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: Green Plaza @ Bulverde Retail						**2. Regulated Entity No.:**			
3. Customer Name: GPD at Bulverde, LLC						**4. Customer No.:**			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**		1.48 Acres	
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**			BayFilter (ADS)			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Bexar		**14. Watershed:**			Salado Creek Watershed			

Application Distribution

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

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

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

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

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	_X_	___	___	___	___
Region (1 req.)	_X_	___	___	___	___
County(ies)	_X_	___	___	___	___
Groundwater Conservation District(s)	_X_ Edwards Aquifer Authority _X_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.
Kevin Love Print Name of Customer/~~Authorized~~ Agent
Signature of Customer/Authorized Agent 5-30-24 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.

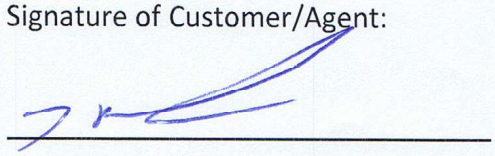
Signature

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: Kevin W. Love, P.E.

Date: 5-30-24

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Green Plaza @ Bulverde Retail
2. County: Bexar
3. Stream Basin: Elm Waterhole Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer
5. Edwards Aquifer Zone:
   - ☒ Recharge Zone
   - ☐ Transition Zone
6. Plan Type:
   - ☒ WPAP
   - ☐ SCS
   - ☒ Modification
   - ☐ AST
   - ☐ UST
   - ☐ Exception Request

7. Customer (Applicant):

   Contact Person: Robert Green
   Entity: GPD at Bulverde, LLC
   Mailing Address: PO Box 700542
   City, State: San Antonio, TX Zip: 78270-0542
   Telephone: (210) 421-8347 FAX: N/A
   Email Address: greenpropertydevelopment@gmail.com

8. Agent/Representative (If any):

   Contact Person: Kevin W. Love, P.E. / Jackson Chapman
   Entity: KLove Engineering, LLC
   Mailing Address: 22610 US Highway 281 N. Ste. 204
   City, State: San Antonio, TX Zip: 78258
   Telephone: (210) 485-5683 FAX: N/A
   Email Address: klove@kloveengineering.com / jchapman@kloveengineering.com

9. Project Location:

   ☒ The project site is located inside the city limits of San Antonio.
   ☐ 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.

    Approximately 1,000 ft south of the intersection of N US Hwy 281 & Estate Gate Dr.

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

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

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

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

    ☐ Survey staking will be completed by this date: _____

14. ☒ **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.

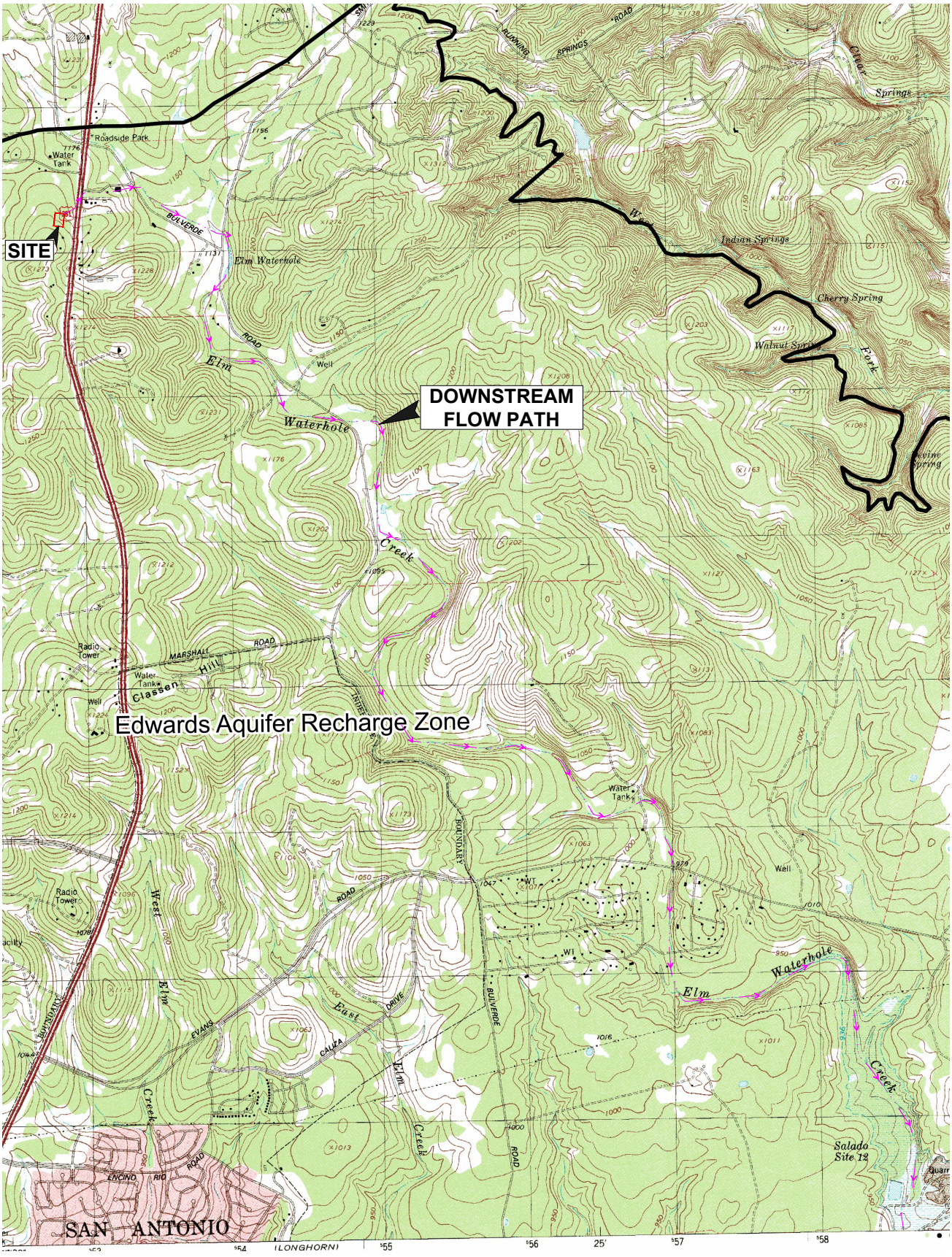
PROJECT NO.	1148-03
DATE:	03/26/24
DRAWN BY:	JC
DESIGNED BY:	AB
SCALE:	N.T.S.

GREEN PLAZA @ BULVERDE RETAIL

25211 N US HWY 281
SAN ANTONIO, TEXAS 78260

ATTACHMENT A - ROAD MAP

K Love ENGINEERING
Site Development Engineering Services
Firm No. 11042
www.kloveengineering.com (210) 485-5683



PROJECT NO.	1148-03
DATE:	03/26/24
DRAWN BY: JC	**DESIGNED BY:** AB
SCALE:	N.T.S.

GREEN PLAZA @ BULVERDE RETAIL

25211 N US HWY 281
SAN ANTONIO, TEXAS 78260

ATTACHMENT B - USGS MAP

KLove ENGINEERING
Site Development Engineering Services
Firm No. 11042
www.kloveengineering.com (210) 485-5683

ATTACHMENT C
Project Description

The subject project is located approximately 1,000 linear feet south of N US Hwy 281 & Estate Gate Dr intersection in San Antonio, TX. This location is within the limits of the City of San Antonio and the Steven M. Clouse Water Recycling Center. This area is not in a mandatory detention area and is currently undeveloped. The property is not located within the 100-yr floodplain per the Flood Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) #48029C0130G, dated 9/29/2010.

The proposed retail and fast-food restaurant building will be constructed on Lot 1 (1.48 acres) out of the subdivision plat *"Ashton Gray 281 Subdivision", Vol 20003 Page 537.* The total proposed impervious cover for this proposed development is approximately 1.23 acres (53,518 sq-ft). The proposed improvements addressed by this Water Pollution Abatement Plan Modification (WPAP MOD) are as follows:

(1) Access
(2) Sidewalk
(3) Parking Lot
(4) Commercial Building
(5) Utilities

To prevent pollution of storm water runoff originating on-site and potentially flowing across and off the site after construction, an additional / second BayFilter (ADS) BMP is proposed to be built on the northeast side of the property as a permanent BMP, (there is an existing approved BMP ID: 13001966, RN112007182, approved on September 20, 2024). The Permanent Pollution Abatement Measures (BMPs) for the Green Plaza @ Bulverde Retail project will be designed in accordance with the TCEQ Technical Guidance Manual RG-348 (Revised September 2007) to remove over 80% of the increased Total Suspended Solids (TSS) for the proposed improvements. The proposed additional BayFilter (ADS) BMP will capture / treat 0.08 ac of impervious cover with no impervious cover bypassing the proposed BMP. The proposed BayFilter BMP will capture / treat over 80% of the increased TSS with the Lm/Lr (65/75 = 0.87) ratio being less than 1 (see attached TSS calculations).

Potable water and wastewater disposal is provided by the San Antonio Water System (SAWS). Wastewater is disposed of by conveyance to the existing Steven M. Clouse Water Recycling Center operated by SAWS.

GEOLOGIC ASSESSMENT (WPAP)

ASHTON GRAY TRACT
+/- 1.6 ACRES
SAN ANTONIO, TEXAS

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E21273
DECEMBER 13, 2021

Prepared exclusively for

Westwood Professional Services
1718 Dry Creek Way, Suite 110
San Antonio, Texas 78259

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

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

December 13, 2021

Westwood Professional Services
1718 Dry Creek Way, Suite 110
San Antonio, Texas 78259

Attn: Yen W. Lai, P.E.

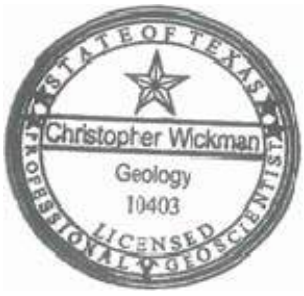
SUBJECT:
Geologic Assessment (WPAP)
for the Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
+/- 1.6 Acres
San Antonio, Texas
FGS Project N^{o} FGS-E21273

Dear Yen W. Lai, P.E.:

Frost GeoSciences, Inc., (FGS) is pleased to submit the enclosed Geologic Assessment completed for the above referenced project site as it relates to 30 TAC §213.5(b)(3), effective June 1, 1999. Our investigation was conducted, and this report was prepared in general accordance with the Texas Commission on Environmental Quality (TCEQ) "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04).

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

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



Respectfully submitted,
Frost GeoSciences, Inc.

Chris Wickman, P.G.
Senior Geologist

Copies Submitted: (6) Yen W. Lai, P.E.; Westwood Professional Services
(1) Electronic (pdf) Copy

TABLE OF CONTENTS

GEOLOGIC ASSESSMENT

Texas Commission on Environmental Quality (TCEQ)

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

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

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

Signature

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

Print Name of Geologist: Chris Wickman, P.G. Telephone: (210) 372-1315

Date: December 13, 2021 Fax: (210) 372-1318

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

Signature of the Geologist:

Regulated Entity Name: Ashton Gray Tract

Project Information

1. Date(s) Geologic Assessment was performed: October 10 and December 13, 2021
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)
Crawford	D	0 to 2
Tarrant	C	0 to 2

**Soil Group Definitions (Abbreviated)*

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

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

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

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

   Applicant's Site Plan Scale: 1" = 20'
   Site Geologic Map Scale: 1" = 20'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☒ Other method(s). Please describe method of data collection: 2020 Aerial Photograph

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

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

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

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

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

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

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

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

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

Administrative Information

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

STRATIGRAPHIC COLUMN

EXPLANATION OF HYDROSTRATIGRAPHIC UNITS

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

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Ashton Gray Tract | **PROJECT NUMBER:** FGS-E21273

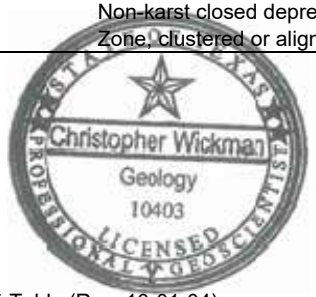
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29° 41' 18.70"	-98° 27' 16.09"	MB	30	Kkd	3	3	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-2	29° 41' 20.64"	-98° 27' 14.78"	CD	5	Kkd	3	5	1	-	-	-	-	CF	15	20	20		YES		HILLSIDE

Datum: NAD 83

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



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

Chris Wickman, P.G.

Date: 12/13/2021

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

Sheet 1 of 1

LOCATION

The project site is located along and west of U.S Highway 281, approximately ¼-mile south of the intersection of U.S. Highway 281 North and Bulverde Road Bexar County, Texas. An overall view of the area is shown on copies of the site plan, a street map, the U.S.G.S. Topographic Map, the EAA-Edwards Aquifer Recharge Zone and Contributing Zone Map, the FIRM Map, the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, 2020 aerial photographs at a scale of 1"=500' and 1"=100', and a NRCS Web Soil Survey aerial photograph at a scale of 1"=500'. These maps are included as Figures 1 through 9 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Chris Wickman, P.G., Senior Geologist with Frost GeoSciences, Inc. Mr. Wickman is a Licensed Professional Geoscientist in the State of Texas (License # 10403).

Frost GeoSciences, Inc. researched the geology of the area west and southwest of the intersection of Bulverde Road and U.S. Highway 281. The research included, but was not limited to, the Geologic Atlas of Texas, San Antonio Sheet, FEMA maps, Edwards Aquifer Recharge Zone Maps, U.S.G.S. 7.5 Minute Quadrangle Maps, U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the Bureau of Economic Geology-Geologic Atlas of Texas, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the U.S.G.S. Water-Resources Investigations Report 94-4117, and the U.S.D.A. Soil Survey of Bexar County, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made Potential Recharge Features (PRFs). A transect spacing of approximately 50 feet, or less depending on vegetation thickness, was used to inspect the project area. A 2020 aerial photograph, in conjunction with a hand-held Garmin GPS 72H Global Positioning System with an Estimated Potential Error ranging from 10 to 14 feet, was used to navigate around the property and identify the locations of PRFs, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any PRFs noted in the field were marked with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map. The Site Geologic Map, indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included in Appendix C of this report. A copy of a 2020 Aerial Photograph at an approximate scale of 1" =100' indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included on Figure 9 in Appendix A. The Geologic Assessment Form TCEQ-0585, (Rev. 2-11-15), Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included pages 1 through 5 of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the U.S.G.S. 7.5 Minute Quadrangle Map, Bulverde Sheet (1988), the elevation across the project site ranges from 1210 to 1240 feet above mean sea level. The project site has a total relief of approximately 30 feet. Runoff from the project site flows to the north-northeast into an unnamed tributary of Elm Waterhole Creek. The intersection of Bulverde Road and U.S. Highway 281 is located north of the project site. U.S. Highway 281 is located east of the project site. A copy of the U.S.G.S. 7.5 Minute Quadrangle Map indicating the location of the project site is included on Figure 3 in Appendix A.

Recharge / Transition Zone

According to the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, Bulverde (2014), the Official Edwards Aquifer Recharge Zone Map, Bulverde, Texas (1994), and the TCEQ website: Edwards Aquifer Viewer – https://tceq.maps.arcgis.com/apps/webappviewer/index.html, the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map indicating the location of the project site is included on Figure 4 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Flood Insurance Map, Community Panel Number 48029C130G, dated September 29, 2010, was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned Panel No. indicates that the project site is located within "Zone X". According to the Panel Legend, Zone X represents areas determined to be outside the 0.2%annual chance floodplain. A copy of the above referenced FIRM panel indicating the location of the project site is included on Figure 5 in Appendix A.

Soils

According to the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Bexar County (1966) and the USDA NRCS Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov, the Site is located on the Crawford and Bexar Stony Soils (Cb) and the Tarrant Association (TaB). A copy of the 2014 aerial photo (approximate scale: 1"=500') obtained from the Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov has been included on Figure 7 in Appendix A.

- The Crawford and Bexar Stony Soils (Cb) are very dark grayish brown to reddish brown clay. They are stony clay in texture and are shallow to moderately deep over hard limestone. These soils are extensive in the northern part of the county. The surface layer is noncalcareous, about 8 inches thick, and very dark grayish brown or very dark brown. It has fine, subangular blocky and granular structure. When moist, this layer is very firm but breaks easily to a mass of fine clods. When dry, is very hard and contains many large cracks. Angular fragments of chert and limestone are common. These fragments may range in size from a quarter of an inch to 24 inches in diameter. The subsurface layer is dense, angular blocky clay. This layer is neutral or slightly acidic, but it may be limy in the lower parts. It is about 26 inches thick and either overlies a thin layer of yellowish red to pale brown, limy clay or, if the limy layer is lacking, rests on hard, fractured limestone. Crawford soils are naturally well drained. Internal drainage and permeability vary according to moisture content. Water moves

rapidly when the soil is dry and cracked, but very slowly when the soil is wet. This soil has a USDA Texture Classification of Cherty Clay Loam to Loam. The Unified Classification is CG or CL. The AASHO Classification is A-2, A-4, or A-6. This soil has an average permeability from 1.0 to 1.5 inches/hour.

- The Tarrant Association (TaB) consists of stony soils that are very shallow, dark colored, and gently undulating to steep. The Tarrant Association occurs on the limestone prairies in the northern third of the county. The surface layer is very dark grayish brown, calcareous clay loam and is about 10 inches thick. It has moderate, fine, subangular blocky structure. This layer is crumbly and friable when moist. Limestone fragments that range from a quarter of an inch to 24 inches in diameter cover about 35 percent of the surface. The subsurface layer, about 8 inches thick, is hard fractured limestone. The cracks and spaces are filled with dark grayish brown clay loam. The bedrock is hard limestone. Tarrant soils have rapid surface drainage and good internal drainage. The capacity to hold water is low. Natural fertility is high. Water erosion is a hazard. This soil has a USDA Texture Classification of Clay Loam. The Unified Classification is CL or CH. The AASHO Classification is A-7. This soil has an average permeability from 1.0 to 1.5 inches/hour.

Narrative Description of the Site Geology

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to be low. The locations of the PRFs are identified on the 2020 aerial photograph on Figure 9 in Appendix A, and on the Site Geologic Map provided in Appendix C. Color photos of the project site and some of the PRFs are included in Appendix B.

PRF #S-1 is a manhole cover associated with a sanitary sewer easement observed in the southwestern corner of the project site. Frost GeoSciences rates the relative infiltration of the manmade feature as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 35 on the sensitivity scale, column 10 in the Geologic Assessment Table included on page 5 of this report. Frost GeoSciences, Inc. does not consider the manhole cover to be a sensitive feature.

PRF #S-2 consists of a non-karst closed depression infilled with gravel, coarse and fine soils. Frost GeoSciences, Inc. rates the feature as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 20 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 5 of this report. Frost GeoSciences, Inc. does not consider the non-karst closed depression to be a sensitive feature.

