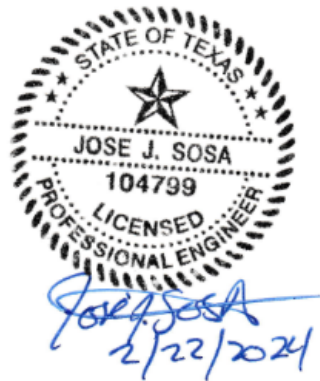


# **WATER POLLUTION ABATEMENT PLAN**

**SH 46 Development**

**NEW BRAUNFELS, TX**



**PREPARED FOR**

**JMA ENTITY, LLC**

*February, 2024*

# MENDEZ ENGINEERING

February 2<sup>nd</sup>, 2024

Texas Commission on Environment Quality  
San Antonio Region  
14250 Judson Road  
San Antonio, Texas 78233-4880

Re: SH 46 Development  
Water Pollution Abatement Plan

Enclosed are one (1) original and five (5) copies of the SH 46 Development, Water Pollution Abatement Plan Application. This Application has been prepared to be consistent with the Texas Commission on Environmental Quality (20 TAC 213) and its current policies for development over the Edwards Aquifer Recharge Zone.

This Water Pollution Abatement Plan Application contains a total area of 15.974 acre of storm water accumulation area identified as the project limits. Please review the enclosed report & construction plans for the items it is intended to address, and if acceptable, provide written approval of said plan so that construction may begin at the earliest opportunity. Appropriate review fees in the amount of \$6,500.00 and associated fee application are included herein.

If you should have any questions regarding the contained information, please feel free to contact me at 210.802.0808.

Respectfully,

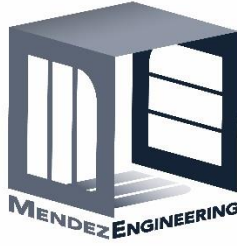


Jose J. Sosa, P.E., CFM  
Senior Project Manager | MENDEZ ENGINEERING

# Water Pollution Abatement Plan Checklist

- **Edwards Aquifer Application Cover Page (TCEQ-20705)**
- **General Information Form (TCEQ-0587)**
  - Attachment A - Road Map
  - Attachment B - USGS / Edwards Recharge Zone Map
  - Attachment C - Project Description
- **Geologic Assessment Form (TCEQ-0585)**
  - Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
  - Attachment B - Stratigraphic Column
  - Attachment C - Site Geology
  - Attachment D - Site Geologic Map(s)
- **Water Pollution Abatement Plan Application Form (TCEQ-0584)**
  - Attachment A - Factors Affecting Surface Water Quality
  - Attachment B - Volume and Character of Stormwater
  - Attachment C - Suitability Letter from Authorized Agent (if OSSF is proposed)
  - Attachment D - Exception to the Required Geologic Assessment (if requested)
  - Site Plan
- **Temporary Stormwater Section (TCEQ-0602)**
  - Attachment A - Spill Response Actions
  - Attachment B - Potential Sources of Contamination
  - Attachment C - Sequence of Major Activities
  - Attachment D - Temporary Best Management Practices and Measures
  - Attachment E - Request to Temporarily Seal a Feature (if requested)
  - Attachment F - Structural Practices
  - Attachment G - Drainage Area Map
  - Attachment H - Temporary Sediment Pond(s) Plans and Calculations
  - Attachment I - Inspection and Maintenance for BMPs
  - Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices
- **Permanent Stormwater Section (TCEQ-0600)**
  - Attachment A - 20% or Less Impervious Cover Waiver (if requested for multi-family, school, or small business site)
  - Attachment B - BMPs for Upgradient Stormwater
  - Attachment C - BMPs for On-site Stormwater
  - Attachment D - BMPs for Surface Streams
  - Attachment E - Request to Seal Features (if sealing a feature)
  - Attachment F - Construction Plans
  - Attachment G - Inspection, Maintenance, Repair and Retrofit Plan
  - Attachment H - Pilot-Scale Field Testing Plan (if proposed)
  - Attachment I - Measures for Minimizing Surface Stream Contamination

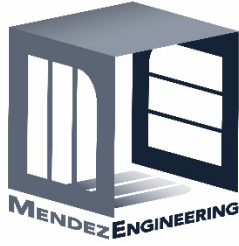
- **Agent Authorization Form (TCEQ-0599), if application submitted by agent**
- **Application Fee Form (TCEQ-0574)**
- **Check Payable to the “Texas Commission on Environmental Quality”**
- **Core Data Form (TCEQ-10400)**



# SH 46 Development

## WATER POLLUTION ABATEMENT PLAN

PREPARED FOR:  
BIZ PARK BERRY LANE, LLC  
4203 SPINNAKER COVER  
AUSTIN, TX 78731



## **SECTION A**

**Edwards Aquifer Application Cover Page TCEQ-20705**

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### 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.

<b>1. Regulated Entity Name:</b> SH 46- DEVELOPMENT					<b>2. Regulated Entity No.:</b>				
<b>3. Customer Name:</b> BIZ PARK BERRY LANE, LLC					<b>4. Customer No.:</b> 605416965				
<b>5. Project Type:</b> (Please circle/check one)	New		Modification		Extension		Exception		
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential		Non-residential			<b>8. Site (acres):</b>		15.974	
<b>9. Application Fee:</b>	\$6,500		<b>10. Permanent BMP(s):</b>			Yes, Sand Filtration System			
<b>11. SCS (Linear Ft.):</b>	N/A		<b>12. AST/UST (No. Tanks):</b>			N/A			



<b>13. County:</b>	Comal	<b>14. Watershed:</b>	Comal River-Guadalupe River
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## 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](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.

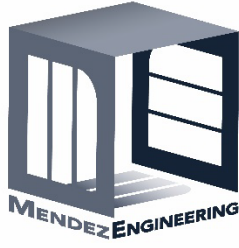
<b>Austin Region</b>			
<b>County:</b>	<b>Hays</b>	<b>Travis</b>	<b>Williamson</b>
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	✓	—	—	—
Region (1 req.)	—	✓	—	—	—
County(ies)	—	✓	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input checked="" type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA Medina	<input type="checkbox"/> EAA Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input checked="" type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> San Antonio ETJ (SAWS)	NA

	<input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park				
--	--	--	--	--	--

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.	
Jose J. Sosa, P.E.	
Print Name of Customer/Authorized Agent	2/22/2024
Signature of Customer/Authorized Agent	Date

<b>**FOR TCEQ INTERNAL USE ONLY**</b>			
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):



## SH-46 DEVELOPMENT

PROPERTY DEED

STATE OF TEXAS )  
 ) KNOW ALL MEN BY THESE PRESENTS:  
COUNTY OF COMAL )

SPECIAL WARRANTY DEED  
WITH VENDOR'S LIEN

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

THAT SANDRA L. WATERMAN, INDIVIDUALLY AND AS TRUSTEE TO THE SANDRA L. WATERMAN TRUST, DATED 9/2/1999 ("Grantor"), being the sole owner of the below-described property hereby declares that it has good and full power to sell and dispose of the said property for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration to Grantor paid by BIZ PARK BERRY LANE LLC, a Texas limited partnership, 4203 Spinnaker Cove, Austin, Texas 78731 ("Grantee"), the receipt of which is hereby acknowledged and confessed, and the further consideration of the execution and delivery by said Grantee of one certain real estate lien note ("Note") of even date in the original principal amount as contained in the Note of even date, bearing interest, containing an attorneys' fee clause and principal and interest being payable all as therein specified, payable to the order of SANDRA L. WATERMAN, TRUSTEE TO THE SANDRA L. WATERMAN TRUST, DATED 9/2/1999, 3655 Valkaria Road, Malabar, Florida 32950-4737 ("Mortgagee"), bearing interest at the rate therein provided; and being secured by Vendor's Lien and superior title retained herein favor of said Mortgagee, and also being secured by a DEED OF TRUST of even date herewith from Grantee to Trustee, Kim Lowe, 3307 Northland Drive, Suite 175, Austin, Texas 78731 and Trustee's substitutes or successors ("Trustee");

GF# 291 /FKL

WHEREAS, Mortgagee has, at the special instance and request of Grantee, paid to Grantor a portion of the purchase price of the property hereinafter described, as included in the above-described Note, said Vendor's Lien against said property securing the payment of said Note is hereby assigned, transferred and delivered to Mortgagee, Grantor hereby conveying to said Mortgagee the said superior title to said property, subrogating said Mortgagee to all the rights and remedies of Grantor in the premises by virtue of said liens; and

Grantor has GRANTED, SOLD, and CONVEYED, and by these presents does GRANT, SELL, and CONVEY unto said Grantee Commonly referred to as 6535 and 6525 W. Hwy 46, New Braunfels, Comal County, Texas 78132, more particularly described as:

SEE EXHIBIT "A" METES AND BOUNDS ATTACHED AND INCORPORATED  
HEREIN.

TO HAVE AND TO HOLD the above-described premises, together with all and singular, the rights and appurtenances thereunto in anywise belonging unto said Grantee, his heirs and assigns, forever. And the Grantor covenants with the Grantee that the Grantor has done nothing to impair such title as Grantor received in said Land and Improvements, and Grantor will warrant and defend the title against the lawful claims of all persons claiming by, through or under the Grantor, but not otherwise.

Grantor and Grantee have prorated the taxes for this year. Grantee is responsible for taxes all subsequent tax years.

This conveyance is made subject to any and all valid and subsisting restrictions, easements, rights of way, reservations, maintenance charges together with any lien securing said maintenance charges, zoning laws, ordinances of municipal and/or other governmental authorities, conditions and covenants, if any, applicable to and enforceable against the above-described property as shown by the records of the County Clerk of said County.

The use of any pronoun herein to refer to Grantor or Grantee shall be deemed a proper reference even though Grantor and/or Grantee may be an individual (either male or female), a corporation, a partnership or a group of two or more individuals, corporations and/or partnerships, and when this Deed is executed by or to a corporation, or trustee, the words "heirs, executors and administrators" or "heirs and assigns" shall, with respect to such corporation or trustee, be construed to mean "successors and assigns".

It is expressly agreed that the Vendor's Lien is retained in favor of the payee of said Note against the above-described property, premises and improvements, until said Note and all interest thereon shall have been fully paid according to the terms thereof, when this Deed shall become absolute.

**[SIGNATURE PAGE TO FOLLOW]**

Sandra L Waterman

Sandra L Waterman, Trustee

SANDRA L. WATERMAN, INDIVIDUALLY AND AS TRUSTEE TO THE SANDRA L. WATERMAN TRUST, DATED 9/2/1999

STATE OF FLORIDA

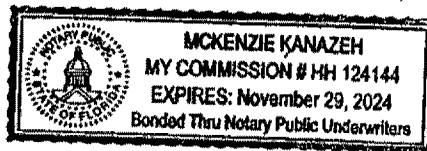
§  
§  
§

COUNTY OF BREVARD

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THE 12<sup>th</sup> DAY OF NOVEMBER 2022 BY SANDRA L. WATERMAN, INDIVIDUALLY AND AS TRUSTEE TO THE SANDRA L. WATERMAN TRUST, DATED 9/2/1999, ON BEHALF OF SAID TRUST.

Mckenzie Kanazeh

NOTARY PUBLIC - STATE OF FLORIDA



**EXHIBIT "A"**  
**PERMITTED EXCEPTIONS**

**TRACT 1:**

Being a 10.985-acre tract of land out of the Catherine Reis Survey No. 742, Abstract No. 499, the G.W.T.&P. RR. Co. Survey No. 837, Abstract No. 697 and the Alva Morris Holbrook Survey No. 424, Abstract No. 272, Comal County, Texas, being all of a called 11.00 acres, recorded in Document No. 200606006695, Official Public Records, Comal County, Texas, said 10.985 tract of land being more particularly described as follows:

BEGINNING at a 1/2" iron pin found for the East corner of said 11.00-acre tract and being the North corner of a called 6.082-acre tract described in Document No. 201806023892, Official Public Records, Comal County, Texas and being in the Southwest right-of-way line of State Highway 46, from which a 1/2" iron pin found bears S43°34'08" E, 104.13 feet for the Southeast corner of said 6.082-acre tract, also from POINT OF BEGINNING, a 3/8" iron pin found for the Southeast corner of the Remainder of a called 10.553-acre tract, recorded in Volume 334, Page 878 of the Deed Records, Comal County, Texas, bears 44°40'36" E a distance of 344.19 feet;

THENCE S 64°58'31" W along the Southeast line of the herein described tract, common with the Northwest line of said 6.082-acre tract, passing at a distance of 965.91 feet to a point for the West corner of said 6.082-acre tract, common with the North corner of said Remainder of called 10.553-acre tract, from which a 1/2" iron pin found, bears S25°01'29" E a distance of 1.99 feet, continuing an additional 254.93 feet to a 3/8 inch iron pin found leaning, for the West corner of said Remainder of the 10.553-acre tract, common with the interior corner of a called 152.03-acre tract, recorded in Document No. 201506000910, Official Public Records, Comal County, Texas and continuing for a total distance of 1409.57 feet to a 1/2" iron pin found for the South corner of the herein described tract and being an interior corner of said 152.03-acre tract;

THENCE N 31 °13'31" W along the Southwest line of the herein described tract, common with an interior line of said 152.03-acre tract, a distance of 381.20 feet to a set 1/2" iron pin with cap "HMT" for the West corner of a said 11.00-acre tract and the herein described tract, also being the Southwest corner of a called 5.00-acre tract, recorded in Document No. 200606006694, Official Public Records, Comal County, Texas;

THENCE departing said interior line of a 152.03-acre tract, and common with the South line of said 5.00-acre tract and the North line of said 11.00-acre tract, N 67°26'01" E, a distance of 1336.53 feet to a set 1/2" iron pin with cap "HMT" in the aforementioned Southwest right-of-way line of State Highway 46 for the East corner of said 5.00-acre tract, the North corner of a said 11.00-acre tract and the herein described tract, from which a 1/2" iron pin (with cap stamped "Matkin Hoover") found for the North corner of said 5.00-acre tract bears N 44°46'05" E a distance 178.63 feet,

said iron pin also being the East corner of a called 4.030-acre tract recorded in Document No. 200206040402, Official Public Records, Comal County, Texas;

THENCE with the Southwest right-of-way line of State Highway 46 and the Northeast line of said 11.00-acre tract, S 44°46'05" E, a distance of 341.73 feet to the POINT OF BEGINNING, containing 10.985 acres of land in Comal County, Texas.

**TRACT 2:**

Being a 4.989-acre tract of land out of the Catherine Reis Survey No. 742, Abstract No. 499 and the G.W.T.&P. RR. Co. Survey No. 837, Abstract No. 697, Comal County, Texas, being the same tract called 5.00 acres, recorded in Document No. 200606006694, Official Public Records, Comal County, Texas, said 4.989-acre tract of land being more particularly described as follows:

BEGINNING at a 1/2" iron pin found with cap "Matkin Hoover" in the Southwest right-of-way line of State Highway 46 for the North corner of said 5.00-acre tract, recorded in Document No. 200606006694, Official Public Records, Comal County, Texas, the same point being the East corner of a called 4.030-acre tract recorded in Document No. 200206040402, Official Public Records, Comal County, Texas, from which a 1/2" iron pin (with cap stamped "RPLS 4233") found bears N 44°42'05" W a distance of 425.63 feet for the North corner of called 4.030-acre tract;

THENCE with the Southwest right-of-way line of State Highway 46 and the Northeast line of said 5.00-acre tract, S 44°46'05" E, a distance of 178.63 feet to a set 1/2" iron pin with cap "HMT" for the North corner of a called 11.00-acre tract of land recorded in Document No. 200606006695, Official Public Records, Comal County, Texas, common with the Easternmost corner of said 5.00-acre tract and the herein described tract, from which a 1/2" iron pin found for the most East corner of said 11.00-acre tract bears S 44°46'05" E a distance of 341.73 feet;

THENCE departing the Southwest right-of-way line of State Highway 46, with the North line of said 11.00-acre tract and the South line of said 5.00-acre tract, S 67°26'01" W, a distance of 1336.53 feet to a set 1/2" iron pin with cap "HMT" in a Northern line of a called 152.03-acre tract, recorded in Document No. 201506000910, Official Public Records, Comal County, Texas, for the Northernmost West corner of said 11.00-acre tract, the Southernmost West corner of said 5.00-acre tract and the herein described tract;

THENCE with said Northern line of said 152.03 acre tract and the Southwest line of said 5.00-acre tract, N 31°13'31" W, a distance of 166.96 feet to a found 1/2" iron pin in the base of an oak tree in the South line of the remainder of a called 262.02-acre tract recorded in Document No. 201206007088, Official Public Records, Comal County, Texas, same point being the Northernmost West corner of said 5.00-acre tract and the herein described tract;

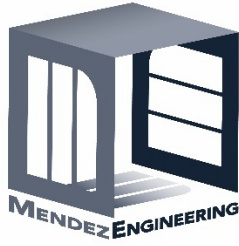


THENCE with the South line of said remainder of a called 262.02-acre tract and the North line of said 5.00-acre tract, N 67°25'09" E, passing a found 1/2" iron pin with cap "4233" for the South corner of the aforementioned 4.030-acre tract at 769.28 feet, continuing a total distance of 1294.17 feet to the POINT OF BEGINNING, containing 4.989 acres of land in Comal County, Texas.

**Filed and Recorded**  
**Official Public Records**  
**Bobbie Koepf, County Clerk**  
**Comal County, Texas**  
**11/15/2022 03:05:02 PM**  
**LOUISA 6 Pages(s)**  
**202206048772**



*Bobbie Koepf*



## **SECTION B**

**General Information Form TCEQ-0587**

# 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: Jose J. Sosa, P.E.

Date: 2/22/2024

Signature of Customer/Agent:



## Project Information

1. Regulated Entity Name: SH 46 Development
2. County: Comal
3. Stream Basin: Upper Dry Comal Tributary 3
4. Groundwater Conservation District (If applicable): 99 Comal Trinity GCD
5. Edwards Aquifer Zone:
  - Recharge Zone
  - Transition Zone
6. Plan Type:
  - WPAP
  - SCS
  - Modification
  - AST
  - UST
  - Exception Request

7. Customer (Applicant):

Contact Person: John Muhich  
Entity: BIZ PARK BERRY LANE, LLC  
Mailing Address: 4203 Spinnaker Cove  
City, State: Austin, TX Zip: 78731  
Telephone: (512)452-1210 FAX: \_\_\_\_\_  
Email Address: johnsmuhich@gmail.com

8. Agent/Representative (If any):

Contact Person: Jose J. Sosa, P.E.  
Entity: Mendez Engineering, LLC  
Mailing Address: 12950 Country Pkwy Suite 120  
City, State: San Antonio, TX Zip: 78216  
Telephone: (210)802-0808 FAX: \_\_\_\_\_  
Email Address: JSosa@mendezengineering.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 City 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.

6535 West Highway 46, New Braunfels, Comal County, Texas. Project is located on West TX - 46 near the intersection Copper Ridge. The site is approximately 3,827 L.F. away located at 6535 West TX-46, New Barunfels, TX 78132. The area of the site is 15.974 acres.

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: FEBRUARY 29 2024

14.  **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:

- Area of the site
- Offsite areas
- Impervious cover
- Permanent BMP(s)
- Proposed site use
- Site history
- Previous development
- 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)
- Undeveloped (Undisturbed/Uncleared)
- Other: \_\_\_\_\_

### ***Prohibited Activities***

16.  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.  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:

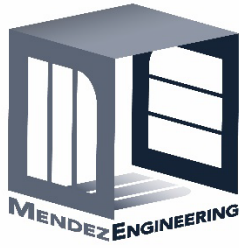
- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- For a UST Facility Plan or Modification or an AST Facility 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.  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)
- San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

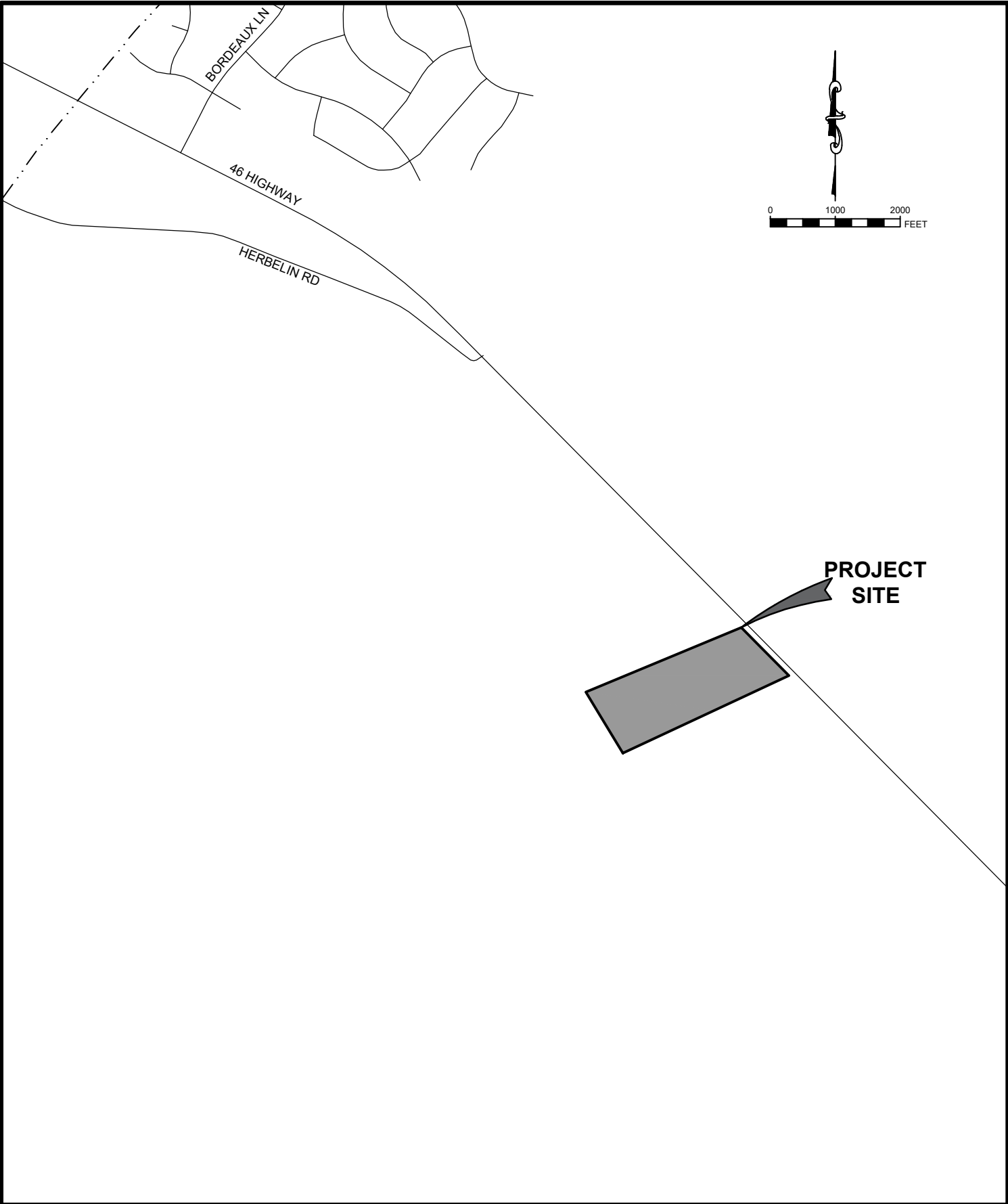
20.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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

21.  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.




## **ATTACHMENT A**

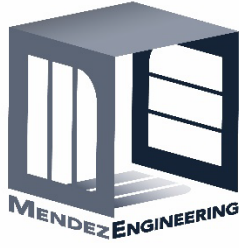
### **Road Map**



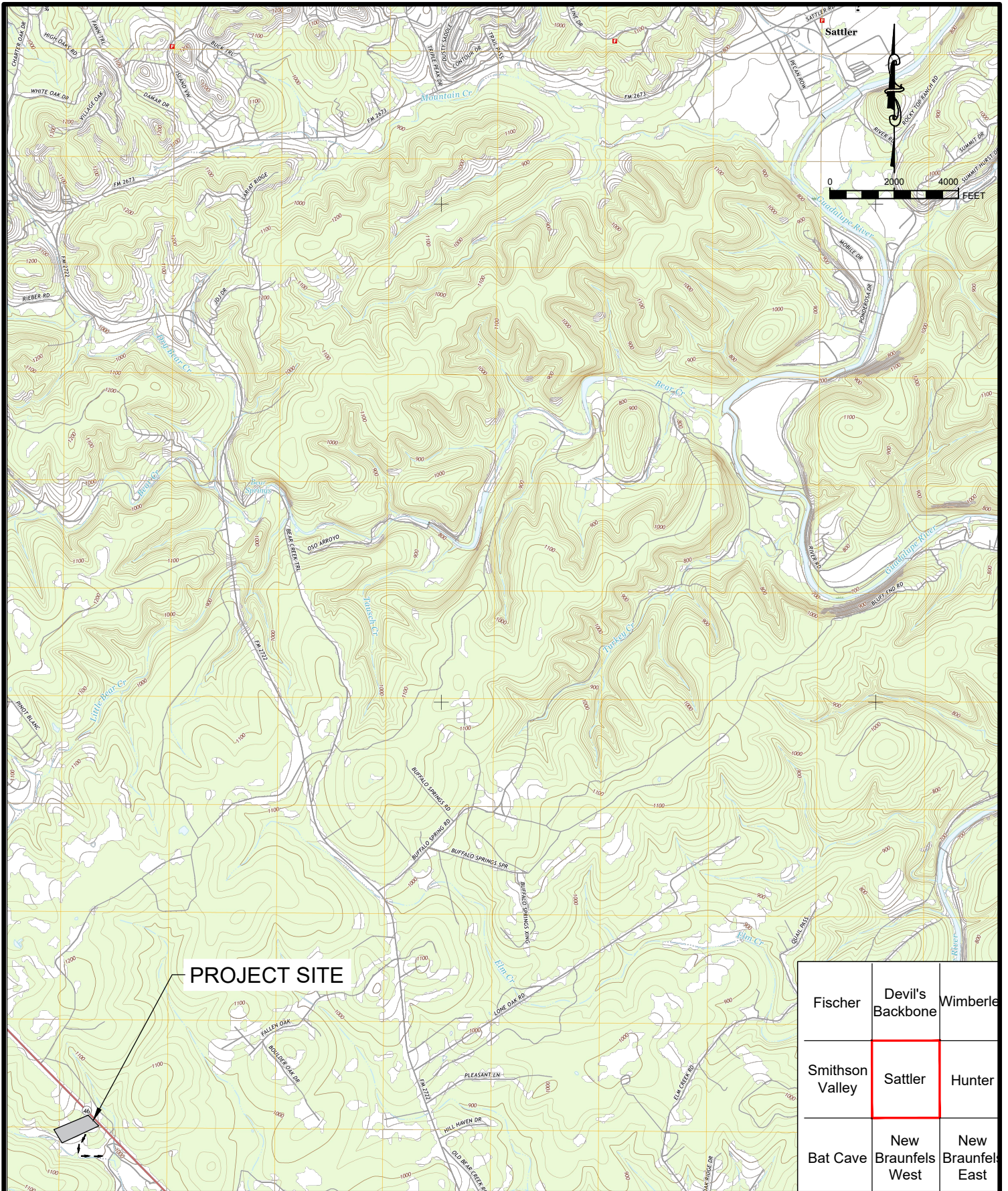
Date: Dec 14, 2023, 1:45pm User ID: ecastoneda  
 File: K:\232136 Mulich - SH 46 Development\07.00 CAD\ATTACHMENT A - ROAD MAP.dwg

DESIGNED BY: AS	<b>SH 46 DEVELOPMENT</b> 6535 W TX-46, NEW BRAUNFELS, TX 78259	ATTACHMENT A - ROAD MAP	 <b>MENDEZ ENGINEERING</b> Registration # F-14070 12950 Country Parkway, Suite 120 San Antonio, Texas 78216 Office: 210-802-0808 <a href="http://www.MendezEngineering.com">www.MendezEngineering.com</a>
DRAFTED BY: EC			
CHECKED BY: JJS	<b>Owner: BIZ PARK BERRY LANE, LLC</b> 4203 SPINNAKER COVER AUSTIN, TX 78731	<b>WATER POLLUTION ABATEMENT PLAN</b>	
SHEET  Exhibit-1			





**ATTACHMENT B**  
**Recharge Zone Map**



Fischer	Devil's Backbone	Wimberle
Smithson Valley	Sattler	Hunter
Bat Cave	New Braunfels West	New Braunfels East

DESIGNED BY: AS  
 DRAFTED BY: EC  
 CHECKED BY: JJS  
 SHEET  
 Exhibit-2

**SH 46 DEVELOPMENT**  
 6535 W TX-46,  
 NEW BRAUNFELS, TX 78259  
 Owner: **BIZ PARK BERRY LANE, LLC**  
 4203 SPINNAKER COVER  
 AUSTIN, TX 78731

ATTACHMENT B -  
 RECHARGE ZONE MAP  
 WATER POLLUTION ABATEMENT PLAN



**MENDEZ ENGINEERING**  
 Registration # F-14070  
 12950 Country Parkway, Suite 120  
 San Antonio, Texas 78216  
 Office: 210-802-0808  
 www.MendezEngineering.com

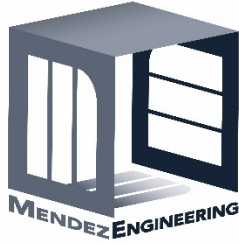
Date: Feb 02, 2024, 11:08am User ID: Jjessa  
 File: M252128\_Munch - SH 46 Development\K07202 CAD\DWG\WATTACHMENT B - RECHARGE\_ZONE\_MAP.dwg

# **ATTACHMENT C**

## **Project Description**

The Proposed Project is situated at 6535 West Highway 46, New Braunfels, TX 78132. The center of the Site is located at 29°45'26.83"N Latitude and 98°14'42.89"W Longitude (WGS 84). The Site comprises two (2) parcels that combine to form an area of approximately 15.975 acres. Currently, the Site is occupied by a public storage unit business, a commercial gym facility, and an unoccupied residential home. The proposed project aims to expand the Site with additional commercial buildings and a septic system.

The impervious cover of the proposed project will be 193,842-sq.ft. (4.45-acres), which is 27.9% of the total acreage available. The existing impervious cover is 35,068-sq. ft. (0.81-acres), which was 5.0% of the total acreage.



