WATER POLLUTION ABATEMENT PLAN

FOR

VERAMENDI REGIONAL PARK #1

SEPTEMBER 3, 2025

Prepared For:
Veramendi PE-Darwin LLC
2168 Oak Run Parkway, Ste 101
New Braunfels, TX, 78132

Prepared By:

LJA ENGINEERING, INC.
TBPE Firm Registration No. F-1386
9830 Colonnade Blvd Ste 300
San Antonio, Texas 78256
Phone (210) 503-2700

LJA FILE NO. SA3856-2404

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.

<table>
<tr><td colspan="5">1. Regulated Entity Name: Veramendi Regional Park #1</td><td colspan="4">2. Regulated Entity No.:</td></tr>
<tr><td colspan="5">3. Customer Name: Veramendi PE-Darwin, LLC</td><td colspan="4">4. Customer No.: CN 605543875</td></tr>
<tr><td>5. Project Type:
(Please circle/check one)</td><td colspan="2">New</td><td colspan="2">Modification</td><td>Extension</td><td>Exception</td><td colspan="2"></td></tr>
<tr><td>6. Plan Type:
(Please circle/check one)</td><td>WPAP</td><td>CZP</td><td>SCS</td><td>UST</td><td>AST</td><td>EXP</td><td>EXT</td><td>Technical Clarification</td><td>Optional Enhanced Measures</td></tr>
<tr><td>7. Land Use:
(Please circle/check one)</td><td colspan="2">Residential</td><td colspan="3">Non-residential</td><td colspan="2">8. Site (acres):</td><td>63.61 ac</td></tr>
<tr><td>9. Application Fee:</td><td colspan="2">$6,500</td><td colspan="3">10. Permanent BMP(s):</td><td colspan="3">Extended Detention Water Quality Ponds & Vegetative Filter Strips</td></tr>
<tr><td>11. SCS (Linear Ft.):</td><td colspan="2"></td><td colspan="3">12. AST/UST (No. Tanks):</td><td colspan="3"></td></tr>
<tr><td>13. County:</td><td colspan="2">Comal</td><td colspan="3">14. Watershed:</td><td colspan="3">Comal River-Guadalupe River</td></tr>
</table>

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

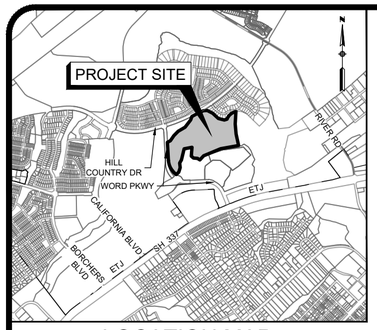
For more detailed boundaries, please contact the conservation district directly.

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

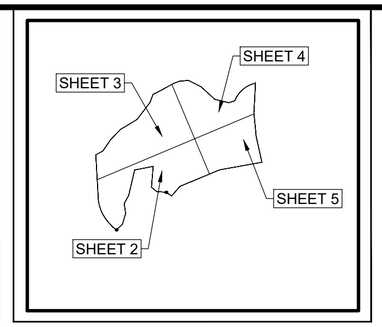
I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Nicholas Gower, PE.
Print Name of Customer/Authorized Agent Nicholas Gower 09/2/2025
Signature of Customer/Authorized 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):	



LOCATION MAP

1" = 3500'



INDEX MAP

NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, 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.

9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230

Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 7/17/2025

CERTIFICATE OF APPROVAL

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

APPROVED FOR ACCEPTANCE

_____ ____ _____
DATE PLANNING AND DEVELOPMENT SERVICES DIRECTOR

_____ ____ _____
DATE CITY ENGINEER

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 BEXAR

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

_____

GORDON ANDERSON

REGISTERED PROFESSIONAL LAND SURVEYOR #6617

LJA ENGINEERING, INC.

9830 COLONNADE BOULEVARD, SUITE 300

SAN ANTONIO, TEXAS 78230

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.

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.

FLOOD ZONE NOTES:

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

UTILITY PROVIDER NOTES:

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

PLAT NOTES:

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

COMMON SPACE NOTES:

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

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

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N41° 03' 28"W	64.73
L2	N61° 52' 01"E	107.87
L3	N20° 45' 40"E	121.66
L4	N69° 30' 30"E	95.65
L5	N85° 44' 51"E	120.00
L6	N72° 46' 02"E	90.00
L7	S67° 28' 52"W	167.76
L8	S41° 43' 11"W	181.63
L9	N57° 09' 45"W	91.18
L10	N84° 18' 21"W	135.99
L11	N48° 49' 35"W	93.22
L12	S30° 01' 23"W	119.30
L13	S7° 01' 12"E	149.23
L14	S17° 10' 28"W	157.12
L15	S48° 07' 02"W	110.66

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C1	102.88	380.08	15°30'34"	51.76	N48° 48' 51"W	102.57
C2	365.18	550.49	38°00'28"	189.59	N22° 02' 43"W	358.52
C3	325.83	5550.00	3°21'49"	162.96	N61° 46' 17"E	325.78
C4	396.77	405.39	56°04'36"	215.90	N49° 35' 57"E	381.12

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 REGIONAL PARK #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, Co-CEO DATE
VERAMENDI PE - DARWIN, LLC
2168 OAK RUN PARKWAY, SUITE 101
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 (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HERIN AS THE VERAMENDI REGIONAL PARK #1 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

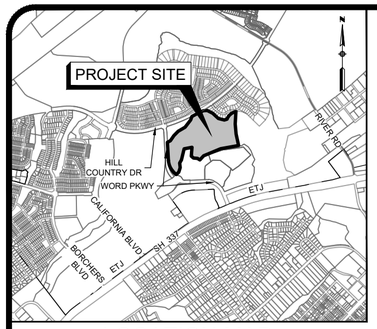
I, _____ , DO HEREBY CERTIFY THAT FOREGOING INSTRUMENT WAS FILED FOR RECORD IN THE MAP AND PLAT RECORDS, DOC# _____ OF COMAL COUNTY ON THE _____ DAY OF _____, 20 _____ AT _____ M.

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

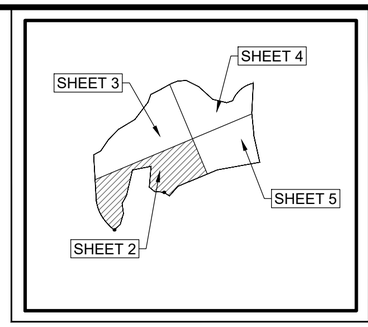
_____
COUNTY CLERK, COMAL COUNTY, TEXAS

_____
DEPUTY

K:\SA\3856 ASA Properties\2403 Veramendi Regional Park-Plat\310 Subdivision Plat\sh_Plat.dwg
User: ngower Plot Date/Time: Jul. 24, 25 - 11:40:21



LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

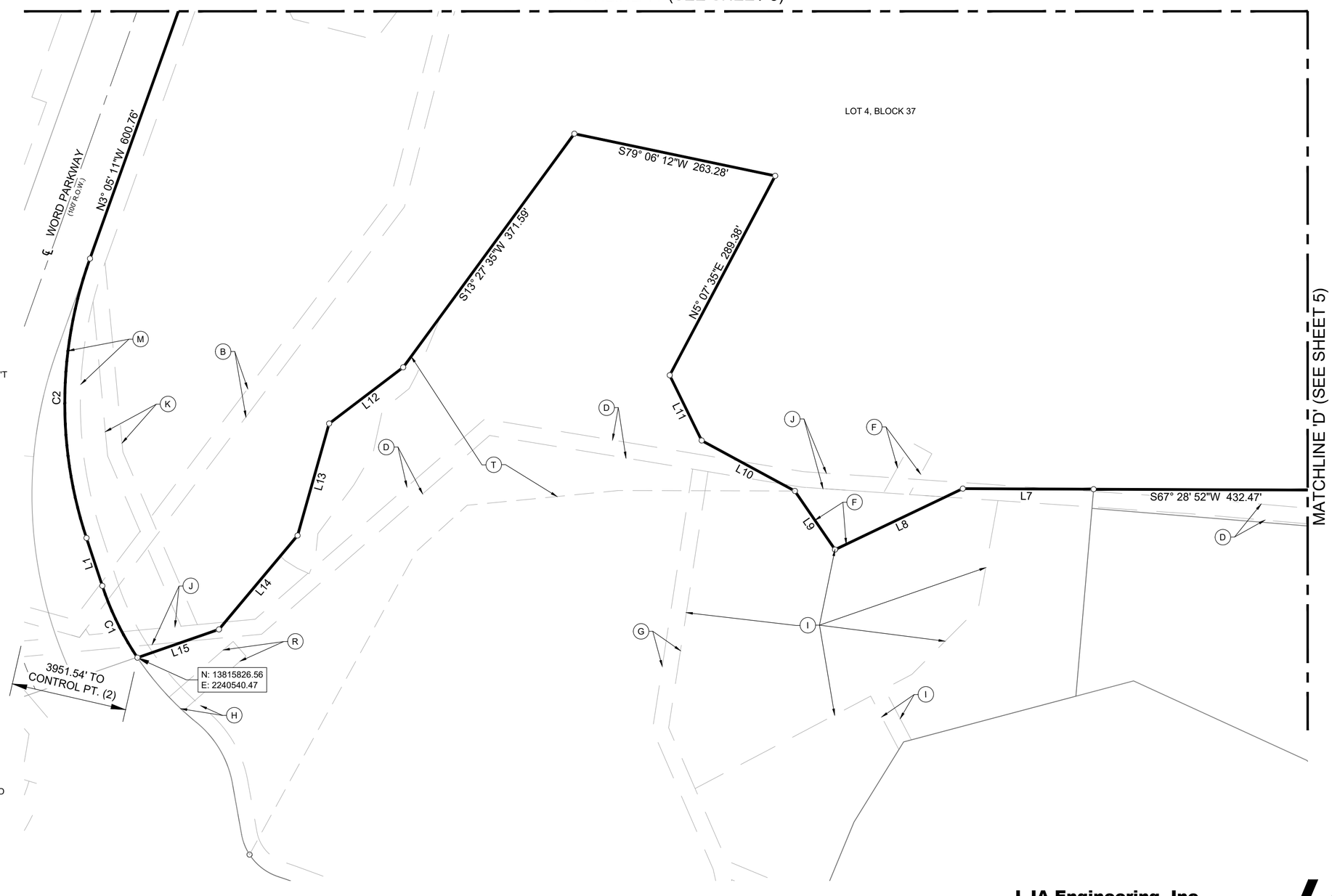
50 25 0 50 100

SCALE IN FEET
SCALE 1" = 100'

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, O.P.R.C.C.Tx.)
(B)	EXIST. 20' SANITARY SEWER ESM'T (VOL. 0692, PG. 0409, O.P.R.C.C.Tx.)
(C)	EXIST. ESM'T - COMAL COUNTY WATER IMPROVEMENT DISTRICT NO. 1D, (DOC# 202106034907, O.P.R.C.C.Tx.)
(D)	VARIABLE WIDTH SANITARY SEWER ESM'T (DOC# 202006021577, O.P.R.C.C.Tx.)
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(T)	VARIABLE WIDTH VEHICULAR ACCESS, PEDESTRIAN ACCESS, FIRE ACCESS, AND UTILITY ESM'T (DOC# _____, O.P.R.C.C.Tx.)

MATCHLINE 'A' (SEE SHEET 3)



DATE OF PREPARATION: 7/17/2025

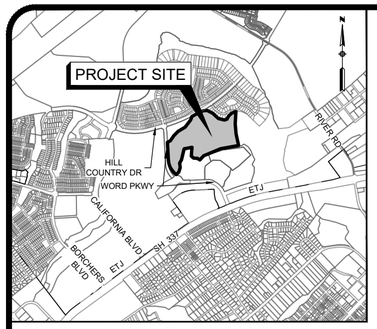
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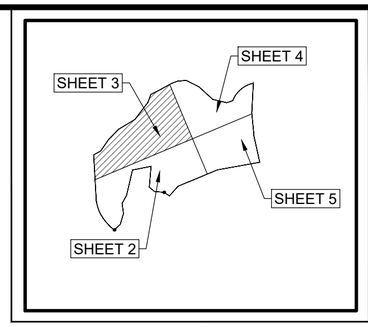
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LOCATION MAP
1" = 3500'



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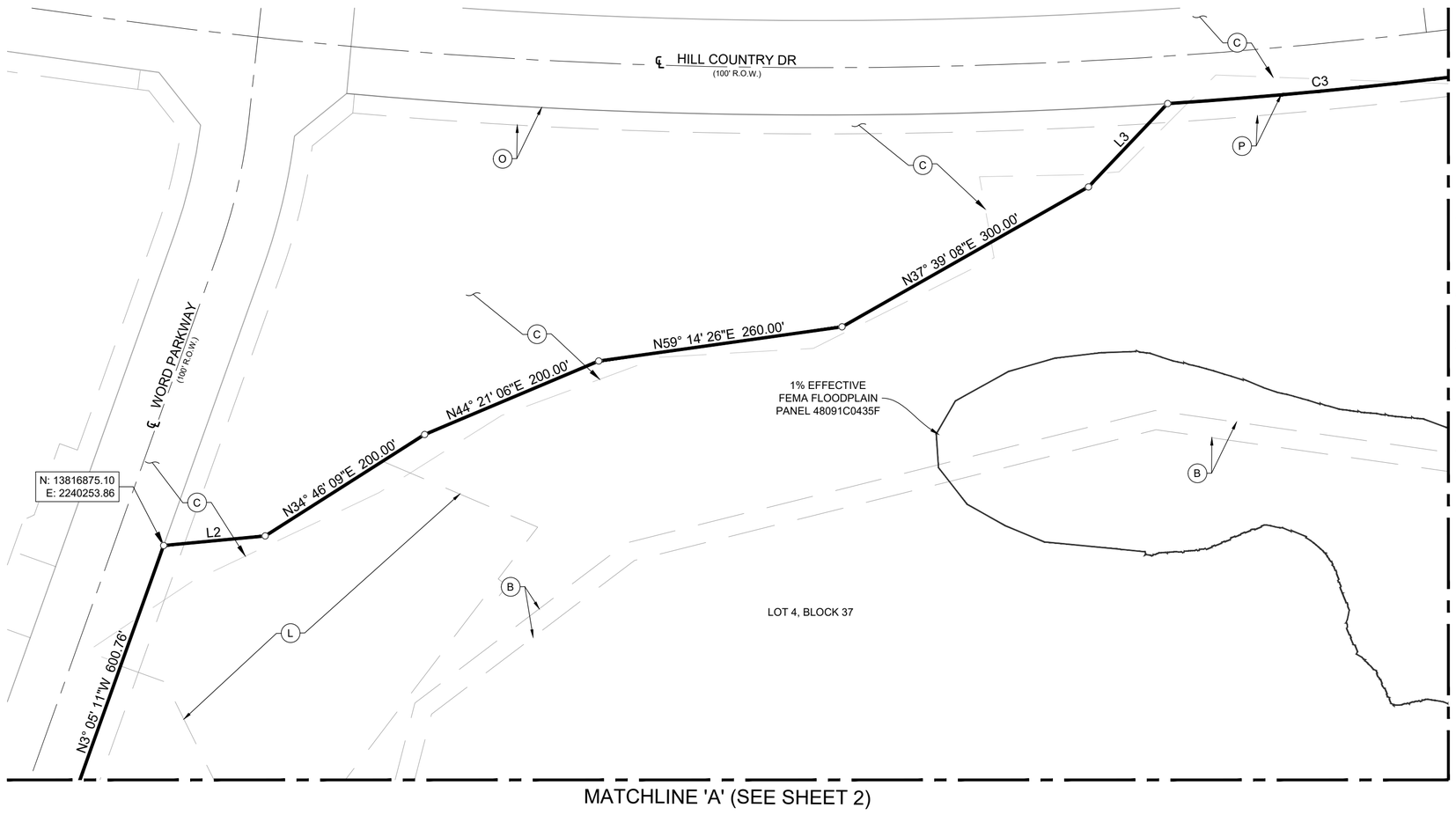
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SCALE IN FEET
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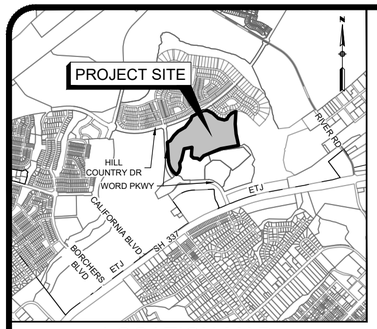
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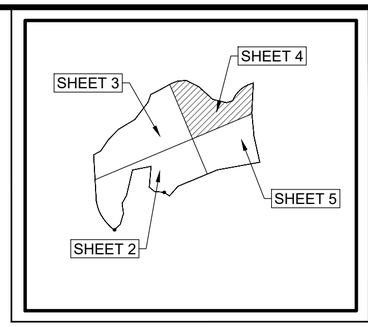
SHEET 3 OF 5

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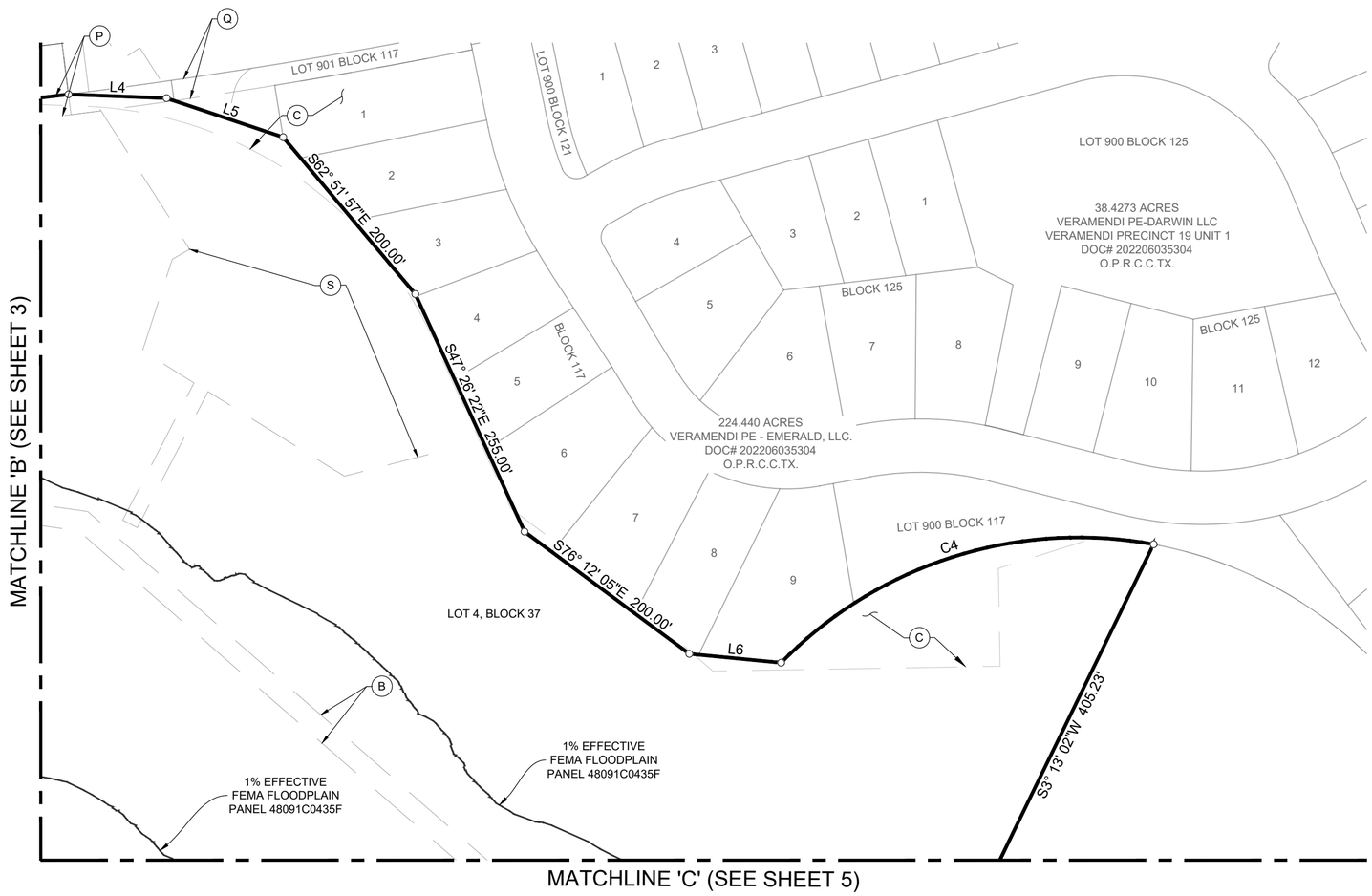
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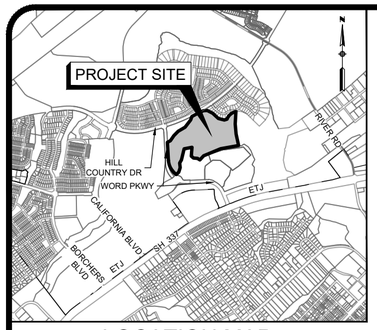
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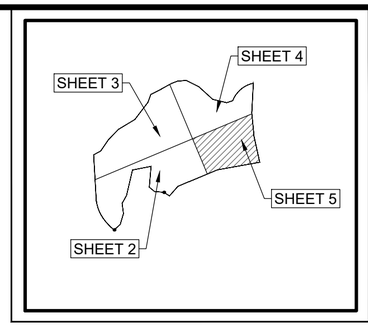
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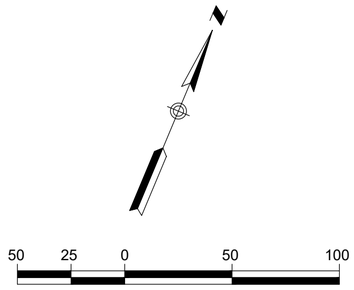
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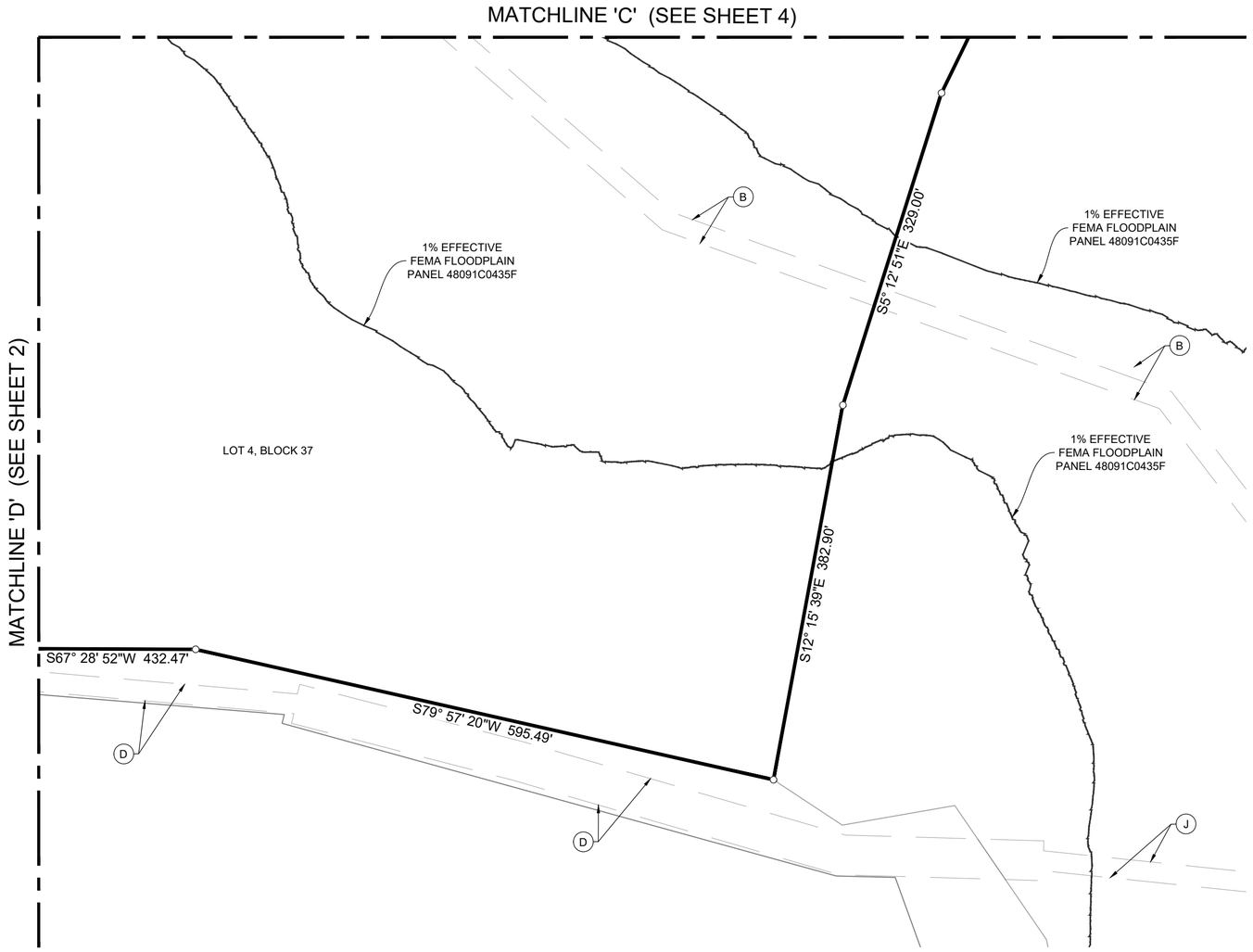
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User: ngower Plot Date/Time: Jul. 24, 25 - 11:40:38

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: Nicholas Gower, PE. / LJA Engineering Inc.

Date: 9/2/2025

Signature of Customer/Agent:

Nicholas Gower

Project Information

1. Regulated Entity Name: Veramendi Regional Park #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-Darwin, LLC
   Mailing Address: 2168 Oak Run Parkway, Suite 101
   City, State: New Braunfels, TX Zip: 78160
   Telephone: 830-643-5633 FAX: _____
   Email Address: garrett.mechler@asaproperties.us.com

8. Agent/Representative (If any):

   Contact Person: Nicholas Gower, 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: ngower@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.

    2300 LF north of the intersection between Loop 337 and Word Pkwy

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 REGIONAL PARK

CITY OF NEW BRAUNFELS ETJ

LOCATION EXHIBIT

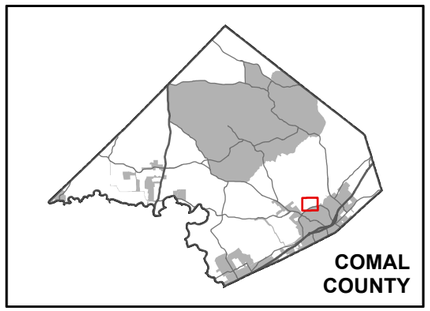
JANUARY 2025

LEGEND

PROJECT BOUNDARY

N
W E
S

0 500 1,000 2,000 FEET



AERIAL PHOTOGRAPH: 2024 NEARMAP

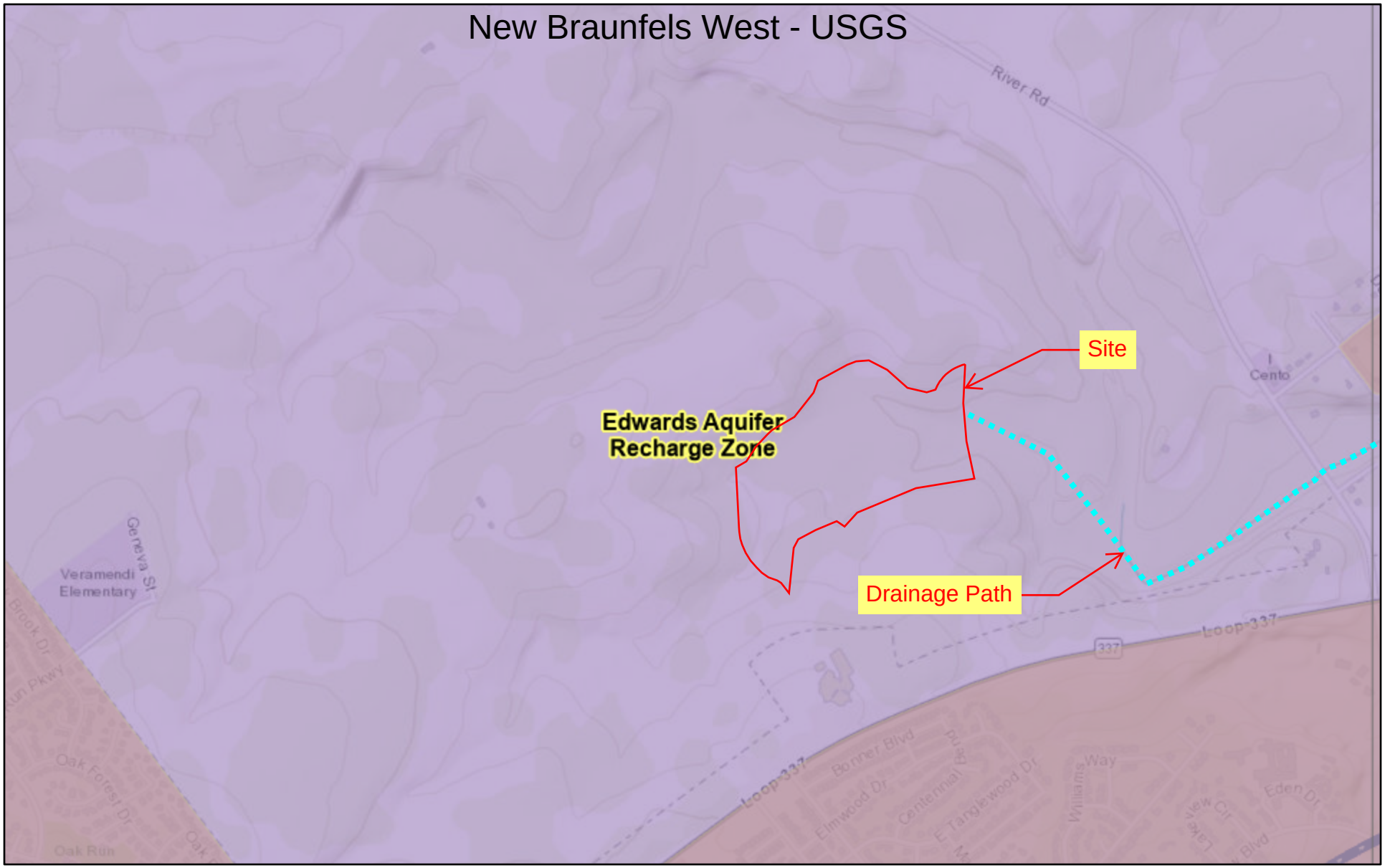
THIS PRODUCT IS FOR INFORMATIONAL PURPOSES AND MAY NOT HAVE BEEN PREPARED FOR OR BE SUITABLE FOR LEGAL, ENGINEERING, OR SURVEYING PURPOSES. IT DOES NOT REPRESENT AN ON-THE-GROUND SURVEY AND REPRESENTS ONLY THE APPROXIMATE RELATIVE LOCATION OF PROPERTY BOUNDARIES.

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

Path: K:\SA\3856.ASA Properties\2404 VRP\GIS\VRP.aprx



ATTACHMENT 'A' - USGS/EDWARDS RECHARGE ZONE



2/28/2025, 10:19:24 AM

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 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

City of New Braunfels, BCAD, Comal County, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, TCEQ

Web AppBuilder for ArcGIS

City of New Braunfels, BCAD, Comal County, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA | TCEQ |

Attachment C – Project Narrative

The proposed site is located along Word Pkwy, approximately 2300 LF North of the intersection with Loop 337 with the ETJ of New Braunfels, Comal County, TX. The property consists of 63.61 acres with 5.64 acres of impervious cover for the proposed development. This site is a regional park that is a part of the surrounding single-family development.

The proposed improvements addressed by this Water Pollution Plan (WPAP) are =

- (3) Extended Bath Detention Ponds
- Vegetative Filter Strips

The design of the three extended detention ponds is based on ultimate site conditions. Batch Detention Pond 'A', located on the west side of the site, is designed to serve Drainage Area 'A', which covers 2.65 acres, including 1.11 acres of impervious surface. The required TSS treatment for the ultimate conditions is 996 lbs. However, the proposed detention pond 'A' is designed to remove 1,031 lbs of TSS, which exceed the required TSS removal.

Batch Detention Pond 'B', located on the east side of the site, is designed to serve Drainage Area 'B', which covers 4.88 acres, including 1.04 acres of impervious surface. The required TSS treatment for the ultimate conditions is 934 lbs. However, the proposed Detention Pond 'B' is designed to remove 1,022 lbs of TSS, which exceed the required TSS removal.

Batch Detention Pond 'C', located on the north side of the site, is designed to serve Drainage Area 'C', which covers 1.81 acres, including 0.73 acres of impervious surface. The required TSS treatment for the ultimate condition is 655 lbs. The actual TSS being removed by this BMP is 485 lbs.

Drainage Area 'D' will be treated with Vegetative Filter Strips. It encompassed of 5.04 acres in which 2.23 acres are impervious surface. The required TSS to be treated is 2,002 lbs. However, the Vegetative filters strips will be treating 2,207 lbs, which exceed the required TSS removal.

Additionally, Drainage Area 'E' encompasses 29.93 acres, including 0.54 acres of impervious cover. Of this, 0.39 acres from the top of the existing dam and 0.14 acres of other impervious cover will remain untreated. However, the required TSS treatment for this area is 126 lbs.

The total required TSS to be treated is 4,713 lbs and the actual TSS being removed by the BMPs are 4,745 lbs. Therefore, the project site is designed to treat the TSS for the development.

GEOLOGIC ASSESSMENT (WPAP)

VERAMENDI
REGIONAL PARK
+/- 58.175 ACRES
NEW BRAUNFELS, TEXAS

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E25159
MAY 19, 2025

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

May 19, 2025

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 Regional Park
+/- 58.175 Acres
New Braunfels, Texas
FGS Project N^{o} FGS-E25159

Dear Mr. Mechler:

Frost GeoSciences, Inc., (FGS) is pleased to submit the enclosed Geologic Assessment 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 Texas Commission on Environmental Quality (TCEQ) "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04).

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.

Ethan Levine
Project Geologist

Steve Frost, C.P.G., P.G.
President
Principal Geologist

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

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APPENDIX A - SITE LOCATION FIGURES
- ***Figure 1: Site Plan***
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- ***Figure 4: E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map***
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- ***Figure 7: U.S. Geological Survey, Water Resource Investigation Map 94-4117***
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- ***Figure 10: 2023 Aerial Photograph with PRFs, 1 inch = 500 feet***

APPENDIX B - SITE PHOTOGRAPHS

APPENDIX C - GEOLOGIC MAP

GEOLOGIC ASSESSMENT

Texas Commission on Environmental Quality

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 Frost, C.P.G., P.G. Telephone: (210) 372-1315

Date: May 19, 2025 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 Regional Park

Project Information

1. Date(s) Geologic Assessment was performed: May 14 and May 16, 2025
2. Type of Project:

   ☒ WPAP ☐ AST
   ☐ SCS ☐ 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 soils map

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
CrD	D	0.5-1

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.

   Applicant's Site Plan Scale: 1" = 200'
   Site Geologic Map Scale: 1" = 200'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

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

EXPLANATION OF HYDROSTRATIGRAPHIC UNITS

Group or Formation	Formal and informal member		Hydrologic unit or Informal hydrostratigraphic unit
Taylor Group (Pecan Gap)		Kpg	Upper Confining Unit (UCU)
Austin Group		Ka	
Eagle Ford Group		Kef	
Buda Limestone		Kb	
Del Rio Clay		Kdr	
Georgetown Formation		Kg	I
Person Formation	Cyclic and marine, undivided	Kpcm	II
	Leached and collapsed	Kplc	III
	Regional dense member	Kprd	IV
Kainer Formation	Grainstone	Kkg	V
	Kirschberg evaporite	Kkke	VI
	Dolomitic	Kkd	VII
	Basal nodular	Kkbn	VIII
Glen Rose Limestone	Upper Glen Rose Limestone	Kgrc	Cavernous
		Kgrcb	Camp Bullis
		Kgrue	Upper evaporite
		Kgrf Kgruf	Fossiliferous Upper
		Kgrf Kgrlf	Lower
		Kgrle	Lower evaporite
	Lower Glen Rose Limestone	Kgrb	Bulverde
		Kgrlb	Little Blanco
		Kgrts	Twin Sisters
		Kgrd	Doeppenschmidt
		Kgrr	Rust
		Kgrhc	Honey Creek
Pearsall Formation	Hensell Sand	Kheh	Hensell
	Cow Creek Limestone	Kcccc	Cow Creek
	Hammett Shale	Khah	Hammett

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Veramendi Regional Park | **PROJECT NUMBER:** FGS-E25159

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-1	29°43'49.58"N	98° 8'39.14"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-2	29°43'51.77"N	98° 8'40.50"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-3	29°43'53.55"N	98° 8'40.60"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-4	29°43'53.71"N	98° 8'39.59"W	SC	20	Kep	3	2	0.5	-	-	-	-	FV	10	30	30		X		Hillside
S-5	29°43'57.64"N	98° 8'34.09"W	SC	20	Kep	5	3	0.5	-	-	-	-	FV	10	30	30		X		Hillside
S-6	29°44'2.41"N	98° 8'32.78"W	SC	20	Kep	1	1	1.5	-	-	-	-	FV	10	30	30		X		Hillside
S-7	29°43'57.58"N	98° 8'29.92"W	SC	20	Kep	3	3	0.5	-	-	-	-	FV	10	30	30		X		Hillside
S-8	29°43'54.13"N	98° 8'24.48"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-9	29°44'5.43"N	98° 8'22.67"W	SC	20	Kep	1	0.5	0.75	-	-	-	-	FV	10	30	30		X		Hillside
S-10	29°44'3.93"N	98° 8'21.79"W	SC	20	Kep	3	1	1.5	-	-	-	-	FV	10	30	30		X		Hillside
S-11	29°43'55.40"N	98° 8'19.96"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-53	29°43'47.85"N	98° 8'37.22"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Hillside
S-55	29°43'52.98"N	98° 8'35.82"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed

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 Frost, C.P.G., P.G.

Date: May 19, 2025

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

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Veramendi Regional Park | **PROJECT NUMBER:** FGS-E25159

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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-56	29°43'57.14"N	98° 8'37.33"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed
S-57	29°43'55.50"N	98° 8'27.12"W	CD	5	Kep	10	15	1.5	-	-	-	-	F	10	15	15		X		Hillside
S-58	29°43'56.34"N	98° 8'22.32"W	CD	5	Kep	30	40	2	-	-	-	-	F	10	15	15		X		Hillside
S-59	29°43'59.47"N	98° 8'35.67"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed
S-60	29°44'1.74"N	98° 8'29.58"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed
S-61	29°44'3.70"N	98° 8'26.55"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed
S-62	29°44'1.27"N	98° 8'18.50"W	MB	30	Kep	2	2	-	-	-	-	-	-	-	30	30		X		Streambed
S-88	29°43'56.58"N	98° 8'16.26"W	SC	20	Kep	2	2.5	1	-	-	-	-	F	12	32	32		X		Hillside
S-91	29°44'1.94"N	98° 8'20.35"W	SF	15	Kep	12	200	-	-	-	-	-	FV	10	25	25		X		Streambed
S-92	29°44'3.60"N	98° 8'22.68"W	SH	20	Kep	30	60	3	-	-	-	-	F	19	39	39		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

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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 Frost, C.P.G., P.G.

Date: May 19, 2025

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

LOCATION

The project site is located approximately 0.22 miles north of Word Parkway in New Braunfels, Comal County, Texas. An overall view of the area is shown on copies of the site plan, a street map, the U.S.G.S. Topographic Map, the EAA-Edwards Aquifer Recharge Zone and Contributing Zone Map, the FIRM Map, the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, U.S. Geological Survey: Water Resources Investigations Report (WRI) 94-4117 Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, a NRCS Web Soil Survey aerial photograph at a scale of 1"=500', and a 2023 aerial photograph at a scale of 1"=500'. These maps are included as Figures 1 through 10 in Appendix A.

METHODOLOGY

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

Frost GeoSciences, Inc. researched the geology of the area north of Word Parkway in New Braunfels, Comal County, Texas. The research included, but was not limited to FEMA flood maps, Edwards Aquifer Recharge Zone Maps, U.S.G.S. 7.5 Minute Quadrangle Maps, the Bureau of Economic Geology-Geologic Atlas of Texas, the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the U.S.G.S. Water-Resources Investigations Report 94-4117, and the U.S.D.A. Soil Survey of Comal and Hays Counties, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made Potential Recharge Features (PRFs). A transect spacing of approximately 50 feet, or less depending on vegetation thickness, was used to inspect the project area. A 2023 aerial photograph, in conjunction with a hand-held Garmin GPS 72H Global Positioning System with an Estimated Potential Error ranging from 10 to 14 feet, was used to navigate around the property and identify the locations of PRFs, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any PRFs noted in the field were marked with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map. The Site Geologic Map, indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included in Appendix C at the end of this report. A copy of a 2023 Aerial Photograph at an approximate scale of 1" = 500' indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included on Figure 10 in Appendix A. The Geologic Assessment Form TCEQ-0585, (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 through 6.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the U.S.G.S. 7.5 Minute Quadrangle Map, New Braunfels West Quad (1988), the elevation across the project site ranges from 680 to 740 feet above mean sea level. The project site has a total relief of approximately 50 feet. Runoff from the project site flows to the east into an unnamed tributary of Blieders Creek. Highway 337 is located to the south of the project site. River Road is located to the east of the Site. A copy of the U.S.G.S. 7.5 Minute Quadrangle Map indicating the location of the project site is included on Figure 3 in Appendix A.

Recharge/Transition Zone

According to the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, New Braunfels West (2014) and the TCEQ website: Edwards Aquifer Viewer – https://tceq.maps.arcgis.com/apps/webappviewer/index.html, the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the E.A.A. Edwards Aquifer Recharge Zone and Contributing 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 the Flood Insurance Map, Community Panel Number 48091C0435F, dated September 2, 2009 was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned Panel No. indicates that the majority of the project site is located within "Zone X". According to the Panel Legend, Zone X represents areas determined to be outside the 0.2% annual chance floodplain. An area in the eastern portion of the project site associated with Tributary 1 of Blieders Creek, which crosses the central portion of the Site, is indicated as "Zone A". According to the map panel legend, Zone A represents areas of the 1% annual chance flood (100-year flood), where no base flood elevations have been determined. A copy of the above referenced FIRM panel indicating the location of the project site is included on Figure 5 in Appendix A.

Soils

According to the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Comal and Hays Counties (1984) and the USDA NRCS Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov, the Site is located on the Crawford and Bexar Stony Soils (Cb) and the Tarrant Association. A copy of the 2022 aerial photo (approximate scale: 1"=500') obtained from the Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov has been included on Figure 6 in Appendix A

- Comfort-Rock outcrop complex, undulating (CrD) consists of shallow, clayey soils and Rock outcrops on the side slopes, hilltops, and ridgetops in the uplands area of the Edwards Plateau. This soil complex is composed of the Comfort extremely stony clay (~49% to ≥95% of the complex), the Rock outcrop (5-36% of the complex), and small amounts of the Rumple, Purves, Eckert, and Real soils. Typically, the surface layer of the Comfort soil is dark brown extremely stony clay about 6 inches thick. Stones and cobbles (some as much as 4' across) cover approximately 45% 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 non-calcareous throughout. The 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. Typically, the Rock outcrop is dolomitic limestone that is barren of soil except in narrow fractures in the rock. Some areas may have as much as 3 inches of soil on top of the outcrop.

Narrative Description of the Site Geology

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to be low. The locations of the PRFs are identified on the 2023 aerial photograph on Figure 10 in Appendix A, and on the Site Geologic Map provided in Appendix C. Color photos of the project site and some of the PRFs are included in Appendix B.

PRFs #S-57 and #S-58 consist of notable non-karst closed depressions created by historic bulldozing on the property. These features are typical of the thousands of similar features and appear to have been created by either the removal of trees or the plucking of boulders. Typically these features are relatively small (less than 10 feet in any dimension and usually only a foot or two deep. The bottoms of these features are lined with clay and show evidence of holding water. These two features are not considered sensitive by FGS. These features score a 15 on the sensitivity scale, column 10 in the Geologic Assessment Table on pages 5 and 6 of this report.

PRFs #S-1, #S-2, #S-3, #S-8, #S-11, #S-53, #S-55, #S-56, #S-59, #S-60, #S-61, and #S-62 are manmade features in bedrock consisting of sanitary sewer manhole covers associated with sewer outfall lines located on the project site. Frost GeoSciences rates the relative infiltration of these features as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). These 12 features are not considered sensitive by FGS. These features score a 30 on the sensitivity scale, column 10 in the Geologic Assessment Table on pages 5 and 6 of this report.

PRFs #S-4, #S-5, #S-6, #S-7, #S-9, #S-10, and #S-88 consist of solution cavities of various dimensions. A machete was used to probe the depth of the features and determine the nature of the infilling. These cavities contained hard clay plugs preventing rapid infiltration of water into the subsurface. This was somewhat expected given the extensive soil development across the property. These 7 features are not considered sensitive by FGS. These features score 30 to 32 on the sensitivity scale, column 10 in the Geologic Assessment Table on pages 5 and 6 of this report.

PRF #S-91 consists of a natural rock outcrop with vuggy limestone (OVR) and fractured bedrock (OFR). The sizes of this outcrop and the strike of the fractures vary greatly. This feature is not considered sensitive by FGS. This feature scores a 25 on the sensitivity scale, column 10 in the Geologic Assessment Table on pages 5 and 6 of this report.

PRF #S-92 consists of an area believed to be the result of soil deflation into the subsurface creating a karst formed closed depression or sinkhole. For these purposes, it is not believed by FGS that this is a sinkhole in the classic sense that a collapse has occurred creating a depression. Rather, FGS believes this feature is purely the result of erosion of surface soils into subsurface features. This feature contained small areas in the bottom with no grasses indicating that water ponds for prolonged periods of time. As a result, it does not appear that this feature provides rapid infiltration into the subsurface. This feature is not considered sensitive by FGS. This feature scores a 39 on the sensitivity scale, column 10 in the Geologic Assessment Table on pages 5 and 6 of this report.

The project site is covered by moderately dense stand of vegetative cover with numerous open grassy areas. Site visit photos indicating the condition of the property at the time of the on-site inspection are included in Appendix B. Overall vegetation on the project site consists of ashe juniper (Juniperus ashei), live oak (Quercus virginiana), and cedar elm (Ulmus crassifolia), with Texas persimmon (Diospyros texana), agarita (Berberis trifoliolata), yucca (Yucca treculeana), and prickly pear cactus (Opuntia lindheimeri). The variations in the vegetative cover on the property are visible in the 2023 aerial photograph on Figures 9 and 10 in Appendix A. A copy of the site layout indicating the boundary of the project site and the elevations is included on the Site Geologic Map in Appendix C of this report.

According to the U.S. Geological Survey: Water Resources Investigations Report (WRI) 94-4117 Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas and the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle the project site is located on the Cretaceous Person Formation, Leached and Collapsed Members, Undivided (Kep). A copy of the WRI map and the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle are included on Figures 7 and 8 in Appendix A. A copy of the Stratigraphic Column highlighting the outcropping formations is included on Page 3 of this report.

The Leached and Collapsed Member of the Cretaceous 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.

According to the site plan provided by ASA Properties, the surveyed elevations on the project site range from 690 to 736 feet. According to this survey, the total relief on the project site is approximately 46 feet. A copy of the site plan indicating the boundary of the project site and the elevations is included on the Site Plan on Figure 1 in Appendix A and the Site Geologic Map in Appendix C of this report.

BEST MANAGEMENT PRACTICES

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to range from low to moderate. The potential always exists to encounter solution cavities within the subsurface during excavating activities. Frost GeoSciences, Inc. is of the opinion that it is very important for construction personnel to be informed of the potential to encounter cavities in the subsurface that lack a surface expression. Construction personnel should also be informed of the proper protocol to follow in the event a karst feature is encountered during the development of the project site.

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 the exclusive use of 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 for Regulated Activities / Developments on the Edwards Aquifer Recharge / Transition Zone, relating to 30 TAC §213.5(b)(3), effective June 1, 1999.

REFERENCES

1. USGS - 7.5 Minute Topographic Quadrangle of New Braunfels West, 1988

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, 1988

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. 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.

7. Stein, W.G. and Ozuna, G.B., 1995, Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas, U.S. Geological Survey Water Resources Investigations 94-4117.