The project site is covered by a moderately dense stand of vegetative cover with a few open grassy areas. Site visit photos indicating the condition of the property at the time of the on-site inspection are included in Appendix B. Overall vegetation on the project site consists of ashe juniper *(Juniperus ashei)*, live oak *(Quercus virginiana)*, and cedar elm *(Ulmus crassifolia)*, with Texas persimmon *(Diospyros texana)*, agarita *(Berberis trifoliolata)*, yucca *(Yucca treculeana)*, and prickly pear cactus *(Opuntia lindheimeri)*. The variations in the vegetative cover on the property are visible in the 2020 aerial photo on Figures 8 and 9 in Appendix A. A copy of the site layout indicating the boundary of the project site and the elevations is included on the Site Geologic Map in Appendix C of this report.

According to the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the project site is located on the Dolomitic Member of the Cretaceous Edwards Kainer Limestone (Kkd). A copy of the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366 is included on Figure 8 in Appendix A. A copy of the Stratigraphic Column highlighting the outcropping formations is included on Page 4 of this report.

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

According to the site plan provided by Westwood Professional Services, the surveyed elevations on the project site range from 1208 to 1234 feet. According to this survey, the total relief on the project site is approximately 26 feet. A copy of the site plan indicating the boundary of the project site and the elevations is included on the Site Plan on Figure 1 in Appendix A and the Site Geologic Map in Appendix C of this report.

BEST MANAGEMENT PRACTICES

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

DISCLAIMER

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

This report has been prepared for the exclusive use of Westwood Professional Services. This report is based on available known records, a visual inspection of the project site, and the work generally accepted for a Geologic Assessment for Regulated Activities / Developments on the Edwards Aquifer Recharge / Transition Zone, relating to 30 TAC §213.5(b)(3), effective June 1, 1999.

REFERENCES

1. USGS - 7.5 Minute Topographic Quadrangle of Bulverde, 1988

2. E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, Bulverde (2014).

3. Official Edwards Aquifer Recharge Zone Map, Bulverde, 1999

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

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

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

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

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

9. Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Panel Number 48029C130G, dated September 29, 2010

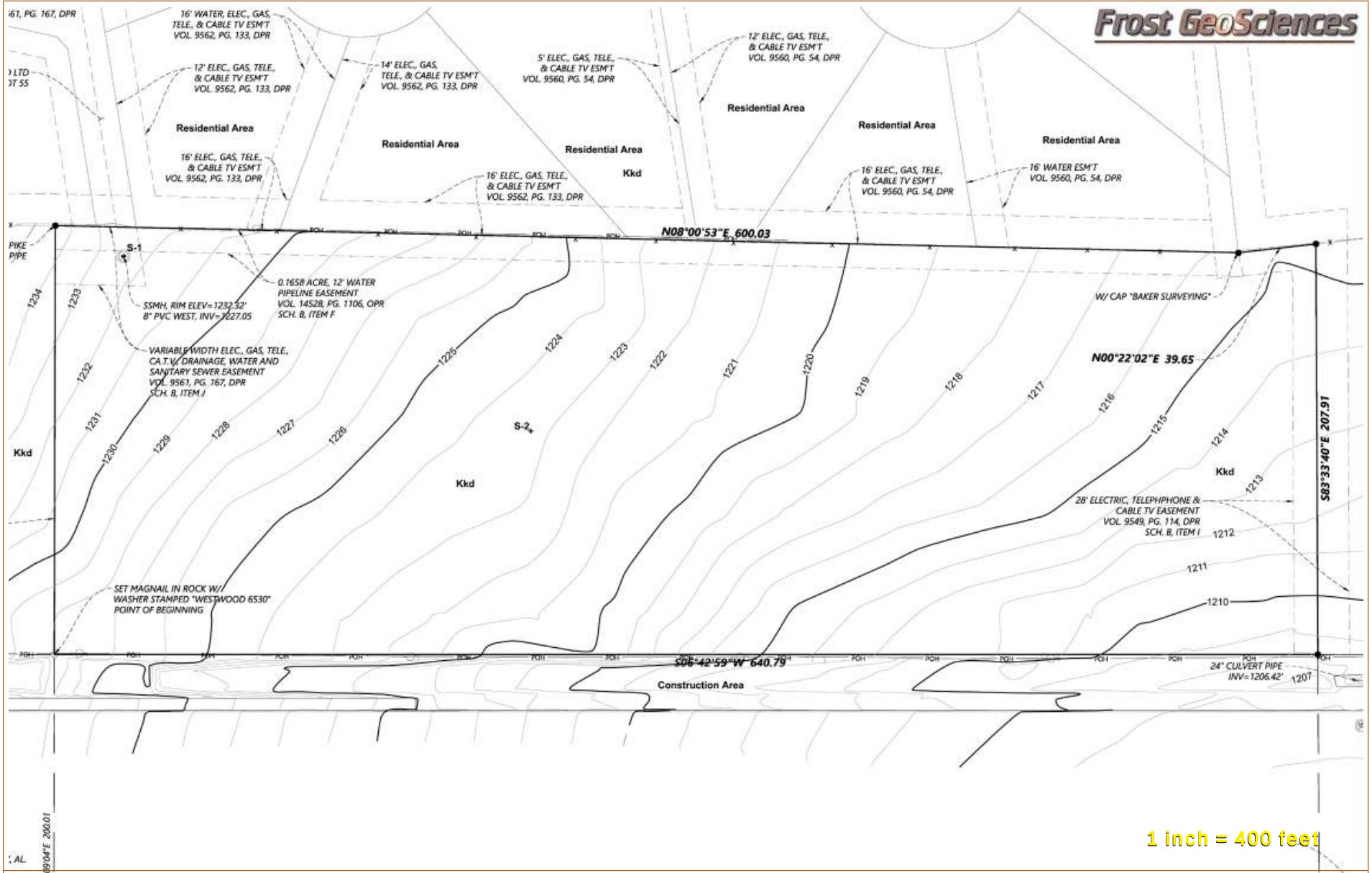
10. United States Department of Agriculture Soil Conservation Service Soil Survey of Bexar County 1966.

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

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

APPENDIX A

SITE LOCATION FIGURES

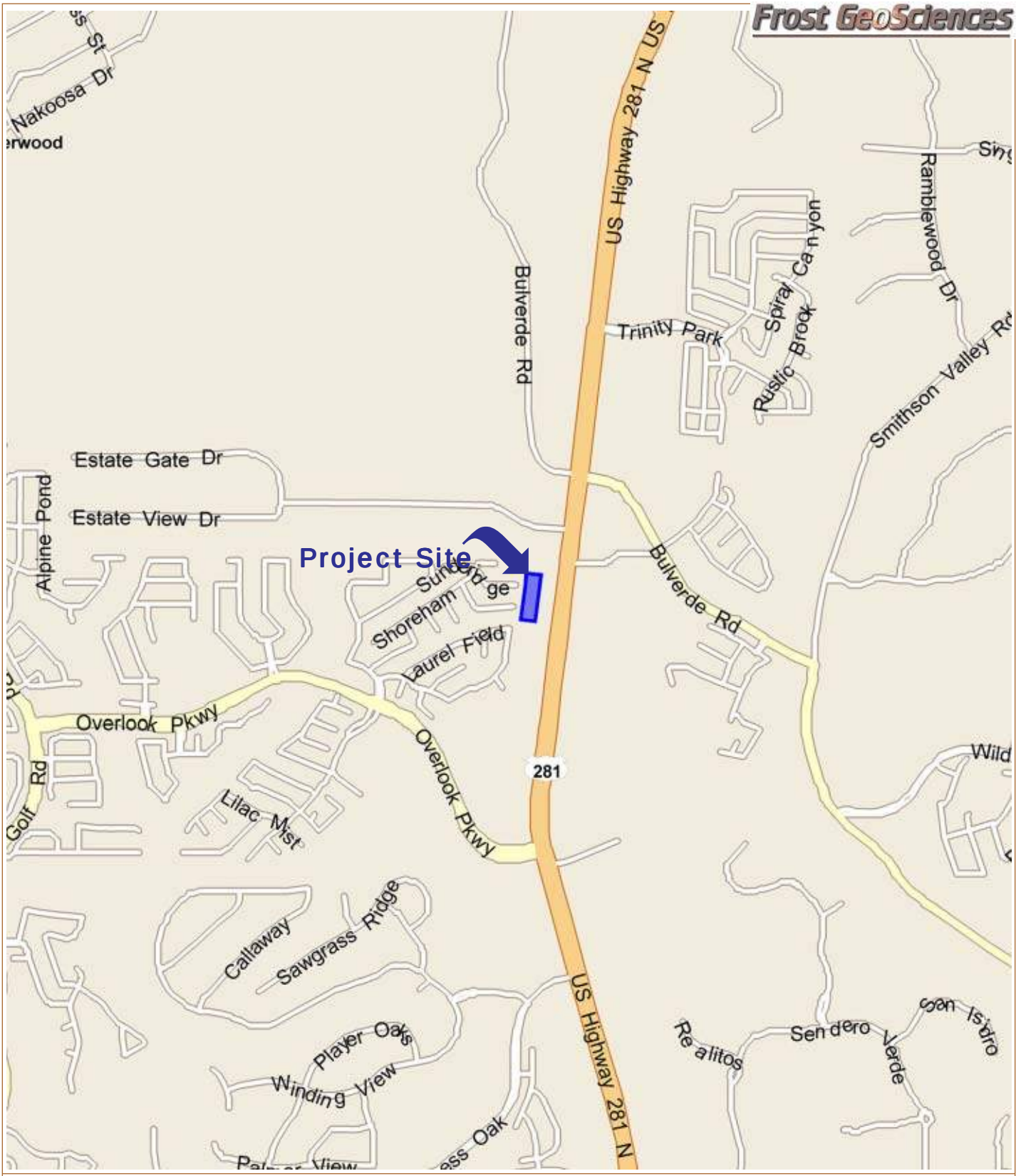


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

Site Layout

PROJECT NO.: FGS-E21273

DATE: December 13, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

Street Map

PROJECT NO.: FGS-E21273

DATE: December 13, 2021

PROJECT NAME:

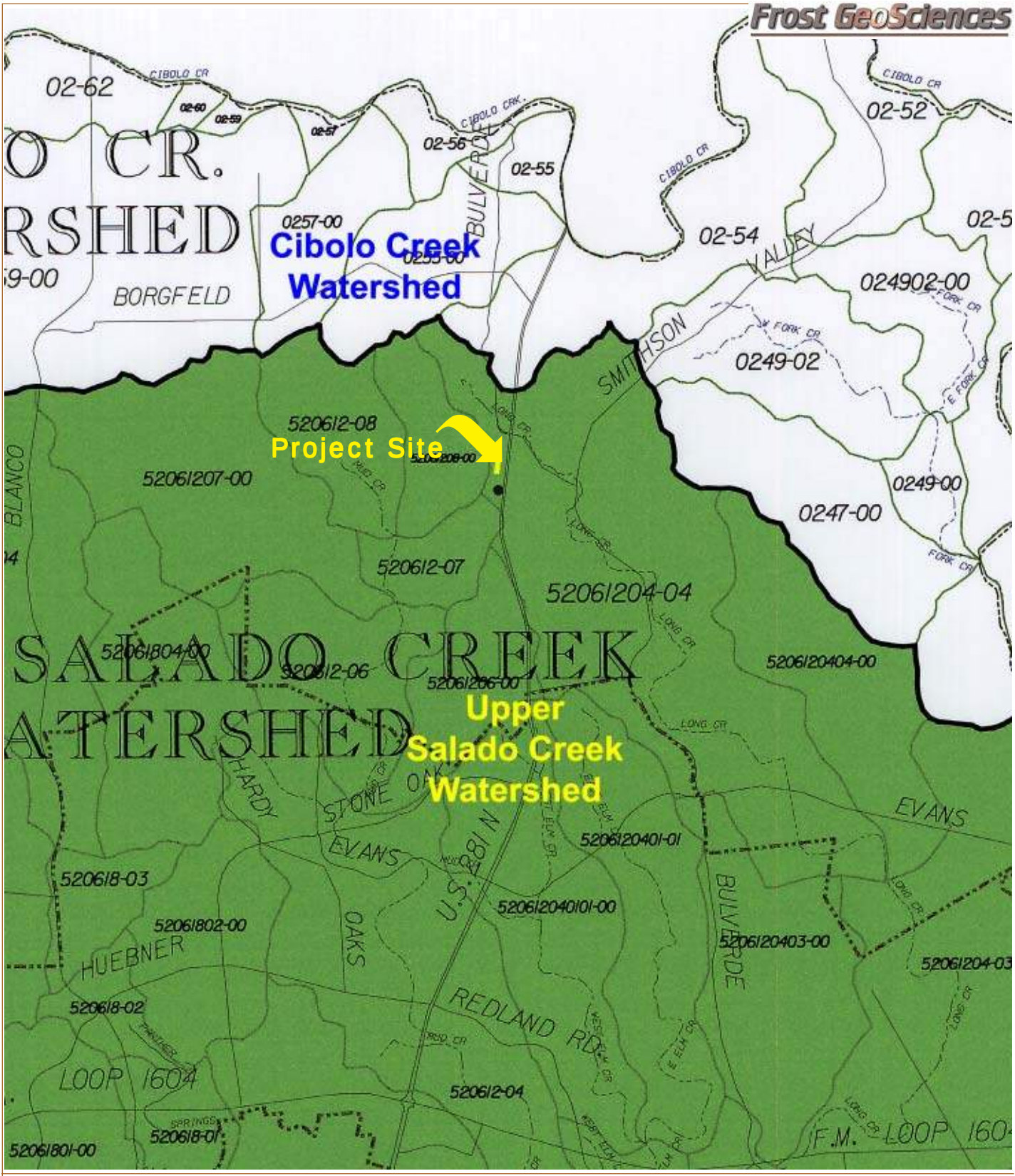
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

U.S.G.S. 7.5 Minute Quadrangle Map
Bulverde, Texas (1988)

PROJECT NO.: FGS-E21273

DATE: December 13, 2021

FIGURE 3



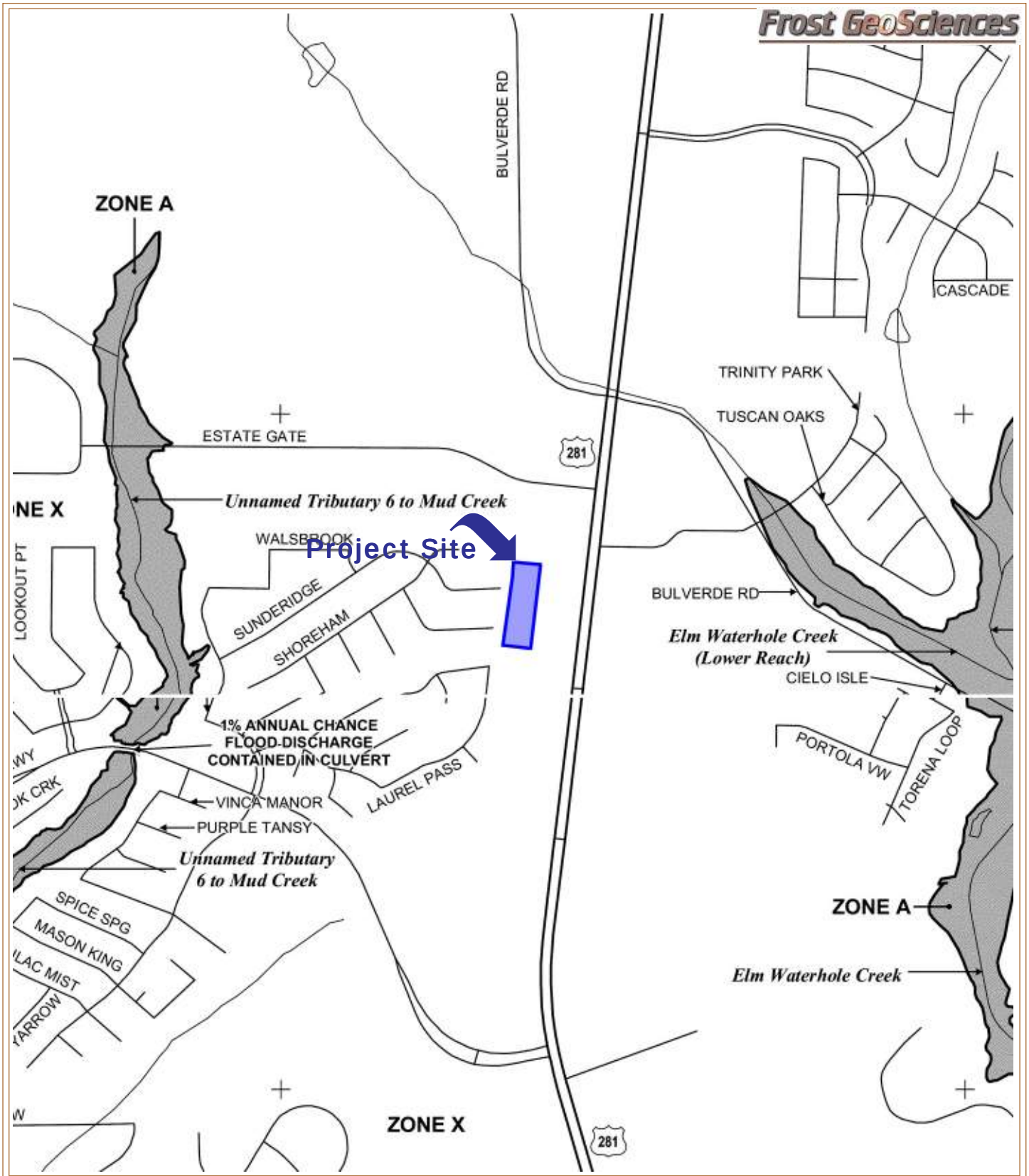
PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Ashton Gray Tract San Antonio, Texas	Bexar County Watersheds Map San Antonio Water Systems (2004)
PROJECT NO.: FGS-E21273	**DATE:** December 13, 2021

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

EAA Recharge & Contributing Zone Map
Bulverde, Texas (2014)