## **SECTION C**

### **Geologic Assessment Form TCEQ-0585**

# 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: Matt Anding

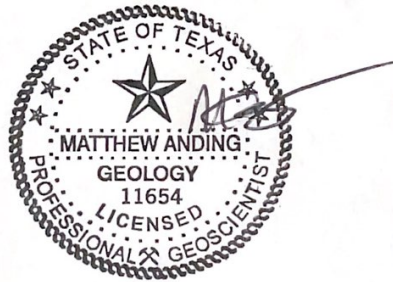
Telephone: 832-641-8143

Date: 09/16/2022

Fax: \_\_\_\_\_

Representing: Anding Environmental Consulting, LLC (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Mr. John Muhich

## Project Information

1. Date(s) Geologic Assessment was performed: September 03, 2022

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	B	4'
ErG	C	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. The minimum scale is 1": 400'  
 Applicant's Site Plan Scale: 1" = 100'  
 Site Geologic Map Scale: 1" = 100'  
 Site Soils Map Scale (if more than 1 soil type): 1" = 100'
9. Method of collecting positional data:
  - Global Positioning System (GPS) technology.
  - Other method(s). Please describe method of data collection: \_\_\_\_\_
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 2 (#) 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.

---

**GEOLOGIC ASSESSMENT**

**ATTACHMENT A - GEOLOGIC ASSESSMENT TABLE**



GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: 6535 West Highway 46, New Braunfels, Comal County, Texas																	
LOCATION			FEATURE CHARACTERISTICS									EVALUATION			PHYSICAL SETTING					
1A	1B'	1C'	2A	2B	3	4			5	5A	6	7	8A	8B		9	10	11		12
FEATURE #	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DENSITY (G/CM <sup>3</sup> )	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)		TOPOGRAPHY		
						X	Y	Z							<40	≥40	<1.0	≥1.0		
SF1	29.757707	-98.243803	SF	20	Kk	12	1.5	8+	N50°E	10	-	-	N	35	65	✓	✓	✓	Hilltop	
MB1	29.757182	-98.246742	MB	30	Kk	1	1	3	-	-	-	-	N	5	35	✓	✓	✓	Hillside	
MB2	29.757786	-98.243547	MB	30	Kk	10	6	?	-	-	-	-	F	5	35	✓	✓	✓	Hilltop	
MB3	29.757646	-98.244047	MB	30	Kk	6	6	?	-	-	-	-	F	5	35	✓	✓	✓	Hilltop	
MB4	29.756941	-98.245567	MB	30	Kk	10	10	?	-	-	-	-	F	5	35	✓	✓	✓	Hilltop	
MB5	29.757017	-98.246002	MB	30	Kk	10	10	?	-	-	-	-	F	5	35	✓	✓	✓	Hilltop	

\* DATUM: NAD 1983 StatePlane-Texas South Central FIPS 4204

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

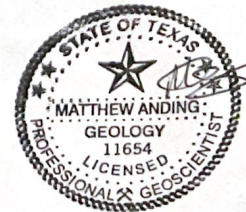
12 TOPOGRAPHY  
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understand, 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 Chapter 213.

  
Matthew Anding, P.G.

Date: 09/16/2022



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**GEOLOGIC ASSESSMENT  
ATTACHMENT B - STRATIGRAPHIC COLUMN**

# SITE STRATIGRAPHY (Edwards Aquifer)

## STRATIGRAPHIC COLUMN

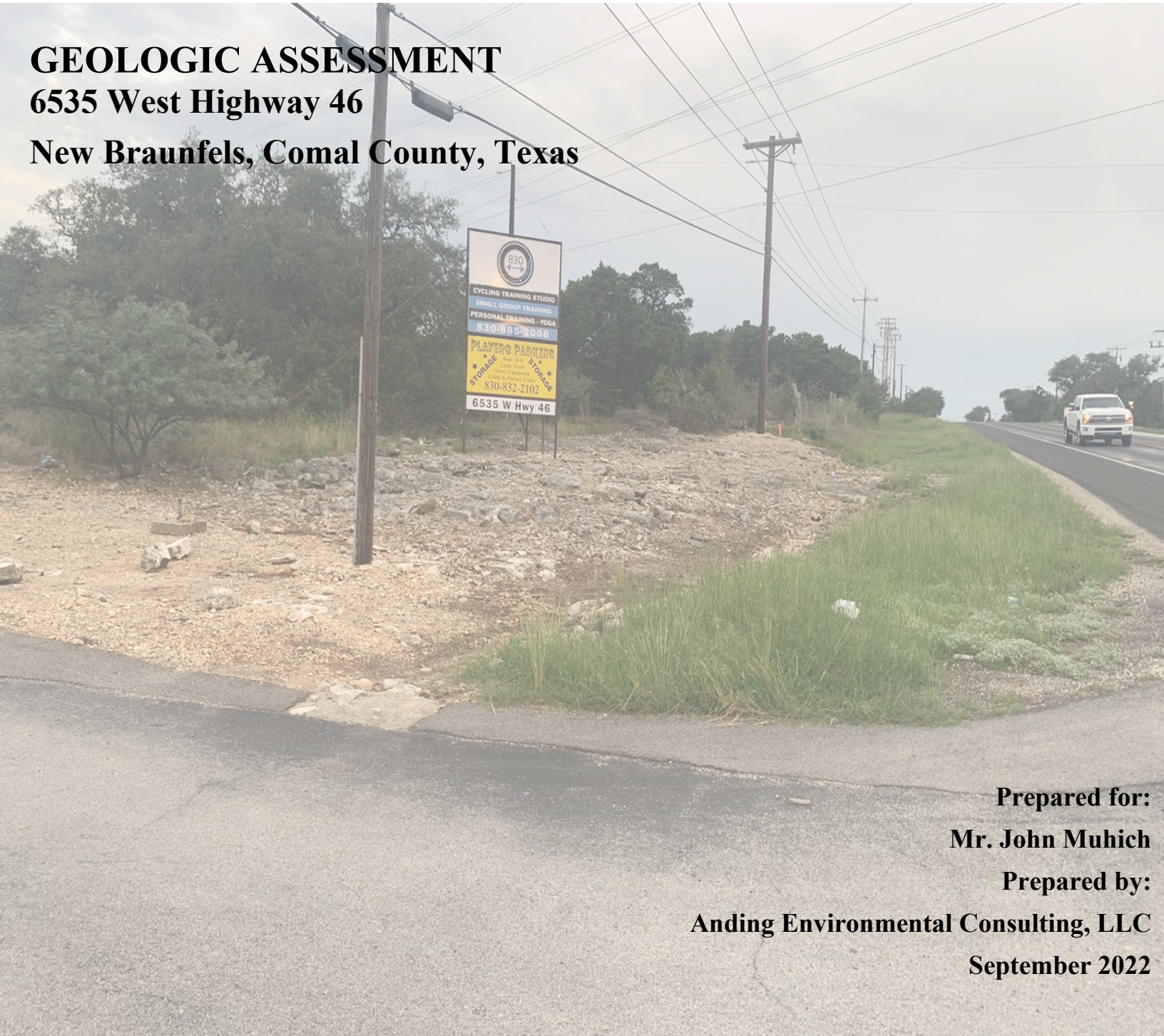
Hydrogeologic subdivision	Group, formation, or member	Hydro-logic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/permeability type				
	Del Rio Clay	CU	50 – 60	Blue-green to yellow-brown clay	Fossiliferous; <i>Ilymatogyra arietina</i>	None	None/primary upper confining unit				
Lower Cretaceous	Edwards aquifer	Edwards Group	Person Formation	II	Cyclic and marine members, undivided (4)	AQ	0 – 70	Mudstone to packstone; <i>miliolid</i> grainstone; chert	Boxwork vugs; light tan, massive; some <i>Toucasia</i> , <i>Caprinid</i> , and <i>Chondrodonta</i>	Many caves; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding; one of the most porous and permeable; essentially absent in Travis County
				III	Leached and collapsed members, undivided (4)	AQ	30 – 80	Crystalline limestone; mudstone to wackestone to <i>miliolid</i> grainstone; chert; collapsed breccia	Light-gray, bioturbated iron-stained beds separated by massive limestone beds; <i>Toucasia</i> , <i>Chondrodonta</i>	Extensive lateral development; large rooms	Majority not fabric/one of the most porous and permeable
				IV	Regional dense member (3)	CU	20 – 30	Light-tan, dense, argillaceous mudstone	Wispy iron-oxide stains; <i>Pleuromya knowltoni</i> , <i>Ceratostreon texanum</i>	None; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
				V	Grainstone member (2)	AQ	45 – 60	Light-gray, <i>miliolid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone; <i>Toucasia</i> , <i>Turritella</i> , and <i>Chondrodonta</i>	Few caves	Not fabric/recrystallization reduces permeability
		VI	Kirschberg evaporite member (1)	AQ	65 – 75	Light-gray, crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame; <i>Cladophyllia</i> and <i>Turritella</i>	Probably extensive cave development	Majority fabric/one of the most porous and permeable		
		VII	Dolomitic member (1)	AQ	110 – 150	Mudstone to grainstone; crystalline limestone; chert	Massively bedded, light gray, <i>Toucasia</i> abundant; <i>Dictyoconus walnutensis</i> , <i>Caprinid</i>	Caves related to structure or bedding planes	Mostly not fabric; some bedding-plane fabric/water-yielding; locally permeable		
		VIII	Basal nodular member	Karst AQ; not karst CU	45 – 60	Shaly, fossiliferous, nodular limestone; mudstone; <i>miliolid</i> grainstone	Massive, nodular and mottled; <i>Ceratostreon texanum</i> , <i>Dictyoconus walnutensis</i> , and <i>Texigryphaea</i>	Few caves	Fabric/low permeability		
		Lower confining unit	Upper member of the Glen Rose Limestone	CU; evaporite beds AQ	350 – 500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/relatively impermeable		

---

**GEOLOGIC ASSESSMENT**  
**ATTACHMENT C - SITE GEOLOGY**



**GEOLOGIC ASSESSMENT**  
**6535 West Highway 46**  
**New Braunfels, Comal County, Texas**



**Prepared for:**  
**Mr. John Muhich**  
**Prepared by:**  
**Anding Environmental Consulting, LLC**  
**September 2022**

# Geologic Assessment

---

6535 West Highway 46  
New Braunfels, Comal County, Texas

**Prepared for:**

John Muhich

Johnsmuhich@gmail.com

Prepared by:



Anding Environmental Consulting, LLC.  
925 Lauren Street  
New Braunfels, TX 78130

September 2022

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2.0	METHODOLOGY .....	2
2.1	RESEARCH INFORMATION.....	2
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## List of Tables

Table 3-1            Site Soils

## Attachments

Attachment A        Geologic Assessment Table  
Attachment B        Stratigraphic Column  
Attachment C        Site Geology and Geologic Assessment  
Attachment D        Site Geologic Maps  
Attachment E        Photo Log



## **Acronyms**

BMP	Best Management Practices
EAPP	Edwards Aquifer Protection Plan
FEMA	Federal Emergency Management Administration
GPS	Global Positioning System
TCEQ	Texas Commission on Environmental Quality
USDA	United States Department of Agriculture
USGS	United States Geological Survey

## **1.0 INTRODUCTION AND PURPOSE**

---

### **1.1 Introduction**

This Geologic Assessment was prepared in general accordance with to 30 TAC §213.5(b)(3), effective September 01, 2003, Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments within the Edwards Aquifer Recharge Zone, and the “Instructions to Geologists”, TCEQ-0585-Instructions (Rev. 10-1-04). Per TCEQ guidance, a proposed project on the Site requires a Geologic Assessment to identify all potential pathways for contaminant movement to the Edwards Aquifer and provide sufficient geologic information so that the appropriate Best Management Practices (BMPs) can be proposed in the Edwards Aquifer Protection Plan (EAPP). This Geologic Assessment has been prepared by a Texas Board of Professional Geoscientists licensed geologist, Mr. Matt Anding, P.G.

### **1.2 Project Description**

The Site is located at 6535 West Highway 46, New Braunfels, TX 78132 and the center of the Site is located at 29°45'26.83"N Latitude and 98°14'42.89"W Longitude (WGS 84). The Site consists of two (2) parcels and are combined ~11 acres in size. The Site is currently developed with a public storage unit business, a commercial gym facility, and an unoccupied residential home. The property location is depicted on **Figure D-1**. A proposed project plans to further develop the Site with additional commercial buildings and septic system.

## **2.0 METHODOLOGY**

---

### **2.1 Research Information**

The Geologic Assessment was performed by Matt Anding, P.G., with Anding Environmental Consulting, LLC (Anding Environmental) on September 03, 2022. Anding Environmental first conducted a desktop analysis of the geology of the area surrounding the Site. The research included, but was not limited to, the Geologic Atlas of Texas, Federal Emergency Management Agency (FEMA) maps, Edwards Aquifer Recharge Zone Maps, USGS 7.5 Minute Quadrangle Maps, Bureau of Economic Geology online digital data, historic aerials and topographic maps, and the United States Department of Agriculture (USDA) Soil Survey of Comal County, Texas.

### **2.2 Field Survey**

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 25-50 feet, or less depending on Site vegetation, was used to inspect the Site. A 2021 aerial photograph, in conjunction with a handheld sub-meter Trimble GeoXH Global Positioning System (GPS), was used to navigate on the property and search for potential recharge features, as recommended in the “Instructions to Geologists”, TCEQ-0585-Instructions (Rev. 10-1-04). The Geologic Assessment Form, Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this Site and are included in this report. Special attention was given to the mapped faults, bedrock outcroppings, and other structural features mapped in the area.

### **2.3 Data Gaps**

No data gaps were incurred during the desktop analysis, interview with the Site owner, or Site access. Multiple large piles of rock and soil material resulting from clearing and grading areas for the previously developed structures were observed throughout the Site (**see Attachment E - Photo Log**). Anding Environmental was unable to survey the ground surface in these areas, however, as they are currently covered with solid material, no potential for rapid infiltration into the subsurface should exist in these areas. Care should be taken if these piles are moved in the future, noting any potential karst features uncovered.

### **2.4 Limitations of Assessment**

No Geologic Assessment can wholly eliminate uncertainty regarding potential pathways for contaminant movement to the Edwards Aquifer in connection with a property. Performance of a Geologic Assessment in accordance with TCEQ-0585 instructions is intended to reduce, but cannot eliminate, uncertainty regarding the potential for surficial points of infiltration in connection with a property, and the TCEQ recognizes reasonable limits of time and cost.

Anding Environmental assumes no responsibility for the discovery of any surficial or subsurface points of infiltration, caves, solution cavities or enlarged fractures/faults, sinkholes, or any other karst features not observed during this Geologic Assessment. Anding Environmental does not have any responsibility with regard to the Client's compliance with or fulfillment of its obligation under any law, ordinance, or regulation prevailing at any of the observed locations.

## 3.0 NARRATIVE DESCRIPTION OF SITE GEOLOGY

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### 3.1 Site Characterization

The Site is located on Hwy 46 and is currently developed with a public storage unit business, a commercial gym facility, and an unoccupied residential home. The front eastern half of the Site is developed with the fenced public storage area and a commercial building currently operating as a fitness gym by appointments. A paved driveway provides access to both areas. The public storage area is largely a gravel parking lot for storage of vehicles, trailers, boats, etc., and also includes the storage building. The back western half of the Site is largely undeveloped with only a residential home and accompanying driveway present. The Site is undeveloped behind the house.

The Site is bordered by an energy substation to the north, Hwy 46 to the east, light commercial land-use to the south, and largely undeveloped residential property to the west.

The Site is located along a broad sloping hillside. Site topography consists of the toe of a larger hill entering the center of the northern boundary, then gently sloping down towards the southeast, south, and southwest. An incised drainage feature exists in the southwestern portion of the Site, existing the western Site boundary. The highest elevation is approximately 1130 ft amsl at the northern Site boundary. The lowest elevation is approximately 1044 ft amsl at the western Site boundary. Surface water tends to sheetflow from the northern Site boundary to the southeast, south, and southwest, with some concentrating in the southwestern drainage feature.

The Site vegetation for the front eastern portion of the Site consists of maintained lawn along with live oak motte and woodland areas. The back western portion of the Site consists of very dense deciduous oak and evergreen motte, including live oak trees, mounted laurel, persimmon, and ashe juniper trees, with rocky surfaces consisting of cactus and grasses.

### 3.2 Site Geology

Per the TCEQ Edwards Aquifer Program GIS dataset, the entire Site is located within the Edwards Aquifer Recharge Zone. A map of the Site and Edwards Aquifer Zones is presented as **Figure D-3**.

The following resources were most utilized in mapping the Site geology:

- Digital Geologic Map Database for the State of Texas (USGS)
- 1982 Geologic Atlas of Texas, San Antonio Sheet (Bureau of Economic Geology)
- 1992 Geologic Map of Texas (Bureau of Economic Geology)
- 2007 Geology of the New Braunfels Area (Bureau of Economic Geology, Texas Water Development Board, and USGS)
- 1991 Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas (USGS)
- 2016 Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas (USGS)
- Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas (USGS)

High resolution geologic mapping in the Site area was best found in the 2016 *Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas* (Clark et al). The entirety of the Site is mapped as Kainer Formation, likely the Dolomitic Member, within the Edwards Group.

**Kainer Formation** (Kk or Kek) (Lower Cretaceous) – The Kainer Formation is the lower unit of the Edwards Group and can be subdivided into the following hydrostratigraphic units: the Basal Nodular, Dolomitic, Kirschberg Evaporite, and Grainstone members. The Kainer formation consists of nodular mudstones and grainstones, dolomitic limestones, chalky mudstones, and crystalline limestones. The Kainer Formation is the upper-most unit of the Edwards Aquifer in the region, and outcrops provide direct recharge to the aquifer. Clark et al. maps the Kainer portions of the site as the Dolomitic Member of the Kainer Formation. (Small and Hanson, 1995; Collins, 2000, Clark et al 2016). Thickness 60-100 ft in the Site area.

Based on literature research and field reconnaissance, the Site has no known or inferred faults on the Site or immediate surrounding area. Anding Environmental observed no fault structures on the Site during the field reconnaissance. No evidence of fault structures were observed on historic aerial imagery. Mapped normal faults are located ~0.5 miles to the southeast of the Site.

A geologic map of the Site is presented as **Figure D-6. Attachment E, Photo Log**, displays photographs of typical outcroppings of the mapped geologic unit on Site.

### 3.3 Site Soils

The northern portion of the Site is covered with Eckrant-Rock (ErG) soils, and the southern portion of the Site is covered with Boerne fine sandy loams (BoB). **Table 3-1** displays soils mapped on the Site and **Figure D-5** illustrates the soils in relation to the Site.

**Table 3-1 – Site Soils**

<b>CrD - Comfort-Rock outcrop complex, 1% to 8 % slopes</b>
<b>ErG - Eckrant-Rock outcrop association, 8% to 30% slopes</b>

**Eckrant-Rock outcrop association (ErG)** – The back western portion of the Site is mapped as Eckrant-Rock outcrop association soils. Eckrant-Rock soils tend to be shallow upland soils located on slopes. Topsoils are typically very dark gray or shades of dark brown and even black. ErG soils are very stony clays with many stone fragments ranging from 4” to 20” and can make up about 35% to 75% by volume of the soil horizon. These soils may be 10” thick and typically deposited on fractured limestone. The shallow soils are very well drained with limited soil moisture due to the lack of soil depth, abundance of limestone rocks, and slope location. ErG soils on the Site were observed to be very shallow in most areas due to site topography (USDA/NRCS, 2022).

**Comfort-Rock Outcrop Complex (CrD)** - Comfort-Rock Outcrop soils are mapped on the front eastern portion of the Site. These soils are extremely stony clays with up to 50 percent of the surface soil covered with cobbles and stones that may reach 4ft across. The surface layer or topsoil

is typically dark brown extremely stony clay about 6 inches thick. The subsoil of the Comfort is 6” to 13” deep and a dark reddish brown extremely stony clay. The underlying material layer is about 13”to 20” inches of mostly indurated dolomitic limestone that has dark reddish brown soil material in the narrow fractures (Carson, 2000). CrD soils on the Site were observed to be very shallow in most areas due to site topography.

### 3.4 Site Assessment

Edwards limestone outcroppings were observed throughout the Site due to thin soil layers and topography. Typical outcroppings on the front eastern portions of the Site include broad bedrock exposed at the surface where soil has been eroded. Outcroppings on the back western portion of the Site with steeper topography includes broad exposed bedrock, fractured bolder and rock fragments, and exposed honeycomb limestone. The incised drainage and surrounding slopes exiting the western Site boundary has little soil, exposing bedrock in most areas.

Anding Environmental observed one (1) potential sensitive recharge features during the Site reconnaissance. A large solution-enlarged fracture is located in the northeast portion of the Site, directly behind the fitness commercial building. A vertical solution cavity is located in the rear western portion of the Site. Details regarding these features can be found in the **Attachment A Geologic Assessment Table, Photo Log, and Figure D-7 Geologic Findings**.

**SF-1 Sensitive**      **Solution Enlarged Fracture:** SF-1 consists of a 12’ long by 12”-18” wide solution-enlarged fracture located behind the fitness commercial building on the front eastern portion of the Site. The feature is mapped within Kainer Formation limestone. The feature’s trend orientation is approximately N50°E, which aligns with the dominant faulting structural trends in the area. The cavity is located within bedrock, extends down directly vertically, and has no soil or infilling. Based on conversations with the current landowner, the cavity is very deep and although the feature does not have a large catchment basin, surface water has been observed flowing directly into the feature.

It is Anding Environmental’s professional judgement that the solution enlarged fracture cavity has a high probability of rapid infiltration and should be considered a potentially sensitive feature.

**MB-1 Not Sensitive**      **Manmade Feature in Bedrock – Power-Line Pole Hole:** MB-1 consists of a 12” diameter vertical post hole located northwest of the residential house in the rear western portion of the Site. The feature is a near perfect circle vertical hole in bedrock mapped in Kainer Formation limestone. The current landowner explained that the hole was dug for a historic power-line pole, and the pole was removed from the ground when they moved onto the property. The hole was evaluated and appears to have a solid bedrock bottom with no cavities further into the subsurface. Therefore, this would not be considered a potential sensitive feature.

**MB-2**      **Manmade Feature in Bedrock – Septic System**: A septic system exists just east of  
**Not**            the commercial fitness building. The septic appears to be covered in thick soils with  
**Sensitive**   no obvious voids or opportunities for surface water to rapidly infiltrate the ground  
surface. Therefore, this would not be considered a potential sensitive feature.

**MB-3**      **Manmade Feature in Bedrock – Water Well**: A drinking water well exists in the  
**Not**            front eastern portion of the Site, just east of the main driveway. The wellhead is  
**Sensitive**   encased in a well pump house which would not allow surface water to flow into the  
well head. Therefore, this would not be considered a potential sensitive feature.

**MB-4**      **Manmade Feature in Bedrock – Water Well**: A drinking water well exists in the  
**Not**            back western portion of the Site, just east of the residential house. The wellhead is  
**Sensitive**   encased in a well pump house which would not allow surface water to flow into the  
well head. Therefore, this would not be considered a potential sensitive feature.

**MB-5**      **Manmade Feature in Bedrock – Septic System**: A septic system exists in the back  
**Not**            western portion of the Site, just west of the residential house. The septic appears to  
**Sensitive**   be covered in thick soils with no obvious voids or opportunities for surface water to  
rapidly infiltrate the ground surface. Therefore, this would not be considered a  
potential sensitive feature.

No other geologic features, sensitive features, or potential recharge features were observed on the Site.

## 4.0 SUMMARY

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Anding Environmental has conducted a Geologic Assessment for the referenced Site in accordance with 30 TAC §213.5(b)(3), TCEQ requirements for regulated developments within the Edwards Aquifer Recharge Zone, and the “Instructions to Geologists”, TCEQ-0585-Instructions (Rev. 10-1-04). One (1) potentially sensitive feature and five (5) non-sensitive manmade features in bedrock were observed on the Site.

The potentially sensitive recharge feature, a solution-enlarged fracture, observed in the front eastern portion of the Site does not appear to receive much infiltration due to its location directly behind and down-gradient of the commercial fitness building. The proposed construction activities will not be located up-gradient of the feature. Best Management Practices (BMP) should be taken to not conduct construction activities immediately up gradient of the feature and to limit runoff, spillage or leaks, or drainage near the feature.

Please note that other karst features may exist on Site, either buried or obscured from view, which may have potential for openings to the subsurface. If any additional potentially karst features are discovered during future Site activities, please do not hesitate to contact Anding Environmental for support.



## 5.0 REFERENCES

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Bureau of Economic Geology, 1992, Geologic Map of Texas: University of Texas at Austin, Virgil E. Barnes, project supervisor, Hartmann, B.M. and Scranton, D.F., cartography, scale 1: 500,000

Clark et. al., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Northern Bexar and Comal Counties, Texas. U.S. Geological Survey.

Collins, E.W., 2000, Geologic map of the New Braunfels, Texas, 30 x 60 minute quadrangle—Geologic framework of an urban-growth corridor along the Edwards aquifer, south-central Texas: University of Texas, Bureau of Economic Geology Miscellaneous Map 39, 28 p., 1 sheet, scale 1: 100,000.

Comal County Appraisal District. Property Search. <http://www.comalad.org/>

Federal Emergency Management Agency. Floodplain Maps. <https://msc.fema.gov/portal>

Hanson, J.A., and Small, T.A., 1995, Geologic framework and hydrogeologic characteristics of the Edwards aquifer outcrop, Hays County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4265, 10 p., 1 sheet, scale 1: 75,000.

Stein, W.G., and Ozuna, G.B., 1995, Geologic framework and hydrogeologic characteristics of the Edwards aquifer recharge zone, Bexar County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4030, 8 p., 1 sheet, scale 1:75,000.

Stoeser, D.B., Shock, Nancy, Green, G.N., Dumonceaux, G. M., and Heran, W.D., in press, A Digital Geologic Map Database for the State of Texas: U.S. Geological Survey Data Series.

Texas Commission on Environmental Quality. Regulatory Databases. <http://www.tceq.state.tx.us/>

United States Department of Agriculture (USDA), 2022. NRCS Web Soil Survey. *Custom Soil Report for Comal County, Texas*. Accessed September 2022.

U.S. Geological Survey. Topographic Maps. <https://ngmdb.usgs.gov/maps/topoview/viewer>

U.S. Geological Survey. Texas Geology. <http://mrdata.usgs.gov/sgmc/tx.html>

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**GEOLOGIC ASSESSMENT**  
**ATTACHMENT D - SITE GEOLOGIC MAPS**



**Legend**

 Site

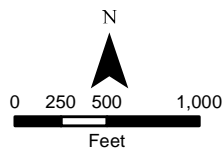
6535 West Highway 46  
New Braunfels, Comal County, Texas

**Site Location Map**

Geologic Assessment  
6535 West Highway 46, New Braunfels, TX



925 Lauren St.  
New Braunfels, TX 78130



TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/13/2022	ANDING	001	D-1



Site

*Legend*

 *Site*

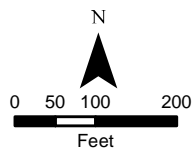
*6535 West Highway 46  
New Braunfels, Comal County, Texas*

**Site Aerial**

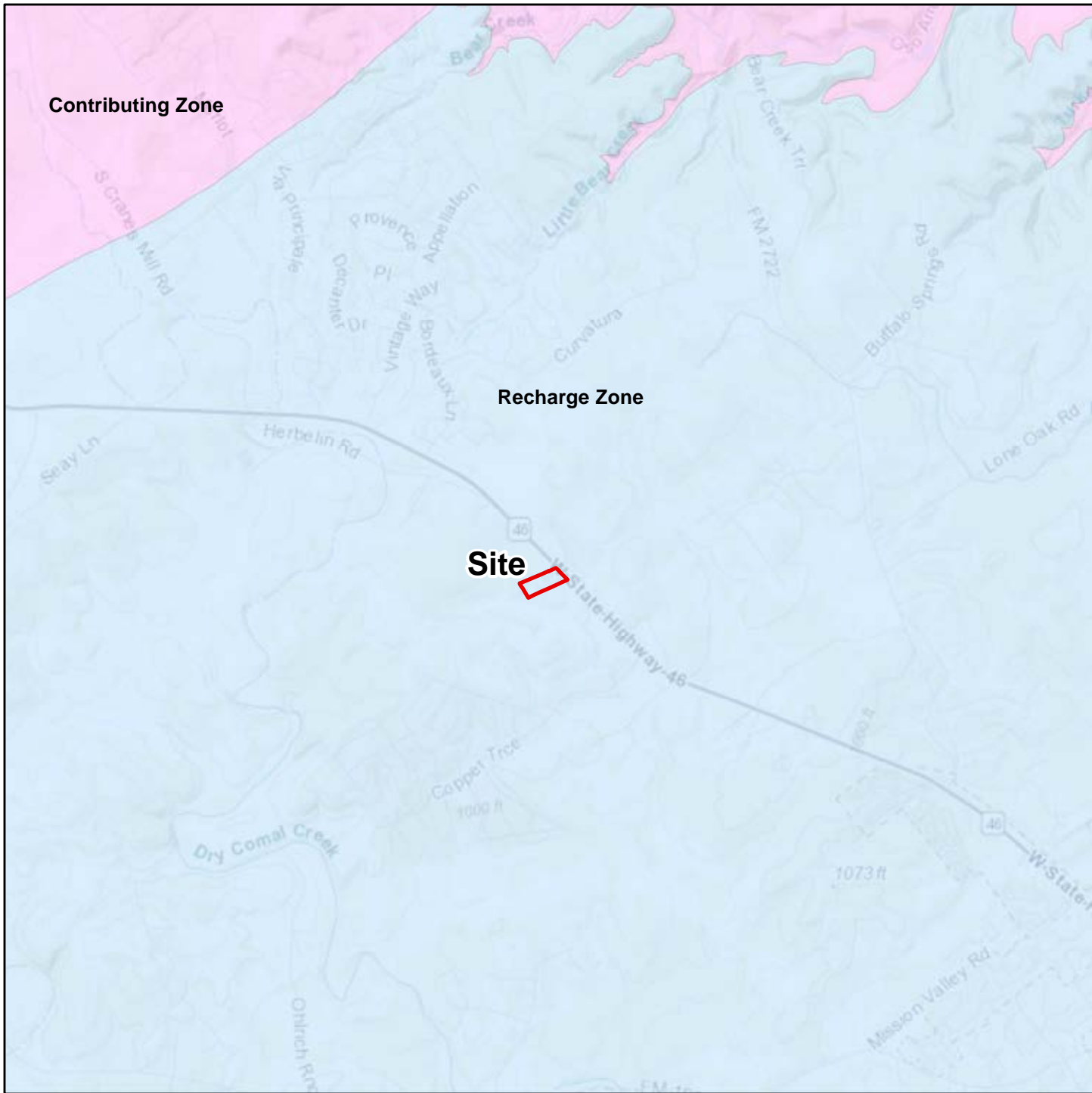
*Geologic Assessment  
6535 West Highway 46, New Braunfels, TX*



