Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Bulverde Convenience Store Subdivision						**2. Regulated Entity No.:**			
3. Customer Name: Viata Bulverde property						**4. Customer No.:**			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-Residential			**8. Site (acres):**		10.698 Acres	
9. Application Fee:	$ 6,500		**10. Permanent BMP(s):**			Sand Filter System			
11. SCS (Linear Ft.):	zero		**12. AST/UST (No. Tanks):**						
13. County:	Comal		**14. Watershed:**			Cibolo Creek			

Application Distribution

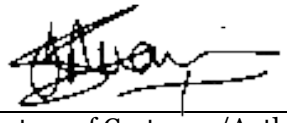
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)		___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	_X_ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park _X_San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Inayat Momin
Print Name of Customer/Authorized Agent
 08/01/2024
Signature of Customer/Authorized Agent Date

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

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.

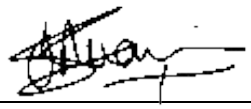
Signature

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: INAYAT MOMIN

Date: *08/01/2024*

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Bulverde Convenience Store Subdivision
2. County: Comal
3. Stream Basin: Cibolo Creek
4. Groundwater Conservation District (If applicable): Comal Trinity Groundwater Conservation District
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST

☐ UST ☐ Exception Request

7. Customer (Applicant):

Contact Person: INAYAT MOMIN
Entity: VIATA BULVERDE PROPERTY
Mailing Address: 2931 ANTIQUE BEND
City, State: San Antonio, TX Zip: 78259
Telephone: (210)326-2551 FAX: 210-308-8842
Email Address: inayatmomin1@gmail.com

8. Agent/Representative (If any):

Contact Person: Salah E. Diab, Ph.D, P.E.
Entity: Seda Consulting Engineers, Inc.
Mailing Address: 6735 IH-10 West
City, State: San Antonio, TX Zip: 78201
Telephone: (210) 308-0057 FAX: 210-308-8842
Email Address: seda@satx.rr.com & sed.seda.sa@gmail.com

9. Project Location:

☒ The project site is located inside the city limits of Bulverde.
☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
☐ 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.

at the Southwest Corner of Starlight Drive and FM1863.

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: 11/03/23

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)

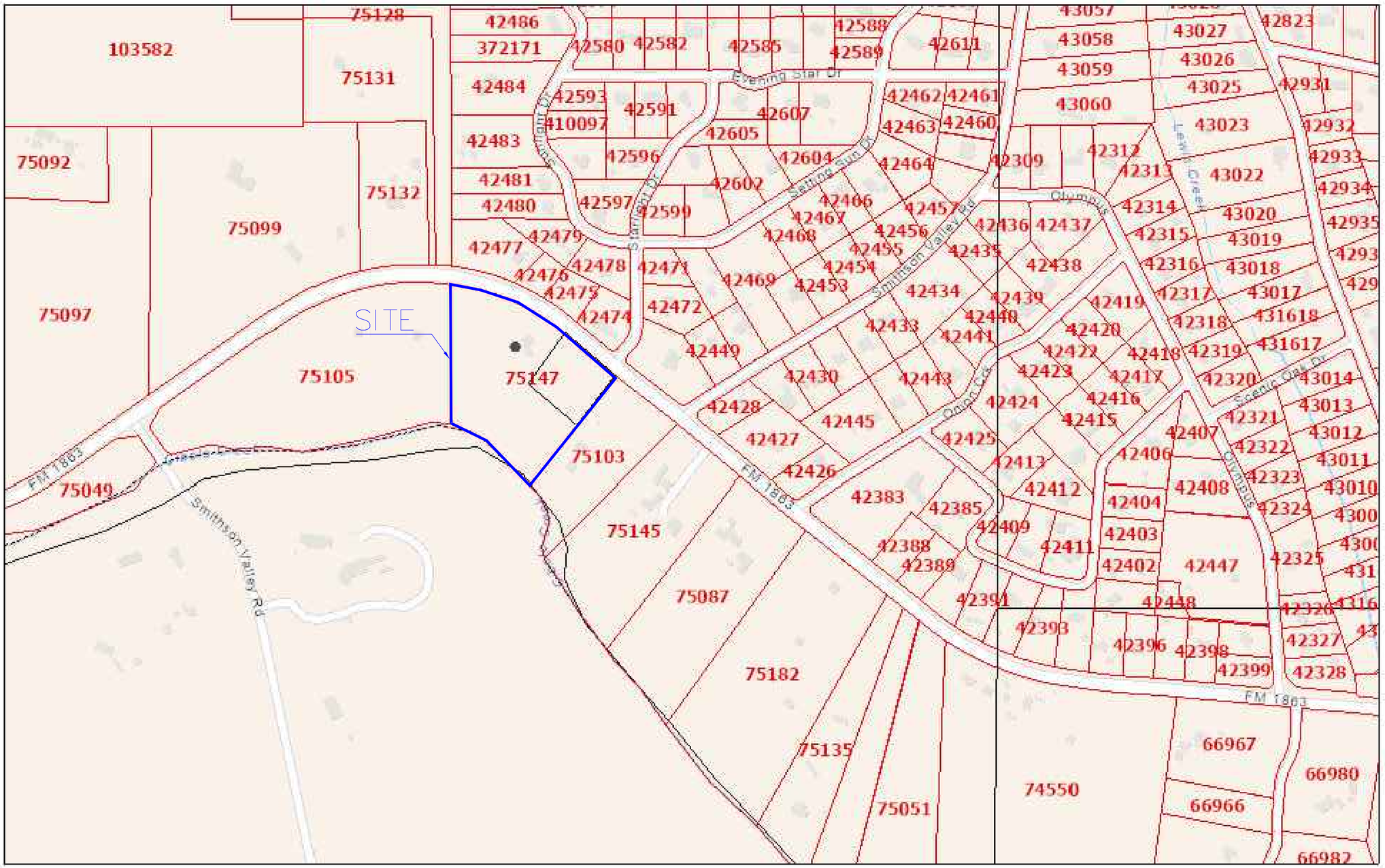
20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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

General Information Form Attachments

ATTACHMENT A

Comal CAD Web Map



8/5/2024, 9:55:55 AM

🟥 Parcels	⬚ Texas Counties
☐ Abstracts	

ROAD MAP

(NOT TO SCALE)

08/01/2024

SALAH E. DIAB 55516

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri Community Maps Contributors, BCAD, Comal County, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin,

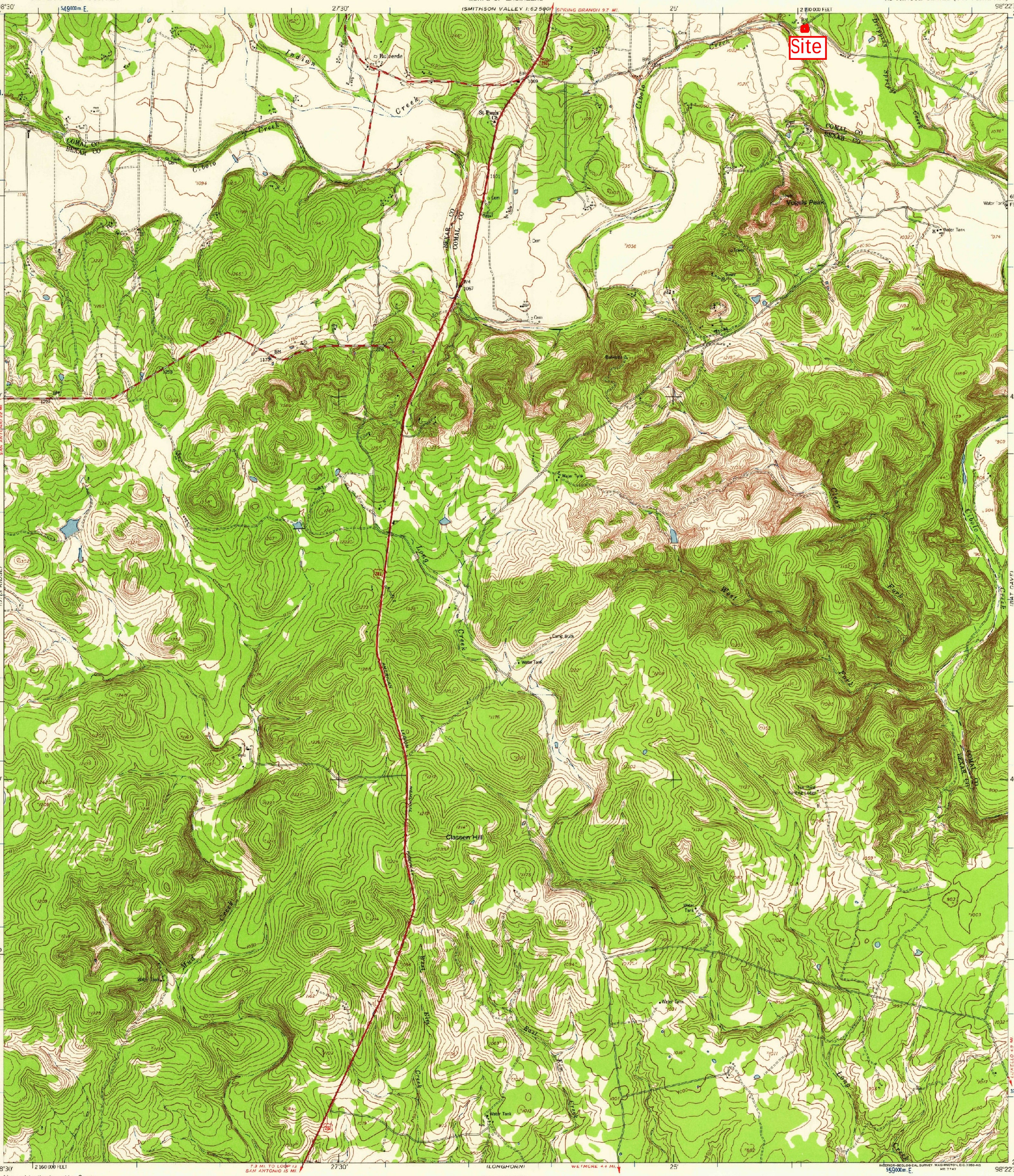
Comal County Appraisal District, BIS Consulting - www.bisconsulting.com

ATTACHMENT B

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

BULVERDE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped by the Army Map Service
Published for civil use by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1952. Photography field annotated 1953

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue

Unchecked elevations are shown in brown

TRUE NORTH
MAGNETIC NORTH
9½°
APPROXIMATE MEAN DECLINATION, 1953

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D.C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
U.S. Route

U.S.G.S.
FILE COPY
TOPOGRAPHIC DIVISION

BULVERDE, TEX.
N2937.5—W9822.5/7.5
1953

ATTACHMENT C

PROJECT DESCRIPTION

Bulverde Convenience Store Subdivision is a 10.698 acres property out of which only disturbed 2.42-acre is used to design for water quality pond located on 4470 FM 1863, Bulverde, and Comal County, Texas. Based on COSA-LIDAR mapping, the subject site referred to as Bulverde Convenience Store Subdivision is located on the Bulverde northeast quadrant.

Under existing conditions, the average grade on the disturbed 2.42-acre tract of land is 1.83%. The subject site is covered by short grass.

Under the proposed condition, the average grade on the 2.42 acre tract of land is 1.83%. Under proposed conditions, one lot of land is covered by proposed building, proposed driveway and parking lots. The total onsite impervious cover for the lot of land is 92,650 square feet or 2.12 acres. The total increase in impervious for this development is 2.12 acres.

100 year flood line of Cibolo creek is flowing the downstream of the subject site. The total property will flow through this creek directly. Please see the proposed exhibits on the report.

According to FIRM Map No. 48091C0220f and 48091C0385F dated on September 2, 2009, the property has been mapped partially outside the 1% floodplain. Refer to Maps for the FIRM Map.

LOCATION MAP   NOT TO SCALE

C.P.S. NOTE:

1.) THE CITY OF SAN ANTONIO AS PART OF ITS ELECTRIC, GAS, WATER, AND WASTEWATER SYSTEMS–CITY PUBLIC SERVICE BOARD (CPS ENERGY) AND SAN ANTONIO WATER SYSTEM (SAWS) – IS HEREBY DEDICATED EASEMENTS AND RIGHTS–OF–WAY FOR UTILITY, TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE AND SERVICE FACILITIES IN THE AREAS DESIGNATED ON THIS PLAT AS "ELECTRIC EASEMENT", "ANCHOR EASEMENT","SERVICE EASEMENT", "OVERHANG EASEMENT", "UTILITY EASEMENT", "GAS EASEMENT", "TRANSFORMER EASEMENT", "WATER EASEMENT", "SANITARY SEWER EASEMENT" AND/OR "RECYCLED WATER EASEMENT" FOR THE PURPOSE OF INSTALLING, CONSTRUCTING, RECONSTRUCTING, MAINTAINING, REMOVING, INSPECTING, PATROLLING, AND ERECTING UTILITY INFRASTRUCTURE AND SERVICE FACILITIES FOR THE REASONS DESCRIBED ABOVE. CPS ENERGY AND SAWS SHALL ALSO HAVE THE RIGHT TO RELOCATE SAID INFRASTRUCTURE AND SERVICE FACILITIES WITHIN EASEMENT AND RIGHT–OF–WAY AREAS, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT LANDS FOR THE PURPOSE OF ACCESSING SUCH INFRASTRUCTURE AND SERVICE FACILITIES AND THE RIGHT TO REMOVE FROM SAID LANDS ALL TREES OR PARTS THEROF, OR OTHER OBSTRUCTIONS WHICH ENDANGER OR MAY INTERFERE WITH THE EFFICIENCY OF WATER, SEWER, GAS, AND/OR ELECTRIC INFRASTRUCTURE AND SERVICE FACILITIES. NO BUILDINGS, STRUCTURES, CONCRETE SLABS, OR WALLS WILL BE PLACED WITHIN EASEMENT AREAS WITHOUT AN ENCROACHMENT AGREEMENT WITH THE RESPECTIVE UTILITY.

2.) ANY CPS ENERGY OR SAWS MONETARY LOSS RESULTING FROM MODIFICATIONS REQUIRED OF CPS ENERGY OR SAWS INFRASTRUCTURE AND SERVICE FACILITIES, LOCATED WITHIN SAID EASEMENT, DUE TO GRADE CHANGES OR GROUND ELEVATION ALTERATIONS SHALL BE CHARGED TO THE PERSON OR PERSONS DEEMED RESPONSIBLE FOR SAID GRADE CHANGES OR GROUND ELEVATION ALTERATIONS.

3.) THIS PLAT DOES NOT AMEND, ALTER, RELEASE OR OTHERWISE AFFECT ANY EXISTING ELECTRIC, GAS, WATER, SEWER, DRAINAGE, TELEPHONE, CABLE TV EASEMENTS OR ANY OTHER EASEMENTS FOR UTILITIES UNLESS THE CHANGES TO SUCH EASEMENTS ARE DESCRIBED HEREON.

MINIMUM FINISHED FLOOR ELEVATION NOTE:

THE MAXIMUM WATER SURFACE ELEVATION DURING THE 100–YEAR STORM EVENT SHALL BE NO LESS THAN 2 FEET BELOW THE FINISHED FLOOR ELEVATION OF ADJACENT RESIDENTIAL DWELLING AND PUBLIC, COMMERCIAL, AND INDUSTRIAL BUILDING.

SURVEYOR'S NOTES:

1) PROPERTY CORNERS ARE MONUMENTED WITH A CAP OR DISK MARKED "RPLS5904" UNLESS NOTED OTHERWISE;
2) COORDINATES SHOWN ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (CORS 1996) FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE DISPLAYED IN GRID VALUES DERIVED FROM THE NGS COOPERATIVE CORS NETWORK;
3) DIMENSIONS SHOWN ARE SURFACE; AND
4) BEARINGS ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (CORS 1996), FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE.

MISCELLANEOUS NOTES:

1) DEVELOPMENT IS SUBJECT TO THE CITY OF BULVERDE CODE OF ORDINANCES.
2) CONTOURS SHOWN ARE BASED OFF OF AN ON THE GROUND SURVEY. THE DATUM USED TO GENERATE THE CONTOURS IS THE NORTH AMERICAN DATUM OF 1983 NAD83 (NA2011) EPOCH 2010.00, FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE.
3) PARTS OF THE PARCELS ARE LOCATED WITHIN A FEMA 100–YEAR FLOODPLAIN AND IF APPLICABLE, PARCEL IS LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AND DEVELOPMENTS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE MUST COMPLY WITH TCEQ EDWARDS AQUIFER RULES, 30 TAC §213.

PLAT NUMBER

SUBDIVISION PLAT ESTABLISHING

BULVERDE CONVENIENCE STORE

BEING A TOTAL OF 10.698 ACRES SITUATED IN THE AGAPITAN GAYTON SURVEY NO. 194, ABSTRACT NO. 174, BEING PART OF 143.3 ACRES TRACT, AS RECORDED IN VOLUME 972, PAGE 803 OF THE PUBLIC OFFICIAL RECORDS OF COMAL COUNTY, TEXAS.

ESTABLISHING LOT 01,02 & 03, COMAL COUNTY, TEXAS.

GRAPHIC SCALE

60 0 30 60 120

(IN FEET)
1 INCH = 100 FT.

Seda Consulting Engineers, Inc.
SCE
FIRM REGISTRATION NO: F–1601
6735 IH 10 W
SAN ANTONIO, TEXAS 78201
(210) 308–0057
FAX: (210) 308–8842
E–MAIL: SEDA@SATX.RR.COM
CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

CAESAR A. GARCIA
REGISTERED PROFESSIONAL LAND SURVEYOR
FIRM REGISTRATION NO. 10194785
14384 HUBER ROAD
SEGUIN, TEXAS 78155
PH: (512) 470–4669

DATE: 09/13/2023   JOB # 1907

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD	CHRD BRG
C1	09°13'15"	1096.30	176.43	176.24	S77°18'35"E
C2	15°27'38"	1106.30	298.52	297.62	N59°38'24"W
C3	28°08'58"	956.30	469.83	465.12	S66°17'57"E
C4	0°22'26"	1106.30	7.22	7.22	N51°43'22"W

LEGEND:

FOUND 1/2" IRON ROD UNLESS OTHERWISE NOTED	●
SET 1/2" IRON ROD UNLESS OTHERWISE NOTED	○
OFFICIAL PUBLIC RECORDS OF COMAL COUNTY	O.P.R.C.C.
DEED AND PLAT RECORDS OF COMAL COUNTY	D.P.R.C.C.
RIGHT–OF–WAY	R.O.W.
EXISTING CONTOURS	– –978– –
CENTERLINE	—-—℄– —
ACRE	AC.
SQUARE FEET	S.F.
VOLUME / PAGE	VOL. / PG.
UNDERGROUND UTILITIES, ELECTRIC, GAS, TELEPHONE AND CABLE TV EASEMENT	U, E, G, TEL & CATV ESM'T
NEW CITY BLOCK	NCB
DOCUMENT	DOC
SPOT ELEVATION AS PER SURVEY	☒

STATE OF TEXAS
COUNTY OF BEXAR

I HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN THIS PLAT TO THE MATTERS OF STREETS, LOTS AND DRAINAGE LAYOUT. TO THE BEST OF MY KNOWLEDGE THIS PLAT CONFORMS TO ALL REQUIREMENTS OF THE UNIFIED DEVELOPMENT CODE, EXCEPT FOR THOSE VARIANCES GRANTED BY THE SAN ANTONIO PLANNING COMMISSION.

