



MHR Engineering, LLC.

Development . Transportation . Water Resources . Civil . Environmental . Surveying

WATER POLLUTION ABATEMENT PLAN

BAR GARDENS

**15318 San Pedro Ave
San Antonio, TX 78232**



Harun Rashid

02/15/23

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: Bar Gardens					2. Regulated Entity No.: 111663241				
3. Customer Name: Brook Hollow Estates, LLC					4. Customer No.:				
5. Project Type: (Please circle/check one)	<u>New</u>	Modification			Extension		Exception		
6. Plan Type: (Please circle/check one)	<u>WPAP</u>	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		<u>Non-residential</u>			8. Site (acres):		0.799 Acres	
9. Application Fee:	\$3,000		10. Permanent BMP(s):			Sedimentation & Filtration Basin			
11. SCS (Linear Ft.):	N/A		12. AST/UST (No. Tanks):			N/A			
13. County:	Bexar		14. Watershed:			Salado Creek			

Application Distribution

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

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

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

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

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

HARUN RASHID, PE, RPLS

Print Name of Customer/**Authorized Agent**



02/15/23

Signature of Customer/Authorized Agent

Date

****FOR TCEQ INTERNAL USE ONLY****

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

Agent Authorization Form

TCEQ-0599

SIGNATURE PAGE:


Applicant's Signature

2/16/23
Date

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared Ericka Fong 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.

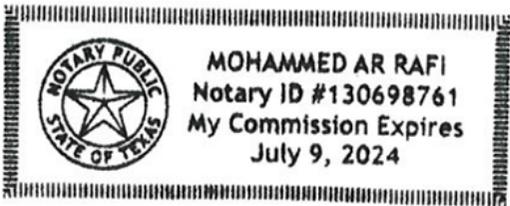
GIVEN under my hand and seal of office on this ____ day of _____.



NOTARY PUBLIC

MOHAMMED AR RAFI
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: JULY 09, 2024



Application Fee Form

TCEQ-0574

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Bar Gardens

Regulated Entity Location: 15318 San Pedro Ave, San Antonio, Texas

Name of Customer: Brook Hollow Estates, LLC.

Contact Person: Harun Rashid, PE, RPLS

Phone: 210-317-7241

Customer Reference Number (if issued): CN _____

Regulated Entity Reference Number (if issued): RN 111663241

Austin Regional Office (3373)

Hays

Travis

Williamson

San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	0.799 Acres	\$ 3,000
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: 02/15/23

Application Fee Schedule

Texas Commission on Environmental Quality

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	Fee
Exception Request	\$500

Extension of Time Requests

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

Core Data Form

TCEQ-10400



TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
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 111663241

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input checked="" type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
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:	
Brook Hollow Estates 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)
802651899	32062910453	81-5467481	N/A
11. Type of Customer:	<input checked="" type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner		<input type="checkbox"/> Operator	
<input type="checkbox"/> Occupational Licensee		<input type="checkbox"/> Responsible Party	
<input checked="" type="checkbox"/> Owner & Operator		<input type="checkbox"/> Voluntary Cleanup Applicant	
<input type="checkbox"/> Other:			
15. Mailing Address:	P.O. Box 460331		
	City	San Antonio	State TX ZIP 78246 ZIP + 4 0329
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		ericka_fong@hotmail.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(210) 789-0787		() -	

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)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> 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.)	
Bar Gardens	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	15318 San Pedro Ave						
	City	San Antonio	State	TX	ZIP	78232	ZIP + 4
24. County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	270' Northeast from the intersection of Brook Hollow Blvd and US 281 North Frontage						
26. Nearest City	San Antonio			State	TX	Nearest ZIP Code 78248	
27. Latitude (N) In Decimal:	29.580771		28. Longitude (W) In Decimal:	-98.475730			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	34	50.58	-98	28	32.63		
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)		
8351	N/A		624410		N/A		
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>							
Real Estate							
34. Mailing Address:	P.O. Box 460331						
	City	San Anto	State	TX	ZIP	78246	ZIP + 4 0329
35. E-Mail Address:	ericka_fong@hotmail.com						
36. Telephone Number	37. Extension or Code		38. Fax Number <i>(if applicable)</i>				
(210) 789-0787			() -				

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

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

SECTION IV: Preparer Information

40. Name:	HARUN RASHID, PE, RPLS		41. Title:	President
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address	
(210) 317-7241		(210) 497-2227	hrashid@mhreng.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:	MHR Engineering	Job Title:	President
Name <i>(In Print)</i> :	HARUN RASHID, PE, RPLS	Phone:	(210) 317- 7241

Signature:

Metam

Date:

02/15/23

General Information Form

TCEQ-0587

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: 02/15/23

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Bar Gardens
2. County: Bexar
3. Stream Basin: Lorence Creek
4. Groundwater Conservation District (If applicable): N/A

5. Edwards Aquifer Zone:

- Recharge Zone
 Transition Zone

6. Plan Type:

- | | |
|--|--|
| <input checked="" type="checkbox"/> WPAP | <input type="checkbox"/> AST |
| <input type="checkbox"/> SCS | <input type="checkbox"/> UST |
| <input type="checkbox"/> Modification | <input type="checkbox"/> Exception Request |

7. Customer (Applicant):

Contact Person: Ericka Fong

Entity: Bar Gardens

Mailing Address: P.O. Box 460331

City, State: San Antonio, TX

Zip: 78246

Telephone: 210-789-0787

FAX: _____

Email Address: ericka_fong@hotmail.com

8. Agent/Representative (If any):

Contact Person: Harun Rashid, PE, RPLS

Entity: MHR Engineering, LLC.

Mailing Address: 16845 Blanco Road, Suite 106

City, State: San Antonio, TX

Zip: 78232

Telephone: 210-317-7241

FAX: 210-497-2229

Email Address: hrashid@mhreng.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.

270' Northeast from the intersection of Brook Hollow Blvd and US 281 North Frontage

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: 02/28/23

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

- Area of the site
- Offsite areas
- Impervious cover
- Permanent BMP(s)
- Proposed site use
- Site history
- Previous development
- Area(s) to be demolished

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
- (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
- (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
- (4) The use of sewage holding tanks as parts of organized collection systems; and
- (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
- (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

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

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

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

Administrative Information

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

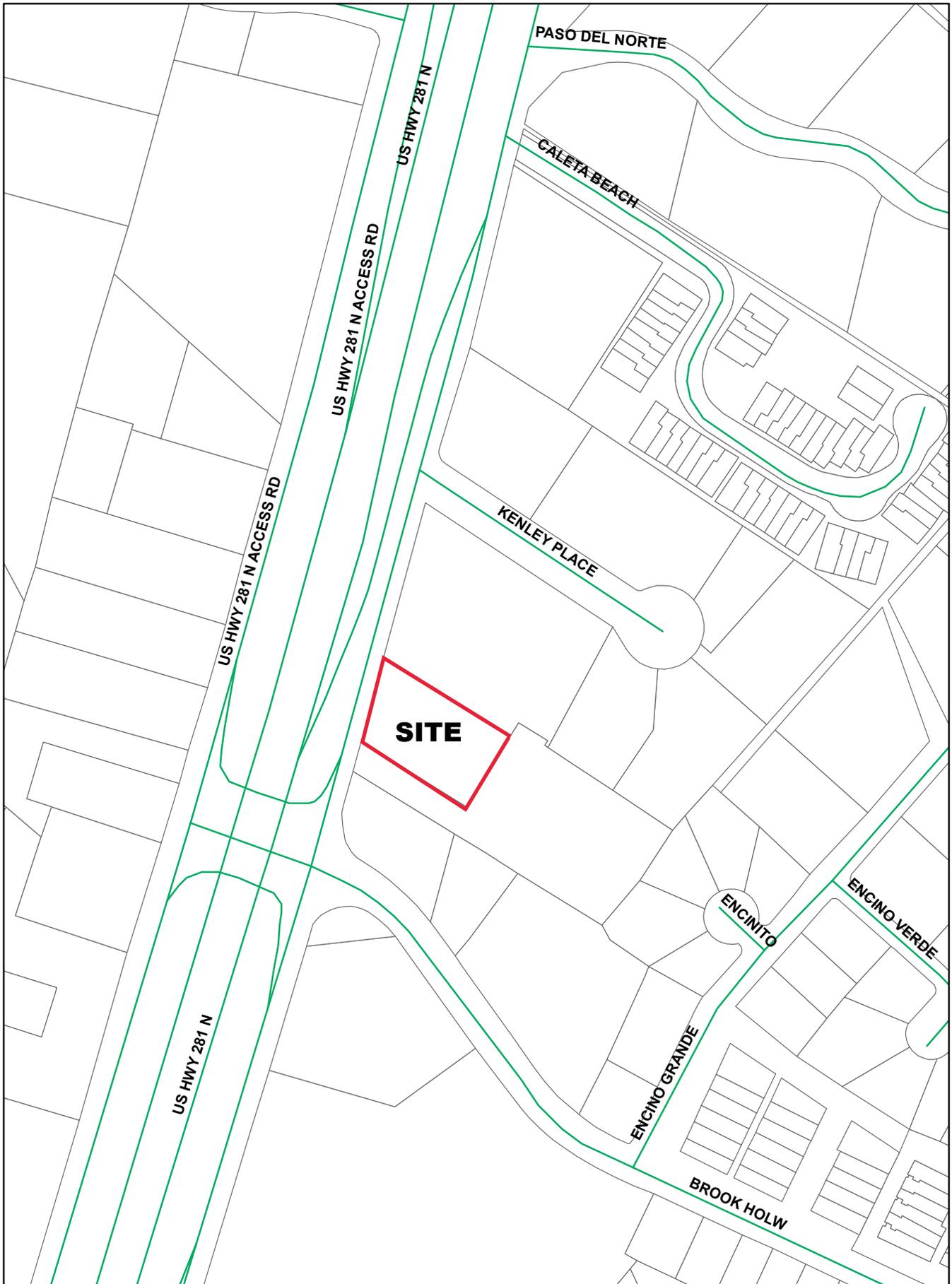
- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
 - For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
 - For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
 - A request for an exception to any substantive portion of the regulations related to the protection of water quality.
 - A request for an extension to a previously approved plan.
19. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:
- TCEQ cashier
 - Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
 - San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)
20. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
21. No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