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

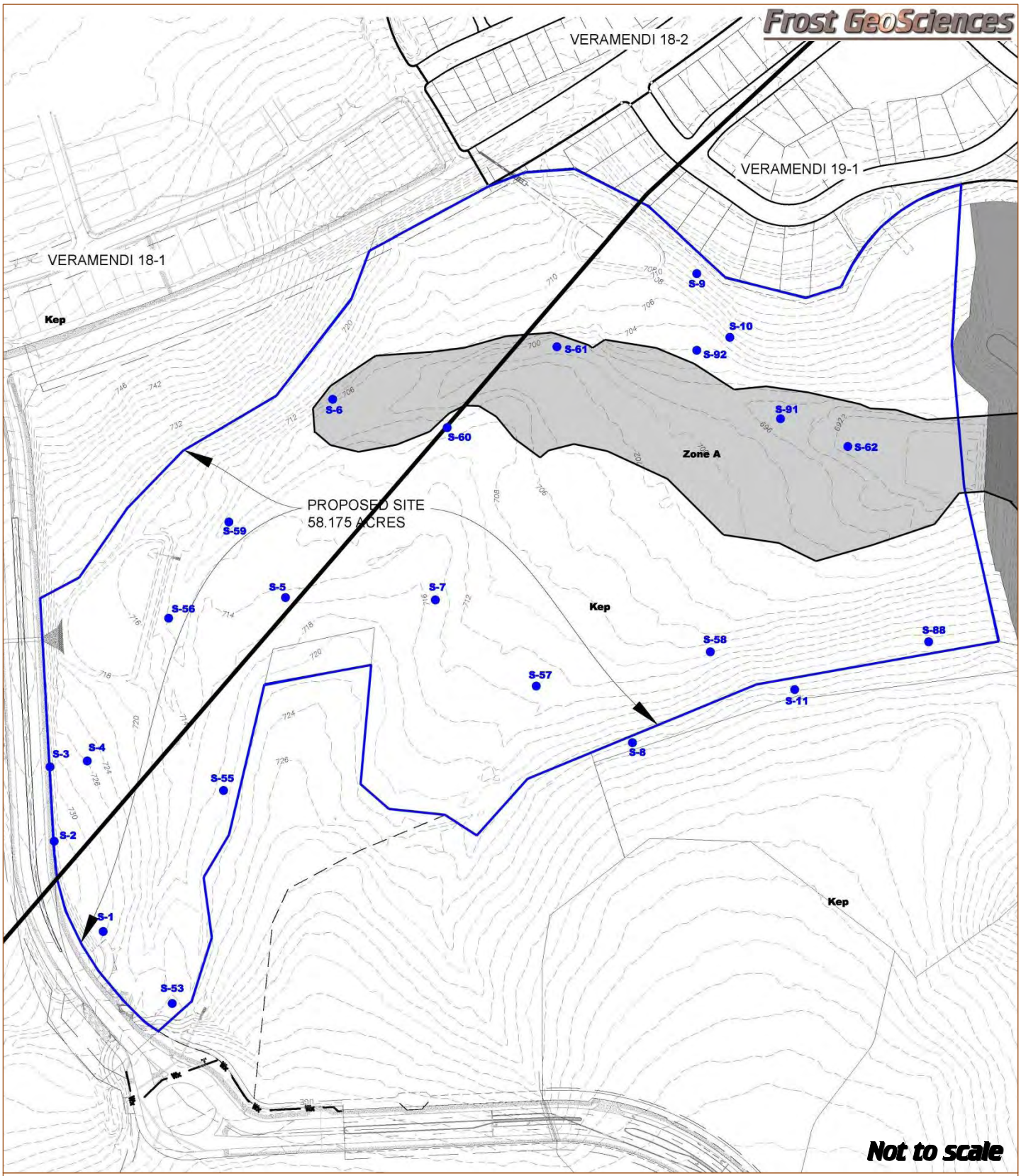
9. United States Department of Agriculture Soil Conservation Service Soil Survey of Comal County 1984

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

11. 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

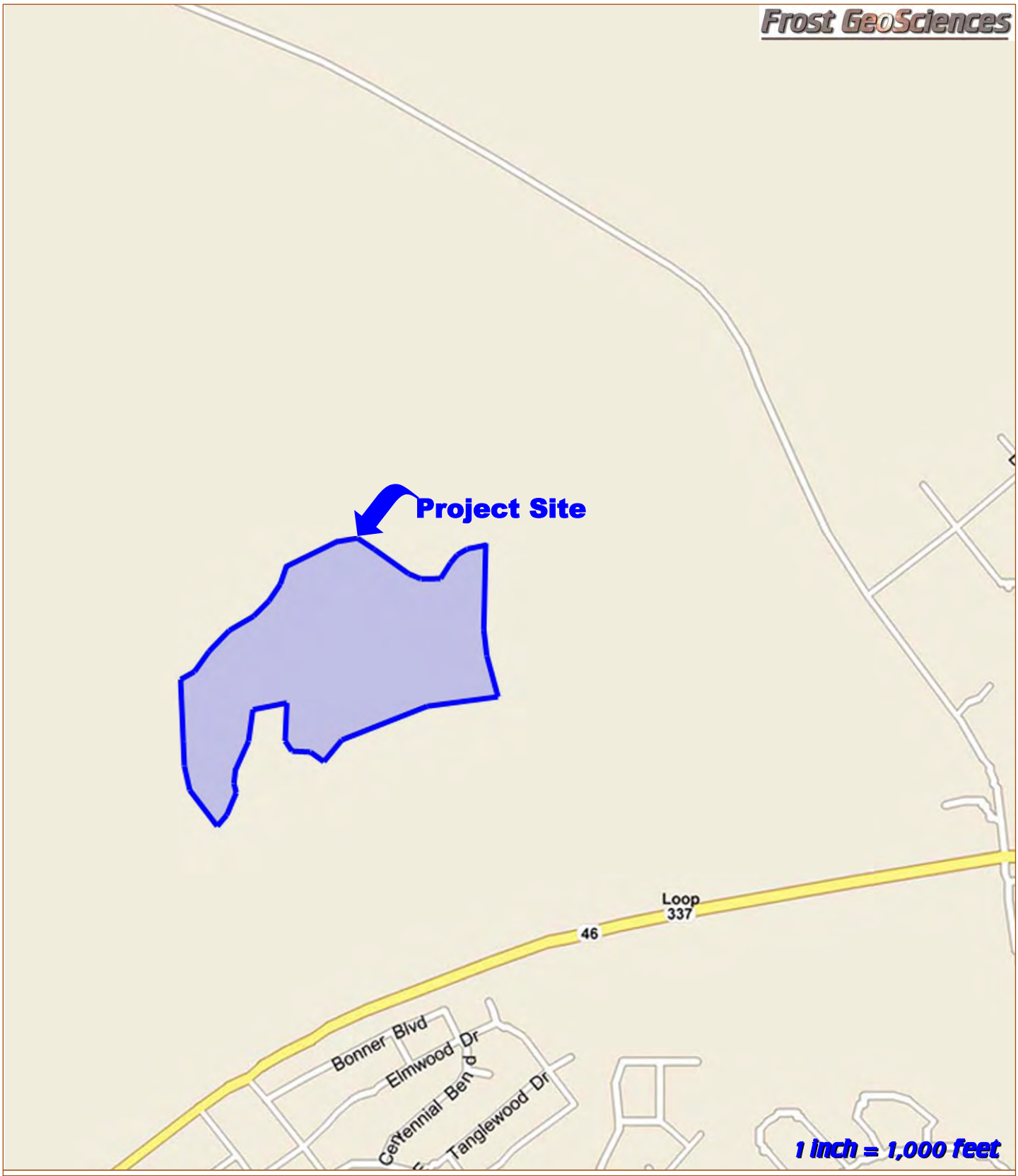


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities/Development on the
Edwards Aquifer Recharge/Transition Zone
Veramendi Regional Park
Comal County, Texas

Site Plan

PROJECT No.: FGS-E25159

DATE: May 19, 2025

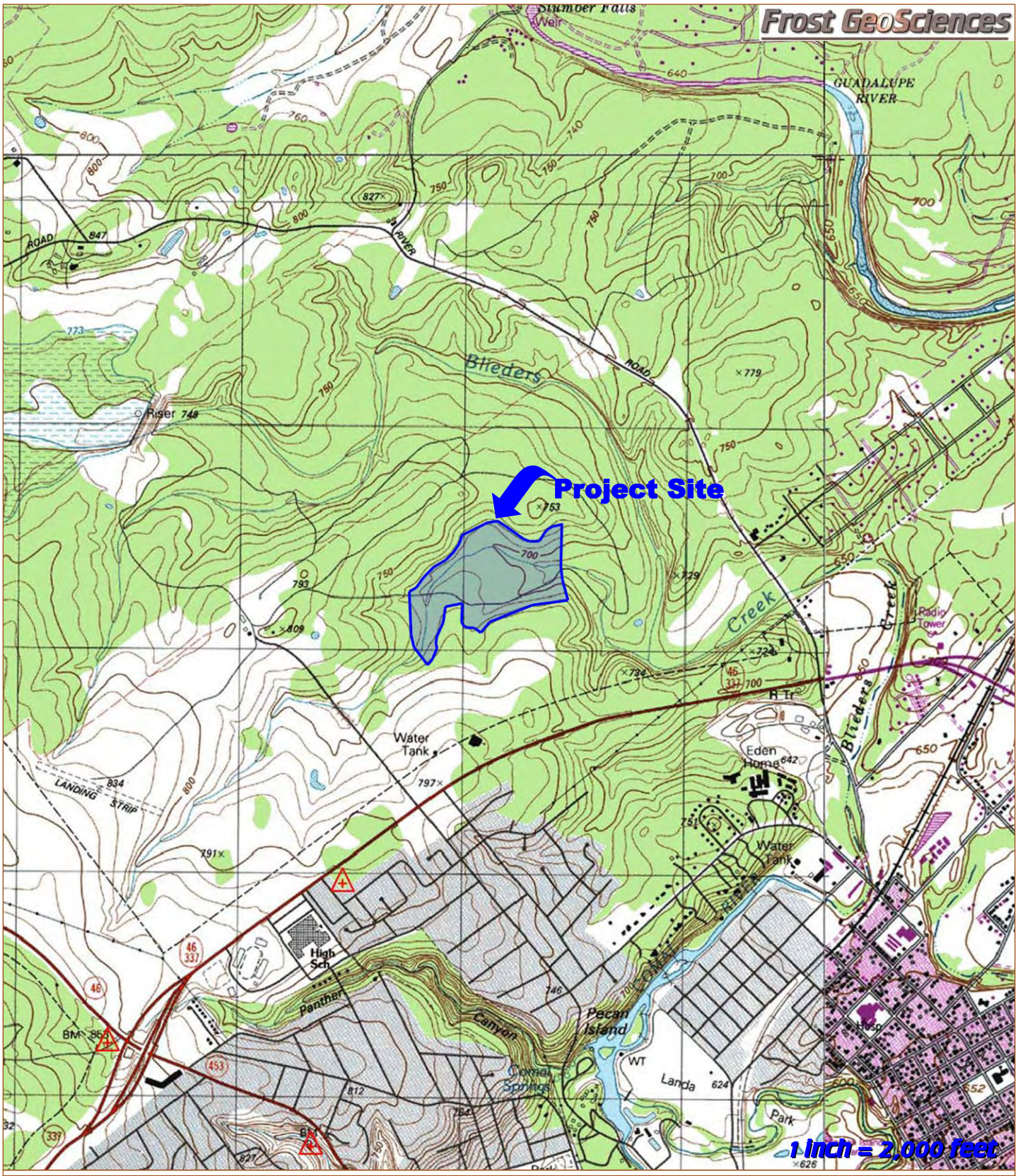


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities/Development on the
Edwards Aquifer Recharge/Transition Zone
Veramendi Regional Park
Comal County, Texas

Street Map
Microsoft Streets and Trips (2013)

PROJECT No.: FGS-E25159

DATE: May 19, 2025

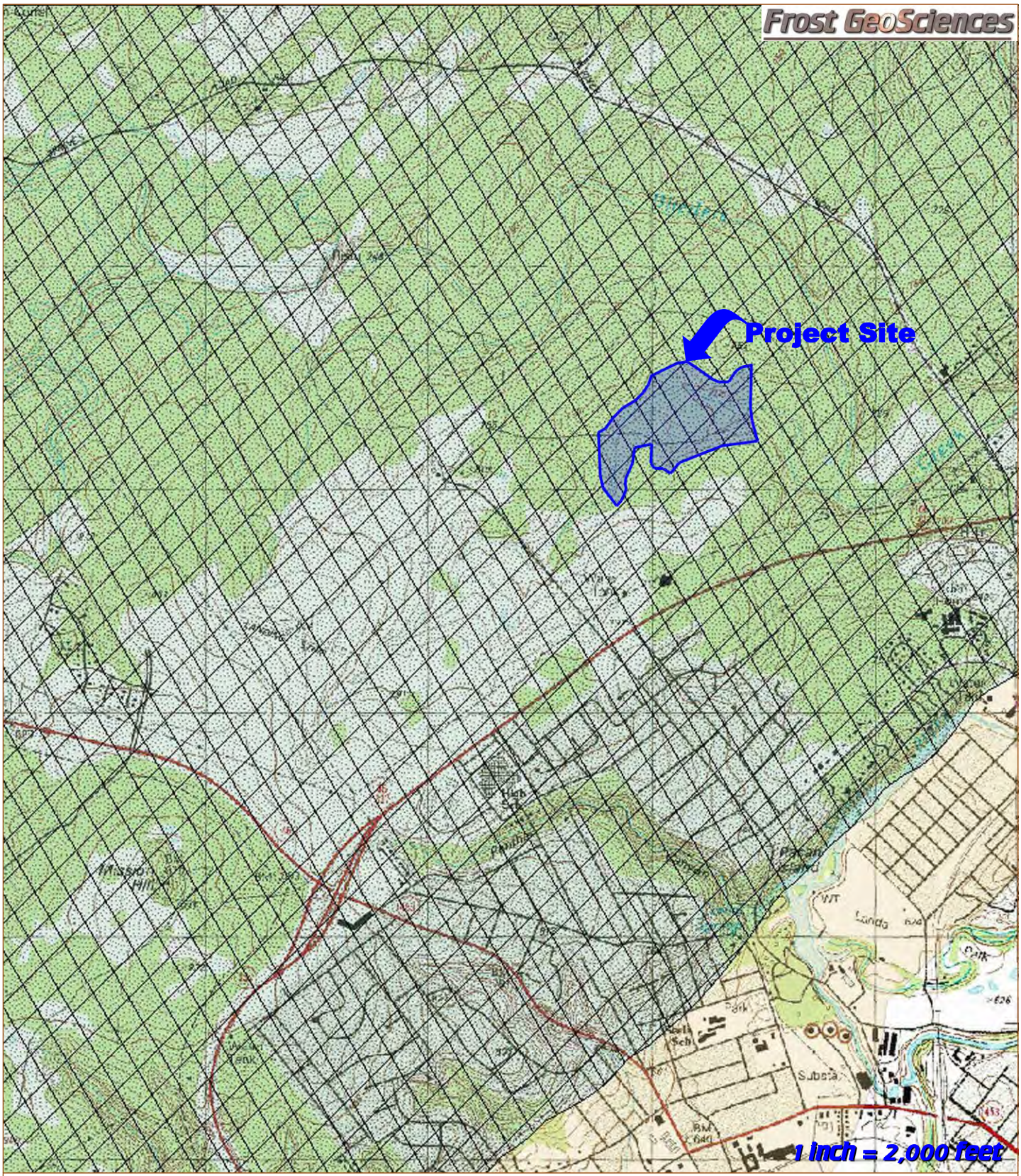


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities/Development on the
Edwards Aquifer Recharge/Transition Zone
Veramendi Regional Park
Comal County, Texas

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

PROJECT No.: FGS-E25159

DATE: May 19, 2025

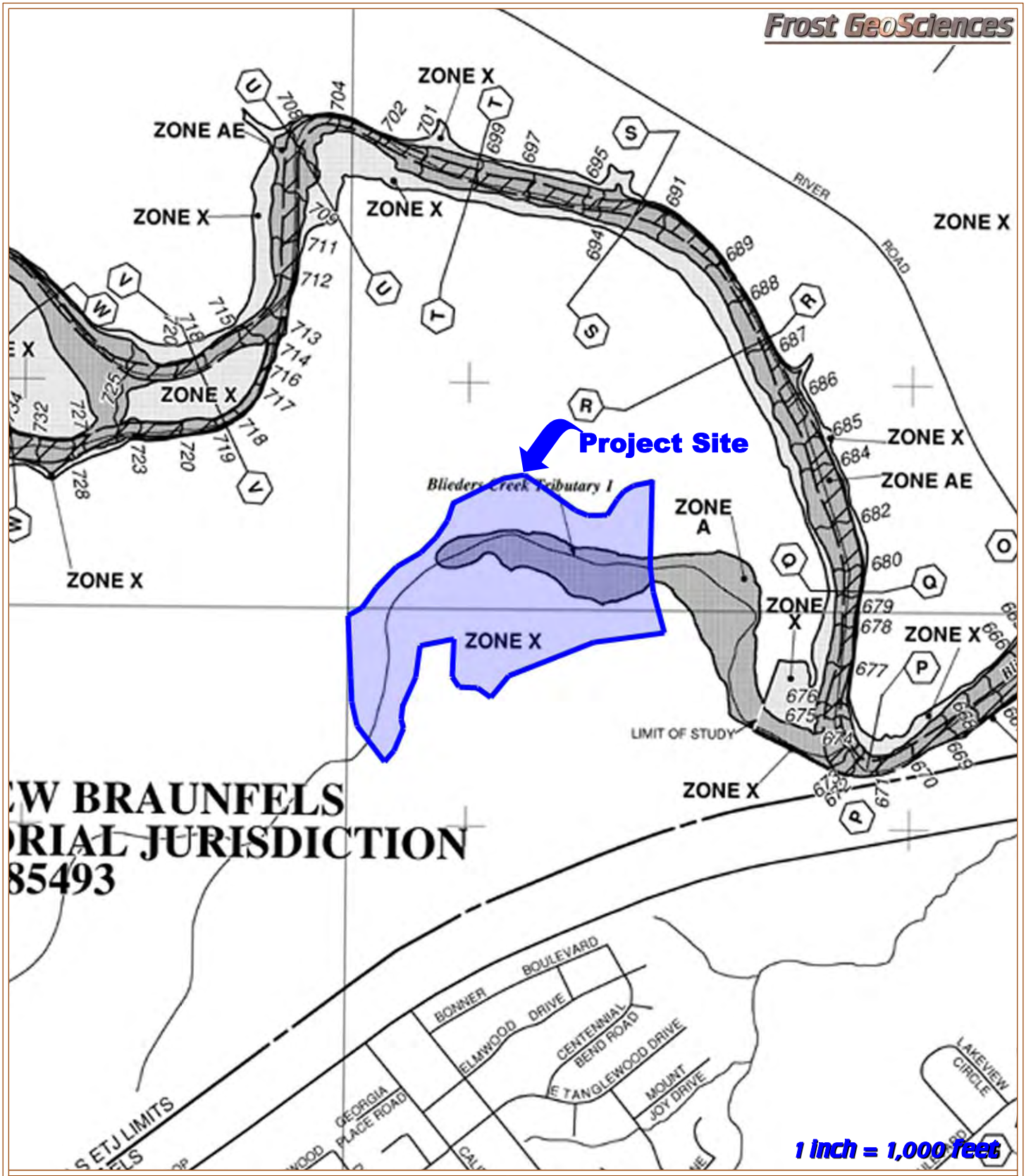


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities/Development on the
Edwards Aquifer Recharge/Transition Zone
Veramendi Regional Park
Comal County, Texas

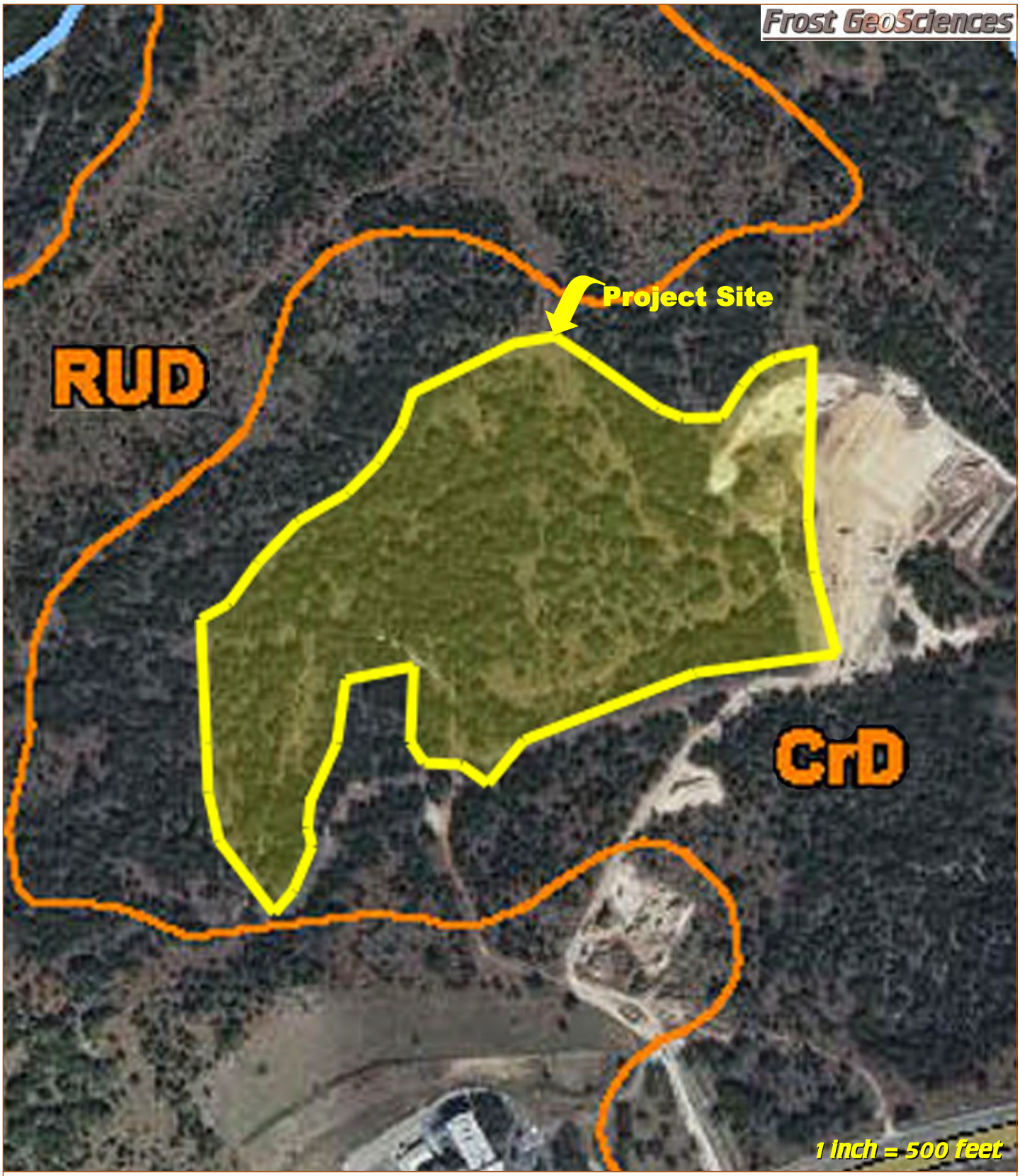
EAA Recharge & Contributing Zone Map
New Braunfels West, Texas (2014)

PROJECT No.: FGS-E25159

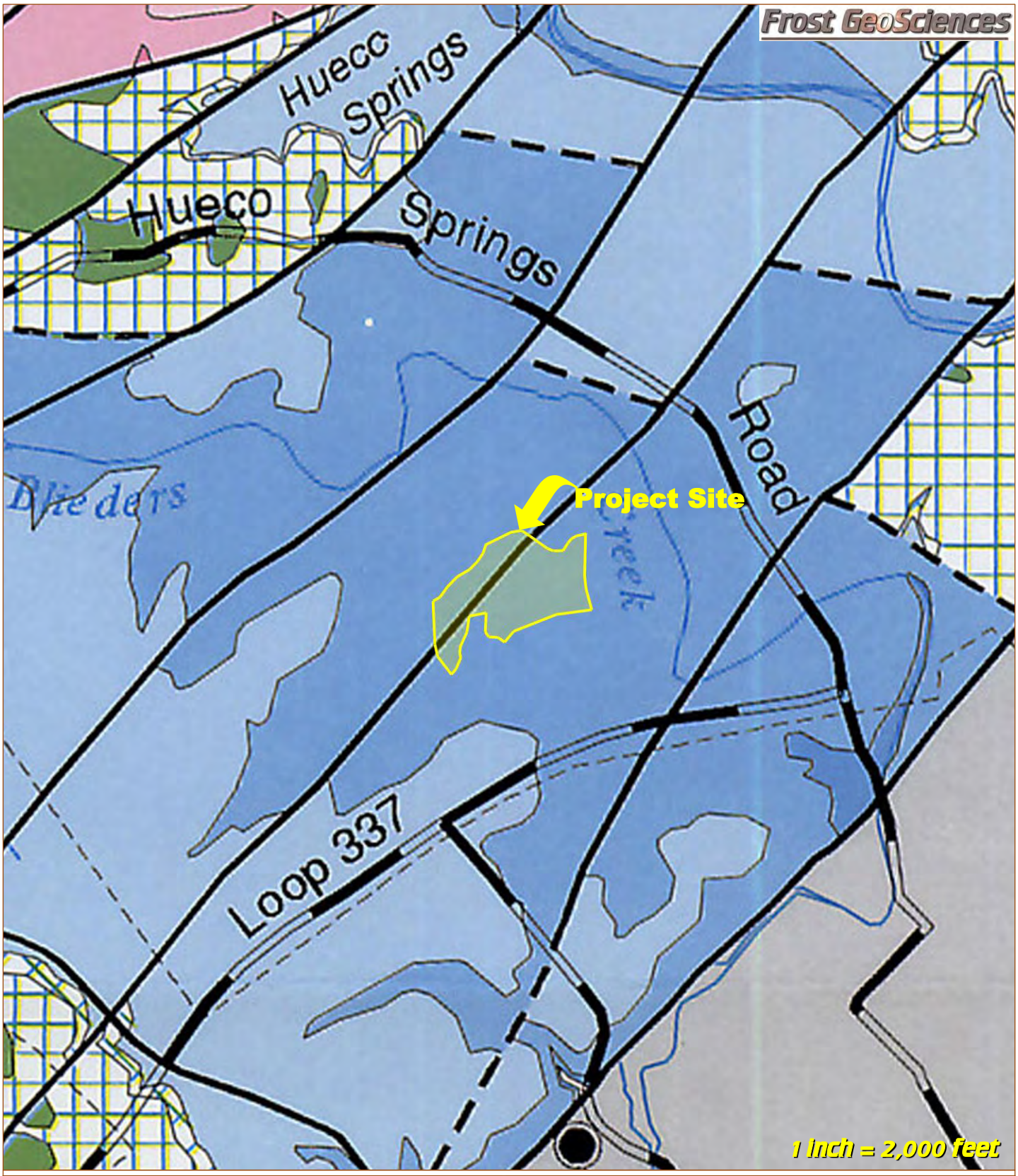
DATE: May 19, 2025



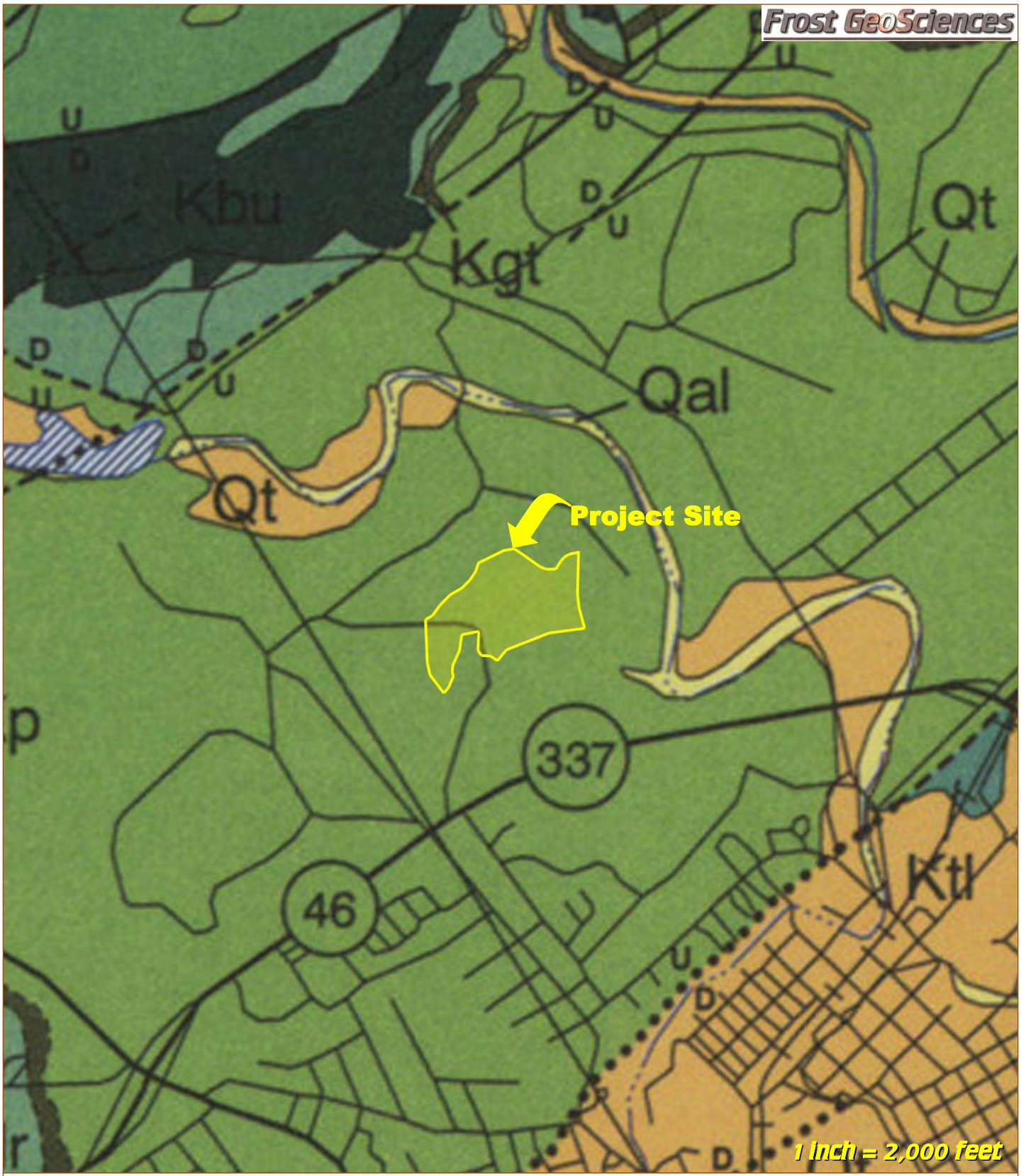
PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities/Development on the Edwards Aquifer Recharge/Transition Zone Veramendi Regional Park Comal County, Texas	Flood Insurance Rate Map (FIRM) Community Panel # 48091C0435F Revised 9/2/2009
PROJECT No.: FGS-E25159	**DATE:** May 19, 2025



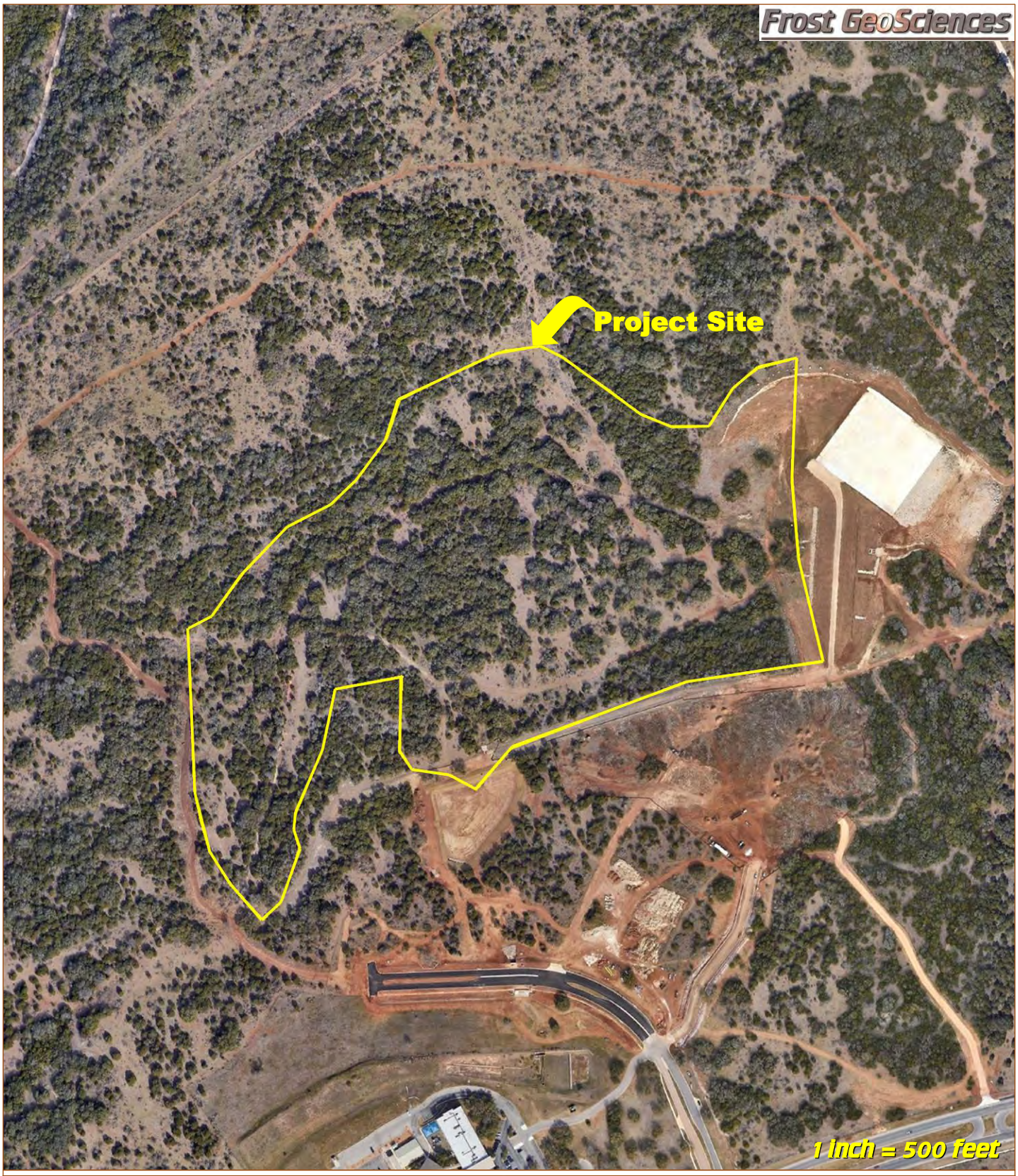
PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities/Development on the Edwards Aquifer Recharge/Transition Zone Veramendi Regional Park Comal County, Texas	Soils Map Comal County Soil Survey NRCS website: websoilsurvey.nrcs.usda.gov
	PROJECT No.: FGS-E25159 / **DATE:** May 19, 2025



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities/Development on the Edwards Aquifer Recharge/Transition Zone Veramendi Regional Park Comal County, Texas	United States Geological Survey Water Resource Investigation Map 94-4117 Comal County, Texas (1994)
	PROJECT No.: FGS-E25159 / **DATE:** May 19, 2025



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities/Development on the Edwards Aquifer Recharge/Transition Zone Veramendi Regional Park Comal County, Texas	United States Geological Survey Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)
	PROJECT No.: FGS-E25159 / **DATE:** May 19, 2025



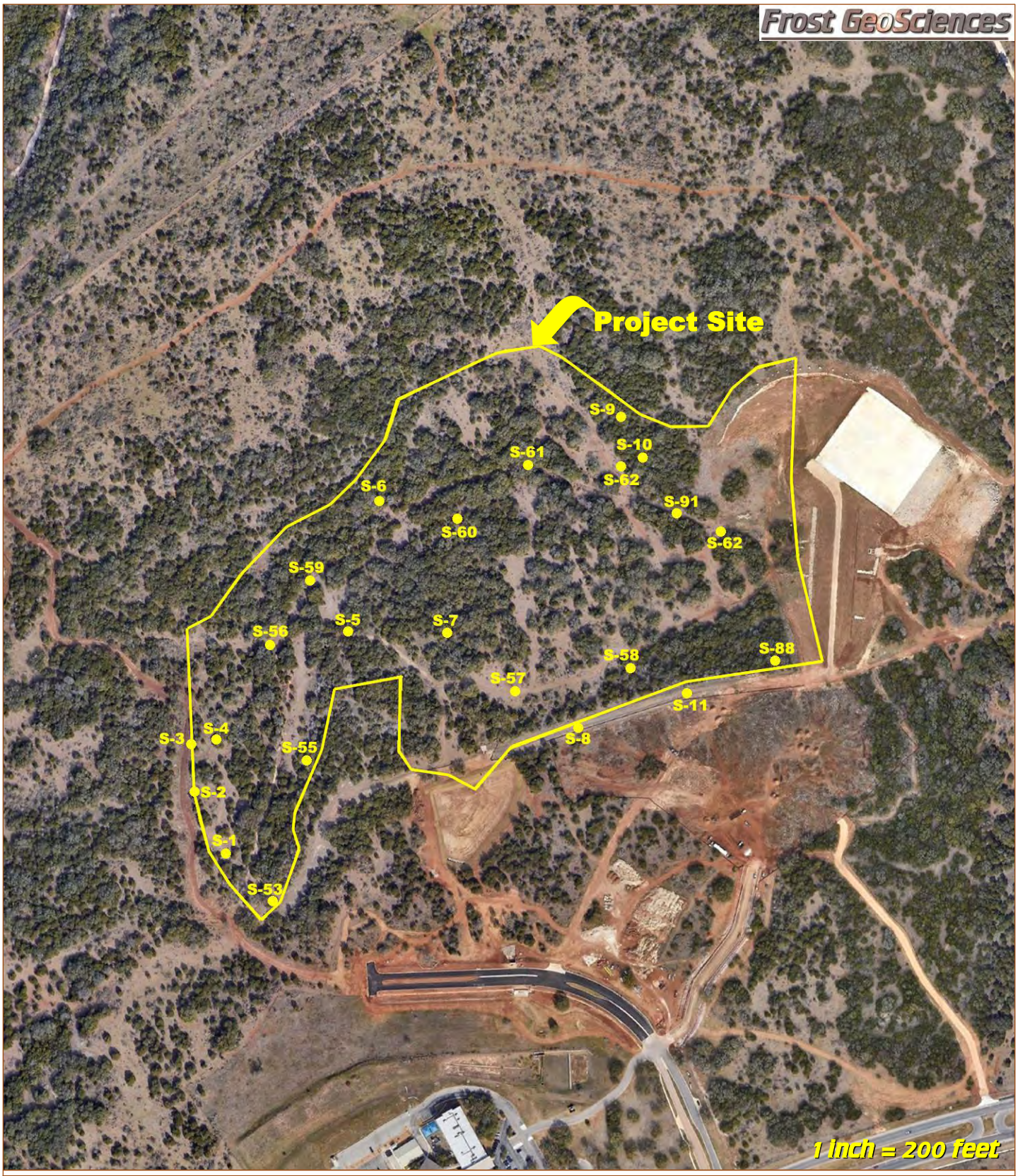
PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities/Development on the
Edwards Aquifer Recharge/Transition Zone
Comal County, Texas

2023 Aerial Photograph
Google Earth Aerial Imagery

PROJECT No.: FGS-E25159

DATE: May 19, 2025



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities/Development on the Edwards Aquifer Recharge/Transition Zone Comal County, Texas	2023 Aerial Photograph with PRFs Google Earth Aerial Imagery
	PROJECT No.: FGS-E25159 / **DATE:** May 19, 2025

APPENDIX B

SITE PHOTOGRAPHS



Photo #1 – View of the southern portion of the Site.



Photo #2 – Additional view of the southern portion of the Site.



Photo #3 – View of PRF #S-1.



Photo #4 – View of PRF #S-2.

	
Photo #5 – View of PRF #S-3.	Photo #6 – View of a drainage area in the south-western portion of the Site.
	
Photo #7 – View of a water pump located in a drainage area in the south-western portion of the Site.	Photo #8 – Additional view of a drainage area in the south-western portion of the Site.



Photo #9 – View of PRF #S-4.



Photo #10 – View of the western portion of the Site.



Photo #11 – Additional view of the western portion of the Site.



Photo #12 – View of PRF #S-5.

	
Photo #13 – View of the west-central portion of the Site.	Photo #14 – Additional view of the west-central portion of the Site.
	
Photo #15 – View of PRF #S-6.	Photo #16 – View of the south-central portion of the Site.



Photo #17 – Additional view of the south-central portion of the Site.



Photo #18 – View of PRF #S-7.



Photo #19 – Additional view of the south-central portion of the Site.



Photo #20 – View of an apartment complex located to the adjacent south of the Site.

	
Photo #21 – View of PRF #S-8.	Photo #22 – View of PRF #S-9.
	
Photo #23 – View of the northern portion of the Site.	Photo #24 – View of PRF #S-10.



Photo #25 – View of PRF #S-11.



Photo #26 – View of PRF #S-53.



Photo #27 – View of PRF #S-55.



Photo #28 – View of PRF #S-56.

	
Photo #29 – View of the north-western portion of the Site.	Photo #30 – View of PRF #S-59.
	
Photo #31 – Additional view of the north-western portion of the Site.	Photo #32 – View of PRF #S-60.



Photo #33 – View of PRF #S-61.



Photo #34 – View of the northern portion of the Site.



Photo #35 – Additional view of the northern portion of the Site.



Photo #36 – View of PRF #S-62.



Photo #37 – View of PRF #S-88.



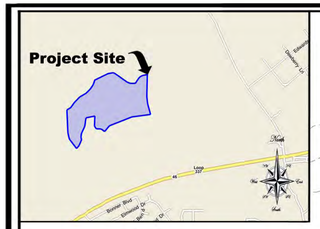
Photo #38 – View of PRF #S-91.



Photo #39 – Additional view of PRF #S-91.

APPENDIX C

GEOLOGIC MAP



Location Map



STATE OF TEXAS
Steve M. Frost
Geology
License No. 315
PROFESSIONAL GEOSCIENTIST
5/8/2025

Signature of Texas Licensed Geoscientist
Steve Frost License No. 315

Frost GeoSciences

Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

13406 Western Oak ▪ 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
Regional Park
+/- 58.175 Acres
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-E25159

Legend

- Potential Recharge Feature (PRF)
- Site Boundary
- Fault
- Floodplain Zone A
- Kep - Cretaceous Person Formation, leached and collapsed

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Comal County, Texas: Panel # 48091C0435F, Revised 9/2/2009

Fault Information Obtained From:
U.S. Geological Survey, Water Resources Investigations Report 94-4117 (1994)
Bureau of Economic Geology, Geologic Map of the New Braunfels, Texas
30 X 60 Minute Quadrangle (2000)
U.S. Geological Survey, Clark (2016) Geologic Framework and Hydrostratigraphy
of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties,
Texas, Science Investigations Map 3366

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 - 2 foot

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: Nicholas Gower, PE / LJA Engineering Inc.

Date: 09/2/2025

Signature of Customer/Agent:



Regulated Entity Name: Veramendi Regional Park #1

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☐ Commercial
   ☐ Industrial
   ☒ Other: Public Park

2. Total site acreage (size of property): 63.61 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	1,556	÷ 43,560 =	0.04
Parking	32,234	÷ 43,560 =	0.74
Other paved surfaces	211,888	÷ 43,560 =	4.86
Total Impervious Cover	216,928	÷ 43,560 =	5.64

Total Impervious Cover 5.64 **÷ Total Acreage** 63.61 **X 100 =** 8.86 **% 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	_____Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day _____	

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.

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

- [X] Existing.
- [ ] Proposed.

16. [X] 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. [X] The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 100 '.

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.
- [X] 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): 48091C0435G

19. [X] 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.
- [X] 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:

- [X] 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%-10%. The overall runoff coefficient (100-yr) prior to development is estimated to be 0.46 based on the existing terrain and slopes. The existing storm water flows from the west to the east of the property through an existing low. This will continue to an existing dam and eventually into Blieders Creek.

The proposed use for this property is a regional park, that will consist of 4.66 acres of impervious cover. A proposed composite c-value (100-yr) of 0.49 was calculated based on the run off coefficient from City of New Braunfels.

Attachment C – Suitability Letter from Authorized Agent

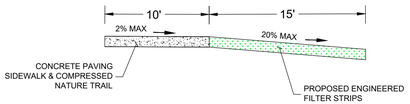
No OSSF will be used with this project.

Attachment D – Exception to the Required Geologic Assessment

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

200 100 0 200 400

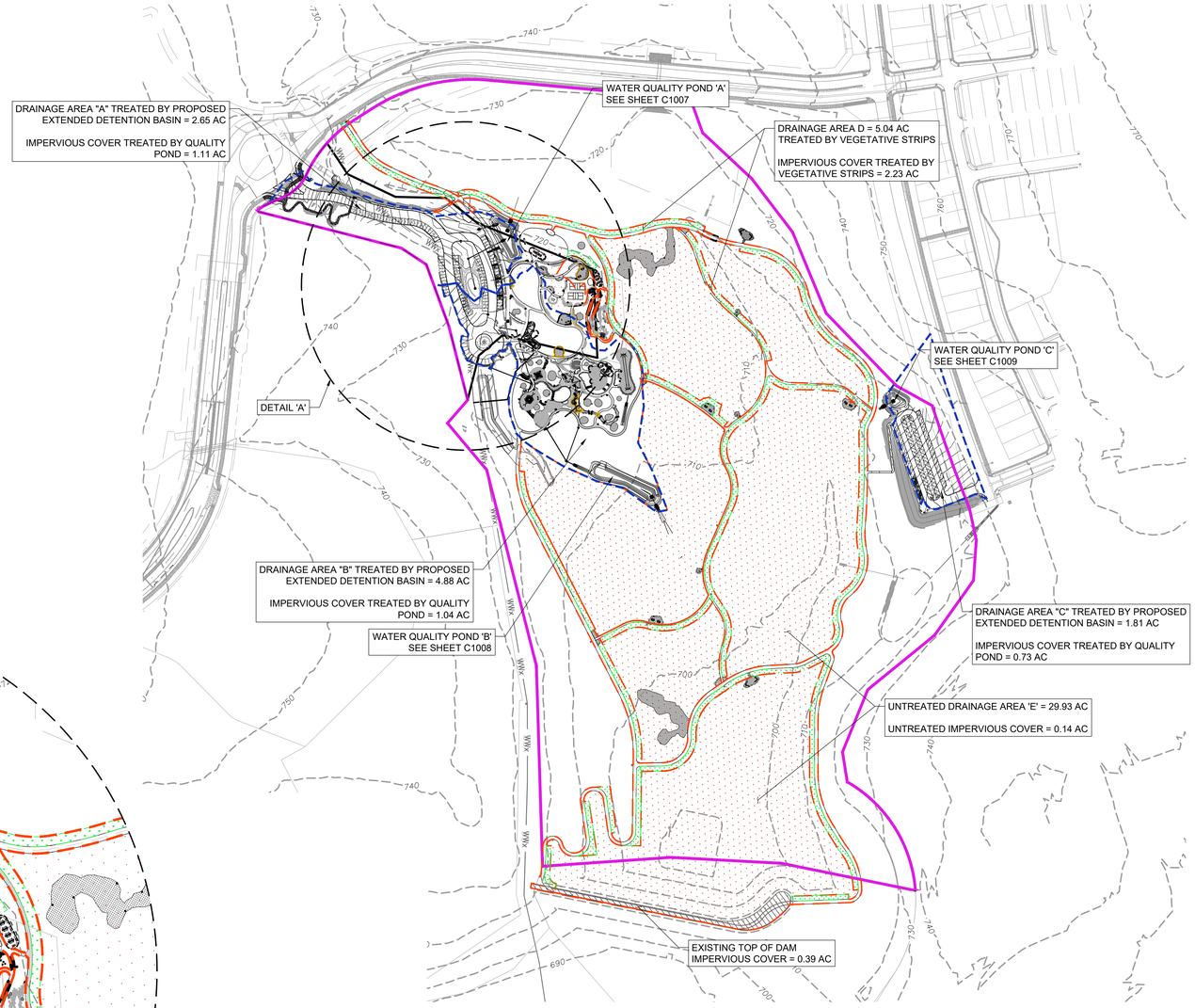
SCALE IN FEET
SCALE: 1"=200'

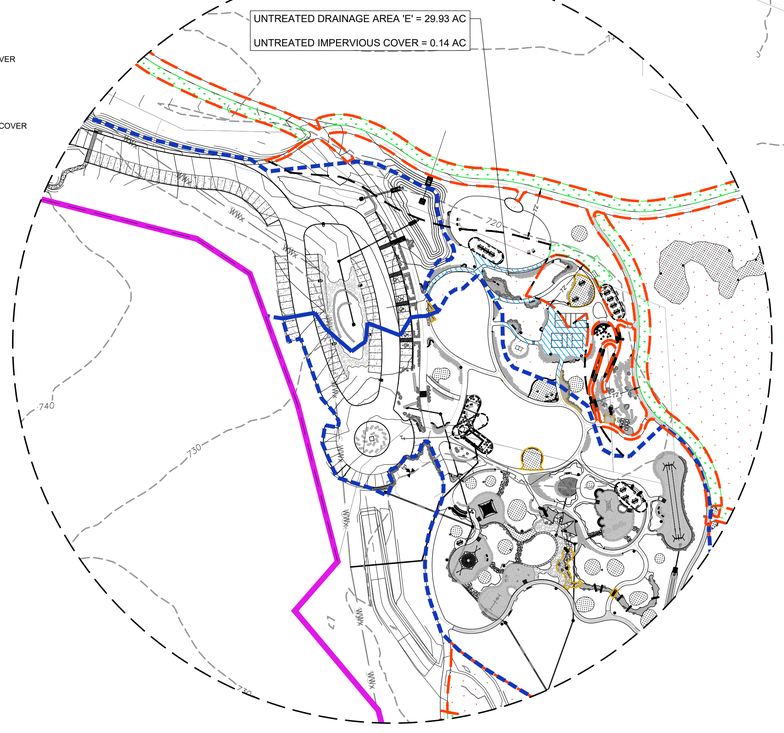


VEGETATIVE FILTER STRIPS DETAIL
N.T.S.

LEGEND

- 740 — EXISTING CONTOUR
- 740 — PROPOSED CONTOUR
- XXX — FLOW ARROWS
- ROCK BERM
- TEMP. SPOILS & STORAGE AREA
- CONCRETE TRUCK WASHOUT PIT
- CONSTRUCTION ENTRANCE
- LOC'SF — LIMITS OF CONSTRUCTION/ SILT FENCE
- IP — INLET PROTECTION
- PROPOSED ENGINEERED FILTER TRIPS
- PROPERTY BOUNDARY
- DRAINAGE AREA TREATED BY PROPOSED BATCH DETENTION PONDS
- DRAINAGE AREA 'C' TREATED BY PROPOSED ENGINEERED FILTER STRIPS
- UNTREATED DRAINAGE AREA 'D'
- EXISTING IMPERVIOUS COVER
- UNTREATED IMPERVIOUS COVER (0.14 AC)





DETAIL 'A'
SCALE: 1" = 100'

VERAMENDI REGIONAL PARK

WPAP SITE PLAN

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_WPAP VRP.dwg

09/04/25

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:
SA3856.2404

SHEET NO.
C1005

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Login Name: nguyen
Last Modified: Sep 04, 25 - 11:34
Last Plotted: Sep 04, 25 - 11:35

BASIN A BATCH DETENTION 'A'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	2.65	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.11	acres
Post-development impervious fraction within drainage basin/outfall area =	0.42	
$L_{M\ THIS\ BASIN}$ =	996	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	2.65	acres
A_I =	1.11	acres
A_P =	1.54	acres
L_R =	1178	lbs

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

$L_{M\ THIS\ BASIN}$ = 1031 lbs.

F = 0.87

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.44	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	4377	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	875	
Total Capture Volume (required water quality volume(s) x 1.20) =	**5,252**	cubic feet

BASIN B BATCH DETENTION 'B'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	4.88	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.04	acres
Post-development impervious fraction within drainage basin/outfall area =	0.21	
$L_{M\ THIS\ BASIN}$ =	934	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	4.88	acres
A_I =	1.04	acres
A_P =	3.84	acres
L_R =	1143	lbs

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

$L_{M\ THIS\ BASIN}$ = 1022 lbs.

F = 0.89

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.60	inches
Post Development Runoff Coefficient =	0.21	
On-site Water Quality Volume =	5932	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1186	
Total Capture Volume (required water quality volume(s) x 1.20) =	**7,119**	cubic feet

BASIN C BATCH DETENTION 'C'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	1.81	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.73	acres
Post-development impervious fraction within drainage basin/outfall area =	0.40	
$L_{M\ THIS\ BASIN}$ =	656	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	1.81	acres
A_I =	0.73	acres
A_P =	1.08	acres
L_R =	776	lbs

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

$L_{M\ THIS\ BASIN}$ = 485 lbs.

F = 0.62

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	0.62	inches
Post Development Runoff Coefficient =	0.31	
On-site Water Quality Volume =	1251	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	250	
Total Capture Volume (required water quality volume(s) x 1.20) =	**1,501**	cubic feet

BREAKDOWN OF TSS BEING TREATED BY PERMANENT BMPS

PROPOSED BMP	DRAINAGE AREA	DRAINAGE AREA TO BMP	EXISTING IMPERVIOUS COVER	IMPERVIOUS COVER TO BPM	BMP EFFICIENCY	F	REQUIRED TSS TO BE TREATED (LBS)	ACTUAL TSS BEING REMOVED BY BMP (LBS)
BATCH DETENTION 'A'	A	2.65 ACRES	0.00 ACRES	1.11 ACRES	91%	87	996 LBS	1,031 LBS
BATCH DETENTION 'B'	B	4.88 ACRES	0.00 ACRES	1.04 ACRES	91%	89	934 LBS	1,022 LBS
BATCH DETENTION 'C'	C	1.81 ACRES	0.00 ACRES	0.73 ACRES	91%	62	655 LBS	485 LBS
VEGETATIVE FILTER STRIPS	D	5.04 ACRES	0.00 ACRES	2.23 ACRES	85%	100	2,002 LBS	2,207 LBS
UNCAPTURED DRAINAGE AREA 'E'	E	29.93 ACRES	0.39 ACRES	0.53 ACRES	--	--	126 LBS	0 LBS
TOTAL	A+B+C+D+E	44.31 ACRES	0.39 ACRES	5.64 ACRES	--	--	4,713 LBS	4,745 LBS

DRAINAGE AREA 'D' VEGETATIVE STRIPS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 4

Total drainage basin/outfall area =	5.04	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.23	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	2002	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	5.04	acres
A_I =	2.23	acres
A_P =	2.81	acres
L_R =	2207	lbs

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

$L_{M\ THIS\ BASIN}$ = 2207 lbs.

F = 1.00

DRAINAGE AREA 'E' UNCAPTURED

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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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

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Total project area included in plan * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 5

Total drainage basin/outfall area =	29.93	acres
Predevelopment impervious area within drainage basin/outfall area =	0.39	acres
Post-development impervious area within drainage basin/outfall area =	0.53	acres
Post-development impervious fraction within drainage basin/outfall area =	0.02	
$L_{M\ THIS\ BASIN}$ =	126	lbs.

VERAMENDI REGIONAL PARK
WPAP SITE CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PDF
DRAWING NAME: sh_wpap vrp.dwg

09/04/25

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: SA3856.2404

SHEET NO.
C1006

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Xref Drawings:
Last Modified: Sep 04, 25 - 11:34
Plotted By: Priscilla Flores

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi Regional Park #1
Date Prepared: 9/3/2025

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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:

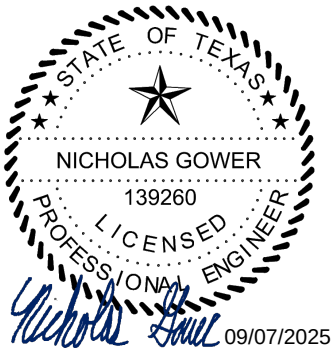
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Comal	
Total project area included in plan * =	44.31	acres
Predevelopment impervious area within the limits of the plan * =	0.39	acres
Total post-development impervious area within the limits of the plan * =	5.64	acres
Total post-development impervious cover fraction * =	0.13	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5



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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	2.65	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.11	acres
Post-development impervious fraction within drainage basin/outfall area =	0.42	
$L_{M\ THIS\ BASIN}$ =	996	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Extended Detention
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	2.65	acres
A_I =	1.11	acres
A_P =	1.54	acres
L_R =	1178	lbs

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

$L_{M\ THIS\ BASIN}$ =	1031	lbs.
F =	0.87	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.44	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	4377	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	875	
Total Capture Volume (required water quality volume(s) x 1.20) =	5,252	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi Regional Park #1
Date Prepared: 9/3/2025

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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: $L_M = 27.2(A_N \times P)$

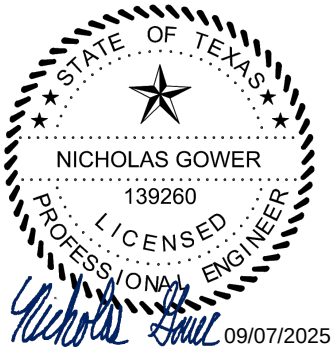
where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Comal	
Total project area included in plan * =	44.31	acres
Predevelopment impervious area within the limits of the plan * =	0.39	acres
Total post-development impervious area within the limits of the plan * =	5.64	acres
Total post-development impervious cover fraction * =	0.13	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5



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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	4.88	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.04	acres
Post-development impervious fraction within drainage basin/outfall area =	0.21	
$L_{M\ THIS\ BASIN}$ =	934	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Extended Detention
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	4.88	acres
A_I =	1.04	acres
A_P =	3.84	acres
L_R =	1143	lbs

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

$L_{M\ THIS\ BASIN}$ =	1022	lbs.
F =	0.89	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.60	inches
Post Development Runoff Coefficient =	0.21	
On-site Water Quality Volume =	5932	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1186	
Total Capture Volume (required water quality volume(s) x 1.20) =	7,119	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Veramendi Regional Park #1
Date Prepared: 9/3/2025

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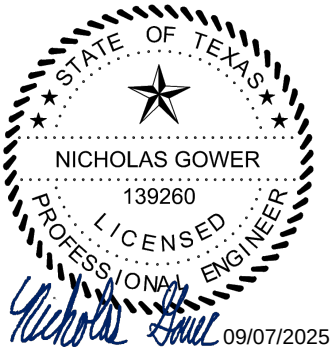
where:
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A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Comal	
Total project area included in plan * =	44.31	acres
Predevelopment impervious area within the limits of the plan * =	0.39	acres
Total post-development impervious area within the limits of the plan * =	5.64	acres
Total post-development impervious cover fraction * =	0.13	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5



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

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	1.81	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.73	acres
Post-development impervious fraction within drainage basin/outfall area =	0.40	
$L_{M\ THIS\ BASIN}$ =	655	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Extended Detention
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	1.81	acres
A_I =	0.73	acres
A_P =	1.08	acres
L_R =	776	lbs

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

$L_{M\ THIS\ BASIN}$ =	485	lbs.
F =	0.62	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	0.62	inches
Post Development Runoff Coefficient =	0.31	
On-site Water Quality Volume =	1251	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	250	
Total Capture Volume (required water quality volume(s) x 1.20) =	1,501	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

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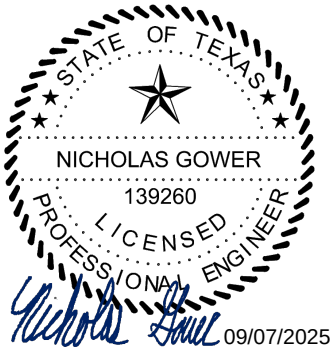
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Total post-development impervious area within the limits of the plan* =	5.64	acres
Total post-development impervious cover fraction * =	0.13	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5



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

Drainage Basin/Outfall Area No. = 4

Total drainage basin/outfall area =	5.04	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.23	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	2002	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	5.04	acres
A_I =	2.23	acres
A_P =	2.81	acres
L_R =	2207	lbs

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

$L_{M\ THIS\ BASIN}$ = 2207 lbs.

F = 1.00

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

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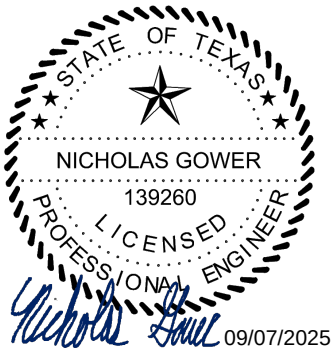
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Total post-development impervious area within the limits of the plan* =	5.64	acres
Total post-development impervious cover fraction * =	0.13	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5



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

Drainage Basin/Outfall Area No. = 5

Total drainage basin/outfall area =	29.93	acres
Predevelopment impervious area within drainage basin/outfall area =	0.39	acres
Post-development impervious area within drainage basin/outfall area =	0.53	acres
Post-development impervious fraction within drainage basin/outfall area =	0.02	
$L_{M\ THIS\ BASIN}$ =	126	lbs.

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: Nicholas Gower, PE / LJA Engineering Inc.

