ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

San Antonio, Texas

BGE, Inc.

TBP Registration No. F-1046

BGE Project No. 9487-00

April 5, 2023

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EDWARDS AQUIFER APPLICATION COVER PAGE

(TCEQ-20705)

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.

<table>
<tr><td colspan="5">1. Regulated Entity Name: Piedmont</td><td colspan="4">2. Regulated Entity No.:</td></tr>
<tr><td colspan="5">3. Customer Name: Gehan Homes</td><td colspan="4">4. Customer No.: 601574049</td></tr>
<tr><td>5. Project Type:
(Please circle/check one)</td><td colspan="2">New</td><td colspan="2">Modification</td><td>Extension</td><td>Exception</td><td colspan="2"></td></tr>
<tr><td>6. Plan Type:
(Please circle/check one)</td><td>WPAP</td><td>CZP</td><td>SCS</td><td>UST</td><td>AST</td><td>EXP</td><td>EXT</td><td>Technical Clarification</td><td>Optional Enhanced Measures</td></tr>
<tr><td>7. Land Use:
(Please circle/check one)</td><td colspan="2">Residential</td><td colspan="3">Non-residential</td><td colspan="2">8. Site (acres):</td><td>16.14</td></tr>
<tr><td>9. Application Fee:</td><td colspan="2">$1,320</td><td colspan="3">10. Permanent BMP(s):</td><td colspan="3">1. Batch Detention Pond
2. Trapezoidal Grassy Swale</td></tr>
<tr><td>11. SCS (Linear Ft.):</td><td colspan="2">2,640 LF</td><td colspan="3">12. AST/UST (No. Tanks):</td><td colspan="3"></td></tr>
<tr><td>13. County:</td><td colspan="2">Bexar</td><td colspan="3">14. Watershed:</td><td colspan="3">Leon Creek</td></tr>
</table>

Application Distribution

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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Aaron J. Neumann
Print Name of Customer/Authorized Agent 04/05/2023
Signature of Customer/Authorized Agent Date

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

GENERAL INFORMATION FORM

(TCEQ-0587)

BGE, Inc. • 7330 San Pedro, Suite 202 • San Antonio, Texas 78216 • 210-581-3600 • www.bgeinc.com

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.

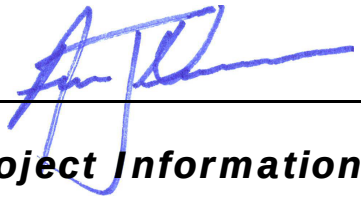
Signature

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: Aaron Neumann, P.E

Date: 04/05/2023

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Piedmont
2. County: Bexar
3. Stream Basin: Leon Creek
4. Groundwater Conservation District (If applicable): None
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☒ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

Contact Person: Chris Lynch
Entity: Gehan Homes
Mailing Address: 3815 S Capital Texas Hwy #275
City, State: Austin, TX Zip: 78704
Telephone: (512)583-9810 FAX: _____
Email Address: clynch@gehanhomes.com

8. Agent/Representative (If any):

Contact Person: Aaron Neumann, P.E.
Entity: BGE, Inc.
Mailing Address: 7330 San Pedro Ave. St. 202
City, State: San Antonio, TX Zip: 78216
Telephone: (210) 581-3600 FAX: _____
Email Address: aneumann@bgeinc.com

9. Project Location:

☒ The project site is located inside the city limits of San Antonio
☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
☐ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

Approximately 500' northeast of S Hausman Rd. & Prue Rd.

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: 03/15/2023

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

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

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

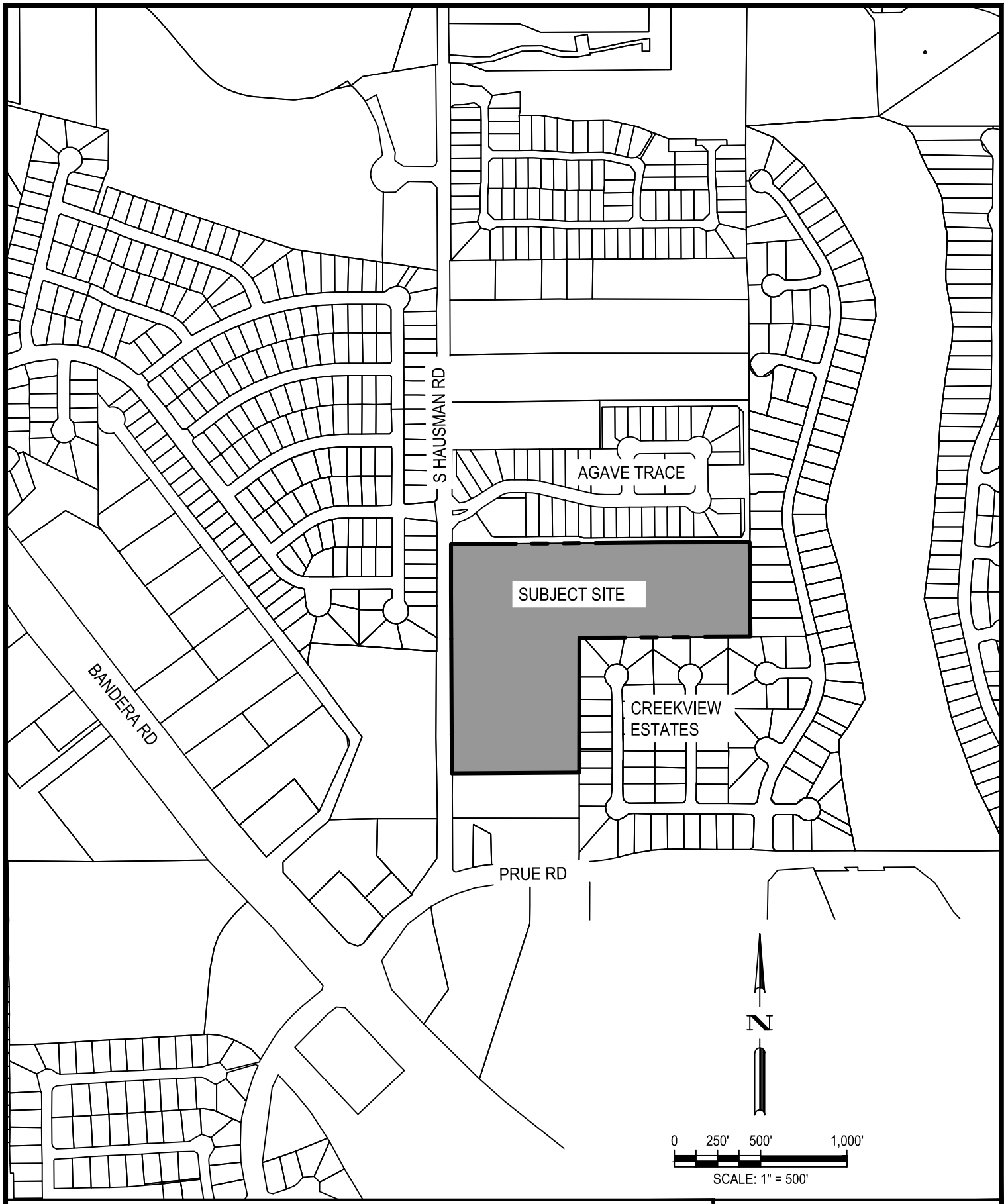
- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

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

ATTACHMENT A

ROAD MAP



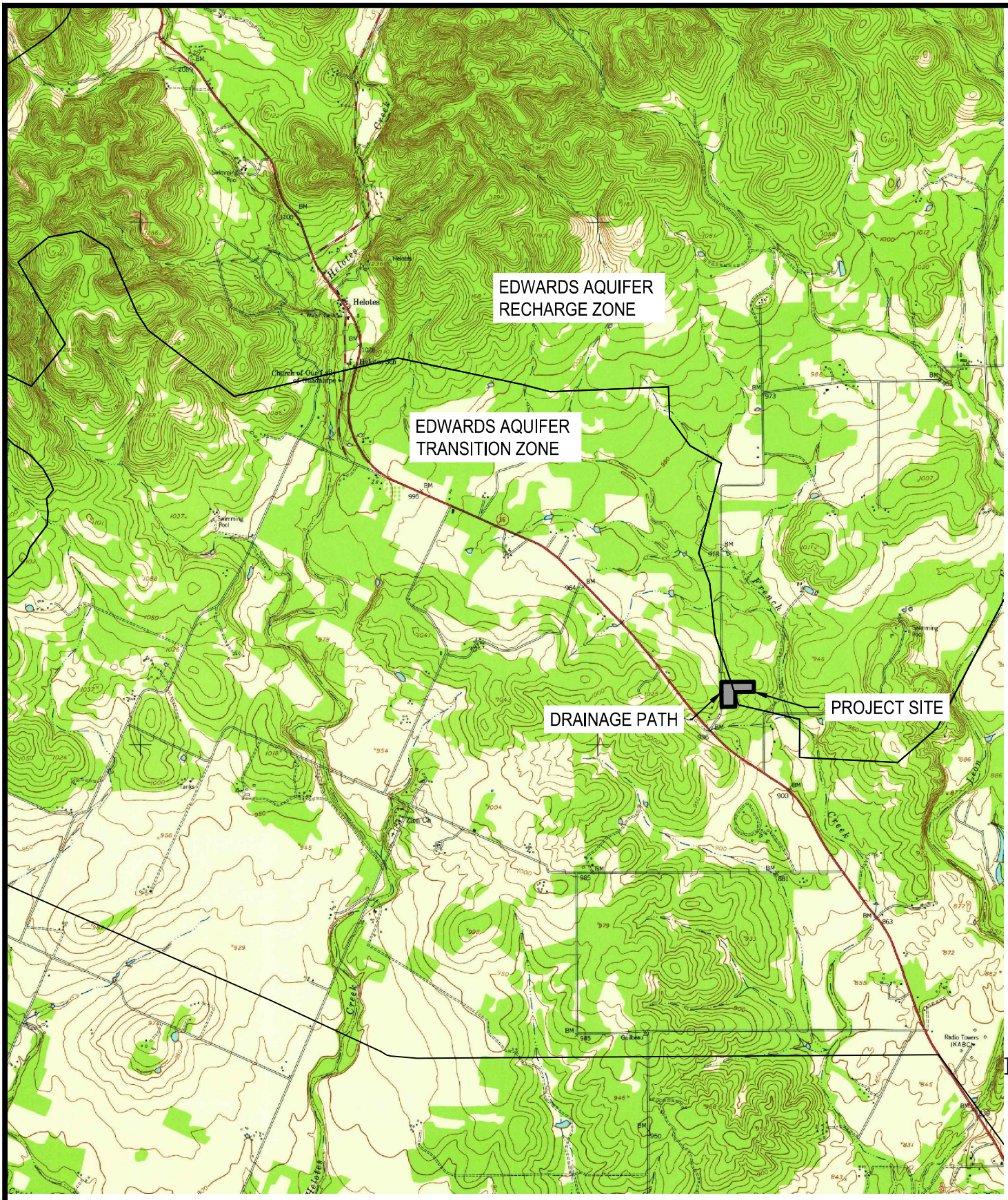
PIEDMONT

ATTACHMENT A - ROAD MAP

BGE, INC.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TBPE Registration No. F-1046
TEL: 210-581-3600 www.bgeinc.com

ATTACHMENT B

USGS/ EDWARDS RECHARGE ZONE MAP



HELOTES USGS QUADRANGLE

ATTACHMENT B - USGS / EDWARDS RECHARGE ZONE MAP

BGE, INC.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TBPE Registration No. F-1046
TEL: 210-581-3600 www.bgeinc.com

ATTACHMENT C

PROJECT DESCRIPTION

Attachment C — Project Description

Piedmont is a 16.14-acre development that will consist of 76 single-family homes with sewer, water, storm, and dry utility infrastructure. The subject tract is located within San Antonio city limits, along the east side of South Hausman road, 400' northeast of the intersection with Prue Road (just off the intersection between Bandera Road & SH-16). The western portion of the tract is in the Edwards Aquifer Transition Zone, and the eastern portion is in the Edwards Aquifer Recharge Zone. The tract is entirely outside of the FEMA 100-year floodplain and entirely within San Antonio Precipitation Area 3.

There is 0.675 offsite flow that enters the site on the west boundary from the side of South Hausman Rd adjacent to the property and is accounted for in the watershed calculations. There will also be some offsite construction within a 20' water and wastewater easement that will be used to connect the site's water and sewer lines to existing SAWS infrastructure. Offsite improvements will not affect the total amount of impervious cover and grade will return to pre-development conditions.

Currently, the subject site is mostly undeveloped, with only one single-family home per lot. The lots are moderately covered with trees, with minimal underbrush consisting primarily of grass. The houses, driveways, and sheds located on this site were built prior to 1990 and qualify as pre-existing impervious cover, this excludes impervious pavement from S Hausman. All existing structures on the site will be demolished including but not limited to houses, decks, driveways, sheds, fences, and utility poles. There are also existing septic tanks located on the site that will be removed and water wells that will need to be properly capped and abandoned.

ATTACHMENT C

General Information Form

There will be two permanent BMPs on this site to remove a total of 4,064 lbs. required from the 14 acres of land that flow into the Edwards Aquifer Recharge Zone. The remaining 2.14 acres of the site remains in the Edwards Aquifer Transition Zone. BMP 1 will be a batch detention pond that includes 8.88 acres of the site designed to remove 3,546 lbs. of solids that will require 16,566 cubic feet of storage for water quality treatment.

BMP 2 is a grassy swale that will capture the flow from 2.18 acres and will remove 518 lbs. of solids. The combined BMPs will meet the required treatment for the 14 acres of runoff that flows into the Recharge Zone. The uncaptured acreage has been accounted for in the sizing of the two BMP structures.

ATTACHMENT C

General Information Form

GEOLOGIC ASSESSMENT FORM

(TCEQ-0585)

GEOLOGIC ASSESSMENT

Texas Commission on Environmental Quality

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

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

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

Signature

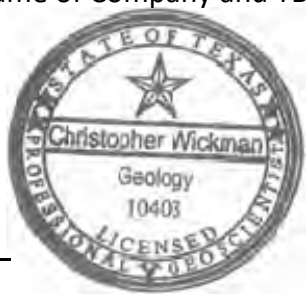
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

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

Date: September 16, 2022 Fax: (210) 372-1318

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

Signature of the Geologist:



Regulated Entity Name: Piedmont Tract

Project Information

1. Date(s) Geologic Assessment was performed: September 2, 2022
2. Type of Project:

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

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

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Crawford	D	0 to 2
Tarrant	C	0 to 2

Soil Group Definitions (Abbreviated)

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

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

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

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

   Applicant's Site Plan Scale: 1" = 50'
   Site Geologic Map Scale: 1" = 50'
   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: 2022 Aerial Photograph

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

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

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

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

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

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

    ☒ There are 6 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

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

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

Administrative Information

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

GEOLOGIC ASSESSMENT (WPAP)

PIEDMONT TRACT
+/- 16 ACRES
SAN ANTONIO, TX

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E22195
SEPTEMBER 16, 2022

Prepared exclusively for

Gehan Homes
9601 McAllister Freeway, Suite 600
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

September 16, 2022

Gehan Homes
9601 McAllister Freeway, Suite 600
San Antonio, Texas 78216

Attn: Mr. Brian Hanan, Director of Feasibility

SUBJECT:
Geologic Assessment (WPAP)
for the Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Piedmont Tract
+/- 16 Acres
San Antonio, TX
FGS Project Nº FGS-E22195

Dear Mr. Brian Hanan, Director of Feasibility:

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 Gehan Homes. Please contact the undersigned if you have questions regarding this report.

Respectfully submitted,
Frost GeoSciences, Inc.

Ethan Levine
Project Manager

Chris Wickman, P.G
Senior Geologist

Copies Submitted:
(1) Mr. Brian Hanan, Director of Feasibility; Gehan Homes
(6) BGE, Inc.
(1) Electronic (pdf) Copy

TABLE OF CONTENTS

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

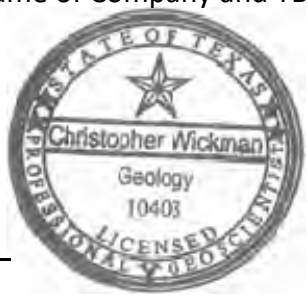
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

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

Date: September 16, 2022 Fax: (210) 372-1318

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

Signature of the Geologist:



Regulated Entity Name: Piedmont Tract

Project Information

1. Date(s) Geologic Assessment was performed: September 2, 2022
2. Type of Project:

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

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

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Crawford	D	0 to 2
Tarrant	C	0 to 2

Soil Group Definitions (Abbreviated)

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

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

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

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

   Applicant's Site Plan Scale: 1" = 50'
   Site Geologic Map Scale: 1" = 50'
   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: 2022 Aerial Photograph

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

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

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

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

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

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

    ☒ There are 6 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

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

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

Administrative Information

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

STRATIGRAPHIC COLUMN

EXPLANATION OF HYDROSTRATIGRAPHIC UNITS

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

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Piedmont Tract **PROJECT NUMBER:** FGS-E22195

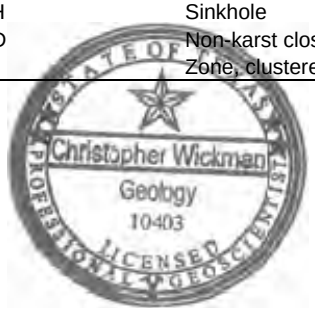
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29° 32' 50.75"	98° 39' 10.51"	MB	30	Kg	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-2	29° 32' 51.46"	98° 39' 9.36"	MB	30	Kg	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-3	29° 32' 50.60"	98° 39' 13.78"	MB	30	Kg	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-4	29° 32' 51.65"	98° 39' 16.90"	MB	30	Kdr	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-5	29° 32' 51.00"	98° 39' 18.39"	MB	30	Kdr	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-6	29° 32' 49.70"	98° 39' 16.98"	MB	30	Kdr	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-7	29° 32' 48.76"	98° 39' 17.32"	MB	30	Kdr	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-8	29° 32' 47.46"	98° 39' 17.88"	MB	30	Kdr	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-9	29° 32' 47.59"	98° 39' 19.14"	MB	30	Kdr	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-10	29° 32' 46.03"	98° 39' 19.11"	MB	30	Kdr	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-11	29° 32' 43.98"	98° 39' 17.97"	MB	30	Kbu	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE
S-12	29° 32' 44.76"	98° 39' 17.96"	MB	30	kbu	0.5	0.5	?	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-13	29° 32' 43.98"	98° 39' 17.97"	MB	30	Kdr	-	-	-	-	-	-	-	X	7	37	37		Yes		HILLSIDE

Datum: NAD 83

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



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

Chris Wickman, P.G.

Date: 9/16/2022

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

Frost GeoSciences

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Piedmont Tract | **PROJECT NUMBER:** FGS-E22195

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-14	29° 32' 50.72"	98° 39' 18.90"	F	20	Kdr/Kg	-	-	-	-	-	-	-	OFC	15	35	35		YES		HILLSIDE
S-15	29° 32' 45.78"	98° 39' 16.68"	F	20	Kdr/Kbu	-	-	-	-	-	-	-	OFC	15	35	35		YES		HILLSIDE

Datum: NAD 83

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

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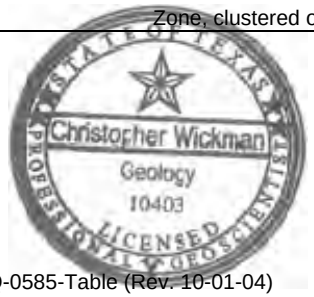
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



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

Chris Wickman, P.G.

Date: 9/16/2022

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

LOCATION

The project site is located along and west of S. Hausman Rd approximately 450 feet north of the intersection of S. Hausman Road and Prue Road in San Antonio, Bexar County, TX. An overall view of the area is shown on copies of the site plan, a street map, the U.S.G.S. Topographic Map, the EAA-Edwards Aquifer Recharge Zone and Contributing Zone Map, the FIRM Map, the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, and 2022 aerial photographs at a scale of 1"=500' and 1"=200', as well as an NRCS Web Soil Survey aerial photograph at a scale of 1"=500'. These maps are included as Figures 1 through 10 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Chris Wickman, P.G., Senior Geologist and Ethan Levine 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 north and northeast of the intersection of S. Hausman Road and Prue Road. 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 U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the U.S.G.S. Water-Resources Investigations Report 95-4030, 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 2022 aerial photograph, in conjunction with a hand-held Garmin GPS 72H Global Positioning System with an Estimated Potential Error ranging from 10 to 14 feet, was used to navigate around the property and identify the locations of PRFs, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any PRFs noted in the field were marked with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map. The Site Geologic Map, indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included in Appendix C at the end of this report. A copy of a 2022 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 on pages 1 through 6.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the U.S.G.S. 7.5 Minute Quadrangle Map, Helotes Quad (1992), the elevation across the project site ranges from 920 to 950 feet above mean sea level. Several apparent residential structures area depicted on the project site. The project site has a total relief of approximately 30 feet. Runoff from the project site flows to the east and southeast into French Creek. Hausman Road is located along the western property line of the project site. The intersection of Hausman Road and Bandera Road (TX-16) is located immediately south of the project site. A copy of the U.S.G.S. 7.5 Minute Quadrangle Map indicating the location of the project site is included on Figure 3 in Appendix A.

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 the TCEQ website: Edwards Aquifer Viewer – https://tceq.maps.arcgis.com/apps/webappviewer/index.html, the project site is located partially within the Recharge Zone and partially within the Transition Zone of the Edwards Aquifer. A copy of an excerpt of the TCEQ website: Edwards Aquifer Viewer – https://tceq.maps.arcgis.com/apps/webappviewer/index.html, 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 48029C0220G, dated October 29, 2010, was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned Panel No. indicates that the project site is located within "Zone X". According to the Panel Legend, Zone X represents areas determined to be outside the 0.2%annual chance floodplain. A copy of the above referenced FIRM panel indicating the location of the project site is included on Figure 6 in Appendix A.

Soils

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

- **Crawford Clay, 0 to 1 percent slopes (Ca) –** This soil is typically found in uplands areas, with a few rare occurrences of this soil in valley areas. The surface layer is dark brown or dark reddish brown, noncalcareous, and 8 to 10 inches thick. Wide cracks form in this soil when it dries. The subsurface layers are also clay and noncalcareous. The subsurface soils are redder than the surface soils. During

dry times, cracks from the surface layer me extend downward into the subsurface layer. Limestone commonly occurs at a depth of approximately 24-36". However, a few areas may have a few inches of limey clay on top of the limestone. Water intake in this soil is slow and water erosion is a hazard. Plow pans are likely to form. The USDA texture is Clay, MH-CH, and the AASHO is A-7. Permeability is 0.2 to 0.5 inches per hour.

- **Tarrant Association, 1 to 5 percent slopes, gently undulating (TaB)** – This soil consists of stony soils that are very shallow, dark colored, and gently undulating to steep. The Tarrant Association occurs on the limestone prairies in the northern third of the county. The surface layer is very dark grayish brown, calcareous clay loam and is about 10" thick. It has moderate, fine, sub angular blocky structure. This layer is crumbly and friable when moist. Limestone fragments that range from a ¼" to 24" in diameter cover about 35 percent of the surface. The subsurface layer, about 8" thick, is hard fractured limestone. The cracks and spaces are filled with dark grayish brown clay loam. The bedrock is hard limestone. Tarrant soils have rapid surface drainage and good internal drainage. Water erosion is a hazard. The capacity to hold water is low. The USDA texture is Clay Loam, CL or CH, and the AASHO is A-7. Permeability is 1.0 to 1.5 inches per 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 2022 aerial photograph on Figure 10 in Appendix A, and on the Site Geologic Map provided in Appendix C. Color photos of the project site and some of the PRFs are included in Appendix B.

PRF #S-1, #S-4, #S-7, #S-9, #S-10 and #S-12 is a water-well. The water wells appeared to be in operation at the time of the site reconnaissance. Frost GeoSciences rates the feature as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 35 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 5 of this report. Frost GeoSciences, Inc. does not consider the solution cavity to be a sensitive feature.

PRF #S-2, #S-3, #S-5, #S-6, #S-11, and #S-13 are septic systems associated with of the on-site residences observed at the project site. The septic systems were observed in close proximity of the residences and were utilized for wastewater and sewage disposal. Frost GeoSciences, Inc. rated the feature as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The septic system scores a 37 on the sensitivity scale, column 10 in the Geologic Assessment Table included on page 5 of this report. Frost GeoSciences, Inc. does not consider the septic tank to be sensitive.

PRFs #S-14 and #S-15 are faults that cross the northwest corner and the southern portion of the project site. The faults were identified on the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366. The fault crossing the southern portion of the project site is the contact between the Del Rio clay to the north and the Buda limestone to the south. Evidence of the faults, (i.e. lithology changes and fractured limestone outcrops observed in the vicinity of the fault) were not observed in association with the faults. Based on the absence of direct visual evidence of the faults due to thick soil cover and vegetation and structural improvements, Frost GeoSciences, Inc.

rates the feature as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). Frost GeoSciences, Inc. does consider the solution cavities to be sensitive feature.

The project site was a residential area improved with several individual residences. In addition to the residences several additional sheds, barns and small outbuildings were observed amongst the residences. The project site is covered by moderately dense to sparse stand of vegetative cover with numerous open grassy areas. Site visit photos indicating the condition of the property at the time of the on-site inspection are included in Appendix B. Overall vegetation on the project site consists of live oak *(Quercus virginiana)*, with Texas persimmon *(Diospyros texana)* and other shrubs and bushes. The variations in the vegetative cover on the property are visible in the 2022 aerial photo on Figures 9 and 10 in Appendix A. A copy of the site layout indicating the boundary of the project site and the elevations is included on the Site Geologic Map in Appendix C of this report.