GREEN PLAZA AT EVANS
WATER POLLUTION ABATEMENT PLAN APPLICATION

ATTACHMENT- A

LOCATION MAP

LOCATION MAP



0 125 250 500 Feet



GREEN PLAZA AT EVANS
WATER POLLUTION ABATEMENT PLAN APPLICATION

ATTACHMENT- B

USGS MAP

USGS MAP



LEGEND

-  Edwards Aquifer Zones
-  SITE



USGS QUAD: LONGHORN

BAR GARDENS
GENERAL INFORMATION

ATTACHMENT- C
Project Descriptions

Proposed development of “Bar gardens” will include two 40’X 8’ portable buildings with some outdoor seating area. Total impervious cover is 19,604 sf which includes 17,543 sf driveway & parking and 640 sf portable buildings and 1,421 sf picnic area. Estimated post development impervious cover is 0.45 acres which is 56.33%.

Proposed development will include site clearing, grading, installation of domestic water and sanitary sewer lateral.

The site will be treated by an engineered Vegetative Filter Strip (VFS). Permanent BMP will be constructed to treat Total Suspended Solids (TSS) generated by the proposed development. These BMPs have been designed to remove 89% of the increased TSS for the entire development in accordance with the TCEQ Technical Guidance Manual RG-348 (2005).

Water Pollution Abatement Plan Application

TCEQ-0584

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: 02/15/23

Signature of Customer/Agent:



Regulated Entity Name: Bar Gardens

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): 0.799 acres

3. Estimated projected population: 20

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	640	÷ 43,560 =	0.01
Parking	17,543	÷ 43,560 =	0.40
Other paved surfaces	1,421	÷ 43,560 =	0.03
Total Impervious Cover	19,604	÷ 43,560 =	0.45

Total Impervious Cover 0.45 ÷ Total Acreage 0.799 X 100 = 56.33% 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 = _____ Ft² ÷ 43,560 Ft²/Acre = _____ acres.
10. Length of pavement area: _____ feet.
 Width of pavement area: _____ feet.
 L x W = _____ Ft² ÷ 43,560 Ft²/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:

<u>100%</u> Domestic	<u>180</u> Gallons/day
<u> </u> % Industrial	<u> </u> Gallons/day
<u> </u> % Commingled	<u> </u> Gallons/day
TOTAL gallons/day <u> </u>	

15. Wastewater will be disposed of by:

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

Attachment C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

Sewage Collection System (Sewer Lines):

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

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

The SCS was previously submitted on .

The SCS was submitted with this application.

The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

The sewage collection system will convey the wastewater to the Dos Rios (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): _____

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.

ATTACHMENT A

Factors Affecting Water Quality:

Potential Sources of Pollution that may reasonably be expected to affect the quality of Storm Water discharges from the site during construction include:

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

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

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

ATTACHMENT B

Stormwater Runoff to be Generated by the Proposed Project:

For a 25-year storm event, the entire 0.799-acre site generates approximately 2.03 cfs prior to development and 4.44 cfs after development based on C values (runoff coefficient) of 0.41 and 0.71 respectively. Rational Method has been used for the hydrologic calculation.

Modification of a Previously Approved Plan

TCEQ-0590

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: Tomas Hernandez, Jr., P.G.

Telephone: 210.888.6100

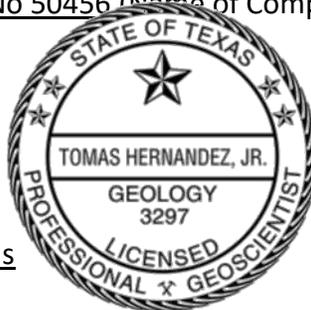
Fax: _____

Date: February 16, 2023

Representing: TTL, Inc., TBPG Firm No 50456 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

T. Hernandez



Regulated Entity Name: Bar Gardens

Project Information

1. Date(s) Geologic Assessment was performed: January 10, 2023

2. Type of Project:

WPAP
 SCS

AST
 UST

3. Location of Project:

Recharge Zone
 Transition Zone
 Contributing Zone within the Transition Zone

4. **Attachment A - Geologic Assessment Table.** Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
5. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Exckrant cobbly clay, 1 to 8 percent slopes	D	0-1

Soil Name	Group*	Thickness(feet)

* Soil Group Definitions (Abbreviated)

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

6. **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. **Attachment C – Site Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'
 Applicant's Site Plan Scale: 1" = 20'
 Site Geologic Map Scale: 1" = 20'
 Site Soils Map Scale (if more than 1 soil type): 1" = N/A'
9. Method of collecting positional data:
 - Global Positioning System (GPS) technology.
 - Other method(s). Please describe method of data collection: _____

10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. Surface geologic units are shown and labeled on the Site Geologic Map.
12. Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
- Geologic or manmade features were not discovered on the project site during the field investigation.
13. The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
- There are _____ (#) 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.

BAR GARDENS

Stratigraphic Column

Hydrogeologic Subdivision		Group, Formation, Or Member		Hydro-logic Function	Thickness (Feet)	Lithology	Field Identification	Cavern Development	Porosity/ Permeability Type		
Upper Cretaceous	Upper Confining Units	Del Rio Clay		CU	50-60	Blue-green to yellow-brown clay	Fossiliferous; <i>Ilymatogyra arietina</i>	None	None/primary upper confining unit		
Lower Cretaceous	I	Georgetown Formation		AQ	100	Gray to light tan marly limestone	Marker fossil: <i>Wacopelia wacoensis</i>	None	Low porosity/low permeability		
	II	Edwards Aquifer	Edwards Group	Person Formation (Kep)	Cyclic and marine members, undivided	AQ	80-90	Mudstone to packstone; <i>millioid</i> grainstone; chert	Thin graded cycles; massive beds to relatively thin beds; crossbeds	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III				Leached and collapsed members, undivided	AQ	70-90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable
	IV				Regional dense member	CU	20-24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V				Grainstone member	AQ	50-60	<i>Millioid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/ recrystallization reduces permeability
	VI	Kainer Formation (KeK)	Kirschberg evaporite member	AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric/one of the most permeable		
	VII		Dolomitic member	AQ	110 -130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, <i>Toucasia</i> abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane-fabric/water-yielding		
	VIII		Basal nodular member	Karst AQ; not karst CU	50-60	Shaly, nodular limestone mudstone and <i>millioid</i> grainstone	Massive, nodular and mottled, <i>Exogyra texana</i>	Large lateral caves at surface; a few caves near Cibolo Creek	Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface		
		Lower confining unit	Upper member of Glen Rose Limestone (Kgru)		CU; evaporite beds Upper Trinity AQ	350-500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/relatively impermeable	

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

BAR GARDENS

Site Geology

The predominant trend for the Site is approximately N60° E based on an average of the trends of faults within the surrounding area and from published maps (Clark 2016). The overall potential for fluid migration to the Edwards Aquifer on the Site is low.