SALAH E. DIAB
55516

____
SALAH E DIAB
LICENSED PROFESSIONAL ENGINEER
FIRM REGISTRATION NO: F–1601
6735 IH 10 W
SAN ANTONIO, TEXAS 78201

COUNTY OF GUADALUPE

I HEREBY CERTIFY THAT THE ABOVE PLAT CONFORMS TO THE MINIMUM STANDARDS SET FORTH BY THE TEXAS BOARD OF PROFESSIONAL LAND SURVEYING ACCORDING TO AN ACTUAL SURVEY MADE ON THE GROUND

5904

____
CAESAR A. GARCIA
REGISTERED PROFESSIONAL LAND SURVEYOR
FIRM REGISTRATION NO. 10194785
14384 HUBER ROAD
SEGUIN, TEXAS 78155

STATE OF TEXAS
COUNTY OF COMAL

KNOWN ALL MEN BY THESE PRESENTS:

THE OWNER OF LAND SHOWN ON THIS PLAT AND WHOSE NAME IS SUBSCRIBED HERETO, AND IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, HEREBY DEDICATES TO THE USE OF THE PUBLIC FOREVER ALL STREETS, PARKS, WATER COURSES, DRAINS, EASEMENTS AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED.

____
OWNER

OWNER/DEVELOPER:
INAYAT MOMIN
VIATA BULVERDE PROPERTY
2931 ANTIQUE BEND
SAN ANTONIO, TEXAS 78259
PH: (210)–326–2551

STATE OF TEXAS
COUNTY OF COMAL

BEFORE ME, THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED INAYAT MOMIN KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS

__________DAY OF ______________________, A.D. 20

____
NOTARY PUBLIC, BEXAR COUNTY, TEXAS

THIS PLAT OF BULVERDE CONVENIENCE STORE HAS BEEN SUBMITTED TO AND CONSIDERED BY THE CITY PLANNING AND ZONING COMMISSION OF THE CITY OF BULVERDE, TEXAS AND IS HEREBY APPROVED BY SUCH COMMISSION.

DATED THIS ____________ DAY OF ____________, YEAR____________.

BY: ______________________________.
CHAIRPERSON

STATE OF TEXAS
COUNTY OF COMAL

I ________________ COUNTY CLERK OF COMAL COUNTY, DO HEREBY

CERTIFY THAT THIS PLAT WAS FILED FOR RECORD IN MY OFFICE, ON THE

DAY OF ________ A.D. ________ AT ________ M. AND DULY RECORDED THE

DAY OF ________ A.D. ________ AT ________ M. IN THE DEED AND PLAT

RECORDS OF COMAL COUNTY, IN BOOK/VOLUME ________ ON PAGE

IN TESTIMONY WHEREOF, WITNESS MY HAND AND OFFICIAL SEAL OF OFFICE,

THIS

________ DAY OF ____________ A.D., 20___.

COUNTY CLERK, COMAL COUNTY TEXAS

BY: ______________________ , DEPUTY

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.

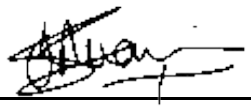
Signature

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: Inayat Momin

Date: *08/01/2024*

Signature of Customer/Agent:



Regulated Entity Name: Bulverde Convenience Store Subdivision

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):10.698 AC.

3. Estimated projected population:12

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	7,500	÷ 43,560 =	0.172
Parking	85,150	÷ 43,560 =	1.955
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover	92,650	÷ 43,560 =	2.127

Total Impervious Cover 2.127 **÷ Total Acreage** 10.698 **X 100 =** 19.88**% 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 x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.

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

11. ☐ A rest stop will be included in this project.

    ☐ A rest stop will not be included in this project.

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

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

15. Wastewater will be disposed of by:

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

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

☐ Sewage Collection System (Sewer Lines):

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

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

☐ 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" = 30'.

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): FEMA Panel # 48091C0385F, Dated Sept. 22, 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 0 (#) 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.

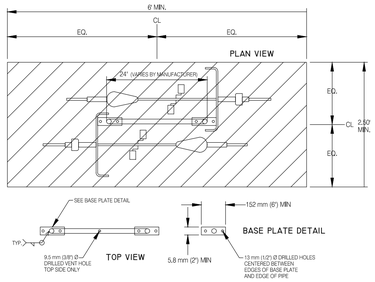
30. ☐ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

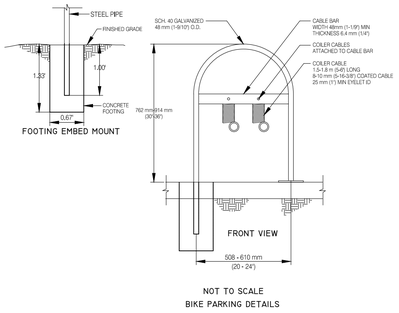
ATTACHMENT A

Factors Affecting Surface Water Quality

1. **Rooftop and concrete parking area (may be oil dripping from cars).**

2. **Temporary (maybe oil from machinery) during construction.**





Minimum vehicle spaces required = 41

Vehicle spaces provided = 74

Minimum bike parking spaces required = 74x0.10= 8 bike parking

Bike parking spaces provided 8 standard bike parking

Compact vehicle spaces provided = 0

Minimum accessible vehicle spaces required, 1 standard 1 van

Accessible vehicle spaces provided, 3 standard 3 van

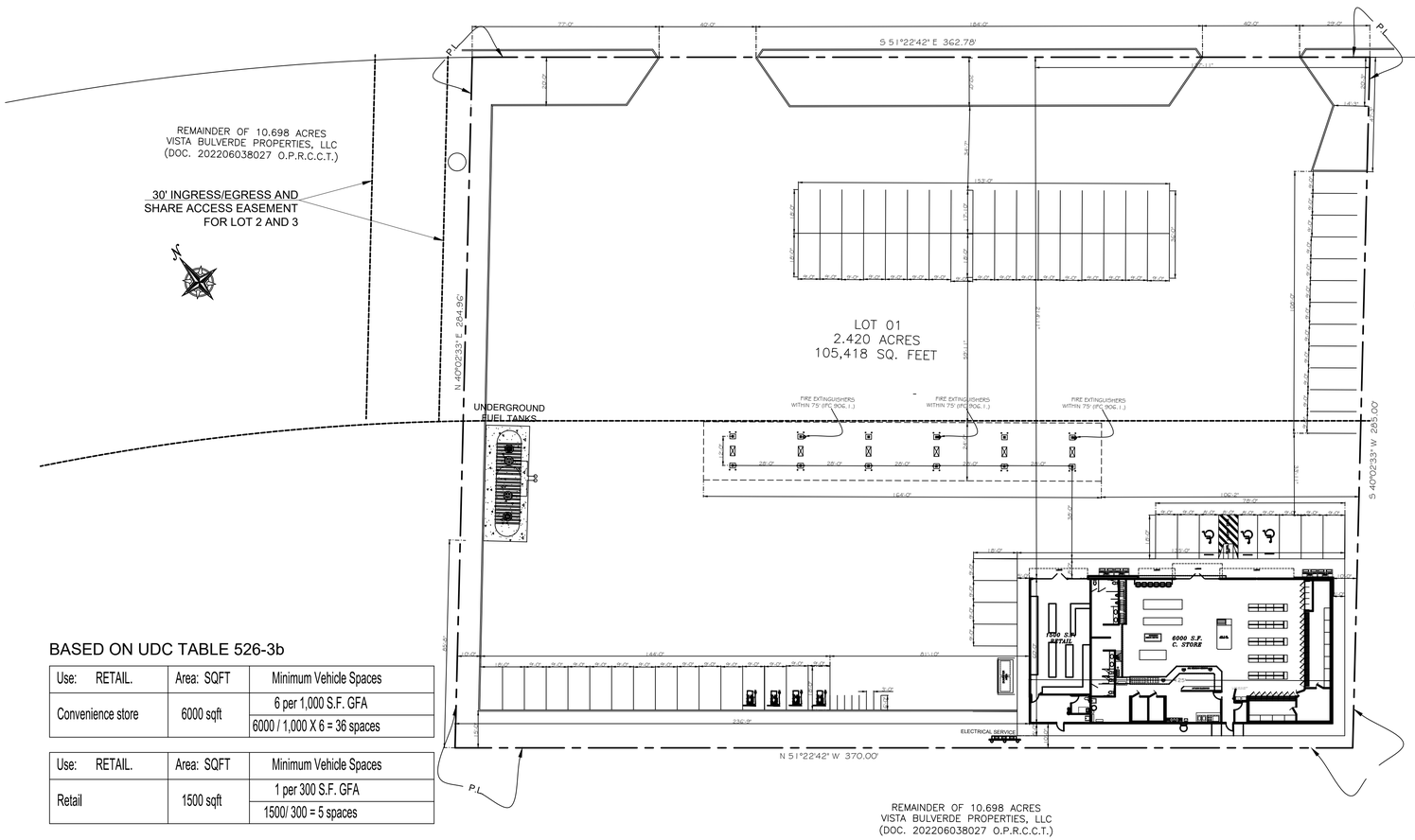
GRAPHIC SCALE
NOT TO SCALE
SCALE 1":30'
30' 10' 0 15' 30'

08/01/2024

STATE OF TEXAS
SALAH E. DIAB
55516
REGISTERED
PROFESSIONAL ENGINEER

STARLIGHT DR.
STARLIGHT WAY
(VOL. 3, PGS. 22-23 P.R.C.C.T.)

F.M.1863
80' R.O.W.
(VOL. 114, PG. 109 D.R.C.C.T.)



5.00 ACRES
ALFONSO D. ORANTES AND
NOEMI ORANTES
(DOC# 200206001014 O.P.R.C.C.T

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY (R.O.W.) LINE / SUBDIVISION BOUNDARY
		ADJACENT PROPERTY
(XXX)		RECORD INFORMATION
		BENCHMARK
LP		LIGHT POLE
PP		POWER POLE
		DOWN GUY
T		TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
		WATER METER
	WM	WATER METER VAULT
WTRMH		WATER MANHOLE
		TELEPHONE RISER
		CABLE TV RISER
		ELECTRIC BOX
		ELECTRIC METER
		GAS METER
		GAS VALVE
TCM	TCM	TRAFFIC CONTROL BOX
TSP	TSP	TRAFFIC SIGNAL POST
GMKR		UNDERGROUND GAS LINE MARKER
		GREASE TRAP (SIZE VARIES)
SD		STORMDRAIN LINE
W	XX"W	WATER LINE
FIRE	XX"FL	FIRE LINE
WW	XX"WW	WASTEWATER LINE
GAS	GAS	GAS LINE
OHE	OHE	OVERHEAD ELECTRIC (PRIMARY)
UGE	UGE	UNDERGROUND ELECTRIC (PRIMARY)
UGS	UGS	UNDERGROUND ELECTRIC (SECONDARY)
UGT	UGT	UNDERGROUND TELEPHONE
UGC	UGC	UNDERGROUND CABLE
EMH	EMH	ELECTRIC MANHOLE (SIZE VARIES)
WWMH	WWMH	WASTEWATER MANHOLE (SIZE VARIES)
SDMH	SDMH	STORMDRAIN MANHOLE (SIZE VARIES)
CO	CO	WASTEWATER CLEANOUT
		CURB
		GUARDRAIL FENCE
		FENCE
		CONCRETE SIDEWALKS
678	678	CONTOUR
		DIRECTION OF FLOW
	x785.00	SPOT ELEVATION
	x785.00TC	SPOT ELEVATION TOP OF CURB
x 785.50	x785.00TW	TOP OF WALL/BOTTOM OF WALL
		SWALE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT

BASED ON UDC TABLE 526-3b

Use: RETAIL.	Area: SQFT	Minimum Vehicle Spaces
Convenience store	6000 sqft	6 per 1,000 S.F. GFA
		6000 / 1,000 X 6 = 36 spaces

Use: RETAIL.	Area: SQFT	Minimum Vehicle Spaces
Retail	1500 sqft	1 per 300 S.F. GFA
		1500/ 300 = 5 spaces

Seda Consulting Engineers, Inc.
Firm Registration No: F-1601
6735 IH 10 West
San Antonio, Texas 78201
(210) 308-0057
FAX:(210) 308-8842
e-mail: seda@satx.rr.com
CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
DIMENSIONAL SITE PLAN
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 07/15/2023
DRAWN BY: FM
CHECKED BY: SED
SHEET: 1 OF 1

ATTACHMENT B

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Bulverde Convenience Store Subdivision**
Date Prepared: **8/1/2024**

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

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

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

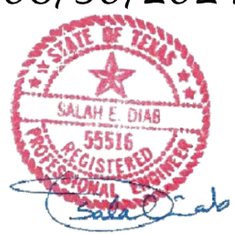
where:

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

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

County =	Comal	
Total project area included in plan * =	10.70	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	2.12	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	1903	lbs.

08/30/2024



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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area =	**2.42**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.12**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.88**	
$L_{M\ THIS\ BASIN}$ =	**1903**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Sand Filter**
Removal efficiency = **89** percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

08/30/2024

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

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

where:

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

A_C = **2.42** acres

A_I =	**2.12**	acres
A_P =	**0.30**	acres
L_R =	**2159**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**1903**	lbs.
F =	**0.88**	

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

Rainfall Depth =	**1.50**	inches
Post Development Runoff Coefficient =	**0.72**	
On-site Water Quality Volume =	**9426**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**1885**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**11311**	cubic feet

08/30/2024

STATE OF TEXAS
SALAH E. DIAB
55516
REGISTERED
PROFESSIONAL ENGINEER

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 Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin =	**NA**	cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	**0.1**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**NA**	square feet	
	NA	acres	

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

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

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	**11311**	cubic feet	
Minimum filter basin area =	**524**	square feet	
Maximum sedimentation basin area =	**4713**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**1178**	square feet	**For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**11311**	cubic feet	
Minimum filter basin area =	**943**	square feet	
Maximum sedimentation basin area =	**3770**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**236**	square feet	**For maximum water depth of 8 feet**

08/30/2024

10. Bioretention System Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = **NA** cubic feet

DESIGN OF SEDIMENTATION/FILTRATION SYSTEM:

Add 20% to the required Water Quality volume for maintenance = 1.2*WQV

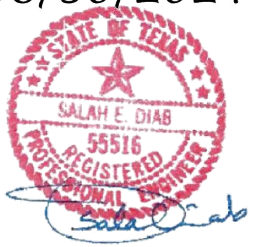
Design WQV = 11,311 cu.ft.

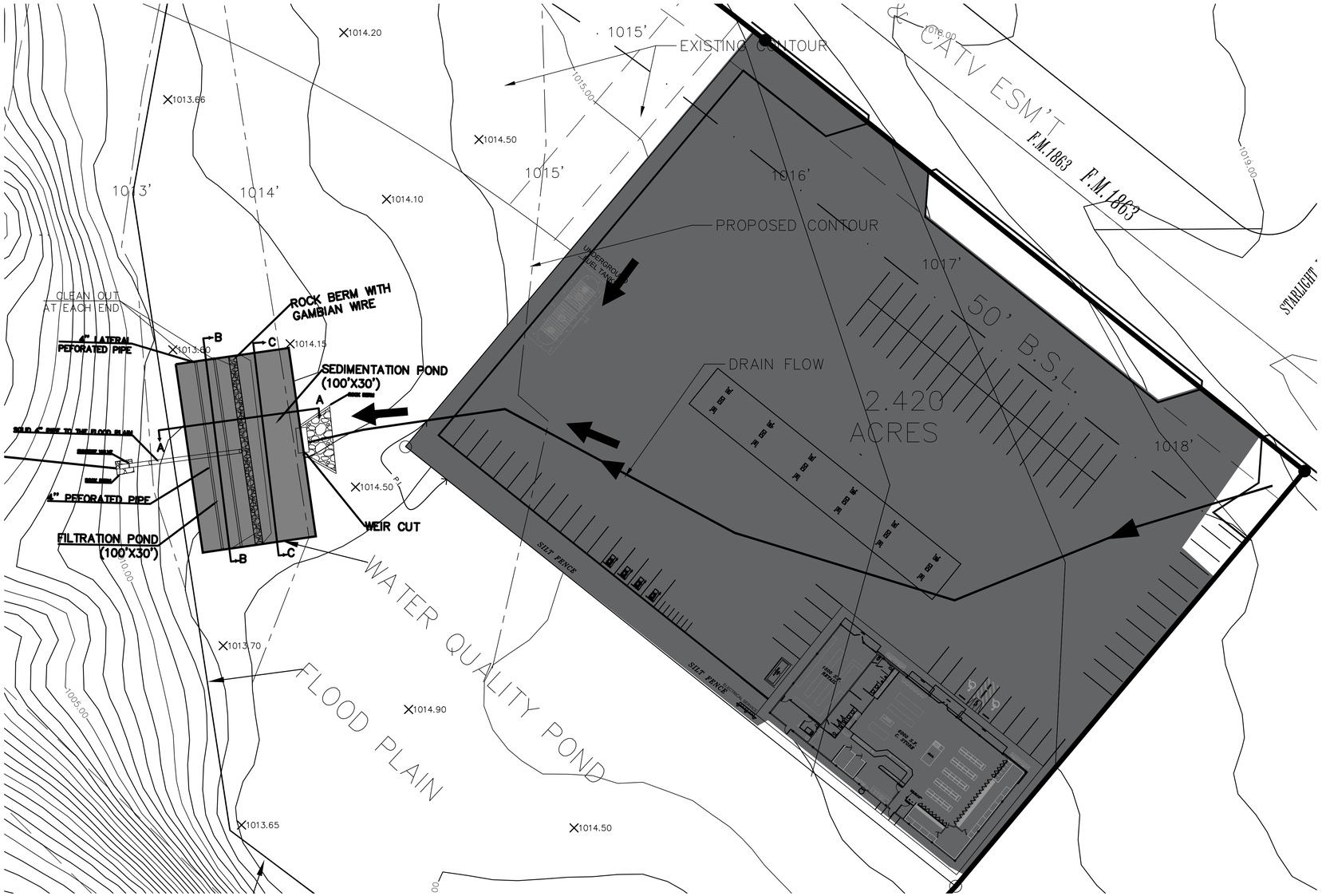
The minimum sand filter surface area (A_f) for the combined filtration and sedimentation in a single basin = Design WQV/(7+2.33*H)

where, H = maximum ponding depth above filtration basin = **2** feet

Therefore, required sand filter surface area (A_f) =	**943**	**sq. ft.**	
Provided facility sand filter area			
Provided Length of the filtration chamber =	**100.00**	**feet**	
Provided Width of the filtration chamber =	**30.00**	**feet**	
Provided filtration surface Area =	**3,000.00**	**sq.ft.**	
	> 943	sq.ft.	**O.K.**
The maximum sedimentation area As =			
As =	3,770.00	sq. ft.	
Length of the sedimentation chamber =	**100.00**	**feet**	
Width of the sedimentation chamber =	**30.00**	**feet**	
Provided Sedimentation surface Area =	**3,000.00**	**sq.ft.**	
	< 3770	sq.ft.	**O.K.**
Provided facility volume =	**12,000**	**cu.ft.**	(from plans)
	> 11311	cu.ft.	**O.K.**

08/30/2024





GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FT.