PROJECT NO.: FGS-E21273

DATE: December 13, 2021



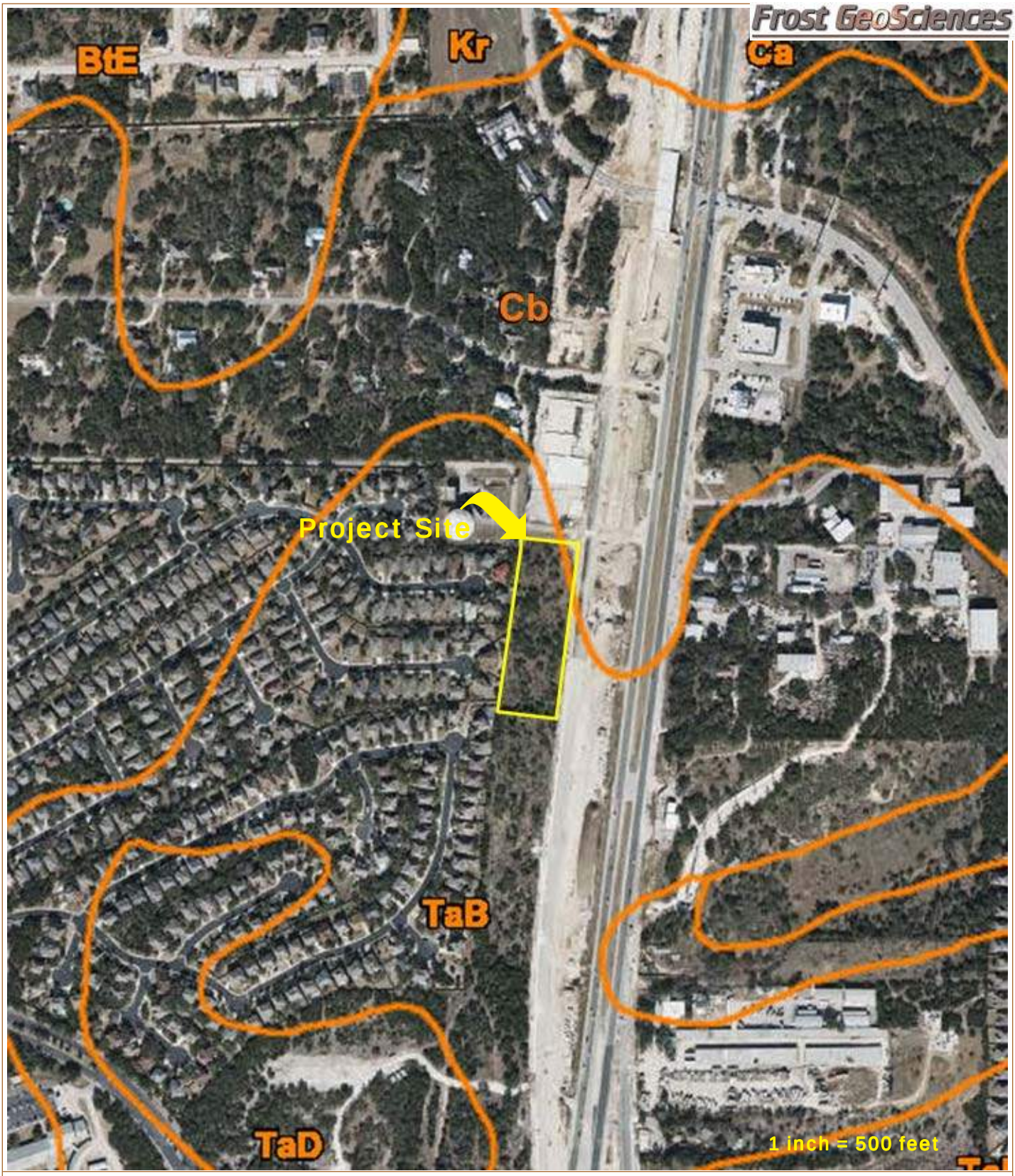
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

Flood Insurance Rate Map (FIRM)
Community Panel # 48029C0130G
(9/29/2010)

PROJECT NO.: FGS-E21273

DATE: December 13, 2021

FIGURE 6



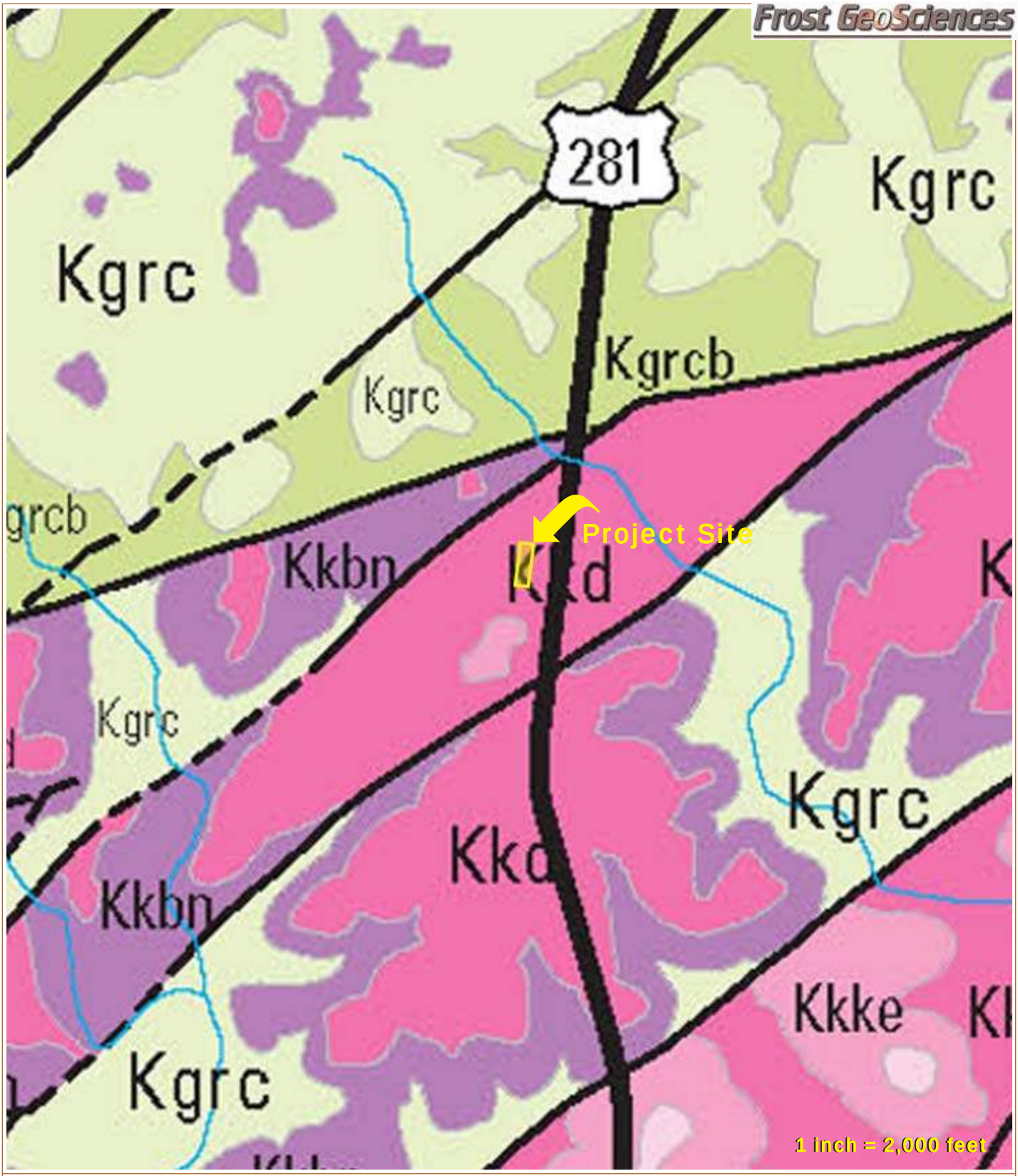
Frost GeoSciences

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

Soils Map
Bexar County Soil Survey
NRCS website: websoilsurvey.nrcs.usda.gov

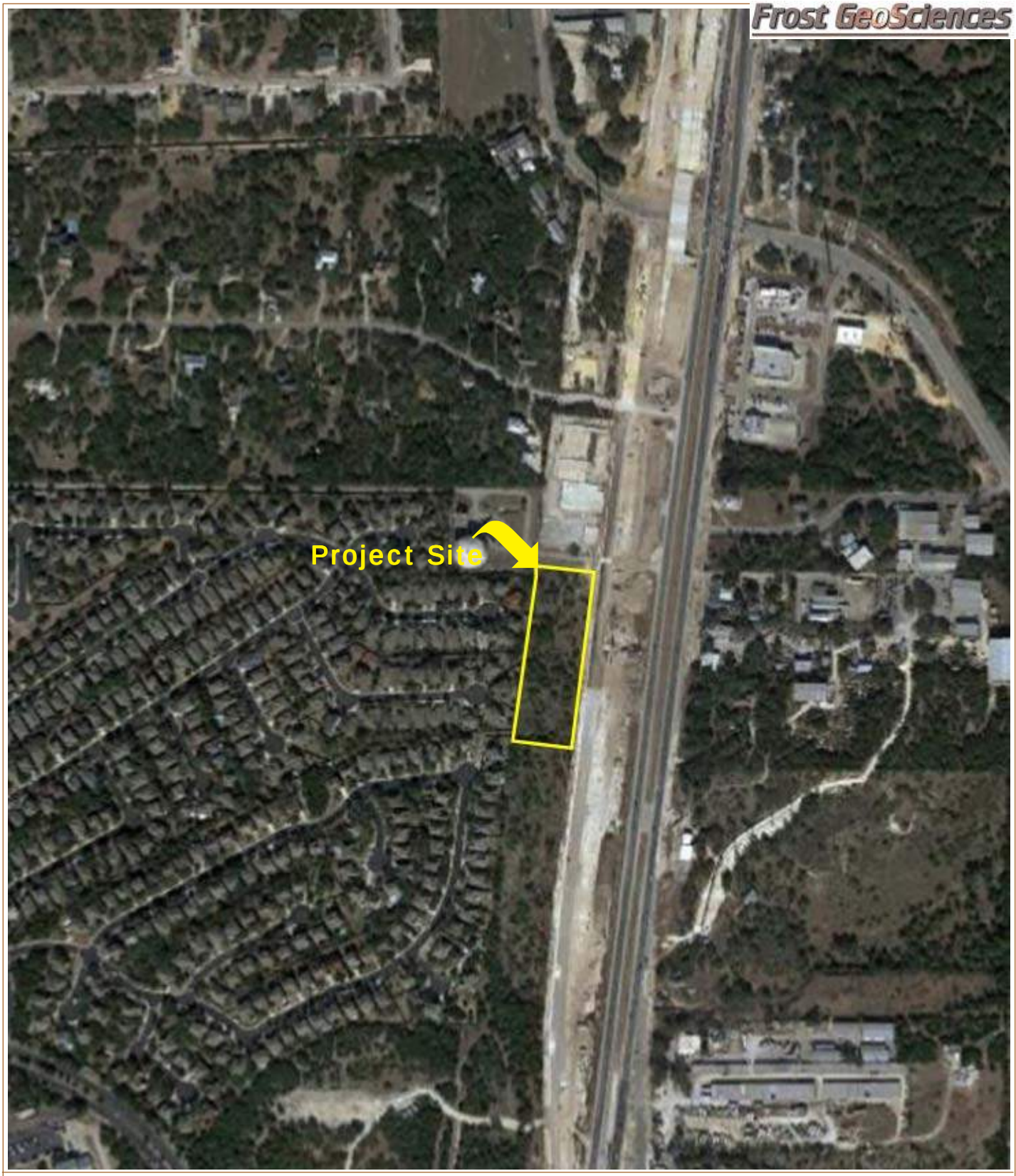
PROJECT NO.: FGS-E21273

DATE: December 13, 2021



PROJECT NAME:	U.S.Geological Survey Scientific Investigations Map 3366 Clarke (2016)	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Ashton Gray Tract San Antonio, Texas	PROJECT NO.: FGS-E21273	DATE: December 13, 2021

Frost GeoSciences



PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

2020 Aerial Photograph
Google Earth Aerial

PROJECT NO.: FGS-E21273

DATE: December 13, 2021

PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone
Ashton Gray Tract
San Antonio, Texas

2020 Aerial Photographwith PRFs
Google Earth Aerial

PROJECT NO.: FGS-E21273

DATE: December 13, 2021

FIGURE 10

APPENDIX B

SITE PHOTOGRAPHS

	
Photo #1 – View of PRF #S-1.	Photo #2 – View of the vegetative cover observed in the southern portion of the Site.
	
Photo #3 – View of the vegetative cover observed in the portion of the Site.	Photo #4 – Additional view of the vegetative cover observed in the southern portion of the Site.

	
Photo #5 – View of PRF #S-2.	Photo #6 – View of the vegetative cover observed in the vicinity of S-2.
	
Photo #7 – View of the vegetative cover observed in the southern portion of the Site.	Photo #8 – Additional view of the vegetative cover observed in the southern portion of the Site.

APPENDIX C

GEOLOGIC MAP

16' WATER, ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9562, PG. 133, DPR

12' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9562, PG. 133, DPR

14' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9562, PG. 133, DPR

5' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9560, PG. 54, DPR

12' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9560, PG. 54, DPR

Residential Area

Residential Area

Residential Area

Residential Area

Residential Area

16' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9562, PG. 133, DPR

16' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9562, PG. 133, DPR

16' ELEC., GAS, TELE., & CABLE TV ESM'T VOL. 9560, PG. 54, DPR

16' WATER ESM'T VOL. 9560, PG. 54, DPR

Kkd

POH

N08°00'53"E 600.03

D SPIKE
ON PIPE

S-1

SSMH, RIM ELEV=1232.32'
8" PVC WEST, INV=1227.05

0.1658 ACRE, 12' WATER PIPELINE EASEMENT VOL. 14528, PG. 1106, OPR SCH. B, ITEM F

W/ CAP "BAKER SURVEYING"

VARIABLE WIDTH ELEC., GAS, TELE., CA.T.V., DRAINAGE, WATER AND SANITARY SEWER EASEMENT VOL. 9561, PG. 167, DPR SCH. B, ITEM J

N00°22'02"E 39.65

1234 1233 1232 1231 1230 1229 1228 1227 1226 1225 1224 1223 1222 1221 1220 1219 1218 1217 1216 1215 1214 1213 1212 1211 1210 1208

S-2+

Kkd

Kkd

Kkd

S83°33'40"E 207.91

28' ELECTRIC, TELEPHPHONE & CABLE TV EASEMENT VOL. 9549, PG. 114, DPR SCH. B, ITEM I

SET MAGNAIL IN ROCK W// WASHER STAMPED "WESTWOOD 6530" POINT OF BEGINNING

S06°42'59"W 640.79

Construction Area

24" CULVERT PIPE
INV=1206.42'

1207

STO

S13°09'04"E 200.01

' UX, AL.
'6

Legend

Kkd - Dolomitic member of the Edwards Kainer limestone

S-# - Potential Recharge Feature (PRF)

Graphic Scale

20 0 10 20 40

(In Feet)

1 inch = 20 feet
Representative Fraction 1:240

Contour Interval - 1 feet

Floodplain Information Obtained From FIRM: Flood Insurance Rate Map Comal County, Texas: Panel # 48029C0130G and 48029C0140G, Revised 9/29/2010

Fault Information Obtained From:
Bureau of Economic Geology, Geologic Atlas of Texas, San Antonio Sheet (1983)
U.S. Geological Survey, Water Resources Investigations Report 95-4030 (1995)
Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)
U.S. Geological Survey Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas (2016)

Christopher Wickman
Geology
10403
LICENSED
STATE OF TEXAS

Signature of Texas Licensed Geoscientist
Chris Wickman License No. 10403

Site Geologic Map

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

Ashton Gray Tract
San Antonio, Texas

Frost GeoSciences, Inc. Control # FGS-E21273

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental
13406 Western Oak ▪ Helotes, Texas 78023
Phone: (210) 372-1315 ▪ Fax: (210) 372-1318

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Kevin W. Love, P.E.

Date: 10-29-24

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Green Plaza @ Bulverde Retail
   Original Regulated Entity Name: Green Plaza @ Bulverde Retail
   Regulated Entity Number(s) (RN): RN112007182
   Edwards Aquifer Protection Program ID Number(s): 13001966
   ☒ The applicant has not changed and the Customer Number (CN) is: CN605950427
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ■ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☐ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ■ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	1.48	1.48
Type of Development	Commercial	Commercial
Number of Residential Lots	0	0
Impervious Cover (acres)	1.23	1.23
Impervious Cover (%	83.11	83.11
Permanent BMPs	1	2
Other		

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet		
Pipe Diameter		
Other		

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	_____	_____
Volume of USTs	_____	_____
Other	_____	_____

5. ■ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ■ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ■ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☐ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ■ Acreage has not been added to or removed from the approved plan.

8. ■ 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.

Jon Niermann, *Chairman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 20, 2024

Mr. Robert Green
Green Property Development, LLC
420 Deer Cross
San Antonio, Texas 78260

Re: Approval of a Water Pollution Abatement Plan (WPAP) for the Edwards Aquifer Protection Program
Green Plaza at Bulverde Retail; Located SW of Estate Gate Dr and US Hwy 281; San Antonio, Bexar County, Texas
Edwards Aquifer Protection Program ID: 13001966, Regulated Entity No. RN112007182

Dear Mr. Green:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the application for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by KLove Engineering, LLC on behalf of the applicant, Green Property Development, LLC on July 10, 2024. Final review of the application was completed after additional material was received on September 13, 2024.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213. The permanent best management practices (BMPs) and measures represented in the application were prepared by a Texas licensed professional engineer (PE). All construction plans and design information were sealed, signed, and dated by a Texas licensed PE. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are **approved,** subject to applicable state rules and the conditions in this letter.

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 1.48 acres. The project will include one building with associated access drive, parking, sidewalks, and utilities. The impervious cover will be 1.23 acres (83.1 percent). Project wastewater will be disposed of by conveyance to the existing Steven M. Clouse Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one BayFilter, designed using the TCEQ technical guidance, *RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices,* will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,004 pounds of TSS generated from the 1.23 acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The permanent BMPS shall be operational prior to occupancy or use of the proposed project. Inspection, maintenance, repair, and retrofit of the permanent BMPs shall be in accordance with the approved application.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial units of the site are the Kainer Formation. No sensitive geologic features were identified in the GA. The site assessment conducted on August 26, 2024 by TCEQ staff determined the site to be generally as described by the GA.

STANDARD CONDITIONS

1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and all technical specifications in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, Dam Safety, Underground Injection Control) as required based on the specifics of the plan.

2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

Prior to Commencement of Construction:

3. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the plan holder must submit to the EAPP proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record. A description of the property boundaries shall be included in the deed recordation in the county deed records. TCEQ form, Deed Recordation Affidavit (TCEQ-0625), may be used.

4. The plan holder of any approved Edwards Aquifer protection plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.

5. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity. Notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.

6. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the

construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation.

During Construction:

8. This approval does not authorize the installation of temporary or permanent aboveground storage tanks on this project that will have a total storage capacity of five hundred gallons or more of static hydrocarbons or hazardous substances without prior approval of an Aboveground Storage Tank facility application.

9. If any sensitive feature is encountered during construction, replacement, or rehabilitation on this project, all regulated activities must be **immediately** suspended near it and notification must be made to TCEQ EAPP staff. Temporary BMPs must be installed and maintained to protect the feature from pollution and contamination. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality.

10. All water wells, including injection, dewatering, and monitoring wells shall be identified in the geologic assessment and must be in compliance with the requirements of the Texas Department of Licensing and Regulation 16 TAC Chapter §76 and all other locally applicable rules, as appropriate.

11. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

12. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.

13. The following records shall be maintained and made available to the executive director 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.

14. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

15. Owners of permanent BMPs and temporary measures must ensure that the BMPs and measures are constructed and function as designed. A Texas licensed PE must certify in

writing that the **permanent** BMPs or measures were constructed as designed. The certification letter must be submitted to the EAPP within 30 days of site completion.

16. The applicant shall be 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 or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.

The holder of the approved Edwards Aquifer protection plan is responsible for compliance with Chapter §213 and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved Edwards Aquifer protection plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Joshua Vacek of the Edwards Aquifer Protection Program at 210-403-4028 or the regional office at 512-339-2929.