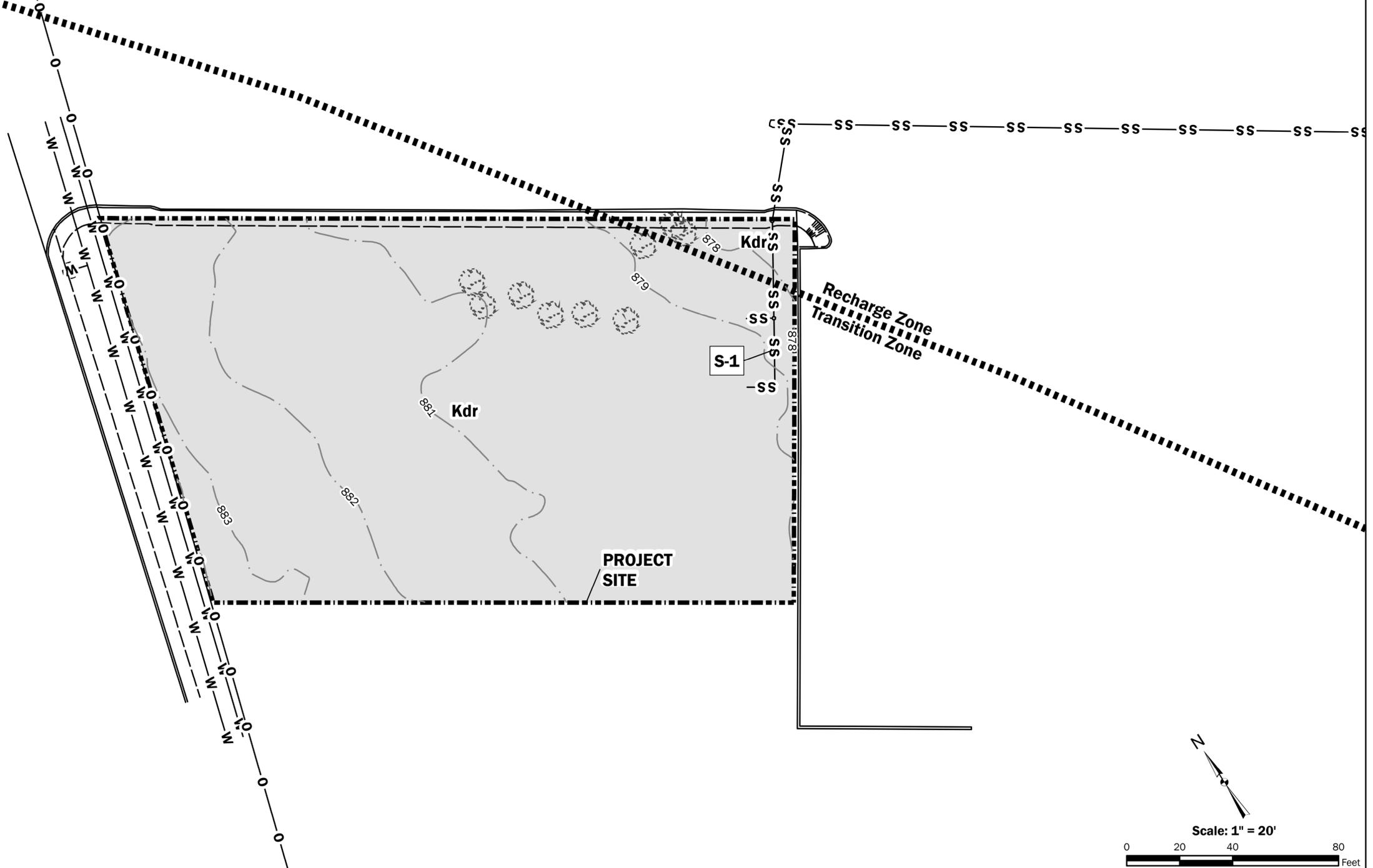
The Site has been disturbed by past clearing and grading. The Site lies mostly within the Transition Zone of the Edwards Aquifer; however, the northeastern-most corner is within Recharge Zone. No rock outcrops were observed during the on-site Geologic Assessment. According to published literature and on-site observations, the Site lies within the Del Rio Clay (Kdr). The Kdr is the upper confining unit of the Edwards Aquifer and is characterized by blue-green to yellow-brown clay. The oyster fossil, *Ilymatogyra arietina*, is typically abundant. The Kdr is approximately 40 to 110 feet thick in Bexar County, but likely much thinner on the Site. No caves or karst have been recognized in the Kdr as porosity and permeability are very low. The Kdr overlies the Lower Cretaceous Group limestone in many areas (Blome 2005). No caves or karst features were identified on the Site.

One manmade feature was identified during the on-site geologic assessment conducted January 10, 2023 and further confirmed by civil design plans. Below is a summary of the feature identified.

- Feature S-1 - This feature is an existing sanitary sewer line located below natural soil and vegetation at the Site. The sewer line has been trenched through bedrock and backfilled with a mix of fine and coarse material that may be more permeable than the surrounding undisturbed areas. Therefore, the probability for rapid infiltration is intermediate.

LEGEND

Project Site Boundary	Recharge Zone/Transition Zone Boundary	Overhead Electrical Line	Existing Elevation (1-ft Contour Interval)
Kdr - Del Rio Clay	Existing U/G Sanitary Sewer Line	Existing Curb	Feature ID
Tree Location	Existing U/G Water Line	Existing Sidewalk	



SITE GEOLOGIC MAP
 BAR GARDENS
 15318 SAN PEDRO AVENUE
 SAN ANTONIO, BEXAR COUNTY, TEXAS



T-H
 2/16/2023

DRAWN BY: JDM/DEK
CHECKED BY: ALM
DRAWING DATE: 2/16/2023
REVISION DATE: N/A
TTL JOB NO.: 22-09-04368.00
APPROX. SCALE: 1 in = 20 ft

BAR GARDENS

References

- Barnes, V.L., 1983, Geologic Atlas of Texas, San Antonio Sheet, Bureau of Economic Geology, The University of Texas at Austin, Texas.
- Blome, Charles D., Faith, Jason R., Pedraza, Diana E., Ozuna, George B., Cole, James C., Clark, Allan K., Small, Ted A., and Morris, Robert R., 2005, Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas. U.S. Geologic Survey; Scientific Investigations Map 2873 Version 1.1.
- Clark, Allan K., Golab, James G. and Morris, Robert R, 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Northern Bexar and Comal Counties, Texas, U.S. Geological Survey
- Texas Commission on Environmental Quality (TCEQ), Instructions to Geologists, TCEQ-0585 Instructions, revised October 1, 2004.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey, Soil Survey of Bexar County, Texas.
- U.S. Geological Survey, 7.5-Minute Series Topographic Quadrangle, Longhorn, Texas, 2019

Temporary Stormwater Section

TCEQ-0602

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: 02/15/23

Signature of Customer/Agent:



Regulated Entity Name: Bar Gardens

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: Salado 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.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

ATTACHMENT A

Spill Response Actions

In the event of an accident leak or spill:

- Contractor shall take immediate action to contain a spill. the contractor may use sand or other absorbent material stockpile 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 equipments 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 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)222-2204
 - the State Emergency Response Center (800)832-8224 (if after hours)
- Contaminated soils will b sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed off in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance manual (9TGM) RG-348 92005) Section 1.4.16. Contractor shall review this section.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

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 spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- (1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.
- (2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- (3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- (4) Establish a continuing education program to indoctrinate new employees.
- (5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- (1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- (2) Store hazardous materials and wastes in covered containers and protect from vandalism.
- (3) Place a stockpile of spill cleanup materials where it will be readily accessible.
- (4) Train employees in spill prevention and cleanup.
- (5) Designate responsible individuals to oversee and enforce control measures.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

- (6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise clean up activities.
- (7) Do not bury or wash spills with water.
- (8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- (9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
- (10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- (11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- (12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- (1) Clean up leaks and spills immediately.
- (2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- (3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- (1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- (2) Use absorbent materials on small spills rather than hosing down or burying the spill.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

- (3) Absorbent materials should be promptly removed and disposed of properly.
- (4) Follow the practice below for a minor spill:
- (5) Contain the spread of the spill.
- (6) Recover spilled materials.
- (7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

- (1) Contain spread of the spill.
- (2) Notify the project foreman immediately.
- (3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- (4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- (5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

- (1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- (2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

- (3) Notification should first be made by telephone and followed up with a written report.
- (4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- (5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

- (1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- (2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- (3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- (4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- (5) Place drip pans or absorbent materials under paving equipment when not in use.
- (6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- (7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- (8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- (9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

Vehicle and Equipment Fueling

- (1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- (2) Discourage “topping off” of fuel tanks.
- (3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

ATTACHMENT B

Potential Sources of Contamination

Potential Sources:

1. Asphalt products used by this product.
2. Oil, grease, fuel and hydraulic fluid contamination from 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.

Prevention Measures:

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 waste 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.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

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 0.45 acres. The second stage is the construction stage that will include two portable buildings, paved parking, landscaping and site cleanup. This will disturb approximately 0.45 acres.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

ATTACHMENT D

Temporary Best Management Practices and Measures

Inceptor Swales

- Shallow swales placed along the boundary of the property to catch upgradient water and redirect the flow away from disturbed areas. These swales will utilize vegetation to slow the water and allow for any sediment particles to settle out before leaving the site, thus minimizing the amount of contaminants leaving the site. See location and details on the SWPPP sheet.

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.

Rock Berm and Silt Fence

- Placed in areas where flows are concentrated and silt fence alone will not contain the flows. Consists of rocks held in place with wire mesh and silt fence placed along the face of the rock. Stops sediments from leaving the site from runoff flowing through the site. See details on the SWPPP sheet.

Inlet Protection

- Placed around inlets to catch and stop sediment from entering the storm drain system before filtration systems are in place. For material and details see 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.