According to the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the project site is located on the Cretaceous Del Rio clay (Kdr), the Cretaceous Georgetown formation (Kg), as well as the Cretaceous Buda limestone occurring in the southern portion of the project site. A copy of the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366 is included on Figure 8 in Appendix A. A copy of the Stratigraphic Column highlighting the outcropping formations is included on Page 3 of this report.

Buda Limestone (Kb) is a buff to light gray, dense nodular mudstone and wackestone. with calcite-filled veins and bluish dendrites. Iron nodules and iron staining is common.

Del Rio Clay (Kdr) is a fossiliferous and gypsiferous, blue green to yellow brown clay packstone with common iron nodules. Marine mega-fossils include abundant Exogyra arientina and other pelecypods. The Del Rio Clay weathers to light gray or yellowish gray. Overall thickness in mapped area ranges from 40 to 50 feet.

Cretaceous Georgetown Limestone (Kgt) 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.

According to the site plan provided by BGE, Inc., the surveyed elevations on the project site range from 921 to 958 feet. According to this survey, the total relief on the project site is approximately 37 feet. A copy of the site plan indicating the boundary of the project site and the elevations is included on the Site Plan on Figure 1 in Appendix A and the Site Geologic Map in Appendix C of this report.

BEST MANAGEMENT PRACTICES

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

DISCLAIMER

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

This report has been prepared for the exclusive use of Gehan Homes. 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, 1999

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

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

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

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

8. 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 48029C0220G, dated October 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)

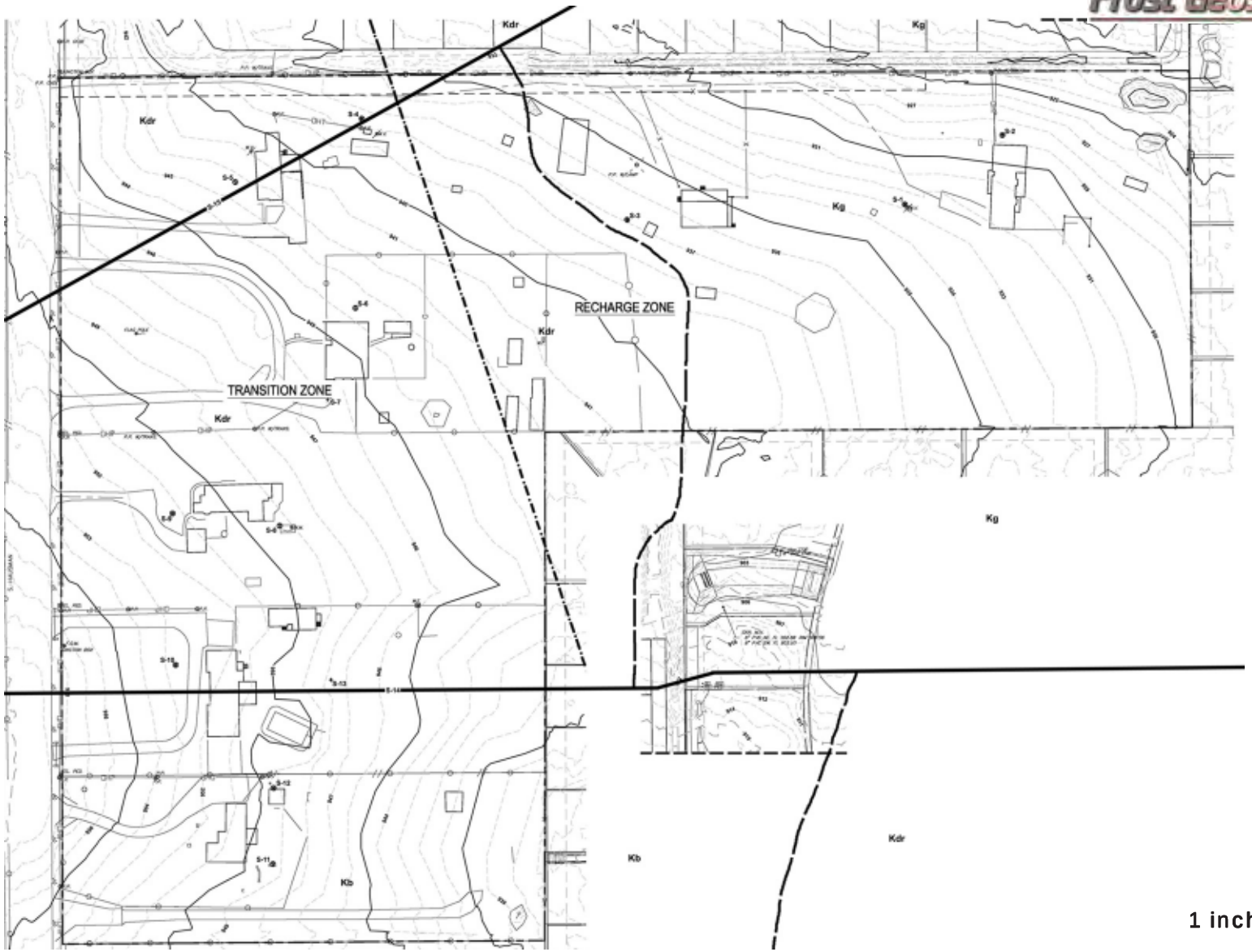
13. TCEQ-0585-Instructions (Rev. 10-1-04), “Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone”.

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

APPENDIX A

SITE LOCATION FIGURES

Frost GeoSciences

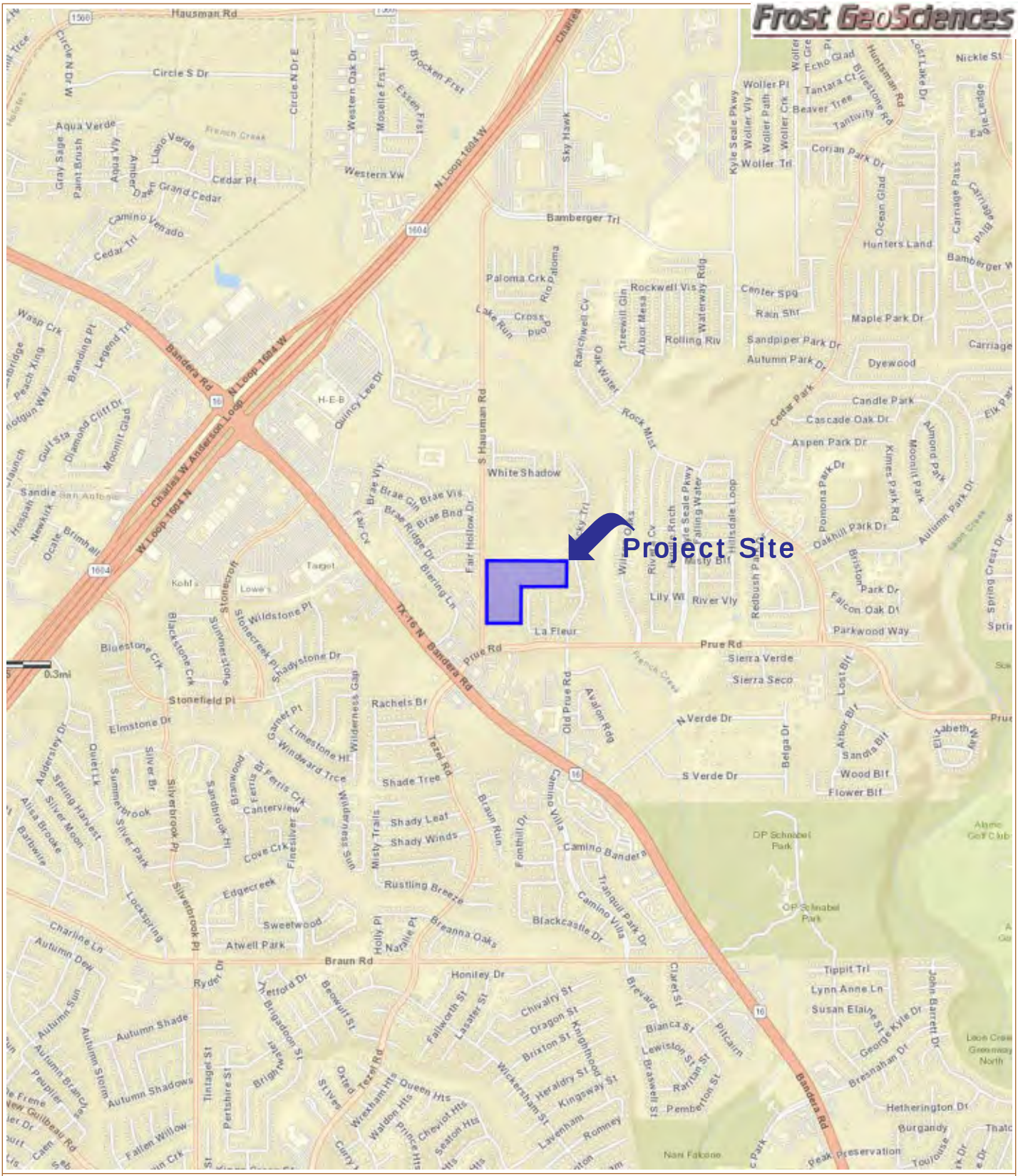


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Piedmont Tract
San Antonio, Texas

Site Layout

PROJECT NO.: FGS-E22195

DATE: September 16, 2022



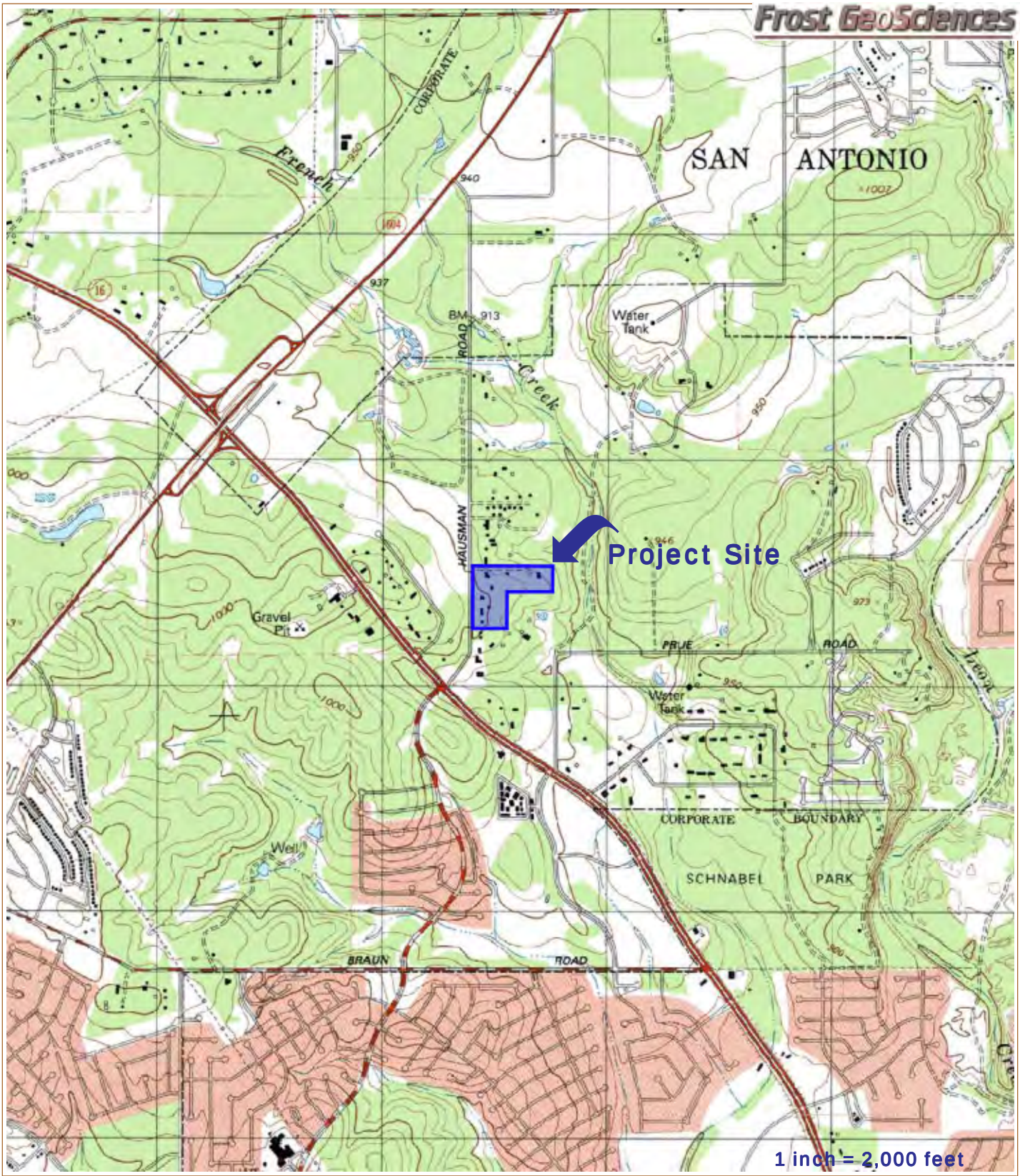
PROJECT NAME:

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

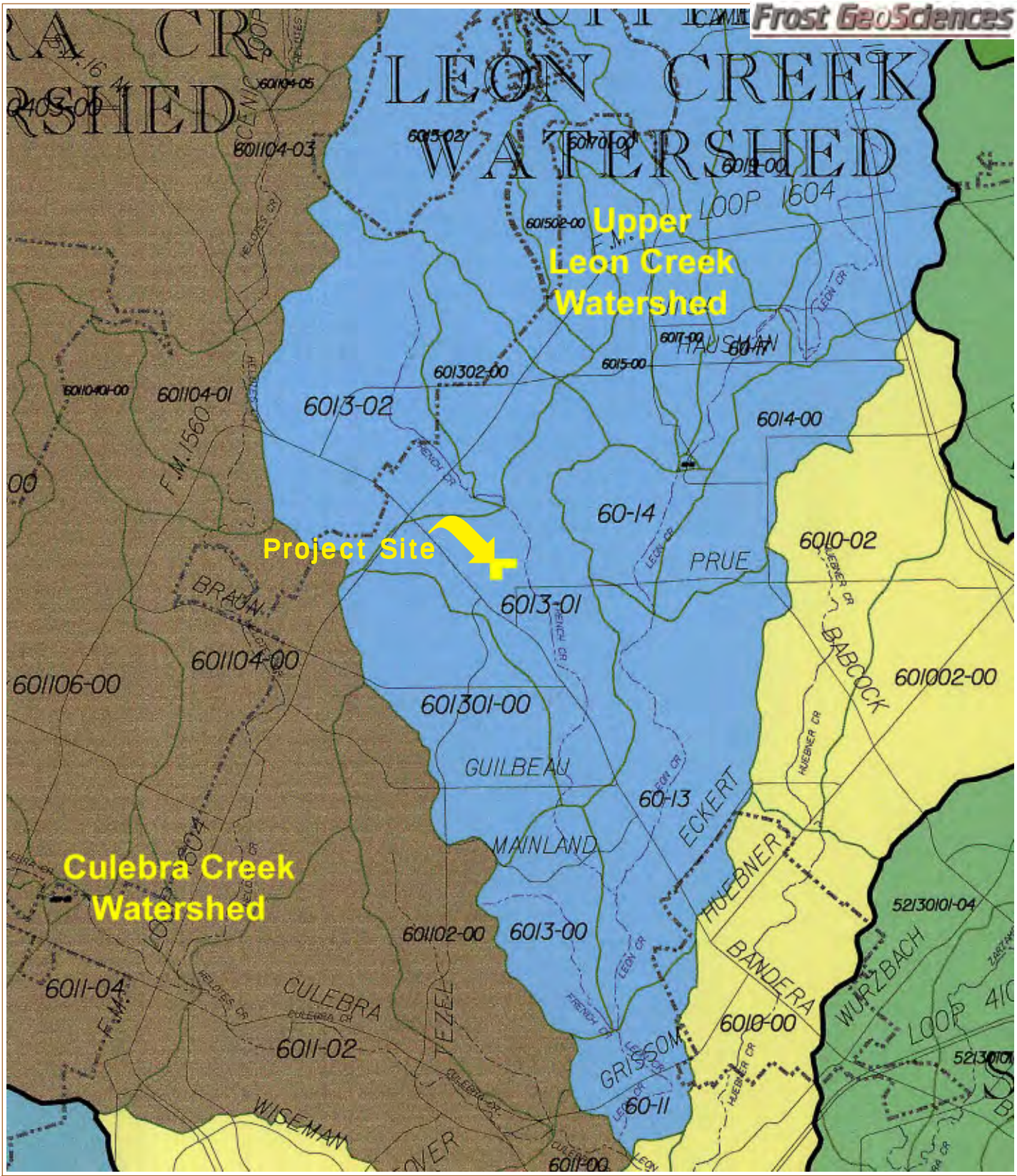
Street Map

PROJECT NO.: FGS-E22195

DATE: September 16, 2022



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Piedmont Tract San Antonio, Texas	U.S.G.S. 7.5 Minute Quadrangle Map Helotes, Texas (1992)
PROJECT NO.: FGS-E22195	**DATE:** September 16, 2022



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Piedmont Tract San Antonio, Texas	Bexar County Watersheds Map San Antonio Water Systems (2004)
PROJECT NO.: FGS-E22195	**DATE:** September 16, 2022

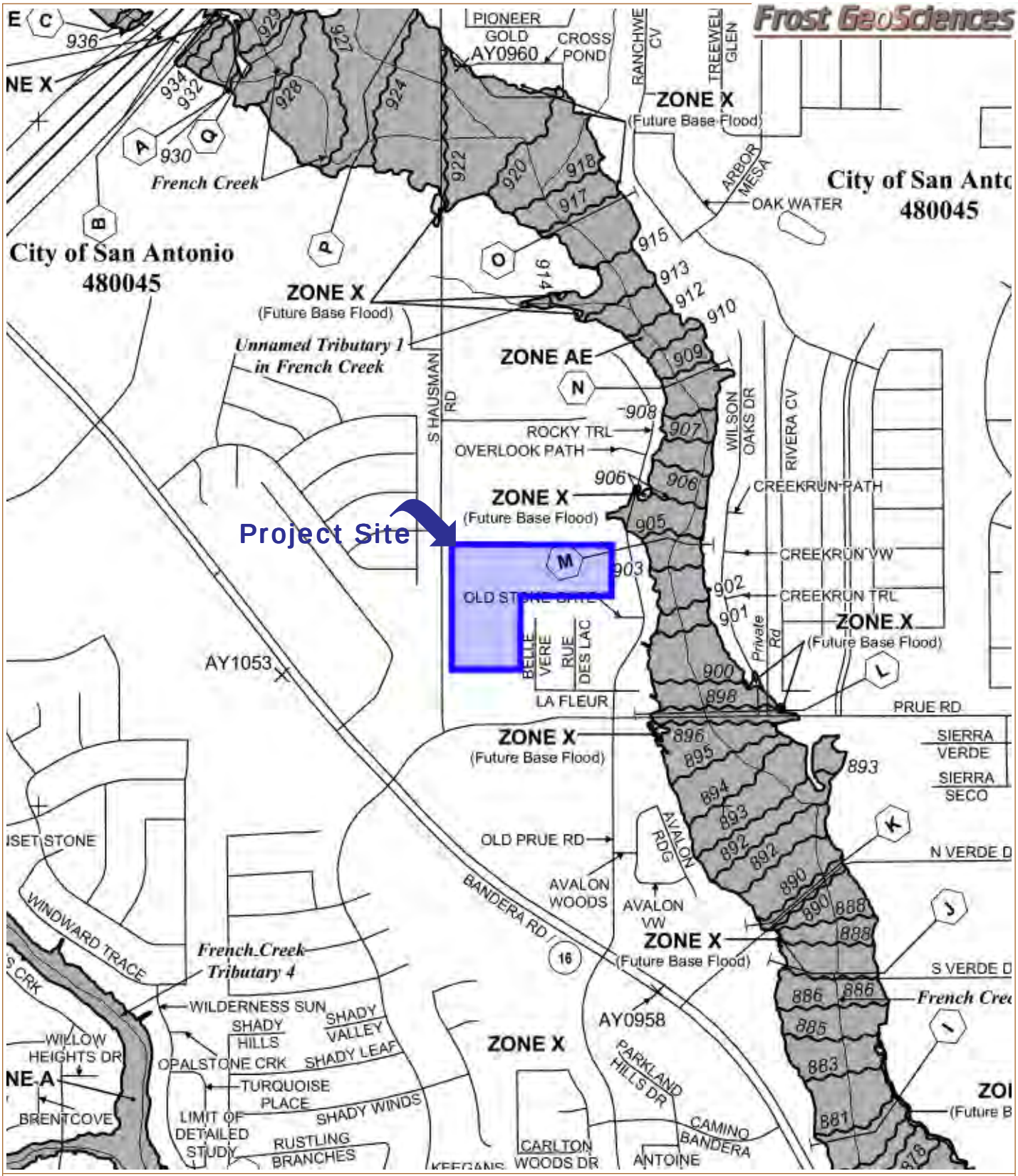
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Piedmont Tract
San Antonio, Texas

Texas Commission on Environmental Quality
TCEQ website: https://tceq.maps.arcgis.com/apps
Edwards Aquifer Viewer

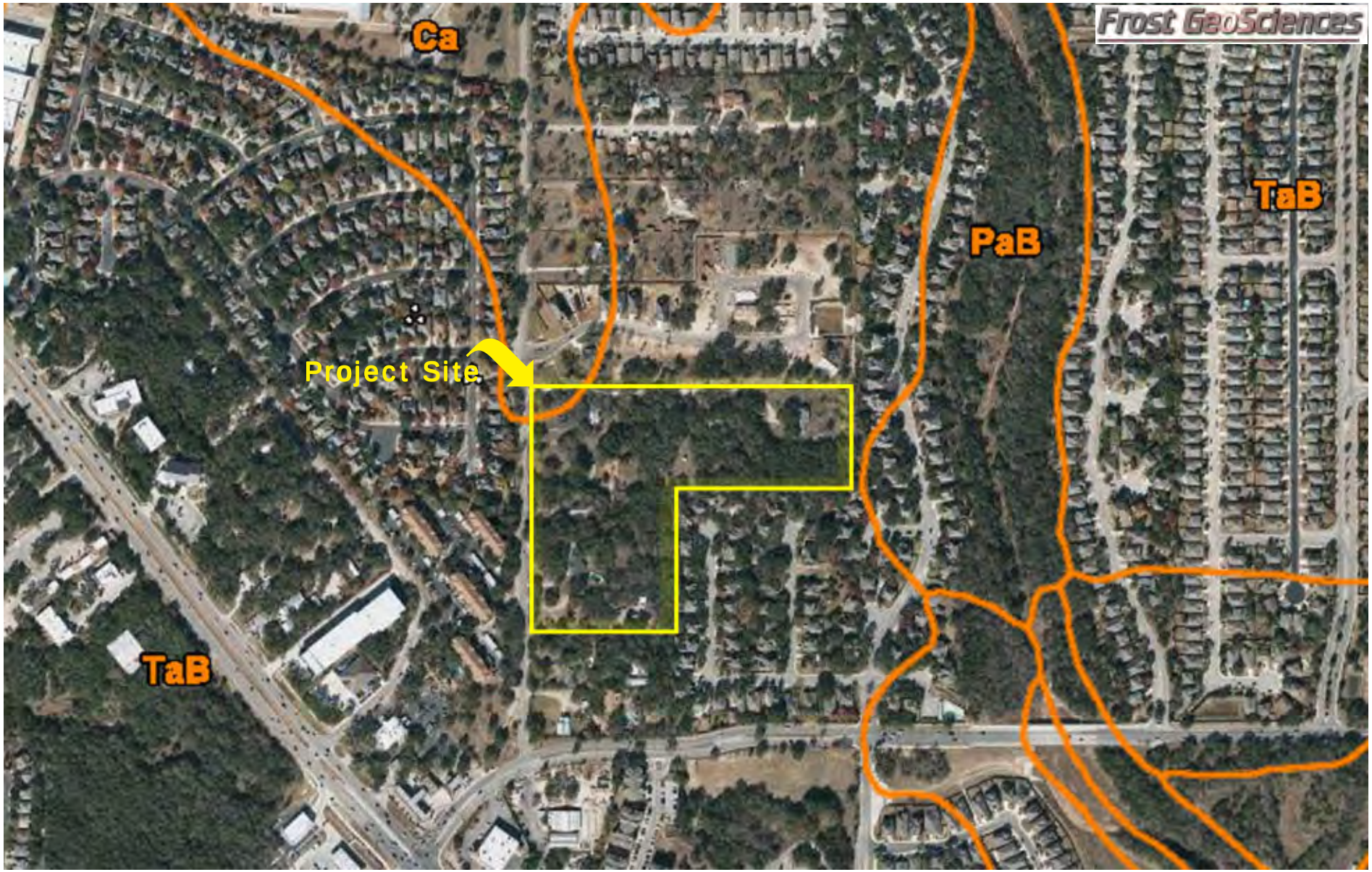
PROJECT NO.: FGS-E22195

DATE: September 16, 2022

FIGURE 5



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Piedmont Tract San Antonio, Texas	Flood Insurance Rate Map (FIRM) Community Panel # 48029C0220G Revised: 9/29/2010)
PROJECT NO.: FGS-E22195	**DATE:** September 16, 2022