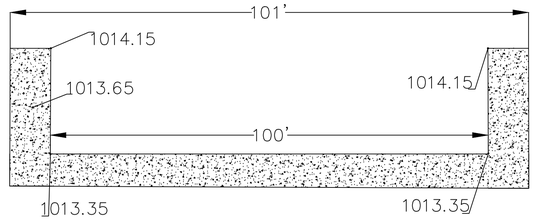
LEGEND

- DIRECTION OF FLOW
- 1015 — EXISTING MAJOR CONTOUR
- 1017 — EXISTING MINOR CONTOUR
- 1017 — PROP CONTOUR
- SPOT ELEVATION

NOTE:

THE BASIN IS A CONCRETE LINER.
SAND AND GRAVEL LAYER (MATCH RG-348 DESIGN CRITERIA SECTION 3.4.2 AND 3.4.7).
THE SAND FILTER IS CONSTRUCTED WITH 12 INCHES OF SAND OVERLYING 6 INCHES OF GRAVEL. THE SAND AND GRAVEL MEDIA ARE SEPARATED BY PERMEABLE GEOTEXTILE FABRIC. FOUR-INCH PERFORATED PVC PIPE IS USED TO DRAIN CAPTURED FLOWS FROM THE GRAVEL LAYER. A MINIMUM OF 2 INCHES OF GRAVEL MUST COVER THE TOP SURFACE OF THE PVC PIPE. FIGURE 3-23 PRESENTS A SCHEMATIC REPRESENTATION OF A STANDARD SAND BED PROFILE. THE SAND GRAIN SIZE DISTRIBUTION SHOULD BE COMPARABLE TO THAT OF "WASHED CONCRETE SAND" (I.E., ASTM C-33 FINE AGGREGATE)

IMPERVIOUS COVER TREATMENT SUMMARY TABLE	
TOTAL EX IMPERVIOUS COVER	00.00 AC
PROPOSED IMPERVIOUS COVER	2.12 AC.
TOTAL PROPOSED IMPERVIOUS COVER INCREASE	2.12 AC
TREATED IMPERVIOUS COVER AREA	2.12 AC. (100%)



SECTION C–C
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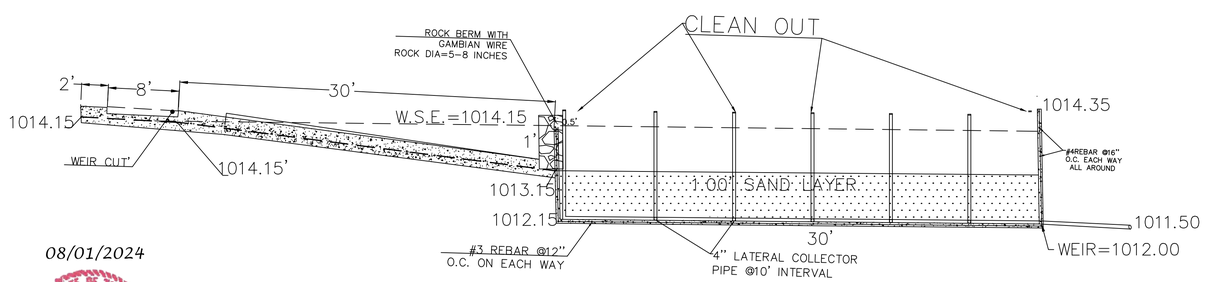
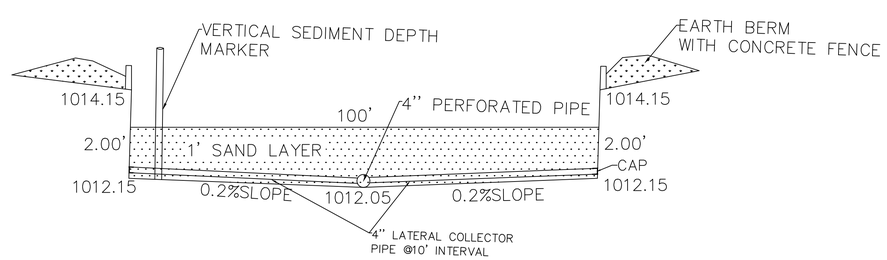


SECTION A–A
(NOT TO SCALE)



SECTION B–B
(NOT TO SCALE)

08/01/2024

STATE OF TEXAS
SALAH E. DIAB
95516
REGISTERED
PROFESSIONAL ENGINEER

Seda Consulting Engineers, Inc.
Firm Registration No: F-1601
6735 IH 10 West
San Antonio, Texas 78201
(210) 308-0057
FAX:(210) 308-8842
e-mail: seda@satx.rr.com
CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
WATER QUALITY POND PLAN
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 05/02/2024
DRAWN BY: FM
CHECKED BY: SED
SHEET: 1 OF 2

CONSTRUCTION NOTES:

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.

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

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

11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR

    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

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

08/01/2024

STATE OF TEXAS
SALAH E. DIAS
55516
REGISTERED
PROFESSIONAL ENGINEER

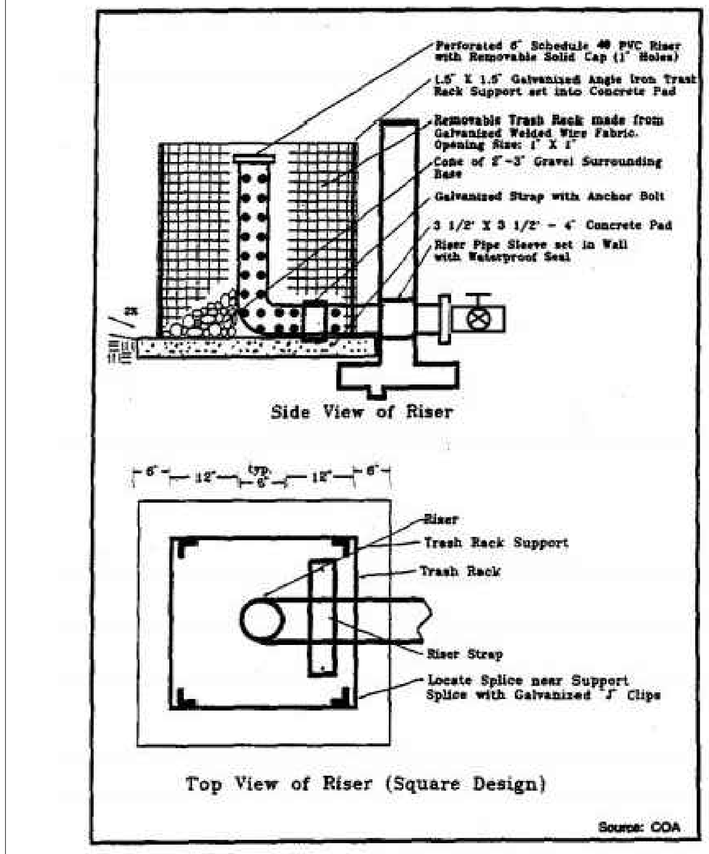


Figure 3-24 Detail of Sedimentation Riser Pipe

Revisions:

Seda Consulting Engineers, Inc.
Firm Registration No: F-1601
6735 IH 10 West
San Antonio, Texas 78201
(210) 308-0057
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CIVIL • STRUCTURAL ENVIRONMENTAL • PLANNER

SCE

BULVERDE CONVENIENCE STORE SUBDIVISION
WATER QUALITY POND DETAIL
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1811
DATE: 08/01/2024
DRAWN BY: FM
CHECKED BY: SED
SHEET: 2 OF 2

Geologic Assessment for 4470 FM 1863, Comal County, Texas

JULY 2024

PREPARED FOR

David Ranjbar

PREPARED BY

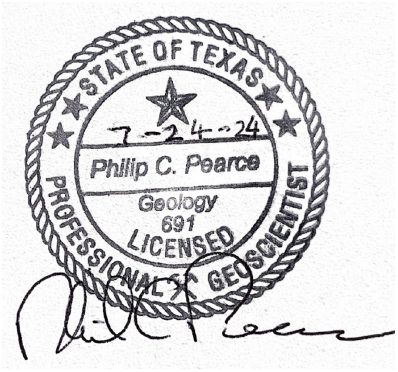
SWCA Environmental Consultants

Texas Board of Professional Geoscientists, Firm Registration No. 50159

GEOLOGIC ASSESSMENT
FOR 4470 FM 1863, COMAL COUNTY, TEXAS

Prepared for

David Ranjbar



Prepared by

Philip Pearce, P.G. and Kenadi Sutton

SWCA Environmental Consultants
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4949 North Loop 1604 West, Suite 235
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SWCA Project No. 90712

July 2024

CONTENTS

Appendices

Figures

Tables

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1 INTRODUCTION

This report covers an approximately 10-acre property located at 4470 Farm to Market Road (FM) 1863, north adjacent to the county line in southern Comal County (Project; Figure 1: Project Site). The northern approximately ¾ of the Project Site lies within the Edwards Aquifer Contributing Zone (EACZ) and the southern ¼ of the Project Site overlies the Edwards Aquifer Recharge Zone (EARZ) as defined by the Texas Commission on Environmental Quality (TCEQ). The purpose of this GA is to describe geologic conditions on the property, such as locations of karst features and Edwards Aquifer recharge features, to comply with TCEQ Edwards Aquifer Protection Program.

2 METHODOLOGY

SWCA scientists studied information sources pertaining to all reputed caves from the Project Site to gather information related to documented caves in the vicinity prior to conducting field work. These information sources include:

- ESRI® ArcGIS® Online Basemap Map Services;
- U.S. Geological Survey (2022) 7.5-minute topographic digital raster graphics; and
- Geologic maps and mapped fault lines (Clark et al. 2016; 2023).

SWCA geoscientist Kenadi Sutton and biologist Ainsley Koch conducted a field survey for a Geologic Assessment on June 25, 2024. The pedestrian survey was completed by traversing parallel transects spaced approximately 30 to 50 feet apart as directed by the TCEQ (2004) in the *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* (Rev. 10-01-04). The Project Site is centered on a rural residential property south adjacent to Farm to Market Road 1863 (FM 1863), and north adjacent to Cibolo Creek, along the Bexar-Comal County Line. The Project Site contains a pasture on the east side, wooded areas on the south side, Cibolo Creek along the south boundary, and a drainageway along the west side of the project area leading from FM 1863 southwards into Cibolo Creek.

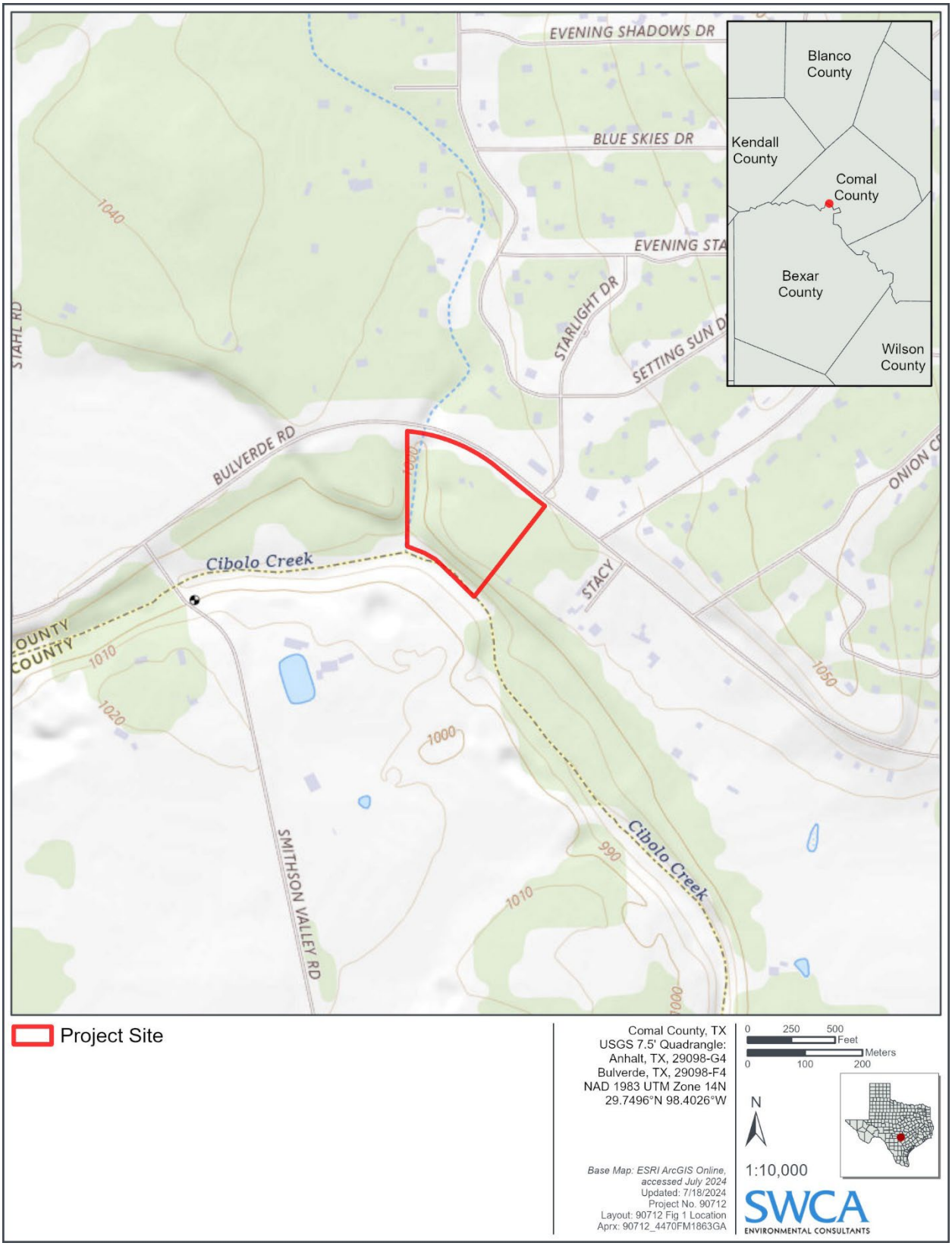

Figure 1. Project Site location map.

3 RESULTS

3.1 Project Site Overview

The Project Site lies within the Contributing and Recharge Zones of the San Antonio Segment of the Edwards Aquifer (TCEQ 2024). Topography within and adjacent to the Project Site lacks significant elevation changes. Project Site topography ranges from approximately 990 feet above mean sea level (amsl) at the south end where Cibolo Creek is located, to 1,020 feet amsl at the northeast side of the Project Site, with a gentle decrease in elevation from the north to south. On the west side of the Project Site lies a drainageway, which has greater relief compared to the flat east portion of the Project Site.

The Project Site contains a pasture on the east side, wooded areas on the south side, Cibolo Creek along the south boundary, and a drainageway along the west side of the Project Site leading from FM 1863 southwards into Cibolo Creek. The southern Project Site boundary follows the Bexar-Comal County line.

3.2 Geology

Quaternary-age terrace deposits cover the majority of the Project Site, with the Cretaceous-age Upper Member of the Glen Rose (Kgru) formation outcropping along the northern edge of the Project Site (Appendix A, Attachment D) and within the bed of Cibolo Creek. The Glen Rose Formation is described as limestone, dolomite, and marl subdivided into two units by a *Corbula* fossil bed. The formation has alternating resistant and recessive beds forming stairstep topography. The limestone is aphanitic to fine grained, hard to soft and marly, and light gray to yellowish gray. The dolomite is fine grained, porous, and yellowish brown. Marine megafossils include molluscan steinkerns, rudistids, oysters, and echinoids. The upper member is relatively thinner bedded, more dolomitic, and less fossiliferous than the lower member. The upper member thickness is about 220 feet. The lower member is more massive and about 160 feet thick and includes at top a *Corbula* bed with abundant steinkerns of *Corbula harveyi* in an interval up to 5 feet thick. The total thickness of the Glen Rose Formation is approximately 380 feet. Project Site geology has been mapped most recently at a useful scale by Clark et al. (2016, 2023) and SWCA finds this interpretation of the geology to be generally accurate. The Stratigraphic Column is included as Attachment B within Appendix A.

The Project Site occurs along the Balcones Fault Zone (BFZ) within the Edwards Aquifer Contributing and Recharge Zones (TCEQ 2024). Structural down-warping occurred with the Gulf of Mexico's ancestral formation during the middle Tertiary. The earth's crust was stretched in response and the BFZ formed along a zone of weakness, which currently marks the boundary between the Edwards Plateau and the Gulf Coastal Plain in central Texas. The BFZ is characterized by a series of northeast-trending, predominantly normal, nearly vertical, en echelon faults. Faults are mapped approximately 0.58 miles northwest of the Project Site. A small fault (Feature F-05) was observed on site within the bed of Cibolo Creek.

Recharge into the Edwards Aquifer primarily occurs in areas where the Edwards Group and Georgetown Formation are exposed at the surface. Most recharge is from direct infiltration via precipitation and streamflow loss. Recharge occurs predominantly along secondary porosity features such as faults, fractures, and karst features (caves, solution cavities, sinkholes, etc.). Karst features are commonly formed along joints, fractures, and bedding plane surfaces in the Edwards Group and Georgetown Formation. Although neither the Georgetown no Edwards Group are exposed at or near the project site, portions of Cibolo Creek are included within the Edwards Aquifer Recharge Zone, because some evidence suggests water recharging the lower member of the Glen Rose Formation along Cibolo Creek indirectly recharges the Edwards Aquifer downstream where faults juxtapose the Glen Rose Formation and Edwards Group.

3.3 Soils

The Natural Resources Conservation Service (2024) identifies three soil units within the Project Site (Figure 2). Table 1 provides additional detail for these soil types.

Table 1. Project Site Soils Detail

Soil Name	Hydric	Hydrologic Soil Group*	Drainage Class	Frequency of Flooding/Ponding
TaB: Tarpley Clay, 1 to 3 percent slopes	No	C	Well drained	None
Or: Orif soils, moist, 0 to 3 percent slopes, frequently flooded	No	A	Well drained	Frequent
BrB: Bolar clay loam, 1 to 3 percent slopes	No	D	Well drained	None

Data Source: Natural Resources Conservation Service 2024.

* Group A – Soils had high infiltration rates when thoroughly wetted and exhibit the lowest potential for runoff.
* Group C – Soils had slow infiltration rates when thoroughly wetted and exhibit moderately high potential for runoff.
* Group D – Soils had very slow infiltration rates when thoroughly wetted and exhibit the highest potential for runoff.