*925 Lauren St.  
New Braunfels, TX 78130*

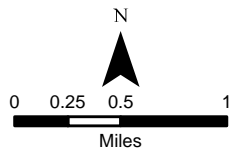


<i>TC NO.</i>	<i>DATE</i>	<i>DRAWN BY</i>	<i>MAP NO.</i>	<i>FIGURE</i>
22-015	9/13/2022	ANDING	002	D-2



**Legend**

- Site
- Edwards Aquifer Contributing Zone
- Edwards Aquifer Contributing Zone within the Transition Zone
- Edwards Aquifer Recharge Zone
- Edwards Aquifer Transition Zone



6535 West Highway 46  
New Braunfels, Comal County, Texas

**Edwards Aquifer Zone Map**

Geologic Assessment  
6535 West Highway 46, New Braunfels, TX






925 Lauren St.  
New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/13/2022	ANDING	003	D-3



**Legend**

-  NHD Mapped Drainage
-  Elevation Contours 2' Intervals
-  Site

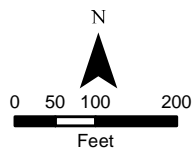
6535 West Highway 46  
New Braunfels, Comal County, Texas

**Site Topography**

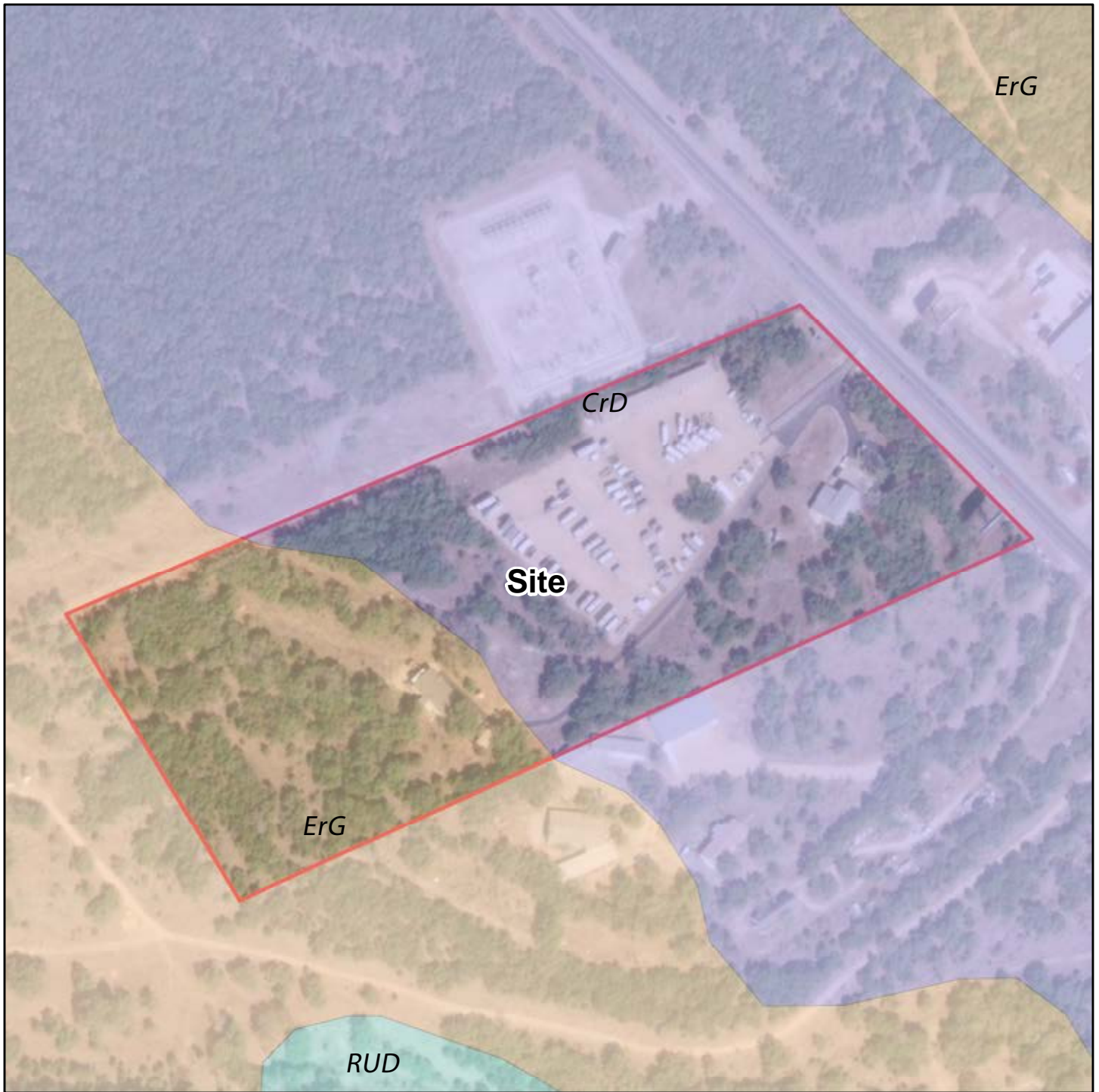
Geologic Assessment  
6535 West Highway 46, New Braunfels, TX



925 Lauren St.  
New Braunfels, TX 78130

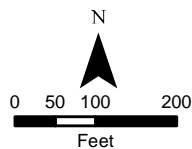


TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/13/2022	ANDING	004	D-4



**Legend**

- CrD - Comfort-Rock outcrop complex, 1% to 8 % slopes
- ErG - Eckrant-Rock outcrop association, 8% to 30 % slope
- RUD - Rumple-Comfort, rubbly association, 1% to 8% slopes
- Site



6535 West Highway 46  
New Braunfels, Comal County, Texas

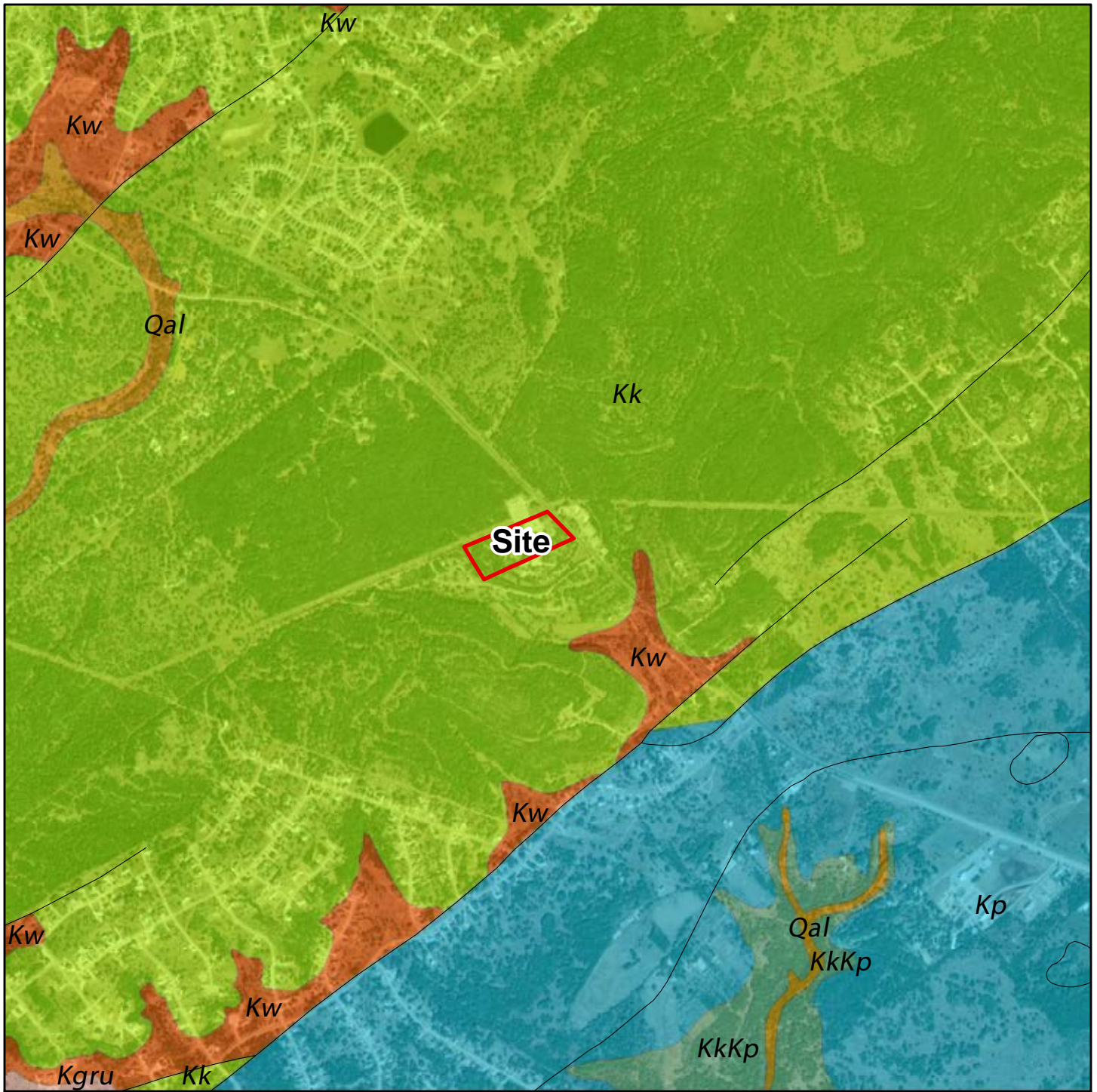
**Site Soils**

Geologic Assessment  
6535 West Highway 46, New Braunfels, TX



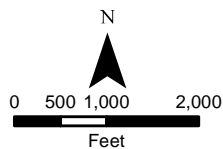
925 Lauren St.  
New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/13/2022	ANDING	005	D-5



**Legend**  
**Surface Geology**

- Kgru - Glen Rose
- Kk (Kek) - Kainer
- KkKp - Kainer/Person
- Kp (Kep) - Person
- Kw - Walnut Formation
- Qal - Alluvium



6535 West Highway 46  
New Braunfels, Comal County, Texas

**Regional Geology**

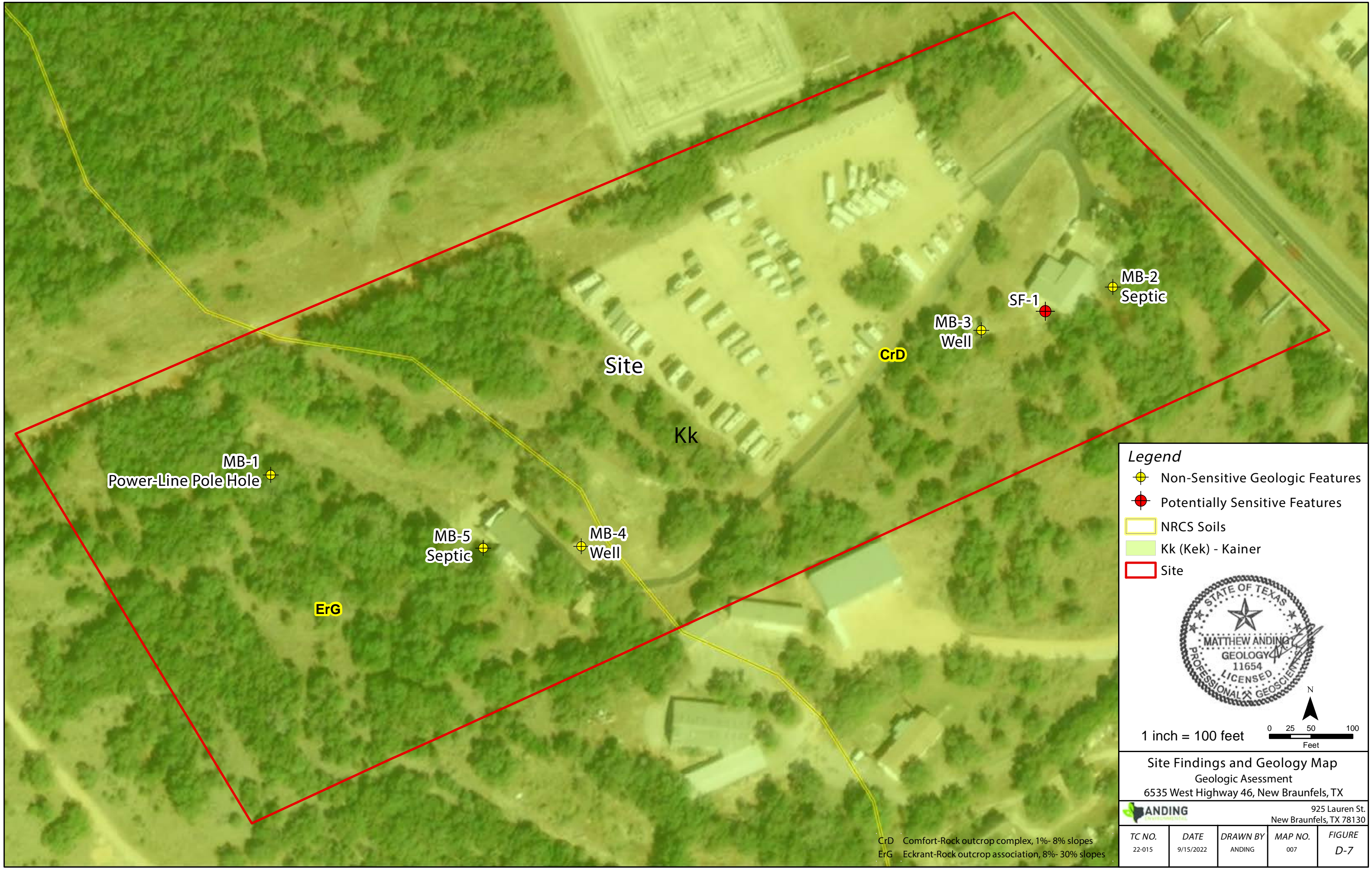
Geologic Assessment  
6535 West Highway 46, New Braunfels, TX



925 Lauren St.  
New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/13/2022	ANDING	006	D-6





**Legend**

- Non-Sensitive Geologic Features
- Potentially Sensitive Features
- NRCS Soils
- Kk (Kek) - Kainer
- Site



1 inch = 100 feet

**Site Findings and Geology Map**  
 Geologic Assessment  
 6535 West Highway 46, New Braunfels, TX

**ANDING** 925 Lauren St.  
 New Braunfels, TX 78130

CrD Comfort-Rock outcrop complex, 1%- 8% slopes  
 ErG Eckrant-Rock outcrop association, 8%- 30% slopes

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
22-015	9/15/2022	ANDING	007	D-7

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**GEOLOGIC ASSESSMENT  
ATTACHMENT E - PHOTO LOG**

**Attachment E - Photo Log**  
**Site Investigation Photos**



**Site Entrance and Eastern Site Boundary**



**Eastern Site Boundary**



**Main Driveway**



**Commercial Fitness Building**



**Public Storage Area**



**Public Storage Area**



**Northern Site Boundary**



**Northwestern Site Corner**



**Western Site Boundary**



**Southern Site Boundary**



**Bedrock Outcropping Eastern Site Boundary**



**Typical Bedrock Outcropping Front Eastern Portion of Site**



**Typical Bedrock Outcropping Front Eastern Portion of Site**



**Typical Bedrock Outcropping Front Eastern Portion of Site**



**Typical Bedrock Outcropping on Slopes of Back Western Portion of Site**



**Typical Vuggy Bedrock Outcropping on Slopes of Back Western Portion of Site**



**Typical Vuggy Bedrock Outcropping on Slopes of Back Western Portion of Site**



**Typical Dense Vegetation Back Western Portion of Site**



**Incised Drainage Feature Western Site Boundary**



**SF-1 Solution Enlarged Fracture Behind Commercial Fitness Building**



**SF-1 Solution Enlarged Fracture**



**SF-1 Solution Enlarged Fracture**



**MB-1 Historic Power Line Pole Hole**



**MB-2 Septic System**





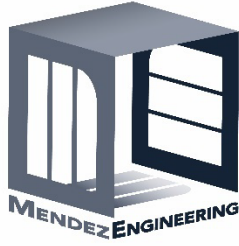
**MB-3 Water Well**



**MB-4 Water Well In Front of Residential House**



**MB-5 Septic System Behind Residential House**



## **SECTION D**

### **Water Pollution Abatement Plan Application Form (TCEQ-0584)**

# 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: Jose J. Sosa, P.E.

Date: 2/22/24

Signature of Customer/Agent:



Regulated Entity Name: SH-46 Development

## Regulated Entity Information

1. The type of project is:

- Residential: Number of Lots: \_\_\_\_\_
- Residential: Number of Living Unit Equivalents: \_\_\_\_\_
- Commercial
- Industrial
- Other: \_\_\_\_\_

2. Total site acreage (size of property): 15.974 acres

3. Estimated projected population: N/A

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	(61,272)	÷ 43,560 =	1.41
Parking	0	÷ 43,560 =	0
Other paved surfaces	135,078	÷ 43,560 =	3.10
Total Impervious Cover	193,842	÷ 43,560 =	4.45

**Total Impervious Cover**

$4.45 \div \text{Total Acreage } 15.975 \times 100 = 27.9\% \text{ Impervious Cover}$

- 5.  **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.  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.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

10. Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area: \_\_\_\_\_ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

$\text{Pavement area } \text{_____ acres} \div \text{R.O.W. area } \text{_____ acres} \times 100 = \text{_____ \% impervious cover.}$

- 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:

<u>100%</u> Domestic	<u>2,000</u> Gallons/day
<u>0%</u> Industrial	<u>TBD</u> Gallons/day
<u>0%</u> Commingled	<u>TBD</u> Gallons/day
TOTAL gallons/day <u>2,000</u>	

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.

The sewage collection system will convey the wastewater to the \_\_\_\_\_ (name) Treatment Plant. The treatment facility is:

- Existing.  
 Proposed.

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

## **Site Plan Requirements**

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

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

Site Plan Scale: 1" = 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.

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): 48091C0265F effective from 09/02/2009

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

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

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

There are 2 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

The wells are not in use and have been properly abandoned.

The wells are not in use and will be properly abandoned.

The wells are in use and comply with 16 TAC §76.

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

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

All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.

No sensitive geologic or manmade features were identified in the Geologic Assessment.

**Attachment D - Exception to the Required Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.

- 22.  The drainage patterns and approximate slopes anticipated after major grading activities.
- 23.  Areas of soil disturbance and areas which will not be disturbed.
- 24.  Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
- 25.  Locations where soil stabilization practices are expected to occur.
- 26.  Surface waters (including wetlands).
  - N/A
- 27.  Locations where stormwater discharges to surface water or sensitive features are to occur.
  - There will be no discharges to surface water or sensitive features.
- 28.  Legal boundaries of the site are shown.

### ***Administrative Information***

- 29.  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.  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 Water Quality

### Construction

The materials listed below are anticipated to be present on-site during construction and as such may present a potential pollutant source (This is not an all-inclusive list):

- Concrete/Masonry
- Metal studs, Metal reinforcing bars, etc.
- Tar
- Fertilizers
- Petroleum based products
- Cleaning solvents/Detergents
- Wood

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 equipment and vehicle drippings;
- Hydrocarbons from asphalt paving operations;
- Miscellaneous trash and litter from construction workers and material wrappings;
- Concrete truck washout.

Material management practices will be utilized to reduce the risk of spills, or other accidental exposure of the materials listed above to storm water runoff, including the following:

1. An effort shall be made to store only enough product required to complete the work as so defined in the approved construction documents.
2. All materials stored on-site shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
3. Products should be kept in their original containers with the original manufacturer's label.
4. Manufactures' recommendations for proper use and disposal shall be followed.
5. Substances shall not be mixed with one another unless recommended by the manufacturer.
6. Whenever possible, all of a product shall be used before disposing of its respective container.
7. The site superintendent should inspect daily to ensure proper use and disposal of on-site materials.

### Post-Construction

The materials listed below are anticipated to be present on-site after construction and as such may present a potential pollutant source (This is not an all-inclusive list):

- Trash and Debris (Litter)
- Discarded Food and Tobacco Products
- Potential sources of pollution that may reasonable be expected to affect the quality of storm
- Water discharges from the site after development includes:
- Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings.
- Dirt and dust which may fall off vehicles, and
- Miscellaneous trash and litter.



## Attachment B

### Volume and Character of Stormwater

The stormwater runoff that comes from commercial sites, such as rooftops, parking lots, sidewalks, and landscapes, may contain small amounts of oil, grease, suspended solids, fertilizers, and pesticides. To address this, both temporary and permanent Best Management Practices (BMPs) have been designed based on the Technical Guidance manual. These BMPs aim to treat the required volume and character of stormwater runoff, removing at least 80% of the increased Total Suspended Solids (TSS) generated by the development.

For Brush (which is a mixture of brush, weed, and grass with brush as the major element type D), the SCS Curve Number (CN) post-development is 73. The SCS Curve Number varies based on the type of soil and can be found in Table 4-3 of the City of New Braunfels Drainage and Erosion Control Design Manual. In addition, paved parking lots, roofs, driveways, and other impervious surfaces have a SCS Curve Number of 98.

The stormwater runoff generated by this development will be conveyed to a proposed water sand filter system. All stormwater flow produced by the increase in impervious cover will be detained or reduced. Below is a summary of stormwater runoff quantities for the existing and proposed conditions of the development.

**Existing Condition Phase 1:                      Q25 = 66.80 cfs ; CN = 78**

**Proposed Condition Phase 1:                      Q25 = 61.03 cfs ; CN = 86**

#### **\*Combined "CN" value**

Please see enclosed drainage area map for detailed quantities of these flows located in the Temporary Storm Section (TCEQ – 0602) of this report under Attachment "G".

**ATTACHMENT C**

**Suitability Letter from Authorized Agent**



# COMAL COUNTY

## ENGINEER'S OFFICE

February 20, 2024

Steve Wenzel, P.E.

via e-mail: [swenzel.eng@gmail.com](mailto:swenzel.eng@gmail.com)

Re: AAA Storage WPAP On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Wenzel:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site is suitable for the use of private sewage facilities, with the exception of the areas identified below, and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on February 20, 2024:

- The Geologic Assessment, prepared by Matthew Anding, P.G.
- The Water Pollution Abatement Plan prepared by Steven K. Wenzel, P.E.

Areas that are not Suitable:

Feature ID	Latitude	Longitude
SF1	29.757707	-98.243803

In accordance with TAC §285.91, Table X, Minimum Required Separation Distances for soil absorption systems, unlined ET beds, surface application (edge of spray area), and drip irrigation disposal systems are not suitable within 150' of these sensitive features. Furthermore, tanks, lined ET beds and sewer pipe with watertight joints are not allowed within 50' of these sensitive features.

Finally, according to TAC §285.42(a), if any recharge feature is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

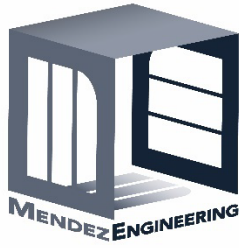
If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

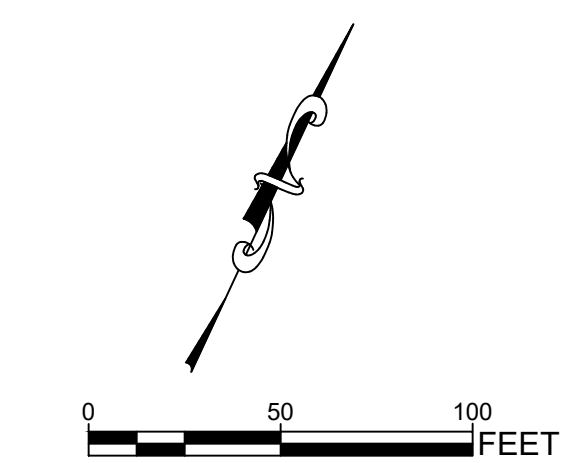
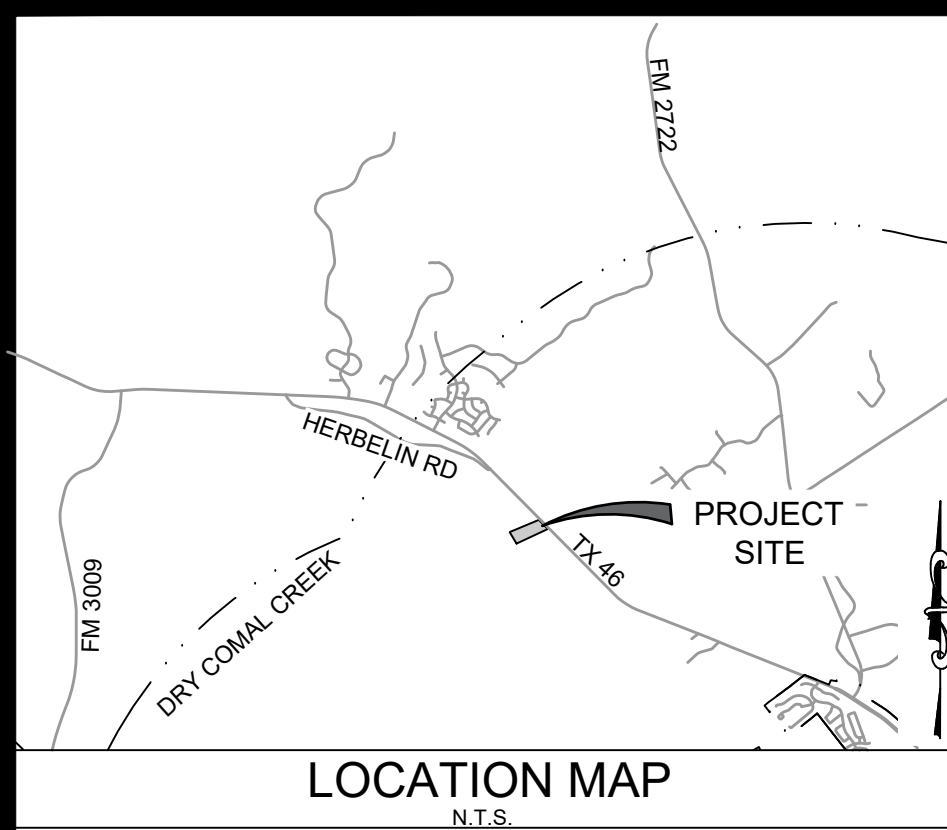
Robert Boyd, P.E.

Comal County Assistant Engineer

cc: Scott Haag, Comal County Commissioner Precinct No. 2



## Site Plan



**LEGEND**

--- (dashed line)	BOUNDARY
--- (long dashed line)	ROW
--- (short dashed line)	EASEMENT LINE
--- (line with 'OHE')	EXISTING OVERHEAD ELECTRIC LINE
--- (line with 'U')	EXISTING UTILITY POLE
--- (line with '8" W')	EXISTING WATER LINE
--- (double line)	PROPOSED CURB
--- (arrow)	PROPOSED FLOW
--- (line with 'I')	PROPOSED INTERCEPTOR CHANNEL
--- (stippled area)	PROPOSED PAVEMENT
--- (hatched area)	PROPOSED RETAINING WALL
--- (circle with crosshair)	BENCHMARK
--- (dotted area)	EXISTING PARKING GRAVEL TO REMAIN

**BENCHMARKS**

TBM #50 MAG NAIL N: 13824355.60 E: 2208236.08 ELEV = 1130.56'
TBM #51 1/2" IRON PIN N: 13824059.95 E: 2208526.82 ELEV = 1102.23'

**CAUTION**

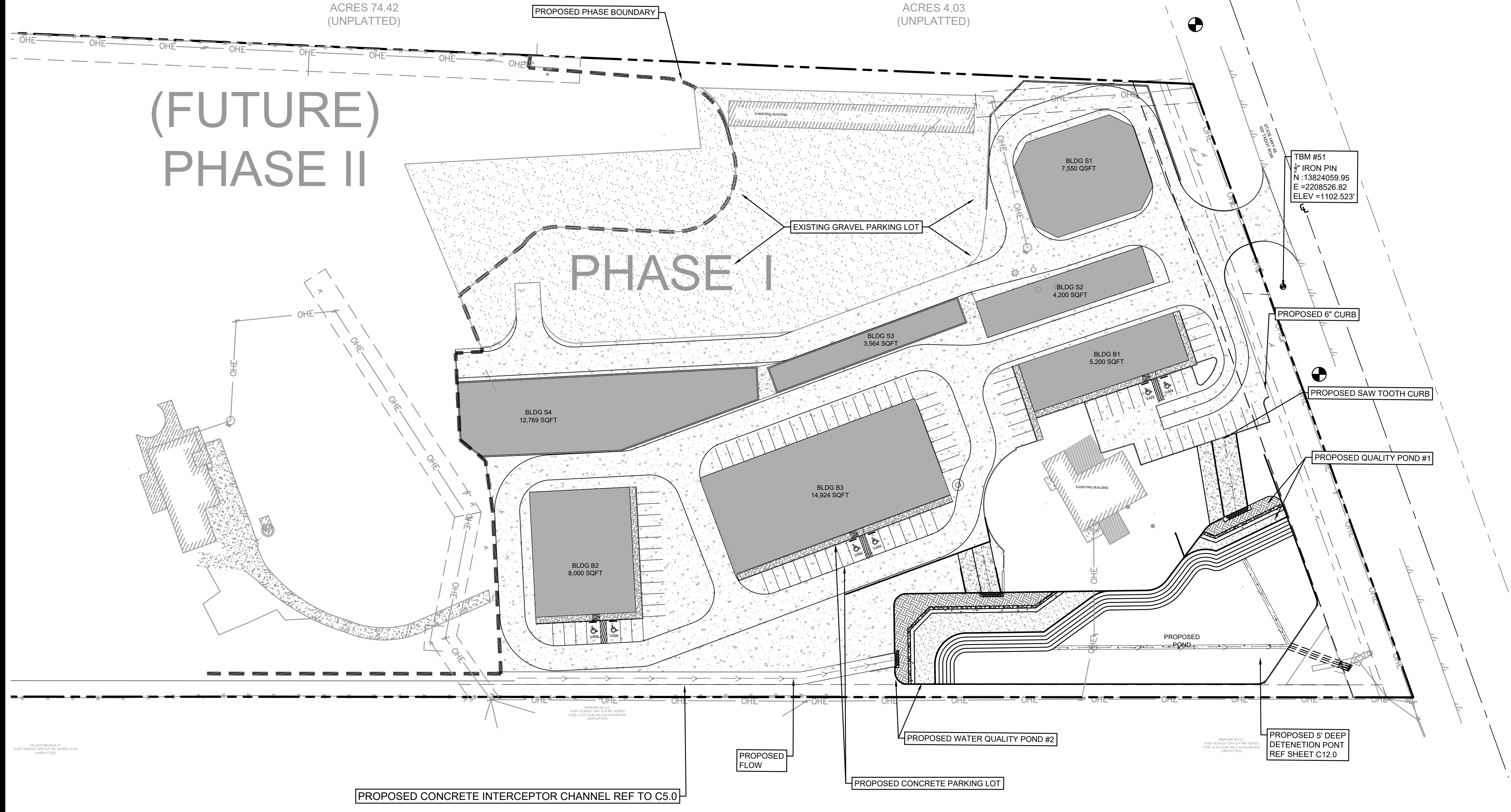
1. CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL EXISTING PUBLIC OR PRIVATE UTILITIES VERTICALLY AND HORIZONTALLY INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES; SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS/DISCREPANCIES THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

FELGER RANCH FAMILY PRTNRSH LTD  
A-697 SUR-837 GWT & P RR  
ACRES 74.42  
(UNPLATTED)

NEW BRAUNFELS UTILITIES  
A-697 SUR-837 GWT & P RR  
ACRES 4.03  
(UNPLATTED)

(FUTURE)  
PHASE II

PHASE I



**SH46 Phase 1**

Building	Type	Area (SQ-FT)
B1	Business	5,200
B2	Business	8,000
B3	Business	14,924
S1	Storage	7,550
S2	Storage	4,200
S3	Storage	3,564
S4	Storage	12,769
Existing 1	Storage	3,920
Existing 2	Office	1,770
Summary		61,897

**SH46 Phase 2**

Building	Type	Area (SQ-FT)
B4	Business	16,524
B5	Business	15,000
B6	Business	14,840
B7	Business	11,284
B8	Business	17,309
S5	Storage	15,000
S7	Storage	10,954
Summary		100,911

**LEGAL DESCRIPTION**

LOT 3, MILLER ESTATES SUBDIVISION, RECORDED IN VOLUME 12  
PAGE 179, MAP AND PLAT RECORDS, COMAL COUNTY, TEXAS

**FLOODPLAIN**

THE TRACT SHOWN HEREON LIES WITHIN ZONE X (AREA TO BE DETERMINED TO BE OUTSIDE 100-YEAR FLOODPLAIN) AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION, AS SHOWN ON MAP No. 48091C0420F, DATED SEPTEMBER 9, 2009, FOR COMAL COUNTY.