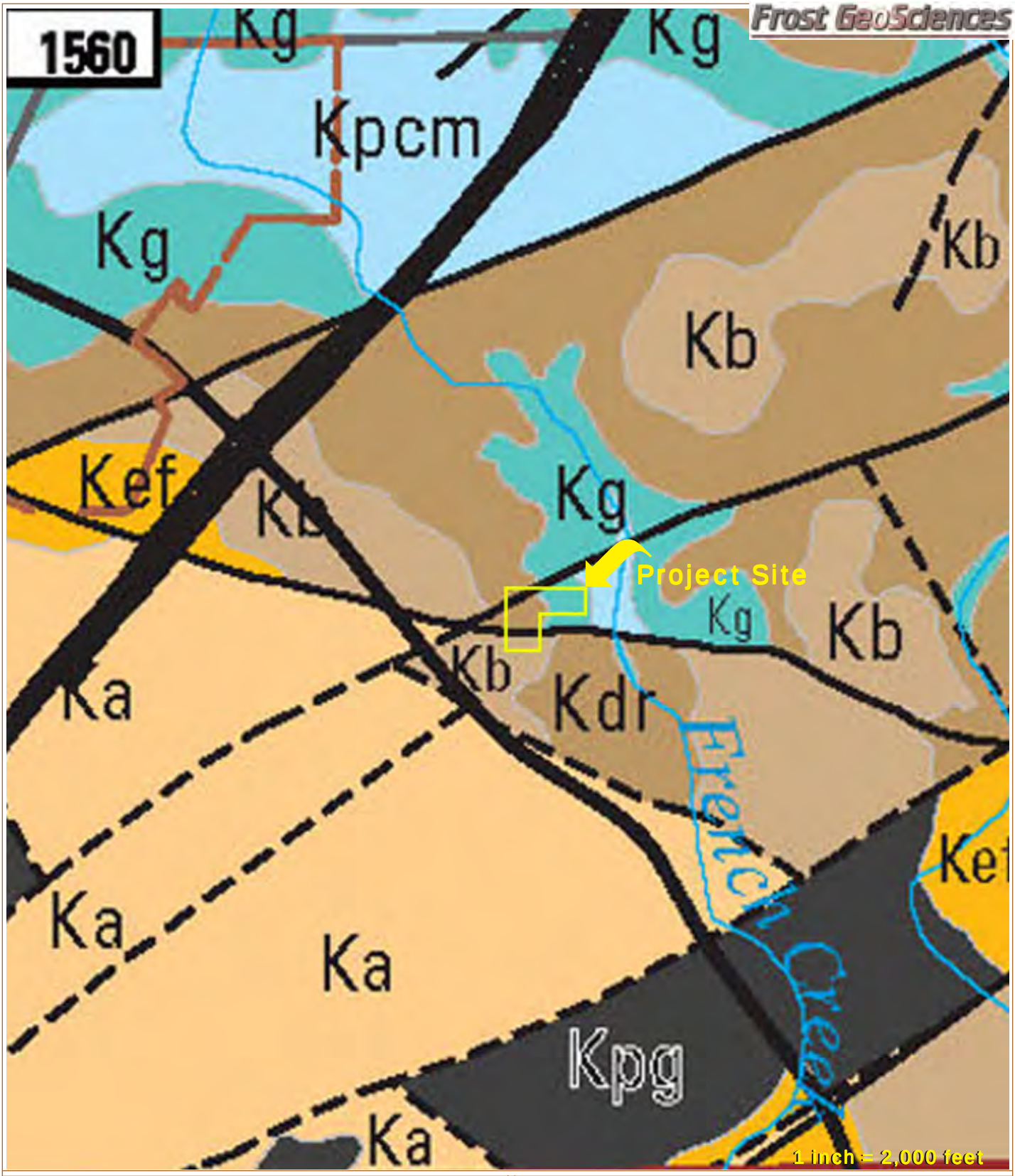


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Piedmont Tract
San Antonio, Texas

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

PROJECT NO.: FGS-E22195

DATE: September 16, 2022



Frost GeoSciences

PROJECT NAME:	U.S.Geological Survey Scientific Investigations Map 3366 Clarke (2016)	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Piedmont Tract San Antonio, Texas	PROJECT NO.: FGS-E22195	DATE: September 16, 2022

Geotechnical • Construction Materials • Geologic • Environmental

FIGURE 8

Frost GeoSciences

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

2022 Aerial Photograph
Google Earth Aerial

PROJECT NO.: FGS-E22195

DATE: September 16, 2022

FIGURE 9

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

2020 Aerial Photograph with PRFs
Google Earth Aerial

PROJECT NO.: FGS-E22195

DATE: September 16, 2022

APPENDIX B

SITE PHOTOGRAPHS

	
Photo #1 – View of PRF #S-1.	Photo #2 – View of the immediate vicinity of near PRF #S-1.
	
Photo #3 – View of PRF #S-2.	Photo #4 – View suspected to be the leach field of septic (PRF #S-2).

	
Photo #5 – View of PRF #S-3.	Photo #6 – View of the immediate vicinity of near PRF #S-3.
	
Photo #7 – View of PRF #S-4.	Photo #8 – View of the shed containing PRF # S-4.

Photo #9 – View of PRF #S-5. A suspect septic system.

Photo #10 – View of PRF #S-6. A suspect septic system.

Photo #11 – View of PRF #S-7. A suspect septic system.

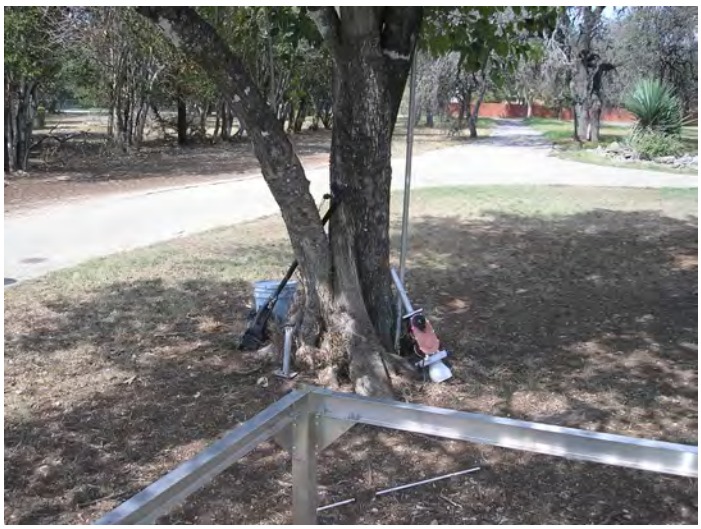


Photo #12 – View of the immediate vicinity of near PRF #S-7.

	
Photo #13 – View of PRF #S-8. An anaerobic septic system.	Photo #14 – View of wooden fence enclosing PRF #S-8.
	
Photo #15 – View of PRF #S-9.	Photo #16 – View of the immediate vicinity of near PRF #S-9.

	
Photo #17 – View of PRF #S-10.	Photo #14 – View of a brick enclosure containing PRF #S-10.
	
Photo #19 – View of PRF #S-11. A suspect septic system.	Photo #20 – View of the immediate vicinity of near PRF #S-11.

Photo #21 – View of PRF #S-12.

Photo #22 – View of PRF #S-13. A suspect septic system.

Photo #23 – View of survey stake marking the location of a proposed sanitary sewer manhole.

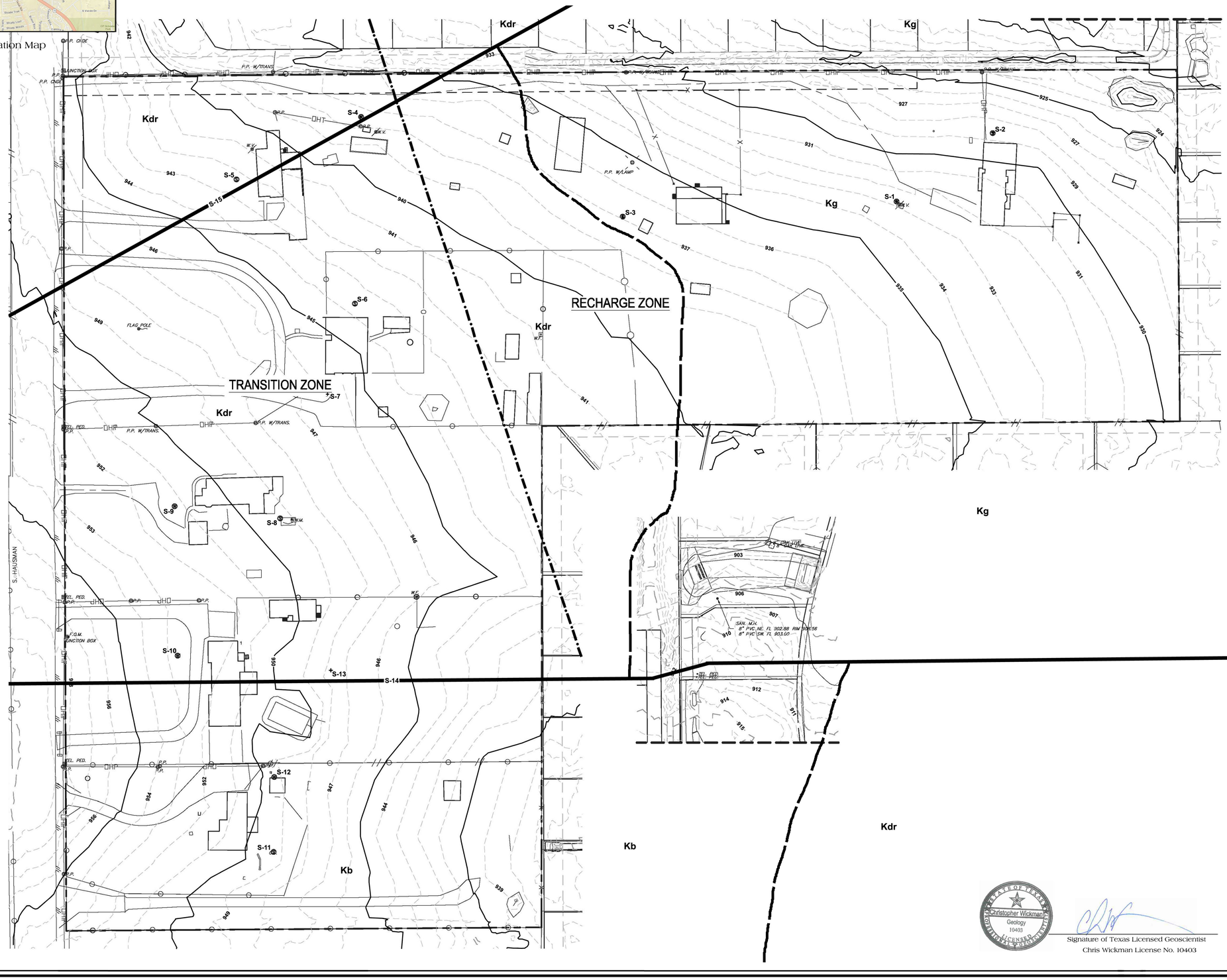
Photo #24 – View of an additional survey stake marking the location of a proposed sanitary sewer manhole.

	
Photo #25 – View of an additional survey stake marking the location of a proposed sanitary sewer manhole.	

APPENDIX C

GEOLOGIC MAP

Location 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

Piedmont Tract
San Antonio, Texas

Frost GeoSciences, Inc. Control # FGS-E22195

Legend

- Kb - Cretaceous Buda Limestone
- Kdr - Cretaceous Del Rio Clay
- Kg - Cretaceous Georgetown Formation
- S-# - Potential Recharge Feature (PRF)
- Formation Contact
- Fault
- Recharge Zone Boundary

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Bexar County, Texas: Panel # 48029C0220G, Revised 9/29/2010

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

North
NW NE
West East
SW SE
South

Graphic Scale

50 0 25 50 100

(In Feet)

1 inch = 50 feet
Representative Fraction 1:600

Contour Interval - 1 foot

STATE OF TEXAS
Christopher Wickman
Geology
10403
LICENSED
PROFESSIONAL GEOSCIENTIST

Signature of Texas Licensed Geoscientist
Chris Wickman License No. 10403

Piedmont Tract

ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

(TCEQ-0582)

Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), 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.

Regulated Entity Name: Piedmont

1. ☒ **Attachment A – SCS Engineering Design Report**. This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

2. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

   Contact Person: Chris Lynch
   Entity: Gehan Homes
   Mailing Address: 3815 S Capital TX Hwy
   City, State: Austin, TX Zip: 78704
   Telephone: (512) 583-9810 Fax: _____
   Email Address: clynch@gehanhomes.com
   The appropriate regional office must be informed of any changes in this information within 30 days of the change.

3. The engineer responsible for the design of this sewage collection system is:

   Contact Person: Aaron Neumann
   Texas Licensed Professional Engineer's Number: 114451
   Entity: BGE, Inc.
   Mailing Address: 7330 San Pedro Ave St. Suite 202
   City, State: San Antonio, TX Zip: 78216
   Telephone: (210) 581-3616 Fax: _____
   Email Address: aneumann@bgeinc.com

Project Information

4. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

   ☒ Residential: Number of single-family lots: 76
   ☐ Multi-family: Number of residential units: _____
   ☐ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

100 % Domestic	15,200 gallons/day
_____ % Industrial	_____ gallons/day
_____ % Commingled	_____ gallons/day

   Total gallons/day: 15,200

6. Existing and anticipated infiltration/inflow is 300 gallons/day. This will be addressed by: PVC SDR21 wastewater main and sealed and coated manholes.

7. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

   ☒ The WPAP application for this development was approved by letter dated 1/13/23 A copy of the approval letter is attached.
   ☐ The WPAP application for this development was submitted to the TCEQ on _____, but has not been approved.
   ☐ A WPAP application is required for an associated project, but it has not been submitted.
   ☐ There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8"	2,640	PVC SDR21	ASTM D3034 or D3212

Total Linear Feet: 2,640

(1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
(2) Pipe Material - If PVC, state SDR value.
(3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

9. The sewage collection system will convey the wastewater to the Leon Creek (name) Treatment Plant. The treatment facility is:

☒ Existing
☐ Proposed

10. All components of this sewage collection system will comply with:

☒ The City of San Antonio standard specifications.
☐ Other. Specifications are attached.

11. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.

☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

13. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.

N.A. ☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes**. A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.

☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

14. ☒ Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 - Manholes and Cleanouts

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
WW-A	Of	1+00	Manhole-A1
WW-A	Of	2+92.19	Manhole-A2
WW-A	Of	3+26.56	Manhole-A3
WW-A	Of	5+19.17	Manhole-A4
WW-A	Of	7+49.06	Manhole-A5
WW-A	Of	11+89.34	Manhole-A6
WW-A	Of	13+28.79	Manhole-A7

Table 2 - Manholes and Cleanouts (Continued)

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
WW-A	Of	16+28.79	Manhole-A8
WW-A	Of	21+28.79	Manhole-A9
WW-B	Of	1+00.00	Manhole-A7
WW-B	Of	4+10.02	Manhole-B1
WW-B	Of	7+10.00	Manhole-B2
	Of		
	Of		

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
	Of		
	Of		
	Of		

15. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.

16. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	Max. Manhole Spacing (feet)
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

N.A. ☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing**. The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

17. ☐ All manholes will be monolithic, cast-in-place concrete.

☒ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

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

Site Plan Scale: 1" = 50 '.

19. ☒ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.

20. Lateral stub-outs:

☒ The location of all lateral stub-outs are shown and labeled.
☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

☐ The entire water distribution system for this project is shown and labeled.
☒ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
☐ There will be no water lines associated with this project.

22. 100-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
☐ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

Line	*Sheet*	*Station*
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
☐ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

Line	*Sheet*	*Station*
	of	to
	of	to
	of	to
	of	to

24. ☒ Legal boundaries of the site are shown.

25. ☒ The ***final plans and technical specifications*** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

26. ☒ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.

☐ There will be no water line crossings.
☐ There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*
WW-A	4+87.16	Crossing		2'
WW-A	13+08.79	Crossing		2'
WW-A	16+08.79	Crossing		2'

27. Vented Manholes:

☒ **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
☐ **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
☐ **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
☐ **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 - Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

☒ There are no drop manholes associated with this project.
☐ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*

29. Sewer line stub-outs (For proposed extensions):

☐ The placement and markings of all sewer line stub-outs are shown and labeled.
☒ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

30. Lateral stub-outs (For proposed private service connections):

☐ The placement and markings of all lateral stub-outs are shown and labeled.
☒ No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

☒ Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

32. Maximum flow velocity/slopes (From Appendix A)

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.

N.A. ☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*

33. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.

☐ Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.

☒ N/A

Administrative Information

34. ☒ The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

35. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	N/A
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	C10.00 of C10.02
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	N/A
Typical trench cross-sections **[Required]**	C10.00 of C10.02
Bolted manholes **[Required]**	N/A
Sewer Service lateral standard details **[Required]**	C10.00 &C10.01 of C10.02
Clean-out at end of line **[Required, if used]**	C10.01 & C10.02 of C10.02
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	N/A
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	C10.01 & C10.02 of C10.02
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	N/A

Standard Details	*Shown on Sheet*
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	N/A

36. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.

37. ☒ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.

    ☒ Survey staking was completed on this date: 3/15/2023

38. ☒ 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.

39. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

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 **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Aaron J. Neumann, P.E.

Date: _____

Place engineer's seal here:

Signature of Licensed Professional Engineer:

04/05/2023

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 - Slope Velocity

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

**For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.*

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)
n = Manning's roughness coefficient (0.013)
Rh = hydraulic radius (ft)
S = slope (ft/ft)

ATTACHMENT A

SCS ENGINEERING DESIGN REPORT

Attachment A — Engineering Design Report

§217.10 Final Engineering Design Report

(f) The report for a wastewater collection system must include the following

(1) a map showing the current service area, the proposed service area, and any proposed future expansion areas.

Response: See Construction Plan Sheet C02.00 Overall Site Plan.

(2) The topographical features of the current, proposed, and any future service areas.

Response: See Construction Plan Sheet C03.80 Overall Grading Plan.

(3) A description of how the design flow was determined.

Response: The design flow was calculated by using the San Antonio Water System Infrastructure Planning Equivalent Dwelling Unit (EDU) calculation of 200 gallons per day as the average sewage flow. (FN042-4 REV A 6/19). For a total of 76 dwelling units 15,200 gallons per day of average sewage flow will be produced at this site.

(4) The minimum and maximum grades for each size and type of pipe.

MIN. SLOPE	MAX. SLOPE	SIZE	TYPE
0.33%	8.40%	8”	SDR21 PVC

(5) Calculations of expected minimum and maximum velocities in the system for each size and type of pipe.

MIN. VELOCITY	MAX. VELOCITY	SIZE	TYPE
2fps	10fps	8”	SDR21 PVC

ATTACHMENT A

Sewage Collection System

(6) The proposed system's effect on an associated existing system's capacity.

Response: The proposed flow from the Piedmont Tract is the same design capacity as the 8-inch main that the project is connecting into. (Job #95-1621)

(7) The existing and anticipated inflow and infiltration, the hydraulic effect of the inflow and infiltration on the proposed and existing systems, any inflow and infiltration flow rate monitoring, and any inflow and infiltration abatement measures.

Response: The existing and anticipated inflow and infiltration is a total of 300 gallons per acre based on the Utility Service Regulation for San Antonio Water System. (USR Section 11.3.1.3)

(8) A description of the ability of the existing and proposed trunk and interceptor wastewater collection systems and lift stations to handle the peak flow.

Response: N/A. There are no trunk or interceptor wastewater lines proposed with this project.

(9) The capability of the receiving treatment facility to receive and adequately treat the anticipated peak flow.

Response: The proposed wastewater improvements will tie into the existing Leon Creek Regional Wastewater Treatment facility and will have enough capacity for the proposed project.

(10) An engineering analysis showing compliance with structural design, minimization of odor-causing conditions, and the pipe design requirements of §217.55 of this title (Relating to Manholes and Related Structures).

Response: All wastewater pipes will be laid in straight line segments; manholes to be coated against gases; pipe connections and manhole lids sealed with rubber gaskets and grouted to prevent the escape of gases.

ATTACHMENT A

Sewage Collection System

(11) A description of the areas not initially served by a project, and the projected means of providing service to these areas, including special provisions incorporated in the present plans for future expansion.

Response: N/A. All residential units within the proposed development will be served by this project.

(12) The calculations and curves show the operating characteristics of all system lift stations at minimum, maximum, and design flow during both present and future conditions.

Response: N/A. There are no lift stations in the project.

(13) The safety considerations incorporated into a project design, including ventilation, entrances, working areas, and explosion prevention.

Response: Trench safety systems will be used for all trenching depths 5 feet or greater; stepped trenches where necessary; barricades to open trenched/work areas; and safety meetings held by the Contractor will help ensure the safe installation of the wastewater improvements associated with the project. No atypical or nonstandard practices or products will be installed with the project. Blasting is not allowed proposed project.

Sincerely,

Aaron J. Neumann, P.E

ATTACHMENT A

Sewage Collection System

Flexible Pipe Design Calculations - 8" PVC

Project Number:	9487-00	Date:	4/3/2023
Project Name:	Piedmont		
Customer Reference No.:	601574049		

Input Data:

Pipe Inside Diameter	D =	7.354	in	
Wall Thickness	t =	0.323	in	(ASTM PS115 D3034)
Trench Width	b =	32	in	
Height of soil surface above top of pipe	h =	47.16	in	
Height of water surface above top of pipe	h_w =	0	in	(groundwater elevation)
Pipe burial depth (min.)	H =	4.6	ft	(2ft < H < 80ft)
Modulus of soil reaction (bed material)	E_b =	2,000	psi	(Use 2,000 psi for gravel)
Modulus of Elasticity (pipe material)	E =	440,000	psi	(440,000 psi for PVC ASTM F679)
Modulus of soil reaction (in-situ soil)	E'_n =	1,000	psi	
Specific Weight of Water	γ_w =	0.0361	pci	
Specific Weight of Soil	γ_s =	120	pcf	
Live Load (See T63)	L_l =	0	psi	(2ft < H < 3ft) or (has 18 kip axle)
Compressive Stress or (HDB)	P_c =	4,000	psi	(Use 4,000 for typical PVC pipe)
Ring Stiffness Constant	RSC =	0		(Provided by Pipe Manufacturer)
Bedding Angle Constant	K =	0.110		(Assume 0.110 unless otherwise justified)

Calculations:

Buckling Analysis (q_a)
TCEQ-10243, T68-T70

Water Buoyancy Factor, R_w
If $h_w = 0$, $R_w = 1$
If $(0 < h_w < h)$, use Equation 2

$$R_w = 1 - 0.33 * \frac{h_w}{h}$$ Equation 2

R_w = 1 (no groundwater encountered)

Empirical Coefficient of Elastic Support, B'

$$B' = \frac{1}{1 + 4 * e^{-0.065H}}$$ Equation 3

B' = 0.25

Moment of Inertia of the pipe wall cross section per linear inch of pipe, I

$$I = \frac{t^3}{12}$$ Equation 4

I = 2.808E-03 in^4/lin. inch
For Solid Wall Pipe only

Allowable Buckling Pressure

$$q_a = 0.4 * \sqrt[2]{32 * Rw * B' * Eb * (E * \frac{I}{D^3})}$$ Equation 1

q_a = 89.56 psi

Vertical Soil Load on the pipe per unit length, W_c

$$W_c = \gamma_s * H * (D + t)/144$$ Equation 6

W_c = 29.43 lb/in

Pressured Applied to Pipe under installed condition, q_p

$$q_p = \gamma_w * hw + Rw * \left(\frac{W_c}{D}\right) + Ll$$ Equation 5

Project Number: 9487-00 Date: 4/3/2023
Project Name: Piedmont
Customer Reference No.: 601574049

q_p =	**4.00**	psi
$q_a \geq q_p$	OK	

Wall Crushing (H)
TCEQ-10243, T71-T72

Surface area of pipe wall, A

A = 3.88 in^2/ft

Outside pipe diameter, D_0

D_0 = 8 in

Maximum Depth, H

$$H = (24 * Pc * A)/(\gamma_s * D_0)$$

H =	**387.60**	ft	Maximum allowable H	Equation 7

Steel encasement is used

Deflection Analysis
TCEQ-10243, T76-T80

Ratio of bedding modulus to soil modulus E_b/E'_n = 2 (if > 1.25, must calculate zeta)

Pipe/trench width coefficient, f

$$f = \frac{b/d_a - 1}{1.154 + 0.444 * (b/d_a - 1)}$$ Equation 9

f = 1.21

$$zeta = \frac{1.44}{f + (1.44 - f) * (\frac{E_b}{E'_n})}$$ Equation 8

zeta = 0.86

Pipe Stiffness (P_s)
TCEQ-10243, T81-T85

$$P_s = \frac{EI}{0.149 * r^3}$$ Equation 10

P_s = 129.57 (must be > 115 psi)

$$P_s = 0.80 * RSC * (\frac{8.337}{D})$$ Equation 11

P_s = 0.00 (NOT USED)

Therefore, **P_s = 129.57**

Soil Stiffness Factor, SSF

$$SSF = 0.061 * zeta * Eb$$

SSF = 104.99

$$\frac{P_s}{SSF} = \frac{P_s}{0.061 * zeta * Eb}$$ (must be > 0.15) Equation 12

P_s/SSF = 1.23

P_s/SSF > 0.15 PIPE STIFFNESS OK

Project Number:	9487-00	Date:	4/3/2023
Project Name:	Piedmont		
Customer Reference No.:	601574049		

Predicted % Vertical Pipe Deflection under Load, ΔY/D (%)
TCEQ-10243, T86

Prism Load, L_p

$$L_p = \frac{\gamma_s * H}{144}$$

Equation 14

L_p = 3.83 psi

% Deflection

$$\frac{\Delta Y}{D} = \frac{K * (L_p + Ll) * 100}{(0.149 * Ps) + (0.061 * zeta * Eb)}$$

ΔY/D =	**0.34** %
ΔY/D < 5%	**PIPE STIFFNESS OK**
ΔY/D < 4%	**ZETA TEST OK**

04/05/2023

ATTACHMENT B

JUSTIFICATION AND CALCULATIONS FOR DEVIATION IN STRAIGHT ALIGNMENT WITHOUT MANHOLES

Attachment B — Justification and Calculations for Deviation in Straight Alignment Without Manholes

Not Applicable.

ATTACHMENT C

JUSTIFICATION FOR VARIANCE FROM MAXIMUM MANHOLE SPACING

Attachment C- Justification for Variance from Maximum Manhole Spacing

Not Applicable.

