304, AND OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE



INDEX MAP
NOT TO SCALE



SHEET 3 OF 3

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

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FRN-F-1386

DATE OF PREPARATION: DECEMBER 04, 2023

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
○	SET 1/2" IRON ROD
1190	EXISTING CONTOURS
1190	PROPOSED CONTOURS
AC	ACRES
DOC	DOCUMENT NUMBER
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MPR	MAP AND PLAT RECORDS OF COMAL COUNTY, TEXAS
R.O.W.	RIGHT-OF-WAY
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PG.	PAGE(S)
V.N.A.E.	VEHICULAR NON-ACCESS EASEMENT (NTS)
ESM'T	EASEMENT
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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

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

VERAMENDI PRECINCT 18 UNIT 2

PLAT (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/21/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_PlatSheets.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/21/2024

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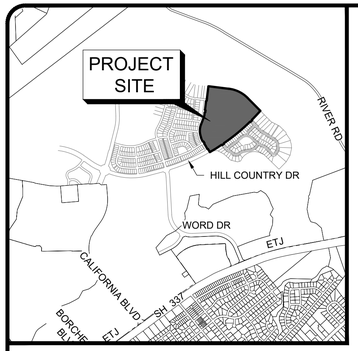
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 5 OF 70 SHEETS

FOR PERMIT



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') n	L_t(ft)	P_2(in)	S_t%	T_t(min)	Shallow Concentrated Flow Paved/Unpaved	L_{sc}(ft)	S_{sc}%	k	T_{sc}(min)	Channel Flow L(ft)	V(ft/sec)	T_{ch}(min)	Total T_c(min)	Total 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 Area(s)	A (ac.)	Coefficient C_2	C_{10}	C_{25}	C_{50}	C_{100}	Intensity I_2(in/hr)	I_{10}(in/hr)	I_{25}(in/hr)	I_{50}(in/hr)	I_{100}(in/hr)	Flow 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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: SI_DAM.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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Phone 210.503.2700
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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 6 OF 70 SHEETS

FOR PERMIT

K:\SA3856.dsn projects\SA402 veramendi precinct 18-2\430 site development plans\dwg-sheets\SI_DAM.dwg
Xref Name: SI_DAM_Base.dwg
Last Modified: Mar. 14, 24 - 17:46
Xref Name: Mar. 20, 24 - 11:23

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

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

200 100 0 200 400

SCALE IN FEET

SCALE: 1"=200'



VERAMENDI PRECINCT 18 UNIT 2

PROPOSED & ULTIMATE DRAINAGE AREA MAP

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: NG
DRAWING NAME: Sh_DAM1.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

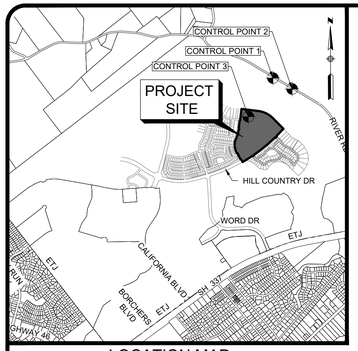
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 7 OF 70 SHEETS

FOR PERMIT

K:\SA3856.000-properties\04402 veramendi precinct 18-2\430 site development plan\dwg-sheets\sh_DAM.dwg
Plotted: Mar 14, 24 - 17:46
Last Modified: Mar 14, 24 - 17:46
Last Modified by: JR



LOCATION MAP
N.T.S.

CITY OF NEW BRAUNFELS NOTES

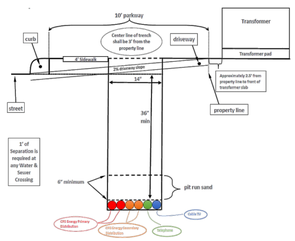
1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGES AND CITY METHODS 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.

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

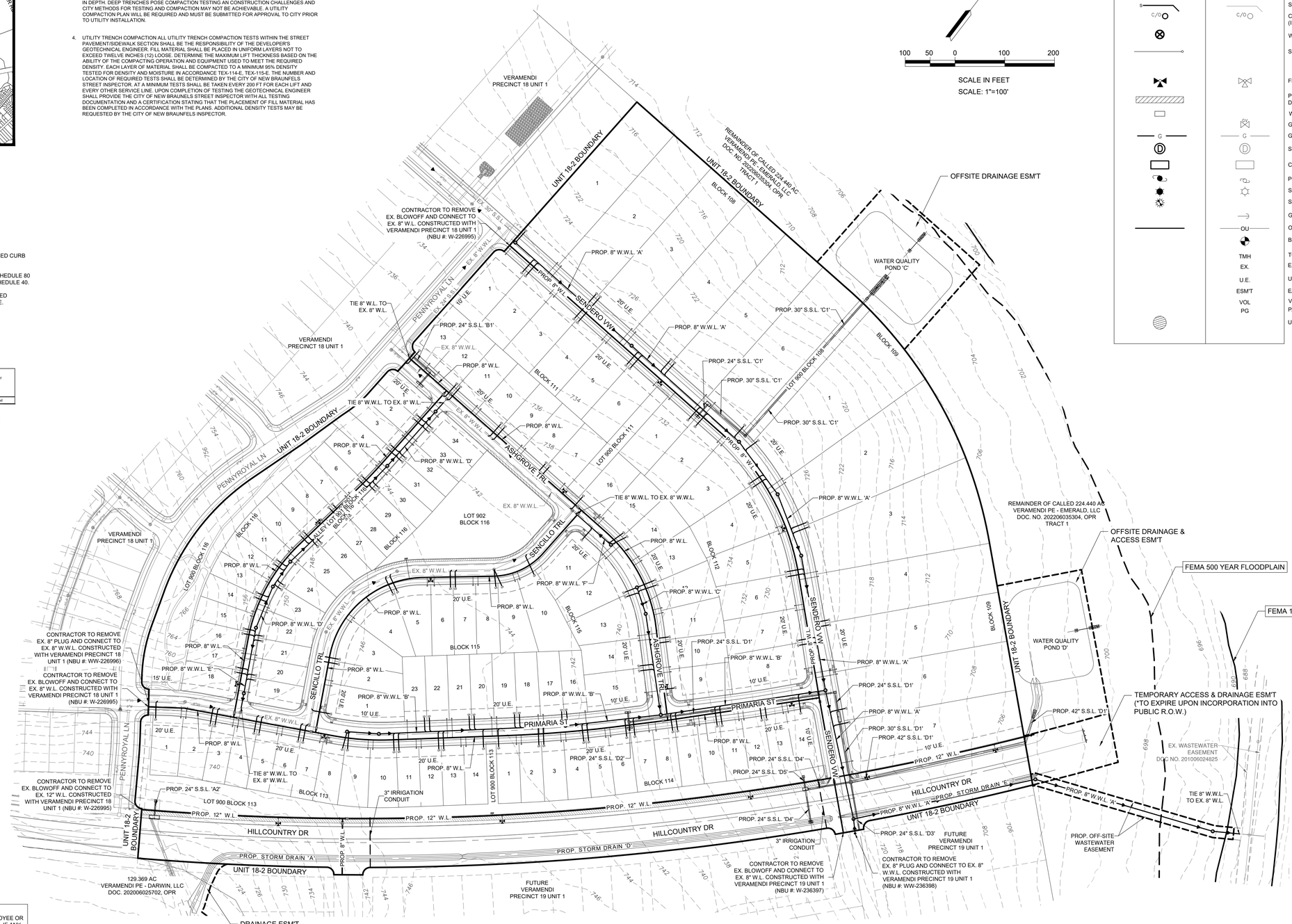


CAUTION:

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.



SCALE IN FEET
SCALE: 1"=100'

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.

VERAMENDI PRECINCT 18 UNIT 2

OVERALL UTILITY LAYOUT

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 8x_OverallUtilityLayout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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

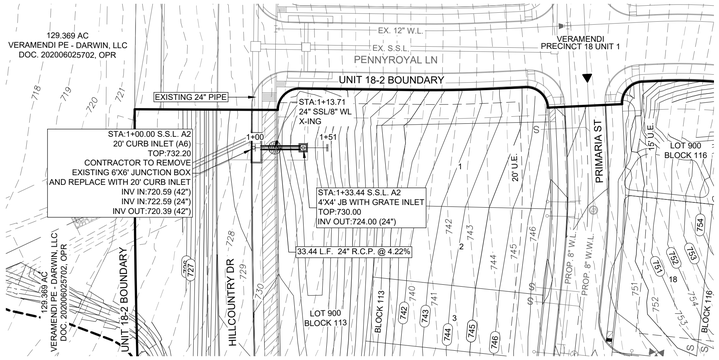
SHEET NO. 8
OF 70 SHEETS

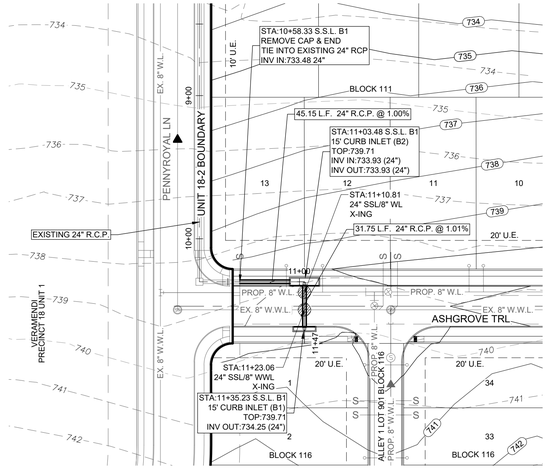
FOR PERMIT

K:\SA3856 Data properties\0402 veramendi precinct 18-2\426 site development plans\dwg\sheets\ph_OverallUtility.dwg
Last Modified: Mar 15, 24 - 15:30
User Profile: Mar 15, 24 - 15:30

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
		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
EGL_{25}		25 YR ENERGY GRADE LINE
HGL_{25}		25 YR HYDRAULIC GRADE LINE
		100 YR HYDRAULIC GRADE LINE

TRENCH EXCAVATION SAFETY PROTECTION

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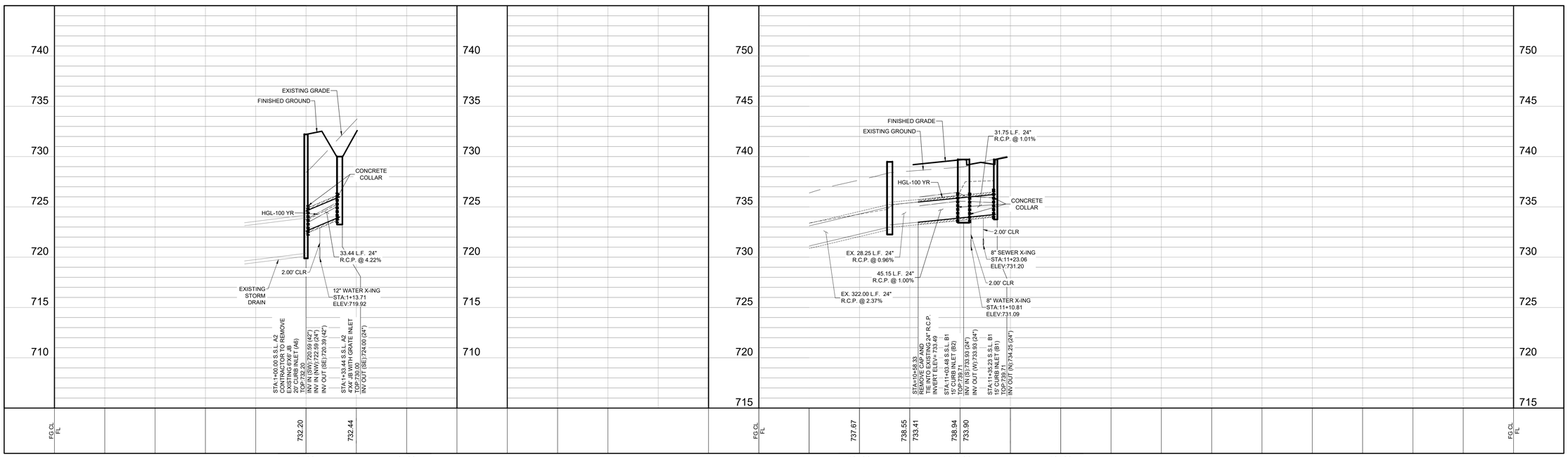
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED 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

P:\LJA\SBC ssa properties\LW42_veramendi precinct 18-21\400 site development plans\dwg-sheets\LW_SSL 'A2' & 'B1'.dwg
Plotted: Mar 13, 24 - 10:54
Last Modified: Mar 13, 24 - 10:54
Last Modified By: JPA

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 01_SSL 'A2' & 'B1'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

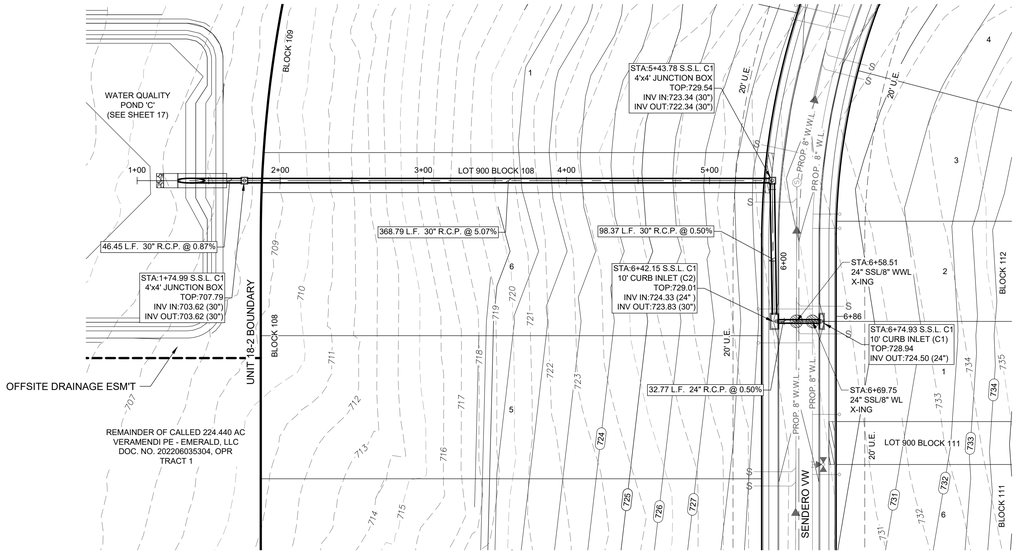
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 9 OF 70 SHEETS

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.



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
EGL_{25}		25 YR ENERGY GRADE LINE
HGL_{25}		25 YR HYDRAULIC GRADE LINE
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50 25 0 50 100

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

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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.

TRENCH EXCAVATION SAFETY PROTECTION

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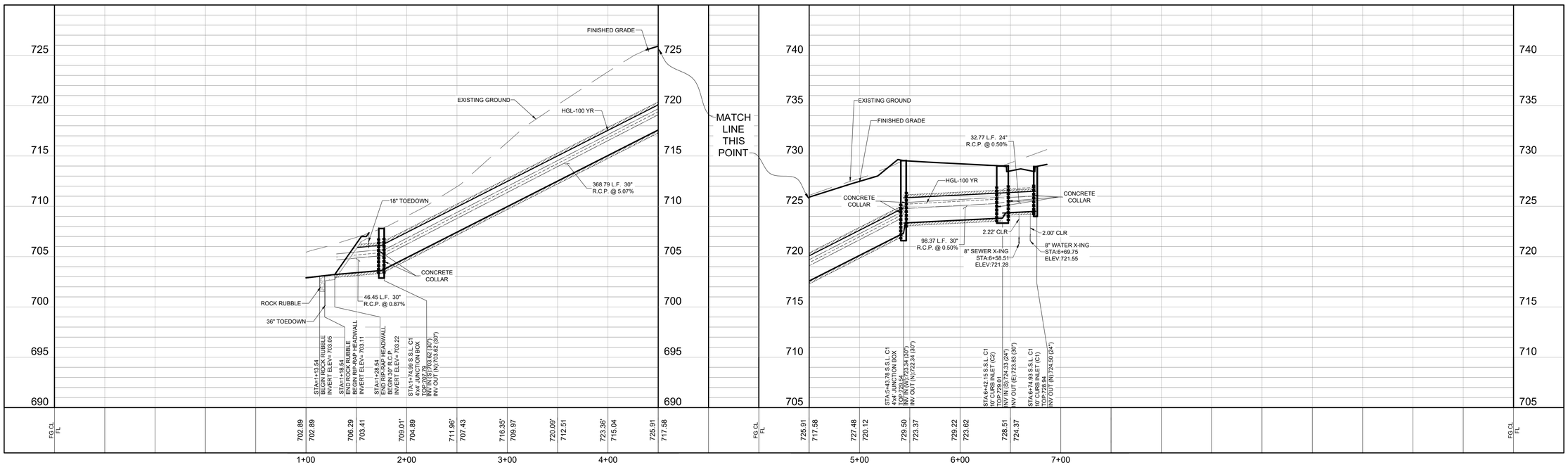
S.S.L. 'C1' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
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SHEET NO. 10
OF 70 SHEETS

K:\SA3856.00\projects\0402 veramendi precinct 18-2\426 site development plans\dwg\sheets\ph_SSL 'C1'.dwg
Xrefs Attached:
Last Modified: Mar. 15, 24 - 16:36
Date Plotted: Mar. 20, 24 - 8:32:04

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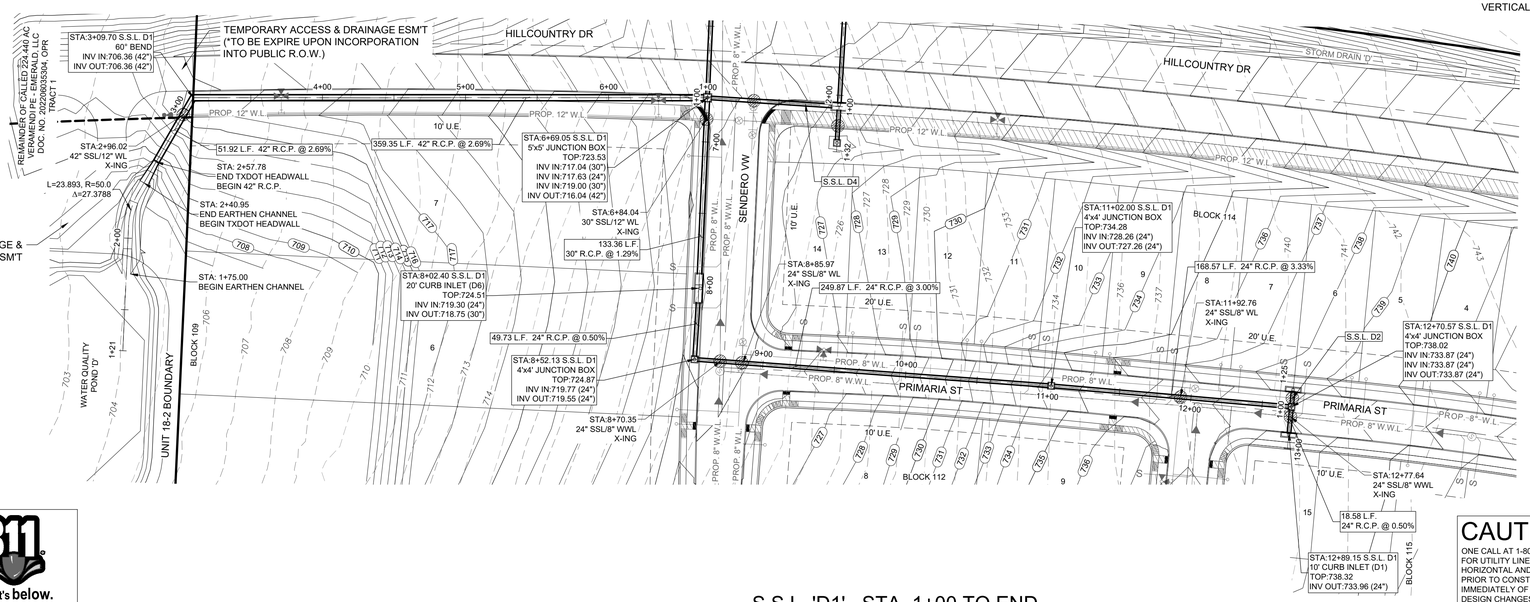

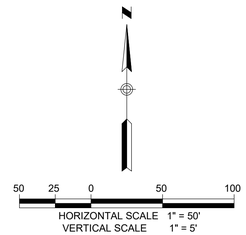

LEGEND

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

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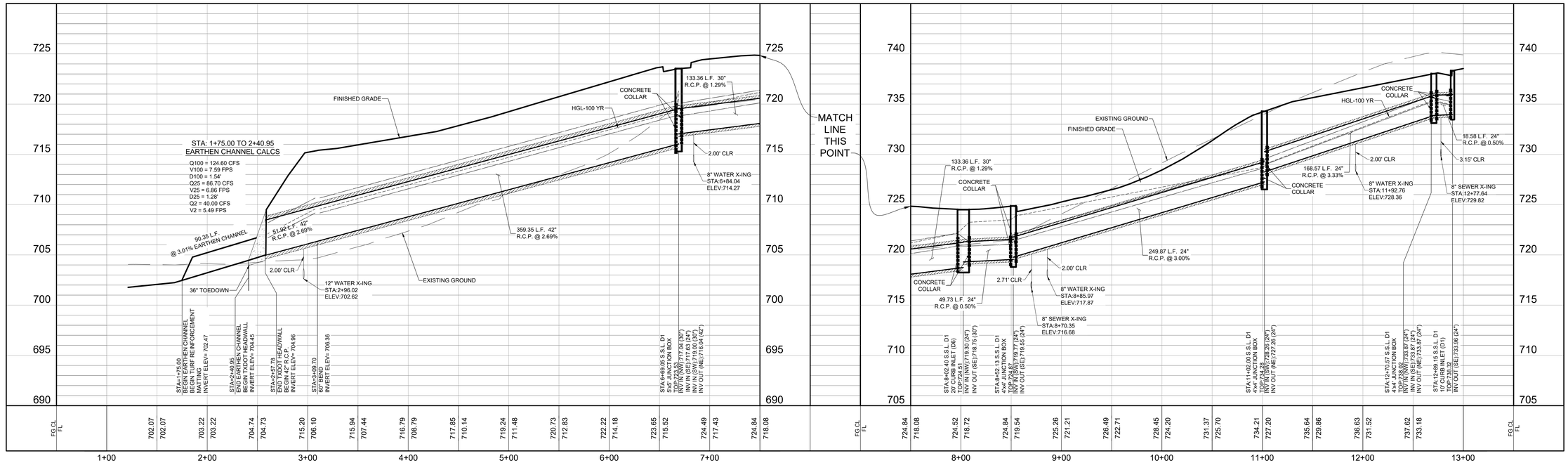

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 18_SSL_D1' P&P.dwg

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SHEET NO. 11
OF 70 SHEETS

K:\SA3856 data projects\0402 veramendi precinct 18-21\426 site development plans\dwg sheets\sh_SSL 'D1' P&P.dwg
Last Modified: Mar 15, 24 - 15:40
Last Plotted: Mar 20, 24 - 11:13

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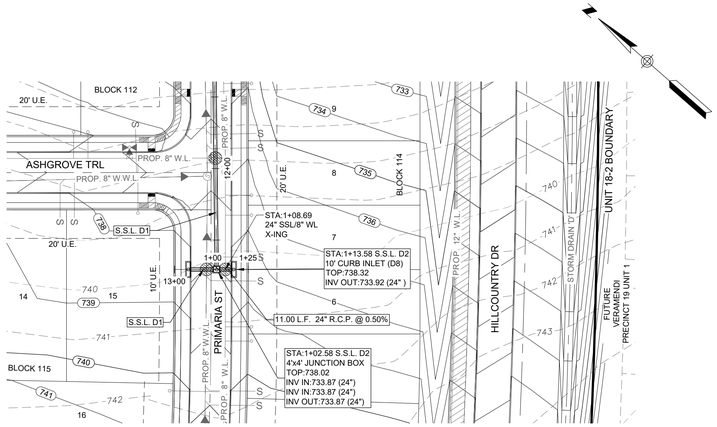

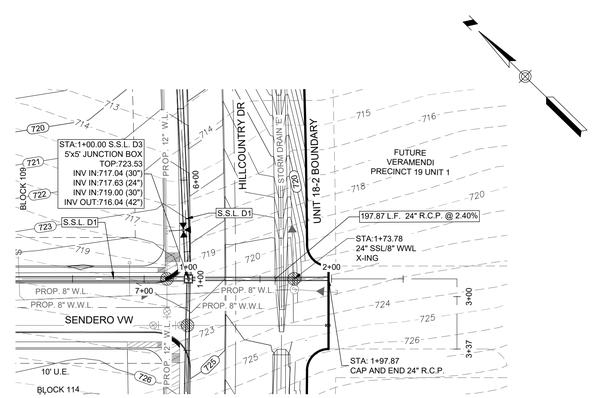

LEGEND

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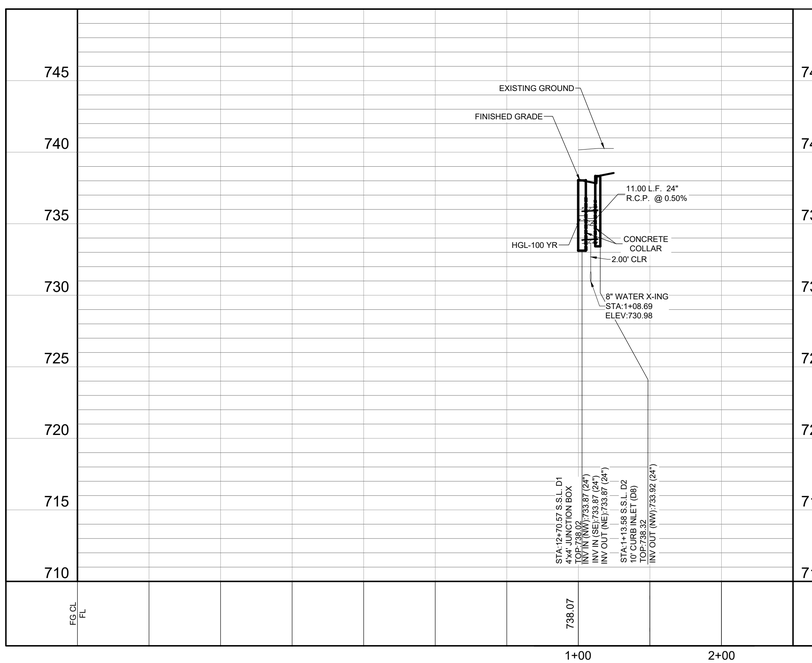

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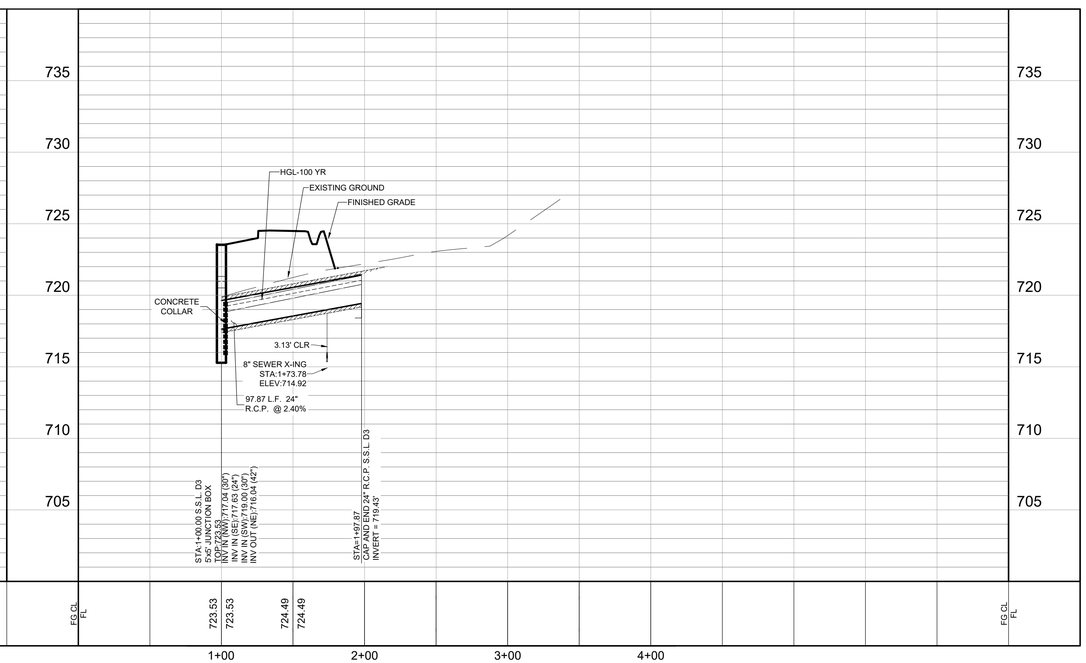

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_SSL 'D2' & 'D3' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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

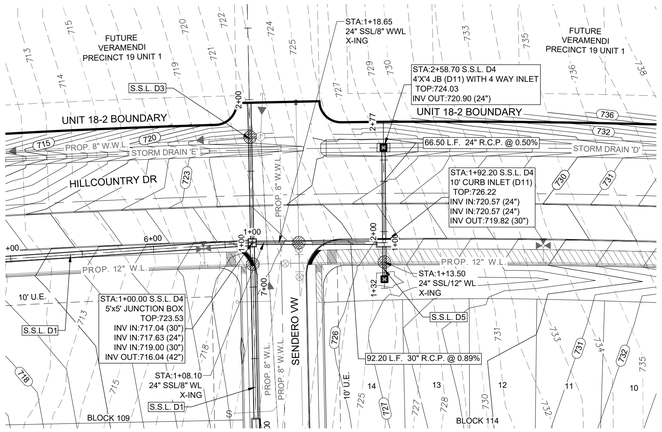
JOB NUMBER: SA3856.0402

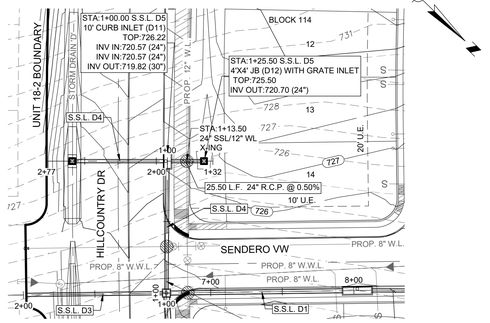
SHEET NO. 12
OF 70 SHEETS

K:\SA3856.000 properties\2402 veramendi precinct 18-2\426 site development plans\dwgs-sheets\sh_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.
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
		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

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.

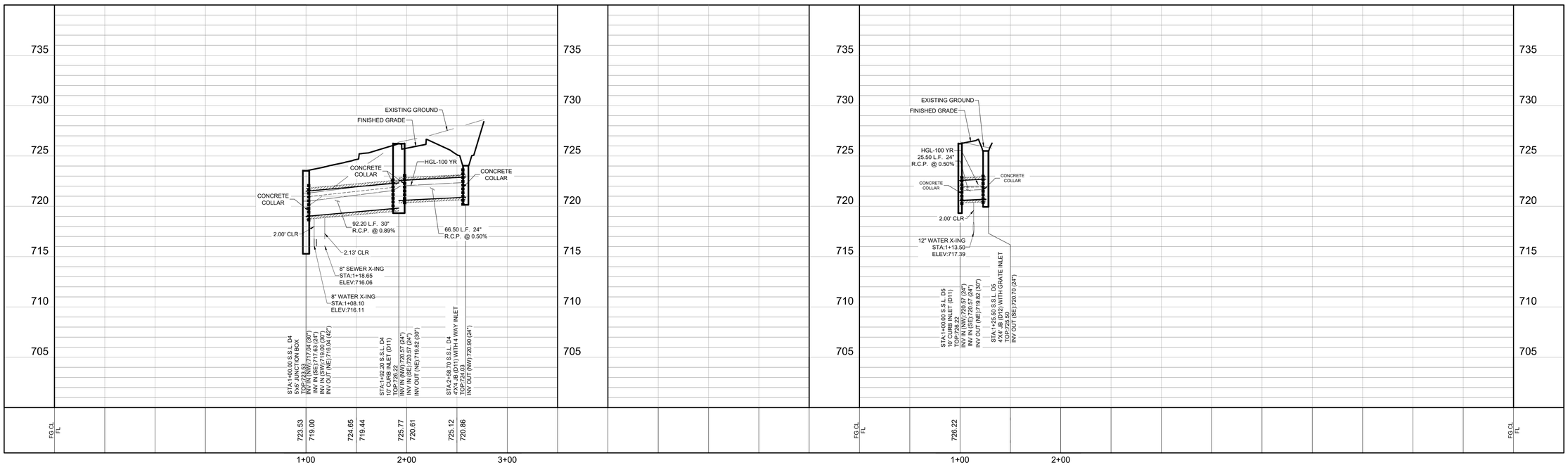
811 Know what's below. Call before you dig.

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.

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

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 95_SSL 'D4' & 'D5' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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

JOB NUMBER: SA3856.0402

SHEET NO. 13
OF 70 SHEETS

P:\LJA\SSE Job projects\SA402 veramendi precinct 18-2\426 site development plans\dwg-sheets\sh_SSL 'D4' & 'D5' P&P.dwg
Plotted By: Priscilla Flores
Last Modified: Mon, 25, 24 - 11:28
Last Modified By: PF, 9:4 - 11:28:43

NOTES:

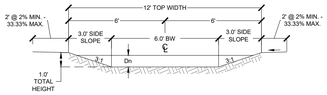
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.

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.

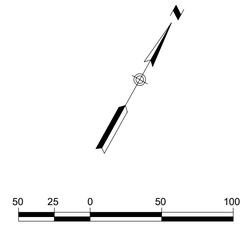
3. ALL STORM SEWER PIPE SHALL BE CL III RCP AS SHOWN ON PROFILE SHEET.

4. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF SAN MARCOS SPECIFICATIONS.

5. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.



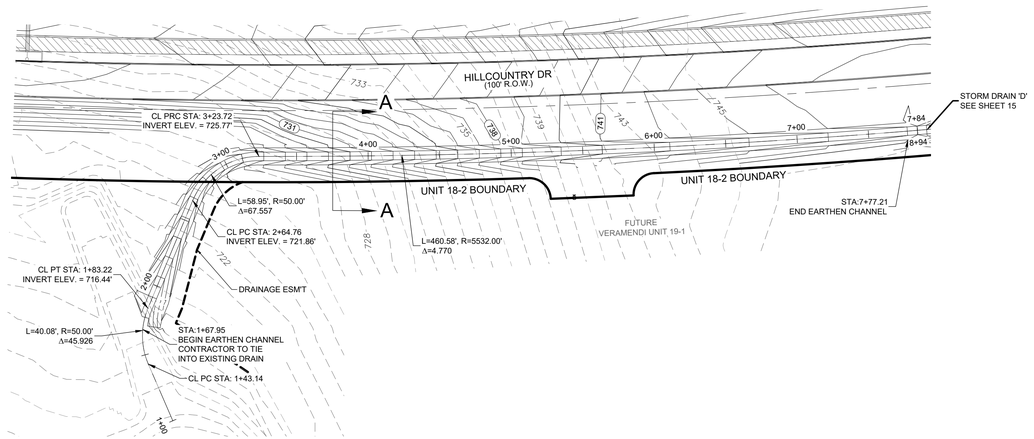
EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+67.95 - STA. 7+77.21



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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
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



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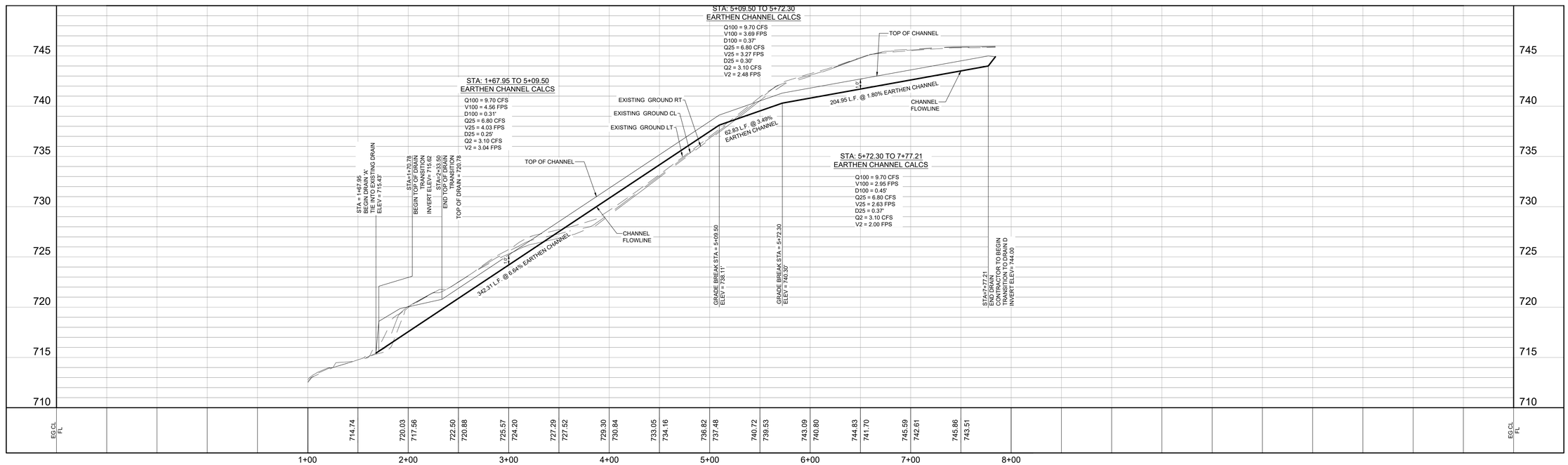
811 Know what's below. Call before you dig.

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



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sp_Drain 'A' 'D' 'E'.dwg

3/20/2024
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. 14
OF 70 SHEETS

K:\sa3856 (ssi property)\0402 veramendi precinct 18-21\26 site development plans\dwg-sheets\sh_Drain 'A' 'D' 'E'.dwg
Xrefs Attached:
Last Modified: Mar. 15, 24 - 15:10
Plot Scale: 1in = 20 ft, 1 in = 1 in

NOTES:

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

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

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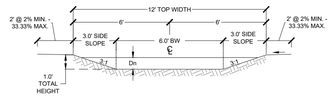
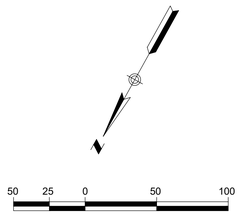


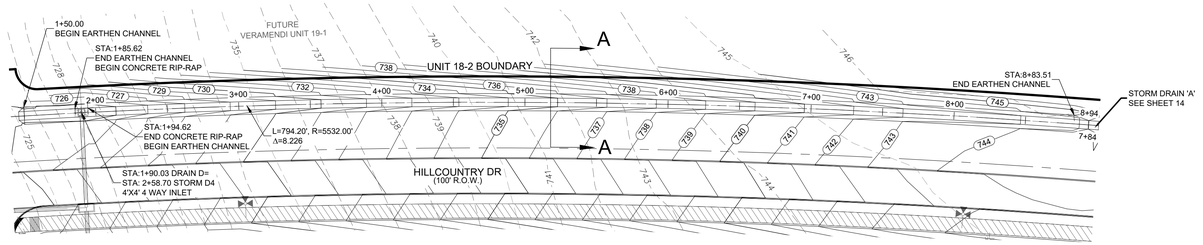
EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+50.00 - STA. 8+83.51



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

LEGEND

PROPOSED	EXISTING	
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



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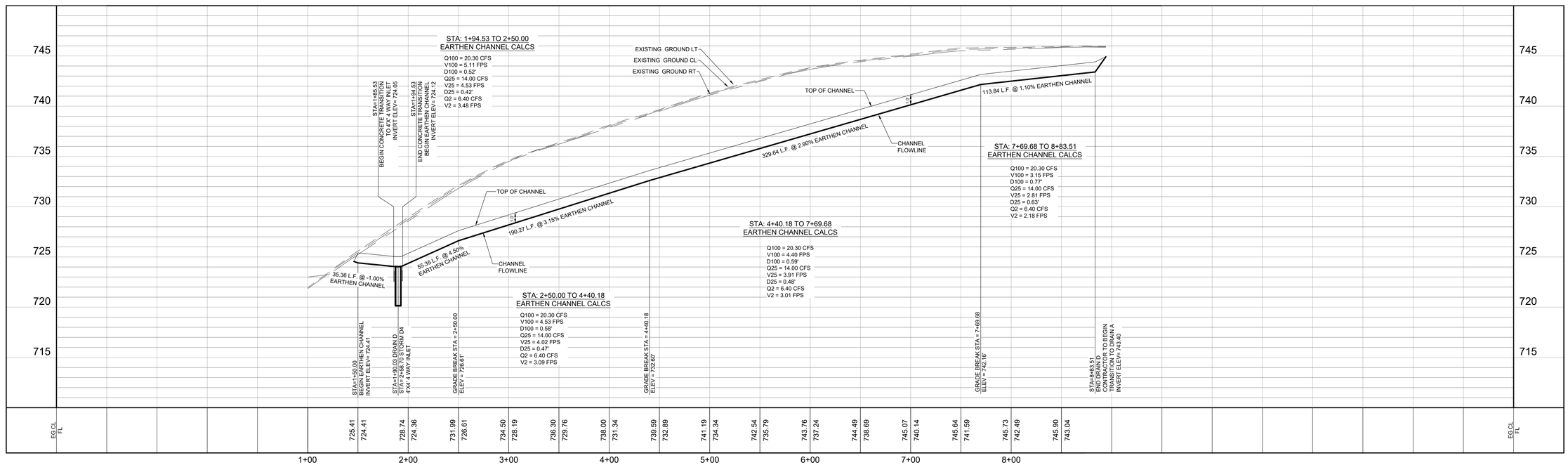
STORM DRAIN 'D' STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
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
3/20/2024

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

K:\SA3856 (tbe properties)\3402 veramendi precinct 18-21\25 plat development plans\dwg-sheets\sh_Drain 'A' 'D' 'E'.dwg
Plotted: Mar 20, 24 - 15:10
Last Modified: Mar 15, 24 - 15:10
Xref Modified: Mar 20, 24 - 14:54

NOTES:

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

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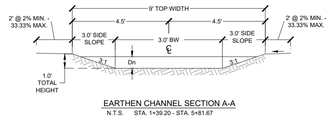
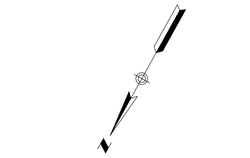


EARTHEN CHANNEL SECTION A-A
N.T.S. STA. 1+39.20 - STA. 5+81.67



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

LEGEND

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
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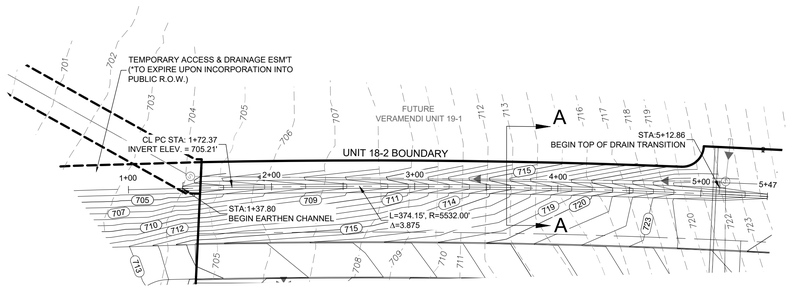
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



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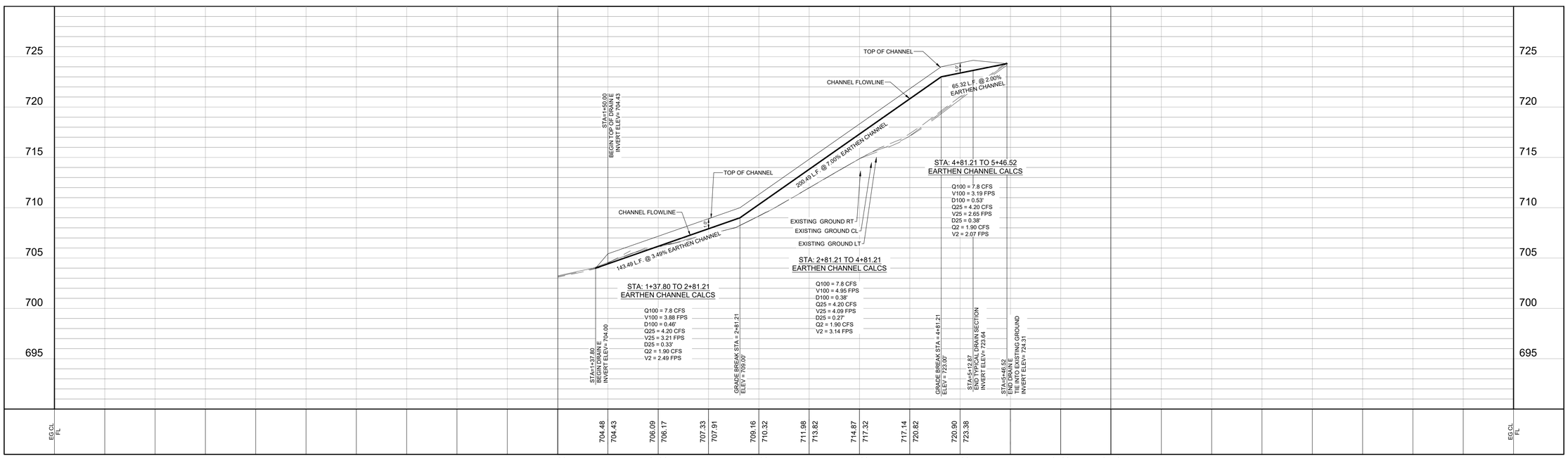
811 Know what's below. Call before you dig.

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



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
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
3/20/2024

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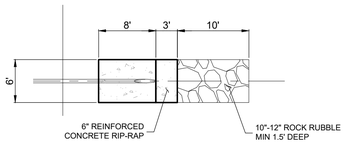
JOB NUMBER: SA3856.0402

SHEET NO. 16
OF 70 SHEETS

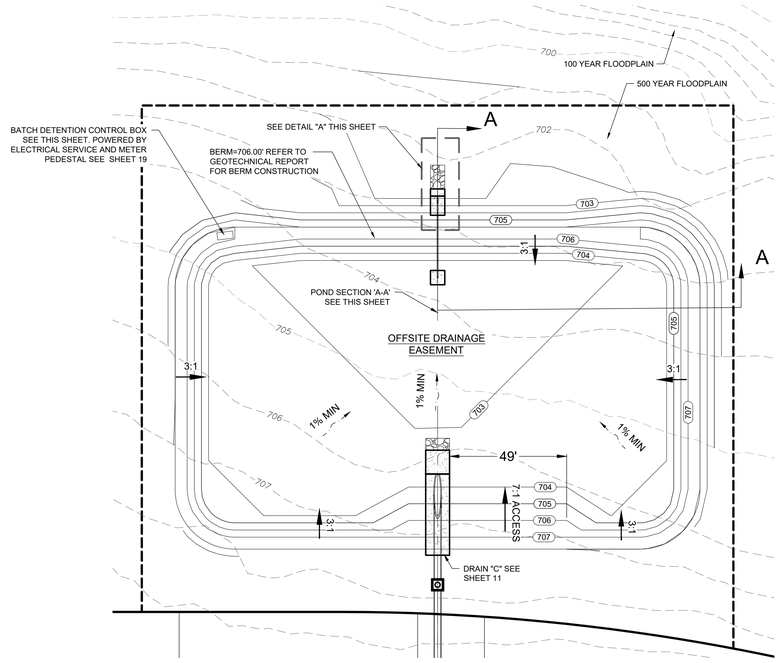
K:\SA3856.nsi project\SA02 vet\mendi precinct 18-2 (430 site development plans\dwg-sheets\sh_Drain 'A' 'D' 'E'.dwg
Xref Name(s):
Last Modified: Mar. 15, 24 - 15:10
Plot Style Table: Mon, Jul 24 - 11:24:26

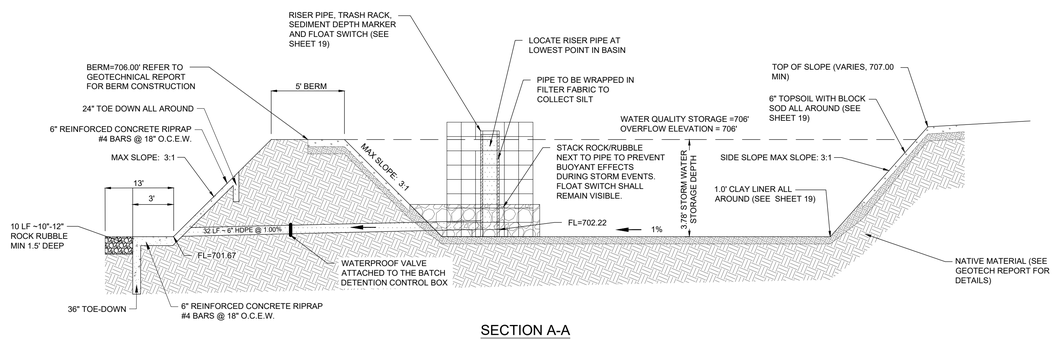
DRAINAGE & GRADING NOTES:

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"-W1D6 x W1D6. 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.