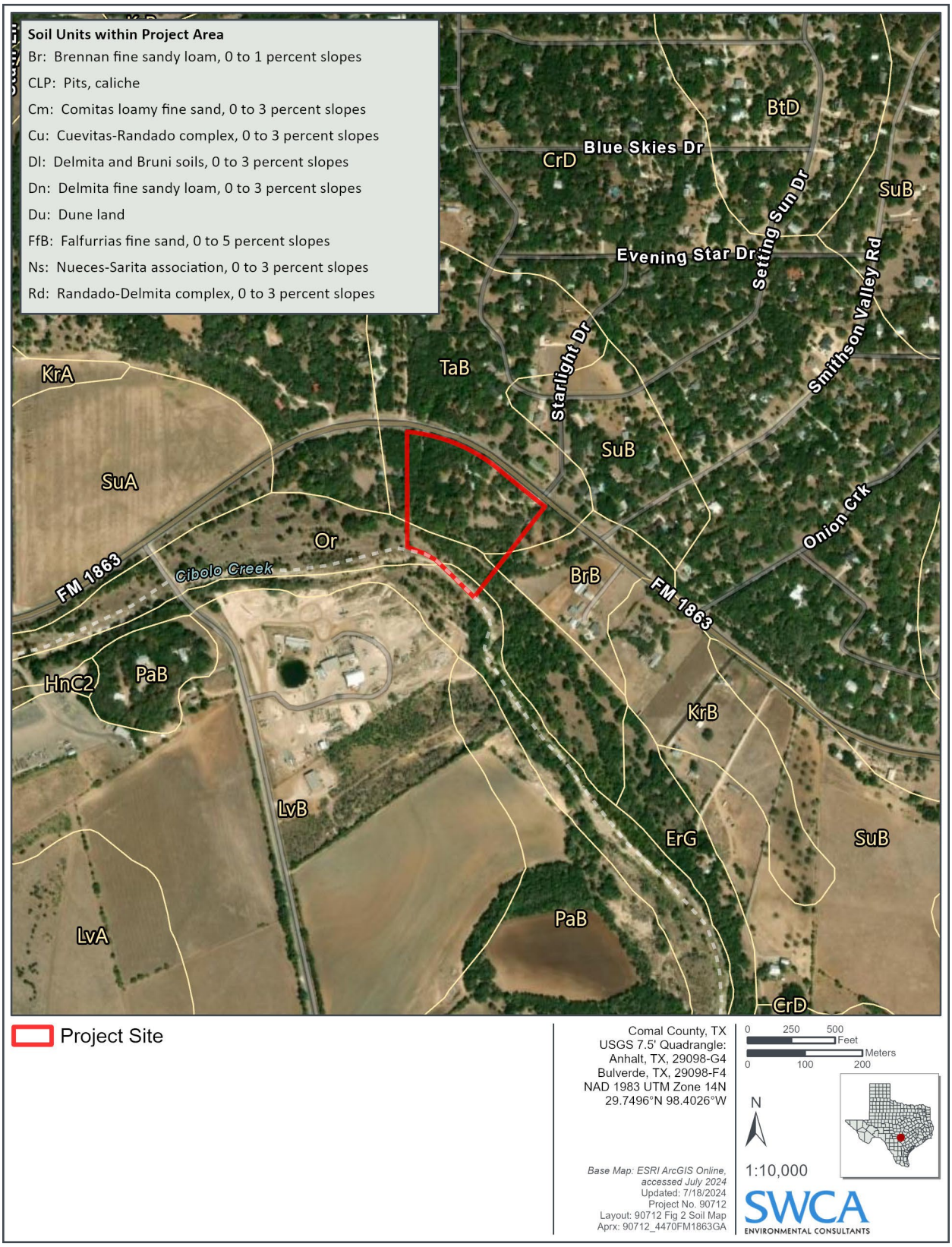

Figure 2. Project Site soils map (Natural Resources Conservation Service 2024).

4 HYDROGEOLOGIC ASSESSMENT

The overall potential for fluid migration to the Edwards Aquifer for the Project Site appears relatively low compared to background infiltration rates, due to the lack of sensitive geologic features. One water well was identified on the Project Site, however no well data was available for this well in the Texas Water Development Board (TWDB) groundwater database (TWDB 2024). A water well was identified on the west adjacent property, approximately 0.12 mile west of the Project Site. The domestic well, identified in the TWDB State Driller Report Database (SDRDB) as well number 36236, was drilled to a total depth of 460 feet below the surface. A water pump is present at a depth of 420 feet below the surface and the well yields approximately 10 gallons per minute, however no water levels have been recorded (TWDB 2024). A second water domestic water well, State Well ID 6821305, is located approximately 0.4 mile southeast of the Project Site and was drilled to a similar depth as SDRDB Well No. 36236. This well is recorded as being drilled through the Edwards Aquifer to the underlying Trinity Aquifer. Its water level was last measured in June 1996 at 170.4 feet below the land surface (TWDB 2024).

On the west side of the Project Site is a drainage area that leads from the north side of FM 1863, south along the west side of the Project Site, and terminates in the southwest corner of the Project Site where the drainage culminates into Cibolo Creek (Attachment E: Photographs 1 and 2). Cibolo Creek runs along the south edge of the Project Site (Attachment E: Photographs 3, 6, 7, 8). The drainage area and Cibolo Creek were mostly dry at the time of the site visit, though there was some standing water in the northeast corner of the Project Site (Feature F-7)(Attachment E: Photograph 1).

SWCA identified six geologic and one manmade feature within the Project Site. Feature F-01 consisted of two solution enlarged fractures in an exposed and weathered bed of limestone along the hillside. The first fracture measured approximately 2 feet by 0.5 foot by 3 feet. The second fracture was present approximately 1.5 feet west of the first fractur. The height of the second fracture was also approximately 2 feet, but the aperture only measured 1/8 inch. The fractures are located within the edge of a limestone bed that is exposed on a hillside. Soil development and root growth has begun to break apart the bedding plane. Soil development was observed beneath the bed; therefore, the infilling is fine, and the probability of rapid infiltration is low.

Feature F-02 consisted of a solution enlarged fracture in an exposed and weathered bed of limestone along the hillside, approximately 4 feet east of F-01. The fracture measured approximately 2.5 feet by 0.75 feet by 3 feet. The fracture is located within the edge of a limestone bed that is exposed on a hillside. Soil development and root growth has begun to break apart the bedding plane. Soil development was observed beneath the bed; therefore, the infilling is fine, and the probability of rapid infiltration is low.

Feature F-03 consisted of limestone vugs and intersecting fractures within the exposed bedrock in a streambed. The fractures were each approximately 6 feet long and were spaced approximately 3 feet from each other, with one fracture intersecting both perpendicularly. The fractures were plugged with soils and grasses. The trend of the longer fractures was N45˚E, consistent with the regional predominant trend of N30˚E ($\pm$15˚). Due vegetated, fine infilling plugging these fractures, the probability of rapid infiltration is low.

Feature F-04 consisted of limestone vugs and five fractures within the exposed bedrock in a streambed. The fractures were plugged with soils and grasses. The fractures were observed to be in random directions, none of which aligned with the regional trend of N30ºE. The lengths and trends of the observed fractures are detailed below:

- F-04a – 10 feet, S60˚E
- F-04b – 11 feet, N55˚E

- F-04c – 11 feet, S67˚E
- F-04d – 9.5 feet, N69˚E
- F-04e – 23 feet, S58˚E

Due to vegetated, fine infilling plugging these fractures, the probability of rapid infiltration is low.

Feature F-05 is a 33 feet long visible segment of a fault extending from the stream bank and into the bed of Cibolo Creek, with a trend of N16˚W, which is not consistent with the regional trend of N30˚E (±15˚). Near the bank, the fault plane appears to be cemented. In the streambed, the fault is filled with soils and vegetation. Due to vegetated, fine infilling and cementation plugging the fault, the probability of rapid infiltration is low.

Feature F-06 is a manmade water well. A well house, pump, piping, and above ground water tank were present. The well casing was not observed, due to the well house access points being nailed down. The presence of the well within a well house suggests the probability of rapid infiltration is low.

Feature F-07 is a non-karst closed depression created by stream scour. The feature was holding water at the time of the site visit and is lined with fin infilling; therefore, the probability of rapid infiltration is low.

5 REFERENCES

Blome, C.D., Faith, J.R., Pedraza, D.E, Ozuna, G.B, Cole, J.C., Clark, A.K., Small, T.A., and Morris, R.R. 2005. Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas. U.S. Geological Survey SIM-2873. Scale 1:200,000.

Clark, A.K., Golab, J.A., and Morris, R.R. 2016. Geologic framework and hydrostratigraphy of the Edwards and Trinity aquifers within northern Bexar and Comal Counties, Texas [superseded by USGS SIM-3510], U.S. Geological Survey, Scientific Investigations Map SIM-3366, 1:24,000.

Clark, A.K., Golab, J.A., Morris, R.R., and Pedraza, D.E. 2023. Geologic framework and hydrostratigraphy of the Edwards and Trinity Aquifers within northern Bexar and Comal Counties, Texas, U.S. Geological Survey, Scientific Investigations Map 3510, 1:24,000.

Natural Resources Conservation Service (NRCS). 2024. United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database. Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed July 2024.

Texas Commission on Environmental Quality (TCEQ). 2004. *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* (Rev. 10-01-04). Austin, Texas. 34 pp.

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Texas Water Development Board (TWDB). 2024. Water Data Interactive— Viewer. Available online at: https://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer. Accessed July 2024.

U.S. Geological Survey (USGS). 2022a. Anhalt, Texas 7.5-minute quadrangle topographic map.

———. 2022b. Bulverde, Texas 7.5-minute quadrangle topographic map.

APPENDIX A

Texas Commission on Environmental Quality Forms

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: Philip C. Pearce, P.G.

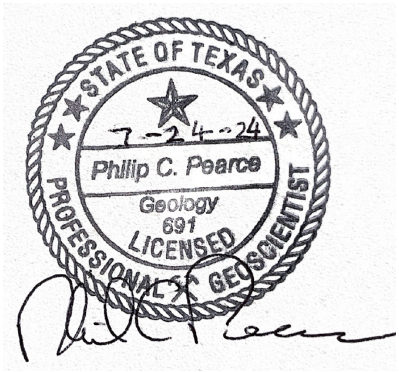
Date: _____

Telephone: 210.877.2847

Fax: 210.877.2848

Representing: SWCA Environmental Consultants (TBPG Firm Registration #50159) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: _____

Project Information

1. Date(s) Geologic Assessment was performed: June 25, 2024
2. Type of Project:
   - ☒ WPAP
   - ☒ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Tarpley Clay, 1 to 3 percent slopes (TaB)	C	0.7-1.7
Orif soils, moist, 0 to 3 percent slopes, frequently flooded (Or)	A	6.7
Bolar clay loam, 1 to 3 percent slopes (BrB)	D	1.7-6.7

Soil Name	Group*	Thickness(feet)

** 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" = 50'
   Site Geologic Map Scale: 1" = 50'
   Site Soils Map Scale (if more than 1 soil type): 1" = 833'

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 1 (#) 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.

ATTACHMENT A

Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: Approx. 4470 FM 1863 Geologic Assessment																	
LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
F-01	29.749081°	-98.403185°	SF	20	Kgru	2	0.5	3	N60ºE	0	-	-	F	5	25	X		X		Hillside
F-02	29.749081°	-98.403185°	SF	20	Kgru	2.5	0.75	3	N83ºE	0	-	-	F	5	25	X		X		Hillside
F-03	29.748857°	-98.403167°	O	5	Kgru	6	3	-	N45ºE	10	2	0.2"	F,V	5	20	X			X	Streambed
F-04	29.748844°	-98.403090°	O	5	Kgru	-	-	-	Random	0	0.35	0.2"	F,V	5	10	X			X	Streambed
F-05	29.748557°	-98.402833°	F	20	Kgru	33	0.2"	-	N16ºW	0	-	-	F,V	5	25	X			X	Streambed
F-06	29.750059°	-98.402538°	MB	30	Kgru	-	-	-	-	0	-	-	-	5	35	X		X		Hillside
F-07	29.750826°	-98.403539°	CD	5	Kgru	10	40	1	N10ºE	0			F	5	10	X			X	Streambed

* DATUM: NAD83

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

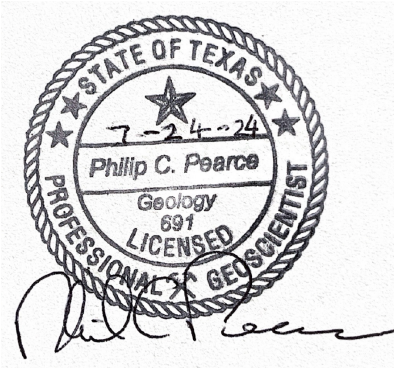
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Philip C. Pearce

Date 7-24-24

Sheet 1 of 1



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

ATTACHMENT B

Stratigraphic Column

Stratigraphic Column

Upper Cretaceous	Upper Confining Units			Navarro and Taylor Groups, undivided; 600 feet thick	
				Austin Group; 130-150 feet thick	
				Eagle Ford Group; 30-50 feet thick	
				Buda Limestone; 40-50 feet thick	
				Del Rio Clay; 40-50 feet thick	
Lower Cretaceous	I	Edwards Aquifer		Georgetown Formation	10-40 feet thick
	II		Edwards Group	Person Formation; 170-200 feet thick	Cyclic and Marine member, undivided
	III				Leached and Collapsed member, undivided
	IV				Regional Dense member
	V			Kainer Formation; 260-310 feet thick	Grainstone member
	VI				Kirschberg Evaporite member
	VII				Dolomitic member
	VIII				Basal Nodular member
	Lower Confining Units			Upper member of Glen Rose Formation; 350-500 feet thick	
				Lower member of Glen Rose Formation; 350-500 feet thick	

Note: The shaded areas represent the lithology that outcrops in the Project Site.
(Blome et al. 2005)

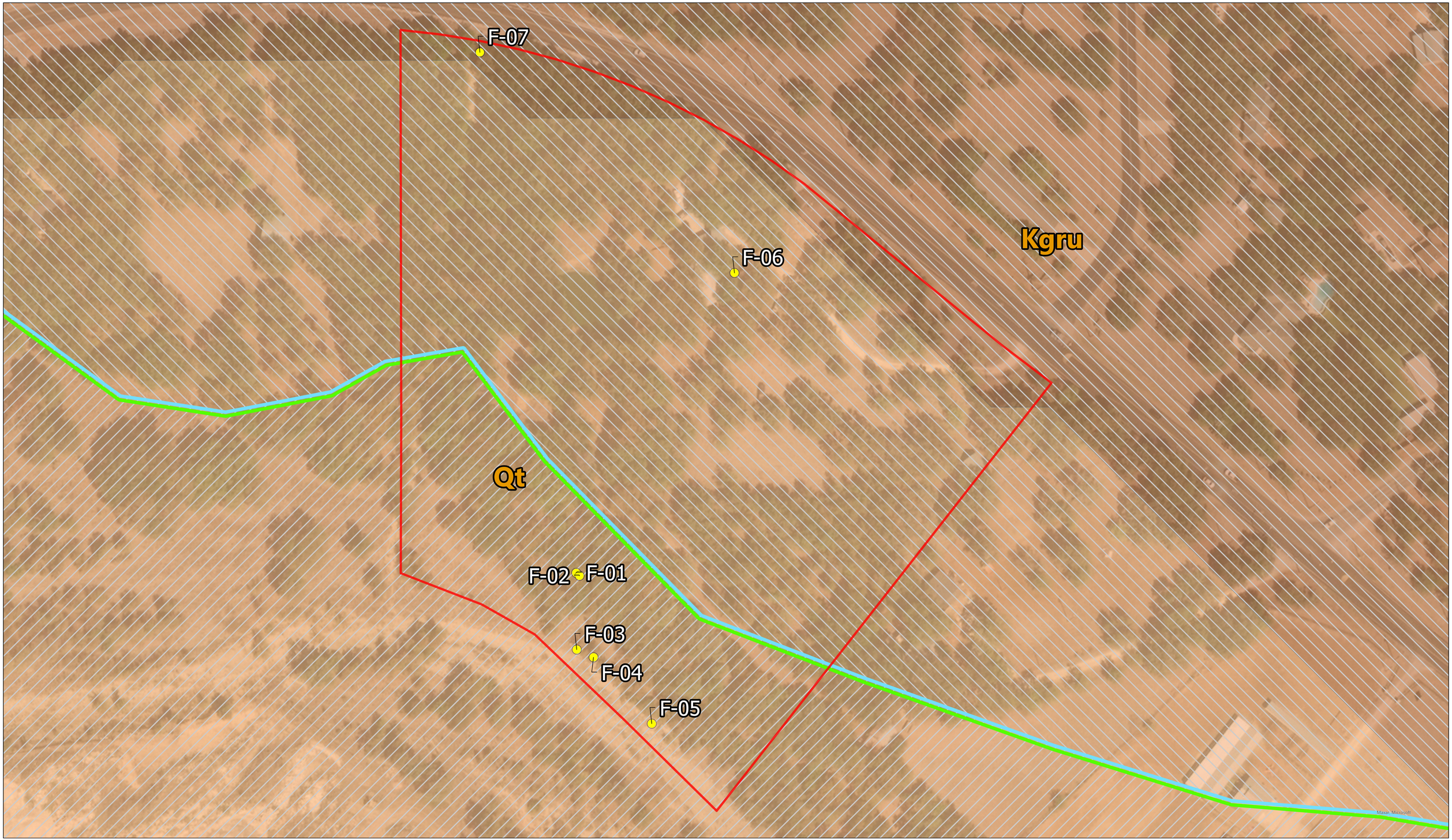
ATTACHMENT C

Narrative Description of Geology

Please refer to section 3.2 of this report for geologic narrative description.

ATTACHMENT D

Site Geologic Map



Recharge Features
Project Site

Edwards Aquifer Zone
Drainage Area
Recharge Zone

Geology Description
Qt: Fluviatile terrace deposits (Pleistocene)
Kgru: Upper Glen Rose Formation (Comanchean)

STATE OF TEXAS
Philip C. Pearce
Geology
691
LICENSED
PROFESSIONAL GEOSCIENTIST
7-24-24

Comal County, TX
USGS 7.5' Quadrangle:
Anhalt, TX, 29098-G4
Bulverde, TX, 29098-F4
NAD 1983 UTM Zone 14N
29.7496°N 98.4026°W

Base Map: ESRI ArcGIS Online, accessed July 2024
Updated: 7/23/2024
Project No. 90712
Layout: geol poster
Aprx: 90712_4470FM1863GA

N

0 25 50 100 Feet

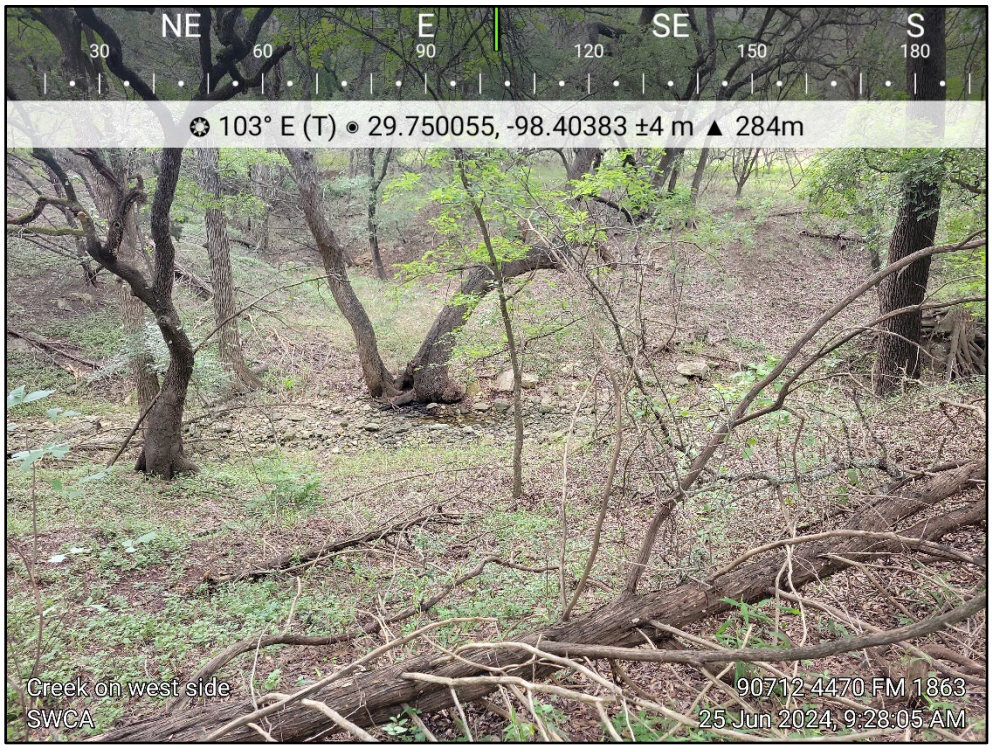
1:600

SWCA
ENVIRONMENTAL CONSULTANTS

ATTACHMENT E

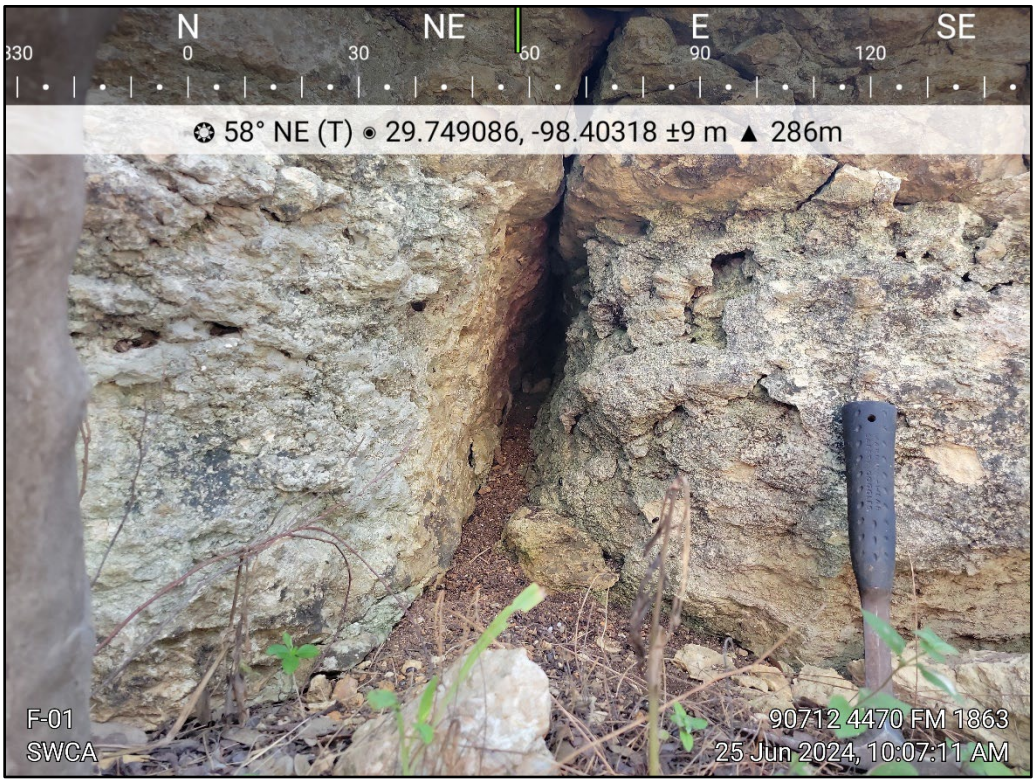
Photographic Log

Photograph 1. Northwest corner on Project Site; Non-Karst Closed Depression, Feature F-7, within a drainageway downstream of bridge on FM 1863.