Date: 09/02/2025

Signature of Customer/Agent:

Nicholas Gower

Regulated Entity Name: Veramendi Regional Park #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. [ ] **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

    - [ ] 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. The second is construction that will include installation of the water quality basin and proposed buildings, streets, landscaping and site clean up.

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.

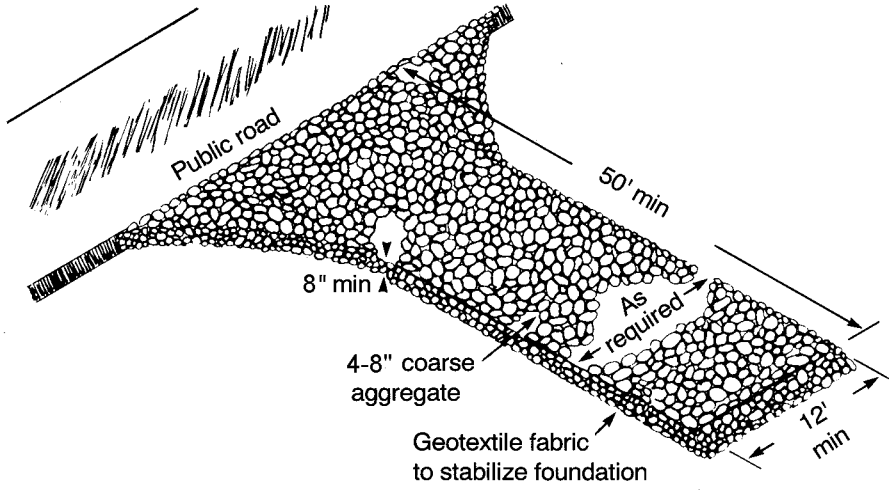


Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

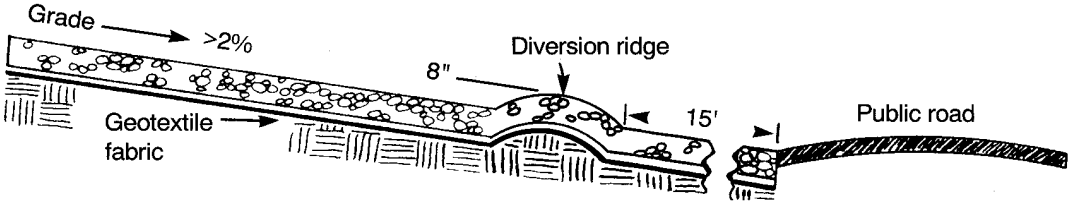


Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

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.

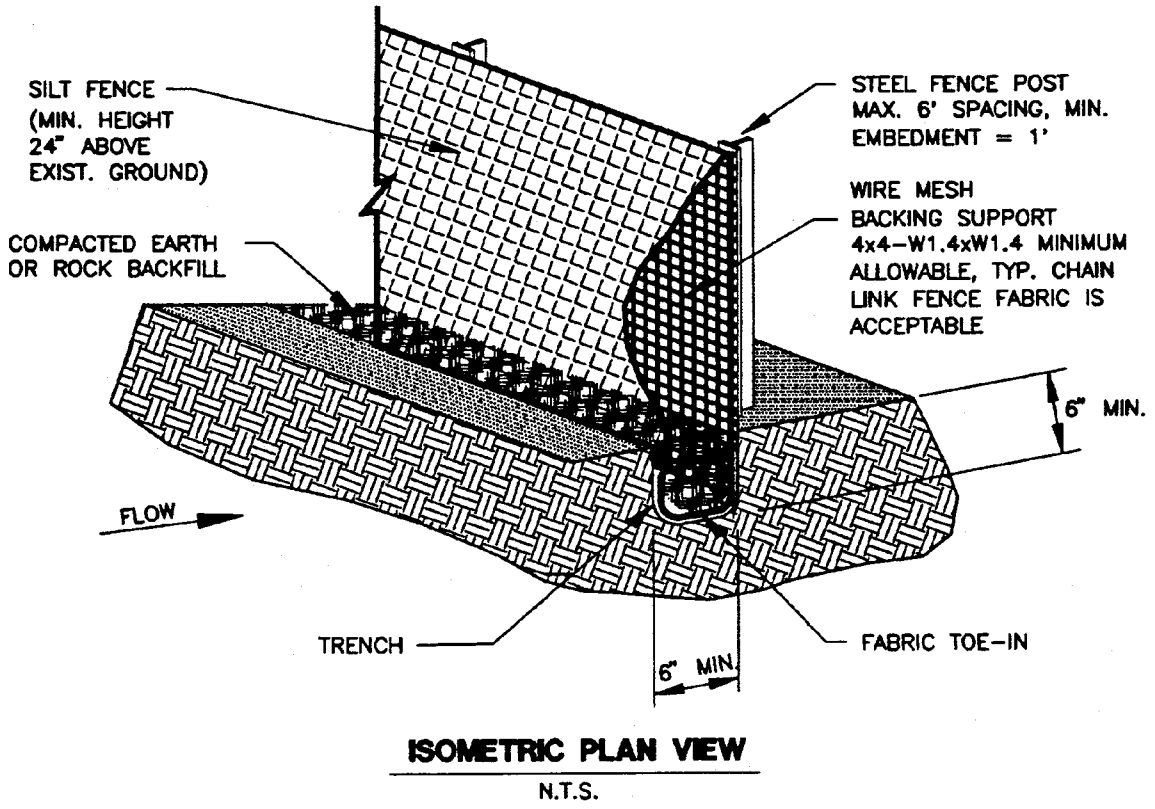


Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

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.

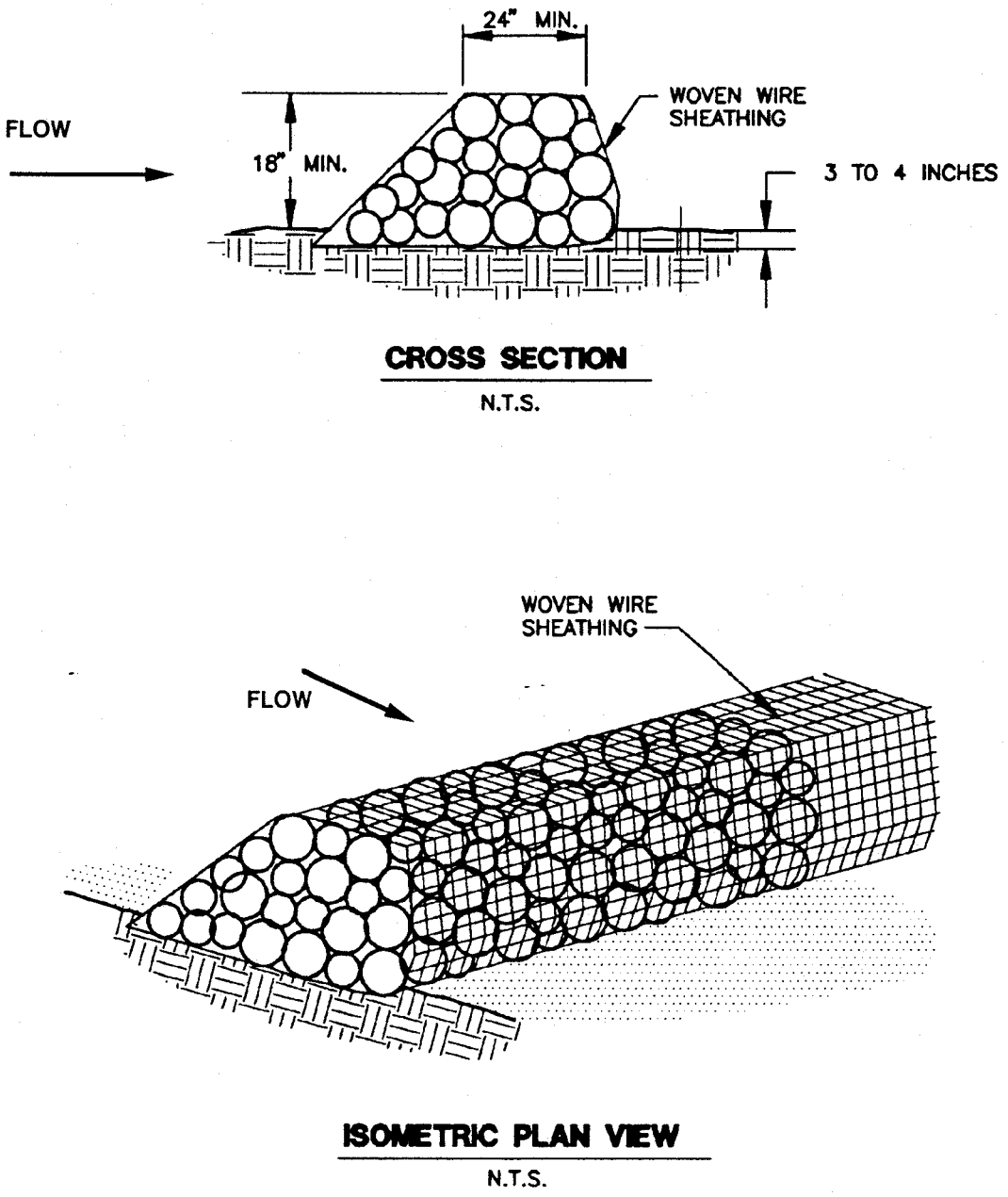


Figure 1-28 Schematic Diagram of a Rock Berm (NCTCOG, 1993)

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.

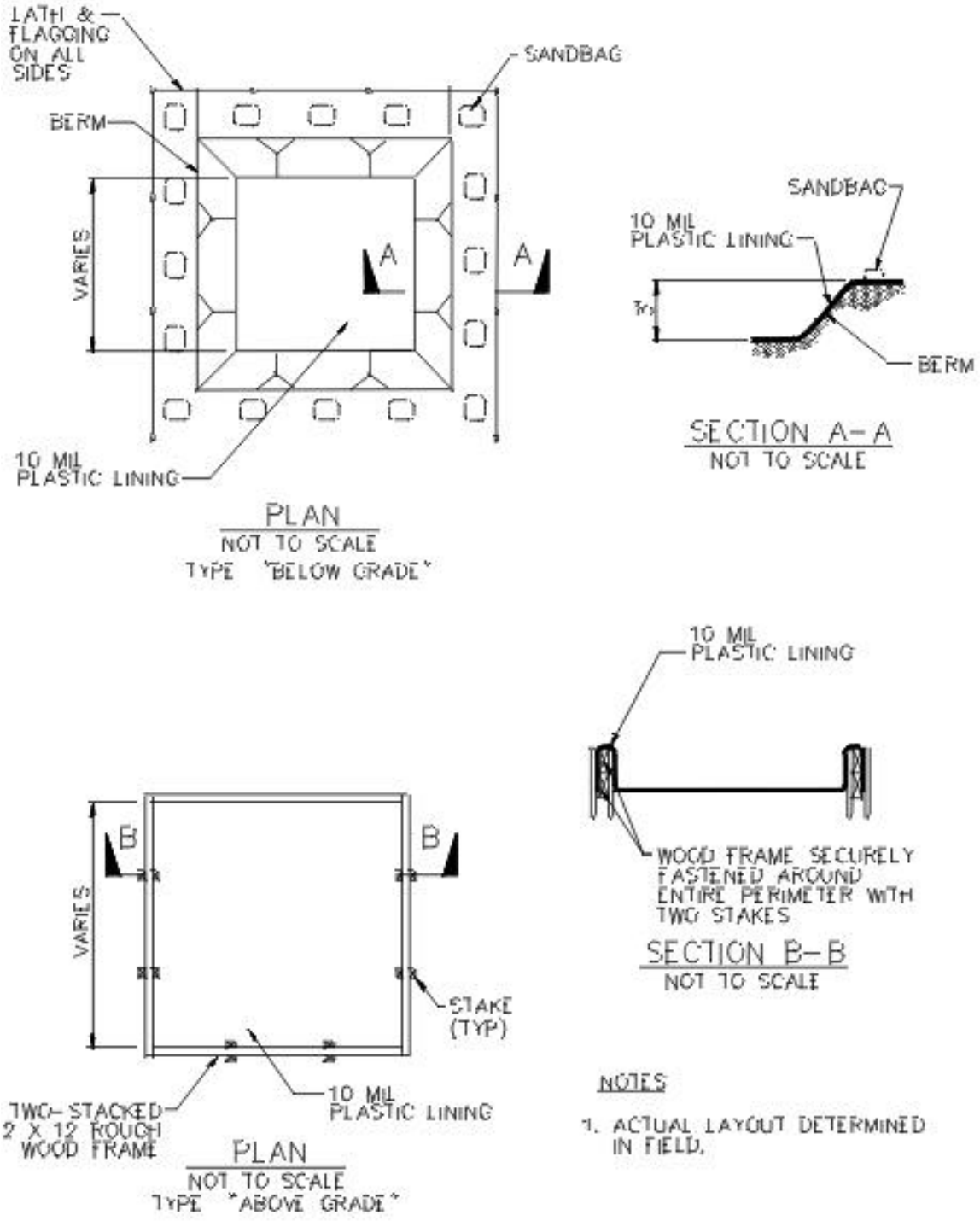


Figure 1-43 Schematics of Concrete Washout Areas

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.

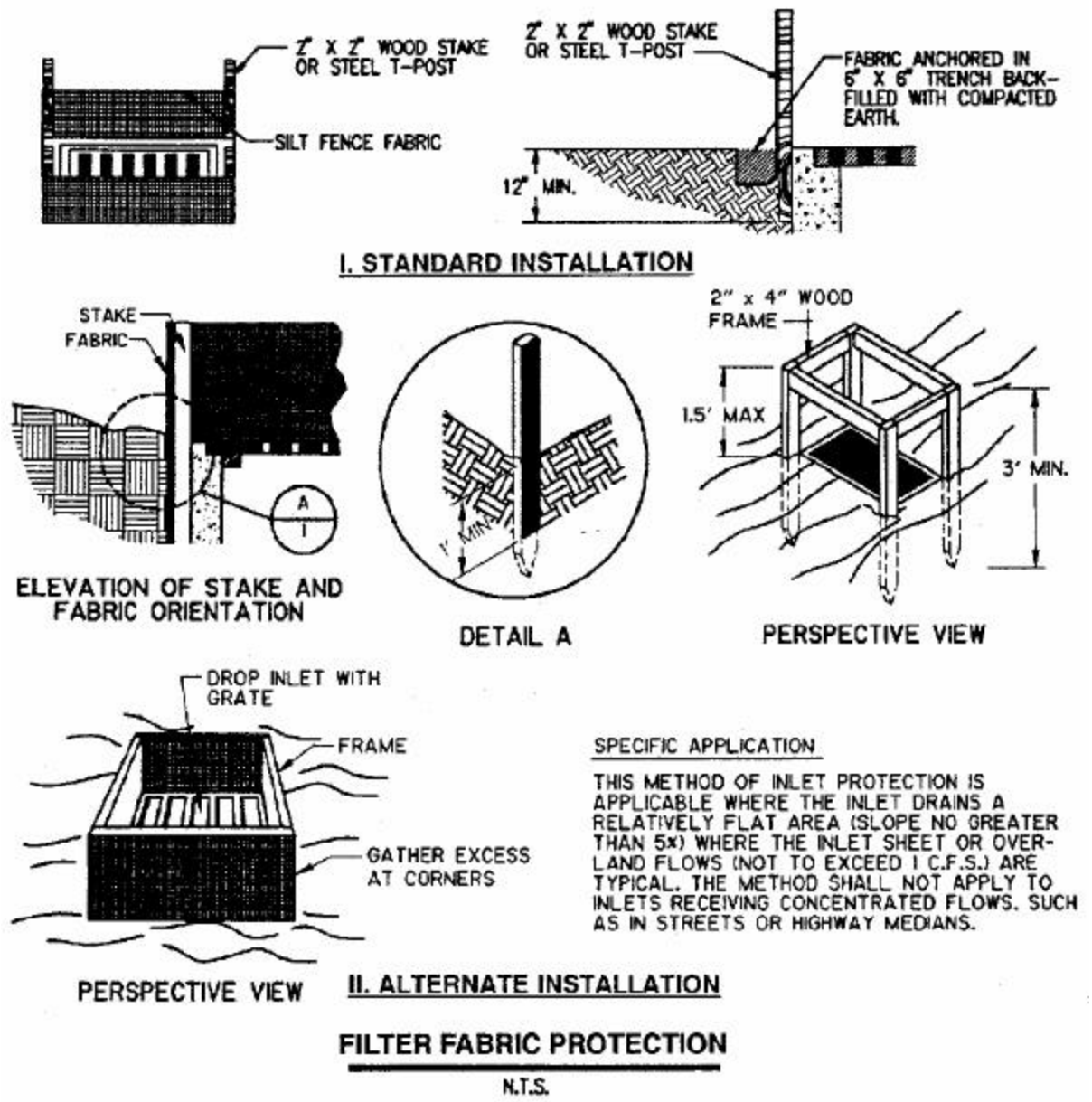


Figure 1-33 Filter Fabric Inlet Protection (NCTCOG, 1993)

(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).

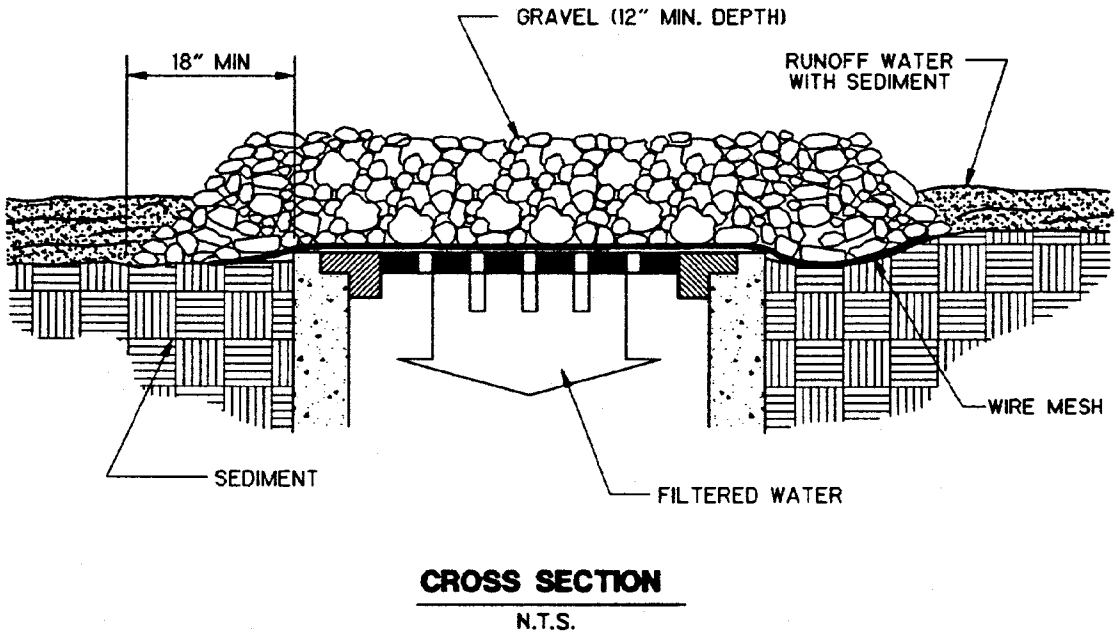


Figure 1-34 Wire Mesh and Gravel Inlet Protection (NCTCOG, 1993)

(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.

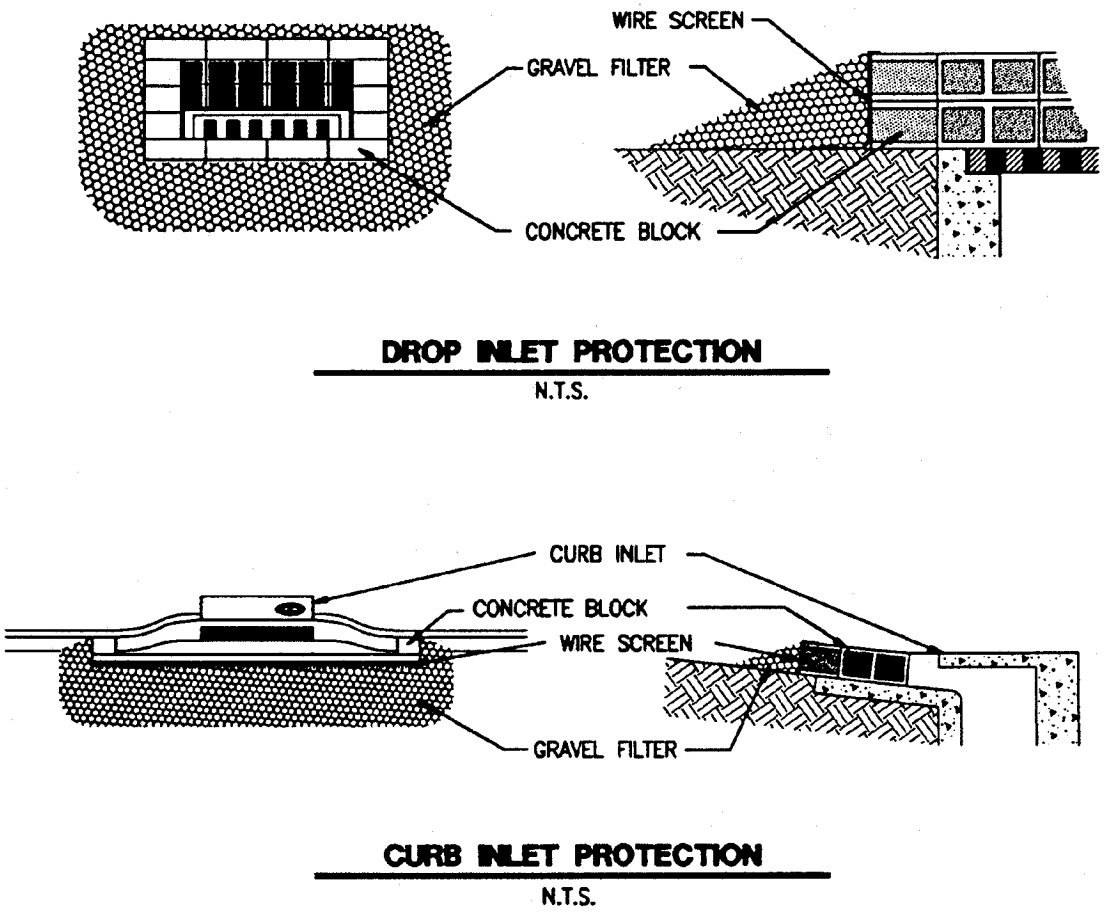


Figure 1-35 Block and Gravel Inlet Protection (NCTCOG, 1993)

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).

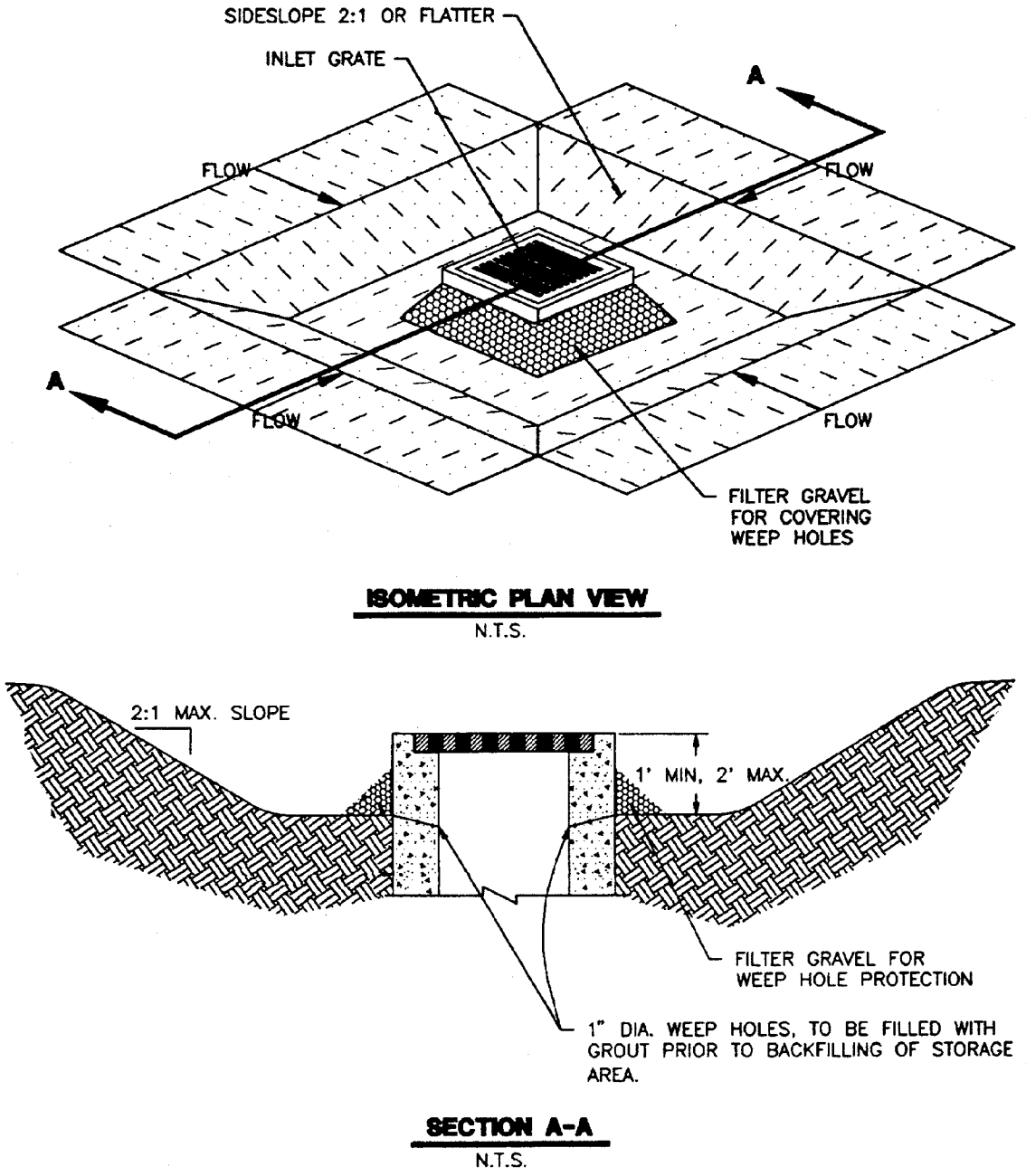


Figure 1-36 Excavated Inlet Protection (NCTCOG, 1993)

(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.

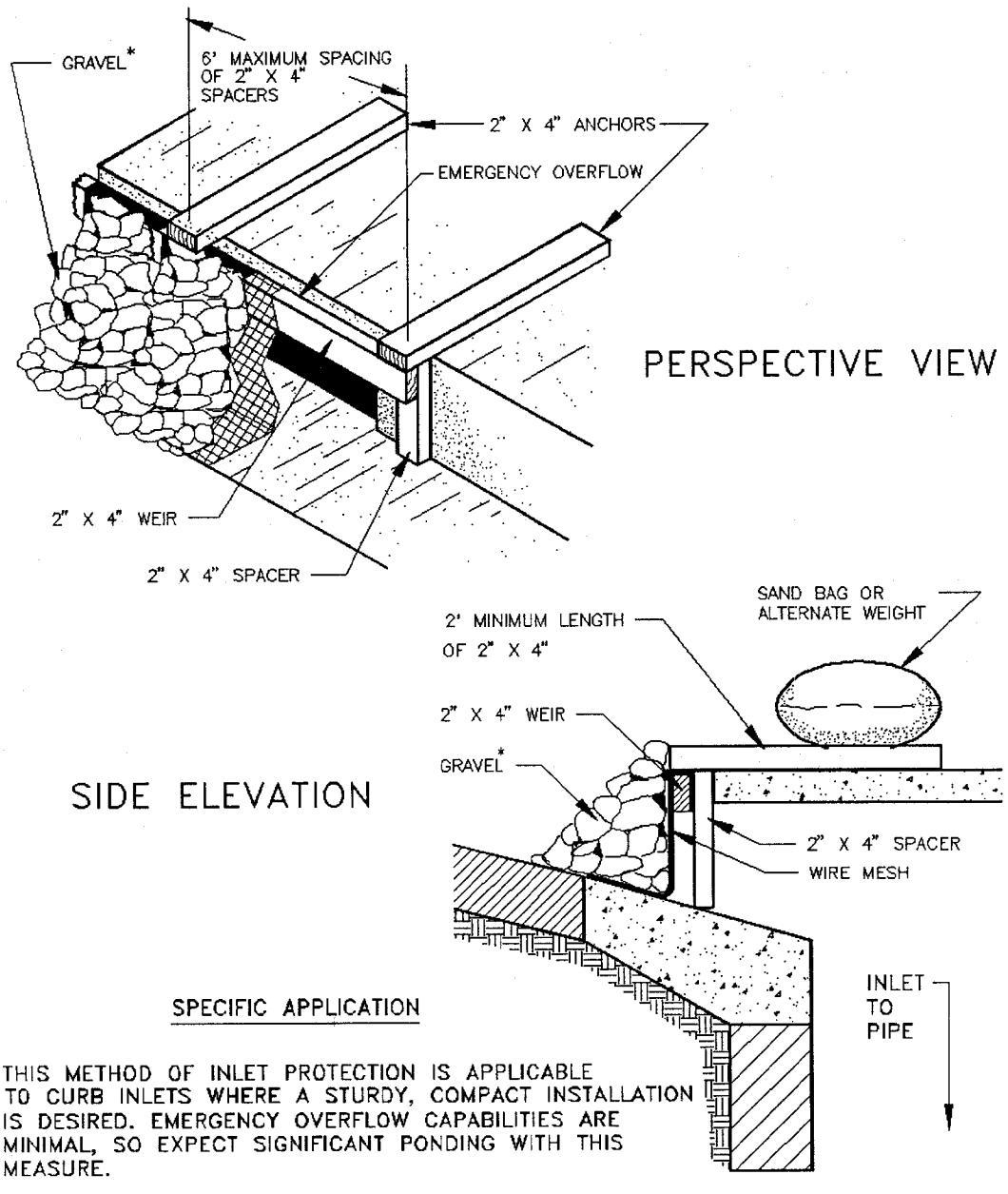


Figure 1-37 Wooden Weir Curb Inlet Protection (VA Dept of Conservation, 1992)

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.

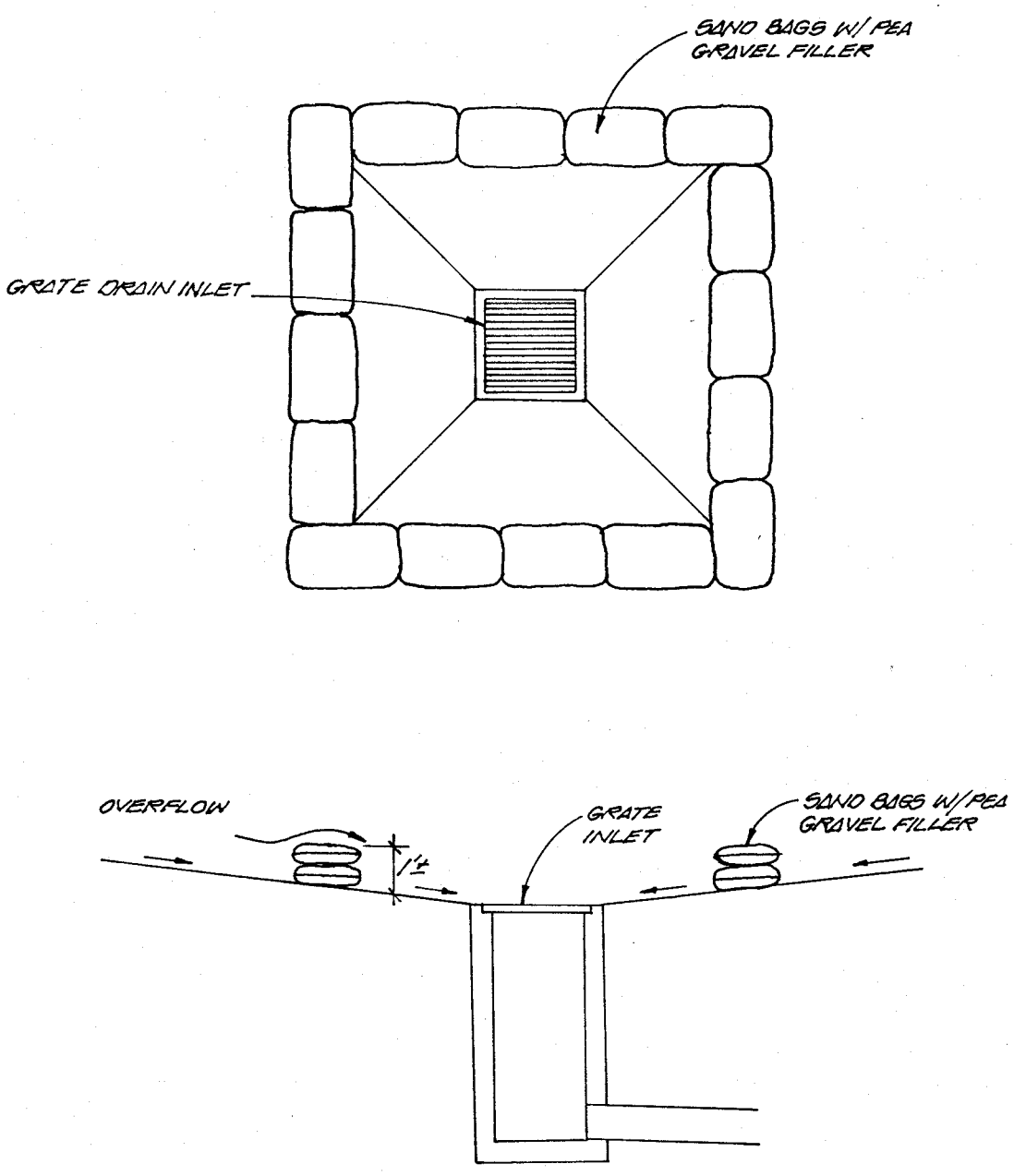


Figure 1-38 Diagram of Bagged Gravel Grate Inlet Protection (Pape-Dawson)

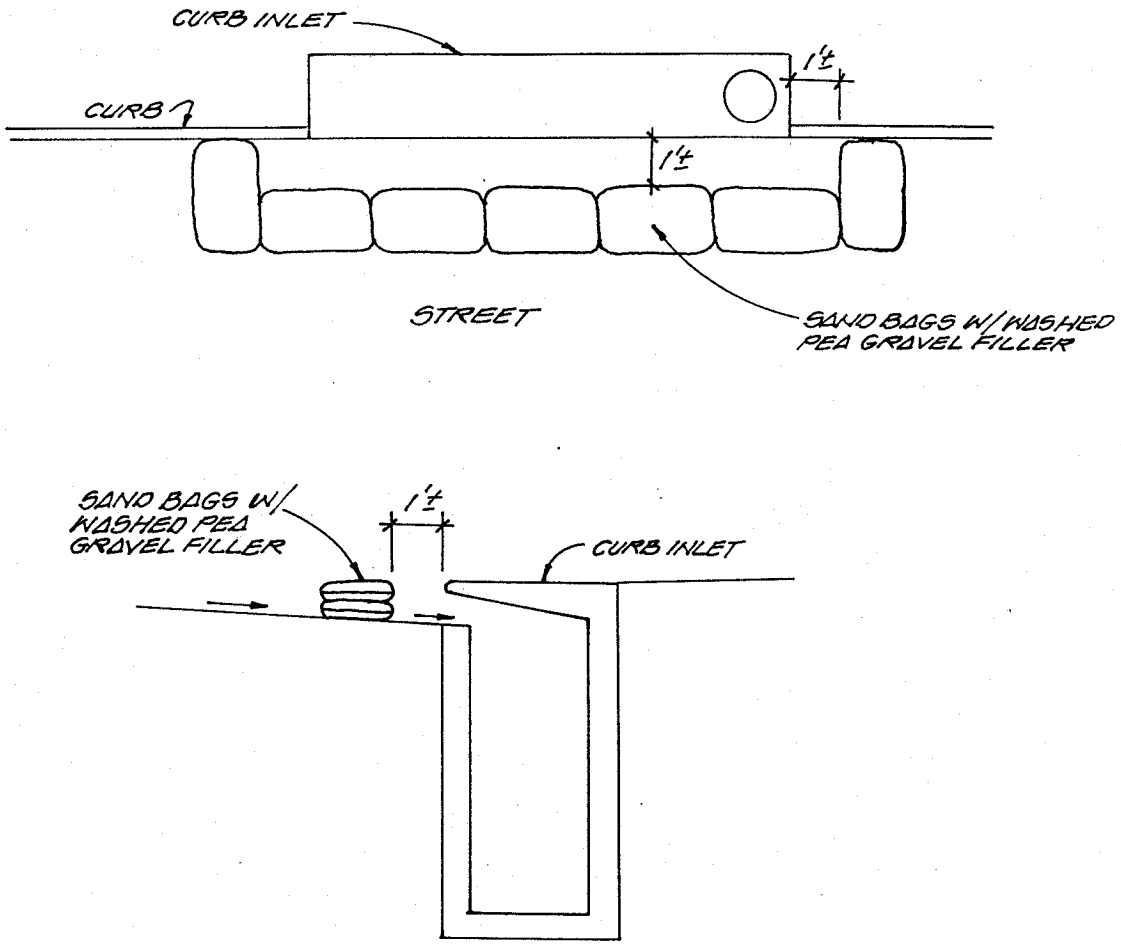


Figure 1-39 Diagram of Bagged Gravel Curb Inlet Protection (Pape-Dawson).

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.

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)(Ii), (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: Nicholas Gower, PE / LJA Engineering Inc.

Date: 09/02/2025

Signature of Customer/Agent

Nicholas Gower

Regulated Entity Name: Veramendi Regional Park #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
    [X] 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

The site is less than 20% impervious cover. Since this is a part of a single family development we are requesting that the we are not required to treat stormwater discharge.

Attachment B – BMP for Upgradient Stormwater

No treatment of this upgradient area is necessary.

Attachment C – BMP for On-Site Stormwater

1) (3) Batch Detention Ponds are proposed to be built on the development as on-site permanent BMPs. These extended detention ponds will treat a total of 2.88 acres of impervious cover.
2) Vegetative Filter Strips would be used to treat a total of 2.23 acres of impervious cover.

Attachment D – BMP for Surface Streams

The project will protect the natural drainage course by constructing the extended detention water quality ponds and vegetative filter strips discussed above and shown on the plans to filter pollutants. The sedimentation/filtration basin proposed has been designed in accordance with TCEQ's TGM RG-348 (2005) which indicated 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

See Attachment "G" attached.

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.

ATTACHMENT "G" – Inspection, Maintenance, Repair and Retrofit Plan

PROJECT NAME Veramendi Regional Park #1

ADDRESS 2300 LF North of the Intersection between Loop 337 & River Rd

CITY, STATE ZIP New Braunfels, Texas 78132

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.

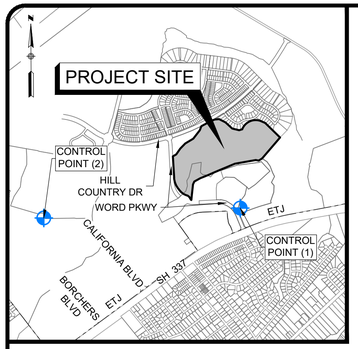
Erosion Control. The pond side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems. Similarly, 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.

Responsible Party for Maintenance	Veramendi PE, Darwin LLC
Address	2168 Oak Run Parkway Ste 101
City, State Zip	New Braunfels, TX 78132
Telephone Number	830 660 4755
Signature of Responsible Party	
Print name of Responsible Party	Garrett Mueller

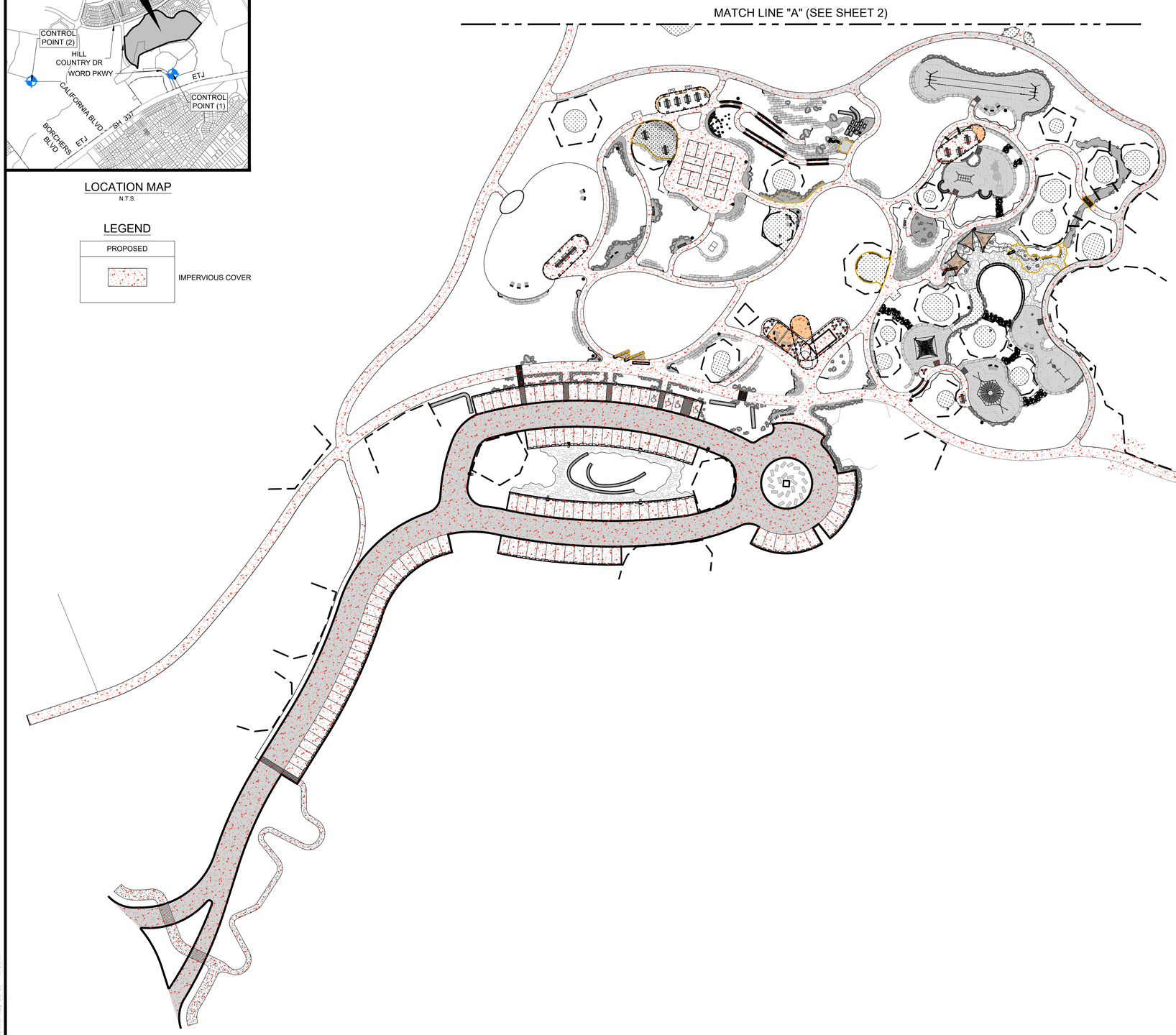


LOCATION MAP
N.T.S.

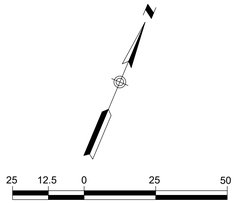
LEGEND

PROPOSED	
	IMPERVIOUS COVER

MATCH LINE "A" (SEE SHEET 2)



MATCH LINE "E" (SEE SHEET 4)



SCALE IN FEET
SCALE: 1"=50'

IMPERVIOUS COVER TABLE	
DESCRIPTION	SQ. FT.
PROPOSED IMPERVIOUS COVER	228,690

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 REGIONAL PARK

IMPERVIOUS COVER EXHIBIT
(SHEET 1 OF 4)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 3/11/2025
DESIGNED BY: NG
DRAWN BY: LG
CHECKED BY: TM
DRAWING NAME: Impervious Cover Exhibit_08823/2025.dwg

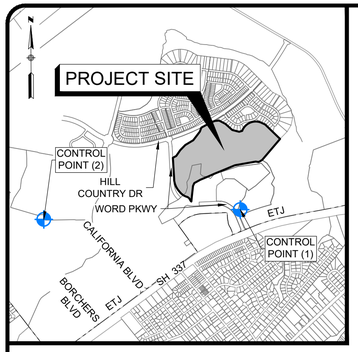
NOT FOR CONSTRUCTION

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

JOB NUMBER: SA3856.2404

SHEET NO. 1
OF 4 SHEETS

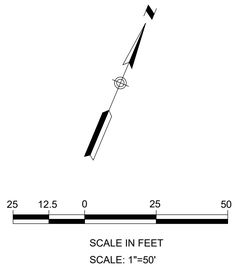
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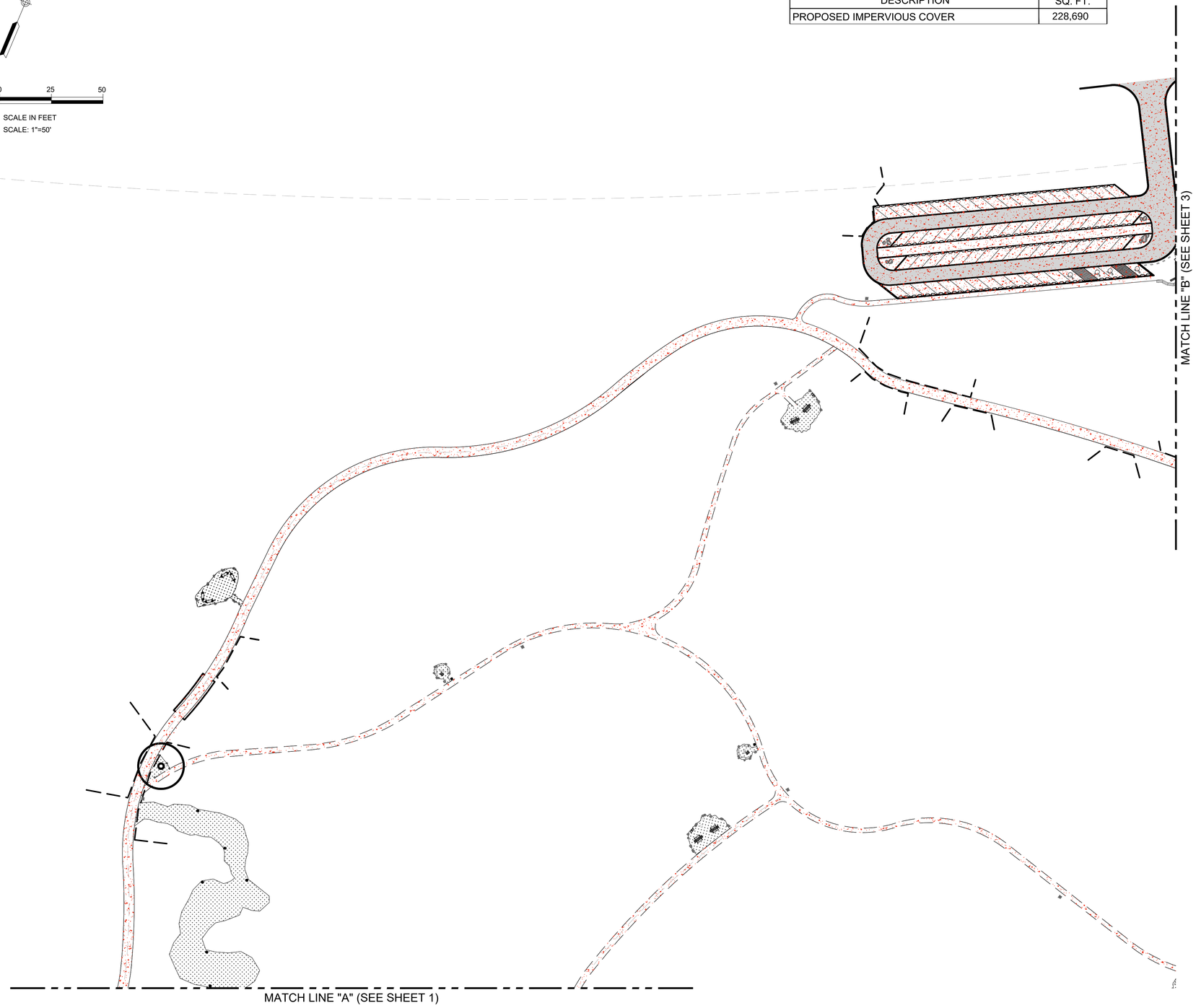
LOCATION MAP
N.T.S.

LEGEND

PROPOSED	
	IMPERVIOUS COVER



IMPERVIOUS COVER TABLE	
DESCRIPTION	SQ. FT.
PROPOSED IMPERVIOUS COVER	228,690



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 . QRZ Z below. V Call before you dig.

VERAMENDI REGIONAL PARK

IMPERVIOUS COVER EXHIBIT
(SHEET 2 OF 4)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/11/2025
DESIGNED BY: NG
DRAWN BY: LG
CHECKED BY: TM
DRAWING NAME: Impervious Cover Exhibit_08252025.dwg

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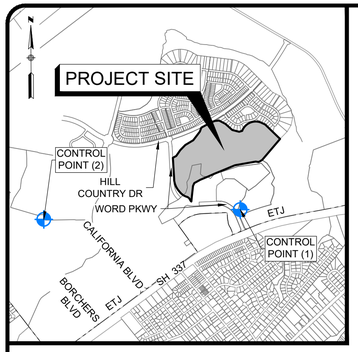
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6DQ $QWRQLR 7H[DV

JOB NUMBER:
SA3856.2404

SHEET NO.

OF 4 SHEETS

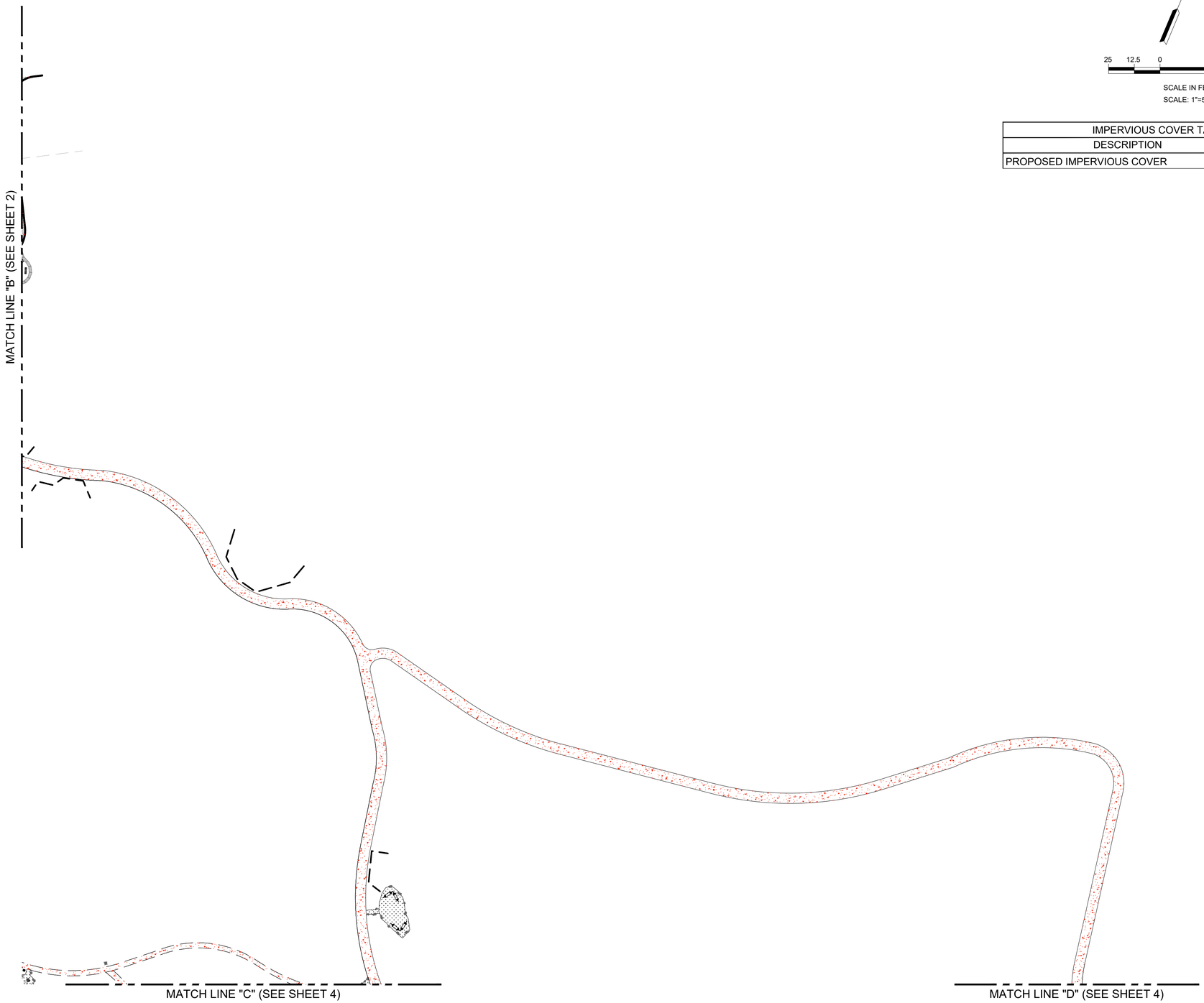
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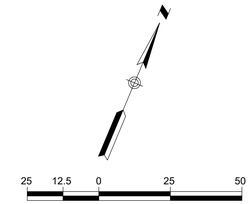


LOCATION MAP
N.T.S.