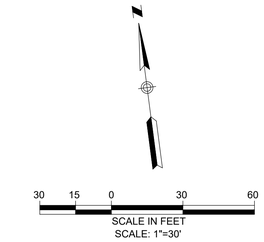


DETAIL "A"
SCALE: 1"=10'





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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: s:\...\Water Quality Ponds.dwg

3/20/2024
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. 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.

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

K:\SA3856 Data Projects\0402 veramendi precinct 18-21\05 site development plans\dwg sheets\05_Water Quality Ponds.dwg
Last Modified: Mar 15, 24 - 16:54
Xrefs Attached: Mar 15, 24 - 14:47

DRAINAGE & GRADING NOTES:

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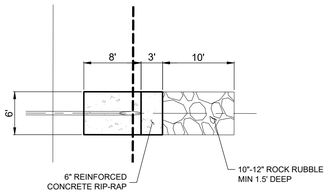
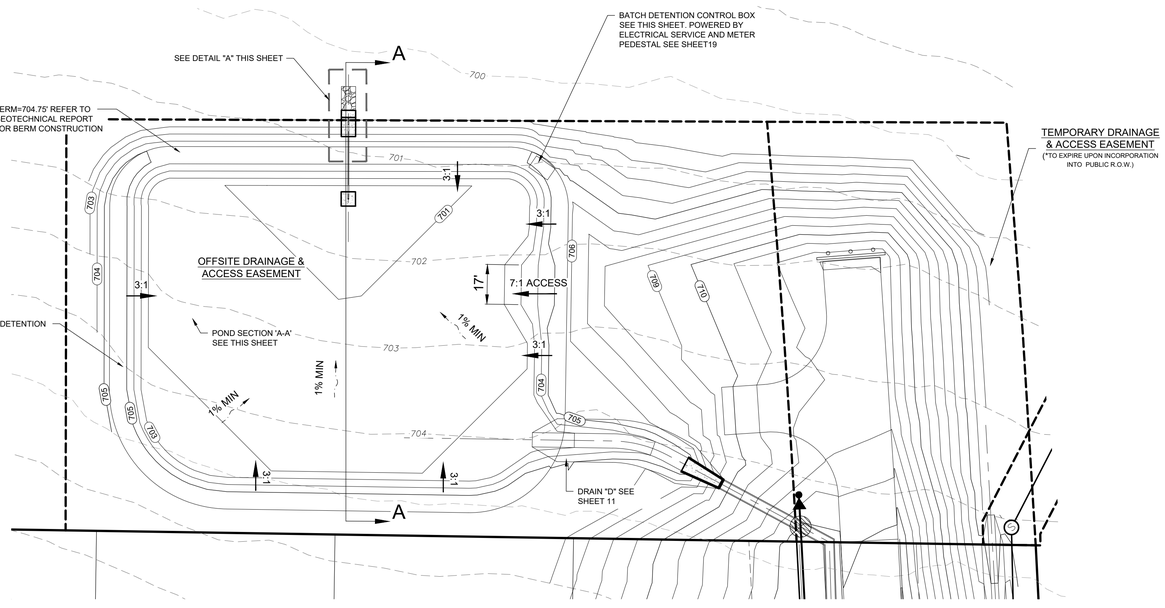
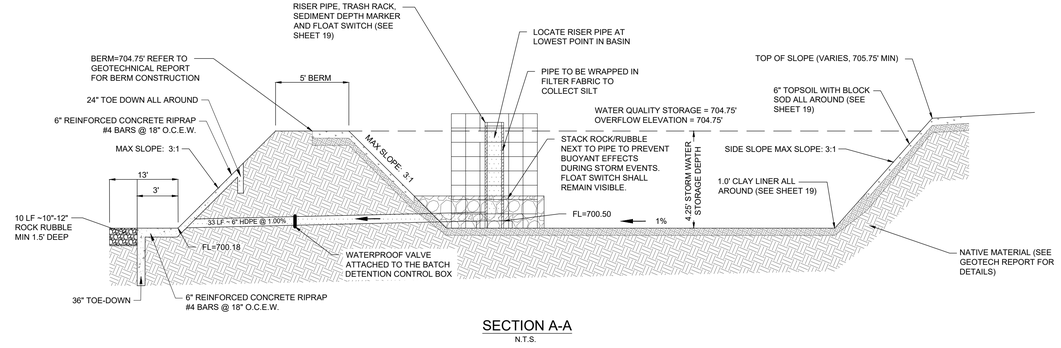


DETAIL "A"
SCALE: 1"=10'





SECTION A-A
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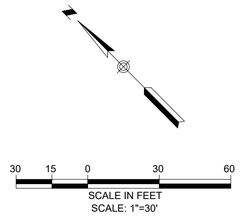

SCALE IN FEET
SCALE: 1"=30'

LEGEND

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

EMERGENCY OVERFLOW WEIR CALCULATION

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

VERAMENDI PRECINCT 18 UNIT 2

WATER QUALITY POND 'D' SWQ

NO.	BY	DATE

REVISIONS
DESCRIPTION

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: sh_Water Quality Ponds.dwg

3/20/2024
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

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OF 70 SHEETS

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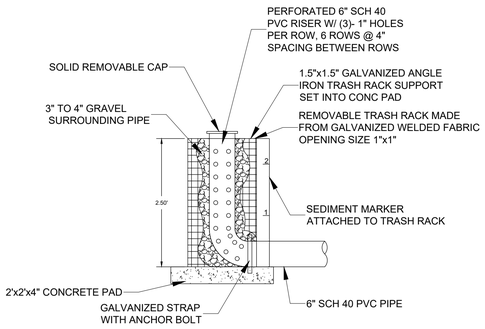
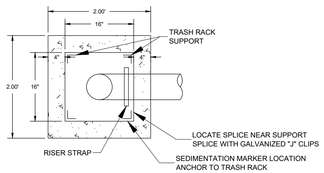
811 Know what's below. Call before you dig.

FOR PERMIT

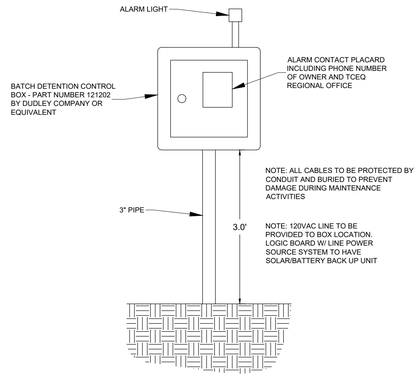
K:\SA3856.dss project\SA002 veramendi precinct 18-21\42B site development plans\dwgs-sheets\sh_Water Quality Ponds.dwg
Xrefs Attached:
Last Modified: Mar. 15, 24 - 16:54
Date Plotted: Mar. 20, 24 - 14:54



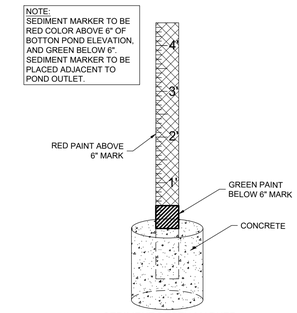
SECTION VIEW OF RISER
NTS



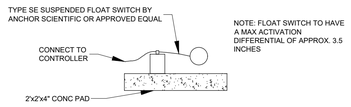
PLAN VIEW OF RISER
NTS



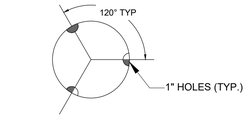
BATCH DETENTION CONTROL BOX
NTS



SEDIMENT DEPTH MARKER
N.T.S.



FLOAT SENSOR
NTS



HOLE LAYOUT DETAIL
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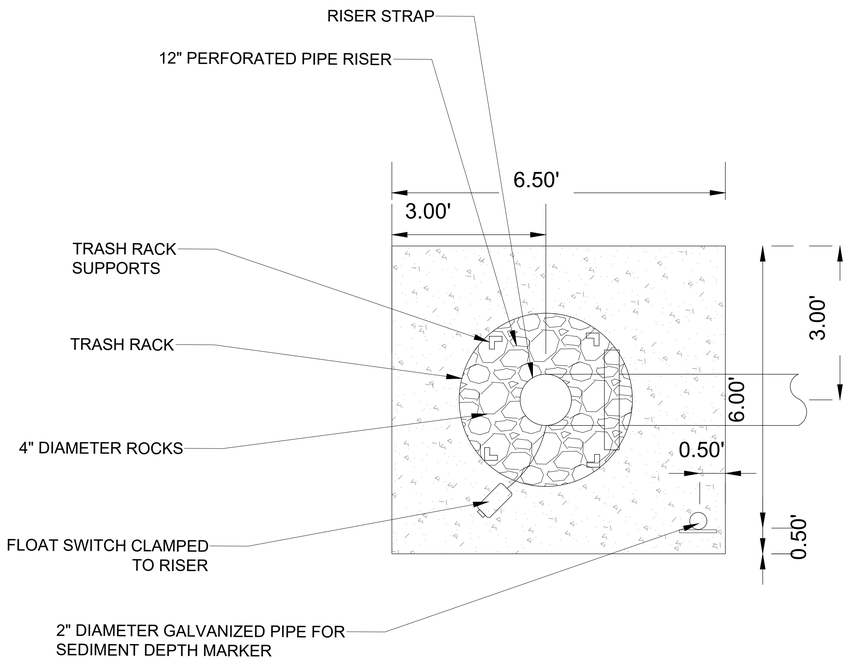


PERFORATED RISER PAD
TOP VIEW
N.T.S.

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.

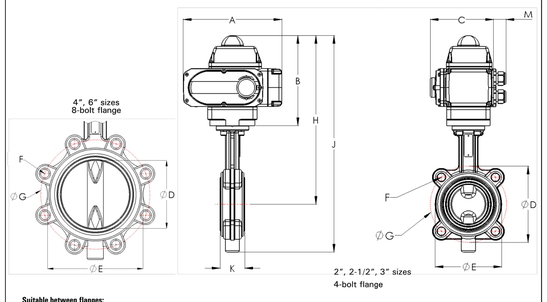
NOTES TO CONTRACTOR
(EACH PHASE OF BASIN CONSTRUCTION)

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

K:\SA3856.002 property\ent\2402 veramendi precinct 18-21\230 site development plans\dwg-sheets\pn_Basin Details.dwg
Last Saved By: NG
Last Modified: Mar. 15, 24 – 17:51
Plot Date/Time: Mar. 20, 24 – 14:49

VERAMENDI PRECINCT 18 UNIT 2

BASIN DETAILS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Basin Details.dwg

3/20/2024
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

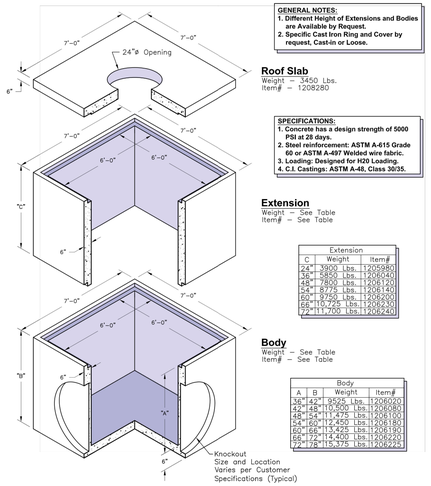
SHEET NO.
19
OF 70 SHEETS

FOR PERMIT

Oldcastle Precast

Water

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



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

Roof Slab
Weight – 3450 Lbs.
Item# – 1208280

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

Extension
Weight – See Table
Item# – See Table

Extension		
C	Weight	Item#
24"	3900 Lbs.	1205980
36"	5850 Lbs.	1206040
48"	7800 Lbs.	1206120
54"	8775 Lbs.	1206140
60"	9750 Lbs.	1206200
66"	10,725 Lbs.	1206300
72"	11,700 Lbs.	1206240

Body
Weight – See Table
Item# – See Table

Body			
A	B	Weight	Item#
36"	42"	9525 Lbs.	1206020
42"	48"	10,500 Lbs.	1206080
48"	54"	11,475 Lbs.	1206100
54"	60"	12,450 Lbs.	1206180
60"	66"	13,425 Lbs.	1206190
66"	72"	14,400 Lbs.	1206220
72"	78"	15,375 Lbs.	1206225

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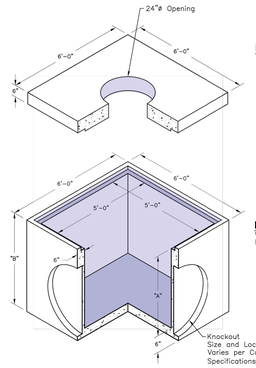
Oldcastle Precast

Water

5'-0"x5'-0" I.D. Junction Box
Model: JB-550



Roof Slab
Weight – 3150 Lbs.
Item# – 1207960

GENERAL NOTES:
1. Different Height of Bodies are Available by Request.
2. Frames and Covers Also Available.

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

Body
Weight – See Table
Item# – See Table

Body			
A	B	Weight	Item#
42"	48"	8475 Lbs.	1205600
48"	54"	9300 Lbs.	1205620
54"	60"	10,125 Lbs.	1205640
60"	66"	10,950 Lbs.	1205680

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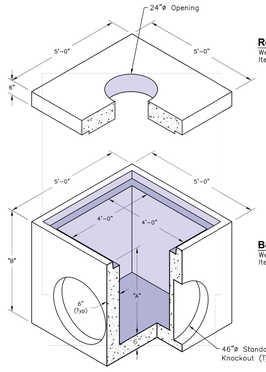
Oldcastle Precast

Water

4'-0"x4'-0" I.D. Junction Box
Model: JB-440



Roof Slab
Weight – 2,200 Lbs.
Item# – 1208240

GENERAL NOTES:
1. Different Height of Bodies are Available by Request.
2. Frames and Covers Also Available.

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

Bottom
Weight – See Table
Item# – See Table

Bottom Section			
A	B	Weight	Item #
18"	24"	3900 Lbs.	1204800
24"	30"	4575 Lbs.	1204820
30"	36"	5250 Lbs.	1204880
36"	42"	5925 Lbs.	1204920
42"	48"	6600 Lbs.	1204960
48"	54"	7275 Lbs.	1205060
54"	60"	7950 Lbs.	1205100
60"	66"	8625 Lbs.	1205140

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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

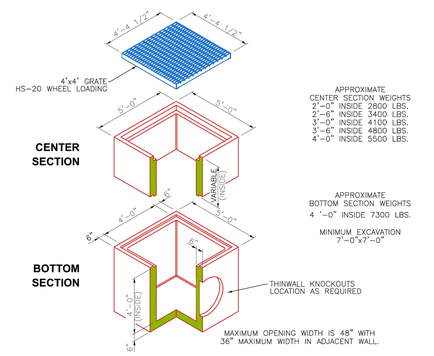
WATER TABLE IS AT 3'-0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN

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
1900 Rilling Road San Antonio, TX 78214
Phone: (210) 923-4523 Fax: (210) 921-0473

GI44
FILE NAME: 44GI.dwg
ISSUE DATE: March, 2005
www.oldcastlesanantonio.com

4'-0"x4'-0" GRATE INLET

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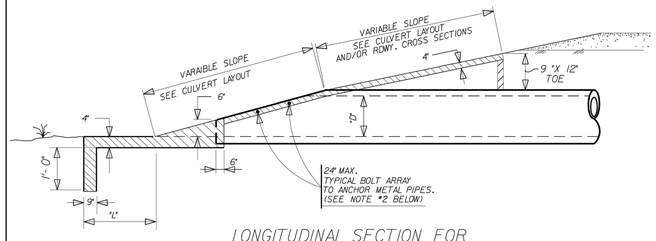
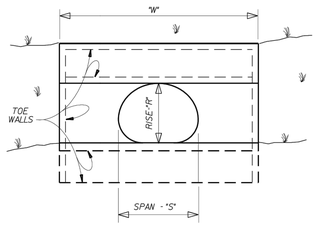
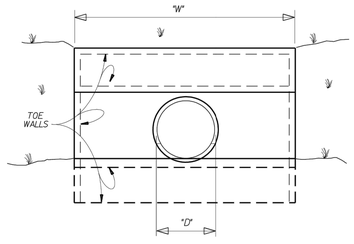


LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT

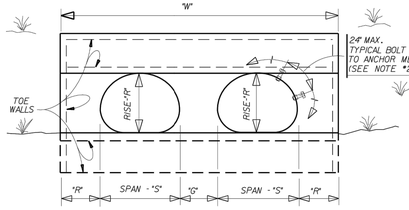


SINGLE CIRCULAR PIPE CULVERT
(CMP or RCP)

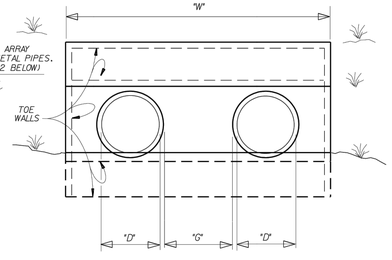
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"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. SPAN "S"	APPROX. ARCH DIM. RISE "R"	"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
					"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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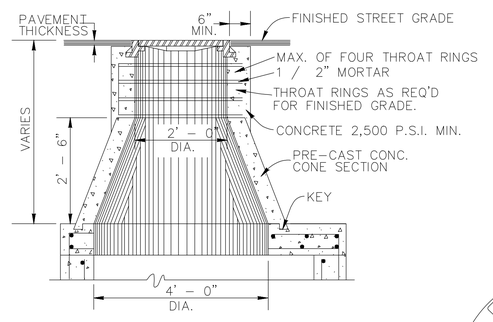
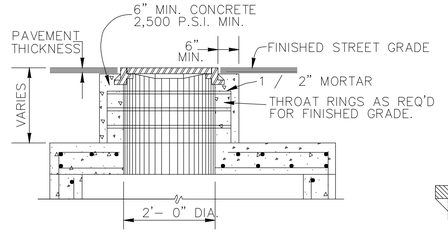
FED.RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			
STATE	STATE DISTRICT	COUNTY	
TEXAS	SAT		
CONT.	SECT.	JOB	HIGHWAY NO.

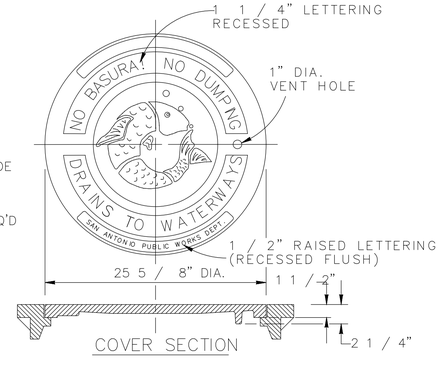
10/95





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.



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)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sn_Drainage Details.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

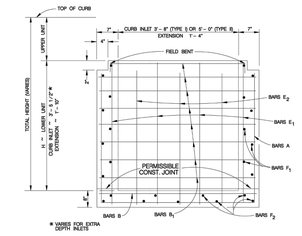
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

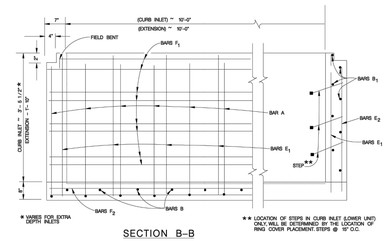
SHEET NO. 20 OF 70 SHEETS

FOR PERMIT

K:\sa3856.sia\projfiles\04123 veramendi precinct 18-2\426 site development plans\dwg-sheets\sn_Drainage Details.dwg
Last Modified: Mon, Mar 18, 24 - 17:55
Last Plotted: Wed, Mar 20, 24 - 14:44:45
STRUCTURE DESIGN
DRIVE:\TDS\DMS\bdwn.dgn



SECTION A–A



SECTION B–B

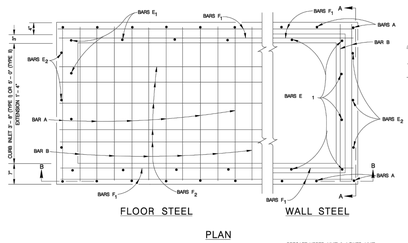
REINFORCING STEEL

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"	

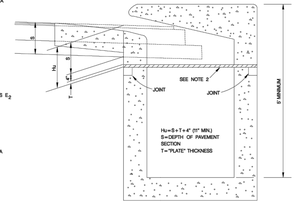
GENERAL NOTES

1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE II (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

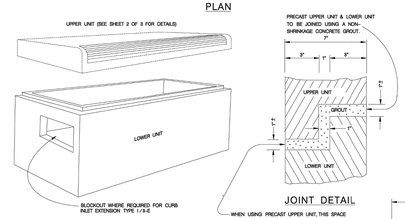
WALL STEEL



PHASE CONSTRUCTION

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

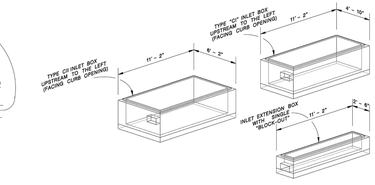
1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hu" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL 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)



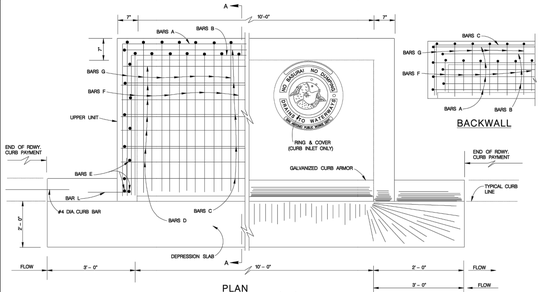
BARS A
(LOWER UNIT)

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

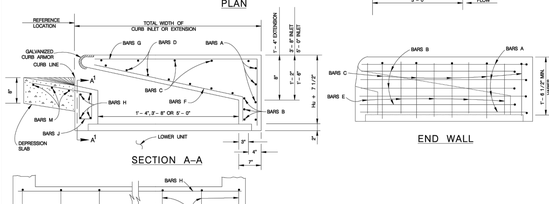
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS
SHEET 1 OF 3

___% 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

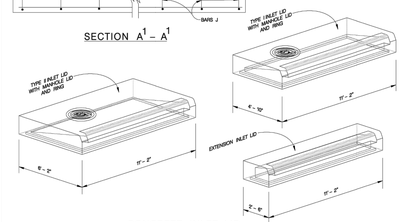
BACKWALL



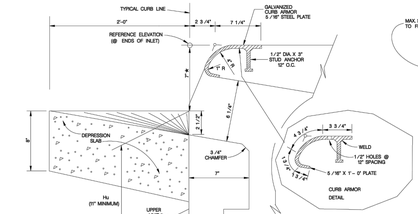
SECTION A–A

END WALL

SECTION A1 – A1



CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)



INLET OPENING DETAIL

REINFORCING STEEL (FOR Hu = 11")

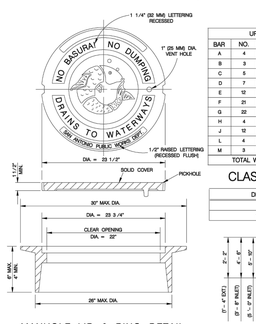
UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	9'-10"	53
B	3	#4	----	9'-10"	36
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	16	#4	11"	1'-2"	9
F	21	#6	6"	4'-8"	147
G	22	#5	6"	5'-8"	187
H	4	#4	----	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	----	2'-0"	5
M	3	#4	----	14'-8"	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

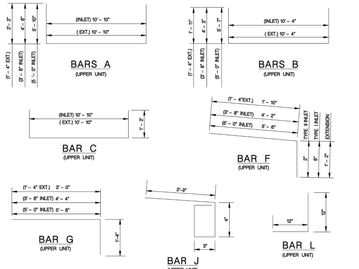


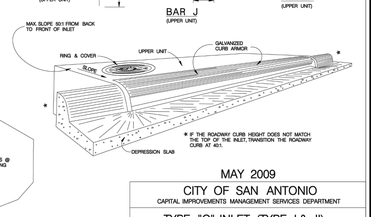
MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

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

SEE SHEET 1 OF 3 FOR GENERAL NOTES.



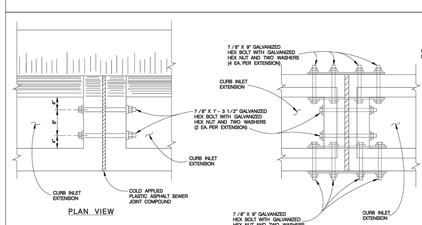


MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

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

___% SUBMITTAL PROJECT NO.:___ DATE:___
DRAWN BY:V. VASQUEZ DSGN. BY:L.E. MALTOS, P.E. CHKD. BY:R.S. HOSSEINI, P.E. SHEET NO.:___OF___



UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	10'– 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'– 1"	63
G	22	#6	6"	2'– 4"	110
H	4	#4	----	10'– 10"	29
J	12	#4	12"	3'– 6"	28
L	4	#4	----	2'– 1"	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

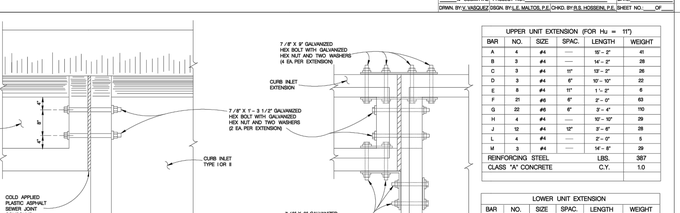
GENERAL NOTES

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.

INLET BOLTING DETAILS
SHOWING EXTENSION TO EXTENSION

INLET BOLTING DETAILS
SHOWING CURB INLET TO EXTENSION

SECTION A–A CURB INLET EXTENSION TYPE E



TYPE "CI" INLET WITH INLET EXTENSION BOXES

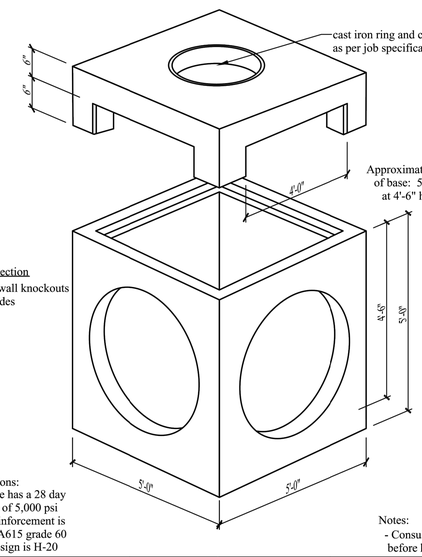
MAY 2009

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



ROCK RUBBLE DETAIL
N.T.S.

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

VERAMENDI PRECINCT 18 UNIT 2

DRAINAGE DETAILS (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: s:\p_Drainage Details.dwg

3/20/2024
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. 21 OF 70 SHEETS

FOR PERMIT

K:\SA3856.vsp projects\04\02 vetramedi precinct 18-21\245 site development plans\dwg-sheets\pri_Drainage Details.dwg
Xrefs Attached: None
Last Modified: Mar. 15, 24 – 17:55
Last Plotted: Mar. 20, 24 – 14:47

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"	1'-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.

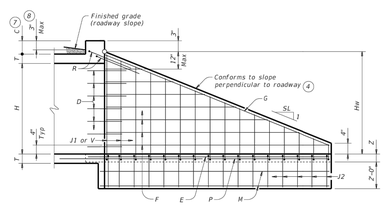
1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated 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.

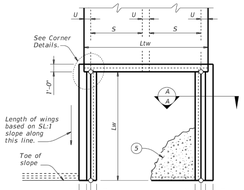
MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing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

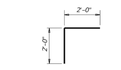
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.



INSIDE ELEVATION



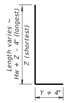
PLAN
(Showing dimensions.)



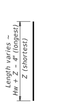
BARS R



BARS D



BARS J1



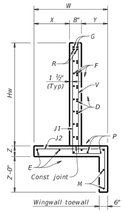
BARS V



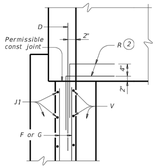
BARS L



BARS J2

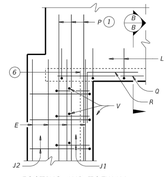


SECTION A-A



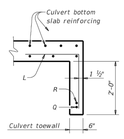
WINGWALL

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



FOOTING AND TOEWALL

CORNER DETAILS



SECTION B-B ⑤

Texas Department of Transportation — Bridge Division Standard

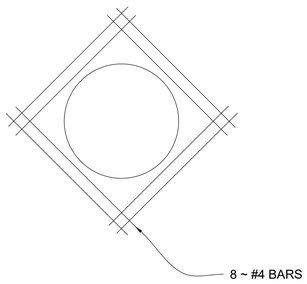
CONCRETE WINGWALLS
WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

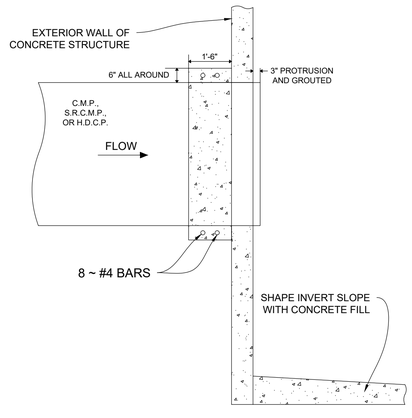
SW-0

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.

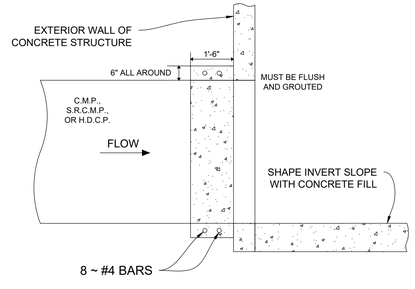
NOTES:

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)

K:\SA0856.dgn properties\SA402 veramendi precinct 18-21\430 site development plans\dwgs-sheets\sh_Drainage Details.dwg
Last Saved: Mar. 15, 24 - 17:55
Last Modified: Mar. 20, 24 - 14:43
Plotted: Mar. 20, 24 - 14:43

VERAMENDI PRECINCT 18 UNIT 2

DRAINAGE DETAILS (SHEET 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Drainage Details.dwg

3/20/2024
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

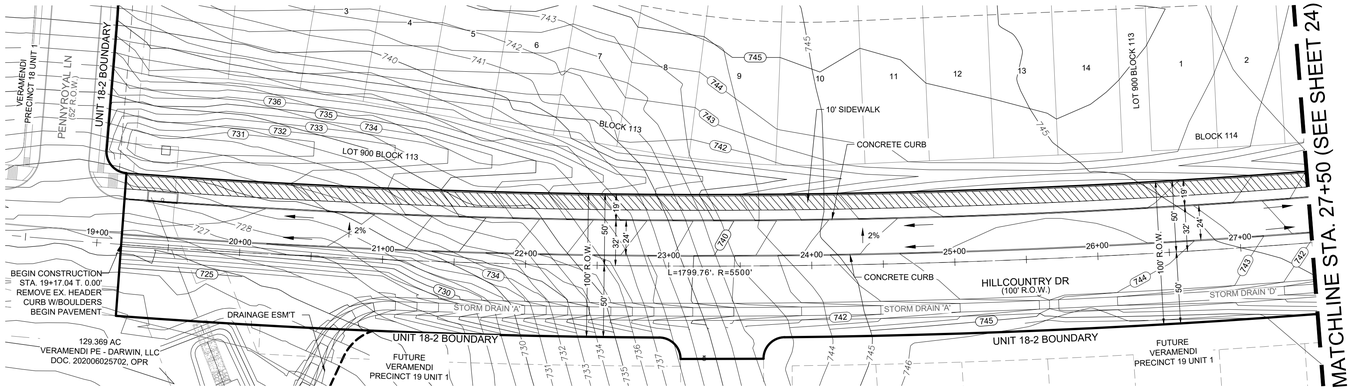
JOB NUMBER: SA3856.0402

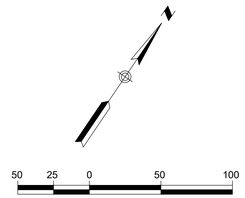
SHEET NO. 22
OF 70 SHEETS

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).



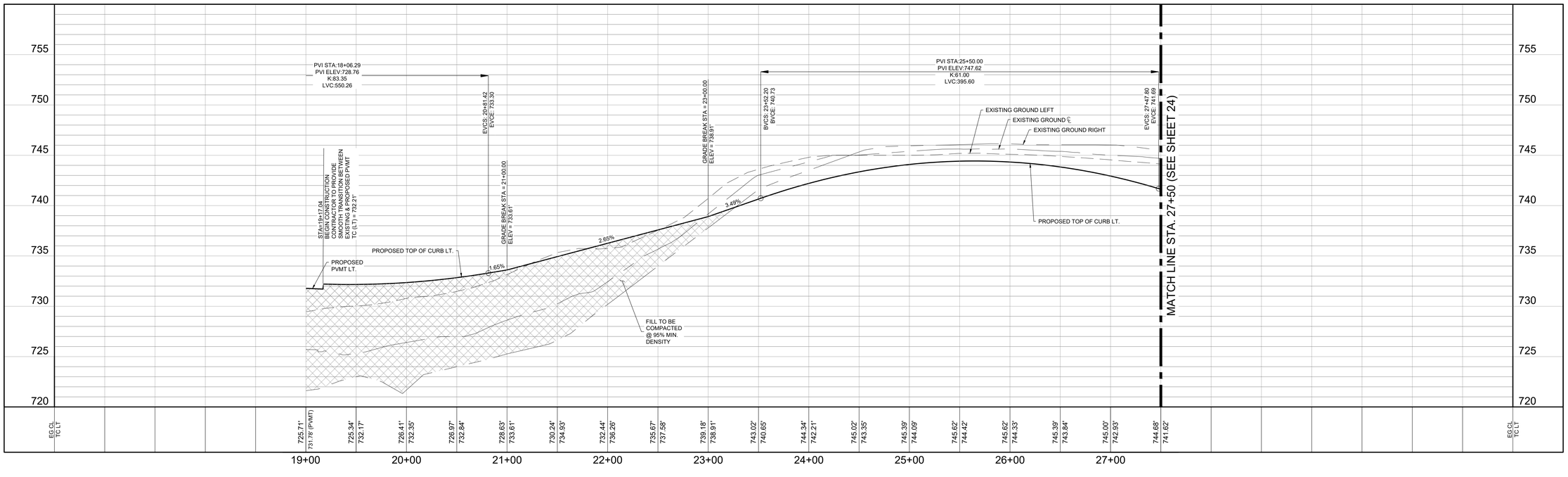


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

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. 19+17.04 TO STA. 27+50



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
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
3/20/2024

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

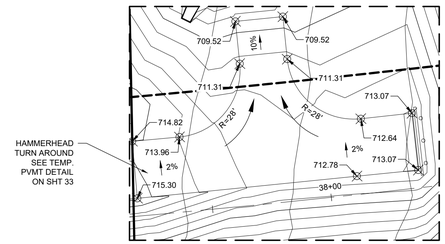
SHEET NO. 23
OF 70 SHEETS

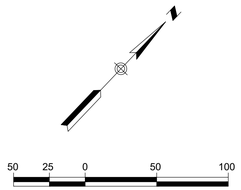
K:\SA3856.dsn projects\VAR2 verramendi precinct 18-21\230 site development plans\dwg-sheets\pln_Sheet P&P_Hill Country Dr.dwg
Xref Dependencies:
Last Modified: Mar. 14, 24 - 11:56
Plotted By: Nov. 20, 24 - 11:45

GENERAL NOTES:

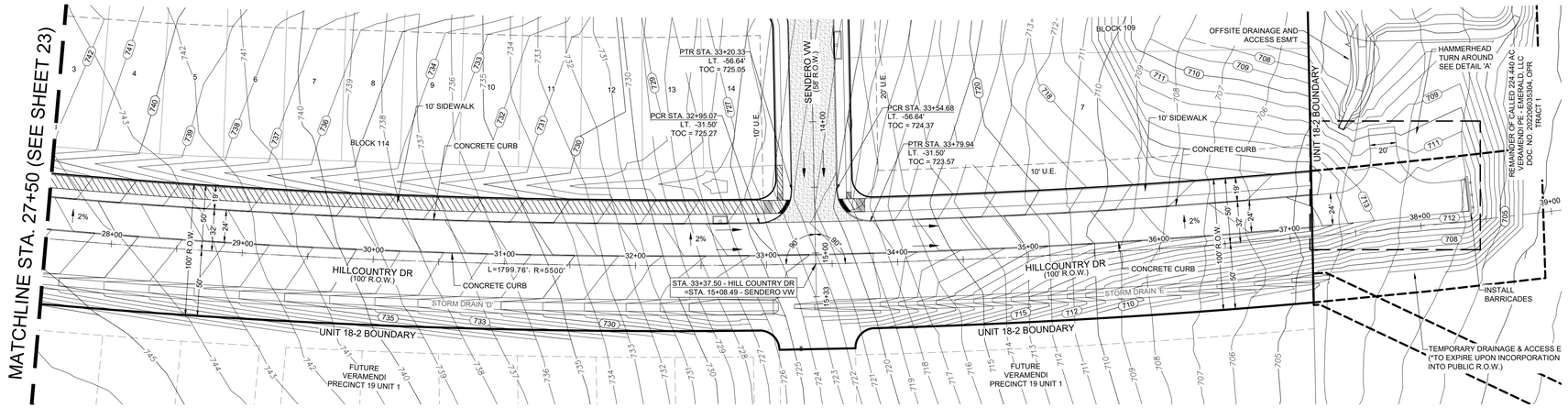
1. ALL HANDICAP RAMPS TO BE TYPE III UNLESS OTHERWISE NOTED, REFER TO SHEET 32.
2. ALL ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. WHERE SIDEWALK IS SEPARATED FROM THE CURB, THE SEPARATION DISTANCE SHALL BE A MINIMUM 6' BETWEEN THE BACK OF CURB AND EDGE OF SIDEWALK.
4. REFER TO SHEETS 32 & 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'





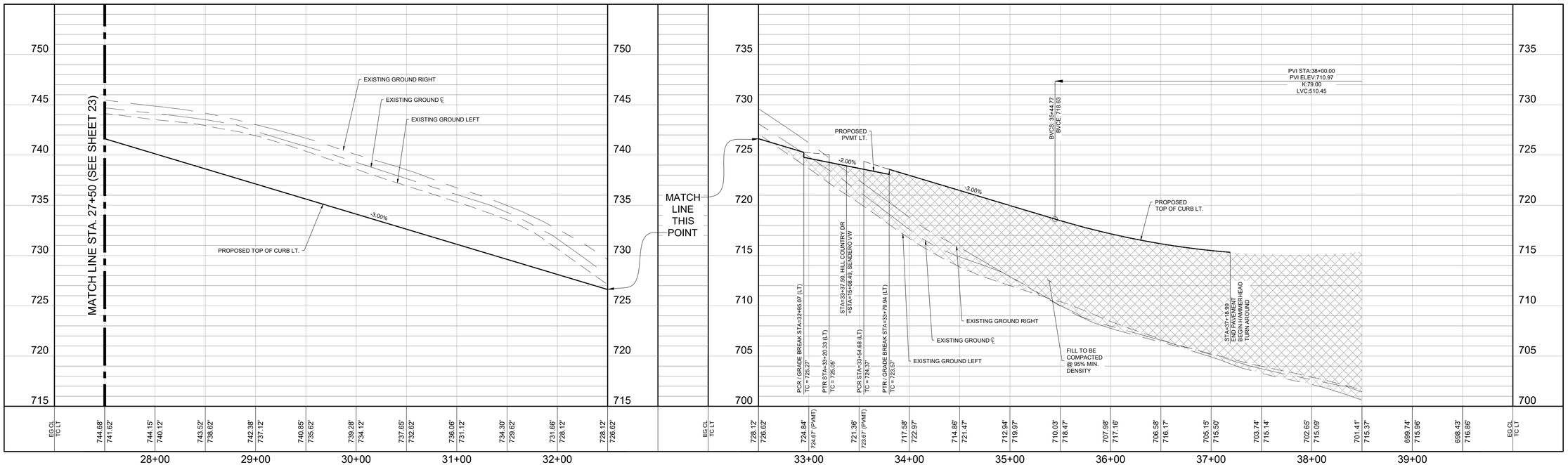
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'



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



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Xrefs Attached:
Last Modified: Mar. 14, 24 - 11:56
Last Modified By: lja, JR, a - 11:56:49

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_Sheet P&P_Hill Country Dr.dwg

3/20/2024

STATE OF TEXAS
PRISCILLA G. FLORES
103874
LICENSED
PROFESSIONAL ENGINEER

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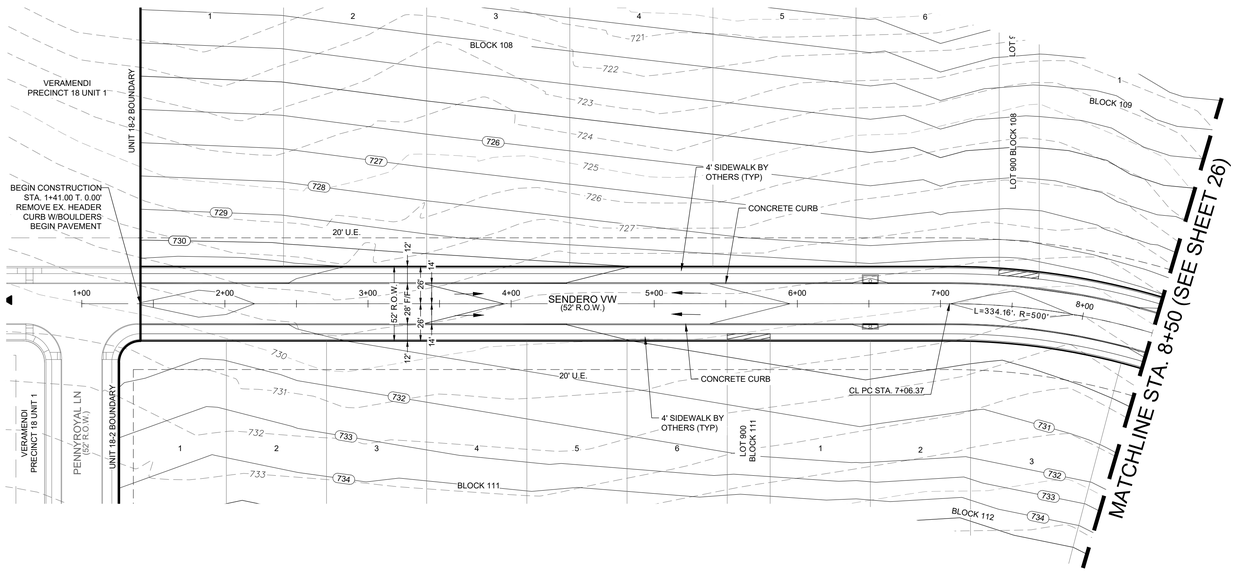
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

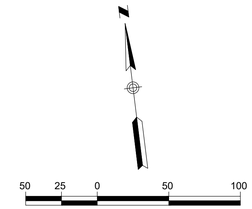
JOB NUMBER: SA3856.0402

SHEET NO. 24 OF 70 SHEETS

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).



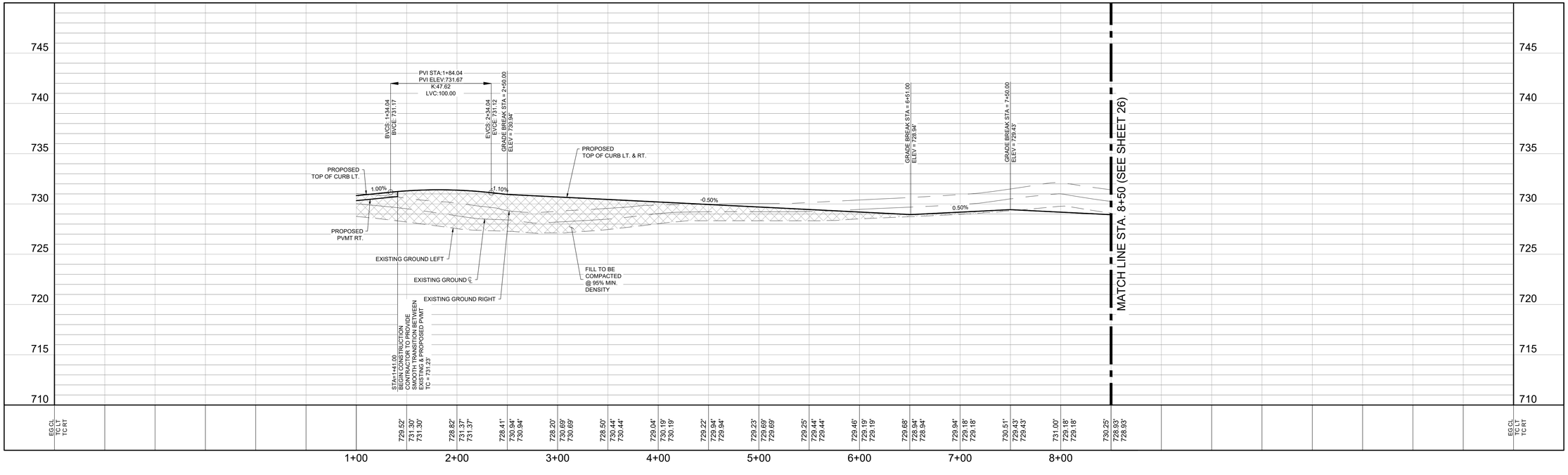


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

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.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 06_Street Plan_Sendero Vw.dwg

3/20/2024
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
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 25 OF 70 SHEETS

K:\SA3856.0xx projects\0402 veramendi precinct 18-21\430 site development plans\dwg-sheets\ph_Sheet P&P_Sendero Vw.dwg
Plotted: Mar 14, 24 - 12:22
Last Modified: Mar 14, 24 - 12:21
Xref Dependencies: Mar 20, 24 - 11:31

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.
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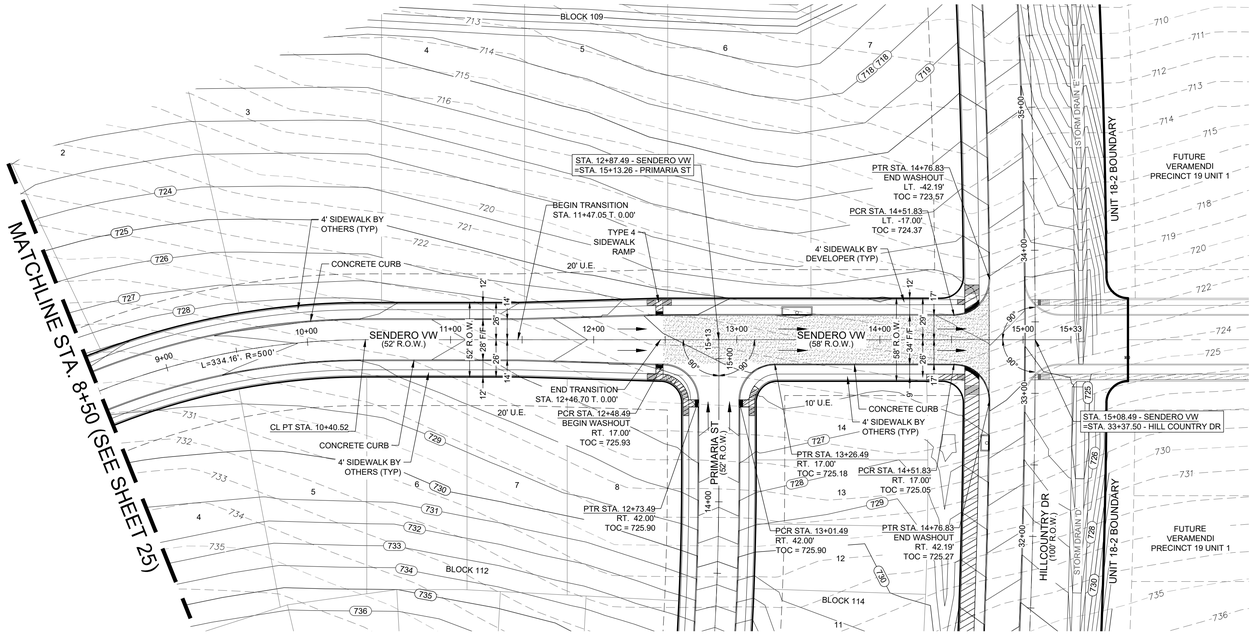
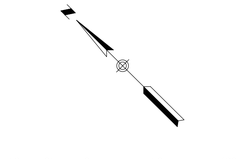
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).