**CAUTION**

CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.  
THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AVOIDING ALL EXISTING UTILITIES BY CALLING DIGTREE @ 1-800-DIG-TESS FOR LOCATION OF ALL UTILITIES, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION.



SH-46 DEVELOPMENT  
OVERALL SITE PLAN

A-A-A STORAGE  
6535 W TX-46  
NEW BRAUNFELS, TEXAS

DESIGNED BY: AS  
DRAFTED BY: AS  
CHECKED BY: JUS  
DATE: 2/22/2024

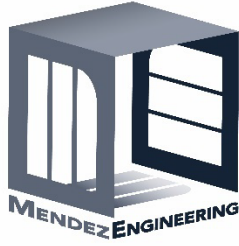
SHEET  
E1.0

Date: 11/13/2024, 2:31 PM, User: JUS, Project: SH46 Phase 1, Drawing: E1.0, Overall Site Plan.dwg  
 Plot: 11/13/2024, 2:31 PM, User: JUS, Project: SH46 Phase 1, Drawing: E1.0, Overall Site Plan.dwg

## **ATTACHMENT D**

### **Exception to the Required Geological Assessment**

Not applicable to this project



## **SECTION E**

**Temporary Stormwater Section – Form TCEQ-0602**

# 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: Jose J. Sosa, P.E.

Date: 2/22/24

Signature of Customer/Agent:



---

Regulated Entity Name: SH 46 Development

## 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: Dry Comal Creek Tributary: 36

### ***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:

- 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.
  - 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.
  - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
  - 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.  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.
  - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9.  **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.  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.  Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

### ***Administrative Information***

20.  All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21.  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.  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.

# 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.tceq.state.tx.us/response/spill\\_rules.html](http://www.tceq.state.tx.us/response/spill_rules.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 runoff 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 O3 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 runoff 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 of Contamination**

<b>Potential Source</b>	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.
<b>Potential Source</b>	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.
<b>Potential Source</b>	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.
<b>Potential Source</b>	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.
<b>Potential Source</b>	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.
<b>Potential Source</b>	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.
<b>Potential Source</b>	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 work described below will carry out the maintenance of service by following a proposed sequence of work required for this project. The developer will provide a cleared site that is graded to a level consistent with the approved WPAP Plan. Here is a general sequence of events that we will follow:

1. Obtain all necessary permits by March 2024.
2. Install all Erosion Control Measures by March 2024.
3. Establish a stable construction entrance/exit that limits sediment dispersion from the site. We may designate multiple locations based on project size and mobility requirements.
4. Start constructing site improvements between March 2024 and October 2024.
5. Continuously maintain and replace erosion control measures as required.
6. Install pavement from September 2024 to October 2024.
7. Inspect and maintain all erosion control measures until all disturbed offsite and Total Site Area/Total Disturbed Area.

**Total Site Area/ Disturbed Area**

The project site spans 15.974 acres, with the proposed project covering 193,836-ft (4.45 acres) of impervious cover. This represents 27.9% of the total acreage available.

Sequence Item	Description	Approximate Acres Disturbed
1.	Clearing	1.344 Ac.
2.	Set Temporary BMP's	.0326 Ac.
3.	Site Grading & Building Construction & Final Site	1.344 Ac.
4.	Top Soil & Landscaping	1.344 Ac.

## ATTACHMENT D

### Temporary Best Management Practices and Measures

The TBMP'S 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 – 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 inches in size.
2. Concrete Washout Areas – A pit containment area with a 10-mil plastic lining with a berm and sandbags to prevent or reduce the discharge of pollutants from concrete waste shall be constructed in an area readily accessible to construction traffic and at least 50 feet away from any sensitive features, storm drains, open ditches or water bodies.
3. 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 drainage are of 2 or less acres.
4. Rock Berms – A structure of 3 to 5 inches diameter rock secured with a woven wire sheath 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.
5. Temporary Seeding – Temporary seeding of disturbed areas shall be performed if disturbed areas are expected to have no construction activity for a period of at least 21 days.

#### Sequence of installation during construction process

1. The Temporary Construction Entrance/Exit 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 will be installed along the down gradient side of the proposed site prior to disturbing any soil. It shall be in place and be maintained until site has been properly revegetated.
3. Rock Berms – Rock berms shall be installed around the perimeter of the project at natural low points following 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.
4. Concrete washout pits shall be installed prior to any concrete work to be done on site. It shall remain on site until all concrete work has been completed and hardened concrete shall be broken up, removed and disposed of properly. Materials for the pit shall be removed from the

site and also be disposed of properly. Any depressions or ground disturbance due to removal of pit area shall be backfilled and repaired.

5. Temporary Seeding shall be installed in areas which are considered as final grades and areas will not be covered by pavements, building or other structures. Seeding shall also be done in graded areas where there is potential for erosion on steep slopes.

#### Upgradient Surface water, Groundwater, and Storm water

Up-gradient stormwater runoff from developed communities (north, east, and west) of the site flow through their respective drainage structures into West Elm Creek and will not flow across the site.

Additionally, if any up-gradient stormwater runoff from undeveloped land to the area of interest is developed, it will flow across their proposed development into West Elm Creek through their respective drainage structures. Upstream developed areas should have accounted for stormwater pollution, therefore implementing permanent BMPs. Undeveloped land up-gradient to the site will be required to comply with Texas Commission on Environmental Quality (TCEQ) regulations for development over the Edwards Aquifer Recharge Zone.

#### Onsite Surface water, Groundwater, and Storm water

Temporary BMPs utilized on the proposed project site to prevent pollution of onsite surface water, groundwater, and storm water are the silt fences acting as barriers to prevent pollution of stormwater. Permanent BMP's will treat stormwater that originates onsite in areas that will remain impervious.

#### Prevention of Pollutants Entering Surface Streams, Sensitive Features, and the Aquifer

Temporary BMPs utilized on the proposed project site to prevent pollution of surface streams, sensitive features, and the aquifer are temporary construction entrance/exit, silt fences, and rock berms. The construction entrance/exit provides a stable exit from the construction site and keeps sediment and mud off public roads. The other TBMPs delineated act in like manner as previously described to protect surface streams, sensitive features, and the aquifer.

#### Maintenance of Flow to Naturally-Occurring Sensitive Features

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.

The permanent sealing of or diversion of flow from a naturally occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" feature on this site.

## **ATTACHMENT E**

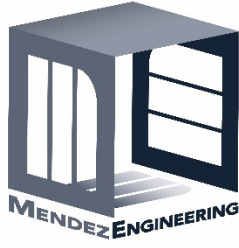
### **Request to Temporarily Seal a Feature (if requested)**

Not applicable to this project

# **ATTACHMENT F**

## **Structural Practices**

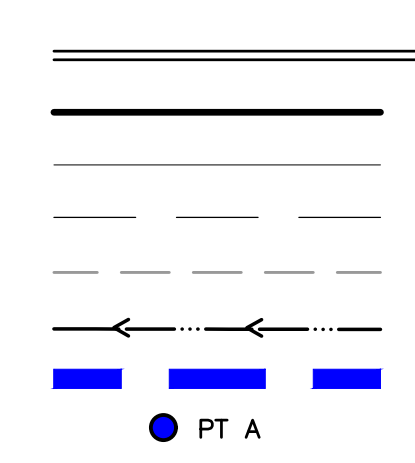
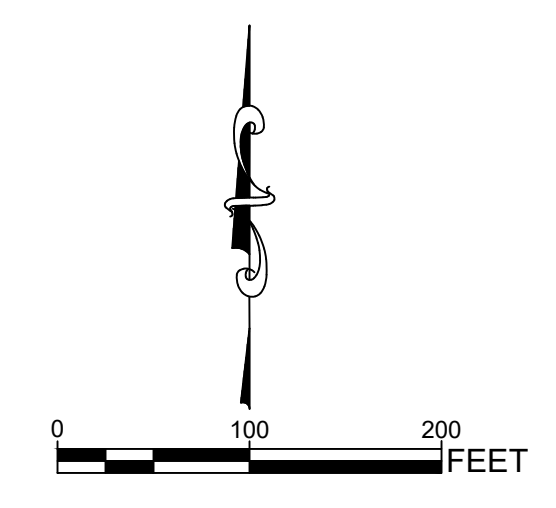
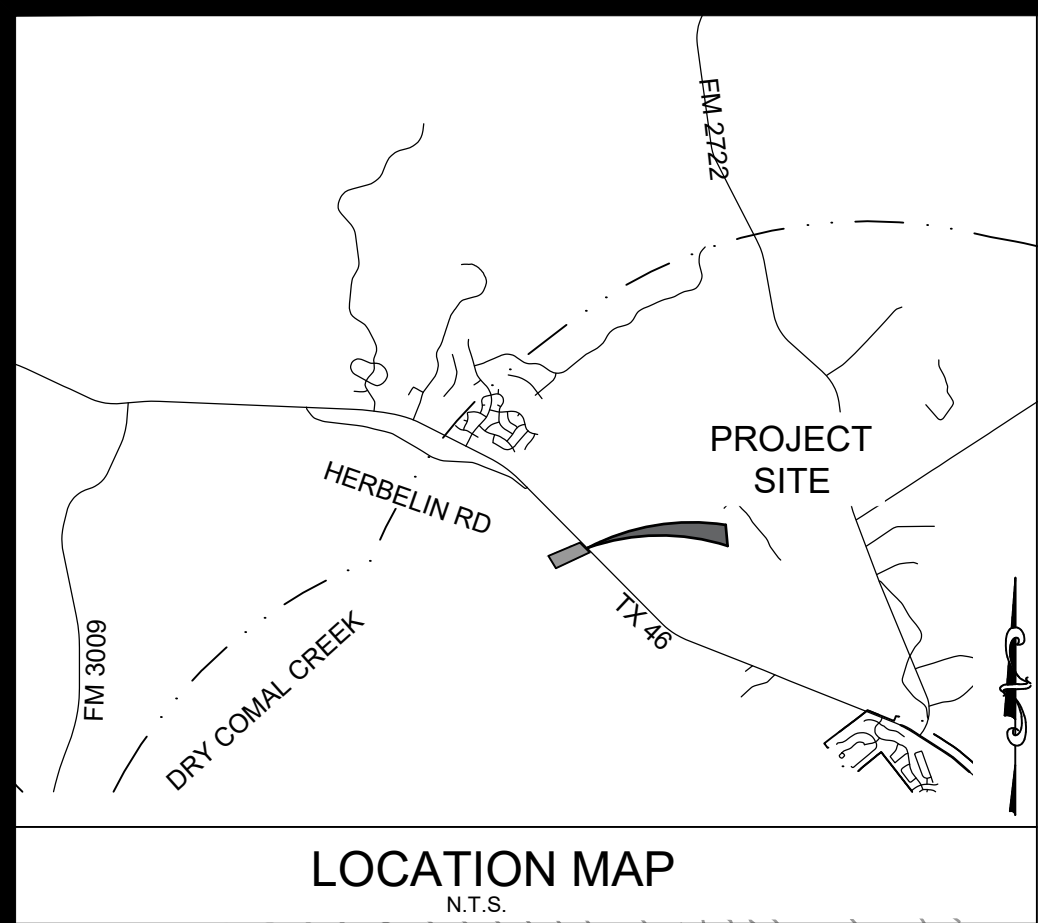
Runoff discharge of pollutants from exposed areas of the site will be limited through the utilization of temporary BMPs. Prior to leaving the site, flows containing pollutants discharge will be treated by a series of Silt Fences to limit the amount of pollutants leaving the site. Temporary Construction Entrance/Exit will be located along SH 46 to provide a stable entrance/exit condition from the construction site to keep mud and sediment off public roadways.



**ATTACHMENT G**  
**Drainage Area Map**







SH-46 DEVELOPMENT - 2 YEAR

Point	Area (AC)	Area of accumulation (AC)	CN	TC (MIN)	TLAG(MIN)	Q(CFS)
DA-1	2.07	2.07	88	19.00	11.40	4.72
DA-2 SUB2A	3.7	3.7	82	21.00	12.60	6.57
DA-2 SUB2B	3.95	3.95	90	17.30	10.38	8.19
DA-2 SUB2C	4.08	4.08	89	17.64	10.58	9.59
1A	-	-	-	-	-	24.19
1	-	-	-	-	-	20.26

SH DEVELOPMENT - 5 YEAR

Point	Area (AC)	Area of accumulation (AC)	CN	TC (MIN)	TLAG(MIN)	Q(CFS)
DA-1	2.07	2.07	88	19.00	11.40	6.86
DA-2 SUB2A	3.7	3.7	82	21.00	12.60	10.11
DA-2 SUB2B	3.95	3.95	90	17.30	10.38	11.68
DA-2 SUB2C	4.08	4.08	89	17.64	10.58	13.80
1A	-	-	-	-	-	35.33
1	-	-	-	-	-	29.11

SH DEVELOPMENT - 10 YEAR

Point	Area (AC)	Area of accumulation (AC)	CN	TC (MIN)	TLAG(MIN)	Q(CFS)
DA-1	2.07	2.07	88	19.00	11.40	8.96
DA-2 SUB2A	3.7	3.7	82	21.00	12.60	13.85
DA-2 SUB2B	3.95	3.95	90	17.30	10.38	15.09
DA-2 SUB2C	4.08	4.08	89	17.64	10.58	17.92
1A	-	-	-	-	-	46.31
1	-	-	-	-	-	43.71

SH DEVELOPMENT - 25 YEAR

Point	Area (AC)	Area of accumulation (AC)	CN	TC (MIN)	TLAG(MIN)	Q(CFS)
DA-1	2.07	2.07	88	19.00	11.40	12.17
DA-2 SUB2A	3.7	3.7	82	21.00	12.60	19.16
DA-2 SUB2B	3.95	3.95	90	17.30	10.38	20.31
DA-2 SUB2C	4.08	4.08	89	17.64	10.58	24.22
1A	-	-	-	-	-	63.18
1	-	-	-	-	-	61.03

SH DEVELOPMENT - 100 YEAR

Point	Area (AC)	Area of accumulation (AC)	CN	TC (MIN)	TLAG(MIN)	Q(CFS)
DA-1	2.07	2.07	88	19.00	11.40	18.28
DA-2 SUB2A	3.7	3.7	82	21.00	12.60	29.74
DA-2 SUB2B	3.95	3.95	90	17.30	10.38	30.26
DA-2 SUB2C	4.08	4.08	89	17.64	10.58	36.24
1A	-	-	-	-	-	95.49
1	-	-	-	-	-	83.9

Date: 02/22/2024, 2:18pm, User: alexis.salinas, Plot: 107.00 (2400) (Plot) 222138 - RFP\_Proposed Drainage Area.dwg

## **ATTACHMENT H**

### **Temporary Sediment Pond Plans and Calculations**

Not applicable to this project.

# ATTACHMENT I

## Inspection and Maintenance for BMPs

### Inspections

Designated and qualified person(s) provided by the permittee shall inspect Pollution Control Measures every seven (7) calendar days and within twenty-four (24) hours after a storm event greater than 0.5 inches of rainfall. An inspection report that summarizes the scope of the inspection, date of inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of stormwater TPDES data for a period of three years after the date of inspection.

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, silt fences, etc.) for evidence of failure or excess silting (over six inches deep)
- 4) vehicle exit point for evidence of off-site sediment tracking
- 5) vehicle storage areas for signs of leaking equipment or spills
- 6) concrete truck rinse-out pit for signs of potential failure
- 7) general site cleanliness

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.

### 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

### Silt Fence

- 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.

#### 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.

#### Concrete Washout Pit Area

1. Each material making up pit area shall be inspected for any damage.
2. Plastic lining shall be inspected periodically to ensure no holes, tears or other defects are observed that might compromise the impermeability of the material.
3. Remove accumulated hardened concrete by breaking up and disposing of properly and if necessary, replacing plastic lining.

#### Temporary Seeding

1. Temporary vegetation should be inspected weekly and after each rain event to locate and repair any erosion.
2. Erosion from storms or other damage should be repaired as soon as practical by re-grading the area and applying new seed.
3. If vegetated cover is less than 80%, the area should be reseeded.

#### 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.

---

Signature

---

Date

---

Print Name

---

Title

# Attachment I

## Inspection Report

Pollution Prevention Measure		Inspected	Corrective Action	
			Description	Date Completed
<b>Silt Fence</b>	Inspections			
	Fencing			
	Sediment Removal			
	Torn Fabric			
	Crushed/Collapsed Fencing			
<b>Construction Entrance/Exit</b>	Inspections			
	Additional Top Dressing			
	Repair/Cleanout			
	Sediment Removed Immediately			
<b>Concrete Washout Pit</b>	Inspections			
	Plastic Lining			
	Berm / Sand Bags			
	Accumulated Concrete / Removal			

\_\_\_\_\_  
Inspector's Name

\_\_\_\_\_  
Inspector's Signature

\_\_\_\_\_  
Name of Owner/Operator

\_\_\_\_\_  
Date

## BMP Inspection Report - Project Construction Activity 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

_____	_____
_____	_____
_____	_____

## ATTACHMENT J

### Schedule of Interim and Permanent Soil Stabilization Practices

1. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 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 seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
2. Permanent seeding of individually disturbed areas shall be performed when infrastructure construction has been completed.
3. Permanent sodding and mulching of landscape areas shall occur at or near the completion of the project.
4. During construction, contractors shall, to the maximum extent possible, limit their construction activities to areas of construction as noted on the plans in an attempt to preserve as much natural vegetation as possible.

#### Seeding & Mulching Specifications

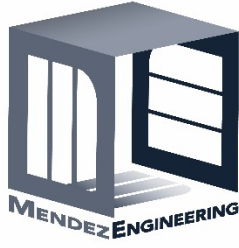
1. All seed must meet requirements of the Texas Seed Law including the labeling requirements. These labels shall show purity, germination, name and type of seed. Seed furnished shall be of the previous season's crop for the date of the project, and the date of analysis shown on each bag shall be within nine (9) months of the time of use on the project. Bermuda grass shall be hulled and treated and have a purity of 95% and germination of no less than 90%. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Owner.
2. Annual Rye grass will be free of Johnson grass, field bindweed, dodder seed, and free of other seed to the limits allowable under the Federal Seed Act and applicable Texas Seed Law. Annual Rye grass will be added into slurry between October 1 through March 15.
3. Wood Cellulose Fiber Mulch. Wood cellulose fiber mulch shall be natural cellulose fiber mulch produced from grinding clean, whole wood chips, or fiber produced from ground newsprint with a labeled ash content not to exceed 7%. The mulch shall be designed for use in conventional mechanical planting, hydraulic planting of seed or hydraulic mulching of grass seed, either alone or with fertilizer and other additives. The mulch shall be that when applied, the material shall form a strong, moisture-retaining mat without the need of an asphalt binder. The mulch material will also be dyed with a green color to assist in determining coverage and to provide an immediate pleasing

appearance. The wood cellulose fiber is also required to be dispersed rapidly in water to form homogeneous slurry and remain in such state when agitated in the hydraulic mulching unit with specified materials.

4. Straw Mulch or Hay Mulch. Straw mulch shall be oat, wheat, or rice straw. Hay mulch shall be prairie grass, Bermuda grass or other hay as approved by the Owner. The straw mulch or hay mulch shall be free of Johnson grass or other noxious weeds and foreign materials. It shall be kept in a dry condition and shall not be molded or rotted.

Optimum Planting Dates	Common Names	Rate, lbs./acre
February 1 – May 1	Bermuda Grass	1.5
September 1 – November 30	Tall Fescue	4.0
	Oats	21.0*
	Wheat (Red, Winter)	30.00
September 1 – November 30	Hairy Vetch	8.0
May 1 – August 31	Foxtail Millet	30.0





## **SECTION F**

**Permanent Stormwater Section – Form TCEQ-0600**

# Permanent Stormwater Section

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

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

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

## Signature

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

Print Name of Customer/Agent: Jose J. Sosa, P.E.

Date: 2/22/24

Signature of Customer/Agent



Regulated Entity Name: SH 46 Development

## Permanent Best Management Practices (BMPs)

**Permanent best management practices and measures that will be used during and after construction is completed.**

- Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.  
 N/A
- 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.  
 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.**

- 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.  **Attachment C - BMPs for On-site Stormwater.**
- 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.  **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.  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.
- 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.  **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:
- Design calculations (TSS removal calculations)
  - TCEQ construction notes
  - All geologic features
  - All proposed structural BMP(s) plans and specifications
- N/A

11.  **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:
- Prepared and certified by the engineer designing the permanent BMPs and measures
  - Signed by the owner or responsible party
  - Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
  - A discussion of record keeping procedures
- N/A
12.  **Attachment H - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
- N/A
13.  **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.  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.  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**

Not applicable to this project

## **Attachment B**

### **BMPs for Upgradient Stormwater**

Up-gradient stormwater runoff from developed communities (north, east and west) of the site flow through their respective drainage structures into Comal Creek and will not flow across the site.

Additionally, if any up-gradient stormwater runoff from undeveloped land to the area of interest is developed, it will flow across their proposed development into Comal Creek through their respective drainage structures. Upstream developed areas should have accounted for stormwater pollution, therefore implementing permanent BMPs. Undeveloped land up-gradient to the site will be required to comply with Texas Commission on Environmental Quality (TCEQ) regulations for development over the Edwards Aquifer Recharge Zone.

## **Attachment C**

### **BMPs for On-Site Stormwater**

The proposed site will utilize a batch detention basin as shown on Site Plan. The proposed best management practices (BMPs) will treat at least 80% of the increase in total suspended solids (TSS) for the site. The proposed sand filtration system has been designed in accordance with the TCEQ Technical Guidance Manual (TGM) RG-348 (2005).



## **Attachment D**

### **BMPs for Surface Streams**

Not applicable to this project

**Attachment E**  
**Request to Seal Features**

Not applicable to this project

## **Attachment F**

### **Construction Plans**

The construction plans and design calculations for the proposed permanent BMPs and measures for the proposed project to have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. The design calculations, TCEQ Construction Notes, all man-made or naturally occurring geological features, all proposed structural measures, and appropriate details are shown on the construction plans.





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

1. The Required Load Reduction for the total project. Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{R1} = 27.2(A_p \times P)$

where:  
 $L_{R1}$  TOTAL PROJECT = Required TSS removal result  
 $A_p$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project	
County	Comal
Total project area included in plan	15.97 acres
Predevelopment impervious area within the limits of the plan	0.81 acres
Total post-development impervious area within the limits of the plan	4.45 acres
Total post-development impervious cover fraction	0.28
P	33 inches

$L_{R1}$  TOTAL PROJECT = 3267 lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 3

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

Drainage Basin/Outfall Area No. = P-1

Total drainage basin/outfall area = 0.23 acres	
Predevelopment impervious area within drainage basin/outfall area = 0.01 acres	
Post-development impervious area within drainage basin/outfall area = 0.09 acres	
Post-development impervious fraction within drainage basin/outfall area = 0.39	
$L_{R1}$ THIS BASIN = 72 lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter  
Removal efficiency = 89 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:  $L_R = (BMP\ efficiency) \times P \times (A_p \times A_c)$

where:  
 $A_c$  = Total On-Site drainage area  
 $A_p$  = Impervious area proposed in  
 $A_v$  = Pervious area remaining in  
 $L_R$  = TSS Load removed from this

$A_c$	0.23 acres
$A_p$	0.09 acres
$A_v$	0.14 acres
$L_R$	94 lbs

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

Desired  $L_{R1}$  THIS BASIN = 72 lbs.

F = 0.77

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth = 0.97 inches  
Post Development Runoff Coefficient = 0.30  
On-site Water Quality Volume = 246 cubic feet

Calculations from RG-348

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	49 cubic feet
Total Capture Volume (required water quality volume(s) x 1.20)	295 cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP  
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate	0.1 in/hr
Irrigation area	NA square feet

8. Extended Detention Basin System

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin	295 cubic feet
Minimum filter basin area	14 square feet
Maximum sedimentation basin area	123 square feet
Minimum sedimentation basin area	31 square feet

9B. Partial Sedimentation and Filtration System

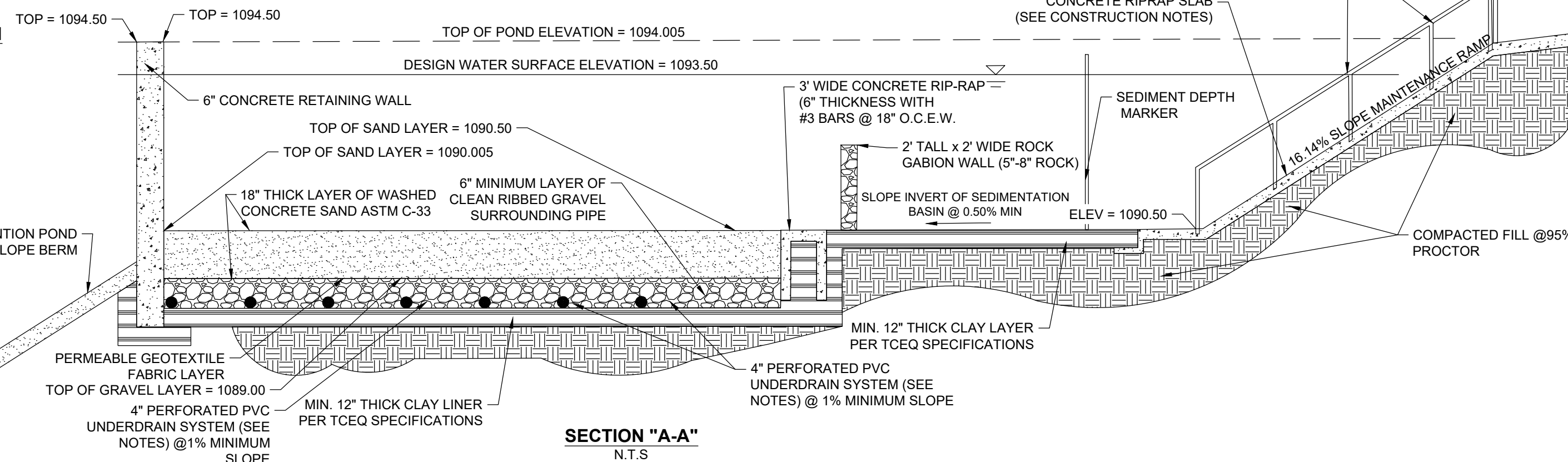
Water Quality Volume for combined basins	295 cubic feet
Minimum filter basin area	25 square feet
Maximum sedimentation basin area	98 square feet
Minimum sedimentation basin area	6 square feet

WATER QUALITY POND 1 - INFORMATION

DESIGN WATER SURFACE ELEV. = 1094.50  
WATER DEPTH = 4  
TOP OF SAND ELEVATION = 1090.50

REQUIRED VOLUME: 1,195 CUFT  
PROVIDED VOLUME: 1,434 CUFT  
REQUIRED SAND FILTER AREA: 239 SQFT  
PROVIDED SAND FILTER AREA: 537 SQFT  
REQUIRED SEDIMENTATION AREA: 224 SQFT  
PROVIDED SEDIMENTATION AREA: 469 SQFT

DETENTION POND  
SLOPE BERM



SECTION "A-A"  
N.T.S

Additional information is provided for cells with a red triangle in the upper right corner  
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1. The Required Load Reduction for the total project. Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{R1} = 27.2(A_p \times P)$

where:  
 $L_{R1}$  TOTAL PROJECT = Required TSS removal result  
 $A_p$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project	
County	Comal
Total project area included in plan	15.97 acres
Predevelopment impervious area within the limits of the plan	0.81 acres
Total post-development impervious area within the limits of the plan	4.45 acres
Total post-development impervious cover fraction	0.28
P	33 inches

$L_{R1}$  TOTAL PROJECT = 3267 lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 4

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

Drainage Basin/Outfall Area No. = P-2A

Total drainage basin/outfall area = 1.28 acres	
Predevelopment impervious area within drainage basin/outfall area = 0.29 acres	
Post-development impervious area within drainage basin/outfall area = 0.76 acres	
Post-development impervious fraction within drainage basin/outfall area = 0.59	
$L_{R1}$ THIS BASIN = 422 lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter  
Removal efficiency = 89 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:  $L_R = (BMP\ efficiency) \times P \times (A_p \times A_c)$

where:  
 $A_c$  = Total On-Site drainage area  
 $A_p$  = Impervious area proposed in  
 $A_v$  = Pervious area remaining in  
 $L_R$  = TSS Load removed from this

$A_c$	1.28 acres
$A_p$	0.76 acres
$A_v$	0.52 acres
$L_R$	781 lbs

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

Desired  $L_{R1}$  THIS BASIN = 422 lbs.