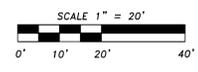
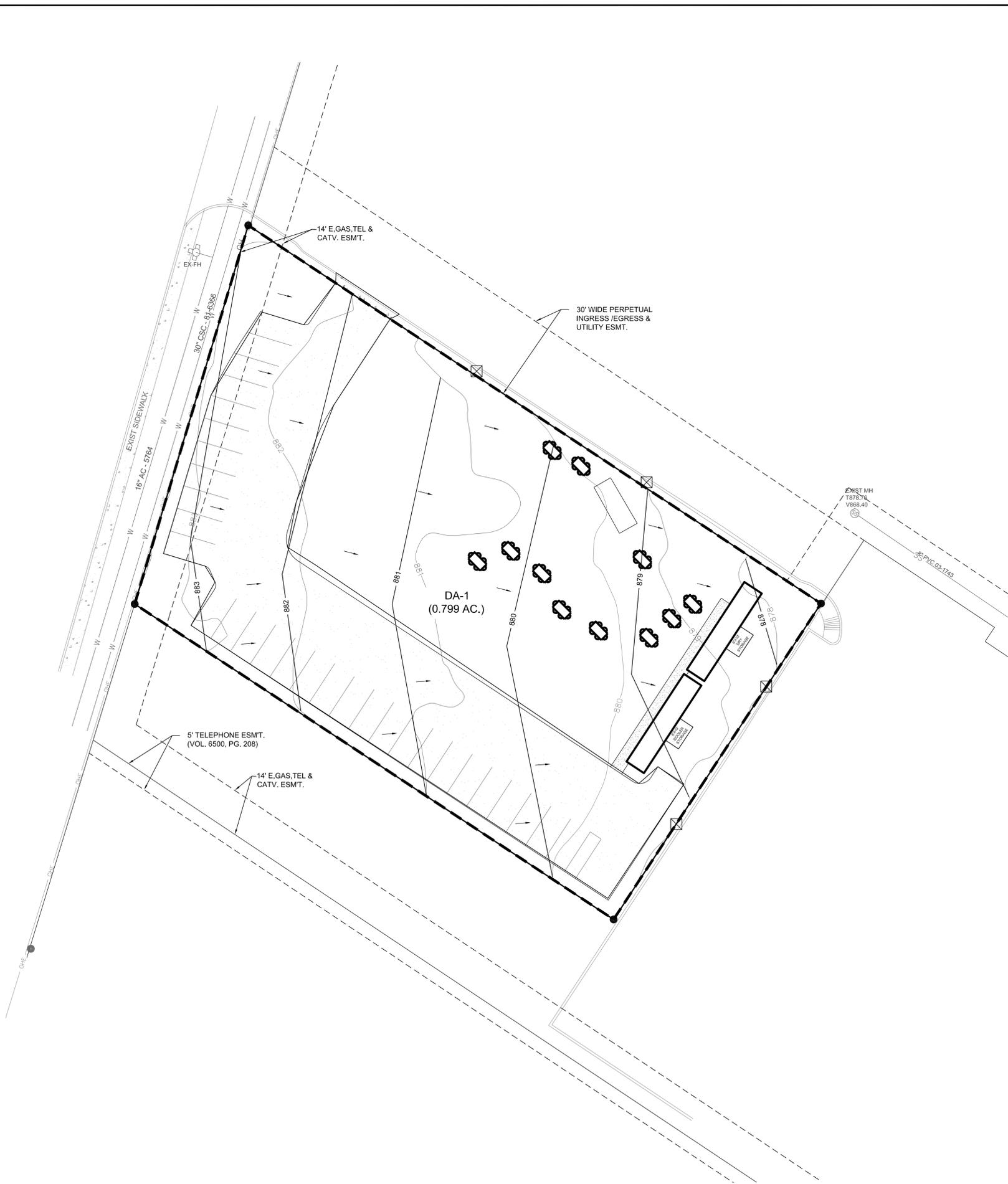
Truck Washout Pit

- 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.

NORTHSIDE ISLAMIC CENTER
TEMPORARY STORMWATER MEASURES

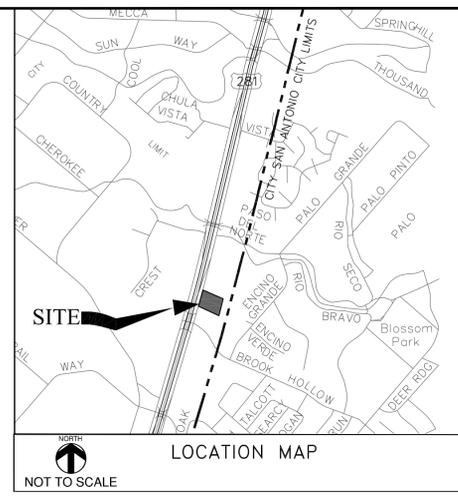
ATTACHMENT G

Drainage Area Map



LEGEND

- EXISTING FIRE HYDRANT
- EXISTING SANITARY SEWER MANHOLE
- EDGE OF PAVEMENT
- EXISTING 8" SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING OVERHEAD ELECTRIC
- EXISTING POWER POLE
- CONTOURS
- EXISTING CONTOURS
- DRAINAGE FLOW
- DRAINAGE BOUNDARY
- DRAINAGE AREA
- ACREAGE



11-02-22

MHR Engineering, LLC.
 TYPE REGISTRATION NO. F-12026

16845 BLANCO ROAD, SUITE 106, TX-78232
 PH: (210)641-0543, FAX: 210-497-2227
 www.mhreng.com

DRAINAGE AREA MAP
 BAR GARDEN
 15318 SAN PEDRO
 SAN ANTONIO, TEXAS

JOB NO. 22-P026

DATE: 9/02/2022

DRAWN: AG CHK: HR

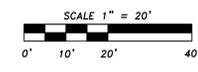
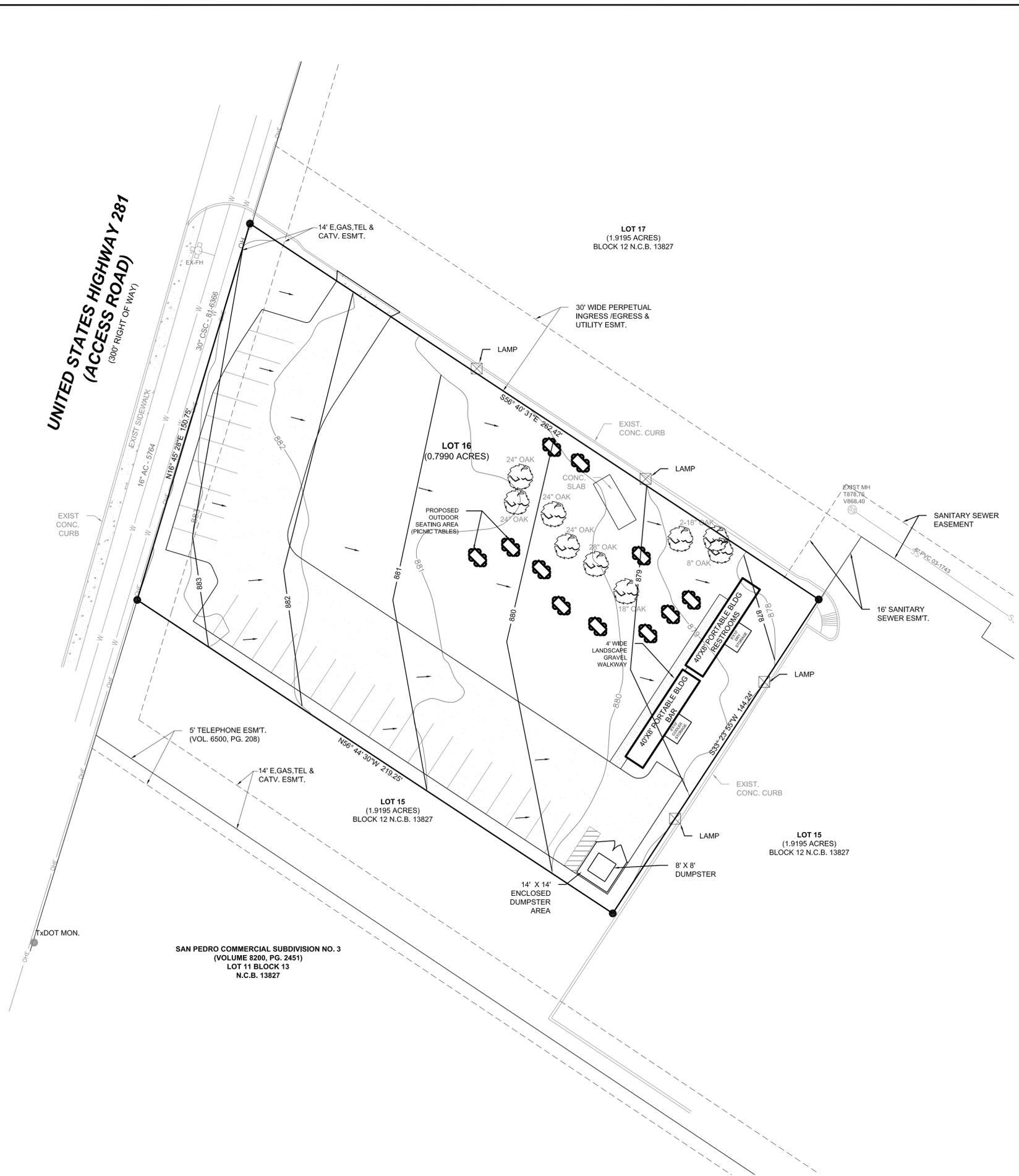
SHEET

C11.0

HYDROLOGIC CALCULATIONS:

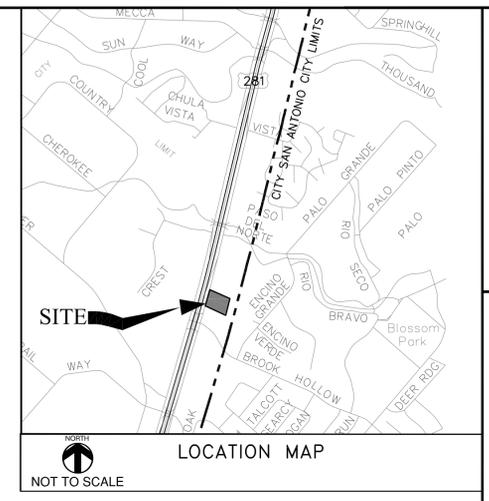
Drainage	Drainage Area	A	C	tc	I ₁	I ₂₅	I ₁₀₀	Q ₁	Q ₂₅	Q ₁₀₀
Condition	Area	(acre)		(min)	(in/h)	(in/h)	(in/h)	(cfs)	(cfs)	(cfs)
Existing	DA-1	0.799	0.41	20	4.51	6.21	7.71	1.48	2.03	2.53
Post-Developed	DA-1	0.799	0.71	13	5.61	7.82	9.76	3.18	4.44	5.54

**UNITED STATES HIGHWAY 281
(ACCESS ROAD)**
(300' RIGHT OF WAY)



LEGEND

- EXISTING FIRE HYDRANT
- EXISTING SANITARY SEWER MANHOLE
- EDGE OF PAVEMENT
- EXISTING 8" SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING OVERHEAD ELECTRIC
- EXISTING POWER POLE
- CONTOURS
- EXISTING CONTOURS
- DRAINAGE FLOW



REVISIONS:



11-02-22

MHR Engineering, LLC.
TBE REGISTRATION NO. F-12026
16845 BLANCO ROAD, SUITE 106, TX-78232
PH: (210)641-0543, FAX: 210-497-2227
www.mhreng.com

**GRADING PLAN
BAR GARDEN
15318 SAN PEDRO
SAN ANTONIO, TEXAS**

JOB NO. 22-PO26
DATE: 9/02/2022
DRAWN: AG CHK: HR

SHEET
C10.0

CAUTION:
EXISTING UTILITIES ARE SHOWN IN APPROXIMATE HORIZONTAL AND VERTICAL LOCATION. CONTRACTOR SHALL CALL TX811 FOR UTILITY LINE LOCATES TO FIELD VERIFY ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION. DAMAGES TO ANY EXISTING OVERHEAD OR UNDERGROUND UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PAID FOR BY CONTRACTOR AT NO EXTRA COST.

NOTE:
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.

BAR GARDENS
TEMPORARY STORMWATER MEASURES

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 the 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 of 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 offsite 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.

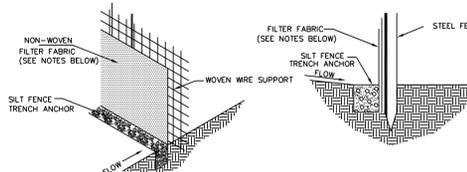
BAR GARDENS
TEMPORARY STORMWATER MEASURES

ATTACHMENT J

Schedule of Interim & Permanent Stabilization

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing only the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance to pages 1-35 to 1-60 of RG-348 (2005). Approved practices include mulching, sodding, netting, and erosion blankets.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.



GENERAL NOTES:

- The maximum height of the filter fabric should range between 18 and 36 inches above the ground surface (depending on the amount of upslope ponding expected).
- Posts should be spaced 8 to 10 feet apart when a woven wire support fence is used and not more than 6 feet apart when extra strength filter fabric (without a woven wire support fence) is used. The posts should be embedded a minimum of one foot.
- A trench should be excavated 4 to 8 inches wide and 4 to 12 inches deep along the upslope side of the line of posts.
- If standard strength filter fabric is to be used, the optional woven wire support fence should be fastened to the upslope side of the trench. The filter fabric should be fastened to the woven wire support fence, and 8 to 20 inches of the fabric should extend into the trench.
- Extra strength filter fabric does not require a woven wire support fence. Fastened the filter fabric directly to the posts and extend 8 to 20 inches of the fabric into the trench.
- Where joints in the filter fabric are required, the filter fabric should be spliced together only at a support post, with a minimum 12-inch overlap and securely sealed.
- Do not attach filter fabric to trees.
- Backfill the anchor trench with compacted soil or 0.75 inch minimum diameter gravel placed over the filter fabric.
- Remove silt fence when the construction site is completely stabilized.
- Inspect silt fences daily during periods of prolonged rainfall, immediately after each rainfall event, and every 14 days during periods of no rainfall. Make any required repairs immediately.
- Sediment must be removed when it reaches a depth of 6". Take care to avoid damaging the fence during cleanout.
- Silt fences should not be removed until the upslope area has been permanently stabilized. Contaminated sediment deposits must be removed and disposed of off-site in accordance with applicable regulations. Uncontaminated sediment deposits remaining in place after the silt fence has been removed should be dressed to conform with the existing grade, and stabilized.
- Place silt fence along a line of uniform elevation, perpendicular to the direction of flow.

SILT FENCE

SYNTHETIC FILTER FABRIC REQUIREMENTS

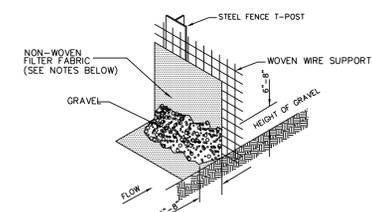
Physical Property	Requirements
Minimum Weight	3.5 ounces per square yard (ASTM D3776)
Min. Mullen Burst Strength	200 lbs per square inch (ASTM D3786)
Maximum flow through rate	120 GPM/SF of frontal area (ASTM D4491)

- Burtop of 10 ounces per square yard of fabric can also be used.
- The filter fabric should be purchased in continuous rolls to minimize joints.

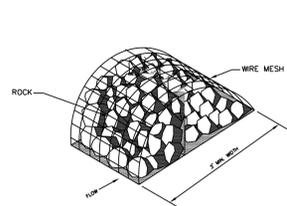
MAINTENANCE:

- Inspect regularly and after every storm. Make any repairs necessary to ensure the measure is in good working order.
- Sediment should be removed and the structure restored to its original dimensions when sediment has accumulated to a depth of 6".
- Clean or remove and replace the stone filter or filter fabric if they become clogged.
- Inlet protection should remain in place and operational until the drainage area is stabilized.

SILT FENCE ANCHORING ALTERNATIVE

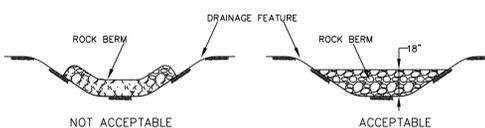


- This alternative may be used when silt fence trench anchoring is not feasible. Situations which may constitute this alternative include impervious or rigid surfaces which make trenching for silt fence anchoring unreasonable.
- All other silt fence materials and erection procedures will be the same as described in the standard silt fence requirements.



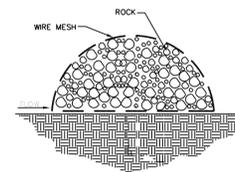
GENERAL NOTES:

- The top of the rock berm should be level and oriented perpendicular to the direction of flow.
- Stone size: ±4"-8" open graded crushed limestone.
- Inspect weekly or after each rainfall event and repair or replace as needed.
- When silt reaches a depth of 6 inches or more above natural ground, silt shall be removed and disposed in an approved manner that will not contribute to resiltation. Uncontaminated sediment deposits remaining in place after the filter fabric has been removed should be dressed to conform with the existing grade and stabilized. Contaminated sediment must be removed and disposed of off-site in accordance with applicable regulations.
- Remove rock berm after construction site is completely stabilized.
- Rock berm shall not exceed 18" in height in areas where flooding of adjacent or upstream property could occur.



ROCK BERM PLACEMENT

ROCK BERM



INSTALLATION:

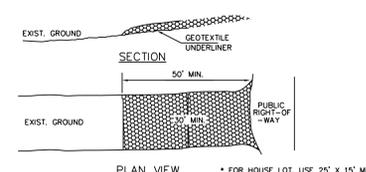
- Layout the rock berm following the contour as closely as possible.
- Clear the area of debris, rocks or plants that will interfere with installation.
- Place wire mesh on the ground along the proposed installation with enough overlap to completely encircle the finished size of the berm.
- Wrap the structure with the previously placed woven wire mesh secure enough so that when walked across the structure retains it's shape.
- Secure with tie wire.

MATERIALS:

- Woven wire support sheathing shall be a minimum 20 gauge with 1 inch openings.

MAINTENANCE:

- Inspect regularly and after every storm. Make any repairs necessary to ensure the rock berm is in good working order.
- Sediment should be removed and the structure restored to its original dimensions when sediment has accumulated to a depth of 6".
- Clean or remove and replace the stone filter if it becomes clogged.
- Rock berm should remain in place and operational until the drainage area is stabilized.