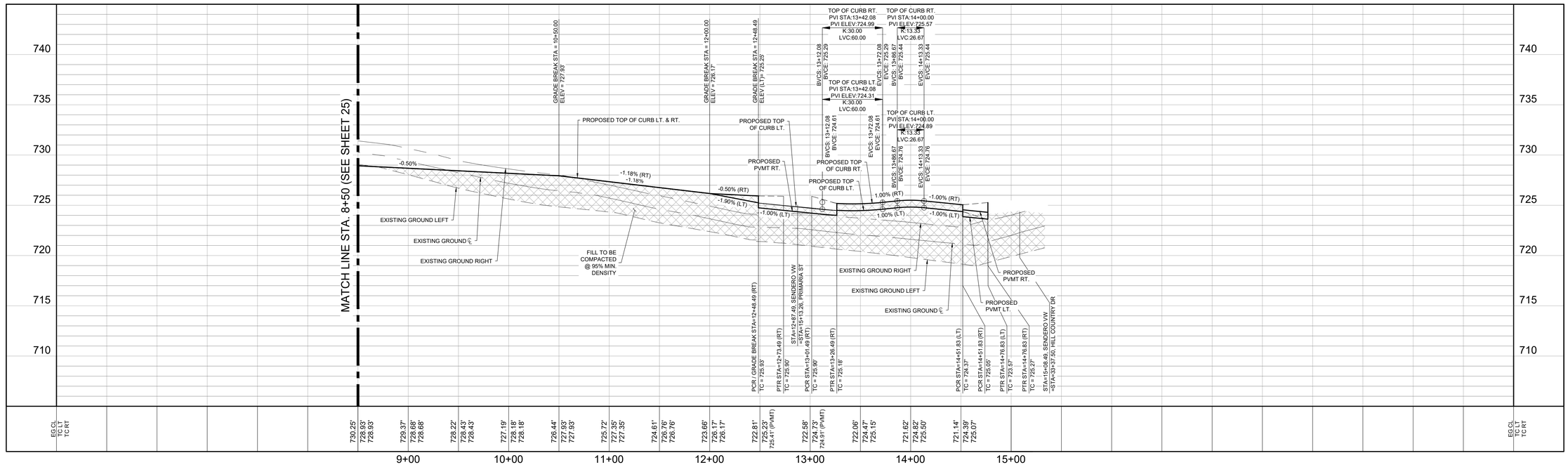


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

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. 8+50 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 26_Street Plan_Sendero Vw.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

JOB NUMBER: SA3856.0402

SHEET NO. 26 OF 70 SHEETS

K:\SA3856.esp_property\SA402_veramendi precinct 18-21\430 site development plans\dwg-sheets\pln_Sheet P&P_Sendero Vw.dwg
Xrefs Attached:
Last Modified: Mar. 14, 24 - 12:22
Plotted By: Mar. 20, 24 - 11:41 a.m.

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.
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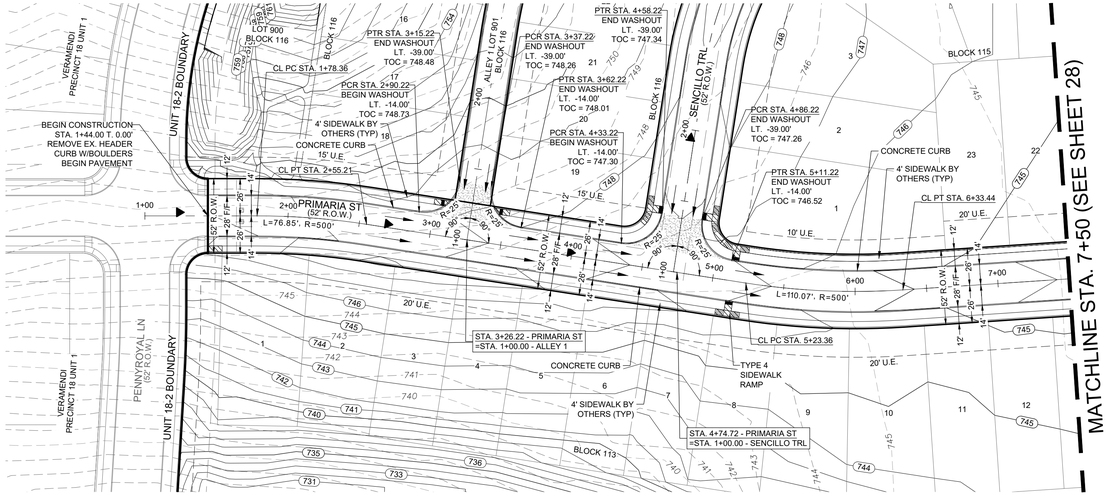
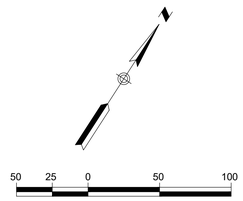
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).



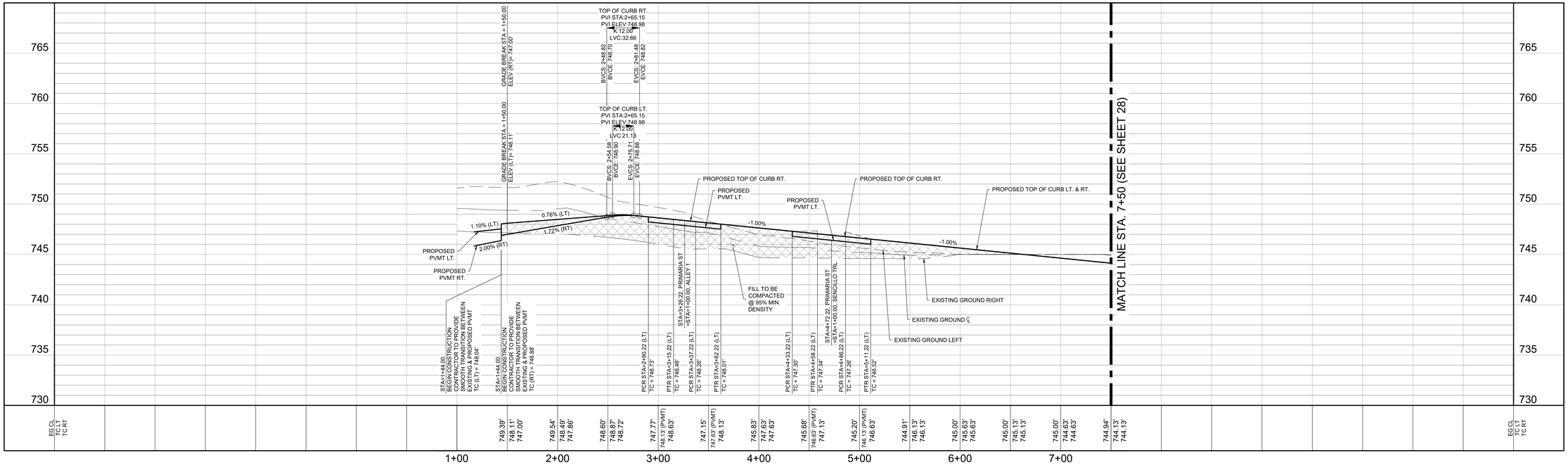


HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

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

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



FOR PERMIT

P:\LJA\DSE dsn properties\VM2 verramendi precinct 18-21\VM2 site development plans\dwg-sheets\sh_Sheet P&P_Primaria St.dwg
User: Nicholas Gonzalez
Last Modified: Mar. 14, 24 – 14:39
Plot Scale: 1in = 1in, Plot By: Nicholas Gonzalez

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: P:\...\Sheet P&P_Primaria St.dwg

3/20/2024
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
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 27
OF 70 SHEETS

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.
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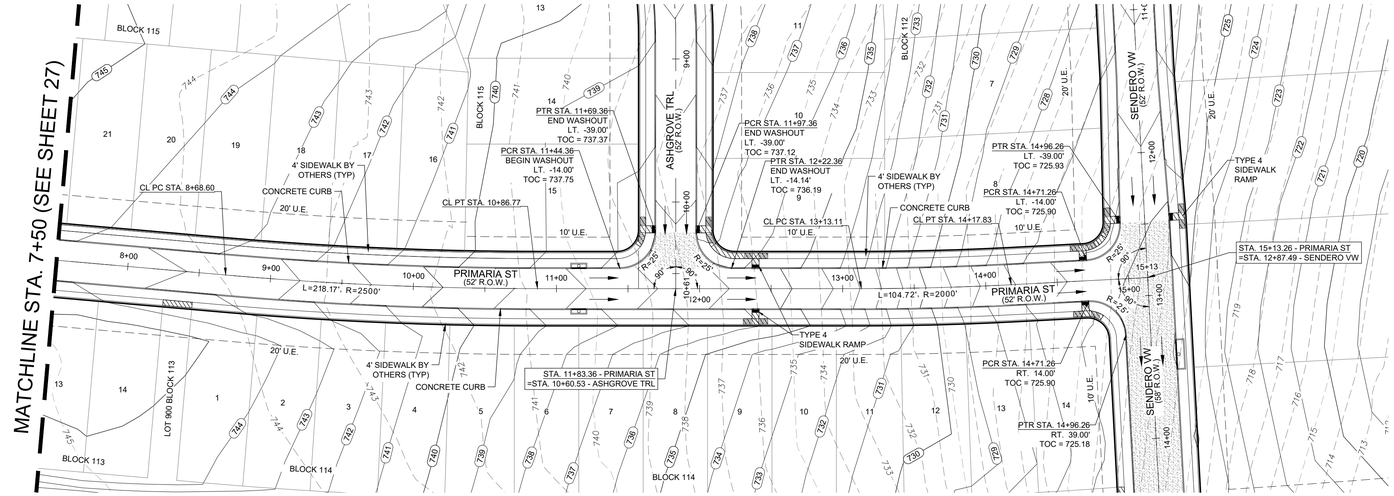
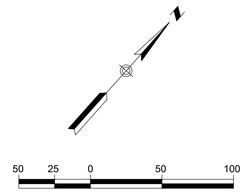
9. VERTICAL CURVE DESIGN SPEED ARE IN COMPLIANCE WITH THE APPROVED DEVELOPMENT CODE TABLE 13-2 FOR LOCAL A (25 MPH) AND MINOR COLLECTOR (40MPH).

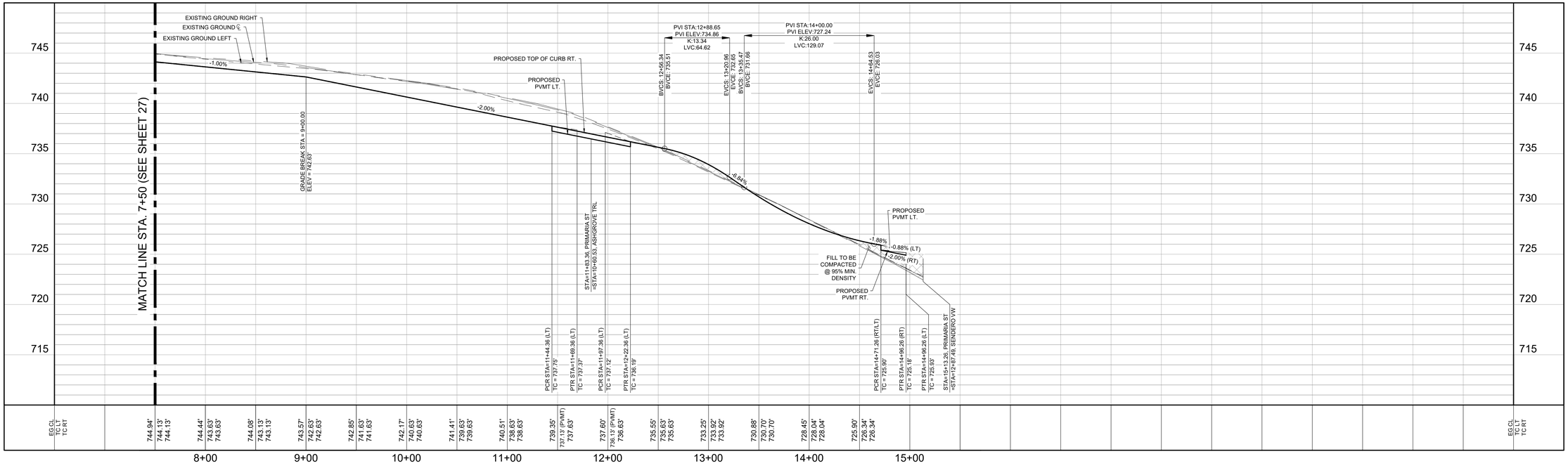




LEGEND

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

PRIMARIA ST STA. 7+50 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...\Sheet P&P_Primaria St.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 28 OF 70 SHEETS

K:\SA3856.esp property\SA02 veramendi precinct 18-21\430 site development plans\dwg-sheets\ph_Sheet P&P_Primaria St.dwg
Xrefs Attached: None
Last Modified: Mar. 14, 24 - 14:39
Plotted By: Mar. 20, 24 - 14:24

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.
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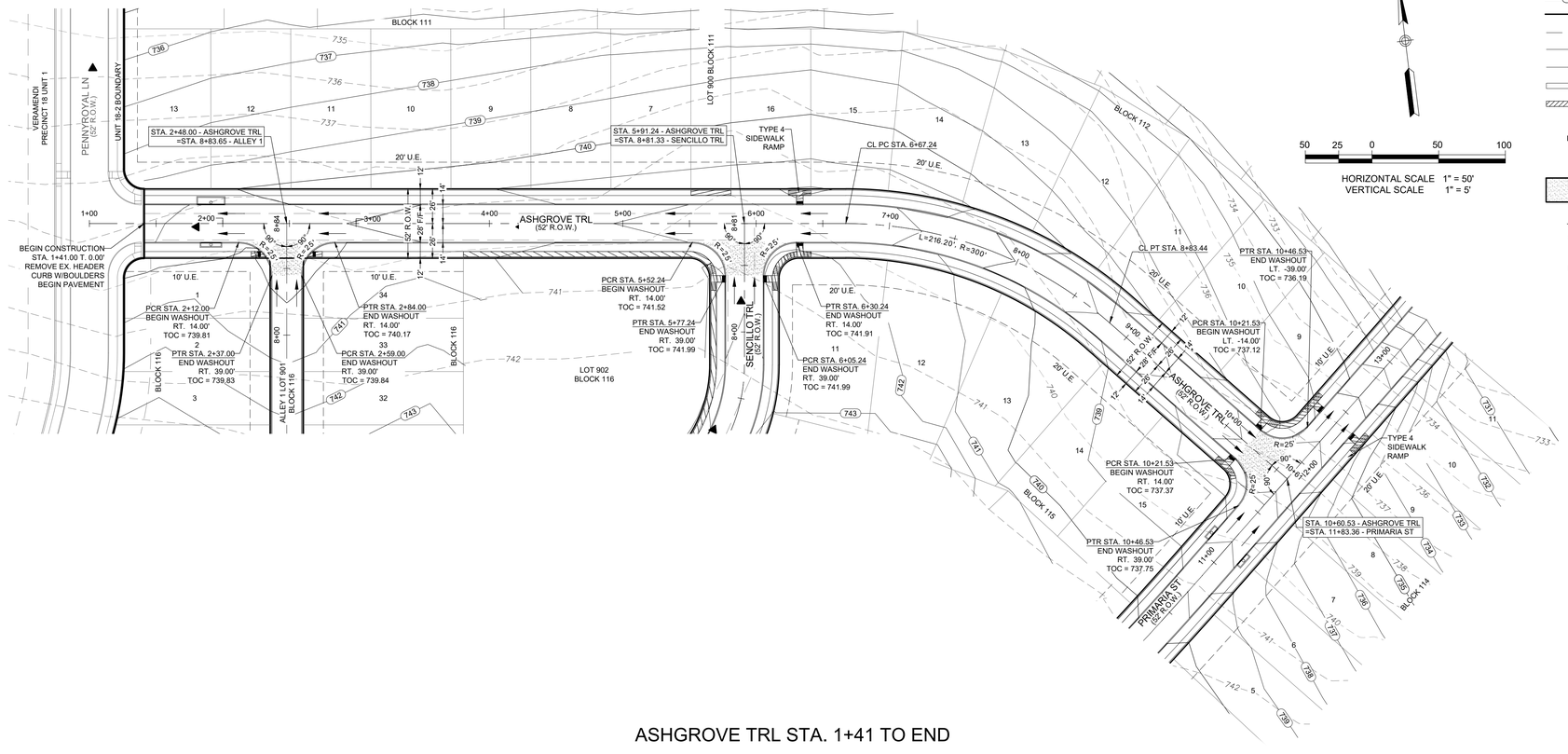
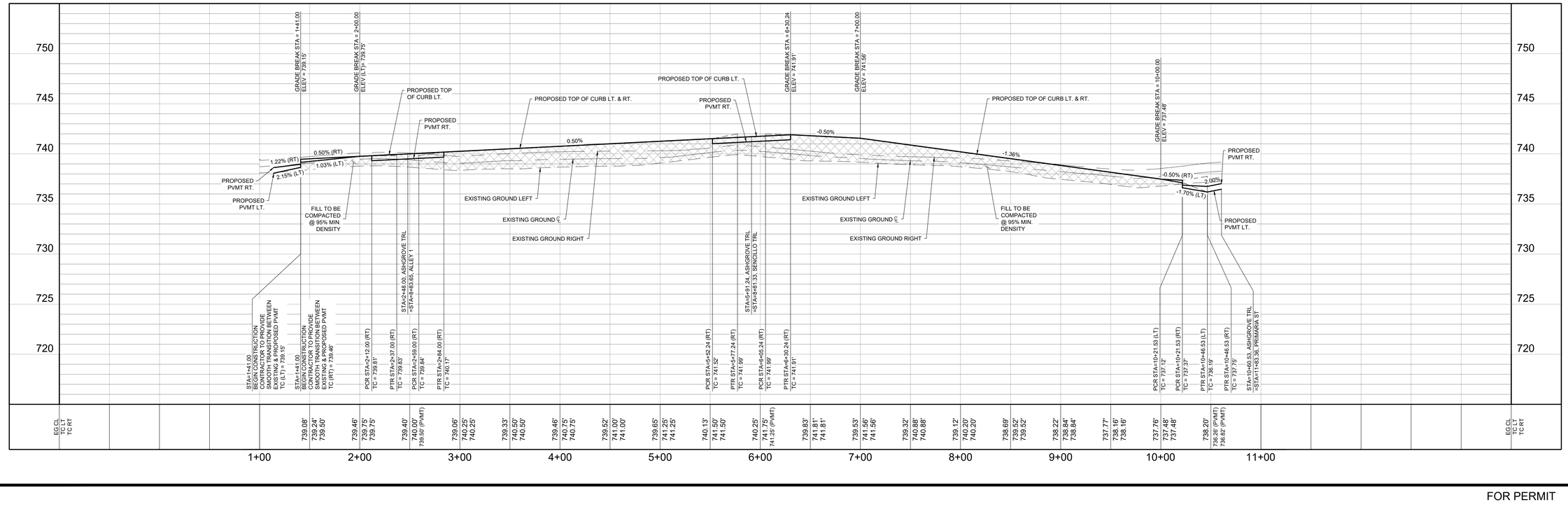
8. SIDEWALK INFRASTRUCTURE SHALL BE INSTALLED ALONG THE STREET FRONT OF ALL LOTS AT THE TIME OF LOT IMPROVEMENT. FOR LOTS WHERE NO BUILDING IMPROVEMENT IS PROPOSED, ALL SIDEWALKS AND PEDESTRIAN CROSSING RAMPS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.
9. VERTICAL CURVE DESIGN SPEED ARE 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
- 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.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 01_Sheet Files\...\Ashgrove Trl.dwg

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — 3/20/2024

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:\SA3856 sss properties\04\02 veramendi precinct 18-21\420 site development plans\dwg sheets\sh_Sheet Files\...\Ashgrove Trl.dwg
Plotted: Mar 14, 24 - 14:48
Last Modified: Mar 14, 24 - 14:48
Last Modified By: MAP

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.
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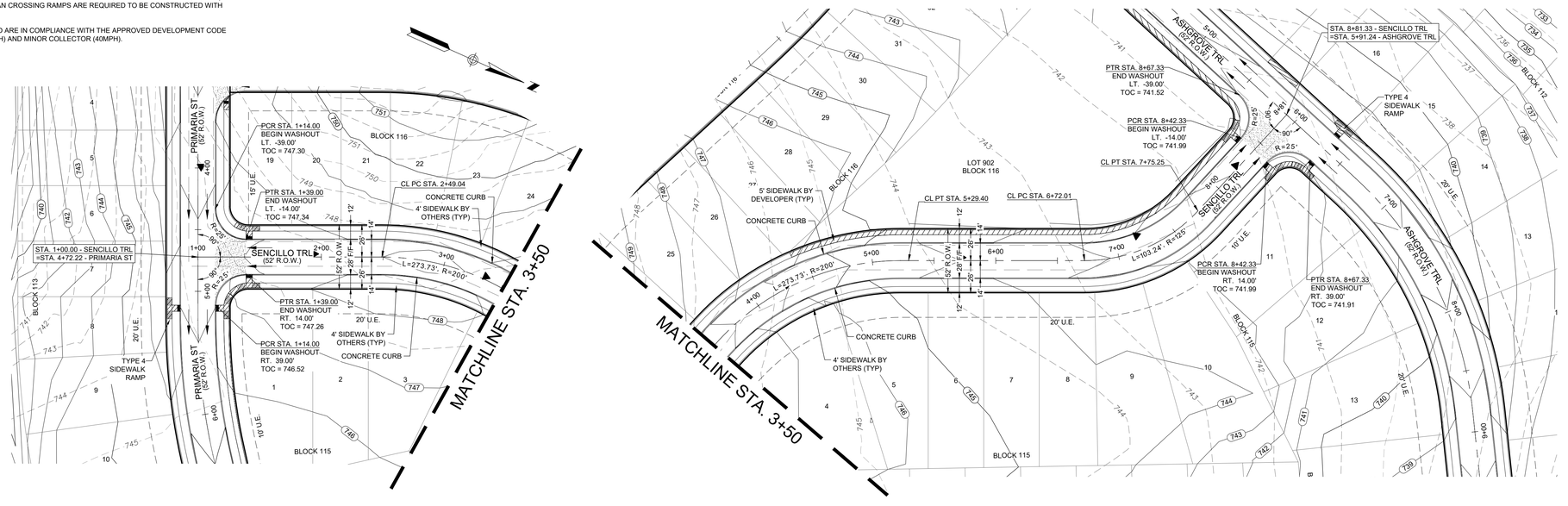
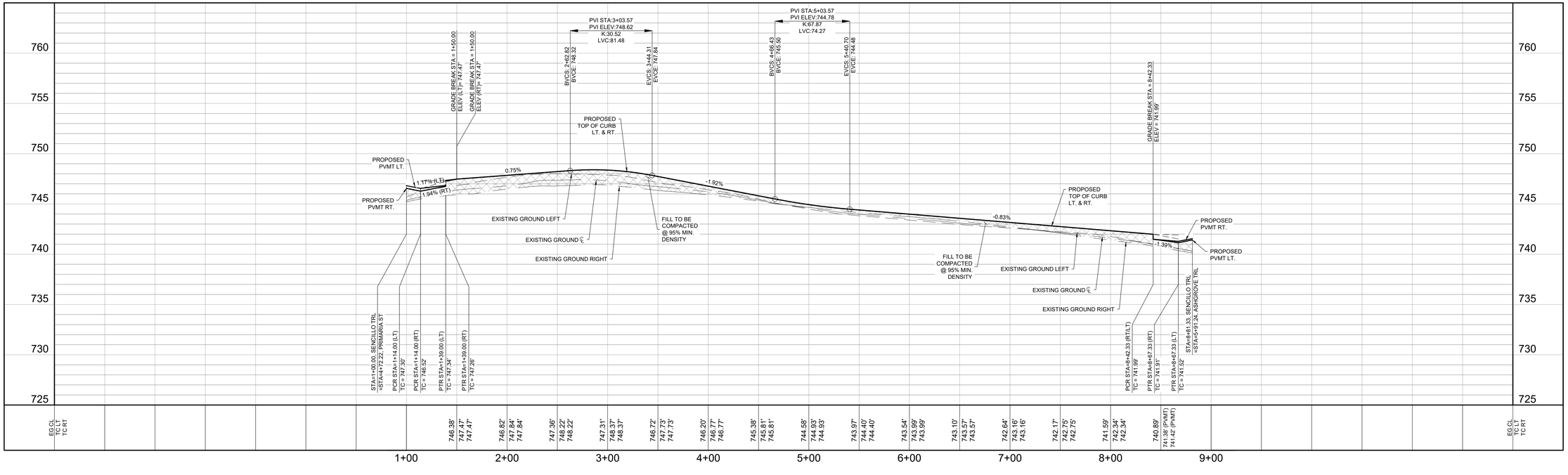


SENCILLO TRL STA. 1+00 TO END



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

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: ...\Sheet P&P_Sencillo Trl.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

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. 30 OF 70 SHEETS

FOR PERMIT

K:\SA3856.000 property\SA3856.000 veramendi precinct 18-21\430 site development plans\dwg-sheets\SA_Sheet P&P_Sencillo Trl.dwg
Xref Name(s):
Last Modified: Mar. 14, 24 - 14:51
Plot Scale: 1in. = 1in.

GENERAL NOTES:

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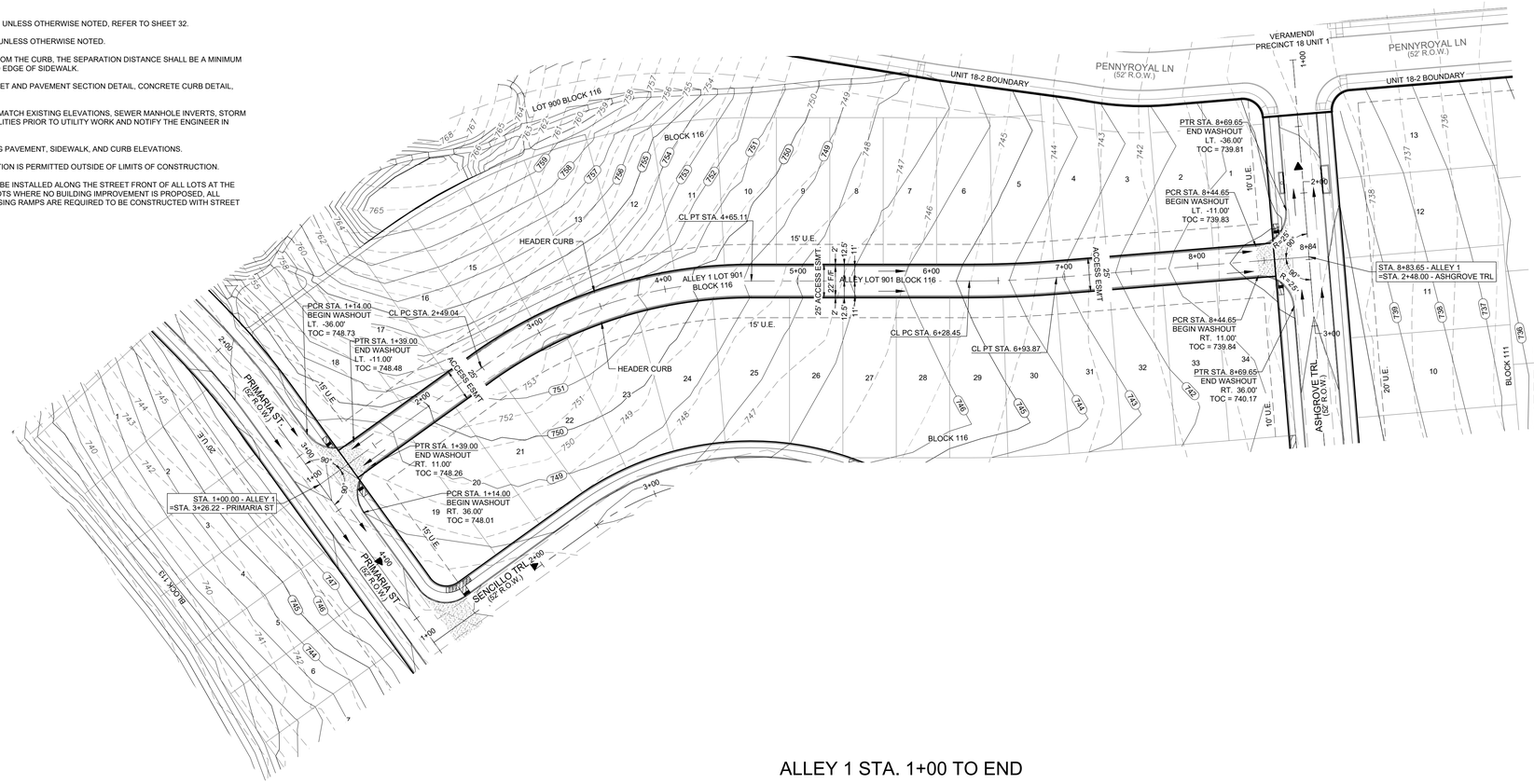

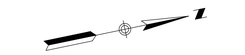

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

LEGEND

800	PROPOSED CONTOUR
	PROPOSED STREET GRADE
	EXISTING GROUND LEFT
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	SIDEWALK (HOMEOWNER'S RESPONSIBILITY)
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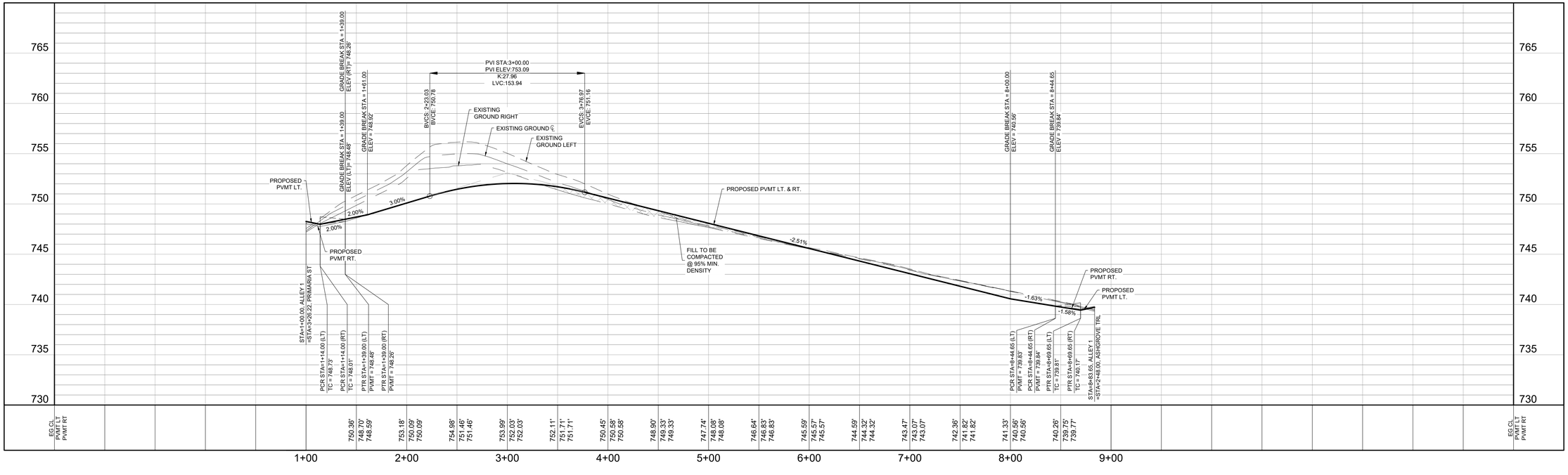
	WASHOUT CROWN
	WASHOUT FLOW ARROW
EG CL	EXISTING GRADE CENTER LINE
TC	TOP OF CURB
ELEV	PAVEMENT ELEVATION

ALLEY 1 STA. 1+00 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: sh_Street P&P_Alley 1.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

LJA Engineering, Inc.
9630 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 31 OF 70 SHEETS

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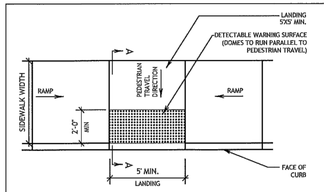
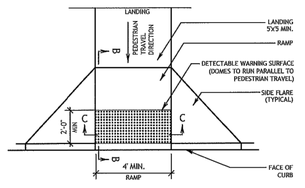
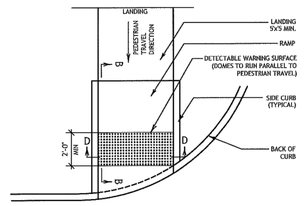


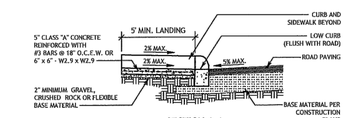
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



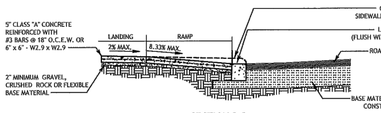
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



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



SECTION A-A



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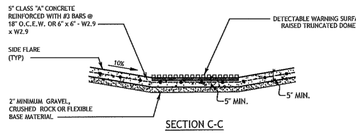
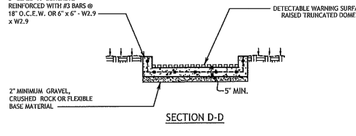


SECTION C-C



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

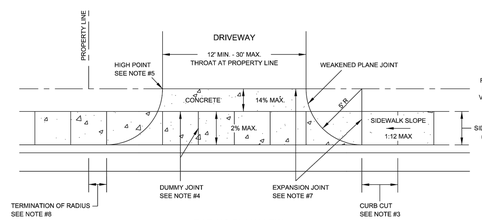
1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN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

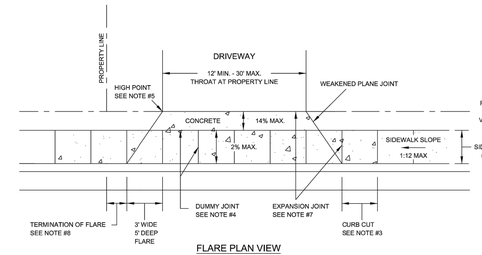
CURB RAMP STANDARDS

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

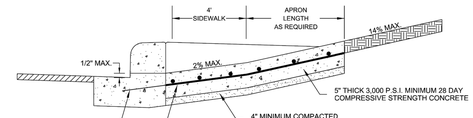


FLARE PLAN VIEW

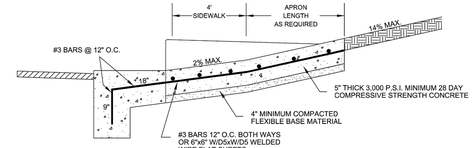
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



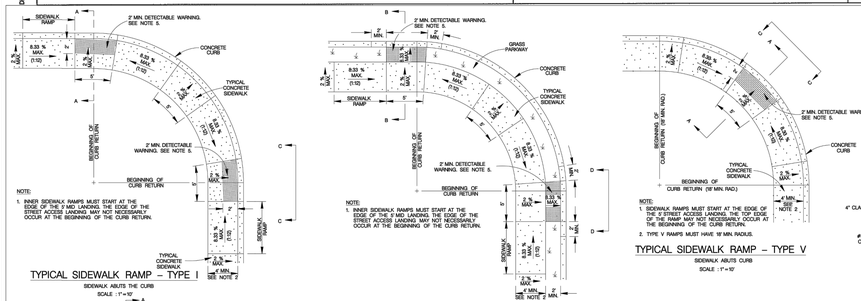
NO EXISTING CURB STRUCTURAL SECTION

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.

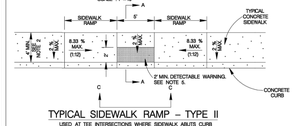
DATE APPROVED: 04/2016	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

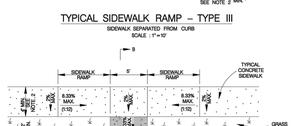


TYPICAL SIDEWALK RAMP – TYPE I
SIDEWALK ABUTS THE CURB
SCALE: 1"=10'

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



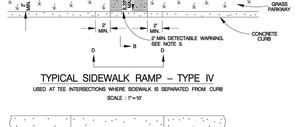
TYPICAL SIDEWALK RAMP – TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE: 1"=10'



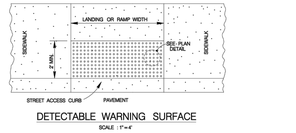
TYPICAL SIDEWALK RAMP – TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=10'



DETECTABLE WARNING SURFACE
SCALE: 1"=4'



SIDEWALK PASSING SPACE
SCALE: 1"=10'



PLAN DETAIL
NO SCALE

DOME SECTION
NO SCALE

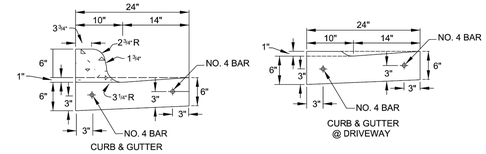
NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

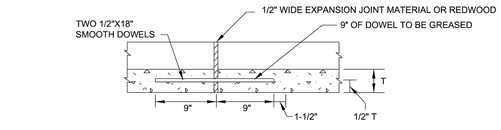
TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	6'-4"
3%	4'-6"	5'-10"
4%	4'-3"	12'-6"
5%	3'-10"	16'-8"

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





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.

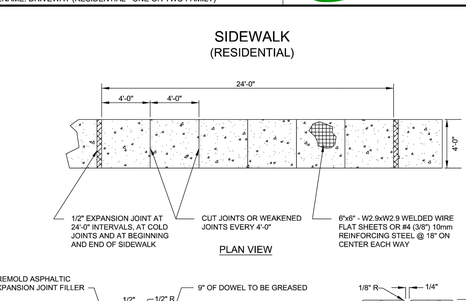
NOTES:

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.

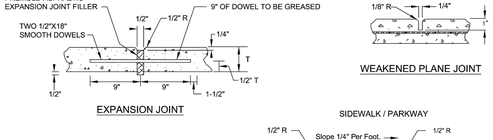
DATE APPROVED: 07/2008	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CURB & GUTTER		

City of New Braunfels ENGINEERING DEPARTMENT

SIDEWALK
(RESIDENTIAL)

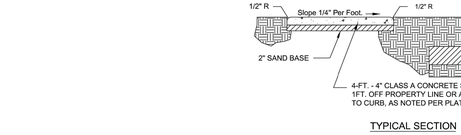


PLAN VIEW



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.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: KG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: st_Street Details.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

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

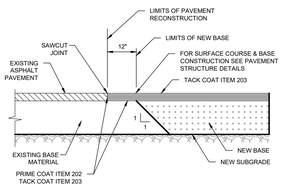
JOB NUMBER: SA3856.0402

SHEET NO. 32 OF 70 SHEETS

FOR PERMIT

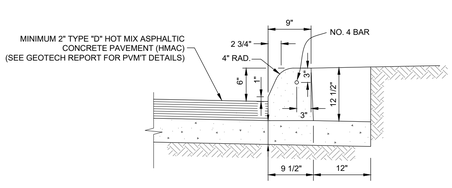
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

K:\SA3856.000\projects\0402 veramendi precinct 18-21\426 site development plans\dwg\sheets\gh_Street Details.dwg
Last Modified: Mar 14, 24 - 15:07
Last Modified By: Kevin Gonzalez



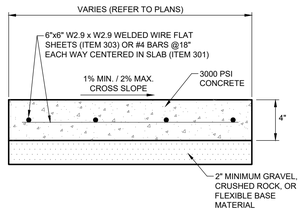
PAVEMENT TIE-IN DETAIL

N.T.S.



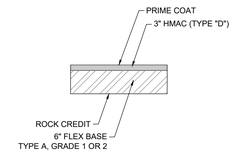
STANDARD CURB DETAIL

N.T.S.



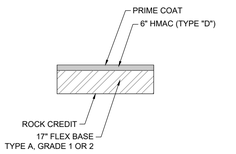
SIDEWALK DETAIL

N.T.S.



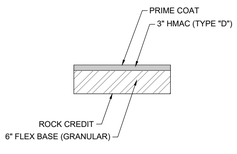
TEMPORARY PAVEMENT DETAIL

N.T.S.



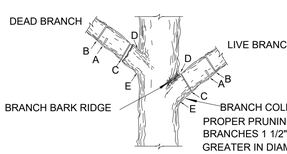
HILL COUNTRY DR SECTION

N.T.S.



LOCAL B, LOCAL A & ALLEY PAVEMENT 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.

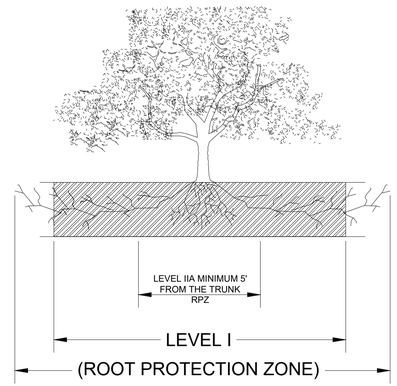
C. FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS

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

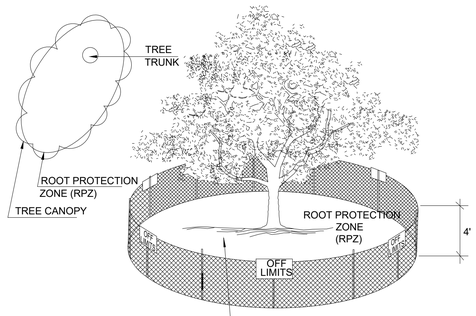
N. T. S.



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.



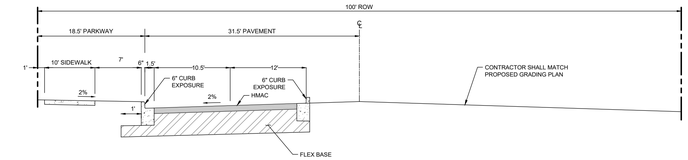
NOTE:

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

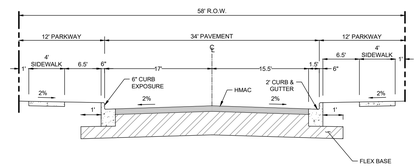
N. T. S.



HILL COUNTRY DR CROSS SECTION

N.T.S.

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

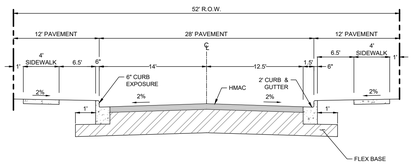


LOCAL B TYPICAL STREET SECTION

N.T.S.

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

(SENDERO VW)

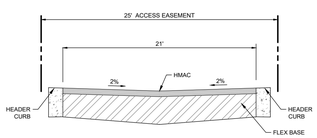


LOCAL A TYPICAL STREET SECTION

N.T.S.

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

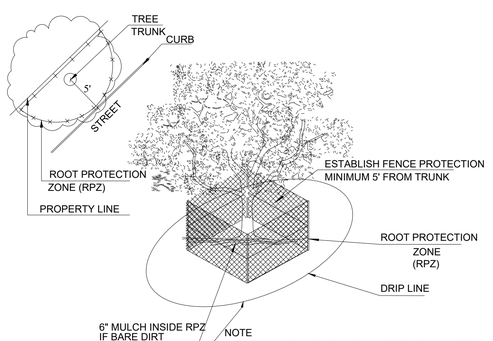
(PRIMARIA ST)
(ASHGROVE TRL)
(SENDERO VW)
(SENCILO TRL)



ALLEY TYPICAL STREET SECTION

N.T.S.

(ALLEY-1)



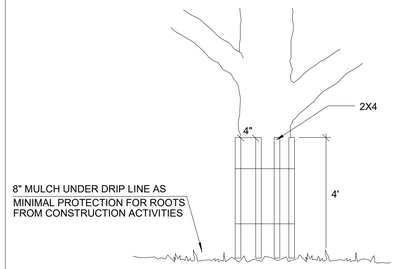
NOTE

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.

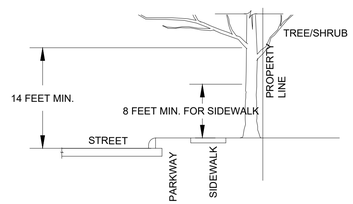


FIGURE No.2:

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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Street Details.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

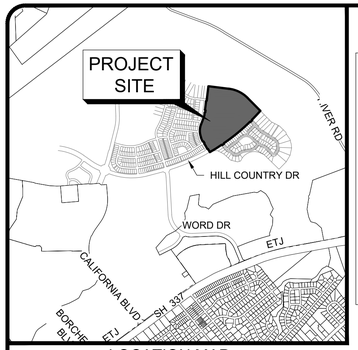
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

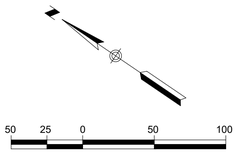
SHEET NO. 33 OF 70 SHEETS

FOR PERMIT

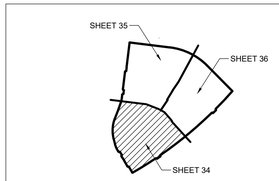
K:\sa3856.dsn.pcpw\sa3856.0402 veramendi precinct 18-2\026 site development plan\dwg-sheet\sh_Street Details.dwg
User Name: Priscilla Flores
Last Modified: Mar. 14, 24 - 15:07
Last Plotted: Mar. 14, 24 - 15:14



LOCATION MAP
N.T.S.



SCALE IN FEET
SCALE: 1"=50'



SHEET INDEX
SCALE 1" = 1000'

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.
4. 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.

