Colliers
Engineering
& Design

Water Pollution Abatement Plan Modification

April 16, 2024

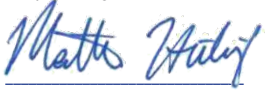
Babcock and Loop 1604

Southwest corner of the Intersection at Babcock Rd & Loop 1604 San Antonio, Texas

Prepared for:

Texas Commission on
Environmental Quality
Attn: Edwards Aquifer Protection
Program

Prepared by:



Matthew Hilbig, PE
Texas Professional Engineer
License No. 131150

Colliers Engineering & Design
3421 Paesanos Pkwy, Ste. 200 San
Antonio TX 78231
Main: 877 627 3772
Colliersengineering.com

Project No. 554-13-05

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: Babcock and Loop 1604						**2. Regulated Entity No.:** 111111423			
3. Customer Name: Abiso Babcock, LP						**4. Customer No.:** CN605842517			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			9.57 legal boundary 11.22 WPAP Boundary
9. Application Fee:	$6,500		**10. Permanent BMP(s):**			CONTECH JELLYFISH FILTER & VFS			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			Not Applicable			
13. County:	Bexar		**14. Watershed:**			Leon Creek			

Application Distribution

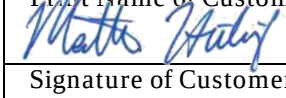
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	__	__
Region (1 req.)	__	__	__
County(ies)	__	__	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	__Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	✓	__	__	__	__
Region (1 req.)	✓	__	__	__	__
County(ies)	✓	__	__	__	__
Groundwater Conservation District(s)	✓ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park ✓San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Matthew Hilbig, P.E. Print Name of Customer/Authorized Agent
 4/23/24 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):	

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GENERAL INFORMATION SECTION

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: Matthew Hilbig, P.E.

Date: 4/23/24

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Babcock and Loop 1604
2. County: Bexar
3. Stream Basin: Leon Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer Authority GCD
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☒ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Blake Honigblum
Entity: Abiso Babcock, LP
Mailing Address: 970 Isom Road
City, State: San Antonio, Texas Zip: 78216
Telephone: 210-979-8444 FAX: _____
Email Address: Blak@abiso-re.com

8. Agent/Representative (If any):

Contact Person: Matthew Hilbig, P.E.
Entity: Colliers Engineering & Design
Mailing Address: 3421 Paesanos Parkway
City, State: San Antonio, TX Zip: 78231
Telephone: 726 223 4925 FAX: _____
Email Address: matthew.hilbig@collierseng.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.

Southwest Corner of Babcock Road and Loop 1604, San Antonio, Texas 78249

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

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

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

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

☐ Survey staking will be completed by this date: _____

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

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

Administrative Information

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

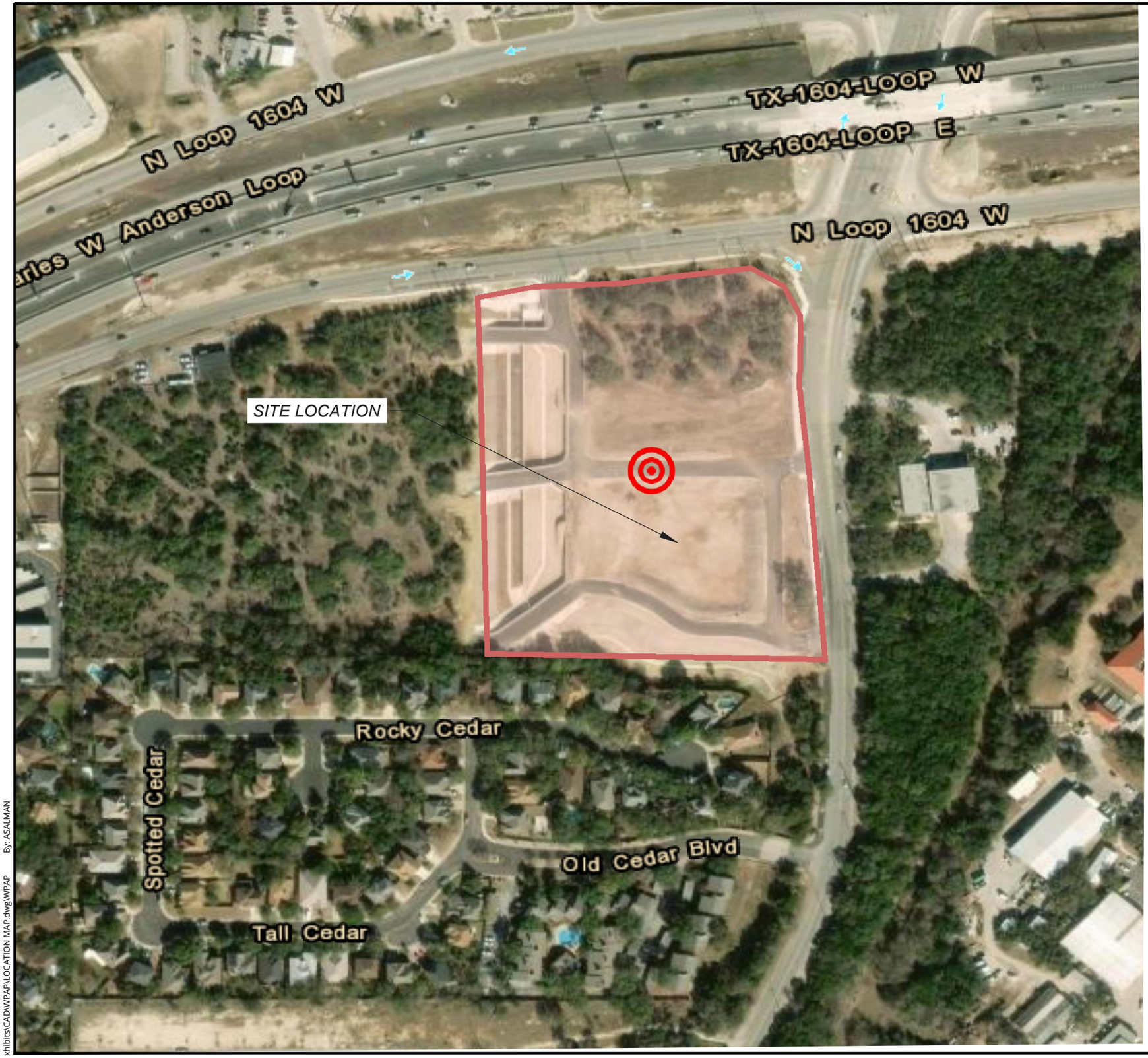
- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

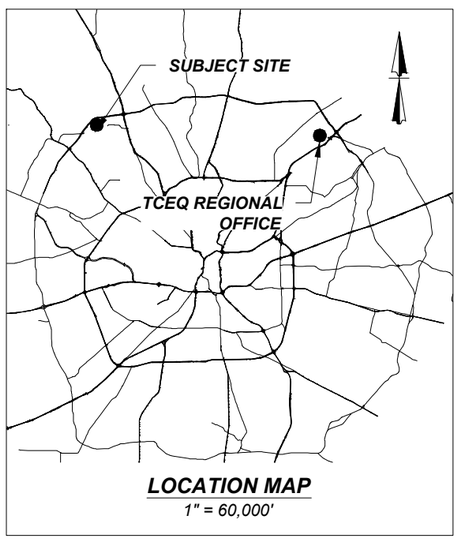
20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.



SCALE : 1"=200'

0' 200' 400'



LOCATION MAP
1" = 60,000'

Colliers Engineering & Design

www.colliersengineering.com

Formerly Known as KFW

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
STATE REQUIRED FILE NUMBER
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION
.	.	.	.

AERIAL AND LOCATION MAP
FOR
BABCOCK AND LOOP 1604

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

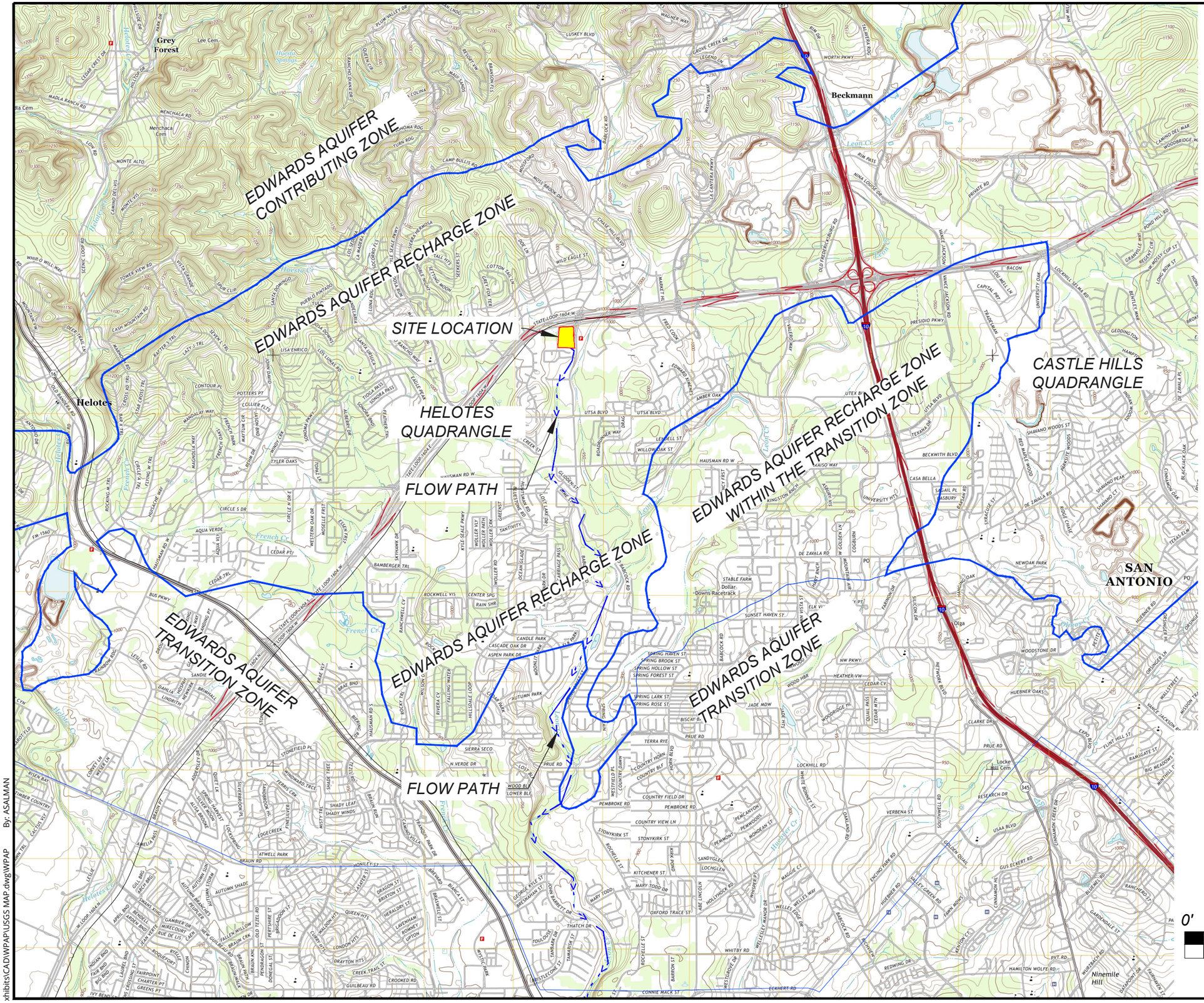
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	04/02/2024	AS	MH

PROJECT NUMBER:	DRAWING NAME:
554-13-05	LOCATION MAP

SHEET TITLE: AERIAL AND LOCATION MAP
FIELD BOOK: XX PAGE: XX

SHEET NUMBER: ATT-A

Exhibits\CAD\WPAP\LOCATION MAP.dwg\WPAP By: ASALMAN



xhibits\CAD\WPAP\USGS MAP.dwg\WPAP By: ASALMAN

Colliers
Engineering
& Design

www.colliersengineering.com

Formerly Known as KFW
ENGINEERS + SURVEYING

REV	DATE	DRAWN BY	DESCRIPTION
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

USGS MAP-HELOTESUSGS
QUADRANGLE
FOR
BABCOCK AND LOOP
1604

Colliers
Engineering
& Design
SAN ANTONIO (KFW)
3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	04/02/2024	AS	MH

PROJECT NUMBER: 554-13-05
DRAWING NAME: USGS MAP

SHEET TITLE: USGS MAP
FIELD BOOK: XX
PAGE: XX

SHEET NUMBER: ATT-B

PROJECT DESCRIPTION

The Shops at Babcock is an undeveloped 11.22-acres site that will be disturbed which lies within the City of San Antonio, in Bexar County, TX, and is located within the Edwards Aquifer Recharge Zone and the Leon Creek Watershed. Project wastewater will be disposed of by conveyance to the existing Leon Creek Wastewater Treatment Plant run by San Antonio Water System (SAWS).

The original and approved design under "BABCOCK AND LOOP 1604." included provisions for access drives, driveways, and a Batch Detention/Water Quality system. However, the owner has approved modifications to this plan. The updated proposal involves the construction of One commercial building (retail) along with associated parking, drives, and utilities, primarily in LOT 3, extending partially into LOTs 4 and 5. This modification will result in the addition of approximately 3.142 acres of impervious cover to the site. Additionally, accounting for 95% impervious cover for LOTs 4 and 5 to accommodate future development will add approximately 2.064 acres of impervious cover. Consequently, the total impervious cover for proposed/future development on the site will amount to 5.206 acres.

In response to these changes, the previously designated Batch Detention/Water Quality system will undergo replacement with a jellyfish filter system. This upgrade is designed to effectively manage total suspended solids (TSS) originating from both the original impervious cover (1.08 acres) in drainage areas (1) and the new impervious cover resulting from the future/proposed development (5.206 acres). Drainage areas 2 and 8, (bypass) previously accounted for in the Batch Detention calculation, will undergo targeted treatment by the proposed jellyfish system, ensuring comprehensive stormwater management.

Moreover, existing interim vegetated filter strips, previously approved in the Water Pollution Abatement Plan), will continue to serve in treating Drainage Areas 3, 4, 5, and 6. Drainage Area 7 will remain under the purview of the existing jellyfish filter system, ensuring continuity in effective stormwater treatment strategies.

The construction process is expected to disturb approximately 4.9 acres of land. To prevent the pollution of storm water runoff originating on-site or up gradient of the site and potentially flowing across and off the site after construction, two Jellyfish Filters system in parallel, designed using TCEQ technical guidance document, complying with Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2015), will be constructed to treat storm water runoff. The required total suspending solids (TSS) treatment for this project to replace the Detention/Water Quality system and the increase of the impervious cover is 3656 pounds. The removal efficiency of the proposed runoff will meet the required overall removal of 80% of increase in TSS. See **Exhibit 3-A & B** for Existing/Proposed drainage areas.

The subject site will be disturbed during construction activities within the limits of construction. These activities will be subject to TPDES requirements. A Storm Water Pollution Prevention Plan will be maintained for the site and temporary BMP's will be implemented to prevent erosion and sedimentation until completion of the permanent BMP. All areas not covered by the building footprint, sidewalks, or pavement will be stabilized with either sod, landscaping, or gravel when construction is complete and before the removal of temporary BMPs.

There will not be any storage of regulated quantities of hazardous materials. San Antonio Water System (SAWS) will supply potable water and wastewater treatment.

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GEOLOGIC ASSESSMENT SECTION

GEOLOGIC ASSESSMENT (WPAP)

THE MILLER-HEDAD TRACTS
BABCOCK ROAD
SAN ANTONIO, TEXAS 78249

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E20255

Prepared exclusively for

Abiso Development, LLC.
970 Isom Road
San Antonio, Texas 78216

Frost GeoSciences

Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

Frost GeoSciences
Geotechnical ▪ Construction Materials
Geologic ▪ Environmental

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

November 17, 2020

Abiso Development, LLC.
970 Isom Road
San Antonio, Texas 78216

Attn: Mr. Blake Honigblum, Managing Partner

SUBJECT:
Geologic Assessment (WPAP)
for the Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
The Miller-Hedad Tracts
Babcock Road
San Antonio, Texas 78249
FGS Project Nº FGS-E20255

Dear Mr. Blake Honigblum, Managing Partner:

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

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

We appreciate the opportunity to perform these services for Abiso Development, LLC. Please contact the undersigned if you have questions regarding this report.

Respectfully submitted,
Frost GeoSciences, Inc.

Mr. Michael McMahan, G.I.T.
Project Manager

Mr. Chris Wickman, P.G.
Senior Geologist

Copies Submitted:
(1) Mr. Blake Honigblum; Abiso Development, LLC.
(6) KFW Engineers & Surveying
(1) Electronic (pdf) Copy

TABLE OF CONTENTS

LOCATION

The Site is located in a developing area at the southwest corner of the Babcock Road and Loop 1604 intersection in San Antonio, Texas. An overall view of the area is shown on copies of the site plan, a street map, the U.S.G.S. Topographic Map, the Bexar County Watersheds Map, the EAA-Edwards Aquifer Recharge Zone and Contributing Zone Map, the FIRM Map, the U.S. Geological Survey Water Resources Investigations 95-4030 Map, the Bureau of Economic Geology: Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, a 2018 aerial photograph at a scale of 1"=500', a 2018 aerial photograph at a scale of 1"=200', and a 1983 aerial photograph at a scale of 1"=500' and are included on Figures 1 through 10 in Appendix A.

METHODOLOGY

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

Frost GeoSciences, Inc. researched the geology of the area at the northwest corner of the Babcock Road and Loop 1604 intersection in San Antonio, Texas. The research included, but was not limited to, the Geologic Atlas of Texas, San Antonio Sheet, FEMA maps, Edwards Aquifer Recharge Zone Maps, U.S.G.S. 7.5 Minute Quadrangle Maps, the Bureau of Economic Geology-Geologic Atlas of Texas, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the U.S.G.S. Water-Resources Investigations Report 95-4030, the United States Geological Survey Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties Texas Map (2016) map and the U.S.D.A. Soil Survey of Bexar County, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made Potential Recharge Features (PRFs). A transect spacing of approximately 50 feet, or less depending on vegetation thickness, was used to inspect the project area. A 2018 aerial photograph, in conjunction with a hand-held Garmin GPS 72H Global Positioning System with an Estimated Potential Error ranging from 10 to 14 feet, was used to navigate around the property and identify the locations of PRFs, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any PRFs noted in the field were marked with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map. The Site Geologic Map, indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included in the Attachments at the end of this report. A copy of a 2018 Aerial Photograph at an approximate scale of 1" =200' indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included on Figure 10 in Appendix A. The Geologic Assessment Form TCEQ-0585, (Rev. 2-11-15), Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included with the Attachments at the end of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the U.S.G.S. 7.5 Minute Quadrangle Map, Helotes Sheet (1992), the elevation across the project site ranges from 1,005 to 980 feet above mean sea level. A north to south trending unnamed, intermittent tributary to Huesta Creek was indicated crossing the central portion of the Site. The Site was located on relatively flat ground surface that gently slopes to the central drainage system. The site is classified as primarily undeveloped woodland. Babcock Road is visible adjacent to and parallel with the eastern site boundary. The north to south trending Maverick Creek can be seen east of the Site. Loop 1604 is visible north of the Site. Hilly topography of the Edwards Plateau uplands can be seen north of the site. The University of Texas at San Antonio Campus is visible east of the Site. The remaining lands displayed in the topographic map are mostly undeveloped woodlands with a mixture of residential and commercial areas. A copy of the U.S.G.S. 7.5 Minute Quadrangle Map indicating the location of the project site is included on Figure 3 in Appendix A.

Bexar County Watersheds Map

According to the Bexar County Watersheds Map (2003), the project site is located within the Upper Leon Creek Watershed Area. A copy of the Bexar County Watersheds Map indicating the location of the project site is included on Figure 4 in Appendix A.

Recharge/Transition Zone

According to the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, Helotes (2014), the Official Edwards Aquifer Recharge Zone Map, Helotes Sheet (1992), and Edwards Underground Water District Reference Map, (March 1988), the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map indicating the location of the project site is included on Figure 5 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Flood Insurance Map, Community Panel Number 48029C0210G, dated September 29, 2010 was reviewed to determine if the project site is located in areas prone to flooding. The FEMA Map labels the on-site unnamed tributary to Huesta Creek as, "Huesta Tributary A". A review of the above mentioned panel number indicates that the majority of the Site surrounding Huesta Tributary A is located in "Zone AE". The northern segment of Huesta Tributary A is located in "Zone A". According to the map legend Zone A is defined as a special flood hazard area subject to inundation by the 1% annual chance flood where no base flood elevations have been determined. According to the map legend, Zone AE is defined as a special flood hazard area subject to inundation by the 1% annual chance flood where base flood elevations have been determined. Areas in the northeast and western portions of the Site are indicated as "Zone X" (Unshaded). Zone X is defined as areas determined to be outside the 0.2% annual chance floodplain. A copy of the above referenced FIRM panel indicating the location of the project site is included on Figure 6 in Appendix A.

Soils

According to the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Bexar County, Texas, issued (1966), the project site is located on the **Crawford and Bexar stony soils (Cb)**. A copy of the 1962 aerial photo (approximate scale: 1" =500') from the U.S.D.A. Soil Survey of Bexar County, Texas indicating the location of the project site and the soil types is included on Figure 7 in Appendix A.

- **The Crawford and Bexar Stony Soils (Cb)** are very dark grayish brown to reddish brown clay. They are stony clay in texture and are shallow to moderately deep over hard limestone. These soils are extensive in the northern part of the county. The surface layer is noncalcareous, about 8 inches thick, and very dark grayish brown or very dark brown. It has fine, subangular blocky and granular structure. When moist, this layer is very firm but breaks easily to a mass of fine clods. When dry, is very hard and contains many large cracks. Angular fragments of chert and limestone are common. These fragments may range in size from a quarter of an inch to 24 inches in diameter. The subsurface layer is dense, angular blocky clay. This layer is neutral or slightly acidic, but it may be limy in the lower parts. It is about 26 inches thick and either overlies a thin layer of yellowish red to pale brown, limy clay or, if the limy layer is lacking, rests on hard, fractured limestone. Crawford soils are naturally well drained. Internal drainage and permeability vary according to moisture content. Water moves rapidly when the soil is dry and cracked, but very slowly when the soil is wet. This soil has a USDA Texture Classification of Cherty Clay Loam to Loam. The Unified Classification is CG or CL. The AASHO Classification is A-2, A-4, or A-6. This soil has an average permeability from 1.0 to 1.5 inches/hour.

Narrative Description of the Site Geology

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to be low. The locations of the PRFs are identified on the 2018 aerial photograph on Figure 11 in Appendix A, and on the Site Geologic Map provided in the Attachments Section. Color photos of the project site and some of the PRFs are included in Appendix B.