ATTACHMENT C

Sewage Collection System

ATTACHMENT D

CALCULATIONS FOR SLOPES FOR FLOWS GREATER THAN 10.0 FEET PER SECOND

Attachment D- Calculations for Slopes for Flows Greater than 10.0 Feet Per Second Site Plan

Not Applicable.

ATTACHMENT D

Sewage Collection System

PLAT NO. 22-11800552

CIVIL CONSTRUCTION DRAWINGS:

PIEDMONT

TCEQ

SEWAGE COLLECTION SYSTEM PLAN

JANUARY 2023

GENERAL NOTES

ALL CONSTRUCTION SHALL CONFORM TO THE LATEST SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION.

STREETS - CITY OF SAN ANONIO
WATER - SAN ANTONIO WATER SYSTEM - SAWS
DRAINAGE - CITY OF SAN ANTONIO
WASTEWATER - SAN ANTONIO WATER SYSTEM - SAWS

CONTACT INFORMATION FOR COORDINATION AND EMERGENCY

CITY OF SAN ANTONIO (210) 207-1111
ELECTRIC UTILITY: CPS ENERGY (210) 353-4357
WATER UTILITY: SAN ANTONIO WATER SYSTEM- SAWS (210) 704-7297
WASTEWATER UTILITY: SAN ANTONIO WATER SYSTEM- SAWS (210) 704-7297
NATURAL GAS UTILITY: GREY FOREST UTILITIES (210) 695-5991

FLOODPLAIN INFORMATION

NO PORTION OF THE LOT IN THIS TRACT IS WITHIN THE BOUNDARIES OF THE 100 YEAR FLOODPLAIN OF ANY WATERWAY THAT IS WITHIN THE LIMITS OF THE FEDERAL FLOOD INSURANCE ADMINISTRATION FIRM PANEL.

FEMA PANEL: #48029C0220G, DATED SEPTEMBER 29, 2010
TRACT SIZE: 16.14 ACRES
TYPE: SINGLE FAMILY RESIDENTIAL

BENCHMARK

PANEL POINT 1
GRID N. 13749249.35
E. 2078356.10

PANEL POINT 2
GRID N.13748050.93
E. 2078285.38

PANEL POINT 6
GRID N. 13747880.3
E. 2078793.57

GENERAL NOTES
1. COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD 83, AND ARE IN SURFACE COORDINATES.
2. PANEL POINTS ARE SIR12 WITH BGE CAPS OR A MAG NAIL WITH A BGE WASHER IN ASPHALT AND 1' X 2' CHEVRON FOR PANEL POINT.

ACCEPTED FOR CONSTRUCTION:

SAWS _____ DATE _____

CITY OF SAN ANTONIO _____ DATE _____

VICINITY MAP

NAME: PIEDMONT

OWNER: GEHAN HOMES
CONTACT: CHRIS LYNCH
3815 SOUTH CAPITAL OF TEXAS HIGHWAY,
SUITE 275
AUSTIN, TEXAS 78704
PHONE: (512) 583-9810

ENGINEER: BGE, INC., TBPE-1046
CONTACT: AARON NEUMANN P.E.
EMAIL: ANEUMANN@BGEINC.COM
7330 SAN PEDRO AVENUE SUITE 202
SAN ANTONIO, TEXAS 78216
PHONE: (210) 581-3600

WATER: SAN ANTONIO WATER SYSTEMS, SAWS
2800 US HIGHWAY 281 N
SAN ANTONIO TX 78212
PHONE: (210) 704-7297

ELECTRIC: CPS ENERGY
754 NW LOOP 410 STE 102
SAN ANTONIO TX 78216
PHONE: (210) 353-4357

DEVELOPER: GEHAN HOMES
CONTACT: CHRIS LYNCH
3815 SOUTH CAPITAL OF TEXAS HIGHWAY,
SUITE 275
AUSTIN, TX 78704
PHONE: (512) 583-9810

LAND SURVEYOR: BGE INC., TBPE F1046
CONTACT: DION ALBERTSON R.P.L.S.
7330 SAN PEDRO AVE SUITE 202
SAN ANTONIO, TX 78216
PHONE: (210) 581-3600

WASTEWATER: SAN ANTONIO WASTEWATER SYSTEM, SAWS
2800 US HIGHWAY 281 N
SAN ANTONIO TX 78212
PHONE: (210) 704-7297

GAS: GREY FOREST UTILITIES
P.O. BOX 258
HELOTES, TEXAS 78023
PHONE: (210) 695-5991

REVISIONS/CORRECTIONS					
SHEET LIST	DESCRIPTION	DATE	REVISE (R) ADD (A) VOID (V) SHEET NO.'S	ACCEPTED BY	APPROVAL DATE

SEWAGE COLLECTION SYSTEM SHEET LIST TABLE		
SHEET NUMBER	SHEET ID	SHEET TITLE
1	C00.00	SCS TITLE SHEET
2	C01.00	TCEQ-0596 GENERAL NOTES
3	C02.00	OVERALL SITE PLAN
4	C03.80	OVERALL GRADING PLAN
5	C09.00	WASTE WATER COLLECTION PLAN
6	C09.10	WASTEWATER A PLAN & PROFILE STA 1+00 TO 6+00
7	C09.11	WASTEWATER A PLAN & PROFILE STA 6+00 TO 13+00
8	C09.12	WASTEWATER A PLAN & PROFILE STA 13+00 TO END
9	C09.13	WASTEWATER B PLAN & PROFILE STA 1+00 TO END
10	C10.00	STANDARD DETAILS (SHEET 1 OF 3)
11	C10.01	STANDARD DETAILS (SHEET 2 OF 3)
12	C10.02	STANDARD DETAILS (SHEET 3 OF 3)

Know what's below. Call before you dig.

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

NOT FOR CONSTRUCTION

SUBMITTED BY

AARON J. NEUMANN, P.E.
BGE,INC. TBPE NO.F-1046
7330 SAN PEDRO AVENUE
SUITE 202
SAN ANTONIO, TEXAS 78216
(210) 581-3600 (MAIN)

BGE, Inc.
7330 San Pedro Ave., Suite 202
San Antonio, TX 78216
Tel: 210-581-3600 ● www.browngay.com
TBPE Registration No. F-1046

STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
02/08/2023

C00.00

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ORGANIZED SEWAGE COLLECTION SYSTEM GENERAL CONSTRUCTION NOTES:

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATION.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

3. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING 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.

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCE SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

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 MANUFACTURERS SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTERWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OF FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.

8. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAN D IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGES, THE LINES MUST BE REPAIRED AND RETESTED.

9. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIALS FOR ANY PORTION OF THE MANHOLE.

   THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC 217.55 ARE INCLUDED ON PLAN SHEET _ OF _.

   IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED..

10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(d) (PIPE DESIGN) and 30 TAC §290.44(e) (WATER DISTRIBUTION).

11. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER:_____.

    IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOING MUST BE USED:___.

    SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

12. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIALS WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

    IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN IN THE DETAIL OF PLAN SHEET _ OF _. (FOR POTENTIAL FUTURE LATERALS).

    THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET _ OF _ AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET _ OF _.

13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, Classes IA, IB, II or III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

14. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(c)(3)(E).

15. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:

(a) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:

(1) LOW PRESSURE AIR TEST.

(A) A LOWPRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C- 924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(ii) OF THIS PARAGRAPH.

(B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.

(i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE..

(ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

EQUATION C.3

$$T = (0.085 \times D \times K)/Q$$

WHERE:

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS

K = 0.000419 X D X L, BUT NOT LESS THAN 1.0

D = AVERAGE INSIDE PIPE DIAMETER IN INCHES

L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET

Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

(C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

TABLE C.3

PIPE DIAMETER (INCHES)	MINIMUM TIME (SECONDS)	MAXIMUM LENGTH FOR THE MINIMUM TIME (FEET)	TIME FOR LONGER LENGTH (SECONDS/FOOT)
6	340	398	0.8550
8	454	298	1.5200
10	567	239	2.3740
12	680	199	3.4190
15	850	159	5.3420
18	1020	133	7.6930
21	1190	114	10.4710
24	1360	100	13.6760
27	1530	88	17.3090
30	1700	80	21.3690
33	1870	72	25.8560

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.

(E) IF ANY PRESSURE LOSS OF LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.

(F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.

(G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMTER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST.

(A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.

(B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.

(C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.

(D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.

(E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.

(b) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

(1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.

(A) MANDREL SIZING.

(i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE,AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMs, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.

(ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.

(iii)ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

(B) MANDREL DESIGN

(i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.

(ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.

(iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.

(iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.

(C) METHOD OPTIONS

(i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.

(ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.

(iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.

(2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.

(3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION

(4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.

(5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%)/

(6) IF A PIPE SECTION FAILS A DEFLECTION TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

16. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

(a) ALL MANHOLES MUST PASS A LEAKAGE TEST.

(b) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.

(1) HYDROSTATIC TESTING

(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.

(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.

(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.

(2) VACUUM TESTING

(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.

(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.

(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN..

(D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.

(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.

(G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.

(H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

17. ALL PRIVATE SERVICE LATERAL MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(c)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION

TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER

OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM

Austin Regional Office
Austin, Texas 78753-1808
Phone (512) 339-2929
Fax (512) 339-3795

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

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

PLAT NO. 22-11800552

REV	DESCRIPTION	DATE	APR
◁			
◁			
◁			
◁			
◁			

DESIGNED BY: YM
REVIEWED BY: OR
DRAWN BY: YM

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TEXAS 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

NOT FOR CONSTRUCTION

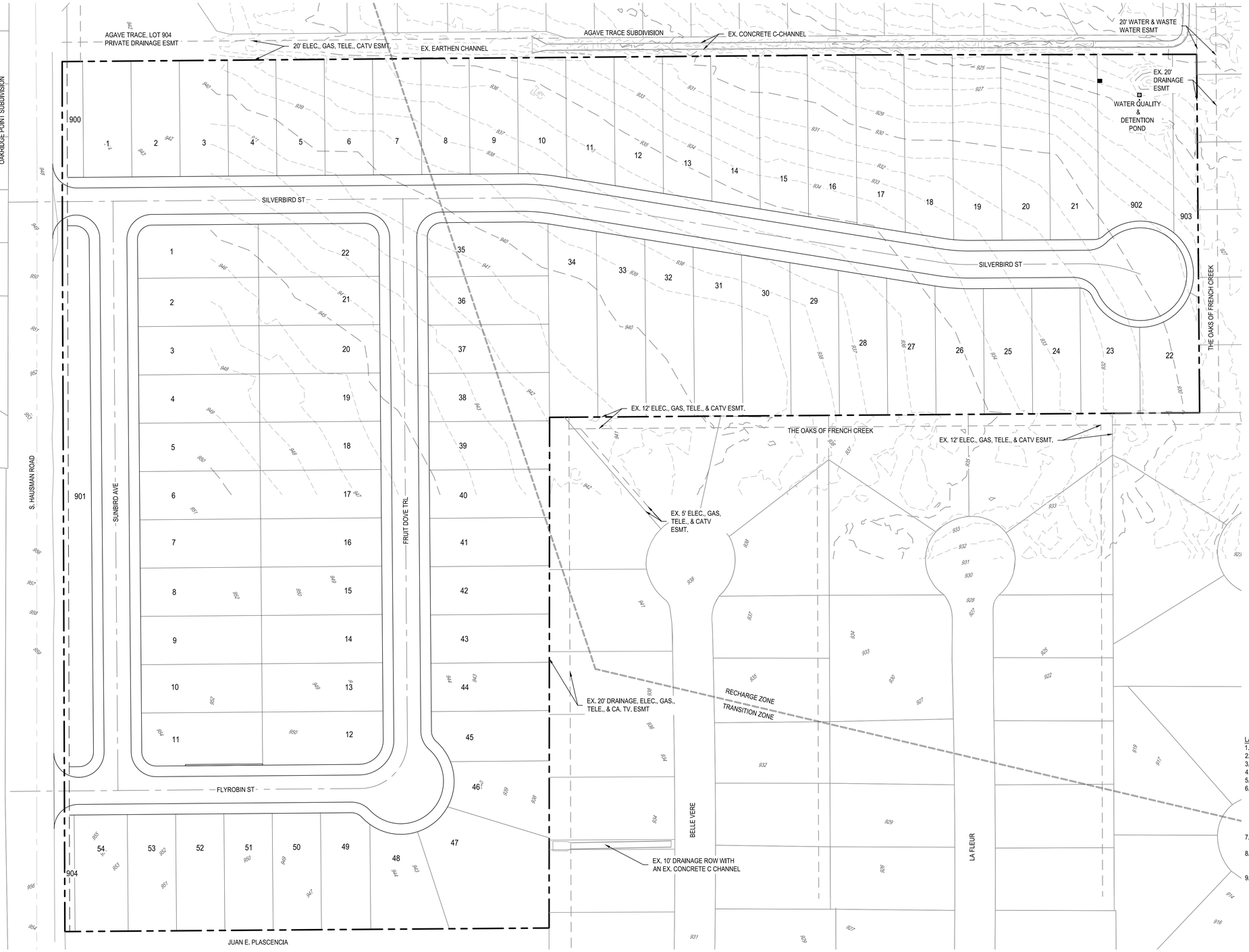
PIEDMONT

TCEQ–0596 GENERAL NOTES

STATE OF TEXAS
AARON J. NEUMANN
11445
LICENSED PROFESSIONAL ENGINEER
02/08/2023

C01.00

PLAT NO. 22-11800552



0 25' 50' 100'

SCALE: 1" = 50'

LEGEND

- PROPERTY BOUNDARY
- 932 EXISTING 1' CONTOUR
- 940 EXISTING 5' CONTOUR
- STREET CENTERLINE
- EDWARDS AQUIFER RECHARGE ZONE
- 10 LOT NUMBERS

PROJECT SUMMARY	
SINGLE-FAMILY RESIDENTIAL AREA (ACRES)	12.00
NUMBER OF RESIDENTIAL LOTS	76
OPEN SPACE/PARKLAND/DRAINAGE LOTS (EA)	5
OPEN SPACE AREA (ACRES)	0.135
ROW (LF)	2,788
DENSITY (LOT/ACRE)	4.71
ROW AREA (ACRES)	3.23
TOTAL ACREAGE	16.14

UTILITY PROVIDERS	
WATER:	SAWS
SEWER:	SAWS
ELECTRIC:	CPS
GAS:	GREY FOREST

FEMA FIRM PANEL:
48029C0220G, EFF. SEP. 29, 2010.

OWNER/DEVELOPER:
CHRIS LYNCH
GEHAN HOMES
3815 SOUTH CAPITOL OF TEXAS HIGHWAY, SUITE 275, AUSTIN, TEXAS 78704

ENGINEER:
AARON NEUMANN, P.E.
BGE, INC., TBPE-1046
7330 SAN PEDRO AVENUE, SUITE 202 SAN ANTONIO, TEXAS 78216

LAND PLAN NOTES:

1. A 10' P.U.E. WILL BE DEDICATED ADJACENT TO ALL STREET RIGHT-OF-WAY.
2. WATER SERVICE IS TO BE PROVIDED BY SAWS.
3. ELECTRIC SERVICE TO BE PROVIDED BY CPS.
4. SANITARY SEWER SERVICE IS TO BE PROVIDED BY SAWS.
5. GAS SERVICE TO BE PROVIDED BY GREY FOREST.
6. DURING THE BUILDING PERMIT STAGE, THE INDIVIDUAL HOMEBUILDER/OWNER SHALL BE RESPONSIBLE FOR CONSTRUCTION OF A 4' CONCRETE SIDEWALK ALONG THE FRONTAGE OF THE INDIVIDUAL LOT. THE DEVELOPER OF THIS PROJECT SHALL BE RESPONSIBLE FOR CONSTRUCTION OF CONCRETE SIDEWALK AT COMMON AREAS, DRAINAGE EASEMENTS, AND ALL OTHER AREAS WHERE SIDEWALK IS REQUIRED TO BE CONSTRUCTED (SEE TYPICAL STREET SECTION FOR PLACEMENT OF SIDEWALK).
7. THIS DEVELOPMENT WILL CONSIST OF SINGLE FAMILY RESIDENTIAL LOTS, WITH A MINIMUM LOT AREA = 6,000 SQUARE FEET AND A MINIMUM WIDTH = 50 LF.
8. ALL STREETS WITHIN THE PIEDMONT SUBDIVISION WILL BE BUILT TO THE CITY OF SAN ANTONIO SPECIFICATIONS AND WILL BE DEDICATED TO THE CITY UPON COMPLETION AND ACCEPTANCE.
9. TRAFFIC SIGNS WILL BE MAINTAINED BY THE CITY OF SAN ANTONIO TO MEET THE STANDARDS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NOT FOR CONSTRUCTION

	APR	DATE	DESCRIPTION	REV

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

PIEDMENT

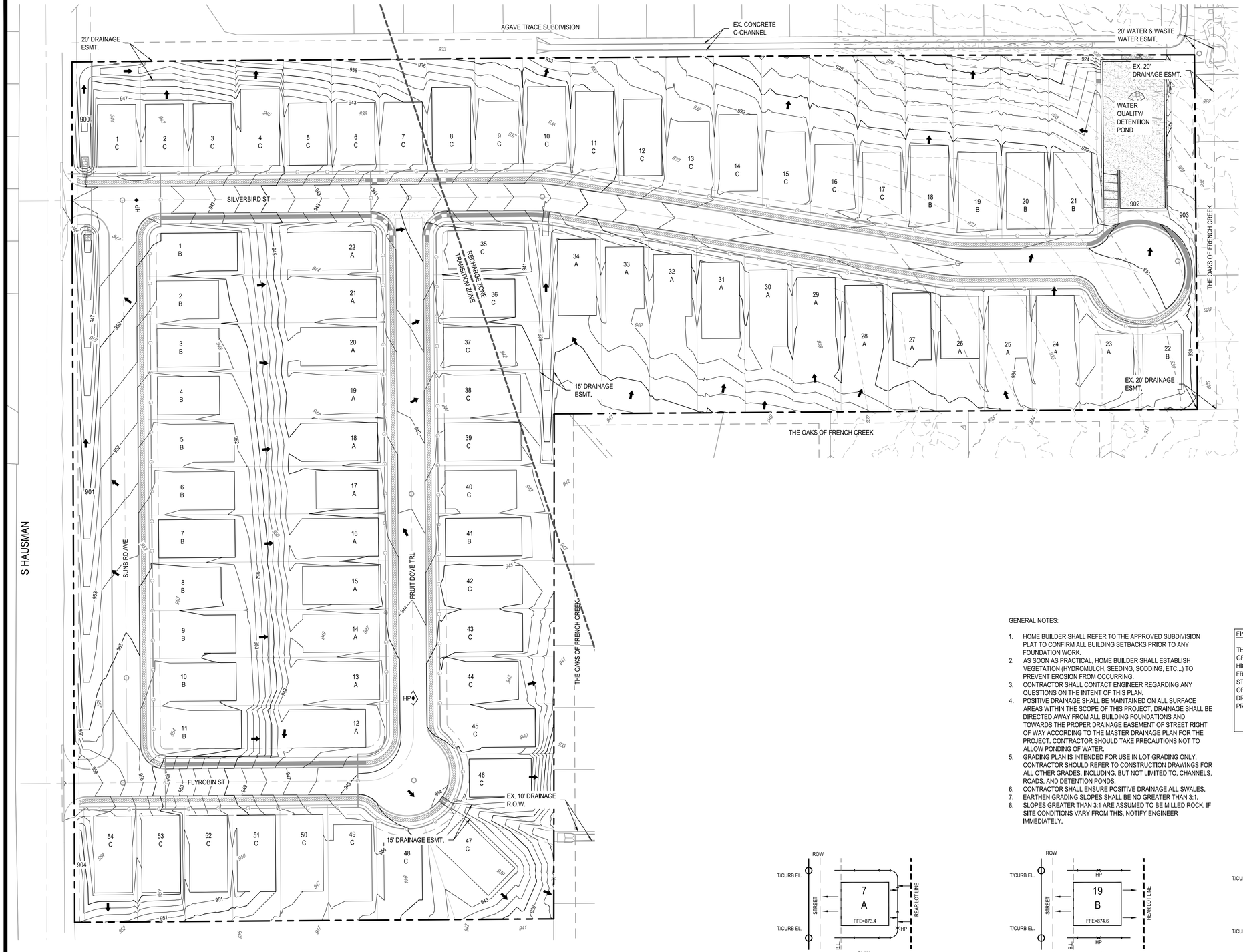
OVERALL SITE PLAN

STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER

02/08/2023

SHEET: 08
C02.00

PLAT NO. 22-11800552



N

0 25' 50' 100'

SCALE: 1" = 50'

LEGEND

- PROPERTY BOUNDARY
- 1 — LOT NUMBERS
- A — LOT GRADING TYPE
- BUILDING SETBACK
- 831 — PROPOSED 1' CONTOUR
- 830 — PROPOSED 5' CONTOUR
- 831 — EXISTING 1' CONTOUR
- 830 — EXISTING 5' CONTOUR
- FLOW ARROW
- EDWARDS AQUIFER RECHARGE ZONE BOUNDARY
- LP / HP — LOW POINT / HIGH POINT

GENERAL NOTES:

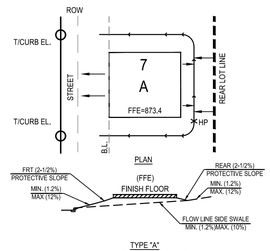
1. HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
2. AS SOON AS PRACTICAL, HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.
3. CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
4. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OF STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.
5. GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.
6. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.
7. EARTHEN GRADING SLOPES SHALL BE NO GREATER THAN 3:1.
8. SLOPES GREATER THAN 3:1 ARE ASSUMED TO BE MILLED ROCK, IF SITE CONDITIONS VARY FROM THIS, NOTIFY ENGINEER IMMEDIATELY.

FINISHED FLOOR ELEVATIONS

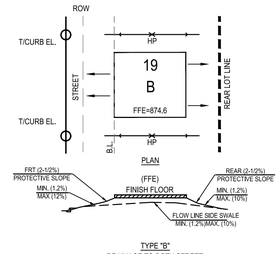
THE ELEVATION OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND OR FINISHED FLOOR ELEVATION WHICH EVER IS HIGHER, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORM WATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO THE STORM WATER CONVEYANCE STRUCTURES MUST HAVE FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE STRUCTURE.

LOT FILL NOTES:

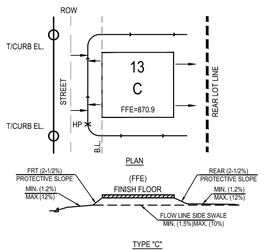
1. ALL LOTS WITH FILL SHALL BE COMPACTED IN ACCORDANCE WITH THE 79G PROCEDURE THAT MEETS THE REQUIREMENTS OF THE FHA DATA SHEET. DOCUMENTATION AND THE EVIDENCE OF COMPACTED SHALL BE FURNISHED TO THE ENGINEER & OWNER.