TRENCH EXCAVATION SAFETY PROTECTION:

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VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE LAYOUT (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Signage_layout.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

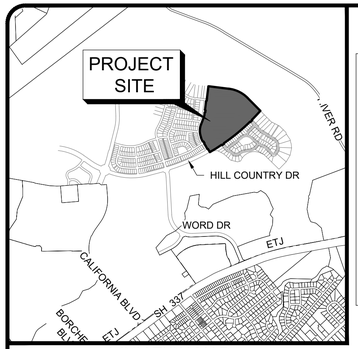
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

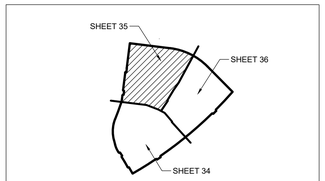
SHEET NO. 34
OF 70 SHEETS

FOR PERMIT

K:\SA3856 data prep\civil\0402 veramendi precinct 18-2\426 site development plans\dwg\sheets\sh_Signage_layout.dwg
Xref Dependencies:
Last Modified: Mar. 14, 24 - 15:43
Date Plotted: Mar. 20, 24 - 11:50



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

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B. PRIMARIA ST
C. ASHGROVE TRL
D. SENCILLO TRL

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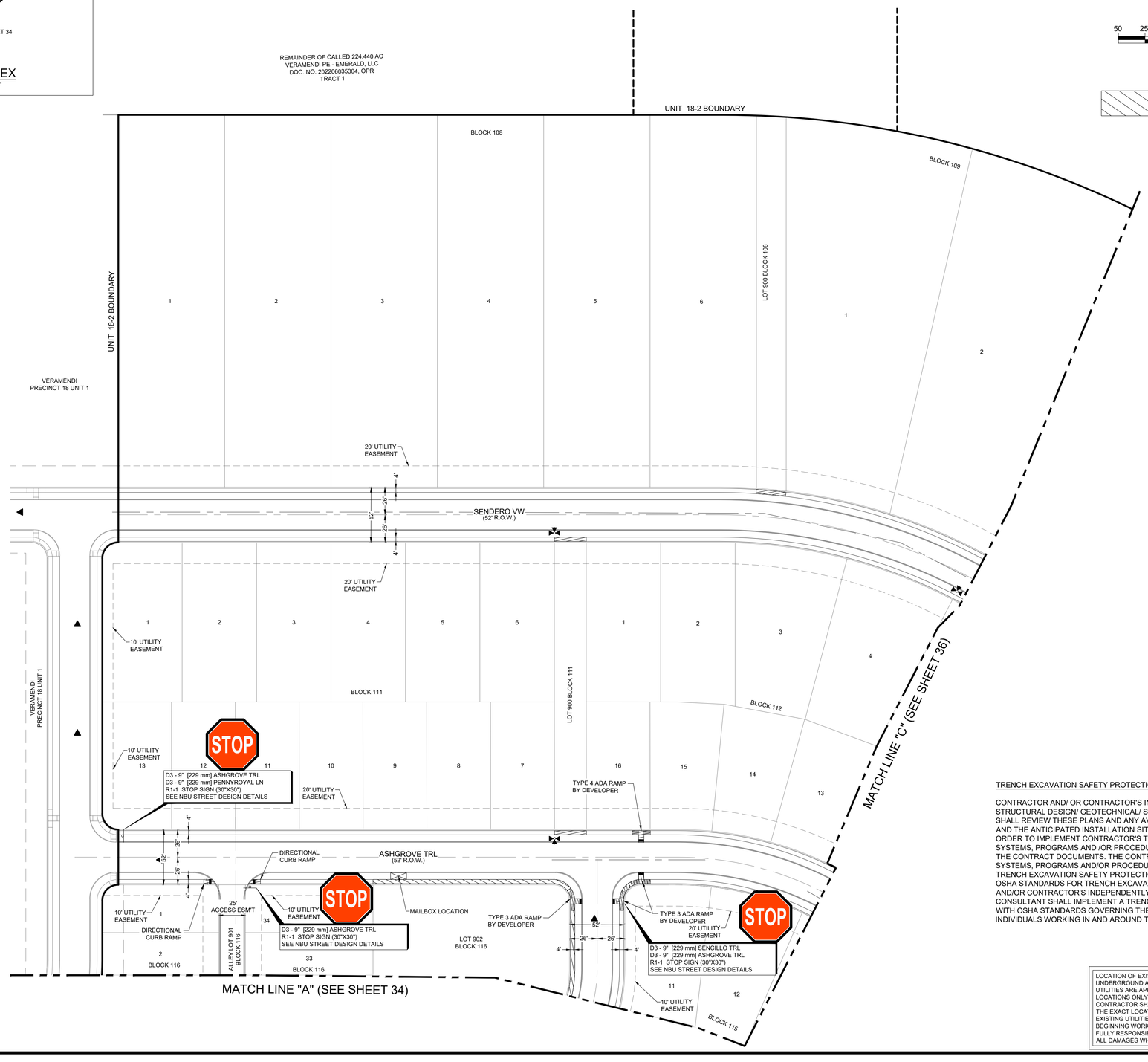



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FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE LAYOUT (SHEET 2 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_SignageLayout.dwng

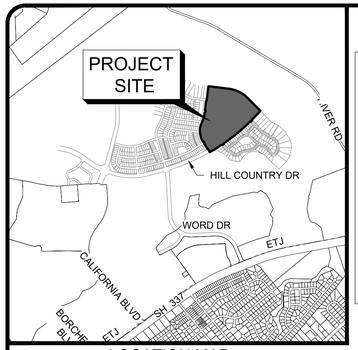
3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla G Flores

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

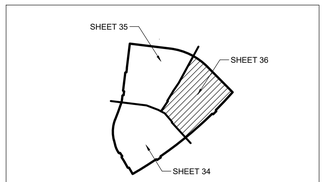
JOB NUMBER: SA3856.0402

SHEET NO. 35
OF 70 SHEETS

K:\SA3856.doc projects\Q4002 veramendi precinct 18-21\CAD\ site development plans\dwg\sheets\sh_SignageLayout.dwg
Plotted: Mar. 14, 24 - 15:43
Last Modified: Mar. 14, 24 - 15:43
Xref Dependencies:



LOCATION MAP
N.T.S.



SHEET INDEX
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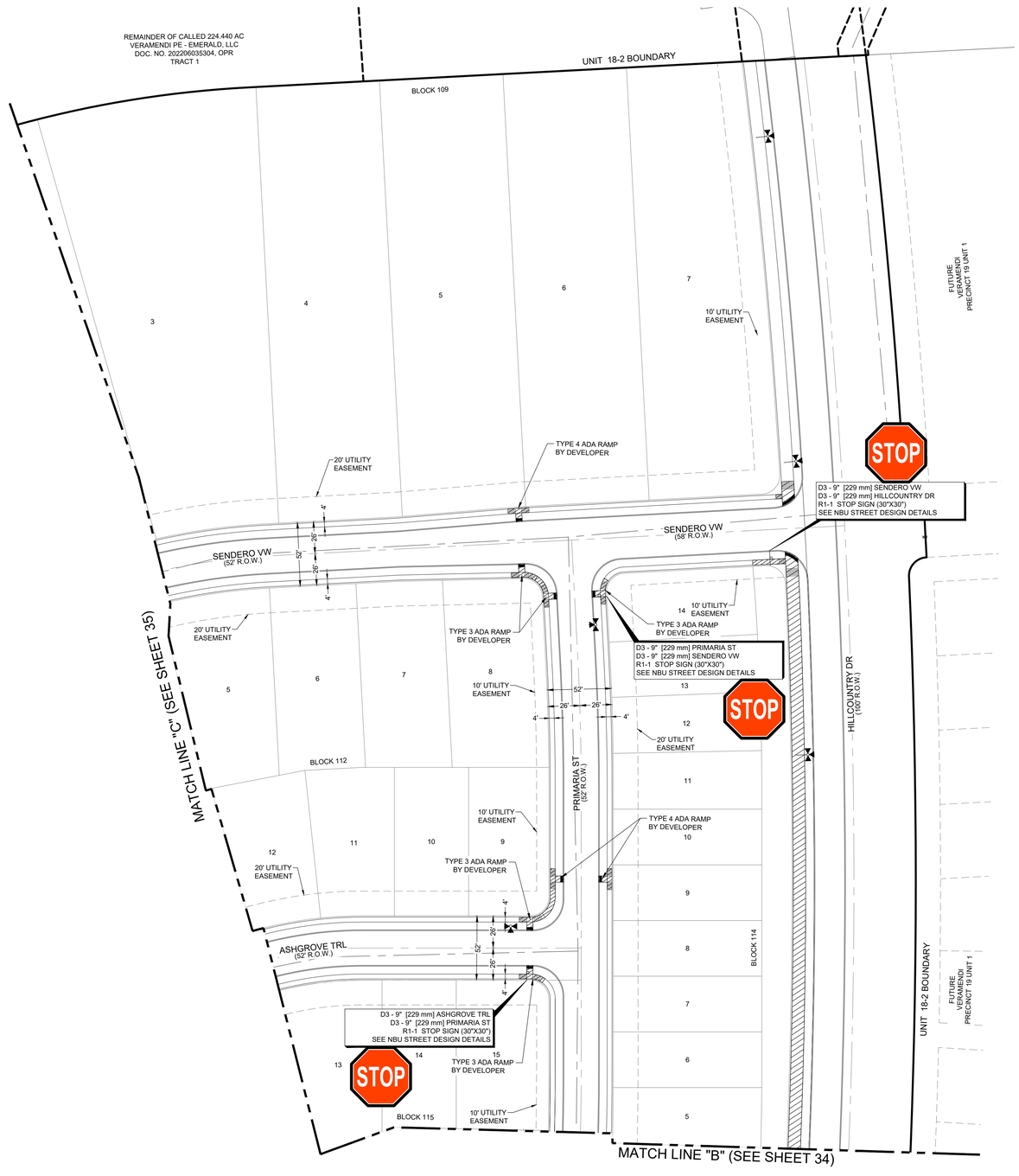

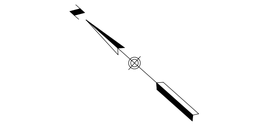

SCALE IN FEET
SCALE: 1"=50'

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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
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STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

LJA Engineering, Inc.
9830 Colonade Blvd
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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 36
OF 70 SHEETS

FOR PERMIT

K:\sa3856.non_properties\0402 veramendi precinct 18-2\026 site development plans\dwg sheets\sh_SignageLayout.dwg
Last Modified: Mar. 14, 24 - 15:43
Last Plotted: Mar. 20, 24 - 15:44 by

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

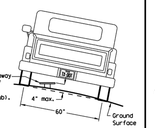
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SB0 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- S16 = 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/G Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

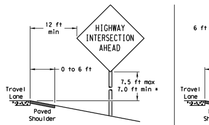
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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).

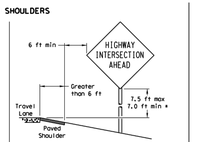
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

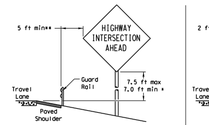
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



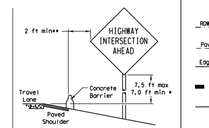
GREATER THAN 6 FT. WIDE

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

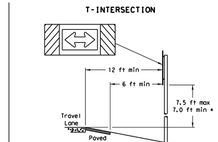


BEHIND GUARDRAIL

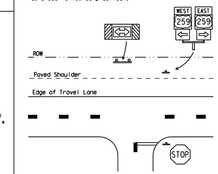


BEHIND CONCRETE BARRIER

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.



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

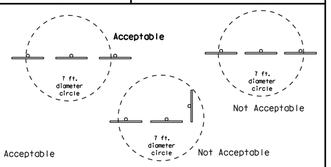
- Signs shall be mounted using the following condition that results in the greatest sign elevation:
  - (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on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

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

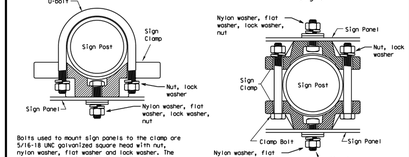
See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
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



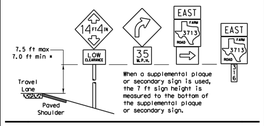
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

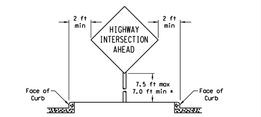
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

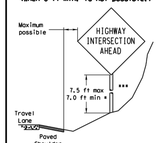


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



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



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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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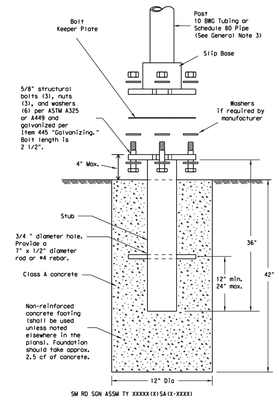
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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:

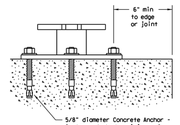
1. Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   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-or-diesel 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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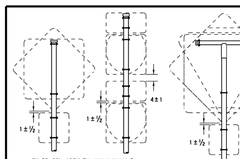
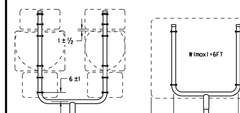


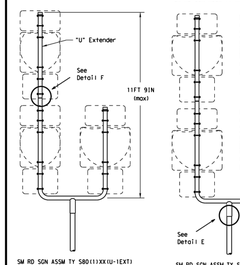
SM RD SGN ASSM TY XXXXX(1)XX(P)

SM RD SGN ASSM TY XXXXX(1)XX(T)

SM RD SGN ASSM TY XXXXX(1)XX(P-BW)



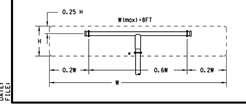
SM RD SGN ASSM TY XXXXX(1)XX(U)



SM RD SGN ASSM TY S80(1)XX(U-1EXT)

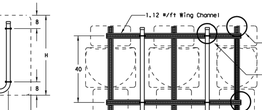
SM RD SGN ASSM TY S80(1)XX(U-2EXT)

SM RD SGN ASSM TY XXXXX(2)XX(P)

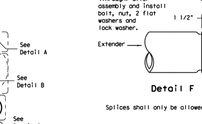


SM RD SGN ASSM TY XXXXX(1)XX(T) (+ See Note 12)

All dimensions are in english unless detailed otherwise.

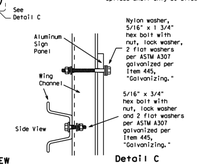


SM RD SGN ASSM TY XXXXX(1)XX(U-WC) (See Note 11)

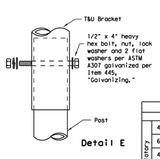


Detail F

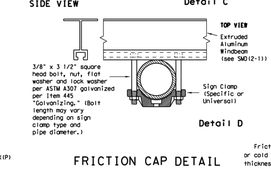
Splices shall only be allowed behind the sign substrate.



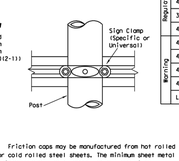
SIDE VIEW **Detail C**



Detail E

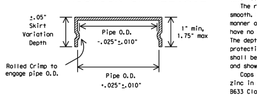


Detail D



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 S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

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.

Texas Department of Transportation
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SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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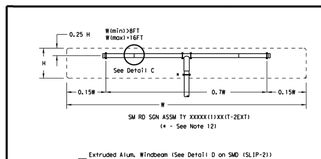
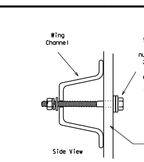
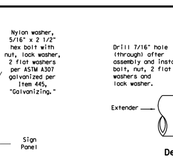


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT) (+ See Note 12)

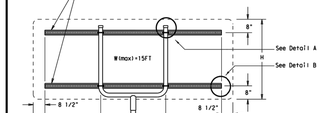


Detail B

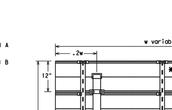


Detail C

Splices shall only be allowed behind the sign substrate.



SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



Typical Sign Mount

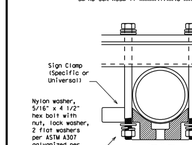
SM RD SGN ASSM TY SB0(2)XX(P-EXAL)

✱ Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

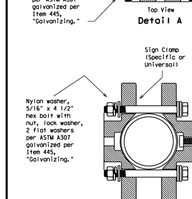
See Detail E for clamp installation



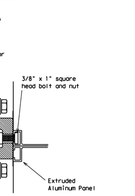
Detail E



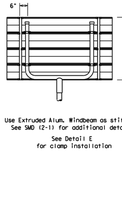
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET



Extruded Aluminum Sign With T Bracket



Use Extruded Alum. Windbeam as stiffeners See SMD (2-11) for additional details

See Detail E for clamp installation

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 S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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	REVISIONS		

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

VERAMENDI PRECINCT 18 UNIT 2

SIGNAGE DETAILS (SHEET 1 OF 2)

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 37 OF 70 SHEETS

FOR PERMIT

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Last Modified: Mar. 14, 24 - 16:01
Last Modified By: Mar. 14, 24 - 16:01

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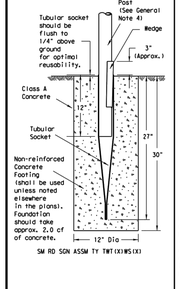
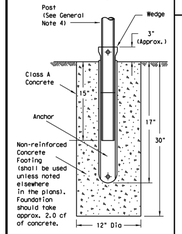
Wedge Anchor Steel System



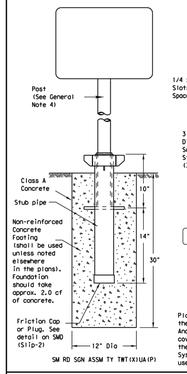
SM RD SGN ASSM TY TWT(XX)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

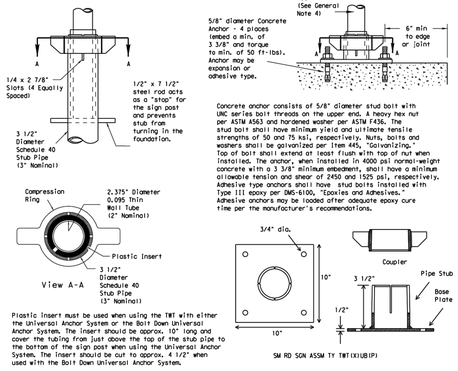


SMD RD SGN ASSM TY TWT(X)WP(X)

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.

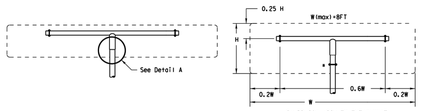
SM RD SGN ASSM TY TWT(XX)UB(P)

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)

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

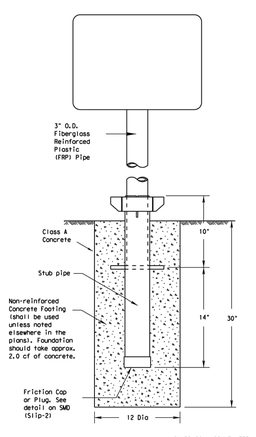
Texas Department of Transportation
Traffic Operations Division

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

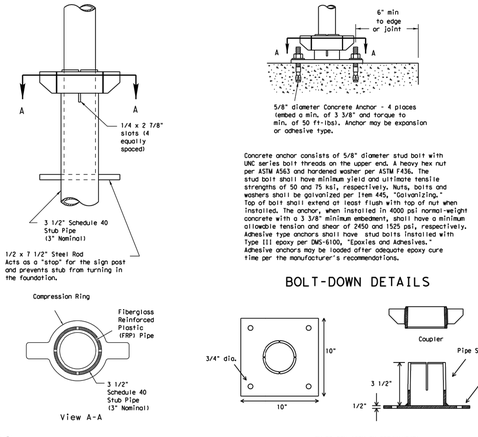
©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26E

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



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



6" min to edge or joint

5/8" diameter Concrete Anchor - 4 places (embed a min. of 3 3/8" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.

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.

BOLT-DOWN DETAILS

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

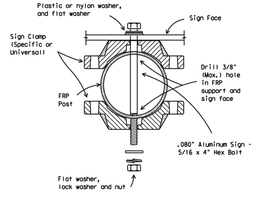
GENERAL NOTES:
1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic 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 obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

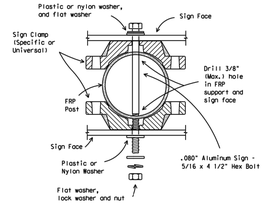
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a 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



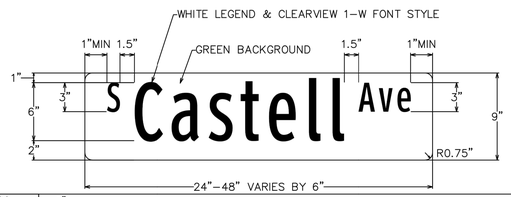
Texas Department of Transportation
Traffic Operations Division

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

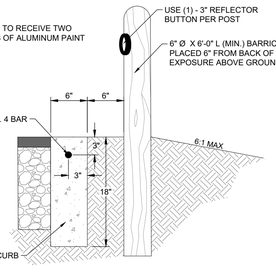
Notes:
1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall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

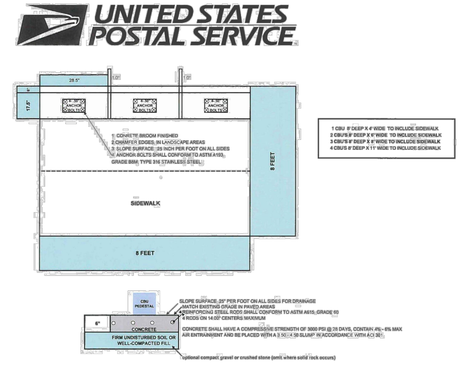
City of New Braunfels
ENGINEERING DIVISION
424 S. CASTELL AVE.
NEW BRAUNFELS, TEXAS 78130
PHONE: 830.221.4020
FAX: 830.626.3000

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.



DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation shall not be liable for any damages resulting from the reuse of this standard or modifications or for incorrect results or damages resulting from its use.

K:\Lja3856.dss projects\2402 veramendi precinct 18-21\428 site development plans\dwg-sheets\sh_Signage Details.dwg
Plotted By: Priscilla Flores - 3/14/2024 - 16:01
Last Modified: Mar 14, 24 - 16:01
Xref Dependencies: None

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: sh_Signage Details.dwg

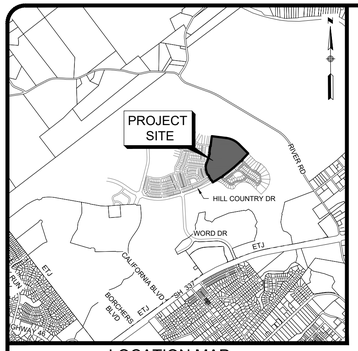
3/14/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla Flores

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

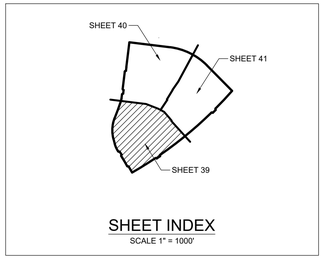
JOB NUMBER: SA3856.0402

SHEET NO. 38 OF 70 SHEETS

FOR PERMIT



LOCATION MAP
N.T.S.

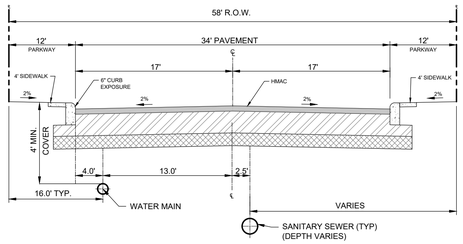


SHEET INDEX
SCALE 1" = 1000'

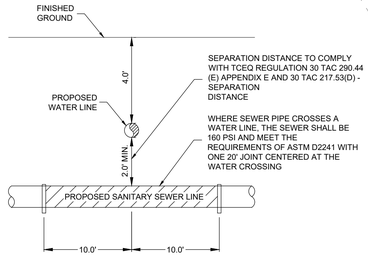
TRENCH EXCAVATION SAFETY PROTECTION

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.

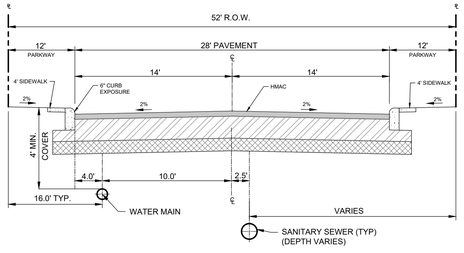
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED 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.

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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S" WW	S" WW	SANITARY SEWER LINE
W	W	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

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 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.

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

UTILITY LAYOUT (SHEET 1 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: NG
CHECKED BY: PGF
DRAWING NAME: sh_Utility.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 39
OF 70 SHEETS

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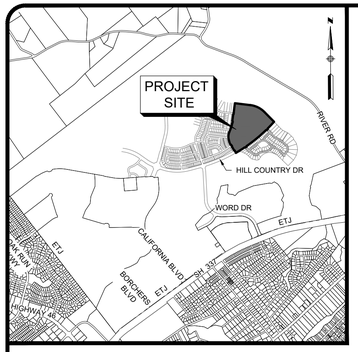
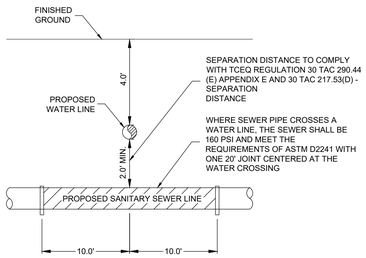
Xref Name: sh_Utility.dwg
Last Modified: Mon, 15_24 - 16:08
Plot Date/Time: Mon, 20_24 - 14:54:31

VERAMENDI PRECINCT 18 UNIT 2

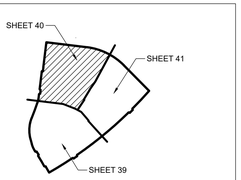
UTILITY LAYOUT (SHEET 2 OF 3)



LOCATION MAP
N.T.S.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



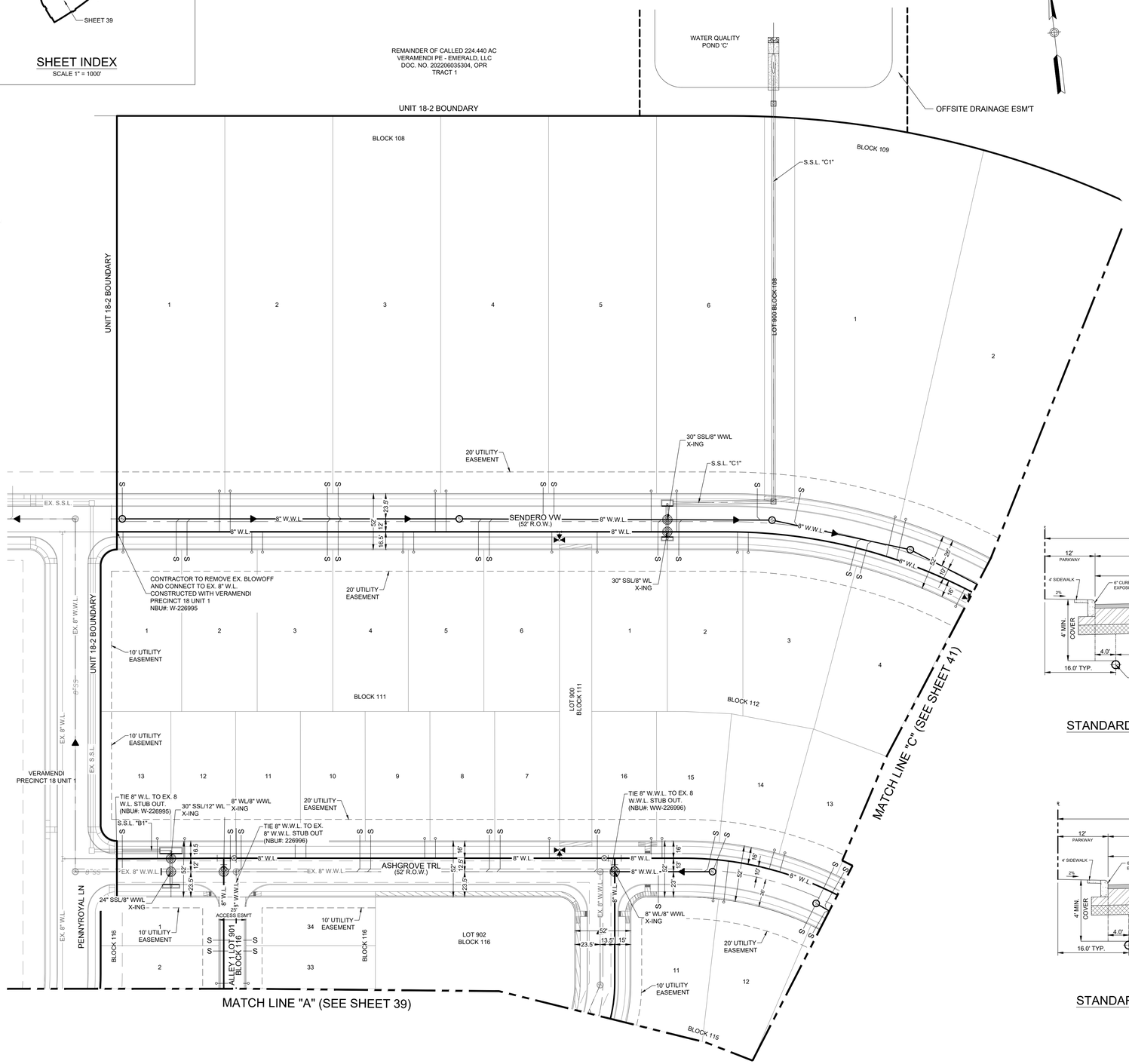
SHEET INDEX
SCALE 1" = 1000'

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.

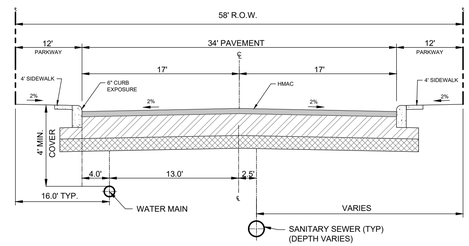
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED 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'

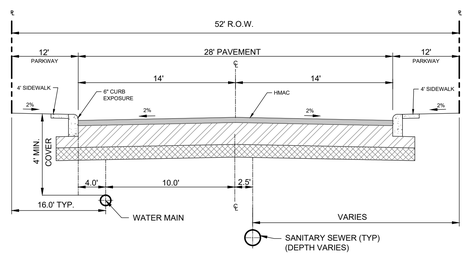


LEGEND

PROPOSED	EXISTING	
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
		TOP OF MANHOLE
	TMH	
	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING



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 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.

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SHEET NO. 40
OF 70 SHEETS

FOR PERMIT

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Last Modified: Mon, 15, 24 - 16:08
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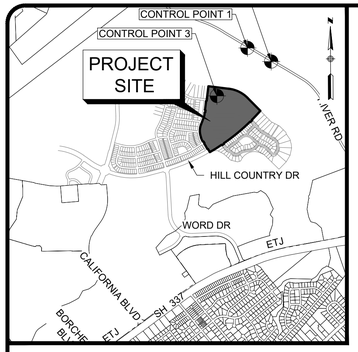
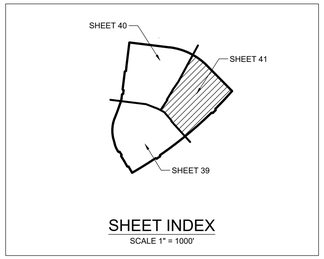


LOCATION MAP
N.T.S.



SHEET INDEX
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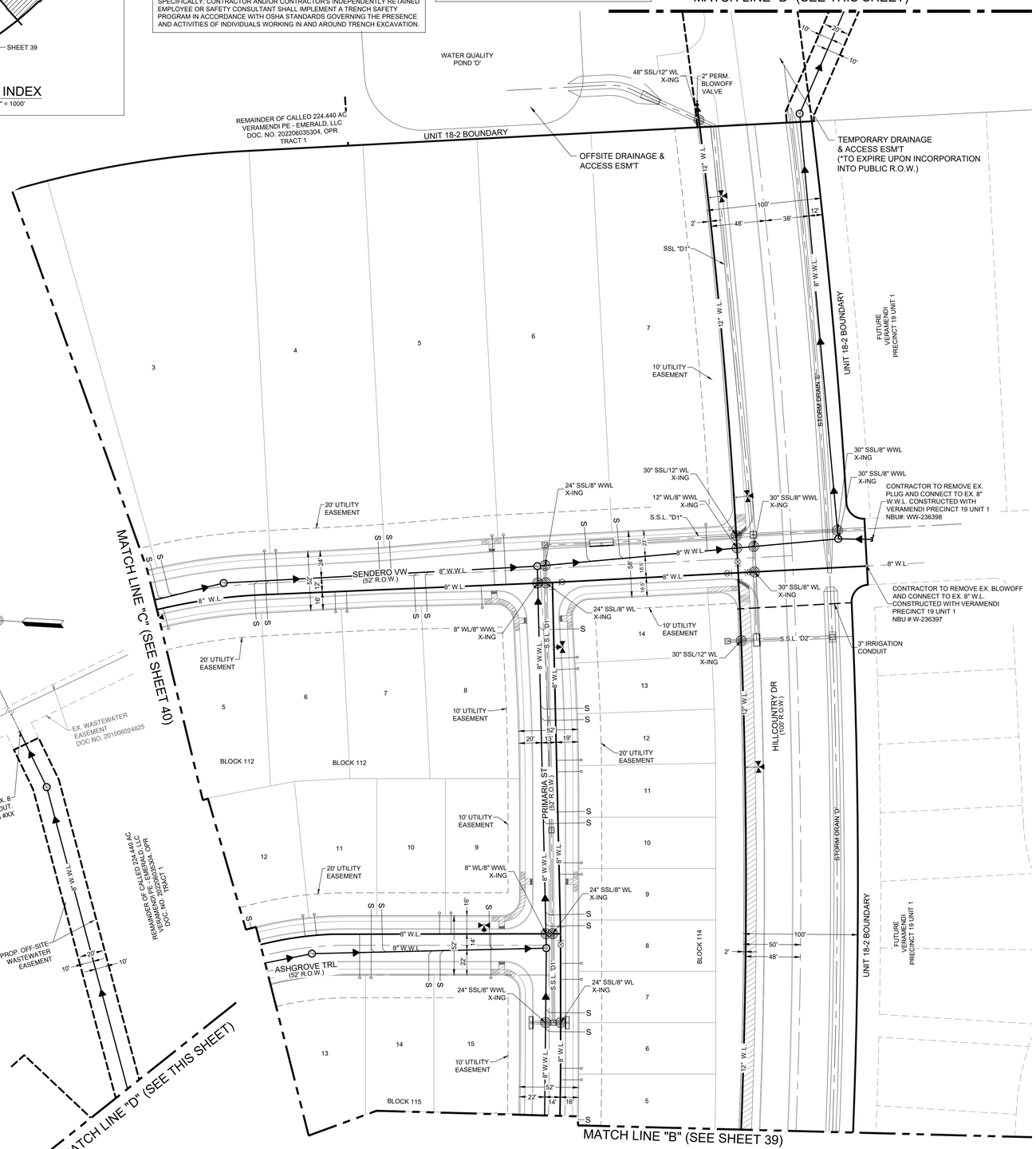

50 25 0 50 100
SCALE IN FEET
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LEGEND

PROPOSED	EXISTING	
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WL	WL	WATER LINE
S		SANITARY SEWER LATERAL
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		GUY WIRE
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	TMH	TOP OF MANHOLE
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	U.E.	UTILITY EASEMENT
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	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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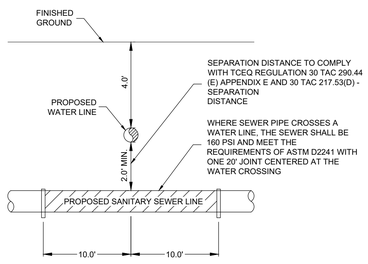
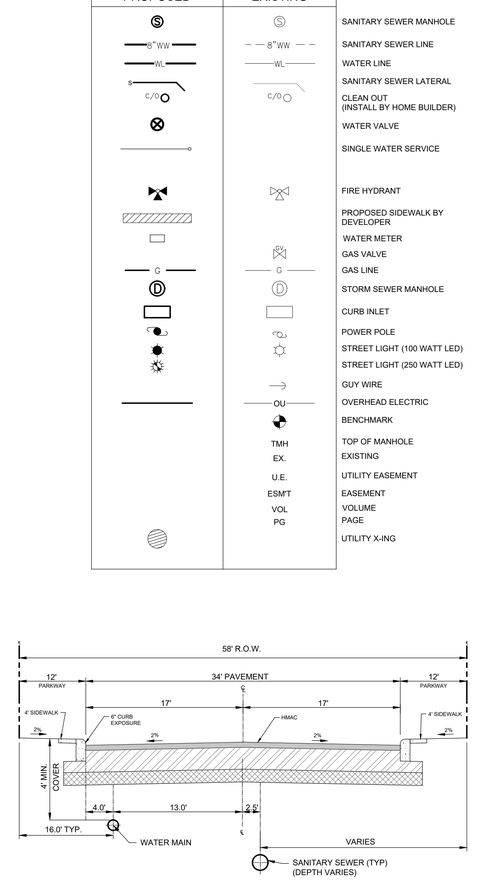
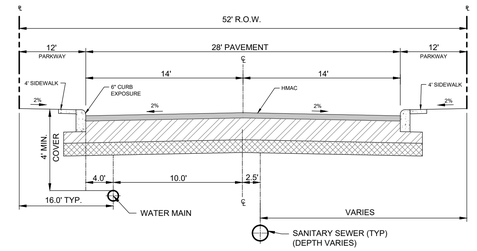


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



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



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FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

UTILITY LAYOUT (SHEET 3 OF 3)

NO.	DESCRIPTION	BY	DATE
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DATE: 3/20/2024
DESIGNED BY: NG
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STATE OF TEXAS
PRISCILLA G. FLORES
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LICENSED PROFESSIONAL ENGINEER
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LJA Engineering, Inc.
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TBPE No. F-1386

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SHEET NO. 41
OF 70 SHEETS

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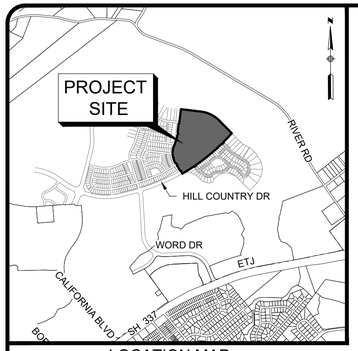
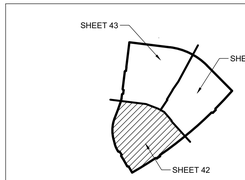
Plotted: Mar. 15, 24 - 16:08
Last Modified: Mar. 15, 24 - 16:08
By: Nathan Ybarra



LOCATION MAP
N.T.S.



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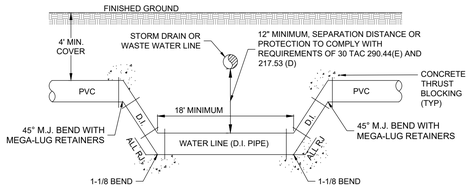
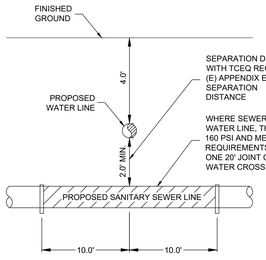
JOINT RESTRAINT NOTE:
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOIN RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL ENSURE THAT ALL TEE'S, BEND'S, VALVE'S, ETC. HAVE A MINIMUM OF 5' OF PIPE WITH NO JOINTS AT EACH SIDE OF THE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



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



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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
GATE VALVE	PVC	8"	NA	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***

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
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	EX.	EXISTING
	U.E.	UTILITY EASEMENT
	ESM'T	EASEMENT
	VOL.	VOLUME
	PG	PAGE
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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.
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NBU PRESSURE ZONE:

- PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 4.

WATER (NBU JOB NO. W-XXXXXX)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5321.5
12" WATER LINE	LF	1807.03
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 3/4" METER	EA	2
LUEs	EA	127
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	3
12" GATE VALVE	EA	2

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 1 OF 3)

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 90_Water Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 42 OF 70 SHEETS

FOR PERMIT

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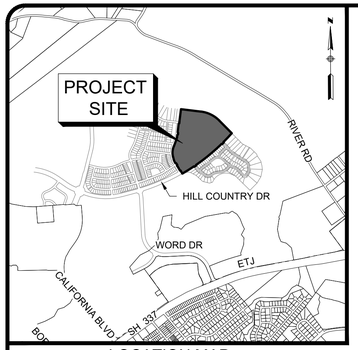
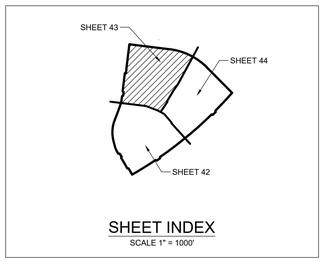
Last Modified By: MAP on 3/20/2024 - 11:51:49



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

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
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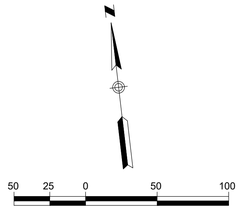

SCALE IN FEET
SCALE: 1"=50'

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
8"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
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		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	OU	OVERHEAD ELECTRIC
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	EX.	EXISTING
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	PG	PAGE
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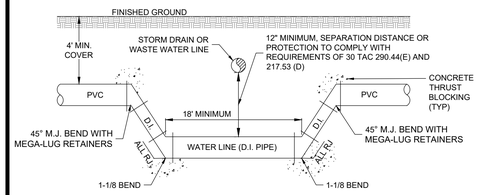

TYPICAL WATER CROSSING DETAIL B
NTS

NOTE:
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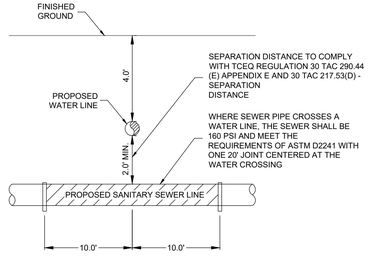

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

TRENCH EXCAVATION SAFETY PROTECTION
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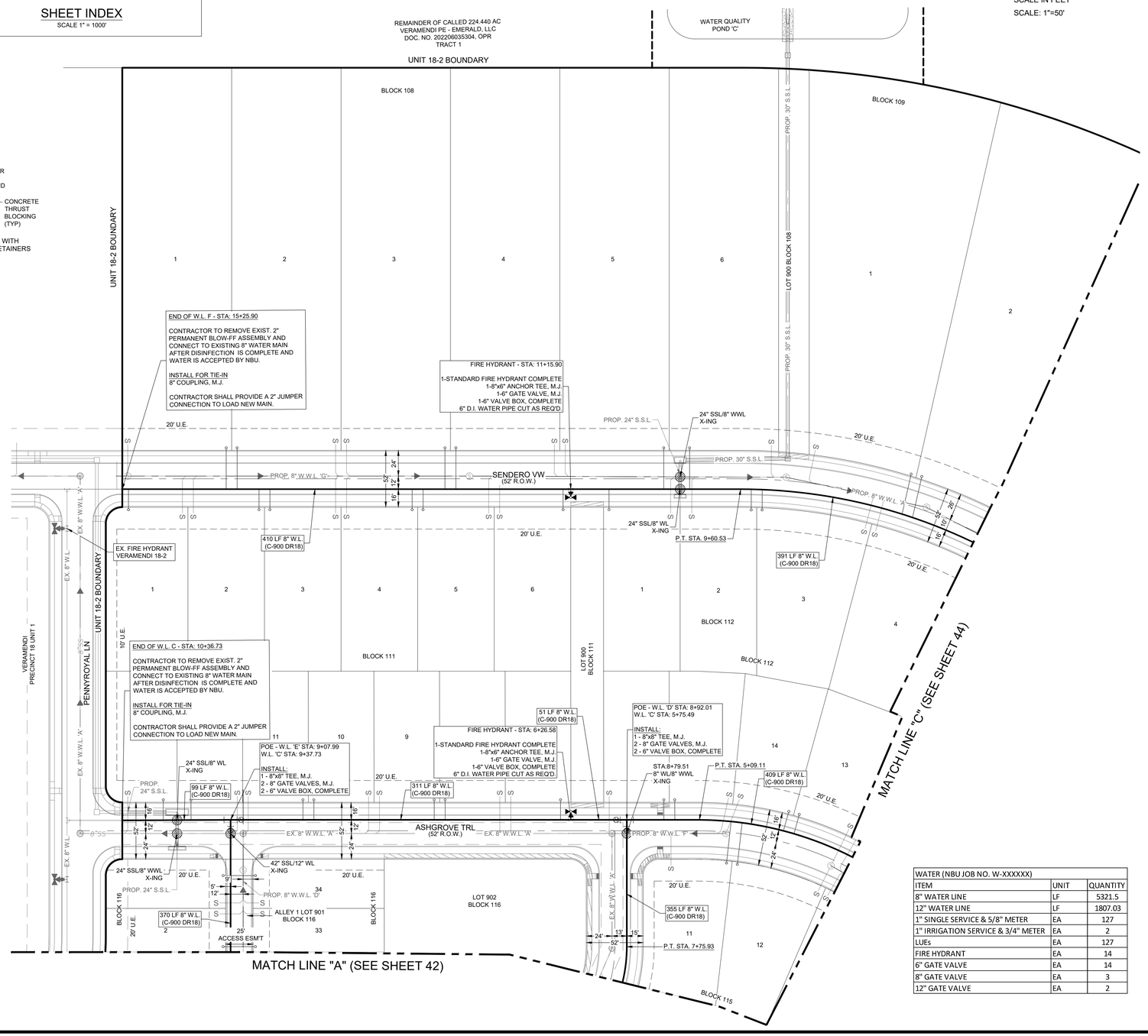

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CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED 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.

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

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

WATER LAYOUT (SHEET 2 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: sh_Water Layout.dwg

3/20/2024
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. 43 OF 70 SHEETS

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Xrefs Loaded: Mar. 15, 24 – 13:08
Last Modified: Mar. 20, 24 – 14:04:29
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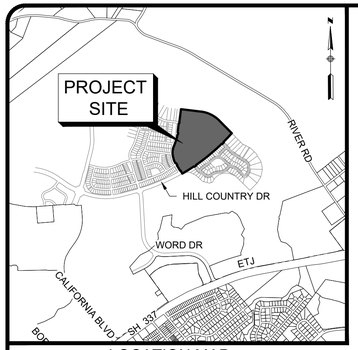
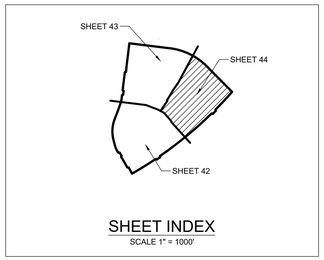
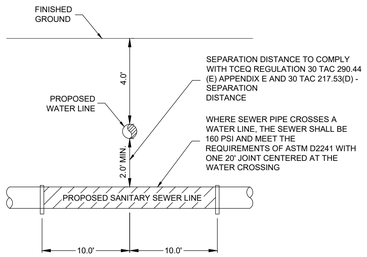


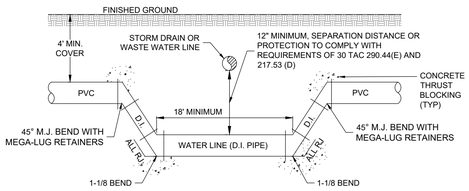
LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



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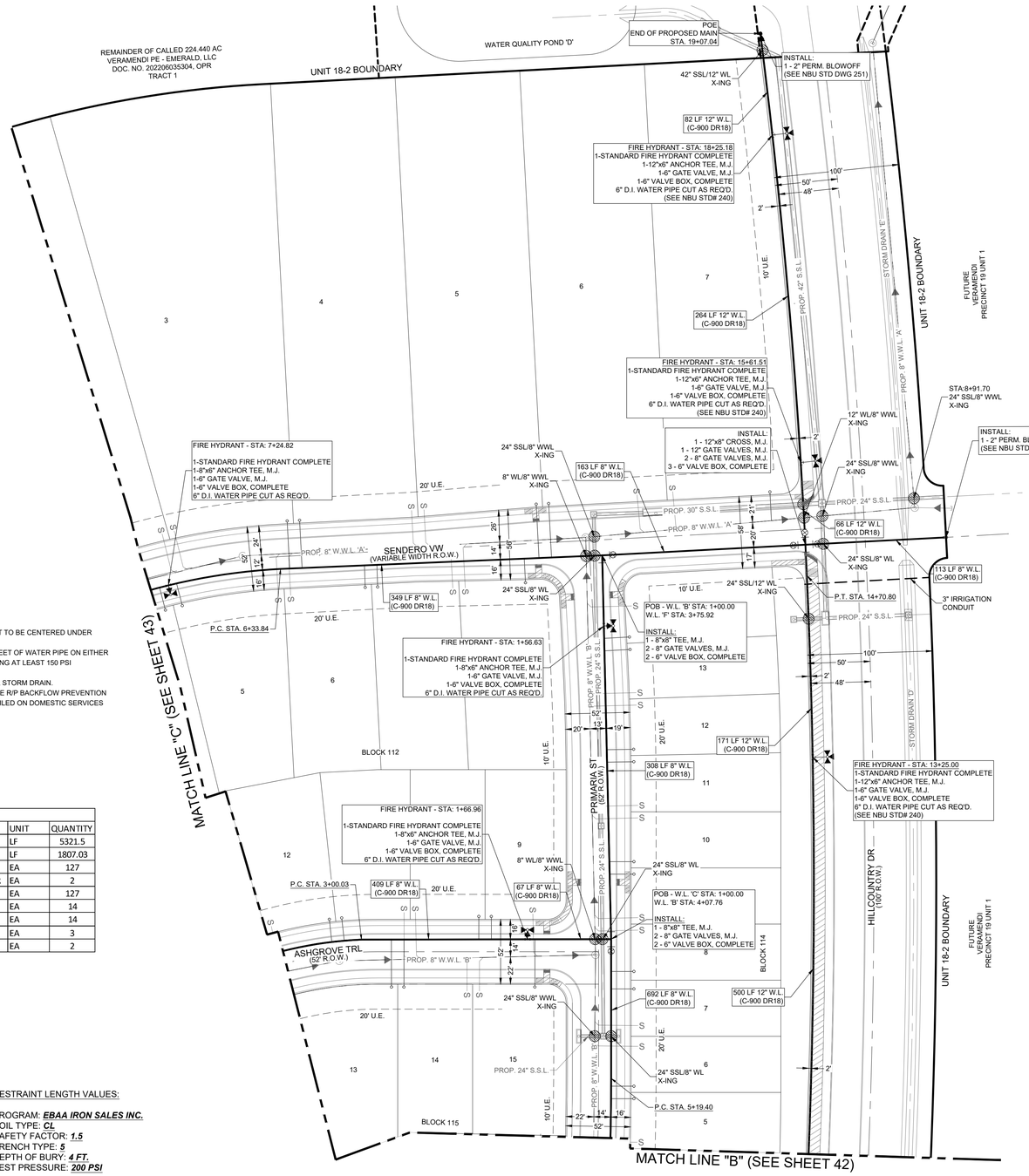

SCALE IN FEET
SCALE: 1"=50'

LEGEND

PROPOSED	EXISTING	
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8" WW	8" WW	SANITARY SEWER LINE
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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.