GENERAL NOTES:

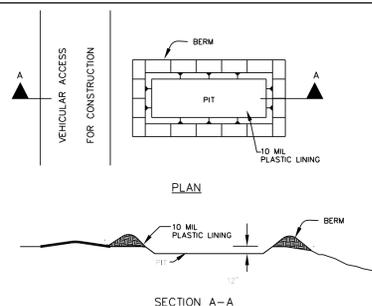
- Clear all vegetation, roots and all other obstructions in preparation for grading.
- Prior to placing geotextile (filter fabric) make sure that the entrance is properly graded and compacted.
- To reduce maintenance and loss of aggregate place geotextile fabric (filter cloth) over the existing ground before placing the stone for the entrance.
- Stone should be placed to a depth of 8-inches or greater for the entire width and length.
- Width should be not less than full width of all points of ingress or egress. Flare the entrance where it meets existing road to provide a turning radius.
- Periodic maintenance will be required to prevent tracking onto public right-of-way or any roadway. All sediment spilled, dropped, or tracked onto any public right-of-way must be removed immediately.

MATERIALS:

- Crushed stone 4-8 mm in diameter.
- Geotextile (filter fabric) with the properties listed below.

Physical Property	Requirements
Grab Tensile Strength	220 lbs. (ASTM D4632)
Elongation Failure	60% (ASTM D4632)
Mullen Burst Strength	430 lbs. (ASTM D3786)
Puncture Strength	125 lbs. (ASTM D4833)
Equivalent Opening	Size 40-80 (US Std Sieve)(ASTM D4751)

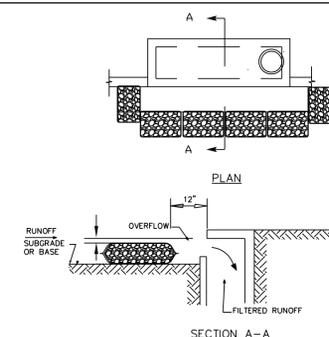
STABILIZED CONSTRUCTION ENTRANCE/EXIT



GENERAL NOTES:

- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
- Washout pit shall be located in an area easily accessible to construction traffic.
- Washout pit shall not be located in areas subject to inundation from storm water runoff.

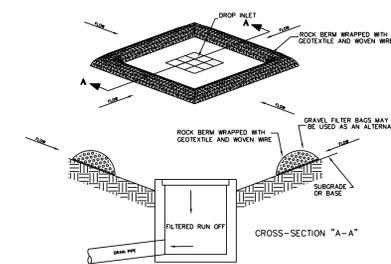
CONCRETE TRUCK WASHOUT PIT



GENERAL NOTES:

- Storm drainage inlets should filter runoff before the water is discharged into streams or onto adjacent properties, unless treatment is provided elsewhere.
- If no additional downstream treatment exists, the maximum drainage area tributary to an area drain installed with a gravel filter should be one acre.
- Curb inlet gravel filters should be inspected and repaired after each runoff event. Sediment should be removed when material is within three inches of the top of the gravel filled bags.

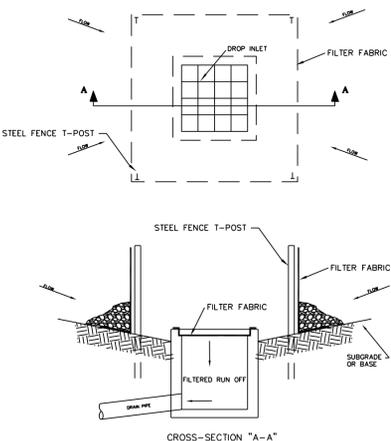
CURB INLET PROTECTION GRAVEL FILTER BAGS



GENERAL NOTES:

- Use open graded clean stone.
- The rock should be enclosed with a woven wire sheathing having maximum 1 inch opening and minimum wire diameter of 20 gauge and wrapped in geotextile with 300 psi burst strength filter fabric.
- Inspection should be made frequently on Severe Service rock berms; silt should be removed when accumulation reaches 4 inches or more.
- When the site is completely stabilized, the berm and accumulated silt should be removed and disposed of in an approved manner.

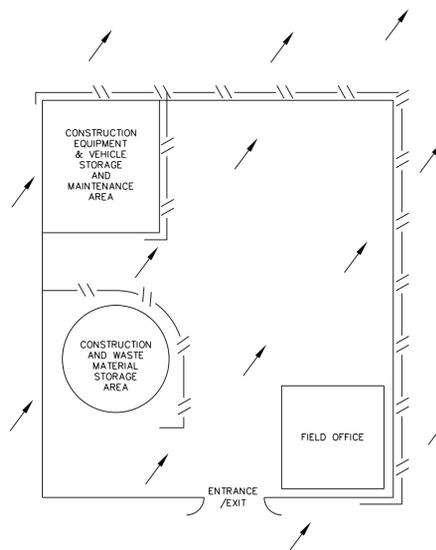
GRATE INLET PROTECTION



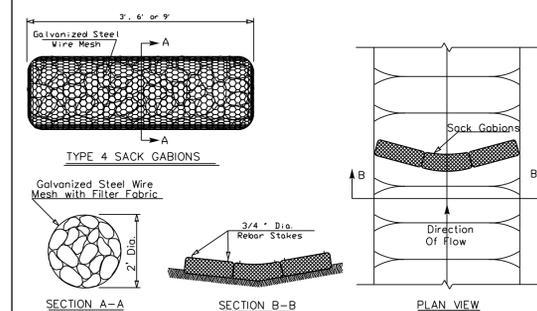
GENERAL NOTES:

- All materials and erection procedures will be the same as described in the standard silt fence requirements.

GRATE INLET PROTECTION (ALTERNATE)



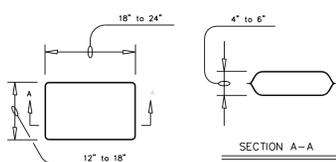
TYP. CONSTRUCTION STAGING AREA



GENERAL NOTES:

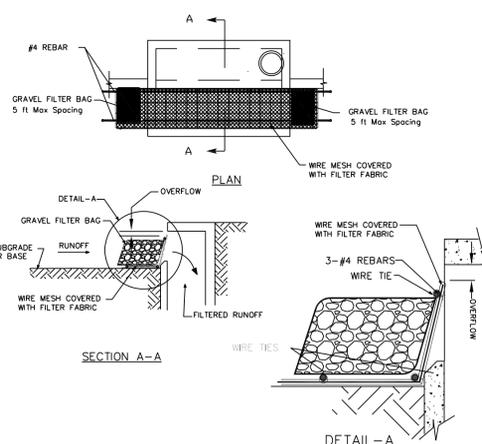
- The top of the sack gabions should be level and oriented perpendicular to the direction of flow.
- Filter fabric material shall be fastened to woven wire support.
- Filter fabric material should meet the following specifications: Resistant to ultraviolet light, Fabric should be non-woven geotextile with minimum weight of 3.5 ounces per square yard, minimum mullen burst strength of 200 pounds per square inch and a flow thru rate of 120 gallons per minute per square foot of frontal area.
- Stone size: ±4"-8" open graded crushed limestone.
- Inspect weekly or after each rainfall event and repair or replace as needed.
- When silt reaches a depth of 6 inches or more above natural ground, silt shall be removed and disposed in an approved manner that will not contribute to resiltation. Contaminated sediment must be removed and disposed of off-site in accordance with applicable regulations.

TYPE 4 SACK GABIONS

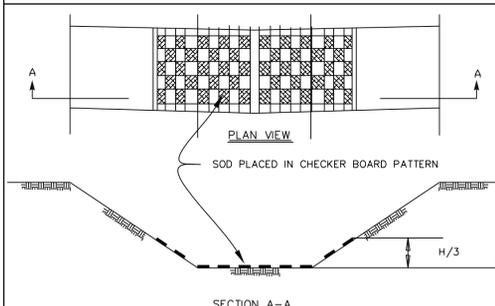


- The filter bag material shall be made of polypropylene, polyethylene or polyamide woven fabric, min unit weight of 4 ounces/SF, Mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%.
- The filter bag shall be filled with clean, medium to coarse gravel (0.31 to 0.75 inch diameter).

GRAVEL FILTER BAG DETAIL



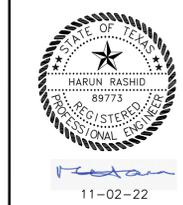
CURB INLET PROTECTION (ALTERNATE)



- Channel to be stabilized with sod placed in a checker board pattern on the channel bottom and on the sides up to 1/3 the depth of channel.

CHANNEL LINING

REVISIONS:



MHR Engineering, LLC
 TBE REGISTRATION NO. F-12026
 16845 BLANCO ROAD, SUITE 106, TX-78232
 PH: (210)641-0543, FAX: 210-497-2227
 www.mhreng.com

TEMPORARY POLLUTION PLAN
BAR GARDEN
15318 SAN PEDRO
SAN ANTONIO, TEXAS

JOB NO. 22-2026
 DATE: 09-02-22
 DRAWN: AG
 SHEET

CHK: HR
 C9.0

Permanent Stormwater Section

TCEQ-0600

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: 02/15/23

Signature of Customer/Agent



Regulated Entity Name: Bar Gardens

Permanent Best Management Practices (BMPs)

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

- Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.
 N/A
- These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
 The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____

N/A

3. Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

The site will be used for low density single-family residential development and has 20% or less impervious cover.

The site will be used for low density single-family residential development but has more than 20% impervious cover.

The site will not be used for low density single-family residential development.

5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

Attachment A - 20% or Less Impervious Cover Waiver. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.

The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

The site will not be used for multi-family residential developments, schools, or small business sites.