F = 0.54

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth = 0.47 inches  
Post Development Runoff Coefficient = 0.42  
On-site Water Quality Volume = 916 cubic feet

Calculations from RG-348

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	183 cubic feet
Total Capture Volume (required water quality volume(s) x 1.20)	1099 cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP  
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate	0.1 in/hr
Irrigation area	NA square feet

8. Extended Detention Basin System

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters

9A. Full Sedimentation and Filtration System

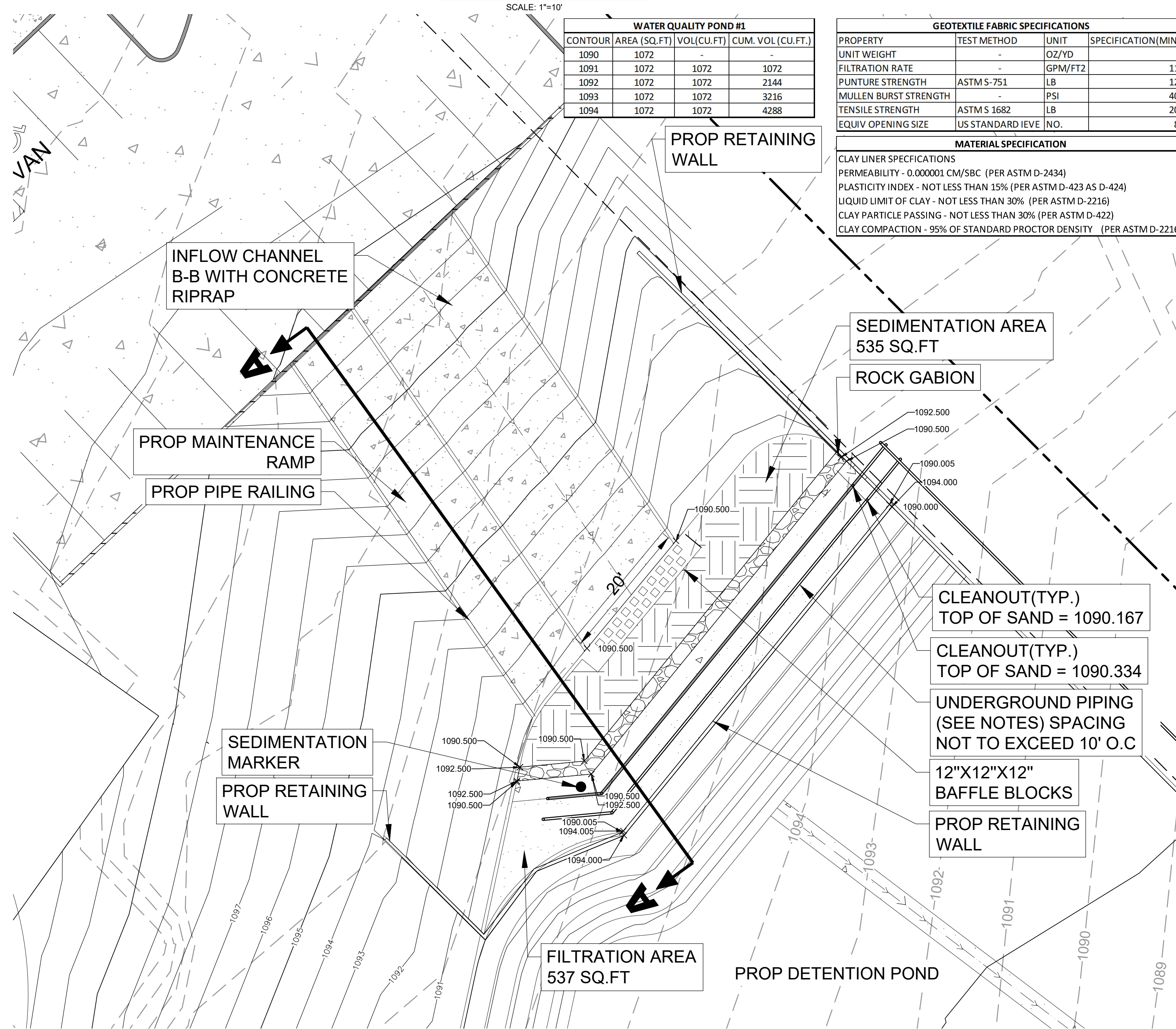
Water Quality Volume for sedimentation basin	1099 cubic feet
Minimum filter basin area	51 square feet
Maximum sedimentation basin area	458 square feet
Minimum sedimentation basin area	114 square feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins	1099 cubic feet
Minimum filter basin area	92 square feet
Maximum sedimentation basin area	366 square feet
Minimum sedimentation basin area	23 square feet

WATER QUALITY POND 1 - PLAN VIEW

SCALE: 1"=10'



ALL WATER QUALITY BASINS SHALL HAVE THE FOLLOWING DESIGN:

- A 6 FOOT HIGH FENCE (WOOD, CHAINLINK, OR OTHER DECORATIVE FENCE AS SPECIFIED BY THE OWNER OR BY RESTRICTIVE COVENANT) SHALL BE INSTALLED AT THE TOP OF THE WATER QUALITY BASIN ALONG ALL SIDES. AT THE LOCATION OF THE 12' WIDE (MIN) MAINTENANCE RAMP, A 12 FOOT WIDE GATE (EITHER BEING A SINGLE GATE OR TWO 6' WIDE GATES) WITH LOCK SHALL BE PROVIDED TO ALLOW ACCESS TO THE WATER QUALITY POND.
- 12' WIDE (MINIMUM) MAINTENANCE RAMP CONSTRUCTED OF 5" THICK CONCRETE RIP-RAP WITH #3 REBAR @ 18" O.C.E.W. (AND 36" DEEP BY 6" CONCRETE TOWELWALLS ALONG ALL SIDES) AT A SLOPE NOT TO EXCEED 4:1. THE MAINTENANCE RAMP SHALL ALSO CONTAIN A METAL PIPE SAFETY RAILING AS SHOWN ON THE ATTACHED DETAILS. THE CLEAR WIDTH OF THE RAMP SHALL BE NO LESS THAN 12 WIDE INSIDE THE TWO SETS OF PIPE RAILINGS.
- THE SEDIMENTATION AREA OF THE POND SHALL CONSIST OF A 12" THICK CLAY LINER AT THE ELEVATIONS SHOWN.
- THE FILTRATION AREA OF THE POND SHALL CONSIST OF A 12" THICK CLAY LINER AT THE ELEVATIONS SHOWN.
- THE FILTRATION SYSTEM CONSISTS OF A LAYER OF 18" DEEP SAND (WASHED CONCRETE SAND MEETING THE REQUIREMENTS OF ASTM C-33 FINE AGGREGATE SPECIFICATIONS) OVER A PERMEABLE GEOTEXTILE FABRIC THAT IS ON TOP OF A MINIMUM 6" DEEP LAYER OF GRAVEL (DEPTH VARIES PER BOTTOM OF POND ELEVATION) THAT ENCASES THE UNDERDRAIN PIPE SYSTEM.
- THE UNDERDRAIN PIPING CONSISTS OF A 4" PERFORATED PVC PIPE AT A MINIMUM SLOPE OF 1% WITH A MAXIMUM SPACING OF 10 FEET. ALL 4" PERFORATED PVC PIPE SHALL BE SCHEDULE 40 PVC WITH PERFORATION ROW SPACING OF NOT MORE THAN 6" (SEE DETAIL SHEET).
- A4" PVC GATE VALVE, 6" X4" ECCENTRIC REDUCER, 6" VALVE BOX, AND VALVE BOX MARKER SHALL BE PLACED OUTSIDE OF THE POND AREA, UPON THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ADJUST THE GATE VALVE TO ENSURE THAT THE POND DRAINS PER T.C.E.Q. SPECIFICATIONS AND TO ALLOW SYSTEM SHUTDOWN IN THE EVENT OF A HAZARDOUS CHEMICAL RELEASE.
- ALL CONCRETE SHALL BE 3500 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS OR GREATER.
- ALL REBAR SPLICES AND LAPS SHALL BE A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL ALERT ENGINEER FOR FIELD OBSERVATION A MIN. OF 24 HOURS PRIOR TO EACH OF THE FOLLOWING EVENTS; DRAIN PIPE INSTALLATION COMPLETION, SAND INSTALLATION AND ANY CONCRETE POURS. THE CONTRACTOR SHALL ALSO PROVIDE A MATERIAL SUBMITTAL TO THE ENGINEER FOR REVIEW ON THE FOLLOWING MATERIALS; GRAVEL, PERMEABLE GEOTEXTILE FABRIC, WASHED CONCRETE SAND, CLAY LINER.
- ALL DRIVEWAYS WILL BE CONSTRUCTED PER CITY OF SAN ANTONIO STANDARD DETAILS & WILL BE CONSTRUCTED IN SUCH A WAY AS TO NOT ALLOW STORMWATER TO ENTER THE POND THROUGH THE MAINTENANCE RAMP.

**MENDEZ ENGINEERING**  
 Registration # F-14070  
 12950 County Parkway STE 120, San Antonio, Texas 78216  
 Office: 210-802-0808  
 www.MendezEngineering.com

STATE OF TEXAS  
 ALEXIS SALINAS  
 146173  
 LICENSED PROFESSIONAL ENGINEER  
 Salinas 2-22-2024

SH-46 DEVELOPMENT  
 WATER QUALITY POND #1

A-A STORAGE  
 6535 W TX-46  
 NEW BRAUNFELS, TEXAS

DESIGNED BY:	AS
DRAFTED BY:	AS
CHECKED BY:	JUS
DATE:	2/22/2024

SHEET  
**E5.0**

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1. The Required Load Reduction for the total project. Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{d,TOTAL PROJECT} = 27.2(A_{p,i} \times P)$

where:  
 $L_{d,TOTAL PROJECT}$  = Required TSS removal result  
 $A_{p,i}$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project  
County = **Comal** acres  
Total project area included in plan = **15.97** acres  
Predevelopment impervious area within the limits of the plan = **0.81** acres  
Total post-development impervious area within the limits of the plan = **4.45** acres  
Total post-development impervious cover fraction = **0.28**  
 $P$  = **33** inches

$L_{d,TOTAL PROJECT}$  = **3267** lbs.  
\* The values entered in these fields should be for the total project area.  
Number of drainage basins / outfalls areas leaving the plan area = **3**

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

Drainage Basin/Outfall Area No. = **P-2B**

Total drainage basin/outfall area = **2.49** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.50** acres  
Post-development impervious area within drainage basin/outfall area = **1.77** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.55**  
 $L_{d,THIS BASIN}$  = **1140** lbs.

3. Indicate the proposed BMP Code for this basin.  
Proposed BMP = **Sand Filter**  
Removal efficiency = **89** percent

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

RG-348 Page 3-33 Equation 3.7:  $L_d = (BMP \text{ efficiency}) \times P \times (A_p - A_p)$

where:  
 $A_p$  = Total On-Site drainage area  
 $A_p$  = Impervious area proposed in  
 $A_p$  = Pervious area remaining in  
 $L_d$  = TSS Load removed from this

$A_p$  = **3.20** acres  
 $A_p$  = **1.77** acres  
 $A_p$  = **1.43** acres  
 $L_d$  = **1821** lbs

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

Desired  $L_d$  THIS BASIN = **1140** lbs.  
 $F$  = **0.63**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth = **0.64** inches  
Post Development Runoff Coefficient = **0.39**  
On-site Water Quality Volume = **2872** cubic feet

Calculations from RG-348  
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 = **574** cubic feet  
Total Capture Volume (required water quality volume(s) x 1.20) = **3446** cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP  
The values for BMP Types not selected in cell C46 will show NA.

7. Retention/Infiltration System

Required Water Quality Volume for retention basin = **NA** cubic feet  
Irrigation Area Calculations:  
Soil infiltration/permeability rate = **0.1** in/hr  
Irrigation area = **NA** square feet

8. Extended Detention Basin System

Required Water Quality Volume for extended detention basin = **NA** cubic feet

9. Filter area for Sand Filters

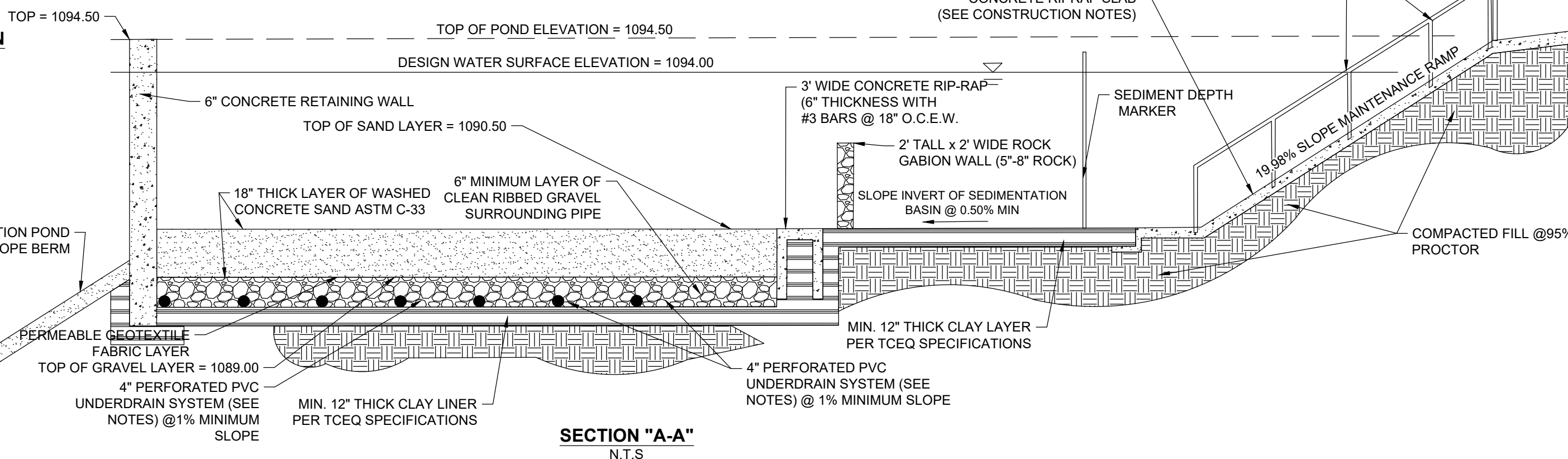
9A. Full Sedimentation and Filtration System  
Water Quality Volume for sedimentation basin = **3446** cubic feet  
Minimum filter basin area = **160** square feet  
Maximum sedimentation basin area = **1436** square feet  
Minimum sedimentation basin area = **359** square feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = **3446** cubic feet  
Minimum filter basin area = **287** square feet  
Maximum sedimentation basin area = **1149** square feet  
Minimum sedimentation basin area = **72** square feet

WATER QUALITY POND 2 - INFORMATION

DESIGN WATER SURFACE ELEV. = 1094.005  
WATER DEPTH = 4  
TOP OF SAND ELEVATION = 1090.50  
REQUIRED VOLUME: 11,477 CU.FT  
PROVIDED VOLUME: 13,772 CU.FT  
REQUIRED SAND FILTER AREA: 2,314 SQ.FT  
PROVIDED SAND FILTER AREA: 2,842 SQ.FT  
REQUIRED SEDIMENTATION AREA: 2,082 SQ.FT  
PROVIDED SEDIMENTATION AREA: 2,112 SQ.FT



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1. The Required Load Reduction for the total project. Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{d,TOTAL PROJECT} = 27.2(A_{p,i} \times P)$

where:  
 $L_{d,TOTAL PROJECT}$  = Required TSS removal result  
 $A_{p,i}$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project  
County = **Comal** acres  
Total project area included in plan = **15.97** acres  
Predevelopment impervious area within the limits of the plan = **0.81** acres  
Total post-development impervious area within the limits of the plan = **4.45** acres  
Total post-development impervious cover fraction = **0.28**  
 $P$  = **33** inches

$L_{d,TOTAL PROJECT}$  = **3267** lbs.  
\* The values entered in these fields should be for the total project area.  
Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **P-2C**

Total drainage basin/outfall area = **2.49** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.44** acres  
Post-development impervious area within drainage basin/outfall area = **1.83** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.73**  
 $L_{d,THIS BASIN}$  = **1607** lbs.

3. Indicate the proposed BMP Code for this basin.  
Proposed BMP = **Sand Filter**  
Removal efficiency = **89** percent

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

RG-348 Page 3-33 Equation 3.7:  $L_d = (BMP \text{ efficiency}) \times P \times (A_p - A_p)$

where:  
 $A_p$  = Total On-Site drainage area  
 $A_p$  = Impervious area proposed in  
 $A_p$  = Pervious area remaining in  
 $L_d$  = TSS Load removed from this

$A_p$  = **2.49** acres  
 $A_p$  = **1.83** acres  
 $A_p$  = **0.66** acres  
 $L_d$  = **1870** lbs

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

Desired  $L_d$  THIS BASIN = **1607** lbs.  
 $F$  = **0.86**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth = **1.38** inches  
Post Development Runoff Coefficient = **0.54**  
On-site Water Quality Volume = **6769** cubic feet

Calculations from RG-348  
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 = **1354** cubic feet  
Total Capture Volume (required water quality volume(s) x 1.20) = **8123** cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP  
The values for BMP Types not selected in cell C46 will show NA.

7. Retention/Infiltration System

Required Water Quality Volume for retention basin = **NA** cubic feet  
Irrigation Area Calculations:  
Soil infiltration/permeability rate = **0.1** in/hr  
Irrigation area = **NA** square feet

8. Extended Detention Basin System

Required Water Quality Volume for extended detention basin = **NA** cubic feet

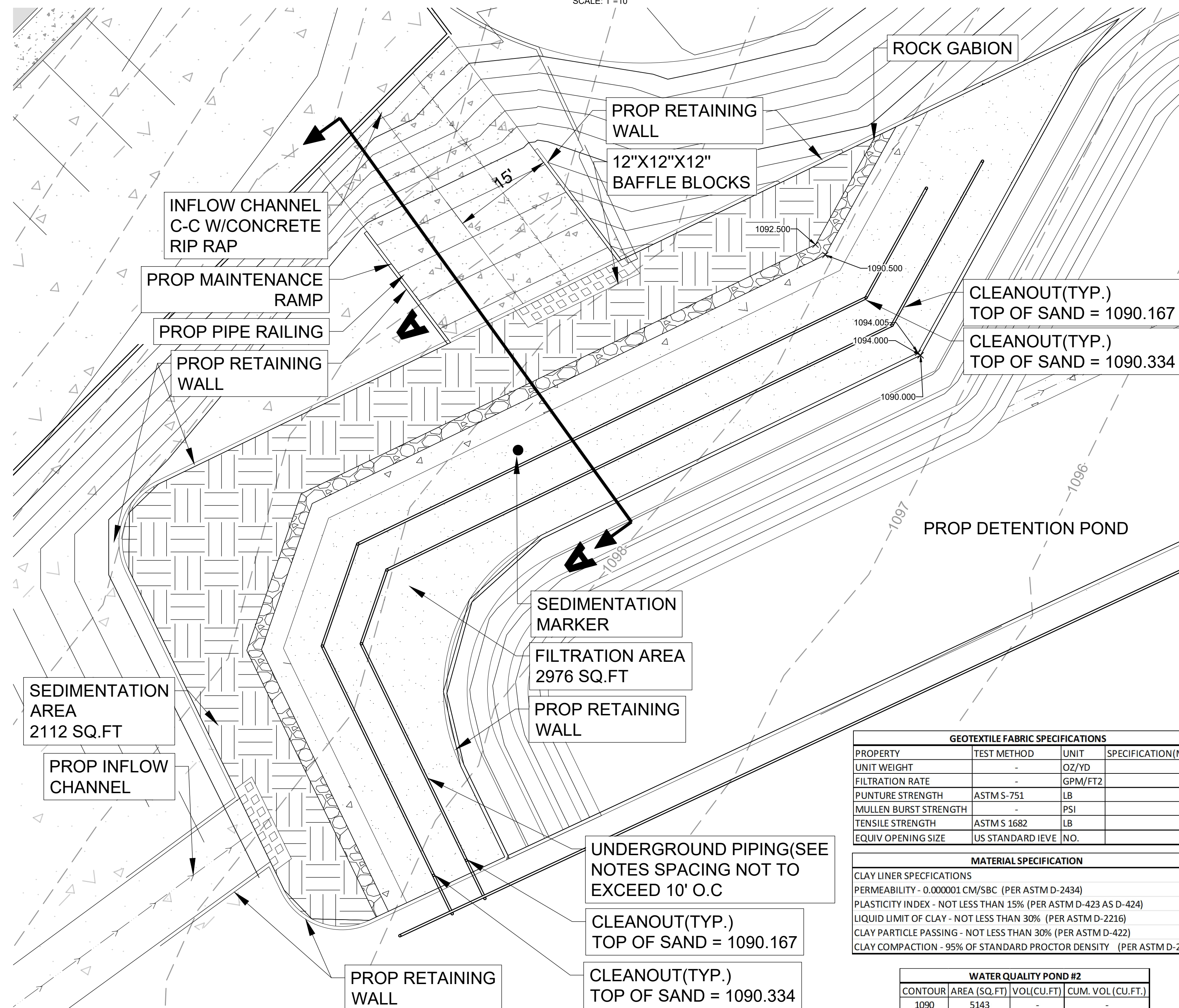
9. Filter area for Sand Filters

9A. Full Sedimentation and Filtration System  
Water Quality Volume for sedimentation basin = **8123** cubic feet  
Minimum filter basin area = **376** square feet  
Maximum sedimentation basin area = **3385** square feet  
Minimum sedimentation basin area = **846** square feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = **8123** cubic feet  
Minimum filter basin area = **677** square feet  
Maximum sedimentation basin area = **2708** square feet  
Minimum sedimentation basin area = **169** square feet

WATER QUALITY POND 2 - PLAN VIEW  
SCALE: 1"=10'



GEOTEXTILE FABRIC SPECIFICATIONS			
PROPERTY	TEST METHOD	UNIT	SPECIFICATION (MIN)
UNIT WEIGHT	-	OZ/YD	8
FILTRATION RATE	-	GPM/FT2	110
PUNCTURE STRENGTH	ASTM S-751	LB	125
MULLEN BURST STRENGTH	-	PSI	400
TENSILE STRENGTH	ASTM S 1682	LB	200
EQUIV OPENING SIZE	US STANDARD SIEVE NO.	-	80

MATERIAL SPECIFICATION			
CLAY LINER SPECIFICATIONS			
PERMEABILITY - 0.00001 CM/SBC (PER ASTM D-2434)			
PLASTICITY INDEX - NOT LESS THAN 15% (PER ASTM D-423 AS D-424)			
LIQUID LIMIT OF CLAY - NOT LESS THAN 30% (PER ASTM D-2216)			
CLAY PARTICLE PASSING - NOT LESS THAN 30% (PER ASTM D-422)			
CLAY COMPACTION - 95% OF STANDARD PROCTOR DENSITY (PER ASTM D-2216)			

WATER QUALITY POND #2			
CONTOUR	AREA (SQ.FT)	VOL (CU.FT)	CUM. VOL (CU.FT)
1090	5143	-	-
1091	5143	5143	5143
1092	5143	5143	10286
1093	5143	5143	15429
1094	5143	5143	20572

- ALL WATER QUALITY BASINS SHALL HAVE THE FOLLOWING DESIGN:
- A 6 FOOT HIGH FENCE (WOOD, CHAINLINK, OR OTHER DECORATIVE FENCE AS SPECIFIED BY THE OWNER OR BY RESTRICTIVE COVENANT) SHALL BE INSTALLED AT THE TOP OF THE WATER QUALITY BASIN ALONG ALL SIDES. AT THE LOCATION OF THE 12' WIDE (MIN) MAINTENANCE RAMP, A 12 FOOT WIDE GATE (EITHER BEING A SINGLE GATE OR TWO 6' WIDE GATES) WITH LOCK SHALL BE PROVIDED TO ALLOW ACCESS TO THE WATER QUALITY POND.
  - 12' WIDE (MINIMUM) MAINTENANCE RAMP CONSTRUCTED OF 5" THICK CONCRETE RIPRAP WITH #3 REBAR @ 18" O.C.E.W. (AND 36" DEEP BY 6" CONCRETE TOEWALLS ALONG ALL SIDES) AT A SLOPE NOT TO EXCEED 4:1. THE MAINTENANCE RAMP SHALL ALSO CONTAIN A METAL PIPE SAFETY RAILING AS SHOWN ON THE ATTACHED DETAILS. THE CLEAR WIDTH OF THE RAMP SHALL BE NO LESS THAN 12 WIDE INSIDE THE TWO SETS OF PIPE RAILINGS.
  - THE SEDIMENTATION AREA OF THE POND SHALL CONSIST OF A 12" THICK CLAY LINER AT THE ELEVATIONS SHOWN.
  - THE FILTRATION AREA OF THE POND SHALL CONSIST OF A 12" THICK CLAY LINER AT THE ELEVATIONS SHOWN.
  - THE FILTRATION SYSTEM CONSISTS OF A LAYER OF 18" DEEP SAND (WASHED CONCRETE SAND MEETING THE REQUIREMENTS OF ASTM C-33 FINE AGGREGATE SPECIFICATIONS) OVER A PERMEABLE GEOTEXTILE FABRIC THAT IS ON TOP OF A MINIMUM 6" DEEP LAYER OF GRAVEL (DEPTH VARIES PER BOTTOM OF POND ELEVATION) THAT ENCASES THE UNDERDRAIN PIPE SYSTEM.
  - THE UNDERDRAIN PIPING CONSISTS OF A 4" PERFORATED PVC PIPE AT A MINIMUM SLOPE OF 1% WITH A MAXIMUM SPACING OF 10 FEET. ALL 4" PERFORATED PVC PIPE SHALL BE SCHEDULE 40 PVC WITH PERFORATION ROW SPACING OF NOT MORE THAN 6" (SEE DETAIL SHEET).
  - A4" PVC GATE VALVE, 6" X4" ECCENTRIC REDUCER, 6" VALVE BOX, AND VALVE BOX MARKER SHALL BE PLACED OUTSIDE OF THE POND AREA, UPON THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ADJUST THE GATE VALVE TO ENSURE THAT THE POND DRAINS PER T.C.E.Q. SPECIFICATIONS AND TO ALLOW SYSTEM SHUTDOWN IN THE EVENT OF A HAZARDOUS CHEMICAL RELEASE.
  - ALL CONCRETE SHALL BE 3500 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS OR GREATER.
  - ALL REBAR SPLICES AND LAPS SHALL BE A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE SPECIFIED.
  - CONTRACTOR SHALL ALERT ENGINEER FOR FIELD OBSERVATION A MIN. OF 24 HOURS PRIOR TO EACH OF THE FOLLOWING EVENTS; DRAIN PIPE INSTALLATION COMPLETION, SAND INSTALLATION AND ANY CONCRETE POURS. THE CONTRACTOR SHALL ALSO PROVIDE A MATERIAL SUBMITTAL TO THE ENGINEER FOR REVIEW ON THE FOLLOWING MATERIALS; GRAVEL, PERMEABLE GEOTEXTILE FABRIC, WASHED CONCRETE SAND, CLAY LINER.
  - ALL DRIVEWAYS WILL BE CONSTRUCTED PER CITY OF SAN ANTONIO STANDARD DETAILS & WILL BE CONSTRUCTED IN SUCH A WAY AS TO NOT ALLOW STORMWATER TO ENTER THE POND THROUGH THE MAINTENANCE RAMP.



SH-46 DEVELOPMENT  
WATER QUALITY POND #2

A-A STORAGE  
6535 W TX-46  
NEW BRAUNFELS, TEXAS

DESIGNED BY: AS  
DRAFTED BY: AS  
CHECKED BY: JUS  
DATE: 2/22/2024

SHEET  
E5.1

**NOTES**

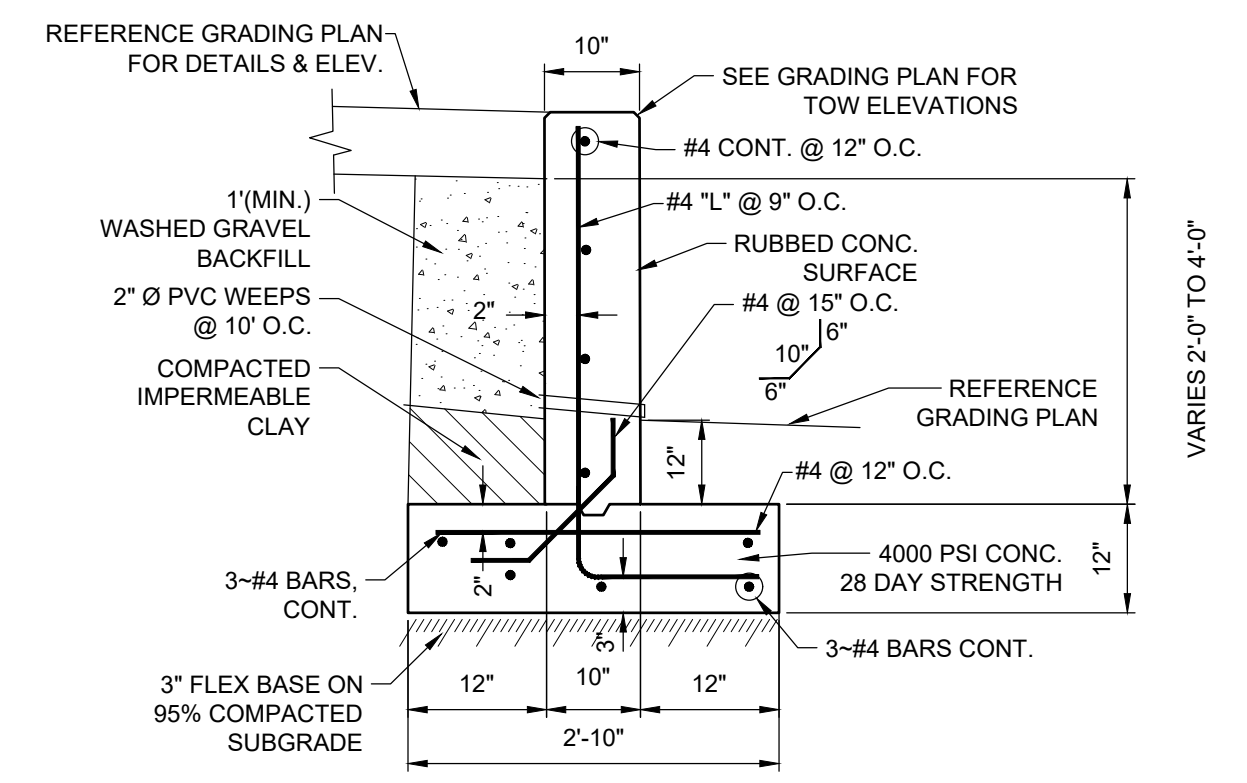
- CONTRACTOR TO PROVIDE DETAILED SUBMITTAL DRAWINGS TO THE OWNER & ENGINEER FOR APPROVAL. ALL SUBMITTALS SHALL MEET GUADALUPE COUNTY SPECIFICATIONS.
- DETENTION POND STORAGE WILL BE AS INDICATED ON TABLE SHOWN ON SHEET C11.0.
- CONTRACTOR TO HYDROMULCH POND EARTHEN POND SLOPES AND POND BOTTOM
- PROVIDE 3000 PSI CONCRETE @ 28 DAYS WITH 6 X 6 - W2.9 X W2.9 WELDED WIRE FABRIC OR ITS EQUAL FOR CONCRETE RIPRAP. PROPOSED HEADWALLS TO FOLLOW TxDOT DETAILS. CONCRETE STRENGTH INDICATED ON DETAILS.