Photograph 2. Representative view of west side drainageway and wooded areas along west and south side of Project Site.

Photograph 3. South adjacent Cibolo Creek bed on west side of Project Site.



Photograph 4. Representative photograph of F-01.

Photograph 5. Representative photograph of F-02.

Photograph 6. Representative photograph of natural bedrock features (F-03, F-04) observed in creek bed.

Photograph 7. Representative photograph of F-05.

Photograph 8. Representative photograph of F-05.

Photograph 9. Representative photograph of location of on-site water well (F-06).

Photograph 10. Representative view of east side of Project Site.

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.

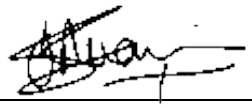
Signature

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: YNAYAT MOMIN

Date: *08/01/2024*

Signature of Customer/Agent:



Regulated Entity Name: Bulverde Convenience Store Subdivision

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: Cibolo Creek.

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☐ 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.

TEMPORARY STORMWATER SECTION ATTACHMENTS

ATTACHMENT A

Spill Response Actions

*(As per TCEQ RG-348. "**Complying with the Edwards Aquifer Rules – Technical Guidance of Best Management Practices**", 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 stormwater 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, 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 run on 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 Water courses.

(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:
(5) Contain the spread of the spill.
(6) Recover spilled materials.
(7) 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 https://www.tceq.texas.gov/response/spills

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 run on 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 oil 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 run on 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.

ATTACHMENT B

FACTORS AFFECTING WATER QUALITY

Surface water contamination during construction can occur through various activities and processes. These contaminants can include sediments, chemicals, nutrients, and debris that may harm aquatic ecosystems and pose risks to human health. Here are some key activities and processes that may lead to surface water contamination:

1. **Soil Erosion and Sediment Runoff**:
    - **Excavation and Grading**: Disturbing the soil for foundations, roads, or landscaping can lead to soil erosion, especially during heavy rains. The loose soil can be washed into nearby water bodies, increasing turbidity and harming aquatic life.
    - **Removal of Vegetation**: Clearing vegetation reduces the land's natural ability to retain soil and absorb water, leading to increased runoff and sedimentation in water bodies.
2. **Handling and Storage of Hazardous Materials**:
    - **Fuel and Oil Spills**: Construction equipment often uses fuels and lubricants. Spills from storage tanks, machinery, or refueling activities can introduce hydrocarbons into the water system.
    - **Chemicals and Solvents**: The use of chemicals such as paints, adhesives, and cleaning agents can result in spills or improper disposal, leading to contamination of surface water.
3. **Storm water Runoff**:
    - **Contaminated Site Water**: Water that collects on the site, including rainwater that comes into contact with pollutants, can flow into nearby streams, rivers, or lakes.
4. **Waste Management**:
    - **Construction Waste**: Improper disposal of construction waste, including debris, cement, chemicals, and packaging, can lead to environmental contamination.
5. **Improper Waste Disposal**:
    - **Sanitary Waste**: Improper management of sanitary facilities on-site, such as portable toilets, can lead to the release of human waste into water systems.
6. **Uncontrolled Access**:
    - **Vehicle and Equipment Movement**: Construction vehicles and equipment can introduce contaminants such as oil, grease, and sediments into water systems, especially if they operate near or through water bodies.
7. After construction is complete, the potential sources of contamination would be from sediments brought onsite such as fuel, oil and grease from vehicles.

ATTACHMENT C

The general sequence of events will be as follows:

- Install temporary erosions/sedimentation controls, and tree protection fencing.
- Clear/grub remaining vegetation within the homebuilding site as listed on the engineering plans.
- Rough grade site and prepare for slab installation.
- Install slab and construct structure and associated utilities.
- Complete site pavement
- Complete final site grading and restoration of site vegetation (i.e. landscaping).
- When the owner receives City certificate of occupancy, remove and dispose of temporary erosion controls and tree protection.
- Complete any final site dress-up as needed.

The major soil disturbing events are clearing and grubbing, rough cut grading, excavation, regarding, final grading of the site, and Paving.

Please note that all the site (2.42 acres) will be disturbed during all the major activities during construction.

Description of Temporary BMPs:

Silt Fence:

A **silt fence** is a temporary sediment control device used on construction sites to protect water quality in nearby streams, rivers, and lakes from sediment (loose soil) in storm water runoff. It consists of a piece of synthetic filter fabric stretched between a series of wooden or metal stakes, typically driven into the ground along the contour of the slope.

Key Features and Functions:

- **Sediment Control**: The fabric allows water to pass through while trapping soil particles, preventing sediment from leaving the construction site.
- **Placement**: Silt fences are usually placed at the downslope perimeter of a disturbed area, or around sensitive environmental areas like wetlands.
- **Installation**: Proper installation is crucial for effectiveness. The bottom of the fabric is typically buried in a trench to prevent water from flowing underneath.
- **Maintenance**: Silt fences require regular inspection and maintenance. Accumulated sediment must be removed when it reaches a certain level to prevent the fence from failing.

Rock Berm for Entrance and Exit:

A **rock berm** is used as a stabilization method at construction site entrances and exits to minimize sediment tracking onto public roadways and to reduce erosion. It typically consists of large, angular rocks placed at the entrance/exit points where vehicles enter or leave the construction site.

Key Features and Functions:

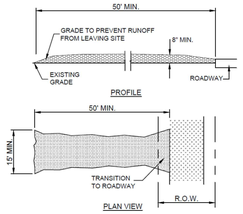
- **Erosion Control**: The rock berm stabilizes the soil and reduces the velocity of water runoff, thereby minimizing erosion.
- **Sediment Control**: As vehicles drive over the berm, the rocks help to remove mud and sediment from tires, reducing the amount of sediment transported off-site.

- **Installation**: The rock size and thickness of the berm depend on site conditions and traffic volume. Geotextile fabric is often placed underneath to separate the rocks from the soil, preventing the soil from mixing with the rocks and losing effectiveness.

- **Maintenance**: Regular maintenance is required to ensure that the rock berm remains effective. This includes adding or replacing rocks as they become embedded with mud or soil, and removing sediment build-up.

Both silt fences and rock berms are critical components of a construction site's overall erosion and sediment control plan, aimed at protecting water quality and minimizing environmental impact.

ATTACHMENT D

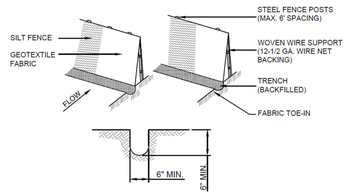


GENERAL NOTES:

1. STONE SIZE- 3 TO 5 INCH OPEN GRADED ROCK.
2. LENGTH- AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS- NOT LESS THAN 8 INCHES.
4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING- WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE- ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER. SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TREATED IN (e.g. pavement) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. 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.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POSTS OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SILT FENCE

NOT TO SCALE

SILT FENCE:

A **SILT FENCE** IS A TEMPORARY SEDIMENT CONTROL DEVICE USED ON CONSTRUCTION SITES TO PROTECT WATER QUALITY IN NEARBY STREAMS, RIVERS, AND LAKES FROM SEDIMENT (LOOSE SOIL) IN STORM WATER RUNOFF. IT CONSISTS OF A PIECE OF SYNTHETIC FILTER FABRIC STRETCHED BETWEEN A SERIES OF WOODEN OR METAL STAKES, TYPICALLY DRIVEN INTO THE GROUND ALONG THE CONTOUR OF THE SLOPE.

KEY FEATURES AND FUNCTIONS:

- **SEDIMENT CONTROL**: THE FABRIC ALLOWS WATER TO PASS THROUGH WHILE TRAPPING SOIL PARTICLES, PREVENTING SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
- **PLACEMENT**: SILT FENCES ARE USUALLY PLACED AT THE DOWNSLOPE PERIMETER OF A DISTURBED AREA, OR AROUND SENSITIVE ENVIRONMENTAL AREAS LIKE WETLANDS.
- **INSTALLATION**: PROPER INSTALLATION IS CRUCIAL FOR EFFECTIVENESS. THE BOTTOM OF THE FABRIC IS TYPICALLY BURIED IN A TRENCH TO PREVENT WATER FROM FLOWING UNDERNEATH.
- **MAINTENANCE**: SILT FENCES REQUIRE REGULAR INSPECTION AND MAINTENANCE. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN IT REACHES A CERTAIN LEVEL TO PREVENT THE FENCE FROM FAILING.

ROCK BERM FOR ENTRANCE AND EXIT:

A **ROCK BERM** IS USED AS A STABILIZATION METHOD AT CONSTRUCTION SITE ENTRANCES AND EXITS TO MINIMIZE SEDIMENT TRACKING ONTO PUBLIC ROADWAYS AND TO REDUCE EROSION. IT TYPICALLY CONSISTS OF LARGE, ANGULAR ROCKS PLACED AT THE ENTRANCE/EXIT POINTS WHERE VEHICLES ENTER OR LEAVE THE CONSTRUCTION SITE.

KEY FEATURES AND FUNCTIONS:

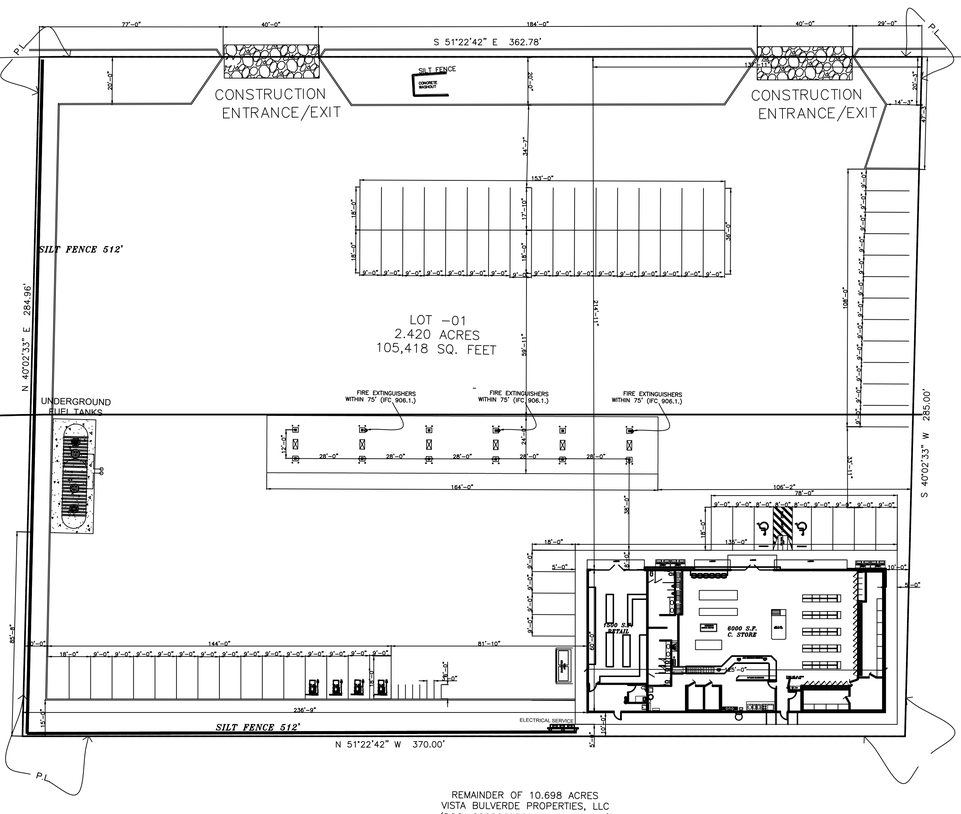
- **EROSION CONTROL**: THE ROCK BERM STABILIZES THE SOIL AND REDUCES THE VELOCITY OF WATER RUNOFF, THEREBY MINIMIZING EROSION.
- **SEDIMENT CONTROL**: AS VEHICLES DRIVE OVER THE BERM, THE ROCKS HELP TO REMOVE MUD AND SEDIMENT FROM TIRES, REDUCING THE AMOUNT OF SEDIMENT TRANSPORTED OFF-SITE.
- **INSTALLATION**: THE ROCK SIZE AND THICKNESS OF THE BERM DEPEND ON SITE CONDITIONS AND TRAFFIC VOLUME. GEOTEXTILE FABRIC IS OFTEN PLACED UNDERNEATH TO SEPARATE THE ROCKS FROM THE SOIL, PREVENTING THE SOIL FROM MIXING WITH THE ROCKS AND LOSING EFFECTIVENESS.
- **MAINTENANCE**: REGULAR MAINTENANCE IS REQUIRED TO ENSURE THAT THE ROCK BERM REMAINS EFFECTIVE. THIS INCLUDES ADDING OR REPLACING ROCKS AS THEY BECOME EMBEDDED WITH MUD OR SOIL, AND REMOVING SEDIMENT BUILD-UP.

08/01/2024

GRAPHIC SCALE
NOT TO SCALE
SCALE 1":30'
30' 10' 0 15' 30'

STABLIGHT DR.
60' RIGHT-OF-WAY
(VOL. 3, PGS. 22-23 P.R.C.C.T.)

F.M.1863
80' R.O.W.
(VOL. 114, PG. 109 D.R.C.C.T.)



REMAINDER OF 10.698 ACRES
VISTA BULVERDE PROPERTIES, LLC
(DOC. 202206038027 O.P.R.C.C.T.)

REMAINDER OF 10.698 ACRES
VISTA BULVERDE PROPERTIES, LLC
(DOC. 202206038027 O.P.R.C.C.T.)

5.00 ACRES
ALFONSO D. ORANTES AND
NOEMI ORANTES
(DOC# 200206001014 O.P.R.C.C.T

CONSTRUCTION NOTES:

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

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

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

NOTE:
1. THERE WILL BE NO CONSTRUCTION STAGING
2. SEE CONCRETE WASHOUT LOCATION IN THE PLAN
2. THERE WILL BE NO SCHEDULED SOIL STABILIZATION.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY (R.O.W.) LINE/ SUBDIVISION BOUNDARY
		ADJACENT PROPERTY
(xxx)		RECORD INFORMATION
		BENCHMARK
LP'X'		LIGHT POLE
PP'X'		POWER POLE
		DOWN GUY
T		TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
		WATER METER
	WM	WATER METER VAULT
WTRMH		WATER MANHOLE
		TELEPHONE RISER
		CABLE TV RISER
		ELECTRIC BOX
		ELECTRIC METER
		GAS METER
		GAS VALVE
TCB		TRAFFIC CONTROL BOX
TSP	TSP	TRAFFIC SIGNAL POST
CAMCE		UNDERGROUND GAS LINE MARKER
		GREASE TRAP (SIZE VARIES)
SD		STORMDRAIN LINE
W	XX"W	WATER LINE
FIRE	XX"FL	FIRE LINE
WW	XX"WW	WASTEWATER LINE
GAS	GAS	GAS LINE
OHE	OHE	OVERHEAD ELECTRIC (PRIMARY)
UGE	UGE	UNDERGROUND ELECTRIC (PRIMARY)
UGS	UGS	UNDERGROUND ELECTRIC (SECONDARY)
UGT	UGT	UNDERGROUND TELEPHONE
UGC	UGC	UNDERGROUND CABLE
EMH	EMH	ELECTRIC MANHOLE (SIZE VARIES)
WWMH	WWMH	WASTEWATER MANHOLE (SIZE VARIES)
SDMH	SDMH	STORMDRAIN MANHOLE (SIZE VARIES)
CO	CO	WASTEWATER CLEANOUT
		CURB
		GUARDRAIL FENCE
		FENCE
		CONCRETE SIDEWALKS
678	678	CONTOUR
		DIRECTION OF FLOW
	x785.00	SPOT ELEVATION
	x785.00TC	SPOT ELEVATION TOP OF CURB
x785.50	x785.00TW	TOP OF WALL/BOTTOM OF WALL
		SWALE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT

Revisions:

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San Antonio, Texas 78201
(210) 308-0057
FAX:(210) 308-8842
e-mail: seda@sabx.rr.com
CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
EROSION CONTROL PLAN
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 07/15/2023
DRAWN BY: FM
CHECKED BY: SED
SHEET: 1 OF 2

SILT FENCE:

MATERIALS:

(1) SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN_2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
(2) FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT_2, AND BRINDELL HARDNESS EXCEEDING 140.
(3) WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION:

(1) STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1–FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
(2) LAY OUT FENCING DOWN–SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.
(3) THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN–SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
(4) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
(5) SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3–FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6) SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES:

(1) INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL.
(2) REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
(3) REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
(4) REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.
(5) WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED

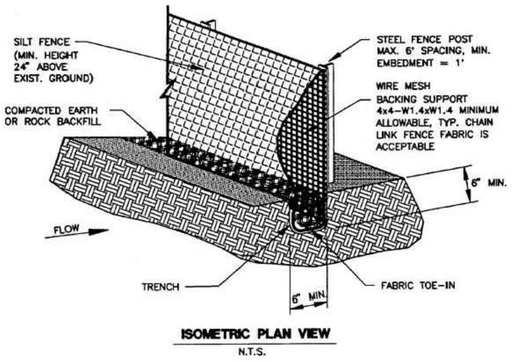

Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

SILT FENCE

TEMPORARY CONSTRUCTION ENTRANCE/EXIT:

MATERIALS:

(1) THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
(2) THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8 INCHES.
(3) THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD_2, A MULLEN BURST RATING OF 140 LB/IN_2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
(4) IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4 INCH DIAMETER WASHED STONE OR COMMERCIAL RACK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION: (NORTH CAROLINA, 1993)

(1) AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
(2) THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
(3) THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
(4) IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
(5) PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
(6) PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
(7) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
(8) INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES:

(1) THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
(2) ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
(3) WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
(4) WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
(5) ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS

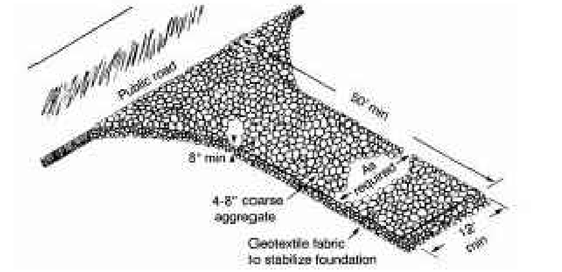

Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

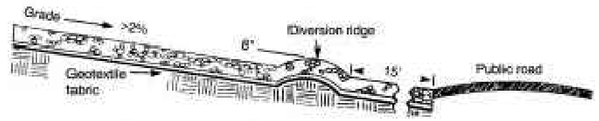

Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

ENTRANCE/EXIT

Permanent Stabilization – These measures will permanently prevent soil erosion and will suspend billing for each month they are functioning properly. When all exposed soil at a site is permanently stabilized, the project will receive final approval from the Soil Erosion Program.