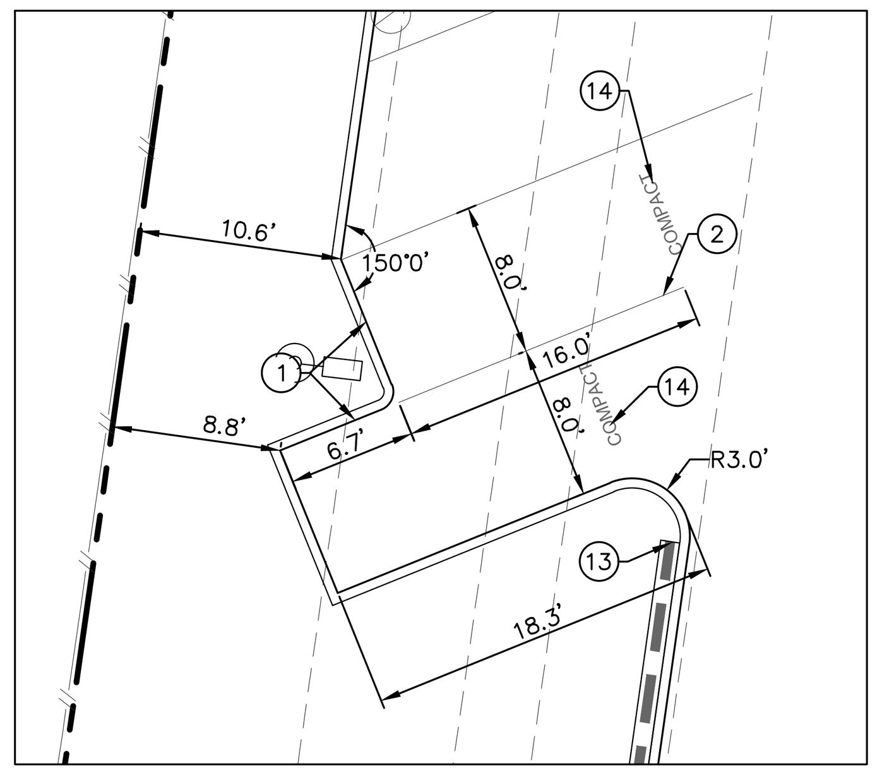
Sincerely,

Monica Reyes

Monica Reyes, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

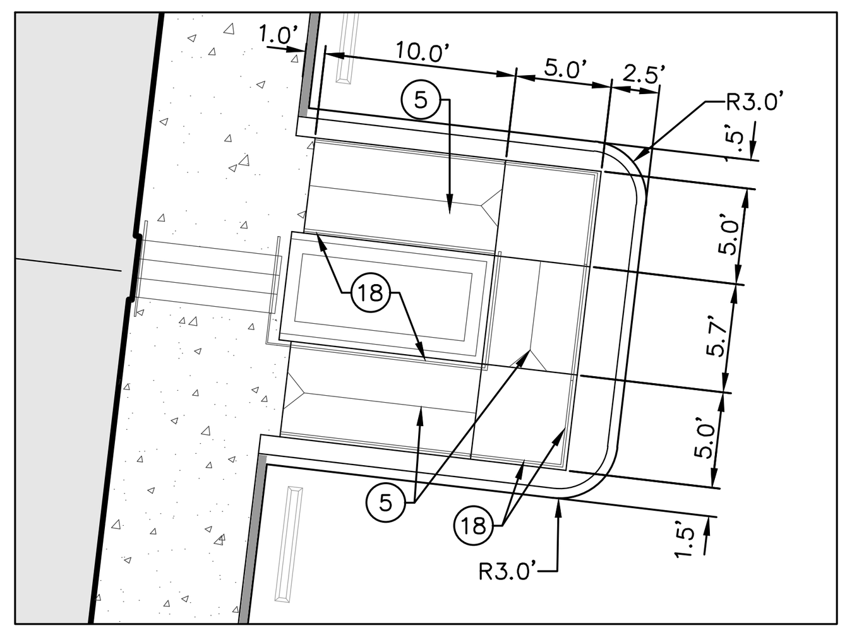
MR/jv

cc: Mr. Kevin W. Love, P.E., KLove Engineering, LLC



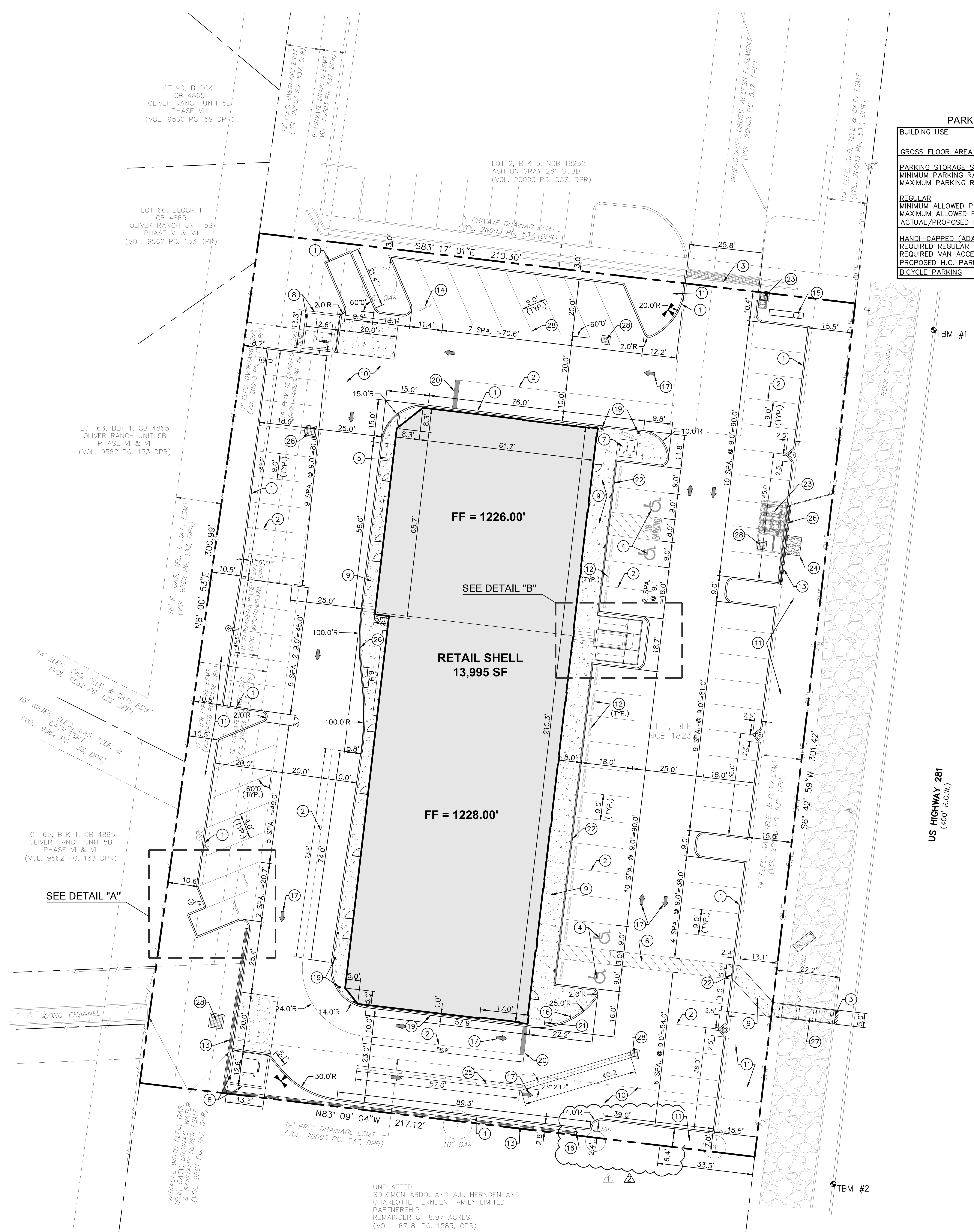
DETAIL "A"

SCALE: 1"=10'



DETAIL "B"

SCALE: 1"=10'



PARKING SUMMARY TABLE

BUILDING USE	RETAIL	SERVICE FOOD W/ DRIVE THRU LANE	SERVICE RESTAURANT
GROSS FLOOR AREA (FT.^{2})	9,727 SF	1,500 SF	2,768 SF
PARKING STORAGE STANDARDS			
MINIMUM PARKING RATIO	300	150	100
MAXIMUM PARKING RATIO	200	40	40
REGULAR			
MINIMUM ALLOWED PARKING	32	10	28
MAXIMUM ALLOWED PARKING	48	37	70
ACTUAL/PROPOSED PARKING	76		
HANDI-CAPPED (ADA)			
REQUIRED REGULAR H.C. PARKING	3		
REQUIRED VAN ACCESSIBLE PARKING	1		
PROPOSED H.C. PARKING	4		
BICYCLE PARKING	5		

SCALE: 1"=20'

20 10 0 20

SITE PLAN NOTES:

1. ALL CURB RADIUS DIMENSIONS ARE TO FACE OF CURB. CONTRACTOR TO VERIFY ALL PLAN DIMENSIONS PRIOR TO CONSTRUCTION.
2. ALL SIDEWALKS SHALL HAVE 2% MAX CROSS SLOPE.
3. BUILDING AND PARKING ARE PARALLEL TO THE EAST PROPERTY LINE (S06°42'59"W).
4. ALL CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
5. AS PER UDC SECTION 35-506(A)(1)(C)(2) EXISTING SIDEWALKS, CURBS, AND DRIVE APPROACHES SHALL COMPLY WITH TEXAS ACCESSIBILITY STANDARDS AND CURRENT CITY OF SAN ANTONIO DESIGN STANDARDS. AS THIS SITE HAS EXISTING FLATWORK IN THE RIGHT OF WAY THAT MUST BE EVALUATED FOR COMPLIANCE PLEASE CONSIDER THE FOLLOWING OPTIONS TO PROCEED AND RESPOND APPROPRIATELY

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	P S	TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
		WATER METER
	WM	WATER METER VAULT
WTRMH		WATER MANHOLE
		TELEPHONE RISER
		CABLE TV RISER
E	E	ELECTRIC BOX
EM	EM	ELECTRIC METER
G	G	GAS VALVE
G	G	GAS METER
TCB	TCB	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)
TMH	TMH	TELEPHONE MANHOLE (SIZE VARIES)
		FIRE DEPARTMENT CONNECTION
CO	CO	WASTEWATER CLEANOUT
		CURB
		HEADER CURB
		SAWTOOTH CURB
		RETAINING WALL
		CHAINLINK FENCE
		CONCRETE SIDEWALKS
678	678	CONTOUR
		DIRECTION OF FLOW
	×785.00TC	SPOT ELEVATION/TOP OF CURB
x 785.50	×785.00	SPOT ELEVATION
		SWALE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT

(#) KEY NOTES

1. PROPOSED 6" CONCRETE CURB (TYPICAL) REF. DETAIL C7.0.3.
2. PROPOSED 4" WHITE WIDE PARKING STRIPE (TYPICAL).
3. SIDEWALK JUNCTION. DOWEL INTO EXISTING CONCRETE SIDEWALK USING #4 DOWELS AT 18" O.C. WITH A MINIMUM EMBEDMENT OF 8" INTO PROPOSED AND EXISTING SIDEWALK.
4. PROPOSED HANDICAP PARKING. REF. DETAIL C7.0.7.
5. PROPOSED CURB RAMP (TYPICAL) REF. DETAIL C7.0.5.
6. PROPOSED PAINTED CROSSWALK STRIPING. REF. DETAIL C7.0.9.
7. PROPOSED BICYCLE PARKING AREA. REF. DETAIL C7.0.7.
8. PROPOSED CONCRETE DUMPSTER ENCLOSURE REF. ARCH PLANS.
9. PROPOSED CONCRETE SIDEWALK REF. DETAIL C7.0.1.
10. PROPOSED ASPHALT PAVEMENT. REF. SHEET C3.1.
11. LANDSCAPING. REF. LANDSCAPE PLANS.
12. PROPOSED WHEELSTOP REF. DETAIL C7.0.2.
13. RETAINING WALL DESIGN BY OTHERS. RETAINING WALL DESIGN SHALL BE SIGNED & SEALED BY A ENGINEER LICENSED IN THE STATE OF TEXAS, TYPE OF WALL TO BE CHOSEN BY OWNER WITH THE HELP OF THE CONTRACTOR.
14. PROPOSED 8'x16' COMPACT PARKING SPACE. "COMPACT" LETTERING TO BE 8" IN HEIGHT.
15. PROPOSED MONUMENT SIGN. REF. ARCH. PLANS FOR DETAILS.
16. PROPOSED "DO NOT ENTER" SIGN REF. DETAIL C7.1.6.
17. PROPOSED DIRECTIONAL ARROW REF. DETAIL C7.1.1.
18. PROPOSED RAIL AT RAMP ARCH. PLANS FOR DETAILS.
19. PROPOSED 6" DIAMETER PIPE BOLLARD. REF. ARCH. PLANS
20. PROPOSED STOP BAR AND SIGN (TYPICAL) REF. DETAIL C7.1.10
21. PROPOSED "EXIT ONLY" SIGN REF. DETAIL C7.1.6.
22. PROPOSED HEADER CURB REF, DETAIL C7.0.12.
23. PROPOSED TCEQ WATER QUALITY BASIN REF. SHEET C5.2 FOR DETAILS.
24. PROPOSED ROCK RUBBLE REF. DETAIL C7.1.3.
25. PROPOSED CONCRETE DRAINAGE "V" SWALE REF. DETAIL C7.1.7.
26. PROPOSED GUARD RAIL REF. DETAIL C7.1.5.
27. PROPOSED SIDEWALK BRIDGE REF. DETAIL C7.2.1.
28. PROPOSED GRATE INLET REF. SHEET C5.1 FOR DETAILS.

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

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

Date: Oct 24, 2024, 3:15pm
File: K:\Projects\1148-03 Ashton Gray\Drawings\C3.0 Site Plan.dwg

KLOVE ENGINEERING
Site Development Engineering Services
Firm No. 11042
www.kloveengineering.com (210) 485-5683

STATE OF TEXAS
KEVIN WILLIAM LOVE
93563
LICENSED PROFESSIONAL ENGINEER
08/26/24

REVISIONS:	DATE
1 REMOVE SOUTH CROSS ACCESS CONNECTION	08-06-24
2 PER LANDSCAPE	08-26-24

OWNER:
GREEN PROPERTY DEVELOPMENT, LLC
420 DEER CROSS
SAN ANTONIO, TEXAS 78260

GREEN PLAZA @ BULVERDE RETAIL

25211 N. US HWY 281
SAN ANTONIO, TX 78260

CIVIL SITE AND DIMENSIONAL CONTROL PLAN

DESIGNED BY:	AB
DRAWN BY:	RQ/JR
SCALE:	1"=20'
DATE:	04/10/24
SHEET NO.	C3.0

Attachment B – Narrative of Proposed Modification

To prevent pollution of storm water runoff originating on-site and potentially flowing across and off the site after construction, an additional / second BayFilter (ADS) BMP is proposed to be built on the northeast side of the property as a permanent BMP, (there is an existing approved BMP ID: 13001966, RN112007182, approved on September 20, 2024). The Permanent Pollution Abatement Measures (BMPs) for the Green Plaza @ Bulverde Retail project will be designed in accordance with the TCEQ Technical Guidance Manual RG-348 (Revised September 2007) to remove over 80% of the increased Total Suspended Solids (TSS) for the proposed improvements. The proposed additional / second BayFilter (ADS) BMP will capture / treat 0.08 ac of impervious cover with no impervious cover bypassing the second proposed BMP (there was previously 0.08 ac of impervious cover bypassing the one original BMP). The proposed BayFilter BMP will capture / treat over 80% of the increased TSS with the Lm/Lr (65/75 = 0.87) ratio being less than 1 (see attached TSS calculations).

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.

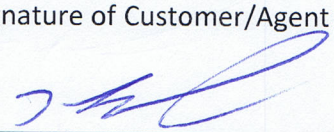
Signature

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: Kevin W. Love, P.E.

Date: 5-30-24

Signature of Customer/Agent:



Regulated Entity Name: Green Plaza @ Bulverde Retail

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):1.48

3. Estimated projected population:N/A

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	13,995	÷ 43,560 =	0.32
Parking	39,523	÷ 43,560 =	0.91
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover	53,518	÷ 43,560 =	1.23

Total Impervious Cover 1.23 **÷ Total Acreage** 1.48 **X 100 =** 83.11**% 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:

100.0% Domestic	2,800 Gallons/day
_____% Industrial	_____ Gallons/day
_____% Commingled	_____ Gallons/day

TOTAL gallons/day 2,800

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 Steven M. Clouse (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" = 20'.

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 map #48029C0130G ; 09/29/2010

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

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

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

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

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

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

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

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

22. ☒ 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.

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.

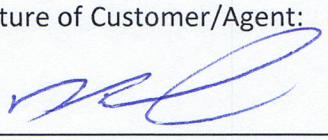
Signature

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: Kevin W. Love, P.E.

Date: 5-30-24

Signature of Customer/Agent:



Regulated Entity Name: Green Plaza @ Bulverde Retail

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: Elm Waterhole 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.

ATTACHMENT A

Spill Response Actions

In the event of an accidental leak or spill:

- Contractor shall take immediate action to contain a spill. The contractor may use sand or other absorbent material stockpiled on site to absorb a spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms down gradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Sand or material used to contain the spill should be collected and stored in such a way so as not to continue to affect additional ground. Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. In the event of potential rainfall, the material should be covered with poly or plastic sheeting to prevent contaminating runoff.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a spill. Additional notifications as required by the type and amount of spill will be conducted by the owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- the contractor will be required to report significant or hazardous spills in reportable quantities to:
    - the National Response Center at (800) 424-8802
    - the Edwards Aquifer Authority at (210) 222-2204
    - the TCEQ Regional Office (210) 490-3096 (if during business hours: 8 am to 5 pm) or
    - the State Emergency Response Center (800) 832-8224 (if after hours)
- Contaminated soils will be sampled for waste characterization. When the analysis results are know the contaminated soils will be removed from the site and disposed of in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

TCEQ's TGM Section 1.4.16
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 spill, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.
The following steps will help reduce the storm water impacts of leaks and spills:
Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spills 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 storm water runoff during rainfall to the extent that it doesn't compromise cleanup activities.
(7) Do not bury or wash spills with water.
(8) Store and dispose of used cleanup materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMP's.
(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.
(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
(3) Never hose down or bury dray 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 in 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 and 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 are available on the TCEQ website at: http://wwww.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment located away from drainage courses to prevent the runon of storm water 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 storm water. Place the oil filter in a funnel over a waste oil-recycling drain 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 storm water 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

Potential Sources of Contamination

Potential Sources:

1. Asphalt products used by this project.
2. Oil, grease, fuel and hydraulic fluid contamination form construction equipment and vehicle dripping.
3. Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.
4. Miscellaneous trash and litter from construction workers and materials wrappings.
5. Construction debris.
6. Spills/Overflow of waste from portable toilets.