Potential Recharge Feature S-1 is a void identified in the area east and along the excavated drainage path. A north to south trending unnamed tributary to Huesta Creek was observed as broad grass lined drainage swale crossing the center of the Site. This improved drainage appeared to have rerouted the natural drainage path. Based on review of historic aerial photographs, the unnamed tributary to Huesta Creek appears to have been converted to an improved trapezoidal drainage channel by 1983. Milling spoil, pushed rock and soil material from excavation of the channel appears to have been dumped in the south-central portion of the Site by 1983. A mounded berm in the south-central portion of the Site was observed at the time on the site inspection and consisting of plucked boulders and pushed soil that appeared to be associated with excavation of the centrally located improved grass-lined drainage channel. The void appeared to be a result of space forming between

this bulldozed soil and boulders. The void opening was approximately 8 inches long by 6 inches wide. The void extended vertically and terminated approximately 3 feet below the ground surface to a soil lined bottom. Sapping of the fine soils exposed limestone boulders along the interior walls of the feature. The depth of the void and surrounding soil deflation areas were visually inspected and probed with a machete. Fine grained sand and clay lined the bottoms of these non-karst features. These aforementioned features were not karst features and Frost GeoSciences, Inc. rates this features as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The cavity scores a 25 on the sensitivity scale, column 10 of the Geologic Assessment Table included within the Attachments at the end of this report. Frost GeoSciences, Inc. does not consider the cavity to be a sensitive feature.

PRF S-2 consists of a non-karst closed depression identified near the northern site boundary. This closed depression was approximately 10 feet wide by 15 feet long by 1.5 feet deep. This closed depression appears to be associated with the natural drainage swale that formerly crossed the site. Tree removal and excavation activity appears to have formed the u-shaped depression. Frost GeoSciences rates this feature as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 13 on the sensitivity scale, column 10 of the Geologic Assessment Table included within the Attachments at the end of this report.

PRF's S-3. S-4 and S-5 consist of are manmade features in bedrock. These PRFs are sanitary sewer manhole covers associated with City of San Antonio sanitary sewer lines. Frost GeoSciences, Inc. rates the relative infiltration of the features as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The features score a 35 on the sensitivity scale, column 10 of the Geologic Assessment Table included within the Attachments at the end of this report. Frost GeoSciences, Inc. does not consider these manmade features to be sensitive.

The project site is covered by moderately dense stand of vegetative cover with several open grassy areas. The Site was bounded to the north by Loop 1604, to the east by Babcock Road, to the south by residential development, and to the west by undeveloped wooded land. At the time of the FGS Site visit, vegetation on-site consisted primarily of cedar elm (*Ulmus crassifolia*), sugarberry (*Celtis laevigata*), live oak (*Quercus fusiformis*), and chinaberry (Melia azedarach). Occasional specimens of Japanese privet (*Ligustrum japonicum*), Texas persimmon (*Diospyros texana*), mountain laurel (*Sophora secundiflora*), Honey mesquite (*Prosopis glandulosa*), Huisache (*Vachellia farnesiana*), and Ashe juniper (*Juniperus ashei*) were noted. The understory layer consisted primarily of small regrowth Ashe juniper and live oak, with occasional specimens of Agarita (*Mahonia trifoliolata*), and Prickly pear (*Opuntia engelmannii*). Ashe juniper appeared to have been historically cleared from the project Site. Site visit photos indicating the condition of the property at the time of the on-site inspection are included in Appendix B. The variations in the vegetative cover on the property are visible in the 2018 aerial photo on Figures 10 and 11 in Appendix A. A copy of the site layout indicating the boundary of the project site and the elevations is included on the Site Geologic Map in the Attachments of this report.

According to the United States Geological Survey Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties Texas Map (2016), the western portion of the project site is located on the Lower Cretaceous Georgetown Limestone Formation (Kg) and eastern portion is located on the Leached and collapsed, undivided member (Kplc) of the Lower Cretaceous Edwards Person formation. The Georgetown Limestone consists of limestone and marl. The majority of the limestone is light gray, fine grained, argillaceous, nodular, and moderately indurated. The remaining limestone is white, hard, brittle, and thick bedded. The marl is light gray to yellowish gray, and soft. Marine megafossils include Kingena wacoensis and Gryphaea washitaensis. Thickness varies from 30 to 80 feet. The Leached and collapsed, undivided member (Kplc) of the Cretaceous Edwards Person formation consists of bioturgbated iron-stained limestone beds separated by massive limestone beds and stromatolitic limestone. Lithology consists of recrystallized limestone, mudstone, wackestone, packstone, grainstone, chert (bedded and large nodules) and collapsed breccia. The Leached and Collapsed member forms extensive lateral cavern development and large rooms. This is one of the most permeable members of the Edwards Group. Fossils include *Toucasia sp.*, *Montastrea roemeriana*, and oysters. Overall thickness ranges from 70 to 90 feet. A copy of the WRI map, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle map and a United States Geological Survey Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties Texas map are included on Figures 8A, 8B and 8C in Appendix A. A copy of the Stratigraphic Column highlighting the outcropping formations is included in the Attachments of this report.

According to the site plan provided by KFW Engineers & Surveying, the surveyed elevations on the project site range from 979 to 1,005 feet. According to this survey, the total relief on the project site is approximately 26 feet. A copy of the site plan indicating the boundary of the project site and the elevations is included on the Site Plan on Figure 1 in Appendix A and the Site Geologic Map in the Attachments Section of this report.

BEST MANAGEMENT PRACTICES

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

DISCLAIMER

This report has been prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04) by a Licensed Texas Professional Geoscientist. All areas of the project site were carefully inspected for features that could contribute to the recharge of the Edwards

Aquifer; however, this survey cannot preclude the presence of subsurface karst features that lack surface expression. This report is not intended to be a definitive investigation of all possible geologic or karst features at this site. All conclusions, opinions, and recommendations for Best Management Practices (BMP's) in this report are based on information obtained while researching the project and on the site conditions at the time of our field investigation.

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

REFERENCES

1. USGS - 7.5 Minute Topographic Quadrangle of Helotes, 1992

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

3. Official Edwards Aquifer Recharge Zone Map, Helotes, 1992

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

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

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

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

8. Stein, W.G. and Ozuna, G.B., 1995, Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Bexar County, Texas, U.S. Geological Survey Water Resources Investigations 95-4030.

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

10. Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Panel Number 48029C0210G, dated September 29, 2010

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

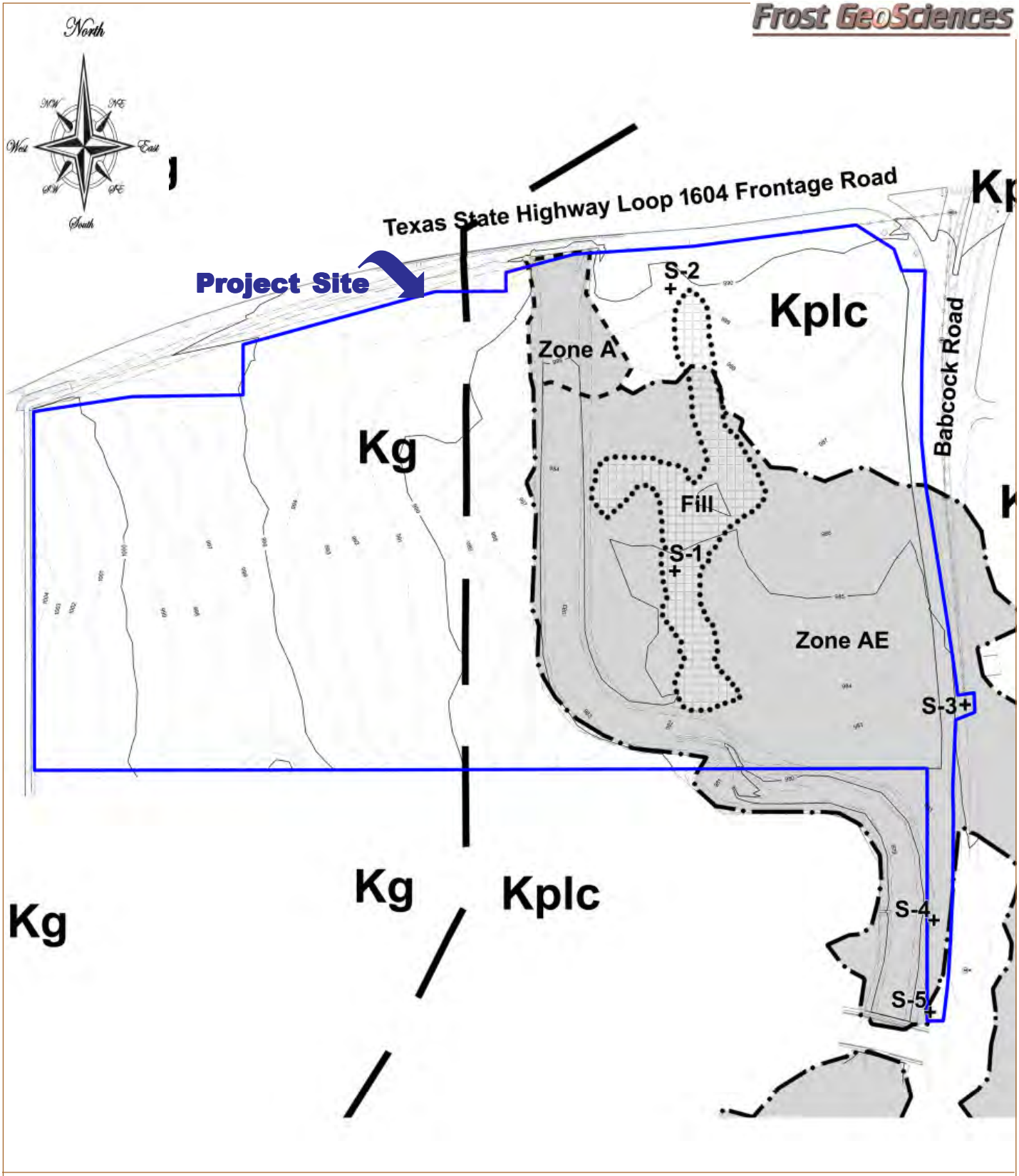
12. USDA NRCS Web Soil Survey (WSS) website: https://websoilsurvey.nrcs.usda.gov (2014)

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

14. San Antonio Water Systems, Bexar County Watersheds Map, 2004.

APPENDIX A

SITE LOCATION FIGURES



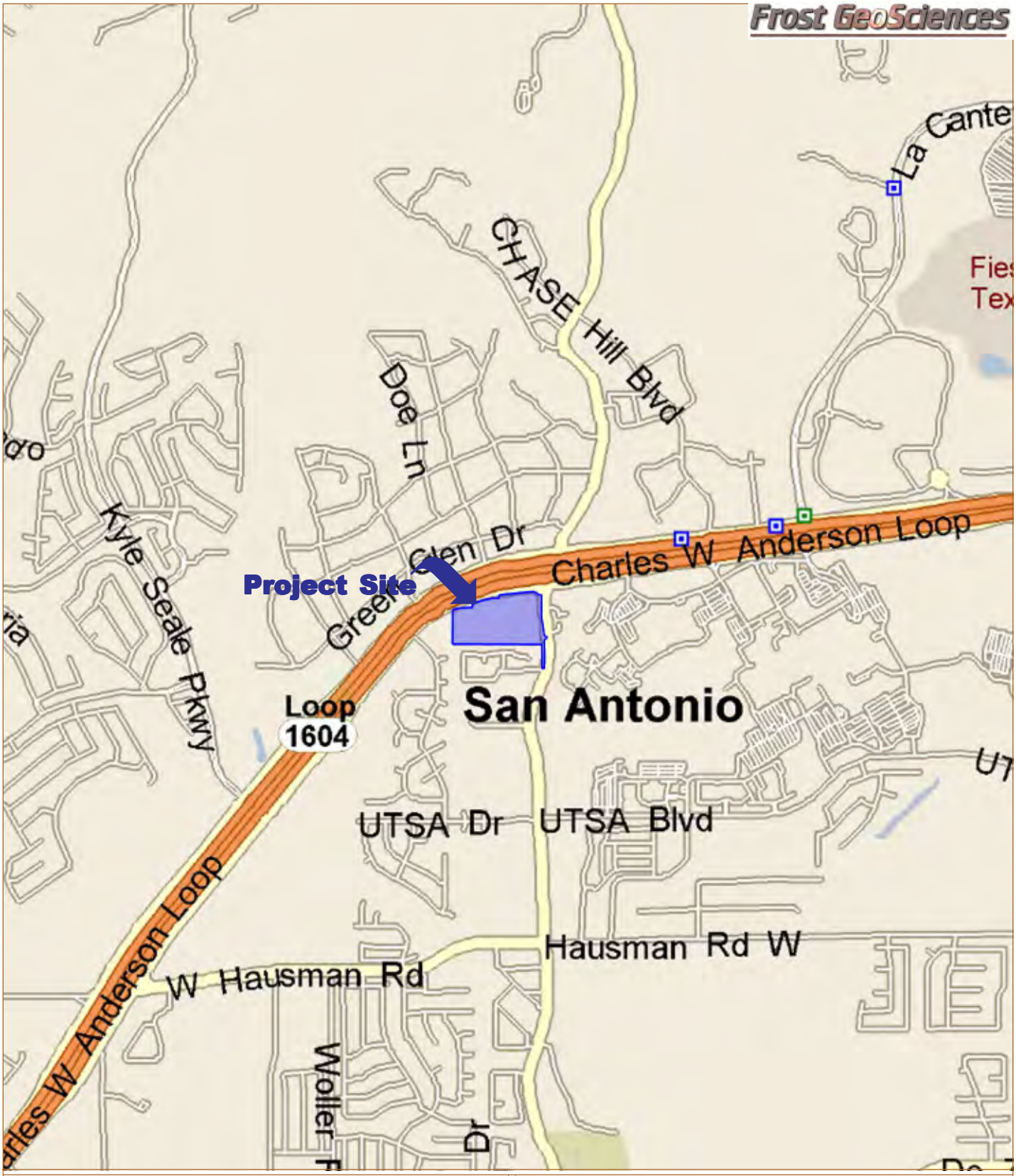
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

Site Layout

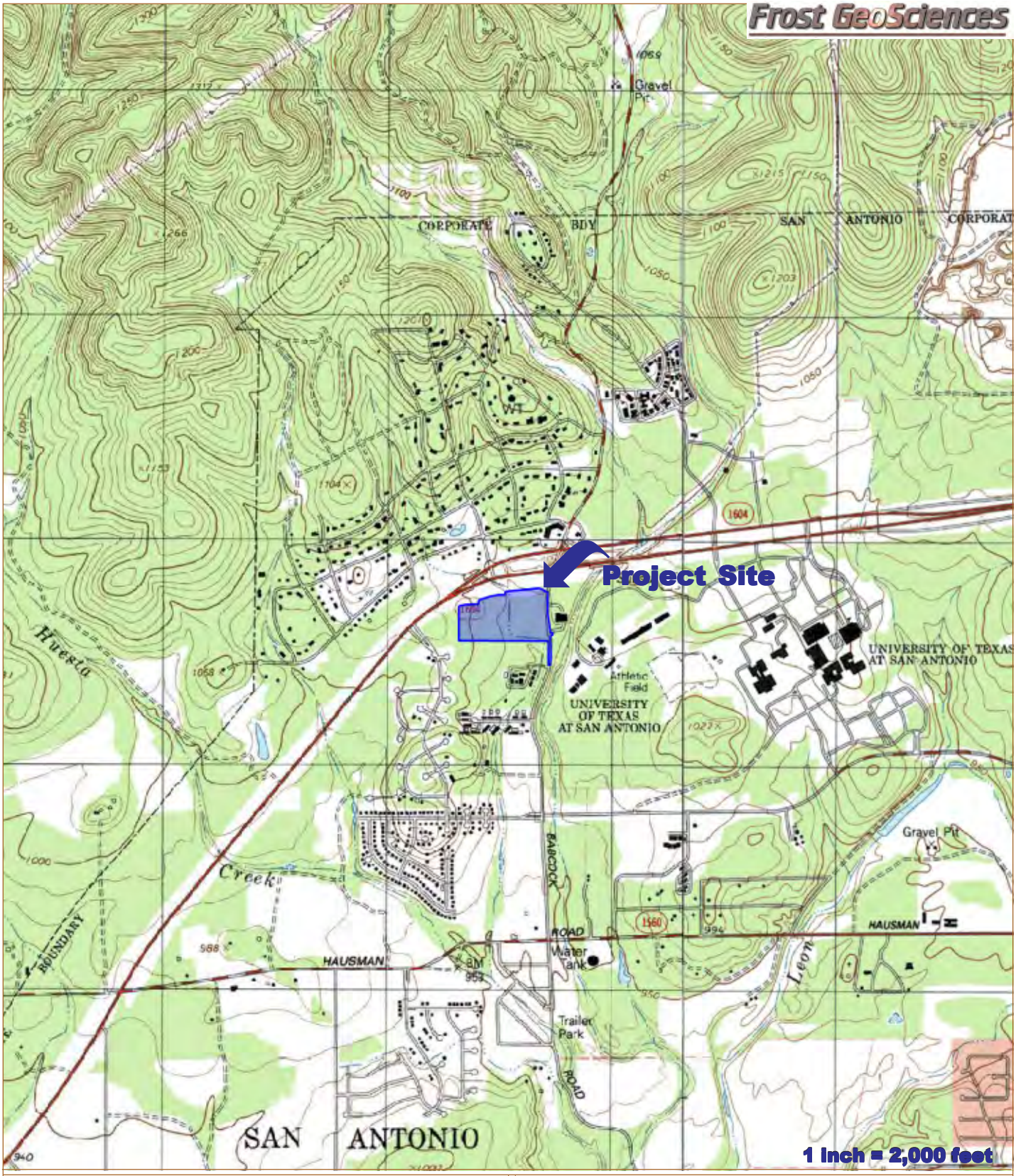
PROJECT NO.: FGS-E20225

DATE: November 17, 2020

FIGURE 1



PROJECT NAME:	Street Map	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Miller-Hedad Tracts San Antonio, Texas	PROJECT NO.: FGS-E20225	DATE: November 17, 2020



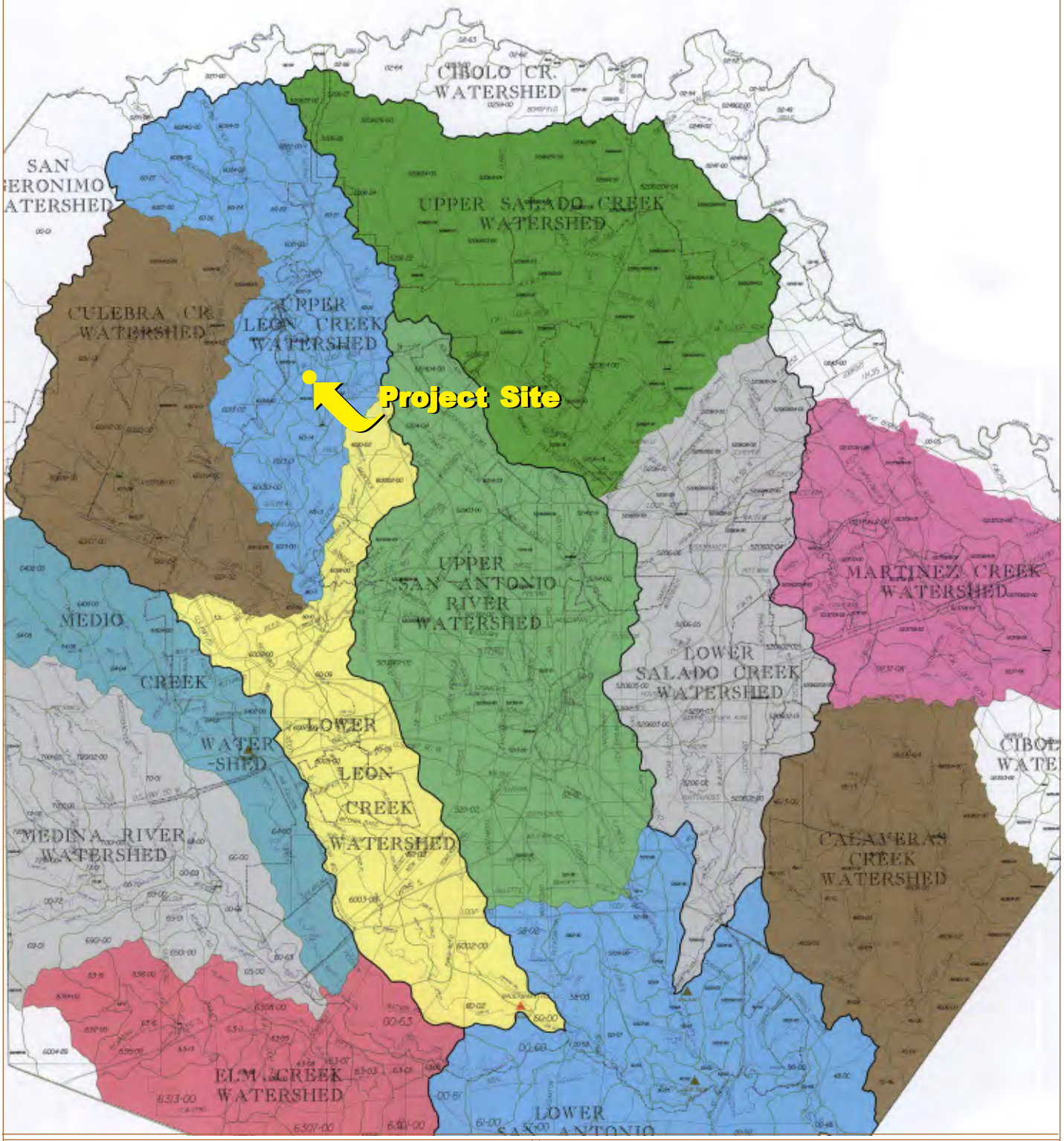
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

U.S.G.S. 7.5 Minute Quadrangle Map
Helotes, Texas Sheet (1992)