1) **Established Vegetative Cover** – Any form of vegetation that provides a root base in the soil and a barrier between the soil and the weather can be considered permanent stabilization. Forms of acceptable vegetative cover when properly installed and maintained are sod, grass, native trees, shrubs and ground cover.
2) **Woodchips** – As part of landscaping a thick layer of wood chips or other "permanent" mulch is acceptable in non-sloped areas.
3) **Stone** – A thick layer of stone is considered permanent stabilization on all areas except steep slopes. This includes gravel drives, stone gardens, and pavers used for foot traffic. Geo-textile fabric placed underneath stone in swales and drives is advisable.
4) **Pavement** – Roads or driveways are considered permanent stabilization.

It is important to remember that none of the above methods guarantee stabilization. Proper maintenance is the key to good stabilization. The members of the SESC Program staff are happy to answer any questions or to help out with suggestions on what is best for a particular site. Contact us at (734) 222-6860.

Washtenaw County, Office of the Water Resources Commissioner, Soil Erosion Program
Western County Service Center, 705 N. Zeeb Rd, P.O. Box 8645, Ann Arbor, MI 48107-8645
eWashtenaw.org, Direct 734-222-3978, Main 734-222-6860, Fax 734-222-6803

08/01/2024

STATE OF TEXAS · SALAH E. DIAB · 55516 · REGISTERED · PROFESSIONAL ENGINEER

revisions:

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e-mail: seda@satx.rr.com
CIVIL• STRUCTURAL ENVIRONMENTAL• PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
EROSION CONTROL PLAN DETAIL
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 08/01/2024
DRAWN BY: FM
CHECKED BY: SED
SHEET: 2 OF 2

ATTACHMENTs E

N/A

ATTACHMENT F

1.4.2 Temporary Construction Entrance/Exit

The purpose of a temporary gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights-of-way. This practice should be used at all points of construction ingress and egress. Schematic diagrams of a construction entrance/exit are shown in Figure 1-24 and Figure 1-25.

Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected were access is not necessary. A rock stabilized construction entrance should be used at all designated access points.

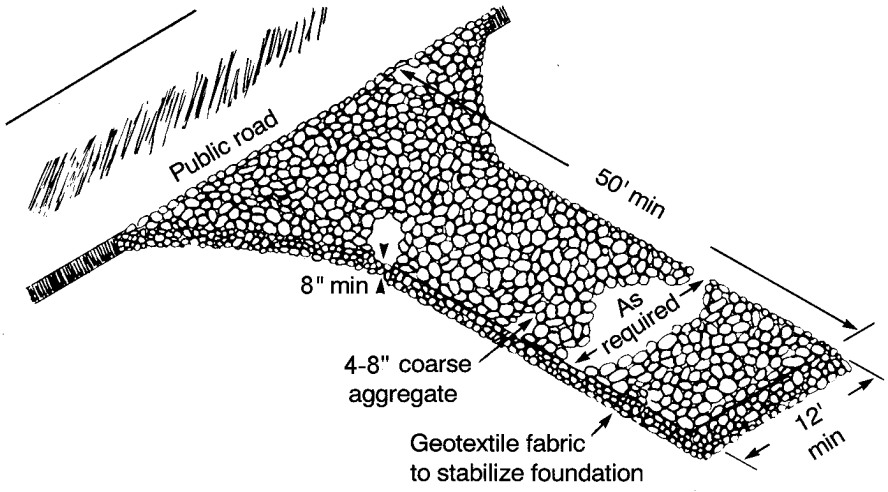


Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

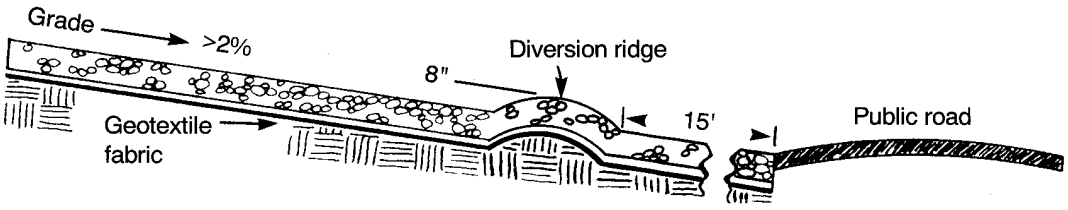


Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.

(2) The aggregate should be placed with a minimum thickness of 8 inches.

(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd^2, a mullen burst rating of 140 lb/in^2, and an equivalent opening size greater than a number 50 sieve.

(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

Installation: (North Carolina, 1993)

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.

(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.

(3) The construction entrance should be at least 50 feet long.

(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.

(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.

(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.

(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

(8) Install pipe under pad as needed to maintain proper public road drainage.

Common trouble points

(1) Inadequate runoff control – sediment washes onto public road.

(2) Stone too small or geotextile fabric absent, results in muddy condition as stone is pressed into soil.

(3) Pad too short for heavy construction traffic – extend pad beyond the minimum 50 foot length as necessary.

(4) Pad not flared sufficiently at road surface, results in mud being tracked on to road and possible damage to road edge.

(5) Unstable foundation – use geotextile fabric under pad and/or improve foundation drainage.

Inspection and Maintenance Guidelines:

(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

1.4.3 Silt Fence

A silt fence is a barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. When properly used, silt fences can be highly effective at controlling sediment from disturbed areas. They cause runoff to pond, allowing heavier solids to settle out. If not properly installed, silt fences are not likely to be effective. A schematic illustration of a silt fence is shown in Figure 1-26.

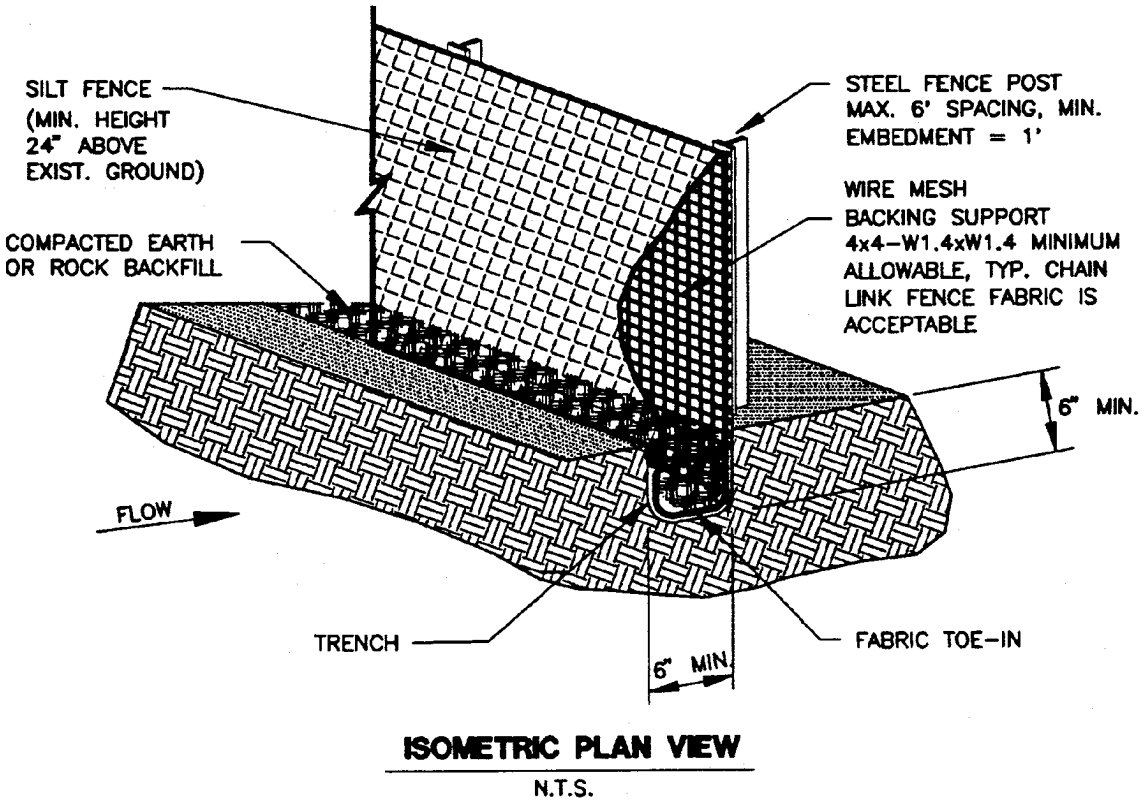


Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

Materials:

(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in^2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.

(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Y-bar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft^2, and Brindell hardness exceeding 140.

(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

Installation:

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1-foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.

(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.

(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.

(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.

(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.

(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

Common Trouble Points:

(1) Fence not installed along the contour causing water to concentrate and flow over the fence.

(2) Fabric not seated securely to ground (runoff passing under fence)

(3) Fence not installed perpendicular to flow line (runoff escaping around sides)

(4) Fence treating too large an area, or excessive channel flow (runoff overtops or collapses fence)

Inspection and Maintenance Guidelines:

(1) Inspect all fencing weekly, and after any rainfall.

(2) Remove sediment when buildup reaches 6 inches.

(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.

(4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

(5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

1.4.18 Concrete Washout Areas

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.

For onsite washout:

- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Below grade concrete washout facilities are typical. These consist of a lined excavation sufficiently large to hold expected volume of washout material. Above grade facilities are used if excavation is not practical. Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this section, with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

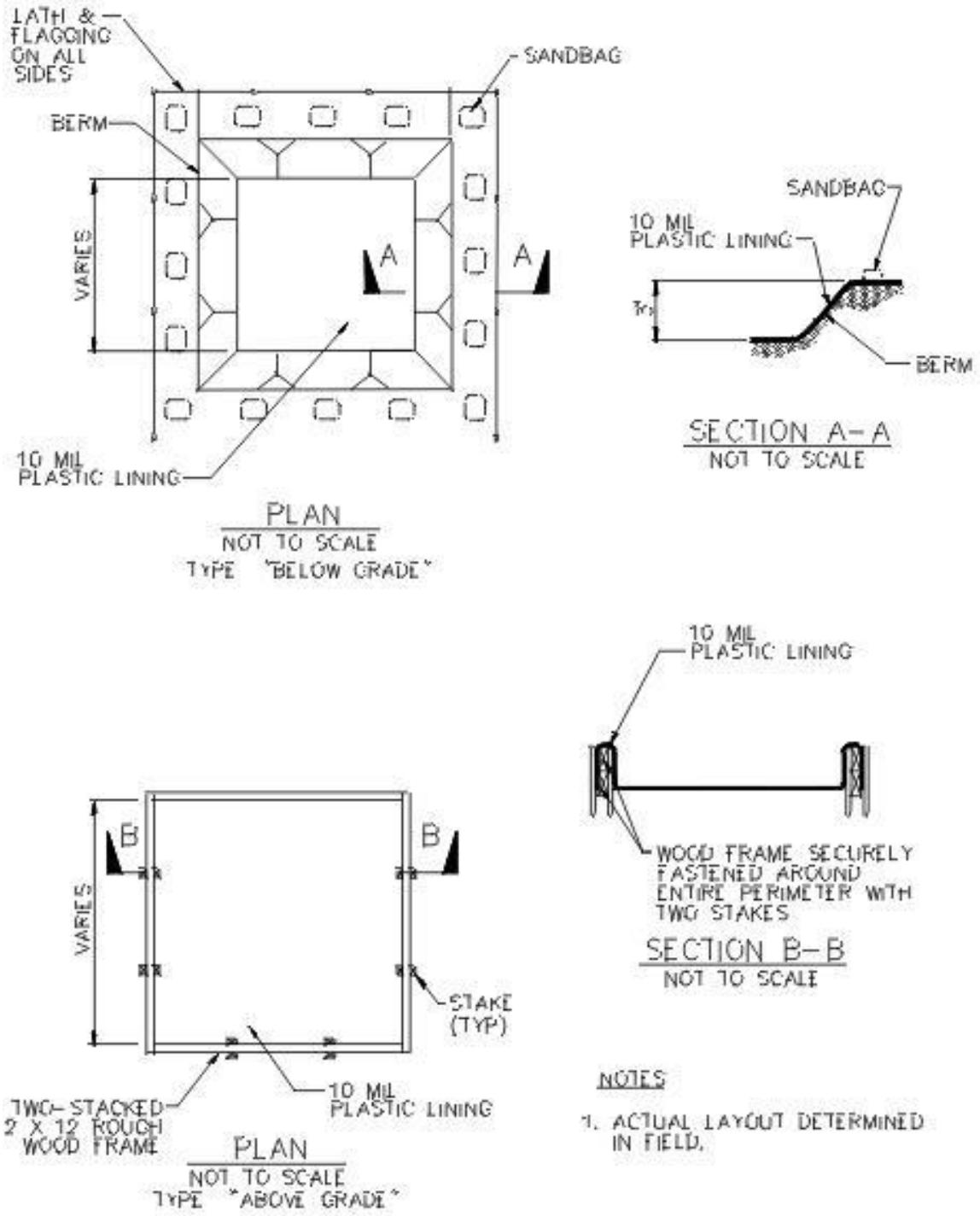
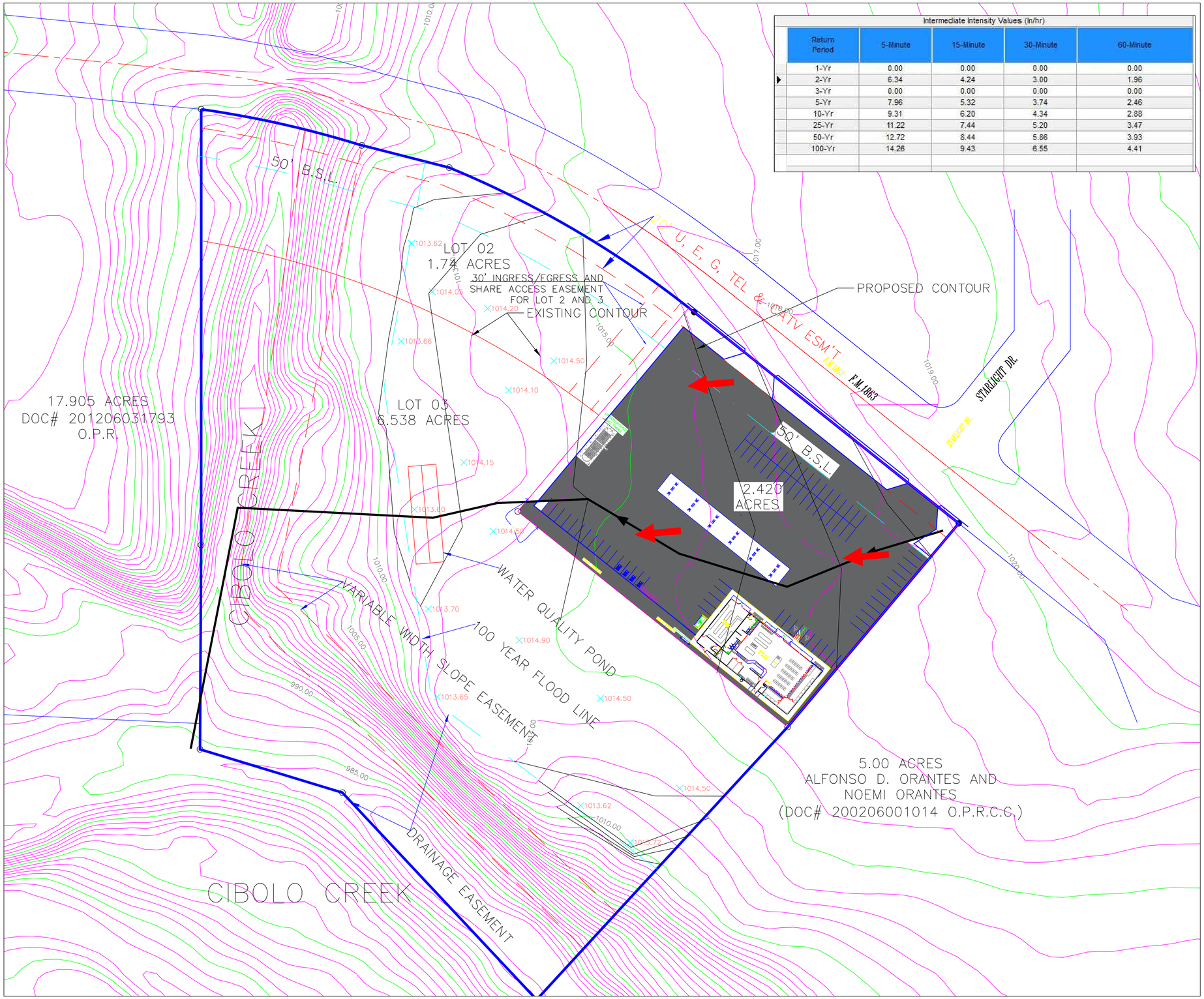


Figure 1-43 Schematics of Concrete Washout Areas

ATTACHMENT G

Drainage Area Map

Intermediate Intensity Values (in/hr)				
Return Period	5-Minute	15-Minute	30-Minute	60-Minute
1-Yr	0.00	0.00	0.00	0.00
2-Yr	6.34	4.24	3.00	1.96
3-Yr	0.00	0.00	0.00	0.00
5-Yr	7.96	5.32	3.74	2.46
10-Yr	9.31	6.20	4.34	2.88
25-Yr	11.22	7.44	5.20	3.47
50-Yr	12.72	8.44	5.86	3.93
100-Yr	14.26	9.43	6.55	4.41



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 INCH = 50 FT.

LEGEND

- DIRECTION OF FLOW
- 1015 EXISTING MAJOR CONTOUR
- 1017 EXISTING MINOR CONTOUR
- 1017 PROP CONTOUR
- DRAIN PATH
- SPOT ELEVATION

08/01/2024

STATE OF TEXAS
SALAH E. DIAB
55516
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PROFESSIONAL ENGINEER

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CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
PROPOSED DRAINAGE PLAN
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 06/22/2023
DRAWN BY: FM
CHECKED BY: SED
SHEET: 1 OF 1

ATTACHMENT H:
N/A

ATTACHMENT I:

INSPECTION AND MAINTENANCE PROCEDURES FOR 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.