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

WATER LAYOUT (SHEET 3 OF 3)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_Water Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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

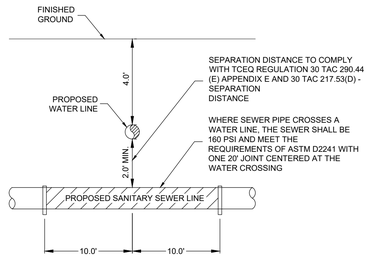
JOB NUMBER: SA3856.0402

SHEET NO. 44
OF 70 SHEETS

K:\SA3856 (lja properties)\3002 veramendi precinct 18-21\2B site development plans\dwg-sheets\sh_Water Layout.dwg
Plotted: Mar. 15, 24 – 13:08
Last Modified: Mar. 15, 24 – 13:08
Xref Name: Mar. 20, 24 – 7:54A MP

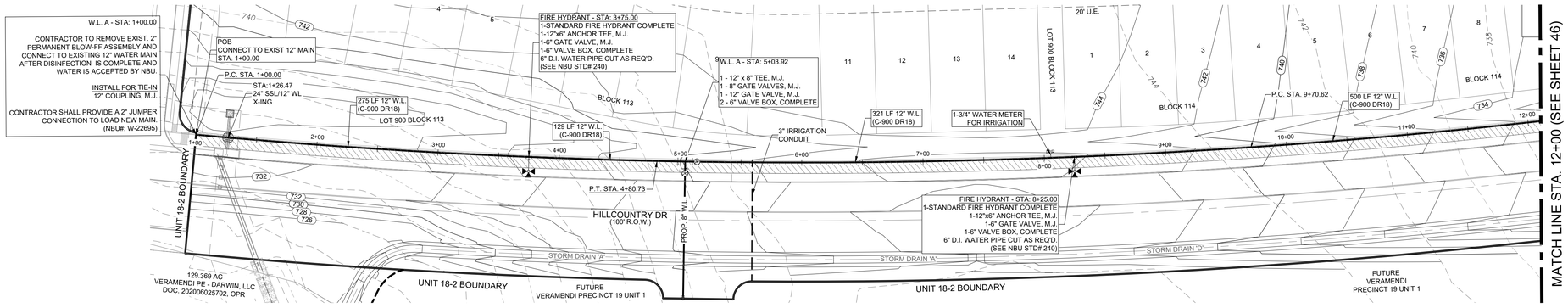
GENERAL NOTES:

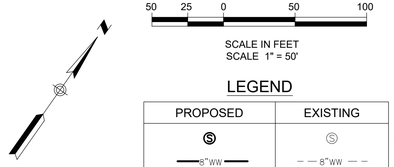
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
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.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

WATER (NBU JOB NO. W-XXXXXX)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5321.5
12" WATER LINE	LF	1807.03
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 3/4" METER	EA	2
LUEs	EA	127
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	3
12" GATE VALVE	EA	2





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
	ESMT	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.

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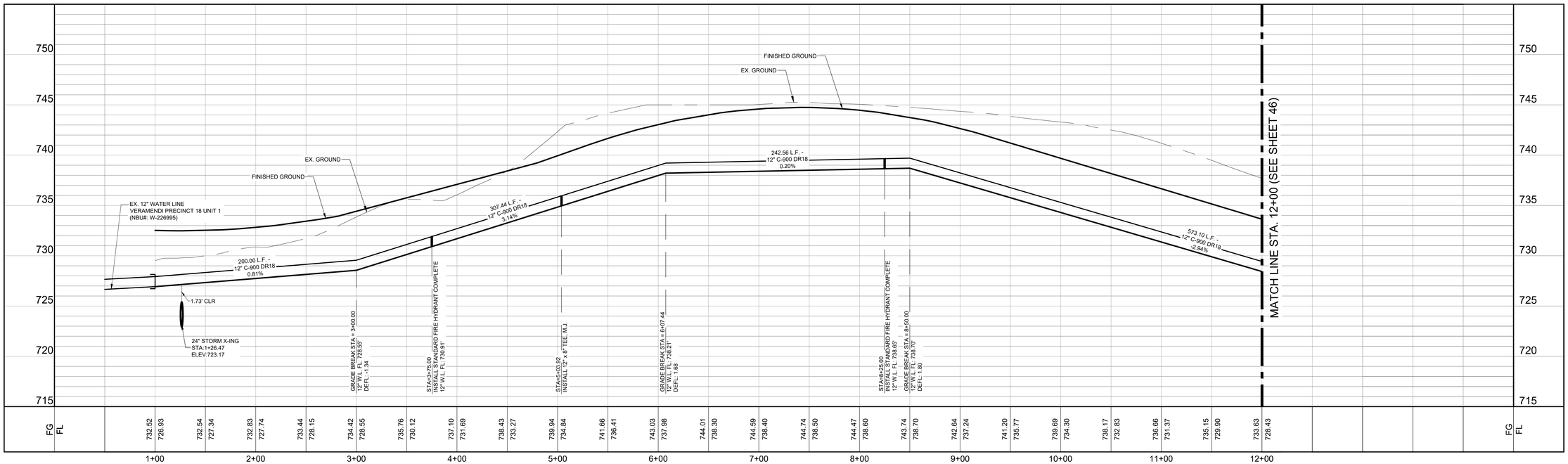
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED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

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

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: ML
CHECKED BY: PGF
DRAWING NAME: sh_Water P&P_Hill Country.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024
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

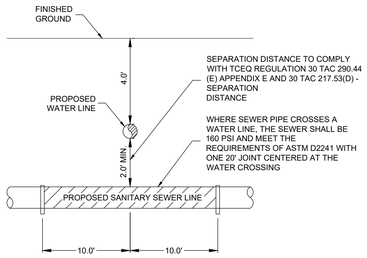
SHEET NO. 45
OF 70 SHEETS

K:\SA3856 (tbs properties)\3402 verramendi precinct 18-21\05 site development plans\dwgs\sheets\sh_Water P&P_Hill Country.dwg
Plotted: Mar. 15, 24 - 18:02
Last Modified: Mar. 15, 24 - 18:02
By: Nathan Mc. Jones

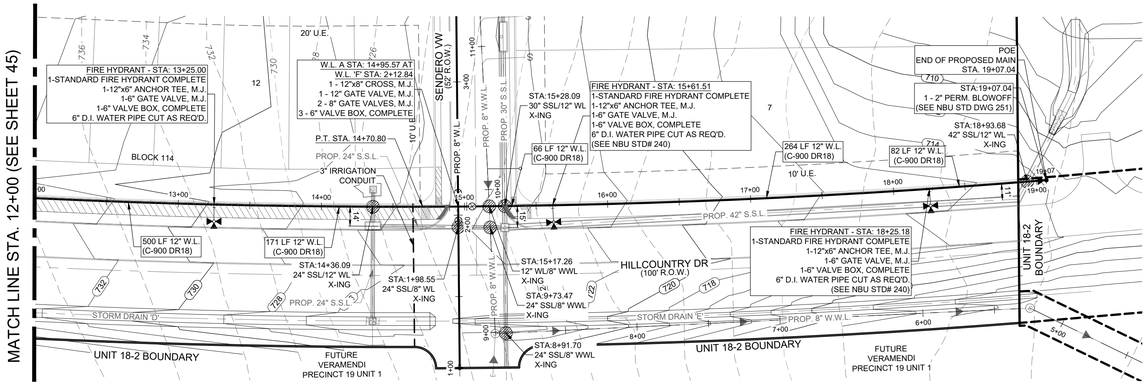
GENERAL NOTES:

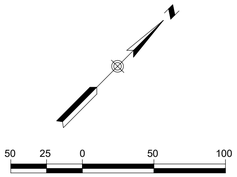
1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL DD-834-01.
2. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
3. ALL VALVES SHALL READ "OPEN RIGHT".
4. ALL FIRE HYDRANTS SHALL 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.

WATER (NBU JOB NO. W-XXXXXX)		
ITEM	UNIT	QUANTITY
8" WATER LINE	LF	5321.5
12" WATER LINE	LF	1807.03
1" SINGLE SERVICE & 5/8" METER	EA	127
1" IRRIGATION SERVICE & 3/4" METER	EA	2
LUEs	EA	127
FIRE HYDRANT	EA	14
6" GATE VALVE	EA	14
8" GATE VALVE	EA	3
12" GATE VALVE	EA	2



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS





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

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WATER LINE 'A' HILL COUNTRY 12+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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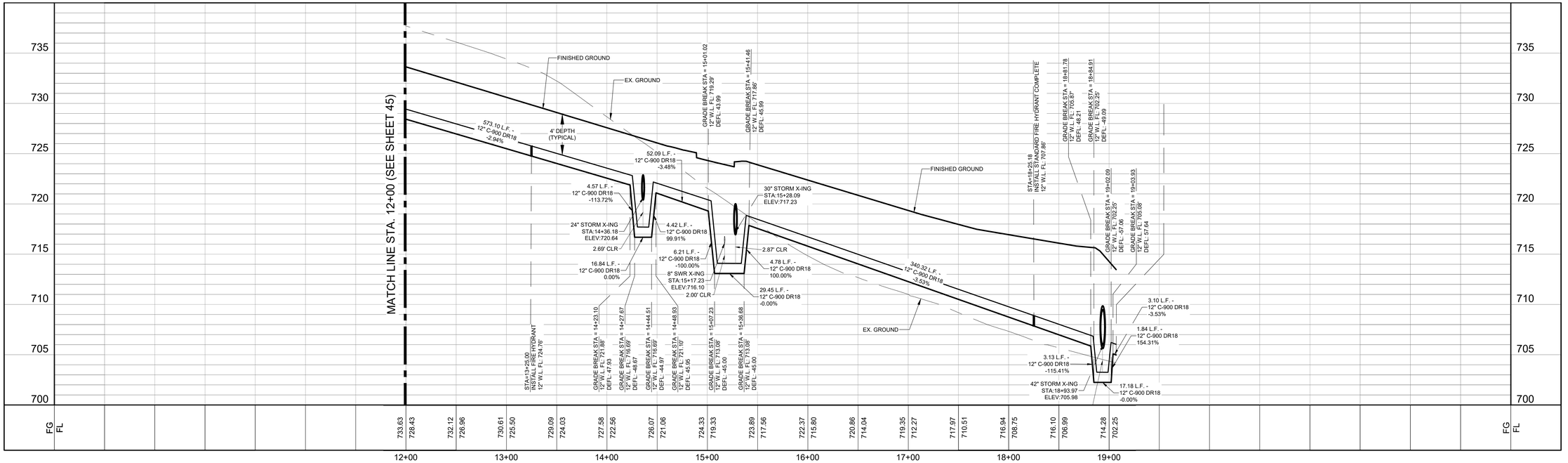


K:\sa3856.dsp\profiles\24022 veramendi precinct 18-2\v435 site development plans\dwg-sheets\ph_Water P&P_ph1 Country.dwg
Last Modified: Mar. 15, 24 - 18:02
Last Plotted: Mar. 19, 24 - 14:54

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2
WATER LINE 'A' HILL COUNTRY PLAN & PROFILE
12+00 TO END

NO.	DESCRIPTION	BY	DATE

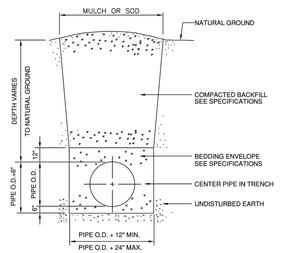
DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: ML
CHECKED BY: PGF
DRAWING NAME: sh_Water P&P_ph1 Country.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024
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

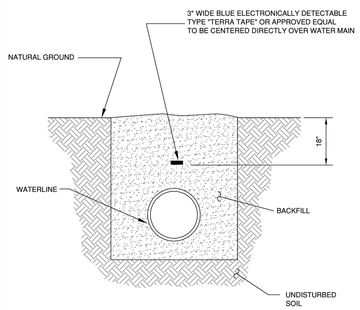
JOB NUMBER: SA3856.0402

SHEET NO. 46
OF 70 SHEETS



TYPICAL TRENCH WITH UNFINISHED SURFACE

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

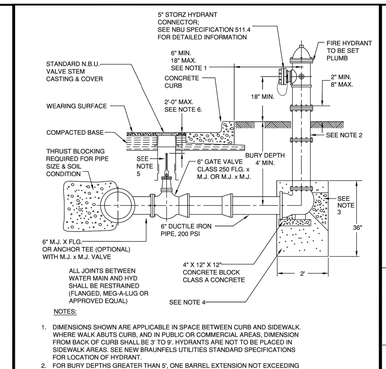


WATERLINE SURFACE IDENTIFICATION DETAIL

NOT TO SCALE

PLACEMENT OF INDUCTIVE TRACER DETECTION TAPE

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

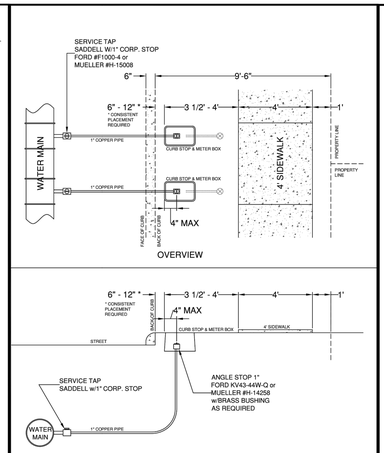


NOTES:

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 10'.
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.

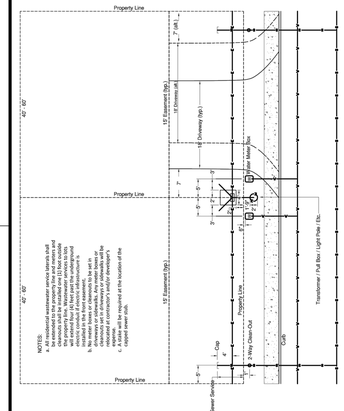
STANDARD FIRE HYDRANT INSTALLATION WITH 5" STORZ CONNECTOR

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING:
UPDATED: 5-23-12	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 240		



SERVICE TAP: METER BOX PLACEMENT BETWEEN SIDEWALK AND CURB

DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING:
UPDATED: 5-3-03	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 243		



NARROW LOT WATER & SEWER SERVICE ALIGNMENT SCENARIO

DRAWN BY: D. A.	APPROVED BY: N. P.	STANDARD DRAWING:
UPDATED: 12/20/18	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 410		

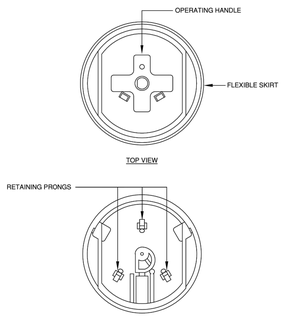
FLOODPLAIN NOTE:

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:

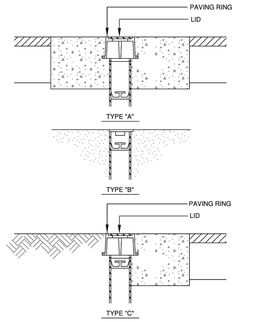
PER NBU WATER NOTES (DATED 5/16/19)

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:
UPDATED: 4-10-03	SCALE: N.T.S.	SHEET: 1 OF 2
DRAWING NO.: 234		

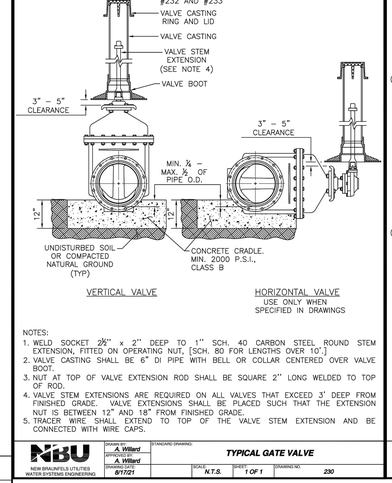


NOTES:

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 #HM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDRAD LOCATION COIL.

DEBRIS CAP INSTALLATION

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

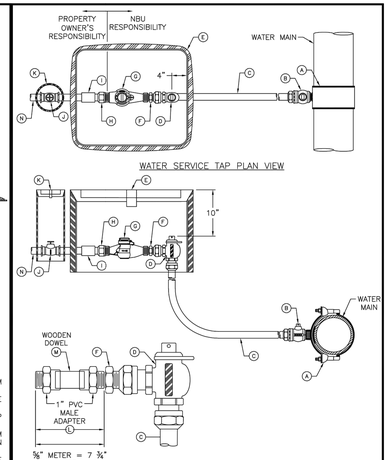


NOTES:

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:
UPDATED: 8/17/21	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 230		



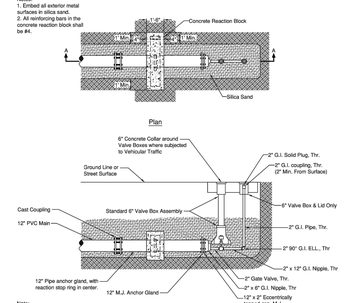
STANDARD INSTALLATION DETAIL FOR 5/8", 3/4" & 1" METER

DRAWN BY: A. Willard	APPROVED BY: A. Willard	STANDARD DRAWING:
UPDATED: 8/17/21	SCALE: N.T.S.	SHEET: 1 OF 2
DRAWING NO.: 202		

Water Notes

WATER NOTES:

1. All water mains shall be AWWA C900 (class 150 or greater).
2. Water services shall be single 1" copper tubing.
3. Water line is to be constructed in accordance with the NBU Systems Connection & Construction Policy.
4. Water main shall have a minimum of 42 inches of cover, otherwise concrete encasement will be required.
5. Each unit in a duplex, triplex, fourplex, or condominium shall be provided with an individual water meter. A master meter can be considered for separate buildings, however, those buildings must be plumbed to allow separate meters for future consideration.
6. Contractor will keep the area on top of and around the water meter box free of all objects and debris.
7. Initial backfill of water lines shall be manufactured sand or pea gravel as per NBU Systems Connection & Construction Policy.
8. Secondary backfill of water lines shall generally consist of material removed from the trench and shall be free from brush, debris and trash or stones having any dimension larger than 6" inches at the largest dimension.
9. Hydrostatic testing is done from valve to valve.
10. No meter boxes to be set in driveways or sidewalks. Any meter boxes set in driveways or sidewalks will be relocated at contractor's and/or developer's expense.
11. Meter boxes must be set at the 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. Acceptable meter boxes are D13-BAMR and D15-BAMR. New residential lots are required to use the D15-BAMR meter boxes (double AMR). Commercial lots should choose which box applies to the domestic and/or irrigation meter layout.
13. 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.
14. Contractor shall place tracer wire on top of the water mains. Tracer wire should run from valve to valve and exit at the valve box. The tracer wire should be attached to the top of the pipe using tape. Excess wire should be left within valve boxes to be placed within lid of cover.
15. Water quality shall be protected 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
16. All backflow prevention assemblies shall be tested upon installation and report sent to NBU via the online tracking system, contact NBU backflow prevention specialist for more details. Email questions to crossconnection@nbutexas.com
17. All residential and commercial properties shall have a Customer Service Inspection certificate (CSI Inspection) completed upon completion of the building or home structure. Contact 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

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

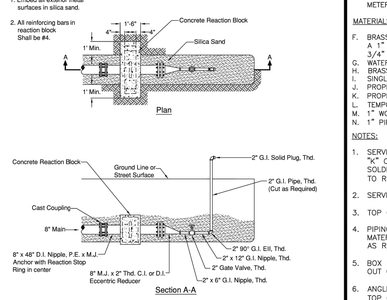
DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING:
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 251		

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

Not To Scale

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

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING:
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 253		



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

Not To Scale

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

DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING:
UPDATED: 5-8-03	SCALE: N.T.S.	SHEET: 1 OF 1
DRAWING NO.: 252		

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

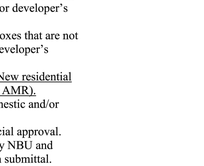
DRAWN BY: A. Willard	APPROVED BY: A. Willard	STANDARD DRAWING:
UPDATED: 8/17/21	SCALE: N.T.S.	SHEET: 2 OF 2
DRAWING NO.: 202		

VERAMENDI PRECINCT 18 UNIT 2

WATER DETAILS

NO.	REVISIONS DESCRIPTION	BY	DATE

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



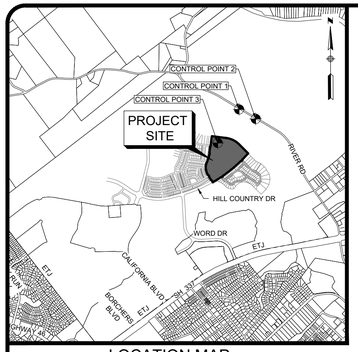
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1366

JOB NUMBER: SA3856.0402

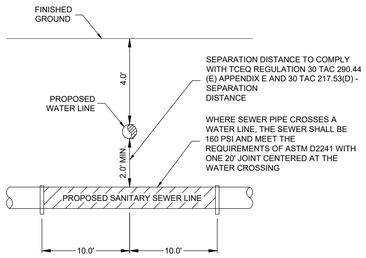
SHEET NO. 47 OF 70 SHEETS

FOR PERMIT

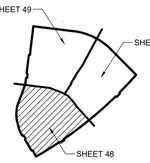
K:\SA3856.000 prop\eta\Q402 veramendi precinct 18-21\428 site development plans\dwgs\sheets\VA_Water Details.dwg
Plotted: Mar 15, 24 - 11:01
Last Modified: Mar 15, 24 - 11:01
Xref Scale Factor: 1.0000



LOCATION MAP
N.T.S.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



SHEET INDEX
SCALE 1" = 1000'

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.

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 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

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).

WASTEWATER (NBU JOB NO. WW-226996)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4219.21
LUEs	LF	126
6" WASTEWATER SERVICE	EA	126
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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: 01_WastewaterLayout.dwg

5/20/2024
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. 48
OF 70 SHEETS

FOR PERMIT

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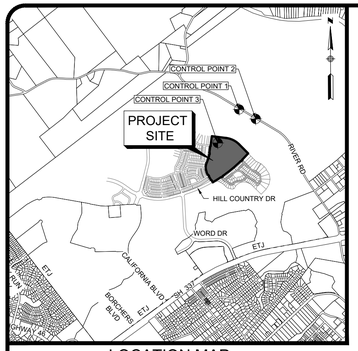
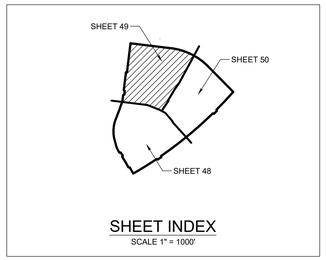
Login Name: nguyen
Last Modified: Mar. 15, 24 – 11:17
Plot Time/Date: Mar. 20, 24 – 14:47



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

WASTEWATER (NBU JOB NO. WW-226996)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4219.21
LUEs	LF	126
6" WASTEWATER SERVICE	EA	126
48" MANHOLE	EA	23

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
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
Ⓓ	Ⓓ	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
	U.E.	UTILITY EASEMENT
	ESMT	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

NOTES:

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2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PRE TCEQ RULES.
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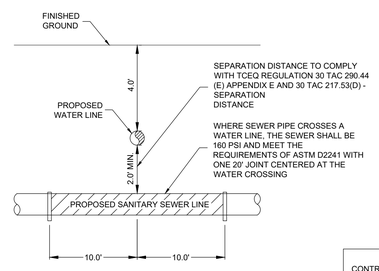

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

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.

TRENCH EXCAVATION SAFETY PROTECTION
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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)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 01_0_WastewaterLayout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 49 OF 70 SHEETS

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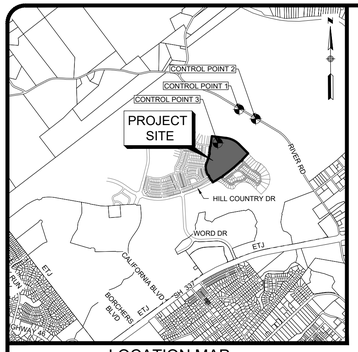
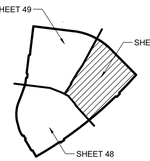
Last Modified: Mar 15, 24 - 11:17
By: PGFlores Xrefs: sh_#0 sh_#1 sh_#2



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

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.

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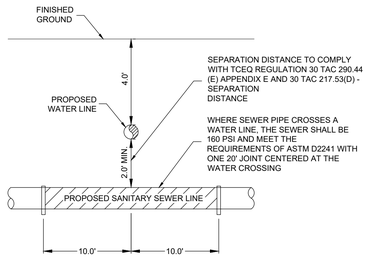
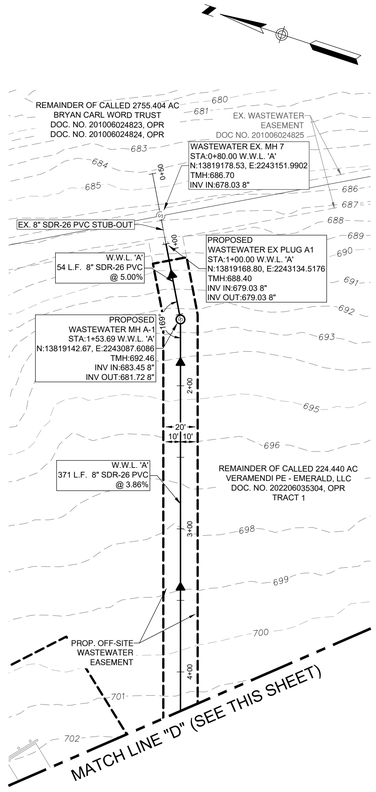


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS



WASTEWATER (NBU JOB NO. WW-226996)		
ITEM	UNIT	QUANTITY
8" SANITARY SEWER PIPE	LF	4219.21
LUEs	LF	126
6" WASTEWATER SERVICE	EA	126
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
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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

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).

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 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_c_Wastewater_Layout.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 50 OF 70 SHEETS

FOR PERMIT

K:\SA3856.dsk project\0402 veramendi precinct 18-2\426 site development plans\dwg sheets\sh_c_Wastewater_Layout.dwg
Xref Name: ...
Last Modified: Mar. 15, 24 - 11:17
Plotted: Mar. 20, 24 - 14:57 CT

GENERAL NOTES:

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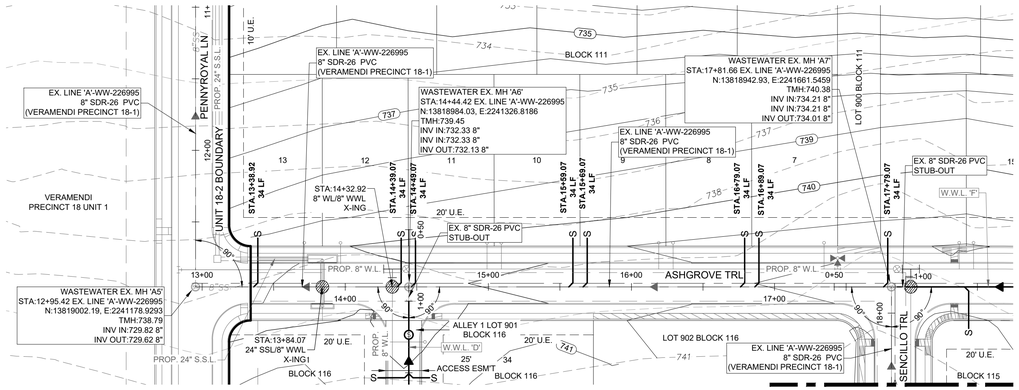

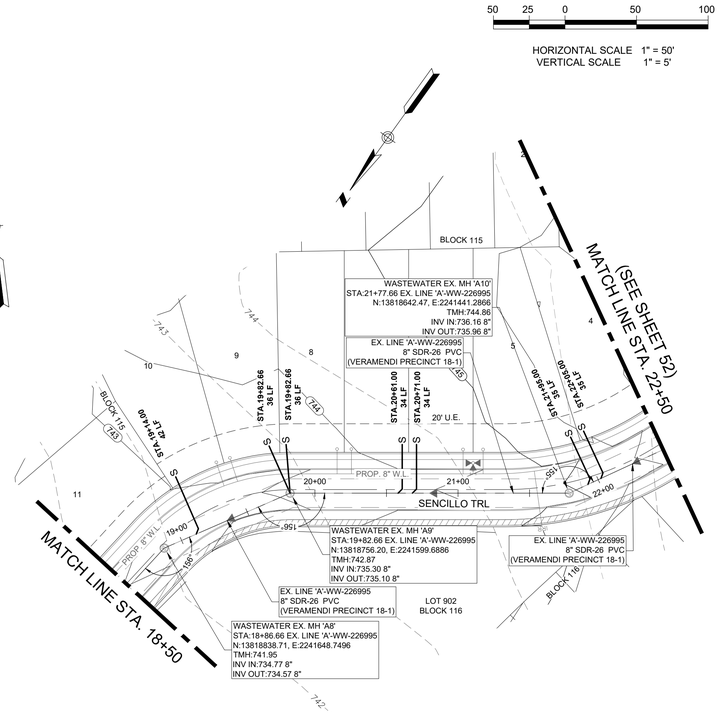

LEGEND

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
	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
		UTILITY X-ING

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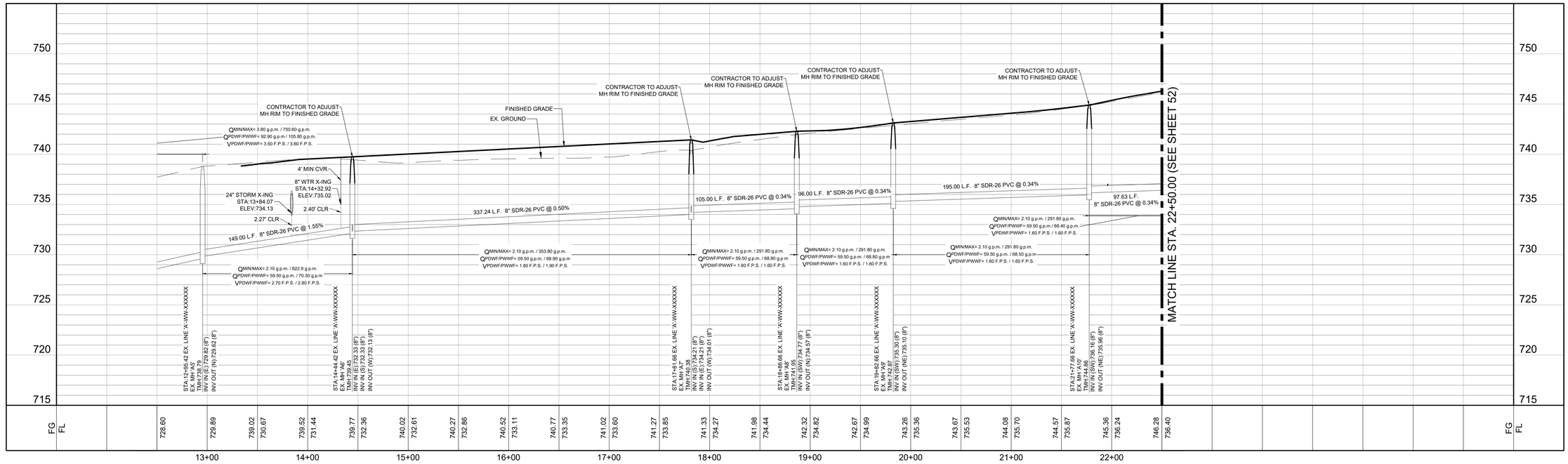
EX. WASTEWATER LINE 'A' STA. 12+50 TO STA. 22+50



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 80_SWW_EX_LINE A'.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
3/20/2024

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. 51
OF 70 SHEETS

K:\sa3856.dsk_properties\04022 veramendi precinct 18-2\426 site development plan\dwg-sheets\pb_AWW_EX. LINE 'A'.dwg
Last Modified: Mar. 15, 24 - 11:35
Last Plotted: Mar. 19, 24 - 09:53:03

GENERAL NOTES:

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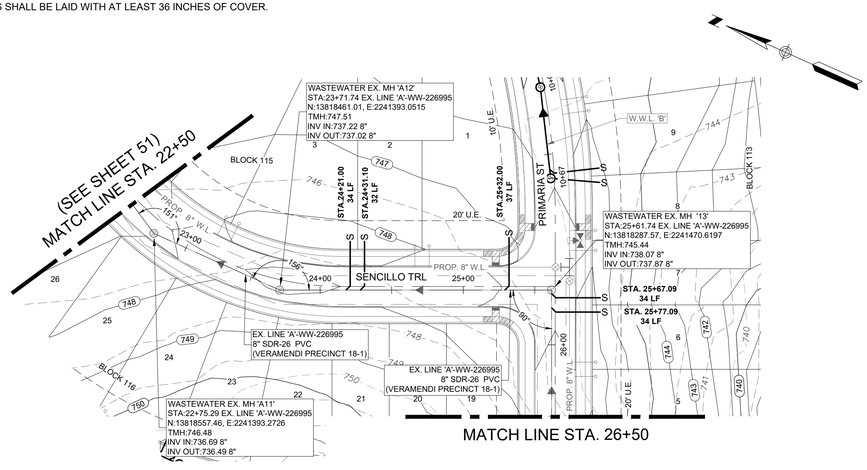

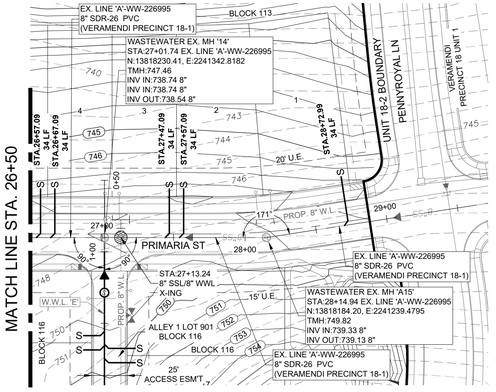

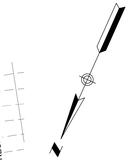

50 25 0 50 100

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

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
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
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EX. WASTEWATER LINE 'A' STA. 22+50 TO END

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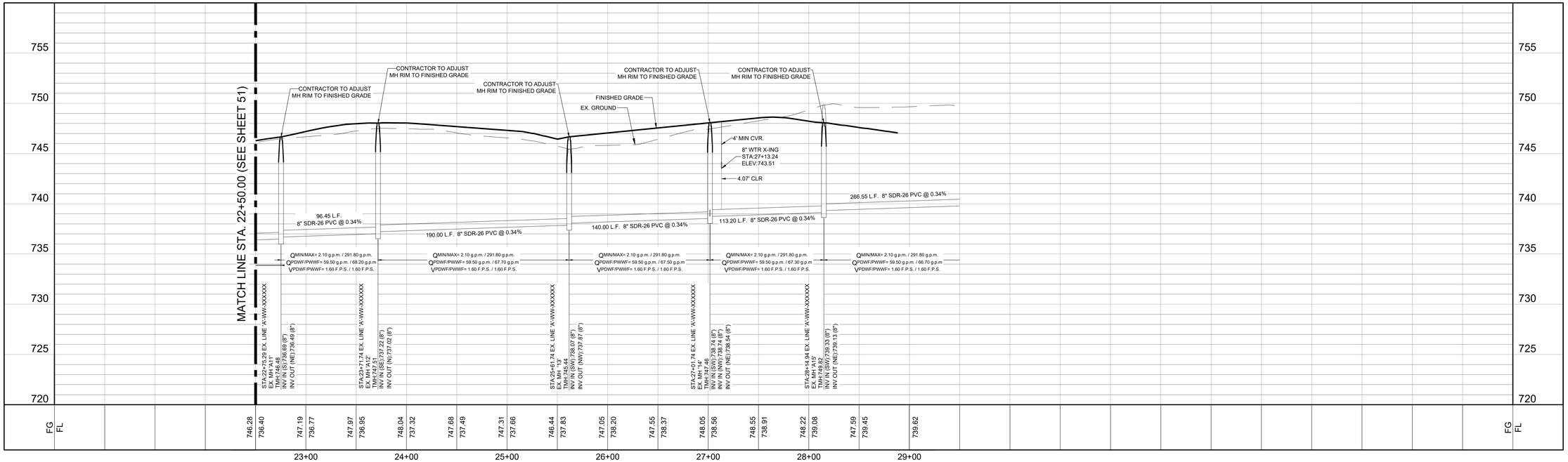

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
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
3/20/2024

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. 52 OF 70 SHEETS

K:\sa3856.dsp\projects\04D2 zeremendi precinct 18-2\426 site development plan\dwg-sheets\ph_WWL EX. LINE 'A'.dwg
Last Modified: Mar. 15, 24 - 11:35
Last Plotted: Mar. 19, 24 - 09:53:03

GENERAL NOTES:

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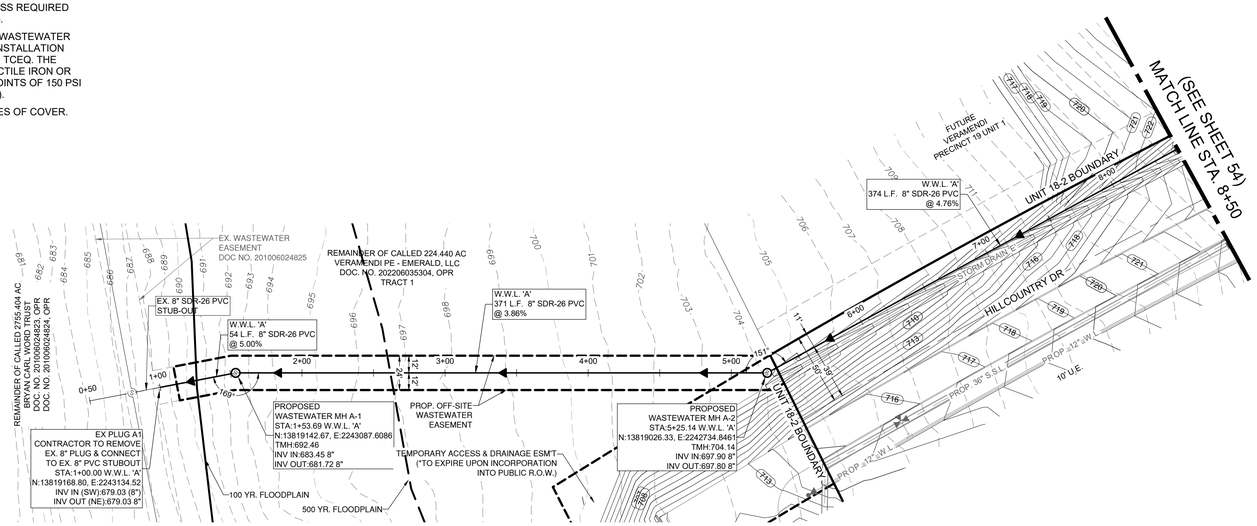

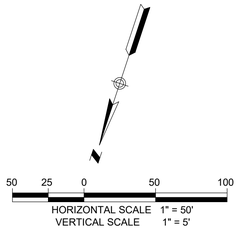

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S 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

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

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

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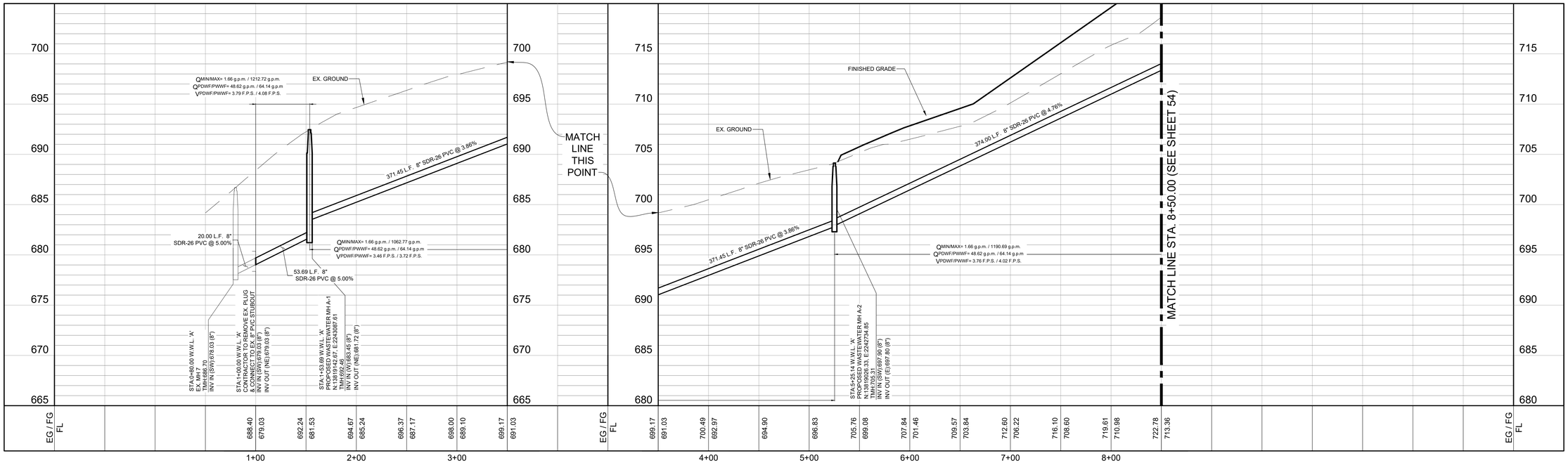

LJA Engineering, Inc.
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: sh_WWL_'A' P&P.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

JOB NUMBER: SA3856.0402

SHEET NO. 53
OF 70 SHEETS

FOR PERMIT

K:\SA3856 Eds properties\0402 veramendi precinct 18-2\426 site development plans\dwg-sheets\sh_WWL_'A' P&P.dwg
Last Modified: Mar 15, 24 - 17:08
Last Plotted: Mar 20, 24 - 08:54

GENERAL NOTES:

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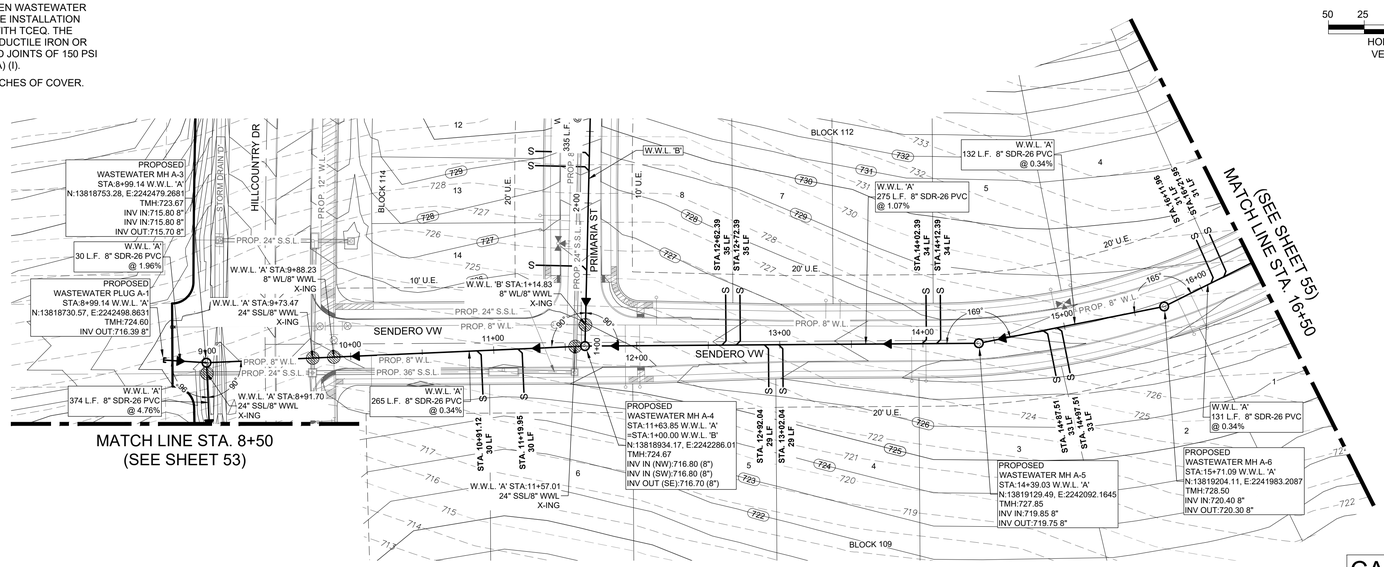

LEGEND

PROPOSED	EXISTING	
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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)
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		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

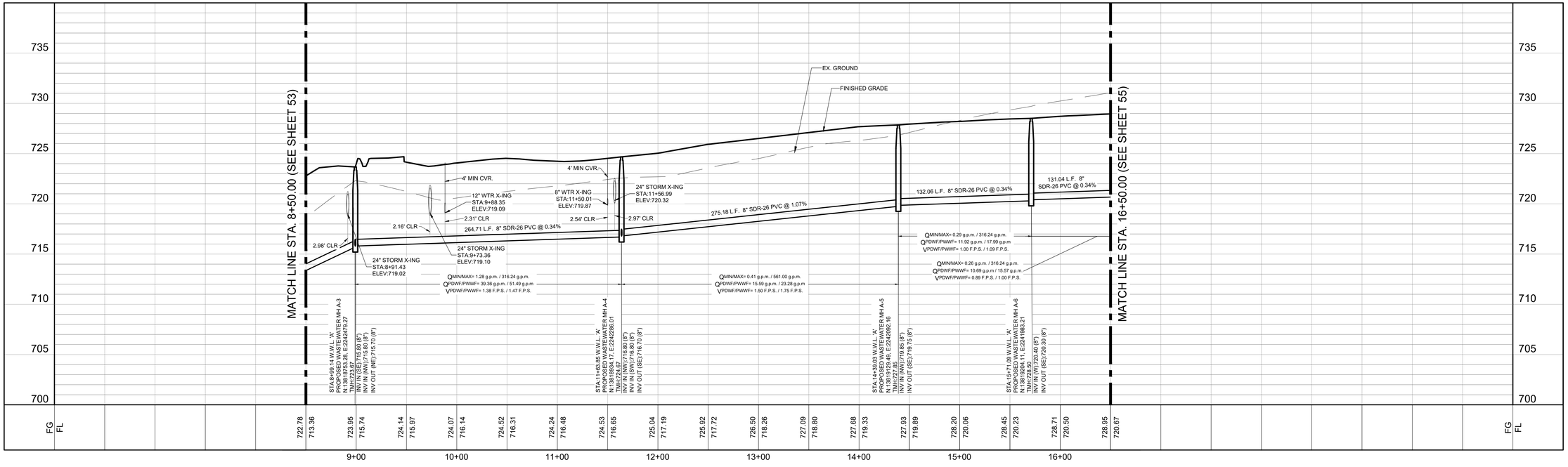
50 25 0 50 100

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

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. 8+50.00 TO STA. 16+50



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.