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

FIGURE 3

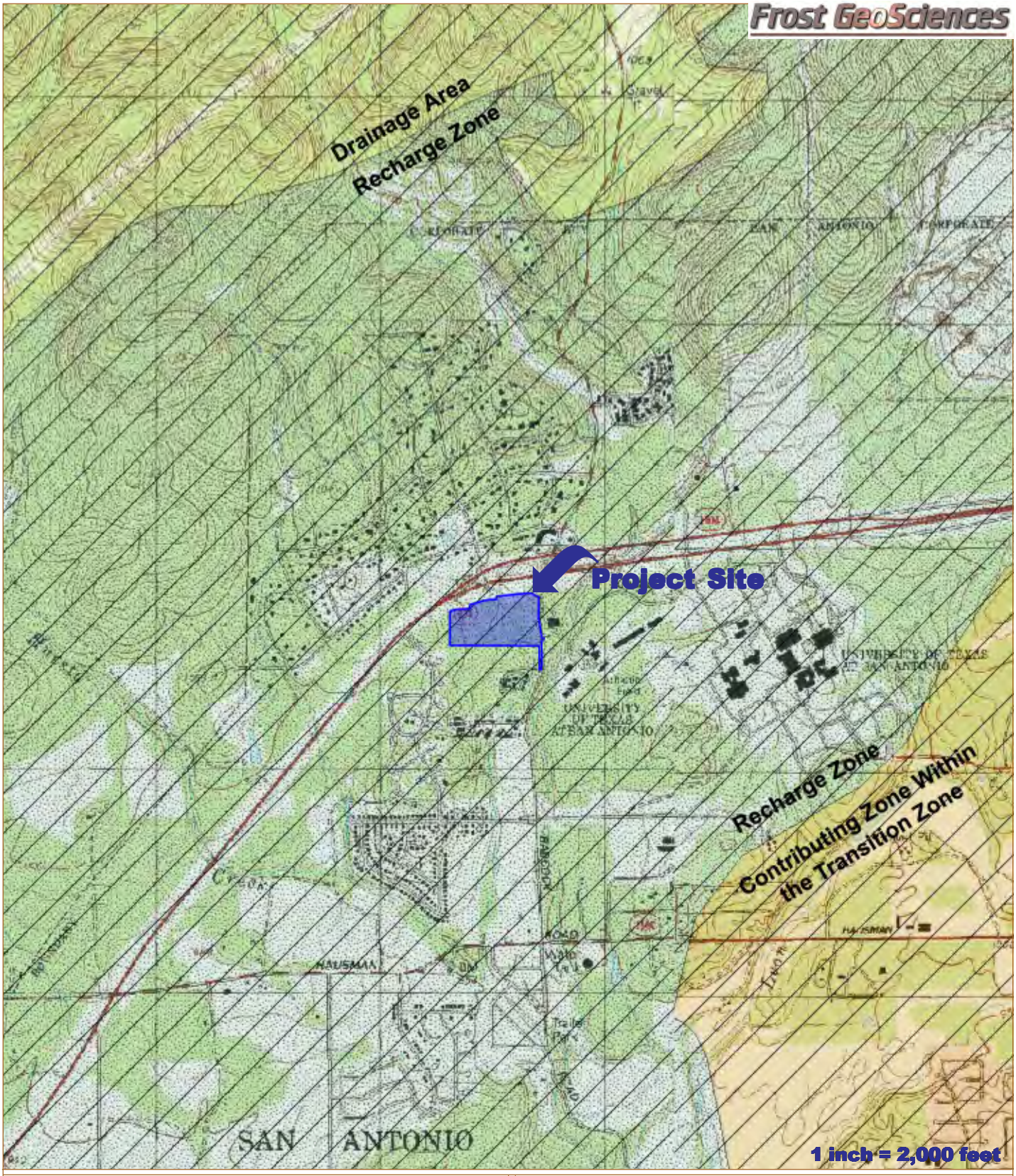


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

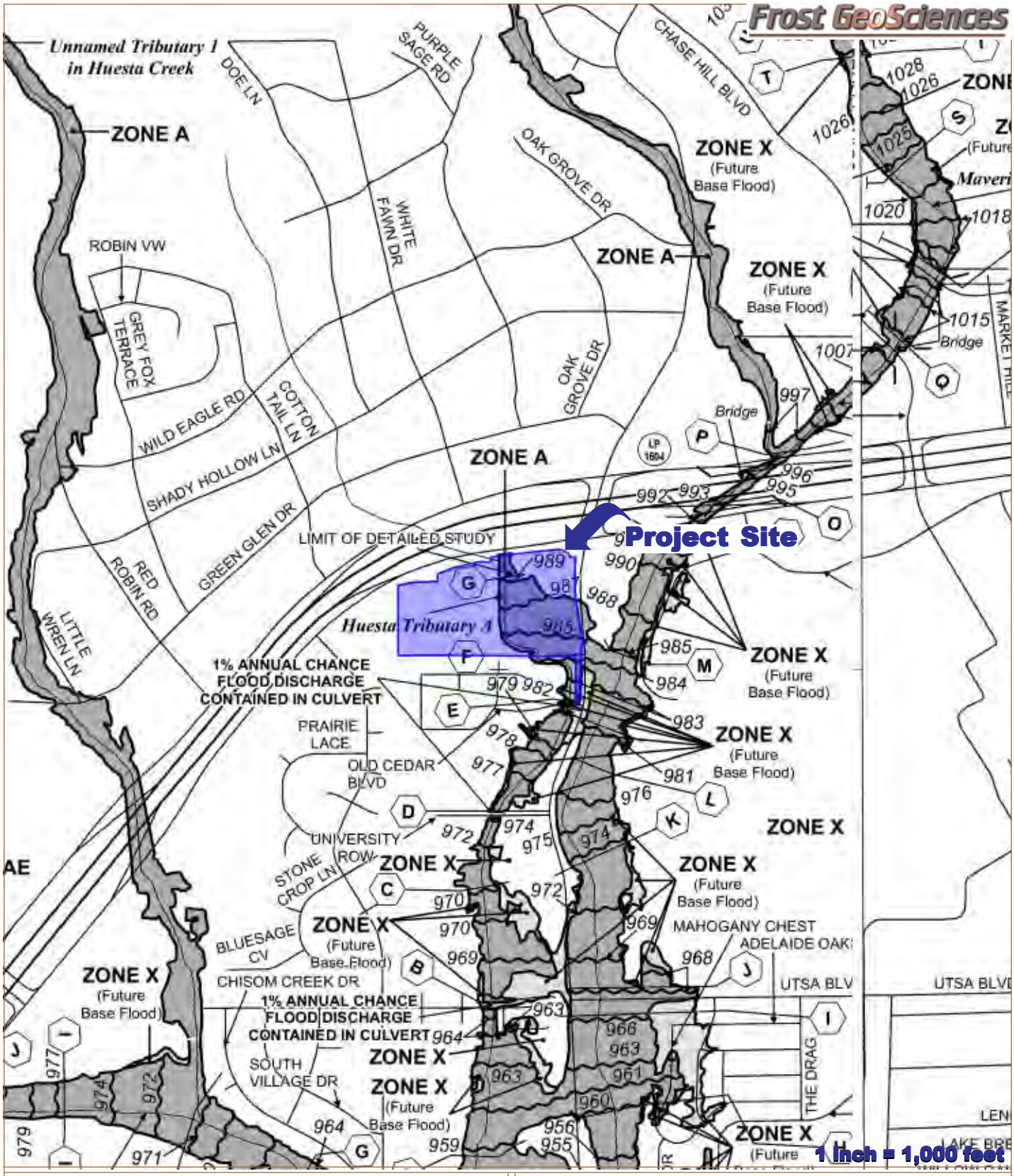
Bexar County Watersheds Map
San Antonio Water Systems (2004)

PROJECT NO.: FGS-E20225

DATE: November 17, 2020



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Miller-Hedad Tracts San Antonio, Texas	AA-Edwards Aquifer Recharge and Contributing Zone Map, Helotes, Texas Quadrangle (2014)
PROJECT NO.: FGS-E20225	**DATE:** November 17, 2020

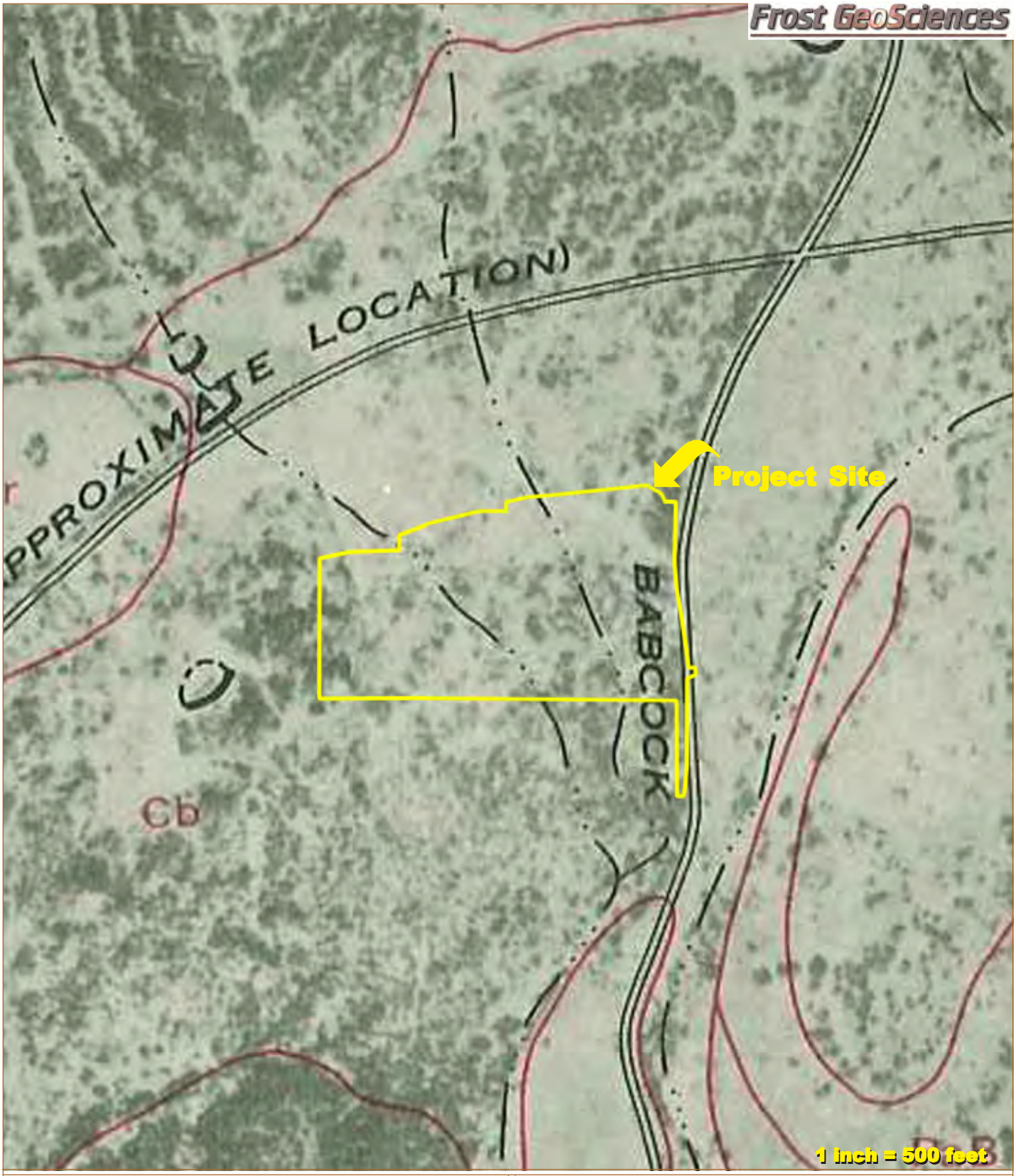


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

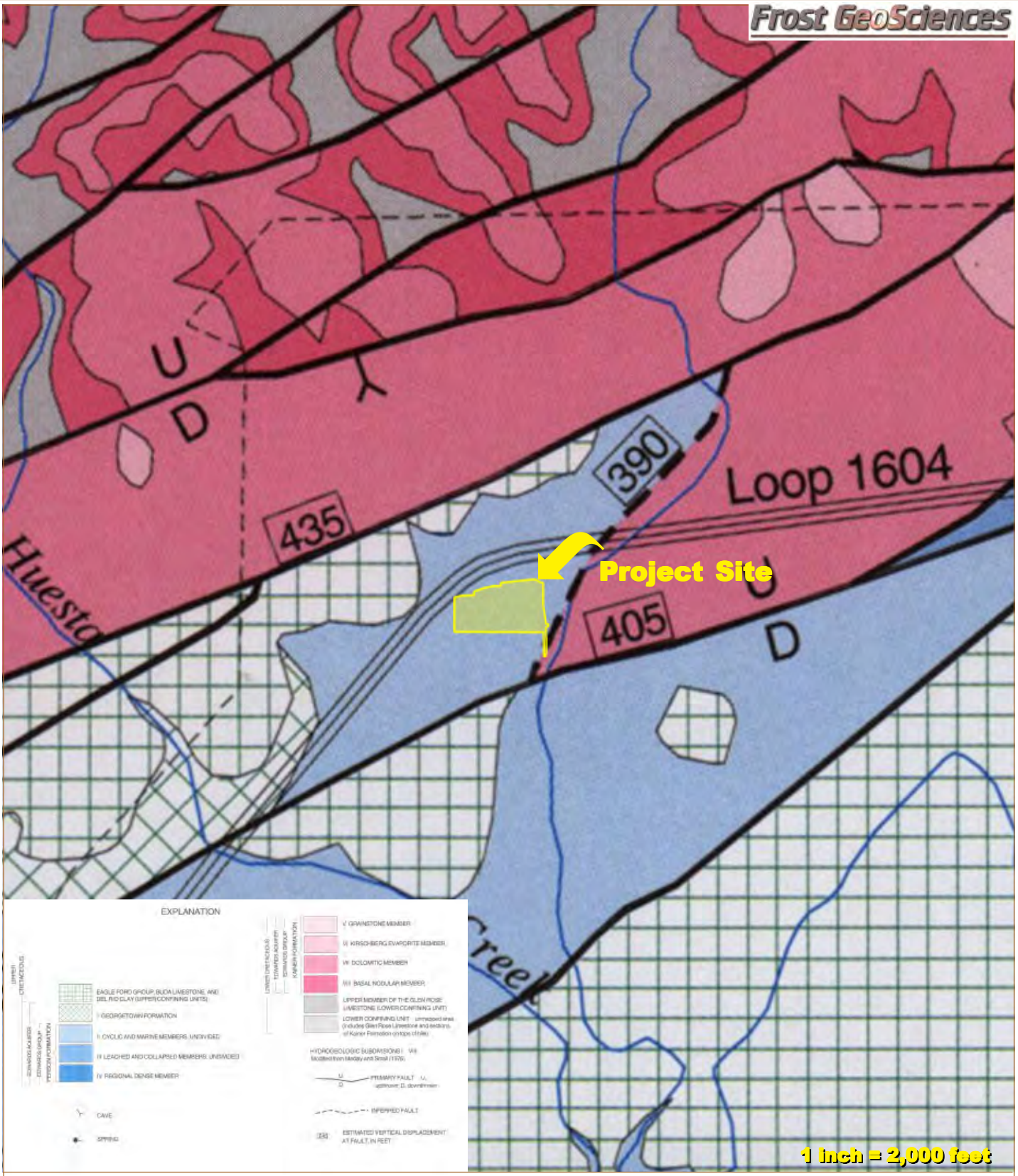
Flood Insurance Rate Map (FIRM)
Community Panel # 48019C0230G and
48029C0210G (9/29/2010)

PROJECT NO.: FGS-E20225

DATE: November 17, 2020



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Miller-Hedad Tracts San Antonio, Texas	U.S.D.A. Soil Survey of Bexar County, Texas (1966)
PROJECT NO.: FGS-E20225	**DATE:** November 17, 2020



PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

United States Geologic Survey
Water Resources Investigations #4030-95
Geologic Map of Bexar County, Texas

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

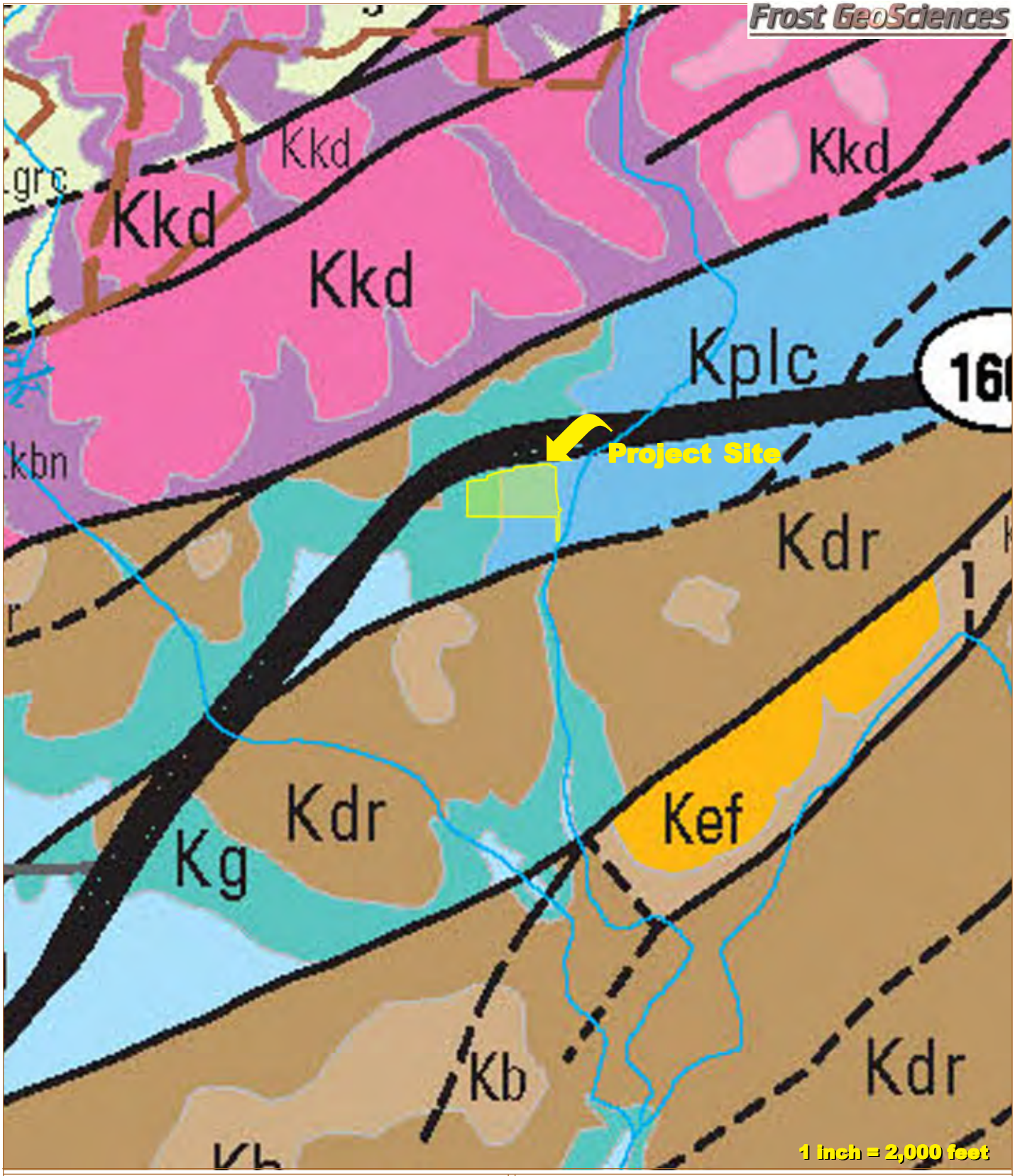
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

Bureau of Econmic Geology
Geologic Map of the New Braunfels
30X60 Minute Quadrangle (2000)

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

FIGURE 8B



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Miller-Hedad Tracts San Antonio, Texas	U.S.G.S. Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties Map (2016)
	PROJECT NO.: FGS-E20225 / **DATE:** November 17, 2020

Frost GeoSciences

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

1983 Aerial Photograph
United States Geologic Survey

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

2018 Aerial Photograph
Google Earth Image

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Miller-Hedad Tracts
San Antonio, Texas

2018 Aerial Photograph with PRFs
Google Earth Image

PROJECT NO.: FGS-E20225

DATE: November 17, 2020

APPENDIX B

SITE PHOTOGRAPHS

Photo #1 – View from the southern boundary along the Huesta Creek Tributary A improved drainage channel.

Photo #2 – View from the northern boundary along Huesta Creek Tributary A. Photograph taken from atop the box culvert.

Photo #3 – Typical view of vegetation observed in the central portion of the Site.

Photo #4 – Additional view of vegetation observed in the central portion of the Site.

Photo #5 – View of the S-1 opening located in the southeast portion of the site.

Photo #6 – View inside S-1. Note the pushed boulders that formed the feature.

Photo #7 – Typical view of vegetation within the vicinity of S-1. Note plucked boulders and soil deflation areas in the vicinity of S-1.

Photo #8 – View from S-1 along the mounded berm in the southeast portion of the Site.

Photo #9 – View of the S-2 closed depression located near the northern site boundary.

Photo #10 – Typical view of vegetation observed in the vicinity of S-2.

Photo #11 – View of vegetation observed in the eastern portion of the Site.

Photo #12 – View of dense vegetation observed along the southeast boundary of the Site.

Photo #13 – View of S-3 located in the middle of Babcock Road.

Photo #14 – View of S-4 along the west side of Babcock Road.

Photo #15 – View of S-5 along the west side of Babcock Road.

Photo #16 – Typical view of vegetation observed in the southeast portion of the Site.