INSPECTION AND MAINTENANCE PROCEDURES FOR TEMPORARY CONSTRUCTION ENTRANCE/EXIT

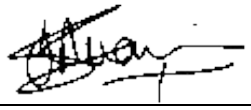
1. The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
2. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
5. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

INSPECTION AND MAINTENANCE PROCEDURES FOR CONCRETE WASHOUT

1. Avoid mixing excess amounts of fresh concrete.
2. Perform washout of concrete trucks in designated areas only.
3. Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
4. Do not allow excess concrete to be dumped onsite, except in designated areas.

I understand that I am responsible for maintenance of the Temporary Pollution Abatement Measures included in this project until each 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, have read and understand the requirements of the attached Maintenance Plan and Schedule.



Signature

08/01/2024

Date

ATTACHMENT J :

Site Stabilization

Removing the vegetative cover and altering the soil structure by clearing, grading, and compacting the surface increases an area's susceptibility to erosion. Apply stabilizing measures as soon as possible after the land is disturbed (Figure 1-5). Plan and implement temporary or permanent vegetation, mulches, or other protective practices to correspond with construction activities. Protect channels from erosive forces by using protective linings and the appropriate channel design. Consider possible future repairs and maintenance of these practices in the design.

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once a vegetative cover of about 80% has been established. However, often seeding and fertilizing do not produce as thick a vegetative cover as do seed and mulch or netting. Newly established vegetation does not have as extensive a root system as existing vegetation and therefore is more prone to erosion, especially on steep slopes. Care should be taken when fertilizing to avoid untimely or excessive application. Since the practice of seeding and fertilizing does not provide any protection during the time of vegetative establishment, it should be used only on favorable soils in very flat areas and not in sensitive areas.

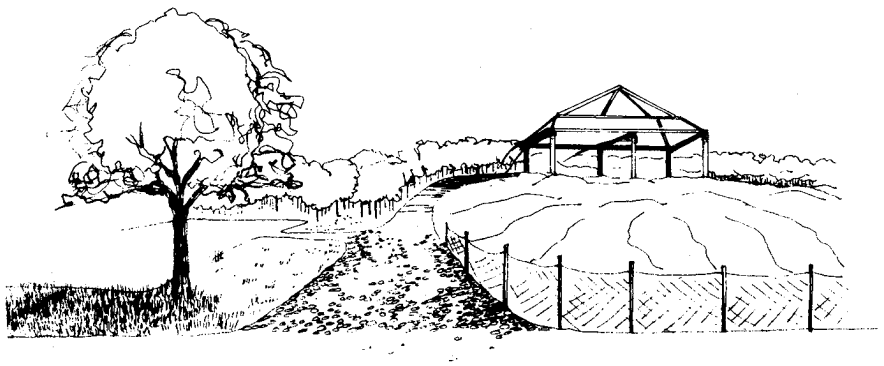


Figure 1-5 Stabilization of Disturbed Areas (North Carolina, 1993)

The management of land by using ground cover reduces erosion by reducing the flow rate of runoff and the raindrop impact. Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days. In very flat, non-sensitive areas with favorable soils, stabilization may involve simply seeding and fertilizing. Mulch and/or sod may be necessary on steeper slopes, for erodible soils, and near sensitive areas. Sediment that has escaped the site due to the failure of sediment and erosion controls should be removed as soon as possible to minimize offsite impacts. Permission should be obtained from adjacent landowners prior to offsite sediment removal.

Mulching/mats can be used to protect the disturbed area while vegetation becomes established. Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulches/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone should be used only for temporary protection of the soil surface or when permanent seeding is not feasible. The useful life of mulch varies with the material used and the amount of precipitation, but is approximately 2 to 6 months.

During times of year when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are not highly erodible. On steep slopes or highly erodible soils, multiple mulching treatments should be used. Interlocking ceramic materials, filter fabric, and netting are available for this purpose. Before stabilizing an area, it is important to have installed all sediment controls and diverted runoff away from the area to be planted. Runoff may be diverted away from denuded areas or newly planted areas using dikes, swales, or pipe slope drains to intercept runoff and convey it to a permanent channel or storm drain. Reserved topsoil may be used to revegetate a site if the stockpile has been covered and stabilized.

Consideration should be given to maintenance when designing mulching and matting schemes. Plastic nets are often used to cover the mulch or mats; however, they can foul lawn mower blades if the area requires mowing.

Sod can be used to permanently stabilize an area. Sodding provides immediate stabilization of an area and should be used in critical areas or where establishment of permanent vegetation by seeding and mulching would be difficult. Sodding is also a preferred option when there is high erosion potential during the period of vegetative establishment from seeding.

Because of the hardy drought-resistant nature of wildflowers, they may be more beneficial as an erosion control practice than turf grass. While not as dense as turfgrass, wildflower thatches and associated grasses are expected to be as effective in erosion control and contaminant absorption. Because thatches of wildflowers do not need fertilizers, pesticides, or herbicides, and the need for watering is minimal, implementation of this practice may result in cost savings. In 1987, Howard County, Maryland, spent $690.00 per acre to maintain turfgrass areas, compared to only $31.00 per acre for wildflower meadows. A wildflower stand requires several years to become established; however, maintenance requirements are minimal once the area is established.

Plan for Temporary Structural Controls

Retain Sediment on the Site. Even with careful planning, some erosion is unavoidable. The resulting sediment must be trapped on the site. Plan the location where sediment deposition will occur and maintain access for cleanout. Protect low points below disturbed areas by building barriers to reduce sediment loss. Whenever possible, plan and construct sediment traps and basins before other land-disturbing activities (Figure 1-6).

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

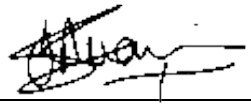
Signature

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

Print Name of Customer/Agent: Ynayat Momin

Date: *08/01/2024*

Signature of Customer/Agent



Regulated Entity Name: Bulverde Convenience Store Subdivision

Permanent Best Management Practices (BMPs)

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

1. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   ☐ N/A

2. ☒ 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

PERMANENT STORMWATER SECTION
ATTACHMENTS

ATTACHMENT A: N/A

ATTACHMENT B: N/A, The upgradient has its own BMP'S

ATTACHMENT C: BMPs for onsite Stormwater.

3.4.7 Sand Filter Systems

Since the mid-1980's, sand filtration has been the predominant nonpoint source water quality management practice used in the Austin, Texas area. Sand filters tend to have good longevity due to their offline design and the high porosity of the sand media. However, without proper maintenance, sand filters are prone to clogging, which dramatically reduces performance and can lead to nuisances associated with standing water. Pollutant removal is achieved primarily by straining pollutants through the filtration media, settling of solids on the top of the sand bed, and, if the filter maintains a grass cover crop, through plant uptake. Sand filters often are perceived to have negative aesthetic appeal, especially when not maintained, thus landscaping and basin configuration design should be carefully considered.

Sand filters may be configured as either a single basin or separate basins for sedimentation and filtration. If the sand filter design includes a wall with a riser pipe between the sedimentation and filtration chambers (separate basins), then the sedimentation basin should be sized to contain the entire design capture volume (termed "full sedimentation" in the City of Austin design manual). If the two chambers are separated by gabion baskets or similar porous structures, then the sum of the volumes of the sedimentation and filtration chambers must equal the designed capture volume (also known as partial sedimentation).

Design Criteria

(1) *Facility Sizing* – The required water quality volume is dependent on the characteristics of the contributing drainage area. The method for calculation of required water quality volume is specified in Section 3.3 of this manual. This water quality volume should be increased by a factor of 20% to accommodate reductions in the available storage volume due to deposition of solids in the time between full-scale maintenance activities. A fixed vertical sediment depth marker should be installed in the sedimentation basin to indicate when sediment accumulation equals 20% of the water quality volume and sediment removal is required.

(2) *Basin Geometry* – The water depth in the sedimentation basin when full should be at least 2 feet and no greater than 8 feet. A fixed vertical sediment depth marker should be installed in the sedimentation basin to indicate when the accumulated depth of sediment equals 6 inches and sediment removal is required. The minimum average surface area for the sand filter (Af) varies depending on whether the proposed facility includes a separate sedimentation basin.

The recommended filter area for sand filters with a separate sedimentation basin is:

$$A_f = \frac{WQV}{18}$$

A_f = minimum surface area for the filtration basin in square feet

WQV = water quality volume in cubic feet

The sand filter area for facilities that combine filtration and sedimentation in a single basin is calculated as:

$$A_f = \frac{WQV}{10}$$

The larger filter area compensates for the less effective pretreatment in the sedimentation basin and reduces maintenance requirements.

(3) *Sand and Gravel Configuration* – The sand filter is constructed with 18 inches of sand overlying 6 inches of gravel. The sand and gravel media are separated by permeable geotextile fabric. Four-inch perforated PVC pipe is used to drain captured flows from the gravel layer. A minimum of 2 inches of gravel must cover the top surface of the PVC pipe. Figure 3-23 presents a schematic representation of a standard sand bed profile.

(4) *Sand Properties* – The sand grain size distribution should be comparable to that of "washed concrete sand" (i.e., ASTM C-33 fine aggregate).

(5) *Underdrain Pipe Configuration* – The underdrain piping should consist of a main collector pipe and two or more lateral branch pipes, each with a minimum diameter of 4 inches. The pipes should have a minimum slope of 1% (1/8 inch per foot) and the laterals should be spaced at intervals of no more than 10 feet. There should be no fewer than two lateral branch pipes. Each individual underdrain pipe should have a screw-on cleanout access location. All piping is to be Schedule 40 PVC. The maximum spacing between rows of perforations should not exceed 6 inches.

(6) *Basin Lining* – The basin lining should conform to the specifications described in Section 3.4.2.

(7) *Flow Splitter* – The inflow structure to the sedimentation chamber should incorporate a flow-splitting device capable of isolating the capture volume and bypassing the 25-year peak flow around the sand filter system once the entire water quality volume has been captured.

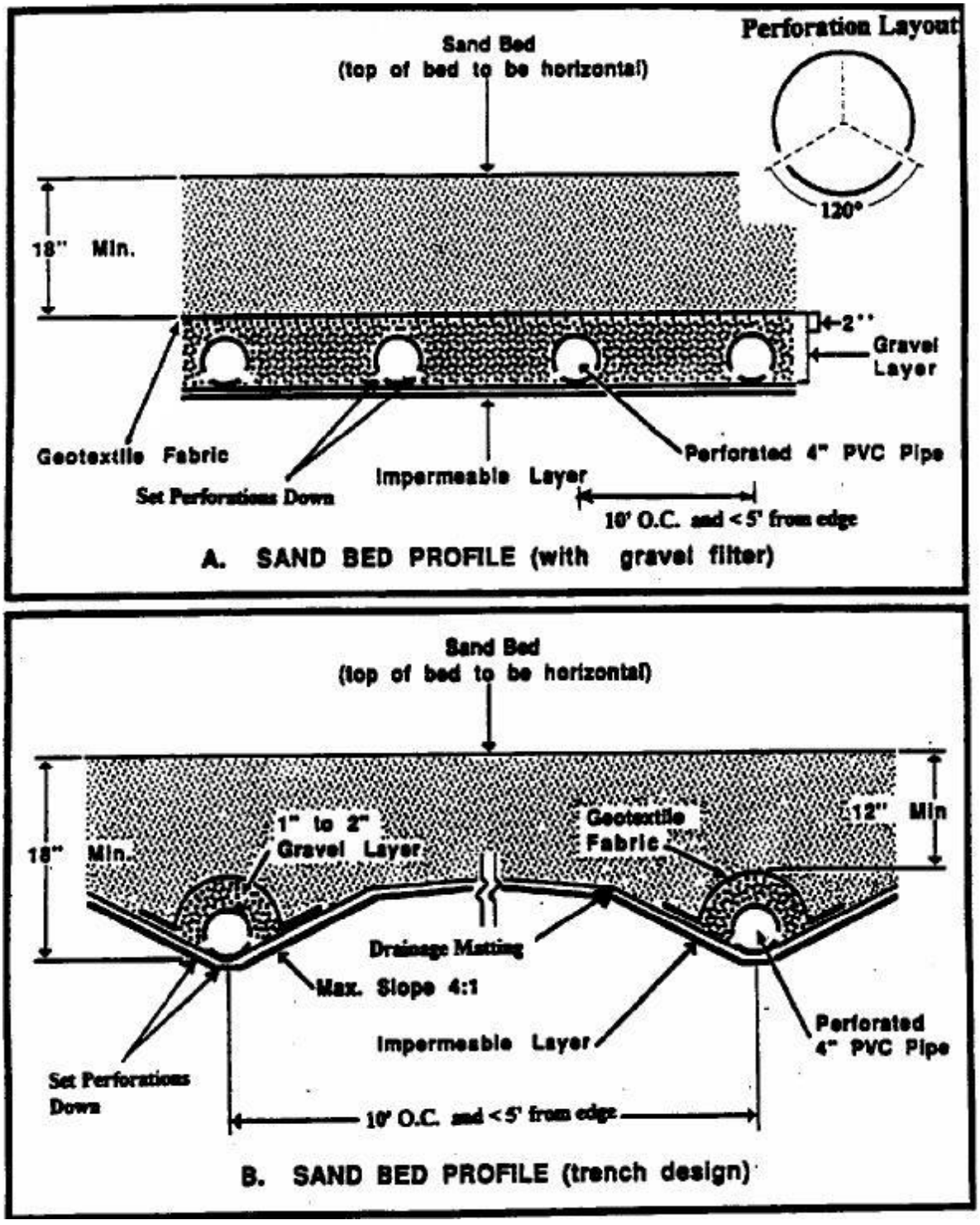


Figure 3-23 Schematic of Sand Bed Profile

(8) *Basin Inlet* – Energy dissipation is required at the sedimentation basin inlet so that flows entering the basin should be distributed uniformly and at low velocity in order to prevent resuspension and encourage conditions necessary for deposition of solids.

(9) *Sedimentation Pond Outlet Structure* – The outflow structure from the sedimentation chamber should be (1) an earthen berm; (2) a concrete wall; or (3) a rock gabion. When a concrete wall is used, rock riprap is not required upstream of the wall. Gabion outflow structures should extend across the full width of the facility such that no short-circuiting of flows can occur. The gabion rock should be 5 to 8 inches in diameter. The receiving end of the sand filter should be protected (splash pad, riprap, etc.) such that erosion of the sand media does not occur. The outlet of the sedimentation basin should have flow control so that the sedimentation basin drains from full in 24 hours. This can be accomplished with either an orifice or by adjusting a valve. The riser pipe should have a minimum diameter of 6 inches with four 1-inch perforations per row. The vertical spacing between rows should be 4 inches (on centers).

(10) *Sand Filter Discharge* – If a gabion structure is used to separate the sedimentation and filtration basins, a valve must installed so that discharge from the BMP can be stopped in case runoff from a spill of hazardous material enters the sand filter. The control for the valve must be accessible at all times, including when the basin is full.

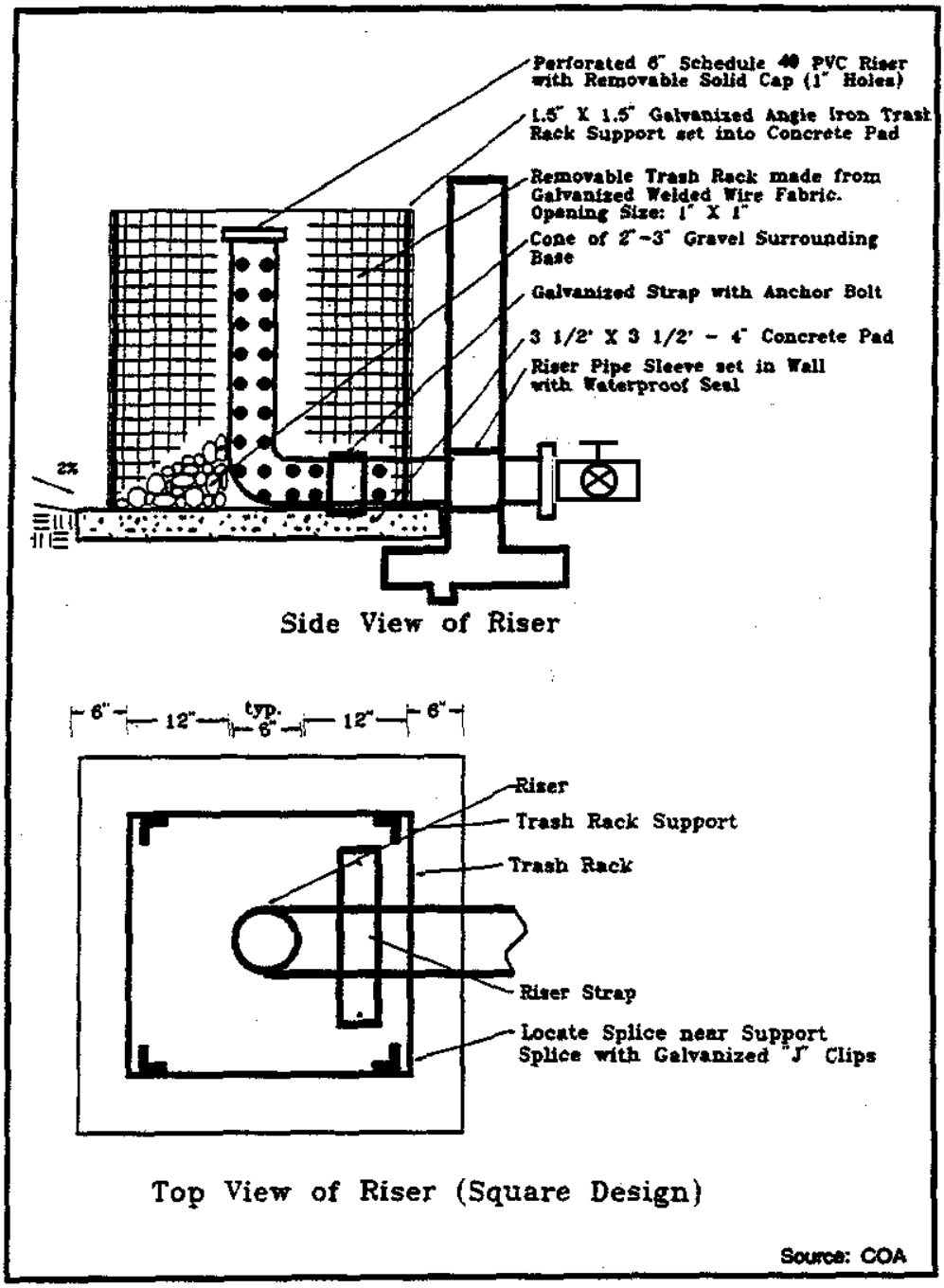


Figure 3-24 Detail of Sedimentation Riser Pipe

(11) *Safety Considerations* – Safety is provided either by fencing of the facility or by managing the contours of the pond to eliminate dropoffs and other hazards. Earthen side slopes should not exceed 3:1 (H:V) and should terminate on a flat safety bench area. Landscaping can be used to impede access to the facility. The primary spillway opening must not permit access by small children. Outfall pipes more than 48 inches in diameter should be fenced.

(12) *Stabilization Plan* – A plan should be provided indicating how adjacent terrestrial areas will be stabilized.