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 85_WWL 'A' P&P.dwg

3/20/2024
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

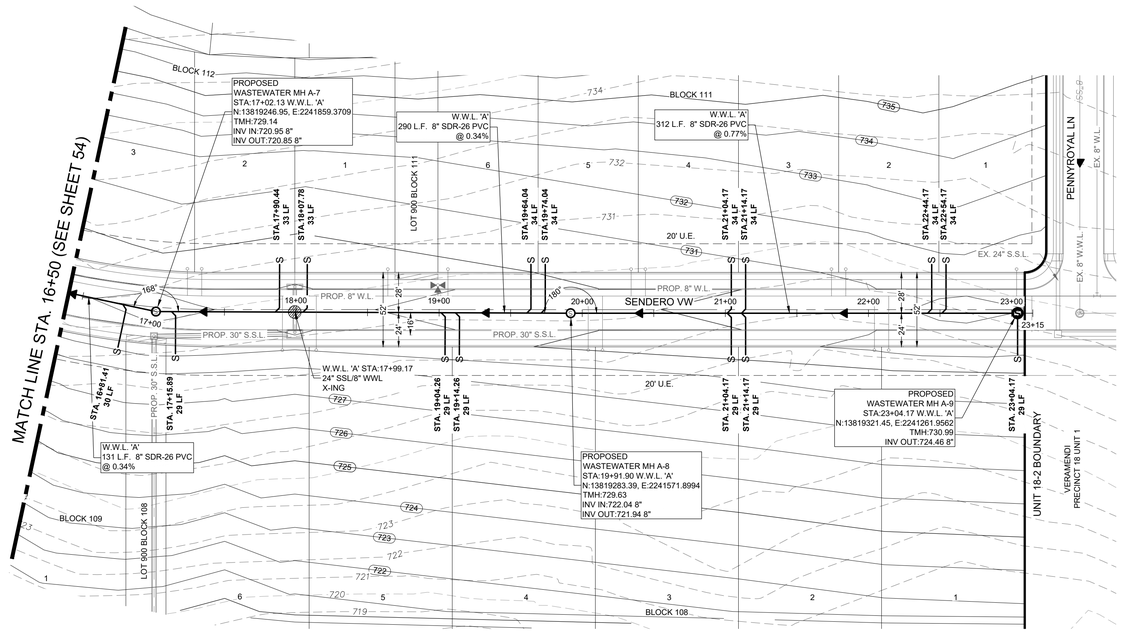
SHEET NO. 54
OF 70 SHEETS

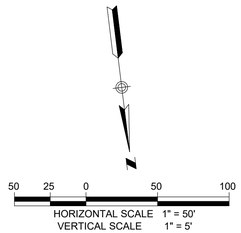
FOR PERMIT

K:\SA3856.000 properties\0402 veramendi precinct 18-2\426 site development plans\dwg\sheets\sh_WWL 'A' P&P.dwg
Last Modified: Mar 15, 24 - 17:08
Last Plotted: Mar 20, 24 - 08:54:49

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	
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

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.

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TRENCH EXCAVATION SAFETY PROTECTION

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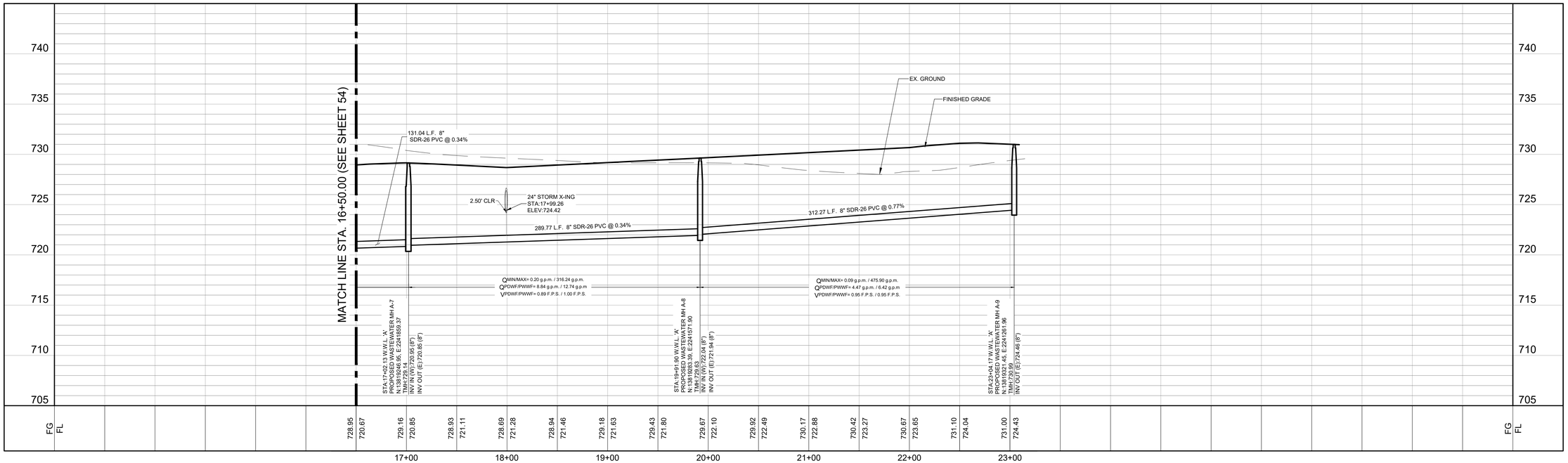
WASTEWATER LINE 'A' STA. 16+50 TO END



FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: s:\...\WWL_'A' P&P.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024

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. 55 OF 70 SHEETS

K:\SA3856 Veramendi properties\0402 veramendi precinct 18-2\426 site development plans\dwg-sheets\sh_WWL_'A' P&P.dwg
Last Modified: Mar 15, 24 - 17:08
Last Plotted: Mar 20, 24 - 08:41:13

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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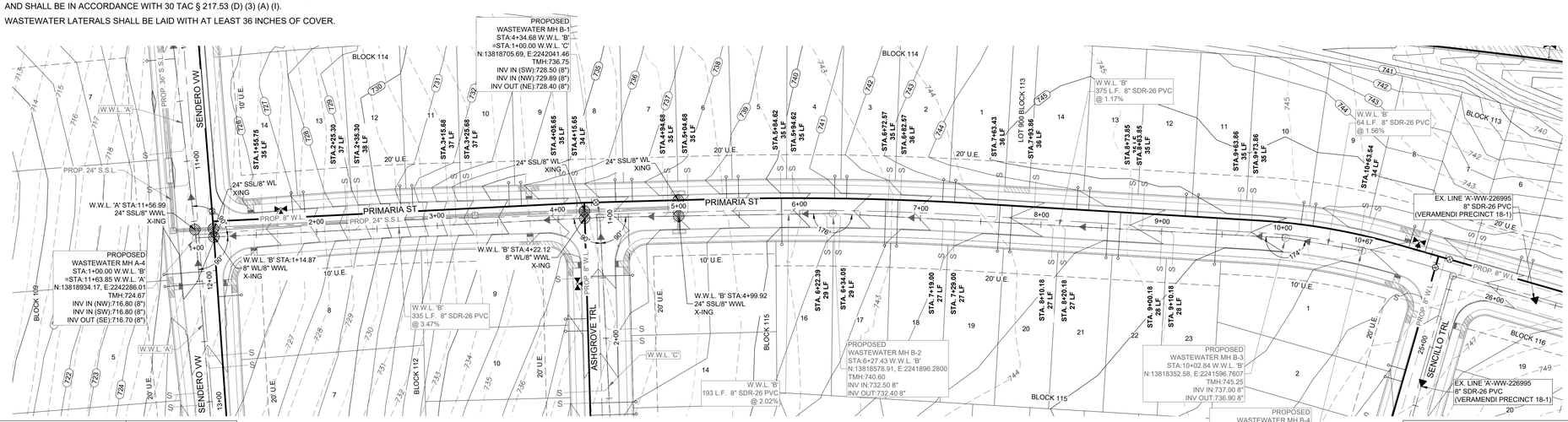
50 25 0 50 100

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

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



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

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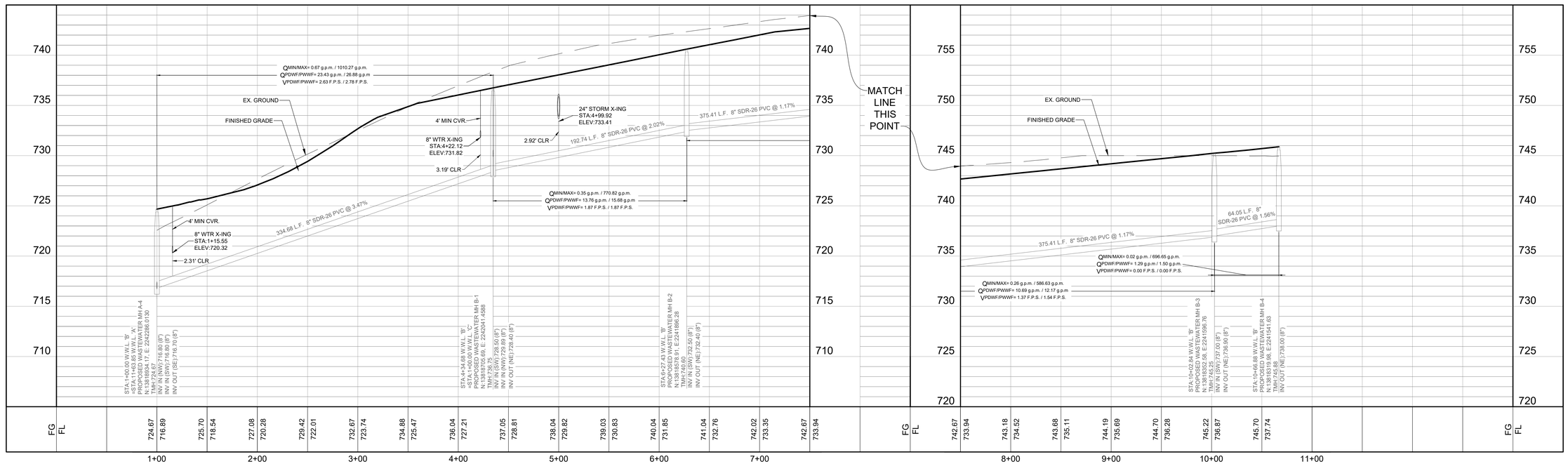

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
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
3/20/2024

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:\SA3856 (via prosertek)\0402 veramendi precinct 18- 21 (26) site development plans\dwg-sheets\ph_WWL 'B' P&P.dwg
Plotted: Mar. 15, 24 – 11:40
Last Modified: Mar. 15, 24 – 11:40
Xrefs Attached: Mar. 20, 24 – 10:39

GENERAL NOTES:

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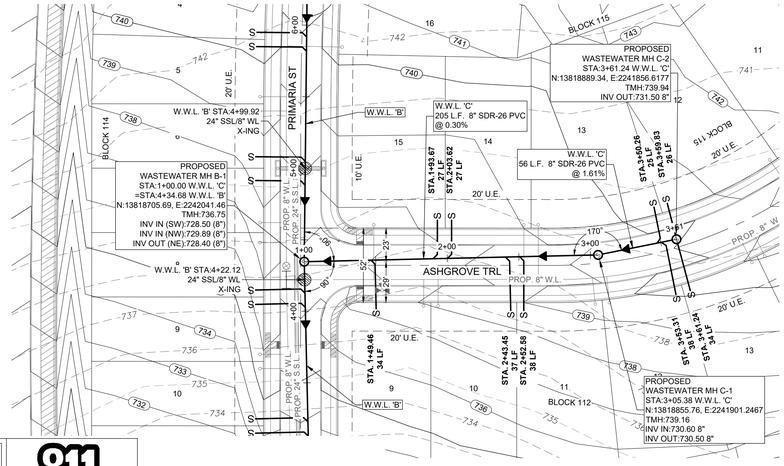

WASTEWATER LINE 'C' STA. 1+00.00 TO END

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

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

LEGEND

50 25 0 50 100

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

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

TRENCH EXCAVATION SAFETY PROTECTION

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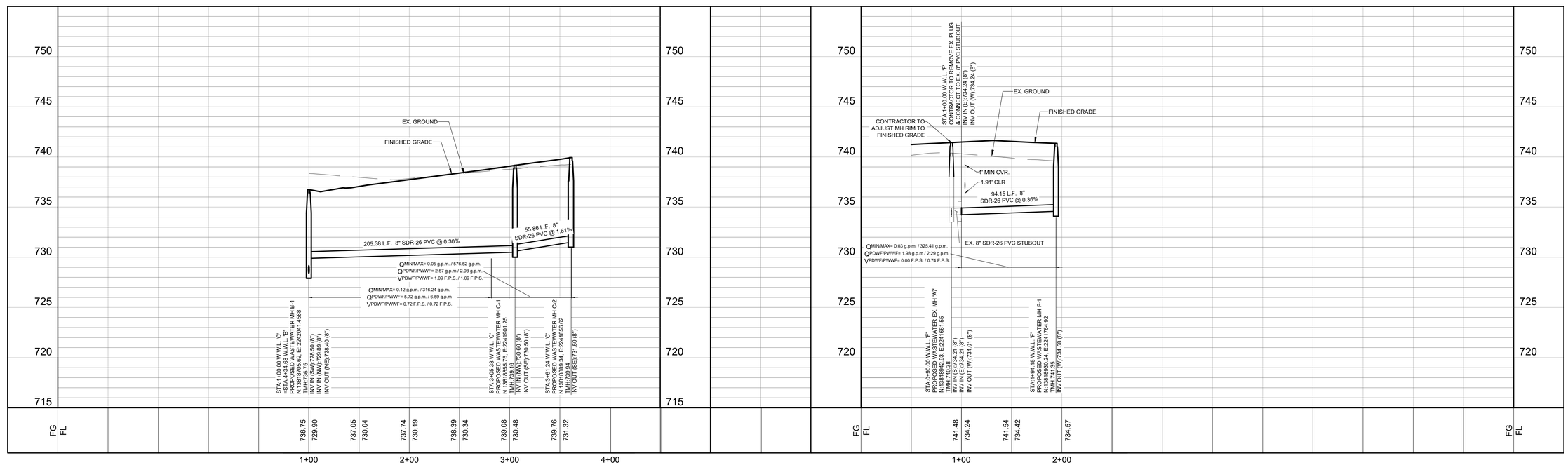

FOR PERMIT

VERAMENDI PRECINCT 18 UNIT 2

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

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 90_WWL 'C' P&P.dwg

3/20/2024
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. 57 OF 70 SHEETS

K:\sa3856.ooo_properties\04012_veramendi precinct 18-2\426 site development plan\dwg-sheet\ch_WWL 'C' P&P.dwg
Last Modified: Mar 15, 24 - 11:46
Last Plotted: Mar 20, 24 - 10:53:43

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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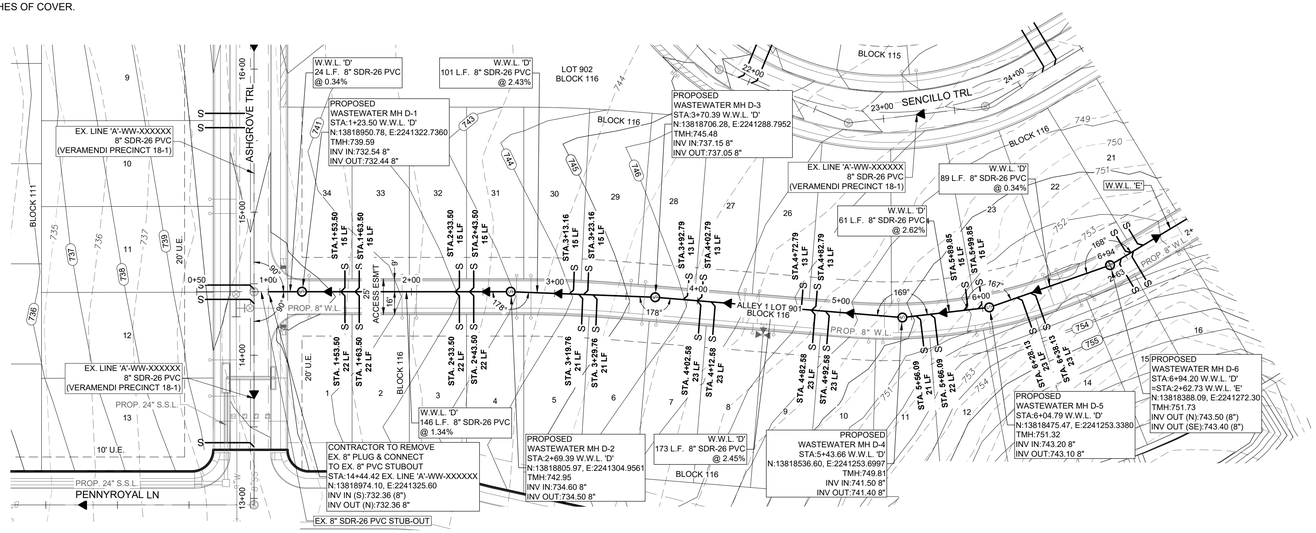
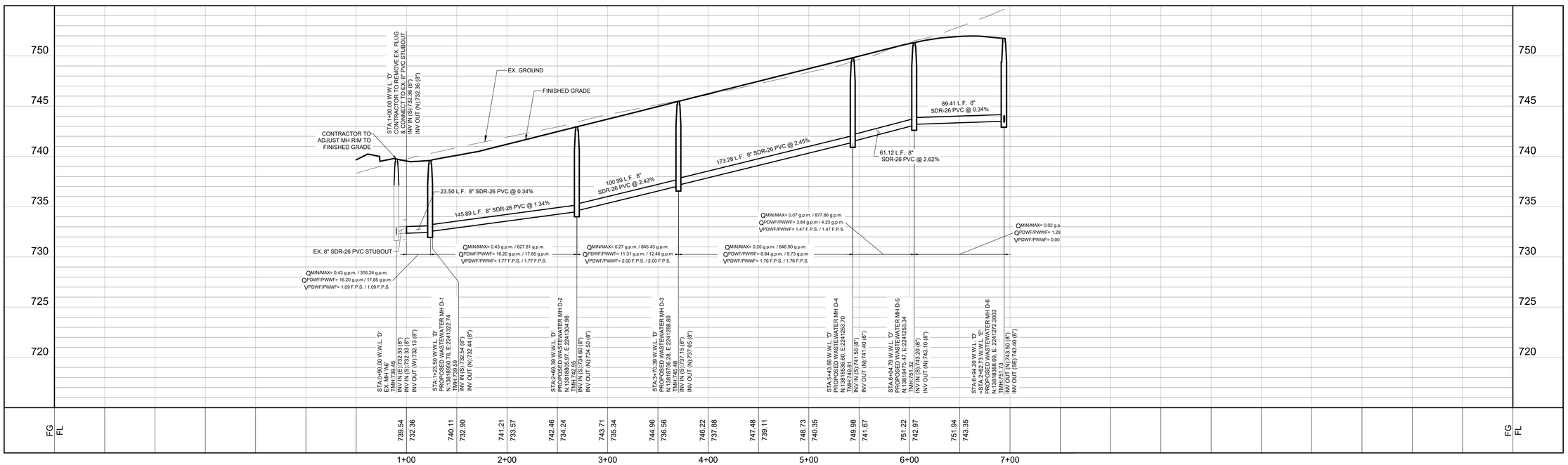


WASTEWATER LINE 'D' STA. 1+00.00 TO END



LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
S"WW	8"WW	SANITARY SEWER LINE
WL	WL	WATER LINE
S		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
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	ESM'T	EASEMENT
	VOL	VOLUME
	PG	PAGE
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HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

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.

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PDF
DRAWING NAME: 80_WWL 'D' P&P.dwg

3/20/2024
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

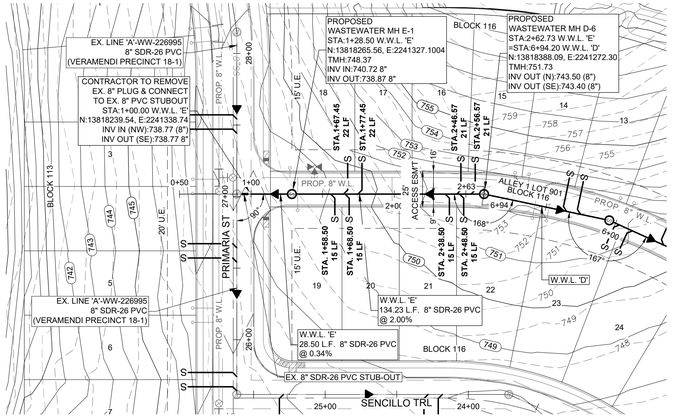
SHEET NO. 58
OF 70 SHEETS

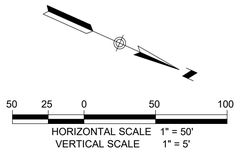
FOR PERMIT

P:\LJa\DSE dat projects\SA402_verlamendi precinct 18-21\430 site development plans\dwg-sheets\pln_WWL 'D' P&P.dwg
Xrefs Attached:
Last Modified: Mar. 15, 24 – 11:53
Last Modified By: Nick Gonzales

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	
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	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.

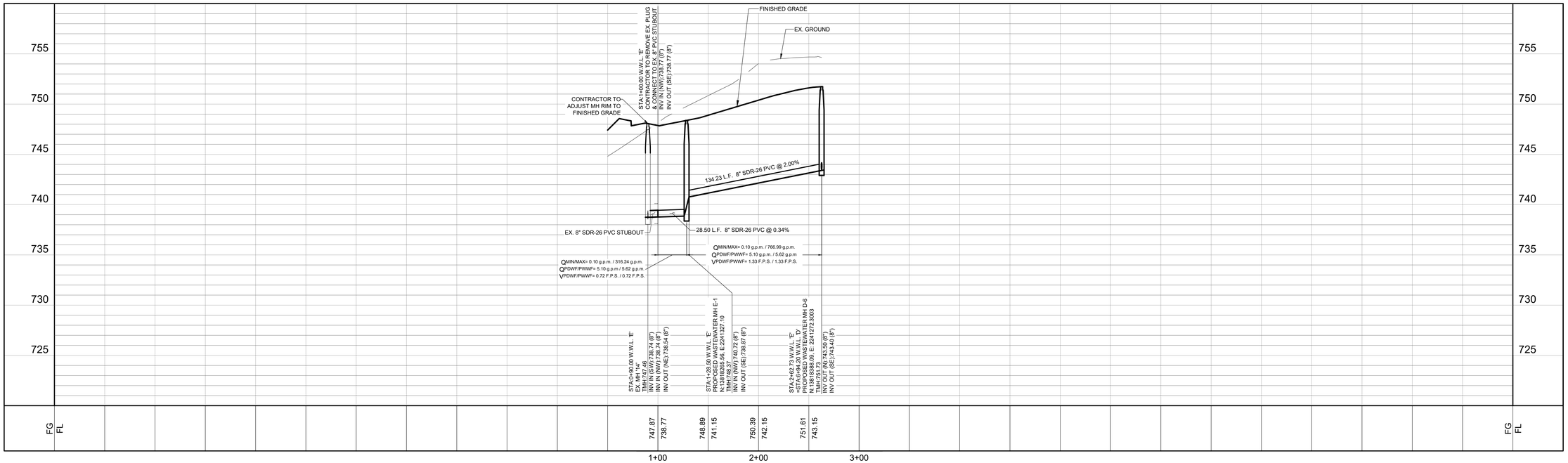
811 Know what's below. Call before you dig.

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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: MAP
CHECKED BY: PGF
DRAWING NAME: 81_VWL 'E' P&P.dwg

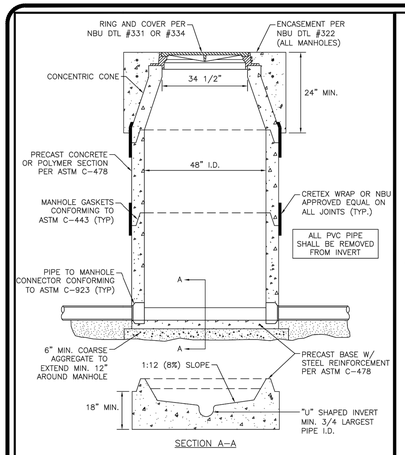
3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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. 59
OF 70 SHEETS

K:\sa3856.000_properties\04D2_veramendi precinct 18-2\425 site development plans\dwg-sheets\pb_WWL 'E' P&P.dwg
User: Matthew Gonzales
Last Modified: Mar. 15, 24 - 12:12
Layout Name: 81_VWL 'E' P&P.dwg

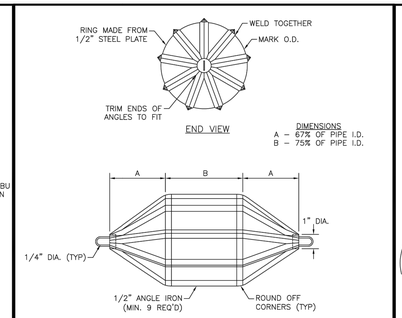


SECTION A–A

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

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 328

WASTEWATER MANHOLE ON PRECAST BASE



SIDE OR TOP VIEW

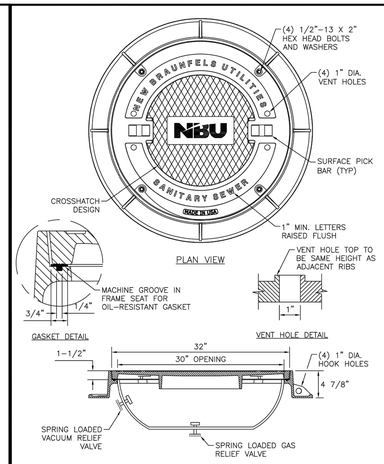
MANDREL REQUIREMENTS:

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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 350

GO, NO GO DEFLECTION TESTING MANDREL

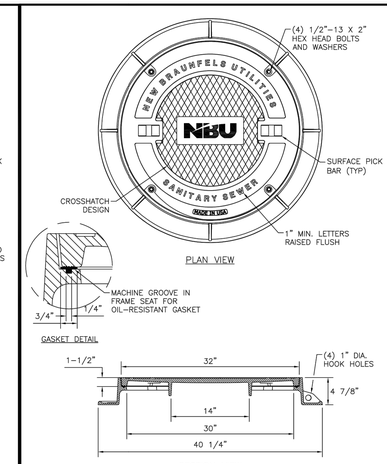


SECTION VIEW

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

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 334

VENTED SANITARY SEWER MANHOLE COVER

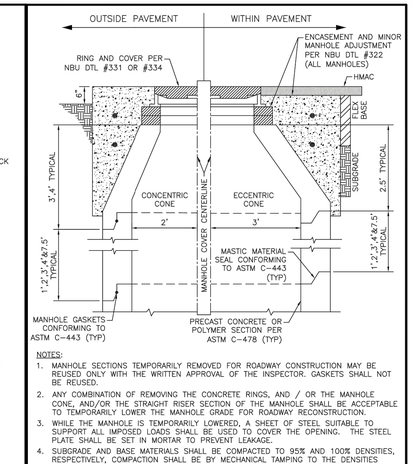


SECTION VIEW

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

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 331

SANITARY SEWER MANHOLE COVER

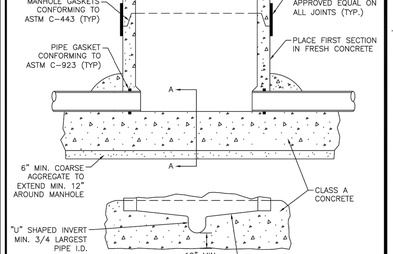


NOTES:

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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 321

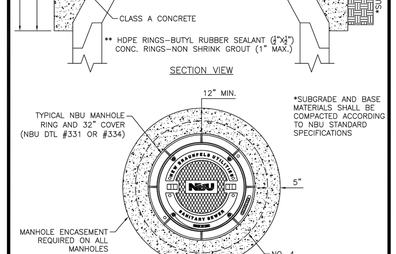
MAJOR MANHOLE ADJUSTMENT



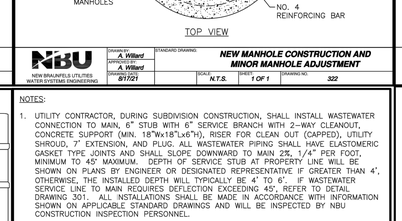
SECTION A–A

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 327

WASTEWATER MANHOLE ON CAST IN PLACE FOUNDATION



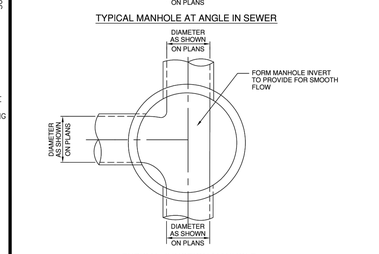
SECTION VIEW



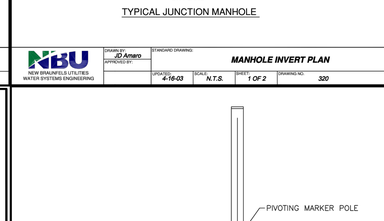
TOP VIEW

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 322

NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENT



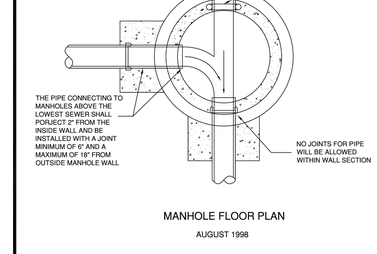
TYPICAL MANHOLE AT ANGLE IN SEWER



TYPICAL JUNCTION MANHOLE

NBU	DRAWN BY: JD Amaro	APPROVED BY:	UPDATED: 4-16-03	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO: 320

MANHOLE INVERT PLAN

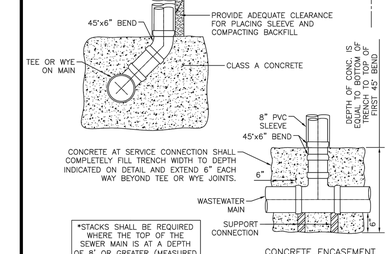


MANHOLE FLOOR PLAN

AUGUST 1998

NBU	DRAWN BY: H Shadrock	APPROVED BY:	UPDATED: 5-8-03	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO: 320

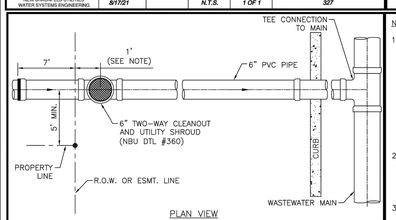
STANDARD MANHOLE MANHOLE FLOOR PLAN



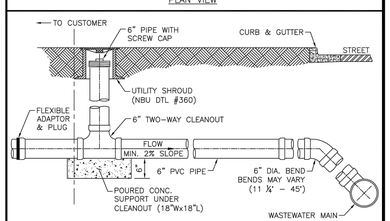
CONCRETE ENCASEMENT FOR SERVICE CONNECTION

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 301

WASTEWATER DEEP SERVICE CONNECTION DETAIL



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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO: 302

SINGLE WASTEWATER SERVICE CONNECTION DETAIL

NOTES:

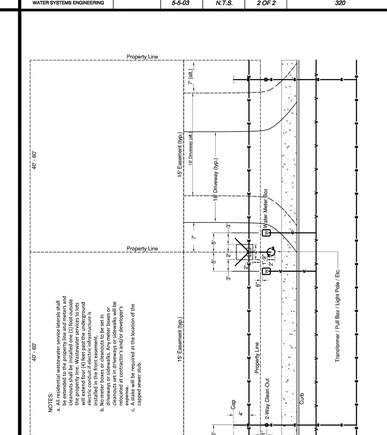
1. UTILITY CONTRACTOR, DURING SUBDIVISION CONSTRUCTION, SHALL INSTALL WASTEWATER CONNECTION TO MAIN, 6" STUB WITH 6" SERVICE BRANCH WITH 2-WAY CLEANOUT, CONCRETE SUPPORT (MIN. 18"Wx18"Lx6"H), RISER FOR CLEAN OUT (CAPPED), UTILITY SHROUD, 7' EXTENSION, AND PLUG. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC 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	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO: 302

SINGLE WASTEWATER SERVICE CONNECTION DETAIL

NBU	DRAWN BY: A. Willard	APPROVED BY: A. Willard	DRAWING DATE: 8/17/21	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 360

UTILITY SHROUD FOR SEWER CLEANOUT ASSEMBLY



NBU	DRAWN BY: D. A.	APPROVED BY: N. P.	DATED: 12/20/18	STANDARD DRAWING:	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 410

NARROW LOT WATER & SEWER SERVICE ALIGNMENT SCENARIO

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

1/22/2024
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. 60 OF 70 SHEETS

FOR PERMIT

K:\SA3856.dso (projects)\0402 veramendi precinct 18-21\426 site development plans\dwg\sheets\sh_Wastewater Details.dwg
Last Modified: Mar 15, 24 - 12:16
Xrefs Attached: Mar 15, 24 - 12:14

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 (e) (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.	DESCRIPTION	BY	DATE

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

1/22/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
Priscilla G Flores

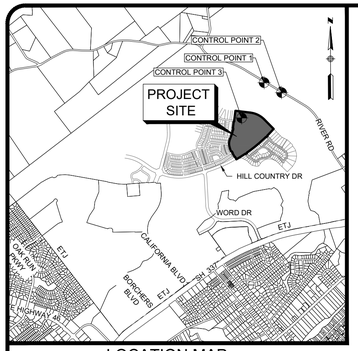
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

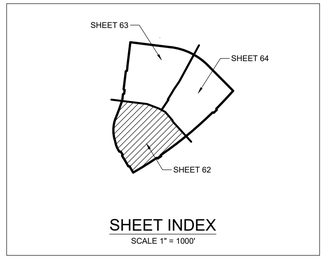
SHEET NO. 61 OF 70 SHEETS

FOR PERMIT

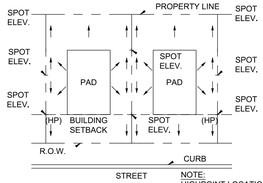
K:\SA3856\Fldr_Properties\0402 veramendi precinct 18-2\0426 site development plans\dwg\sheets\sh_Wastewater Details.dwg
User: Priscilla Flores
Last Modified: Mar. 15, 24 - 12:16
Last Plotted: Mar. 20, 24 - 09:31



LOCATION MAP
N.T.S.

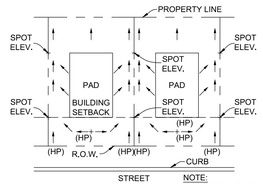


SHEET INDEX
SCALE 1" = 1000'



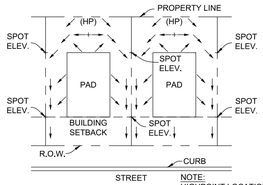
NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

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



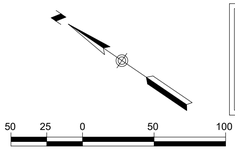
NOTE: HIGHPOINT LOCATION TO BE FIELD LOCATED FOR EACH INDIVIDUAL LOT.

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.

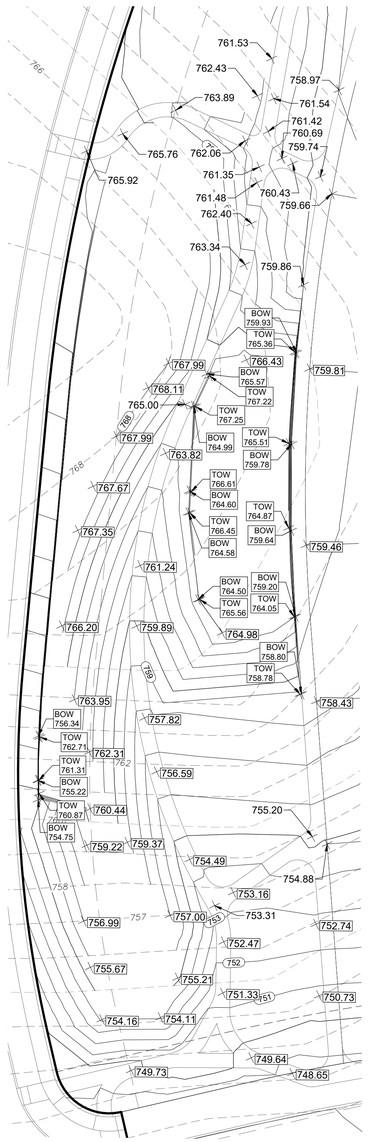
811 Know what's below. Call before you dig.

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 ESM'T.
	ESM'T.	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).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES. GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING
19. WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
20. STRIPPED VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE PERIOD OF TIME PER THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC.12.2(N).



DETAIL "A"
SCALE: 1"=20'

VERAMENDI PRECINCT 18 UNIT 2

GRADING PLAN (SHEET 1 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: st_Grading Plan.dwg

12/6/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G Flores

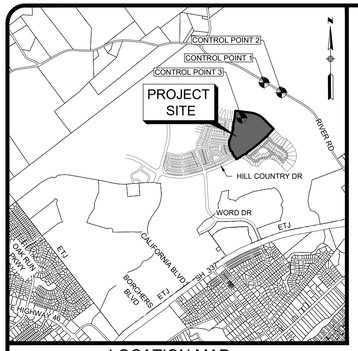
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

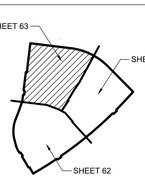
SHEET NO. 62
OF 70 SHEETS

FOR PERMIT

K:\SA3856 data projects\2402 veramendi precinct 18-2\426 site development plans\dwg\sheets\st_Grading Plan.dwg
Last Modified: Mar 15, 24 - 11:13
Xref Path(s): Mar 15, 24 - 11:13



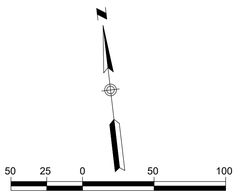
LOCATION MAP
N.T.S.



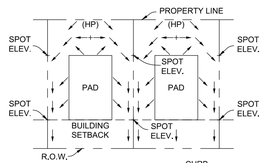
SHEET INDEX
SCALE 1" = 1000'

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.

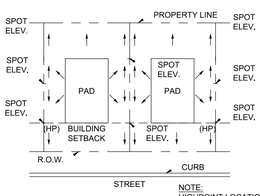


SCALE IN FEET
SCALE: 1"=50'



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

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



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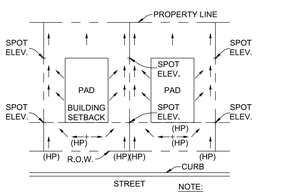
TYPICAL "B" LOT GRADING
N.T.S.



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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VERAMENDI PRECINCT 18 UNIT 2

GRADING PLAN (SHEET 2 OF 3)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PDF
DRAWING NAME: sh_Grading Plan.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

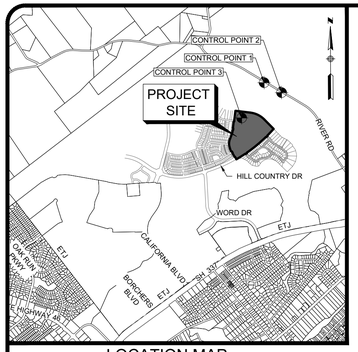
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

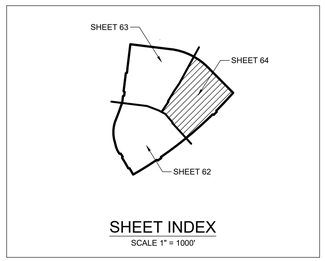
SHEET NO. 63
OF 70 SHEETS

FOR PERMIT

K:\SA3856.sia_project\SA3856.veramendi precinct 18-2\426 site development plans\dwg-sheets\sh_Grading Plan.dwg
Last Modified: Mon, 15, 24 - 13:13
Last Plotted: Mon, 25, 24 - 14:14



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

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
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

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

GRADING PLAN (SHEET 3 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: st_Grading Plan.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
3/20/2024
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

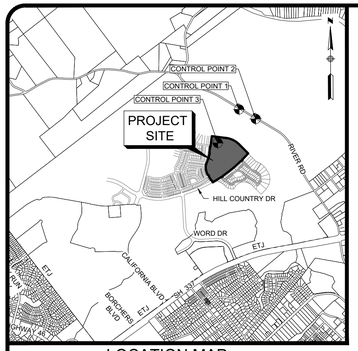
JOB NUMBER: SA3856.0402

SHEET NO. 64 OF 70 SHEETS

K:\SA3856.dsk Jobs\Civil\0402 veramendi precinct 18-2\426 site development plans\dwg\sheets\st_Grading Plan.dwg
Last Modified: Mar 15, 24 - 17:13
Xrefs Attached: Mar 15, 24 - 16:41:11

VERAMENDI PRECINCT 18 UNIT 2

STORMWATER POLLUTION PREVENTION PLAN



LOCATION MAP
N.T.S.

SWPPP MODIFICATIONS		
DATE	SIGNATURE	MODIFICATIONS

100 50 0 100 200

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.

REVISIONS NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: PDF
CHECKED BY: PDF
DRAWING NAME: sh_SWPPP.dwg

3-20-2024
STATE OF TEXAS
PRISCILLA G. FLORES
109874
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PROFESSIONAL ENGINEER

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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. 65 OF 70 SHEETS

FOR PERMIT

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Last Modified: Mar. 15, 24 - 17:21
Last Plotted: Mar. 20, 24 - 14:49

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/FT', 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 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

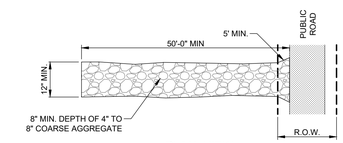
1. ALL AGGREGATE SHOULD BE AT LEAST 3 INCHES IN DIAMETER AND SHOULD NOT EXCEED A VOLUME OF 0.5 CUBIC FOOT.
2. EARTH EMBANKMENT: PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF 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 SHOULD BE 3:1 (H:V). MINIMUM WIDTH OF THE EMBANKMENT AT THE TOP SHALL BE 8 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

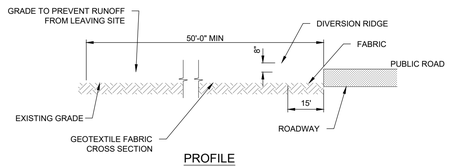
1. THE DRAINAGE AREA FOR A SEDIMENT BASIN SHALL BE LESS THAN 100 ACRES.
2. THE BASIN SHOULD INCLUDE A PERMANENT STAKE TO INDICATE THE SEDIMENT LEVEL IN THE POOL AND MARKED TO INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME (NOT THE TOP OF THE STAKE). SEDIMENT SHALL BE REMOVED WHEN SEDIMENT 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.



PLAN VIEW



PROFILE

66.01 STABILIZED CONSTRUCTION EXIT

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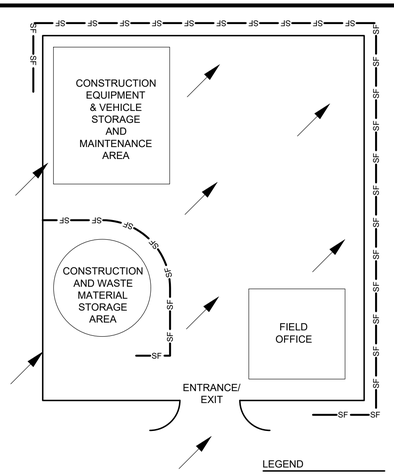

CONSTRUCTION STAGING AREA

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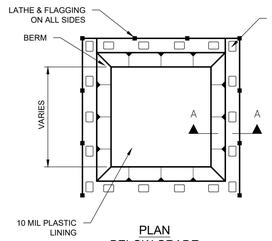
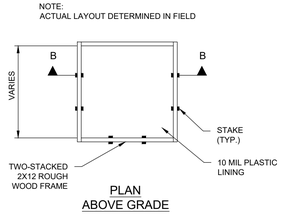
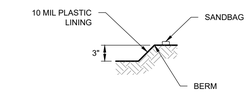


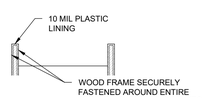
PLAN
BELOW GRADE



PLAN
ABOVE GRADE



BELOW GRADE
SECTION A-A



ABOVE GRADE
SECTION B-B

66.02 CONCRETE WASHOUT AREA

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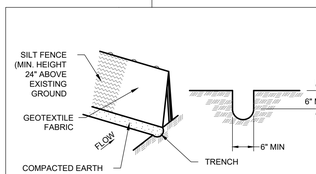

66.03 SILT FENCE

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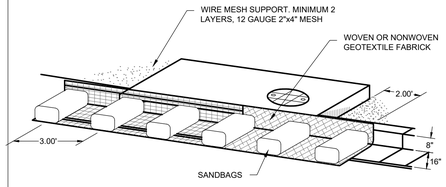
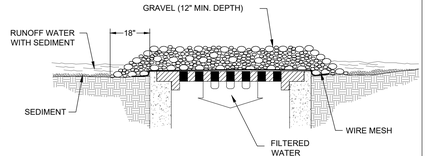


CURB INLET PROTECTION

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.



GRATE INLET PROTECTION

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

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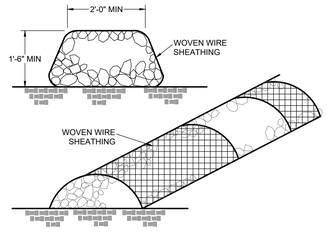


NOTES:

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

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sp_SWPPP Details.dwg

3/20/2024
STATE OF TEXAS
PRISCILLA G. FLORES
No. 109874
LICENSED PROFESSIONAL ENGINEER

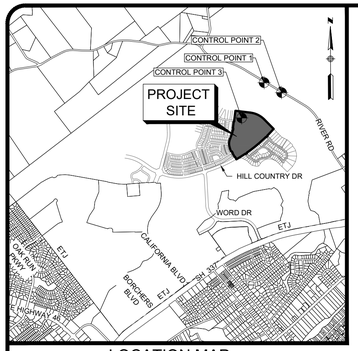
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 66 OF 70 SHEETS

FOR PERMIT

K:\SA3856.vpc projects\2402 veramendi precinct 18-21\430 site development plans\dwg-sheets\sp_SWPPP Details.dwg
Xrefs Attached:
Last Modified: Mar. 15, 24 - 12:52
Plot Scale: 1.00 x Plot Units: Inches



LOCATION MAP

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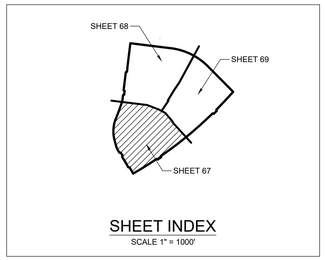

SHEET INDEX

SCALE 1" = 1000'

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



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)

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 1 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sh_Tree Preservation Plan.dwg

STATE OF TEXAS
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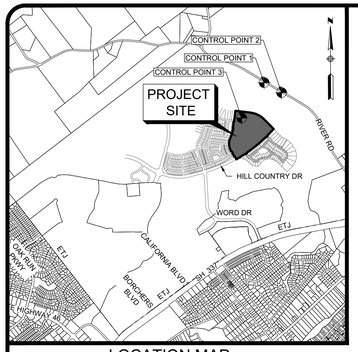
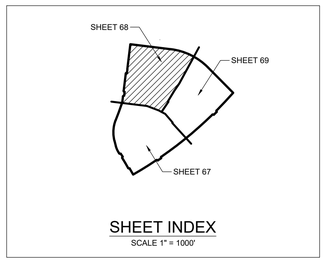
SHEET NO. 67 OF 70 SHEETS

FOR PERMIT



LOCATION MAP

N.T.S.