ATTACHMENTS

GEOLOGIC FORM TCEQ 0585

STRATIGRAPHIC COLUMN

GEOLOGIC ASSESSMENT TABLE

SITE GEOLOGIC MAP

GEOLOGIC FORM TCEQ 0585

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

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

Date: November 17, 2020 Fax: (210) 372-1318

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

Signature of Geologist:

Regulated Entity Name: Miller-Hedad Tracts

Project Information

1. Date(s) Geologic Assessment was performed: November 16, 2020
2. Type of Project:

   ☒ WPAP ☐ AST
   ☐ SCS ☐ UST
3. Location of Project:

   ☒ Recharge Zone
   ☐ Transition Zone
   ☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Crawford and Bexar Stony Soils (Cb)	**D**	**0.67**

** 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" = 60'
   Site Geologic Map Scale: 1" = 60'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☒ Other method(s). Please describe method of data collection: 2018 Aerial Image

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

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

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

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

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

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

    ☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

STRATIGRAPHIC COLUMN

STRATIGRAPHIC COLUMN

[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]

Hydrogeologic subdivision			Group, formation, or member			Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/ permeability type
Upper Cretaceous	Upper confining units		Eagle Ford Group			CU	30 – 50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/ low permeability
			Buda Limestone			CU	40 – 50	Buff, light gray, dense mudstone	Porcelaneous limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability
			Del Rio Clay			CU	40 – 50	Blue-green to yellow-brown clay	Fossiliferous; *Ilymatogyra arietina*	None	None/primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			Karst AQ; not karst CU	2 – 20	Reddish-brown, gray to light tan marly limestone	Marker fossil; *Waconella wacoensis*	None	Low porosity/low permeability
	II		Edwards Group	Person Formation	Cyclic and marine members, undivided	AQ	80 – 90	Mudstone to packstone; *miliolid* 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			Kainer Formation	Grainstone member	AQ	50 – 60	*Miliolid* grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/ recrystallization reduces permeability
	VI				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, *Toucasia* 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 *miliolid* grainstone	Massive, nodular and mottled, *Exogyra texana*	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 the Glen Rose Limestone			CU; evaporite beds AQ	350 – 500	Yellowish tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/relatively impermeable

GEOLOGIC ASSESSMENT TABLE

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: The Miller-Hedad Tracts | **PROJECT NUMBER: FGS-E20255**

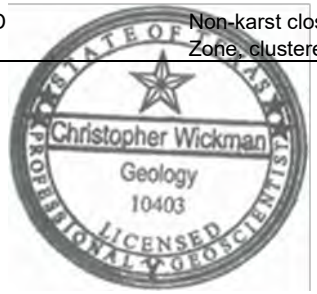
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29° 35' 5.65"	-98° 37' 58.01"	SC	20	Kplc	0.67	0.5	3	-	-	-	-	OF	5	25	25		YES		FLOODPLAIN
S-2	29° 35' 9.58"	-98° 37' 58.07"	CD	5	Kplc	10	15	1.5	-	-	-	-	FV	8	13	13		YES		HILLSIDE
S-3	29° 35' 3.62"	-98° 37' 53.30"	MB	30	Kplc	3	3	?	-	-	-	-	-	5	35	35		YES		FLOODPLAIN
S-4	29° 35' 0.57"	-98° 37' 53.79"	MB	30	Kplc	3	3	?	-	-	-	-	-	5	35	35		YES		FLOODPLAIN
S-5	29° 34' 59.24"	-98° 37' 53.95"	MB	30	Kplc	3	3	?	-	-	-	-	-	5	35	35		YES		FLOODPLAIN

Datum: NAD 83

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



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

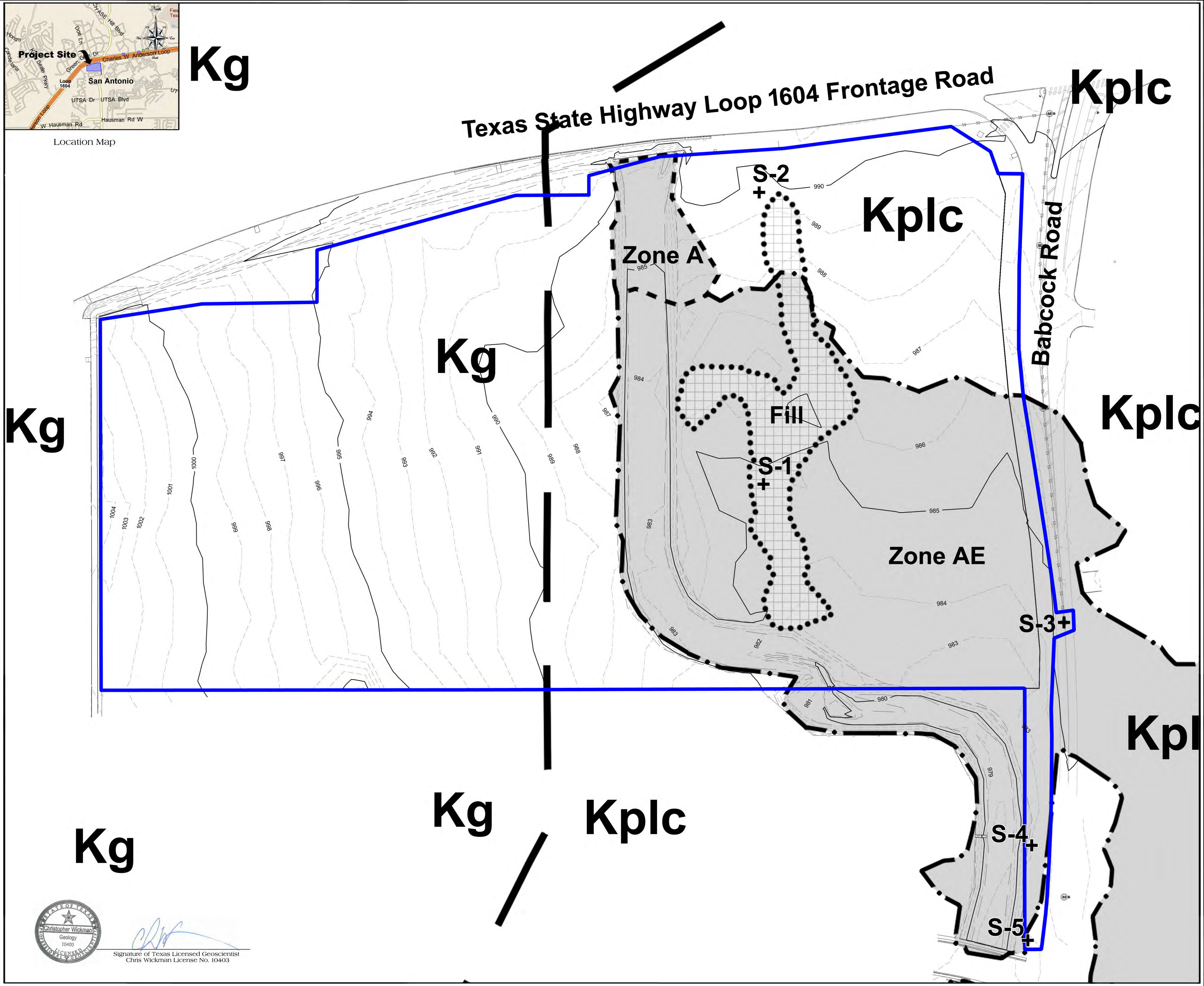
Mr. Chris Wickman, P.G.

Date November 17, 2020

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

FGS Project Nº FGS-E20255

SITE GEOLOGIC MAP



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

Site Geologic Map

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
for the
Miller-Hedad Tracts
Babcock Road
San Antonio, Texas

Frost GeoSciences, Inc. Control # FGS-20255

Legend

Fill - Fill Material
Qal - Alluvium
Kau - Austin Chalk
Kef - Eagle Ford Shale
Kbu - Buda Limestone
Kdr - Del Rio Clay
Kg - Georgetown Limestone
Kplc - Edwards Person Formation Leached and Collapsed Member
Kgr - Glen Rose Formation

S-# - Potential Recharge Feature (PRF)
- Formation Contact
- 100-Year Floodplain - Zone A
- 100-Year Floodplain - Zone AE
- Other Flood Hazard Area - Zone X (shaded)
- Fill Material

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Comal County, Texas: Panel # 48029C0210G, Revised 9/29/10

Fault Information Obtained From:
United States Geological Survey Geologic Framework and Hydrostratigraphy of the Edwards andTrinity Aquifers within Northern Bexar and Comal Counties Texas Map by Allan K. Clark, James G. Golab, and Robert R. Morris, (2016)

Graphic Scale
60 0 30 60 120
(In Feet)

1 inch = 60 feet
Representative Fraction 1:720

Contour Interval - 1 foot

Colliers
Engineering
& Design

MODIFICATION OF A PREVIOUSLY APPROVED PLAN SECTION

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: Matthew Hilbig, P.E.

Date: 4/23/24

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Babcock and Loop 1604
   Original Regulated Entity Name: _____
   Regulated Entity Number(s) (RN): 111111423
   Edwards Aquifer Protection Program ID Number(s): 13001277
   ☒ The applicant has not changed and the Customer Number (CN) is: 605842517
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

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

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

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

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	11.22 WPAP Boundary	11.22 WPAP Boundary
Type of Development	COMMERCIAL	COMMERCIAL
Number of Residential Lots		Net increases of 5.206, 3.142 for Proposed Development , 2.064 for future Development(LOT 4 &5)
Impervious Cover (acres)	2.08 AC	Total increases from 2.08 to 7.286 AC
Impervious Cover (%	18.53%	Increases to 64.94%
Permanent BMPs	Batch Detention, 1 x Jellyfish Filter, VFS	2 x Jellyfish Filter in parallel , VFS
Other		

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

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

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

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

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

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

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 22, 2021

Mr. Blake Honigblum
Abiso Babcock, LP
970 Isom Road
San Antonio, Texas 78216

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Babcock and Loop 1604; Located at the northwest corner of Babcock Road and Loop 1604 intersection; San Antonio, Texas

TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN111111423; Additional ID. No. 13001277

Dear Mr. Honigblum:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Application for the above-referenced project submitted to the San Antonio Regional Office by KFW Engineers on behalf of the Abiso Babcock, LP on March 9, 2021. Final review of the WPAP was completed after additional material was received on March 25, 2021 and April 14, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial development is on a 11.22-acre site with 2.08 acres (18.53 percent) of impervious cover. The project proposes the construction of access drives and driveways on undeveloped tracts along with a deceleration lane. No wastewater will be generated by this project.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, one (1) batch detention basin, one (1) Jellyfish filter system, one (1) engineered vegetative filter strip and three (3) interim vegetative filter strips, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,697 pounds of TSS generated from the 2.08 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the geologic assessment included with the application, the site is located on the Georgetown Formation and the leached and collapsed members of the Person Formation. One (1) non-sensitive geologic feature, one (1) non-karst closed depression and three (3) manmade features in bedrock were noted by the project geologist. The site assessment conducted on March 23, 2021 revealed that the site was generally as described in the application.

SPECIAL CONDITION

I. All permanent pollution abatement measures shall be operational prior to first use of the access drives and driveways within their respective drainage areas.

II. All sediment and/or media removed from the permanent pollution abatement measures during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing

and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

18. 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 San Antonio Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Dianne Pavlicek-Mesa, P.G., of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/dpm

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Armando J. Niebla, P.E., KFW Engineers
Ms. Renee Green, P.E., Bexar County Public Works
Mr. Roland Ruiz, Edwards Aquifer Authority
Mr. Scott Halty, San Antonio Water System

Deed Recordation Affidavit
Edwards Aquifer Protection Plan

THE STATE OF TEXAS §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ who, being duly sworn by me, deposes and says:

(1) That my name is _____ and that I own the real property described below.

(2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.

(3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on _____.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

(4) The said real property is located in _____ County, Texas, and the legal description of the property is as follows:

_____
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this __ day of _____, ____.

_____
NOTARY PUBLIC

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____ 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

_____
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

NARRATIVE OF PROPOSED MODIFICATION

The Shops at Babcock is an undeveloped 11.22-acres site that will be disturbed which lies within the City of San Antonio, in Bexar County, TX, and is located within the Edwards Aquifer Recharge Zone and the Leon Creek Watershed. Project wastewater will be disposed of by conveyance to the existing Leon Creek Wastewater Treatment Plant run by San Antonio Water System (SAWS).

The original and approved design under "BABCOCK AND LOOP 1604." included provisions for access drives, driveways, and a Batch Detention/Water Quality system. However, the owner has approved modifications to this plan. The updated proposal involves the construction of a commercial building (retail) along with associated parking, drives, and utilities, primarily in LOT 3, extending partially into LOTs 4 and 5. This modification will result in the addition of approximately 3.142 acres of impervious cover to the site. Additionally, accounting for 95% impervious cover for LOTs 4 and 5 to accommodate future development will add approximately 2.064 acres of impervious cover. Consequently, the total impervious cover for proposed/future development on the site will amount to 5.206 acres.

In response to these changes, the previously designated Batch Detention/Water Quality system will undergo replacement with a jellyfish filter system. This upgrade is designed to effectively manage total suspended solids (TSS) originating from both the original impervious cover (1.08 acres) in drainage areas (1) and the new impervious cover resulting from the future/proposed development (5.206 acres). Drainage areas 2 and 8, (bypass) previously accounted for in the Batch Detention calculation, will undergo targeted treatment by the proposed jellyfish system, ensuring comprehensive stormwater management.

Moreover, existing interim vegetated filter strips, previously approved in the Water Pollution Abatement Plan), will continue to serve in treating Drainage Areas 3, 4, 5, and 6. Drainage Area 7 will remain under the purview of the existing jellyfish filter system, ensuring continuity in effective stormwater treatment strategies.

The construction process is expected to disturb approximately 4.9 acres of land. To prevent the pollution of storm water runoff originating on-site or up gradient of the site and potentially flowing across and off the site after construction, two Jellyfish Filters system in parallel, designed using TCEQ technical guidance document, complying with Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2015), will be constructed to treat storm water runoff. The required total suspending solids (TSS) treatment for this project to replace the Detention/Water Quality system and the increase of the impervious cover is 3656 pounds. The removal efficiency of the proposed runoff will meet the required overall removal of 80% of increase in TSS. See **Exhibit 3-A & B** for Existing/Proposed drainage areas.

The subject site will be disturbed during construction activities within the limits of construction. These activities will be subject to TPDES requirements. A Storm Water Pollution Prevention Plan will be maintained for the site and temporary BMP's will be implemented to prevent erosion and sedimentation until completion of the permanent BMP. All areas not covered by the building

footprint, sidewalks, or pavement will be stabilized with either sod, landscaping, or gravel when construction is complete and before the removal of temporary BMPs.

There will not be any storage of regulated quantities of hazardous materials. San Antonio Water System (SAWS) will supply potable water and wastewater treatment.

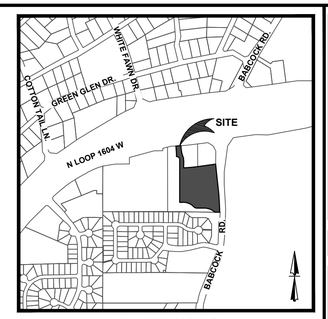
KEY NOTES

1. CHANNEL EASEMENT (VOL. 1340 PG. 994 O.P.R.)
2. 14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 9542 PG. 170 D.P.R.)
3. 5' X 30' ANCHOR EASEMENT (VOL. 9542 PG. 170 D.P.R.)
4. 100 YEAR FLOOD PLAIN (ZONE "A" AS SCALED FROM PANEL #48029C0210G, DATED SEPTEMBER 29, 2010.
5. 12' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 9528 PG. 21 D.P.R.)
6. 14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 20003, PG. 145 P.R.)
7. 14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 20003, PG. 145 P.R.)
8. 16' SANITARY SEWER EASEMENT (VOL. 20003, PG. 145 P.R.)
9. PERMEABLE AND IMPERMEABLE 15' DRAINAGE ACCESS EASEMENT (VOL. 20003, PG. 145 P.R.)
10. PERMEABLE AND IMPERMEABLE 15' DRAINAGE ACCESS EASEMENT (VOL. 20003, PG. 145 P.R.)
11. 25' X 25' TURN-AROUND SEWER EASEMENT (VOL. 20003, PG. 145 P.R.)
12. VARIABLE WIDTH R.O.W. DEDICATION TO THE CITY OF SAN ANTONIO 0.1423 ACRES (VOL. 20003, PG. 145 P.R.)
13. 1% AC ULTIMATE FLOODPLAIN PER FLOOD STUDY PREPARED BY KFW ENGINEERS (VOL. 20003, PG. 145 P.R.)

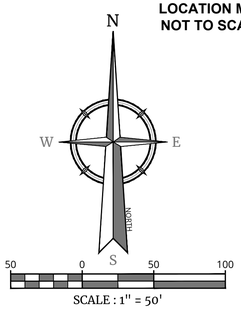
EXISTING UTILITY NOTES:

1. THIS UTILITY PLAN HAS BEEN PREPARED TO THE BEST OF OUR ABILITY USING THE DATA AVAILABLE. EXISTING UTILITY DATA SHOWN ON THIS LAYOUT WAS OBTAINED FROM A SURVEY OF THE VISIBLE FEATURES AT THE SITE AND PUBLIC RECORD MAPS OBTAINED FROM UTILITY COMPANIES.
2. IT IS ESSENTIAL THAT 48 HOURS PRIOR TO CONSTRUCTION ALL UTILITY COMPANIES BE NOTIFIED TO LOCATE AND TAG THEIR UNDERGROUND FACILITIES PRIOR TO EXCAVATION.
3. THE CONTRACTOR NEEDS TO ALLOW FOR THE POSSIBILITY OF UNDETECTED UNDERGROUND UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ALSO, THE CONTRACTOR MUST ALLOW FOR CHANGES DUE TO UTILITIES BEING IN LOCATIONS DIFFERENT FROM THOSE SHOWN ON THE UTILITY RECORD DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND EXPOSING CONFLICTS PRIOR TO CONSTRUCTION.
4. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTING EXISTING UTILITIES DURING CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT.

CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING	TANGENT
C1	41.82	194.50	12°19'13"	41.74	S19° 40' 12"E	20.99
C2	25.05	55.50	25°51'52"	24.84	S12° 53' 53"E	12.74
C3	122.02	173.50	40°17'38"	119.52	N69° 57' 29"W	63.65
C4	28.89	40.50	40°52'33"	28.28	N69° 40' 01"W	15.09
C5	123.78	173.50	40°52'33"	121.17	N69° 40' 01"W	64.66



LOCATION MAP
NOT TO SCALE



SCALE : 1" = 50'

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING CONCRETE
- EXISTING CURB
- EXISTING SIGN
- EXISTING IRR VALVES
- EXISTING WATER METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM MANHOLE
- EXISTING LIGHT POST
- EXISTING FIRE HYDRANT
- EXISTING HANDRAIL
- EXISTING OVERHEAD UTILITY AND POWER POLE
- EXISTING 8" SEWER LINE
- EXISTING 16" WATER LINE
- EXISTING 24" WATER LINE
- EXISTING 30" WATER LINE
- EXISTING GAS LINE
- EXISTING CONTOURS
- EXISTING GUY WIRE
- SITE BENCHMARK SEE DESCRIPTION THIS SHEET

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
MATTHEW M. HILBIG
131150
LICENSED
PROFESSIONAL ENGINEER
04/23/2024

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN
FOR
THE SHOPS AT BABCOCK II
LOT 3
BLOCK 1
SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2024	AB	EW

PROJECT NUMBER: 554-13-05
DRAWING NAME: TCEQ SITE PLAN
SHEET TITLE: TCEQ EXISTING PLAN
SHEET NUMBER: ATT C

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Date: Apr 11, 2024, 11:13am User ID: asalman
File: M:\554\13\05\Design\Exhibits\CAD\WPAP\TCEQ SITE PLAN.dwg

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WATER POLLUTION ABATEMENT PLAN APPLICATION SECTION

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: Matthew Hilbig, P.E.

Date: 4/23/24

Signature of Customer/Agent:

Regulated Entity Name: Babcock and Loop 1604

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): 9.57 acres(Legal Acreage), 11.22 acres disturbed area

3. Estimated projected population: 500

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	37450 SF+89909 SF (FUTURE DEVELOPMENT)=**127359 SF**	÷ 43,560 =	2.923
Parking	99427 SF	÷ 43,560 =	2.283
Other paved surfaces	Total of **90605** SF (Existing) **32234** SF (DA 3,4,5,6)Treated by Approved WPAP (RN#111111423)	÷ 43,560 =	2.08
Total Impervious Cover	317,392 SF	÷ 43,560 =	7.286

Total Impervious Cover 7.286 **÷ Total Acreage** 11.22 **X 100 =** 64.94 **% Impervious Cover**

5. ☑ **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

6. ☑ Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. Type of project:

   ☐ TXDOT road project.
   ☐ County road or roads built to county specifications.
   ☐ City thoroughfare or roads to be dedicated to a municipality.
   ☐ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

   Width of R.O.W.: _____ feet.
   L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100 % Domestic	87,559 Gallons/day
_____ % Industrial	_____ Gallons/day
_____ % Commingled	_____ Gallons/day

TOTAL gallons/day 87,559

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 10/09/2020.
- ☐ 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 Leon Creek Wastewater 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" = 50 '.

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.

FACTORS AFFECTING WATER QUALITY

Materials that are anticipated to be used on site that could be a potential source of contamination include the following:

During Construction:

1. Concrete and Masonry Materials.
2. Wood, plastic, and metal Materials.
3. Tar and hydrocarbons from paving operations.
4. Oil, Grease, fuel, and hydraulic fluid from construction equipment and vehicle drippings.
5. Fertilizers, Herbicides, and Pesticides.
6. Cleaning solutions and detergents.
7. Miscellaneous construction trash and debris.
8. Soil erosion and sedimentation due to construction activity.

Ultimate Use:

1. Pollutants generated from vehicles utilizing the site.
2. Fertilizers, Herbicides, and pesticides used to maintain landscaping.
3. Miscellaneous trash and debris generated from the public.

(This is not intended to be an all-inclusive list)

All practical management practices will be used to reduce the risk of spills and other exposure of any contaminant to surface or groundwater.

VOLUME AND CHARACTER OF STORMWATER

The existing condition of the 11.22-acre tract is developed with access drives, and driveways and consists of 8 drainage area. The drainage areas slopes around 2.0% with a runoff coefficient of 0.80 to 0.96. Please refer to **Exhibit 3A** for all existing runoff calculations.

After construction, the drainage areas will have a weighted runoff coefficient between 0.83 to 0.96. Please refer to Exhibit 3B for all proposed runoff calculations and weighted C-Value calculations. For all calculations on proposed impervious cover, please refer to **Exhibit 3C**. All exhibits can be found at the end of this report.

SUITABILITY LETTER FROM AUTHORIZED AGENT

Not applicable. All wastewater lines will connect to an existing San Antonio Water System (SAWS) sewer line.

EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

Not applicable, Geologic Assessment is attached.

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TEMPORARY STORMWATER SECTION

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: Matthew Hilbig, P.E.

Date: 4/23/24

Signature of Customer/Agent:

Regulated Entity Name: Babcock and Loop 1604

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: Leon 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.

SPILL RESPONSE ACTIONS

If there is an accidental spill on site, the contractor shall respond with appropriate action. The contractor will be required to contact the owner and in turn the owner will contact the TCEQ in the event of a spill on site. In addition to the following guidance, reference the latest version of TCEQ's Technical Guidance Manual (TGM) RG-348 Section 1.4.16.

Cleanup

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

Minor Spills

1. Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
2. Use absorbent materials on small spills rather than hosing down or burying the spill.
3. Absorbent materials should be promptly removed and disposed of properly.
4. Follow the practice below for a minor spill:
   - Contain the spread of the spill.
   - Recover spilled materials.
   - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

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

Spills should be cleaned up immediately:

1. Contain spread of the spill.
2. Notify the project foreman immediately.

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

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

1. Notify the TCEQ by telephone as soon as possible and within 24 hours at (512)339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
3. Notification should first be made by telephone and followed up with a written report.
4. The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5. Other agencies which may need to be consulted include, but not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

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.

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.

POTENTIAL SOURCES OF CONTAMINATION

During Construction:

1. Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping.

2. Hydrocarbons from paving operations.

3. Miscellaneous trash and litter from construction workers and material wrappings.

4. Construction debris.

5. Silt leaving the site.

Ultimate Use:

1. Vehicle drippings within parking lot.

2. Stormwater runoff contamination from fertilizers, herbicides, and pesticides.

3. Groundwater contamination from leakage in wastewater system.

SEQUENCE OF MAJOR ACTIVITIES

Intended Schedule or Sequence of Major Activities:

1. Installation of BMPs
2. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (Approximately 4.09 Acres)
3. Wet and Dry Utility Construction
4. Final Subgrade Preparation (Approximately 4.09 Acre)
5. Installation of Base Materials (Approximately 4.09 Acre)
6. Concrete (foundations, curbs, flatwork) (Approximately 4.09 Acre)
7. Paving Activities (Approximately 4.09 Acre)
8. Site cleanup and Removal of BMPs

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

A: Temporary BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all inlets. A temporary construction entrance will be placed on site to reduce vehicle "tracking" onto adjoining streets. A concrete washout pit will be used to collect all excess concrete during construction. A construction staging area will be used for equipment storage and vehicle maintenance.

BMPs for this project will protect surface water or groundwater from turbid water, phosphorus, sediment, oil, and other contaminants, which may mobilize in storm water flows by slowing the flow of runoff to allow sediment and suspended solid to settle out of the runoff.

Practices may also be implemented on site for interim and permanent stabilization. Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, and other similar measures.

B: The BMPs for this project are designed to allow water to pass through after sedimentation has occurred. Existing flow patterns will be maintained to any naturally-occurring sensitive features that are discovered during construction.

REQUEST TO TEMPORARILY SEAL A FEATURE

There will be no temporary sealing of any naturally occurring features on site.

STRUCTURAL PRACTICES

Structural BMPs will be used to limit runoff discharge of pollutants from exposed areas of the site. BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all storm water inlets to prevent pollutants from entering into the stormwater drainage system. A temporary construction entrance will be placed at the site entry/exit point to reduce tracking onto adjoining streets. A construction staging area will be used onsite to perform all vehicle maintenance and for equipment and material storage. A concrete truck washout pit will be placed on site to provide containment and easier clean up of waste from concrete operations. The location of all structural temporary BMP's is shown on the site plan (**Exhibit 1**) and details and specifications are provided in **Exhibit 2** which can be found at the end of this report under the appropriate tab.

DRAINAGE AREA MAP

An existing drainage area map and proposed/ultimate drainage area map are included with this report as **EXHIBIT 3A** and **EXHIBIT 3B**. The exhibits can be found at the end of this report under the appropriate **EXHIBIT 3** tab.

TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

For this project, there are no disturbed areas over 10 acres within a common drainage watershed. Therefore, no temporary sediment ponds are proposed.

INSPECTION AND MAINTENANCE FOR BMPs

MAINTENANCE

All temporary and permanent erosion and sediment control BMPs will be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair of BMPs will be conducted in accordance with manufacturers' specifications.

All temporary erosion and sediment control BMPs will be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment will be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation will be permanently stabilized as soon as possible.

Erosion and sediment controls are designed to prevent soil erosion and sediment migration offsite, to the extent practicable, which may result from construction activity. This design considers local topography, soil type, and rainfall.

Control measures must be installed and maintained according to the manufacturer's specifications. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permitee must replace or modify the control for site situations.

If sediment ponds are utilized the Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts, and whenever feasible, prior to the next rain event.

The controls must be installed, maintained, and operated in a manner that will limit, to the extent practicable, offsite transport of litter, construction debris, and construction materials.

INSPECTIONS

An inspection will be performed by the qualified personnel, as designated by the permitee, on a weekly basis and after any rainfall event. An inspection and maintenance report shall be made per inspection. An inspection form has been included in this report and in the SWPPP. Based on the inspection results, the controls shall be corrected before the next scheduled inspection.

A log of inspection results will be maintained on-site and will include the name of the inspector, date, major observations, and necessary corrective measures. Reports of maintenance and inspection activities will be maintained on-site, in conformance with the TPDES permit conditions. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWPPP. This report must be signed by the responsible party.

Major observations shall, at a minimum, include the following:

The locations of discharges of sediment or other pollutants from the site;

Locations of BMPs that need to be maintained;

Locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and

Location where additional BMPs are needed.

All needed repairs or modifications will be reported to the contractors to permit the timely implementation of required actions. Necessary repairs of modifications will be implemented within seven days of inspection. The SWPPP will be modified within seven days to reflect any modifications to measures as a result of inspection.

The SWPPP must be amended whenever there is a change in design, construction, operation or maintenance that has a significant effect on the discharge of pollutants to the waters of the United States that was not addressed in the SWPPP.

The SWPPP must be amended when inspections or investigations by site operations, local, state or federal officials indicate that the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from the construction site or otherwise is not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity.

INSPECTION FORM

NAME OF INSPECTOR_____
(Inspector must attach a brief summary of qualifications to this report.)

DATE_____

BEST MANAGEMENT PRACTICES (BMPs)

☐***Vegetative Buffers***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____
_____
_____

☐***Soil Covering (Including mulch and temporary vegetation)***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____
_____
_____

☐***Outlet Protection***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____
_____
_____

☐***Sediment Control Basins***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____
_____
_____

☐***Silt Fence***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Stabilized Entrances/Exits***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Construction Staging Areas***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Inlet Protection***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Gravel Filter Bags***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Vegetated Filter Strip***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Concrete Truck Washout Pit***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Trash Receptacles***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***General Site Cleanliness***

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Other*** _____

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Other*** _____

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

☐***Other*** _____

☐In Compliance ☐Out of Compliance ☐Not Applicable

Comments/Maintenance Required:_____

_____

_____

MAJOR OBSERVATIONS

At a minimum, inspector shall note any evidence of erosion, sediment discharges from the site, BMPs requiring maintenance, BMPs requiring modification, and any additional BMPs required.

CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

INSPECTOR NAME/SIGNATURE

DATE

OWNER NAME/SIGNATURE

DATE

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION

Construction practices shall disturb the minimal amount of existing ground cover as required for land clearing, grading, and construction activity for the shortest amount of time possible to minimize the potential of erosion and sedimentation from the site. Existing vegetation shall be maintained and left in place until it is necessary to disturb for construction activity. For this project the following stabilization practices will be implemented:

1. Hydraulic Mulch and Seeding: Disturbed areas subject to erosion shall be stabilized with hydraulic mulch and/or seeded and watered to provide interim stabilization. For areas that are not to be sodded as per the project landscaping plan, a minimum of 85% vegetative cover will be established to provide permanent stabilization.

2. Sodding and Wood Mulch: As per the project landscaping plan, Sodding and wood mulch will be applied to landscaped areas to provide permanent stabilization prior to project completion.

Records of the following shall be maintained by the permitee in the attached Project Timeline:

a) The dates when major grading activities occur;

b) The dates when construction activities temporarily or permanently cease on a portion of the site; and

c) The dates when stabilization measures are initiated.

Stabilization measures must be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in the following, must be initiated no more that fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased:

Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practical.

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 the site.

In arid areas (areas with an average rainfall of 0-10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and 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 practical. For interim stabilization during drought conditions best management practices will be implemented. These may include but are not limited to geotextile blankets and matting, hydromulch, diversion structures and/or structural controls such as silt fence and rock berms. These BMPs are to be maintained in accordance with the inspection/maintenance schedule provided in Attachment I.

PROJECT TIMELINE

DATES WHEN MAJOR GRADING ACTIVITIES OCCUR	
Date	Construction Activity

DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE	
Date	Construction Activity

DATES WHEN STABILIZATION MEASURES ARE INITIATED	
Date	Stabilization Activity

Colliers
Engineering
& Design

PERMANENT STORMWATER SECTION

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Matthew Hilbig, P.E.

Date: 4/23/24

Signature of Customer/Agent

Regulated Entity Name: Babcock and Loop 1604

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

2. ☑ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   ☑ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

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

☐ N/A

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

   ☐ N/A

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

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☑ The site will not be used for low density single-family residential development.

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

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☑ The site will not be used for multi-family residential developments, schools, or small business sites.

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

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

☑ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☑ **Attachment C - BMPs for On-site Stormwater**.

☑ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

8. ☑ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

9. ☑ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☑ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☑ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☑ Design calculations (TSS removal calculations)

☑ TCEQ construction notes

☑ All geologic features

☑ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☑ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☑ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☑ Signed by the owner or responsible party
    ☑ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☑ A discussion of record keeping procedures

    ☐ N/A

12. ☐ **Attachment H - Pilot-Scale Field Testing Plan**. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

    ☑ N/A

13. ☐ **Attachment I -Measures for Minimizing Surface Stream Contamination**. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

    ☑ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

14. ☑ The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

    ☐ N/A

15. ☑ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    ☐ N/A

20% OR LESS IMPERVIOUS COVER WAIVER

Not applicable.

BMPs For Up-Gradient Stormwater

The public drainage channel adjacent to the subject site will capture the Up-Gradient storm water being generated by the LOT 2 - 10.84 acres of undeveloped land.

BMPs For On-Site Stormwater

Three (3) permanent BMP and four (4) interim BMP devices will be used to treat storm water runoff from the site. Four (4) Existing Vegetated Filter Strips, one (1) Existing Jellyfish Filter, and Two (2) Proposed Jellyfish Filter in parallel will be used to treat the contaminated stormwater runoff. The required amount of pollutant load to be treated by the BMPs are 5,947 pounds TSS, based on the 7.286 acres of impervious cover to be constructed.
Our future / proposed development will generate 5,129 lbs. of TSS on-site. Additionally, 180 lbs of TSS will be generated upstream of DA-2 and 33 lbs will be generated form DA-8, but not treated by a BMP. This uncaptured TSS has been accounted for by oversizing the BMP units.

Please reference the Exhibits Section at the end of this report for construction plans and specifications.

Table 1

Drainage Area	Impervious Cover Increase EX/PRO/FUTURE (Acres)	Proposed TSS Generated
DA-1	6.286	5,129
DA-2	0.22	180
DA-3	0.04	33
DA-4	0.05	41
DA-5	0.05	41
DA-6	0.10	82
DA-7	0.50	408
DA-8	0.04	33
Total	**7.286**	**5,947**

Actual TSS Removal

Drainage Area	PBMP	Actual TSS Removal
DA-1	Proposed JellyFish Filters	5,129
DA-2	Overtrearment with Proposed JellyFish Filter	180
DA-3	1 x VFS Treated by Approved WPAP (RN#111111423)	33
DA-4	1 x VFS Treated by Approved WPAP (RN#111111423)	41
DA-5	1 x VFS Treated by Approved WPAP (RN#111111423)	41
DA-6	1 x VFS Treated by Approved WPAP (RN#111111423)	82
DA-7	Existing Jellyfish -Treated by Approved WPAP (RN#111111423)	408
DA-8	Overtrearment with Proposed JellyFish Filter	33
Total		**5,947**

BMPs For Surface Streams

Not applicable. There are no existing surface streams onsite, therefore additional BMP's are not required.

REQUEST TO SEAL A FEATURE

There will be no sealing of any naturally occurring features on site.

CONSTRUCTION PLANS

Calculations for the load removal requirements for the project and the load removal provided by the permanent BMP's are provided in the attached spreadsheet, which have been signed and sealed by a professional engineer licensed in the State of Texas. The load removal requirements are derived from the equations from the TCEQ Technical Guidance Manual based upon project area and increase in impervious cover. All stormwater runoff with the exception of the driveways, will be treated by the permanent BMP and meet the overall required removal of 80% of the increase in Total Suspended Solids. Provided within the calculations is a summary of the amount of pollutant load required to be removed from the drainage areas and the amount of removal provided by the permanent BMP's.

Construction plans, details, specifications, and constructions notes are provided in **Exhibit 4** which is attached at the end of this report under the appropriate tab.

PERMANENT BEST MANAGEMENT PRACTICES INSPECTION AND MAINTENANCE PLAN

The attached inspection and maintenance plan outline the procedures necessary to maintain the performance of the Permanent Best Management Practices for this project. It should be noted that the plan provides guidelines that may have to be adjusted dependent on site specific and weather-related conditions.

It is the responsibility of the responsible party to contract with a representative to provide the inspections and maintenance as outlined in the plan for the duration of the project. The responsible party will maintain this responsibility until it is assumed or transferred to another entity in writing. If the property is leased or sold, the responsibility for the maintenance will be required to be transferred through the lease agreement, binding covenants, closing documents, or other binding legal instrument.

I, the responsible party, have read and understand the requirements of the attached Inspection and Maintenance Plan for the proposed Permanent Best Management Practices for my project. I acknowledge that I will maintain responsibility for the implementation and execution of the plan until the responsibility is transferred to or assumed by another party in writing through a binding legal instrument.

Responsible Party: Abiso Babcock, LP

By: _____ Date: 04/11/2024

MAINTENANCE GUIDELINES FOR A JELLYFISH FILTER

Jellyfish cartridges are passively backwashed automatically after each storm event, which removes accumulated sediment from the membranes and significantly extends the service life of the cartridges and the maintenance interval. If required, the cartridges can be easily manually backwashed without removing the cartridges. Additionally, the lightweight cartridges can be removed by hand and externally rinsed, and rinsed cartridges then re-installed. These simple maintenance options allow for cartridge regeneration, thereby minimizing cartridge replacement costs and life-cycle treatment costs while ensuring long-term treatment performance.

Regular inspection and maintenance are proven, cost-effective ways to maximize water resource protection for all stormwater pollution control practices, and are required to insure proper functioning of the Jellyfish® Filter. Inspection of the Jellyfish® Filter is performed from the surface, while proper maintenance requires a combination of procedures conducted from the surface and with worker entry into the structure.

Please refer to the following information and guidelines before conducting inspection and maintenance activities:

- **When is inspection needed?**

Post-construction inspection is required prior to putting the Jellyfish Filter into service.

Routine inspections are recommended quarterly during the first year of operation to accurately assess the sediment and floatable pollutant accumulation, and to ensure that the automatic backwash feature is functioning properly.

Inspection frequency in subsequent years is based on the maintenance plan developed in the first year, but must occur annually at a minimum.

Inspections should also be performed immediately after oil, fuel or other chemical spill.

- **When is maintenance service needed?**

The unit must be cleaned annually. This cleaning includes removal and appropriate disposal of all water, sediment, oil and grease, and debris that has accumulated within the unit. The Jellyfish Filter is inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. Since some of the maintenance procedures require manned entry into the Jellyfish structure, only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

Filter cartridges should be tested for adequate flow rate, every 12 months and cleaned and re-commissioned, or replaced if necessary. A manual backflush must be performed on a single draindown cartridge using a Jellyfish Cartridge Backflush Pipe (described in the Jellyfish® Filter Owner's Manual). If the time required to drain 14 gallons of backflush water from the Backflush Pipe (from top of pipe to the top of the open flapper valve) exceeds 15 seconds, it is recommended to perform a manual backflush on each of the cartridges. After the manual backflush, the draindown test should be repeated on a single cartridge to determine if the cartridge can drain 14 gallons of water in 15 seconds. If the cartridge still does not achieve the design flow rate, it must be replaced.

The unit should be cleaned out immediately after an oil, fuel or chemical spill.

- **External Rinsing**

This cartridge cleaning procedure is performed by removing the cartridge from the cartridge deck and externally rinsing the filtration tentacles using a low-pressure water sprayer, as described in the Jellyfish® Filter Owner's Manual. If this procedure is performed within the structure, the cartridge or individual filtration tentacles should be rinsed while safely suspended over the maintenance access wall opening in the cartridge deck, such that rinsate flows into the lower chamber of the Jellyfish® Filter. If the rinsing procedure is performed outside the structure, the cartridge or individual filtration tentacles should be rinsed in a suitable basin such as a plastic barrel or tub, and rinsate subsequently poured into the maintenance access wall opening in the cartridge deck. Sediment is subsequently removed from the lower chamber by standard vacuum service.

Manufacturer Contact Information:

CONTECH Engineered Solutions LLC Email:
info@conteches.com
1-800-338-1122
Website: https://www.conteches.com/

Mail or other: 9100 Centre Pointe Drive
West Chester, OH 45069

PILOT-SCALE FIELD TESTING PLAN

Not applicable. The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMP's and measures for this site, therefore pilot-scale field testing is not required.

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

No surface streams exist onsite. During the construction phase, temporary BMP's, both structural and non structural, will be used to prevent pollution from leaving the site. All disturbed areas will be re-vegetated as a soon as practical.

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AGENT AUTHORIZATION FORM

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

I Blake Honigblum,
Print Name

Owner,
Title - Owner/President/Other

of Abiso Babcock, LP,
Corporation/Partnership/Entity Name

have authorized Matthew Hilbig, P.E.
Print Name of Agent/Engineer

of Colliers Engineering & Design
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

4/11/2024
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Blake Honigblum 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 11th day of April, 2024.

ANDREW BAGNALL NOTARY PUBLIC STATE OF TEXAS ID 13464283-1 EXP. 11-10-2027

NOTARY PUBLIC

Andrew Bagnall
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/10/2027

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APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Babcock and Loop 1604

Regulated Entity Location: SW Corner of W. Loop 1604 & Babcock Rd., San Antonio, Texas

Name of Customer: Abiso Babcock, LP

Contact Person: Blake Honigblum Phone: 210-802-0110

Customer Reference Number (if issued):CN 605842517

Regulated Entity Reference Number (if issued):RN 111111423

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☑ Bexar ☐ Medina ☐ Uvalde

☐ Comal ☐ Kinney

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

☐ Austin Regional Office

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

☑ San Antonio Regional Office

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

Site Location (Check All That Apply):

☑ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	11.22 Acres	$ 6,500
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 4/23/24

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

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CORE DATA FORM

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 605842517		RN 111111423

SECTION II: Customer Information

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

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
803821131	32076556078	85-3996766	

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

12. Number of Employees	13. Independently Owned and Operated?
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ Yes ☐ No

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

☒ Owner ☐ Operator ☐ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:								
	120 Austin Highway, Suite 105							
	City	San Antonio	State	TX	ZIP	78209	ZIP + 4	5339

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	Blake@abiso-re.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(210) 802-0110		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Babcock Rd & Loop 1604

23. Street Address of the Regulated Entity: *(No PO Boxes)*							
	City		State		ZIP		ZIP + 4	
24. County	Bexar						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Southwest Corner of Babcock Road and Loop 1604 Intersection				
26. Nearest City			State	Nearest ZIP Code	
San Antonio			TX	78249	
27. Latitude (N) In Decimal:	29.584928		28. Longitude (W) In Decimal:	-98.632380	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	35	5.74	-98	37	56.57

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)
1542	5812	236220	722110

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

Commercial Development

34. Mailing Address:							
	City		State		ZIP		ZIP + 4	
35. E-Mail Address:							

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

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

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

SECTION IV: Preparer Information

40. Name:	Matthew Hilbig, P.E.	41. Title:	Senior Project Manager

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(726) 223-4925			matthew.hilbig@collierseng.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:	Colliers Engineering & Design	Job Title:	Senior Project Manager
Name *(In Print)*:	Matthew Hilbig, P.E.	Phone:	(726) 223-4925
Signature:		Date:	4/23/24

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EXHIBIT 1
TCEQ SITE PLAN

LEGAL DESCRIPTION

BEING A 19.72 ACRES IN N.C.B.14865, SITUATED IN THE ANSELMO PRU SURVEY NO. 20, A-574, THE FRANK FEILLE SURVEY NO. 21, A-1273, AND THE RAMON ORTEGA SURVEY NO. 435, A-987, CITY OF SAN ANTONIO, BEXAR COUNTY, TEXAS.

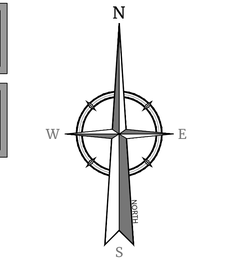
BENCHMARKS

BM 303: SET PK NAIL WITH WASHER IN CONCRETE AT EL: 1001.38' SET BY KFW SURVEYING

BM 304: SET PK NAIL WITH WASHER IN CURB AT EL: 991.10' SET BY KFW SURVEYING

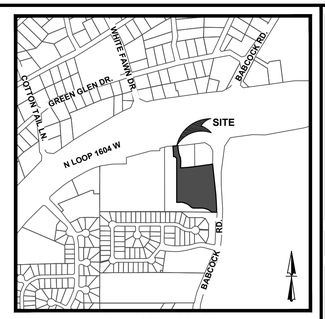
COORDINATION NOTE:

1. **CONTACT SPECTRUM TO COORDINATE CABLE TV SERVICE. (844)-584-2058.**
2. **CONFIRM REQUIREMENTS AND COORDINATE WITH CPS (CITY PUBLIC SERVICE) FOR INSPECTIONS AND CONDUIT SIZES FOR PRIMARY AND SECONDARY ELECTRICAL SERVICES. (210)-353-2256.**
3. **CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.**
4. **CONTRACTOR TO COORDINATE WITH CPS (CITY PUBLIC SERVICE) TO PLAN GAS SERVICES. (210)-353-2256.**
5. **CONTRACTOR TO COORDINATE WITH SAWS (SAN ANTONIO WATER SYSTEM) TO PLAN WATER AND SANITARY SEWER SERVICES. (210)-233-2009.**
6. **CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.**



CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING	TANGENT
C1	41.62	194.50	12°15'13"	41.74	S19° 40' 12"E	20.99
C2	25.05	55.50	25°51'32"	24.84	S12° 53' 53"E	12.74
C3	122.02	173.50	40°17'38"	119.52	N69° 57' 29"W	63.65
C4	28.89	40.50	40°52'33"	28.28	N69° 40' 01"W	15.09
C5	123.78	173.50	40°52'33"	121.17	N69° 40' 01"W	64.66

CAUTION!!! *THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION.THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.*



LOCATION MAP
NOT TO SCALE

TCEQ-0592 (Rev. JULY 15, 2015)

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Notes

1. *A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:*
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. *ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.*
3. *IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURINGCONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDEDIMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANYSENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BERESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES INORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSEIMPACTS TO WATER QUALITY.*
4. *NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.*
5. *PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.*
6. *ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.*
7. *SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.*
8. *LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.*
9. *ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.*
10. *IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.*
11. *THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:*
   - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
   - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
   - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
12. *THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:*

   A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

   B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

   C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

Austin Regional Office
12100 PARK 35 CIRCLE, BUILDING
Austin, Texas 8753-1808
Phone(512) 339-2929
Fax (512) 339-3795

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

GENERAL:

1. *ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.*

INSTALLATION:

1. *ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.*
2. *CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.*

MAINTENANCE AND INSPECTION:

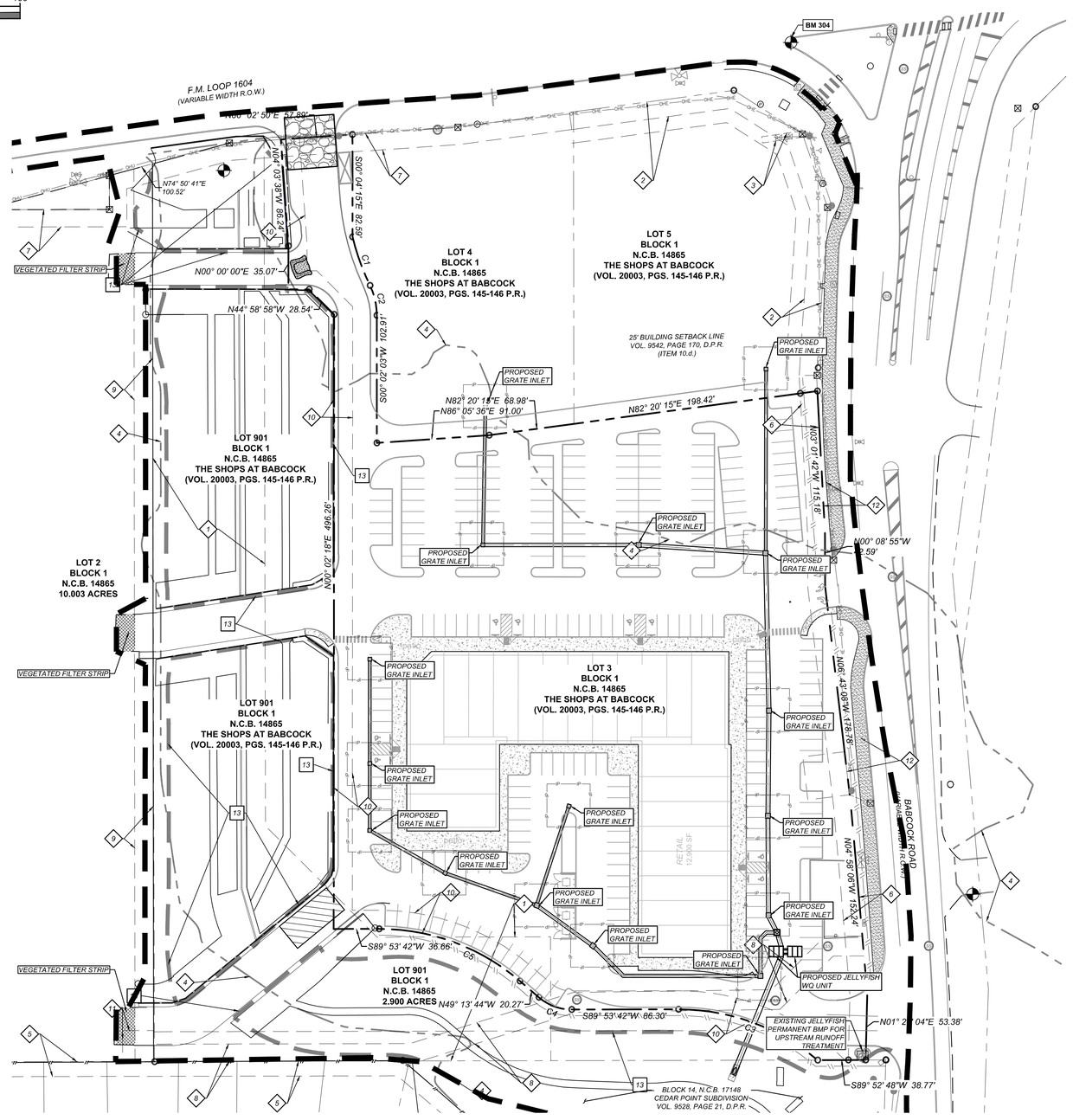
1. *CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
2. *LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.*

PROJECT COMPLETION:

3. *ALL DISTURBED AREAS ARES NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMP'S AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).*
4. *BEST MANAGEMENT PRACTICES MAY BE REMOVED IN PHASES IF ALL UPGRADIENT AREAS HAVE BEEN STABILIZED PER SWPPP AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.*
5. *CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT).*

TEMPORARY VEGETATION:

THE PREFERRED OPTION DURING THE CURRENT DROUGHT WITH REGARDS TO RE-VEGETATION IS TO PREPARE THE SEEDBED, ADDING TOPSOIL/COMPOST AS REQUIRED, PLACE FERTILIZER AND PERMANENT SEED MIX, AND THEN CORRECTLY INSTALL A SOIL RETENTION BLANKET (SRB) OR CHANNEL LINER, WHICHEVER IS REQUIRED FOR THE LOCATION. NO WATERING TO ESTABLISH VEGETATION WOULD BE REQUIRED. INFORMATION ON APPROVED SRB AND CHANNEL LINERS FOR THE SLOPE AND SOIL TYPE FOR A SPECIFIC LOCATION CAN BE FOUND AT http://www.dot.state.tx.us/business/doing_business/product_evaluation/erosion_control.htm
INSTALLATION SHOULD BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION WHICH SHOULD BE PROVIDED TO THE UTILITY INSPECTOR.