Preventative Measure:

1. After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.
2. Vehicle maintenance when possible will be performed within the construction staging area. Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.
3. Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures. Contractor's superintendent or representative oversee shall enforce proper spill prevention and control measures. Hazardous materials and wastes shall be stored in covered containers and protected from vandalism. A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
4. Trash containers will be placed throughout the site to encourage proper trash disposal.
5. Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
6. Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets on a level ground surface. Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT C

Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will consist of two stages. Stage one will include site preparation that will include clearing and grubbing of vegetation where applicable and rough grading. This will disturb approximately 1.48 acres. The second stage is the construction stage that will include the buildings, paved parking, sidewalks, landscaping and site cleanup. This will disturb approximately 1.48 acres.

ATTACHMENT D

Temporary Best Management Practices and Measures

Silt Fence

- Placed on the down gradient slope of the disturbed areas to catch sediment before it leaves the site. Temporary measure, to be removed once the disturbance activities have ceased and stabilization completed. See details on the SWPPP sheet.

Construction Exit

- Located at the entrance/exit of the site and used to reduce materials from being tracked onto existing roads from construction vehicles. Usually consists of oversized rock gravel that will allow for material to fall off vehicles therefore reducing the amount of material that leaves the site. See SWPPP sheet for location and specifications.

Concrete Washout Pit

- Designed to trap and store waste from concrete and similar activities. This allows for safe storage and removal from the site by not allowing contaminants to enter the storm water. Contaminants can be kept in a location that will not allow storm water to mix and flow off the site. See SWPPP sheet for location and specifications.

ATTACHMENT E

Request to Temporarily Seal a Feature

No features will be sealed within the site.

ATTACHMENT F

The following structural measures will be installed prior to the initiation of site preparation activities:

- 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.

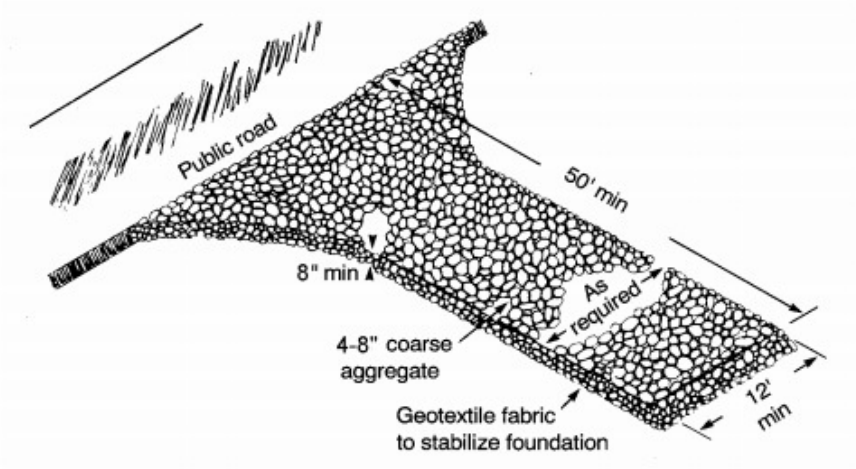


Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

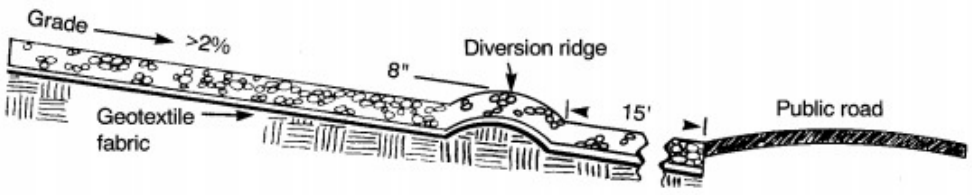


Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

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/yd2 , a mullen burst rating of 140 lb/in2 , 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.

- 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.

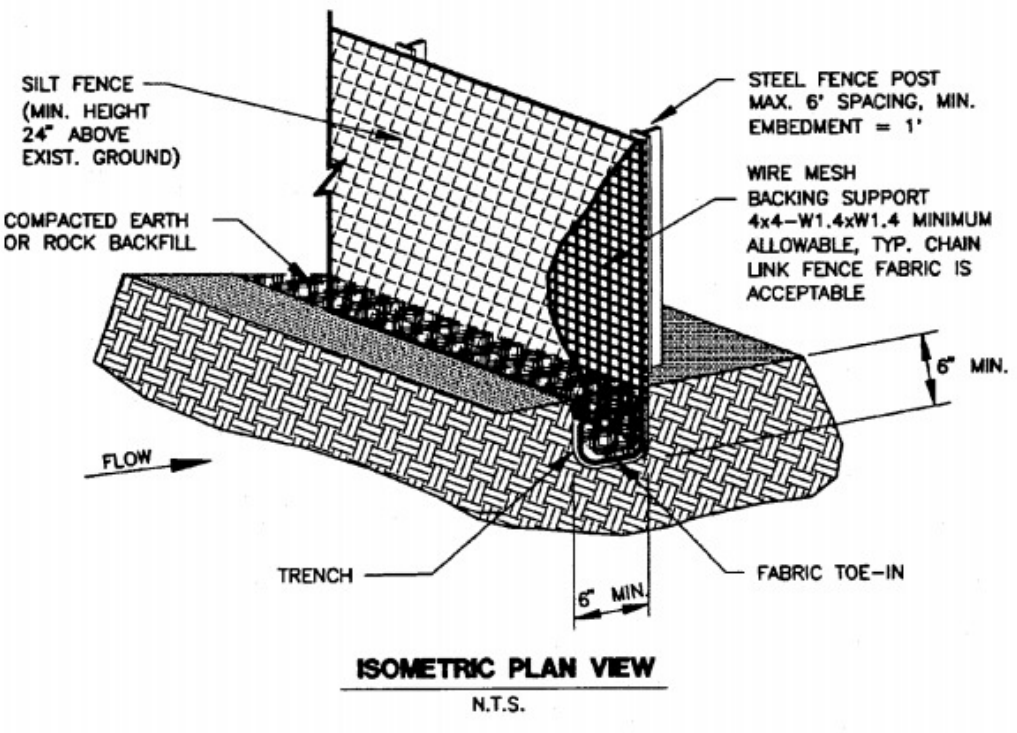


Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

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. 1-67 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/in2 , 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/ft2 , 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. 1-68
(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

- Inlet Protection

Storm sewers that are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainage ways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets. The following guidelines for inlet protection are based primarily on recommendations by the Virginia Dept. of Conservation and Recreation (1992) and the North Central Texas Council of Governments (NCTCOG, 1993b). In developments for which drainage is to be conveyed by underground storm sewers (i.e., streets with curbs and gutters), all inlets that may receive storm runoff from disturbed areas should be protected.

Materials:
(1) Filter fabric should be a nylon reinforced polypropylene fabric which meets the following minimum criteria: Tensile Strength, 90 lbs.; Puncture Rating, 60 lbs.; Mullen Burst Rating, 280 psi; Apparent Opening Size, U.S. Sieve No. 70.
(2) Posts for fabric should be 2” x 4” pressure treated wood stakes or galvanized steel, tubular in cross-section or they may be standard fence “T” posts.
(3) Concrete blocks should be standard 8” x 8” x 16” concrete masonry units.
(4) Wire mesh should be standard hardware cloth or comparable wire mesh with an opening size not to exceed 1/2 inch.

Installation:
Gravel and Wire Mesh Drop Inlet Sediment Filter
(1) Wire mesh should be laid over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Wire mesh with 1/2-inch openings should be used. If more than one strip of mesh is necessary, the strips should be overlapped (see Figure 1-34).

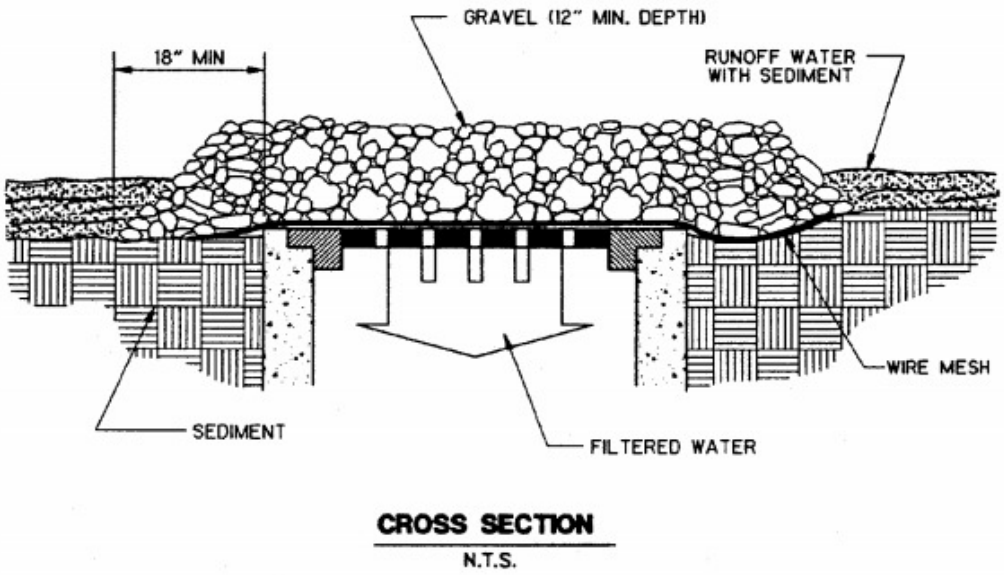


Figure 1-34 Wire Mesh and Gravel Inlet Protection (NCTCOG, 1993)

(2) Coarse aggregate should be placed over the wire mesh as indicated in Figure 1-34. The depth of stone should be at least 12 inches over the entire inlet opening. The stone should extend beyond the inlet opening at least 18 inches on all sides.

(3) If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stones must be pulled away from the inlet, cleaned and/or replaced.

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.

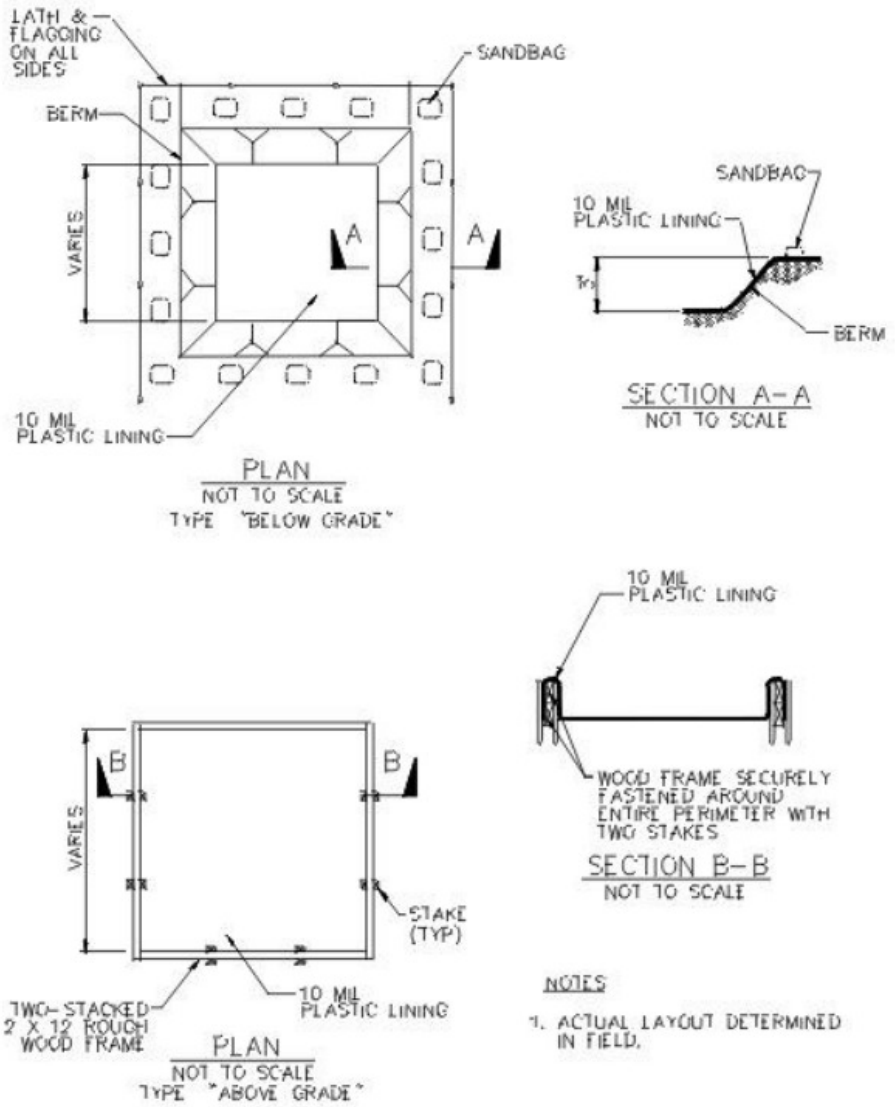
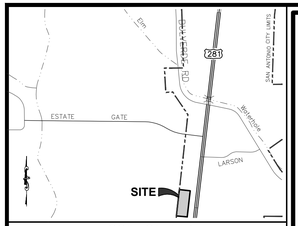


Figure 1-43 Schematics of Concrete Washout Areas

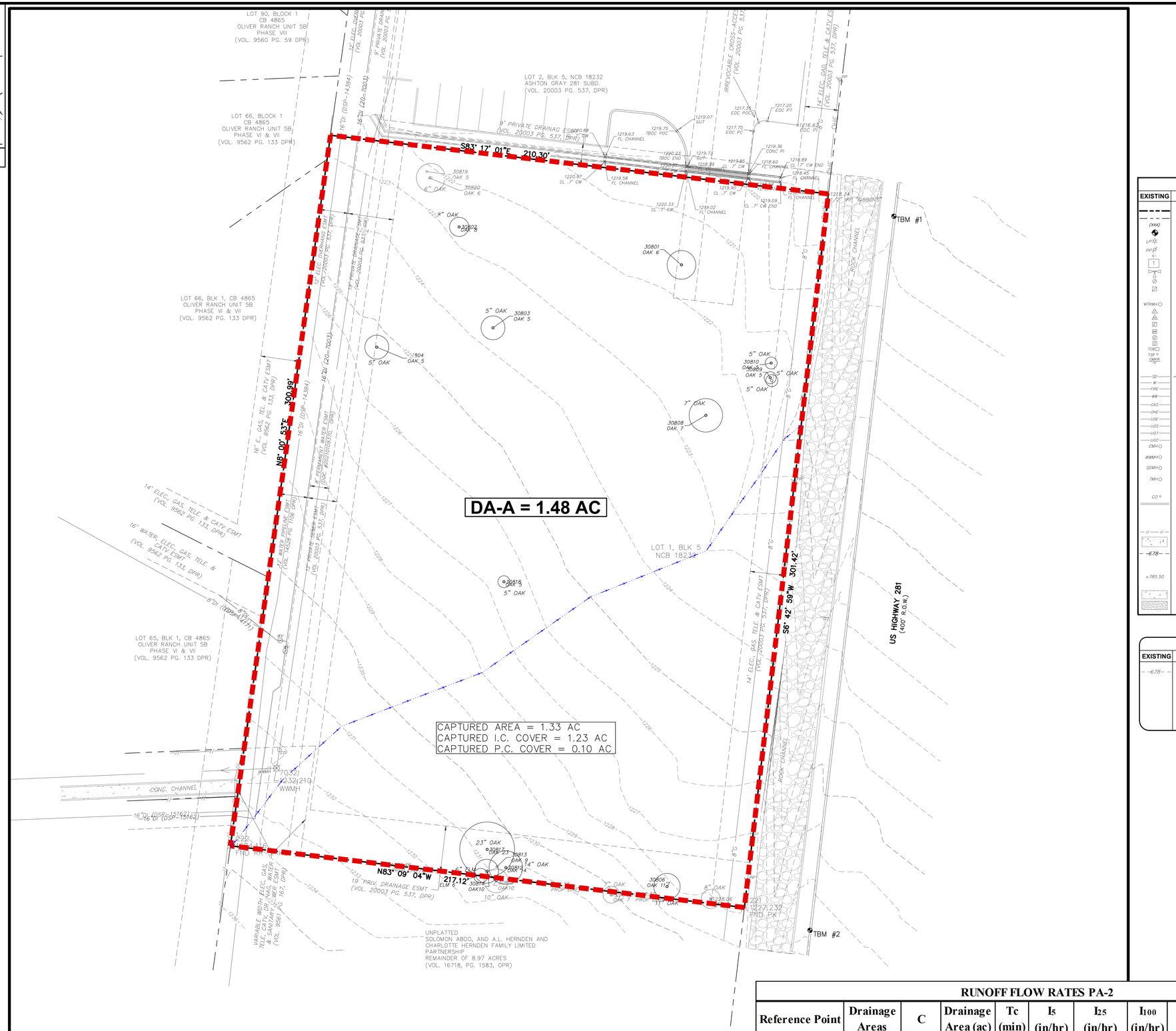
ATTACHMENT G

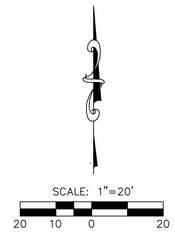
Drainage Area Map.

See Drainage Area maps EX-2A & EX-2B attached after this sheet.