SHEET INDEX

SCALE 1" = 1000'

NOTES

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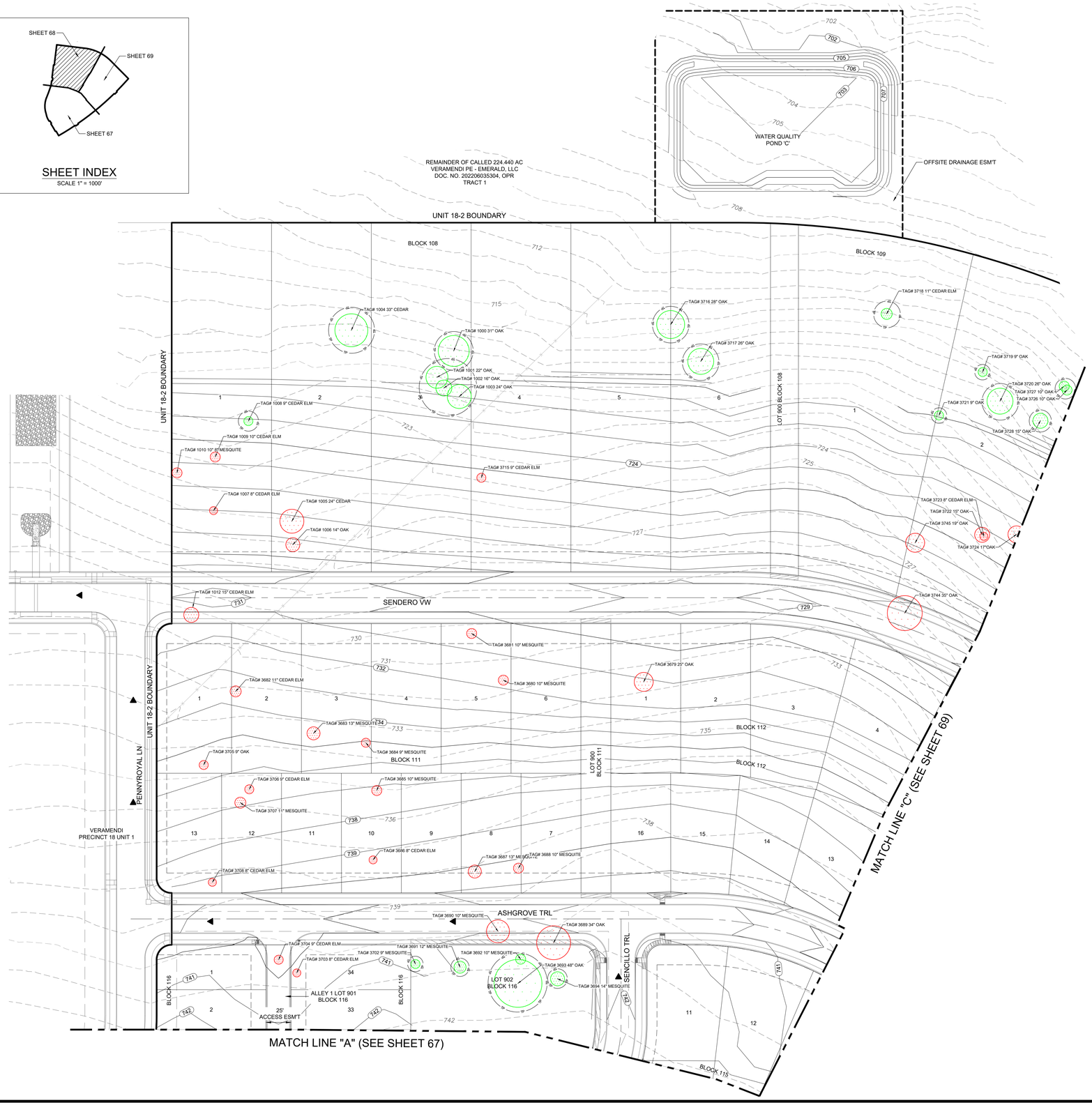

50 25 0 50 100

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)

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 2 OF 3)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
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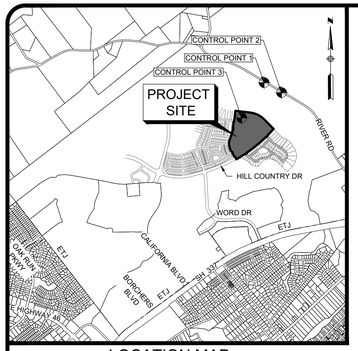
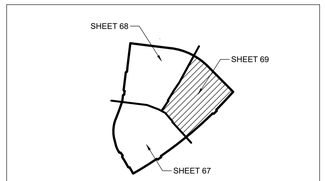
SHEET NO. 68 OF 70 SHEETS

FOR PERMIT



LOCATION MAP
N.T.S.



SHEET INDEX
SCALE 1" = 1000'

NOTES

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2. NO CONSTRUCTION SHALL OCCUR WITHIN THE ONE HALF (½) ROOT PROTECTION ZONE.
3. REFER TO SHEET 33 FOR PROTECTION DETAILS

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)

VERAMENDI PRECINCT 18 UNIT 2

TREE PRESERVATION PLAN (SHEET 3 OF 3)

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sht_Tree Preservation Plan.dwg

STATE OF TEXAS
PRISCILLA G. FLORES
109874
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3/20/2024

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TBPE No. F-1386

JOB NUMBER: SA3856.0402

SHEET NO. 69
OF 70 SHEETS

FOR PERMIT

K:\sa3856.doc_properties\0402 veramendi precinct 18-2\426 site development plan\dwg-sheets\pb_Tree Preservation Plan.dwg
User: priscilla.flores
Last Modified: Mar. 15, 24 - 13:14
Last Saved By: Mar. 15, 24 - 13:14

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: 3/20/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: sht_Tree Preservation Plan.dwg

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JOB NUMBER: SA3856.0402

SHEET NO. 70 OF 70 SHEETS

FOR PERMIT

K:\SA3856.dsn projects\0402 veramendi precinct 18-2\426 site development plans\dwg sheets\sht_Tree Preservation Plan.dwg
Xrefs Attached: None
Last Modified: Mar. 15, 24 - 13:14
Dwg Plotted: Mar. 15, 24 - 13:14:25

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3210	21" OAK		21	
3211	23" OAK		23	
3221	8" MESQUITE		8	
3222	8" MESQUITE		8	
3223	9" MESQUITE		9	
3224	8" MESQUITE		8	
3225	8" MESQUITE		8	
3226	8" MESQUITE		8	
3227	8" MESQUITE		8	
3230	10" MESQUITE		10	
3231	8" MESQUITE		8	
3232	8" MESQUITE		8	
3237	9" MESQUITE		9	
3238	12" MESQUITE		12	
3239	16" MESQUITE		16	
3240	8" MESQUITE		8	
3241	20" CEDAR		20	
3242	26" OAK		26	
3243	40" OAK		40	
3244	27" OAK		27	
3245	24" OAK		24	
3246	19" OAK		19	
3247	21" OAK		21	
3248	22" OAK		22	
3249	18" OAK		18	
3250	19" CEDAR		19	
3251	13" OAK			13
3252	33" OAK			33
3253	12" OAK			12
3254	10" OAK			10
3255	16" OAK			16
3256	14" OAK			14
3257	11" OAK			11
3258	14" OAK			14
3259	12" OAK		12	
3260	12" OAK		12	
3261	14" OAK		14	
3262	13" OAK		13	
3263	21" OAK			21
3264	15" OAK		15	
3265	14" OAK		14	
3266	20" OAK		20	
3267	18" OAK		18	
3268	18" OAK		18	
3269	12" OAK		12	
3270	13" OAK			13
3271	14" OAK			14
3272	25" OAK		25	
3273	21" OAK		21	
3274	17" OAK		17	
3275	14" OAK		14	
3276	11" OAK		11	
3277	13" OAK		13	
3278	14" OAK		14	
3279	21" OAK			21
3280	16" OAK		16	
3281	15" OAK			15
3282	19" OAK		19	
3283	16" OAK		16	
3284	12" OAK		12	
3285	15" OAK		15	
3286	20" OAK		20	
3287	14" OAK		14	
3288	15" OAK		15	
3289	15" OAK		15	
3290	17" OAK		17	
3291	14" OAK		14	
3292	13" OAK		13	
3293	14" OAK		14	
3294	13" OAK		13	
3295	15" OAK		15	
3296	15" OAK		15	
3297	14" OAK		14	
3298	13" OAK		13	
3299	18" OAK		18	
3300	11" OAK		11	
3301	17" OAK		17	
3302	19" OAK		19	
3303	17" OAK		17	
3304	14" OAK			14
3305	18" OAK			18
3306	13" OAK			13
3307	11" OAK			11
3308	15" OAK			15
3309	24" OAK			24
3310	15" OAK			15
3311	21" OAK			21

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3312	16" OAK			16
3313	15" OAK			15
3314	24" OAK		24	
3315	20" CEDAR		20	
3316	14" OAK		14	
3317	20" OAK		20	
3318	15" OAK		15	
3319	17" OAK		17	
3320	21" OAK		21	
3321	31" OAK		31	
3322	15" OAK			15
3323	18" OAK			18
3324	44" OAK			44
3325	8" OAK			8
3326	19" OAK			19
3327	17" OAK			17
3328	20" OAK			20
3329	29" OAK			29
3330	12" OAK			12
3331	16" OAK			16
3332	14" OAK			14
3333	17" OAK			17
3334	18" OAK			18
3335	12" OAK			12
3336	19" OAK			19
3337	16" OAK			16
3338	32" OAK			32
3339	25" OAK			25
3340	32" OAK			32
3341	13" OAK		13	
3342	10" OAK		10	
3343	10" OAK		10	
3344	11" OAK		11	
3345	9" MESQUITE		9	
3346	9" MESQUITE		9	
3347	33" OAK		33	
3348	27" OAK		27	
3349	22" OAK		22	
3350	13" OAK		13	
3351	17" OAK		17	
3352	21" CEDAR		21	
3353	8" MESQUITE		8	
3354	10" MESQUITE		10	
3355	27" OAK			27
3356	20" OAK		20	
3357	15" OAK		15	
3358	19" OAK		19	
3359	16" OAK		16	
3360	17" OAK			17
3361	17" OAK			17
3362	24" OAK		24	
3363	41" OAK		41	
3364	16" OAK		16	
3365	15" OAK		15	
3366	24" OAK		24	
3367	19" OAK		19	
3368	22" OAK		22	
3369	30" OAK		30	
3370	35" OAK		35	
3371	16" OAK		16	
3372	18" OAK		18	
3373	21" OAK		21	
3374	22" OAK			22
3375	26" OAK		26	
3376	8" CEDAR ELM		8	
3377	13" OAK		13	
3378	9" OAK		9	
3379	10" OAK		10	
3380	10" OAK		10	
3381	9" OAK		9	
3382	13" OAK		13	
3383	10" OAK		10	
3384	13" OAK		13	
3385	11" OAK		11	
3386	8" OAK		8	
3387	8" OAK			8
3388	12" OAK			12
3389	9" CEDAR ELM		9	
3390	18" OAK		18	
3391	21" OAK			21
3392	9" CEDAR ELM			9
3393	13" CEDAR ELM			13
3394	11" OAK			11
3395	8" OAK			8
3396	9" OAK			9
3397	8" OAK			8
3398	8" OAK			8
3399	8" CEDAR ELM		8	
3400	9" OAK		9	
3401	17" OAK		17	

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3402	21" OAK			21
3403	9" OAK		9	
3404	8" OAK		8	
3405	14" OAK		14	
3406	11" OAK		11	
3407	8" CEDAR ELM		8	
3408	8" CEDAR ELM		8	
3409	8" OAK		8	
3410	11" OAK		11	
3411	8" OAK		8	
3412	12" OAK		12	
3413	13" OAK		13	
3414	20" OAK		20	
3415	18" OAK		18	
3416	10" OAK		10	
3417	12" OAK		12	
3418	12" OAK		12	
3419	11" OAK		11	
3420	15" OAK		15	
3421	14" OAK		14	
3422	16" OAK		16	
3423	19" OAK		19	
3424	8" CEDAR ELM		8	
3425	35" OAK		35	
3426	13" OAK		13	
3427	27" OAK		27	
3428	9" CEDAR ELM		9	
3429	16" OAK		16	
3430	12" CEDAR ELM		12	
3431	12" OAK		12	
3432	11" OAK		11	
3433	15" OAK		15	
3434	13" OAK		13	
3435	15" OAK		15	
3436	9" OAK		9	
3437	12" OAK		12	
3438	16" OAK			16
3439	13" OAK		13	
3440	9" OAK		9	
3441	12" OAK		12	
3442	11" OAK		11	
3443	20" OAK		20	
3444	13" OAK		13	
3445	12" OAK		12	
3446	15" OAK		15	
3447	12" OAK		12	
3448	13" OAK		13	
3449	11" OAK		11	
3450	17" OAK		17	
3451	9" OAK		9	
3452	14" OAK		14	
3453	17" OAK		17	
3454	16" OAK		16	
3455	15" OAK		15	
3456	16" OAK		16	
3457	18" CEDAR ELM		18	
3458	10" OAK		10	
3459	19" OAK		19	
3460	17" OAK		17	
3461	18" OAK		18	
3462	21" OAK		21	
3463	14" OAK			14
3464	18" OAK			18
3465	20" OAK			20
3466	13" OAK			13
3467	18" OAK		18	
3468	11" OAK		11	
3469	16" OAK		16	
3470	17" OAK		17	
3471	18" OAK		18	
3472	14" OAK		14	
3473	12" OAK			12
3474	15" OAK		15	
3475	22" OAK			22
3476	18" OAK		18	
3477	16" OAK			16
3478	16" OAK			16
3479	15" OAK			15
3480	10" OAK			10
3481	8" OAK		8	
3482	13" OAK		13	
3483	11" OAK		11	
3484	11" OAK		11	
3485	38" OAK		38	
3486	10" OAK		10	
3487	16" OAK		16	
3488	13" OAK		13	
3489	14" OAK		14	
3490	8" OAK		8	
3491	11" OAK		11	

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3492	15" OAK		15	
3493	16" OAK		16	
3494	10" OAK		10	
3495	14" OAK		14	
3496	20" OAK		20	
3497	10" OAK		10	
3498	12" OAK		12	
3499	15" OAK		15	
3500	18" OAK		18	
3501	21" OAK		21	
3502	19" OAK		19	
3503	8" CEDAR ELM		8	
3504	16" OAK		16	
3505	21" OAK		21	
3506	22" OAK			22
3507	15" OAK		15	
3508	14" OAK		14	
3509	15" OAK		15	
3510	10" OAK		10	
3511	13" OAK		13	
3512	17" OAK		17	
3513	11" OAK		11	
3514	18" OAK		18	
3515	17" OAK		17	
3516	15" OAK		15	
3517	16" OAK		16	
3518	19" OAK		19	
3519	18" OAK		18	
3520	18" OAK		18	
3521	12" OAK		12	
3522	33" OAK		33	
3523	27" OAK		27	
3524	16" OAK		16	
3525	16" OAK		16	
3526	14" OAK		14	
3527	32" OAK		32	
3528	12" OAK		12	
3529	15" OAK		15	
3530	9" OAK		9	
3531	35" OAK		35	
3532	21" OAK		21	
3533	22" OAK		22	
3534	9" OAK		9	
3535	30" OAK		30	
3536	15" OAK		15	
3537	11" OAK		11	
3538	11" OAK		11	
3539	9" OAK		9	
3540	8" OAK		8	
3541	13" OAK		13	
3542	15" OAK		15	
3543	15" OAK		15	
3544	9" OAK		9	
3545	23" OAK		23	
3546	16" OAK		16	
3547	14" OAK		14	
3548	16" OAK		16	
3549	9" OAK		9	
3550	12" OAK		12	
3551	12" OAK		12	
3552	25" OAK			25
3553	9" OAK			9
3554	18" OAK			18
3555	12" OAK			12
3556	16" OAK			16
3557	24" OAK			24
3558	12" OAK			12
3559	9" CEDAR ELM			9
3560	20" OAK			20
3561	17" OAK			17
3562	9" OAK			9
3563	9" OAK			9
3564	10" CEDAR ELM			10
3565	22" OAK			22
3566	38" OAK			38
3567	24" OAK			24
3568	27" OAK		27	
3569	15" OAK		15	
3570	17" OAK		17	
3571	26" OAK		26	
3572	21" OAK		21	
3573	12" OAK		12	
3574	9" OAK		9	
3575	9" OAK		9	
3576	9" OAK		9	
3577	11" OAK		11	
3578	16" OAK		16	
3579	16" OAK		16	
3580	13" OAK			13
3581	17" OAK			17

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Species	Exempt	Significant Tree Removed	Significant Tree Preserved
3582	30" OAK			30
3583	12" OAK			12
3584	14" OAK			14
3585	18" OAK			18
3586	22" OAK			22
3587	18" OAK		18	
3588	15" OAK			15
3589	23" OAK			23
3590	16" OAK			16
3591	15" OAK			15
3592	34" OAK		34	
3593	16" OAK			16
3594	13" OAK			13
3595	13" OAK			13
3596	14" OAK			14
3597	45" OAK			45
3598	13" OAK			13
3599	13" OAK			13
3600	11" OAK		11	
3601	11" OAK		11	
3602	13" OAK		13	
3603	9" OAK		9	
3604	23" OAK			23
3605	23"OAK			23
3606	11" OAK			11
3607	8" OAK			8
3608	16" OAK			16
3609	10" OAK			10
3610	17" OAK			17
3611	18" OAK			18
3612	16" OAK			16
3613	21" OAK			21
3614	13" OAK		13	
3615	9" OAK		9	
3616	21" OAK		21	
3617	12" OAK			12
3618	16" OAK			16
3619	10" OAK			10
3620	26" OAK			26
3621	9" CEDAR ELM			9
3622	20" OAK			20
3623	15" OAK			15
3624	21" OAK			21
3625	12" OAK			12
3626	8" OAK			8
3627	9" CEDAR ELM			9
3628	8" CEDAR ELM			8
3629	10" CEDAR ELM			10
3630	15" OAK			15
3631	13" OAK		13	
3632	14" OAK		14	
3633	11" OAK		11	
3634	16" OAK		16	
3635	10" OAK		10	
3636	11" OAK		11	
3637	9" OAK		9	
3638	12" OAK		12	
3639	13" OAK		13	
3640	12" OAK		12	
3641	8" OAK		8	
3642	11" OAK		11	
3643	12" OAK		12	
3644	13" OAK		13	
3645	14" OAK		14	
3646	15" OAK		15	
3647	8" OAK		8	
3648	14" OAK		14	
3649	15" OAK		15	
3650	15" OAK		15	
3651	8" OAK		8	
3652	21" OAK		21	
3653	8" OAK		8	

VERAMENDI PRECINCT 19 UNIT 1

TREE PRESERVATION PLAN CALCULATIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/27/2024
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PF
DRAWING NAME: sh_Tree Preservation Plan.dwg

04/01/2024
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: SA3856.0401

SHEET NO. 60 OF 60 SHEETS

FOR PERMIT

K:\SA3856.A01 Properties\VA01 Veramendi Precinct 19-1\Y26 Site Development Plans\DWG Sheets\sh_Tree Preservation Plan.dwg
Xref Path: ...\Xref
Last Modified: Mar. 27, 24 - 17:12
Plot Date/Time: Apr. 01, 24 - 14:34:19

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Priscilla G. Flores, PE

Date: 3/7/2024

Signature of Customer/Agent:

Priscilla G Flores

Regulated Entity Name: Veramendi Precincts 18-2 & 19-1

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☐ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Blieders Creek

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- [X] A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
- [X] A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
- [X] A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
- [X] A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. [X] The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   - [ ] **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
   - [X] There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. [X] **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. [X] **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

    - [X] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
    - [ ] There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

    ☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. [X] Records must be kept at the site of 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.

19. [X] Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. [X] All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. [X] If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. [X] Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

Temporary Stormwater Section

Attachment A – Spill Response Actions

Spill Prevention and Control

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the storm water impacts of leaks and spills:

Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

(3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

(4) Establish a continuing education program to indoctrinate new employees.

(5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

(2) Store hazardous materials and wastes in covered containers and protect from vandalism.

(3) Place a stockpile of spill cleanup materials where it will be readily accessible.

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise cleanup activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:
   a) Contain the spread of the spill.
   b) Recover spilled materials.
   c) Clean the contaminated area and properly dispose of contaminated materials.

Semi-significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

(3) Notification should first be made by telephone and followed up with a written report.

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at:
http://www.tnrcc.state.tx.us/enforcement/emergency_response.html.

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak 03 and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you & think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.

(2) Discourage “topping off” of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

Spill Response Actions

In the event that a spill of hydrocarbons or hazardous substances does occur, the contractor shall be required to maintain a sufficient stockpile of sand material in the staging area. This sand material shall be used to immediately isolate and provide containment of the spill by constructing dikes. Furthermore, this sand material shall act as an absorbent material that can be disposed of offsite and out of the Recharge Zone during clean-up operations. The contractor, in the event of a spill, shall also notify the owner who shall contact TCEQ. All contaminated soils resulting from an accidental release will be required to be removed and disposed of in accordance with all local, state and federal regulations.

Attachment B – Potential Sources Contamination

Potential Source	Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
Preventive Measure	Vehicle maintenance, when possible, will be performed within a construction staging area specified by the General Contractor.
Potential Source	Miscellaneous trash and litter from construction workers and material wrappings.
Preventive Measure	Trash containers will be placed throughout the site to encourage proper trash disposal.
Potential Source	Construction debris.
Preventive Measure	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
Potential Source	Stormwater contamination from excess application of fertilizers, herbicides and pesticides.
Preventive Measure	Fertilizers, herbicides and pesticides will be applied only when necessary and in accordance with manufacturer's directions.

Potential Source	Soil and mud from construction vehicle tires as they leave the site.
Preventive Measure	A temporary construction entrance/exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.
Potential Source	Sediment from soil, sand, gravel and excavated materials stockpiled on site.
Preventive Measure	Silt fence shall be installed on the down gradient side of all stockpiled materials. Reinforced rock berms shall be installed at all downstream discharge locations.
Potential Source	Portable toilet spill.
Preventive Measure	Toilets on the site will be emptied on a regular basis by the contracted toilet company.

Attachment C – Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will be divided into stages. The first stage is site preparation that will include clearing and grubbing of vegetation, where applicable. This will disturb approximately 88.72 acres. The second is construction that will include installation of utilities, construction of the water quality basin and the proposed buildings, parking lot, landscaping and site cleanup. This will disturb approximately 88.72 acres.

Sequence Item	Description
1.	**Install TBMP's as required. (Silt Fence, etc.)**
2.	**Clearing of Disturbed Areas**
3.	**Grading of Disturbed Areas**
4.	**Construction of Permanent BMP's /Storm Drains**
5.	**Complete Construction**
6.	**Soil Stabilization and/or re-vegetation**
7.	**Clean site**
8.	**Remove TBMP's**

Attachment D – Temporary Best Management Practices and Measures

1. Temporary Construction Entrance/Exit – A stabilized pad of crushed stone located at any point where traffic will be entering or leaving the construction site from a public R.O.W., street, alley, sidewalk or parking area. It shall be a minimum of 50 feet long, 12 feet wide and 8 inches thick. The rock shall be 4" to 8" in size.

2. Silt Fence – A barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. Silt fences shall be installed on the down gradient side of the proposed areas to be disturbed that have a drainage area of ¼ acres per 100 feet of fence.

3. Rock Berms – A sediment trap consisting of 3" to 5" diameter rock wrapped in a woven wire sheathing. The berm shall have a minimum height of 36" and a minimum top width of 2 feet. A rock berm shall be placed at locations of the concentrated flows where the drainage area is between 2 and 5 acres.

4. Inlet Protection – Placed around inlets to catch and stop sediment from entering the storm drain system before filtration system are in place.

5. Concrete Washout Pit – Designed to trap and store waste from concrete and similar activities. This allows for safe storage and removal from the site by not allowing contaminants to enter the storm water. Contaminants can be kept in a location that will not allow storm water to mix and flow off the site.

Sequence of installation during construction process

1. The Temporary Construction Entrance/Exit (Item 1) shall be installed prior to disturbing any soil except at the location of the Temporary Construction Entrance/Exit. It shall stay in place and be maintained until the end of the infrastructure construction.

2. Silt fence (Item 2) shall be installed along the western boundary of the site prior to any disturbance of the site

3. Rock berms (Item 4) shall be installed around the perimeter of the project at natural low points following rough grading of the site and shall be removed once grading to the on-site stormwater drainage system with bagged gravel inlet filters in sump is complete. Rock berms will also be utilized at the outlet of the pond while it is being constructed.

The TBMPs and measures utilized for the proposed project to prevent pollution of storm water, groundwater, and surface water during the construction phase are the following:

1. Temporary Construction Entrance/Exit
2. Silt Fence
3. Concrete Washout Pit
4. Rock Berm
5. Inlet Protection

Attachment D – Temporary Best Management Practices and Measures

Stormwater originating from upgradient.

- Stormwater originating from upgradient from the east site of the property will be routed around the site by proposed grading.

Stormwater originating from onsite.

- Stormwater originating from onsite will be maintained by the proposed TMBPs (Silt fence, rock berms, etc.) to stay within the project limits and treated by the proposed PBMP.

Prevent stormwater from entering surface water, sensitive features and aquifer.

- No stormwater is expected to enter any surface water, sensitive feature or directly to the aquifer.

Will maintain flow to naturally occurring sensitive features.

- No naturally occurring sensitive features are documented on the geological assessment table.

1.4.2 Temporary Construction Entrance/Exit

The purpose of a temporary gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights-of-way. This practice should be used at all points of construction ingress and egress. Schematic diagrams of a construction entrance/exit are shown in Figure 1-24 and Figure 1-25.

Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected were access is not necessary. A rock stabilized construction entrance should be used at all designated access points.

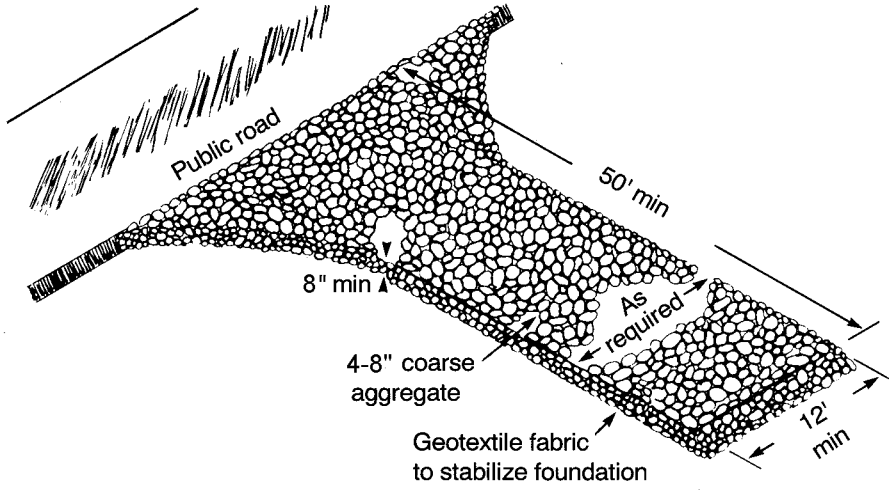


Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

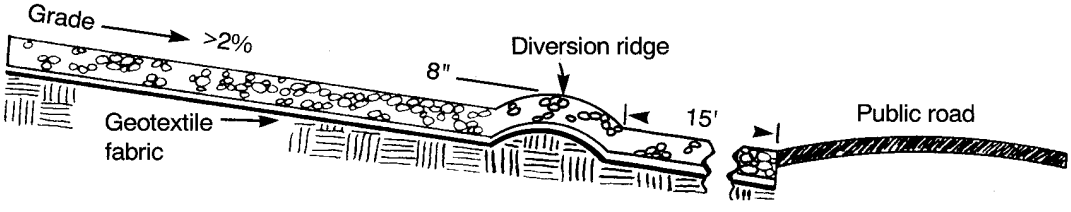


Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.

(2) The aggregate should be placed with a minimum thickness of 8 inches.

(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd^2, a mullen burst rating of 140 lb/in^2, and an equivalent opening size greater than a number 50 sieve.

(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

Installation: (North Carolina, 1993)

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.

(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.

(3) The construction entrance should be at least 50 feet long.

(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.

(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.

(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.

(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

(8) Install pipe under pad as needed to maintain proper public road drainage.

Common trouble points

(1) Inadequate runoff control – sediment washes onto public road.

(2) Stone too small or geotextile fabric absent, results in muddy condition as stone is pressed into soil.

(3) Pad too short for heavy construction traffic – extend pad beyond the minimum 50 foot length as necessary.

(4) Pad not flared sufficiently at road surface, results in mud being tracked on to road and possible damage to road edge.

(5) Unstable foundation – use geotextile fabric under pad and/or improve foundation drainage.

Inspection and Maintenance Guidelines:

(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

1.4.3 Silt Fence

A silt fence is a barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. When properly used, silt fences can be highly effective at controlling sediment from disturbed areas. They cause runoff to pond, allowing heavier solids to settle out. If not properly installed, silt fences are not likely to be effective. A schematic illustration of a silt fence is shown in Figure 1-26.

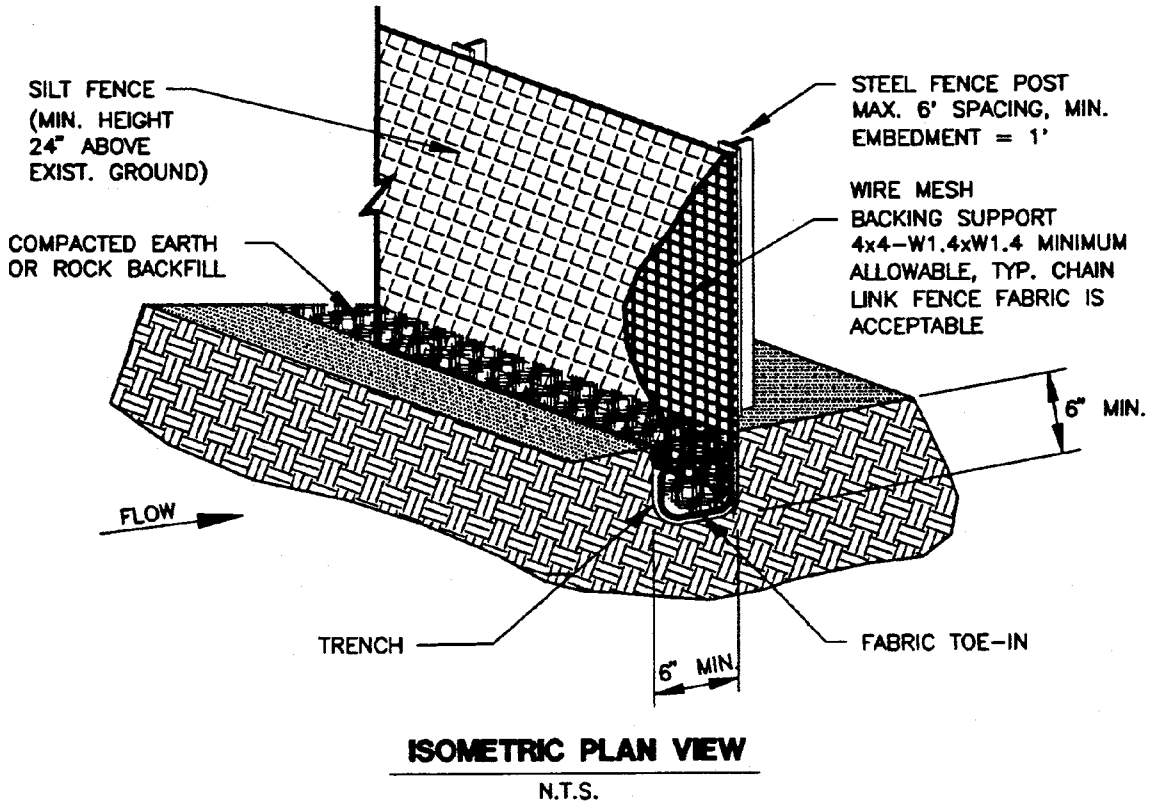


Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

Materials:

(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in^2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.

(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Y-bar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft^2, and Brindell hardness exceeding 140.

(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

Installation:

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. 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.

(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.

(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.

(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.

(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.

(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

Common Trouble Points:

(1) Fence not installed along the contour causing water to concentrate and flow over the fence.

(2) Fabric not seated securely to ground (runoff passing under fence)

(3) Fence not installed perpendicular to flow line (runoff escaping around sides)

(4) Fence treating too large an area, or excessive channel flow (runoff overtops or collapses fence)

Inspection and Maintenance Guidelines:

(1) Inspect all fencing weekly, and after any rainfall.

(2) Remove sediment when buildup reaches 6 inches.

(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.

(4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

(5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

1.4.5 Rock Berms

The purpose of a rock berm is to serve as a check dam in areas of concentrated flow, to intercept sediment-laden runoff, detain the sediment and release the water in sheet flow. The rock berm should be used when the contributing drainage area is less than 5 acres. Rock berms are used in areas where the volume of runoff is too great for a silt fence to contain. They are less effective for sediment removal than silt fences, particularly for fine particles, but are able to withstand higher flows than a silt fence. As such, rock berms are often used in areas of channel flows (ditches, gullies, etc.). Rock berms are most effective at reducing bed load in channels and should not be substituted for other erosion and sediment control measures farther up the watershed.

Materials:

(1) The berm structure should be secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.

(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

Installation:

(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.

(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.

(3) Place the rock along the sheathing as shown in the diagram (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.

(6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

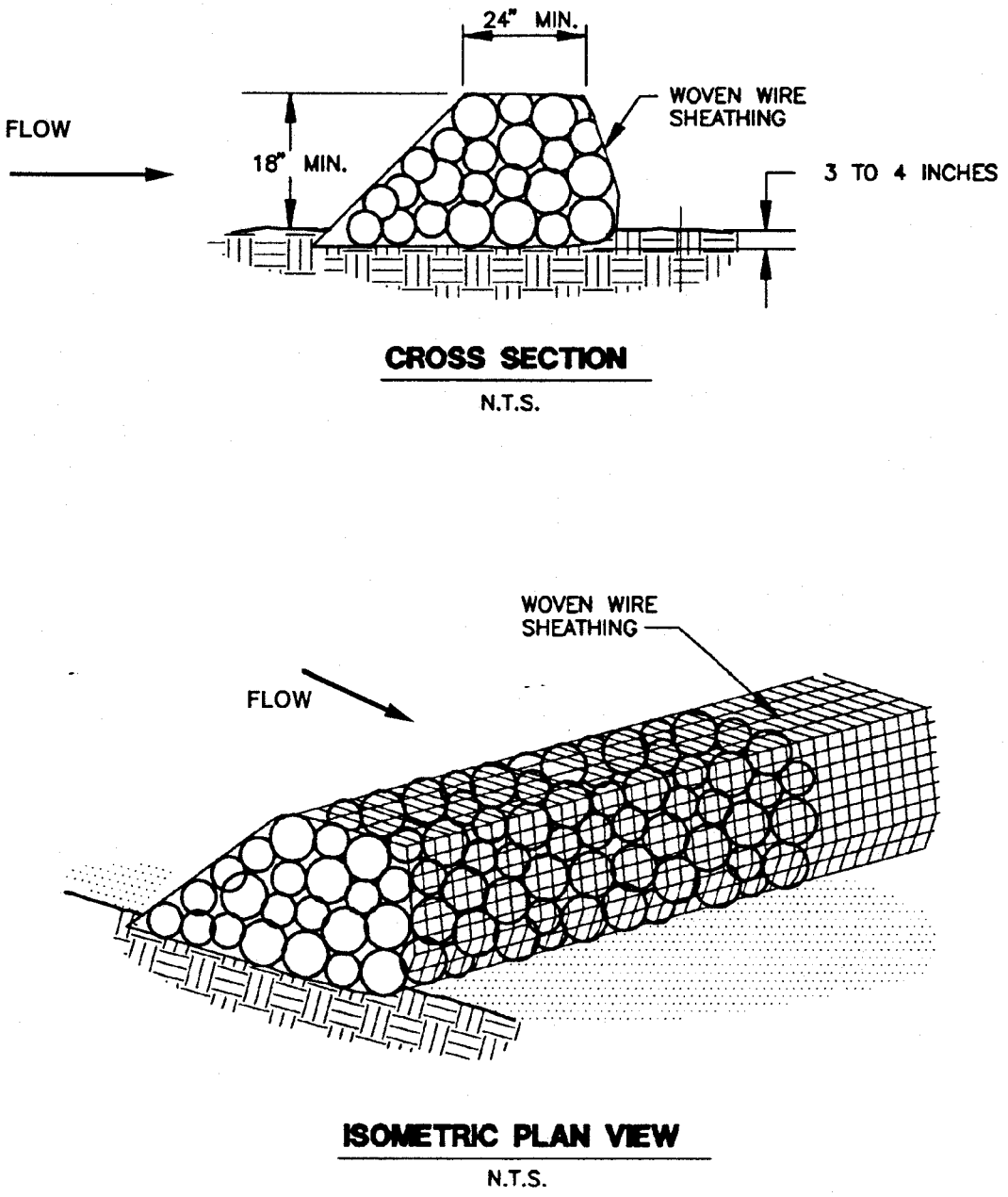


Figure 1-28 Schematic Diagram of a Rock Berm (NCTCOG, 1993)

Common Trouble Points:

(1) Insufficient berm height or length (runoff quickly escapes over the top or around the sides of berm)

(2) Berm not installed perpendicular to flow line (runoff escaping around one side)

Inspection and Maintenance Guidelines:

(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.

(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.

(3) Repair any loose wire sheathing.

(4) The berm should be reshaped as needed during inspection.

(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.

(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

1.4.18 Concrete Washout Areas

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.

For onsite washout:

- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Below grade concrete washout facilities are typical. These consist of a lined excavation sufficiently large to hold expected volume of washout material. Above grade facilities are used if excavation is not practical. Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this section, with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

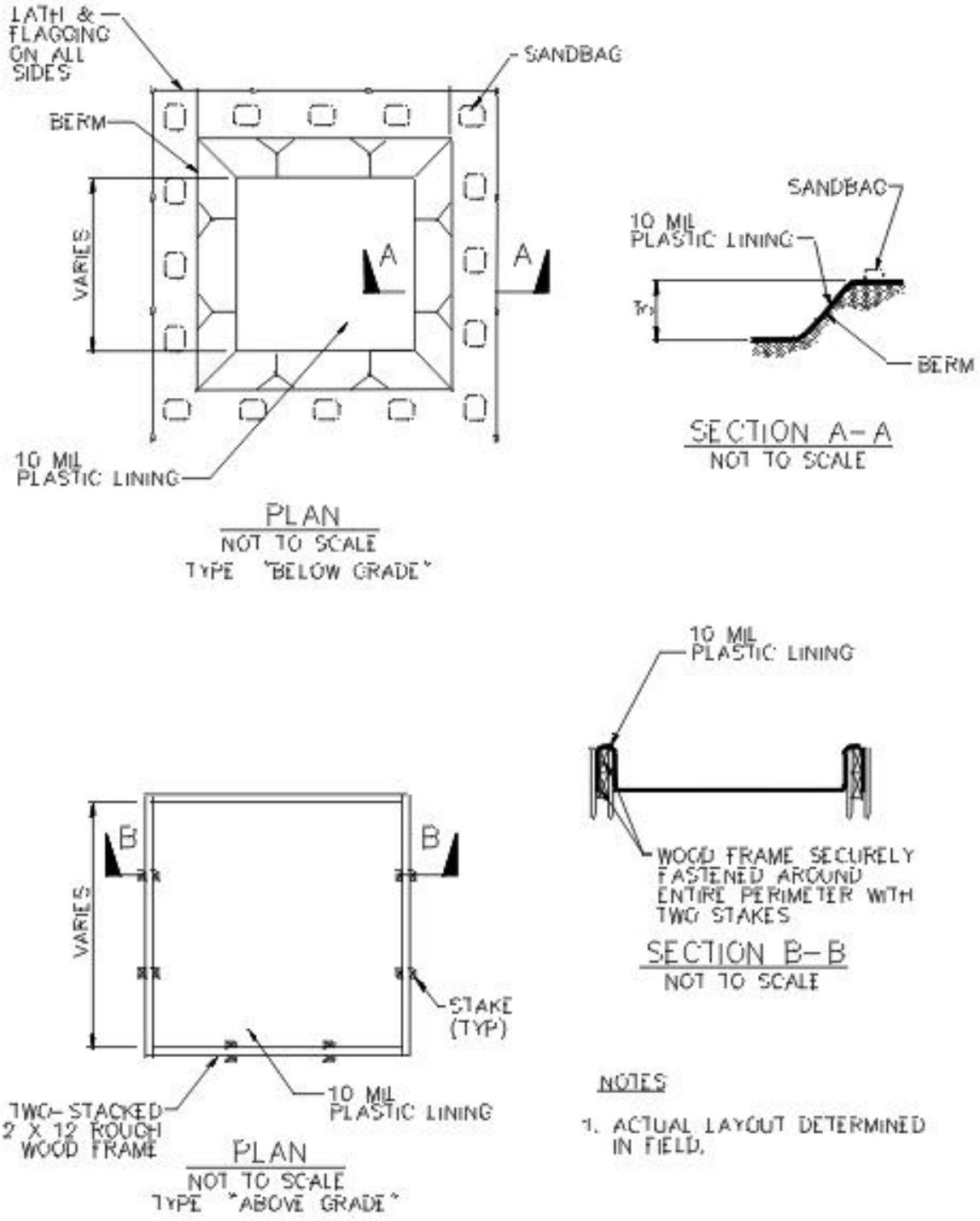


Figure 1-43 Schematics of Concrete Washout Areas

1.4.11 Inlet Protection

Storm sewers that are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainage ways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets. The following guidelines for inlet protection are based primarily on recommendations by the Virginia Dept. of Conservation and Recreation (1992) and the North Central Texas Council of Governments (NCTCOG, 1993b).

In developments for which drainage is to be conveyed by underground storm sewers (i.e., streets with curbs and gutters), all inlets that may receive storm runoff from disturbed areas should be protected. Temporary inlet protection is a series of different measures that provide protection against silt transport or accumulation in storm sewer systems. This clogging can greatly reduce or completely stop the flow in the pipes. The different measures are used for different site conditions and inlet types.

Care should be taken when choosing a specific type of inlet protection. Field experience has shown that inlet protection that causes excessive ponding in an area of high construction activity may become so inconvenient that it is removed or bypassed, thus transmitting sediment-laden flows unchecked. In such situations, a structure with an adequate overflow mechanism should be utilized.

It should also be noted that inlet protection devices are designed to be installed on construction sites and not on streets and roads open to the public. When used on public streets these devices will cause ponding of runoff, which can cause minor flooding and can present a traffic hazard. An example of appropriate siting would be a new subdivision where the storm drain system is installed before the area is stabilized and the streets open to the general public. When construction occurs adjacent to active streets, the sediment should be controlled on site and not on public thoroughfares. Occasionally, roadwork or utility installation will occur on public roads. In these cases, inlet protection is an appropriate temporary BMP.

The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap or basin.

Filter barrier protection using silt fence is appropriate when the drainage area is less than one acre and the basin slope is less than five percent. This type of protection is not applicable in paved areas.

Block and gravel protection is used when flows exceed 0.5 cubic feet per second and it is necessary to allow for overtopping to prevent flooding. This form of protection is also useful for curb type inlets as it works well in paved areas.

Wire mesh and gravel protection is used when flows exceed 0.5 cubic feet per second and construction traffic may occur over the inlet. This form of protection may be used with both curb and drop inlets.

Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain inlet. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. If this measure is implemented, the impoundment should be sized such that the volume of excavation is 3,600 cubic feet per acre (equivalent to 1 inch of runoff) of disturbed area entering the inlet.

Materials:

(1) Filter fabric should be a nylon reinforced polypropylene fabric which meets the following minimum criteria: Tensile Strength, 90 lbs.; Puncture Rating, 60 lbs.; Mullen Burst Rating, 280 psi; Apparent Opening Size, U.S. Sieve No. 70.

(2) Posts for fabric should be 2" x 4" pressure treated wood stakes or galvanized steel, tubular in cross-section or they may be standard fence "T" posts.

(3) Concrete blocks should be standard 8" x 8" x 16" concrete masonry units.

(4) Wire mesh should be standard hardware cloth or comparable wire mesh with an opening size not to exceed 1/2 inch.

Guidelines for installation:

Silt Fence Drop Inlet Protection

(1) Silt fence should conform to the specifications listed above and should be cut from a continuous roll to avoid joints.

(2) For stakes, use 2 x 4-inch wood or equivalent metal with a minimum length of 3 feet.

(3) Space stakes evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely drive them into the ground, approximately 18 inches deep (Figure 1-33).

(4) To provide needed stability to the installation, a frame with 2 x 4-inch wood strips around the crest of the overflow area at a maximum of 1½ feet above the drop inlet crest should be provided.

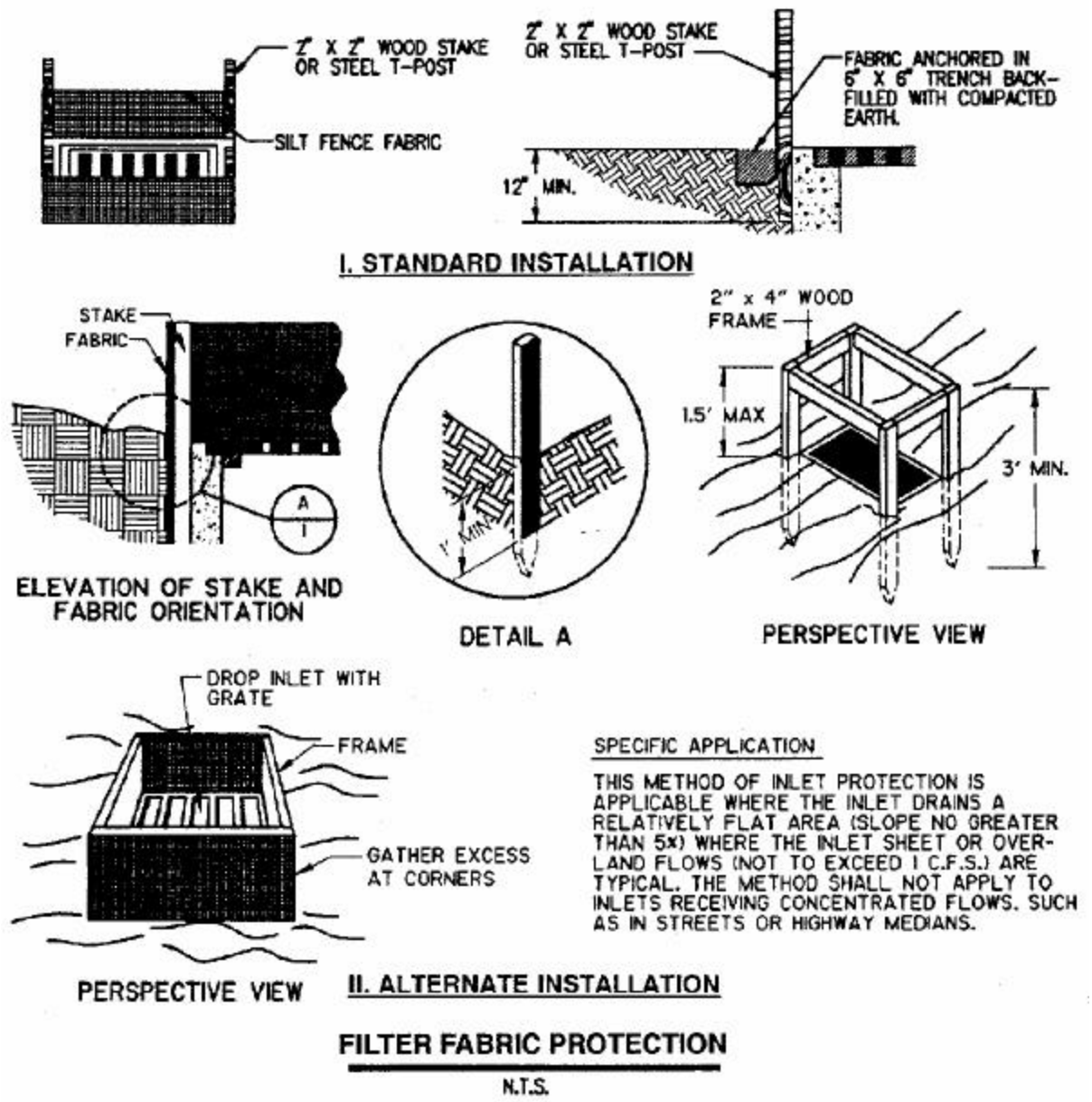


Figure 1-33 Filter Fabric Inlet Protection (NCTCOG, 1993)

(5) Place the bottom 12 inches of the fabric in a trench and backfill the trench with 12 inches of compacted soil.