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- WPAP BOUNDARY
- EXISTING CONCRETE
- EXISTING CURB
- EXISTING SIGN
- EXISTING IRR VALVES
- EXISTING WATER METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM MANHOLE
- EXISTING LIGHT POST
- EXISTING FIRE HYDRANT
- EXISTING HANDRAIL
- EXISTING OVERHEAD UTILITY AND POWER POLE
- EXISTING GUY WIRE
- SITE BENCHMARK SEE DESCRIPTION THIS SHEET
- PROPOSED CURB
- PROPOSED RIBBON CURB
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED SACK GABIONS
- PROPOSED CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA
- PROPOSED CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA
- PROPOSED CONCRETE TRUCK WASHOUT PIT

KEY NOTES

1. *CHANNEL EASEMENT (VOL. 1340 PG. 994 O.P.R.)*
2. *14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 9542 PG. 170 D.P.R.)*
3. *5' X 30' ANCHOR EASEMENT (VOL. 9542 PG. 170 D.P.R.)*
4. *100 YEAR FLOOD PLAIN (ZONE "A" AS SCALED FROM PANEL #48029C0210G, DATED SEPTEMBER 29, 2010.*
5. *12' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 9528 PG. 21 D.P.R.)*
6. *14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 20003, PG. 145 P.R.)*
7. *14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 20003, PG. 145 P.R.)*
8. *16' SANITARY SEWER EASEMENT (VOL. 20003, PG. 145 P.R.)*
9. *PERMEABLE AND IMPERMEABLE 15' DRAINAGE ACCESS EASEMENT (VOL. 20003, PG. 145 P.R.)*
10. *PERMEABLE AND IMPERMEABLE 15' DRAINAGE ACCESS EASEMENT (VOL. 20003, PG. 145 P.R.)*
11. *25' X 25' TURN-AROUND SEWER EASEMENT (VOL. 20003, PG. 145 P.R.)*
12. *VARIABLE WIDTH R.O.W. DEDICATION TO THE CITY OF SAN ANTONIO 0.1423 ACRES (VOL. 20003, PG. 145 P.R.)*
13. *1% AC ULTIMATE FLOODPLAIN PER FLOOD STUDY PREPARED BY KFW ENGINEERS (VOL. 20003, PG. 145 P.R.)*

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131150
LICENSED PROFESSIONAL ENGINEER
04/23/2024

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN
FOR
THE SHOPS AT BABCOCK II

LOT 3
BLOCK 1

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2024	AB	EW

PROJECT NUMBER: 554-13-05
DRAWING NAME: PRO SITE PLAN

SHEET TITLE: WPAP SITE PLAN

SHEET NUMBER: EX-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Date: Apr 15, 2024, 2:22pm User ID: abustillos
File: M:\554\13\03\Design\Exhibits\CAD\WPAP\PRO SITE PLAN.dwg

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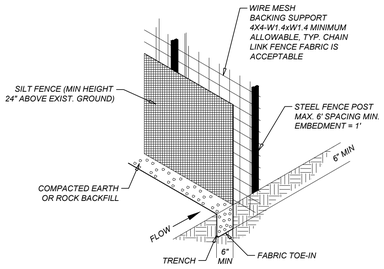
EXHIBIT 2
EROSION CONTROL DETAILS



ISOMETRIC PLAN VIEW

SILT FENCE

MATERIALS:
(1) SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD. MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.

(2) FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION. SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FL2, AND BRINDELL HARDNESS EXCEEDING 140.

(3) WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION:
(1) STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1- FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

(2) LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/ 00 FEET OF FENCE.

(3) THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN- SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

(4) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

(5) SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

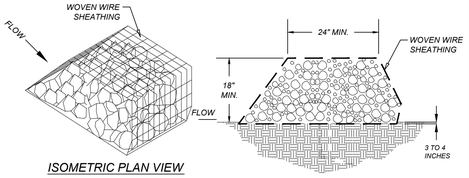
(6) SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STONE FLOW OR DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES:
(1) INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL.
(2) REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

(3) REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

(4) REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

(5) WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.



ISOMETRIC PLAN VIEW

CROSS SECTION

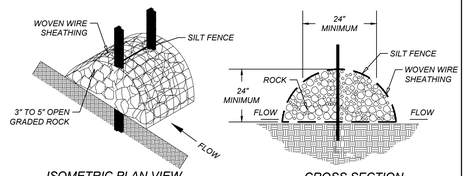
ROCK BERM

MATERIALS:
(1) THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

(2) CLEAN, OPEN GRADED 3- TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION:
(1) LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
(2) BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
(3) PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM FIGURE 1-2(B), TO A HEIGHT NOT LESS THAN 18".
(4) WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AIRL THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
(5) BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
(6) THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

INSPECTION AND MAINTENANCE GUIDELINES:
(1) INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
(2) REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
(3) REPAIR ANY LOOSE WIRE SHEATHING.
(4) THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
(5) THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
(6) THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.



ISOMETRIC PLAN VIEW

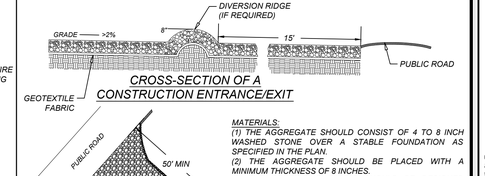
CROSS SECTION

HIGH SERVICE ROCK BERM

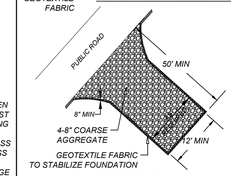
MATERIALS:
(1) SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
(2) FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION. SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FL2, AND BRINDELL HARDNESS EXCEEDING 140. REBAR (EITHER #5 OR #6) MAY ALSO BE USED TO ANCHOR THE BERM.
(3) WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.
(4) THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH. AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
(5) CLEAN, OPEN GRADED 3- TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION:
(1) LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1-INCH OPENINGS.
(2) INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE DESCRIBED IN SECTION 2.4.3.
(3) PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN IN THE DIAGRAM (FIGURE 1-2B). TO A HEIGHT NOT LESS THAN 24 INCHES. CLEAN, OPEN GRADED 3- 5" DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCK MAY BE USED.
(4) WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
(5) THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.

INSPECTION AND MAINTENANCE GUIDELINES:
(1) INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
(2) REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER.
(3) REPAIR ANY LOOSE WIRE SHEATHING.
(4) THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
(5) THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
(6) THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.



CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT



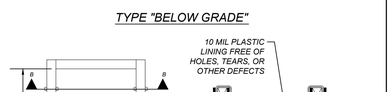
TEMPORARY CONSTRUCTION ENTRANCE/EXIT

MATERIALS:
(1) THE AGGREGATE SHOULD CONSIST OF 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
(2) THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8 INCHES.
(3) THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD2, A MULLEN BURST RATING OF 140 LB/IN2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
(4) IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4 INCH DIAMETER WASHED STONE OR COMMERCIAL RACK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION: (NORTH CAROLINA, 1993)
(1) AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
(2) THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
(3) THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
(4) IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
(5) PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
(6) PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
(7) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
(8) INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

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

STABILIZED CONSTRUCTION ENTRANCE / EXIT

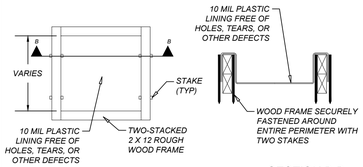


PLAN VIEW

SECTION A-A

10 MIL PLASTIC LINING FREE OF HOLES, TEARS, OR OTHER DEFECTS

TYPE "BELOW GRADE"



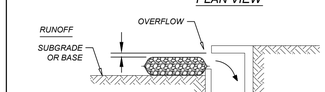
PLAN VIEW

SECTION B-B

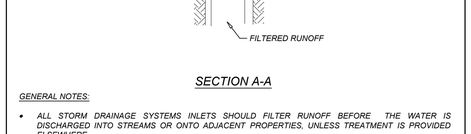
TYPE "ABOVE GRADE"

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 AND AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.

CONCRETE TRUCK WASHOUT PIT



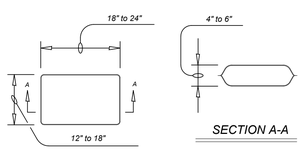
PLAN VIEW



SECTION A-A

GENERAL NOTES:
- ALL STORM DRAINAGE SYSTEMS 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.
- ALL 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 CONCRETE BLOCKS. PERIODICALLY, THE GRAVEL SHOULD BE RAKED TO INCREASE INFILTRATION AND FILTERING OF RUNOFF WATERS.

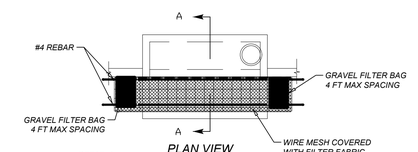
CURB INLET PROTECTION GRAVEL FILTER BAGS



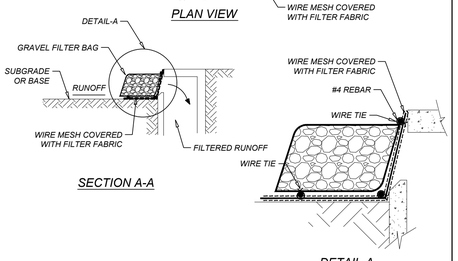
SECTION A-A

GENERAL NOTES:
- THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN UNIT WEIGHT OF 4 OUNCES/SY, 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



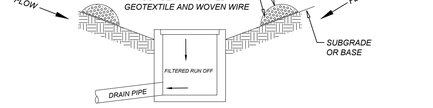
PLAN VIEW



SECTION A-A

DETAIL-A

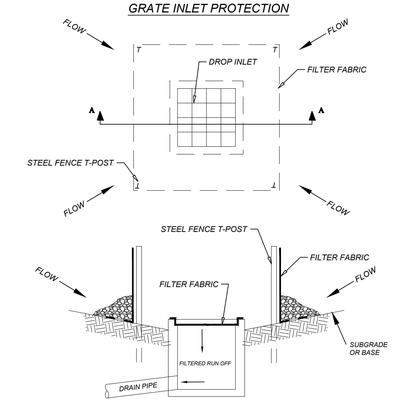
CURB INLET PROTECTION (ALTERNATE)



CROSS-SECTION A-A

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.

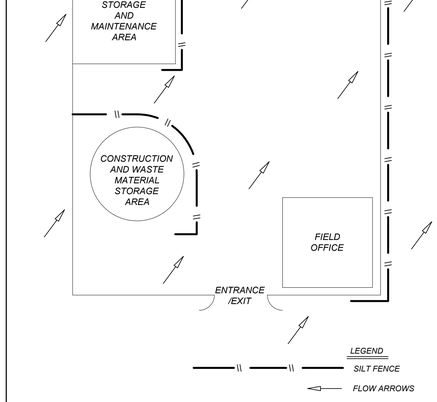
GRATE INLET PROTECTION



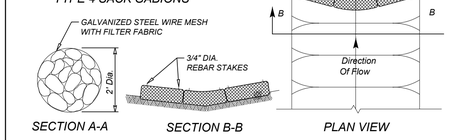
CROSS-SECTION A-A

GENERAL NOTES:
- ALL MATERIALS AND ERECTION PROCEDURES WILL BE THE SAME AS DESCRIBED IN THE STANDARD SILT FENCE REQUIREMENTS.

GRATE INLET PROTECTION (ALTERNATE)



TYPICAL CONSTRUCTION STAGING AREA



TYPE 4 SACK GABIONS

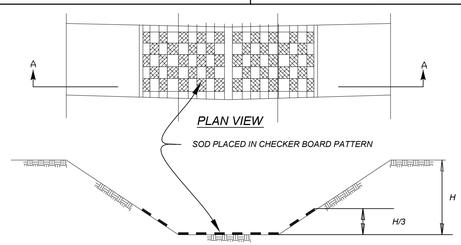
SECTION A-A

SECTION B-B

PLAN VIEW

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



SECTION A-A

- CHANNEL TO BE STABILIZED WITH SOD PLACED IN A CHECKER BOARD PATTERN TOM THE CHANNEL BOTTOM AND ON THE SIDES UP TO 1/3 THE DEPTH OF CHANNEL.

CHANNEL LINING

REV	DESCRIPTION	DRAWN BY	DATE

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STATE OF TEXAS
MATTHEW M. HILBIG
131150
LICENSED PROFESSIONAL ENGINEER
04/23/2024

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN

FOR

THE SHOPS AT BABCOCK II

LOT 3
BLOCK 1

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

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AS SHOWN	APRIL 2024	AB	EW

PROJECT NUMBER: 554-13-05

DRAWING NAME: EX (EROSION CONTROL DETAIL SHEET)

SHEET TITLE: EROSION CONTROL DETAIL SHEET

SHEET NUMBER: EX 2

Date: Apr 04, 2024, 11:41am User ID: abustillos
File: M:\554\13\03\Design\Civil\C3.1 (EROSION CONTROL DETAIL SHEET).dwg

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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& Design

EXHIBIT 3
DRAINAGE AREA MAPS/ IMPERVIOUS COVER

EXISTING RUNOFF CONDITIONS

DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
DA-1	6.53	0.80	14	5.51	28.78	7.67	40.07	9.64	50.36
DA-2	0.22	0.96	9	6.60	1.39	9.23	1.95	11.68	2.47
DA-3	0.04	0.96	5	7.94	0.30	11.14	0.43	14.01	0.54
DA-4	0.05	0.96	5	7.94	0.38	11.14	0.53	14.01	0.67
DA-5	0.05	0.96	5	7.94	0.38	11.14	0.53	14.01	0.67
DA-6	0.27	0.96	5	7.94	2.06	11.14	2.89	14.01	3.63
DA-7	2.23	0.83	9	6.60	12.22	9.23	17.08	11.68	21.62
DA-8	0.04	0.96	5	7.94	0.30	11.14	0.43	14.01	0.54

DRAINAGE AREA	*AREA (ACRES)*	*EXISTING IMPERVIOUS COVER (ACRES)*	*EXISTING PBMP*	*TSS REQUIRED REMOVAL (LBS/YR)*	*TSS DESIGNED REMOVAL (LBS/YR)*
DA-1	6.53	1.08	BATCH DETENTION	881	1094
DA-2	0.22	0.22	OVERTREATMENT WITH BATCH DETENTION	180	0
DA-3	0.04	0.04	VEGETATED FILTER STRIP	33	33
DA-4	0.05	0.05	VEGETATED FILTER STRIP	41	41
DA-5	0.05	0.05	VEGETATED FILTER STRIP	41	41
DA-6	0.27	0.10	VEGETATED FILTER STRIP	82	82
DA-7	2.22	0.50	JELLYFISH FILTER	408	408
DA-8	0.04	0.04	OVERTREATMENT WITH BATCH DETENTION	33	0
DRAINAGE CHANNEL	3.25	N/A	N/A	N/A	N/A
TOTAL	11.22 (ON SITE) 1.45 (OFF SITE)	2.08		1699	1699

DA-1 (6.53 ac)

Description	Area	C
Undeveloped	5.45	0.77
Paved	1.08	0.96
	Weighted C	0.80

DA-2 (0.22 ac)

Description	Area	C
Paved	0.22	0.96
	Weighted C	0.96

DA-3 (0.04 ac)

Description	Area	C
Paved	0.04	0.96
	Weighted C	0.96

DA-4 (0.05 ac)

Description	Area	C
Paved	0.05	0.96
	Weighted C	0.96

DA-5 (0.05 ac)

Description	Area	C
Paved	0.05	0.96
	Weighted C	0.96

DA-6 (0.27 ac)

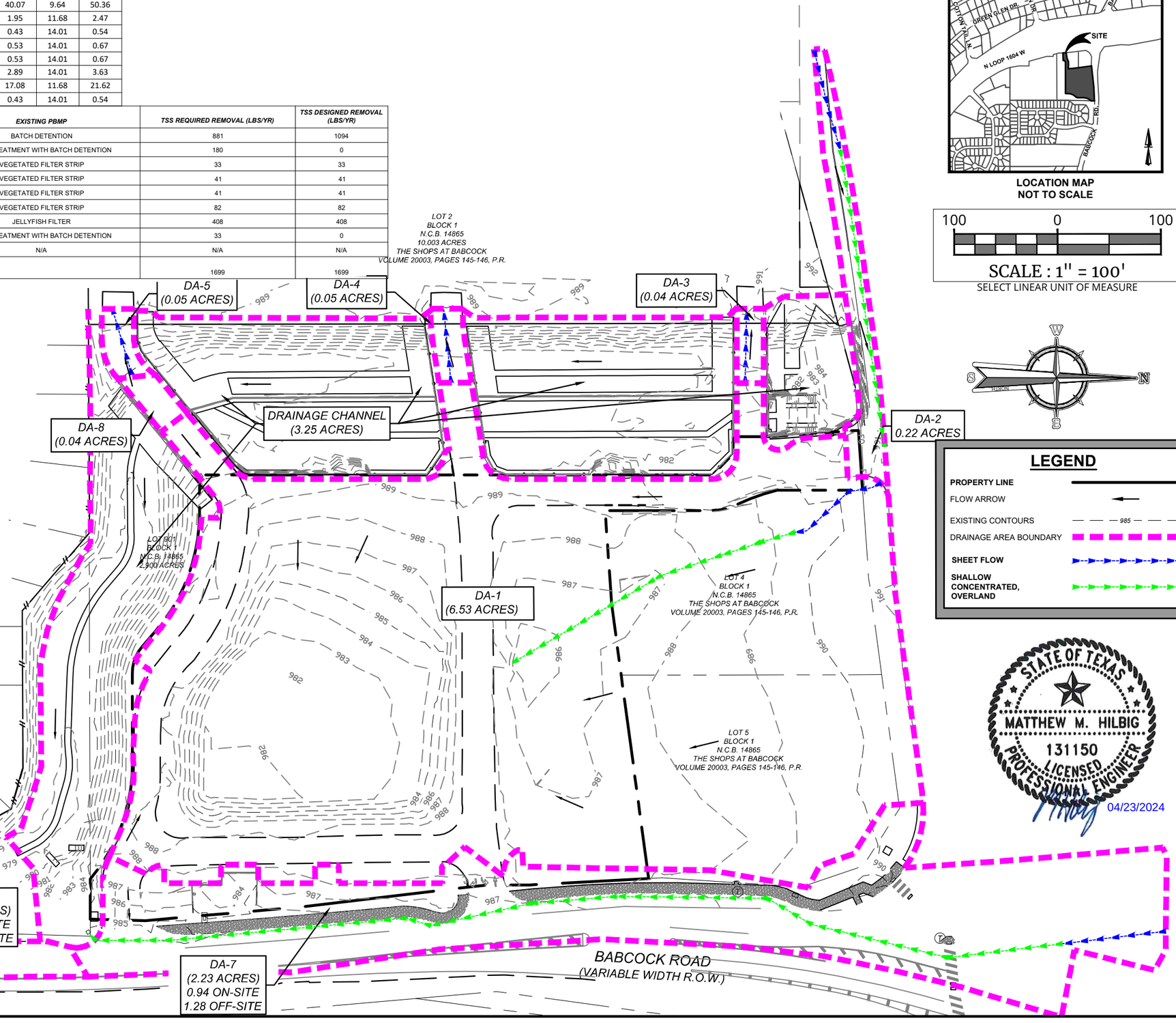
Description	Area	C
Paved	0.10	0.96
Paved (Off-site)	0.17	0.96
	Weighted C	0.96

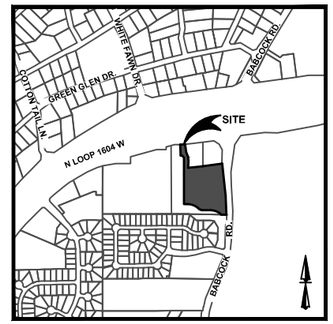
DA-8 (0.04 ac)

Description	Area	C
Paved	0.04	0.96
	Weighted C	0.96

DA-7 (2.22 ac)

Description	Area	C
Paved	0.50	0.96
Undeveloped	0.44	0.39
Undeveloped (Off-site)	0.08	0.39
Paved (Off-site)	1.2	0.96
	Weighted C	0.83





LOCATION MAP
NOT TO SCALE

100 0 100

SCALE : 1" = 100'

SELECT LINEAR UNIT OF MEASURE

LEGEND

- **PROPERTY LINE**
- FLOW ARROW
- EXISTING CONTOURS — 985 —
- DRAINAGE AREA BOUNDARY
- **SHEET FLOW**
- **SHALLOW CONCENTRATED, OVERLAND**

STATE OF TEXAS
MATTHEW M. HILBIG
131150
LICENSED
PROFESSIONAL ENGINEER
04/23/2024

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REV	DATE	DRAWN BY	DESCRIPTION