LOCATION MAP
NOT TO SCALE





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 VALVE
		GAS METER
TCB	TCB	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)
TMH	TMH	TELEPHONE MANHOLE (SIZE VARIES)
		FIRE DEPARTMENT CONNECTION
CO	CO	WASTEWATER CLEANOUT
		CURB
		HEADER CURB
		SAWTOOTH CURB
		RETAINING WALL
// //		CHAINLINK FENCE
		CONCRETE SIDEWALKS
678	678	CONTOUR
		DIRECTION OF FLOW
	X785.00TC	SPOT ELEVATION/TOP OF CURB
X785.50	X785.00	SPOT ELEVATION
		SWALE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT

LEGEND

EXISTING	PROPOSED	DESCRIPTION
678	678	CONTOUR
		FLOW ARROW
		UNCAPTURED AREA
		RETAINING WALL
		UNDISTURBED AREA

RUNOFF FLOW RATES PA-2

Reference Point	Drainage Areas	C	Drainage Area (ac)	Tc (min)	I_5 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_5 (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX - Onsite	A	0.49	1.48	6	7.52	10.53	13.30	**5.45**	**7.64**	**9.65**

Kove ENGINEERING
Site Development Engineering Services
Firm No. 11042
www.kloveengineering.com (210) 485-5683

STATE OF TEXAS
KEVIN WILLIAM LOVE
93563
LICENSED
PROFESSIONAL ENGINEER
10/28/24

DATE
REVISIONS:

OWNER:
GREEN PROPERTY DEVELOPMENT, LLC
420 DEER CROSS
SAN ANTONIO, TEXAS 78260

GREEN PLAZA @ BULVERDE RETAIL

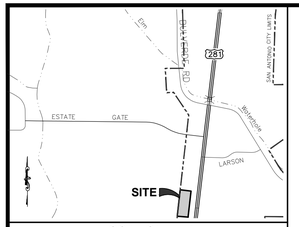
25211 N. US HWY 281
SAN ANTONIO, TX 78260

EXISTING DRAINAGE AREA MAP

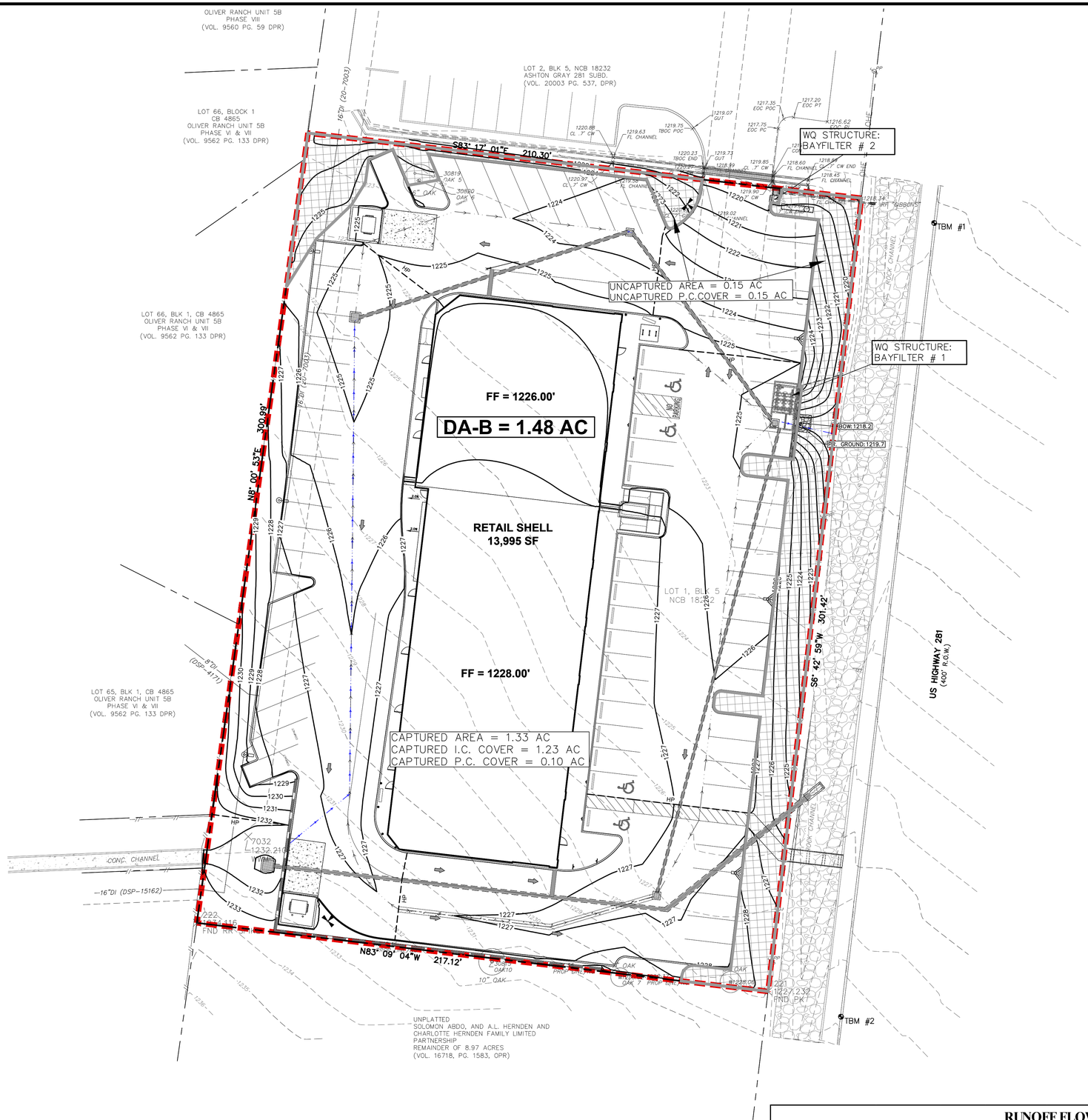
DESIGNED BY:	AB
DRAWN BY:	RQ/JR
SCALE:	1"=20'
DATE:	04/10/24
SHEET NO:	EX-2A

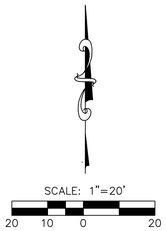
811 Know what's below. Call before you dig.

Date: Oct 28, 2024, 3:12pm User ID: klove
File: K:\PROJECTS\1148-03 Ashton Gray\TCEQ\TCEQ WPAP Mod\6 - Temporary Stormwater Section\EX-2A WPAP EXST-DA 02-28-24.dwg
Date: Oct 28, 2024, 3:12pm
File: K:\PROJECTS\1148-03 Ashton Gray\TCEQ\TCEQ WPAP Mod\6 - Temporary Stormwater Section\EX-2A WPAP EXST-DA 02-28-24.dwg



LOCATION MAP
NOT TO SCALE





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 VALVE
		GAS METER
TCB	TCB	TRAFFIC CONTROL BOX
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TMH	TMH	TELEPHONE MANHOLE (SIZE VARIES)
		FIRE DEPARTMENT CONNECTION
CO	CO	WASTEWATER CLEANOUT
		CURB
		HEADER CURB
		SAWTOOTH CURB
		RETAINING WALL
// //		CHAINLINK FENCE
		CONCRETE SIDEWALKS
678	678	CONTOUR
		DIRECTION OF FLOW
	X785.00TC	SPOT ELEVATION/TOP OF CURB
X785.50	X785.00	SPOT ELEVATION
		SWALE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT

LEGEND

EXISTING	PROPOSED	DESCRIPTION
678	678	CONTOUR
		FLOW ARROW
		RETAINING WALL
		UNDISTURBED AREA
		UNCAPTURED AREA

PR/ULT DA-B

Zoning	Acreage	C	% C
C-Undeveloped	0.25	0.49	0.12
C-Developed	1.23	0.97	1.19
Total=	1.48		1.32
Composite C=			0.89

RUNOFF FLOW RATES PA-2

Reference Point	Drainage Areas	C	Drainage Area (ac)	Tc (min)	I_5 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_5 (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
PR/ULT - Onsite	B	0.89	1.48	7	7.17	10.03	12.69	9.44	13.21	16.72

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STATE OF TEXAS
KEVIN WILLIAM LOVE
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LICENSED
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25211 N. US HWY 281
SAN ANTONIO, TX 78260

PROPOSED DRAINAGE AREA MAP

DESIGNED BY: AB
DRAWN BY: RQ/JR
SCALE: 1"=20'
DATE: 04/10/24
SHEET NO.

EX-2B

Know what's below. Call before you dig.

Date: Oct 24, 2024, 3:28pm User ID: Kevin Love
File: K:\PROJECTS\1148-03 Ashton Gray\TCEQ\TCEQ WPAP Mod\6 - Temporary Stormwater Section\EX-2B WPAP PROP-DA 10-21-24_MV.dwg

ATTACHMENT H

Temporary Sediment Pond(s) Plans and Calculations

N/A.

ATTACHMENT I

Inspections and Maintenance for BMPs

The designated and qualified person(s) shall inspect the Pollution Control Measures weekly and within 24 hours after a storm event. A report that summarizes the inspections scope, name and qualification of person(s) conducting the inspection, date of inspection, any actions taken as a result of inspection, and observations shall be recorded and maintained for a period of three years after the date of the inspection as part of the Storm Water TPDES data. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

The inspector shall observe the following as a minimum:

1. Significant disturbed areas for evidence of erosion
2. Storage areas for evidence of leakage from the exposed stored materials
3. Structural controls for evidence of failure or excess siltation
    a. Rock berms
    b. Silt fences
    c. Drainage swales
    d. Inlet protection
    e. Sediment over 6 inches
    f. Outlet structures (ponds or basins outfalls)
4. Construction entrance/exit for evidence of off-site sediment tracking
5. Construction staging areas for evidence of vehicle leakage or spills
6. Concrete truck washout pit for signs of failure
7. Basin erosion or sediment buildup

Any deficiencies noted during the inspection will be corrected and documented within seven (7) calendar days following the inspection or before the next anticipated storm event.

Contractor shall review Sections 1.3 and 1.4 of the TCEQ Technical Guidance Manual for any additional BMP maintenance and inspection requirements.

TEMPORARY STORMWATER SECTION

Pollution Prevention Measure	Inspected	Corrective Action	
		Description	Date Completed
Revegetation			
Erosion/sediment controls			
Construction exits			
Construction staging areas			
Concrete washout pit			
Construction debris/litter			
Trash receptacles			
Infrastructure			
Roadway clearing			
Utility clearing			
Roadway grading			
Utility construction			
Drainage construction			
Roadway base			
Roadway surface			
Pad clearing			
Pad grading			
Foundation construction			
Building construction			
Site grading			
Site cleanup			
BMPs			
Other Measures			

By my signature below, I certify that all items are acceptable and the project site is in compliance with the SWPPP.

_____ _____

Inspector's Name Inspector's Signature

_____ _____

Name of Owner/Operator (Firm) Date

*Inspector to attach statement of qualifications to this report.

K Love ENGINEERING

TEMPORARY STORMWATER SECTION

PROJECT DATES AND ACTIVITIES

Date and description when major site grading occurs

Construction Activity	Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Date and description when construction activities temporarily or permanently cease

Construction Activity	Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Date and description of stabilization measures used

Stabilization Activity	Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

K Love ENGINEERING

ATTACHMENT J

Schedule of Interim and Permanent Soil Stabilization

During construction, existing vegetation shall be protected as much as possible.

Soil stabilization shall commence when construction activities have ceased for that area.

Permanent Stabilization

- All slopes for the site shall not exceed a slope of 3:1 to allow for vegetation to be established without extra support or matting. Stabilization will occur when construction activities have been completed and will not resume.
- Areas within islands and curbs shall be re-vegetated in accordance to the landscaping plan. Re-vegetation will occur when described in the landscaping plan or when vegetation will not be harmed from future construction activities.

Natural Vegetation

Materials

- Vegetation will vary from season to season and by location. Consult the county agricultural extension agents for specific seeds and application rates.

Installation

- Final grading and all erosion structures must be completed before seeding is to occur.
- Seedbed should be well pulverized, loose, and uniform.
- Fertilizer will be applied at a rate of 40 pounds of nitrogen and 40 pounds of phosphorus per acre. A substitute for fertilizer will be compost applied at the same time as seeding.
- Apply seeding with a cyclone seeder, cultipacker seeder, drill, or hydroseeder.
- Irrigate as to replace moisture loss due to evaporation.

Blankets and Matting

Materials

- Not limited to, jute, excelsior, straw blanket, wood fiber blanket, coconut fiver blanket-mesh, straw coconut fiver blanket, plastic netting-mesh, synthetic fiber with netting or bonded synthetic fibers may be used. Other materials may be used if approved by the engineer.

Installation

- Install in accordance with the manufacturer's recommendations and ensure proper anchoring and soil preparation. Methods and materials for anchoring may vary and should follow manufacturer's instructions.

Hydraulic Mulch

Materials

- Hydraulic mulches to consist of wood fiber mulch to be applied at a rate of 2,000 to 4,000 pounds per acre.
- Hydraulic matrices to consists of wood fibers and acrylic polymer or similar binder applied at a rate of 2,000 to 4,000 pounds per acre for wood fiber mulch and 5 to 10 percent of binder.
- Bonded fiber matrix to consists of wood fibers and adhesives applied at a rate of 3,000 to 4,000 pounds per acre.

Installation

- Prior to application, disturbed areas shall be roughened by rolling with crimping or punching type roller of by track walking when rolling is impractical.
- Place hydraulic matrices as to allow 24 hours to dry before rainfall occurs.

Sod

Materials

- Sod should be machine cut at a uniform soil thickness of 3/4 inch which excludes shoot growth and thatch. Pieces should be cut to a uniform width and length, torn or uneven pads should not be used. Sod should be harvested, delivered, and installed within a period of 36 hours.

Installation

- Fertilizer shall be placed prior to placement of the sod. Rates and types of fertilizer shall be placed in accordance with an soil tests or recommendations by the county agricultural agents.
- Do not place sod on frozen surfaces or excessively wet or dry weather. Irrigation may be necessary prior to placement of sod.
- Place the first row of sod in a straight line with following rows placed parallel and butting against the prior row. Joints should be staggered to promote uniform growth and strength. Do not stretch or overlap sod.
- On slopes 3:1 or greater, stagger joints and secure with stapling or other approved method. Install sod with the length perpendicular to the slope.
- After placement of sod, roll or tamp the sod to ensure firm contact between roots and soil.
- After rolling or tamping, irrigate sod to a depth sufficient that the underside of the pad and 4 inches of soil below is thoroughly wet.
- In the absence of adequate rainfall, watering shall be performed to maintain a moist soil depth of at least 4 inches.
- The first mowing should not occur until the sod is firmly rooted, approximately 2 to 3 weeks.

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: Kevin W. Love, P.E.

Date: 5-30-24

Signature of Customer/Agent

Regulated Entity Name: Green Plaza @ Bulverde Retail

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

ATTACHMENT A

20% or Less Impervious Cover Waiver

This site will be used for a small business but will have an impervious cover value greater than 20%.

ATTACHMENT B

BMPs for Upgradient Stormwater

The project site currently receives upgradient stormwater runoff. The upgradient runoff will be routed through the subject tract but will not be treated by the onsite BayFilter (ADS) Treatment System.

ATTACHMENT C

BMPs for On-Site Stormwater

In keeping with TCEQ rules, this development will employ a BayFilter system by ADS. The Best Management Practice used, the BayFilter system, for the project will achieve at least 80% reduction in the expected increase of suspended solids. The proposed additional / second BayFilter (ADS) BMP will capture / treat 0.08 ac of impervious cover (the entire site's impervious cover is captured by the original / first BMP and the additional / second proposed BMP). The proposed BayFilter BMP will capture / treat over 80% of the increased TSS with the Lm/Lr (65/75 = 0.87) ratio being less than 1 (see attached TSS calculations).

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	DANIEL COOLEY 667-216-0219 DANIEL.COOLEY@ADSPIPE.COM
ADS SALES REP:	KYLE RIVENBURG 210-527-7304 KYLE.RIVENBURG@ADSPIPE.COM
PROJECT NO:	S413462

Advanced Drainage Systems, Inc.

GREEN PLAZA @ BULVERDE RETAIL

SAN ANTONIO, TX

BAYSAVER BAYFILTER SPECIFICATIONS

PRODUCTS

A. INTERNAL COMPONENTS: ALL COMPONENTS INCLUDING CONCRETE STRUCTURE(S), PVC MANIFOLD PIPING AND FILTER CARTRIDGES, SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES LLC, 1030 DEER HOLLOW DRIVE, MOUNT AIRY, MD (800.229.7283).

B. PVC MANIFOLD PIPING: ALL INTERNAL PVC PIPE AND FITTINGS SHALL MEET ASTM D1785. MANIFOLD PIPING SHALL BE PROVIDED TO THE CONTRACTOR PARTIALLY PRE-CUT AND PRE-ASSEMBLED.

C. FILTER CARTRIDGES: EXTERNAL SHELL OF THE FILTER CARTRIDGES SHALL BE SUBSTANTIALLY CONSTRUCTED OF POLYETHYLENE OR EQUIVALENT MATERIAL ACCEPTABLE TO THE MANUFACTURER. FILTRATION MEDIA SHALL BE ARRANGED IN A SPIRAL LAYERED FASHION TO MAXIMIZE AVAILABLE FILTRATION AREA. AN ORIFICE PLATE SHALL BE SUPPLIED WITH EACH CARTRIDGE TO RESTRICT THE FLOW RATE TO A MAXIMUM OF 45 GPM.

D. FILTER MEDIA: FILTER MEDIA SHALL BE BY BAYSAVER TECHNOLOGIES LLC AND SHALL CONSIST OF THE FOLLOWING MIX: A BLEND OF ZEOLITE, PERLITE AND ACTIVATED ALUMINA.

E. PRECAST CONCRETE VAULT: CONCRETE STRUCTURES SHALL BE PROVIDED ACCORDING TO ASTM C. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C478, C857 AND C858. PRECAST CONCRETE SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES, LLC.

PERFORMANCE

A. THE STORMWATER FILTER SYSTEM SHALL BE AN OFFLINE DESIGN CAPABLE OF TREATING 100% OF THE REQUIRED TREATMENT FLOW AT FULL SEDIMENT LOAD CONDITIONS.
B. THE STORMWATER FILTER SYSTEM'S CARTRIDGES SHALL HAVE NO MOVING PARTS.
C. THE STORMWATER TREATMENT UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 87% OF SUSPENDED SOLIDS (TCEQ REGULATORY GUIDANCE 348). TOTAL PHOSPHORUS, TURBIDITY, TOTAL COPPER, AND ZINC BASED UPON LOCAL APPROVALS AND INDEPENDENT TESTING.
D. THE STORMWATER FILTRATION CARTRIDGE SHALL BE EQUIPPED WITH A HYDRODYNAMIC BACKWASH MECHANISM TO EXTEND THE FILTER'S LIFE AND OPTIMIZE ITS PERFORMANCE.
E. THE STORMWATER FILTRATION SYSTEM'S CARTRIDGES SHALL HAVE A TREATED SEDIMENT CAPACITY FOR 87% TSS REMOVAL OF 262 LBS FOR 545 AND 530 CARTRIDGES, AND 131 LBS FOR 522 CARTRIDGE.

BAYFILTER MAINTENANCE

THE BAYFILTER SYSTEM REQUIRES PERIODIC MAINTENANCE TO CONTINUE OPERATING AT ITS PEAK EFFICIENCY DESIGN. THE MAINTENANCE PROCESS COMPRISES THE REMOVAL AND REPLACEMENT OF EACH BAYFILTER CARTRIDGE AND THE CLEANING OF THE VAULT OR MANHOLE WITH A VACUUM TRUCK. FOR BEST RESULTS, BAYFILTER MAINTENANCE SHOULD BE PERFORMED BY A CERTIFIED MAINTENANCE CONTRACTOR. A QUICK CALL TO AN ADS ENGINEER OR CUSTOMER SERVICE REPRESENTATIVE WILL PROVIDE YOU WITH A LIST OF RELIABLE CONTRACTORS IN YOUR AREA.

WHEN BAYFILTER IS INITIALLY INSTALLED, WE RECOMMEND THAT AN INSPECTION BE PERFORMED ON THE SYSTEM IN THE FIRST SIX (6) MONTHS. AFTER THAT, THE INSPECTION CYCLE TYPICALLY FALLS INTO A BIANNUAL PATTERN GIVEN NORMAL STORM OCCURRENCE AND ACTUAL SOLIDS LOADS.

WHEN BAYFILTER EXHIBITS FLOWS BELOW DESIGN LEVELS, THE SYSTEM SHOULD BE INSPECTED AND MAINTAINED AS SOON AS PRACTICAL. REPLACING A BAYFILTER CARTRIDGE SHOULD BE CONSIDERED AT OR ABOVE THE LEVEL OF THE MANIFOLD.