LEGEND

PROPOSED	
	IMPERVIOUS COVER





SCALE IN FEET
SCALE: 1"=50'

IMPERVIOUS COVER TABLE	
DESCRIPTION	SQ. FT.
PROPOSED IMPERVIOUS COVER	228,690

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

VERAMENDI REGIONAL PARK

IMPERVIOUS COVER EXHIBIT
(SHEET 3 OF 4)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 3/11/2025
DESIGNED BY: NG
DRAWN BY: LG
CHECKED BY: TM
DRAWING NAME: Impervious Cover Exhibit_008252025.dwg

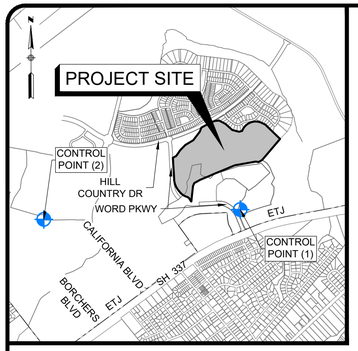
NOT FOR CONSTRUCTION

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

JOB NUMBER: SA3856.2404

SHEET NO. 3 OF 4 SHEETS

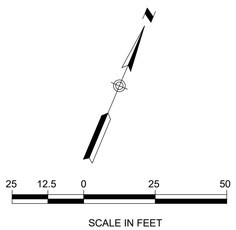
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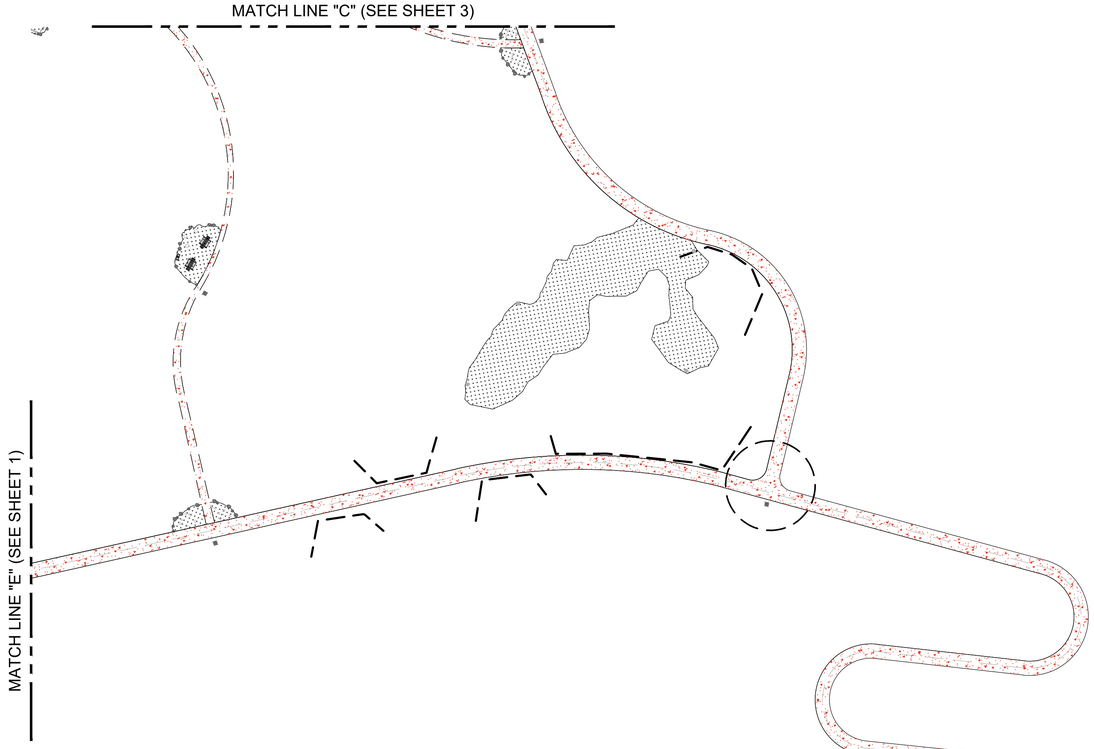
LOCATION MAP
N.T.S.

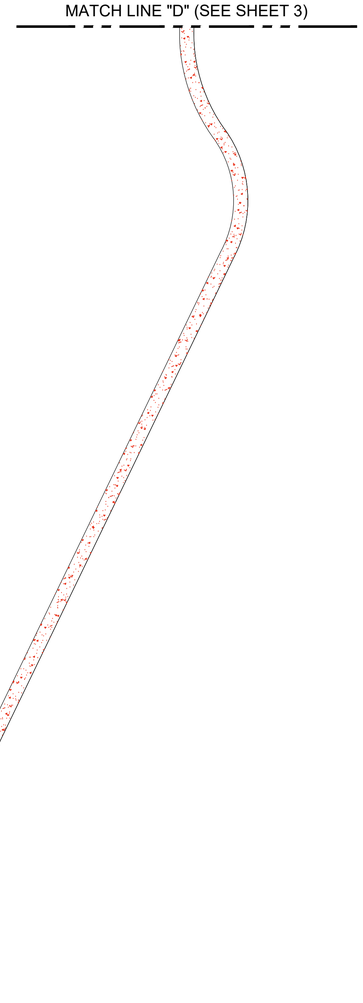
LEGEND

PROPOSED	
	IMPERVIOUS COVER



SCALE IN FEET
SCALE: 1"=50'





IMPERVIOUS COVER TABLE	
DESCRIPTION	SQ. FT.
PROPOSED IMPERVIOUS COVER	228,690

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VERAMENDI REGIONAL PARK

IMPERVIOUS COVER EXHIBIT
(SHEET 4 OF 4)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 3/11/2025
DESIGNED BY: NG
DRAWN BY: LG
CHECKED BY: TM
DRAWING NAME: Impervious Cover Exhibit_008252025.dwg

NOT FOR CONSTRUCTION

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

JOB NUMBER:
SA3856.2404

SHEET NO.
4
OF 4 SHEETS

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Last Modified: Aug 25, 25 - 15:15
Last Plotted: Aug 25, 25 - 15:15

VERAMENDI REGIONAL PARK

CONSTRUCTION DOCUMENT SET

NEW BRAUNFELS, TEXAS 78132

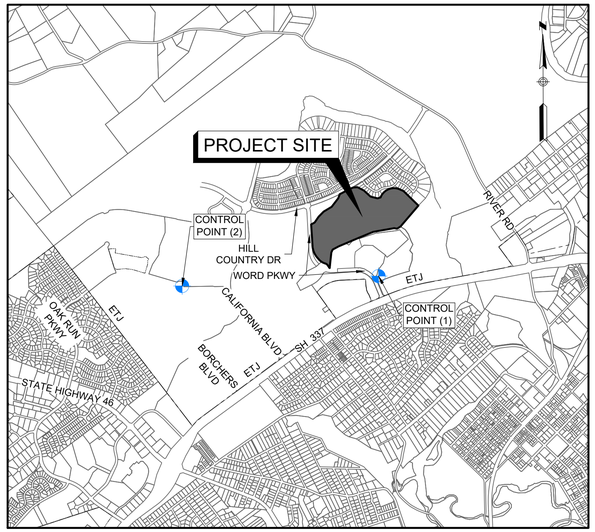
COMAL COUNTY

TCEQ WPAP #:

CONB #: CP2024-154

NOTES:

1. TYPE 3 DEVELOPMENT.
2. 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.
3. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
4. THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONES.
5. A PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO.48091C0435G EFFECTIVE DATE 5/8/2024.
6. 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.
7. FOLLOWING PERMITS ARE REQUIRED PRIOR TO START OF CONSTRUCTION:
   A. CITY OF NEW BRAUNFELS PUBLIC INFRASTRUCTURE PERMIT
   B. NEW BRAUNFELS UTILITY APPROVAL
   C. TCEQ WATER POLLUTION ABATEMENT PLAN APPROVAL
   D. TCEQ SEWAGE COLLECTION SYSTEM APPROVAL
8. WATER SERVICES ARE GOING TO BE FROM WORD PARKWAY PHASE 3 (W-232348).



LOCATION MAP
1" = 2000'

SUBMITTAL DATE: DECEMBER 2024

BENCHMARK INFORMATION:

CONTROL POINT 1: SET ⅝" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
NORTHING: 13815422.49
EASTING: 2242137.79
ELEVATION: 762.23'

CONTROL POINT 2: SET ⅝" IRON ROD W/ ALUMINUM CAP STAMPED "LJA SURVEYING"
NORTHING: 13815147.21
EASTING: 2236647.77
ELEVATION: 811.66'

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 0.9998600195972564.

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

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

THIS INFORMATION PROVIDED BY LJA SURVEYING.

PROPERTY DESCRIPTION

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

DEFERRED SUBMITTALS:

- ONE (1) PREMANUFACTURED RESTROOM UNIT WITH PRE-ENGINEERED METAL PAVILION
- THREE (3) PRE-ENGINEERED METAL PAVILIONS.

REVISIONS			
NO.	DESCRIPTION	BY	DATE

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

DEVELOPER: VERAMENDI PE - DARWIN, 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. SA3856.2404

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

TBG
landscape architects, planners & designers
3232 e cesar chavez st
bldg 1, suite 100
austin, tx 78702
[512] 327-1011
tbgpartners.com

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.

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.

GENERAL SITE NOTES

1. CONTRACTOR SHALL COMPLY WITH THE CITY OF NEW BRAUNFELS BUILDING CODE AND REGULATIONS AND APPLICABLE TECHNICAL SPECIFICATIONS IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR THE CITY OF NEW BRAUNFELS," AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.

2. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION PRIOR TO STARTING CONSTRUCTION.

3. LOCATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON A COMBINATION OF FIELD SURVEYING AND AVAILABLE UTILITY MAPS. CONTRACTOR TO DETERMINE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES (WHETHER SHOWN ON PLANS OR NOT) BY COORDINATING WITH THE RESPECTIVE UTILITY AGENCIES PRIOR TO CONSTRUCTION. THE FOLLOWING ARE NUMBERS OF THE RESPECTIVE AGENCIES:

TESS-STATEWIDE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. . . . . .
1-800-DIG-TESS

IF ANY NUMBER HAVE CHANGED OR ARE INCORRECT, THE CONTRACTOR IS STILL RESPONSIBLE FOR CONTACTING THE AGENCIES.

4. REMOVE ALL ASPHALT AND CONCRETE WITH A SMOOTH SAW-CUT.

5. COMPACT ALL PAVEMENT SUBGRADE TO 95% MAXIMUM DRY DENSITY. COMPACT AREAS TO RECEIVE LANDSCAPING AND/OR GRASS TO 85%.

6. PRIOR TO BIDDING, THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE SITE AND FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE SITE WHICH MAY AFFECT HIS WORK. THIS INCLUDES ACCOUNTING FOR ALL VISIBLE FEATURES WHICH MAY IMPACT THE BID OR THE WORK.

7. CONTRACTOR SHALL CAREFULLY DEMOLISH AND REMOVE ALL ITEMS (ABOVE AND BELOW GROUND) AS REQUIRED TO CONSTRUCT THE PROJECTS AS SHOWN. ALL REMOVAL AND DISPOSAL ACTIVITIES MUST COMPLY WITH APPLICABLE CODES, LAWS AND ORDINANCES.

8. REMOVE AND DISPOSE OF ALL EXCESS EXCAVATION.

9. CONTRACTOR IS RESPONSIBLE FOR ALL VERTICAL AND HORIZONTAL CONTROL.

10. BASE MATERIAL AND INSTALLATION TO BE IN CONFORMANCE WITH ITEM 247 (TxDOT. STD. SPECS. LATEST ED.), TYPE A GRADE 2. COMPACT TO 95% MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR OR 98% MAXIMUM DRY DENSITY OF THE STANDARD PROCTOR.

11. LIME STABILIZED SUBGRADE SHALL BE COMPACTED WITHIN 3% OF OPTIMUM MOISTURE CONTENT TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR.

12. PRIME COAT MATERIAL AND INSTALLATION TO BE CUT-BACK ASPHALT TYPE IN ACCORDANCE WITH ITEM 310 (TxDOT. STD. SPECS. LATEST ED.) (0.2 GAL/S.Y.).

13. ALL ASPHALT MATERIAL AND INSTALLATION TO COMPLY WITH ITEM 340 TYPE "C" (TxDOT. STD. SPECS. LATEST ED.).

14. WHEELSTOPS SHALL BE OF PRE-CAST CONCRETE AND 6' LENGTH. DOWEL PRE-CAST CONCRETE WHEEL STOPS A MINIMUM OF 12" INTO BASE AND PAVEMENT.

15. CONTRACTOR TO FULLY COOPERATE WITH PARKING LOT LIGHT CONTRACTOR.

16. ALL SITE CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED. ALL MATERIALS AND METHODOLOGIES USED SHALL CONFORM WITH ITEM 360 (TXDOT. STD. SPECS, LATEST ED.)

17. FOR ALL STRIPING AND TRAFFIC CONTROL MARKINGS, CONTRACTOR TO USE GLIDDEN TRAFFIC PAINT #63228 OR SHERWIN-WILLIAMS PRO-MAR TRAFFIC MARKING PAINT (SERIES B29W1). COLOR IS WHITE. APPLY TWO COATS.

18. INSTALL "FIRE LANE - TOW AWAY ZONE" SIGNS IN ACCORDANCE WITH THE FIRE MARSHALL'S REQUIREMENTS. PAINT CURBS AS REQUIRED BY FIRE MARSHALL.

19. DIMENSIONS ARE TO THE PAVEMENT EDGE OF THE CURB, FACE OF BUILDING OR PROPERTY LINE, OR STRIPING CENTERLINE.

20. THE CONCRETE DRIVE APPROACHES WITHIN CITY RIGHT-OF-WAY ARE SUBJECT TO CITY INSPECTION.

21. MAXIMUM SIDEWALK CURB CONTROL JOINT SPACING IS 5 FEET.

22. MAXIMUM SIDEWALK CURB EXPANSION JOINT SPACING IS 40 FEET.

23. CONTRACTOR MUST KEEP ALL PERMITS ON JOB SITE.

24. ALL EXISTING SIGNS AND BENCHES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING EXISTING SPRINKLER SYSTEM COMPONENTS WHICH CONFLICT WITH CONSTRUCTION.

26. PROPOSED CURBING TO BE TRANSITIONED SMOOTHLY TO MATCH EXISTING.

27. THE CONSTRUCTION SITE IS TO BE THOROUGHLY CLEANED BY THE CONTRACTOR PRIOR TO ISSUANCE OF PAYMENT BY THE OWNER.

28. CONTRACTOR SHALL INCLUDE ALL COSTS FOR ROUTING PEDESTRIAN AND VEHICULAR TRAFFIC IN THE BID AMOUNT. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CURRENT LEASE HOLDER IN ORDER TO INSURE CONVENIENT ACCESS.

29. 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 COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATION. 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.

30. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.

31. ITEMS OF WORK NOTED "BY OTHERS" SHALL BE CONSIDERED AS NOT PART OF THIS CONTRACT.

32. THE CONTRACTOR SHALL COORDINATE (WITH OWNER/ARCHITECT) WHICH TREES ARE TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ACCORDINGLY AND PROVIDE WATER AS REQUIRED.

33. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.

34. IN CASES WHERE HYDROMULCH HAS BEEN PROPERLY APPLIED, CONTRACTOR TO PROVIDE WATER AS REQUIRED TO ACHIEVE A MINIMUM OF 75% GERMINATION TOWARDS SUBSTANTIAL GROWTH.

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.

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.

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.

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:

- SOME ITEMS ABOVE WILL OCCUR SIMULTANEOUSLY OR MAY OCCUR OUT OF SEQUENCE INDICATED.
- ALL SEQUENCES SUBJECT TO CHANGE.
- COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

VERAMENDI REGIONAL PARK

GENERAL CIVIL NOTES

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PDF
DRAWING NAME: 00_General Notes.dwg

09/04/25

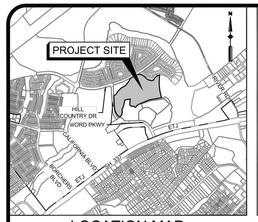
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

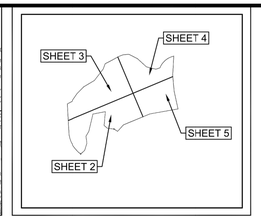
JOB NUMBER: SA3856.2404

SHEET NO.
C0001

K:\LJA3856_KSA Properties\2404 VWP\L06 Site Development Plans\03WC-Sheets\gh_General Notes.dwg
Last Modified: May 22, 25 - 15:49
Last Modified By: gh, KSA Engineers



LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, 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.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386

DATE OF PREPARATION: 6/17/2025

CERTIFICATE OF APPROVAL

APPROVED THIS THE _____ DAY OF _____, 20 _____,

BY THE THE CITY OF NEW BRAUNFELS, TEXAS.

APPROVED FOR ACCEPTANCE

_____ _____
DATE PLANNING AND DEVELOPMENT SERVICES DIRECTOR

_____ _____
DATE CITY ENGINEER

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 BEXAR

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

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

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.

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.

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)

SIDEWALK NOTES:
TEN (10) FOOT SIDEWALK WILL BECONSTRUCTED WITH VERAMENDI - WORD PARKWAY PHIASE 3 PER CITY STANDARDS AT THE TIME OF CONSTRUCTION:
A. WORD PARKWAY

PLAT NOTES:
1. THIS PLAT IS SUBJECT TO THE REQUIREMENTS AND REGULATIONS OF THE VERAMENDI DEVELOPMENT COMPANY DEVELOPMENT AGREEMENT, RECORDED AS DOCUMENT NO. 201509029547 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.

COMMON SPACE NOTES:

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

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N41° 03' 28"W	64.73
L2	N61° 52' 01"E	107.87
L3	N20° 45' 40"E	121.66
L4	N69° 30' 30"E	95.65
L5	N85° 44' 51"E	120.00
L6	N72° 46' 02"E	90.00
L7	S67° 28' 52"W	167.76
L8	S41° 43' 11"W	181.63
L9	N57° 09' 45"W	91.18
L10	N84° 18' 21"W	135.99
L11	N48° 49' 35"W	93.22
L12	S30° 01' 23"W	119.30
L13	S7° 01' 12"E	149.23
L14	S17° 10' 28"W	157.12
L15	S48° 07' 02"W	110.66

CURVE TABLE						
Curve #	Arc	Rad	I	Tan	Chord Bearing	Chord
C1	102.88	380.08	15°30'34"	51.76	N48° 48' 51"W	102.57
C2	365.18	550.49	38°00'28"	189.59	N22° 02' 43"W	358.52
C3	325.83	5550.00	3°21'49"	162.96	N61° 46' 17"E	325.78
C4	396.77	405.39	56°04'36"	215.90	N49° 35' 57"E	381.12

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 REGIONAL PARK #1 SUBDIVISON 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, Co-CEO DATE
VERAMENDI PE - DARWIN, LLC
2168 OAK RUN PARKWAY, SUITE 101
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 (WE), THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HERIN AS THE VERAMENDI REGIONAL PARK #1, 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

SHEET 1 OF 5

K:\SA3856.ASA Properties\2404 Veramendi Replace Park-Plat\310 Subdivision Plat\sh_Plat.dwg
User: hwinnicke Plot Date/Time: Jun. 17, 25 - 14:58:38

PLAT IS CURRENTLY BEING PROCESSED WITH PERMIT #: FP25-0076. PLAT SHEETS WILL BE REPLACED ONCE PLAT IS RECORDED

VERAMENDI REGIONAL PARK
PLAT (1 OF 5)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

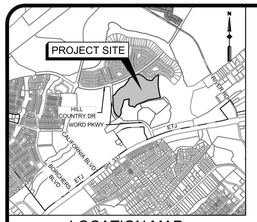
DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Plat.dwg

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

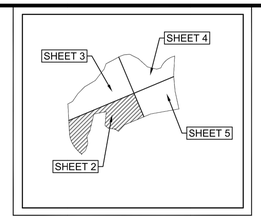
JOB NUMBER:
SA3856.2404

SHEET NO.
C0002

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Plot Scale: 1:1
Last Modified: Jun. 17, 25 - 15:01
Last Plotted: Jun. 17, 25 - 15:01



LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

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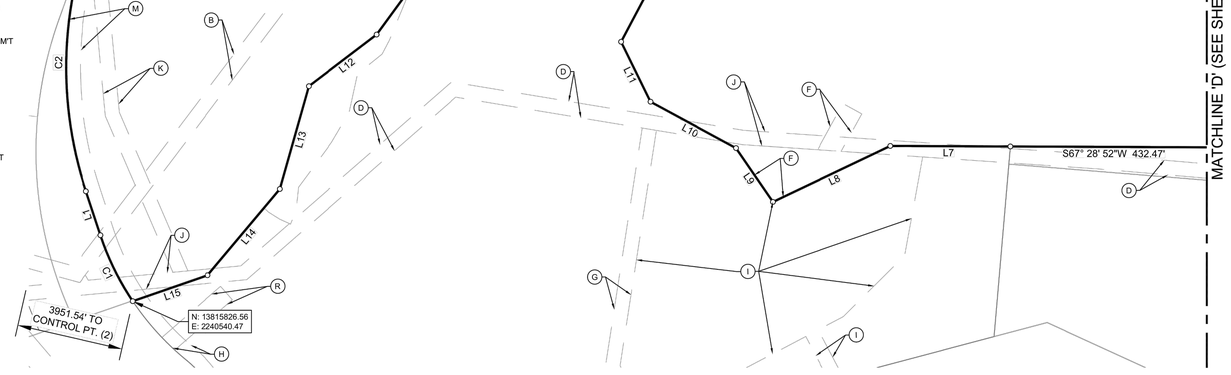
SCALE IN FEET
SCALE 1" = 100'

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
O	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, O.P.R.C.C.Tx.)
(B)	EXIST. 20' SANITARY SEWER ESM'T (VOL. 0692, PG. 0409, O.P.R.C.C.Tx.)
(C)	EXIST. ESM'T - COMAL COUNTY WATER IMPROVEMENT DISTRICT NO. 1D, (DOC# 202106034907, O.P.R.C.C.Tx.)
(D)	VARIABLE WIDTH SANITARY SEWER ESM'T (DOC# 202006021577, O.P.R.C.C.Tx.)
(E)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# 202106002451, O.P.R.C.C.Tx.)
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(G)	20' SANITARY SEWER ESM'T (DOC# 202306002383, O.P.R.C.C.Tx.)
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(O)	20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)
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(R)	25' DRAINAGE & ACCESS ESM'T (DOC# _____, O.P.R.C.C.Tx.)
(S)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# _____, O.P.R.C.C.Tx.)

MATCHLINE 'A' (SEE SHEET 3)

58.175 ACRES
VERAMENDI PE - DARWIN, LLC.
LOT 4, BLOCK 37
DOC# 202006025702
O.P.R.R.P.C.C.TX.



DATE OF PREPARATION: 6/17/2025

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

SEE SHEET 1 OF 5 FOR LINE & CURVE TABLES

SHEET 2 OF 5

PLAT IS CURRENTLY BEING PROCESSED WITH PERMIT #: FP25-0076. PLAT SHEETS WILL BE REPLACED ONCE PLAT IS RECORDED

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386
SHEET 2 OF 5

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Xref Drawings:
Last Modified: Jun. 17, 25 - 15:01
Plotted By: Jun. 17, 25 - 14:59:25

VERAMENDI REGIONAL PARK
PLAT (2 OF 5)

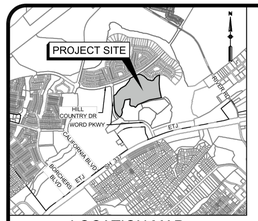
NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Plat.dwg

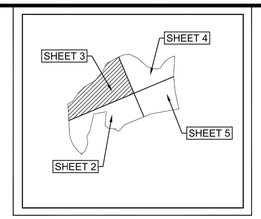
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER:
SA3856.2404

SHEET NO.
C0003



LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

50 25 0 50 100

SCALE IN FEET
SCALE 1" = 100'

LEGEND

●	FOUND 1/2" IRON ROD (UNLESS NOTED)
O	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	EXTRATERITORIAL JURISDICTION
NCB	NEW CITY BLOCK
BLK	BLOCK

(A) EXIST. 20' SANITARY SEWER ESM'T (VOL. 1018, PGS. 700, O.P.R.C.C.Tx.)

(B) EXIST. 20' SANITARY SEWER ESM'T (VOL. 0692, PG. 0409, O.P.R.C.C.Tx.)

(C) EXIST. ESM'T - COMAL COUNTY WATER IMPROVEMENT DISTRICT NO. 1D, (DOC# 202106034907, O.P.R.C.C.Tx.)

(D) VARIABLE WIDTH SANITARY SEWER ESM'T (DOC# 202006021577, O.P.R.C.C.Tx.)

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(F) VARIABLE WIDTH DRAINAGE ESM'T (DOC# 202206051248, O.P.R.C.C.Tx.)

(G) 20' SANITARY SEWER ESM'T (DOC# 202306002383, O.P.R.C.C.Tx.)

(H) 20' UTILITY ESM'T (DOC# 202306002383, O.P.R.C.C.Tx.

(I) VARIABLE WIDTH DRAINAGE EASEMENT (DOC#202306002383, O.P.R.C.C.Tx.)

(J) 20' SANITARY SEWER ESM'T (DOC# 202006021578, O.P.R.C.C.Tx.)

(K) 20' SANITARY SEWER ESM'T (DOC# _____, O.P.R.C.C.Tx.)

(L) VARIABLE WIDTH DRAINAGE ESM'T (DOC# _____, O.P.R.C.C.Tx.)

(M) 20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.

(N) 20' UTILITY SEWER ESM'T (DOC# _____, O.P.R.C.C.Tx.)

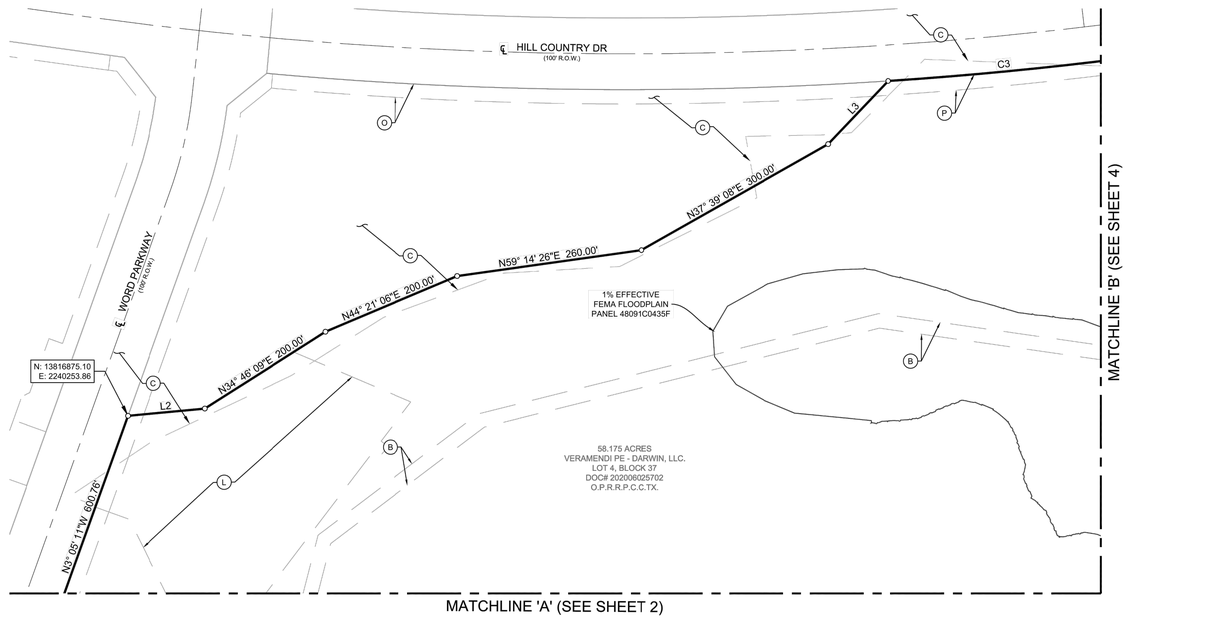
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(P) 20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)

(Q) 20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)

(R) 25' DRAINAGE & ACCESS ESM'T (DOC# _____, O.P.R.C.C.Tx.)

(S) VARIABLE WIDTH DRAINAGE ESM'T (DOC# _____, O.P.R.C.C.Tx.)



DATE OF PREPARATION: 6/17/2025

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

SEE SHEET 1 OF 5 FOR LINE & CURVE TABLES

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386
SHEET 3 OF 5

K:\SA3856 AJA Properties\2400 Veramendi Regional Park-Plat\1010 Subdivision Plat\sh_Plat.dwg
User: twarnicke Plot Date/Time: Jun. 17, 25 - 14:58:01

PLAT IS CURRENTLY BEING PROCESSED WITH PERMIT #: FP25-0076. PLAT SHEETS WILL BE REPLACED ONCE PLAT IS RECORDED

VERAMENDI REGIONAL PARK
PLAT (3 OF 5)

NO.	DESCRIPTION	BY	DATE

REVISIONS

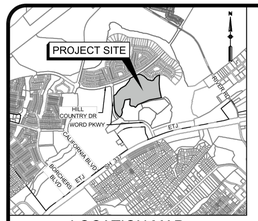
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DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Plat.dwg

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

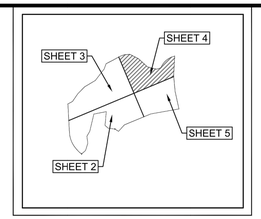
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Last Modified: Jun. 17, 25 - 15:01
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LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

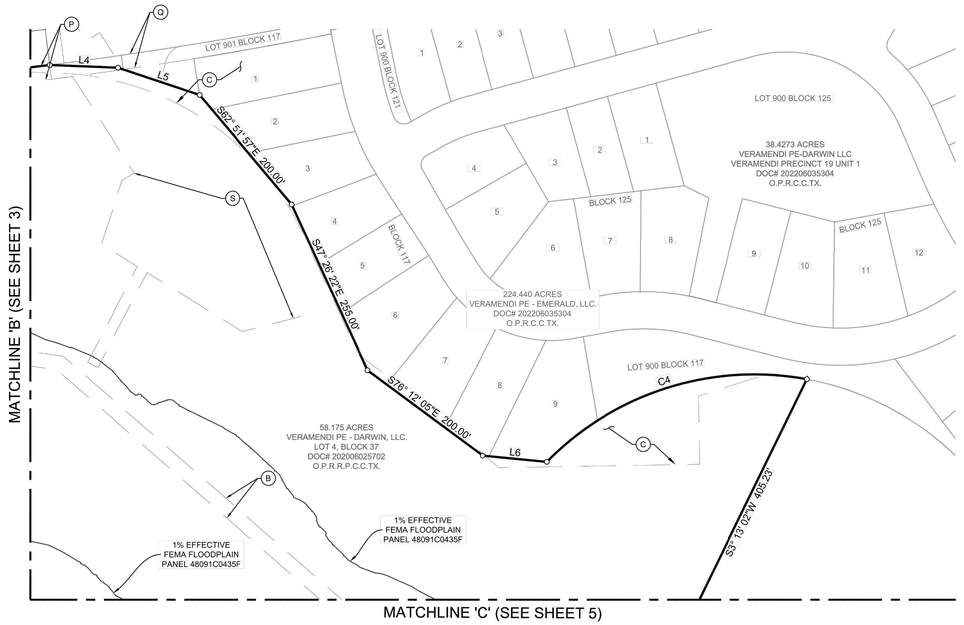
BEING 58.175 ACRES OF LAND, OUT OF THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702, IN THE OFFICIAL PUBLIC RECORD OF COMAL COUNTY, TEXAS, IN THE JUAN MARTIN DE VERAMENDI NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

50 25 0 50 100

SCALE IN FEET
SCALE 1" = 100'

LEGEND

●		FOUND 1/2" IRON ROD (UNLESS NOTED)
O		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
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DATE OF PREPARATION: 6/17/2025

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

SEE SHEET 1 OF 5 FOR LINE & CURVE TABLES

SHEET 4 OF 5

PLAT IS CURRENTLY BEING PROCESSED WITH PERMIT #: FP25-0076. PLAT SHEETS WILL BE REPLACED ONCE PLAT IS RECORDED

LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
FRN-F-1386
SHEET 4 OF 5

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Last Modified: Jun. 17, 25 – 15:01
Last Plotted: Jun. 17, 25 – 14:59:49

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VERAMENDI REGIONAL PARK
PLAT (4 OF 5)

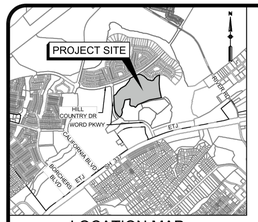
NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
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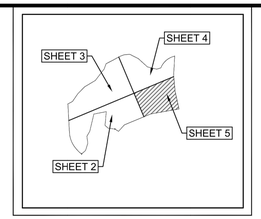
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LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.2404

SHEET NO.
C0005



LOCATION MAP
1" = 3500'



INDEX MAP
NOT TO SCALE

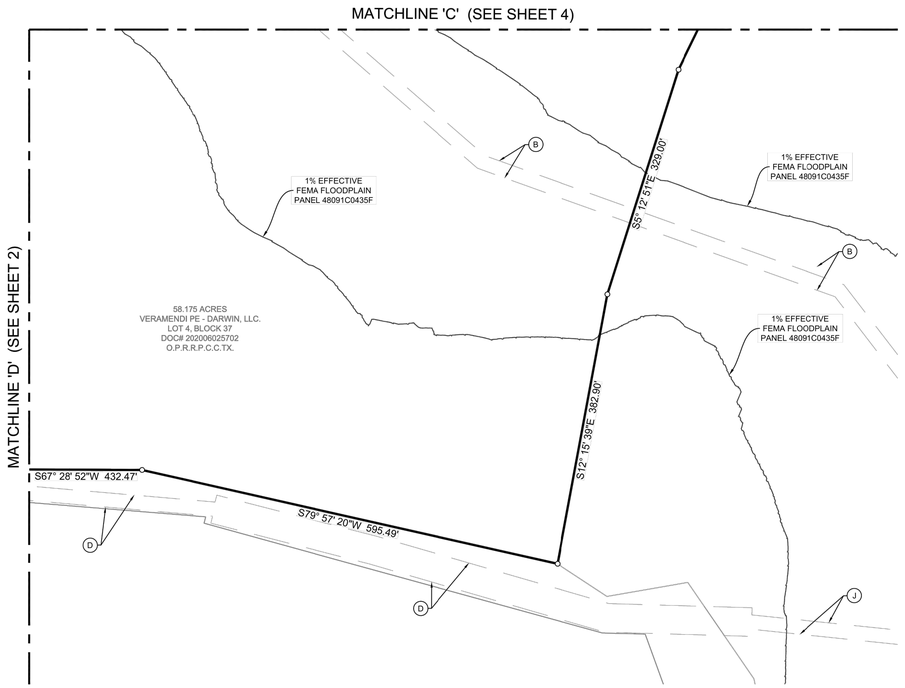
SUBDIVISION PLAT OF VERAMENDI REGIONAL PARK #1

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(B)	EXIST. 20' SANITARY SEWER ESM'T (VOL. 0692, PG. 0409, O.P.R.C.C.Tx.)
(C)	EXIST. ESM'T - COMAL COUNTY WATER IMPROVEMENT DISTRICT NO. 1D, (DOC# 202106034907, O.P.R.C.C.Tx.)
(D)	VARIABLE WIDTH SANITARY SEWER ESM'T (DOC# 202006021577, O.P.R.C.C.Tx.)
(E)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# 202106002451, O.P.R.C.C.Tx.)
(F)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# 202206051248, O.P.R.C.C.Tx.)
(G)	20' SANITARY SEWER ESM'T (DOC# 202306002383, O.P.R.C.C.Tx.)
(H)	20' UTILITY ESM'T (DOC# 202306002383, O.P.R.C.C.Tx.
(I)	VARIABLE WIDTH DRAINAGE EASEMENT (DOC#202306002383, O.P.R.C.C.Tx.)
(J)	20' SANITARY SEWER ESM'T (DOC# 202006021578, O.P.R.C.C.Tx.)
(K)	20' SANITARY SEWER ESM'T (DOC# _____, O.P.R.C.C.Tx.)
(L)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# _____, O.P.R.C.C.Tx.)
(M)	20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.
(N)	20' UTILITY SEWER ESM'T (DOC# _____, O.P.R.C.C.Tx.)
(O)	20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)
(P)	20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)
(Q)	20' UTILITY EASEMENT (DOC# _____, O.P.R.C.C.Tx.)
(R)	25' DRAINAGE & ACCESS ESM'T (DOC# _____, O.P.R.C.C.Tx.)
(S)	VARIABLE WIDTH DRAINAGE ESM'T (DOC# _____, O.P.R.C.C.Tx.)



DATE OF PREPARATION: 6/17/2025

PLAT NOTES APPLY TO EVERY PAGE OF THIS MULTIPLE PAGE PLAT

SEE SHEET 1 OF 5 FOR LINE & CURVE TABLES

SHEET 5 OF 5

LJA Engineering, Inc.
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Phone 210.503.2700
LJA.COM
FRN-F-1386
SHEET 5 OF 5

PLAT IS CURRENTLY BEING PROCESSED WITH PERMIT #: FP25-0076. PLAT SHEETS WILL BE REPLACED ONCE PLAT IS RECORDED

VERAMENDI REGIONAL PARK
PLAT (5 OF 5)

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Plat.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: SA3856.2404

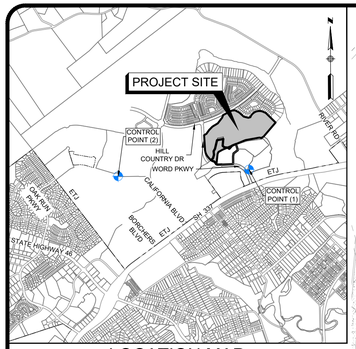
SHEET NO.
C0006

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User: hwormcke Plot Date/Time: Jun. 17, 25 – 14:59:05

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User: hwormcke Plot Date/Time: Jun. 17, 25 – 15:01
Last Modified: Jun. 17, 25 – 15:01
Plot Scale: 1=1 Plot Offset: 0.00, 0.00

VERAMENDI REGIONAL PARK

DRAINAGE AREA MAP

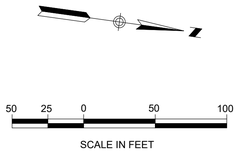


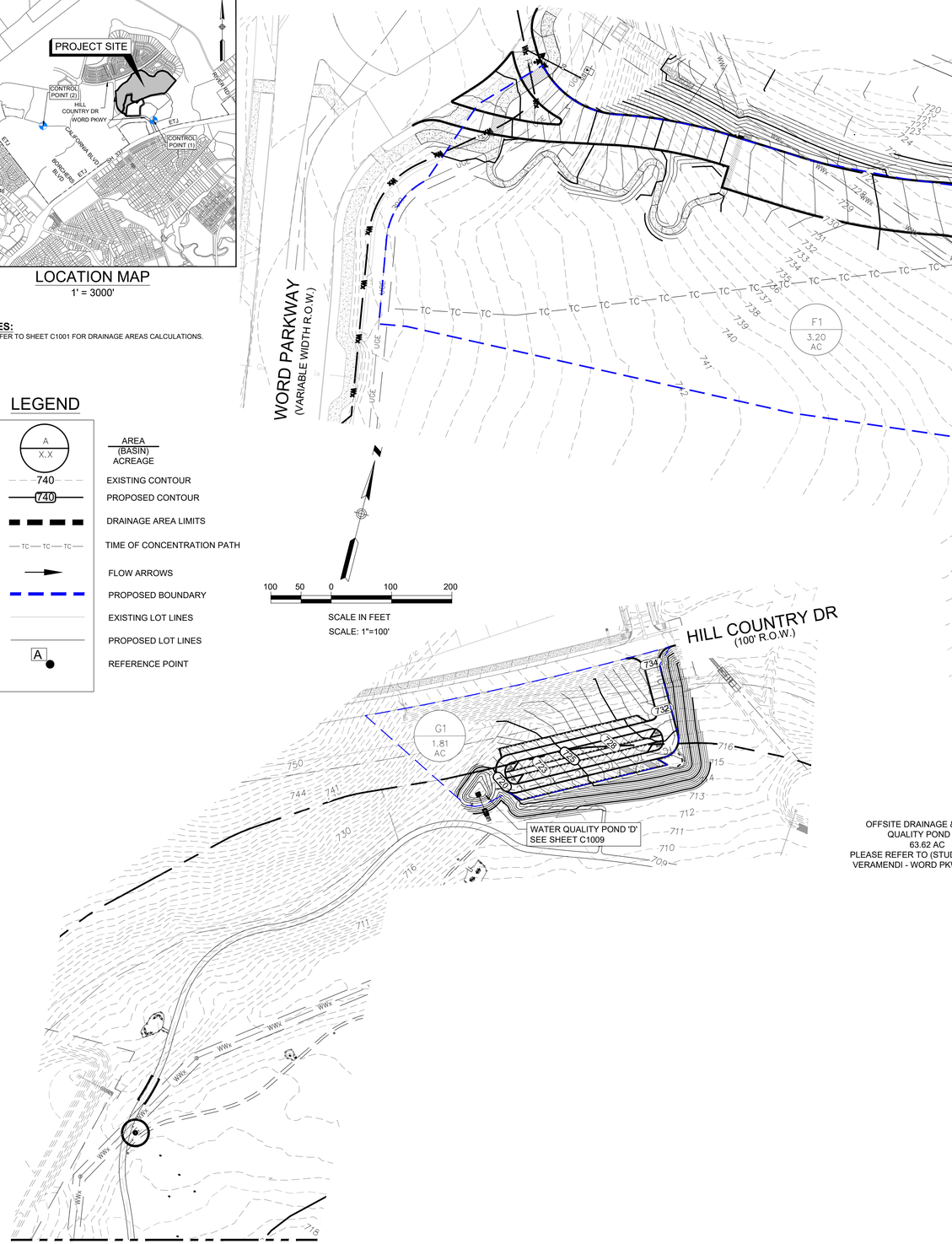
LOCATION MAP
1" = 3000'

NOTES:
1. REFER TO SHEET C1001 FOR DRAINAGE AREAS CALCULATIONS.

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





OFFSITE DRAINAGE & WATER QUALITY POND - E1
63.62 AC
PLEASE REFER TO (STUDY POINT 12)
VERAMENDI - WORD PKWY PHASE 2

MATCH LINE 'A' (SEE THIS SHEET)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: lid_02drainage area map.dwg

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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TBPE No. F-1386

JOB NUMBER:
SA3856.2404

SHEET NO.
C1000

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Plotted: Sep. 02, 25 - 18:12
Last Modified: Sep. 02, 25 - 18:12
Xref Files: Base, Xs, Ref, Xr, Xl, Xp, Xc

Veramendi Precinct_Parks 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	0.24	55	4.08	1.5	8.8	Unpaved	0	0.5	16.13	0.0	0	6	0.0	**10.0**	**6.0**
	B1	0.24	55	4.08	1.5	8.8	Unpaved	0	0.5	16.13	0.0	0	6	0.0	**10.0**	**6.0**
	B2	0.24	100	4.08	2.0	12.6	Paved	90	1.0	20.32	0.7	0	6	0.0	**13.4**	**8.0**
	B3	0.24	100	4.08	2.0	12.6	Paved	167	2.0	20.32	1.0	0	6	0.0	**13.6**	**8.2**
	B4	0.24	100	4.08	3.0	10.7	Unpaved	90	3.0	16.13	0.5	0	6	0.0	**11.3**	**6.8**
	B5	0.24	30	4.08	2.0	5.0	Unpaved	0	0.5	16.13	0.0	0	6	0.0	**10.0**	**6.0**
	B6	0.24	100	4.08	2.0	12.6	Paved	17	2.0	20.32	0.1	0	6	0.0	**12.7**	**7.6**
	B7	0.24	45	4.08	1.0	8.8	Unpaved	0	0.5	16.13	0.0	0	6	0.0	**10.0**	**6.0**
	B8	0.24	40	4.08	1.0	8.0	Unpaved	0	0.5	16.13	0.0	0	6	0.0	**10.0**	**6.0**
	B9	0.24	100	4.08	3.7	9.9	Paved	183	4.0	20.32	0.8	0	6	0.0	**10.6**	**6.4**
	C1	0.24	24	4.08	2.0	5.0	Paved	548	1.0	20.32	4.5	0	6	0.0	**10.0**	**6.0**
	D1	0.24	100	4.08	1.0	16.7	Unpaved		1.0	16.13	0.0	500	6	1.4	**18.1**	**10.9**
1	E1	PLEASE REFER TO VERAMENDI PKWY PHASE 2 (STUDY POINT 12)													**18.6**	**11.2**
	B1+B2+B3+B4+B5+B6+B7+B8+B9+C1+D1	0.24	50	4.08	1.0	9.6	Paved	0	2.0	20.32	0.0	459	6	1.3	**10.9**	**6.5**
	F1	0.24	100	4.08	4.8	8.9	Unpaved	507	4.7	16.13	2.4	0	6	0.0		
							Paved	47	2.7	20.32	0.2				**11.6**	**7.0**
	F2	0.24	5	4.08	2.0	5.0	Unpaved	0	0.5	16.13	0.0	100	6	0.3	**10.0**	**6.0**
	A1+F1+F2	0.24	100	4.08	4.8	8.9	Unpaved	507	4.7	16.13	2.4	0	6	0.0		
							Paved	47	2.7	20.32	0.2				**11.6**	**7.0**
	G1	0.016	150	4.08	2.7	5.0	Paved	303	3.3	20.32	1.4	0	6	0.0	**10.0**	**6.0**
		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 $T_{sc}=\frac{L_{sc}}{3600KS_{sc}^{0.5}}$					Eq 5.4.3 $T_{ch}=\frac{L_{ch}}{3600*V}$			Eq 5.4 $T_t+T_{sc}+T_{ch}$	

Veramendi Precinct_Parks 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	0.10	0.34	0.40	0.44	0.47	0.51	5.05	7.50	9.12	10.38	11.70	0.2	0.3	0.4	0.5	0.6
	B1	0.11	0.46	0.52	0.57	0.60	0.65	5.05	7.50	9.12	10.38	11.70	0.3	0.4	0.6	0.7	0.8
	B2	0.28	0.38	0.45	0.49	0.52	0.56	4.48	6.62	8.01	9.11	10.26	0.5	0.8	1.1	1.3	1.6
	B3	0.51	0.41	0.47	0.51	0.55	0.59	4.45	6.57	7.94	9.04	10.19	0.9	1.6	2.1	2.5	3.1
	B4	0.23	0.31	0.37	0.41	0.44	0.48	4.82	7.15	8.68	9.88	11.13	0.3	0.6	0.8	1.0	1.2
	B5	0.03	0.44	0.51	0.55	0.59	0.63	5.05	7.50	9.12	10.38	11.70	0.1	0.1	0.2	0.2	0.2
	B6	0.08	0.41	0.47	0.51	0.55	0.59	4.59	6.80	8.23	9.36	10.54	0.1	0.3	0.3	0.4	0.5
	B7	0.08	0.46	0.53	0.57	0.61	0.65	5.05	7.50	9.12	10.38	11.70	0.2	0.3	0.4	0.5	0.6
	B8	0.04	0.29	0.35	0.39	0.42	0.46	5.05	7.50	9.12	10.38	11.70	0.1	0.1	0.1	0.2	0.2
	B9	0.57	0.64	0.71	0.76	0.80	0.84	4.94	7.34	8.92	10.15	11.44	1.8	3.0	3.9	4.6	5.5
	C1	0.70	0.36	0.42	0.46	0.49	0.53	5.05	7.50	9.12	10.38	11.70	1.3	2.2	2.9	3.6	4.4
	D1	2.25	0.33	0.39	0.44	0.47	0.51	3.85	5.64	6.79	7.72	8.69	2.9	5.0	6.7	8.1	9.9
1	E1	63.62											139.3	238.5	305.1		450.8
	B1+B2+B3+B4+B5+B6+B7+B8+B9+C1+D1	4.88	0.39	0.45	0.49	0.53	0.57	4.89	7.26	8.81	10.03	11.30	9.2	16.0	21.3	25.8	31.4
	F1	3.20	0.40	0.46	0.50	0.54	0.58	4.77	7.07	8.58	9.76	11.00	6.0	10.4	13.8	16.7	20.3
	F2	0.06	0.60	0.67	0.72	0.75	0.80	5.05	7.50	9.12	10.38	11.70	0.2	0.3	0.4	0.5	0.6
	A1+F1+F2	3.36	0.40	0.46	0.51	0.54	0.58	4.77	7.07	8.58	9.76	11.00	6.4	11.0	14.6	17.6	21.4
	G1	1.81	0.49	0.56	0.60	0.64	0.68	5.05	7.50	9.12	10.38	11.70	4.5	7.6	10.0	12.0	14.5
Eq 5.3.1 $Q=CIA$																	

VERAMENDI REGIONAL PARK
DRAINAGE AREAS CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_drainage area map.dwg

09/04/25

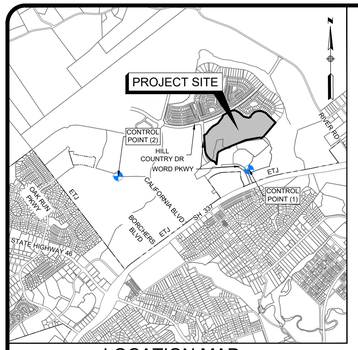
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

JOB NUMBER: SA3856.2404

SHEET NO.
C1001

K:\LJA3856_AGA Properties\Land_WIP_LDS Site Development Plans\DWG Sheets\sh_Drainage area map.dwg
Xref Drawings:
Last Modified: Sep. 02, 25 - 08:12
Plotted By: Priscilla Flores



LOCATION MAP
1" = 3000'

NOTE:

1. ALL DRAIN BASINS & INLETS ARE ADS NYLOPLAST DRAINS OR APPROVED EQUAL.
2. OUTFALL STRUCTURE TO FOLLOW DETAIL "A" FOR 18" PIPE AND DETAIL "B" FOR 12" PIPE
3. TYPICAL EARTHEN CHANNEL TO FOLLOW DETAIL "C"

C1
CONTRACTOR TO TIE
PERFORATED PIPE
INTO STORM DRAIN
MULCH ELEVATION=716.83
INV OUT=714.00

39.21 L.F. 12" HDPE @ 0.51%

BEGIN OUTFALL STRUCTURE
INV IN=713.80

EARTHEN CHANNEL SEE DETAIL "C"

BEGIN EARTHEN CHANNEL
MATCH EXISTING ELEV: 713.50

B2-4
CONTRACTOR TO TIE
PERFORATED PIPE
INTO STORM DRAIN
SAND ELEVATION=720.33
INV OUT=712.90

B3-1
CONTRACTOR TO TIE
PERFORATED PIPE
INTO STORM DRAIN
MULCH ELEVATION=717.15
INV OUT=712.68

B2-2
18" X 18"DB
W/ GRATE INLET
RIM=715.75
INV IN=712.46
INV IN=712.46
INV OUT=712.46

43.80 L.F. 12" HDPE @ 0.50%

58.69 L.F. 12" HDPE @ 0.50%

29.15 L.F. 12" HDPE @ 0.50%

106.62 L.F. 12" HDPE @ 0.50%

B2-3
18"X18" DB
W/ GRATE INLET
RIM=717.00
INV IN=712.61
INV OUT=712.61

B2-1
18"X18" DB
RIM=714.39
INV IN=711.93
INV OUT=711.93

MATCH LINE (SEE SHEET C1003)

B1-5
24" X 24" DB
RIM=718.00
INV IN=712.83
INV IN=713.33
INV OUT=712.83

105.83 L.F. 12" HDPE @ 0.50%

BEGIN OUTFALL STRUCTURE
INV IN=710.49

B1-3
CONTRACTOR TO TIE
PERFORATED PIPE
INTO STORM DRAIN
MULCH ELEVATION=716.83
INV IN=712.13
INV OUT=712.13

72.15 L.F. 18" HDPE @ 0.50%

52.84 L.F. 18" HDPE @ 1.01%

112.97 L.F. 18" HDPE @ 0.80%

31.97 L.F. 18" HDPE @ 1.31%

BEGIN EARTHEN CHANNEL
MATCH POND 'B' ELEV: 710.06

EARTHEN CHANNEL SEE DETAIL "D"

B1-1
24" X 24" DB
RIM=713.81
INV IN=710.90
INV IN=711.40
INV OUT=710.90

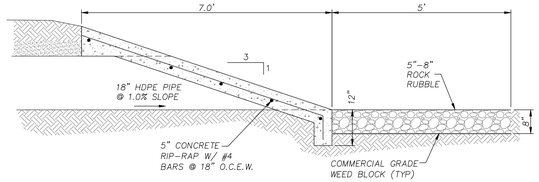
B1-2
24" X 24" DB
RIM=715.60
INV IN=711.80
INV OUT=711.80

68.00 L.F. 18" HDPE @ 0.50%

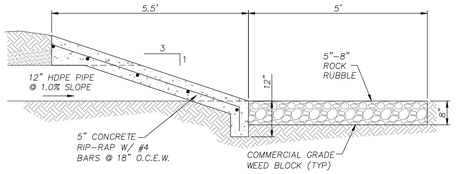
B1-4
CONTRACTOR TO TIE
PERFORATED PIPE
INTO STORM DRAIN
MULCH ELEVATION=717.75
INV IN=712.47
INV OUT=712.47

CONTINUE 1% GRADE TO EXISTING GROUND
TO ENSURE POSITIVE DRAINAGE

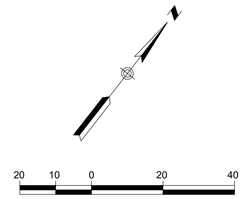
WATER QUALITY POND 'B'
SEE SHEET C1008



DETAIL "A"
SCALE: N.T.S.



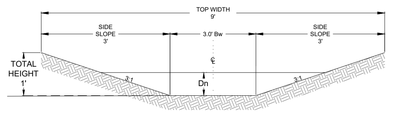
DETAIL "B"
SCALE: N.T.S.



SCALE IN FEET
SCALE: 1" = 20'

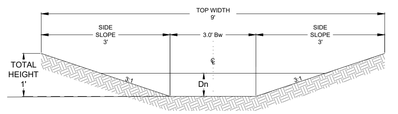
LEGEND

DB	DRAIN BASIN
740	EXISTING CONTOUR
740	PROPOSED CONTOUR



EARTHEN CHANNEL DETAIL "C"

TOTAL DEPTH = 1'
S = 0.50%
Q(100)= 1.5 CFS
V100 = 1.18 FT/S
D (100)= 0.32'
N= 0.035



EARTHEN CHANNEL DETAIL "D"

TOTAL DEPTH = 1'
S = 1.04%
Q(100)= 17.4 CFS
V100 = 3.13 FT/S
D (100)= 0.95'
N= 0.035

B1-5 GRATE INLET CALCULATION

$Q = Cw(P^{2/3}) \times S$
Q(100)=2.4 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = 1.37 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

B2-3 GRATE INLET CALCULATION

$Q = Cw(P^{2/3}) \times S$
Q(100)=0.3 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = .342 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

B2-2 GRATE INLET CALCULATION

$Q = Cw(P^{2/3}) \times S$
Q(100)=0.3 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = .342 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

VERAMENDI REGIONAL PARK

STORM SEWER LAYOUT (SHEET 1 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/30/2025
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PDF
DRAWING NAME: ...\C1002_StormSewer.dwg

09/04/25

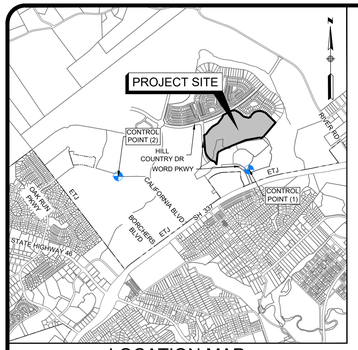
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

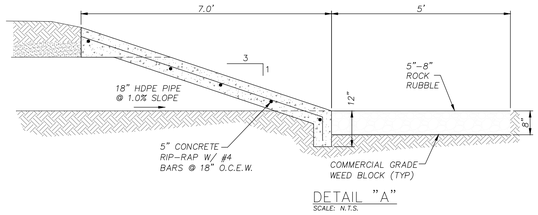
JOB NUMBER:
SA3856.2404

SHEET NO.
C1002

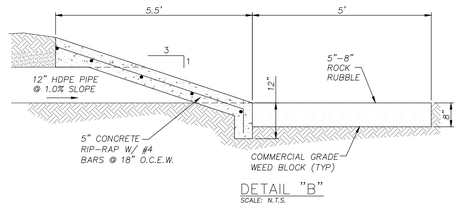
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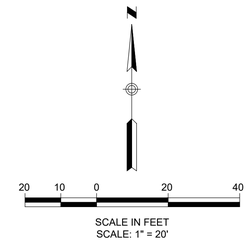
LOCATION MAP
1" = 3000'



DETAIL "A"
SCALE: N.T.S.