EXISTING DRAINAGE AREA MAP
FOR

BABCOCK & LOOP 1604 - PHASE 5

N. 1604 W. AND BABCOCK
SAN ANTONIO
BEXAR
TEXAS 78249

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194650

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AS SHOWN	04/05/2024	AS	MH

PROJECT NUMBER: 554-13-05
DRAWING NAME: EX DAM

SHEET TITLE: EXISTING DRAINAGE AREA MAP
FIELD BOOK: XX PAGE:XX

SHEET NUMBER: EX 3A

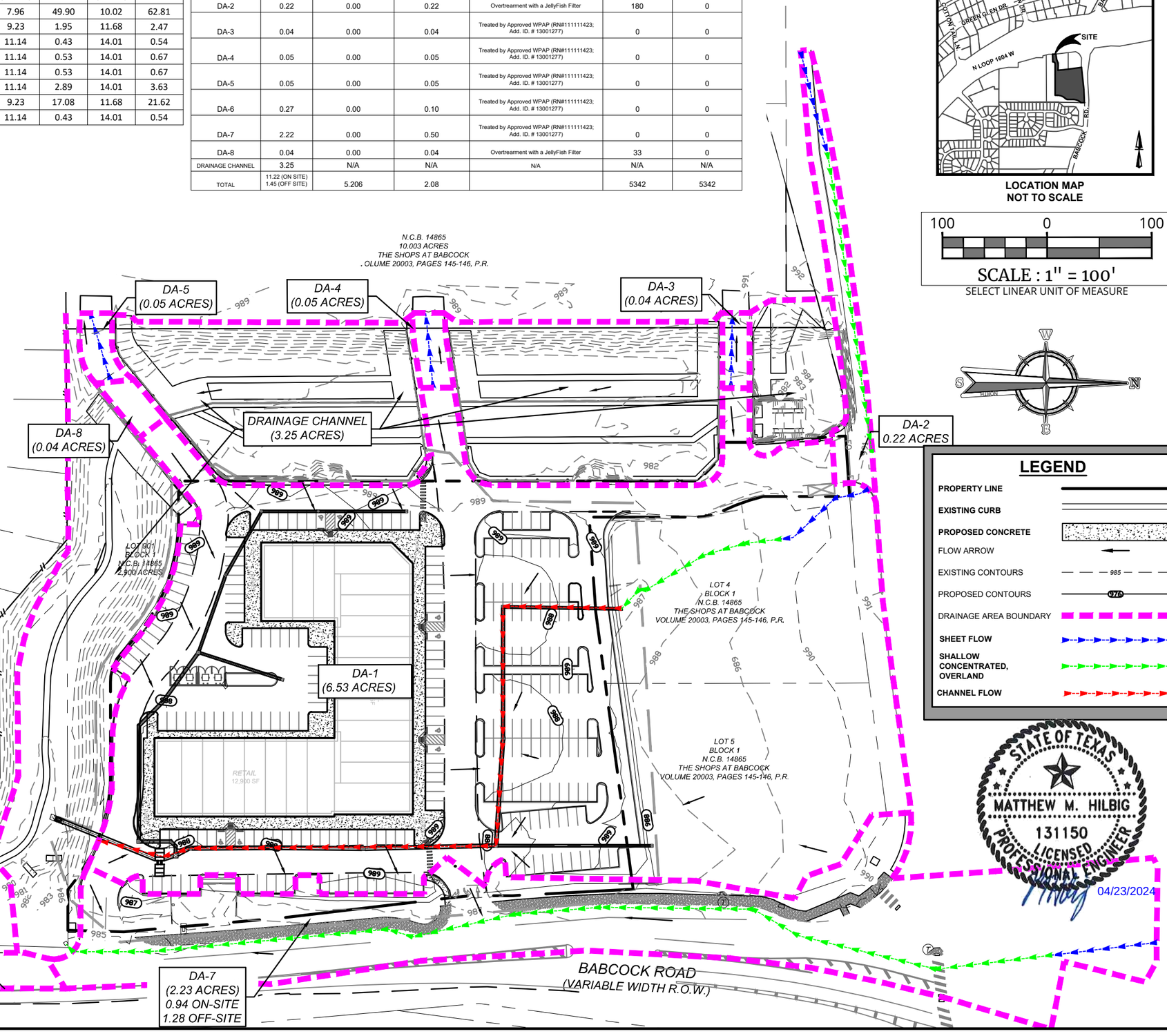
xhibits\CAD\WPAP\EX DAM.dwg\Layout1 By: ASALMAN

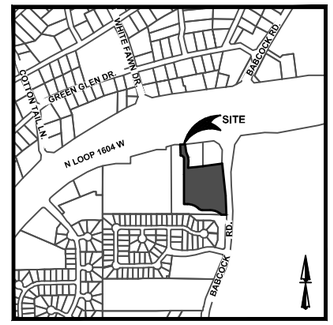
PROPOSED RUNOFF CONDITIONS

DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
DA-1	6.53	0.96	13	5.71	35.79	7.96	49.90	10.02	62.81
DA-2	0.22	0.96	9	6.60	1.39	9.23	1.95	11.68	2.47
DA-3	0.04	0.96	5	7.94	0.30	11.14	0.43	14.01	0.54
DA-4	0.05	0.96	5	7.94	0.38	11.14	0.53	14.01	0.67
DA-5	0.05	0.96	5	7.94	0.38	11.14	0.53	14.01	0.67
DA-6	0.27	0.96	5	7.94	2.06	11.14	2.89	14.01	3.63
DA-7	2.23	0.83	9	6.60	12.22	9.23	17.08	11.68	21.62
DA-8	0.04	0.96	5	7.94	0.30	11.14	0.43	14.01	0.54

TREATMENT SUMMARY TABLE

DRAINAGE AREA	AREA (ACRES)	PRPOPOSED IMPERVIOUS COVER (ACRES)	EXISTING IMPERVIOUS COVER (ACRES)	PBMP	TSS REQUIRED REMOVAL (LBS/YR)	TSS DESIGNED REMOVAL (LBS/YR)
DA-1	6.53	5.206	1.08	JellyFish Filter	5129	5342
DA-2	0.22	0.00	0.22	Overtreatment with a JellyFish Filter	180	0
DA-3	0.04	0.00	0.04	Treated by Approved WPAP (RN#111111423; Add. ID. # 13001277)	0	0
DA-4	0.05	0.00	0.05	Treated by Approved WPAP (RN#111111423; Add. ID. # 13001277)	0	0
DA-5	0.05	0.00	0.05	Treated by Approved WPAP (RN#111111423; Add. ID. # 13001277)	0	0
DA-6	0.27	0.00	0.10	Treated by Approved WPAP (RN#111111423; Add. ID. # 13001277)	0	0
DA-7	2.22	0.00	0.50	Treated by Approved WPAP (RN#111111423; Add. ID. # 13001277)	0	0
DA-8	0.04	0.00	0.04	Overtreatment with a JellyFish Filter	33	0
DRAINAGE CHANNEL	3.25	N/A	N/A	N/A	N/A	N/A
TOTAL	11.22 (ON SITE) 1.45 (OFF SITE)	5.206	2.08		5342	5342





LOCATION MAP
NOT TO SCALE

100 0 100

SCALE : 1" = 100'

SELECT LINEAR UNIT OF MEASURE

LEGEND

- PROPERTY LINE
- EXISTING CURB
- PROPOSED CONCRETE
- FLOW ARROW
- EXISTING CONTOURS — 985 —
- PROPOSED CONTOURS — 976 —
- DRAINAGE AREA BOUNDARY
- SHEET FLOW
- SHALLOW CONCENTRATED, OVERLAND
- CHANNEL FLOW

STATE OF TEXAS
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REV	DATE	DRAWN BY	DESCRIPTION

PROPOSED DRAINAGE AREA MAP
FOR

BABCOCK & LOOP 1604 - PHASE 5

N. 1604 W. AND BABCOCK
SAN ANTONIO
BEXAR
TEXAS 78249

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
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AS SHOWN	04/05/2024	AS	MH

PROJECT NUMBER:	DRAWING NAME:
554-13-05	PRO DAM

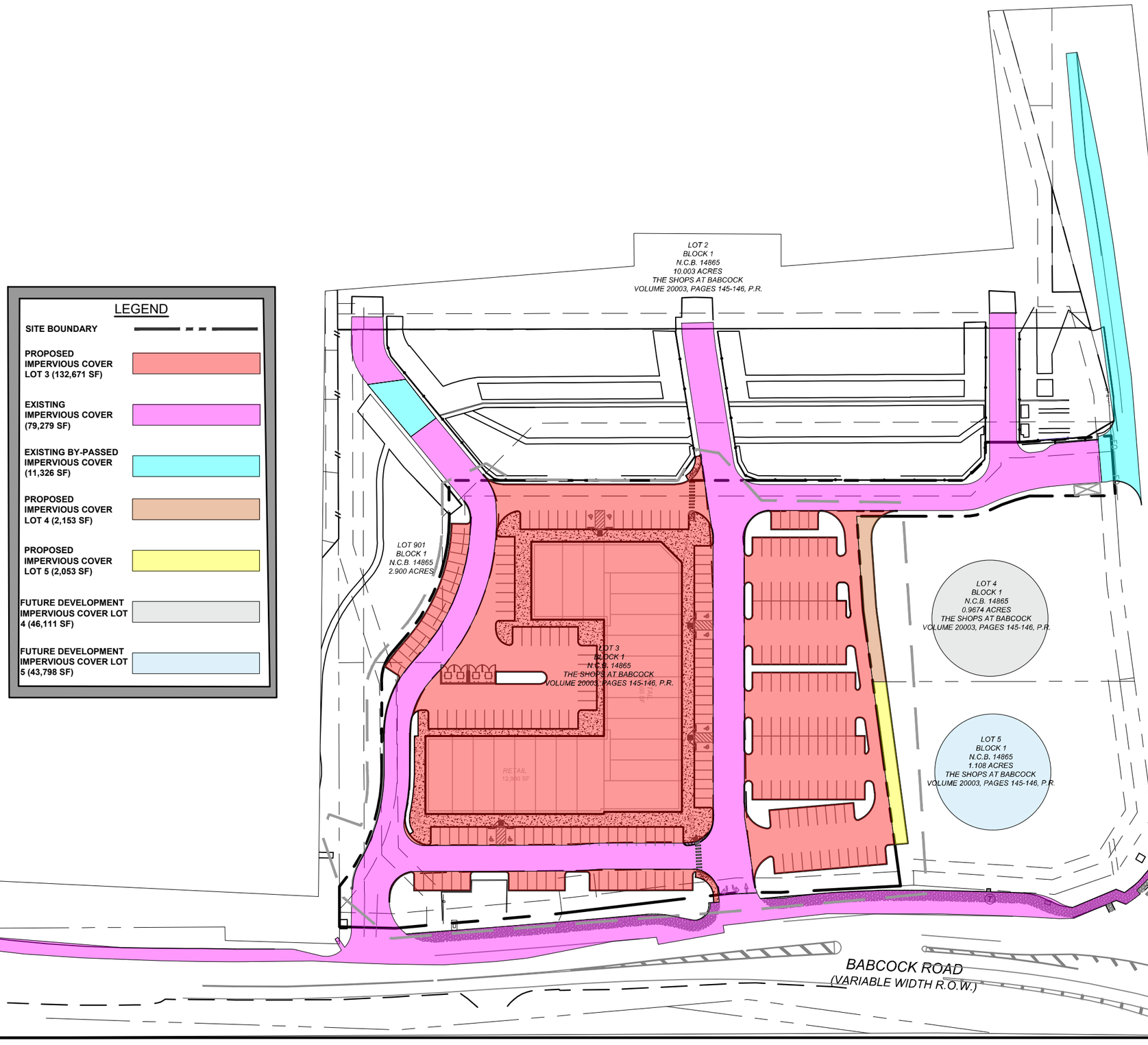
SHEET TITLE: PROPOSED DRAINAGE AREA MAP
FIELD BOOK: XX PAGE:XX

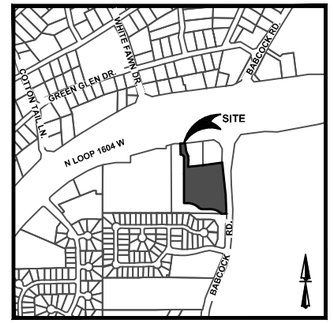
SHEET NUMBER: EX 3B

xhibits\CAD\WPAP\PRO DAM.dwg\Layout1 By: ASALMAN

LEGEND

- SITE BOUNDARY
- PROPOSED IMPERVIOUS COVER LOT 3 (132,671 SF)
- EXISTING IMPERVIOUS COVER (79,279 SF)
- EXISTING BY-PASSED IMPERVIOUS COVER (11,326 SF)
- PROPOSED IMPERVIOUS COVER LOT 4 (2,153 SF)
- PROPOSED IMPERVIOUS COVER LOT 5 (2,053 SF)
- FUTURE DEVELOPMENT IMPERVIOUS COVER LOT 4 (46,111 SF)
- FUTURE DEVELOPMENT IMPERVIOUS COVER LOT 5 (43,798 SF)



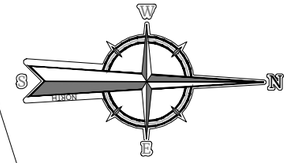


LOCATION MAP
NOT TO SCALE

100 0 100

SCALE : 1" = 100'

SELECT LINEAR UNIT OF MEASURE



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STATE REQUIRED FILE NUMBER

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REV	DATE	DRAWN BY	DESCRIPTION

EXISTING AND PROPOSED IMPERVIOUS COVER
FOR

BABCOCK & LOOP 1604 - PHASE 5

N. 1604 W. AND BABCOCK
SAN ANTONIO
BEXAR
TEXAS 78249

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
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PROJECT NUMBER: 554-13-05
DRAWING NAME: PRO IC

SHEET TITLE: EXISTING & PROPOSED IMPERVIOUS COVER
FIELD BOOK: XX PAGE:XX

SHEET NUMBER: EX 3C

By: ASALMAN

xhibits\CAD\WPAP\PRO IC.dwg\Layout1

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EXHIBIT 4
WPAP DETAILS

PROPOSED JELLYFISH

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Babcock and Loop 1604
Date Prepared: 4/14/2024

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

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

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

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

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

County =	Bexar	
Total project area included in plan * =	11.22	acres
Predevelopment impervious area within the limits of the plan * =	0.74	acres
Total post-development impervious area within the limits of the plan * =	7.286	acres
Total post-development impervious cover fraction * =	0.65	
P =	30	inches

$L_{M\ TOTAL\ PROJECT}$ = **5342** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 8

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	6.53	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	6.286	acres
Post-development impervious fraction within drainage basin/outfall area =	0.96	
$L_{M\ THIS\ BASIN}$ =	5129	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Contech StormFilter
Removal efficiency = 86 percent

Batch Detention
Bioretention
Contech Jellyfish
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 =	6.53	acres
A_I =	6.286	acres
A_P =	0.24	acres
L_R =	5615	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 5342 lbs.

F = **0.95**

04/23/2024

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: BABCOCK AND LOOP 1604
Date Prepared: 4/15/2024

1. The Required Load Reduction for the total project:

Calculations from RG-348 Pages 3-27 to 3-30

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

$L_{M\ TOTAL\ PROJECT}$ = 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 * =	**11.22**	acres
Predevelopment impervious area within the limits of the plan * =	**0.74**	acres
Total post-development impervious area within the limits of the plan* =	**7.29**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**30**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**5342**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**8**	

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

Drainage Basin/Outfall Area No. =	**1**	
Total drainage basin/outfall area =	**6.53**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**6.286**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.96**	
$L_{M\ THIS\ BASIN}$ =	**5129**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**JF**	abbreviation
Removal efficiency =	**86**	percent

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

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

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

A_C =	**6.53**	acres
A_I =	**6.286**	acres
A_P =	**0.24**	acres
L_R =	**5615**	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	**5342**	lbs.
F =	**0.95**	

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

Offsite area draining to BMP =	**0.00**	acres
Offsite impervious cover draining to BMP =	**0.00**	acres

Calculations from RG-348 Pages Section 3.2.22

Rainfall Intensity =	**1.60**	inches per hour
Effective Area =	**5.66**	acres
Cartridge Length =	**54**	inches
Peak Treatment Flow Required =	**9.14**	cubic feet per second

7. Jellyfish

Designed as Required in RG-348 Section 3.2.22

Flow Through Jellyfish Size	**Vault**	
Jellyfish Size for Flow-Based Configuration =	**(2)JFPD0811-24-5**	
Jellyfish Treatment Flow Rate =	**9.44**	cfs

PROPOSED BYPASS ACCOUNTED FOR IN THE PROPOSED JELLYFISH

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Babcock and Loop 1604
Date Prepared: 4/12/2024

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
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1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

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

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

County =		Bexar	
Total project area included in plan * =		11.22	acres
Predevelopment impervious area within the limits of the plan * =		0.74	acres
Total post-development impervious area within the limits of the plan * =		7.286	acres
Total post-development impervious cover fraction * =		0.65	
P =		30	inches
$L_{M\ TOTAL\ PROJECT}$ =		5342	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 8

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	0.22	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.22	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	180	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Contech StormFilter
Removal efficiency = 86 percent

Batch Detention
Bioretention
Contech Jellyfish
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 =	0.00	acres
A_I =	0.00	acres
A_P =	0.00	acres
L_R =	0	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 0 lbs.

F = #DIV/0!

PROPOSED BYPASS ACCOUNTED FOR IN THE PROPOSED JELLYFISH

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Babcock and Loop 1604
Date Prepared: 4/15/2024

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

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

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

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

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

County =	Bexar		
Total project area included in plan * =	11.22	acres	
Predevelopment impervious area within the limits of the plan * =	0.74	acres	
Total post-development impervious area within the limits of the plan * =	7.29	acres	
Total post-development impervious cover fraction * =	0.65		
P =	30	inches	
$L_{M\ TOTAL\ PROJECT}$ =	5342	lbs.	

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

Number of drainage basins / outfalls areas leaving the plan area = 8

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

Drainage Basin/Outfall Area No. = 8

Total drainage basin/outfall area =	0.04	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.04	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	33	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Contech StormFilter
Removal efficiency = 86 percent

Batch Detention
Bioretention
Contech Jellyfish
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
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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 =	0.00	acres
A_I =	0.00	acres
A_P =	0.00	acres
L_R =	0	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 0 lbs.

F = #DIV/0!

LEGAL DESCRIPTION

BEING A 19.72 ACRES IN N.C.B.14865, SITUATED IN THE ANSELMO PRU SURVEY NO. 20, A-574, THE FRANK FEILLE SURVEY NO. 21, A-1273, AND THE RAMON ORTEGA SURVEY NO. 435, A-987, CITY OF SAN ANTONIO, BEXAR COUNTY, TEXAS.

BENCHMARKs

BM 303: SET PK NAIL WITH WASHER IN CONCRETE AT EL: 1001.38' SET BY KFW SURVEYING

BM 304: SET PK NAIL WITH WASHER IN CURB AT EL: 991.10' SET BY KFW SURVEYING

COORDINATION NOTE:

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2. **CONFIRM REQUIREMENTS AND COORDINATE WITH CPS (CITY PUBLIC SERVICE) FOR INSPECTIONS AND CONDUIT SIZES FOR PRIMARY AND SECONDARY ELECTRICAL SERVICES. (210)-353-2256.**
3. **CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.**
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6. **CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.**

KEY NOTES

1. *CHANNEL EASEMENT (VOL. 1340 PG. 994 O.P.R.)*
2. *14' GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT (VOL. 9542 PG. 170 D.P.R.)*
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STORM DRAIN GENERAL NOTES:

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2. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO THE START OF CONSTRUCTION.

3. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS EXPENSE.

4. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHALL BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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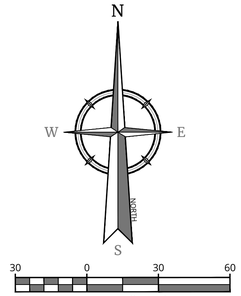
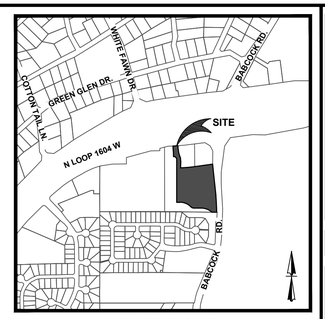
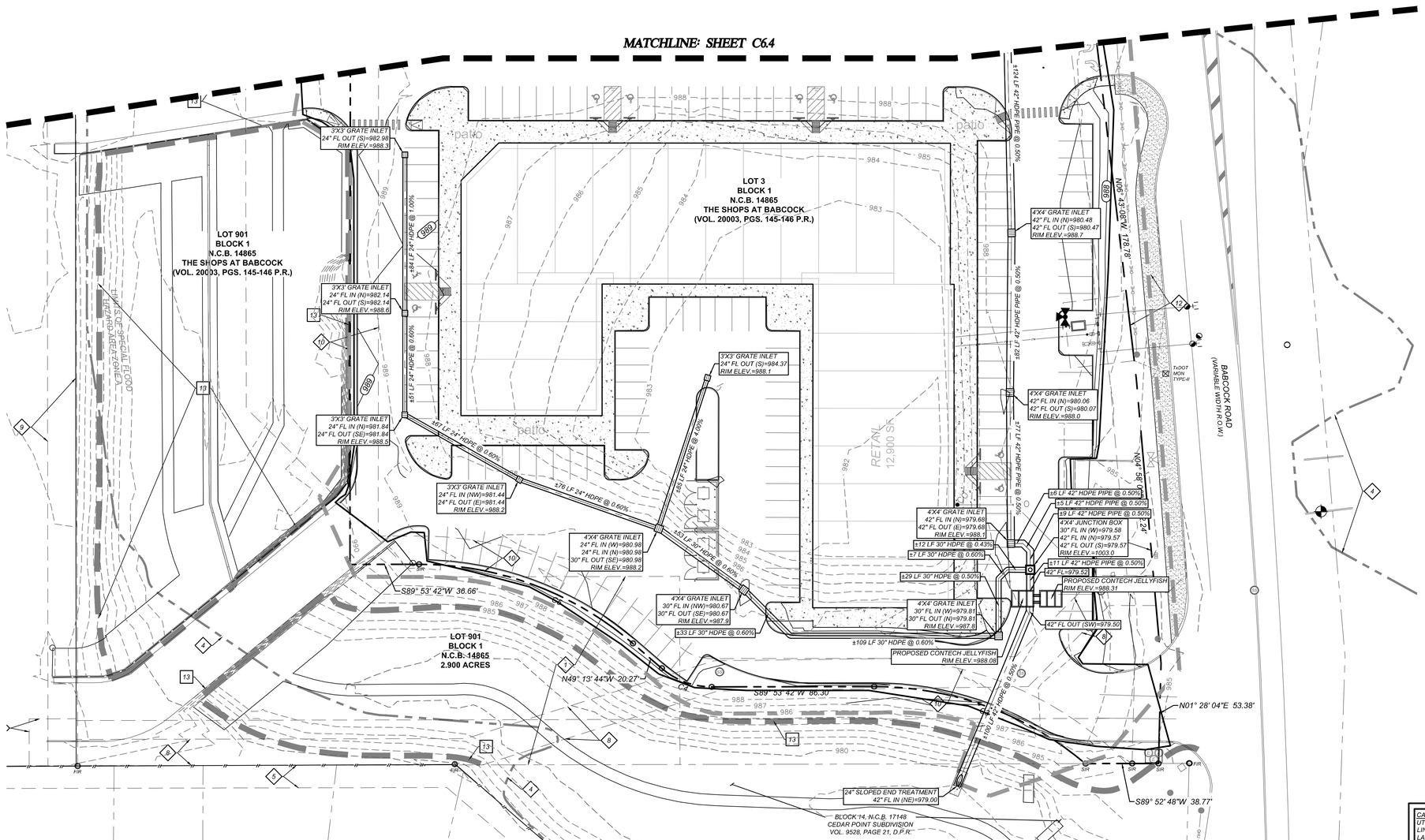