MAINTENANCE PROCEDURES

1. REMOVE THE MANHOLE COVERS AND OPEN ALL ACCESS HATCHES.
2. BEFORE ENTERING THE SYSTEM MAKE SURE THE AIR IS SAFE PER OSHA STANDARDS OR USE A BREATHING APPARATUS. USE LOW O2, HIGH CO, OR OTHER APPLICABLE WARNING DEVICES PER REGULATORY REQUIREMENTS.
3. USING A VACUUM TRUCK, REMOVE ANY LIQUID AND SEDIMENTS THAT CAN BE REMOVED PRIOR TO ENTRY.
4. USING A SMALL LIFT OR THE BOOM OF THE VACUUM TRUCK, REMOVE THE USED CARTRIDGES BY LIFTING THEM OUT.
5. ANY CARTRIDGES THAT CANNOT BE READILY LIFTED CAN BE EASILY SLID ALONG THE FLOOR TO A LOCATION THEY CAN BE LIFTED VIA A BOOM LIFT.
6. WHEN ALL THE CARTRIDGES HAVE BEEN REMOVED, IT IS NOW PRACTICAL TO REMOVE THE BALANCE OF THE SOLIDS AND WATER. LOOSEN THE STAINLESS CLAMPS ON THE FERNCO COUPLINGS FOR THE MANIFOLD AND REMOVE THE DRAINPIPES AS WELL. CAREFULLY CAP THE MANIFOLD AND THE FERNCO'S AND RINSE THE FLOOR, WASHING AWAY THE BALANCE OF ANY REMAINING COLLECTED SOLIDS.
7. CLEAN THE MANIFOLD PIPES, INSPECT, AND REINSTALL.
8. INSTALL THE EXCHANGE CARTRIDGES AND CLOSE ALL COVERS.
9. THE USED CARTRIDGES MUST BE SENT BACK TO ADS FOR EXCHANGE/RECYCLING AND CREDIT ON UNDAMAGED UNITS.

BAYFILTER INSTALLATION NOTES

1. CONTACT UTILITY LOCATOR TO MARK ANY NEARBY UNDERGROUND UTILITIES AND MAKE SURE IT IS SAFE TO EXCAVATE.
2. REFERENCE THE SITE PLAN AND STAKE OUT THE LOCATION OF THE BAYFILTER VAULT.
3. EXCAVATE THE HOLE, PROVIDING ANY SHEETING AND SHORING NECESSARY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS.
4. LEVEL THE SUB-GRADE TO THE PROPER ELEVATION. VERIFY THE ELEVATION AGAINST THE MANHOLE DIMENSIONS, THE INVERT ELEVATIONS, AND THE SITE PLANS. ADJUST THE BASE AGGREGATE, IF NECESSARY.
5. HAVE THE SOIL BEARING CAPACITY VERIFIED BY A LICENSED/ENGINEER FOR THE REQUIRED LOAD BEARING CAPACITY. ON SOLID SUB-GRADE, SET THE FIRST SECTION OF THE BAYFILTER PRE-CAST VAULT.
6. CHECK THE LEVEL AND ELEVATION OF THE FIRST SECTION TO ENSURE IT IS CORRECT BEFORE ADDING ANY RISER SECTIONS.
7. IF ADDITIONAL SECTION(S) ARE REQUIRED, ADD A WATERTIGHT SEAL TO THE FIRST SECTION OF THE BAYFILTER VAULT. SET ADDITIONAL SECTION(S) OF THE VAULT, ADDING A WATERTIGHT SEAL TO EACH JOINT.
8. INSTALL THE PVC OUTLET MANIFOLD.
9. INSTALL THE PVC OUTLET PIPE IN BAYFILTER VAULT.
10. INSTALL THE INLET PIPE TO THE BAYFILTER VAULT.
11. AFTER THE SITE IS STABILIZED, REMOVE ANY ACCUMULATED SEDIMENT OR DEBRIS FROM THE VAULT AND INSTALL THE FLOW DISKS, DRAINDOWN MODULES (IF APPLICABLE), AND THE BAYFILTER CARTRIDGES.
12. PLACE FULL SET OF HOLD DOWN BARS AND BRACKETS INTO PLACE.

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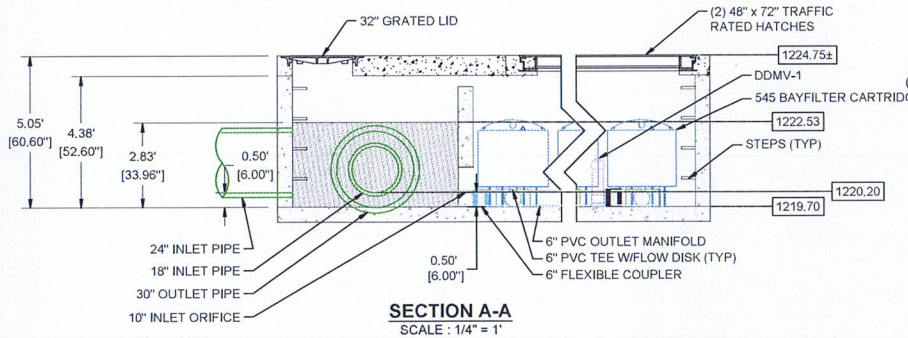
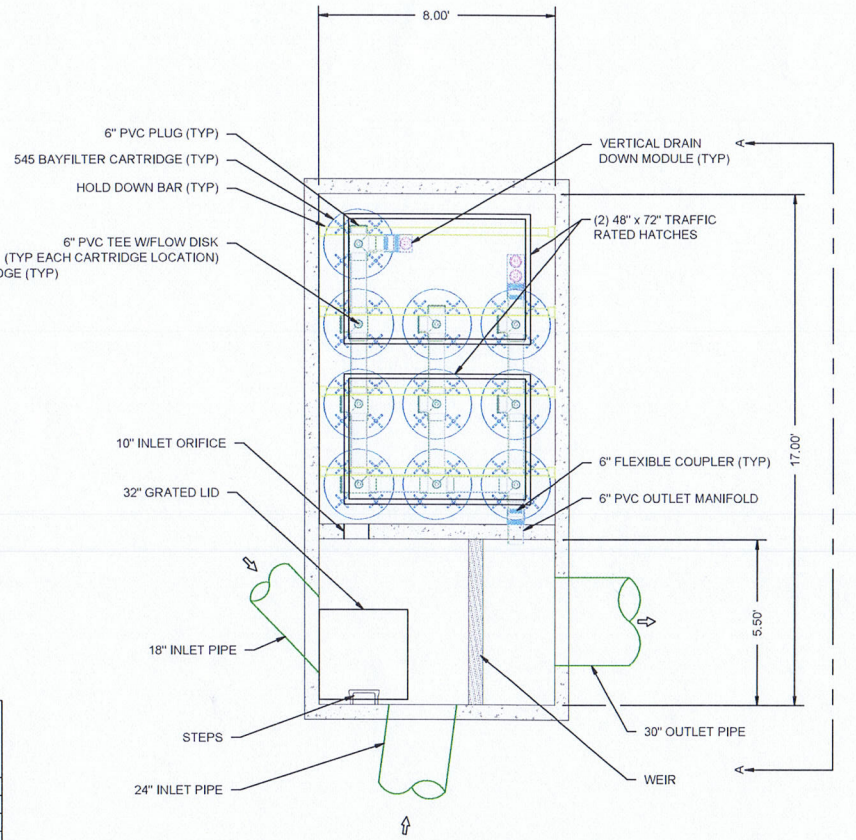
STATE OF TEXAS
KEVIN WILLIAM LOVE
93563
LICENSED
PROFESSIONAL ENGINEER
10/24/24



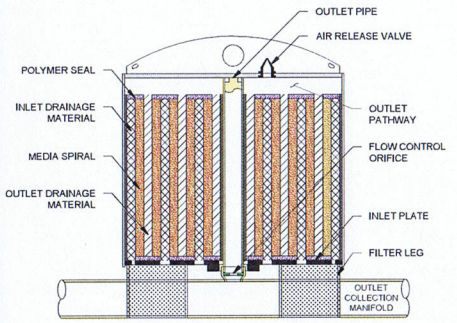
SECTION A-A
SCALE : 1/4" = 1'



PLAN VIEW
SCALE : 1/4" = 1'

NOTE: THIS DETAIL SHOWS A FUNCTIONAL FILTER DESIGN PER SITE SPECIFIC INFORMATION PROVIDED. THE FINAL APPROVED PRECAST DRAWINGS WILL DETERMINE THE FINAL SIZE, INCLUDING BUT NOT LIMITED TO; OVERALL DIMENSIONS, RISER SIZE, RISER TYPE & HEIGHT AND FRAMES & COVERS BEING PROVIDED.

WQv = 239 CF



545 BAYFILTER 8-17-10	BF-1
WATER QUALITY FLOW RATE	1.0 CFS
DRAINAGE AREA	1480 AC
CARTRIDGE DESIGN FLOW RATE	45 GPM
# BAYFILTER CARTRIDGES	10
TREATED SEDIMENT CAPACITY*	920 LBS

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 90 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS INLINE WITH AN INTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE CARTRIDGES. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.
*TREATED SEDIMENT CAPACITY IS CALCULATED IN ACCORDANCE WITH TCEQ REGULATOR GUIDANCE 348.

GREEN PLAZA
@ BULVERDE RETAIL
SAN ANTONIO, TX

DATE	DRWN	CHKD	DESCRIPTION
10-17-24	LAH	KLJ	REV BF-1, ADD BF-2
09-19-24	JPR	KLJ	ADDED CARTRIDGES FOR NEW FLOW RATE
06-19-24	SLS	KLJ	REVISED PER MARK-UP/UPDATED PLAN

DATE: 05-29-24 DRAWN: LAH
PROJECT #: S413462 CHECKED: PR

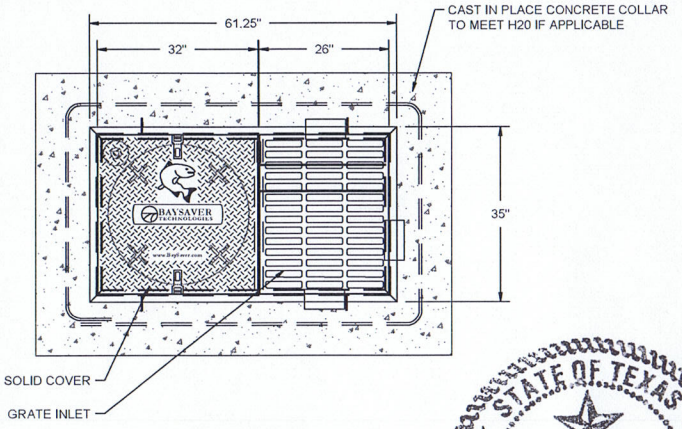
BayFilter®
Stormwater Media Filters

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026

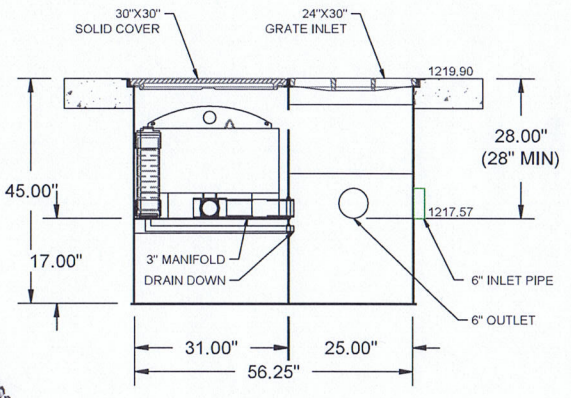
AS NOTED

SHEET 2 OF 3

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE CAVITY REGULATIONS, AND PROJECT REQUIREMENTS.

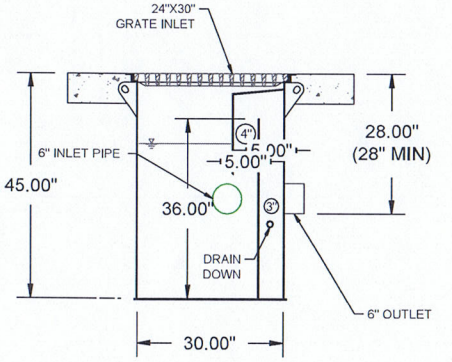


SURFACE DETAIL



SECTION A-A

SCALE: 1/2" = 1'



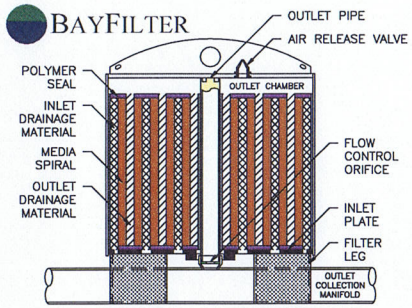
SECTION B-B

SCALE: 1/2" = 1'

10/24/24

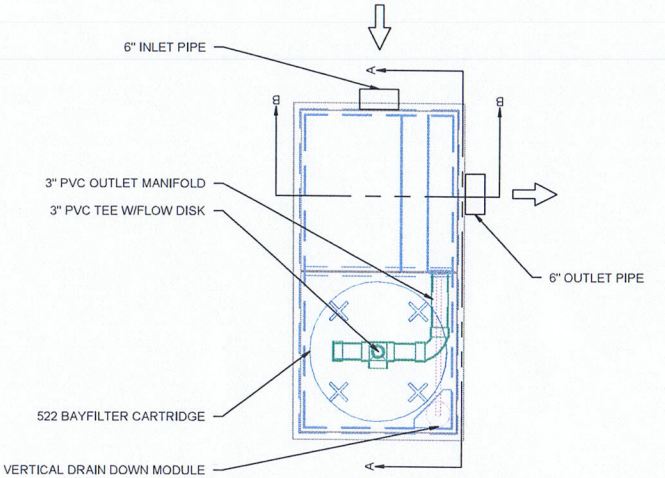
*NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT

DRAINAGE AREA = 0.25 AC
WQv = 12 CF



BAYFILTER CBF-1	BF-2
WATER QUALITY FLOW	11.25
CARTRIDGE DESIGN FLOW RATE	11.25
# BAYFILTER CARTRIDGES	1
TREATED SEDIMENT CAPACITY	175

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 45 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.



PLAN VIEW

SCALE: 1/2" = 1'

GREEN PLAZA
@ BULVERDE RETAIL
SAN ANTONIO, TX

DATE: 05-29-24 | DRAWN: LAH | CHECKED: PR | PROJECT #: S413462

DATE	DRWN	CHKD	DESCRIPTION
10-17-24	LAH	KLJ	REV BF-1, ADD BF-2
08-19-24	LAH	JPR	ADDED CARTRIDGES FOR NEW FLOW RATE
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BayFilter®
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AS NOTED

SHEET 3 OF 3

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Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Green Plaza @ Bulverde Retail
Date Prepared: 10/14/2024

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 — Pages 3-27 to 3-30

Equation 3.3: $L_M = 27.2(A_N \times P)$

L_M = 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 =	Bexar	
Total project area included in plan * =	1.480	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	1.230	acres
Total post-development impervious cover fraction * =	0.83	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	1004	lbs.
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. =	7	
Total drainage basin/outfall area =	1.250	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	1.150	acres
Post-development impervious fraction within drainage basin/outfall area =	0.92	
$L_{M\ THIS\ BASIN}$ =	938	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	1.250	acres
A_I =	1.150	acres
A_P =	0.100	acres
L_R =	1040	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	938	lbs.
F =	0.90	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	1.70	inches
Rainfall Intensity =	1.10	inches per hour
Post Development Runoff Coefficent =	0.75	
Effective Area =	1.04	acres
Peak Flow =	1.14	cubic feet per second
On-site Water Quality Volume =	5796	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	6955	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF545	
Cartridge Surface Loading Rate =	0.5	GPM per ft^2
Cartridge Capacity =	45.00	GPM
Cartridge head =	30.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	6.00	inches

Option 1. Volume Design

Number of Cartridges for Volume-Based Configuration =	3	
Storage Volume for Volume-Based Configuration =	6955	cubic feet

Option 2. Flow Through Design

Flow Rate for Flow-Through Configuration =	1.14	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	12	
Volume for Flow-Through Configuration =	0	cubic feet

Option 3. BayFilter w/Equalization Design

Minimum number of Cartridges Required =	3	
Flow Rate for Flow-Through Configuration w/ Equalization =	1.00	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	10	
Minimum Required Equalization Storage (Calculated Volume +20%) =	114	cubic feet

10/24/24

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Green Plaza @ Bulverde Retail
Date Prepared: 10/14/2024

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

L_M = 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 =	Bexar	
Total project area included in plan * =	1.480	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	1.230	acres
Total post-development impervious cover fraction * =	0.83	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	1004	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	2	

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

Drainage Basin/Outfall Area No. =	2	
Total drainage basin/outfall area =	0.250	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	0.080	acres
Post-development impervious fraction within drainage basin/outfall area =	0.32	
$L_{M\ THIS\ BASIN}$ =	65	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	0.250	acres
A_I =	0.080	acres
A_P =	0.170	acres
L_R =	75	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	65	lbs.
F =	0.87	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	1.44	inches
Rainfall Intensity =	0.95	inches per hour
Post Development Runoff Coefficent =	0.27	
Effective Area =	0.08	acres
Peak Flow =	0.07	cubic feet per second
On-site Water Quality Volume =	352	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	422	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF522	
Cartridge Surface Loading Rate =	0.5	GPM per ft^2
Cartridge Capacity =	22.50	GPM
Cartridge head =	18.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	3.00	inches

Option 1. Volume Design

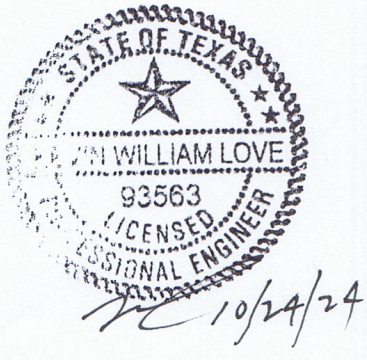
Number of Cartridges for Volume-Based Configuration =	1	
Storage Volume for Volume-Based Configuration =	422	cubic feet

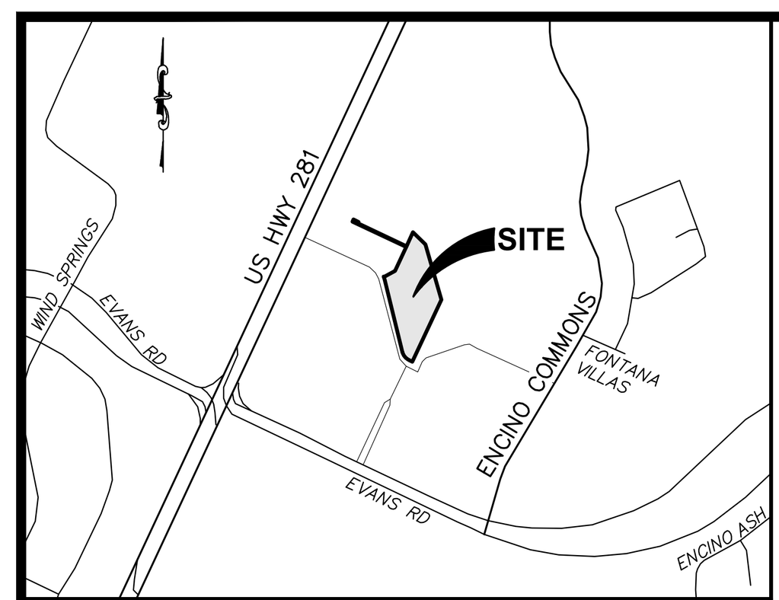
Option 2. Flow Through Design

Flow Rate for Flow-Through Configuration =	0.07	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	2	
Volume for Flow-Through Configuration =	0	cubic feet