DETAIL "B"
SCALE: N.T.S.



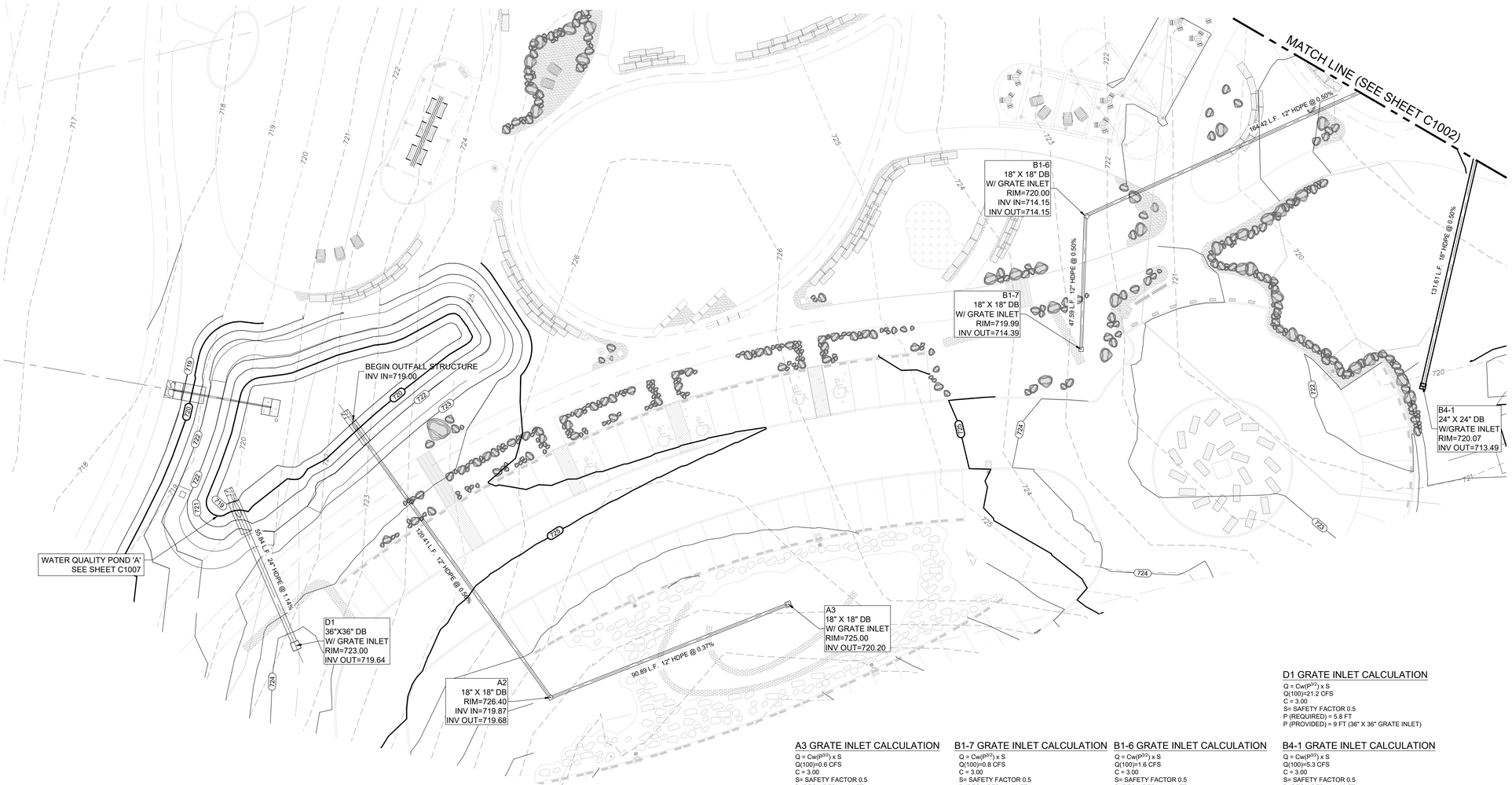
SCALE IN FEET
SCALE: 1" = 20'

LEGEND

DB	DRAIN BASIN
740	EXISTING CONTOUR
740	PROPOSED CONTOUR

NOTE:

1. ALL DRAIN BASINS & INLETS ARE ADS NYLOPLAST DRAINS OR APPROVED EQUAL.
2. DB TO BE A MINIMUM OF 3' UNDER PAVEMENT.



D1 GRATE INLET CALCULATION

$Q = Cw(P^{3/2}) \times S$
Q(100)=21.2 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = 5.8 FT
P (PROVIDED) = 9 FT (36" X 36" GRATE INLET)

A3 GRATE INLET CALCULATION

$Q = Cw(P^{3/2}) \times S$
Q(100)=0.6 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = .68 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

B1-7 GRATE INLET CALCULATION

$Q = Cw(P^{3/2}) \times S$
Q(100)=0.8 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = .66 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

B1-6 GRATE INLET CALCULATION

$Q = Cw(P^{3/2}) \times S$
Q(100)=1.6 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = 1.04 FT
P (PROVIDED) = 3 FT (18" X 18" GRATE INLET)

B4-1 GRATE INLET CALCULATION

$Q = Cw(P^{3/2}) \times S$
Q(100)=5.3 CFS
C = 3.00
S= SAFETY FACTOR 0.5
P (REQUIRED) = 3.53 FT
P (PROVIDED) = 4 FT (24" X 24" GRATE INLET)

VERAMENDI REGIONAL PARK
STORM SEWER LAYOUT (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/30/2025
DESIGNED BY: NG
DRAWN BY: TM
CHECKED BY: PGF
DRAWING NAME: s:\...\StormSewer.dwg

09/04/25

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

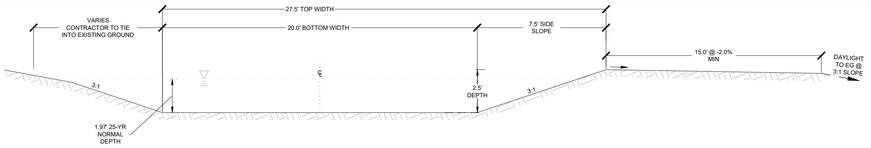
JOB NUMBER: SA3856.2404

SHEET NO. C1003

K:\SA3856_EIA Properties\Z404 WPI V439 Site Development Plans\DWG\Sheets\sht_StormSewer.dwg
Plotted: Aug 27, 25 - 17:58
Last Modified: Aug 27, 25 - 17:56
Last Modified By: PGF

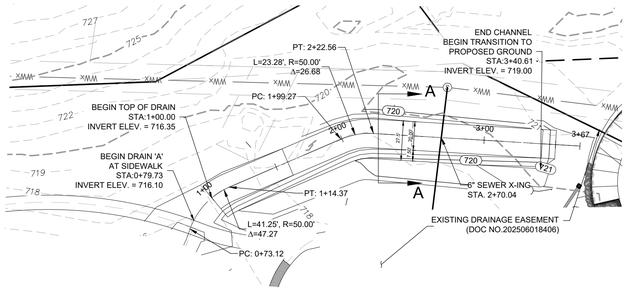
DRAINAGE & GRADING NOTES:

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. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
4. 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.
5. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH "A" AS SHOWN IN THE PROFILE.
6. ALL RCP SHALL BE AASHTO M170 CLASS III RCP.
7. ALL WORK SHALL BE PERFORMED WITHIN SITE LIMITS OF CONSTRUCTION.
8. 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.
9. 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.
10. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
11. ALL DISTURBED AREAS TO BE STABILIZED WITH HYDROMULCH IMMEDIATELY AFTER ESTABLISHING FINAL GRADES UNLESS OTHERWISE NOTED.
12. 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.
13. 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.
14. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
15. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF NEW BRAUNFELS SPECIFICATIONS.
16. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.



DRAIN 'A' EARTHEN CHANNEL SECTION A-A

N.T.S. STA.: 0+79.73 - 3+40.61



LEGEND

PROPOSED	EXISTING	
Ⓢ	Ⓢ	SANITARY SEWER MANHOLE
	WW	SANITARY SEWER LINE
	WL	WATER LINE
C/O	C/O	SANITARY SEWER LATERAL w/ CLEANOUT
⊗	⊗	WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
GAS	GAS	GAS LINE
Ⓓ	Ⓓ	STORM SEWER MANHOLE
		CURB INLET
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	ESM'T.	EASEMENT
	U.E.	UTILITY EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS
		UTILITY XING
EGL_{25}		25 YR ENERGY GRADE LINE
HGL_{25}		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.

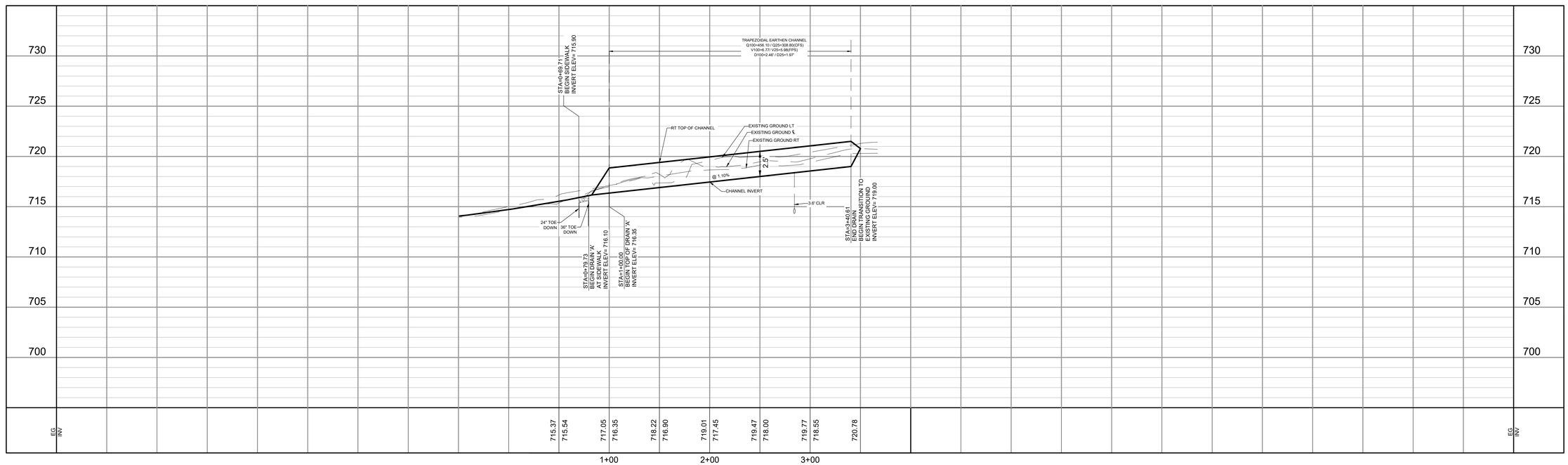
811 Know what's below. Call before you dig.

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.

EARTHEN CHANNEL 'A' STA 1+00 TO END



VERAMENDI REGIONAL PARK

EARTHEN CHANNEL 'A' STA 1+00 TO END

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: 06_Earthen Channel 'A'.dwg

09/04/25

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

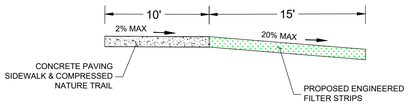
JOB NUMBER: SA3856.2404

SHEET NO. C1004

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Plot Date/Time: Aug 22, 25 - 13:54
Last Modified: Aug 22, 25 - 13:51
Last Saved By: HEW

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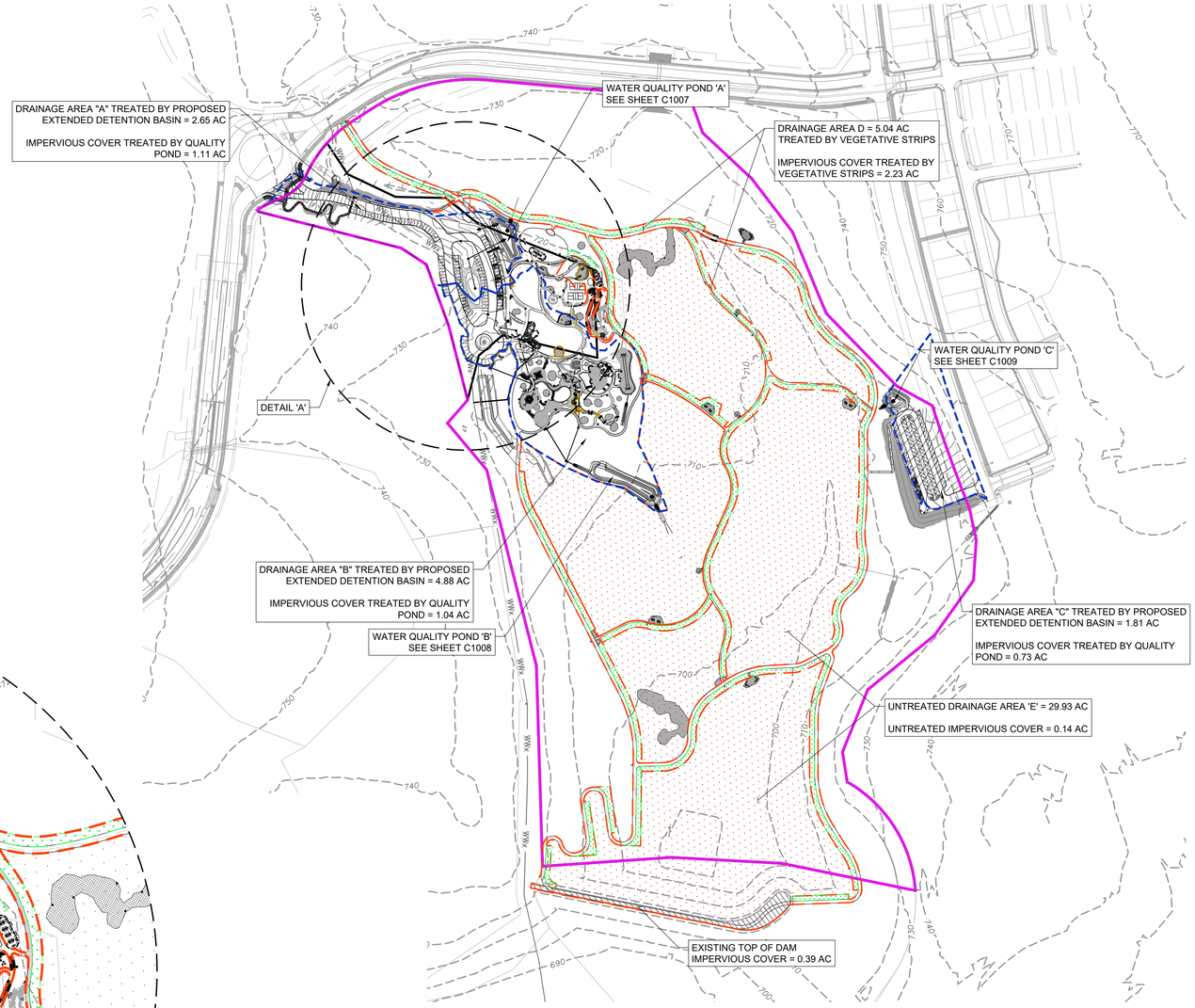
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SCALE: 1"=200'

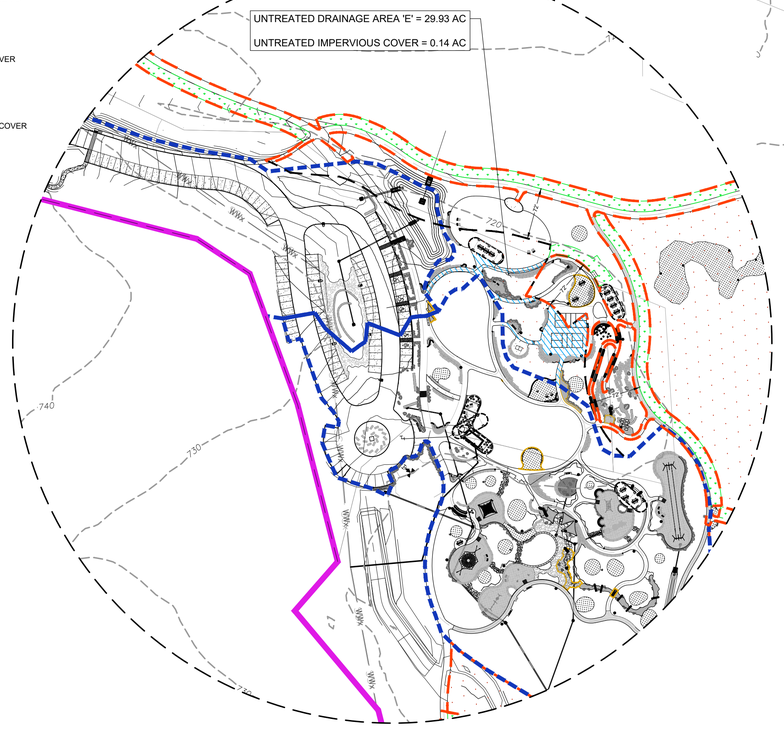


VEGETATIVE FILTER STRIPS DETAIL
N.T.S.

LEGEND

- 740 — EXISTING CONTOUR
- 740 — PROPOSED CONTOUR
- XXX — FLOW ARROWS
- ROCK BERM
- TEMP. SPOILS & STORAGE AREA
- CONCRETE TRUCK WASHOUT PIT
- CONSTRUCTION ENTRANCE
- LOC'SF — LIMITS OF CONSTRUCTION/ SILT FENCE
- IP — INLET PROTECTION
- PROPOSED ENGINEERED FILTER TRIPS
- PROPERTY BOUNDARY
- DRAINAGE AREA TREATED BY PROPOSED BATCH DETENTION PONDS
- DRAINAGE AREA 'C' TREATED BY PROPOSED ENGINEERED FILTER STRIPS
- UNTREATED DRAINAGE AREA 'D'
- EXISTING IMPERVIOUS COVER
- UNTREATED IMPERVIOUS COVER (0.14 AC)





DETAIL 'A'
SCALE: 1" = 100'

VERAMENDI REGIONAL PARK

WPAP SITE PLAN

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_WPAP VRP.dwg

09/04/25

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:
SA3856.2404

SHEET NO.
C1005

K:\SA3856.404 ADA Properties\2404 WPP\WPP Site Development Plans\Civil\Sheets\sh_wpap vrp.dwg
Login Name: nguyen
Last Modified: Sep 04, 25 - 11:34
Last Plotted: Sep 04, 25 - 11:35

BASIN A BATCH DETENTION 'A'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	2.65	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.11	acres
Post-development impervious fraction within drainage basin/outfall area =	0.42	
$L_{M\ THIS\ BASIN}$ =	996	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	2.65	acres
A_I =	1.11	acres
A_P =	1.54	acres
L_R =	1178	lbs

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

$L_{M\ THIS\ BASIN}$ = 1031 lbs.

F = 0.87

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.44	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	4377	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	875	
Total Capture Volume (required water quality volume(s) x 1.20) =	**5,252**	cubic feet

BASIN B BATCH DETENTION 'B'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	4.88	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.04	acres
Post-development impervious fraction within drainage basin/outfall area =	0.21	
$L_{M\ THIS\ BASIN}$ =	934	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	4.88	acres
A_I =	1.04	acres
A_P =	3.84	acres
L_R =	1143	lbs

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

$L_{M\ THIS\ BASIN}$ = 1022 lbs.

F = 0.89

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.60	inches
Post Development Runoff Coefficient =	0.21	
On-site Water Quality Volume =	5932	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1186	
Total Capture Volume (required water quality volume(s) x 1.20) =	**7,119**	cubic feet

BASIN C BATCH DETENTION 'C'

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	1.81	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.73	acres
Post-development impervious fraction within drainage basin/outfall area =	0.40	
$L_{M\ THIS\ BASIN}$ =	656	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention**
Removal efficiency = 91 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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	1.81	acres
A_I =	0.73	acres
A_P =	1.08	acres
L_R =	776	lbs

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

$L_{M\ THIS\ BASIN}$ = 485 lbs.

F = 0.62

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	0.62	inches
Post Development Runoff Coefficient =	0.31	
On-site Water Quality Volume =	1251	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	250	
Total Capture Volume (required water quality volume(s) x 1.20) =	**1,501**	cubic feet

BREAKDOWN OF TSS BEING TREATED BY PERMANENT BMPS

PROPOSED BMP	DRAINAGE AREA	DRAINAGE AREA TO BMP	EXISTING IMPERVIOUS COVER	IMPERVIOUS COVER TO BPM	BMP EFFICIENCY	F	REQUIRED TSS TO BE TREATED (LBS)	ACTUAL TSS BEING REMOVED BY BMP (LBS)
BATCH DETENTION 'A'	A	2.65 ACRES	0.00 ACRES	1.11 ACRES	91%	87	996 LBS	1,031 LBS
BATCH DETENTION 'B'	B	4.88 ACRES	0.00 ACRES	1.04 ACRES	91%	89	934 LBS	1,022 LBS
BATCH DETENTION 'C'	C	1.81 ACRES	0.00 ACRES	0.73 ACRES	91%	62	655 LBS	485 LBS
VEGETATIVE FILTER STRIPS	D	5.04 ACRES	0.00 ACRES	2.23 ACRES	85%	100	2,002 LBS	2,207 LBS
UNCAPTURED DRAINAGE AREA 'E'	E	29.93 ACRES	0.39 ACRES	0.53 ACRES	--	--	126 LBS	0 LBS
TOTAL	A+B+C+D+E	44.31 ACRES	0.39 ACRES	5.64 ACRES	--	--	4,713 LBS	4,745 LBS

DRAINAGE AREA 'D' VEGETATIVE STRIPS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 4

Total drainage basin/outfall area =	5.04	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.23	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	2002	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
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_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	5.04	acres
A_I =	2.23	acres
A_P =	2.81	acres
L_R =	2207	lbs

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

$L_{M\ THIS\ BASIN}$ = 2207 lbs.

F = 1.00

DRAINAGE AREA 'E' UNCAPTURED

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Veramendi Regional Park #1**
Date Prepared: **9/3/2025**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
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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 * =		44.31	acres
Predevelopment impervious area within the limits of the plan * =		0.39	acres
Total post-development impervious area within the limits of the plan* =		5.64	acres
Total post-development impervious cover fraction * =		0.13	
P =		33	inches
$L_{M\ TOTAL\ PROJECT}$ * =		4712	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

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

Drainage Basin/Outfall Area No. = 5

Total drainage basin/outfall area =	29.93	acres
Predevelopment impervious area within drainage basin/outfall area =	0.39	acres
Post-development impervious area within drainage basin/outfall area =	0.53	acres
Post-development impervious fraction within drainage basin/outfall area =	0.02	
$L_{M\ THIS\ BASIN}$ =	126	lbs.

VERAMENDI REGIONAL PARK
WPAP SITE CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PDF
DRAWING NAME: sh_wpap vrp.dwg

09/04/25

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

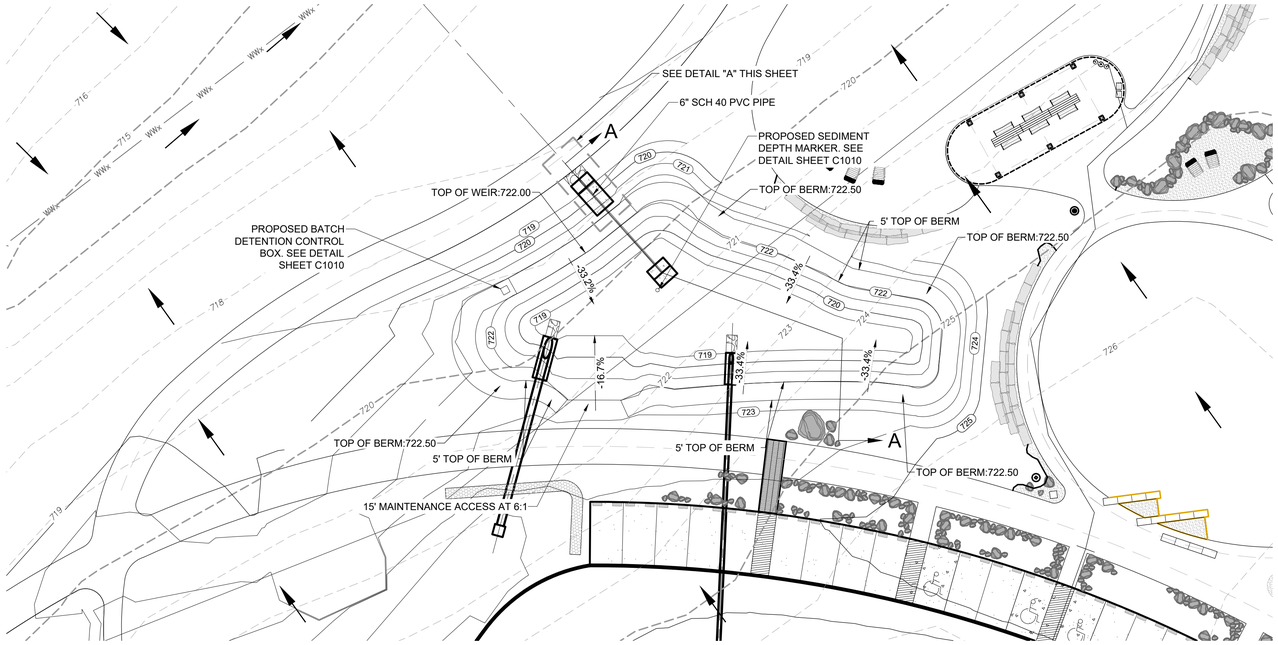
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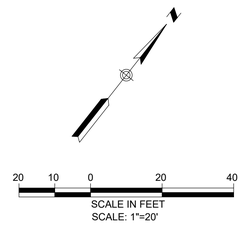
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C1006

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Xref Drawings:
Last Modified: Sep 04, 25 - 11:34
Plotted By: Priscilla Flores

DRAINAGE & GRADING NOTES:

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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.
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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.



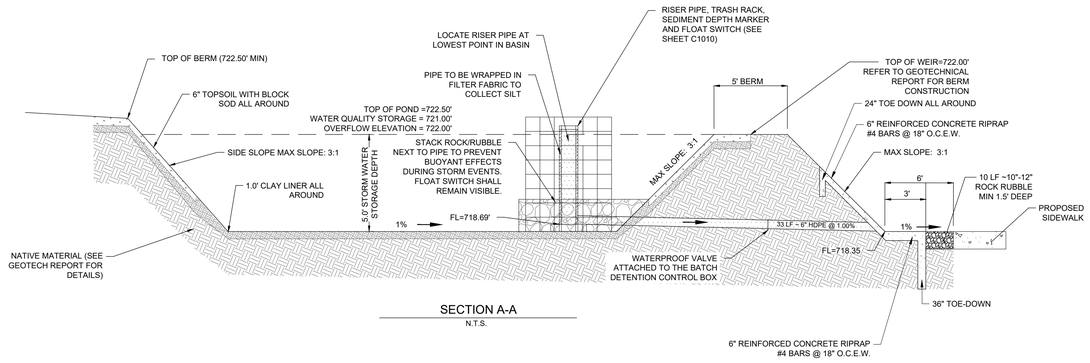


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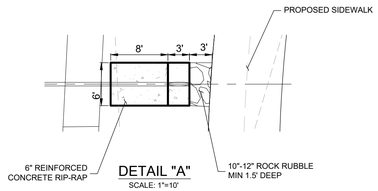
PROPOSED	EXISTING	
580	580	CONTOUR
2%	2%	FLOW ARROW
		GRASSED DRAIN FLOW
580.25	580.25	GROUND ELEVATION

EMERGENCY OVERFLOW WEIR CALCULATION

$Q_{OVF}=C*L*H^{3/2}$
L=40'
H=0.5'
C=2.6
$Q_{OVF}=2.6*40*0.5^{3/2}$
Q_{OVF}=36.77 CFS
Q_{100}=21.4 CFS
36.77 CFS > 21.4 CFS = OK



SECTION A-A
N.T.S.



DETAIL "A"
SCALE: 1"=10'

Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density

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.

VERAMENDI REGIONAL PARK

WATER QUALITY POND 'A'

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_WQ Pond 'A'.dwg

09/04/25

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

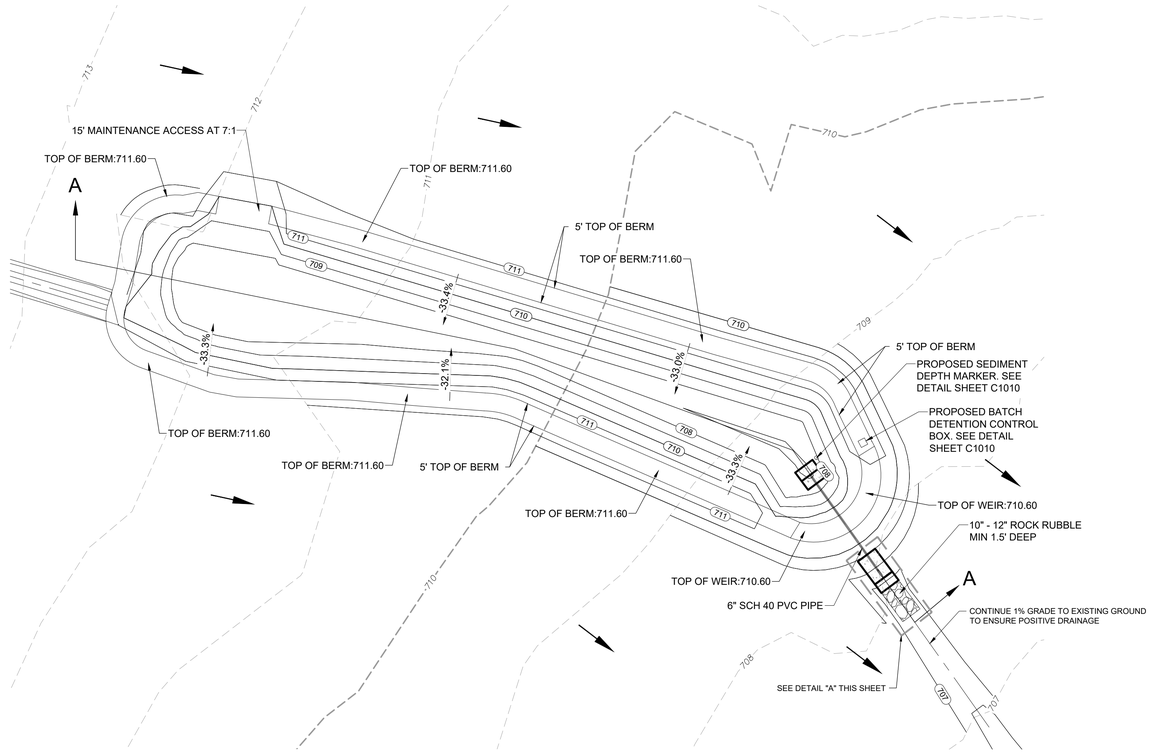
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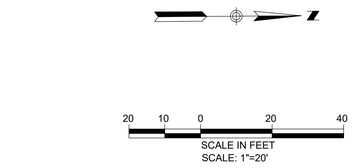
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Last Plotted: Sep. 04, 25 - 8:34 am

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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=30'
H=1.0'
C=2.6
$Q_{OVF}=2.6*30*1.0^{3/2}$
Q_{OVF}=78.00 CFS
Q_{OVF}=31.40 CFS
78.00 CFS > 31.40 CFS = OK

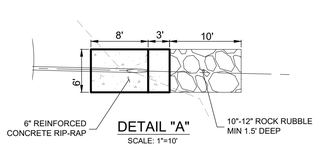
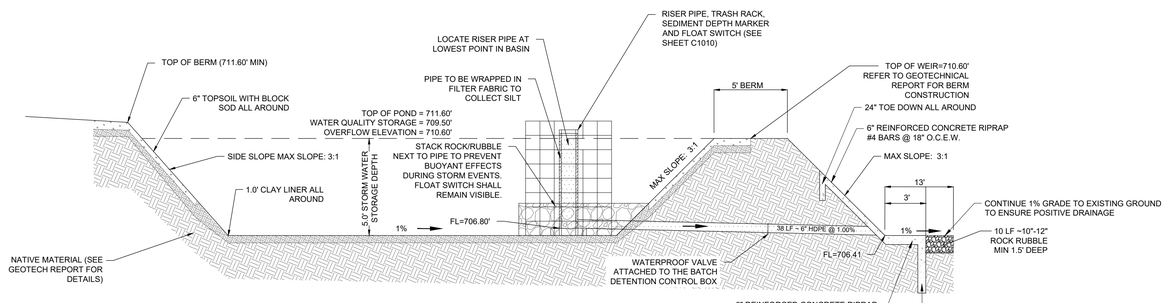


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Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1 x 10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density



SECTION A-A
N.T.S.

VERAMENDI REGIONAL PARK

WATER QUALITY POND 'B'

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: 9b_LWQ Pond 'B'.dwg

09/04/25



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

JOB NUMBER: SA3856.2404

SHEET NO.
C1008

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.

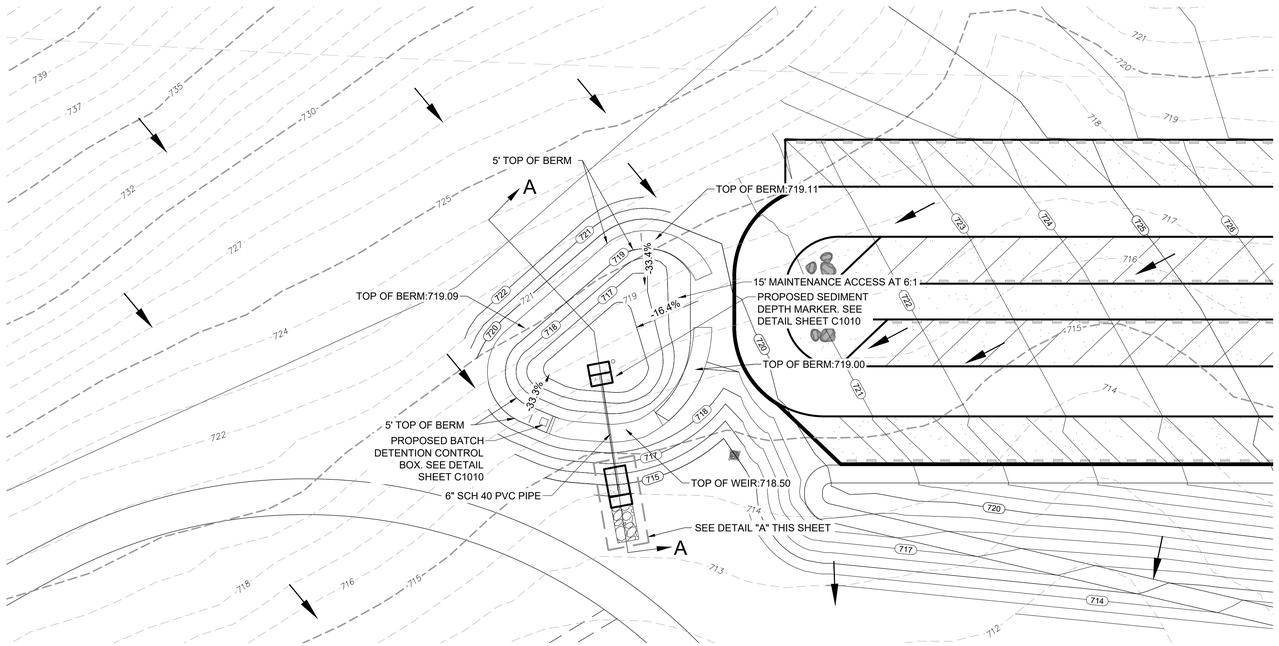
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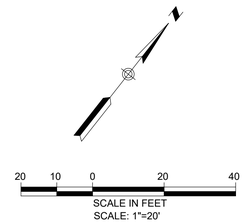
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Plotted: Sep. 03, 25 - 11:33
Last Modified: Sep. 03, 25 - 11:33
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DRAINAGE & GRADING NOTES:

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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.
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	
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=30'
H=0.5'
C=2.6
$Q_{OVF}=2.6*30*0.5^{3/2}$
$Q_{OVF}=27.58$ CFS
$Q_{100}=14.50$ CFS
27.58 CFS > 14.50 CFS = OK

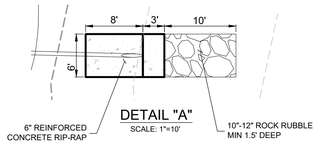
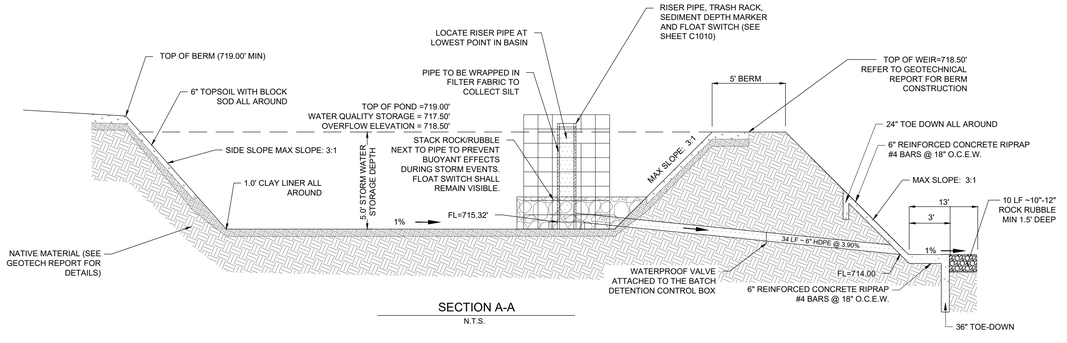


Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density



SECTION A-A
N.T.S.

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.

VERAMENDI REGIONAL PARK

WATER QUALITY POND 'C'

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_WQ Pond 'C'.dwg

09/04/25

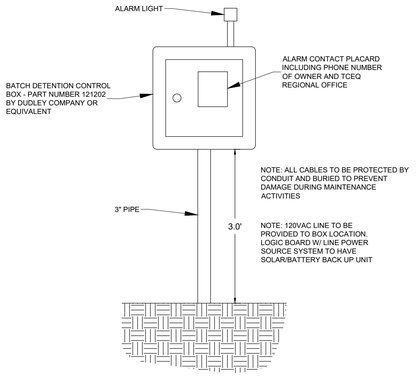
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

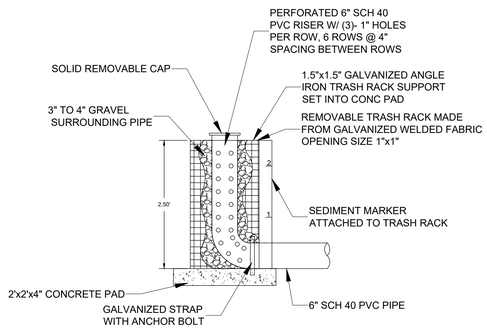
JOB NUMBER: SA3856.2404

SHEET NO. C1009

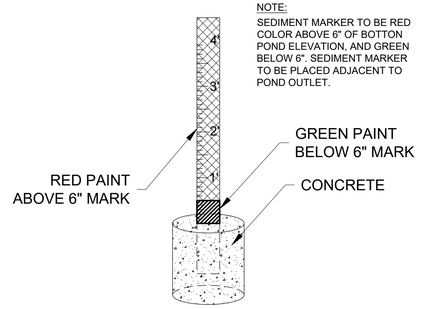
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Plotted: Sep 03, 25 - 15:56
Last Modified: Sep 03, 25 - 15:55
Xref Path(s): Rev 4A.dgn, 4A.dgn



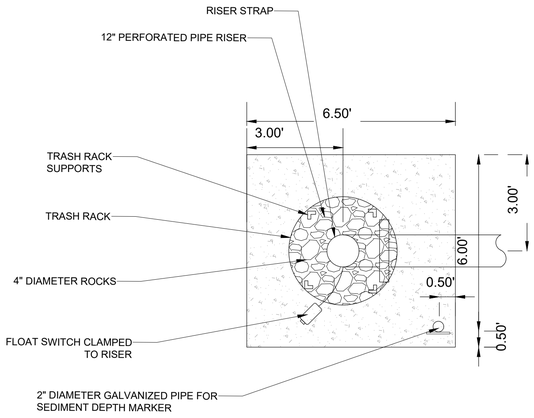
BATCH DETENTION CONTROL BOX
NTS



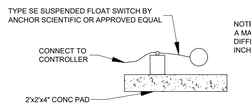
SECTION VIEW OF RISER
NTS



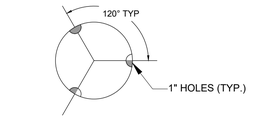
SEDIMENT DEPTH MARKER
(ATTACHED TO TRASH RACK)
N.T.S.



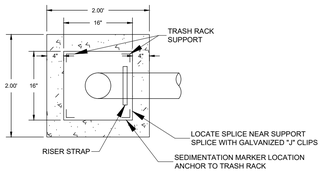
PERFORATED RISER PAD
TOP VIEW
N.T.S.



FLOAT SENSOR



HOLE LAYOUT DETAIL
NTS



PLAN VIEW OF RISER
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.

CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	SPECIFICATION
PERMEABILITY (CM/SEC)	ASTM D 2434	0.000001
PLASTICITY INDEX OF CLAY (%)	ASTM D 423/D 424	NOT LESS THAN 15
LIQUID LIMIT OF CLAY (%)	ASTM D 2216	NOT LESS THAN 30
CLAY PARTICLES PASSING (%)	ASTM 422	95% OF STANDARD PROCTOR DENSITY
CLAY COMPACTION (%)	ASTM D 2216	95% OF STANDARD PROCTOR DENSITY

NOTE:

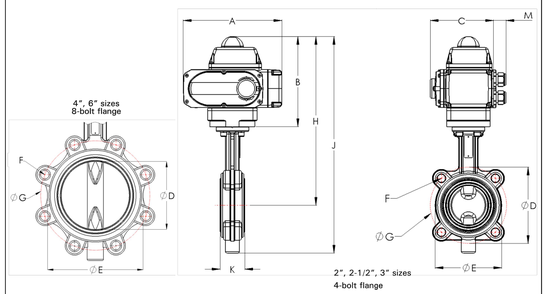
1. THE CLAY LINER SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES.

Valworx

SERIES 5673

OR SIMILAR

Dimensions:

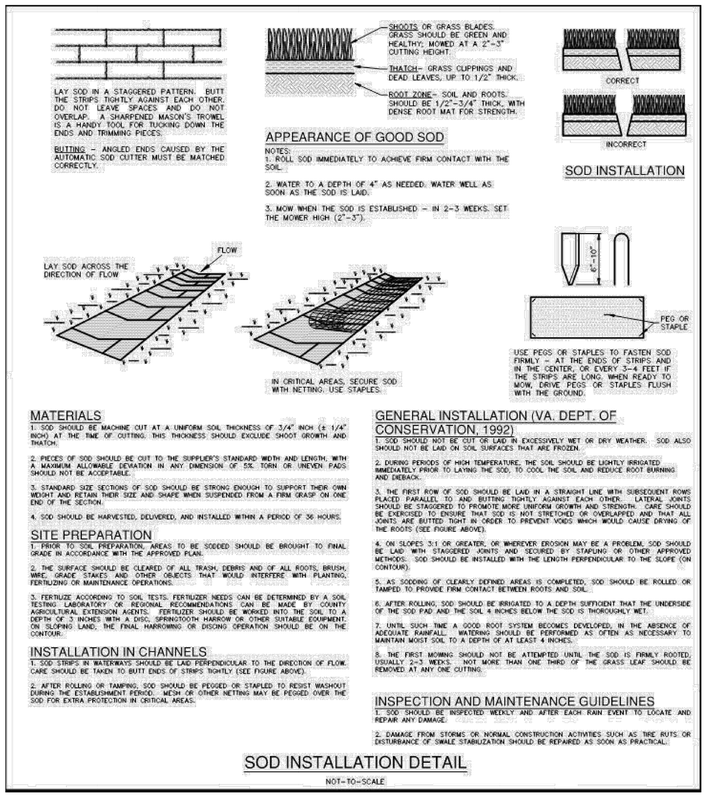


Suitable between flanges:

- 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

Doc: 5673.0922 Cornelius, N.C. • USA www.valworx.com



SOD INSTALLATION DETAIL
NOT-TO-SCALE

VERAMENDI REGIONAL PARK

BASIN DETAILS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: 05_Basin Details.dwg

09/04/25

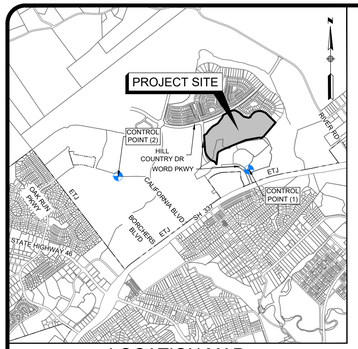
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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

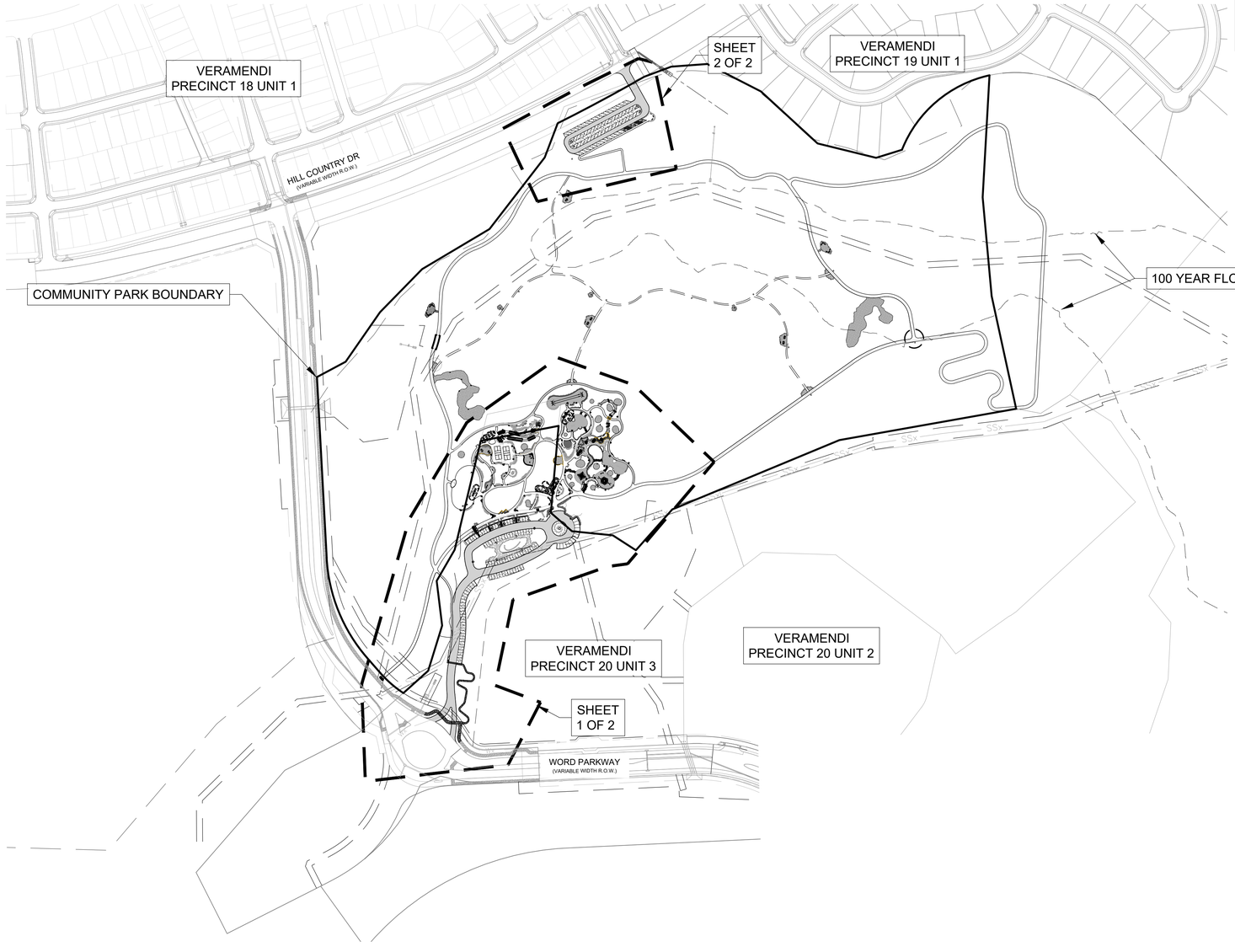
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SHEET NO. C1010

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Last Modified: Sep 03, 25 - 11:34
Last Modified By: Hannah Wilson



LOCATION MAP
1" = 3000'



200 100 0 200 400

SCALE IN FEET
SCALE: 1" = 200'

LEGEND

EXISTING	
	PROPERTY BOUNDARY
	100YR FLOODPLAIN
	EASEMENT

VERAMENDI REGIONAL PARK

OVERALL CIVIL SITE PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Site Plan_OVERALL.dwg

09/04/25

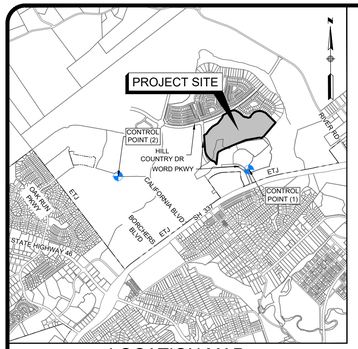
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

JOB NUMBER:
SA3856.2404

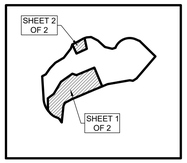
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C2000

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User: Priscilla Flores
Last Modified: Sep. 03, 25 - 11:34
Plot Date/Time: Sep. 04, 25 - 11:34:23



LOCATION MAP

1" = 3000'

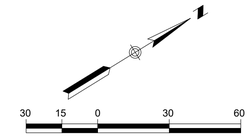


GENERAL SITE NOTES:

1. CONTRACTOR SHALL COMPLY WITH THE CITY OF NEW BRAUNFELS BUILDING CODE AND REGULATIONS AND APPLICABLE TECHNICAL SPECIFICATIONS IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR THE CITY OF NEW BRAUNFELS", AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
2. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION PRIOR TO STARTING CONSTRUCTION.
3. LOCATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON A COMBINATION OF FIELD SURVEYING AND AVAILABLE UTILITY MAPS. CONTRACTOR TO DETERMINE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES (WHETHER SHOWN ON PLANS OR NOT) BY COORDINATING WITH THE RESPECTIVE UTILITY AGENCIES PRIOR TO CONSTRUCTION. THE FOLLOWING ARE NUMBERS OF THE RESPECTIVE AGENCIES:

   TESS-STATEWIDE ONE CALL DAMAGE PREVENTION SYSTEM
   FOR BURIED UTILITIES. 1-800-DIG-TESS

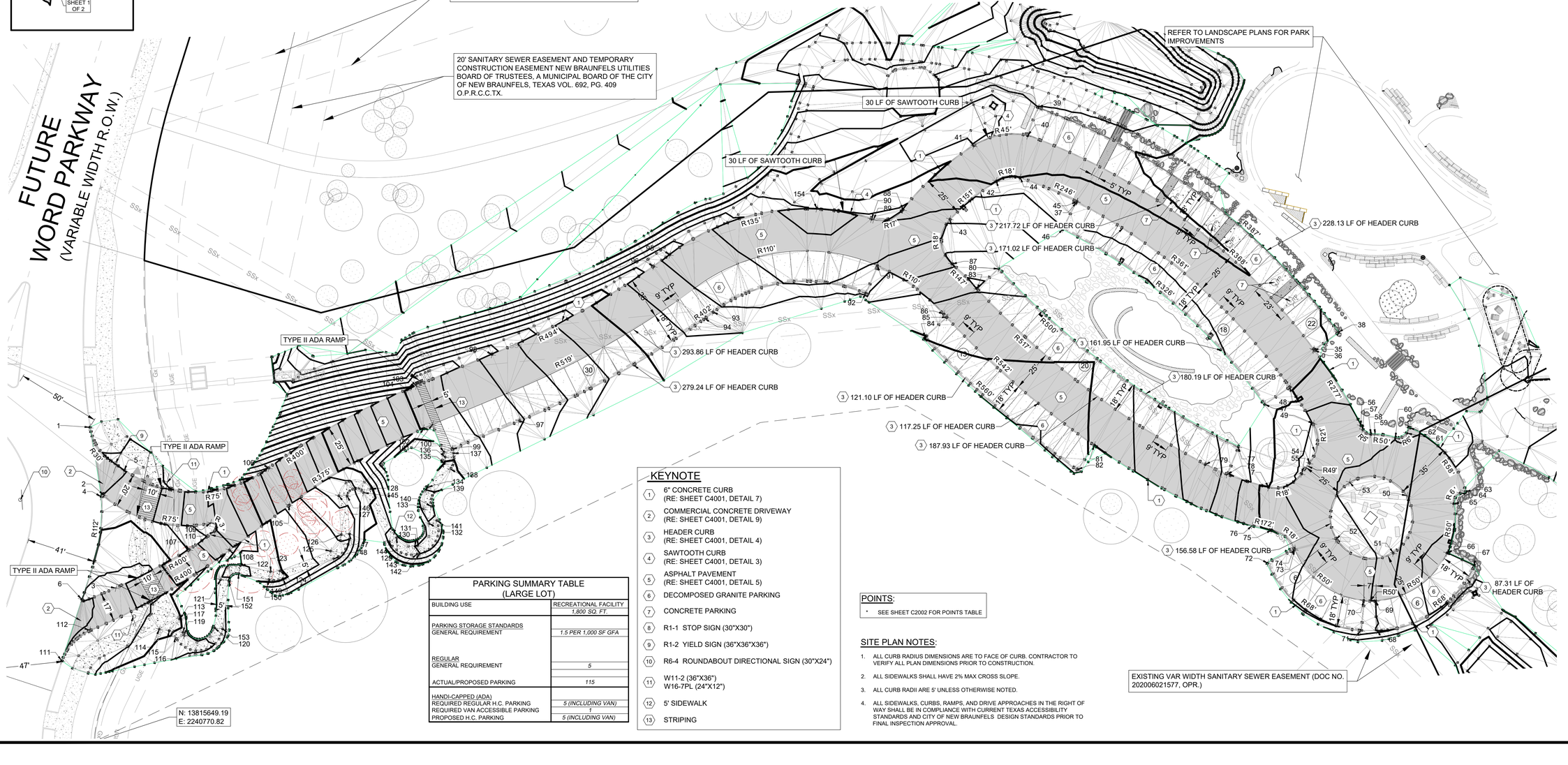
   *IF ANY NUMBER HAVE CHANGED OR ARE INCORRECT, THE CONTRACTOR IS STILL RESPONSIBLE FOR CONTACTING THE AGENCIES.
4. REMOVE ALL ASPHALT AND CONCRETE WITH A SMOOTH SAW-CUT.
5. COMPACT ALL PAVEMENT SUBGRADE TO 95% MAXIMUM DRY DENSITY. COMPACT AREAS TO RECEIVE LANDSCAPING AND/OR GRASS TO 85%.
6. PRIOR TO BIDDING, THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE SITE AND FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE SITE WHICH MAY AFFECT HIS WORK. THIS INCLUDES ACCOUNTING FOR ALL VISIBLE FEATURES WHICH MAY IMPACT THE BID OR THE WORK.
7. CONTRACTOR SHALL CAREFULLY DEMOLISH AND REMOVE ALL ITEMS (ABOVE AND BELOW GROUND) AS REQUIRED TO CONSTRUCT THE PROJECTS AS SHOWN. ALL REMOVAL AND DISPOSAL ACTIVITIES MUST COMPLY WITH APPLICABLE CODES, LAWS AND ORDINANCES.
8. REMOVE AND DISPOSE OF ALL EXCESS EXCAVATION.
9. CONTRACTOR IS RESPONSIBLE FOR ALL VERTICAL AND HORIZONTAL CONTROL.
10. BASE MATERIAL AND INSTALLATION TO BE IN CONFORMANCE WITH ITEM 247 (TxDOT STD. SPECS. LATEST ED.) TYPE A GRADE 2 COMPACT TO 95% MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR OR 98% MAXIMUM DRY DENSITY OF THE STANDARD PROCTOR.
11. LIME STABILIZED SUBGRADE SHALL BE COMPACTED WITHIN 3% OF OPTIMUM MOISTURE CONTENT TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR.
12. PRIME COAT MATERIAL AND INSTALLATION TO BE CUT-BACK ASPHALT TYPE IN ACCORDANCE WITH ITEM 310 (TxDOT STD. SPECS. LATEST ED.) (0.2 GAL/S.Y.).
13. ALL ASPHALT MATERIAL AND INSTALLATION TO COMPLY WITH ITEM 340 TYPE "C" (TxDOT STD. SPECS. LATEST ED.).
14. WHEELSTOPS SHALL BE OF PRE-CAST CONCRETE AND 6' IN LENGTH. DOWEL PRE-CAST CONCRETE WHEEL STOPS A MINIMUM OF 12" INTO BASE AND PAVEMENT.
15. CONTRACTOR TO FULLY COOPERATE WITH PARKING LOT LIGHT CONTRACTOR.
16. ALL SITE CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED. ALL MATERIALS AND METHODOLOGIES USED SHALL CONFORM WITH ITEM 360 (TXDOT STD. SPECS, LATEST ED.)
17. FOR ALL STRIPING AND TRAFFIC CONTROL MARKINGS, CONTRACTOR TO USE GLIDDEN TRAFFIC PAINT #63228 OR SHERWIN-WILLIAMS PRO-MAR TRAFFIC MARKING PAINT (SERIES B29W1). COLOR IS WHITE. APPLY TWO COATS.
18. INSTALL "FIRE LANE - TOW AWAY ZONE" SIGNS IN ACCORDANCE WITH THE FIRE MARSHALL'S REQUIREMENTS. PAINT CURBS AS REQUIRED BY FIRE MARSHALL.
19. DIMENSIONS ARE TO THE PAVEMENT EDGE OF THE CURB, FACE OF BUILDING OR PROPERTY LINE, OR STRIPING CENTERLINE.
20. THE CONCRETE DRIVE APPROACHES WITHIN CITY RIGHT-OF-WAY ARE SUBJECT TO CITY INSPECTION.
21. MAXIMUM SIDEWALK CURB CONTROL JOINT SPACING IS 5 FEET.
22. MAXIMUM SIDEWALK CURB EXPANSION JOINT SPACING IS 40 FEET.
23. CONTRACTOR MUST KEEP ALL PERMITS ON JOB SITE.
24. ALL EXISTING SIGNS AND BENCHES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING EXISTING SPRINKLER SYSTEM COMPONENTS WHICH CONFLICT WITH CONSTRUCTION.
26. PROPOSED CURBING TO BE TRANSITIONED SMOOTHLY TO MATCH EXISTING.
27. THE CONSTRUCTION SITE IS TO BE THOROUGHLY CLEANED BY THE CONTRACTOR PRIOR TO ISSUANCE OF PAYMENT BY THE OWNER.
28. CONTRACTOR SHALL INCLUDE ALL COSTS FOR ROUTING PEDESTRIAN AND VEHICULAR TRAFFIC IN THE BID AMOUNT. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CURRENT LEASE HOLDER IN ORDER TO INSURE CONVENIENT ACCESS.
29. 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 COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATION. 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.
30. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
31. ITEMS OF WORK NOTED "BY OTHERS" SHALL BE CONSIDERED AS NOT PART OF THIS CONTRACT.
32. THE CONTRACTOR SHALL COORDINATE (WITH OWNER/ARCHITECT) WHICH TREES ARE TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ACCORDINGLY AND PROVIDE WATER AS REQUIRED.
33. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
34. IN CASES WHERE HYDROMULCH HAS BEEN PROPERLY APPLIED, CONTRACTOR TO PROVIDE WATER AS REQUIRED TO ACHIEVE A MINIMUM OF 75% GERMINATION TOWARDS SUBSTANTIAL GROWTH.
35. THIS SITE PERMIT SET DOES NOT INCLUDE CONSTRUCTION OF ANY BUILDING FOUNDATIONS.