TYPE "A"
ALL DRAINAGE TO STEET



TYPE "B"
DRAINAGE TO BOTH STREET AND REAR LOT LINE



TYPE "C"
DRAINAGE TO REAR LOT LINE

NOT FOR CONSTRUCTION

						APR
						DATE
						DESCRIPTION
						REV

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

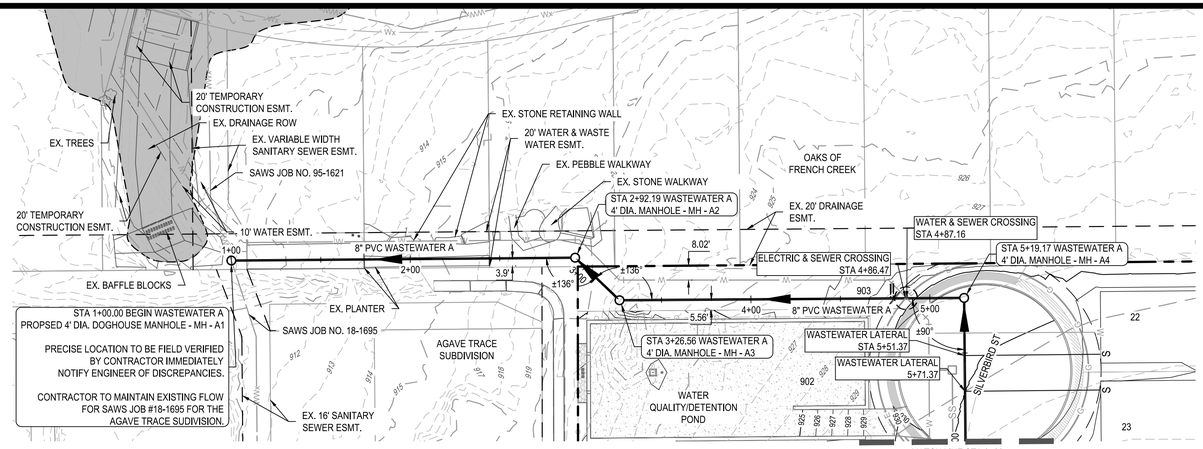
PIEDMONT

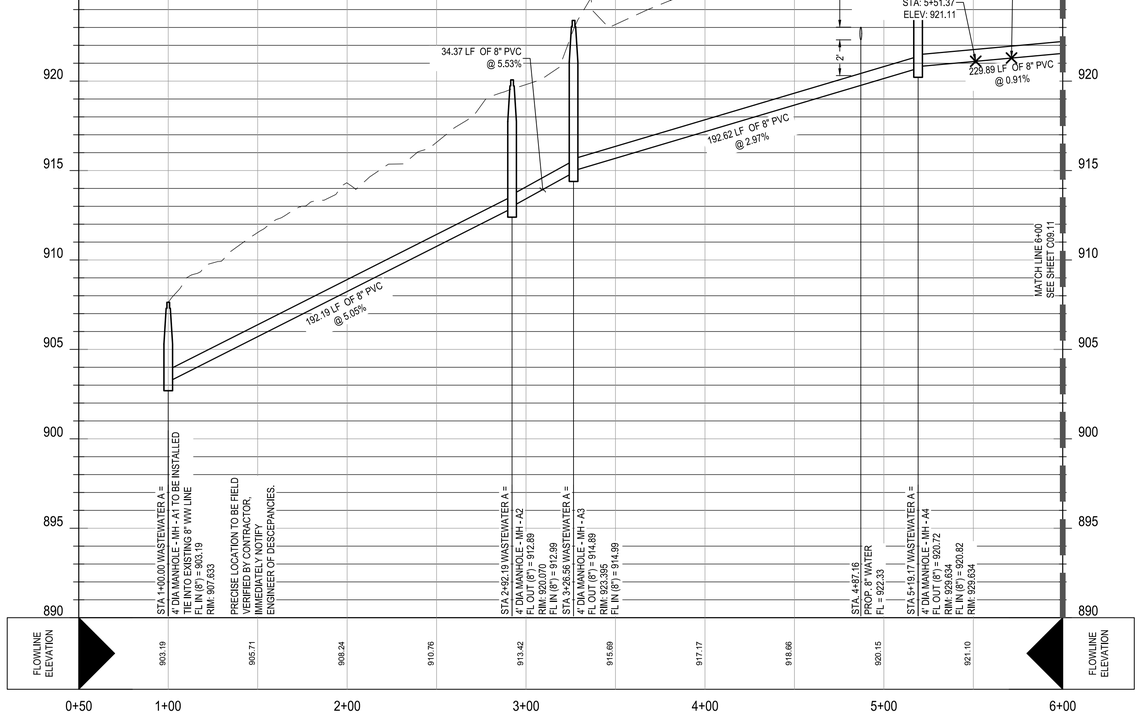
OVERALL GRADING PLAN

STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
02/08/2023

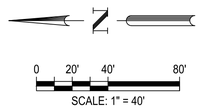
SHEET: 19
C03.80

G:\TX\C\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\03_CADD\01_Shts\C03.80 948700 OVERALL GRADING PLAN.dwg Layout: OVERALL GRADING PLAN Plotted: 1/31/2023 2:46:10 PM By: Calderon





PLAT NO. 22-11800552



LEGEND

- FEMA FLOODPLAIN ZONE
- EDWARDS AQUIFER RECHARGE ZONE
- PROPERTY BOUNDARY
- PUBLIC UTILITY EASEMENT (P.U.E.)
- EXISTING WASTEWATER LINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED STORM DRAIN
- PROPOSED ELECTRIC
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED 1' MINOR CONTOUR
- PROPOSED 5' MAJOR CONTOUR
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE SEWER SERVICE CONNECTION
- PROPOSED FIRE HYDRANT
- UTILITY CROSSING

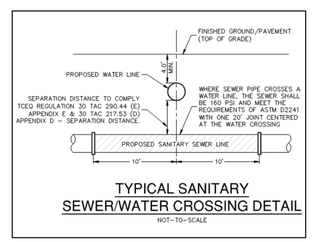
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS COVERING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR SHALL REFERENCE GAS AND ELECTRIC PLANS FOR FINAL SIZE AND ELEVATION AT CROSSINGS

SEWER GENERAL NOTE:
WASTEWATER PIPES SHALL BE SDR21 PVC.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

NOT FOR CONSTRUCTION

							APR
							DATE
							DESCRIPTION
							REV

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TEXAS 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

PIEDMONT

WASTEWATER A PLAN & PROFILE
STA 1+00 TO 6+00

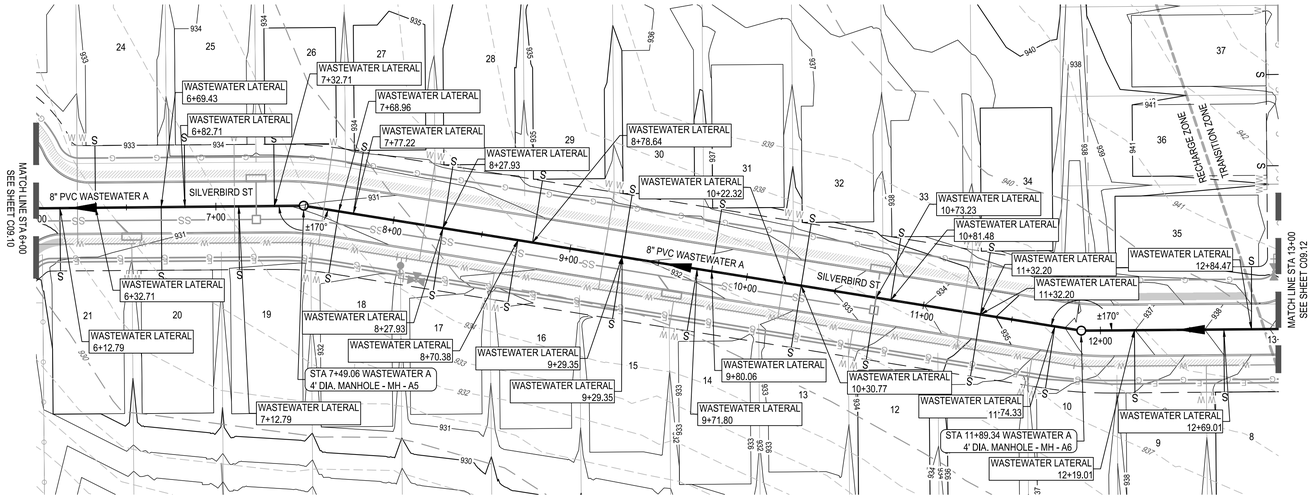
STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
03/13/2023

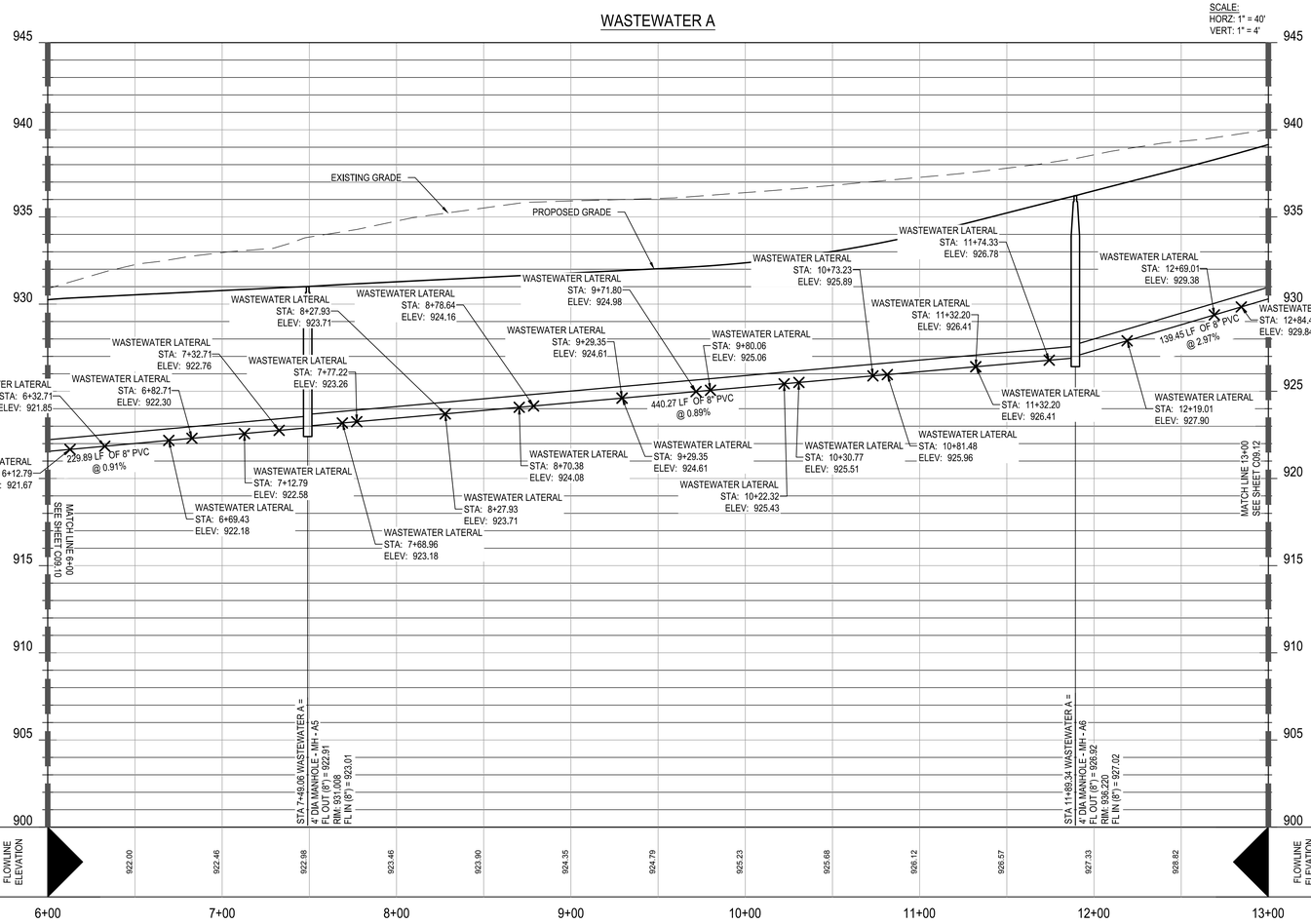
SHEET: 48
C09.10

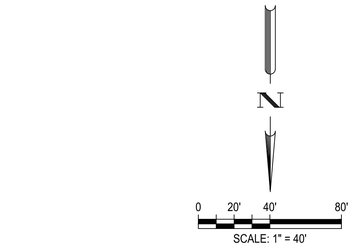
SEWER: UPPER LEON CREEK WATERSHED- LEON CREEK W.R.C.
DEVELOPER NAME: GEHAN HOMES
DEVELOPER ADDRESS: 13815 CAPITAL HIGHWAY, SUITE 275
CITY AUSTIN STATE TX ZIP 78704
PHONE N/A FAX N/A
SAWS BLOCK MAP # 110622 TOTAL EDU'S 76 TOTAL ACREAGE 16.14
TOTAL LINEAR FOOTAGE OF PIPE 2,940 PLAT NO. 22-11800552
NUMBER OF LOTS 76 SAWS JOB NO. 22-1721

G:\TXCI\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\03_CADD\01_Site\C09.10 948700 WASTEWATER A P&P.dwg Layout: WASTEWATER A PLAN & PROFILE STA 1+00 TO 6+00 Plotted: 3/8/2023 2:40:35 PM By: Calderon

PLAT NO. 22-11800552







LEGEND

- FEMA FLOODPLAIN ZONE
- EDWARDS AQUIFER RECHARGE ZONE
- PROPERTY BOUNDARY
- PUBLIC UTILITY EASEMENT (P.U.E.)
- EXISTING WASTEWATER LINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED STORM DRAIN
- PROPOSED ELECTRIC
- EXISTING 1' MINOR CONTOUR
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- PROPOSED 1' MINOR CONTOUR
- PROPOSED 5' MAJOR CONTOUR
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE SEWER SERVICE CONNECTION
- PROPOSED FIRE HYDRANT
- UTILITY CROSSING

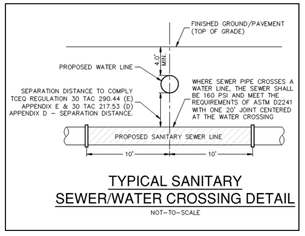
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS COVERING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR SHALL REFERENCE GAS AND ELECTRIC PLANS FOR FINAL SIZE AND ELEVATION AT CROSSINGS.

SEWER GENERAL NOTE:
WASTEWATER PIPES SHALL BE SDR21 PVC.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

NOT FOR CONSTRUCTION

SEWER: UPPER LEON CREEK WATERSHED- LEON CREEK W.R.C.
DEVELOPER NAME: GEHAN HOMES
DEVELOPER ADDRESS: 13815 CAPITAL HIGHWAY, SUITE 275
CITY AUSTIN STATE TX ZIP 78704
PHONE N/A FAX N/A
SAWS BLOCK MAP # 110622 TOTAL EDU'S 76 TOTAL ACREAGE 16.14
TOTAL LINEAR FOOTAGE OF PIPE 2,940 PLAT NO. 22-11800552
NUMBER OF LOTS 76 SAWS JOB NO. 22-1721

							APR
							DATE
							DESCRIPTION
◁	◁	◁	◁	◁	◁		REV

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TEL: 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

PIEDMONT

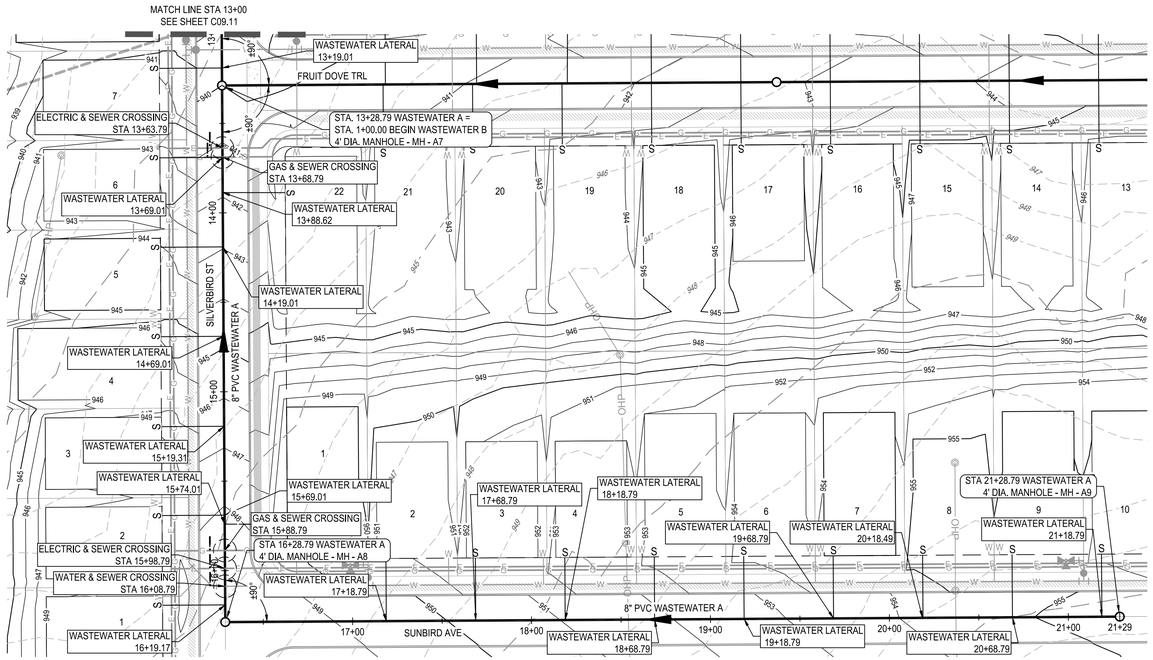
WASTEWATER A PLAN & PROFILE
STA 6+00 TO 13+00

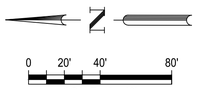
STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
03/13/2023

SHEET: 49
C09.11

G:\TX\C\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\03_CADD\01_Shts\C09.10 9487000 WASTEWATER A P&P.dwg Layout: WASTEWATER A PLAN & PROFILE STA 6+00 TO 13+00 Plotted: 3/8/2023 2:40:42 PM By: Calderon

PLAT NO. 22-11800552



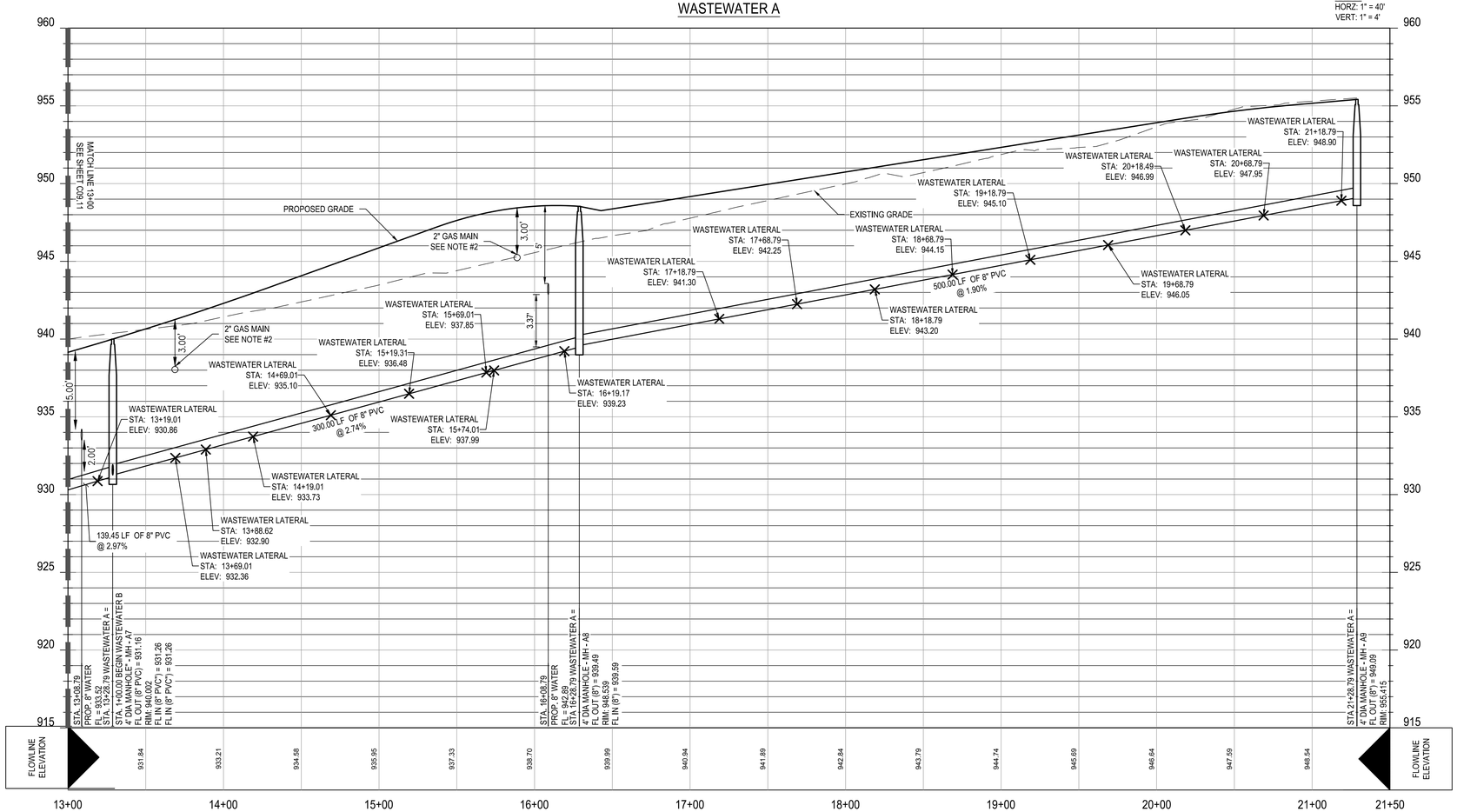


LEGEND

- FEMA FLOODPLAIN ZONE
- EDWARDS AQUIFER RECHARGE ZONE
- PROPERTY BOUNDARY
- PUBLIC UTILITY EASEMENT (P.U.E.)
- EXISTING WASTEWATER LINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED STORM DRAIN
- PROPOSED ELECTRIC
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED 1' MINOR CONTOUR
- PROPOSED 5' MAJOR CONTOUR
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE SEWER SERVICE CONNECTION
- PROPOSED FIRE HYDRANT
- UTILITY CROSSING

WASTEWATER A

SCALE:
HORZ: 1" = 40'
VERT: 1" = 4'



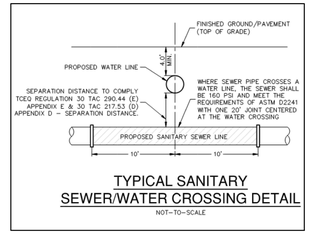
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS COVERING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR SHALL REFERENCE GAS AND ELECTRIC PLANS FOR FINAL SIZE AND ELEVATION AT CROSSINGS.

SEWER GENERAL NOTE:
WASTEWATER PIPES SHALL BE SDR21 PVC.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE

NOT FOR CONSTRUCTION

SEWER: UPPER LEON CREEK WATERSHED- LEON CREEK W.R.C.	
DEVELOPER NAME: GEHAN HOMES	
DEVELOPER ADDRESS: 13815 CAPITAL HIGHWAY, SUITE 275	
CITY: AUSTIN	STATE: TX ZIP: 78704
PHONE: N/A	FAX: N/A
SAWS BLOCK MAP #: 110622	TOTAL EDU'S: 76 TOTAL ACREAGE: 16.14
TOTAL LINEAR FOOTAGE OF PIPE: 2,940	PLAT NO.: 22-11800552
NUMBER OF LOTS: 76	SAWS JOB NO.: 22-1721

							APR
							DATE
							DESCRIPTION
							REV

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

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SAN ANTONIO, TX 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

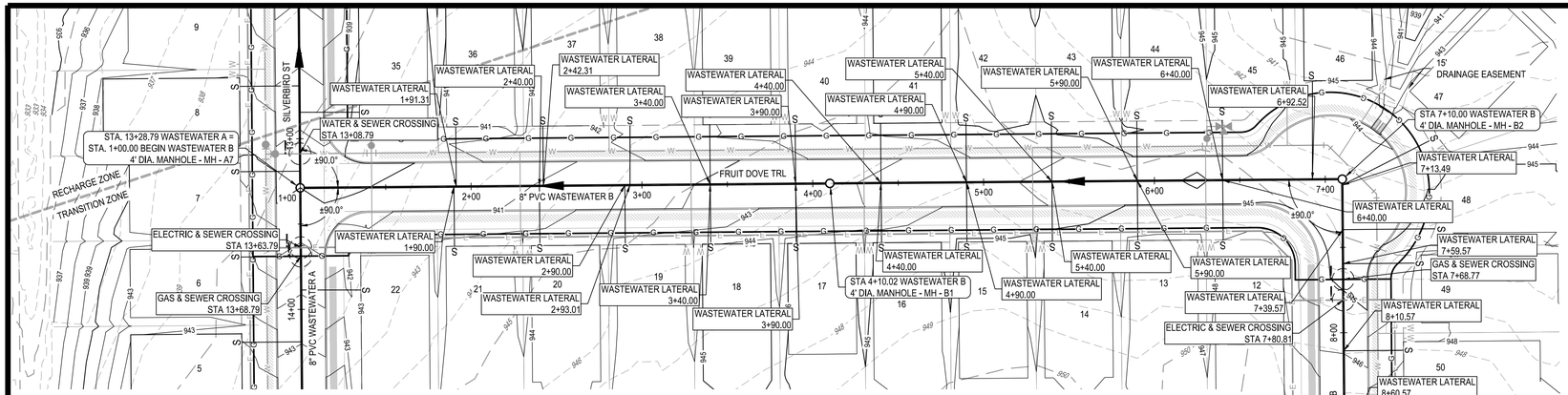
PIEDMONT

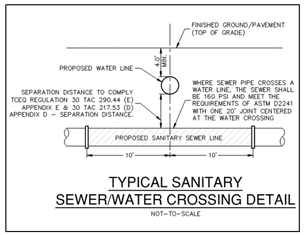
WASTEWATER A PLAN & PROFILE
STA 13+00 TO END

STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
03/13/2023

SHEET: 50
C09.12

G:\TXC\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\03_CADD\01_Shts\C09.10 9487000 WASTEWATER A P&P.dwg Layout: WASTEWATER A PLAN & PROFILE STA 13+00 TO END Plotted: 3/8/2023 2:40:52 PM By: Calderon





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS COVERING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

SEWER: UPPER LEON CREEK WATERSHED- LEON CREEK W.R.C.

DEVELOPER NAME: GEHAN HOMES
DEVELOPER ADDRESS: 13815 CAPITAL HIGHWAY, SUITE 275
CITY AUSTIN STATE TX ZIP 78704
PHONE N/A FAX N/A
SAWS BLOCK MAP # 110622 TOTAL EDU'S 76 TOTAL ACREAGE 16.14
TOTAL LINEAR FOOTAGE OF PIPE 2,940 PLAT NO. 22-11800552
NUMBER OF LOTS 76 SAWS JOB NO. 22-1721

NOTES:

1. COMPACTION OF TRENCH UNDER PROPOSED PAVING SHOULD USE APPROPRIATE REPLACEMENT GRANULAR MATERIAL IF UNSUITABLE SOIL IS EXCAVATED FROM TRENCH.
2. CONTRACTOR SHALL REFERENCE GAS AND ELECTRIC PLANS FOR FINAL SIZE AND ELEVATION AT CROSSINGS.

SEWER GENERAL NOTE:
WASTEWATER PIPES SHALL BE SDR21 PVC.