**DETENTION POND MAINTENANCE NOTES**

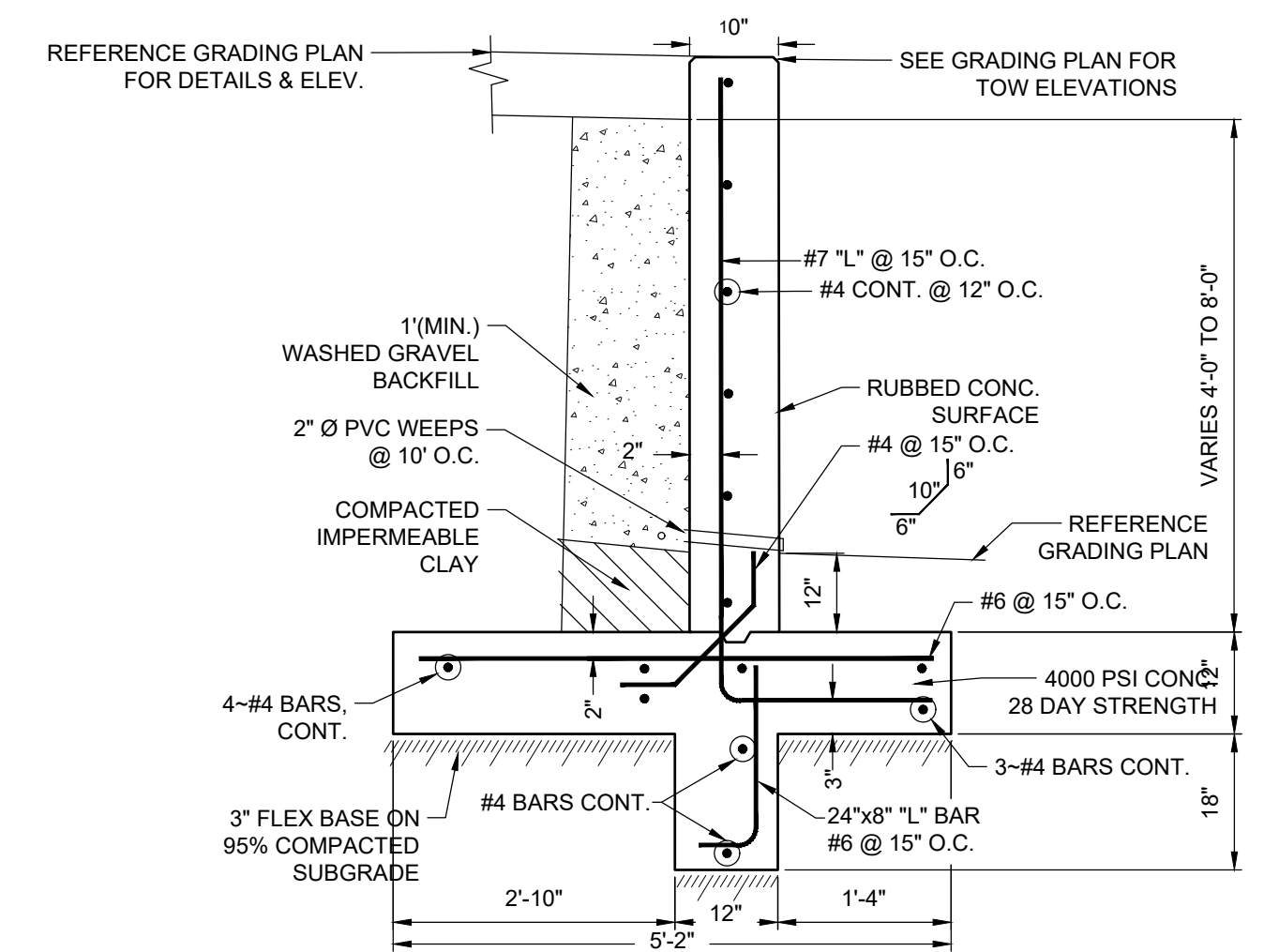
- DETENTION POND SHALL BE MOWED WHEN GRASS HEIGHT EXCEEDS 18".
- OUTLET SHALL BE INSPECTED AFTER EVERY RAINFALL EXCEEDING 1" IN 24 HR PERIOD.
- ANY DEBRIS OR SEDIMENT BLOCKING THE OUTLET SHALL BE REMOVED.

**NOTES:**

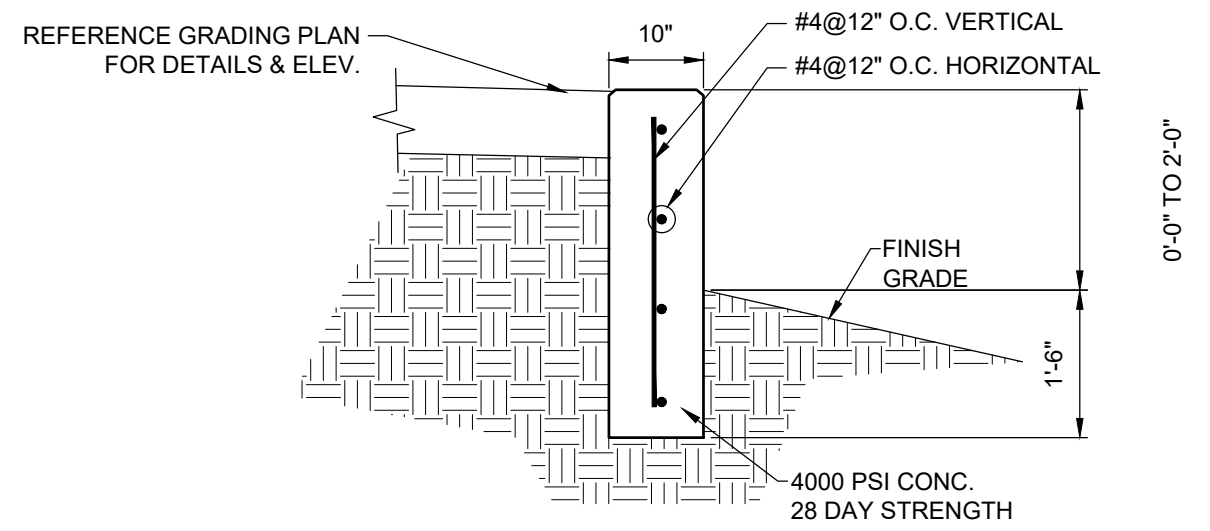
- PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES.
- ALL CONCRETE SHALL BE MINIMUM 4000 PSI AT 28 DAY STRENGTH.
- PROVIDE 1" DOWELED EXPANSION JOINS @ 50' O.C. AND CONTROL JOINS @ 10' O.C.
- ALL DOWEL BARS SHALL BE SMOOTH AND ALL REINFORCING BARS SHALL BE DEFORMED 'REBAR'. BOTH DOWELS AND REINFORCING STEEL SHALL BE A MINIMUM ASTM A 615, GRADE 80.
- ALL REINFORCING STEEL SHALL BE PROPERLY CHAIRED AND TIED PRIOR TO PLACEMTN OF CONCRETE.
- MAINTAIN 2" OF CLEAR COVER BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE, UNLESS OTHERWISE SHOWN.
- MINIMUM BAR SPLICES SHALL BE AS FOLLOWS:  
 a. 2'-4" WALLS: 24"  
 b. 4'-8" WALLS: 30"  
 c. 8'-10" WALLS: 36"
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE AWAY FROM RETAINING WALLS AT ALL TIMES.
- CONTRACTOR TO CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO PLACEMENT OF CONCRETE TO SCHEDULE OBSERVATION OF REINFORCING STEEL.



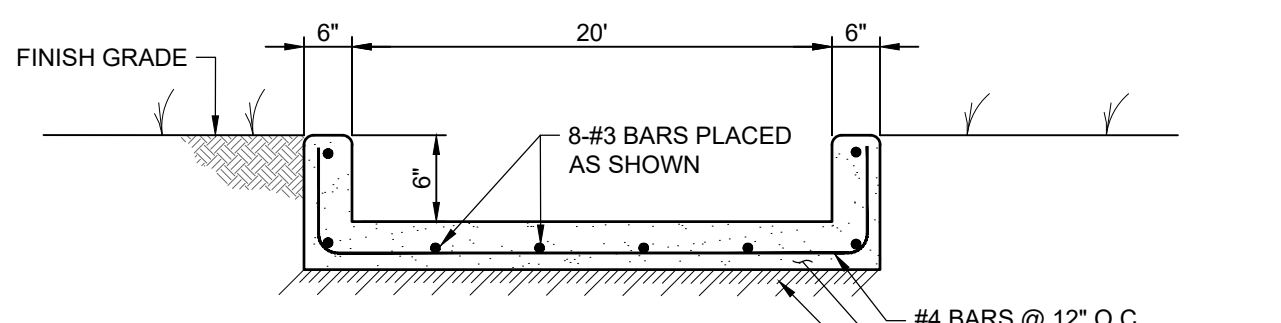
2'-4' RETAINING WALL SECTION DETAIL  
 NOT TO SCALE



4'-8' RETAINING WALL SECTION DETAIL  
 NOT TO SCALE



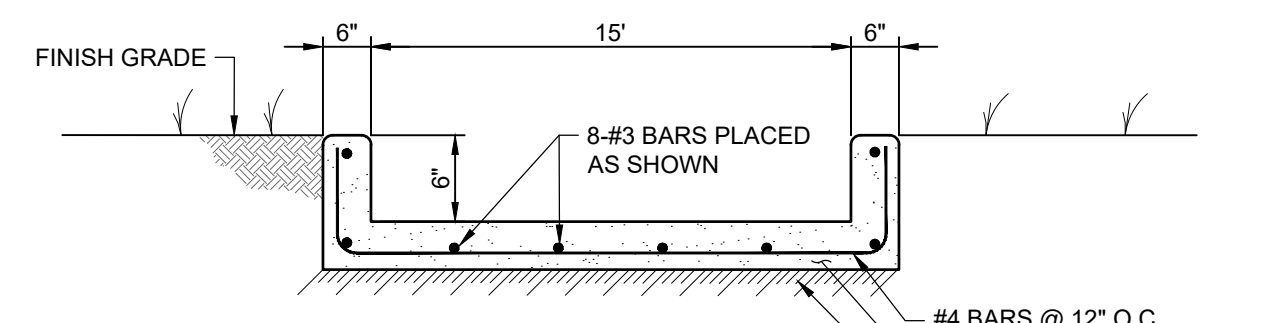
50'-2' RETAINING WALL SECTION DETAIL  
 NOT TO SCALE



INLET CHANNEL SECTION B-B DETAIL  
 NOT TO SCALE

HYDRAULIC DATA

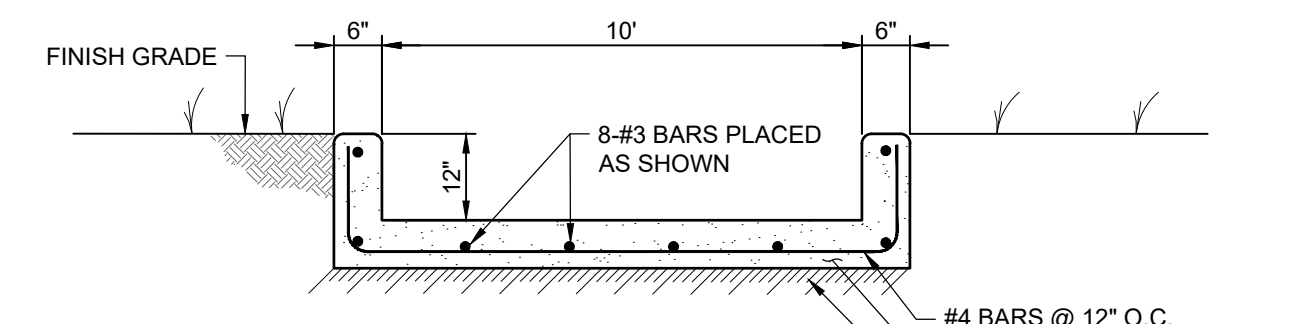
Q <sub>100</sub> = 30.26 CFS	Q <sub>25</sub> = 20.31 CFS
n = 0.013	n = 0.013
b <sub>w</sub> = 20.0'	b <sub>w</sub> = 20.0'
S = 15.88%	S = 15.88%
A = 2.80 SF	A = 2.2 SF
P = 20.28'	P = 20.22'
V = 10.81 ft/s	V = 9.23 ft/s
D = 0.14'	D = 0.11'



INLET CHANNEL SECTION C-C DETAIL  
 NOT TO SCALE

HYDRAULIC DATA

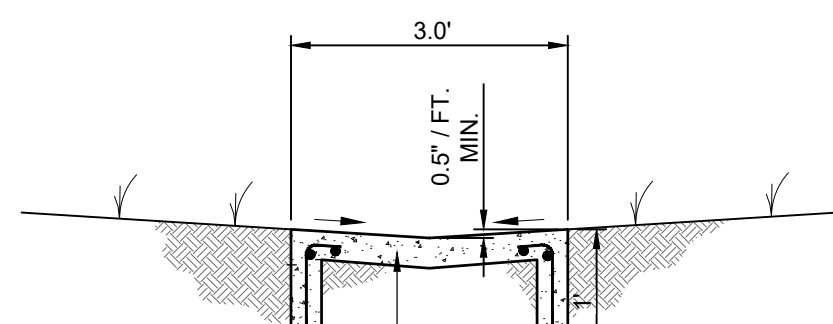
Q <sub>100</sub> = 29.74 CFS	Q <sub>25</sub> = 19.16 CFS
n = 0.013	n = 0.013
b <sub>w</sub> = 15.0'	b <sub>w</sub> = 15.0'
S = 29.88%	S = 29.88%
A = 1.95 SF	A = 1.5 SF
P = 15.26'	P = 15.20'
V = 13.25 ft/s	V = 12.77 ft/s
D = 0.13'	D = 0.10'



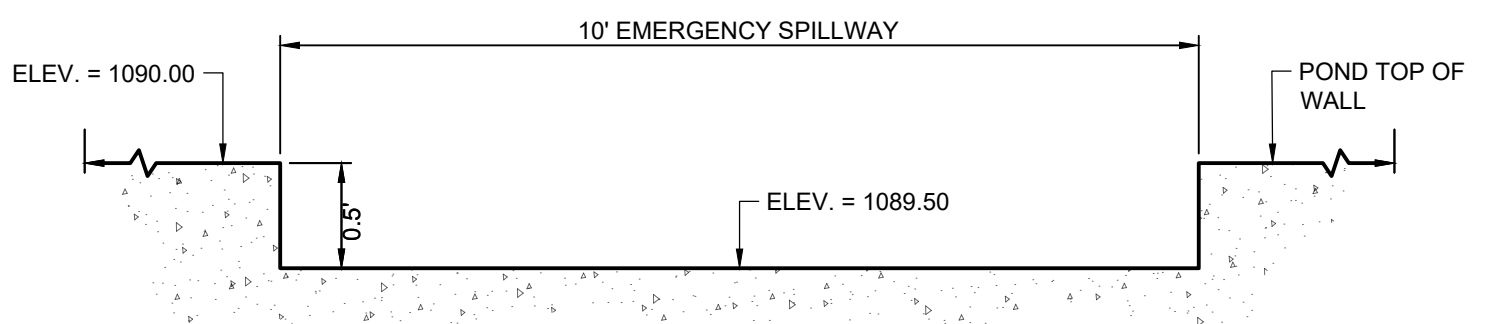
INLET CHANNEL SECTION D-D DETAIL  
 NOT TO SCALE

HYDRAULIC DATA

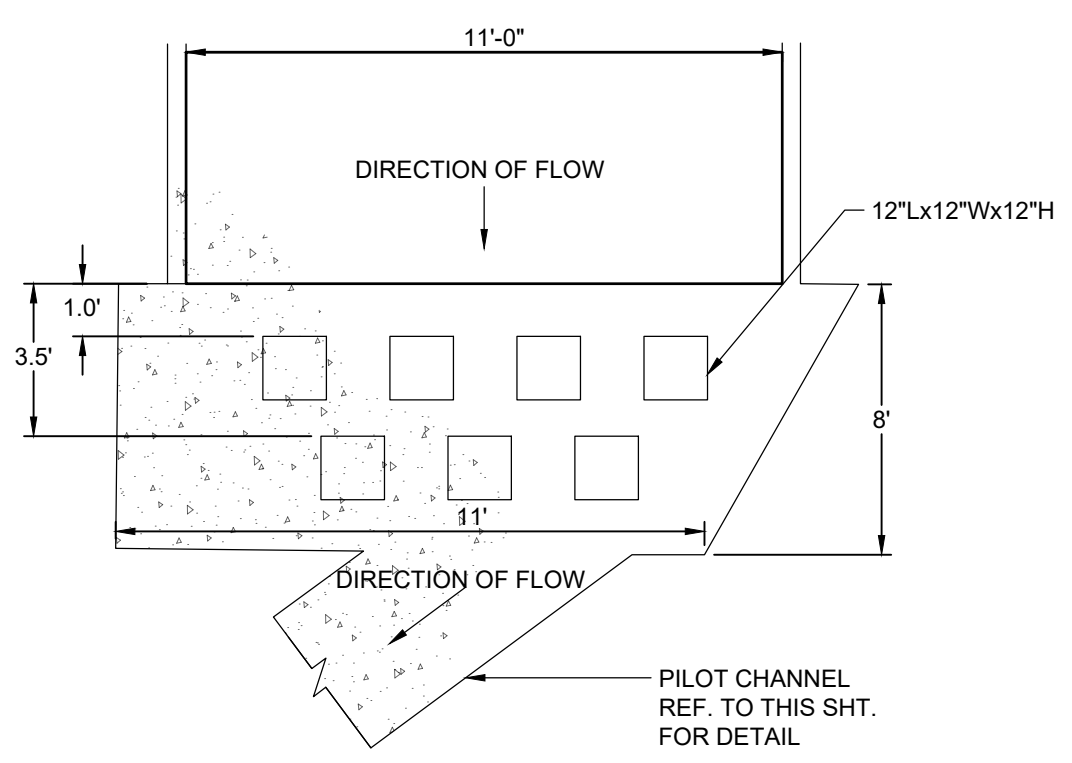
Q <sub>100</sub> = 36.24 CFS	Q <sub>25</sub> = 24.22 CFS
n = 0.011	n = 0.011
b <sub>w</sub> = 10.0'	b <sub>w</sub> = 10.0'
S = 2.61%	S = 2.61%
A = 3.40 SF	A = 2.80 SF
P = 10.68'	P = 10.56'
V = 10.06 ft/s	V = 8.65 ft/s
D = 0.34'	D = 0.25'



PILOT CHANNEL DETAIL  
 NOT TO SCALE



POND OUTLET - FRONT VIEW  
 NOT TO SCALE



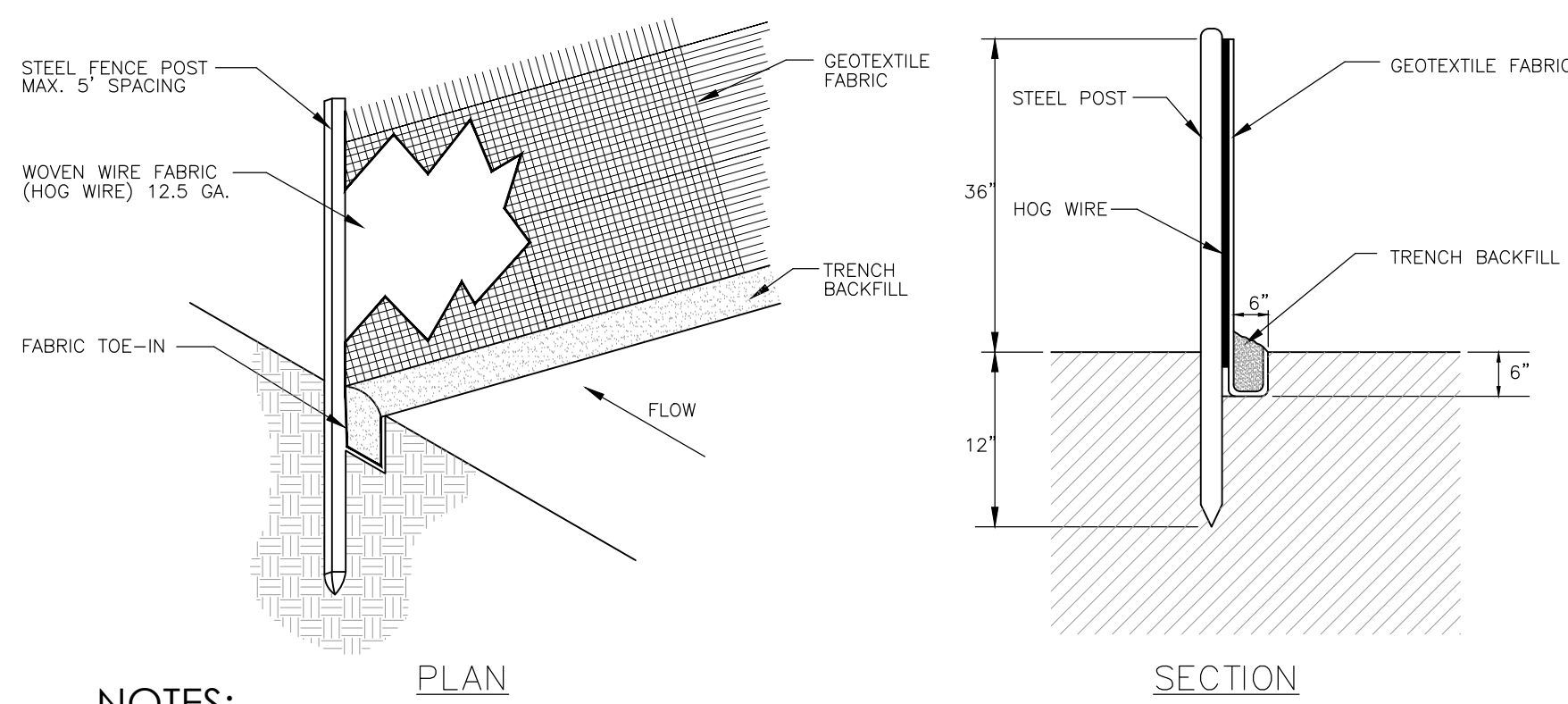
INLET DISSIPATOR DETAIL  
 NOT TO SCALE

Date: 01/23/2024, 2:28pm, User: JJS, Project: 24000 (City) 222135 - RFP - Proposed Drainage Area, Drawn: JJS, 13/22/2024, 2:28pm, User: JJS, Project: 24000 (City) 222135 - RFP - Proposed Drainage Area, Drawn: JJS

DESIGNED BY: AS  
 DRAFTED BY: AS  
 CHECKED BY: JJS  
 DATE: 2/22/2024

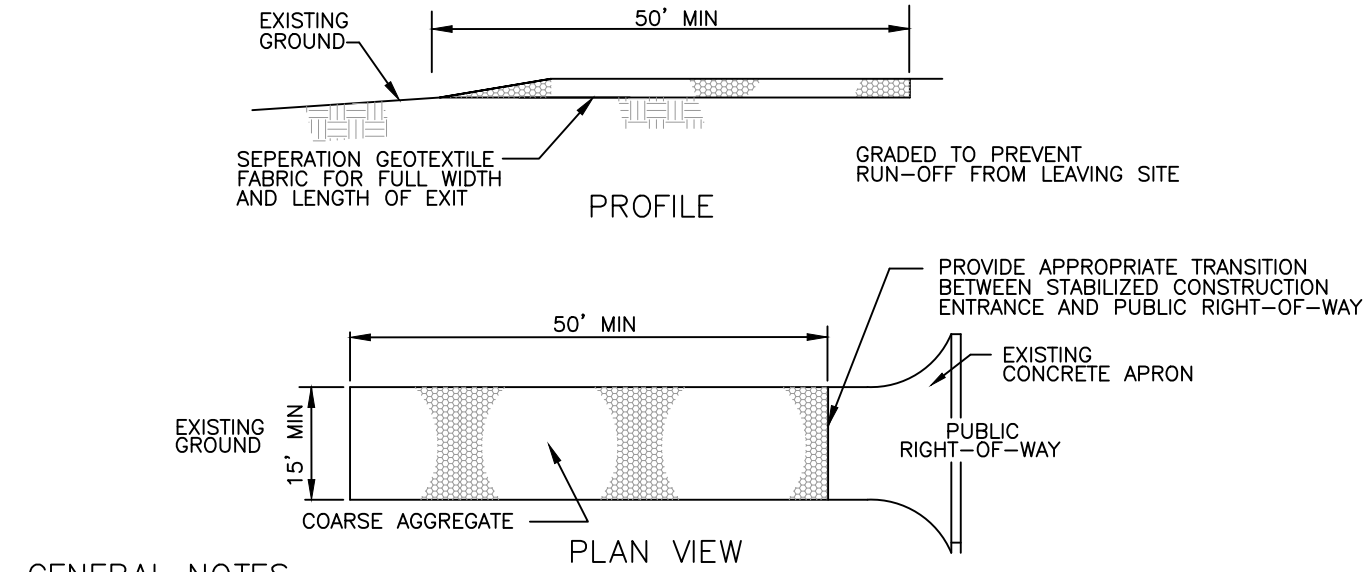
SHEET  
**E6.0**





**NOTES:**

- SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NON WOVEN 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.
- 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.
- WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12.5 GAUGE MINIMUM.
- 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 5 FEET ON CENTER.
- 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 1/4 ACRE/100 FEET OF FENCE.
- 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.
- 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.
- 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.
- SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES, OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE OLD FENCE.
- REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
- 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.

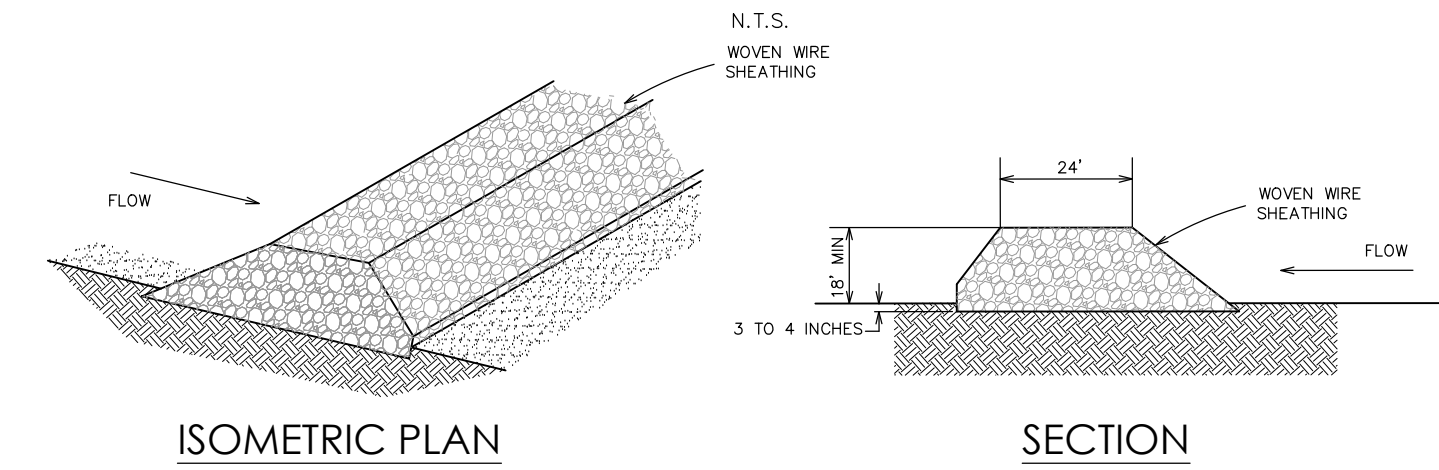


**GENERAL NOTES**

- LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS BUT NOT LESS THAN 50 FEET.
- THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
- WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A TRUCK WASHING AREA WHEN SHOWN ON THE CONSTRUCTION DRAWING. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
- STONE MATERIAL SHALL CONSIST OF 3 TO 5 INCH OPEN GRADED ROCK AND SHALL BE PLACED IN A LAYER OF AT LEAST 8 INCHES THICKNESS.

**NOTES:**

- THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION.
- THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8 INCHES.
- 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.
- AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
- THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
- THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
- PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
- PLACE STONE TO DIMENSIONS AND GRADE SHOWN. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
- 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.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
- WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- 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.
- ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE.