6. **Attachment B - BMPs for Upgradient Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.
7. **Attachment C - BMPs for On-site Stormwater.**
- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.
8. **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.
- N/A
9. The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.
- The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.
- Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.
10. **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:
- Design calculations (TSS removal calculations)
- TCEQ construction notes
- All geologic features
- All proposed structural BMP(s) plans and specifications
- N/A

11. **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:
- Prepared and certified by the engineer designing the permanent BMPs and measures
 - Signed by the owner or responsible party
 - Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
 - A discussion of record keeping procedures
- N/A
12. **Attachment H - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
- N/A
13. **Attachment I -Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.
- N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
- N/A
15. A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.
- N/A

BAR GARDENS

PERMANENT POLLUTION ABATEMENT MEASURES

ATTACHMENT B

BMPs for Upgradient Stormwater.

Proposed development will not receive any offsite runoff and there will not be any need to have any BMPs for the upgradient stormwater.

BAR GARDENS

PERMANENT POLLUTION ABATEMENT MEASURES

ATTACHMENT C

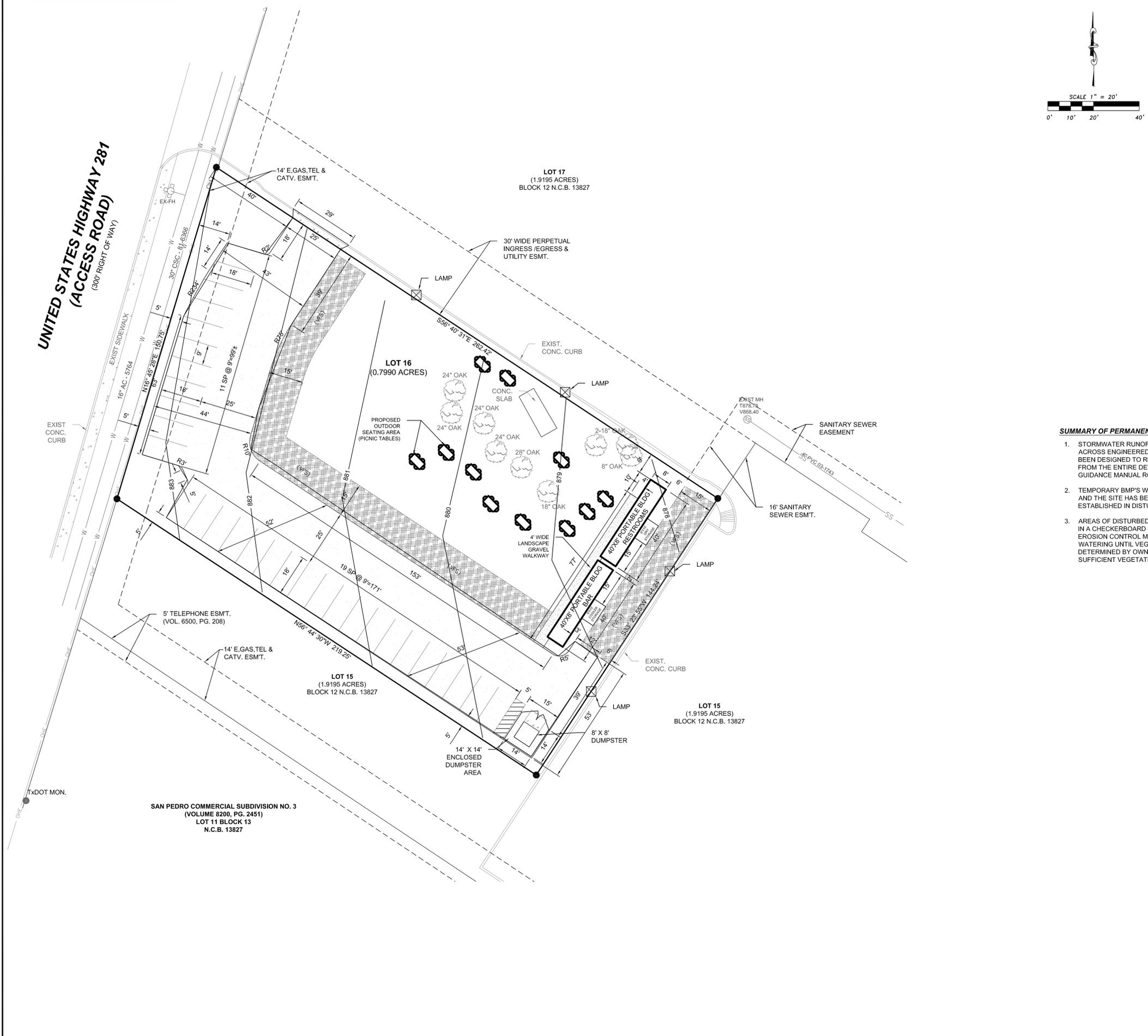
BMPs for Onsite Stormwater:

Runoff from proposed development will be treated using engineered Vegetative Filter Strip (VFS) (15'). Location of the VFS will be next to the drive in the parking area.

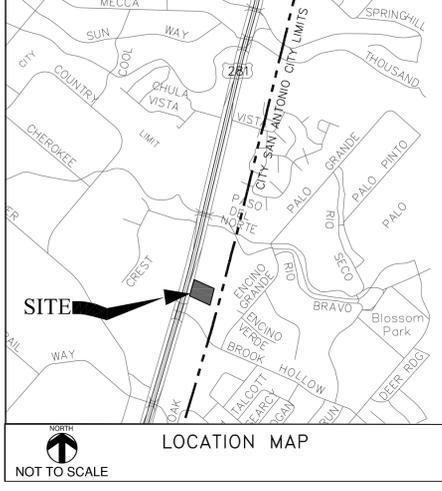
BAR GARDENS
PERMANENT POLLUTION ABATEMENT MEASURES

ATTACHMENT F

Construction Plans for BMPs are being accompanied with this report.



- SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURE:**
- STORMWATER RUNOFF WITHIN THE COMMERCIAL DEVELOPMENT WILL BE DISCHARGED ACROSS ENGINEERED VEGETATIVE FILTER STRIPS. THE VEGETATIVE FILTER STRIP HAS BEEN DESIGNED TO REMOVE 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FROM THE ENTIRE DEVELOPMENT IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL RG-348 (1995)
 - TEMPORARY BMP'S WILL BE MAINTAINED UNTIL THE SITE IMPROVEMENTS ARE COMPLETED AND THE SITE HAS BEEN STABILIZED, INCLUDING SUFFICIENT VEGETATION BEING ESTABLISHED IN DISTURBED AREAS.
 - AREAS OF DISTURBED SOIL SHALL BE REVEGETATED TO STABILIZE SOIL USING BLOCK SOD IN A CHECKERBOARD PATTERN. THE CONTRACTOR MAY SUBSTITUTE SEED-IMPREGNATED EROSION CONTROL MATS OR PLACEMENT OF TOP SOIL, HYDRAULIC MULCHING, AND WATERING UNTIL VEGETATION IS ESTABLISHED. SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER. IRRIGATION MAY BE REQUIRED IN ORDER TO ESTABLISH SUFFICIENT VEGETATION.



MHR Engineering, LLC.

16845 BLANCO ROAD, SUITE 106, TX-78232
PH: (210)641-0543, FAX: 210-497-2227
www.mhreng.com
TBP# F-12026 / TBPLS F-10193913

**PERMANENT POLLUTION
ABATEMENT PLAN
BAR GARDEN
15318 SAN PEDRO
SAN ANTONIO, TEXAS**

JOB NO. 22-PO26
DATE: 9/02/2022
DRAWN: AG CHK: HR
SHEET

C5.0

BAR GARDENS
PERMANENT POLLUTION ABATEMENT MEASURES

ATTACHMENT G

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

BAR GARDENS
PERMANENT POLLUTION ABATEMENT MEASURES

PERMANENT POLLUTION ABATEMENT MEASURES
MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES

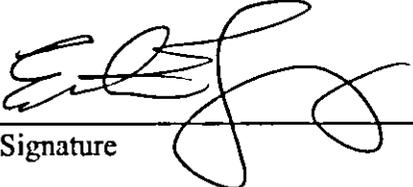
This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific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

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

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

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

I, the owner, have read and understand the requirements of the attached Maintenance Plan and Schedule.



Signature

2/16/23

Date

BAR GARDENS
 PERMANENT POLLUTION ABATEMENT MEASURES

**INSPECTION AND MAINTENANCE SCHEDULE
 FOR
 PERMANENT POLLUTION ABATEMENT MEASURES**

Recommended Frequency	Task to be Performed													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
After Rainfall	√							√	√		√			√
Monthly	√									√				√
Quarterly	√	√	√		√			√						√
Yearly	√			√		√	√				√			√

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

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

<i>Task No. & Description</i>	<i>Included in this project</i>	
1. Check Depth of Vegetation	Yes	No
2. Check Depth of Silt Deposit in Basin	Yes	No
3. Removal of Debris and Trash	Yes	No
4. Cut-off Valve	Yes	No
5. Inlet Splash Pad	Yes	No
6. Underdrain System	Yes	No
7. Structural Integrity	Yes	No
8. Discharge Pipe	Yes	No
9. Drawdown Time	Yes	No
10. Vegetated Filter Strips	Yes	No
11. For Pump Stations	Yes	No
12. For Pump Stations	Yes	No
13. For Pump Stations	Yes	No
14. Visually Inspect Security Fencing for Damage or Breach	Yes	No

**MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION
ABATEMENT MEASURES**

1. Check Depth of Vegetation. Vegetation in the basin shall not exceed 18-inches in depth. When vegetation needs to be cut, it shall be cut to an approximately 4-inch height. *A written record should be kept of inspection results and maintenance performed.*

2. Check Depth of Silt Deposit in Basin. Top of cleanouts shall be set 4-inches above sand layer. When silt has accumulated to top of cleanouts, the silt shall be removed the top 2 inches of the sand media shall also be removed and replaced with clean silica based sand. Written record should be kept of inspection results and maintenance performed.