(6) Fasten fabric securely by staples or wire to the stakes and frame. Joints must be overlapped to the next stake.

(7) It may be necessary to build a temporary dike on the down slope side of the structure to prevent bypass flow.

If the drop inlet is above the finished grade, the grate may be completely covered with filter fabric. The fabric should be securely attached to the entire perimeter of the inlet using 1"x 2" wood strips and appropriate fasteners.

Gravel and Wire Mesh Drop Inlet Sediment Filter

(1) Wire mesh should be laid over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Wire mesh with 1/2-inch openings should be used. If more than one strip of mesh is necessary, the strips should be overlapped (see Figure 1-34).

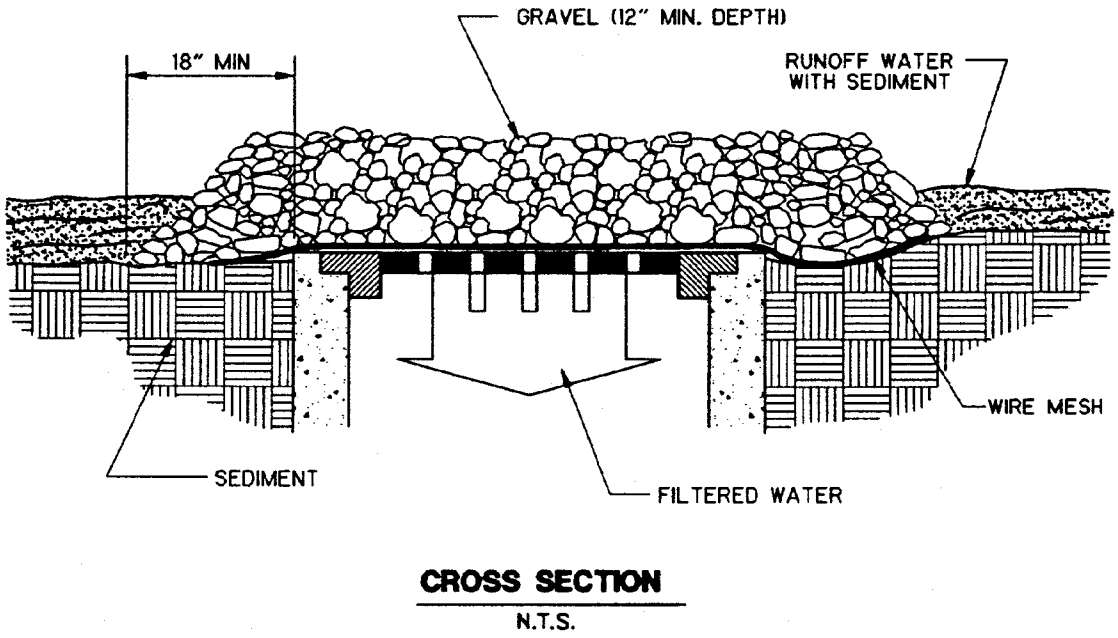


Figure 1-34 Wire Mesh and Gravel Inlet Protection (NCTCOG, 1993)

(2) Coarse aggregate should be placed over the wire mesh as indicated in Figure 1-34. The depth of stone should be at least 12 inches over the entire inlet opening. The stone should 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 its function, the stones must be pulled away from the inlet, cleaned and/or replaced.

Note: This filtering device has no overflow mechanism; therefore, ponding is likely especially if sediment is not removed regularly. This type of device should never be used where overflow may endanger an exposed fill slope. Consideration should also be given to the possible effects of ponding on traffic movement, nearby structures, working areas, adjacent property, etc.

Block and Gravel Drop Inlet Sediment Filter

(1) Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4-inch, 8-inch and 12-inch wide blocks. The barrier of blocks should be between 12 and 24 inches high.

(2) Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings should be used.

(3) Stone should be piled against the wire to the top of the block barrier, as shown in Figure 1-35.

(4) If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

Block and Gravel Curb Inlet Sediment Filter

(1) Two concrete blocks should be placed on their sides abutting the curb at either side of the inlet opening.

(2) A 2-inch x 4-inch stud should be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.

(3) Concrete blocks should be placed on their sides across the front of the inlet and abutting the spacer blocks as depicted in Figure 1-35.

(4) Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings should be used.

(5) Coarse aggregate should be piled against the wire to the top of the barrier as shown in Figure 1-35.

(6) If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and/or replaced.

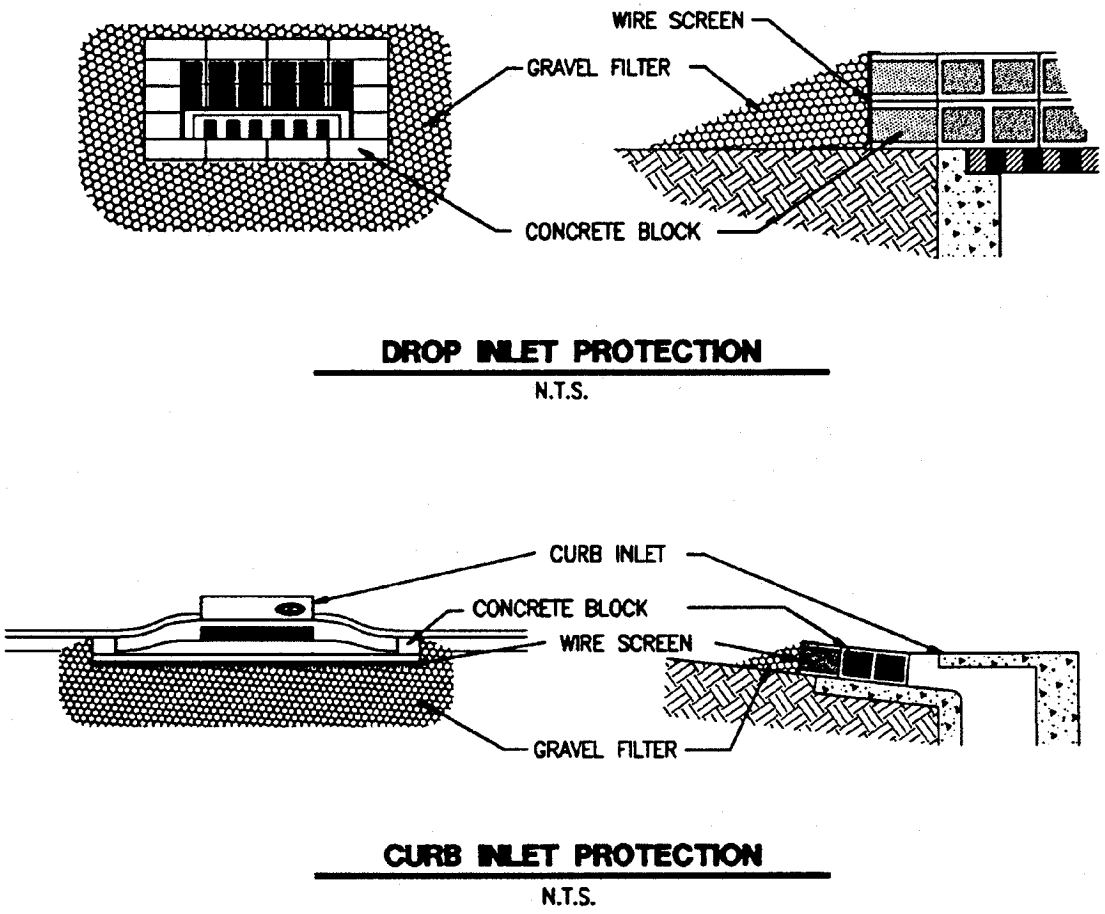


Figure 1-35 Block and Gravel Inlet Protection (NCTCOG, 1993)

Excavated Drop Inlet Sediment Trap

(1) The excavated trap should be sized to provide a minimum storage capacity calculated at 3,600 cubic feet per acre of drainage area. A trap should be no less than 1-foot nor more than 2 feet deep measured from the top of the inlet structure. Side slopes should not be steeper than 2:1 (see Figure 1-36).

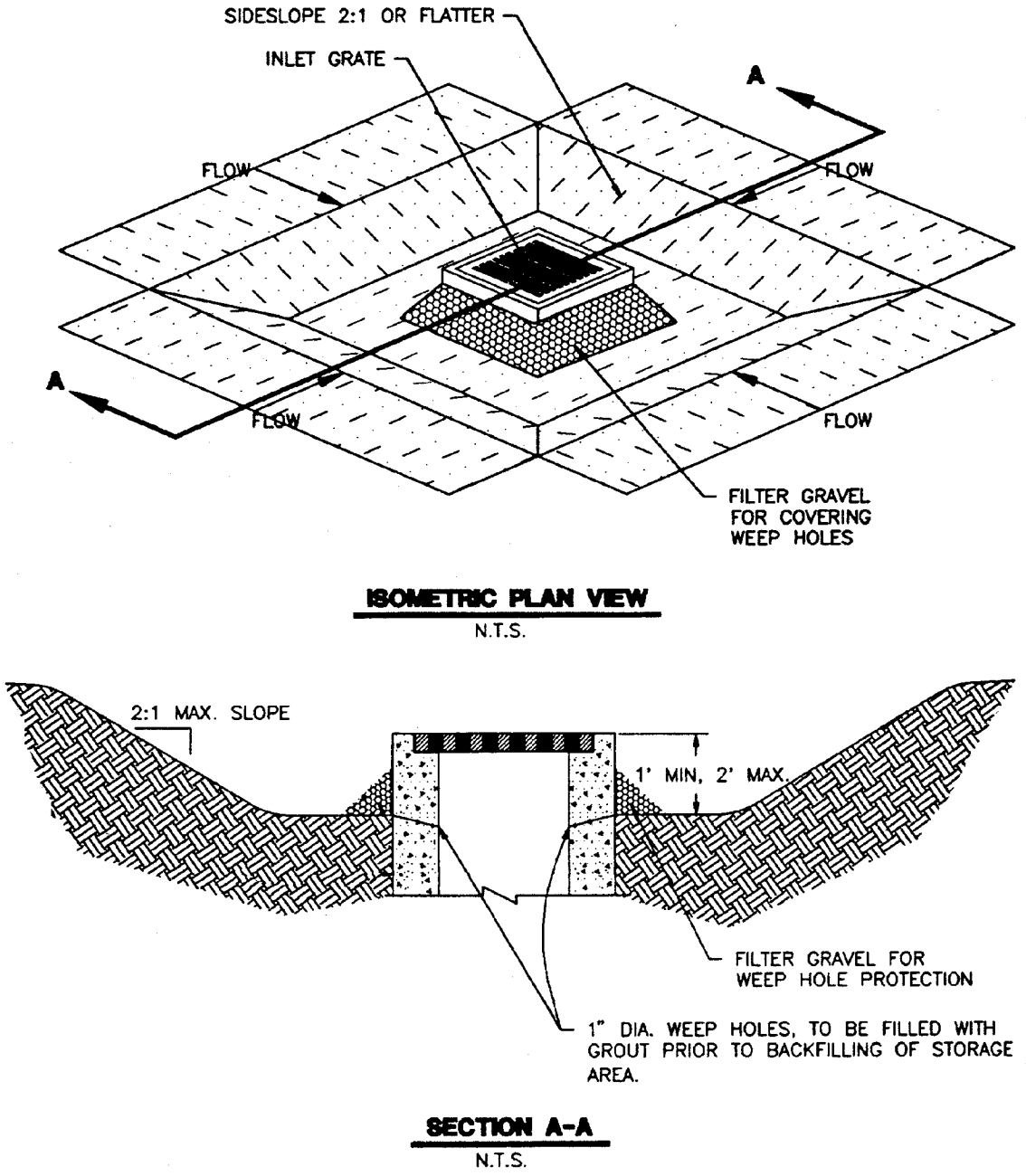


Figure 1-36 Excavated Inlet Protection (NCTCOG, 1993)

(2) The slope of the basin may vary to fit the drainage area and terrain. Observations must be made to check trap efficiency and modifications should be made as necessary to ensure satisfactory trapping of sediment. Where an inlet is located so as to receive concentrated flows, such as in a highway median, it is recommended that the basin have a rectangular shape in a 2:1 (length/width) ratio, with the length oriented in the direction of the flow.

(3) Sediment should be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Removed sediment should be deposited in a suitable area and in a manner such that it will not erode.

Curb Inlet Protection with 2-inch x 4-inch Wooden Weir

(1) Attach a continuous piece of wire mesh (30-inch minimum width x inlet throat length plus 4 feet) to the 2-inch x 4-inch wooden weir (with a total length of throat length plus 2 feet) as shown in Figure 1-37. Wood should be "construction grade" lumber.

(2) Place a piece of approved filter cloth of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2-inch x 4-inch weir.

(3) Securely nail the 2-inch x 4-inch weir to the 9-inch long vertical spacers which are to be located between the weir and inlet face at a maximum 6-foot spacing.

(4) Place the assembly against the inlet throat and nail 2-foot (minimum) lengths of 2-inch x 4-inch board to the top of the weir at spacer locations. These 2-inch x 4-inch anchors should extend across the inlet tops and be held in place by sandbags or alternate weight.

(5) The assembly should be placed so that the end spacers are a minimum 1 foot beyond both ends of the throat opening.

(6) Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place coarse aggregate over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.

(7) This type of protection should be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

(8) Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

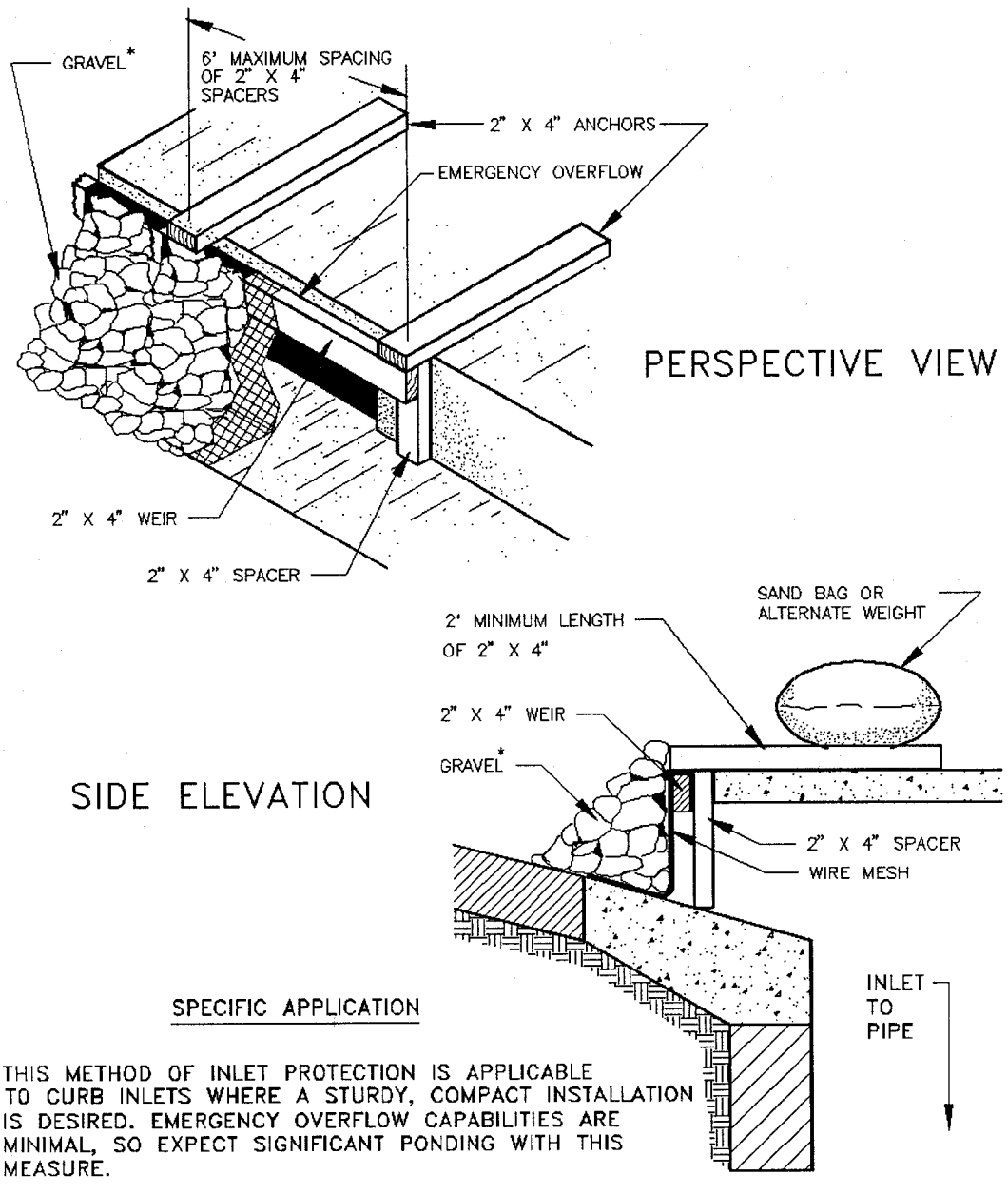


Figure 1-37 Wooden Weir Curb Inlet Protection (VA Dept of Conservation, 1992)

Common Trouble Points:

(1) Gaps between the inlet protection and the curb (flows bypass around side of filter).

(2) Filter fabric skirt not anchored to pavement (flows pass under filter).

Bagged Gravel Inlet Filter

Sandbags filled with pea gravel can also be used to construct a sediment barrier around curb and drain inlets. The sandbags should be filled with washed pea gravel and stacked to form a continuous barrier about 1 foot high around the inlets. The bags should be tightly abutted against each other to prevent runoff from flowing between the bags. This measure should be installed as shown in Figure 1-38.

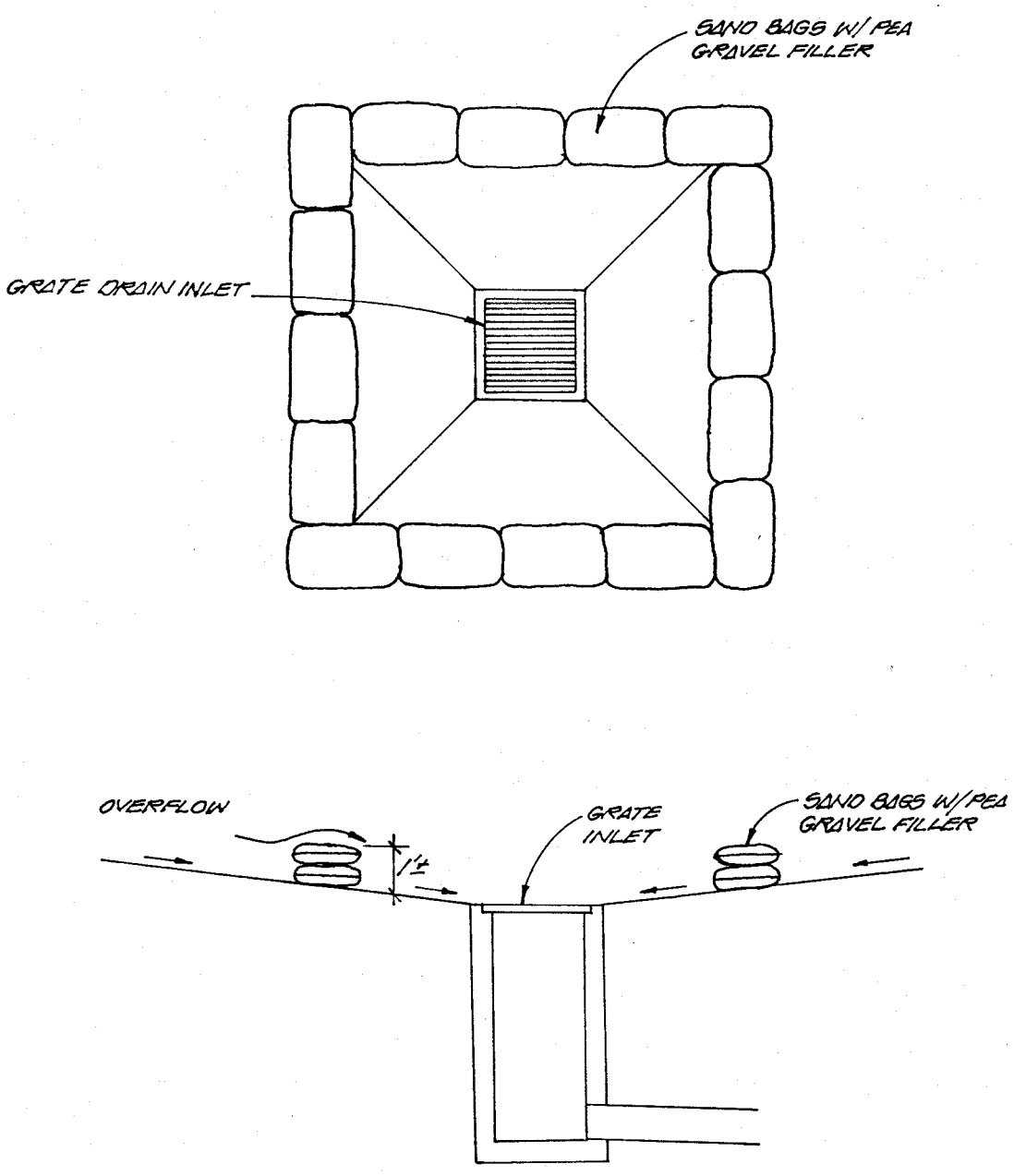


Figure 1-38 Diagram of Bagged Gravel Grate Inlet Protection (Pape-Dawson)

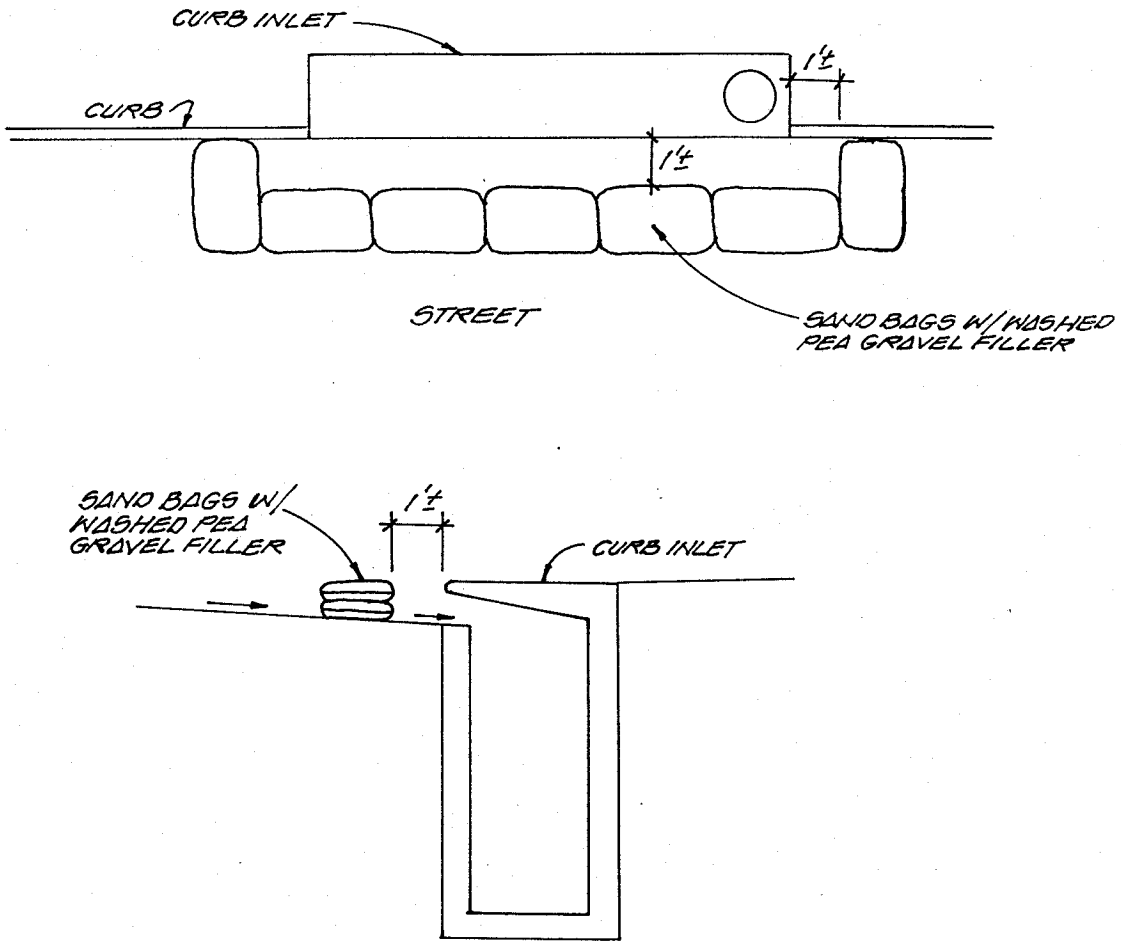


Figure 1-39 Diagram of Bagged Gravel Curb Inlet Protection (Pape-Dawson).

Inspection and Maintenance Guidelines:

(1) Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.

(2) Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.

(3) Check placement of device to prevent gaps between device and curb.

(4) Inspect filter fabric and patch or replace if torn or missing.

(5) Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

Attachment E – Request to Temporarily Seal a Feature

No sensitive features will be sealed in this project site.

Attachment F – Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities:

- Erection of silt fences along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection, as located on WPAP SITE PLAN
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on WPAP SITE PLAN

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- Installation of concrete truck washout pit(s), as required and located on WPAP SITE PLAN

Attachment G – Drainage Area Map

See Sheet WPAP Drainage Area Map attached at the end of these attachments.

Attachment H – Temporary Sediment Pond(s) Plans and Calculations

No Temporary Sediment Pond will be utilized with this project.

Attachment I – Inspection and Maintenance for TBMPs

Inspections

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event greater than 0.5 inches of rainfall. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the date o the inspection. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 18-2
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	**Comal**	
Total project area included in plan:	=	**80.45**	acres
Predevelopment impervious area within the limits of the plan:	=	**0.00**	acres
Total post-development impervious area within the limits of the plan:	=	**28.01**	acres
Total post-development impervious cover fraction:	*	**0.35**	
P =		**33**	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **Pond**

Total drainage basin/outfall area =	**6.96**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.88**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.41**	
$L_{M\ THIS\ BASIN}$ =	**2505**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	**6.96**	acres
A_I =	**2.88**	acres
A_P =	**4.08**	acres
L_M =	**3025**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **3025** lbs. Note $Lotal_M$ for this basin

F = **1.00**

EXTENDED DETENTION POND "C"

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 19-1
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	**Comal**	
Total project area included in plan:	=	**80.45**	acres
Predevelopment impervious area within the limits of the plan:	=	**0.00**	acres
Total post-development impervious area within the limits of the plan:	=	**28.01**	acres
Total post-development impervious cover fraction:	*	**0.35**	
P =		**33**	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **Pond**

Total drainage basin/outfall area =	**6.96**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.88**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.41**	
$L_{M\ THIS\ BASIN}$ =	**2505**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	**6.96**	acres
A_I =	**2.88**	acres
A_P =	**4.08**	acres
L_M =	**3025**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **3025** lbs.

F = **1.00**

EXTENDED DETENTION POND "D"

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi 18-2
Date Prepared: 8/28/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

	County =	**Comal**	
Total project area included in plan:	=	**80.45**	acres
Predevelopment impervious area within the limits of the plan:	=	**0.00**	acres
Total post-development impervious area within the limits of the plan:	=	**28.01**	acres
Total post-development impervious cover fraction:	*	**0.35**	
P =		**33**	inches

$L_{M\ TOTAL\ PROJECT}$ = **25142** lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **Pond**

Total drainage basin/outfall area =	**23.16**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**10.70**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.46**	
$L_{M\ THIS\ BASIN}$ =	**9604**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **90** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	**23.16**	acres
A_I =	**10.70**	acres
A_P =	**12.46**	acres
L_M =	**11195**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **11195** lbs.

F = **1.00**

EXTENDED DETENTION POND "D"

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips** (This is Batch Detention, TCEQ Spreadsheet wont let me change it)
Removal efficiency = **85** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_M = TSS Load removed from this catchment area by the proposed BMP

A_C =	**34.23**	acres
A_I =	**12.05**	acres
A_P =	**22.18**	acres
L_M =	**12031**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

$L_{M\ THIS\ BASIN}$ = **12031** lbs.

F = **1.00**

VEGETATED FILTER STRIPS

TOTA AREA TREATED BY VEGETATED FILTER STRIPS = 34.23 AC

TOTAL IMPERVIOUS COVER TREATED BY VEGETATED FILTER STRIPS = 12.05 AC

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
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 (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further notice may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), 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 ED, 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, TAC, Chapters 213 or any other TCEQ regulation. The ED reserves the right to require additional measures if the plan proves to be inadequate for water quality protection. Failure to comply with any condition of the ED's approval, whether or not a 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, TAC § 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 ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

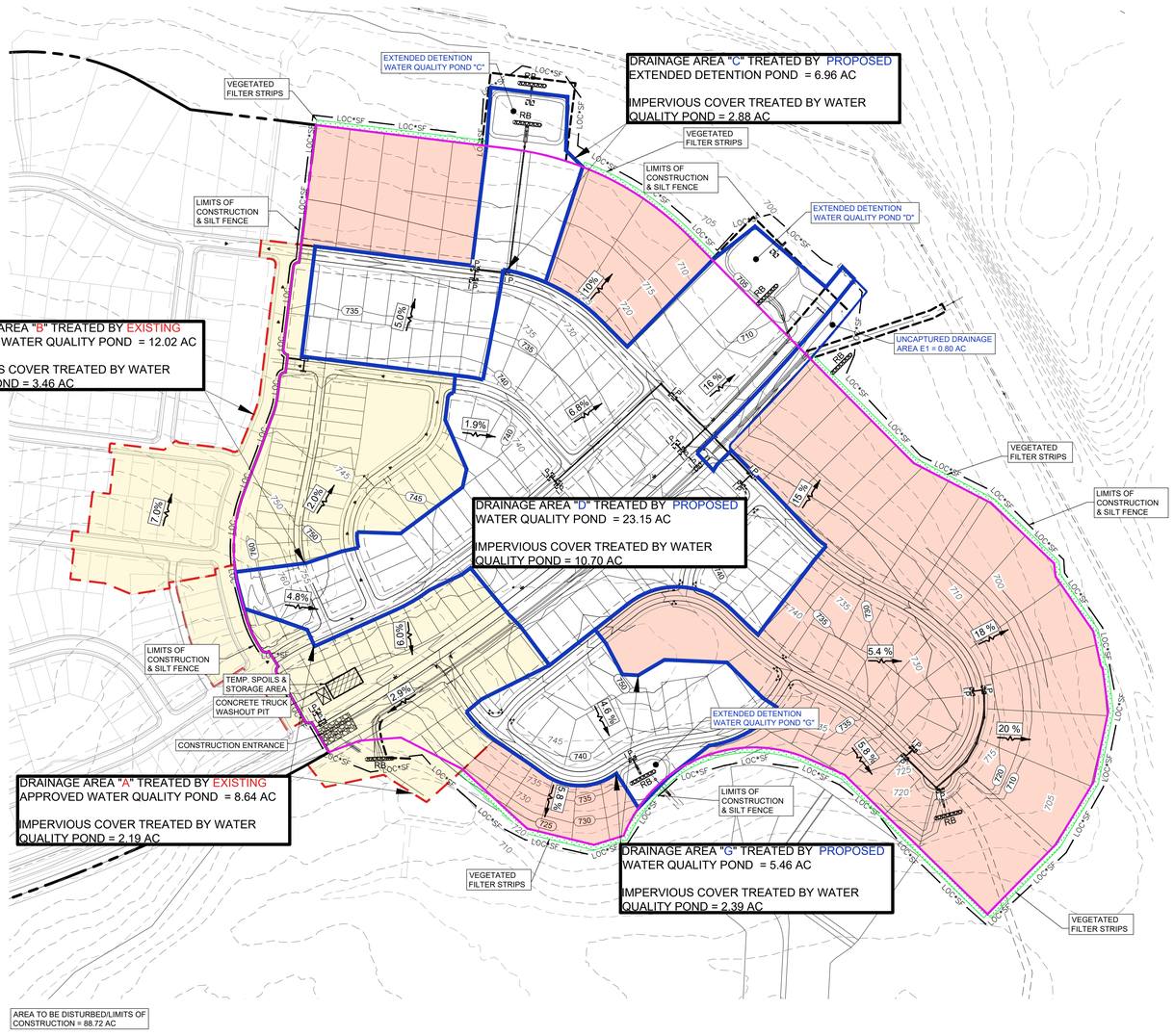
1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
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 any 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 E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
11. The following records shall be maintained and made available to the TCEQ upon request:
    - the dates when major grading activities occur;
    - the dates when construction activities temporarily or permanently cease on a portion of the site; and
    - the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
    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.

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.

TCEQ-0592 (Rev. July 15, 2015) Page 1 of 2

TCEQ-0592 (Rev. July 15, 2015) Page 2 of 2



DRAINAGE AREA TREATED BY PROPOSED EXTENDED DETENTION PONDS

DRAINAGE AREA TREATED BY PROPOSED VEGETATED FILTER STRIPS

DRAINAGE AREA TREATED BY APPROVED EXISTING DETENTION PONDS*

PROPERTY BOUNDARY

LEGEND

740	EXISTING CONTOUR
740	PROPOSED CONTOUR
XXX	FLOW ARROWS
RB	ROCK BERM
	TEMP. SPOILS & STORAGE AREA
	CONCRETE TRUCK WASHOUT PIT
	CONSTRUCTION ENTRANCE
LOC*SF	LIMITS OF CONSTRUCTION/ SILT FENCE
LP	INLET PROTECTION
	VEGETATED FILTER TRIPS

REQUIRED TSS REMOVAL FOR ENTIRE SITE

TOTAL ACREAGE	PRE-DEVELOPMENT IMPERVIOUS COVER	POST-DEVELOPMENT IMPERVIOUS COVER	POST-DEVELOPMENT IMPERVIOUS COVER TREATED BY EX APPROVED PONDS*	Lm-REQUIRED TSS REMOVAL
80.45 ACRES	0.00 ACRES	28.01 ACRES	5.65 ACRES	25,142 LBS

BREAKDOWN OF TSS BEING TREATED BY PERMANENT BMP'S

PROPOSED BMP	DRAINAGE AREA TO BMP	IMPERVIOUS COVER TO BPM	BMP EFFICIENCY	F	PERCENT OF TOTAL TSS BEING TREATED	TSS BEING REMOVED BY BMP (LBS)
EXTENDED DETENTION POND C	6.96 ACRES	2.88 ACRES	90%	1.0	100.00%	3,025 LBS
EXTENDED DETENTION POND D	23.16 ACRES	10.70 ACRES	90%	1.0	100.00%	11,195 LBS
EXTENDED DETENTION POND G	5.46 ACRES	2.39 ACRES	90%	1.0	100.00%	2,505 LBS
VEGETATED FILTER STRIPS	34.23 ACRES	12.05 ACRES	85%	1.0	100.00%	12,031 LBS
TOTAL						28,756 LBS

*PLEASE REFER TO APPROVED WPAP PROVIDED IN THIS SUBMITTAL

200 100 0 200 400

SCALE IN FEET

SCALE: 1"=200'

VERAMENDI PRECINCT 18-2 & 19-1

WPAP DRAINAGE MAP EXHIBIT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 2/25/19
DESIGNED BY: KGL
DRAWN BY: MAP
CHECKED BY: BDB
DRAWING NAME:

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER
08/28/2024

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

SHEET NO. W1.1

FOR PERMIT

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, and (6) concrete truck rinse-out pit for signs of potential failure. Deficiencies noted during the inspection will be corrected and documented within seven (7) calendar days following the inspection or before the next anticipated storm event if practicable.

Pollution Prevention Measure	Inspected	Corrective Action	
		Description	Date Completed
General			
Revegetation			
Erosion/Sediment Controls			
Vehicle Exits			
Material Areas			
Equipment Areas			
Concrete Rinse			
Construction Debris			
Trash Receptacles			
Infrastructure			
Roadway Clearing			
Utility Clearing			
Roadway Grading			
Utility Construction			
Drainage Construction			
Roadway Base			
Roadway Surfaces			
Site Cleanups			
Building			
Clearing for Building			
Foundation Grading			
Utility Construction			
Foundation Construction			
Building Construction			
Site Grading			
Site Cleanup			

**Indicate N/A where measure does not apply.*

By my signature below, I certify that all items are acceptable and the project site is in compliance with SWPPP.

Inspector's Name _____ Inspector's Signature _____

_____ _____

Name of Owner/Operator (Firm) Date

Note: Inspector is to attach a brief statement of his qualifications to this report.

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

Construction Activity	Date

Date when stabilization measures are initiated:

Stabilization Activity	Date

Attachment I (con't) – Inspection and Maintenance for TBMPs

Temporary Sediment Control Fences

1. Inspect all fencing weekly, and after any rainfall.
2. Remove sediment when buildup reaches 6 inches.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Rock Berm/High Service Rock Berm

1. Inspections should be made weekly and after each rainfall by the responsible party.
2. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt of in an approved manner.
3. Repair any loose wire sheathing.
4. The berm should be reshaped as needed during inspection.
5. The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
6. The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

Temporary Construction Entrance and Exits

1. The entrance should be maintained in a condition, which will prevent tracking or following of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
2. All sediment spilled, dropped, washed or tracked on to public rights-of-ways should be removed immediately by contractor.
3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
5. All sediment should be prevented from entering ant storm drain, ditch, or water course by using approved methods.

Bagged Gravel Inlet Filters

1. Inspections should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
2. Remove sediment when buildup reached a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not eride.
3. Check placement of device to prevent gaps between device and curb.
4. Inspect filter fabric and patch or replace if torn or missing.
5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

Temporary Sedimentation Basin

1. 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 contractor.
2. Trash and other debris should be removed after each rainfall to prevent clogging out fo the outlet structure.
3. 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.
4. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

Documentation Procedures

1. A copy of the inspection report is located on the following page.
2. The inspection report must be maintained on site at all times.
3. The inspection report is incorporated as part of the WPAP. The contractor is responsible for completing and updating the form in compliance with TCEQ rules.

Attachment J – Schedule of Interim and Permanent Soil Stabilization

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing only the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where

the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Priscilla G. Flores, PE

Date: 11/27/2023

Signature of Customer/Agent

Priscilla G Flores

Regulated Entity Name: Veramendi Precincts 18-2 & 19-1

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. [X] Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   [ ] N/A

2. [X] These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   [X] The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____

☐ N/A

3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

   ☐ N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☒ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☐ The site will not be used for low density single-family residential development.

5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☒ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ **Attachment B - BMPs for Upgradient Stormwater**.

- [X] A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- [ ] No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- [ ] Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. [X] **Attachment C - BMPs for On-site Stormwater**.

   - [X] A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
   - [ ] Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

8. [X] **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

   - [ ] N/A

9. [X] The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

   - [X] The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.
   - [ ] **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. [X] **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

    - [X] Design calculations (TSS removal calculations)
    - [X] TCEQ construction notes
    - [X] All geologic features
    - [X] All proposed structural BMP(s) plans and specifications

    - [ ] N/A

11. [X] **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    [X] Prepared and certified by the engineer designing the permanent BMPs and measures
    [X] Signed by the owner or responsible party
    [X] Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    [ ] A discussion of record keeping procedures

    [ ] N/A

12. [ ] **Attachment H - Pilot-Scale Field Testing Plan**. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

    [X] N/A

13. [X] **Attachment I -Measures for Minimizing Surface Stream Contamination**. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

    [ ] N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. [X] The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

    [ ] N/A

15. [X] A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    [ ] N/A

Attachment A – 20% or Less Impervious Cover Waiver

No impervious cover waiver is being requested with this project.

Attachment B – BMP for Upgradient Stormwater

No treatment of this upgradient area is necessary.

Attachment C – BMP for On-Site Stormwater

In keeping with the TCEQ rules, this development will employ extended detention basins and vegetative filter strips.

1) 3 extended detention ponds are proposed to be built on the development as on-site permanent BMP, this water quality pond would be treating a total of 15.97 acres of Impervious Cover.
2) Vegetated Filter Strips would be use to tread a total of 12.05 ac of impervious cover.

All site BMPs were designed to remove at least 80% of the increased (TSS) in accordance with TCEQ's.

Attachment D – BMP for Surface Streams

This project will protect the natural drainage course by constructing the extended detention ponds discussed above and shown on the plans to filter pollutants from the captured first flush. The sedimentation/filtration basin proposed has been designed in accordance with TCEQ's TGM RG-348 (2005) which indicates a minimum of 80% of the increased TSS load from the site as a whole must be removed.

Attachment E – Request to Seal Features

There are no naturally occurring sensitive features located within the boundaries of the site.

Attachment F – Construction Plans

See attached plans.

ATTACHMENT "G" – Inspection, Maintenance, Repair and Retrofit Plan

PROJECT NAME Veramendi Precincts 18-2 & 19-1

ADDRESS 3600 LF North of the Intersection between Loop 337 & River Rd

CITY, STATE ZIP New Braunfels, Texas

EXTENDED DETENTION BASINS

Extended detention basins have moderate to high maintenance requirements, Depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and nonroutine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

There are many factors that may affect the basin's operation and that should be periodically checked. These factors can include mowing, control of pond vegetation, removal of accumulated bottom sediments, removal of debris from all inflow and outflow structures, unclogging of orifice perforations, and the upkeep of all physical structures that are within the detention pond area. One should conduct periodic inspections and after each significant storm. Remove floatables and correct erosion problems in the pond slopes and bottom. Pay particular attention to the outlet control perforations for signs of clogging. If the orifices are clogged, remove sediment and other debris. The generic aspects that must be considered in the maintenance plan for a detention facility are as follows:

Inspections. Basins should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the pond is meeting the target detention times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately.

Mowing. The upper stage, side slopes, embankment, and emergency spillway of an extended detention basin must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins should be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing of grass is performed, a mulching mower should be used, or grass clippings should be caught and removed.

Debris and Litter Removal. Debris and litter will accumulate near the extended detention control device and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the control device or riser.

Erosion Control. The pond side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired.

Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. These repairs should include patching of cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. The various inlet/outlet and riser works in a basin will eventually deteriorate and must be replaced. Public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yr, whereas reinforced concrete barrels and risers may last from 50 to 75 yr.

Nuisance Control. Standing water (not desired in a extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

Sediment Removal. When properly designed, dry extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins (which have a permanent pool to conceal deposited sediments), sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be resuspended if allowed to accumulate over time and escape through the hydraulic control to downstream channels and streams. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

VEGETATIVE FILTER STRIPS

Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it receives in the first few months after it is plant ed. Once established, all vegetated BMPs require some basic maintenance to insure the health of the plants including:

Pest Management. An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

Seasonal Mowing and Lawn Care. If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

Inspection. Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and 3-92 restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

Debris and Litter Removal. Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

Sediment Removal. Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

Grass Reseeding and Mulching. A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

Responsible Party for Maintenance	Versamend: PE Emerald LLC
Address	2160 Oak Run Pkwy
City, State Zip	New Braunfels TX 78132
Telephone Number	830 660-4755
Signature of Responsible Party	
Print name of Responsible Party	Garrett Mechler

Permanent Stormwater Section Attachment "G" continued
Sample Maintenance Table

ITEM #	DATE	DESCRIPTION OF ACTION(S) TAKEN	INITIALS

Attachment H – Pilot-Scale Field Testing Plan

The TCEQ's TGM was used to design the BMP's for this project.

Attachment I– Measures for Minimizing Surface Stream Contamination

Any points where discharge from this site is concentrated and erosive velocities exist will include appropriately sized energy dissipaters to reduce velocities to non-erosive levels.

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Garrett Mechler,
Print Name

Vice President,
Title - Owner/President/Other

of VERAMENDI PE-EMERALD LLC,
Corporation/Partnership/Entity Name

have authorized Priscilla Flores
Print Name of Agent/Engineer

of LJA Engineering
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

11/14/2023
Date

THE STATE OF Texas §

County of Comal §

ALEX RUE
Notary Public
State of Texas
ID # 13067096-9
My Comm. Expires 05-20-2024

BEFORE ME, the undersigned authority, on this day personally appeared Garrett Mechler known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 14 day of November, 2023.

NOTARY PUBLIC

Alex Rue
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 5/20/2024

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Veramendi Precincts 18-2 & 19-1

Regulated Entity Location: 3600 LF North of the Intersection between Loop 337 & River Rd

Name of Customer: Veramendi PE-Emerald LLC

Contact Person: Garrett Mechler Phone: 830 660 4755

Customer Reference Number (if issued): CN 606123701

Regulated Entity Reference Number (if issued): RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde

☒ Comal ☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment**. This payment is being submitted to:

☐ Austin Regional Office

☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ San Antonio Regional Office

☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	80.45 Acres	$ 6,500
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 11/14/2023

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5	$1,500
	5 < 10	$3,000
	10 < 40	$4,000
	40 < 100	$6,500
	100 < 500	$8,000
	≥ 500	$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	$3,000
	1 < 5	$4,000
	5 < 10	$5,000
	10 < 40	$6,500
	40 < 100	$8,000
	≥ 100	$10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☐ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 606123701		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy) 11/3/2023

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

VERAMENDI PE-EMERALD LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0803277761	32070223675		

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator ☒ Other: Vice President
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:

387 W Mill St, Ste 108							
City	New Braunfels	**State**	TX	**ZIP**	78130	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	garrett.mechler@asaproperties.us.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*

(830) 660-4755		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Veramendi Precincts 18-2 & 19-1

23. Street Address of the Regulated Entity: *(No PO Boxes)*							
	City		**State**		**ZIP**		**ZIP + 4**
24. County							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	3600 LF North of the Intersection between Loop 337 and River Rd.				
26. Nearest City			**State**	**Nearest ZIP Code**	
New Braunfels			TX	78130	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	29.737275		**28. Longitude (W) In Decimal:**	98.140564	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	44	14.19	98	8	26.03

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1521			

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Singe Family Houses

34. Mailing Address:							
	City		**State**		**ZIP**		**ZIP + 4**
35. E-Mail Address:							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
( ) -		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

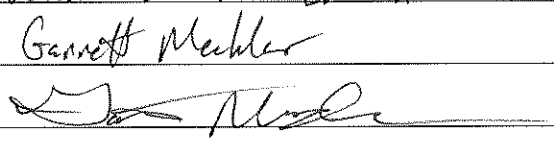
SECTION IV: Preparer Information

40. Name:	LJA Engineering	41. Title:	Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 503-2700		( ) -	pflores@lja.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Veramendi PE - Emerald	Job Title:	VP of Operations
Name *(In Print)*:	Garrett Mechler	Phone:	(830)660-4755
Signature:		Date:	11/14/2023