LEGEND

- FEMA FLOODPLAIN ZONE
- EDWARDS AQUIFER RECHARGE ZONE
- PROPERTY BOUNDARY
- PUBLIC UTILITY EASEMENT (P.U.E.)
- EXISTING WASTEWATER LINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
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- PROPOSED ELECTRIC
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- PROPOSED 1' MINOR CONTOUR
- PROPOSED 5' MAJOR CONTOUR
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE SEWER SERVICE CONNECTION
- PROPOSED FIRE HYDRANT
- UTILITY CROSSING

PLAT NO. 22-11800552

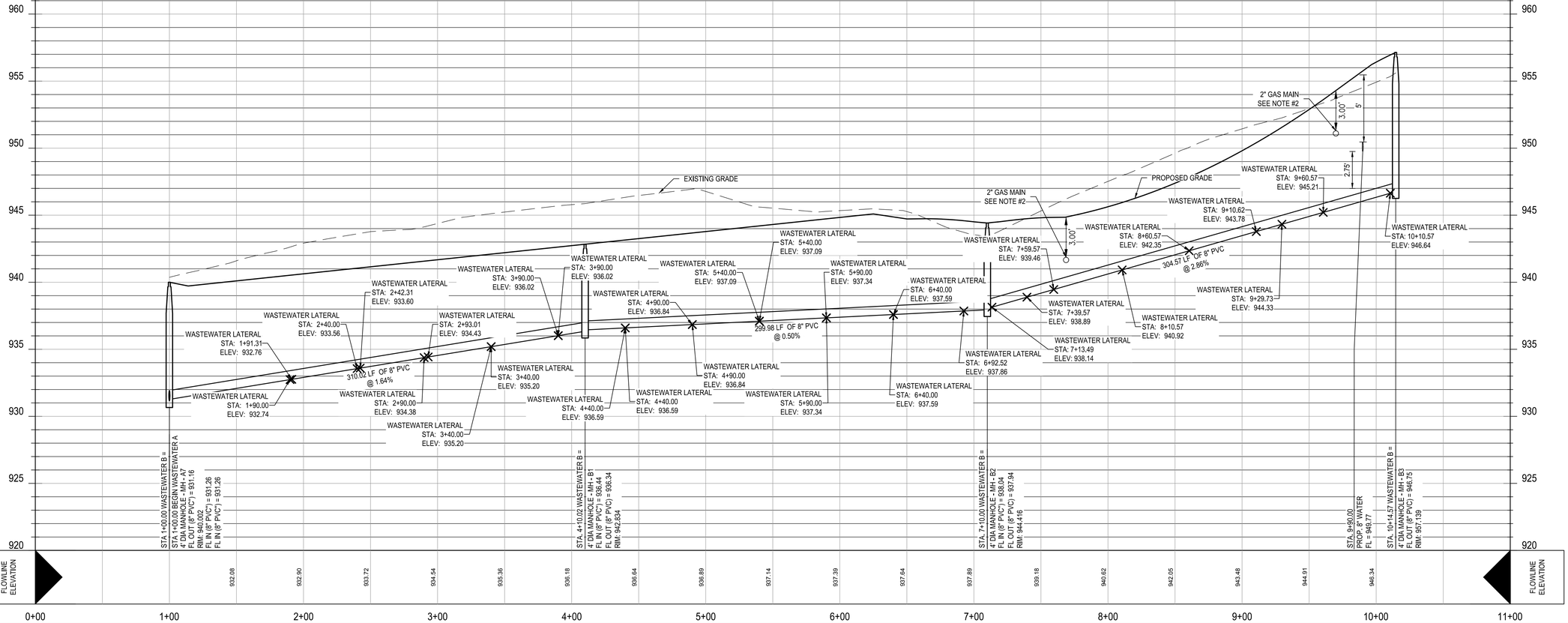
N

0 20' 40' 80'

SCALE: 1" = 40'

SCALE:
HORZ: 1" = 40'
VERT: 1" = 4'

WASTEWATER B



NOT FOR CONSTRUCTION

PIEDMONT

WASTEWATER B PLAN & PROFILE
STA 1+00 TO END

REV	DESCRIPTION	DATE	APR

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

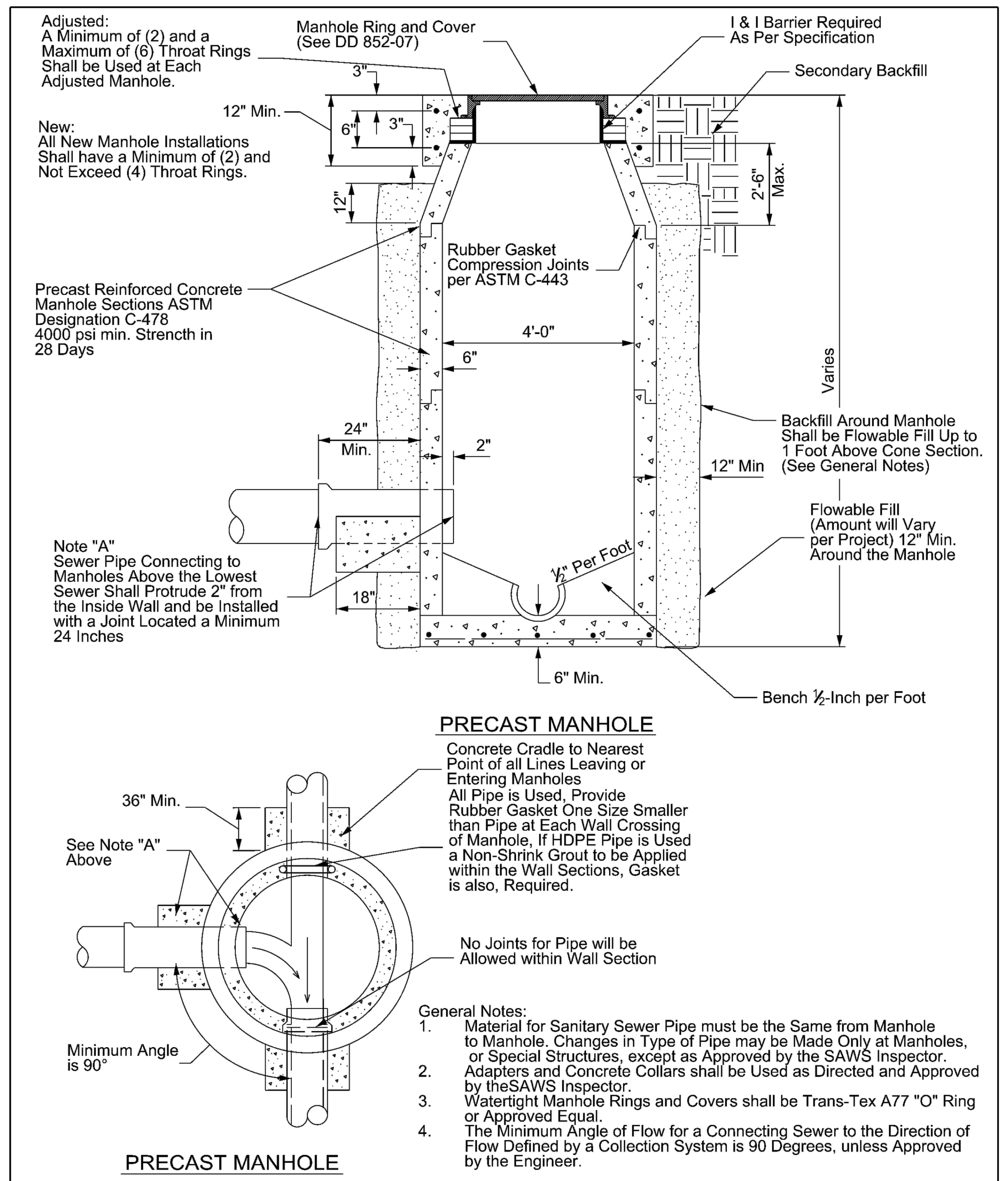
BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TEL: 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

STATE OF TEXAS
AARON J. NEUMANN
11445
LICENSED PROFESSIONAL ENGINEER
03/13/2023

SHEET: 51
C09.13

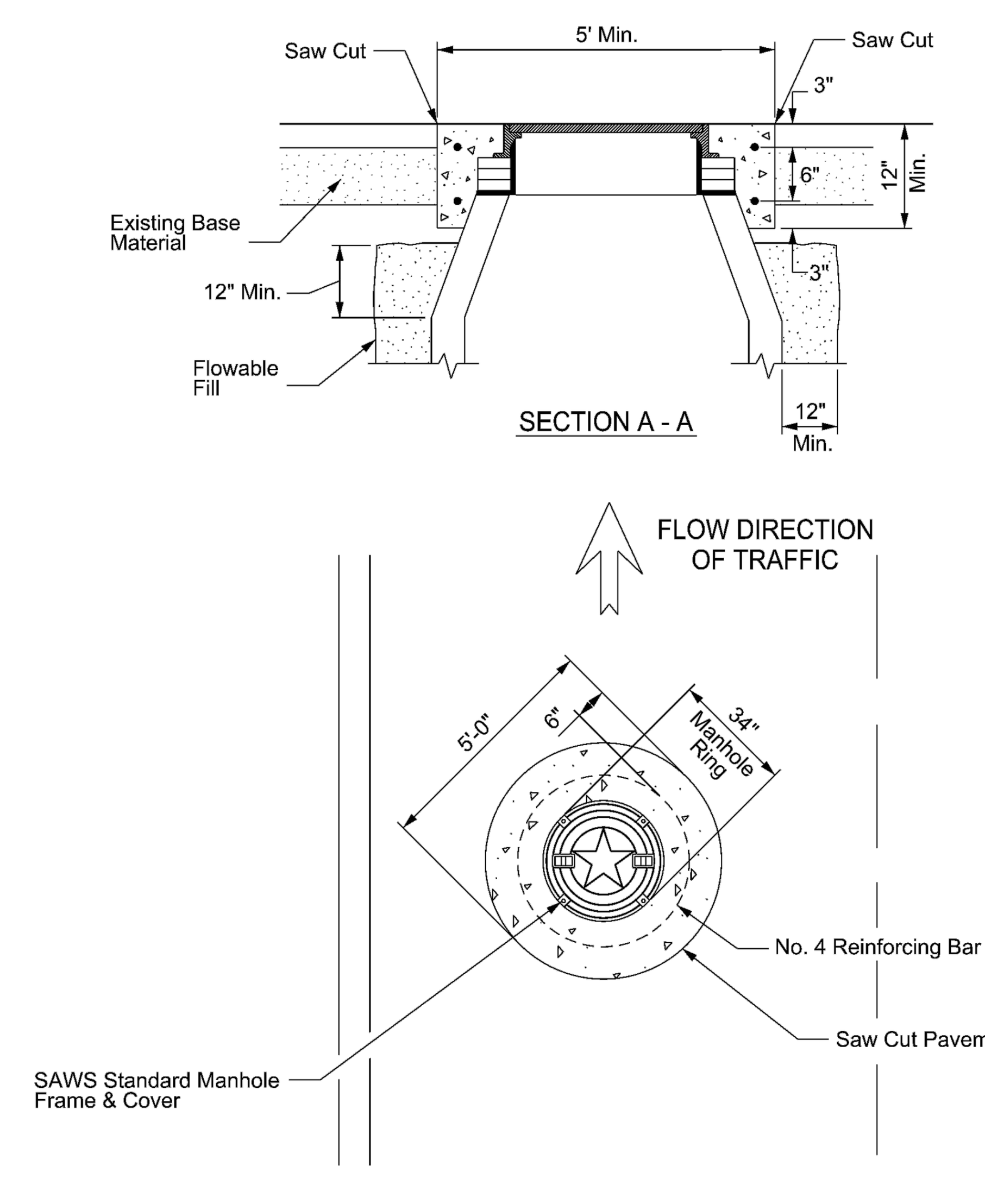
G:\TXC\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\05_Deliverables\01 - Submittals\05_TCEQ\01_WPAP & SCS\11_Organized Sewage Collection System Application (TCEQ-0582)\Attachments\GENERAL NOTES.dwg Layout: Details_1 Plotted: 2/7/2023 7:54:53 AM By: Ymedrano

PLAT NO. 22-11800552



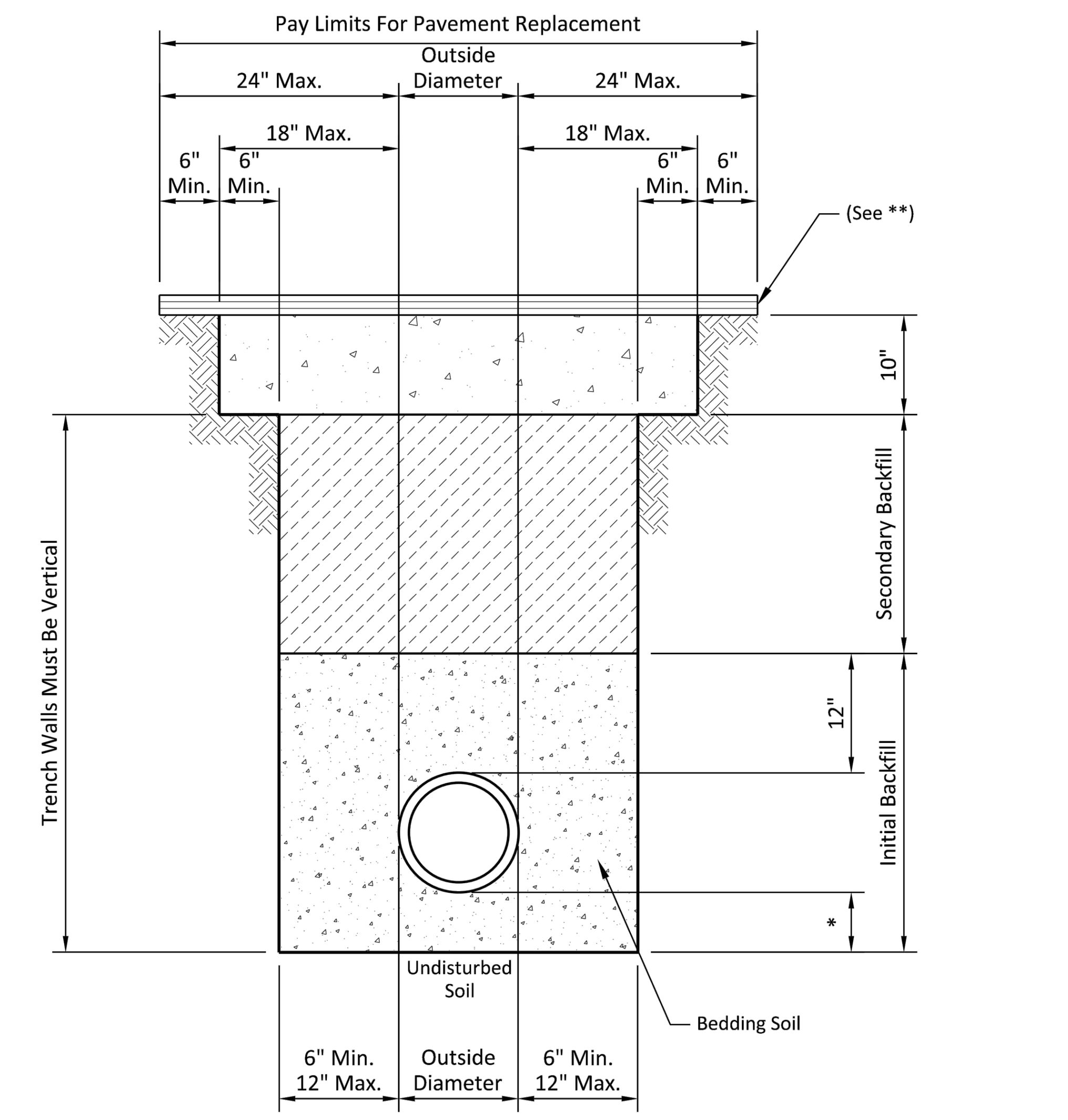
General Notes:
1. Material for Sanitary Sewer Pipe must be the Same from Manhole to Manhole. Changes in Type of Pipe may be Made Only at Manholes, or Special Structures, except as Approved by the SAWS Inspector.
2. Adapters and Concrete Collars shall be Used as Directed and Approved by theSAWS Inspector.
3. Watertight Manhole Rings and Covers shall be Trans-Tex A77 "O" Ring or Approved Equal.
4. The Minimum Angle of Flow for a Connecting Sewer to the Direction of Flow Defined by a Collection System is 90 Degrees, unless Approved by the Engineer.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD PRECAST MANHOLE	APPROVED MAY 2013	REVISED AUG 2019
		DD-852-01	SHEET 1 OF 2



NOTE:
1. The Concrete Shall be 4000 PSI Minimum and Reinforced with No. 4 Bars as Shown.
2. The Concrete Shall Extend to Edge of Saw Cut Pavement.
3. Manhole Ring Encasement is Required on all Manholes.
4. Manhole Lid shall Open in the Direction of Traffic or Downstream in Parkway

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING ENCASEMENT DETAIL	APPROVED AUGUST 2009	REVISED AUG 2019
		DD 852-03	SHEET 1 OF 2



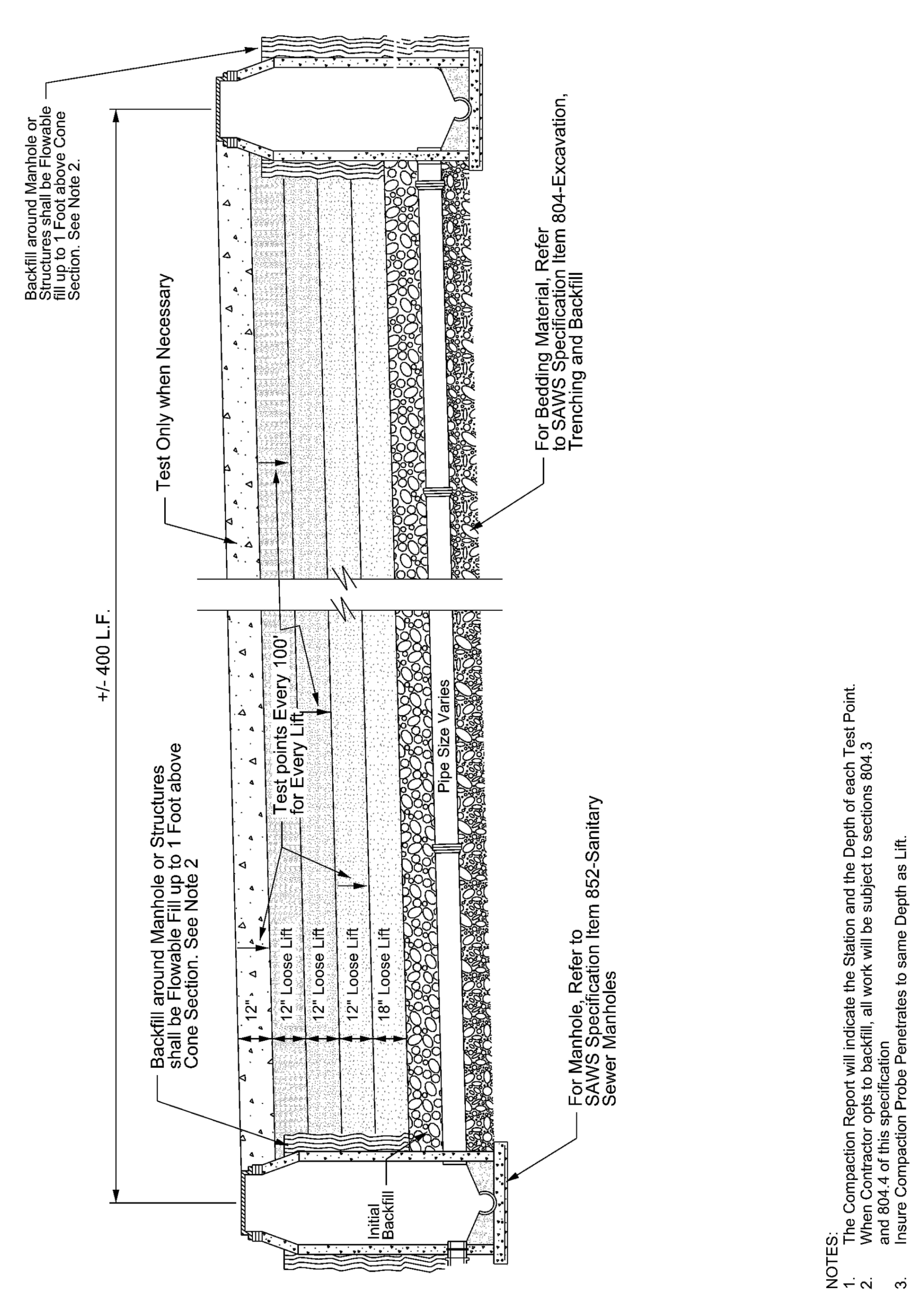
The Existing Material at the Bearing Level shall be Removed and Replaced to a Minimum Depth of 6-Inches or ½ of the Outside Diameter of the Pipe, whichever is greater, with Bedding Material.

In Areas of over Excavation, Encasement shall extend from Trench Wall. Pay Limits shall not Exceed 12" Max. as shown on Detail. Additional Encasement shall be incidental.

* Sewer Gravel 6" Min. or ½ O.D. of the Pipe, whichever is greater.
** Minimum 2" HMAC Type "D" for Trench Repair in Local/Residential Streets.
** Minimum 3" HMAC Type "C" for Trench Repair in Collector/Arterial Streets.

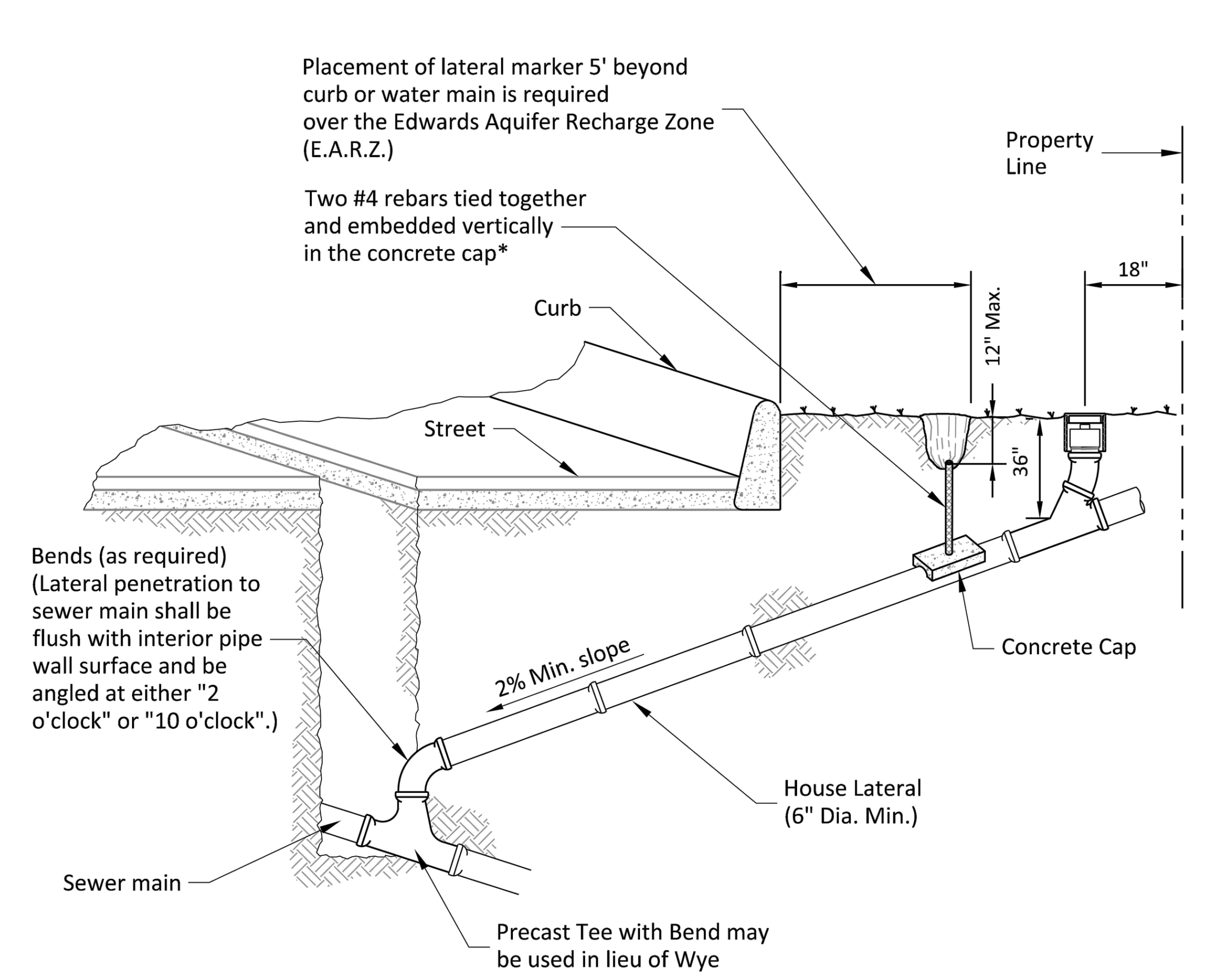
- Hot Mix Asphalt Concrete (HMAC)
- Asphalt Treated Base (A.T.B.)