**NOTES:**

- 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.
- 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.
- LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE.
- BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
- PLACE THE ROCK ALONG THE SHEATHING TO A HEIGHT NOT LESS THAN 18".
- WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH THE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
- 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.
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY, FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
- REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER AND REPAIR ANY LOOSE WIRE SHEATHING.
- 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.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

**1 SILT FENCE DETAIL**

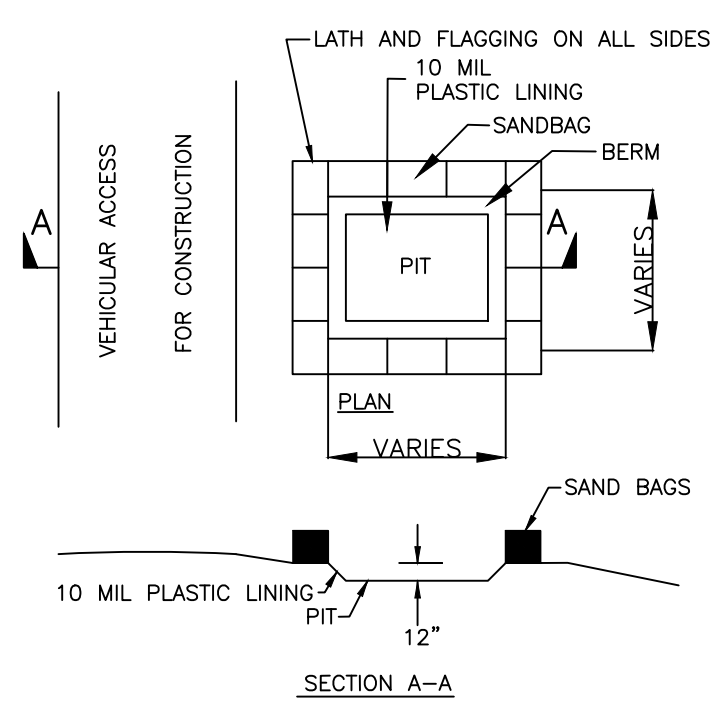
SCALE: NONE

**2 TEMPORARY CONSTRUCTION ENTRANCE / EXIT**

SCALE: NONE

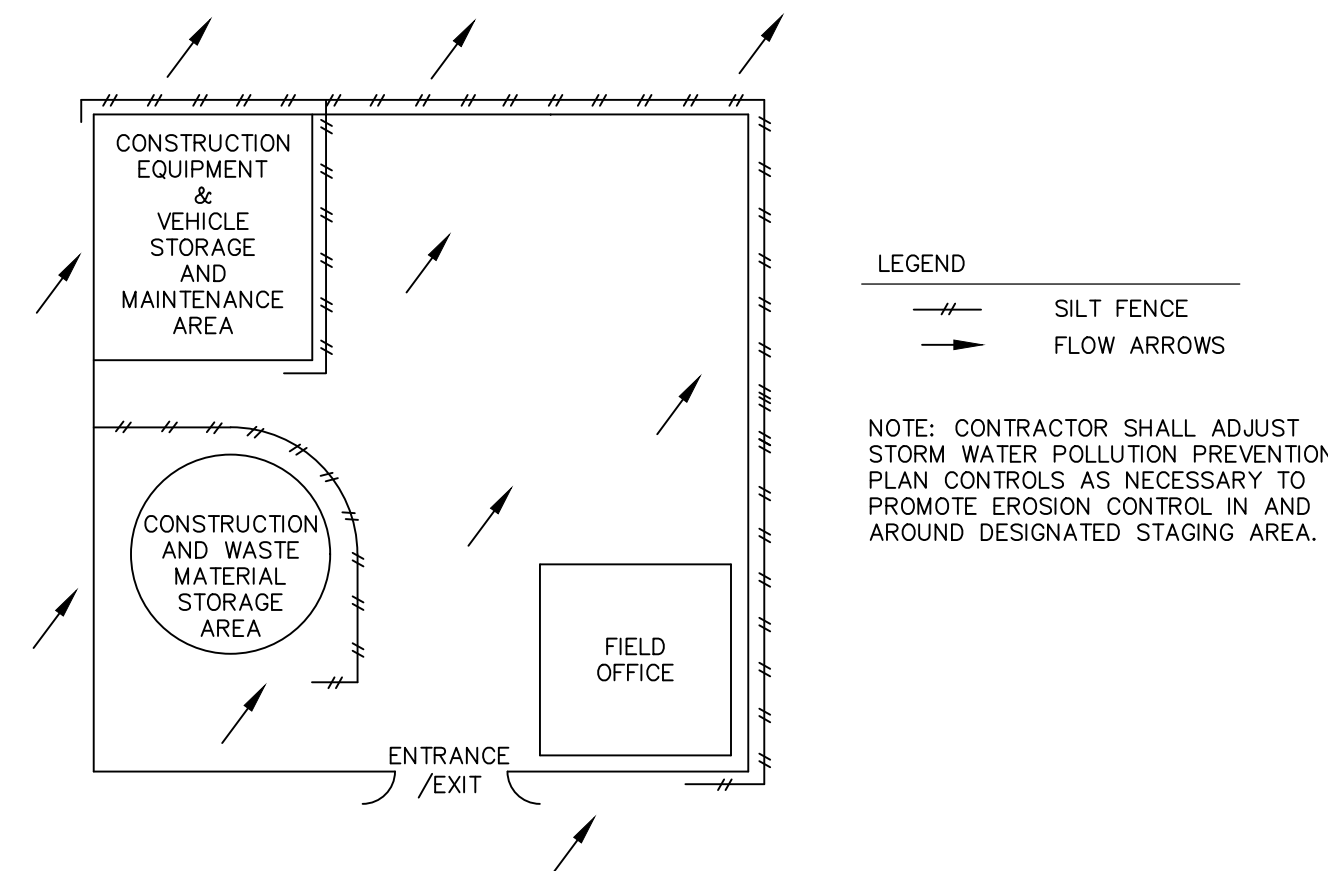
**3 ROCK BERM DETAIL**

SCALE: NONE



**GENERAL NOTES:**

- DETAILS ILLUSTRATE MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
- WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
- WASHOUT PIT SHALL NOT BE LOCATED IN AREA SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.



**LEGEND**  
 --- SILT FENCE  
 → FLOW ARROWS

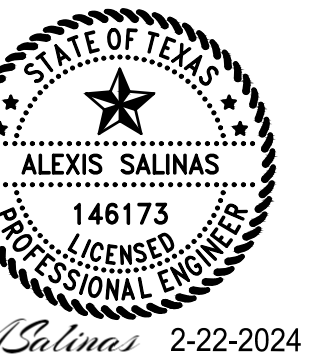
**NOTE:** CONTRACTOR SHALL ADJUST STORM WATER POLLUTION PREVENTION PLAN CONTROLS AS NECESSARY TO PROMOTE EROSION CONTROL IN AND AROUND DESIGNATED STAGING AREA.

**4 CONCRETE TRUCK WASHOUT PIT**

SCALE: NONE

**5 TYP. CONSTRUCTION STAGING AREA**

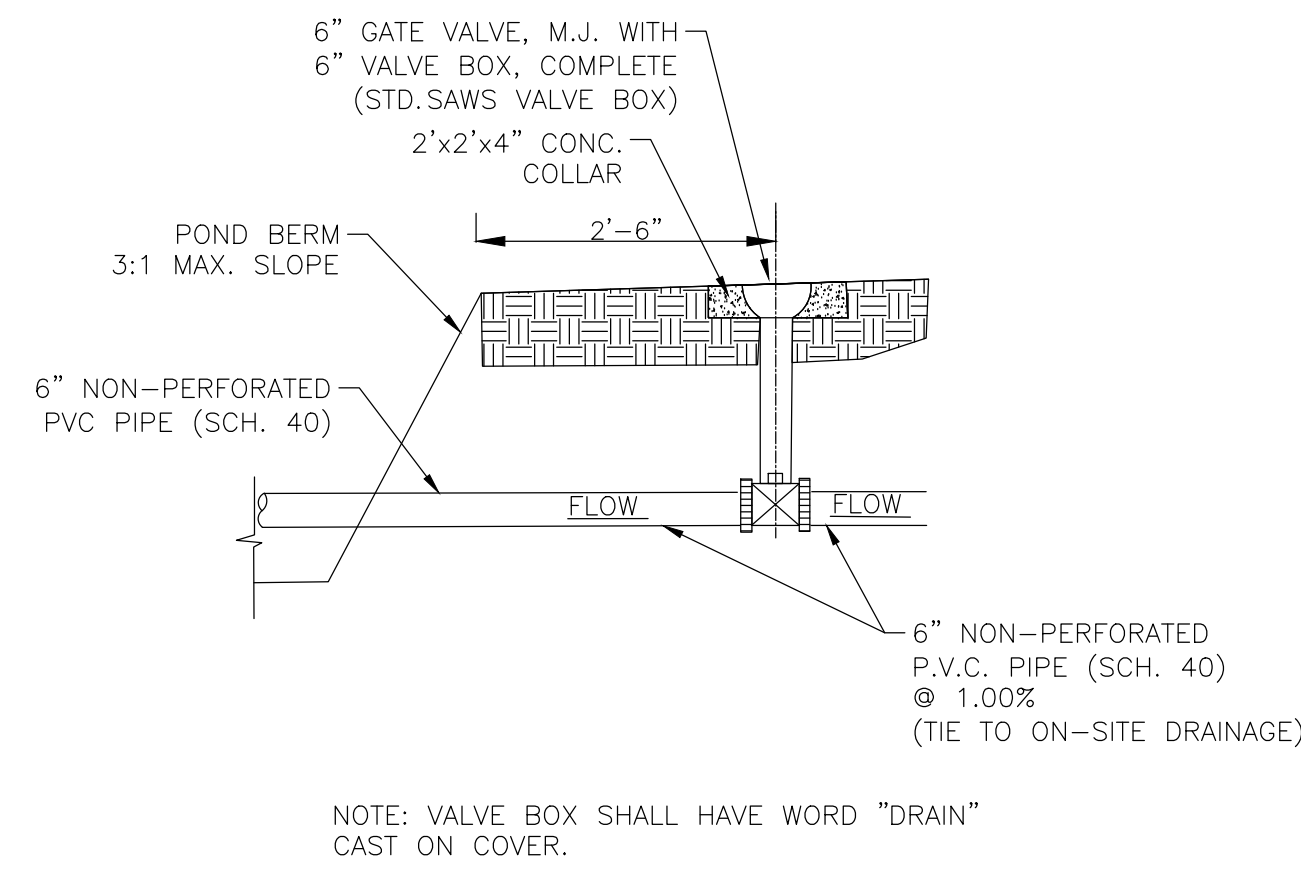
SCALE: NONE



DESIGNED BY:	AS
DRAFTED BY:	AS
CHECKED BY:	JJS
DATE:	2/22/2024

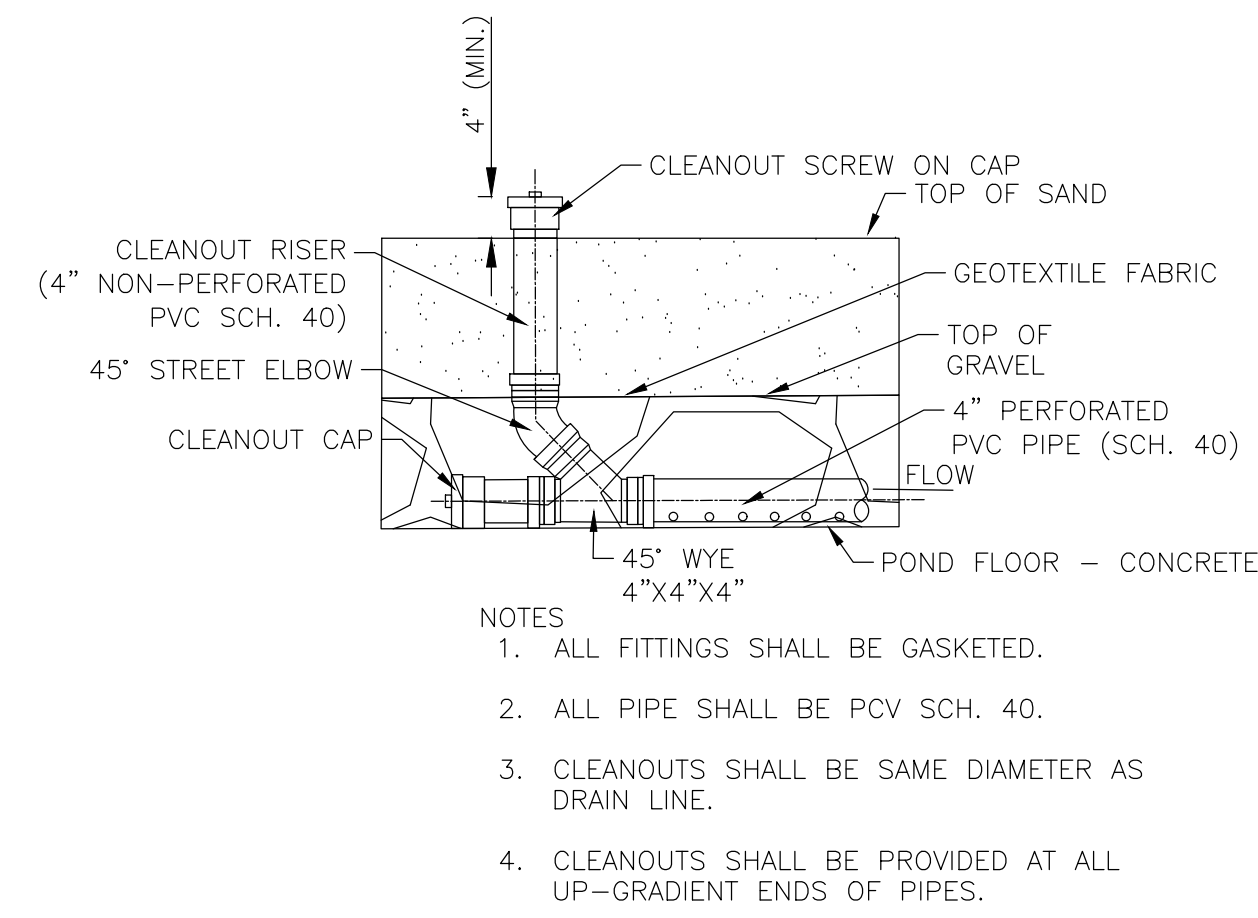
SHEET

E7.0



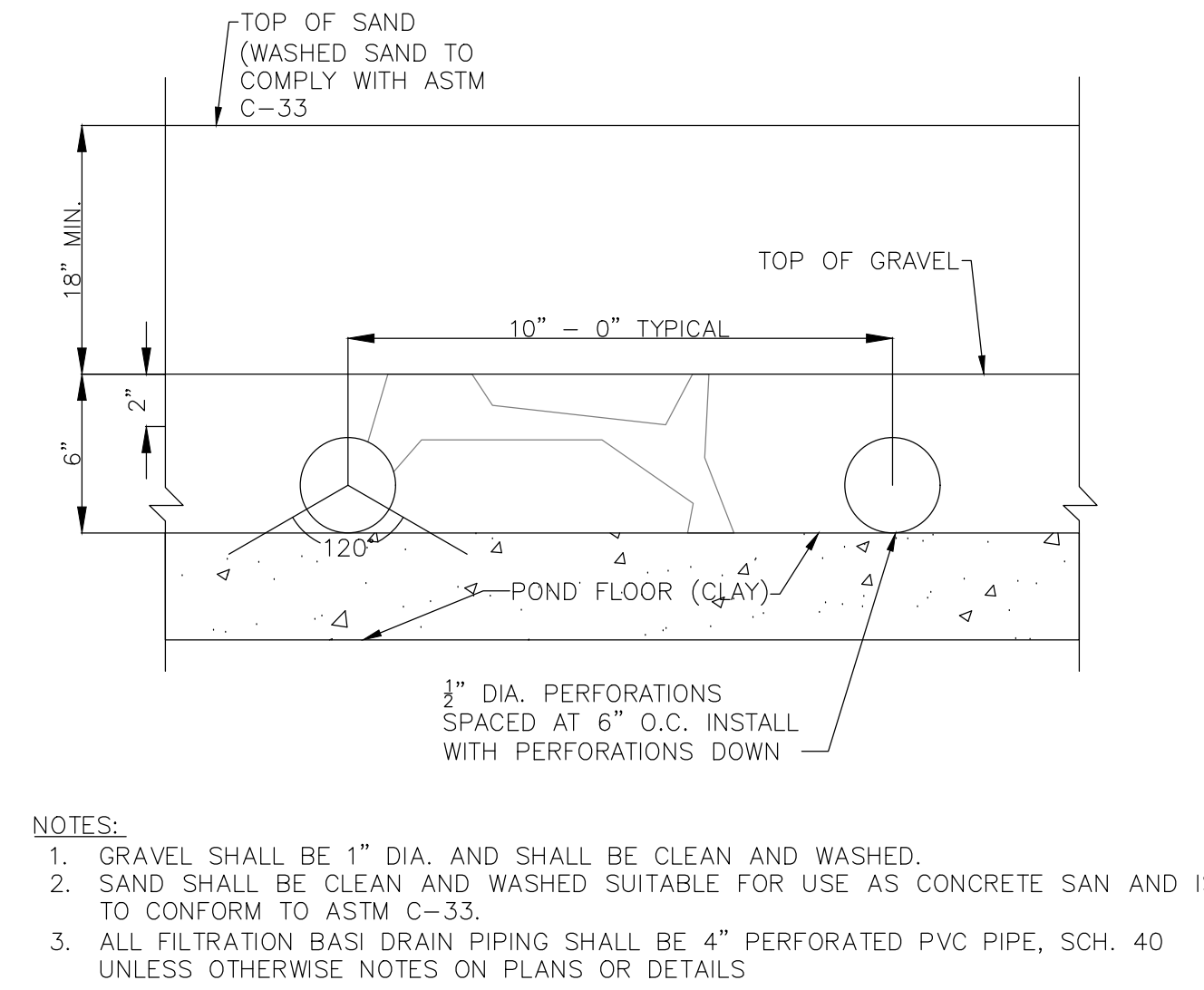
**1 GATE VALVE AT POND EXIT**

SCALE: NONE



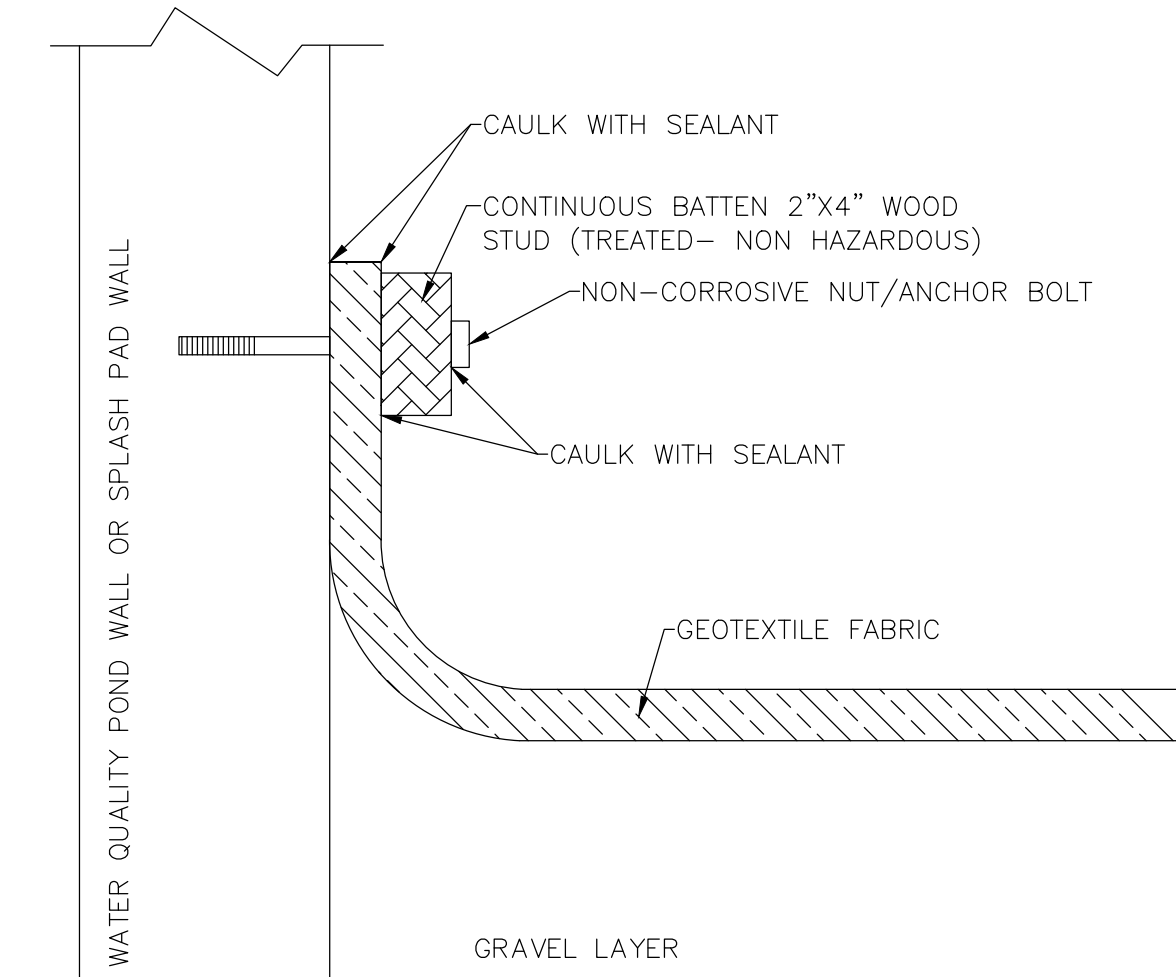
**2 CLEANOUT DETAIL**

SCALE: NONE



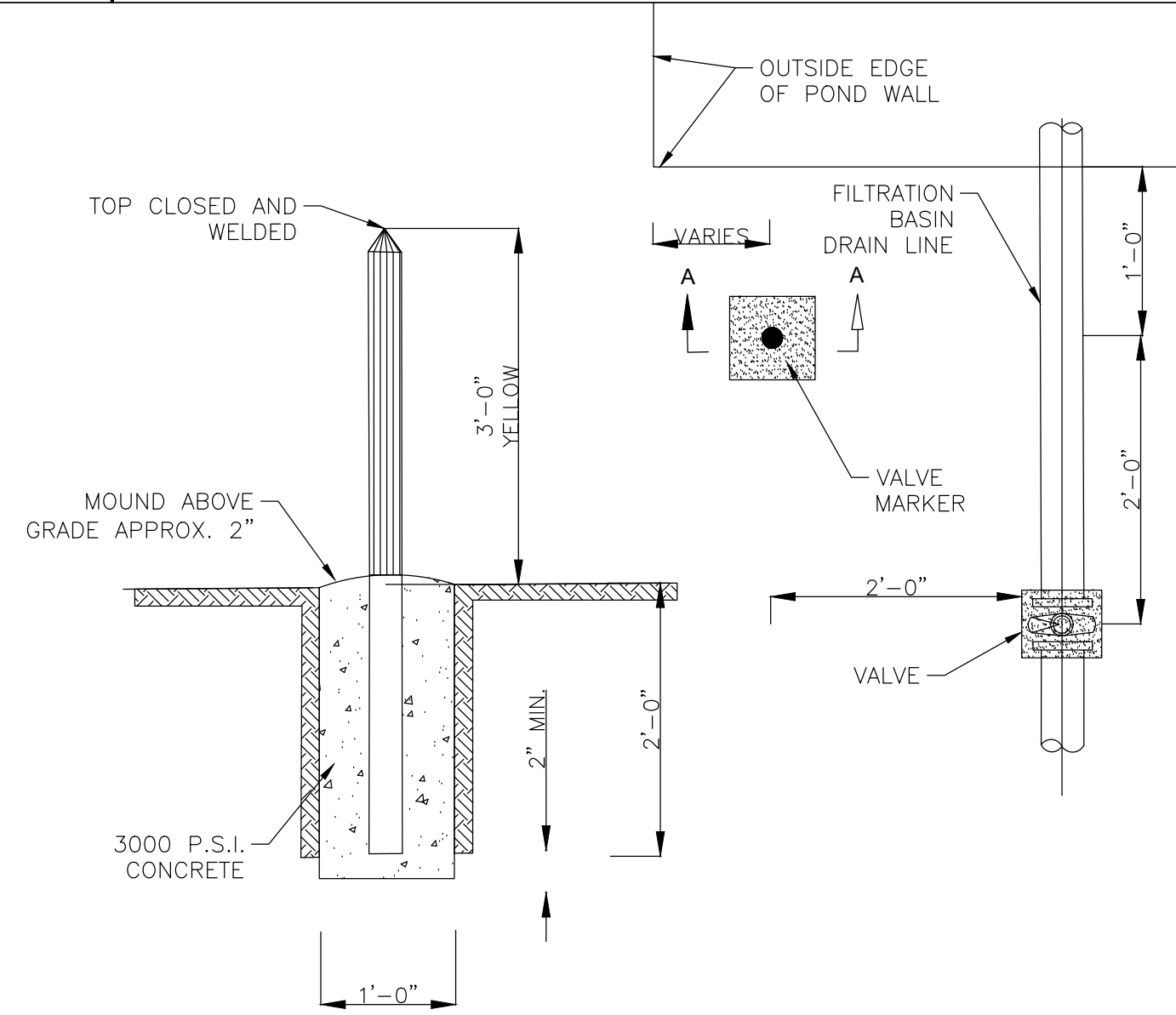
**3 PERFORATED PIPE LAYING DETAIL**

SCALE: NONE



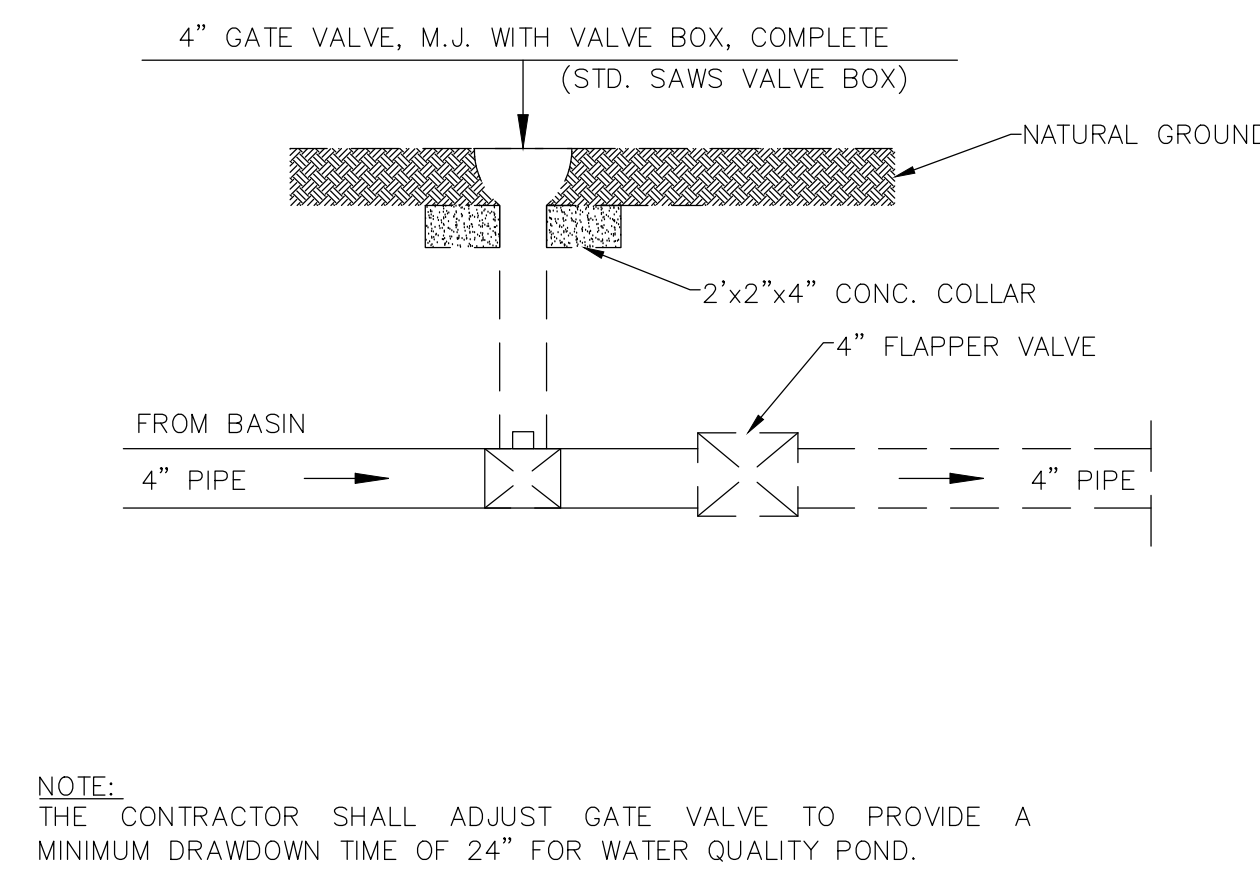
**4 GEOTEXTILE FABRIC CONNECTION DETAILS**