3. Removal of Debris and Trash. The basin and inlet structure shall be checked for the accumulation of debris and trash such as brush, limbs, leaves, paper cups, aluminum cans, plastic bottles etc. Accumulated trash and debris shall be raked or collected from the basin and inlet structure and disposed of properly.
The sedimentation and filtration basin will have permanent metal ladder with wall. In addition during sediment removal, debris removal and sand removal and replacement any extra heavy duty ladder may be used for temporary usage. The wet well and splitter box will have separate metal ladder with wall.

4. *Written record should be kept of inspection results and maintenance performed.*

5. Cut-off Valve. The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24-hours and 48-hours). Count should be kept of number of turns to open and close the valve so that the valve can be reset to the starting position. Defects

BAR GARDENS
PERMANENT POLLUTION ABATEMENT MEASURES

in the operation of the cut-off valve shall be corrected within 7 working days. *A written record should be kept of inspection results and maintenance performed.*

6. Inlet Splash Pad. The filter area around the inlet splash pad shall be checked for erosion and for the condition of the rock rubble. Erosion or disturbance of the rock rubble should be corrected by removing the rock rubble, restoring missing sand media to appropriate depth and replacement of the rock rubble. If the condition persists in subsequent inspections, the size of the rock rubble should be increased. Rubble should be placed to a density that minimizes the amount of exposed sand between the rock rubble. Deficiencies should be corrected within seven working days. *A written record should be kept of inspection results and maintenance performed.*

7. Underdrain System. The underdrain system shall be visually inspected for the accumulation of silt in the pipe system. The pipe clean-outs shall have the caps removed and visually inspected for accumulation of silt deposits. If silt deposits appear to have accumulated so as to significantly reduce the drain capacity of the pipes then maintenance shall be performed. When silt deposits have accumulated to the stage described above, the clean-outs and drainpipes can be flushed with a high-pressure water flushing process. Clean-out caps must be replaced onto the clean-outs after maintenance so as to avoid the possibility of short circuiting the filtering process. Sediment accumulation at outlet pipe or in wet well due to flushing shall be removed and disposed of properly. *A written record should be kept of inspection results and the maintenance performed.*

8. Structural Integrity. In addition to Items 1 through 6 the following are measures which should be reviewed during a check of structural integrity:
 - Observe the height of the confining berm for visible signs of erosion or potential breach. Signs of erosion should be corrected within 2 weeks or immediately in case of emergency conditions. Corrective measures include but are not limited to addition of topsoil or appropriate soil material so as to restore the original berm

height of the sand filter basin. Restored areas shall be protected through placement of block sod in a checkerboard pattern.

- Bypass of filter process. This condition can manifest itself in several ways. One way is by visually inspecting the clean-outs for accumulation of silt as described in Item 6. Significant accumulations of silt could be a sign of a torn filter fabric. Observations should be made over several inspection cycles to determine whether the condition persists. A second non-intrusive way of making observations for structural condition would be to visually look for collapsed or depressed areas along the edge of the filter media interface with basin side slope. If condition exists, corrective action should be performed within 15 working days. Removal of sand and replacement of filter fabric and/or pipe and gravel may be necessary. *A written record should be kept of inspection results and corrective measures taken.*
9. Discharge Pipe. The basin discharge pipe shall be checked for accumulation of silt, debris or other obstructions which could block flow. Soil accumulations, vegetative overgrowth and other blockages should be cleared from the pipe discharge point. Erosion at the point of discharge shall be monitored. If erosion occurs, the addition of rock rubble to disperse the flow should be accomplished. *A written record should be kept of inspection results and corrective measures taken*
10. Drawdown Time. This characteristic can be a sign of the need for maintenance. The minimum drawdown time is 24 hours. If drawdown time is less than 24 hours, the gate valve shall be checked and partially closed to limit the drawdown time. Extensive drawdown time greater than 48 hours may indicated blockage of the sand media, the underdrain system and/or the discharge pipe. Corrective actions should be performed and completed within 15 working days. *A written record of the inspection findings and corrective actions performed should be made.*
11. Vegetated Filter Strips. Vegetation height for native grasses shall be limited to no more than 18-inches. When vegetation exceeds that height, the filter strip shall be cut to a height of approximately 4 inches. Turf grass shall be limited to a height of 4-

BAR GARDENS

PERMANENT POLLUTION ABATEMENT MEASURES

inches with regular maintenance that utilizes a mulching mower. Trash and debris shall be removed from filter strip prior to cutting. Check filter strip for signs of concentrated flow and erosion. Areas of filter strip showing signs of erosion shall be repaired by scarifying the eroded area, reshaping, regrading and placement of block sod in a checkerboard pattern over the affected area. *A written record of the inspection findings and corrective actions performed should be made*

12. For Pump Stations. Check wet well discharge pipe to confirm flow through the pump system. If flow is not present, allow sufficient time for pump to cycle on and off. If flow does not occur, the wet well should be checked for the level of water. The wet well should be opened and the on/off float switches should be moved up and down to activate the pump. If the pump does not start, a repair technician shall be called in to repair the malfunction within 5 working days. *A written record of the inspection findings and corrective actions performed should be made*

13. For Pump Stations. Check the wet well for accumulation for trash, debris and silt. Trash and debris shall be removed and disposed of properly. Silt depth can be checked by probing the bottom of the wet well with a stick or PVC pipe. Silt accumulations should be removed when silt collects to a depth of 6 inches over the entire wet well bottom. Silt can be removed by vacuum pump method. If silt buildup continues, underdrain system shall be inspected. *Written record should be kept of inspection results and maintenance performed.*

14. For Pump Stations. Visually check aboveground pump wiring and connections for damage. Damaged or loose connections should be repaired within 5 working days. *A written record should be kept of inspection results and the maintenance performed.*

15. Visually Inspect Security Fencing for Damage or Breach. Check maintenance access gates for proper operation. Damage to fencing or gates shall be repaired within 5 working days. *A written record should be kept of inspection results and maintenance performed.*

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project:

Calculations from RG-348

Pages 3-27 to 3-30

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

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

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

County =	Bexar	
Total project area included in plan * =	0.80	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	0.45	acres
Total post-development impervious cover fraction * =	0.56	
P =	30	inches

$L_{M \text{ TOTAL PROJECT}}$ = **367** lbs.

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

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



Harun Rashid

02/10/23

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

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

Total drainage basin/outfall area =	0.80	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres

Post-development impervious area within drainage basin/outfall area = **0.45** acres
 Post-development impervious fraction within drainage basin/outfall area = **0.56**
 $L_{M \text{ THIS BASIN}} =$ **367** lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

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

where:

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

$A_C =$ **0.80** acres
 $A_I =$ **0.45** acres
 $A_P =$ **0.35** acres
 $L_R =$ **421** lbs

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

Desired $L_{M \text{ THIS BASIN}} =$ **367** lbs.

F = 0.87

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

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth =	1.44	inches
Post Development Runoff Coefficient =	0.40	
On-site Water Quality Volume =	1650	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet

Storage for Sediment = 330

Total Capture Volume (required water quality volume(s) x 1.20) = 1980 cubic feet

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

7. Retention/Irrigation System

Designed as Required in RG-348

Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

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

8. Extended Detention Basin System

Designed as Required in RG-348

Pages 3-46 to 3-51

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

9. Filter area for Sand Filters

Designed as Required in RG-348

Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	1980	cubic feet	
Minimum filter basin area =	92	square feet	
Maximum sedimentation basin area =	825	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	206	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	1980	cubic feet	
Minimum filter basin area =	165	square feet	
Maximum sedimentation basin area =	660	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	41	square feet	For maximum water depth of 8 feet

10. Bioretention System

Designed as Required in RG-348

Pages 3-63 to 3-65

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

11. Wet Basins

Designed as Required in RG-348

Pages 3-66 to 3-71

Required capacity of Permanent Pool =	NA	cubic feet	Permanent Pool Capacity is 1.20 times the WQV Total Capacity should be the Permanent Pool Capacity plus a second WQV.
Required capacity at WQV Elevation =	NA	cubic feet	

12. Constructed Wetlands

Designed as Required in RG-348

Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands =	NA	cubic feet
--	-----------	------------

13. AquaLogic™ Cartridge System

Designed as Required in RG-348

Pages 3-74 to 3-78

** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.

Required Sedimentation chamber capacity =	NA	cubic feet
Filter canisters (FCs) to treat WQV =	NA	cartridges
Filter basin area (RIA _F) =	NA	square feet