SCALE IN FEET
SCALE: 1" = 30'

LEGEND

PROPOSED	EXISTING	
		ASPHALT DRIVE
		DECOMPOSING GRANITE
		MULCH
		SIDEWALK
		STRIPING
		TREES TO BE REMOVED
		TREES TO REMAIN
(5)		PARKING SPACE COUNT



KEYNOTE

1	6" CONCRETE CURB (RE: SHEET C4001, DETAIL 7)
2	COMMERCIAL CONCRETE DRIVEWAY (RE: SHEET C4001, DETAIL 9)
3	HEADER CURB (RE: SHEET C4001, DETAIL 4)
4	SAWTOOTH CURB (RE: SHEET C4001, DETAIL 3)
5	ASPHALT PAVEMENT (RE: SHEET C4001, DETAIL 5)
6	DECOMPOSED GRANITE PARKING
7	CONCRETE PARKING
8	R1-1 STOP SIGN (30"X30")
9	R1-2 YIELD SIGN (36"X36"X36")
10	R6-4 ROUNDABOUT DIRECTIONAL SIGN (30"X24")
11	W11-2 (36"X36") W16-7PL (24"X12")
12	5' SIDEWALK
13	STRIPING

PARKING SUMMARY TABLE (LARGE LOT)

BUILDING USE	RECREATIONAL FACILITY
	1,800 SQ. FT.
PARKING STORAGE STANDARDS GENERAL REQUIREMENT	*1.5 PER 1,000 SF GFA*
REGULAR GENERAL REQUIREMENT	*5*
ACTUAL/PROPOSED PARKING	*115*
HANDI-CAPPED (ADA) REQUIRED REGULAR H.C. PARKING REQUIRED VAN ACCESSIBLE PARKING PROPOSED H.C. PARKING	*5 (INCLUDING VAN)* *1* *5 (INCLUDING VAN)*

POINTS:

- SEE SHEET C2002 FOR POINTS TABLE

SITE PLAN NOTES:

1. ALL CURB RADIUS DIMENSIONS ARE TO FACE OF CURB. CONTRACTOR TO VERIFY ALL PLAN DIMENSIONS PRIOR TO CONSTRUCTION.
2. ALL SIDEWALKS SHALL HAVE 2% MAX CROSS SLOPE.
3. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
4. ALL SIDEWALKS, CURBS, RAMPS, AND DRIVE APPROACHES IN THE RIGHT OF WAY SHALL BE IN COMPLIANCE WITH CURRENT TEXAS ACCESSIBILITY STANDARDS AND CITY OF NEW BRAUNFELS' DESIGN STANDARDS PRIOR TO FINAL INSPECTION APPROVAL.

VERAMENDI REGIONAL PARK

CIVIL SITE PLAN (1 OF 2)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_SitePlan.dwg

09/04/25

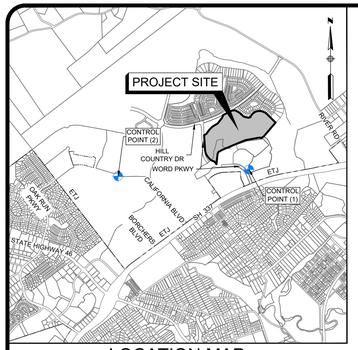
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

JOB NUMBER: SA3856.2404

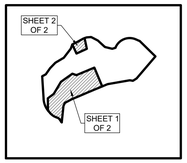
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User: sjones
Last Modified: Aug. 27, '25 - 11:11
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LOCATION MAP

1" = 3000'



GENERAL SITE NOTES:

1. CONTRACTOR SHALL COMPLY WITH THE CITY OF NEW BRAUNFELS BUILDING CODE AND REGULATIONS AND APPLICABLE TECHNICAL SPECIFICATIONS IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR THE CITY OF NEW BRAUNFELS", AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
2. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION PRIOR TO STARTING CONSTRUCTION.
3. LOCATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON A COMBINATION OF FIELD SURVEYING AND AVAILABLE UTILITY MAPS. CONTRACTOR TO DETERMINE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES (WHETHER SHOWN ON PLANS OR NOT) BY COORDINATING WITH THE RESPECTIVE UTILITY AGENCIES PRIOR TO CONSTRUCTION. THE FOLLOWING ARE NUMBERS OF THE RESPECTIVE AGENCIES:

   TESS-STATEWIDE ONE CALL DAMAGE PREVENTION SYSTEM
   FOR BURIED UTILITIES. 1-800-DIG-TESS

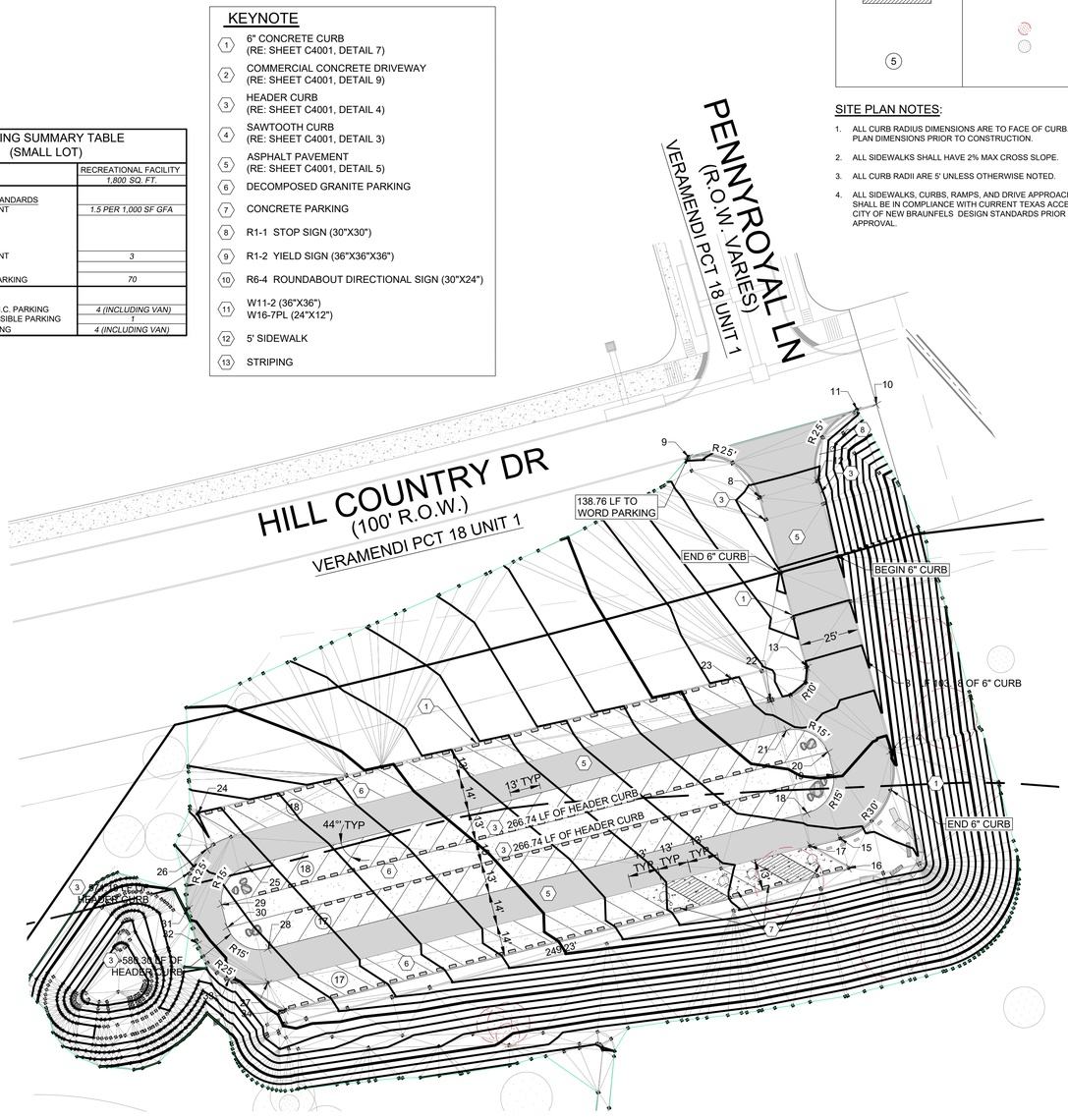
   *IF ANY NUMBER HAVE CHANGED OR ARE INCORRECT, THE CONTRACTOR IS STILL RESPONSIBLE FOR CONTACTING THE AGENCIES.
4. REMOVE ALL ASPHALT AND CONCRETE WITH A SMOOTH SAW-CUT.
5. COMPACT ALL PAVEMENT SUBGRADE TO 95% MAXIMUM DRY DENSITY. COMPACT AREAS TO RECEIVE LANDSCAPING AND/OR GRASS TO 85%.
6. PRIOR TO BIDDING, THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE SITE AND FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE SITE WHICH MAY AFFECT HIS WORK. THIS INCLUDES ACCOUNTING FOR ALL VISIBLE FEATURES WHICH MAY IMPACT THE BID OR THE WORK.
7. CONTRACTOR SHALL CAREFULLY DEMOLISH AND REMOVE ALL ITEMS (ABOVE AND BELOW GROUND) AS REQUIRED TO CONSTRUCT THE PROJECTS AS SHOWN. ALL REMOVAL AND DISPOSAL ACTIVITIES MUST COMPLY WITH APPLICABLE CODES, LAWS AND ORDINANCES.
8. REMOVE AND DISPOSE OF ALL EXCESS EXCAVATION.
9. CONTRACTOR IS RESPONSIBLE FOR ALL VERTICAL AND HORIZONTAL CONTROL.
10. BASE MATERIAL AND INSTALLATION TO BE IN CONFORMANCE WITH ITEM 247 (TxDOT STD. SPECS. LATEST ED.) TYPE A GRADE 2 COMPACT TO 95% MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR OR 98% MAXIMUM DRY DENSITY OF THE STANDARD PROCTOR.
11. LIME STABILIZED SUBGRADE SHALL BE COMPACTED WITHIN 3% OF OPTIMUM MOISTURE CONTENT TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR.
12. PRIME COAT MATERIAL AND INSTALLATION TO BE CUT-BACK ASPHALT TYPE IN ACCORDANCE WITH ITEM 310 (TxDOT STD. SPECS. LATEST ED.) (0.2 GAL/S.Y.).
13. ALL ASPHALT MATERIAL AND INSTALLATION TO COMPLY WITH ITEM 340 TYPE "C" (TxDOT STD. SPECS. LATEST ED.).
14. WHEELSTOPS SHALL BE OF PRE-CAST CONCRETE AND 6' IN LENGTH. DOWEL PRE-CAST CONCRETE WHEEL STOPS A MINIMUM OF 12" INTO BASE AND PAVEMENT.
15. CONTRACTOR TO FULLY COOPERATE WITH PARKING LOT LIGHT CONTRACTOR.
16. ALL SITE CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED. ALL MATERIALS AND METHODOLOGIES USED SHALL CONFORM WITH ITEM 360 (TXDOT STD. SPECS, LATEST ED.)
17. FOR ALL STRIPING AND TRAFFIC CONTROL MARKINGS, CONTRACTOR TO USE GLIDDEN TRAFFIC PAINT #63228 OR SHERWIN-WILLIAMS PRO-MAR TRAFFIC MARKING PAINT (SERIES B29W1). COLOR IS WHITE. APPLY TWO COATS.
18. INSTALL "FIRE LANE - TOW AWAY ZONE" SIGNS IN ACCORDANCE WITH THE FIRE MARSHALL'S REQUIREMENTS. PAINT CURBS AS REQUIRED BY FIRE MARSHALL.
19. DIMENSIONS ARE TO THE PAVEMENT EDGE OF THE CURB, FACE OF BUILDING OR PROPERTY LINE, OR STRIPING CENTERLINE.
20. THE CONCRETE DRIVE APPROACHES WITHIN CITY RIGHT-OF-WAY ARE SUBJECT TO CITY INSPECTION.
21. MAXIMUM SIDEWALK CURB CONTROL JOINT SPACING IS 5 FEET.
22. MAXIMUM SIDEWALK CURB EXPANSION JOINT SPACING IS 40 FEET.
23. CONTRACTOR MUST KEEP ALL PERMITS ON JOB SITE.
24. ALL EXISTING SIGNS AND BENCHES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING EXISTING SPRINKLER SYSTEM COMPONENTS WHICH CONFLICT WITH CONSTRUCTION.
26. PROPOSED CURBING TO BE TRANSITIONED SMOOTHLY TO MATCH EXISTING.
27. THE CONSTRUCTION SITE IS TO BE THOROUGHLY CLEANED BY THE CONTRACTOR PRIOR TO ISSUANCE OF PAYMENT BY THE OWNER.
28. CONTRACTOR SHALL INCLUDE ALL COSTS FOR ROUTING PEDESTRIAN AND VEHICULAR TRAFFIC IN THE BID AMOUNT. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CURRENT LEASE HOLDER IN ORDER TO INSURE CONVENIENT ACCESS.
29. 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 COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATION. 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.
30. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
31. ITEMS OF WORK NOTED "BY OTHERS" SHALL BE CONSIDERED AS NOT PART OF THIS CONTRACT.
32. THE CONTRACTOR SHALL COORDINATE (WITH OWNER/ARCHITECT) WHICH TREES ARE TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ACCORDINGLY AND PROVIDE WATER AS REQUIRED.
33. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
34. IN CASES WHERE HYDROMULCH HAS BEEN PROPERLY APPLIED, CONTRACTOR TO PROVIDE WATER AS REQUIRED TO ACHIEVE A MINIMUM OF 75% GERMINATION TOWARDS SUBSTANTIAL GROWTH.
35. THIS SITE PERMIT SET DOES NOT INCLUDE CONSTRUCTION OF ANY BUILDING FOUNDATIONS.

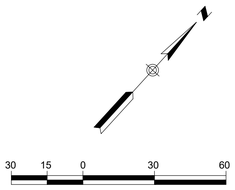
PARKING SUMMARY TABLE (SMALL LOT)

BUILDING USE	RECREATIONAL FACILITY
	1,800 SQ. FT.
PARKING STORAGE STANDARDS GENERAL REQUIREMENT	*1.5 PER 1,000 SF GFA*
REGULAR GENERAL REQUIREMENT	*3*
ACTUAL/PROPOSED PARKING	*70*
HANDI-CAPPED (ADA) REQUIRED REGULAR H.C. PARKING REQUIRED VAN ACCESSIBLE PARKING PROPOSED H.C. PARKING	*4 (INCLUDING VAN)* *1* *4 (INCLUDING VAN)*

KEYNOTE

1. 6" CONCRETE CURB (RE: SHEET C4001, DETAIL 7)
2. COMMERCIAL CONCRETE DRIVEWAY (RE: SHEET C4001, DETAIL 9)
3. HEADER CURB (RE: SHEET C4001, DETAIL 4)
4. SAWTOOTH CURB (RE: SHEET C4001, DETAIL 3)
5. ASPHALT PAVEMENT (RE: SHEET C4001, DETAIL 5)
6. DECOMPOSED GRANITE PARKING
7. CONCRETE PARKING
8. R1-1 STOP SIGN (30"X30")
9. R1-2 YIELD SIGN (36"X36"X36")
10. R6-4 ROUNDABOUT DIRECTIONAL SIGN (30"X24")
11. W11-2 (36"X36") W16-7PL (24"X12")
12. 5' SIDEWALK
13. STRIPING





SCALE IN FEET
SCALE: 1" = 30'

LEGEND

PROPOSED	EXISTING	
		ASPHALT DRIVE
		DECOMPOSING GRANITE
		MULCH
		CONCRETE
		STRIPING
		TREES TO BE REMOVED
		TREES TO REMAIN
5		PARKING SPACE COUNT

SITE PLAN NOTES:

1. ALL CURB RADIUS DIMENSIONS ARE TO FACE OF CURB. CONTRACTOR TO VERIFY ALL PLAN DIMENSIONS PRIOR TO CONSTRUCTION.
2. ALL SIDEWALKS SHALL HAVE 2% MAX CROSS SLOPE.
3. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
4. ALL SIDEWALKS, CURBS, RAMPS, AND DRIVE APPROACHES IN THE RIGHT OF WAY SHALL BE IN COMPLIANCE WITH CURRENT TEXAS ACCESSIBILITY STANDARDS AND CITY OF NEW BRAUNFELS DESIGN STANDARDS PRIOR TO FINAL INSPECTION APPROVAL.

PROPERTY CORNERS

Point #	Northing	Easting
1	13815746.08	2240608.56
2	13815731.88	2240647.75
3	13815708.86	2240699.09
4	13815730.04	2240647.59
5	13815750.14	2240641.59
6	13815687.75	2240694.04
7	13816329.73	2241010.88
8	13817871.27	2241272.18
9	13817880.89	2241238.24
10	13817921.93	2241310.82
11	13817917.63	2241303.34
12	13817883.78	2241293.93
13	13817805.93	2241308.85
14	13817779.24	2241352.13
15	13817738.15	2241339.97
16	13817726.77	2241346.50
17	13817731.91	2241328.21
18	13817745.38	2241323.73
19	13817763.94	2241330.73
20	13817772.77	2241326.05
21	13817777.38	2241306.76
22	13817788.12	2241297.11
23	13817793.26	2241278.82
24	13817683.26	2241071.45
25	13817666.33	2241097.41
26	13817669.42	2241078.79
27	13817620.09	2241117.41
28	13817634.28	2241114.29
29	13817647.78	2241090.41
30	13817638.94	2241095.09
31	13817643.03	2241076.95
32	13817629.21	2241084.32
33	13817617.62	2241101.00
34	13817610.66	2241127.62
35	13816396.15	2240954.19
36	13816396.22	2240954.90
37	13816321.59	2240804.41
38	13816414.18	2240953.35
39	13816331.68	2240743.96

PROPERTY CORNERS

Point #	Northing	Easting
40	13816317.46	2240755.02
41	13816286.70	2240743.19
42	13816287.10	2240768.19
43	13816251.42	2240773.13
44	13816300.54	2240773.96
45	13816322.02	2240804.16
46	13816306.25	2240813.83
47	13816353.92	2240966.91
48	13816372.39	2240965.92
49	13816372.79	2240992.24
50	13816397.91	2241058.67
51	13816372.91	2241083.67
52	13816347.81	2241058.76
53	13816372.83	2241033.58
54	13816358.34	2241011.36
55	13816350.93	2241014.32
56	13816396.32	2241008.26
57	13816396.04	2241010.97
58	13816398.77	2241015.88
59	13816400.86	2241017.21
60	13816410.25	2241025.41
61	13816417.57	2241026.61
62	13816420.44	2241024.55
63	13816429.11	2241074.92
64	13816425.97	2241074.01
65	13816419.24	2241077.47
66	13816400.29	2241100.51
67	13816410.14	2241115.57
68	13816340.19	2241118.28
69	13816348.85	2241102.50
70	13816342.78	2241098.57
71	13816331.94	2241112.94
72	13816305.58	2241049.30
73	13816323.53	2241050.87
74	13816323.67	2241050.02
75	13816318.03	2241033.57
76	13816309.33	2241025.10
77	13816327.08	2240980.45
78	13816312.60	2240991.14

PROPERTY CORNERS

Point #	Northing	Easting
79	13816304.53	2240979.14
80	13816260.74	2240814.04
81	13816254.09	2240934.15
82	13816237.59	2240941.36
83	13816243.13	2240817.72
84	13816201.40	2240826.00
85	13816219.06	2240822.50
86	13816218.53	2240819.80
87	13816238.24	2240796.71
88	13816230.46	2240753.66
89	13816212.26	2240749.39
90	13816211.35	2240748.43
91	13816199.75	2240774.03
92	13816185.06	2240784.42
93	13816101.05	2240745.96
94	13816094.70	2240746.53
95	13816097.04	2240703.15
96	13816085.12	2240704.06
97	13815967.61	2240740.54
98	13815974.71	2240698.13
99	13815924.35	2240733.69
100	13815919.41	2240732.91
101	13815922.22	2240715.13
102	13815916.39	2240714.21
103	13815926.13	2240690.44
104	13815920.22	2240689.50
105	13815823.58	2240711.15
106	13815824.86	2240685.93
107	13815758.46	2240702.58
108	13815778.81	2240715.25
109	13815777.80	2240695.55
110	13815777.05	2240701.35
111	13815658.12	2240719.09
112	13815682.01	2240712.34
113	13815731.58	2240735.03
114	13815718.00	2240733.71
115	13815722.59	2240737.65
116	13815723.70	2240742.80
117	13815729.06	2240742.90

PROPERTY CORNERS

Point #	Northing	Easting
119	13815728.83	2240744.73
120	13815746.59	2240750.41
121	13815764.95	2240727.68
122	13815779.58	2240726.68
123	13815793.05	2240739.37
124	13815798.11	2240741.93
125	13815830.21	2240747.79
126	13815840.82	2240742.67
127	13815851.85	2240722.07
128	13815870.46	2240728.66
129	13815868.17	2240761.75
130	13815875.00	2240771.93
131	13815876.48	2240772.42
132	13815889.18	2240764.71
133	13815890.95	2240755.42
134	13815899.84	2240745.68
135	13815915.96	2240738.83
136	13815918.48	2240735.78
137	13815923.86	2240736.40
138	13815917.23	2240743.68
139	13815901.74	2240750.31
140	13815895.81	2240756.61
141	13815894.09	2240765.65
142	13815874.97	2240777.19
143	13815873.42	2240776.68
144	13815863.18	2240761.41
145	13815865.47	2240728.31
146	13815856.08	2240724.76
147	13815845.23	2240745.03
148	13815829.31	2240752.71
149	13815797.21	2240746.85
150	13815789.62	2240743.01
151	13815776.15	2240730.32
152	13815768.84	2240730.82
153	13815750.48	2240753.55
154	13816186.71	2240725.89

VERAMENDI REGIONAL PARK

CIVILSITE PLAN (2 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sht_SitePlan.dwng

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

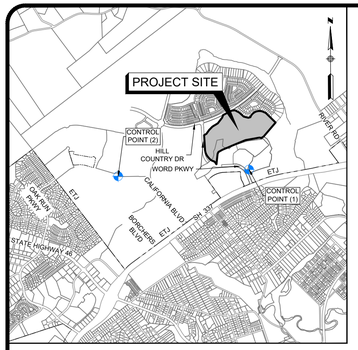
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.2404

SHEET NO.

C2002

K:\SA3856.2404 Properties\04 VMP\400 Site Development Plans\DWG Sheets\sht_SitePlan.dwg
User: rgyver
Last Modified: Aug. 27, 25 - 11:11
Plot Date/Time: Nov. 04, 24 - 13:45



LOCATION MAP
1' = 3000'

CITY OF NEW BRAUNFELS NOTES

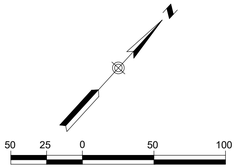
1. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AN CONSTRUCTION CHALLENGES AND CITY METHODS 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-113-E, 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 LF 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. CONTRACTOR SHALL COMPLY WITH THE CITY OF NEW BRAUNFELS BUILDING CODE AND REGULATIONS AND APPLICABLE TECHNICAL SPECIFICATIONS IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR THE CITY OF NEW BRAUNFELS," AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
2. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION PRIOR TO STARTING CONSTRUCTION.
3. LOCATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON A COMBINATION OF FIELD SURVEYING AND AVAILABLE UTILITY MAPS. CONTRACTOR TO DETERMINE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES (WHETHER SHOWN ON PLANS OR NOT) BY COORDINATING WITH THE RESPECTIVE UTILITY AGENCIES PRIOR TO CONSTRUCTION. THE FOLLOWING ARE NUMBERS OF THE RESPECTIVE AGENCIES:

   TESS-STATEWIDE ONE CALL DAMAGE PREVENTION SYSTEM
   FOR BURIED UTILITIES. 1-800-DIG-TESS

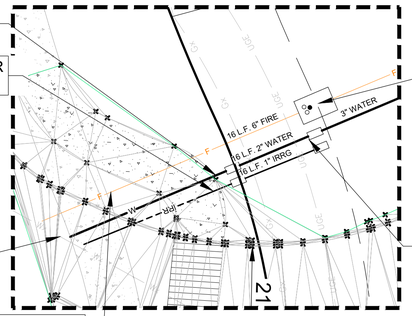
   "IF ANY NUMBER HAVE CHANGED OR ARE INCORRECT, THE CONTRACTOR IS STILL RESPONSIBLE FOR CONTACTING THE AGENCIES.
4. PRIOR TO BIDDING, THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE SITE AND FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE SITE WHICH MAY AFFECT HIS WORK. THIS INCLUDES ACCOUNTING FOR ALL VISIBLE FEATURES WHICH MAY IMPACT THE BID OR THE WORK.
5. FOR ALL STRIPING AND TRAFFIC CONTROL MARKINGS, CONTRACTOR TO USE GLIDDEN TRAFFIC PAINT #63228 OR SHERWIN-WILLIAMS PRO-MAR TRAFFIC MARKING PAINT (SERIES B29W1). COLOR IS WHITE. APPLY TWO COATS.
6. INSTALL "FIRE LANE - TOW AWAY ZONE" SIGNS IN ACCORDANCE WITH THE FIRE MARSHALL'S REQUIREMENTS. PAINT CURBS AS REQUIRED BY FIRE MARSHALL.
7. ITEMS OF WORK NOTED "BY OTHERS" SHALL BE CONSIDERED AS NOT PART OF THIS CONTRACT.
8. THE CONTRACTOR SHALL COORDINATE (WITH OWNER/ARCHITECT) WHICH TREES ARE TO BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ACCORDINGLY AND PROVIDE WATER AS REQUIRED.
9. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
10. IN CASES WHERE HYDROMULCH HAS BEEN PROPERLY APPLIED, CONTRACTOR TO PROVIDE WATER AS REQUIRED TO ACHIEVE A MINIMUM OF 75% GERMINATION TOWARDS SUBSTANTIAL GROWTH.
11. FINISHED FLOOR ELEVATION IS FOR REFERENCE ONLY. SITE WORK PERMIT DOES NOT INCLUDE ANY BUILDING FOUNDATIONS.
12. NO BUILDING FOUNDATIONS ARE PART OF THE SITE PERMIT SET. FINISHED FLOOR ELEVATIONS ARE FOR MASS GRADING PURPOSES AND WILL BE FINALIZED WITH THE BUILDING PERMIT.



SCALE IN FEET
SCALE: 1" = 50'

LEGEND

PROPOSED	EXISTING	
S	S	SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
	WL	WATER LINE
S		SANITARY SEWER LATERAL
C/O	C/O	CLEAN OUT
		WATER VALVE
		SINGLE WATER SERVICE
		FIRE HYDRANT
		WATER METER
	GV	GAS VALVE
G	Gx	GAS LINE
D	D	STORM SEWER MANHOLE
		CURB INLET
		POWER POLE
		STREET LIGHT (100 WATT LED)
		STREET LIGHT (250 WATT LED)
		GUY WIRE
	OU	OVERHEAD ELECTRIC
		BENCHMARK
	TMH	TOP OF MANHOLE
	EX.	EXISTING
	G,E,T,CA	GAS, ELEC, TELE & CABLE TV ESM'T.
	ESM'T.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	DPR	DEED & PLAT RECORDS OF GUADALUPE COUNT,Y TEXAS
	OPR	OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS
		FIRE LANE MARKING REF. TO SHEET C4001 DETAIL 1 & 2 FOR STRIPING AND SIGN DETAILS



DETAIL "A"
1' = 10'

EXISTING 2" DOMESTIC METER W/ 1-12"X2" SERVICE SADDLE

EXISTING1-1" IRRIGATION METER W/ 1-12"X1" SERVICE SADDLE

6" DOUBLE CHECK VALVE ASSEMBLY W/ 5'X7.5'X6' CONCRETE VAULT

EXISTING 20' SANITARY SEWER EASEMENT (VOL 692, PG 409, OPR)

12" EXISTING WATER MAIN (BY OTHERS)

INSTALL 1 - 2"x3" REDUCED PRESSURE PRINCIPLE BACKFLOW DEVICE. REF. MEP PLANS FOR DETAILS.

CONTRACTOR SHALL TIE PROPOSED 6" WATER MAIN INTO EXISTING 12" WATER MAIN AFTER DISINFECTION IS COMPLETE AND WATER IS ACCEPTED BY CONB FOR CHLORINATION INJECTION:
2-1" CORPORATION STOP, C.C. X I.P.
2-1" COPPER TUBING, CUT AS REQ'D.
2-1 1/4" THD SOLID CAPS, THR.
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN

1-6" 22.55°ELBOW, M.J.

1-3" 22.5°ELBOW, M.J.

1-6" 45°ELBOW, M.J.

1-3" 45°ELBOW, M.J.

5/8" DOMESTIC WATER SERVICE LINE

5/8" DOMESTIC WATER SERVICE LINE

5/8" DOMESTIC WATER SERVICE LINE

1" DOMESTIC WATER SERVICE LINE

FFE= 722.50' (MIN.)
INV=719.02

922 L.F. - 6" PVC PIPE FOR FIRE

857 L.F. - 3" HDPE PIPE

27 LF-6" SANITARY SEWER LATERAL @ 2%

CLEANOUT INV. 718.48

77 LF-6" SANITARY SEWER LATERAL @ 2%

CLEANOUT INV. 716.94

86 LF-6" SANITARY SEWER LATERAL @ 2%

CLEANOUT INV. 715.22

100 LF-6" SANITARY SEWER LATERAL @ 2%

1-3" 11.25°ELBOW, M.J.

1-6" 11.25°ELBOW, M.J.

EXISTING VAR WIDTH SANITARY SEWER EASEMENT (DOC NO. 202006021577, OPR.)

1-3" 90°ELBOW, M.J.

1-6" 45°ELBOW, M.J.

WORD PARKWAY
(VARIABLE W/IDTH R.O.W.)

EXISTING 12" WATER LINE TO BE DONE BY OTHERS

SEE DETAIL "A" THIS SHEET

EXISTING GAS LINE

EXISTING UNDERGROUND ELECTRICAL LINE

N: 13815649.19
E: 2240770.82

INSTALL:
1-FIRE HYDRANT ASSEMBLY
1-6" GATE VALVE
1-6" VALVE BOX COMPLETE
1-6" PLUG
REF: TO SHEET C4004 FOR DETAILS

CONTRACTOR TO COORDINATE WITH THE CITY OF NEW BRAUNFELS AND / OR COMAL COUNTY FIRE MARSHALL FOR FINAL INSPECTION OF FIRE LANE AND FIRE SIGNS.

EXISTING MH A11
(VERAMENDI SANITARY SEWER S7)
EX INV IN= 711.92
EX INV OUT= 712.12
INV IN= 713.22
IN CASE OF ANY DISCREPANCY, CONTACT ENGINEER IMMEDIATELY

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.

VERAMENDI REGIONAL PARK

PRELIMINARY UTILITY AND FIRE PROTECTION PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PDF
DRAWING NAME: 81_Utility_Fire Protection Plan.dwg

09/04/25

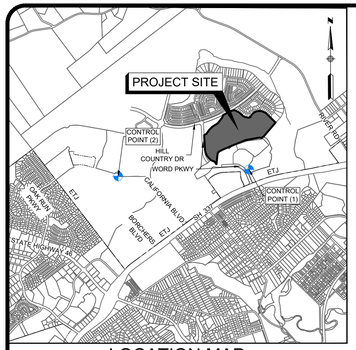
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

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

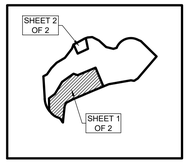
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SA3856.2404

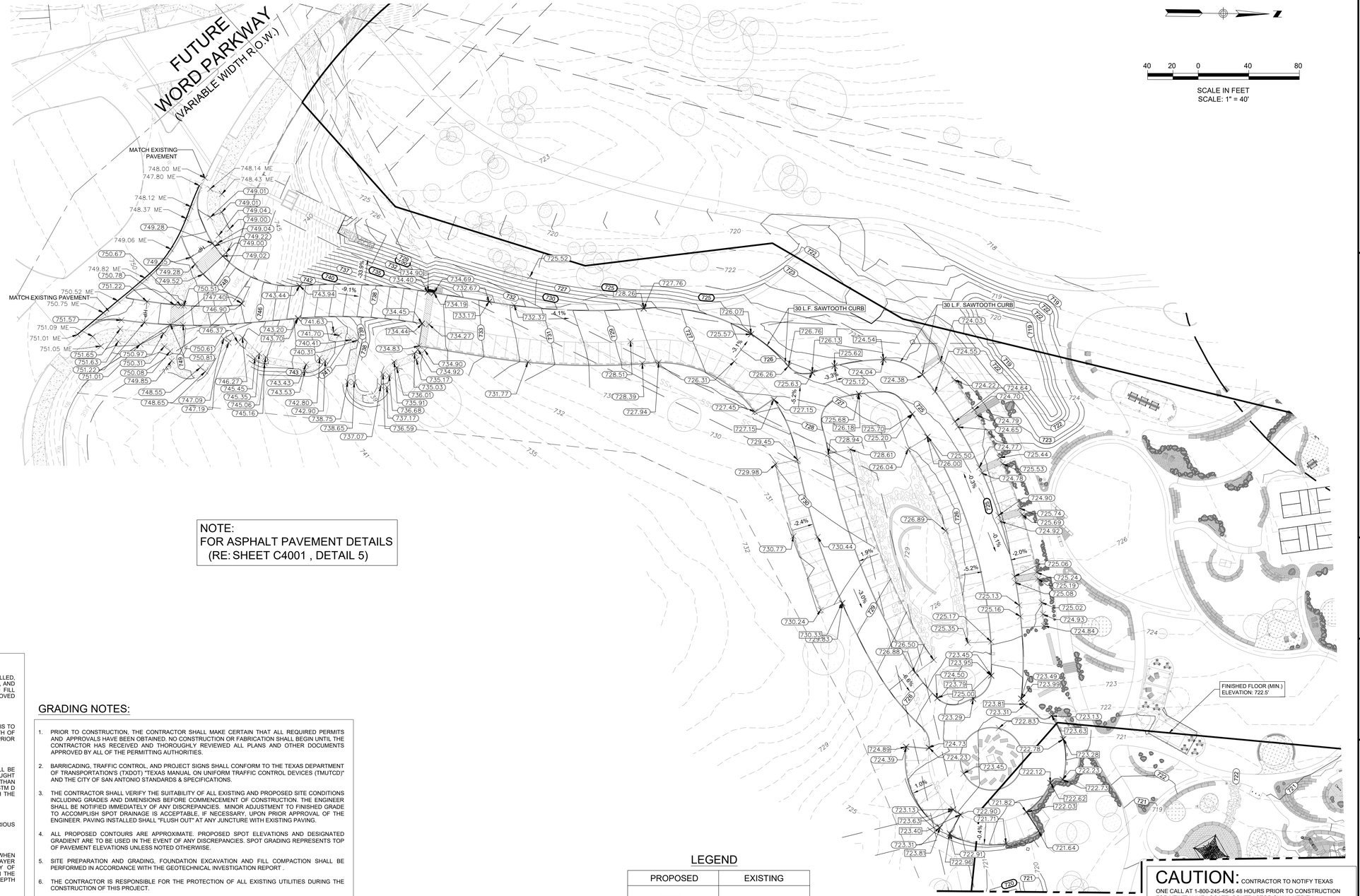
SHEET NO.
C3000

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User: Nicholas Gonzales
Last Modified: Aug 26, 25 - 18:17
Plot Time: Aug 26, 25 - 14:36:06



LOCATION MAP
1" = 3000'





NOTE:
FOR ASPHALT PAVEMENT DETAILS
(RE: SHEET C4001 , DETAIL 5)

GENERAL SPECIFICATIONS FOR COMMERCIAL SITE PREPARATION

GENERAL DESCRIPTION

THE ITEM SHALL CONSIST OF ALL CLEARING AND PREPARATION OF LAND TO BE FILLED, FILLING OF THE LAND, SPREADING, COMPACTION TESTING AND INSPECTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES AND SLOPES AS SHOWN ON THE APPROVED PLANS.

SCARIFYING THE AREA TO BE FILLED

ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND SURFACE SHALL THEN BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"), ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING.

COMPACTING THE AREA TO BE FILLED

FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD-TEX-113-E COMPACTION PROCEDURE.

FILL MATERIALS

THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

DEPTH AND MIXING OF FILL LAYERS

THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO THE STIPULATED ABOVE. EACH LAYER SHALL BE THOROUGHLY MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS MAY VARY DEPENDING ON THE COMPACTION EQUIPMENT OF THE DEMONSTRATED CAPABILITY. THE MAXIMUM LOOSE DEPTH FOR ANY MATERIAL SHALL NOT EXCEED TWELVE INCHES (12").

ROCK

WHEN FILL MATERIAL INCLUDES ROCK, THE MAXIMUM ROCK SIZE SHALL BE AS APPROVED BY THE GEOTECHNICAL ENGINEER. NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE FILLED WITH SMALL STONES OR SOIL AND ADEQUATELY COMPACTED. NO LARGE ROCKS WILL BE PERMITTED WITHIN EIGHTEEN INCHES (18") OF THE FINISHED GRADE.

COMPACTION OF FILL LAYER

COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTION SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

DENSITY TEST

FIELD DENSITY TESTS SHALL BE PERFORMED ON LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE EIGHTEEN INCHES (18"). ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THE TESTING LAB PERFORMS ALL TEST REQUIRED BY FHA SPECIFICATION.

LOT GRADING

ALL GRADING SHALL CONFORM TO ADA STANARDS WHERE APPLICABLE. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IN ALL AREAS OF THE PROJECT.

GRADING NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL MAKE CERTAIN THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
2. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION'S (TXDOT) "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)" AND THE CITY OF SAN ANTONIO STANDARDS & SPECIFICATIONS.
3. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES. MINOR ADJUSTMENT TO FINISHED GRADE TO ACCOMPLISH SPOT DRAINAGE IS ACCEPTABLE, IF NECESSARY, UPON PRIOR APPROVAL OF THE ENGINEER. PAVING INSTALLED SHALL "FLUSH OUT" AT ANY JUNCTURE WITH EXISTING PAVING.
4. ALL PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN THE EVENT OF ANY DISCREPANCIES. SPOT GRADING REPRESENTS TOP OF PAVEMENT ELEVATIONS UNLESS NOTED OTHERWISE.
5. SITE PREPARATION AND GRADING, FOUNDATION EXCAVATION AND FILL COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT .
6. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT.
7. THE CONTRACTOR SHALL ADJUST TOP OF MANHOLES AND OTHER UTILITY SURFACE FEATURES AS NEEDED TO PROMOTE POSITIVE GRADING.
8. ALL BUILDINGS SHALL HAVE A MINIMUM 1/2" DROP FROM FINISHED FLOOR AT THRESHOLDS, AND FINISHED GROUND ELEVATIONS AT EXTERIOR SHALL BE 8" LOWER THAN FINISHED FLOOR ELEVATIONS UNLESS OTHERWISE NOTED.
9. ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS-SLOPE OF 2% AND A MAXIMUM RUN SLOPE OF 5%, UNLESS DESIGNATED AS A RAMP.
10. CONTRACTOR MUST VERIFY ALL EXISTING GRAVITY INVERTS AND MATCH EXISTING ELEVATIONS AND IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
11. MAXIMUM SLOPE OF LANDSCAPED AREAS TO BE 3:1, BUT CAN BE CONSTRUCTED FLATTER AS DIRECTED BY OWNER/ENGINEER.
12. THE MINIMUM FINISHED FLOOR ELEVATION SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND AND GRADING OF ADJACENT GROUND SHOULD SLOPE AWAY FROM STRUCTURES.
13. FINISHED FLOOR ELEVATION SHALL BE CONSTRUCTED AT MINIMUM 722.5'.
14. NO BUILDING FOUNDATIONS ARE PART OF THE SITE PERMIT SET. FINISHED FLOOR ELEVATIONS ARE FOR MASS GRADING PURPOSES AND WILL BE FINALIZED WITH THE BUILDING PERMIT.

LEGEND

PROPOSED	EXISTING	
800	800	CONTOUR
2%	2%	FLOW ARROW
-2.0%		GRADE BREAK
		SLOPE
800.00		SPOT GRADES
800.00		MATCH EXISTING
800.00		TOP OF CURB
		TREES TO BE REMOVED
		TREES TO REMAIN

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.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

VERAMENDI REGIONAL PARK
GRADING PLAN (1 OF 2)

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Grading Plan.dwg

09/04/25

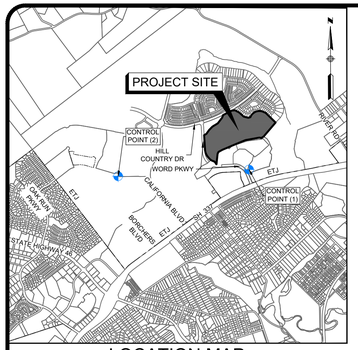
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
Priscilla G. Flores

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

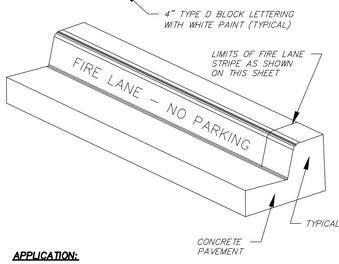
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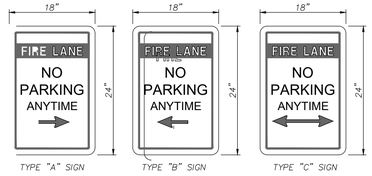
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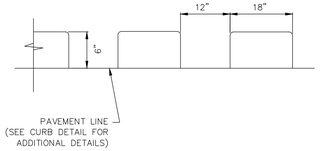
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Last Saved By: Hector Wong Aug 27, 25 - 15:27
Last Modified: Wed Aug 27, 25 - 15:27


PROJECT SITE
CONTROL POINT (2)
HILL COUNTRY DR
WORD PKWY
CONTROL POINT (1)
CALIFORNIA BLVD
RANCHERO BLVD
STATE HIGHWAY 16
ET1
ET2
ET3
ET4
ET5
ET6
ET7
ET8
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ET40

FIRE LANE - NO PARKING







APPLICATION:

1. ON EXISTING 6" CURB: PAINT RED LANE STRIPE ON BOTH FACE AND TOP OF CURB PAINT WHITE LETTERS ON FACE OF CURB ONLY
2. WHERE NO CURB EXIST: PAINT A 6" WIDE RED STRIPE LOCATED 1.0' OFF EDGE OF PAVEMENT WITH 4" WHITE LETTER IN RED STRIPE.
3. SEE SITE PLAN FOR CURB TYPES AND LOCATIONS
4. NO MORE THAN 40 FEET SPACING BETWEEN WORDING.

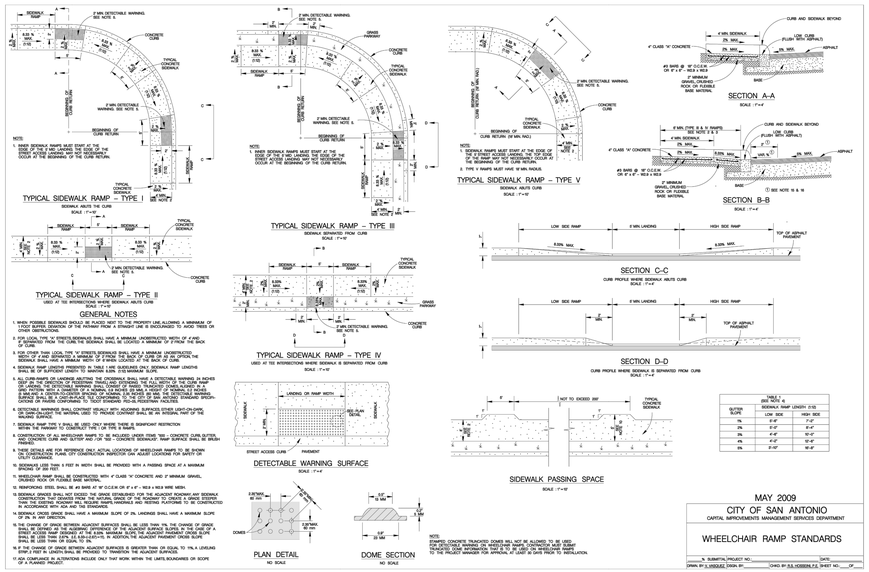
NOTES:

1. LETTERS AND BORDER IN RED ON WHITE BACKGROUND.
2. STANDARD SIZE OF SIGN SHALL BE 18"x24" AS SPECIFIED BY THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (R7-35)
3. FIRE PLAN REVIEWER OR FIRE INSPECTOR WILL MAP OUT THE LOCATIONS AND NUMBER OF SIGNS REQUIRED.
4. BOTTOM OF EDGE OF THE SIGN MUST BE AT LEAST SEVEN (7) FEET ABOVE GRADE WHERE THE SIGN IS INSTALLED AND AT LEAST TWO (2) FEET FROM THE BACK OF CURB.

1 TYP. FIRE LANE MARKING DETAIL
N.T.S.

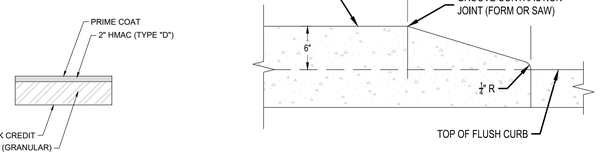
2 FIRE LANE SIGN DETAIL
N.T.S.

3 SAWTOOTH CURB DETAIL
N.T.S.


TYPICAL SIDEWALK RAMP – TYPE I
SIDEWALK ABUTS THE CURB
TYPICAL SIDEWALK RAMP – TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
TYPICAL SIDEWALK RAMP – TYPE III
SIDEWALK SEPARATED FROM CURB
TYPICAL SIDEWALK RAMP – TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
TYPICAL SIDEWALK RAMP – TYPE V
SIDEWALK ABUTS CURB
SECTION A-A
SECTION B-B
SECTION C-C
CURB PROFILE WHERE SIDEWALK ABUTS CURB
SECTION D-D
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
DETECTABLE WARNING SURFACE
PLAN DETAIL
DOME SECTION
SIDEWALK PASSING SPACE
GENERAL NOTES
1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE,ALLOWING A MINIMUM OF 1 FOOT BUFFER SEPARATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTACLES.
2. FOR LOCAL THRU, "A" STREETS SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4'-0" 5' SEPARATED FROM THE CURB.THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2'FROM THE BACK OF CURB.
3. FOR COLLECTOR THRU LOCAL, THRU "A" STREETS SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4'AND SEPARATED, A MINIMUM OF 2'FROM THE BACK OF CURB OR AS OPTIONS THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5'WITH LOCATED AT THE BACK OF CURB.
4. SIDEWALKS OF LESSER UNOBSTRUCTED WIDTHS SHALL BE ALLOWED IN SIDEWALK RAMP LENGTHS WHERE THE SIDEWALK IS CONSTRICTED BY UNAVOIDABLE OBSTACLES.
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. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES (0.9M), A HEIGHT OF NOMINAL 0.2 INCHES (5MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60MM). DETECTABLE WARNINGS SURFACE SHALL BE A CAST-IN-PLACE TILE CONFORMANCE TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS OR PAVERS CONFORMING TO TEXDOT STANDARD PEDI-RG PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST WITH ADJACENT SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. DETECTABLE WARNINGS SHALL NOT BE PLACED ON ANY PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION PERPENDICULAR TO TRAVEL LESS THAN 4'-0" (1.2M) IS REQUIRED.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "555 – CONCRETE CURB, GUTTER, AND GUTTERS AND CURB AND GUTTER "555 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BROOM FINISH.
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. SIDEWALK OF 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MINIMUM INTERVAL 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 NORMAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN 5% SHALL BE CONSIDERED A RAMP AND SHALL COMPLY WITH WARNINGS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MINIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MINIMUM SLOPE OF 1.5% AND A MAXIMUM OF 2%.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 1%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A CURB RAMP, THE CHANGE OF GRADE SHALL BE MEASURED ACROSS THE GUTTER AND ROADWAY. THE RAMP SHALL BE LESS THAN EQUAL TO 8.33% (1:12) IN ELEVATION. THE ADJACENT ROADWAY SLOPES, IF LESS THAN 5%, SHALL BE USED TO DETERMINE THE CHANGE OF GRADE.
16. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 1%, 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.