3.4.8 Bioretention

Bioretention facilities are effectively sand filters that include additional organic material in the filtration media to support vegetation. This allows these facilities to be integrated into the site landscaping where they can provide unobtrusive treatment of stormwater runoff.

1) *Water Quality Volume* – The water quality is calculated according to the guidelines in Section 3.3. This volume should be increased by a factor of 20% to accommodate reductions in the available storage volume due to deposition of solids in the time between full-scale maintenance activities. A fixed vertical sediment depth marker should be installed in the facility to indicate when sediment accumulation equals 20% of the water quality volume and sediment removal is required.

2) *Inlet Design* – When siting bioretention facilities to intercept drainage, the designer should attempt to use the preferred "off-line" facility design. Off-line facilities are defined by the flow path through the facility. Any facility that utilizes the same entrance and exit flow path upon reaching pooling capacity is considered an off-line facility.

3) *Filtration Area* – The footprint of the media should be sufficiently large that it underlies the entire flooded area for the design water quality volume calculated according to the guidelines in Section 3.3. The water depth over the media for the design storm should not exceed 6 inches.

4) *Media Properties* – The filtration media should have a minimum thickness of 3 feet and should have a maximum clay content of less than 5%. The soil mixture should be 50-60% sand; 20-30% compost; and 20-30% topsoil. The soil should be a uniform mix, free of stones, stumps, roots, or other similar objects larger than two inches. No other materials or substances should be mixed or dumped within the bioretention that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. Provide clean sand, free of deleterious materials. Sand should be ASTM C- 33 with grain size of 0.02- 0.04 inches (same as sand filter).

ATTACHMENT D: N/A

ATTACHMENT E: N/A

ATTACHMENT F:

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Bulverde Convenience Store Subdivision**
Date Prepared: **8/1/2024**

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

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

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

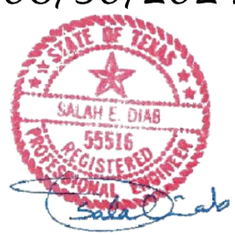
where:

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

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

County =	Comal	
Total project area included in plan * =	10.70	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	2.12	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	1903	lbs.

08/30/2024



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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area =	**2.42**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**2.12**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.88**	
$L_{M\ THIS\ BASIN}$ =	**1903**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Sand Filter**
Removal efficiency = **89** percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

08/30/2024

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

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

where:

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

A_C = **2.42** acres

A_I =	**2.12**	acres
A_P =	**0.30**	acres
L_R =	**2159**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**1903**	lbs.
F =	**0.88**	

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

Rainfall Depth =	**1.50**	inches
Post Development Runoff Coefficient =	**0.72**	
On-site Water Quality Volume =	**9426**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**1885**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**11311**	cubic feet

08/30/2024

STATE OF TEXAS
SALAH E. DIAB
55516
REGISTERED
PROFESSIONAL ENGINEER

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 Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin =	**NA**	cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	**0.1**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**NA**	square feet	
	NA	acres	

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

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

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	**11311**	cubic feet	
Minimum filter basin area =	**524**	square feet	
Maximum sedimentation basin area =	**4713**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**1178**	square feet	**For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**11311**	cubic feet	
Minimum filter basin area =	**943**	square feet	
Maximum sedimentation basin area =	**3770**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**236**	square feet	**For maximum water depth of 8 feet**

08/30/2024

10. Bioretention System Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = **NA** cubic feet

DESIGN OF SEDIMENTATION/FILTRATION SYSTEM:

Add 20% to the required Water Quality volume for maintenance = 1.2*WQV

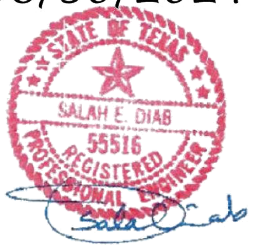
Design WQV = 11,311 cu.ft.

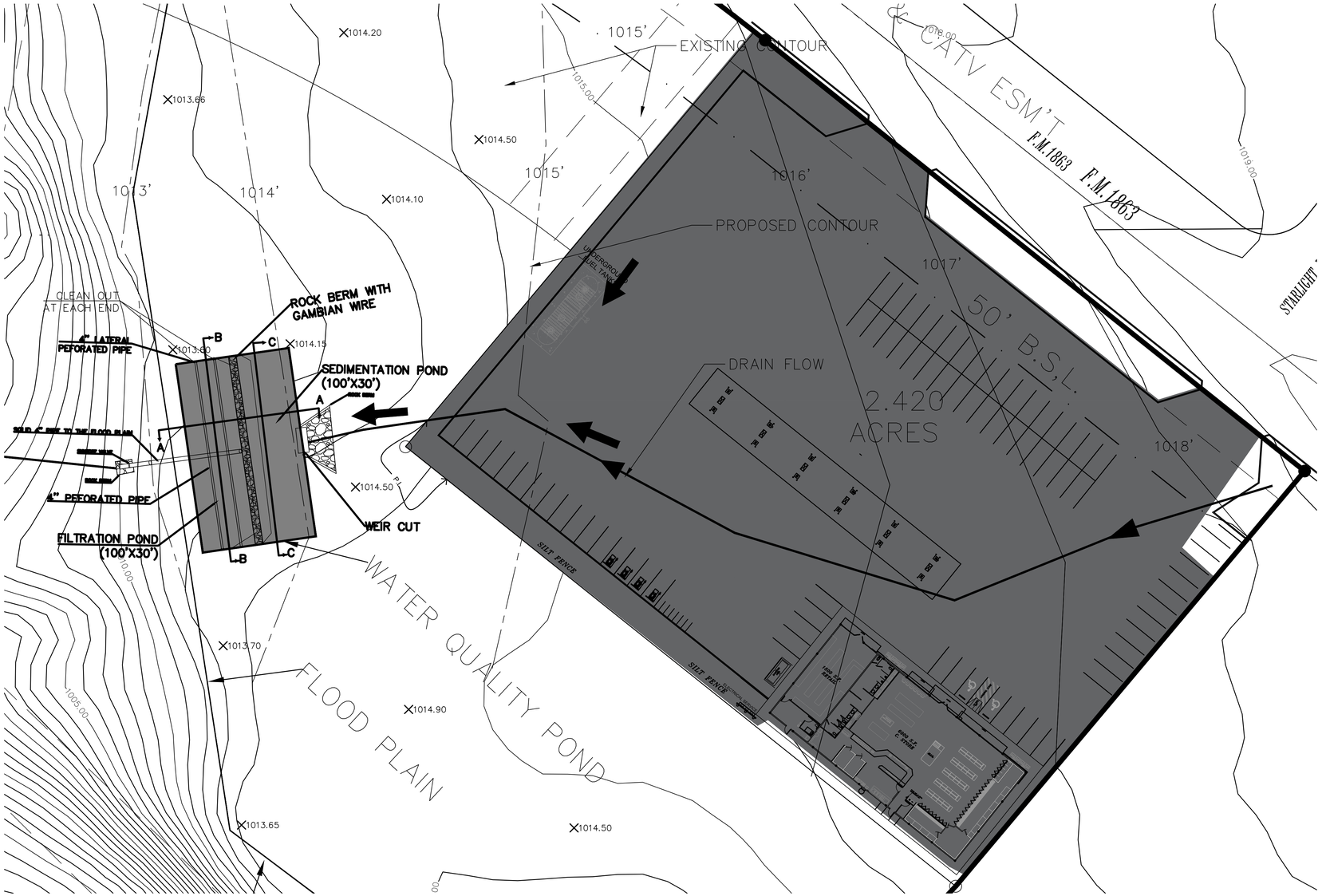
The minimum sand filter surface area (A_f) for the combined filtration and sedimentation in a single basin = Design WQV/(7+2.33*H)

where, H = maximum ponding depth above filtration basin = **2** feet

Therefore, required sand filter surface area (A_f) =	**943**	**sq. ft.**	
Provided facility sand filter area			
Provided Length of the filtration chamber =	**100.00**	**feet**	
Provided Width of the filtration chamber =	**30.00**	**feet**	
Provided filtration surface Area =	**3,000.00**	**sq.ft.**	
	> 943	sq.ft.	**O.K.**
The maximum sedimentation area As =			
As =	3,770.00	sq. ft.	
Length of the sedimentation chamber =	**100.00**	**feet**	
Width of the sedimentation chamber =	**30.00**	**feet**	
Provided Sedimentation surface Area =	**3,000.00**	**sq.ft.**	
	< 3770	sq.ft.	**O.K.**
Provided facility volume =	**12,000**	**cu.ft.**	(from plans)
	> 11311	cu.ft.	**O.K.**

08/30/2024





GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FT.

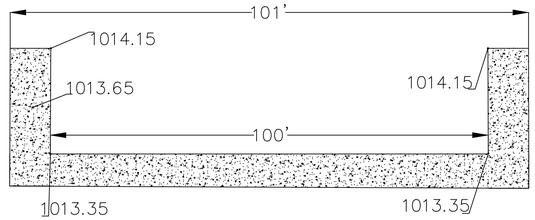
LEGEND

- DIRECTION OF FLOW
- 1015 — EXISTING MAJOR CONTOUR
- 1017 — EXISTING MINOR CONTOUR
- 1017 — PROP CONTOUR
- SPOT ELEVATION

NOTE:

THE BASIN IS A CONCRETE LINER.
SAND AND GRAVEL LAYER (MATCH RG-348 DESIGN CRITERIA SECTION 3.4.2 AND 3.4.7).
THE SAND FILTER IS CONSTRUCTED WITH 12 INCHES OF SAND OVERLYING 6 INCHES OF GRAVEL. THE SAND AND GRAVEL MEDIA ARE SEPARATED BY PERMEABLE GEOTEXTILE FABRIC. FOUR-INCH PERFORATED PVC PIPE IS USED TO DRAIN CAPTURED FLOWS FROM THE GRAVEL LAYER. A MINIMUM OF 2 INCHES OF GRAVEL MUST COVER THE TOP SURFACE OF THE PVC PIPE. FIGURE 3-23 PRESENTS A SCHEMATIC REPRESENTATION OF A STANDARD SAND BED PROFILE. THE SAND GRAIN SIZE DISTRIBUTION SHOULD BE COMPARABLE TO THAT OF "WASHED CONCRETE SAND" (I.E., ASTM C-33 FINE AGGREGATE)

IMPERVIOUS COVER TREATMENT SUMMARY TABLE	
TOTAL EX IMPERVIOUS COVER	00.00 AC
PROPOSED IMPERVIOUS COVER	2.12 AC.
TOTAL PROPOSED IMPERVIOUS COVER INCREASE	2.12 AC
TREATED IMPERVIOUS COVER AREA	2.12 AC. (100%)



SECTION C–C
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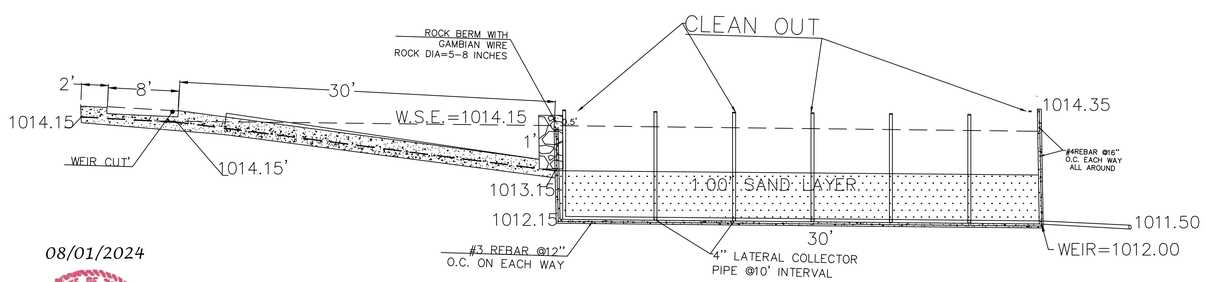

SECTION A–A
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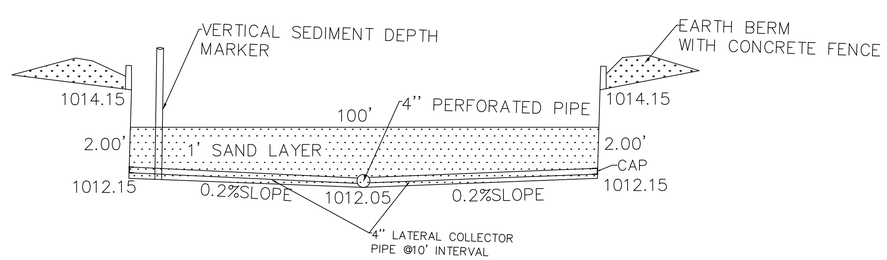


SECTION B–B
(NOT TO SCALE)

08/01/2024

STATE OF TEXAS
SALAH E. DIAB
95516
REGISTERED
PROFESSIONAL ENGINEER

Seda Consulting Engineers, Inc.
Firm Registration No: F-1601
6735 IH 10 West
San Antonio, Texas 78201
(210) 308-0057
FAX:(210) 308-8842
e-mail: seda@satx.rr.com
CIVIL • STRUCTURAL • ENVIRONMENTAL • PLANNER

BULVERDE CONVENIENCE STORE SUBDIVISION
WATER QUALITY POND PLAN
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1907
DATE: 05/02/2024
DRAWN BY: FM
CHECKED BY: SED
SHEET: 1 OF 2

CONSTRUCTION NOTES:

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.

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

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

11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR

    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

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

08/01/2024

STATE OF TEXAS
SALAH E. DIAS
55516
REGISTERED
PROFESSIONAL ENGINEER

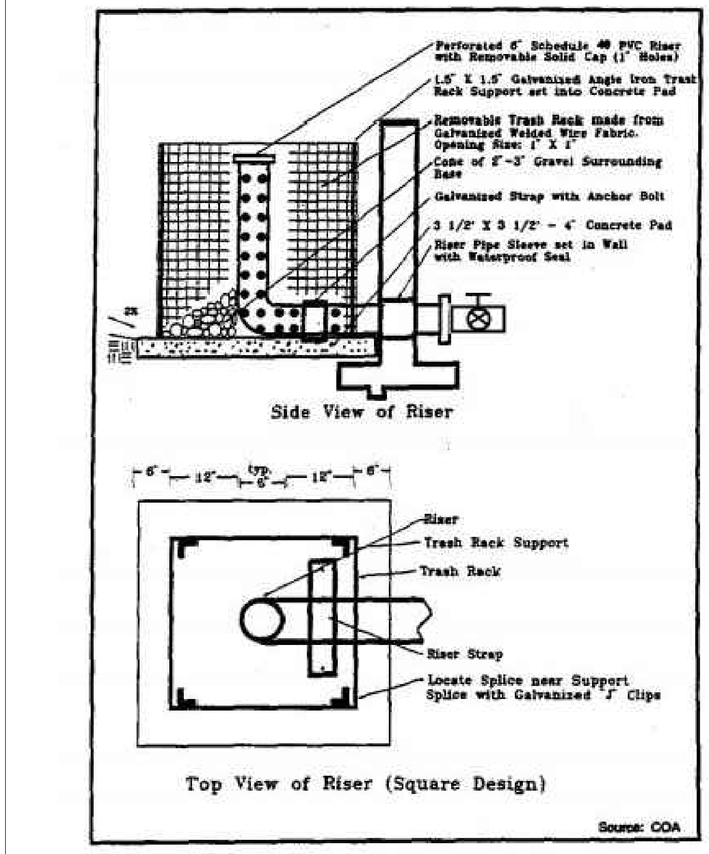


Figure 3-24 Detail of Sedimentation Riser Pipe

Revisions:

Seda Consulting Engineers, Inc.
Firm Registration No: F-1601
6735 IH 10 West
San Antonio, Texas 78201
(210) 308-0057
FAX:(210) 308-8842
e-mail: seda@satx.rr.com
CIVIL • STRUCTURAL ENVIRONMENTAL • PLANNER

SCE

BULVERDE CONVENIENCE STORE SUBDIVISION
WATER QUALITY POND DETAIL
CITY OF BULVERDE, COMAL COUNTY, TEXAS

JOB NO. 1811
DATE: 08/01/2024
DRAWN BY: FM
CHECKED BY: SED
SHEET: 2 OF 2

ATTACHMENT G:

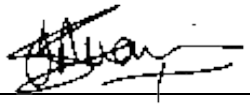
MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

1. 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.
2. 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.
3. 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.
4. 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.
5. Filter Underdrain: Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.
6. 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.

It should be noted that the timing and procedures presented herein are general guidelines, adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until each 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, have read and understand the requirements of the attached Maintenance Plan and Schedule.



Signature

08/01/2024

Date

ATTACHMENT H & I : N/A

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

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN		RN

SECTION II: Customer Information

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

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) | *If new Customer, enter previous Customer below:*

Viata Bulverde property | N/A

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0804654070	32085545740		

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

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

INAYAT MOMIN
2931 ANTIQUE BEND

City	State	ZIP	ZIP + 4
San Antonio	TX	78259	

16. Country Mailing Information (*if outside USA*) | **17. E-Mail Address** (*if applicable*)

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(210) 326-2551		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name (*Enter name of the site where the regulated action is taking place.*)

23. Street Address of the Regulated Entity: *(No PO Boxes)*	4470 FM 1863							
	City	Bulverde	State	TX	ZIP	78163	ZIP + 4	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	at the Southwest corner of FM 1863 and Starlight Drive

26. Nearest City	State	Nearest ZIP Code
San Antonio	TX	78256

27. Latitude (N) In Decimal:	29.750307		28. Longitude (W) In Decimal:	-98.404540	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	45	01	-98	24	16

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)

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

Convenience store for gas station purpose

34. Mailing Address:	Inayat Momin						
	2931 ANTIQUE BEND						
	City	San Antonio	State	TX	ZIP	78259	ZIP + 4

35. E-Mail Address:	

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(210) 326-2551		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

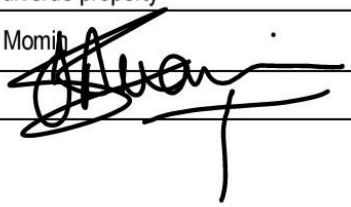
SECTION IV: Preparer Information

40. Name:	Salah E. Diab, PhD., P.E.	41. Title:	Project Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 308-0057		( ) -	seda@satx.rr.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	viata bulverde property	Job Title:	President, Secretary Treasurer
Name *(In Print)*:	Inayat Momin	Phone:	(210) 326- 2551
Signature:		Date:	03/14/2024

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Bulverde Convenience Store Subdivision
Regulated Entity Location: at the Southwest corner of FM 1863 and Starlight Drive
Name of Customer: Viata Bulverde property
Contact Person: INAYAT MOMIN Phone: 210-326-2551
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment**. This payment is being submitted to:

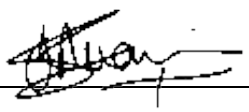
☐ Austin Regional Office
☒ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☐ Contributing Zone ☒ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	10.698 Acres	$ 6,500.00
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: 

Date: 03/14/2024

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

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

I INAYAT MOMIN,
Print Name

Owner, President, Secretary/Treasurer,
Title - Owner/President/Other

of Viata Bulverde property,
Corporation/Partnership/Entity Name

have authorized Salah Diab, P.E.
Print Name of Agent/Engineer

of Seda Consulting Engineers, Inc
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

03/14/2024
Date

THE STATE OF Texas §

County of BEXAR §

BEFORE ME, the undersigned authority, on this day personally appeared Ernest Momin 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 14th day of MARCH, 2024

NOTARY PUBLIC

Typed or Printed Name of Notary

RIDA A. DAAU
My Notary ID # 126901245
Expires May 22, 2025

MY COMMISSION EXPIRES: _____