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED MARCH 2008	REVISED AUG 2019
		DD-804-01	SHEET 1 OF 1



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TRENCH COMPACTION DETAIL	APPROVED MARCH 2018	REVISED AUG 2019
		DD 804-02	SHEET 1 OF 1

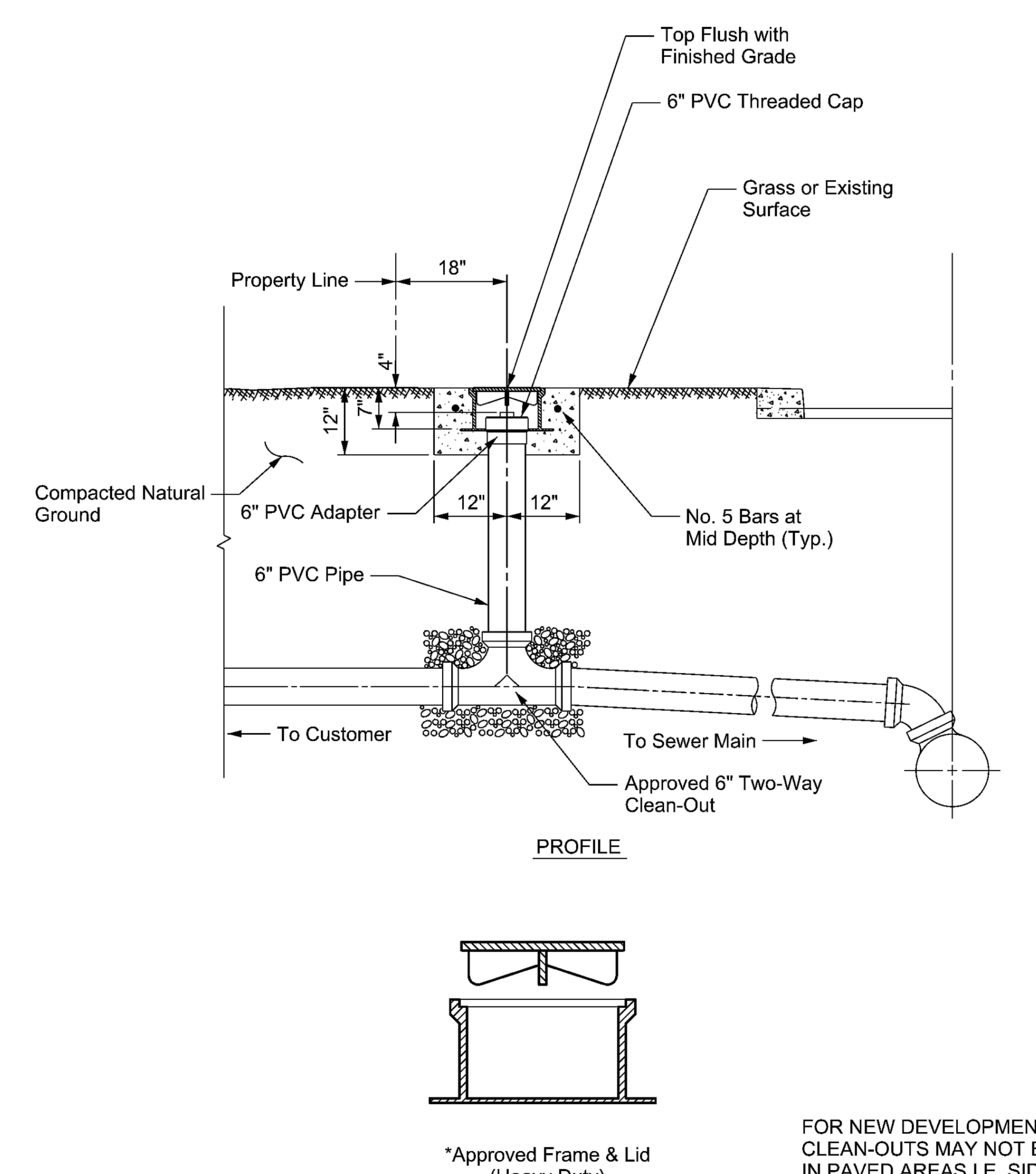
Depth and grade of service laterals as shown, are typical only. Actual depth, alignment and grade of service laterals shall be determined by the Engineer based on the elevations of the sewer main, street, natural ground and building to be serviced.



HOUSE LATERAL DETAIL

Note:
A minimum of 3' of cover to subgrade is necessary, otherwise concrete encasement will be required.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)	APPROVED March 2008	REVISED December 2018
		DD-854-EARZ	SHEET 1 OF 1



FOR NEW DEVELOPMENT CLEAN-OUTS MAY NOT BE PLACED IN PAVED AREAS I.E. SIDEWALKS, DRIVEWAYS, OR PARKING LOTS, AND MUST BE LOCATED A MINIMUM OF 6" FROM ALL PAVED AREAS.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CLEANOUT DETAIL	APPROVED MARCH 2008	REVISED AUG 2019
		DD-854-02	SHEET 1 OF 3

REV	DESCRIPTION	DATE	APR

DESIGNED BY: YM
REVIEWED BY: OR
DRAWN BY: YM

BGE

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TX 78216
TEL: 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

NOT FOR CONSTRUCTION

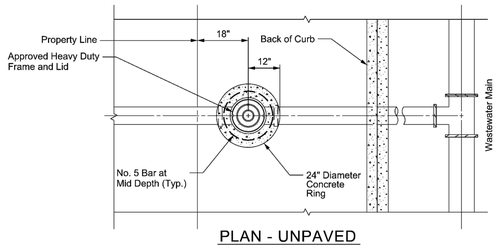
PIEDMONT

SAWS STANDARD DETAILS (SHEET 1 OF 3)

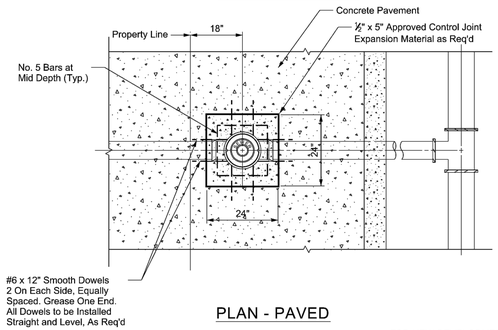
STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
02/08/2023

C10.00

PLAT NO. 22-11800552



PLAN - UNPAVED

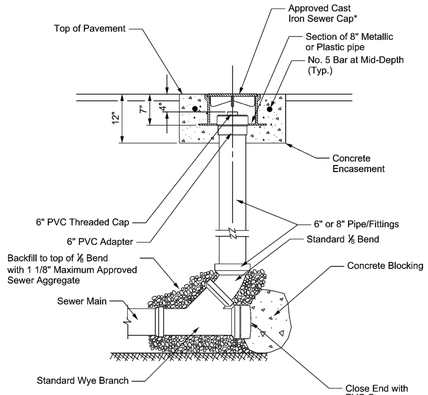


PLAN - PAVED

*Approved Frame & Lid (Heavy Duty)

FOR NEW DEVELOPMENT CLEAN-OUTS MAY NOT BE PLACED IN PAVED AREAS I.E. SIDEWALKS, DRIVEWAYS, OR PARKING LOTS, AND MUST BE LOCATED A MINIMUM OF 6" FROM ALL PAVED AREAS.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CLEANOUT DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 2 OF 3
		DD-854-02		

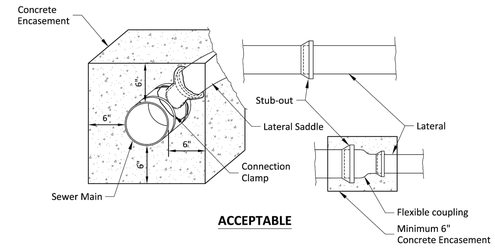


*Approved Frame & Lid (Heavy Duty)

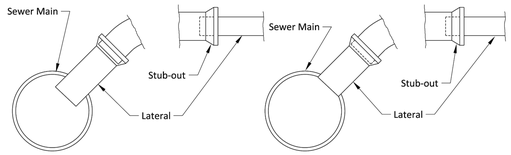
Note: Depending upon the type of service that an 8 inch lateral (on a dead end main) is providing, a standard manhole in lieu of this cleanout may be required. Consult with the SAWS Inspector.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CLEANOUT DETAIL (ON DEAD-END MAIN)	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 3 OF 3
		DD-854-02		

LATERAL CONNECTION TO EXISTING SEWER MAIN



ACCEPTABLE

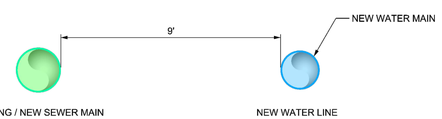


UNACCEPTABLE **ACCEPTABLE**

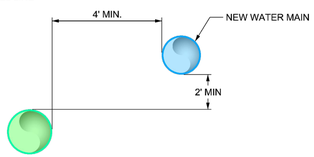
Note:
The saddle shall be permanently bonded to the existing main by the use of compounds or clamps as recommended by the manufacturer.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	LATERAL CONNECTION	APPROVED March 2008	REVISED December 2018	SHEET 1 OF 1
		DD-854-03		

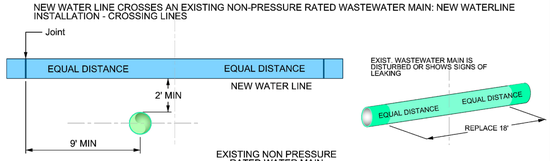
EXISTING / NEW WATER LINES CONSTRUCTED LOCATION OF WATER LINES



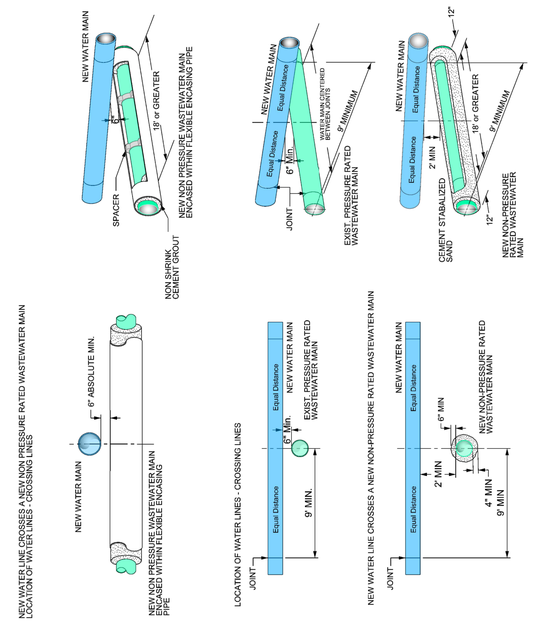
Where the nine foot separation distance can not be achieved, the following criteria shall apply: LOCATION OF WATER LINES - PARRALLEL LINE



NEW WATER LINE CROSSES AN EXISTING NON-PRESSURE RATED WASTEWATER MAIN: NEW WATERLINE INSTALLATION - CROSSING LINES



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	WATER LINES	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 3 OF 9
		DD-812-01		



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 5 OF 9
		DD-812-01		

							APR
							DATE
							DESCRIPTION
◁	◁	◁	◁	◁	◁		REV

DESIGNED BY: ####
REVIEWED BY: ####
DRAWN BY: ####

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SAN ANTONIO, TX 78216
TEL: 210-581-3600 • www.bgeinc.com
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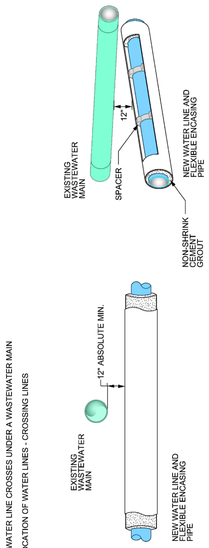
NOT FOR CONSTRUCTION

PIEDMONT

SAWS STANDARD DETAILS (SHEET 2 OF 3)

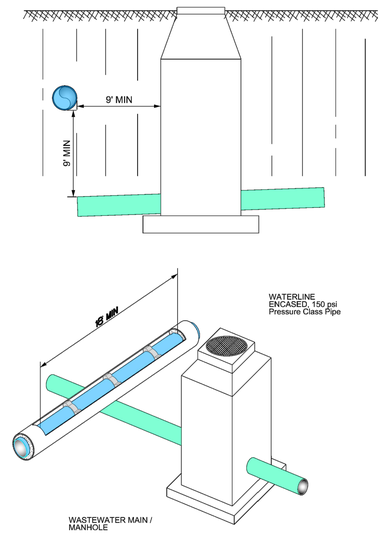
STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
02/08/2023

C10.01



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	DETAIL	APPROVED MAY 2013	REVISED AUG 2019	SHEET 6 OF 9
		DD-812-01		

WATERLINE AND WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SEPARATION
CLEANOUT SEPARATION



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	CLEANOUT SEPARATION	APPROVED MAY 2013	REVISED AUG 2019	SHEET 7 OF 9
		DD-812-01		

							APR
							DATE
							DESCRIPTION
△	△	△	△	△	△		REV

DESIGNED BY:	YM
REVIEWED BY:	OR
DRAWN BY:	YM

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SAN ANTONIO, TX 78216
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PIEDMONT

SAWS STANDARD DETAILS (SHEET 3 OF 3)

STATE OF TEXAS
AARON J. NEUMANN
11445
LICENSED PROFESSIONAL ENGINEER
02/08/2023

C10.02

TEMPORARY STORM WATER SECTION

(TCEQ-0602)

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

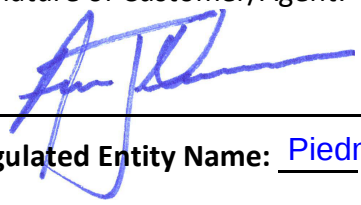
Signature

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

Print Name of Customer/Agent: Aaron Neumann, P.E.

Date: 04/05/2023

Signature of Customer/Agent:



Regulated Entity Name: Piedmont

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.

ATTACHMENT A

SPILL RESPONSE ACTIONS

Attachment A — Spill Response Actions

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contactor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within aswale.

ATTACHMENT A

Temporary Stormwater Section

- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor will be required to report significant or hazardous spills in reportable quantities to:

  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.

- 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.

  Notification should first be made by telephone and followed up with a written report.

  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.

  Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

ATTACHMENT A

Temporary Stormwater Section

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

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

ATTACHMENT A

Temporary Stormwater Section

ATTACHMENT B

POTENTIAL SOURCES OF CONTAMINATION

Attachment B — Potential Sources of Contamination

Other potential sources of contamination during construction include:

Potential Source

- Asphalt products used on this project.

Preventative Measure

- After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Potential Source

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

Preventative Measure

- Vehicle maintenance when possible will be performed within the construction staging area.
- Construction vehicles and equipment should be checked regularly for leaks and repaired immediately.

Potential Source

- Accidental leaks or spills of oil, petroleum products and substances fisted under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

Preventative Measure	▪ Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures. ▪ Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures. ▪ Hazardous materials and wastes shall be stored in covered containers and protected from vandalism. ▪ A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
Potential Source	• Miscellaneous trash and litter from construction workers and material wrappings.
Preventative Measure	▪ Trash containers will be placed throughout the site to encourage proper trash disposal.
Potential Source	• Construction debris.
Preventative Measure	▪ Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
Potential Source	• Spills/Overflow of waste from portable toilets.
Preventative Measure	▪ Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.

ATTACHMENT B

Temporary Stormwater Section

- Portable toilets will be placed on a level ground surface.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT B

Temporary Stormwater Section

ATTACHMENT C

SEQUENCE OF MAJOR ACTIVITIES

Attachment C- Sequence of Major Activities

A. Proposed Single Family Development (Approximately 16.14 Acres)

1. *Install temporary erosion and sediment controls and stabilized construction entrance as indicated on erosion control plan.*
2. *Rough grade all streets.*
3. *Install all utilities in the right of way.*
4. *Regrade and compact subgrade.*
5. *Ensure all underground utility crossings are in place and install first course of base.*
6. *Install curbs, rip-rap, and miscellaneous concrete.*
7. *Install second base course.*
8. *Prior to paving, mandrel, low pressure, hydrostatic, vacuum, and a camera golf ball test must be complete prior to paving.*
9. *Lay asphalt.*
10. *Camera inspection to ensure wastewater system is free of debris.*
11. *Final grade any ditches and parkways.*
12. *Revegetate disturbed areas, dispose of spoil.*
13. *Final inspection.*
14. *Removal of temporary erosion controls.*

ATTACHMENT D

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Attachment D — Temporary Best Management Practices and Measures

a. 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.

There is no upgradient water that will enter the site that will require treatment.

b. 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.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (I) erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms with silt fencing downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of gravel filter bags downgradient of construction activities for temporary erosion and sedimentation controls (4) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (5) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the Site, they will not enter surface streams and/or sensitive features.

c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

There were two faults lines at the change in soil type located on the site and labeled as sensitive features observed on the site and no surface streams on, or adjacent, to the project limits. All Temporary BMPs utilized are adequate for the drainage areas served.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

d. 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.

There were two faults lines at the change in soil type located on the site labeled as sensitive features observed on the site and no surface streams on, or adjacent, to the project limits. All Temporary BMPs utilized are adequate for the drainage areas served.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

ATTACHMENT D

Temporary Stormwater Section

ATTACHMENT E

REQUEST TO TEMPORARILY SEAL A FEATURE (IF REQUESTED)

Attachment E — Request to Temporarily Seal a Feature

The attached Geologic Assessment in section (TCEQ-0585) does not recommend a temporary seal on the sensitive features.

ATTACHMENT E

Temporary Stormwater Section

ATTACHMENT F

STRUCTURAL PRACTICES

Attachment F - Structural Practices

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

- *Erection of silt fences along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection, as located and illustrated on Sheet C02.10*
- *Installation of inlet protection at downgradient inlets of construction activities, as located on Sheet C02.10*
- *Installation of stabilized construction entrance exit[s) and construction staging area(s), as located on Sheet C02.10*

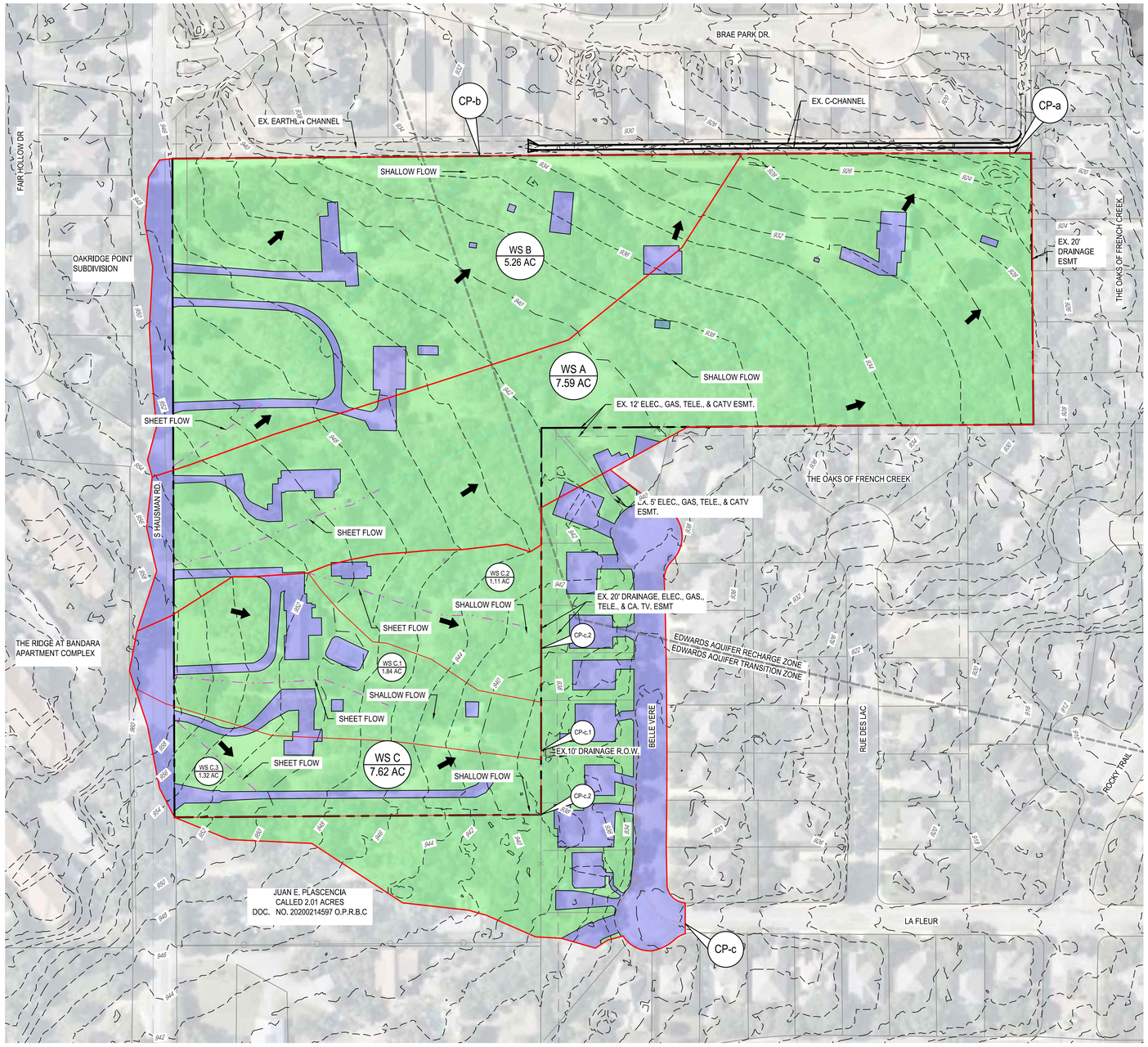
The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- *Installation of concrete truck washout pit(s), as required and located and illustrated on Sheet C02.10*

ATTACHMENT G

DRAINAGE AREA MAP

PLAT NO. 22-11800552



0 40' 80' 160'

SCALE: 1" = 80'

LEGEND

- PROPERTY BOUNDARY
- SHEET FLOW TIME OF CONCENTRATION (TOC)
- SHALLOW FLOW TIME OF CONCENTRATION (TOC)
- CHANNEL FLOW TIME OF CONCENTRATION (TOC)
- WATERSHED BOUNDARY
- SUB WATERSHED BOUNDARY
- EXISTING 2' CONTOURS
- EXISTING 10' CONTOURS
- EDWARDS AQUIFER RECHARGE ZONE
- FLOW ARROW
- WS # / ACRES — WATERSHED IDENTIFICATION
- CP-1 — COMPUTATION POINT
- PERVIOUS COVER
- IMPERVIOUS COVER

DESCRIPTION		RANGE - NATURAL	EXISTING PAVEMENT	TOTAL ACREAGE	COMPOSITE RUNOFF
PRE DEV C -VALUE		0.49	0.97		
WS A	ACREAGE	7.12	0.47		
	WEIGHTED CN	0.46	0.06	**7.59**	**0.52**
WS B	ACREAGE	4.46	0.80		
	WEIGHTED CN	0.42	0.15	**5.26**	**0.56**
WS C.1	ACREAGE	1.47	0.44		
	WEIGHTED CN	0.38	0.22	**1.84**	**0.60**
WS C.2	ACREAGE	1.01	0.03		
	WEIGHTED CN	0.48	0.02	**1.11**	**0.50**
WS C.3	ACREAGE	0.97	0.29		
	WEIGHTED CN	0.38	0.22	**1.32**	**0.60**
WS C	ACREAGE	5.50	2.12		
	WEIGHTED CN	0.35	0.27	**7.62**	**0.62**

PRE DEVELOPED CFS			
COMPUTATION POINTS	5 YEAR	25 YEAR	100 YEAR
CP a	17.72	24.37	30.35
CP b	17.20	23.70	29.31
CP c.1	5.84	8.04	9.93
CP c.2	3.03	4.17	5.15
CP c.3	5.27	7.28	9.04
CP c	24.26	33.37	41.20

PRE DEVELOPMENT TIME OF CONCENTRATION - COSA UDC SECTION 5.4

	SHEET FLOW								SHALLOW FLOW								CHANNEL FLOW							
WATERSHED	UPSTREAM ELEV	DOWNSTREAM ELEV	MANNINGS N (SWDCM Table 5.4.1)	LENGTH	SLOPE	SLOPE	VELOCITY	TIME OF CONCENTRATION	UPSTREAM ELEVATION	DOWNSTREAM ELEVATION	LENGTH	SLOPE	SLOPE	PAVED 20.32, UNPAVED 16.13	VELOCITY	TIME OF CONCENTRATION	UPSTREAM ELEVATION	DOWNSTREAM ELEVATION	LENGTH	SLOPE	SLOPE	VELOCITY	TIME OF CONCENTRATION	TOTAL TIME
	FT	FT		LF	%	FT/FT	FPS	MIN	FT	FT	FT	%	FT/FT		FPS	(MIN)	FT	FT	FT	%	FT/FT	FT	(MIN)	(MIN)
WS A	958.0	948.0	0.13	300	3.333	0.033	0.006	14.563	948.0	919.0	1079	2.688	0.027	16.13	2.64	6.801	0	0	0	0.000	0.000	6.000	0.000	21.36
WS B	951.0	949.0	0.13	146	2.900	0.029	0.005	8.654	949.0	934.0	440	3.300	0.033	16.13	2.93	2.503	933	928	357	2.400	0.024	6.000	0.992	12.15
WS C.1	958.0	947.0	0.13	300	4.000	0.040	0.006	13.539	947.0	937.0	218	4.500	0.045	16.13	3.42	1.062	0	0	0	0.000	0.000	6.000	0.000	14.60
WS C.2	952.0	941.0	0.13	300	3.700	0.037	0.006	13.968	941.0	940.0	40	1.800	0.018	16.13	2.16	0.308	0	0	0	0.000	0.000	6.000	0.000	14.28
WS C.3	958.0	950.0	0.13	146	5.000	0.050	0.006	6.960	950.0	938.0	396	3.300	0.033	16.13	2.93	2.252	0	0	0	0.000	0.000	6.000	0.000	9.21
WS C	958.0	947.0	0.13	300	4.000	0.040	0.006	13.539	947.0	937	218	4.500	0.045	16.13	3.42	1.062	937	929	403	0.500	0.005	6.000	1.119	15.72
P2 =	4.44																							

NOT FOR CONSTRUCTION

APR	DATE	DESCRIPTION	REV

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 202
SAN ANTONIO, TEXAS 78216
TEL: 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