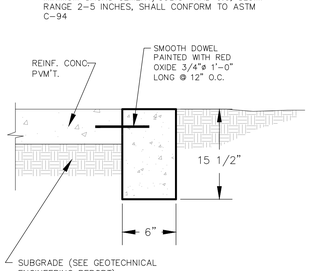
MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS
A SUBMITTAL PROJECT NO.: DATE:
DRWN BY: D. GONZALEZ CHKD BY: R.G. HUDDESS P.E. SHEET NO.: OF

5 PAVEMENT SECTION
N.T.S.

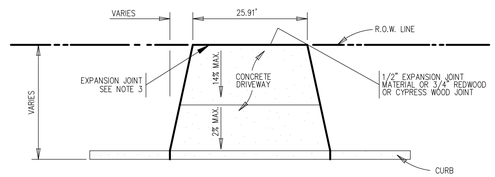


6 TRANSITION CURB DETAIL
N.T.S.

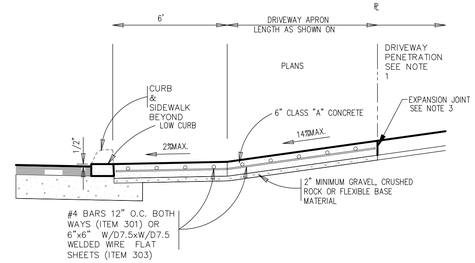
NOTE:
ALL CONCRETE SHALL BE CLASS 'A' "3500 PSI @ 28 DAY" MAXIMUM WATER TO CEMENT RATIO 6.0, MINIMUM SACKS CEMENT/CUBIC YARD 6.0, SLUMP RANGE 2-5 INCHES, SHALL CONFORM TO ASTM C-94



4 HEADER CURB DETAIL
N.T.S.



TYPICAL COMMERCIAL DRIVEWAY PLAN VIEW



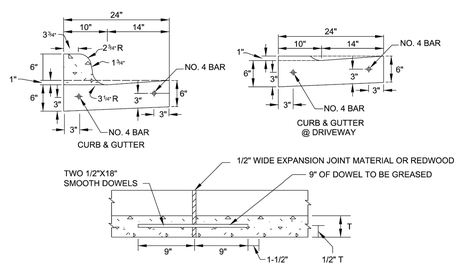
TYPICAL COMMERCIAL DRIVEWAY SECTION
ITEM 502-3

NOTES:

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A. CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2
   B. ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE "D" & 6" FLEXIBLE BASE
   C. GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE, IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

7 TYPICAL COMMERCIAL DRIVEWAY DETAIL
N.T.S.

CURB AND GUTTER



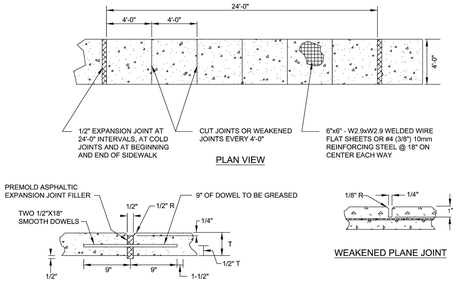
LONGITUDINAL SECTION THRU CURB AND GUTTER SHOWING TYPICAL EXPANSION JOINT DETAILS. REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS. STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

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.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: CURB & GUTTER			

SIDEWALK (RESIDENTIAL)



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.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: SIDEWALK (RESIDENTIAL)			

VERAMENDI REGIONAL PARK
CIVIL SITE DETAILS (SHEET 1 OF 2)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_Site Details.dwg

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER
CENSED
ONAL ENGINEER

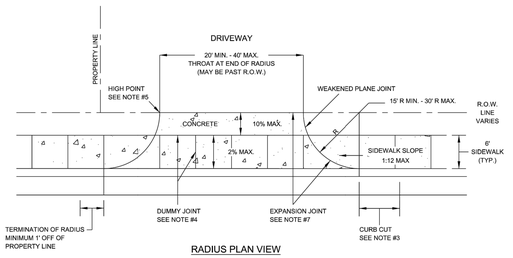
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.2404

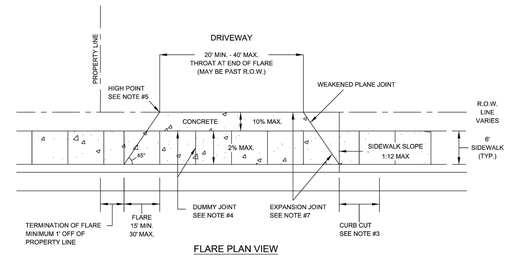
SHEET NO.
C4001

K:\SA3856 ASA Properties\2404 AMP\426 Site Development Plans\DWG\Sheets\sh_Site Details.dwg
Xrefs: None
Last Modified: Aug 27, 25 - 10:55
Last Plotted: Aug 27, 25 - 10:55

DRIVEWAY APRON
(COMMERCIAL - MULTIFAMILY - INDUSTRIAL)
(RADIAL/FLARED)



RADIUS PLAN VIEW

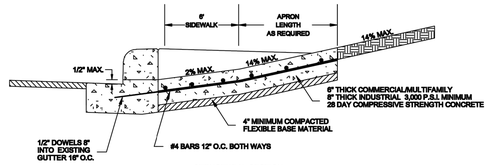


FLARE PLAN VIEW

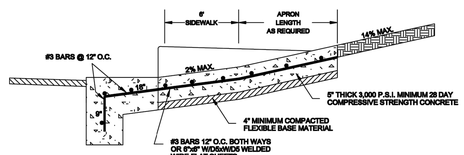
DATE APPROVED: 07/2008	DWG. NO: ST-015.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (COMMERCIAL - MULTIFAMILY - INDUSTRIAL)		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(COMMERCIAL - MULTIFAMILY - INDUSTRIAL)



STRUCTURAL SECTION



NO EXISTING CURB STRUCTURAL SECTION

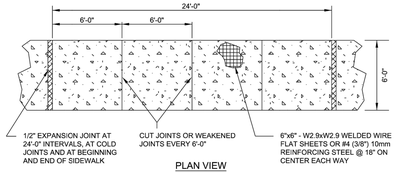
NOTES:

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

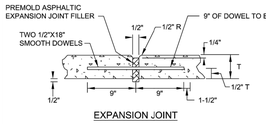
DATE APPROVED: 7/08	**DWG. NO: ST-015.2**	**SCALE: N.T.S.**
DRAWN BY: RAS	**SHEET: 2 OF 2**	
FILENAME: DRIVEWAY (Commercial - Multifamily - Industrial)		
P:\CURRENT NEW BRAUNFELS DETAILS\2008		

City of New Braunfels — **ENGINEERING DEPARTMENT**

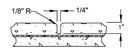
SIDEWALK
(COMMERCIAL - INDUSTRIAL)



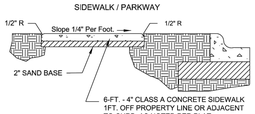
PLAN VIEW



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.

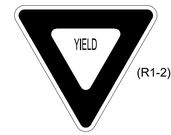
DATE APPROVED: 07/2008	DWG. NO: ST-017	SCALE: N.T.S.	
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: SIDEWALK (COMMERCIAL - INDUSTRIAL)			

City of New Braunfels — ENGINEERING DEPARTMENT



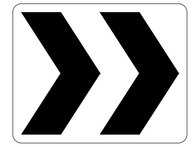
(R6-4)

8 ROUNDABOUT DIRECTIONAL SIGN
N.T.S.



(R1-2)

9 ROUNDABOUT DIRECTIONAL SIGN
N.T.S.



(R6-4)

10 ROUNDABOUT DIRECTIONAL SIGN
N.T.S.



(W11-2)

(W16-7PL)

11 PEDESTRIAN CROSSING
N.T.S.

VERAMENDI REGIONAL PARK
CIVIL SITE DETAILS (SHEET 2 OF 2)

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: tri_Site Details.dwg

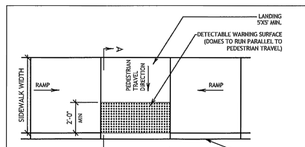
09/04/25

STATE OF TEXAS — PRISCILLA G. FLORES — 109874 — LICENSED PROFESSIONAL ENGINEER — SURVEYOR

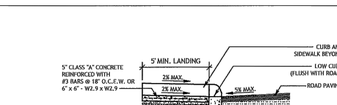
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.533.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.2404

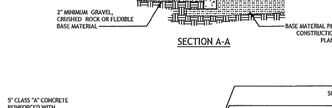
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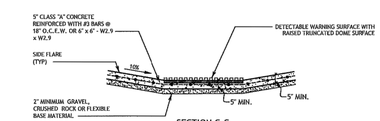
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



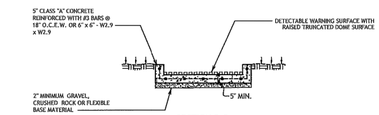
SECTION A-A



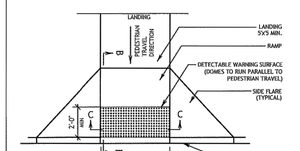
SECTION B-B



SECTION C-C



SECTION D-D



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

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

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% (1Y:12H), MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1Y: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% (1Y: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 2.82% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
16. ADA RAMP SHALL BE CONSTRUCTED WITH 5' CLASS "A" CONCRETE WITH 2" MINIMUM GRAVEL,CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" - W2.9 X W2.9 WIRE MESH.
17. THE EXTENTS OF ADA COMPLIANCE IN ALTERATIONS SHALL BE WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

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

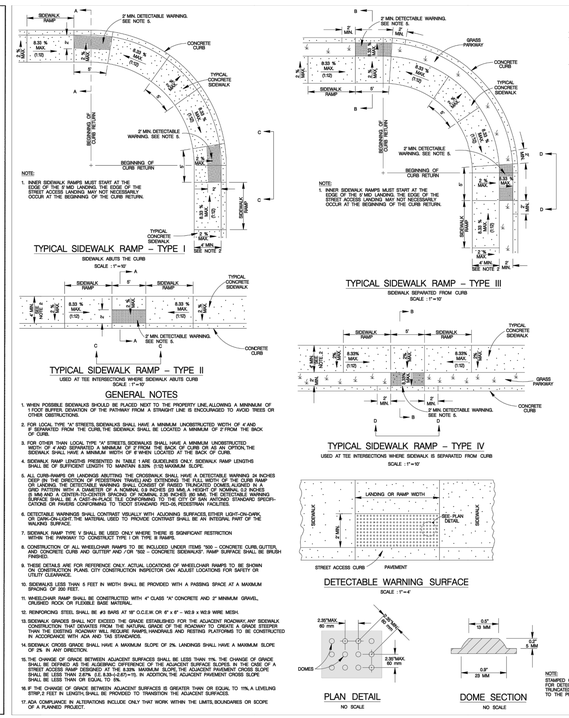


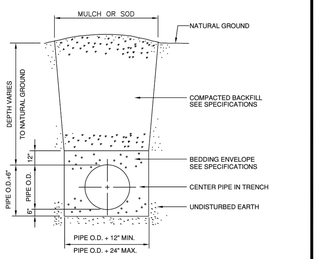
TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-8"	7'-2"
2%	5'-0"	8'-4"
3%	4'-8"	10'-0"
4%	4'-3"	12'-6"
5%	3'-10"	16'-8"

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

___% SUBMITTAL/PROJECT NO.:	DATE:
DRAWN BY: V.VASQUEZ	CHKD BY: R.S. HOSSEIN, P.E.
SHEET NO.:	OF

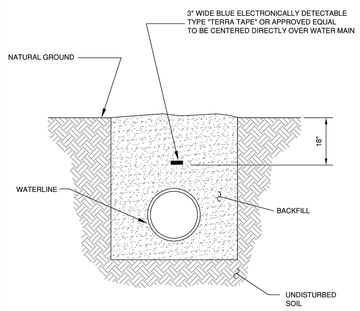
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Xrefs: None
Last Modified: Aug 27, 25 - 10:55
Layout: Site Details
Last Modified: Aug 27, 25 - 10:55



NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

1

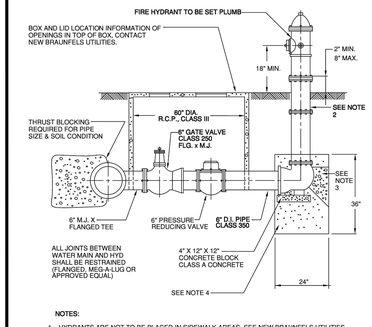


WATERLINE SURFACE IDENTIFICATION DETAIL
NOT TO SCALE

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

2

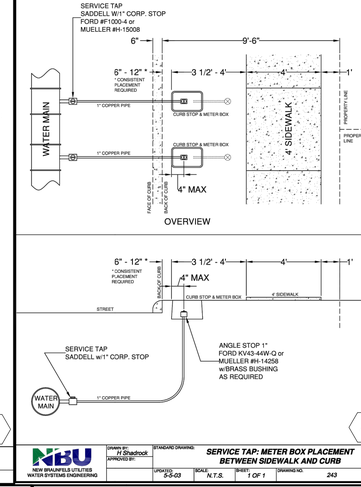


NOTES:
1. HYDRANTS ARE NOT TO BE PLACED IN SIDEWALK AREAS. SEE NEW BRAUNFELS UTILITIES STANDARD SPECIFICATIONS FOR LOCATION OF HYDRANT.
2. FOR BURY DEPTHS GREATER THAN 5', ONE BARREL EXTENSION NOT EXCEEDING 2' IN LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
3. CONCRETE BLOCKING WITH A MIN. 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.

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

DRAWN BY: JD Amaro	STANDARD DRAWING: FIRE HYDRANT INSTALLATION WITH PRESSURE REDUCING VALVE			
APPROVED BY:	UPDATED: 4-15-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 241

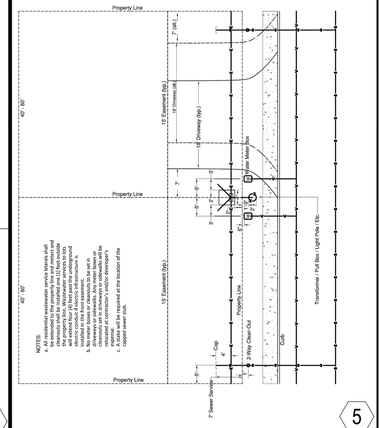
3



NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

4



NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

5

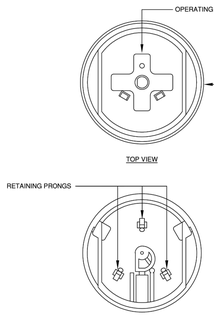
FLOODPLAIN NOTE:

1. A PORTION OF THIS PROJECT IS WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FEMA FIRM MAP NO. 48091C0435G EFFECTIVE DATE 9/2/2009.

NOTES:

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

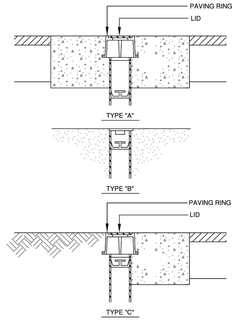
1. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
2. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH, NO ROCKS OR STONES HAVING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



NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

6

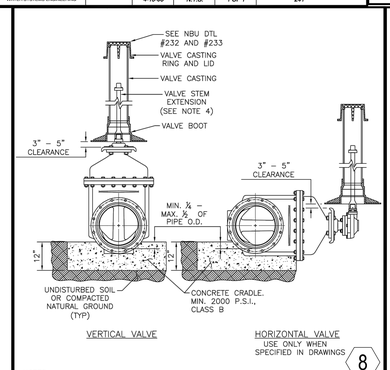


NOTES:
1. DEBRIS CAP SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATION.
2. FLEXIBLE SKIRT SHALL BE TRIMMED TO PROVIDE A SMOOTH CONTACT WITH THE INTERIOR DIAMETER OF THE PIPE.
3. THE DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, INC., PHOENIX, ARIZONA OR 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 #WM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDRAD LOCATION COIL.

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

7

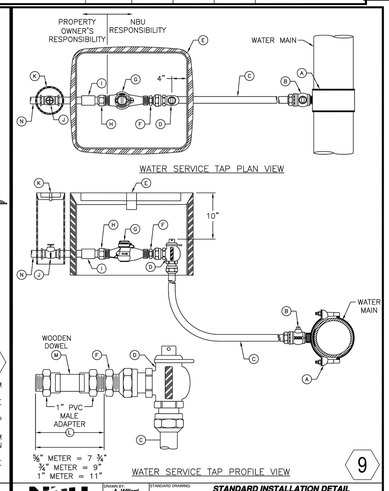


NOTES:
1. WELD SOCKET 2⅜" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF 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.

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

8



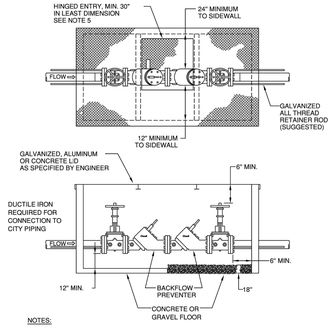
NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

9

NBU Water Notes

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



NOTES:
1. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
2. ALL TEST COCKS MUST BE REDIRECTED UPWARD AND PLUGGED.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
4. CLEARANCES SHALL BE AS INDICATED IN THE SPECIFICATIONS.
5. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 30" IN LEAST DIMENSION.

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

DRAWN BY: H Shadrock	STANDARD DRAWING: STANDARD FIRE LINE INSTALLATION			
APPROVED BY:	UPDATED: 4-23-03	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO.: 210

10

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.

NBU — NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING

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

11

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Last Modified: Apr. 14, 25 - 14:52
Xrefs Bound: Bin, Ar, Arc, Ltn, Xr

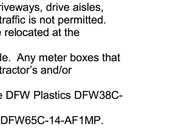
VERAMENDI REGIONAL PARK
UTILITY DETAILS (1 OF 2)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: SI_Utility Details.dwg

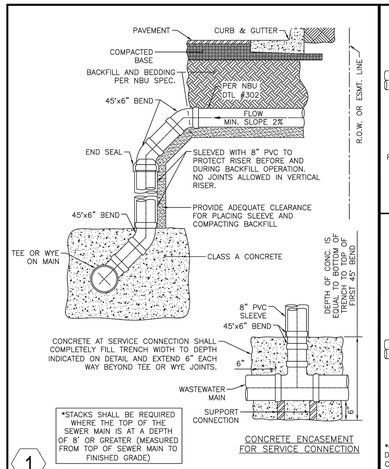
09/04/25



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

JOB NUMBER: SA3856.2404

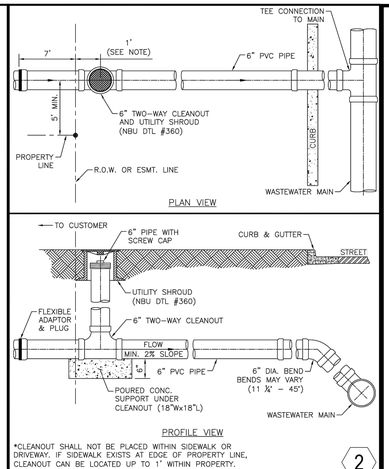
SHEET NO.
C4003



CONCRETE ENCASEMENT FOR SERVICE CONNECTION

1

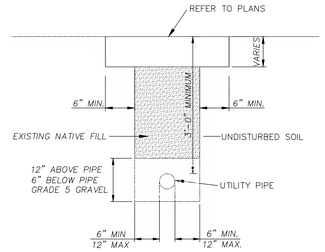
NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	CHECKED BY: A. Willard	6/17/21	STANDARD DRAWING: WASTEWATER DEEP SERVICE CONNECTION DETAIL	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO: 301



*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.

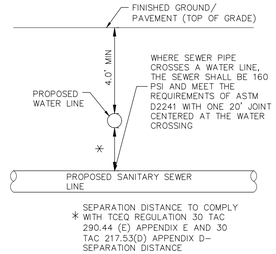
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NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: A. Willard	CHECKED BY: A. Willard	6/17/21	STANDARD DRAWING: SINGLE WASTEWATER SERVICE CONNECTION DETAIL	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO: 302



3 UTILITY TRENCH (PRIVATE) DETAIL

NTS



* SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E AND 30 TAC 217.53(D) APPENDIX D– SEPARATION DISTANCE

4 TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

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-113-E, 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 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING, THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

5

VERAMENDI REGIONAL PARK

UTILITY DETAILS (2 OF 2)

NO.	DESCRIPTION	BY	DATE

REVISIONS

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: 90_Utility Details.dwg

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED PROFESSIONAL ENGINEER

Priscilla G. Flores

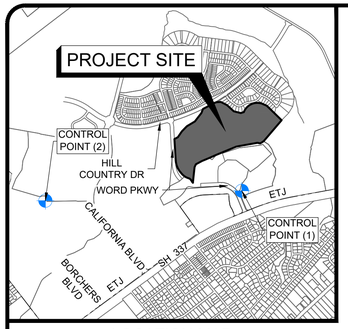
LJA Engineering, Inc.
9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER: SA3856.2404

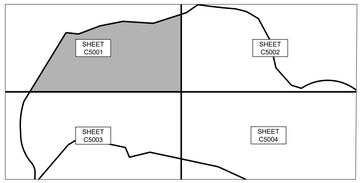
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C4004

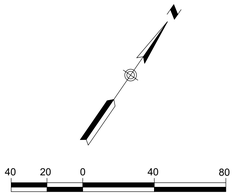
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Last Modified: Apr. 15, 25 – 15:49
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LOCATION MAP



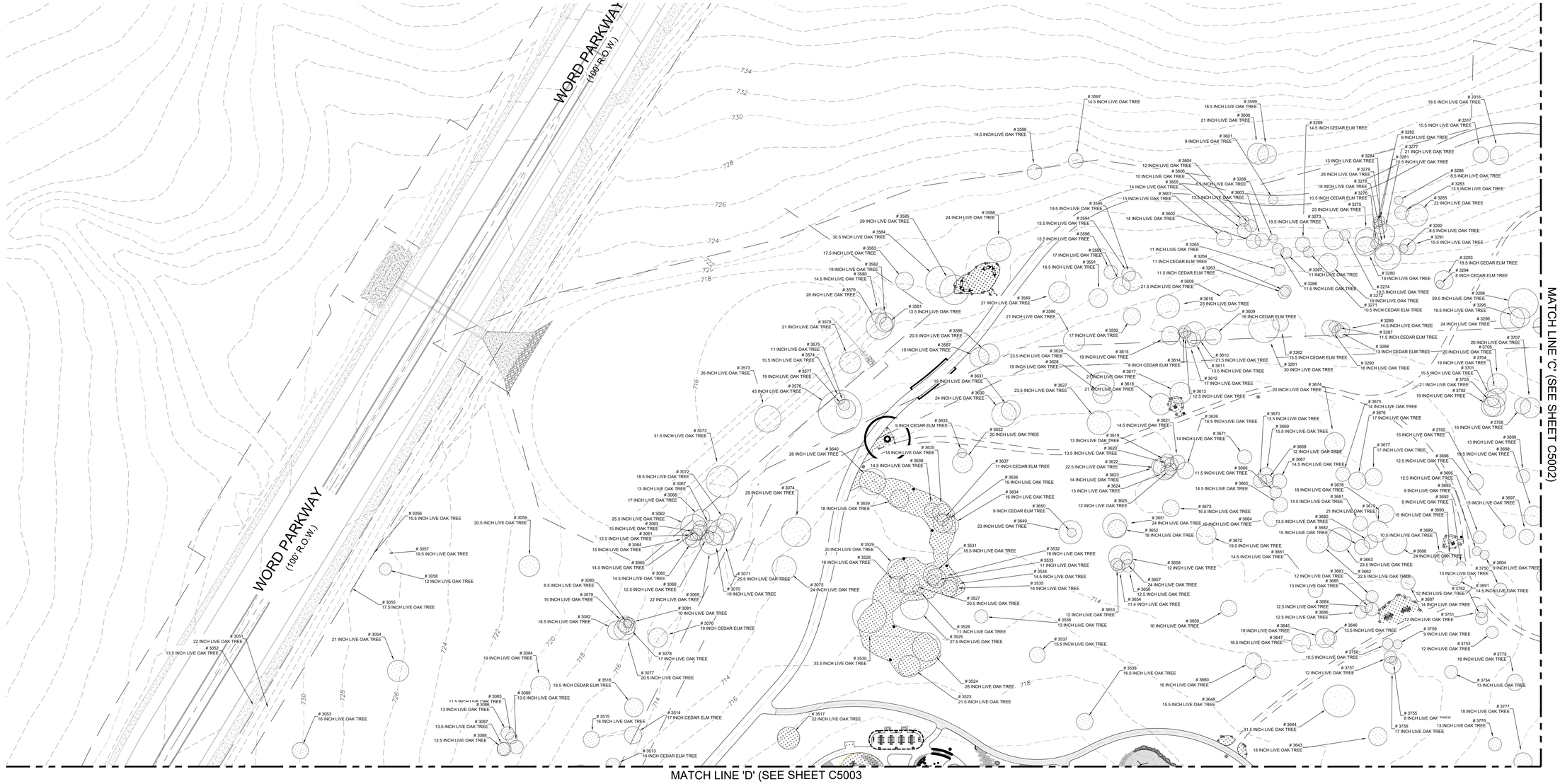
INDEX MAP
N.T.S.



SCALE IN FEET
SCALE: 1"=50'

LEGEND

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



MATCH LINE 'D' (SEE SHEET C5003

VERAMENDI REGIONAL PARK

TREE PRESERVATION PLAN (1 OF 4)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: s02_Tree Preservation Plan.dwg

09/04/25

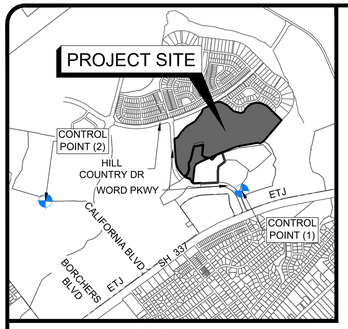
STATE OF TEXAS
PRISCILLA G. FLORES
109874
LICENSED
PROFESSIONAL ENGINEER

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

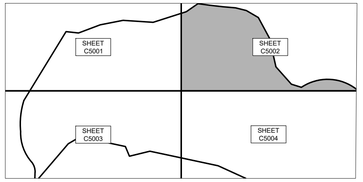
JOB NUMBER:
SA3856.2404

SHEET NO.
C5001

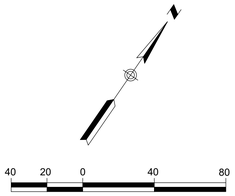
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Last Saved By: ng
Last Modified: Aug 20, 25 - 19:18
Plot Date/Time: Aug 20, 25 - 19:21



LOCATION MAP



INDEX MAP
N.T.S.



SCALE IN FEET
SCALE: 1"=50'

LEGEND

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



VERAMENDI REGIONAL PARK

TREE PRESERVATION PLAN (2 OF 4)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: #C_Tree Preservation Plan.dwg

09/04/25

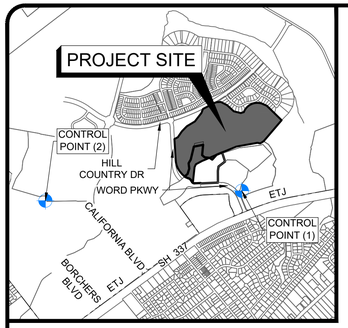
STATE OF TEXAS
PRISCILLA G. FLORES
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9830 Colonnade Blvd
Suite 300
San Antonio, Texas 78230
Phone 210.503.2700
LJA.COM
TBPE No. F-1386

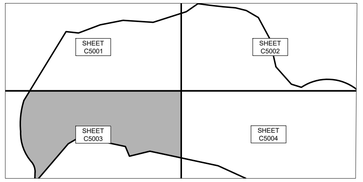
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SA3856.2404

SHEET NO.
C5002

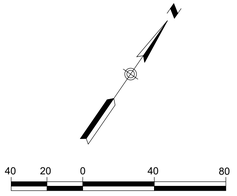
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Last Modified: Aug 20, 25 - 19:18
Last Plotted: Dec 04, 25 - 14:32:39



LOCATION MAP



INDEX MAP
N.T.S.

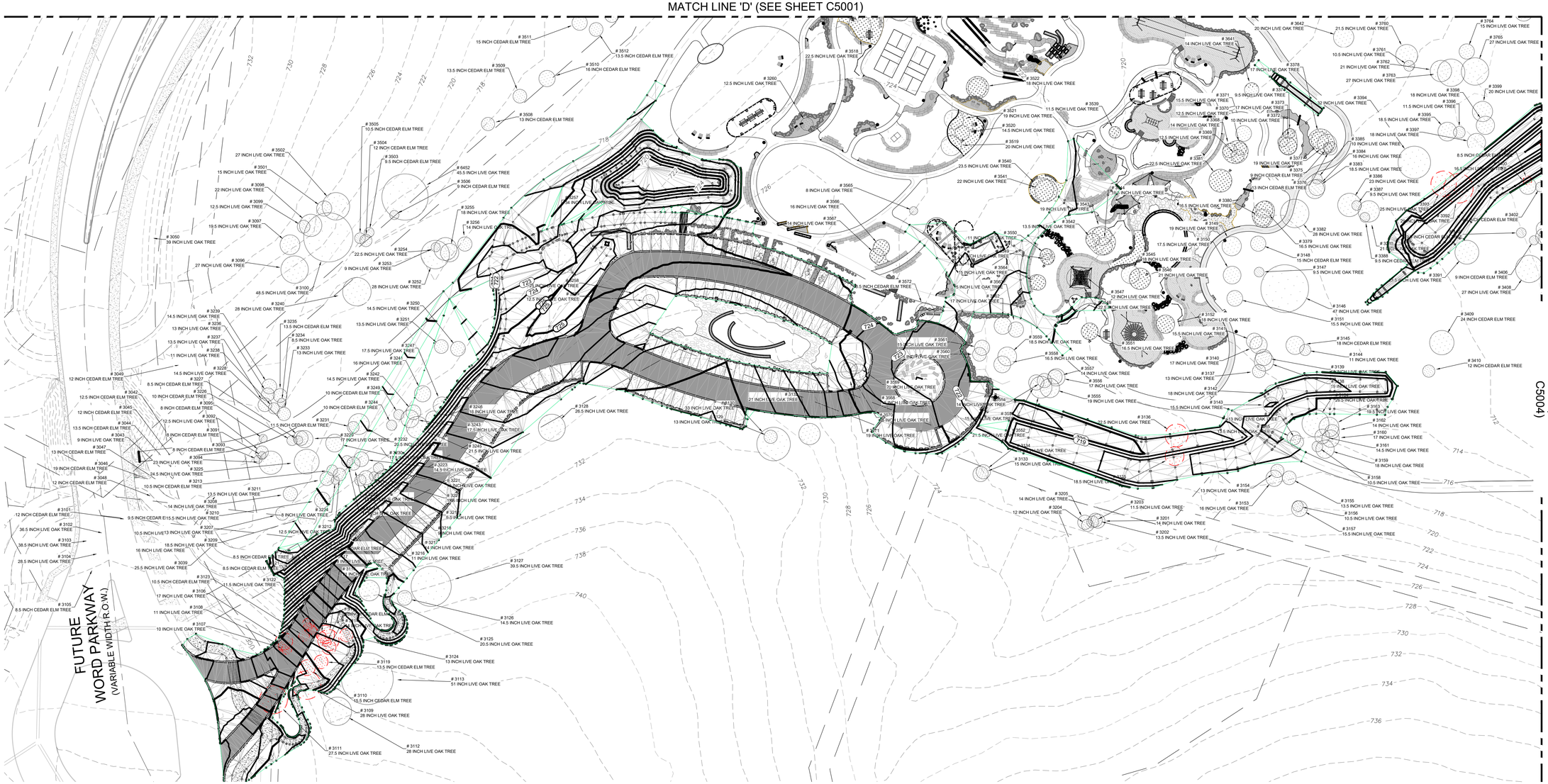


SCALE IN FEET
SCALE: 1"=50'

LEGEND

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

MATCH LINE 'D' (SEE SHEET C5001)



MATCH LINE 'C' (SEE SHEET C5004)

VERAMENDI REGIONAL PARK

TREE PRESERVATION PLAN (3 OF 4)

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: sht_tree Preservation Plan.dwg

09/04/25

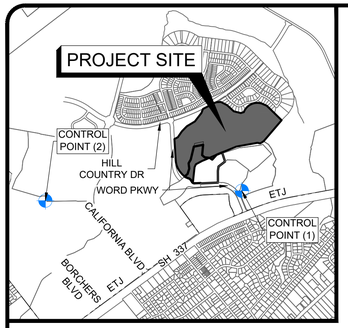
STATE OF TEXAS
PRISCILLA G. FLORES
109874
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Priscilla G. Flores

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

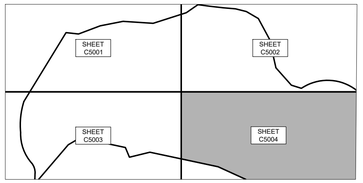
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SHEET NO. **C5003**

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Last Modified: Aug 20, 25 - 19:18
Xrefs Attached: ea, ta, ts, xs, xa, xr

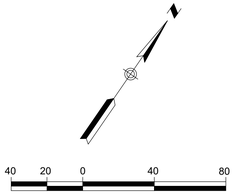


LOCATION MAP



INDEX MAP

N.T.S.



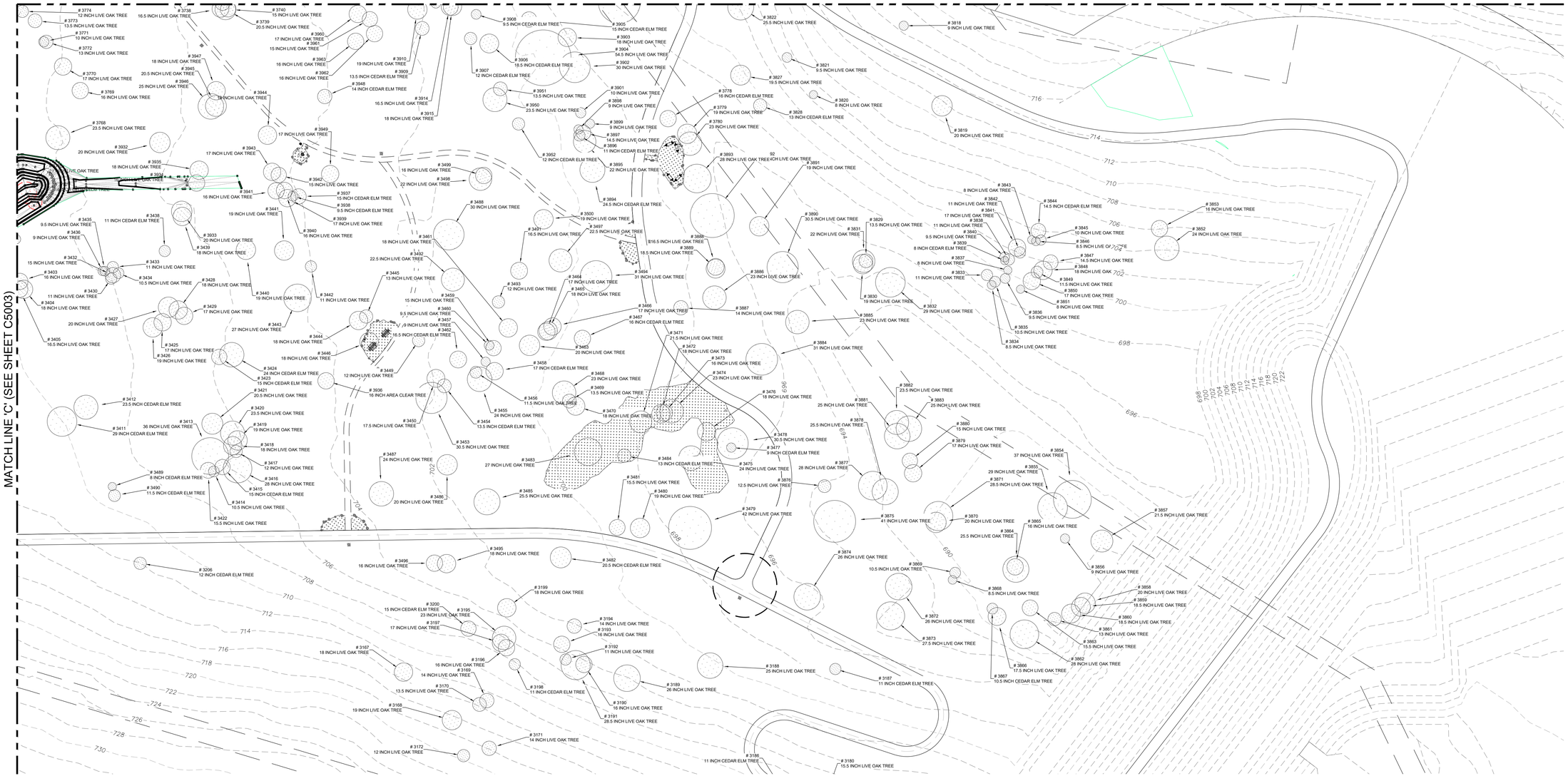
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SCALE: 1"=50'

LEGEND

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

MATCH LINE 'D' (SEE SHEET C5002)

MATCH LINE 'C' (SEE SHEET C5003)



VERAMENDI REGIONAL PARK

TREE PRESERVATION PLAN (4 OF 4)

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: 9-C_Tree Preservation Plan.dwg

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
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Phone 210.503.2700
LJA.COM
TBPE No. F-1386

JOB NUMBER:
SA3856.2404

SHEET NO.
C5004

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Plan Plotted: Aug. 20, 25 - 10:18
Last Modified: Aug. 20, 25 - 10:18
Xref Dependencies: Sur_M_25_11.dwg

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Size	Tree Removed			Tree Preserved		
			8"-23.9"	>24"		8"-23.9"	>24"
3053	16 INCH LIVE OAK TREE				x	16	
3054	21 INCH LIVE OAK TREE				x	21	
3058	12 INCH LIVE OAK TREE				x	12	
3059	20.5 INCH LIVE OAK TREE				x	20.5	
3060	14.5 INCH LIVE OAK TREE				x	14.5	
3061	12.5 INCH LIVE OAK TREE				x	12.5	
3062	25.5 INCH LIVE OAK TREE				x		25.5
3063	15 INCH LIVE OAK TREE				x	15	
3064	15 INCH LIVE OAK TREE				x	15	
3065	14.5 INCH LIVE OAK TREE				x	14.5	
3066	17 INCH LIVE OAK TREE				x	17	
3067	13 INCH LIVE OAK TREE				x	13	
3068	12.5 INCH LIVE OAK TREE				x	12.5	
3069	22 INCH LIVE OAK TREE				x	22	
3070	19 INCH LIVE OAK TREE				x	19	
3071	25.5 INCH LIVE OAK TREE				x		25.5
3072	18.5 INCH LIVE OAK TREE				x	18.5	
3073	31.5 INCH LIVE OAK TREE				x		31.5
3074	29 INCH LIVE OAK TREE				x		29
3075	24 INCH LIVE OAK TREE				x		
3076	19 INCH CEDAR ELM TREE				x	19	
3077	20.5 INCH LIVE OAK TREE				x	20.5	
3078	17 INCH LIVE OAK TREE				x	17	
3079	16 INCH LIVE OAK TREE				x	16	
3080	8.5 INCH LIVE OAK TREE				x	8.5	
3081	10 INCH LIVE OAK TREE				x	10	
3082	18.5 INCH LIVE OAK TREE				x	18.5	
3084	19 INCH LIVE OAK TREE				x	19	
3085	11.5 INCH LIVE OAK TREE				x	11.5	
3086	13 INCH LIVE OAK TREE				x	13	
3087	13.5 INCH LIVE OAK TREE				x	13.5	
3088	12.5 INCH LIVE OAK TREE				x	12.5	
3089	13.5 INCH LIVE OAK TREE				x	13.5	
3090	9.5 INCH CEDAR ELM TREE						
3091	8 INCH CEDAR ELM TREE				x	8	
3092	12.5 INCH LIVE OAK TREE				x	12.5	
3093	8 INCH CEDAR ELM TREE				x	8	
3094	23 INCH LIVE OAK TREE				x	23	
3095	8 INCH CEDAR ELM TREE				x	8	
3096	27 INCH LIVE OAK TREE				x		27
3097	19.5 INCH LIVE OAK TREE				x	19.5	
3098	22 INCH LIVE OAK TREE				x	22	
3099	12.5 INCH LIVE OAK TREE				x	12.5	
3100	48.5 INCH LIVE OAK TREE				x		48.5
3101	12 INCH CEDAR ELM TREE						
3102	36.5 INCH LIVE OAK TREE						
3103	38.5 INCH LIVE OAK TREE						
3104	28.5 INCH LIVE OAK TREE						
3105	8.5 INCH CEDAR ELM TREE						
3106	17 INCH LIVE OAK TREE	x	17				
3107	10 INCH LIVE OAK TREE	x	10				
3108	11 INCH LIVE OAK TREE	x	11				
3109	28 INCH LIVE OAK TREE	x		28			
3110	15.5 INCH CEDAR ELM TREE	x	15.5				
3111	27.5 INCH LIVE OAK TREE	x		27.5			
3112	28 INCH LIVE OAK TREE				x		28
3113	51 INCH LIVE OAK TREE				x		51
3114	14 INCH LIVE OAK TREE	x	14				
3115	8.5 INCH CEDAR ELM TREE	x	8.5				
3116	21 INCH LIVE OAK TREE	x	21				
3117	18 INCH LIVE OAK TREE	x	18				
3118	9 INCH CEDAR ELM TREE	x	9				
3119	13.5 INCH CEDAR ELM TREE	x	13.5				
3120	8.5 INCH CEDAR ELM TREE	x	8.5				
3121	8.5 INCH CEDAR ELM TREE	x	8.5				
3122	11.5 INCH LIVE OAK TREE	x	11.5				
3123	10.5 INCH CEDAR ELM TREE	x	10.5				
3124	13 INCH LIVE OAK TREE	x	13				
3125	20.5 INCH LIVE OAK TREE				x	20.5	
3126	14.5 INCH LIVE OAK TREE				x	14.5	
3127	39.5 INCH LIVE OAK TREE				x		39.5
3128	26.5 INCH LIVE OAK TREE				x		26.5
3129	13 INCH LIVE OAK TREE				x	13	
3130	33 INCH LIVE OAK TREE				x		33
3132	21 INCH LIVE OAK TREE				x	21	
3133	15 INCH LIVE OAK TREE				x	15	
3134	14 INCH LIVE OAK TREE				x	14	
3135	18.5 INCH LIVE OAK TREE	x	18.5				
3136	22.5 INCH LIVE OAK TREE	x	22.5				
3137	13 INCH LIVE OAK TREE				x	13	
3138	19 INCH LIVE OAK TREE				x	19	
3139	16 INCH LIVE OAK TREE				x	16	
3140	17 INCH LIVE OAK TREE				x	17	
3141	15.5 INCH LIVE OAK TREE				x	15.5	
3142	18 INCH LIVE OAK TREE				x	18	
3143	15.5 INCH LIVE OAK TREE				x	15.5	
3144	11 INCH LIVE OAK TREE				x	11	
3145	18 INCH CEDAR ELM TREE				x	18	
3146	47 INCH LIVE OAK TREE				x		47
3147	9.5 INCH LIVE OAK TREE				x	9.5	
3148	15 INCH CEDAR ELM TREE				x	15	
3149	19 INCH LIVE OAK TREE				x	19	
3150	17.5 INCH LIVE OAK TREE				x	17.5	
3151	15.5 INCH LIVE OAK TREE				x	15.5	
3152	18 INCH LIVE OAK TREE				x	18	
3153	16 INCH LIVE OAK TREE				x	16	
3154	13 INCH LIVE OAK TREE				x	13	
3155	13.5 INCH LIVE OAK TREE				x	13.5	
3156	10.5 INCH LIVE OAK TREE				x	10.5	
3157	15.5 INCH LIVE OAK TREE				x	15.5	
3158	10.5 INCH LIVE OAK TREE				x	10.5	
3159	18 INCH LIVE OAK TREE				x	18	
3160	17 INCH LIVE OAK TREE				x	17	
3161	14.5 INCH LIVE OAK TREE				x	14.5	
3162	14 INCH LIVE OAK TREE				x	14	
3163	19.5 INCH LIVE OAK TREE				x	19.5	
3164	26.5 INCH LIVE OAK TREE				x		26.5
3165	13.5 INCH LIVE OAK TREE				x	13.5	
3166	13 INCH LIVE OAK TREE				x	13	
3167	18 INCH LIVE OAK TREE				x	18	
3168	19 INCH LIVE OAK TREE				x	19	
3169	14 INCH LIVE OAK TREE				x	14	
3170	13.5 INCH LIVE OAK TREE				x	13.5	
3171	14 INCH LIVE OAK TREE				x	14	
3172	12 INCH LIVE OAK TREE				x	12	
3173	22 INCH LIVE OAK TREE				x	22	
3174	15.5 INCH LIVE OAK TREE				x	15.5	
3175	14.5 INCH LIVE OAK TREE				x	14.5	
3176	10.5 INCH LIVE OAK TREE				x	10.5	
3177	18 INCH LIVE OAK TREE				x	18	
3178	12.5 INCH LIVE OAK TREE				x	12.5	
3179	15 INCH LIVE OAK TREE				x	15	
3180	15.5 INCH LIVE OAK TREE				x	15.5	
3181	13 INCH LIVE OAK TREE				x	13	
3182	13 INCH LIVE OAK TREE				x	13	
3183	16 INCH LIVE OAK TREE				x	16	
3184	17.5 INCH LIVE OAK TREE				x	17.5	
3185	14.5 INCH LIVE OAK TREE				x	14.5	
3186	11 INCH CEDAR ELM TREE				x	11	
3187	11 INCH CEDAR ELM TREE				x	11	
3188	25 INCH LIVE OAK TREE				x		25
3189	26 INCH LIVE OAK TREE				x		26
3190	16 INCH LIVE OAK TREE				x	16	
3191	28.5 INCH LIVE OAK TREE				x		28.5
3192	11 INCH LIVE OAK TREE				x	11	
3193	16 INCH LIVE OAK TREE				x	16	
3194	14 INCH LIVE OAK TREE				x	14	
3195	23 INCH LIVE OAK TREE				x	23	
3196	16 INCH LIVE OAK TREE				x	16	
3197	17 INCH LIVE OAK TREE				x	17	
3198	11 INCH CEDAR ELM TREE				x	11	
3199	18 INCH LIVE OAK TREE				x	18	
3200	15 INCH CEDAR ELM TREE				x	15	
3201	14 INCH LIVE OAK TREE				x	14	
3202	13.5 INCH LIVE OAK TREE				x	13.5	
3203	11.5 INCH LIVE OAK TREE				x	11.5	
3204	12 INCH LIVE OAK TREE				x	12	
3205	14 INCH LIVE OAK TREE				x	14	
3206	12 INCH CEDAR ELM TREE				x	12	
3207	13 INCH LIVE OAK TREE				x	13	
3208	14 INCH LIVE OAK TREE				x	14	
3209	18.5 INCH LIVE OAK TREE				x	18.5	
3210	15.5 INCH LIVE OAK TREE				x	15.5	
3211	13.5 INCH LIVE OAK TREE				x	13.5	
3212	12.5 INCH LIVE OAK TREE				x	12.5	
3213	10.5 INCH CEDAR ELM TREE				x	10.5	
3214	11 INCH LIVE OAK TREE				x	11	
3216	11 INCH LIVE OAK TREE				x	11	
3217	14 INCH LIVE OAK TREE				x	14	
3218	9 INCH LIVE OAK TREE				x	9	
3219	9.5 INCH LIVE OAK TREE				x	9.5	
3220	15.5 INCH LIVE OAK TREE				x	15.5	
3221	10 INCH LIVE OAK TREE				x	10	
3222	13 INCH LIVE OAK TREE				x	13	
3223	14.5 INCH LIVE OAK TREE				x	14.5	
3224	8 INCH LIVE OAK TREE				x	8	
3225	24.5 INCH LIVE OAK TREE				x		24.5
3226	10 INCH CEDAR ELM TREE				x	10	
3227	8.5 INCH CEDAR ELM TREE				x	8.5	
3228	14.5 INCH LIVE OAK TREE				x	14.5	
3229	17 INCH LIVE OAK TREE				x	17	
3230	17.5 INCH LIVE OAK TREE				x	17.5	
3231	11.5 INCH CEDAR ELM TREE				x	11.5	
3232	20.5 INCH LIVE OAK TREE				x	20.5	
3233	13 INCH LIVE OAK TREE				x	13	
3234	8.5 INCH LIVE OAK TREE				x	8.5	
3235	13.5 INCH CEDAR ELM TREE				x	13.5	
3236	13 INCH LIVE OAK TREE				x	13	
3237	13.5 INCH LIVE OAK TREE				x	13.5	
3238	11 INCH LIVE OAK TREE				x	11	
3239	14.5 INCH LIVE OAK TREE				x	14.5	
3240	28 INCH LIVE OAK TREE				x		28
3241	16 INCH LIVE OAK TREE				x	16	
3242	14.5 INCH LIVE OAK TREE				x	14.5	
3243	17.5 INCH LIVE OAK TREE				x	17.5	
3244	10 INCH CEDAR ELM TREE				x	10	
3245	21.5 INCH LIVE OAK TREE				x	21.5	
3246	16 INCH LIVE OAK TREE				x	16	
3247	17.5 INCH LIVE OAK TREE				x	17.5	
3249	10 INCH CEDAR ELM TREE				x	10	
3250	14.5 INCH LIVE OAK TREE				x	14.5	
3251	13.5 INCH LIVE OAK TREE				x	13.5	
3252	28 INCH LIVE OAK TREE				x		28
3253	9 INCH LIVE OAK TREE				x	9	
3254	22.5 INCH LIVE OAK TREE				x	22.5	
3255	18 INCH LIVE OAK TREE				x	18	
3256	14 INCH LIVE OAK TREE				x	14	
3257	34 INCH LIVE OAK TREE				x		34
3258	25 INCH LIVE OAK TREE				x		25
3259	12.5 INCH LIVE OAK TREE				x	12.5	
3260	12.5 INCH LIVE OAK TREE				x	12.5	
3261	30 INCH LIVE OAK TREE				x		30
3262	15.5 INCH CEDAR ELM TREE				x	15.5	
3263	11.5 INCH CEDAR ELM TREE				x	11.5	
3264	11 INCH CEDAR ELM TREE				x	11	
3265	11 INCH LIVE OAK TREE				x	11	
3266	11.5 INCH LIVE OAK TREE				x	11.5	
3267	11 INCH LIVE OAK TREE				x	11	
3268	8.5 INCH LIVE OAK TREE				x	8.5	
3269	14.5 INCH CEDAR ELM TREE				x	14.5	
3271	10.5 INCH CEDAR ELM TREE				x	10.5	
3272	19 INCH LIVE OAK TREE				x	19	
3273	19.5 INCH LIVE OAK TREE				x	19.5	
3274	10.5 INCH LIVE OAK TREE				x	10.5	
3275	23 INCH LIVE OAK TREE				x	23	
3276	10.5 INCH CEDAR ELM TREE				x	10.5	
3277	21 INCH LIVE OAK TREE				x	21	
3278	18 INCH LIVE OAK TREE				x	18	
3279	26 INCH LIVE OAK TREE				x		26
3280	19 INCH LIVE OAK TREE				x	19	
3281	10.5 INCH LIVE OAK TREE				x	10.5	
3282	9 INCH LIVE OAK TREE				x	9	
3283	13.5 INCH LIVE OAK TREE				x	13.5	
3284	13 INCH LIVE OAK TREE				x	13	
3285	22 INCH LIVE OAK TREE				x	22	
3286	8.5 INCH LIVE OAK TREE				x	8.5	
3287	11.5 INCH CEDAR ELM TREE				x	11.5	
3288	13 INCH CEDAR ELM TREE				x	13	
3289	14.5 INCH LIVE OAK TREE				x	14.5	
3290	16 INCH LIVE OAK TREE				x	16	
3291	15.5 INCH LIVE OAK TREE				x	15.5	
3292	8.5 INCH LIVE OAK TREE				x	8.5	
3293	18.5 INCH CEDAR ELM TREE				x	18.5	
3294	8 INCH CEDAR ELM TREE				x	8	
3295	19.5 INCH LIVE OAK TREE				x	19.5	
3296	24 INCH LIVE OAK TREE				x		
3298	29.5 INCH LIVE OAK TREE				x		29.5
3299	16.5 INCH LIVE OAK TREE				x	16.5	
3300	13.5 INCH LIVE OAK TREE				x	13.5	
3301	11.5 INCH LIVE OAK TREE				x	11.5	
3302	14.5 INCH LIVE OAK TREE				x	14.5	
3303	25 INCH LIVE OAK TREE				x		25
3304	18.5 INCH LIVE OAK TREE				x	18.5	
3305	30 INCH LIVE OAK TREE				x		30
3306	16.5 INCH LIVE OAK TREE				x	16.5	
3307	12.5 INCH LIVE OAK TREE				x	12.5	
3308	17.5 INCH LIVE OAK TREE				x	17.5	
3309	28 INCH LIVE OAK TREE				x		28
3310	12 INCH LIVE OAK TREE				x	12	
3311	20.5 INCH LIVE OAK TREE				x	20.5	
3312	17.5 INCH LIVE OAK TREE				x	17.5	
3313	27.5 INCH LIVE OAK TREE				x		27.5
3314	8.5 INCH CEDAR ELM TREE				x	8.5	
3315	19 INCH LIVE OAK TREE				x	19	
3316	18.5 INCH LIVE OAK TREE				x	18.5	
3317	15.5 INCH LIVE OAK TREE				x	15.5	
3318	14.5 INCH LIVE OAK TREE				x	14.5	
3319	22 INCH LIVE OAK TREE				x	22	
3320	14 INCH LIVE OAK TREE				x	14	
3321	16 INCH LIVE OAK TREE				x	16	
3322	13 INCH LIVE OAK TREE				x	13	
3323	13.5 INCH LIVE OAK TREE				x	13.5	
3324	20.5 INCH LIVE OAK TREE				x	20.5	
3325	24 INCH LIVE OAK TREE				x		
3326	12.5 INCH LIVE OAK TREE				x	12.5	
3327	13 INCH LIVE OAK TREE				x	13	
3328	10 INCH CEDAR ELM TREE				x	10	
3329	11.5 INCH LIVE OAK TREE				x	11.5	
3330	10 INCH LIVE OAK TREE				x	10	
3331	10 INCH LIVE OAK TREE				x	10	
3332	8.5 INCH CEDAR ELM TREE				x	8.5	
3333	9 INCH CEDAR ELM TREE				x	9	
3334	15 INCH LIVE OAK TREE				x	15	
3335	15 INCH LIVE OAK TREE				x	15	
3336	10 INCH LIVE OAK TREE				x	10	
3337	26.5 INCH LIVE OAK TREE				x		26.5
3338	22 INCH LIVE OAK TREE				x	22	
3339	9 INCH LIVE OAK TREE				x	9	
3340	10 INCH LIVE OAK TREE				x	10	
3341	10 INCH LIVE OAK TREE				x	10	
3342	17.5 INCH LIVE OAK TREE				x	17.5	
3343	23 INCH LIVE OAK TREE				x	23	
3344	32.5 INCH LIVE OAK TREE				x		32.5
3345	44 INCH LIVE OAK TREE				x		44
3346	16.5 INCH LIVE OAK TREE				x	16.5	
3347	9 INCH LIVE OAK TREE				x	9	
3348	11.5 INCH LIVE OAK TREE				x	11.5	
3349	24 INCH LIVE OAK TREE				x		
3350	15 INCH LIVE OAK TREE	x	15				
3351	18 INCH LIVE OAK TREE	x	18				
3352	10 INCH LIVE OAK TREE	x	10				
3353	22 INCH LIVE OAK TREE				x	22	
3354	18 INCH LIVE OAK TREE				x	18	
3355	20 INCH LIVE OAK TREE				x	20	
3356	18.5 INCH CEDAR ELM TREE				x	18.5	
3357	9 INCH CEDAR ELM TREE				x	9	
3358	29.5 INCH LIVE OAK TREE	x		29.5			
3359	26.5 INCH LIVE OAK TREE	x		26.5			
3360	26 INCH LIVE OAK TREE	x		26			
3361	19.5 INCH LIVE OAK TREE	x	19.5				
3362	16 INCH LIVE OAK TREE	x	16				
3363	11.5 INCH LIVE OAK TREE				x	11.5	
3364	17.5 INCH LIVE OAK TREE				x	17.5	
3365	26.5 INCH LIVE OAK TREE				x		26.5
3366	28 INCH LIVE OAK TREE				x		28
3367	11 INCH CEDAR ELM TREE				x	11	
3368	14 INCH LIVE OAK TREE				x	14	
3369	12.5 INCH LIVE OAK TREE				x	12.5	
3370	12.5 INCH LIVE OAK TREE				x	12.5	
3371	15.5 INCH LIVE OAK TREE				x	15.5	
3372	10 INCH LIVE OAK TREE				x	10	
3373	17 INCH LIVE OAK TREE				x	17	
3374	9.5 INCH LIVE OAK TREE				x	9.5	
3375	9 INCH CEDAR ELM TREE				x	9	
3376	13 INCH CEDAR ELM TREE				x	13	
3377	19 INCH LIVE OAK TREE				x	19	
3378	17 INCH LIVE OAK TREE				x	17	
3379	16.5 INCH LIVE OAK TREE				x	16.5	
3380	16.5 INCH LIVE OAK TREE				x	16.5	
3381	22.5 INCH LIVE OAK TREE				x	22.5	
3382	28 INCH LIVE OAK TREE				x		28
3383	18.5 INCH LIVE OAK TREE				x	18.5	
3384	16 INCH LIVE OAK TREE				x	16	
3385	10 INCH LIVE OAK TREE				x	10	
3386	23 INCH LIVE OAK TREE				x	23	
3387	9.5 INCH LIVE OAK TREE				x	9.5	
3388	9.5 INCH CEDAR ELM TREE				x	9.5	
3389	21 INCH LIVE OAK TREE				x	21	
3391	23.5 INCH LIVE OAK TREE				x	23.5	
3392	29 INCH LIVE OAK TREE	x		29			
3393	25 INCH LIVE OAK TREE	x		25			
3394	32 INCH LIVE OAK TREE				x		32
3395	18.5 INCH LIVE OAK TREE				x	18.5	
3396	11.5 INCH LIVE OAK TREE				x	11.5	
3397	18 INCH LIVE OAK TREE				x	18	
3398	18 INCH LIVE OAK TREE				x	18	
3399	20 INCH LIVE OAK TREE				x	20	
3400	16.5 INCH LIVE OAK TREE				x	16.5	
3401	8.5 INCH CEDAR ELM TREE	x	8.5				
3402	9.5 INCH CEDAR ELM TREE				x	9.5	
3403	16 INCH LIVE OAK TREE				x	16	
3404	18 INCH LIVE OAK TREE				x	18	
3405	16.5 INCH LIVE OAK TREE				x	16.5	
3406	9 INCH CEDAR ELM TREE				x	9	
3407	9.5 INCH CEDAR ELM TREE				x	9.5	
3408	27 INCH LIVE OAK TREE				x		27
3409	24 INCH CEDAR ELM TREE				x		
3410	12 INCH CEDAR ELM TREE				x	12	
3411	29 INCH CEDAR ELM TREE				x		29
3412	23.5 INCH CEDAR ELM TREE				x	23.5	
3413	36 INCH LIVE OAK TREE				x		36
3414	10.5 INCH LIVE OAK TREE				x	10.5	
3415	15 INCH CEDAR ELM TREE				x	15	
3416	28 INCH LIVE OAK TREE				x		28
3417	12 INCH LIVE OAK TREE				x	12	
3418	18 INCH LIVE OAK TREE				x	18	
3419	19 INCH LIVE OAK TREE				x	19	
3420	23.5 INCH LIVE OAK TREE				x	23.5	
3421	20.5 INCH LIVE OAK TREE				x	20.5	
3422	15.5 INCH LIVE OAK TREE				x	15.5	
3423	15 INCH CEDAR ELM TREE				x	15	
3424	24 INCH CEDAR ELM TREE				x		
3425	17 INCH LIVE OAK TREE				x	17	
3426	19 INCH LIVE OAK TREE				x	19	
3427	20 INCH LIVE OAK TREE				x	20	
3428	18 INCH LIVE OAK TREE				x	18	
3429	17 INCH LIVE OAK TREE				x	17	
3430	11 INCH LIVE OAK TREE				x	11	
3432	15 INCH LIVE OAK TREE				x	15	
3433	11 INCH LIVE OAK TREE				x	11	
3434	10.5 INCH LIVE OAK TREE				x	10.5	
3435	9.5 INCH LIVE OAK TREE				x	9.5	
3436	9 INCH LIVE OAK TREE				x	9	
3438	11 INCH CEDAR ELM TREE				x	11	
3439	18 INCH LIVE OAK TREE				x	18	
3440	19 INCH LIVE OAK TREE				x	19	
3441	19 INCH LIVE OAK TREE				x	19	
3442	11 INCH LIVE OAK TREE				x	11	
3443	27 INCH LIVE OAK TREE				x		27