Option 3. BayFilter w/Equalization Design

Minimum number of Cartridges Required =	1	
Flow Rate for Flow-Through Configuration w/ Equalization =	0.05	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	1	
Minimum Required Equalization Storage (Calculated Volume +20%) =	30	cubic feet





LOCATION MAP
NOT TO SCALE

REQUIRED TSS REMOVAL FOR ENTIRE SITE			
TOTAL ACREAGE	PRE-DEVELOPMENT IMPERVIOUS COVER	POST-DEVELOPMENT IMPERVIOUS COVER	Lm-REQUIRED TSS REMOVAL
1.48 ac	0.00	1.23 ac	1,004 lbs

BREAKDOWN OF TSS TREATED BY PERMANENT BMPS							
PROPOSED BMP	DRAINAGE AREA TO BMP	IMPERVIOUS COVER TO BMP	BMP EFFICIENCY	F	PERCENT OF IMPERVIOUS COVER BEING CAPTURED/TREATED	TSS REQUIRED REMOVAL	TSS BEING REMOVED BY BMP
BAYFILTER 1	1.25 ac	1.15 ac	87%	0.90	100%	938 lbs	1040 lbs
BAYFILTER 2	0.23 ac	0.08 ac	87%	0.87	100%	65 lbs	75 lbs
	1.48 ac	1.23 ac			100%	1,004 lbs	1,115 lbs

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Green Plaza @ Bulverde Retail
Date Prepared: 10/14/2024

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 — Pages 3-27 to 3-30
Equation 3.3: $L_M = 27.2(A_N \times P)$

L_M = 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 =	Bexar	
Total project area included in plan * =	1.480	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	1.230	acres
Total post-development impervious cover fraction * =	0.83	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	1004	lbs.
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. =	7	
Total drainage basin/outfall area =	1.250	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	1.150	acres
Post-development impervious fraction within drainage basin/outfall area =	0.92	
$L_{M\ THIS\ BASIN}$ =	938	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	1.250	acres
A_I =	1.150	acres
A_P =	0.100	acres
L_R =	1040	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	938	lbs.
F =	0.90	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	1.70	inches
Rainfall Intensity =	1.10	inches per hour
Post Development Runoff Coefficent =	0.75	
Effective Area =	1.04	acres
Peak Flow =	1.14	cubic feet per second
On-site Water Quality Volume =	5796	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	6955	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF545	
Cartridge Surface Loading Rate =	0.5	GPM per ft²
Cartridge Capacity =	45.00	GPM
Cartridge head =	30.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	6.00	inches
Option 1. Volume Design		
Number of Cartridges for Volume-Based Configuration =	3	
Storage Volume for Volume-Based Configuration =	6955	cubic feet
Option 2. Flow Through Design		
Flow Rate for Flow-Through Configuration =	1.14	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	12	
Volume for Flow-Through Configuration =	0	cubic feet
Option 3. BayFilter w/Equalization Design		
Minimum number of Cartridges Required =	3	
Flow Rate for Flow-Through Configuration w/ Equalization =	1.00	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	10	
Minimum Required Equalization Storage (Calculated Volume +20%) =	114	cubic feet

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Green Plaza @ Bulverde Retail
Date Prepared: 10/14/2024

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 — Pages 3-27 to 3-30
Equation 3.3: $L_M = 27.2(A_N \times P)$

L_M = 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 =	Bexar	
Total project area included in plan * =	1.480	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	1.230	acres
Total post-development impervious cover fraction * =	0.83	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	1004	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	2	

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

Drainage Basin/Outfall Area No. =	2	
Total drainage basin/outfall area =	0.250	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	0.080	acres
Post-development impervious fraction within drainage basin/outfall area =	0.32	
$L_{M\ THIS\ BASIN}$ =	65	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	0.250	acres
A_I =	0.080	acres
A_P =	0.170	acres
L_R =	75	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	65	lbs.
F =	0.87	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	1.44	inches
Rainfall Intensity =	0.95	inches per hour
Post Development Runoff Coefficent =	0.27	
Effective Area =	0.08	acres
Peak Flow =	0.07	cubic feet per second
On-site Water Quality Volume =	352	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	422	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF522	
Cartridge Surface Loading Rate =	0.5	GPM per ft²
Cartridge Capacity =	22.50	GPM
Cartridge head =	18.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	3.00	inches
Option 1. Volume Design		
Number of Cartridges for Volume-Based Configuration =	1	
Storage Volume for Volume-Based Configuration =	422	cubic feet
Option 2. Flow Through Design		
Flow Rate for Flow-Through Configuration =	0.07	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	2	
Volume for Flow-Through Configuration =	0	cubic feet
Option 3. BayFilter w/Equalization Design		
Minimum number of Cartridges Required =	1	
Flow Rate for Flow-Through Configuration w/ Equalization =	0.05	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	1	
Minimum Required Equalization Storage (Calculated Volume +20%) =	30	cubic feet

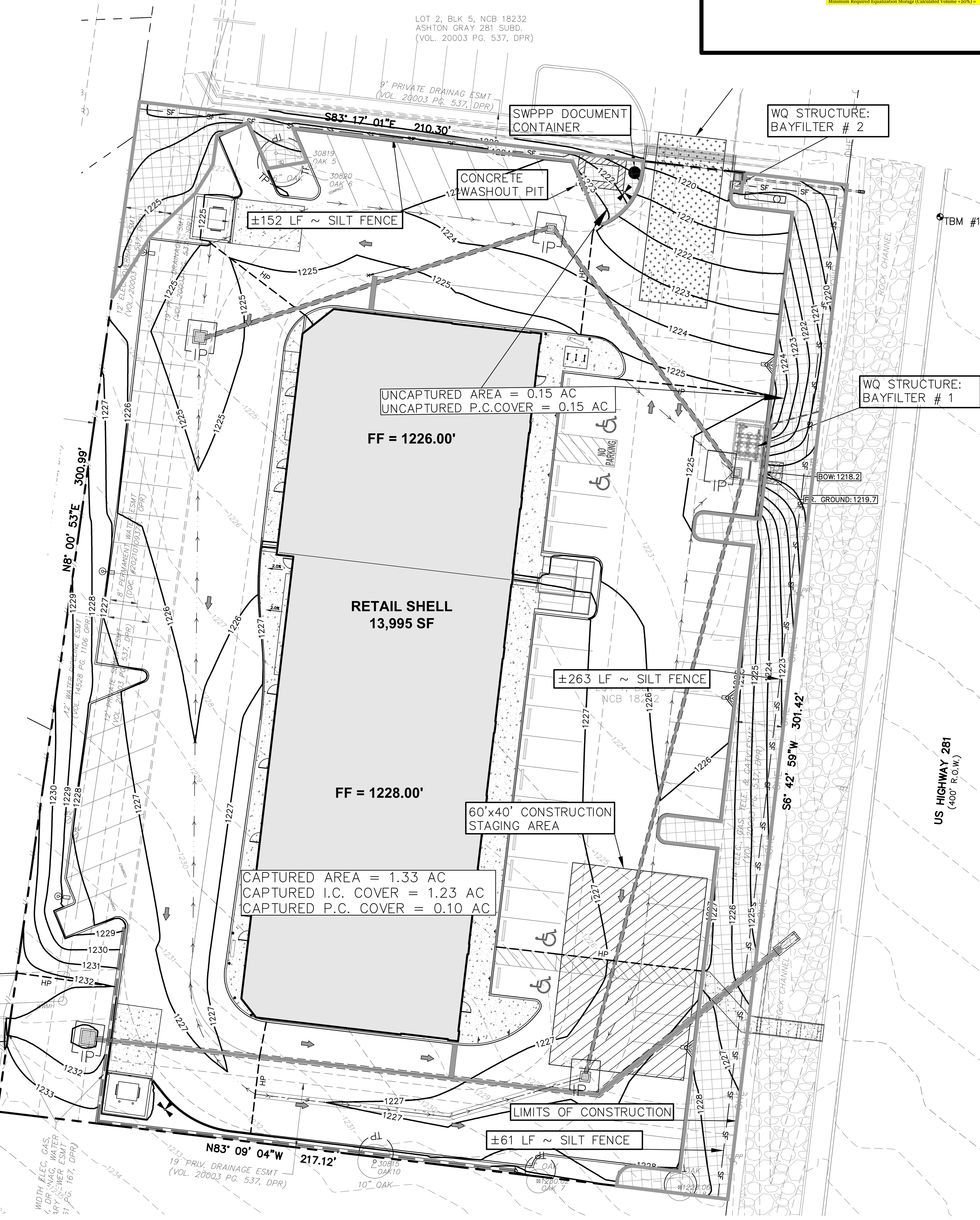
SCALE: 1"=20'
20 10 0 20

LEGEND		
EXISTING	PROPOSED	DESCRIPTION
— 678 —	—678—	CONTOUR
		FLOW ARROW
		UNCAPTURED AREA
		RETAINING WALL
		UNDISTURBED AREA

TEMPORARY BMP'S LEGEND	
PROPOSED	DESCRIPTION
— SF —	SILT FENCE
	CONSTRUCTION ENTRANCE/EXIT
— IP —	INLET PROTECTION
	CONCRETE WASHOUT PIT

IMPERVIOUS COVER
PROJECT AREA = 1.48 ACRES
IMPERVIOUS COVER = 1.23 ACRES
IMPERVIOUS COVER PERCENTAGE = 83.11%

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



Texas Commission on Environmental Quality

Water Pollution Abatement Plan
General Construction Notes

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - -The name of the approved project;
   - -The activity start date; and
   - -The contractor information of the primer contractor.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.
4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of water supply source, distribution system, well, or sensitive feature.
5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
7. Sediment must be removed from the sediment traps or sedimentation basins not later than when in occupies 50% of the basin's design capacity.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposals of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. If portions of the site will have temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. if activity will resume prior to the 21st day, stabilization measures are not required. if drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
11. The following records shall be maintained and made available to the TCEQ upon request:
    - the dates when major grading activities occur;
    - the dates when construction activities temporarily or permanently cease on a portion of the site; and
    - the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

    A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office
12100 Park 35 Circle, Building A
Austin, Texas 78753-1808
Phone (512) 339-2929
Fax (512) 339-3795

San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
Phone (210) 490-3096
Fax (210) 545-4329

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

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

KLove ENGINEERING
Site Development Engineering Services
Firm No. 11042
www.kloveengineering.com
(210) 485-5683

STATE OF TEXAS
KEVIN WILLIAM LOVE
93563
LICENSED PROFESSIONAL ENGINEER
10/25/24

DATE
REVISIONS:

OWNER:
GREEN PROPERTY DEVELOPMENT, LLC
420 DEER CROSS
SAN ANTONIO, TEXAS 78260

GREEN PLAZA @ BULVERDE RETAIL
25211 N. US HWY 281
SAN ANTONIO, TX 78260

WATER QUALITY PLAN

DESIGNED BY:	AB
DRAWN BY:	MV
SCALE:	1"=20'
DATE:	10/21/24
SHEET NO:	

EX-3

ATTACHMENT D

BMPs for Surface Streams

The site does not have surface streams or sensitive features within the boundaries of the site. The site will employ the proposed BayFilter treatment system (ADS) to prevent pollution of surface water or groundwater originating on site or flowing off the site. The Best Management Practice used, the proposed BayFilter treatment system, for the project will achieve at least 80% reduction in the expected increase of suspended solids. The proposed additional / second BayFilter (ADS) BMP will capture / treat 0.08 ac of impervious cover (the entire site's impervious cover is captured by the original / first BMP and the additional / second proposed BMP). The proposed BayFilter BMP will capture / treat over 80% of the increased TSS with the Lm/Lr (65/75 = 0.87) ratio being less than 1 (see attached TSS calculations).

ATTACHMENT E

Request to Seal Features

There are no naturally occurring sensitive features located within the boundaries of the lot to be developed, thus no request to seal features.

ATTACHMENT G

Inspection, Maintenance, Repair and Retrofit Plan

An Inspection, Maintenance, Repair and Retrofit Plan have been attached on the following pages.

ATTACHMENT G

Inspection, Maintenance, Repair and Retrofit Plan

PROJECT NAME: Green Plaza @ Bulverde Retail

ADDRESS: 25211 N US Hwy 281

CITY, STATE ZIP: San Antonio, Texas 78260

Maintenance on Baysaver BayFilter

Due to the high level of pollutant variation and specifically sediment loading, the unit shall be inspected at least every other month during the first year of operation to determine loading and required maintenance intervals. This information can be used to establish an appropriate maintenance schedule for subsequent years. If soil disturbing activities are being conducted within the unit's drainage area, inspection frequencies must be increased to once each month and after rain events of 0.5" and larger. The maintenance cycle of the BayFilter system will be driven mostly by the actual solids load on the filter. The system should be periodically monitored to be certain it is operating correctly.

Indications of the need for maintenance:

- Effluent flow decreasing to below the design flow rate or decrease in treatment below required levels (e.g., greater than 24hr drain down for a volume based system, or the detention drain down time-whichever is greater).
- Filter cartridge replacement should also be considered when sediment levels are at or above the level of the manifold system which is 6 inches and 3 inches for a BayFilter 545 and 545-LP, respectively.
- Bypass occurs during storm events
- If excessive floatables (trash and debris) are present (but no standing water or excessive sedimentation), perform a minor maintenance consisting of gross solids removal, not filter media replacement.
- If standing water above the bottom of the filter cartridge is present in the vault 96 hours after a 2 year rainfall event.
- Removal of trash and silt from the pretreatment chamber

Maintenance & Inspection Procedure

- Remove the manhole covers and open all access hatches.
- Before entering the system make sure the air is safe per OSHA Standards or use a breathing apparatus. Use low O2, high CO, or other applicable warning devices per regulatory requirements.
- Using a vacuum truck remove any liquid and sediments that can be removed prior to entry.
- Using a small lift or the boom of the vacuum truck, remove the used cartridges by lifting them out.
- Any BayFilters that cannot be readily lifted directly out of the vault should be removed from their location and carried to the lifting point using the Trolley system installed in the vault (if applicable).
- When all BayFilters are removed, remove the balance of the solids and water; then loosen the stainless clamps on the Fernco couplings in the pipe manifold; remove the drain pipes as well. Carefully cap the manifold and the Ferncos and rinse the floor removing the balance of the collected solids.
- Clean the manifold pipes, inspect, and reinstall.
- Install the exchange BayFilters and close all covers.

- BaySaver Technologies, LLC. states that used BayFilter cartridges may be sent back to them for exchange/recycling and credit on undamaged units. Contact BaySaver Technologies at 1.800.229.7283 for more information.
- According to 30 TAC 330 or 30 TAC 335, identify any special disposal requirements associated with spent media, absorbents, or other material to be generated during routine cleaning/maintenance operations.
- Removed media will be disposed of according to local and state regulations.

Maintenance on Storage System

Underground detention vaults are similar in function as open detention basins. They have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and non-routine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

Inspections. Storage vaults should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the vault is meeting the target detention times. In particular, the vault's flow control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately.

Debris and Litter Removal. Debris and litter will accumulate near the vault's flow control device. Particular attention should be paid to floating debris that can eventually clog the control device or riser or orifice.

Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, etc.) should be identified and repaired immediately.

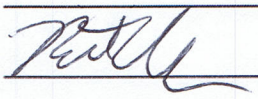
Nuisance Control. Standing water within the bottom of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed.

Sediment Removal. When properly designed, storage vaults will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in vaults for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the vault. Second sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be re-suspended if allowed to accumulate over time. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the vault or at least every 10 years.

Manufacturer Contact Information:

ADS/BaySaver Technologies Engineering Department
Email: info@baysaver.com
Phone: 1.800.229.7283
Website: http://www.baysaver.com/

Mail or other: 1030 Deer Hollow Drive
Mount Airy, MD 21771

Responsible Party for Maintenance	Green Property Development, LLC
Address	420 Deer Cross
City, State Zip	San Antonio, TX 78260
Telephone Number	210-421-8347
Signature of Owner/Representative	
Print name of Owner/Representative	Robert Green

Permanent Stormwater Section Attachment "G" continued
Sample Maintenance Table

ITEM #	DATE	DESCRIPTION OF ACTION(S) TAKEN	INITIALS

ATTACHMENT H

Pilot-scale Field Testing

This site will not have a pilot-scale field testing. The proposed BMP is in compliance with the TCEQ Guidance Manual.

ATTACHMENT I

Measures for Minimizing Surface Stream Contamination

Any points were discharge from this site is concentrated and erosive velocities exist will include appropriately sized energy dissipaters to reduce velocities to non-erosive levels.

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

I Robert Green,
Print Name

Owner,
Title - Owner/President/Other

of GPD at Bulverde, LLC,
Corporation/Partnership/Entity Name

have authorized Kevin W. Love, P.E.
Print Name of Agent/Engineer

of KLove Engineering, LLC
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

5-31-2024
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Robert Green 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 31ST day of MAY, 2024.

NOTARY PUBLIC

ROBIN KNOWLTON
Typed or Printed Name of Notary

ROBIN KNOWLTON
Notary ID #130903245
My Commission Expires
September 23, 2026

MY COMMISSION EXPIRES: 9/23/2026

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Green Plaza @ Bulverde Retail

Regulated Entity Location: 25211 N US Hwy 281, San Antonio, TX 78260

Name of Customer: Green Property Development, LLC

Contact Person: Robert green Phone: (210) 421-8347

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	1.48 Acres	$ 4,000
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: 5-31-2024

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

TCEQ Core Data Form

TCEQ Use Only

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:*

GPD at Bulverde, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0805412493	32093649187		

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

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

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

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

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

15. Mailing Address:

PO Box 700542

City	State	ZIP	ZIP + 4
San Antonio	TX	78270-0542	

16. Country Mailing Information (*if outside USA*)

17. E-Mail Address (*if applicable*)
greenpropertydevelopment@gmail.com

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(210) 421-8347		( ) -

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.*)

Green Plaza @ Bulverde Retail

23. Street Address of the Regulated Entity: *(No PO Boxes)*	25211 N US Hwy 281							
	City	San Antonio	**State**	TX	**ZIP**	78260	**ZIP + 4**	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 1,000 linear feet south of N US Hwy 281 & Estate Gate Dr intersection.

26. Nearest City	**State**	**Nearest ZIP Code**
San Antonio	TX	78260

27. Latitude (N) In Decimal:	29.68875	**28. Longitude (W) In Decimal:**	-98.454058

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	41	19.5	-98	27	14.61

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)
5999	5812	455219	722513

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

Commercail Retail and Fast Food Restaurant

34. Mailing Address:	**25211 N US Hwy 281**							
	City	**San Antonio**	**State**	**TX**	**ZIP**	**78260**	**ZIP + 4**	

35. E-Mail Address:	**greenpropertydevelopment@gmail.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(210) 421-8347		**( ) -**

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:	KLove Engineering, LLC	**41. Title:**	Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 485-5683		( ) -	klove@kloveengineering.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:	KLove Engineering, LLC	**Job Title:**	Principal / Project Manager
Name *(In Print):*	Kevin W. Love, P.E.	**Phone:**	(210) 485- 5683
Signature:		**Date:**	5-30-24