SCALE: NONE



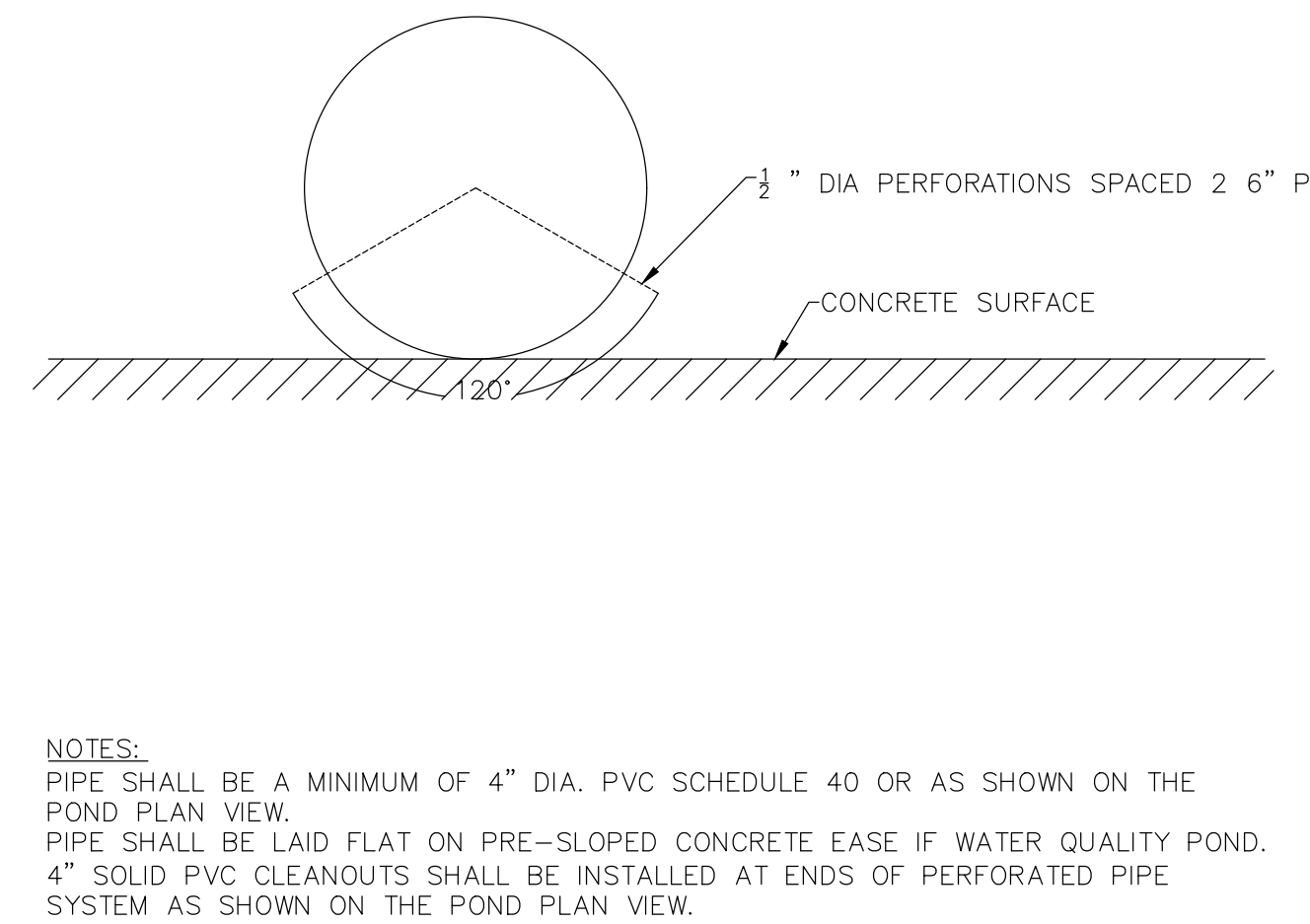
**5 VALVE MARKER AND LOCATION**

SCALE: NONE



**6 PERFORATED PIPE LAYING DETAIL**

SCALE: NONE



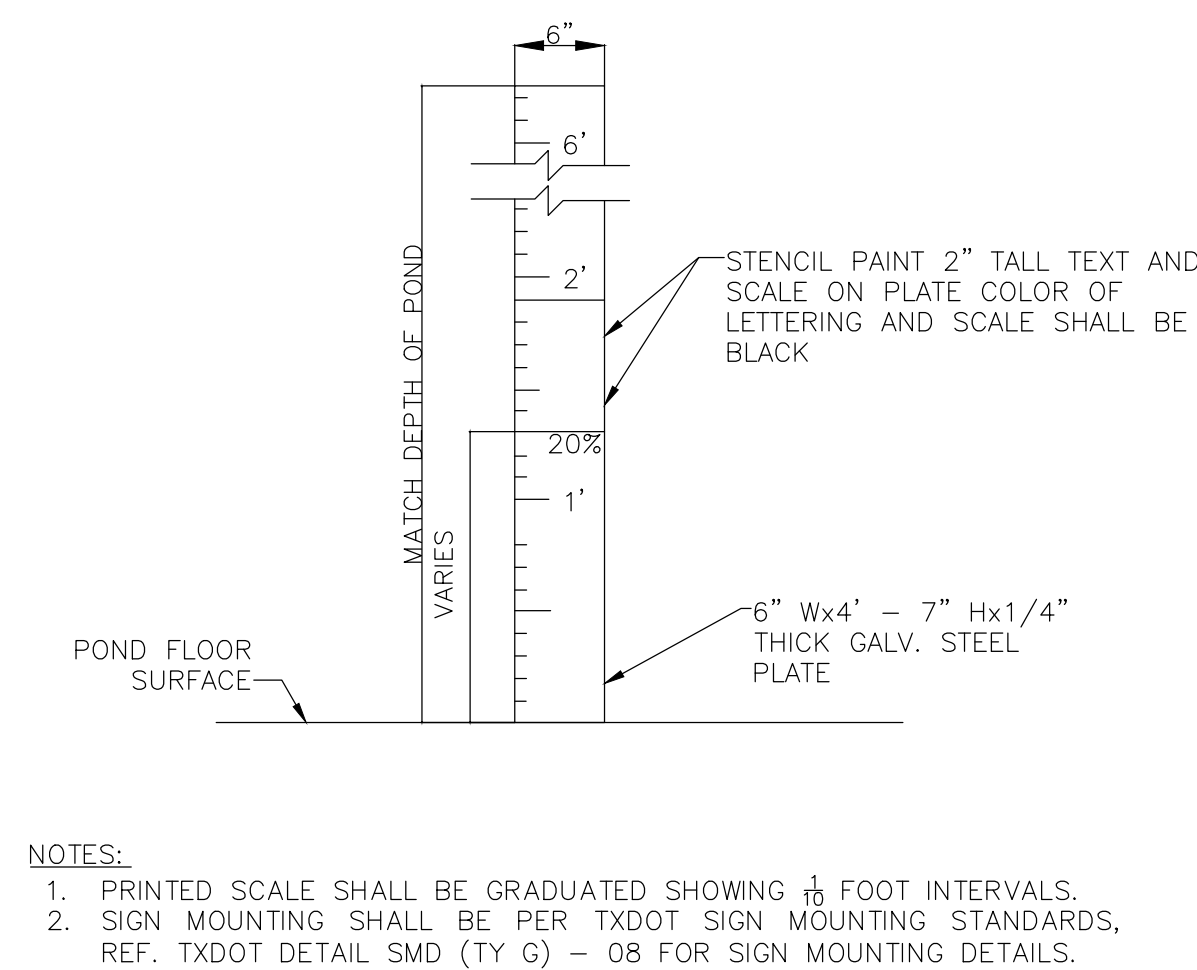
**7 4" PERFORATED PIPE DETAILS**

SCALE: NONE

- 8 CONSTRUCTION NOTES**
- CONTRACTOR ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR APPROVAL
  - CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO EACH OF THE FOLLOWING MILESTONES:
    - REINFORCING STEEL FOR BASIN WALL OR RIP-RAP LINER HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED AND DRAIN PIPE IS IN PLACE, WHERE EPDM LINER IS USED, CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE LINER HAS BEEN AT PROPER ELEVATION AND GRADE.
    - CONCRETE RIP-RAP OR EPDM LINER IS IN PLACE AND UNDER-DRAIN SYSTEM IS IN PLACE WITHOUT GRAVEL.
    - GRAVEL AROUND UNDER-DRAIN SYSTEM IS IN PLACE AND FILTER FABRIC IS UNINSTALLED AND ATTACHED TO WALL OR RIP-RAP.
    - SAND FILTER MEDIA HAS BEEN PLACED AND BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPED (WHERE APPLICABLE)
  - WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.
  - UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS CERTIFYING ELEVATIONS OF THE FOLLOWING:
    - TOP OF BANK AT EACH CORNER OF BASIN
    - TOP OF SLOPE AT EACH CORNER OF BASIN/SPLASH PAD / INLET PIE
    - OVERFLOW WEIR
  - BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS AND ACCUMULATION SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.
  - THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 24 HOURS. THE CONTRACTOR SHALL RESTRICT THE FLOW THROUGH ADJUSTING OF THE GATE VALVE ON THE DISCHARGE PIPE, SO AS TO PROVIDE THE MINIMUM 24 HOUR DRAWDOWN TIME.
  - CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION IN BASINS PER BASIN DETAIL SHEET PRIOR TO SITE CLOSEOUT.

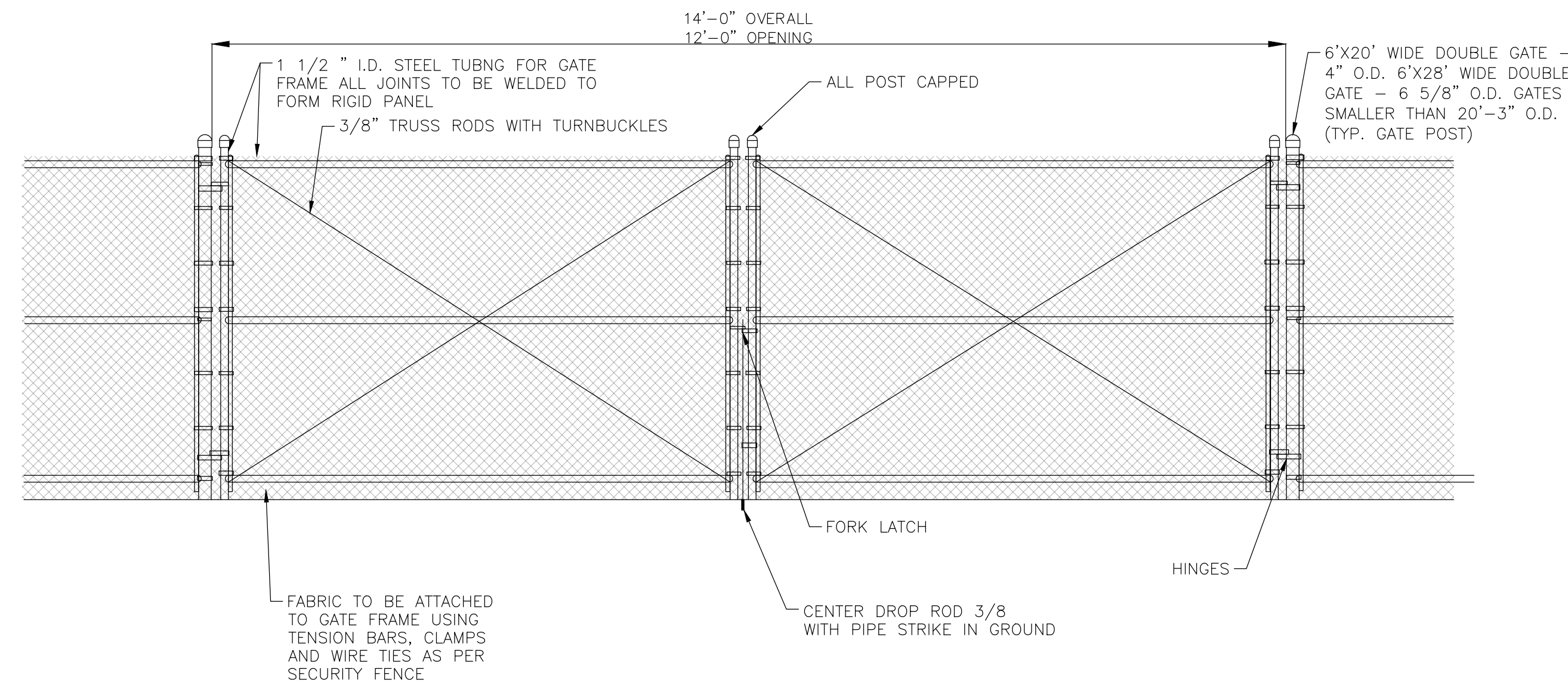
**9 SEDIMENT DEPTH MARKER**

SCALE: NONE



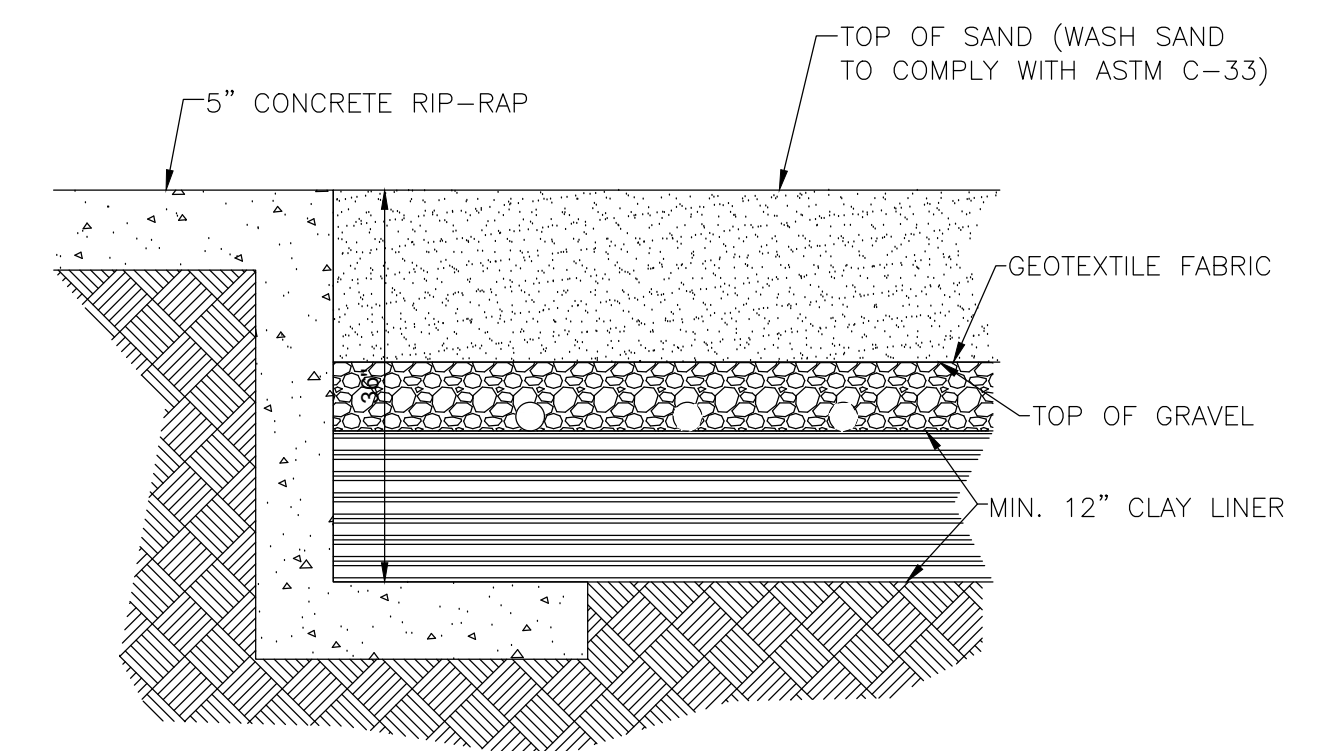
**10 CHAIN LINK FENCE GATE (EXAMPLE)**

SCALE: NONE



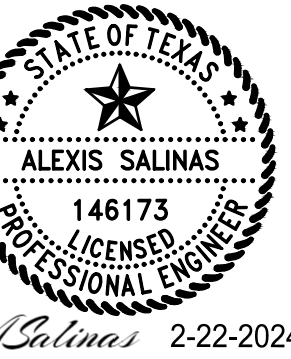
**11 CONCRETE/CLAY INTERFACE**

SCALE: NONE



**11 CONCRETE/CLAY INTERFACE**  
70% CONSTRUCTION DOCUMENTS

SCALE: NONE



SH-46 DEVELOPMENT  
GENERAL CONSTRUCTION  
DETAILS

A-A STORAGE  
6535 W TX-46  
NEW BRAUNFELS, TEXAS

DESIGNED BY: AS  
DRAFTED BY: AS  
CHECKED BY: JJS  
DATE: 2/22/2024

SHEET

E8.0

## **Attachment G**

### **Inspection, Maintenance, Repair, And Retrofit Plan**

#### **Permanent Pollution Abatement Measures**

#### **Maintenance Schedule and Maintenance Procedures**

This document has been prepared to provide a description and schedule for the performance of maintenance of permanent pollution abatement measures for SH 46 Development. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated into a project.

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners' association covenants, or other binding document.

The BMP sand filtration system will have to be fully constructed & operational prior to first occupancy of subdivision and will require weekly inspections and be maintained as necessary.

#### Sand Filtration System

Regular, routine maintenance is essential to effective, long-lasting performance of sand filters. Neglect or failure to service the filters on a regular basis will lead to poor performance and eventual costly repairs. It is recommended that sand filtration system BMPs be inspected on a quarterly basis and after large storms for the first year of operation. This intensive monitoring is intended to ensure proper operation and provide maintenance personnel with a feel for the operational characteristics of the filter. Subsequent inspections can be limited to semi-annually or more often if deemed necessary (Young et al., 1996).

Sand filters consist of basins that capture stormwater runoff and then filter the runoff through a bed of sand in the floor of the facility. These BMPs can be configured as either a single basin or as separate sedimentation and filtration basins. These facilities should be installed at grade to facilitate drying out of the sand between storm events. The objective of sand filters is to remove sediment and the pollutants from the first flush of pavement and impervious area runoff. The filtration of nutrients, organics, and coliform bacteria is enhanced by a mat of bacterial slime that develops during normal operations. One of the main advantages of sand filters is their adaptability; they can be used on areas with thin soils, high evaporation rates, low-soil infiltration rates, in limited space areas, and where groundwater is to be protected (Young et al., 1996).

Certain construction and maintenance practices are essential to efficient operation of the filter. The biggest threat to any filtrating system is exposure to heavy sediment loads that clog the filter media. Construction within the watershed should be complete prior to exposing the filter to stormwater runoff. All exposed areas should be stabilized to minimize sediment loads. Runoff from any unstabilized construction areas should be treated via a separate sediment system that bypasses the filter media.

Other recommended maintenance guidelines include:

**Inspections.** BMP facilities must be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired immediately. Cracks, voids and undermining should be patched/filled to prevent additional structural damage. Trees and root systems should be removed to prevent growth in cracks and joints that can cause structural damage.

**Sediment Removal.** Remove sediment from the inlet structure and sedimentation chamber when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least every year and from the sedimentation basin at least every 5 years.

**Media Replacement.** Maintenance of the filter media is necessary when the drawdown time exceeds 48 hours. When this occurs, the upper layer of sand should be removed and replaced with new material meeting the original specifications. Any discolored sand should also be removed and replaced. In filters that have been regularly maintained, this should be limited to the top 2 to 3 inches.

**Debris and Litter Removal.** Debris and litter will accumulate near the sedimentation basin outlet 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.

**Filter Underdrain.** Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.

**Mowing.** Grass areas in and around sand filters must 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. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation.

#### Documentation Procedures

1. A copy of the inspection report along with referenced maintenance task / procedure descriptions are located on the following pages.
2. The inspection report must be maintained by the responsible party and shall be readily available upon request.
3. The inspection report is incorporated as part of the WPAP Plan. The responsible party is responsible for completing and updating the form in compliance with TCEQ rules. An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

I understand that I am responsible for the maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

I, the owner / representative, have read and understand the requirements of the Maintenance Schedule & Maintenance Procedures outlined here-in and the attached Inspections & Maintenance Schedule & Report along with the referenced maintenance task / procedure descriptions.

Responsible Party: AAA Storage

Mailing Address: 4203 Spinnaker Cove

City, State: Austin, TX

Zip: 78731

Telephone: 704-754-3200

Email: shawn.beichler@aaastorage.com

Signature of Responsible Party

Date:

Shawn Beichler

1/22/24

INSPECTIONS AND MAINTENANCE SCHEDULE FOR PERMANENT POLLUTION ABATEMENT MEASURES

ABATEMENT MEASURES  
SH 46 Development

6535 West Highway 46 New Braunfels, Tx 78132

Recommended Frequency	Tasks to be Performed																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
After Significant Rainfall	✓							✓	✓	✓						✓	✓	✓	
Biannually	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓

\*At least one biannual inspection must occur during or immediately after a rainfall event

✓ Indicates maintenance procedure that applies to this specific site.

See description of maintenance task to be performed on the following pages. Frequency of maintenance task may vary depending on amount of rainfall and other weather-related conditions.

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

Task No Description				
1	Check Depth of Vegetation	YES	NO	N/A
2	Check Depth of Silt Deposit in Basin	YES	NO	N/A
3	Removal of Debris and Trash	YES	NO	N/A
4	Cut-off Valve	YES	NO	N/A
5	Inlet Splash Pad	YES	NO	N/A
6	Underdrain System	YES	NO	N/A
7	Structural Integrity	YES	NO	N/A
8	Discharge Pipe	YES	NO	N/A
9	Drawdown Time	YES	NO	N/A
10	For Pump Stations-wet well discharge pipe	YES	NO	N/A
11	For Pump Stations-wet well debris accumulation	YES	NO	N/A
12	For Pump Stations-above ground pump wiring	YES	NO	N/A
13	Visually Inspect Security Fencing for Damage or Breach	YES	NO	N/A
14	Inspections	YES	NO	N/A
15	Sediment Removal	YES	NO	N/A
16	Media Replacement	YES	NO	N/A
17	Debris and Litter Removal	YES	NO	N/A

18	Filter Underdrain	YES	NO	N/A
19	Mowing	YES	NO	N/A

By my signature below, I certify that all items have been inspected and are acceptable & in compliance with TCEQ BMP regulations or have been recommended for repairs as noted.

\_\_\_\_\_  
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

### **BMP Inspection Report -Maintenance Procedures**

1. Check Depth of Vegetation. Vegetation in the basin shall not exceed 18-inches in depth. When vegetation needs to be cut, it shall be cut to an approximately 4-inch height. A written record should be kept of inspection results and maintenance performed.
2. Check Depth of Silt Deposit in Basin. Top of cleanouts shall be set 4-inches above sand layer. When silt has accumulated to top of cleanouts, the silt shall be removed the top 2 inches of the sand medial shall also be removed and replaced with clean silica-based sand. A written record should be kept of inspection results and maintenance performed.
3. Removal of Debris and Trash. The basin and inlet structure shall be checked for the accumulations of debris and trash such as brush, limbs, leaves, paper cups, aluminum cans, plastic bottles, etc. Accumulated trash and debris shall be raked or collected from the basin and inlet structure and disposed of properly. A written record should be kept of inspection results and maintenance performed.
4. Cut-off Valve. The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24-hours and 48-hours). Count should be kept of number of turns to open and close the valve so that the valve can be reset to the starting position. Defects in the operation of the cut-off valve shall be corrected within 7 working days. A written record should be kept of inspection results and maintenance performed.
5. Inlet Splash Pad. The filter area around the inlet splash pad shall be checked for erosion and for the condition of the rock rubble. Erosion or disturbance of the rock rubble should be corrected by removing the rock rubble, restoring missing sand media to appropriate depth and replacement of the rock rubble. If the condition persists in subsequent inspections, the size of the rock rubble should be increased. Rubble should be placed to a density that minimizes the amount of exposed sand between the rock rubble. Deficiencies should be corrected within seven working days. A written record should be kept of inspection results and maintenance performed.
6. Underdrain System. The underdrain system shall be visually inspected for the accumulation of silt in the pipe system. The pipe clean-outs shall have the caps removed and visually inspected for accumulation of silt deposits. If silt deposits appear to have accumulated so as to significantly reduce the drain capacity of the pipes, then maintenance shall be performed. When silt deposits have accumulated to the stage described above, the clean-outs and



drainpipes can be flushed with a high-pressure water flushing process. Clean-out caps must be replaced onto the clean-outs after maintenance so as to avoid the possibility of short circuiting the filtering process. Sediment accumulation at outlet pipe or in wet well due to flushing shall be removed and disposed of properly. *A written record should be kept of inspection results and maintenance performed.*

7. Structural Integrity. In addition to Items 1 through 6 the following are measures which should be reviewed during a check of structural integrity: Observe the height of the confining berm for visible signs of erosion or potential breach. Signs of erosion should be corrected within 2 weeks or immediately in case of emergency conditions. Corrective measures include, but are not limited to, addition of topsoil or appropriate soil material so as to restore the original berm height of the sand filter basin. Restored areas shall be protected through placement of block sod in a checkerboard pattern. Bypass of filter process. This condition can manifest itself in several ways. One way is by visually inspecting the clean-outs for accumulation of silt as described in Item 6. Significant accumulations of silt could be a sign of a torn filter fabric. Observations should be made over several inspection cycles to determine whether the condition persists. A second non-intrusive way of making observations for structural condition would be to visually look for collapsed or depressed areas along the edge of the filter media interface with basin side slope. If condition exists, corrective action should be performed within 15 working days. Removal of sand and replacement of filter fabric and/or pipe and gravel may be necessary. *A written record should be kept of inspection results and maintenance performed.*
8. Discharge Pipe. The basin discharge pipe shall be checked for accumulation of silt, debris or other obstructions which could block flow. 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. A written record should be kept of inspection results and maintenance performed.
9. Drawdown Time. Drawdown time is not required due to the single chamber design (Vortech). Drawdown time of 30 hours is required for sand filtration basin.
10. For Pump Stations. Check wet well discharge pipe to confirm flow through the pump system. If flow is not present, allow sufficient time for pump to cycle on and off. If flow does not occur, the wet well should be checked for the level of water. The wet well should be opened, and the on/off float switches should be moved up and down to activate the pump. If the pump does not start, a repair technician shall be called into repair the malfunction within 5 working days. *A written record should be kept of inspection results and maintenance performed.*

11. For Pump Stations. Check the wet well for accumulation for trash, debris, and silt. Trash and debris shall be removed and disposed of properly. Silt depth can be checked by probing the bottom of the wet well with a stick or PVC pipe. Silt accumulations should be removed when silt collects to a depth of 6 inches over the entire wet well bottom. Silt can be removed by vacuum pump method. If silt buildup continues, underdrain system shall be inspected. *A written record should be kept of inspection results and maintenance performed.*
12. For Pump Stations. Visually check aboveground pump wiring and connections for damage. Damaged or loose connections should be repaired within 5 working days. *A written record should be kept of inspection results and maintenance performed.*
13. Visually Inspect Security Fencing for Damage or Breach. Check maintenance access gates for property operation. Damage to fencing or gates shall be repaired within 5 working days. *A written record should be kept of inspection results and maintenance performed.*
14. Inspections. BMP facilities must be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired immediately. Cracks, voids and undermining should be patched/filled to prevent additional structural damage. Trees and root systems should be removed to prevent growth in cracks and joints that can cause structural damage.
15. Sediment Removal. Remove sediment from the inlet structure and sedimentation chamber when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least every year and from the sedimentation basin at least every 5 years.
16. Media Replacement. Maintenance of the filter media is necessary when the drawdown time exceeds 48 hours. When this occurs, the upper layer of sand should be removed and replaced with new material meeting the original specifications. Any discolored sand should also be removed and replaced. In filters that have been regularly maintained, this should be limited to the top 2 to 3 inches.
17. Debris and Litter Removal. Debris and litter will accumulate near the sedimentation basin outlet 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.

18. Filter Underdrain. Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.

19. Mowing. Grass areas in and around sand filters must 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. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation.

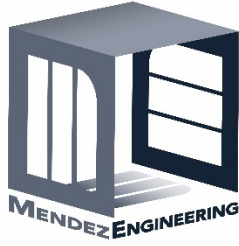
**Attachment H**  
**Pilot-Scale Field Testing Plan**

Not applicable to this project

## **Attachment I**

### **Measures for Minimizing Surface Stream Contamination**

Not applicable to this project



## **SECTION G**

**Agent Authorization – Form TCEQ-0599**

**Application Fee – Form TCEQ-0574**

**Copy of Check**

**TCEQ Core Data – Form TCEQ-10400**

**Agent Authorization Form**  
For Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

I \_\_\_\_\_ John Muhich \_\_\_\_\_  
Print Name

**OWNER**

\_\_\_\_\_ Title - Owner/President/Other \_\_\_\_\_  
of \_\_\_\_\_ BIZ PARK BERRY LANE, LLC \_\_\_\_\_  
Corporation/Partnership/Entity Name

have authorized \_\_\_\_\_ Jose J. Sosa, PE, CFM \_\_\_\_\_  
Print Name of Agent/Engineer

of \_\_\_\_\_ Mendez Engineering, PLLC \_\_\_\_\_  
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:

[Handwritten Signature]  
Applicant's Signature

2/7/2023  
Date

THE STATE OF Texas §

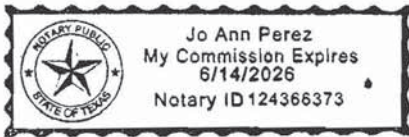
County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared JOANN MURPHY 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 7 day of FEB, 2023.

[Handwritten Signature]  
NOTARY PUBLIC

JOANN PEREZ  
Typed or Printed Name of Notary



MY COMMISSION EXPIRES: 6-14-2026



# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: SH 46 Development

Regulated Entity Location: 6535 West Highway 46, New Braufels, TX 78132

Name of Customer: John Muhich

Contact Person: Jose Sosa P.E

Phone: (210)802-0808

Customer Reference Number (if issued):CN 605416965

Regulated Entity Reference Number (if issued):RN TBD

### 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

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

### Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
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	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	15.974 Acres	\$ 6,500
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: Shawn Beichler

Date: 1/22/24

# 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***

<b><i>Project</i></b>	<b><i>Project Area in Acres</i></b>	<b><i>Fee</i></b>
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

### ***Organized Sewage Collection Systems and Modifications***

<b><i>Project</i></b>	<b><i>Cost per Linear Foot</i></b>	<b><i>Minimum Fee- Maximum Fee</i></b>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

### ***Underground and Aboveground Storage Tank System Facility Plans and Modifications***

<b><i>Project</i></b>	<b><i>Cost per Tank or Piping System</i></b>	<b><i>Minimum Fee- Maximum Fee</i></b>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

### ***Exception Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Exception Request	\$500

### ***Extension of Time Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Extension of Time Request	\$150

**REPLACE WITH COPY OF CHECK**



TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 605416965		RN

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)	
<input type="checkbox"/> New Customer		<input checked="" type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
<b>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).</b>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		<i>If new Customer, enter previous Customer below:</i>	
BIZ PARK BERRY LANE LLC dba AAA Storage TX-46			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
804432868	32083214893	88-0864195	
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other: LLC	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
<b>15. Mailing Address:</b>	4203 SPINNAKER COVE		
	City	AUSTIN	State TX ZIP 78731 ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
		Shawn.Beichler@AAASStorage.com	
<b>18. Telephone Number</b>	<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)	
( 704 ) 754-3200		( ) -	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information
<b>The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).</b>
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)
SH 46 DEVELOPMENT

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	6535 West Highway 46, New Braufels, TX 78132						
	City	New Braufels	State	TX	ZIP	78132	ZIP + 4
24. County	Comal						

**Enter Physical Location Description if no street address is provided.**

25. Description to Physical Location:	The Proposed Project is situated at 6535 West Highway 46, New Braufels, TX 78132. The center of the Site is located at 29°45'26.83"N Latitude and 98°14'42.89"W Longitude (WGS 84). The Site comprises two (2) parcels that combine to form an area of approximately 15.974 acres. Currently, the Site is occupied by a public storage unit business, a commercial gym facility, and an unoccupied residential home. The proposed project aims to expand the Site with additional commercial buildings and a septic system.
---------------------------------------	---

26. Nearest City	State	Nearest ZIP Code
New Braufels	Tx	

27. Latitude (N) In Decimal:	29.60917	28. Longitude (W) In Decimal:	98.44111		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	45	26	98	14	42

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)
4225		493110	

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

34. Mailing Address:	P.O. Box 839966						
	City	San Antonio	State	TX	ZIP	78205	ZIP + 4

35. E-Mail Address:		
36. Telephone Number	37. Extension or Code	38. Fax Number <i>(if applicable)</i>
( 210 ) 207-8022		( ) -

**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.

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

**SECTION IV: Preparer Information**

40. Name:	Jose J. Sosa, P.E.	41. Title:	SR. Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
( 210 ) 802-0808		( ) -	JSosa@MendezEngineering.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.

<b>Company:</b>	Mendez Engineering, PLLC	<b>Job Title:</b>	SR. Project Manager
<b>Name (In Print):</b>	Jose J. Sosa, P.E.	<b>Phone:</b>	( 210 ) 802- 0808
<b>Signature:</b>		<b>Date:</b>	