VERAMENDI REGIONAL PARK

TREE PRESERVATION INVENTORY (1 OF 2)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: Veramendi_Tree Preservation Plan.dwg

09/04/25

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SHEET NO.
C5005

K:\SA3856.404 Propertek\2404 MPP\426 Site Development Plans\DWG-Sheets\04_Tree Preservation Plan.dwg
Xrefs: None
Last Modified: Aug 20, 25 - 19:18
Last Saved By: Tmj

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Size	Tree Removed			Tree Preserved		
			8"-23.9"	>24"		8"-23.9"	>24"
3444	18 INCH LIVE OAK TREE				x	18	
3445	13 INCH LIVE OAK TREE				x	13	
3446	18 INCH LIVE OAK TREE				x	18	
3449	12 INCH LIVE OAK TREE				x	12	
3450	17.5 INCH LIVE OAK TREE				x	17.5	
3453	30.5 INCH LIVE OAK TREE				x		30.5
3454	13.5 INCH CEDAR ELM TREE				x	13.5	
3455	24 INCH LIVE OAK TREE				x		
3456	11.5 INCH LIVE OAK TREE				x	11.5	
3457	9 INCH LIVE OAK TREE				x	9	
3458	17 INCH CEDAR ELM TREE				x	17	
3459	15 INCH LIVE OAK TREE				x	15	
3460	9.5 INCH LIVE OAK TREE				x	9.5	
3461	18 INCH LIVE OAK TREE				x	18	
3462	16.5 INCH CEDAR ELM TREE				x	16.5	
3463	20 INCH LIVE OAK TREE				x	20	
3464	17 INCH LIVE OAK TREE				x	17	
3465	18 INCH LIVE OAK TREE				x	18	
3466	17 INCH LIVE OAK TREE				x	17	
3467	16 INCH CEDAR ELM TREE				x	16	
3468	23 INCH LIVE OAK TREE				x	23	
3469	13.5 INCH LIVE OAK TREE				x	13.5	
3470	18 INCH LIVE OAK TREE				x	18	
3471	21.5 INCH LIVE OAK TREE				x	21.5	
3472	18 INCH LIVE OAK TREE				x	18	
3473	16 INCH LIVE OAK TREE				x	16	
3474	23 INCH LIVE OAK TREE				x	23	
3475	24 INCH LIVE OAK TREE				x		
3476	18 INCH LIVE OAK TREE				x	18	
3477	9 INCH CEDAR ELM TREE				x	9	
3478	30.5 INCH LIVE OAK TREE				x		30.5
3479	42 INCH LIVE OAK TREE				x		42
3480	19 INCH LIVE OAK TREE				x	19	
3481	15.5 INCH LIVE OAK TREE				x	15.5	
3482	20.5 INCH CEDAR ELM TREE				x	20.5	
3483	27 INCH LIVE OAK TREE				x		27
3484	13 INCH CEDAR ELM TREE				x	13	
3485	25.5 INCH LIVE OAK TREE				x		25.5
3486	20 INCH LIVE OAK TREE				x	20	
3487	24 INCH LIVE OAK TREE				x		
3488	30 INCH LIVE OAK TREE				x		30
3489	8 INCH CEDAR ELM TREE				x	8	
3490	11.5 INCH CEDAR ELM TREE				x	11.5	
3491	16.5 INCH LIVE OAK TREE				x	16.5	
3492	22.5 INCH LIVE OAK TREE				x	22.5	
3493	12 INCH LIVE OAK TREE				x	12	
3494	31 INCH LIVE OAK TREE				x		31
3495	18 INCH LIVE OAK TREE				x	18	
3496	16 INCH LIVE OAK TREE				x	16	
3497	22.5 INCH LIVE OAK TREE				x	22.5	
3498	22 INCH LIVE OAK TREE				x	22	
3499	16 INCH LIVE OAK TREE				x	16	
3500	19 INCH LIVE OAK TREE				x	19	
3501	15 INCH LIVE OAK TREE				x	15	
3502	27 INCH LIVE OAK TREE				x		27
3503	9.5 INCH CEDAR ELM TREE				x	9.5	
3504	12 INCH CEDAR ELM TREE				x	12	
3505	10.5 INCH CEDAR ELM TREE				x	10.5	
3506	9 INCH CEDAR ELM TREE				x	9	
3508	13 INCH CEDAR ELM TREE				x	13	
3509	13.5 INCH CEDAR ELM TREE				x	13.5	
3510	16 INCH CEDAR ELM TREE				x	16	
3511	15 INCH CEDAR ELM TREE				x	15	
3512	13.5 INCH CEDAR ELM TREE				x	13.5	
3513	14 INCH CEDAR ELM TREE				x	14	
3514	17 INCH CEDAR ELM TREE				x	17	
3515	16 INCH LIVE OAK TREE				x	16	
3516	18.5 INCH CEDAR ELM TREE				x	18.5	
3517	22 INCH LIVE OAK TREE				x	22	
3518	22.5 INCH LIVE OAK TREE				x	22.5	
3519	20 INCH LIVE OAK TREE				x	20	
3520	14.5 INCH LIVE OAK TREE				x	14.5	
3521	19 INCH LIVE OAK TREE				x	19	
3522	18 INCH LIVE OAK TREE				x	18	
3523	21.5 INCH LIVE OAK TREE				x	21.5	
3524	28 INCH LIVE OAK TREE				x		28
3525	27.5 INCH LIVE OAK TREE				x		27.5
3526	11 INCH LIVE OAK TREE				x	11	
3527	20.5 INCH LIVE OAK TREE				x	20.5	
3528	16 INCH LIVE OAK TREE				x	16	
3529	20 INCH LIVE OAK TREE				x	20	
3530	33.5 INCH LIVE OAK TREE				x		33.5
3531	18.5 INCH LIVE OAK TREE				x	18.5	
3532	19 INCH LIVE OAK TREE				x	19	
3533	11 INCH LIVE OAK TREE				x	11	
3534	14.5 INCH LIVE OAK TREE				x	14.5	
3535	16 INCH LIVE OAK TREE				x	16	
3536	13 INCH LIVE OAK TREE				x	13	
3537	15.5 INCH LIVE OAK TREE				x	15.5	
3538	16.5 INCH LIVE OAK TREE				x	16.5	
3539	11.5 INCH LIVE OAK TREE				x	11.5	
3540	23.5 INCH LIVE OAK TREE				x	23.5	
3541	22 INCH LIVE OAK TREE				x	22	
3542	13.5 INCH LIVE OAK TREE				x	13.5	
3543	19 INCH LIVE OAK TREE				x	19	
3544	16.5 INCH LIVE OAK TREE				x	16.5	
3545	18 INCH LIVE OAK TREE				x	18	
3546	21 INCH LIVE OAK TREE				x	21	
3547	12 INCH LIVE OAK TREE				x	12	
3548	22.5 INCH LIVE OAK TREE				x	22.5	
3549	11 INCH LIVE OAK TREE				x	11	
3550	11 INCH LIVE OAK TREE				x	11	
3551	16.5 INCH LIVE OAK TREE				x	16.5	
3552	21.5 INCH LIVE OAK TREE				x	21.5	
3553	15 INCH LIVE OAK TREE				x	15	
3554	14 INCH LIVE OAK TREE				x	14	
3555	19 INCH LIVE OAK TREE				x	19	
3556	17 INCH LIVE OAK TREE				x	17	
3557	14 INCH LIVE OAK TREE				x	14	
3558	16.5 INCH LIVE OAK TREE				x	16.5	
3559	18.5 INCH LIVE OAK TREE				x	18.5	
3560	13.5 INCH LIVE OAK TREE				x	13.5	
3561	15 INCH LIVE OAK TREE				x	15	
3562	17 INCH LIVE OAK TREE				x	17	
3563	15 INCH LIVE OAK TREE				x	15	
3564	15 INCH LIVE OAK TREE				x	15	
3565	8 INCH LIVE OAK TREE				x	8	
3566	16 INCH LIVE OAK TREE				x	16	
3567	14 INCH LIVE OAK TREE				x	14	
3568	16 INCH LIVE OAK TREE				x	16	
3569	20 INCH LIVE OAK TREE				x	20	
3570	15 INCH LIVE OAK TREE				x	15	
3571	19 INCH LIVE OAK TREE				x	19	
3572	18.5 INCH CEDAR ELM TREE				x	18.5	
3573	26 INCH LIVE OAK TREE				x		26
3574	10.5 INCH LIVE OAK TREE				x	10.5	
3575	11 INCH LIVE OAK TREE				x	11	
3576	43 INCH LIVE OAK TREE				x		43
3577	19 INCH LIVE OAK TREE				x	19	
3578	21 INCH LIVE OAK TREE				x	21	
3579	26 INCH LIVE OAK TREE				x		26
3580	14.5 INCH LIVE OAK TREE				x	14.5	
3581	13.5 INCH LIVE OAK TREE				x	13.5	
3582	19 INCH LIVE OAK TREE				x	19	
3583	17.5 INCH LIVE OAK TREE				x	17.5	
3584	30.5 INCH LIVE OAK TREE				x		30.5
3585	29 INCH LIVE OAK TREE				x		29
3586	20.5 INCH LIVE OAK TREE				x	20.5	
3587	19 INCH LIVE OAK TREE				x	19	
3588	24 INCH LIVE OAK TREE				x		
3589	21 INCH LIVE OAK TREE				x	21	
3590	21 INCH LIVE OAK TREE				x	21	
3591	18.5 INCH LIVE OAK TREE				x	18.5	
3592	17 INCH LIVE OAK TREE				x	17	
3593	17 INCH LIVE OAK TREE				x	17	
3594	13.5 INCH LIVE OAK TREE				x	13.5	
3595	19.5 INCH LIVE OAK TREE				x	19.5	
3596	13.5 INCH LIVE OAK TREE				x	13.5	
3597	14.5 INCH LIVE OAK TREE				x	14.5	
3598	14.5 INCH LIVE OAK TREE				x	14.5	
3599	18.5 INCH LIVE OAK TREE				x	18.5	
3600	21 INCH LIVE OAK TREE				x	21	
3601	9 INCH LIVE OAK TREE				x	9	
3602	14 INCH LIVE OAK TREE				x	14	
3603	13.5 INCH LIVE OAK TREE				x	13.5	
3604	12 INCH LIVE OAK TREE				x	12	
3605	14 INCH LIVE OAK TREE				x	14	
3606	10 INCH LIVE OAK TREE				x	10	
3607	15 INCH LIVE OAK TREE				x	15	
3608	21.5 INCH LIVE OAK TREE				x	21.5	
3609	16 INCH CEDAR ELM TREE				x	16	
3610	21.5 INCH LIVE OAK TREE				x	21.5	
3611	13.5 INCH LIVE OAK TREE				x	13.5	
3612	17 INCH LIVE OAK TREE				x	17	
3613	12.5 INCH LIVE OAK TREE				x	12.5	
3614	9 INCH CEDAR ELM TREE				x	9	
3615	18 INCH LIVE OAK TREE				x	18	
3616	23 INCH LIVE OAK TREE				x	23	
3617	21 INCH LIVE OAK TREE				x	21	
3618	21 INCH LIVE OAK TREE				x	21	
3619	13 INCH LIVE OAK TREE				x	13	
3620	13.5 INCH LIVE OAK TREE				x	13.5	
3621	14.5 INCH LIVE OAK TREE				x	14.5	
3622	22.5 INCH LIVE OAK TREE				x	22.5	
3623	14 INCH LIVE OAK TREE				x	14	
3624	13 INCH LIVE OAK TREE				x	13	
3625	12 INCH LIVE OAK TREE				x	12	
3626	16.5 INCH LIVE OAK TREE				x	16.5	
3627	23.5 INCH LIVE OAK TREE				x	23.5	
3628	19 INCH LIVE OAK TREE				x	19	
3629	23.5 INCH LIVE OAK TREE				x	23.5	
3630	24 INCH LIVE OAK TREE				x		
3631	19 INCH LIVE OAK TREE				x	19	
3632	20 INCH LIVE OAK TREE				x	20	
3633	9 INCH CEDAR ELM TREE				x	9	
3634	16 INCH LIVE OAK TREE				x	16	
3635	18 INCH LIVE OAK TREE				x	18	
3636	19 INCH LIVE OAK TREE				x	19	
3637	11 INCH CEDAR ELM TREE				x	11	
3638	14.5 INCH LIVE OAK TREE				x	14.5	
3639	18 INCH LIVE OAK TREE				x	18	
3640	26 INCH LIVE OAK TREE				x		26
3641	14 INCH LIVE OAK TREE				x	14	
3642	20 INCH LIVE OAK TREE				x	20	
3643	18 INCH LIVE OAK TREE				x	18	
3644	31.5 INCH LIVE OAK TREE				x		31.5
3645	19 INCH LIVE OAK TREE				x	19	
3646	13.5 INCH LIVE OAK TREE				x	13.5	
3647	18.5 INCH LIVE OAK TREE				x	18.5	
3648	15.5 INCH LIVE OAK TREE				x	15.5	
3649	23 INCH LIVE OAK TREE				x	23	
3650	9 INCH CEDAR ELM TREE				x	9	
3651	24 INCH LIVE OAK TREE				x		
3652	18 INCH LIVE OAK TREE				x	18	
3653	12 INCH LIVE OAK TREE				x	12	
3654	11.4 INCH LIVE OAK TREE				x	11.4	
3656	12.5 INCH LIVE OAK TREE				x	12.5	
3657	24 INCH LIVE OAK TREE				x		
3658	12 INCH LIVE OAK TREE				x	12	
3659	16 INCH LIVE OAK TREE				x	16	
3660	16 INCH LIVE OAK TREE				x	16	
3661	14.5 INCH LIVE OAK TREE				x	14.5	
3662	22.5 INCH LIVE OAK TREE				x	22.5	
3663	23.5 INCH LIVE OAK TREE				x	23.5	
3664	15 INCH LIVE OAK TREE				x	15	
3665	14.5 INCH LIVE OAK TREE				x	14.5	
3666	11.5 INCH LIVE OAK TREE				x	11.5	
3667	14.5 INCH LIVE OAK TREE				x	14.5	
3668	12 INCH LIVE OAK TREE				x	12	
3669	15.5 INCH LIVE OAK TREE				x	15.5	
3670	13.5 INCH LIVE OAK TREE				x	13.5	
3671	14 INCH LIVE OAK TREE				x	14	
3672	19.5 INCH LIVE OAK TREE				x	19.5	
3673	16.5 INCH LIVE OAK TREE				x	16.5	
3674	20 INCH LIVE OAK TREE				x	20	
3675	14 INCH LIVE OAK TREE				x	14	
3676	17 INCH LIVE OAK TREE				x	17	
3677	17 INCH LIVE OAK TREE				x	17	
3678	18 INCH LIVE OAK TREE				x	18	
3679	21 INCH LIVE OAK TREE				x	21	
3680	13.5 INCH LIVE OAK TREE				x	13.5	
3681	14.5 INCH LIVE OAK TREE				x	14.5	
3682	15 INCH LIVE OAK TREE				x	15	
3683	12 INCH LIVE OAK TREE				x	12	
3684	12.5 INCH LIVE OAK TREE				x	12.5	
3685	13 INCH LIVE OAK TREE				x	13	
3686	12.5 INCH LIVE OAK TREE				x	12.5	
3687	14 INCH LIVE OAK TREE				x	14	
3688	24 INCH LIVE OAK TREE				x		
3689	10.5 INCH LIVE OAK TREE				x	10.5	
3690	15 INCH LIVE OAK TREE				x	15	
3691	14.5 INCH LIVE OAK TREE				x	14.5	
3692	8 INCH LIVE OAK TREE				x	8	
3693	9 INCH LIVE OAK TREE				x	9	
3694	9 INCH LIVE OAK TREE				x	9	
3695	12.5 INCH LIVE OAK TREE				x	12.5	
3696	12.5 INCH LIVE OAK TREE				x	12.5	
3697	15 INCH LIVE OAK TREE				x	15	
3698	19.5 INCH LIVE OAK TREE				x	19.5	
3699	13 INCH LIVE OAK TREE				x	13	
3700	16 INCH LIVE OAK TREE				x	16	
3701	15.5 INCH LIVE OAK TREE				x	15.5	
3702	19 INCH LIVE OAK TREE				x	19	
3703	21 INCH LIVE OAK TREE				x	21	
3704	19 INCH LIVE OAK TREE				x	19	
3705	20 INCH LIVE OAK TREE				x	20	
3706	16 INCH LIVE OAK TREE				x	16	
3707	20 INCH LIVE OAK TREE				x	20	
3708	23.5 INCH LIVE OAK TREE				x	23.5	
3709	19 INCH LIVE OAK TREE				x	19	
3710	21.5 INCH LIVE OAK TREE				x	21.5	
3711	9.5 INCH LIVE OAK TREE				x	9.5	
3712	21.5 INCH LIVE OAK TREE				x	21.5	
3713	23 INCH LIVE OAK TREE				x	23	
3714	18 INCH LIVE OAK TREE				x	18	
3715	9 INCH LIVE OAK TREE				x	9	
3716	9 INCH LIVE OAK TREE				x	9	
3717	10 INCH LIVE OAK TREE				x	10	
3718	8.5 INCH LIVE OAK TREE				x	8.5	
3719	21 INCH LIVE OAK TREE				x	21	
3720	8.5 INCH CEDAR ELM TREE				x	8.5	
3721	21.5 INCH LIVE OAK TREE				x	21.5	
3722	12.5 INCH LIVE OAK TREE				x	12.5	
3723	15.5 INCH LIVE OAK TREE				x	15.5	
3724	22 INCH LIVE OAK TREE				x	22	
3725	11.5 INCH LIVE OAK TREE				x	11.5	
3726	14.5 INCH LIVE OAK TREE				x	14.5	
3727	23.5 INCH LIVE OAK TREE				x	23.5	
3728	21.5 INCH LIVE OAK TREE				x	21.5	
3729	10.5 INCH LIVE OAK TREE				x	10.5	
3730	52 INCH LIVE OAK TREE				x		52
3731	12 INCH LIVE OAK TREE				x	12	
3732	8.5 INCH CEDAR ELM TREE				x	8.5	
3733	8 INCH LIVE OAK TREE				x	8	
3734	22 INCH LIVE OAK TREE				x	22	
3735	17.5 INCH LIVE OAK TREE				x	17.5	
3736	28 INCH LIVE OAK TREE				x		28
3737	20.5 INCH LIVE OAK TREE				x	20.5	
3738	16.5 INCH LIVE OAK TREE				x	16.5	
3739	20.5 INCH LIVE OAK TREE				x	20.5	
3740	15 INCH LIVE OAK TREE				x	15	
3741	15 INCH LIVE OAK TREE				x	15	
3742	17 INCH LIVE OAK TREE				x	17	
3743	18.5 INCH LIVE OAK TREE				x	18.5	
3744	16.5 INCH LIVE OAK TREE				x	16.5	
3745	29 INCH LIVE OAK TREE				x		29
3746	19 INCH LIVE OAK TREE				x	19	
3747	13 INCH LIVE OAK TREE				x	13	
3748	19.5 INCH LIVE OAK TREE				x	19.5	
3749	14.5 INCH LIVE OAK TREE				x	14.5	
3750	13 INCH LIVE OAK TREE				x	13	
3751	12 INCH LIVE OAK TREE				x	12	
3752	12 INCH LIVE OAK TREE				x	12	
3753	12 INCH LIVE OAK TREE				x	12	
3754	13 INCH LIVE OAK TREE				x	13	
3755	8 INCH LIVE OAK TREE				x	8	
3756	17 INCH LIVE OAK TREE				x	17	
3757	12 INCH LIVE OAK TREE				x	12	
3758	10.5 INCH LIVE OAK TREE				x	10.5	
3759	9 INCH LIVE OAK TREE				x	9	
3760	21.5 INCH LIVE OAK TREE				x	21.5	
3761	10.5 INCH LIVE OAK TREE				x	10.5	
3762	21 INCH LIVE OAK TREE				x	21	
3763	27 INCH LIVE OAK TREE				x		27
3764	15 INCH LIVE OAK TREE				x	15	
3765	27 INCH LIVE OAK TREE				x		27
3766	21 INCH LIVE OAK TREE	x	21				
3767	14 INCH CEDAR ELM TREE	x	14				
3768	23.5 INCH LIVE OAK TREE				x	23.5	
3769	16 INCH LIVE OAK TREE				x	16	
3770	17 INCH LIVE OAK TREE				x	17	
3771	10 INCH LIVE OAK TREE				x	10	
3772	13 INCH LIVE OAK TREE				x	13	
3773	13.5 INCH LIVE OAK TREE				x	13.5	
3774	12 INCH LIVE OAK TREE				x	12	
3775	16 INCH LIVE OAK TREE				x	16	
3776	13 INCH LIVE OAK TREE				x	13	
3777	18 INCH LIVE OAK TREE				x	18	
3778	16 INCH CEDAR ELM TREE				x	16	
3779	19 INCH LIVE OAK TREE				x	19	
3780	23 INCH LIVE OAK TREE				x	23	
3781	41 INCH LIVE OAK TREE				x		41
3782	27.5 INCH LIVE OAK TREE				x		27.5
3783	18 INCH LIVE OAK TREE				x	18	
3784	11 INCH CEDAR ELM TREE				x	11	
3785	26 INCH CEDAR ELM TREE				x		26
3786	15 INCH LIVE OAK TREE				x	15	
3787	11 INCH LIVE OAK TREE				x	11	
3788	18 INCH LIVE OAK TREE				x	18	
3789	9 INCH LIVE OAK TREE				x	9	
3790	19 INCH LIVE OAK TREE				x	19	
3791	20 INCH LIVE OAK TREE				x	20	
3792	22 INCH LIVE OAK TREE				x	22	
3793	8 INCH CEDAR ELM TREE				x	8	
3794	31.5 INCH LIVE OAK TREE				x		31.5
3795	25 INCH LIVE OAK TREE				x		25
3796	25.5 INCH LIVE OAK TREE				x		25.5
3797	9.5 INCH CEDAR ELM TREE				x	9.5	
3798	13 INCH LIVE OAK TREE				x	13	
3799	18 INCH LIVE OAK TREE				x	18	
3800	25 INCH LIVE OAK TREE				x		25
3801	17.5 INCH LIVE OAK TREE				x	17.5	
3802	20.5 INCH LIVE OAK TREE				x	20.5	
3803	28 INCH LIVE OAK TREE				x		28
3804	13 INCH CEDAR ELM TREE				x	13	
3805	8 INCH CEDAR ELM TREE				x	8	
3806	13 INCH LIVE OAK TREE				x	13	
3807	26.5 INCH LIVE OAK TREE				x		26.5
3808	16 INCH LIVE OAK TREE				x	16	
3809	12.5 INCH CEDAR ELM TREE				x	12.5	
3810	13 INCH LIVE OAK TREE				x	13	
3811	32.5 INCH LIVE OAK TREE				x		32.5
3812	12 INCH LIVE OAK TREE				x	12	
3813	9.5 INCH LIVE OAK TREE				x	9.5	
3814	13 INCH LIVE OAK TREE				x	13	
3815	13.5 INCH LIVE OAK TREE				x	13.5	
3816	13 INCH LIVE OAK TREE				x	13	
3817	11 INCH LIVE OAK TREE				x	11	
3818	9 INCH LIVE OAK TREE				x	9	
3819	20 INCH LIVE OAK TREE				x	20	
3820	8 INCH LIVE OAK TREE				x	8	
3821	9.5 INCH LIVE OAK TREE				x	9.5	
3822	25.5 INCH LIVE OAK TREE				x		25.5
3823	17.5 INCH LIVE OAK TREE				x	17.5	
3824	20.5 INCH LIVE OAK TREE				x	20.5	
3825	18 INCH CEDAR ELM TREE				x	18	
3826	23 INCH LIVE OAK TREE				x	23	
3827	19.5 INCH LIVE OAK TREE				x	19.5	
3828	13 INCH CEDAR ELM TREE				x	13	
3829	13.5 INCH LIVE OAK TREE				x	13.5	
3830	19 INCH LIVE OAK TREE				x	19	
3831	22 INCH LIVE OAK TREE				x	22	
3832	29 INCH LIVE OAK TREE				x		29
3833	11 INCH LIVE OAK TREE				x	11	
3834	8.5 INCH LIVE OAK TREE				x	8.5	
3835	10.5 INCH LIVE OAK TREE				x	10.5	
3836	9.5 INCH LIVE OAK TREE				x	9.5	
3837	8 INCH LIVE OAK TREE				x	8	
3838	11 INCH LIVE OAK TREE				x	11	
3839	8 INCH CEDAR ELM TREE				x	8	
3840	9.5 INCH LIVE OAK TREE				x	9.5	
3841	17 INCH LIVE OAK TREE				x	17	
3842	11 INCH LIVE OAK TREE				x	11	
3843	8 INCH LIVE OAK TREE				x	8	
3844	14.5 INCH CEDAR ELM TREE				x	14.5	
3845	10 INCH LIVE OAK TREE				x	10	

X:\SJA\SDSE_KSA Properties\Q4624_VERT-LIFE Site Development Plans\CMB\~Sheets\Sub_Tree Preservation Plan.dwg
User Name: Tim Muenchow
Last Modified: Aug 20, 25 - 19:18
Plotted: Tue, Aug 20, 25 - 19:18

VERAMENDI REGIONAL PARK

TREE PRESERVATION INVENTORY (2 OF 2)

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PDF
DRAWING NAME: #5_Tree Preservation Plan.dwg

09/04/25

STATE OF TEXAS
PRISCILLA G. FLORES
109874
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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: SA3856.2404

SHEET NO.

C5006

Tree Inventory Worksheet to Determine Preservation and Canopy Shade Coverage

Tag #	Size	Tree Removed			Tree Preserved		
			8"-23.9"	>24"		8"-23.9"	>24"
3846	8.5 INCH LIVE OAK TREE				x	8.5	
3847	14.5 INCH LIVE OAK TREE				x	14.5	
3848	18 INCH LIVE OAK TREE				x	18	
3849	11.5 INCH LIVE OAK TREE				x	11.5	
3850	17 INCH LIVE OAK TREE				x	17	
3851	8 INCH LIVE OAK TREE				x	8	
3852	24 INCH LIVE OAK TREE				x		
3853	16 INCH LIVE OAK TREE				x	16	
3854	37 INCH LIVE OAK TREE				x		37
3855	29 INCH LIVE OAK TREE				x		29
3856	9 INCH LIVE OAK TREE				x	9	
3857	21.5 INCH LIVE OAK TREE				x	21.5	
3858	20 INCH LIVE OAK TREE				x	20	
3859	18.5 INCH LIVE OAK TREE				x	18.5	
3860	18.5 INCH LIVE OAK TREE				x	18.5	
3861	13 INCH LIVE OAK TREE				x	13	
3862	28 INCH LIVE OAK TREE				x		28
3863	15.5 INCH LIVE OAK TREE				x	15.5	
3864	25.5 INCH LIVE OAK TREE				x		25.5
3865	16 INCH LIVE OAK TREE				x	16	
3866	17.5 INCH LIVE OAK TREE				x	17.5	
3867	10.5 INCH CEDAR ELM TREE				x	10.5	
3868	8.5 INCH LIVE OAK TREE				x	8.5	
3869	10.5 INCH LIVE OAK TREE				x	10.5	
3870	20 INCH LIVE OAK TREE				x	20	
3871	28.5 INCH LIVE OAK TREE				x		28.5
3872	26 INCH LIVE OAK TREE				x		26
3873	27.5 INCH LIVE OAK TREE				x		27.5
3874	26 INCH LIVE OAK TREE				x		26
3875	41 INCH LIVE OAK TREE				x		41
3876	12.5 INCH LIVE OAK TREE				x	12.5	
3877	28 INCH LIVE OAK TREE				x		28
3878	25.5 INCH LIVE OAK TREE				x		25.5
3879	17 INCH LIVE OAK TREE				x	17	
3880	15 INCH LIVE OAK TREE				x	15	
3881	25 INCH LIVE OAK TREE				x		25
3882	23.5 INCH LIVE OAK TREE				x	23.5	
3883	25 INCH LIVE OAK TREE				x		25
3884	31 INCH LIVE OAK TREE				x		31
3885	23 INCH LIVE OAK TREE				x	23	
3886	23 INCH LIVE OAK TREE				x	23	
3887	14 INCH LIVE OAK TREE				x	14	
3888	16.5 INCH LIVE OAK TREE				x	16.5	
3889	18.5 INCH LIVE OAK TREE				x	18.5	
3890	30.5 INCH LIVE OAK TREE				x		30.5
3891	19 INCH LIVE OAK TREE				x	19	
3892	43 INCH LIVE OAK TREE				x		43
3893	28 INCH LIVE OAK TREE				x		28
3894	24.5 INCH CEDAR ELM TREE				x		24.5
3895	22 INCH LIVE OAK TREE				x	22	
3896	11 INCH CEDAR ELM TREE				x	11	
3897	14.5 INCH LIVE OAK TREE				x	14.5	
3898	9 INCH LIVE OAK TREE				x	9	
3899	9 INCH LIVE OAK TREE				x	9	
3901	10 INCH LIVE OAK TREE				x	10	
3902	30 INCH LIVE OAK TREE				x		30
3903	18 INCH LIVE OAK TREE				x	18	
3904	54.5 INCH LIVE OAK TREE				x		54.5
3905	15 INCH CEDAR ELM TREE				x	15	
3906	18.5 INCH CEDAR ELM TREE				x	18.5	
3907	12 INCH CEDAR ELM TREE				x	12	
3908	9.5 INCH CEDAR ELM TREE				x	9.5	
3909	13.5 INCH CEDAR ELM TREE				x	13.5	
3910	19 INCH LIVE OAK TREE				x	19	
3911	9.5 INCH CEDAR ELM TREE				x	9.5	
3912	12 INCH CEDAR ELM TREE				x	12	
3914	16.5 INCH LIVE OAK TREE				x	16.5	
3915	18 INCH LIVE OAK TREE				x	18	
3916	20 INCH CEDAR ELM TREE				x	20	
3917	16 INCH LIVE OAK TREE				x	16	
3918	16 INCH CEDAR ELM TREE				x	16	
3919	20.5 INCH LIVE OAK TREE				x	20.5	
3920	14 INCH LIVE OAK TREE				x	14	
3921	21 INCH LIVE OAK TREE				x	21	
3922	20 INCH LIVE OAK TREE				x	20	
3923	16 INCH LIVE OAK TREE				x	16	
3924	9.5 INCH CEDAR ELM TREE				x	9.5	
3925	10 INCH LIVE OAK TREE				x	10	
3926	10.5 INCH CEDAR ELM TREE				x	10.5	
3927	11 INCH CEDAR ELM TREE				x	11	
3928	14 INCH LIVE OAK TREE				x	14	
3929	9.5 INCH CEDAR ELM TREE				x	9.5	
3930	10 INCH CEDAR ELM TREE				x	10	
3931	16 INCH LIVE OAK TREE				x	16	
3932	20 INCH LIVE OAK TREE				x	20	
3933	20 INCH LIVE OAK TREE				x	20	
3934	16 INCH LIVE OAK TREE				x	16	
3935	18 INCH LIVE OAK TREE				x	18	
3936	16 INCH AREA CLEAR TREE				x	16	
3937	15 INCH CEDAR ELM TREE				x	15	
3938	9.5 INCH CEDAR ELM TREE				x	9.5	
3939	17 INCH LIVE OAK TREE				x	17	
3940	16 INCH LIVE OAK TREE				x	16	
3941	16 INCH LIVE OAK TREE				x	16	
3942	15 INCH LIVE OAK TREE				x	15	
3943	17 INCH LIVE OAK TREE				x	17	
3944	18 INCH LIVE OAK TREE				x	18	
3945	20.5 INCH LIVE OAK TREE				x	20.5	
3946	25 INCH LIVE OAK TREE				x		25
3947	18 INCH LIVE OAK TREE				x	18	
3948	14 INCH CEDAR ELM TREE				x	14	
3949	17 INCH LIVE OAK TREE				x	17	
3950	23.5 INCH LIVE OAK TREE				x	23.5	
3951	13.5 INCH LIVE OAK TREE				x	13.5	
3952	12 INCH CEDAR ELM TREE				x	12	
3953	20.5 INCH CEDAR ELM TREE				x	20.5	
3954	9.5 INCH CEDAR ELM TREE				x	9.5	
3955	16 INCH CEDAR ELM TREE				x	16	
3956	33.5 INCH LIVE OAK TREE				x		33.5
3957	22 INCH LIVE OAK TREE				x	22	
3958	15 INCH LIVE OAK TREE				x	15	
3959	27.5 INCH LIVE OAK TREE				x		27.5
3960	17 INCH LIVE OAK TREE				x	17	
3961	15 INCH LIVE OAK TREE				x	15	
3962	16 INCH LIVE OAK TREE				x	16	
3963	16 INCH LIVE OAK TREE				x	16	
6452	45.5 INCH LIVE OAK TREE				x		45.5
Subtotal Inches			**352.5**	**191.5**		**11266.9**	**3013.5**
Preservation Credit						22533.8	9040.5
Mitigation Rates			**352.5**	**574.5**			
Total Mitigation Required		**-30647.3**					

VERAMENDI REGIONAL PARK

TREE PRESERVATION CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: #5_Tree Preservation Plan.dwg

09/04/25

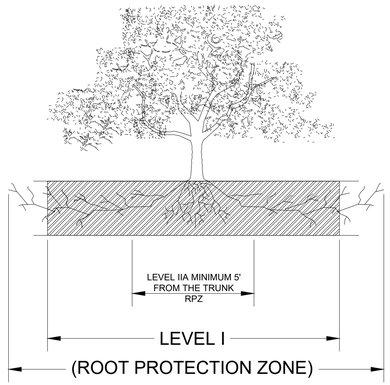
STATE OF TEXAS
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TBPE No. F-1386

JOB NUMBER: SA3856.2404

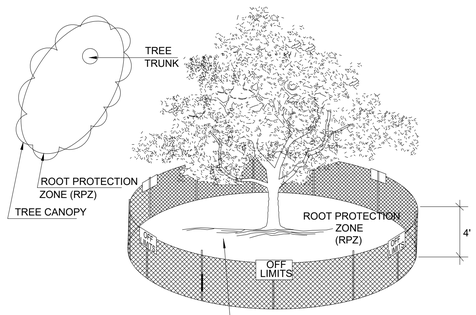
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C5007

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Plot Date/Time: Sep. 04, 25 - 14:34:23



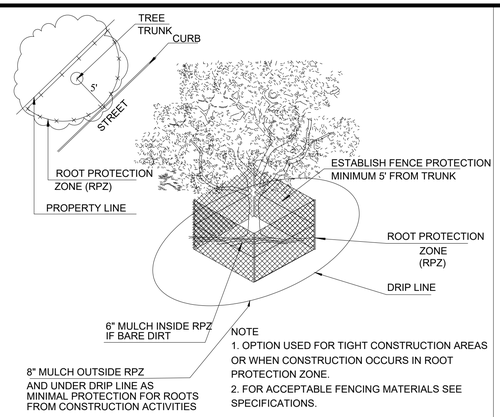
1.1.1 ELEVATION
N. T. S.

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.

1.1.2 LEVEL I & FENCE PROTECTION
N. T. S.

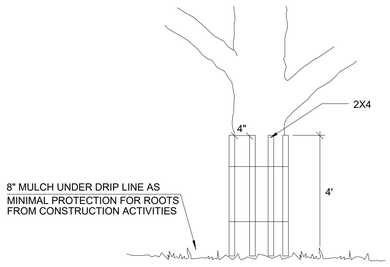


NOTE
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

1.1.3 LEVEL II A FENCE PROTECTION
N. T. S.

GENERAL NOTES

1. ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED, TREES SHALL RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 802. TREES TO RECEIVE LEVEL 2 A PROTECTION AS PER ITEM No. 802 ARE IDENTIFIED ON THE TREE PROTECTION PLAN.
2. ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.
3. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
4. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED **PRIOR** TO CONSTRUCTION, MAINTAINED, AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
5. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.
6. THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK WILT.
7. ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.
8. GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.
9. TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.
10. TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.
11. EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
12. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.
13. BEFORE CONSTRUCTION OR LAND DEVELOPMENT, 4 FT. HIGH SAFETY FENCING SHALL BE INSTALLED AROUND THE ROOT PROTECTION ZONE OF A HIGH VALUE TREE THAT IS TO BE RETAINED.

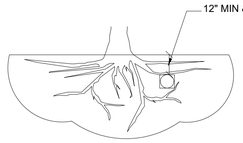


NOTE
WRAP TREE TRUNK WITH 2"X4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS TROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE TUNNELING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO TUNNEL WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE ENGINEER.

TUNNELS SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.

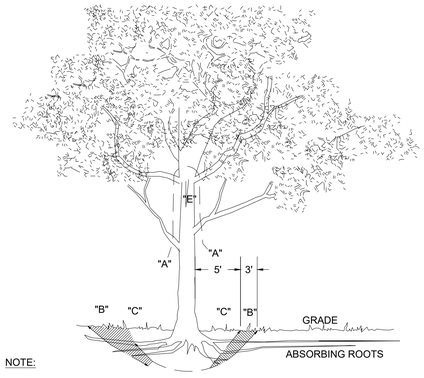


TUNNEL TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.

1.2 BORING THRU TREE ROOT ZONE
N. T. S.



NOTE:

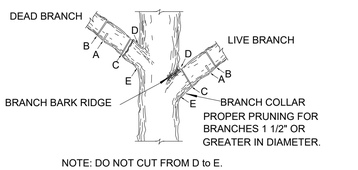
A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.

"B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK - CUT THRU ANCHOR ROOTS AT AN ANGLE - 3' TO 4' DEEP

"C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)

"D" BACKFILL HOLE AND CLEAN UP.

1.3 TREE REMOVAL DIAGRAM
N. T. S.



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

NOTE: DO NOT CUT FROM D to E.

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

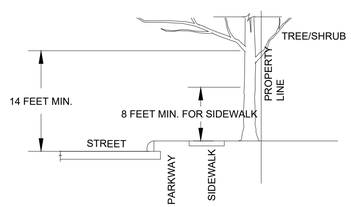
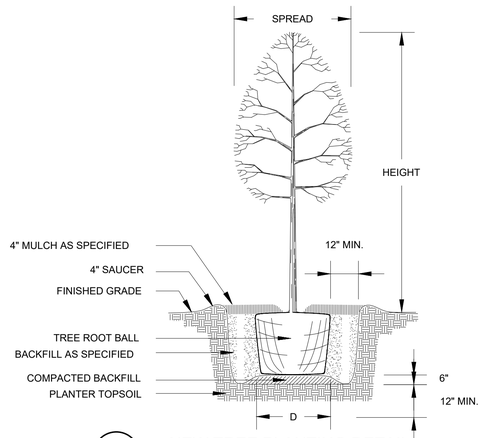


FIGURE No.2:

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.

1.5 BRANCH CLEARANCE DETAIL
N. T. S.



1.6 NEW TREE PLANTING DETAIL
N. T. S.

VERAMENDI REGIONAL PARK
TREE PRESERVATION DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: TMJ
CHECKED BY: PGF
DRAWING NAME: #5_Tree Preservation Plan.dwg

09/04/25

STATE OF TEXAS
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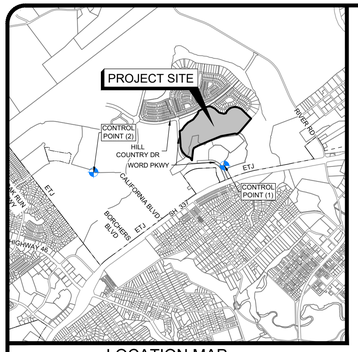
JOB NUMBER: SA3856.2404

SHEET NO.
C5008

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VERAMENDI REGIONAL PARK

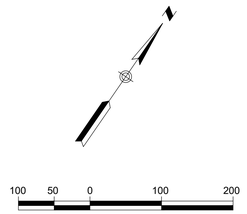
STORMWATER POLLUTION PREVENTION PLAN



LOCATION MAP

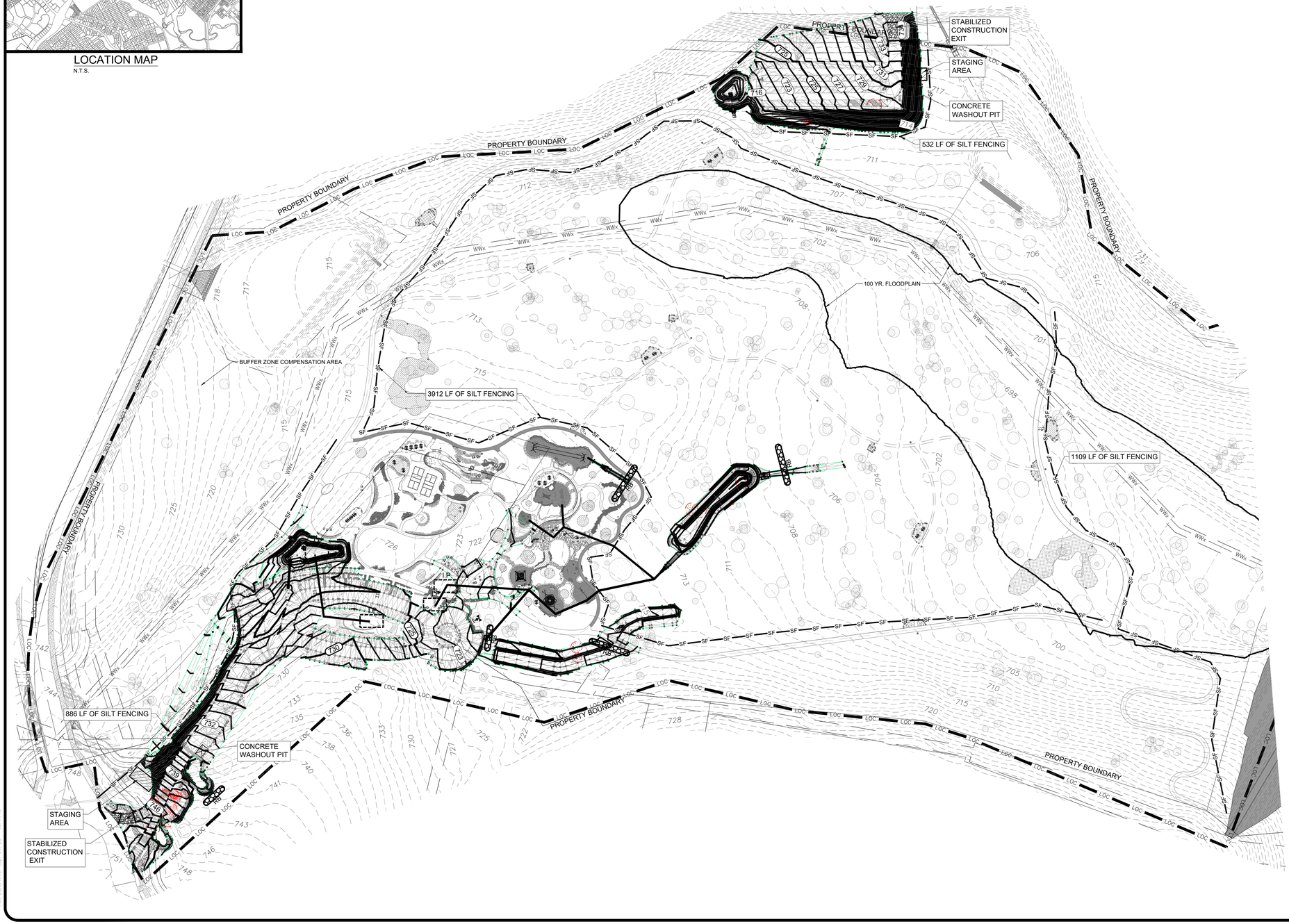
N.T.S.

SWPPP MODIFICATIONS		
DATE	SIGNATURE	MODIFICATIONS



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 C8001



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 PKWY.

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: sh_swppp.dwg

09/04/25

STATE OF TEXAS
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JOB NUMBER: SA3856.2404

SHEET NO.

C8000

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Last Modified: May 29, 25 - 17:33
Last Plotted: May 29, 25 - 17:34

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

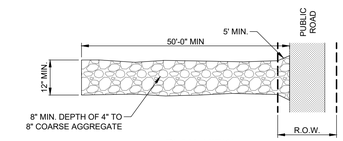
1. ALL AGGREGATE SHOULD BE AT LEAST 3 INCHES IN DIAMETER AND SHOULD NOT EXCEED A VOLUME OF 0.5 CUBIC FOOT.
2. EARTH EMBANKMENT: PLACE FILL MATERIAL IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT OF 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

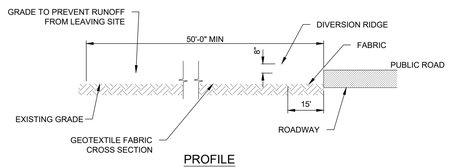
1. THE DRAINAGE AREA FOR A SEDIMENT BASIN SHALL BE LESS THAN 100 ACRES.
2. THE BASIN SHOULD INCLUDE A PERMANENT STAKE TO INDICATE THE SEDIMENT LEVEL IN THE POOL AND MARKED TO INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME (NOT THE TOP OF THE STAKE). SEDIMENT SHALL BE REMOVED WHEN SEDIMENT 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.



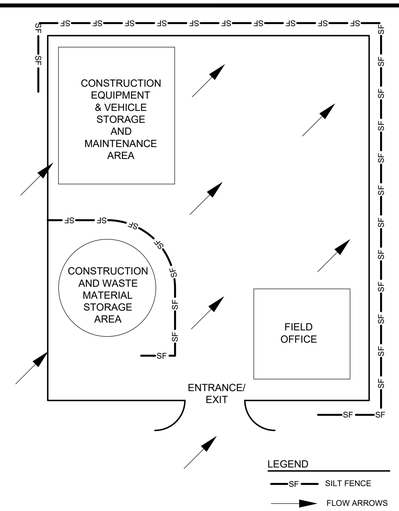
PLAN VIEW



PROFILE

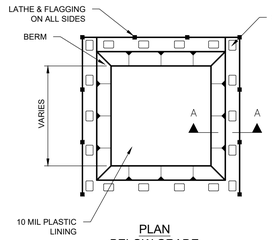
66.01 STABILIZED CONSTRUCTION EXIT

N.T.S.

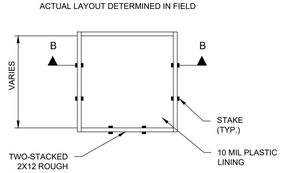


CONSTRUCTION STAGING AREA

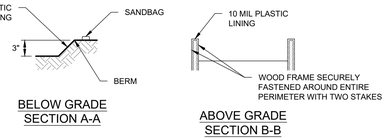
N.T.S.



PLAN
BELOW GRADE



PLAN
ABOVE GRADE

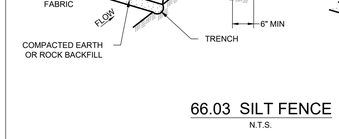


BELOW GRADE
SECTION A-A

ABOVE GRADE
SECTION B-B

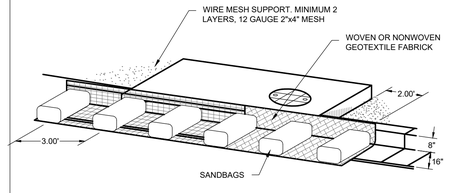
66.02 CONCRETE WASHOUT AREA

N.T.S.

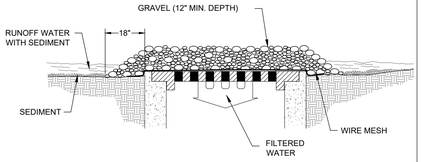


66.03 SILT FENCE

N.T.S.



CURB INLET PROTECTION



GRATE INLET PROTECTION

NOTES:

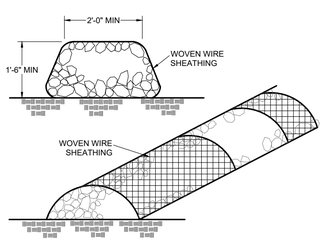
1. WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEN END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CHORD.
2. INLET PROTECTION SHALL BE PLACED OVER THE MOUTH OF THE INLET WITH A 2 FOOT OVERLAP ON EITHER SIDE.
3. THE FABRIC COVER AND SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE.
4. THE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

NOTES:

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

66.04 INLET PROTECTION

N.T.S.



NOTES:

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

66.05 ROCK BERM

N.T.S.

VERAMENDI REGIONAL PARK

SWPPP DETAILS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 11/13/2024
DESIGNED BY: NG
DRAWN BY: HEW
CHECKED BY: PGF
DRAWING NAME: 06_SWPPP_Details.dwg

09/04/25

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: SA3856.2404

SHEET NO.
C8001

K:\LJA3856_ASA Properties\2404 VERT LDS Site Development Plans\CWC-Sheets\ljn_SWPPP_Details.dwg
Xref Drawings:
Last Modified: May. 22, 25 – 11:24
Last Plotted: Dec. 04, 24 – 14:43:36

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

Co - CEO,
Title - Owner/President/Other

of Veramendi PE-Darwin, LLC,
Corporation/Partnership/Entity Name

have authorized Nicholas Gower
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

6/19/2025
Date

THE STATE OF Texas §

County of Comal §

ALEX HARDEMAN
Notary Public, State of Texas
Comm. Expires 05-20-2028
Notary ID 130670969

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 19 day of June, 2025

Alex Hardeman
NOTARY PUBLIC

Alex Hardeman
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 5/20/2028

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Veramendi Regional Park #1

Regulated Entity Location: 2300 LF North of the Intersection of Loop 337 & Word Pkwy

Name of Customer: Veramendi PE-Darwin, LLC

Contact Person: Garrett Mechler Phone: 830 643 5633

Customer Reference Number (if issued): CN 605543875

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	63.61 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: 6/19/2025

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 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $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 605543875		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy) 11/18/2024

☐ 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-Darwin, 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)*
0802689865	32063351814		

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: LLC

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
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant
☒ Other: CO-CEO

15. Mailing Address: 2168 Oak Run Parkway, Suite 101

City	New Braunfels	State	TX	ZIP	78132	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) 643-5633		( ) -

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 Regional Park #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:	2300 LF North of the Intersection of Loop 337 and Word Pkwy.				
26. Nearest City			**State**		**Nearest ZIP Code**
New Braunfels			TX		78132

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:	29.731833		**28. Longitude (W) In Decimal:**	98.142783	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	43	54.60	98	8	34.02

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)
7999			

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Public Park

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		( ) -	ngower@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:	ASA Properties	**Job Title:**	Co-CEO	
Name *(In Print):*	Garrett Mechler		**Phone:**	(830) 643- **5633**
Signature:			**Date:**	6/17/2025