LOCATION MAP
NOT TO SCALE



LEGEND

PROPERTY LINE	
ADJACENT PROPERTY LINE	
EXISTING EDGE OF PAVEMENT	
EXISTING CONCRETE	
EXISTING CURB	
EXISTING SIGN	
EXISTING IRR VALVES	
EXISTING WATER METER	
EXISTING SANITARY SEWER MANHOLE	
EXISTING STORM MANHOLE	
EXISTING LIGHT POST	
EXISTING FIRE HYDRANT	
EXISTING HANDRAIL	
EXISTING OVERHEAD UTILITY AND POWER POLE	OHE — OHE — OHE — OHE
EXISTING GUY WIRE	
SITE BENCHMARK SEE DESCRIPTION THIS SHEET	
EXISTING CONTOURS	980
PROPOSED CURB	
PROPOSED RIBBON CURB	
PROPOSED CONTOURS	980
PROPOSED DRAINAGE SWALE	
PROPOSED HIGH POINT	HIGH POINT
PROPOSED FINISH FLOOR ELEVATION	F.F.E. = XXX.XX
PROPOSED STORM DRAIN	

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Colliers Engineering & Design
www.colliersengineering.com

Formerly Known as KFW

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS — MATTHEW M. HILBIG — 131150 — LICENSED PROFESSIONAL ENGINEER

04/23/2024

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN

FOR

THE SHOPS AT BABCOCK II

LOT 3
BLOCK 1

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2024	AB	EW

PROJECT NUMBER: 554-13-05

DRAWING NAME: C6.3 (STORM DRAIN PLAN)

SHEET TITLE: STORM DRAIN PLAN (1 OF 2)

SHEET NUMBER: C6.3

Date: Apr 15, 2024, 4:30pm User ID: abustillos
File: M:\554\13\05\Design\Civil\Clt 3 (STORM DRAIN PLAN).dwg

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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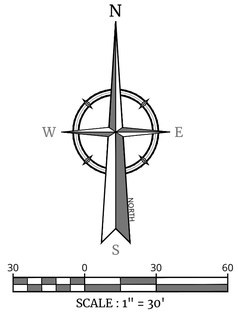
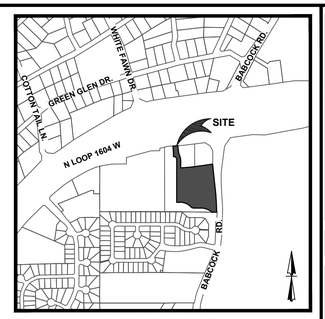
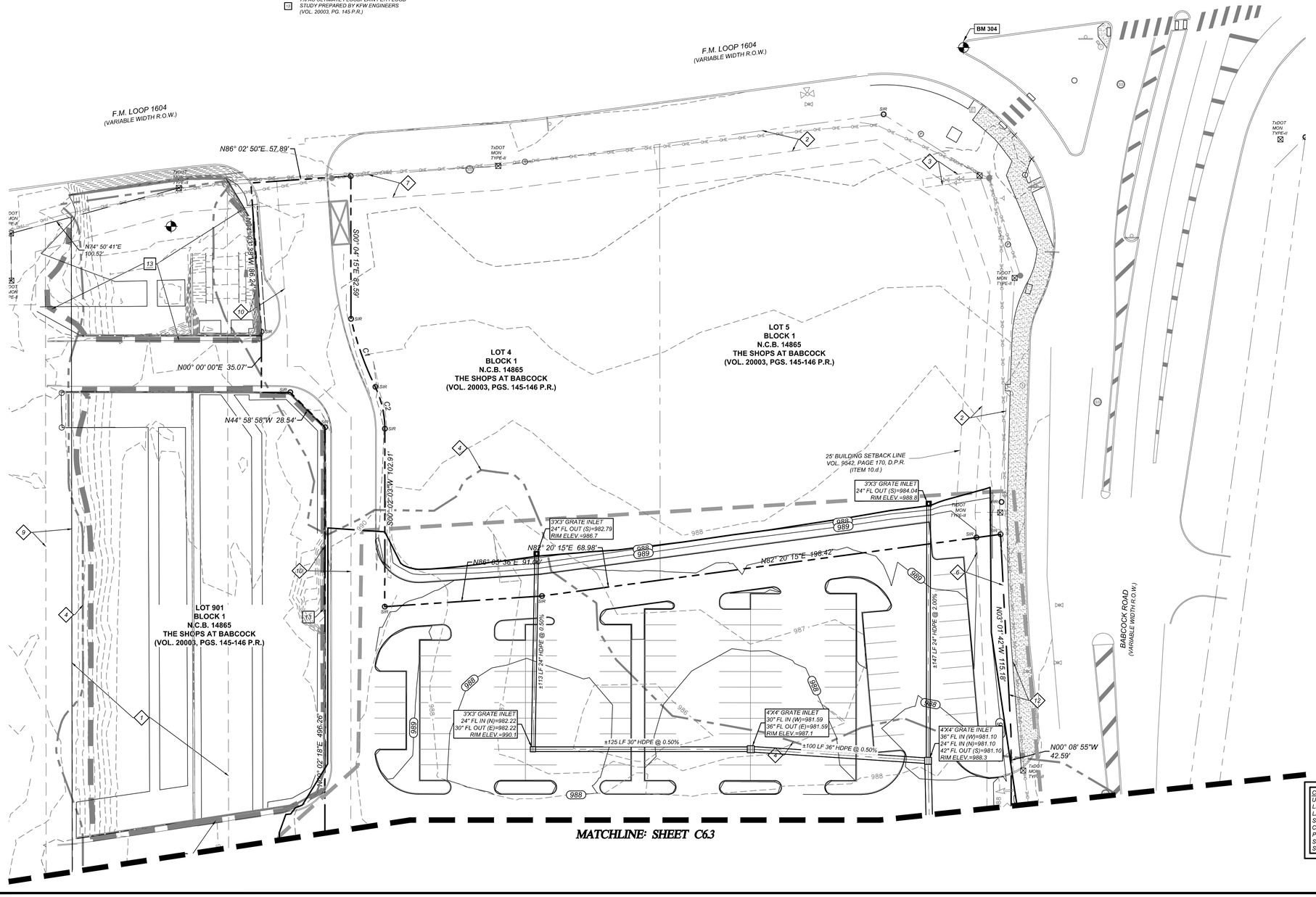




LOCATION MAP
NOT TO SCALE



MATCHLINE: SHEET C6.3

LEGEND

- **PROPERTY LINE**
- **ADJACENT PROPERTY LINE**
- **EXISTING EDGE OF PAVEMENT**
- **EXISTING CONCRETE**
- **EXISTING CURB**
- **EXISTING SIGN**
- **EXISTING IRR VALVES**
- **EXISTING WATER METER**
- **EXISTING SANITARY SEWER MANHOLE**
- **EXISTING STORM MANHOLE**
- **EXISTING LIGHT POST**
- **EXISTING FIRE HYDRANT**
- **EXISTING HANDRAIL**
- **EXISTING OVERHEAD UTILITY AND POWER POLE** (OHE)
- **EXISTING GUY WIRE**
- **SITE BENCHMARK SEE DESCRIPTION THIS SHEET**
- **EXISTING CONTOURS** (980)
- **PROPOSED CURB**
- **PROPOSED RIBBON CURB**
- **PROPOSED CONTOURS** (980)
- **PROPOSED DRAINAGE SWALE**
- **PROPOSED HIGH POINT** (HIGH POINT)
- **PROPOSED FINISH FLOOR ELEVATION** F.F.E. = XXX.XX
- PROPOSED STORM DRAIN

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Colliers Engineering & Design

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Formerly Known as KFW

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
MATTHEW M. HILBIG
131150
LICENSED
PROFESSIONAL ENGINEER
04/23/2024

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN

FOR

THE SHOPS AT BABCOCK II

LOT 3
BLOCK 1

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2024	AB	EW

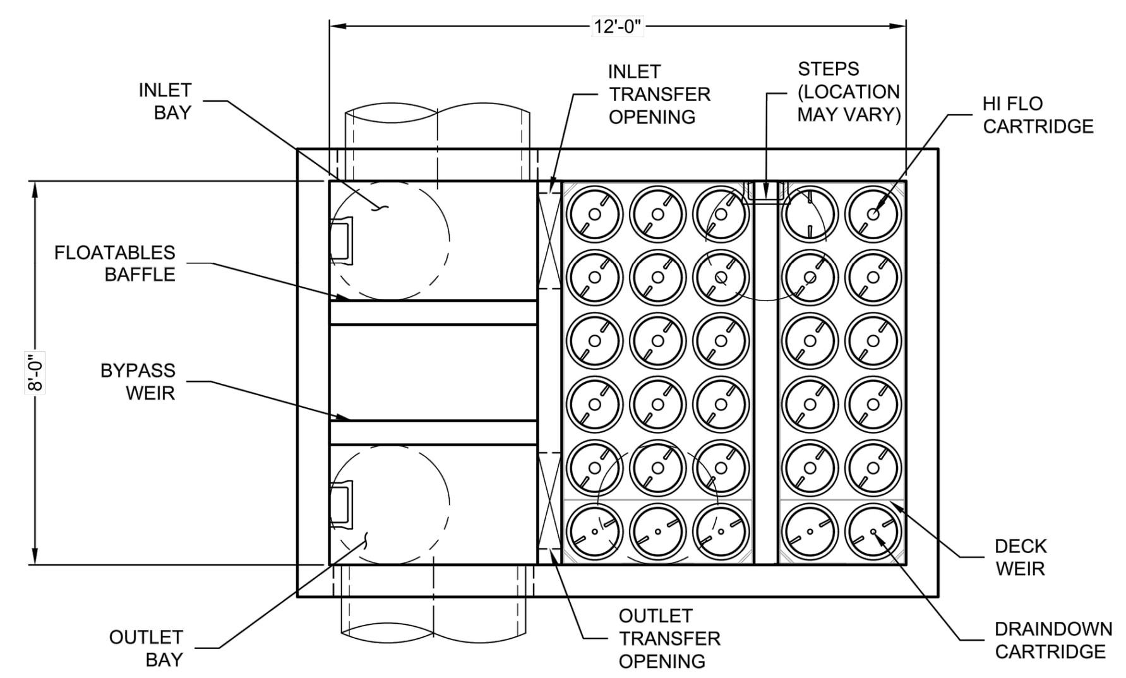
PROJECT NUMBER: 554-13-05
DRAWING NAME: C6.3 (STORM DRAIN PLAN)

SHEET TITLE: STORM DRAIN PLAN (2 OF 2)

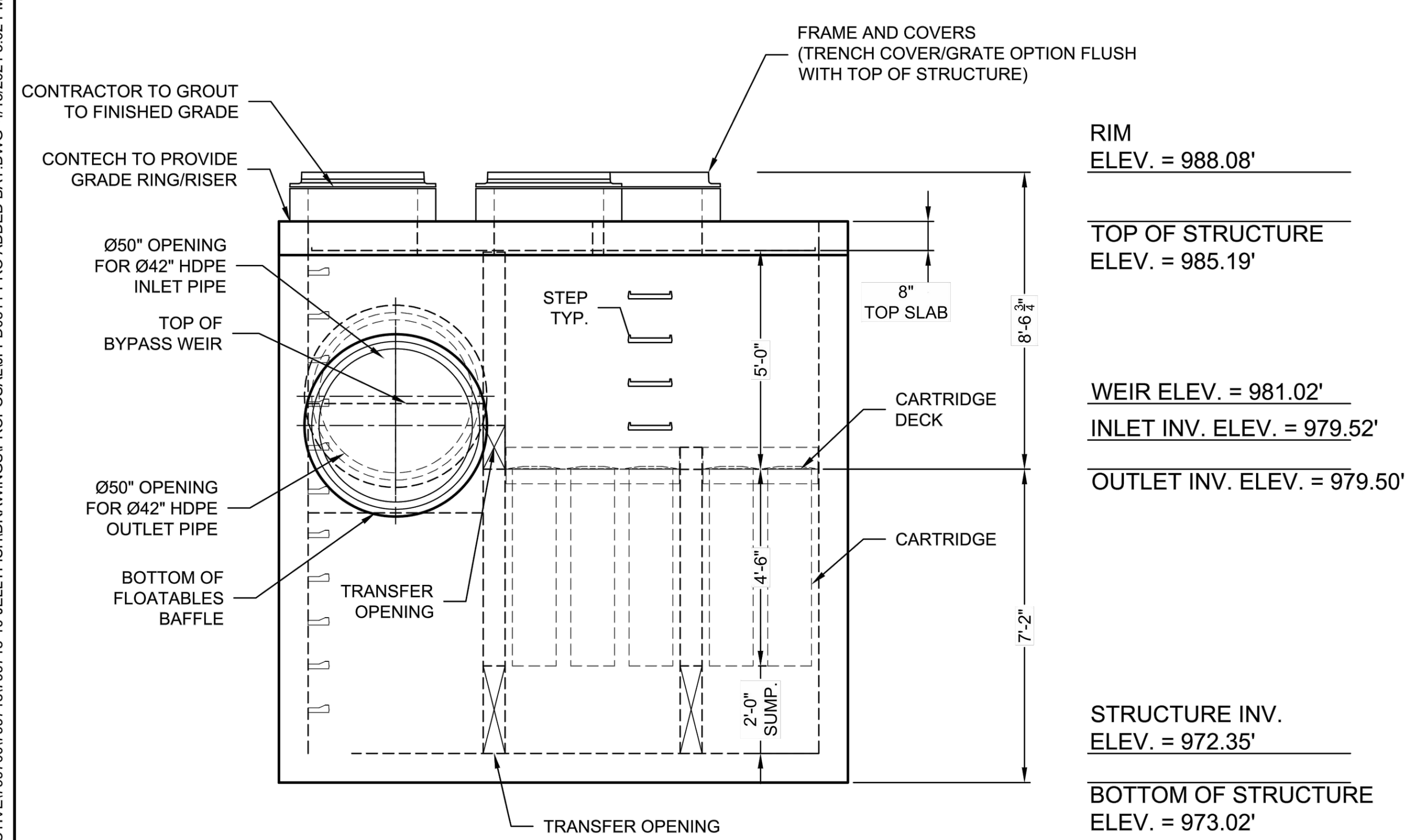
SHEET NUMBER: C6.4

Date: Apr 15, 2024, 4:31pm User ID: abustillos
File: M:\554\13\05\Design\Civil\C6.3 (STORM DRAIN PLAN) PLAN).dwg

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

Jellyfish® Filter

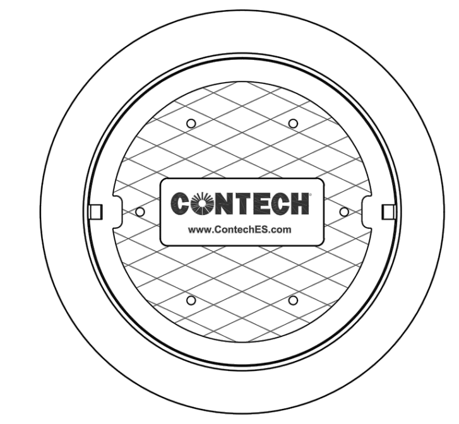
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HIGH-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089
MAX. TREATMENT (CFS)	4.90
DECK TO INSIDE TOP (MIN) (B)	5.00



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WQU
WATER QUALITY FLOW RATE (cfs)	9.14
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	24/5
CARTRIDGE LENGTH	54"

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	979.52'	HDPE	42"	*	*
INLET #2	*	*	*	*	*
OUTLET	979.52'	HDPE	42"	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	988.08'

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:
-RIM ELEVATION OF PARALLEL UNIT IS 988.31'

* PER ENGINEER OF RECORD

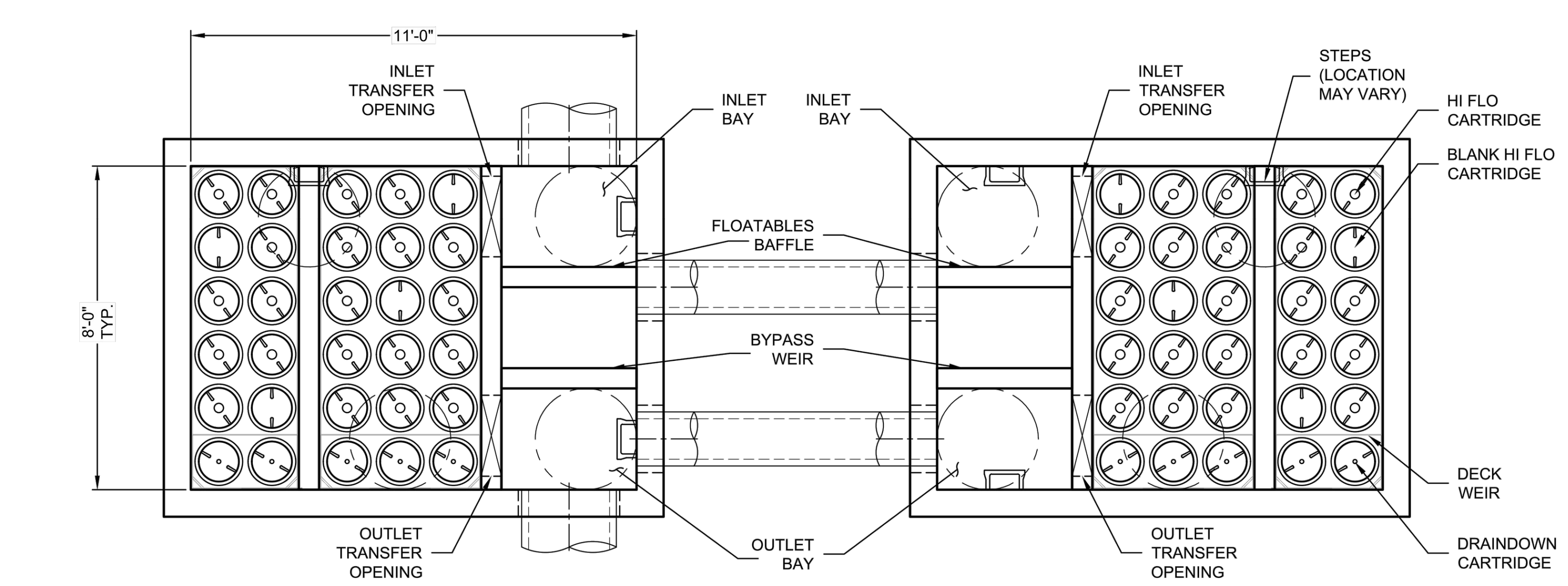
1' ADDED TO BAY AREA TO ACCOMMODATE PIPE SIZE

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

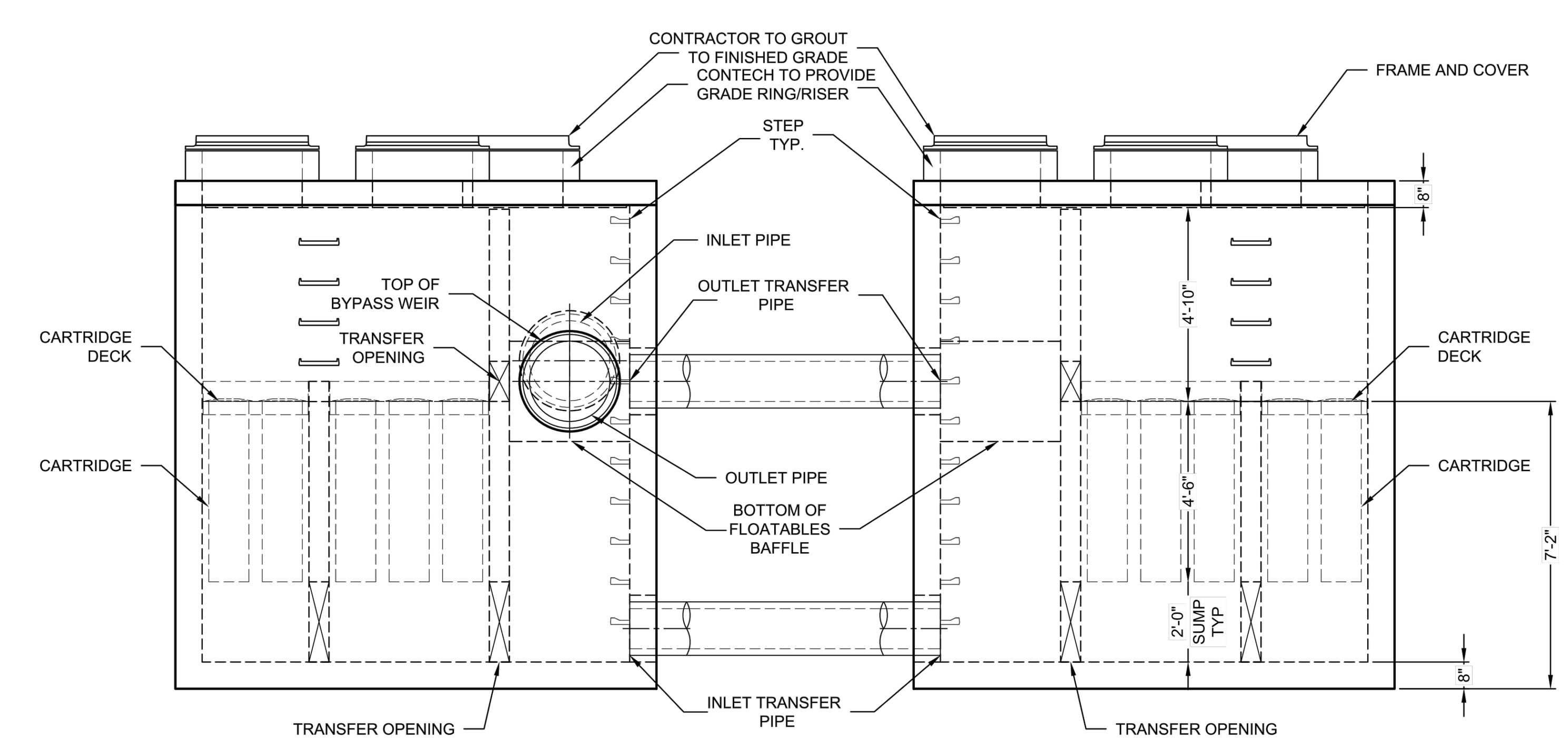
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

8' x 11' JELLYFISH - 799718 - 010
BABCOCK AND LOOP 1604
SAN ANTONIO, TX
SITE DESIGNATION: WQU



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

Jellyfish® Filter

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STANDARD PARALLEL DETAIL NOT SPECIFIC TO SITE

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8' x 11' JELLYFISH - 799718 - 010
BABCOCK AND LOOP 1604
SAN ANTONIO, TX
SITE DESIGNATION: WQU

Colliers Engineering & Design
www.colliersengineering.com

Formerly Known as KFW

REV	DATE	DRAWN BY	DESCRIPTION
-	-	-	-

STATE OF TEXAS MATTHEW M. HILBIG 131150 LICENSED PROFESSIONAL ENGINEER

MATTHEW M. HILBIG
TEXAS LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 131150
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909 - TBPLS Firm#: 10194550

SITE PLAN

FOR

THE SHOPS AT BABCOCK II

LOT 3
BLOCK 1

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	APRIL 2024	AB	EW

PROJECT NUMBER:	DRAWING NAME:
554-13-05	C6.5 (CONTECH DETAIL SHEET)

SHEET TITLE:
CONTECH DETAIL SHEET

SHEET NUMBER:
C6.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.