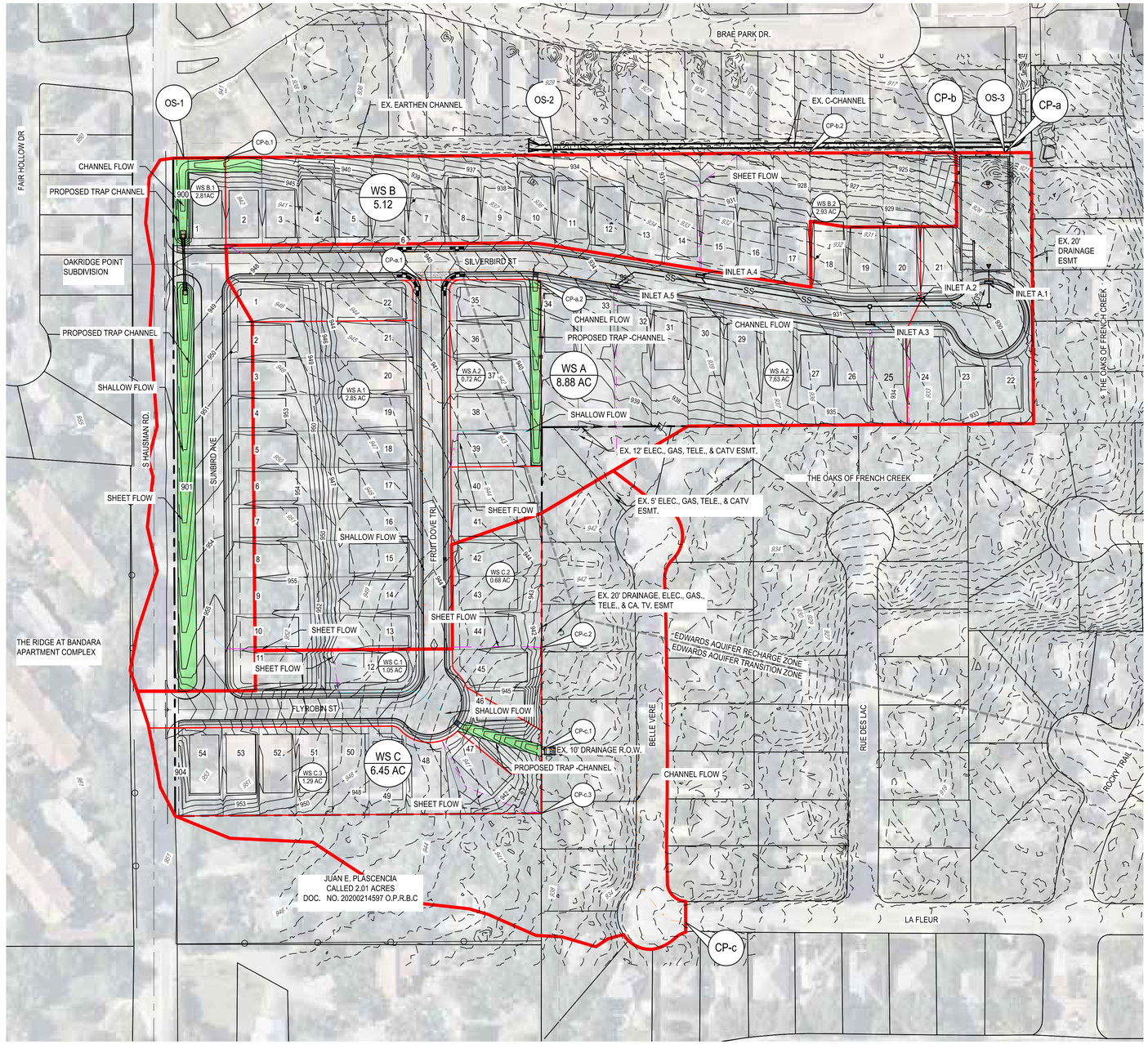
PIEDMONT

EXISTING WATERSHED EXHIBIT

STATE OF TEXAS
AARON J. NEUMANN
11445
PROFESSIONAL ENGINEER

12/29/2022

SHEET: 17
C03.50



PLAT NO. 22-11800552

N

0 40' 80' 160'

SCALE: 1" = 80'

NOTE:

1. POST DEVELOPMENT CFS OBTAINED FROM POND ANALYSIS USING HYDROFLOW HYDROGRAPHS (SEE SWMPP REPORT APPENDIX A)
2. RUNOFF COEFFICIENTS FROM TABLE 5.5.3.A OF THE SAN ANTONIO SWDCM
3. THE SUBDIVISION AGAVE TRACE HAS A EXISTING EARTHEN AND CONCRETE CHANNEL THAT RUNS ALONG THE NORTHERN BOUNDARY OF THE SITE, AND DESIGNED TO RECEIVE FLOW FROM UPSTREAM. THE SIZING OF THE CHANNEL WAS CALCULATED USING EXISTING OFFSITE FLOWS WITH PRE ATLAS-14 INTENSITIES.
4. **BGE USED DRAINAGE AREAS, TC'S, AND ROUGHNESS COEFFICIENTS FROM THE APPROVED AGAVE TRACE SWMP DATED MARCH 2019 FROM PLAT 180425 TO MODEL EXISTING FLOWS OS-1, OS-2, AND OS-3 THAT WERE USED TO DESIGN THE CHANNEL. EXISTING FLOWS USED FOR THE DESIGN OF THE EXISTING EARTHEN AND CONCRETE CHANNEL WERE UPDATED WITH CURRENT ATLAS-14 INTENSITIES FOR OUR MODELS.**
5. EXISTING AGAVE TRACE CHANNEL CAPACITY FOR THE 25-YEAR STORM WAS CALCULATED USING THE DESIGNED DEPTH OF THE CHANNEL MINUS A HALF FOOT FOR FREEBOARD. 100 YEAR CAPACITY WAS CALCULATED USING THE ENTIRE DESIGNED DEPTH OF THE CHANNEL.
6. EXISTING AND ULTIMATE FLOWS WERE MODELED AND COMPARED AT EVERY GRADE BREAK TO CONFIRM THAT ALL FLOWS ARE CONTAINED WITHIN THE EXISTING CHANNEL AND SHOW NO ADVERSE AFFECTS DOWNSTREAM. RESULTS SHOWED THAT ULTIMATE EXISTING FLOWS REDUCE FINAL FLOWS BEING RELEASED FROM THE CHANNEL.
7. RUNOFF COEFFICIENTS FOR THIS SITE ARE 0.69 FOR ZONE R-6 WITH A GENERAL SLOPE OF 3%-5%

LEGEND

- PROPERTY BOUNDARY
- SHEET FLOW TIME OF CONCENTRATION (TOC)
- SHALLOW FLOW TIME OF CONCENTRATION (TOC)
- CHANNEL FLOW TIME OF CONCENTRATION (TOC)
- WATERSHED BOUNDARY
- SUB WATERSHED BOUNDARY
- EXISTING 2' CONTOURS
- EXISTING 10' CONTOURS
- EDWARDS AQUIFER RECHARGE ZONE
- FLOW ARROW
- WS # / ACRES — WATERSHED IDENTIFICATION
- CP-1 — COMPUTATION POINT
- PROPOSED CHANNELS

POST DEVELOPED CFS						
	5 Year		25 Year		100 year	
COMPUTATION POINTS	EXISTING (CFS)	PROPOSED (CFS)	EXISTING (CFS)	PROPOSED (CFS)	EXISTING (CFS)	PROPOSED (CFS)
CP a.1		9.541		13.12		16.19
CP a.2		3.48		4.83		6.00
CP a	17.72	20.66	24.37	26.47	30.08	32.87
CP b.1		10.06		13.92		17.26
CP b.2		9.84		13.53		16.71
CP b	17.20	17.14	23.70	23.57	29.31	29.09
CP c.1	5.84	3.83	8.04	5.28	9.93	6.51
CP c.2	3.03	2.80	4.17	3.86	5.15	4.78
CP c.3	5.27	4.71	7.28	6.48	9.04	8.00
CP c	24.26	22.20	33.37	30.53	41.20	37.69

Agave Trace Channel Capacity VS Existing and Proposed Flow from Upstream to Downstream										
	Earthen channel				Concrete Channel					
Slope %	0.82	0.92	2.26	0.68	1.75	2.91	1.2	3.2	1.29	2	2.48
length of slope (ft)	74.67	79.57	200	172.17	87.83	140	80	148.46	202.74	188.8	28.44
25 year capacity (cfs) *	82.72	87.62	148.99	75.33	117.94	152.09	97.66	159.49	101.26	126.08	140.4
25 yr Existing flow (cfs)**	95.83	92.54	92.54	92.54	106.43	106.2	106.2	106.2	106.2	134.59	134.59
25 yr Developed flow (cfs)**	95.83	95.83	95.83	92.58	95.26	95.26	95.26	101.29	101.29	101.29	101.29
Δ Developed and Existing (cfs)	0	3.29	3.29	0.04	-11.17	-10.94	-10.94	-4.91	-4.91	-33.3	-33.3
100 year capacity (cfs) *	143.35	151.84	237.99	130.54	179.6	228.99	147.05	240.13	152.46	189.84	211.4
100 yr Existing flow (cfs)**	118.32	114.63	114.63	114.63	131.78	131.74	131.74	131.74	131.74	166.81	166.81
100 yr Developed flow (cfs)**	118.32	118.32	118.32	114.67	114.5	114.5	114.5	125.64	125.64	135.11	135.11
Δ Developed and Existing (cfs)	0	3.69	3.69	0.04	-17.28	-17.24	-17.24	-6.1	-6.1	-31.7	-31.7
locations of discharge in the channel	Start Channel/ OS-1		CP b.1		OS-2			CP b.2		CP-a /OS-3	End channel

RED CELLS INDICATE WHERE FLOW EXCEEDS THE DESIRED FLOW RATE

** PLEASE SEE NOTES 3-6

POST DEVELOPMENT TIME OF CONCENTRATION - COSA UDC SECTION 5.4

	SHEET FLOW								SHALLOW FLOW								CHANNEL FLOW							
WATERSHED	UPSTREAM ELEV	DOWNSTREAM ELEV	MANNINGS N (SWDCM Table 5.4.1)	LENGTH	SLOPE	SLOPE	VELOCITY	TIME OF CONCENTRATION	UPSTREAM ELEVATION	DOWNSTREAM ELEVATION	LENGTH	SLOPE	SLOPE	PAVED 20.32, UNPAVED 16.13	VELOCITY	TIME OF CONCENTRATION	UPSTREAM ELEVATION	DOWNSTREAM ELEVATION	LENGTH	SLOPE	SLOPE	VELOCITY	TIME OF CONCEN TRATION	TOTAL TIME
	FT	FT		LF	%	FT/FT	FPS	MIN	FT	FT	FT	%	FT/FT		FPS	(MIN)	FT	FT	FT	%	FT/FT	FT	(MIN)	(MIN)
WS A.1	956	945	0.24	226	2.90	0.029	0.004	16.53	0.0	0.0	0	0.000	0.000	16.13	0.00	0.00	945	941	510	0.9	0.009	4.410	1.927	18.45
WS A.2	945	944	0.24	45	2.00	0.020	0.002	6.83	944.0	942.0	100	1.900	0.019	16.13	2.22	0.75	942	939	215	1.5	0.015	6.000	0.597	8.17
WS A.3	956.0	945.0	0.24	226	2.90	0.029	0.004	16.53	0.0	0.0	0	1.800	0.018	16.13	2.16	0.00	945	929.0	1216	1.800	0.018	6.000	3.378	19.90
WS A	956.0	945.0	0.24	226	2.90	0.029	0.004	16.53	0.0	0.0	0	1.800	0.018	16.13	2.16	0.00	945	929.0	1526	1.800	0.018	6.000	4.239	20.77
WS B.1	958.0	953.0	0.13	41	2.60	0.026	0.002	6.49	955.0	953.0	68	1.300	0.013	20.32	2.32	0.49	952	945	627	1.600	0.016	5.000	2.090	9.07
WS B.2	933.0	928.0	0.13	187	3.60	0.036	0.003	18.00	0.0	0.0	0	0.000	0.000	16.13	0.00	0.00	0	0	0	0.000	0.000	6.000	0.000	18.00
WS B	933.0	928.0	0.24	187	3.69	0.037	0.003	18.00	0.0	0.0	0	0.000	0.000	16.13	0.00	0.00	0	0.0	0	0.000	0.000	6.000	0.000	18.00
									946.0	944.0	77	1.600	0.016	20.32	2.57	0.50								
WS C.1	956.0	949.0	0.24	163	3.60	0.036	0.003	15.24	949.0	946.0	108	3.600	0.036	16.13	3.06	0.59	944	937	113	6.760	0.068	6.000	0.314	16.65
WS C.2	945.0	941.0	0.24	123	3.70	0.037	0.003	11.18	0.0	0.0	0	0.000	0.000	16.13	0.00	0.00	0	0	0	0.000	0.000	6.000	0.000	11.18
WS C.3	944.0	938.0	0.24	182	4.10	0.041	0.003	14.68	0.0	0.0	0	0.000	0.000	16.13	0.00	0.00	0	0	0	0.000	0.000	6.000	0.000	14.68
									946.0	944.0	77	1.600	0.016	20.32	2.57	0.50								
WS C	956.0	949.0	0.24	163	3.60	0.036	0.003	16.63	949.0	946.0	108	3.600	0.036	16.13	3.06	0.59	941	929	113	6.760	0.068	6.000	0.314	18.03
P2 =	4.44																							

	DESCRIPTION	DATE	APR
REV			

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, Inc.
7330 SAN PEDRO AVENUE, SUITE 102
SAN ANTONIO, TX 78216
TEL. 210-581-3600 • www.bgeinc.com
TBPE Registration No. F-1046

NOT FOR CONSTRUCTION

PIEDMONT

PROPOSED WATERSHED EXHIBIT

STATE OF TEXAS
AARON J. NEUMANN
114451
LICENSED PROFESSIONAL ENGINEER
02/08/2023

SHEET: 18
C03.60

G:\TXCO\Projects\San Antonio Projects\9487-00 - Piedmont 11 Acres\03_CADD\01_Shts\C03.60 PROPOSED WATERSHED EXHIBIT.dwg Layout: PROPOSED WATERSHED EXHIBIT Plotted: 1/31/2023 5:41:08 PM By: Calderon

ATTACHMENT H

TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

Attachment H — Temporary Sediment Pond(s) Plan and Calculations

The site will not require a temporary sediment pond since there are no drainage areas greater than 10 acres with a common drainage point.

ATTACHMENT H

Temporary Stormwater Section

ATTACHMENT I

INSPECTION AND MAINTENANCE FOR BMPs

Attachment I - Inspection and Maintenance for BMPs

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) Check sediment basin's embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed by the contractor. Trash and other debris within the basins should be removed after each rainfall to prevent clogging of the outlet structure. Accumulated silt within the basins should be removed and the basin should be re- graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

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

Piedmont Tract

Temporary Stormwater Section (TCEQ-0602)

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

_____ **A brief statement describing the qualifications of the inspector is included in this SWP3.**

"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's Name _____ Inspector's Signature _____ Date _____

ATTACHMENT I

Temporary Stormwater Section

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date
Installation of BMPs	

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

Construction Activity	Date

Dates when stabilization measures are initiated:

Stabilization Activity	Date
Removal of BMPs	

ATTACHMENT I

Temporary Stormwater Section

ATTACHMENT J

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently teased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable. Stabilization measures in this instance shall comply with temporary stabilization as defined in TXR150000 or as defined otherwise in the landscape plans where applicable.

AGENT AUTHORIZATION FORM

(TCEQ-0599)

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

I Chris Lynch,
Print Name

President of Land Operations,
Title - Owner/President/Other

of Gehan Homes,
Corporation/Partnership/Entity Name

have authorized Aaron Neumann
Print Name of Agent/Engineer

of BGE Inc.
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

10/10/2022
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 10th day of October, 2022

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/2026

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

OWNER AUTHORIZATION FORMS

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Bertha Ramirez & Mark Ramirez of
Land Owner Signatory Name

Mark Ramirez and Bertha Ramirez
Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 14615 BLK 1 LOT 65 OAKS OF FRENCH CRK UT-2 PUD
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Sewer Collection System Application
Description of the proposed regulated activities

at 10935 ROCKY TRL SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Mark Ramirez and Bertha Ramirez
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Mark A. Ramirez

Land Owner Signature

Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Mark Ramirez 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 29 day of August, 2022

Christina Barajas

NOTARY PUBLIC

Christina Barajas

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Land Owner Signature

Land Owner Signature

Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Bertha Ramirez 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 29 day of August, 2022

NOTARY PUBLIC

Christina Barajas

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Mark Ramirez and Bertha Ramirez
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

MY COMMISSION EXPIRES: 1/5/26

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Gary Warren and Jean-Marie Warren of Gary Warren and Jean-Marie Warren
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 14615 BLK 1 LOT 66 OAKS OF FRENCH CRK UT-2 PUD

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Sewer Collection System Application
Description of the proposed regulated activities

at 10939 ROCKY TRL SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Gary Warren and Jean-Marie Warren
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Jean-Marie Warren

Land Owner Signature

Date

THE STATE OF § Texas

County of § Bexar

Jean-Marie CB

BEFORE ME, the undersigned authority, on this day personally appeared ~~Garry~~ Warren 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 30 day of August, 2022

Christina Barajas

NOTARY PUBLIC

Christina Barajas

Typed or Printed Name of Notary

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

MY COMMISSION EXPIRES: 2-22-23

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Land Owner Signature

Gary Warren

Land Owner Signature

Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Gary Warren 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 30 day of August, 2022

Christina Barajas

NOTARY PUBLIC

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Christina Barajas

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Gary Warren and Jean-Marie Warren
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/23

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Richard Laskowski, President of Creekview Estates Homeowners Association
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 14615 BLK 1 LOT P-100 /DRAINAGE ROW/ OAKS OF FRENCH CRK UT-2 PUD

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Sewer Collection System Application
Description of the proposed regulated activities

at ROCKY TRL SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Creekview Estates Homeowners Association
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Richard Laskowski
Land Owner Signature President

Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Richard Laskowski - President 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 30 day of August, 2022

Christina Barajas
NOTARY PUBLIC

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Christina Barajas
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Creekview Estates Homeowners Association
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133516031

MY COMMISSION EXPIRES: 1/5/26

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
~~Relating to 30 TAC Chapter 213~~
Effective June 1, 1999

Land Owner Authorization

I, Claude Bowman, Suzan Bowman of Claude Bowman and Suzan Bowman

Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 14615 BLK 1 LOT 67 OAKS OF FRENCH CRK UT-2 PUD

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes

Applicant Name (Legal Entity or Individual)

to conduct Submit a Sewer Collection System Application

Description of the proposed regulated activities

at 10943 ROCKY TRL SAN ANTONIO, TX 78249.

Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Claude Bowman and Suzan Bowman

Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Claude Bowman

Land Owner Signature

Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Claude Bowman 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 30th day of August, 2022

Christina Barajas

NOTARY PUBLIC

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Christina Barajas

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Land Owner Signature

S A Bowman

Land Owner Signature

Date

THE STATE OF § _____

County of § _____

BEFORE ME, the undersigned authority, on this day personally appeared Suzan Bowman 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 30th day of August, 2022

Christina Barajas

NOTARY PUBLIC

Christina Barajas

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Claude Bowman and Suzan Bowman
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Yvette Bricker of YVETTE BRICKER
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 18046 BLK LOT 4 (BEIRING SUBD) "HAUSMAN/PRUE RD" ANNXATN

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes, Ltd.

Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application

Description of the proposed regulated activities

at 11124 S HAUSMAN RD, SAN ANTONIO, TEXAS 78249.

Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that YVETTE BRICKER

Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Yuette Bricker
Land Owner Signature

8/29/22
Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Yuette Bricker 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 29th day of August, 2022

Christina Barajas
NOTARY PUBLIC

CHRISTINA BARAJAS
Notary Public, State of Texas
Comm. Expires 02-22-2023
Notary ID 131903252

Christina Barajas
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-22-23

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of CHRIS LYNCH
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that YVETTE BRICKER
Land Owner Name (Legal Entity or Individual)

has provided GEHAN HOMES, LTD.
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that GEHAN HOMES, LTD.
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, _____ of FLORENCE H. BUCKNER
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at
NCB 18047 BLK LOT 1 "HAUSMAN/PRUE RD" ANNXATN
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes, Ltd.
Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application
Description of the proposed regulated activities

at 11114 S HAUSMAN RD, SAN ANTONIO, TEXAS 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that FLORENCE H. BUCKNER
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Florence Buckner
Land Owner Signature

8-26-2022
Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Florence H Buckner 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 26 day of August 2022

Al Ba
NOTARY PUBLIC

AL BA
NOTARY PUBLIC STATE OF TEXAS
MY COMM. EXP. 08/18/2024
NOTARY ID 12852041-1

Al Ba
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08.18.2024

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of CHRIS LYNCH
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that FLORENCE H. BUCKNER
Land Owner Name (Legal Entity or Individual)

has provided GEHAN HOMES, LTD.
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that GEHAN HOMES, LTD.
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/1/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 1st day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

MY COMMISSION EXPIRES: 1/5/26

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Mark Bissonnette of Dorothy Bissonnette and Mark Bissonnette
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at
NCB 18047 BLK LOT W 822.86 OF 2 NO LABEL # NO SERIAL # & REFER TO : 80200-000-0020
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application
Description of the proposed regulated activities

at 11238 S HAUSMAN RD SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Dorothy Bissonnette and Mark Bissonnette
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Mark Bissonnette
Land Owner Signature

8-25-22
Date

THE STATE OF § Texas

County of § Nueces

BEFORE ME, the undersigned authority, on this day personally appeared Mark Bissonnette 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 25 day of Aug 2022.

JENNIFER BAKER
Notary Public, State of Texas
My Comm. Exp. 09-27-2023
ID No. 12875263-3

NOTARY PUBLIC

Jennifer Baker
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 09-27-2023

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Dorothy Bissonnette and Mark Bissonnette
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/8/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 8th day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133516031

MY COMMISSION EXPIRES: 1/5/26

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Bradley P Auble Andrea Auble of Bradley P. Auble & Andrea N. Auble
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 18046 BLK LOT 3 (BEIRING SUBD) "HAUSMAN/PRUE RD" ANNXATN

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application
Description of the proposed regulated activities

at 11078 S HAUSMAN RD SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Bradley P. Auble & Andrea N. Auble
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Bradley Auble
Land Owner Signature

9-7-22
Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Bradley Peter Auble 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 7th day of September

NOTARY PUBLIC

Clint Trevino
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 04/17/2022

CLINT TREVINO
NOTARY PUBLIC STATE OF TEXAS
MY COMM. EXP. 09/17/2022
NOTARY ID 13173177-7

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Land Owner Signature

Andrea Auble
Land Owner Signature

9-7-22
Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Andrea Auble 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 7th day of September 2022

NOTARY PUBLIC

Clint Trevino
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 09/17/2022

CLINT TREVINO
NOTARY PUBLIC STATE OF TEXAS
MY COMM. EXP. 09/17/2022
NOTARY ID 13173177-7

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch, Gehan Homes, LTD.
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Bradley P. Auble & Andrea N. Auble
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/8/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 8th day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Bradley P Auble of Bradley P. Auble
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at
NCB 18046 BLK LOT 2 (BEIRING SUBD) "HAUSMAN/PRUE RD" ANNXATN
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application
Description of the proposed regulated activities

at 11030 S HAUSMAN RD SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Bradley P. Auble
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Bradley Auble
Land Owner Signature

9-7-22
Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Bradley Auble 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 7th day of September 2022

NOTARY PUBLIC

Clint Trevino
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 09/17/2022

CLINT TREVINO
NOTARY PUBLIC STATE OF TEXAS
MY COMM. EXP. 09/17/2022
NOTARY ID 13173177-7

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Bradley P. Auble
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/8/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 8th day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, _____ of Lisa Corona & Ernest Corona
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

NCB 18047 BLK LOT E IRR 352.46FT OF 2
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Gehan Homes
Applicant Name (Legal Entity or Individual)

to conduct Submit a Water Pollution Abatement Plan and Sewer Collection System Application
Description of the proposed regulated activities

at 11238 S HAUSMAN RD SAN ANTONIO, TX 78249.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that Lisa Corona & Ernest Corona
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Lisa Corona / Ernest Corona   8/27/2022

Land Owner Signature   Date

THE STATE OF § Texas

County of § Bexar

BEFORE ME, the undersigned authority, on this day personally appeared Lisa & Ernesto Corona 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 27th day of August, 2022

DAVID A. CORTEZ
Notary Public, State of Texas
My Comm. Exp. 02-09-2026
ID No. 13358060-4

NOTARY PUBLIC

David A. Cortez

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 02-09-2026

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, Chris Lynch of Chris Lynch
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Lisa Corona & Ernest Corona
Land Owner Name (Legal Entity or Individual)

has provided Gehan Homes
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Gehan Homes
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 9/8/22

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Chris Lynch 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 8th day of September

NOTARY PUBLIC

Laura Dillon
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/5/26

Laura Mei Dillon
My Commission Expires
1/5/2026
Notary ID
133518031

APPLICATION FEE FORM

(TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Piedmont
Regulated Entity Location: 500 ft Northeast from the intersection of S Hausman Rd and Pue Road
Name of Customer: Gehan Homes
Contact Person: Omar Rodriguez Phone: 210-593-3830
Customer Reference Number (if issued):CN 601574049
Regulated Entity Reference Number (if issued):RN 111595765

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	Acres	$
Sewage Collection System	1340 L.F.	$670
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: _____

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

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Piedmont
Regulated Entity Location: 500 ft Northeast from the intersection of S Hausman Rd and Pue Road
Name of Customer: Gehan Homes
Contact Person: Omar Rodriguez Phone: 210-593-3830
Customer Reference Number (if issued):CN 601574049
Regulated Entity Reference Number (if issued):RN 111595765

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	Acres	$
Sewage Collection System	2640 L.F.	$1320
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: 04/05/2023

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

CORE DATA FORM

(TCEQ-10400)

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 601574049		RN 111595765

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	7/18/2022

☒ 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:*

Gehan Homes, LTD.

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
		75-2551989	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

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

13. Independently Owned and Operated?
☐ Yes ☐ No

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

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

15. Mailing Address:

Barton Creek Plaza
3815 S Capital Texas Hwy #275

City	State	ZIP	ZIP + 4
Austin	TX	78704	

16. Country Mailing Information (if outside USA)	17. E-Mail Address (if applicable)
	sbarksdale@gehanhomes.com

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(512) 330-9366	4233	( ) -

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.*)

Piedmont

23. Street Address of the Regulated Entity: *(No PO Boxes)*								
	City		State	Texas	ZIP	78249	ZIP + 4	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	500 ft NE from the intersection of S Hausman Rd and Pue Rd

26. Nearest City	State	Nearest ZIP Code
San Antonio	TX	78249

27. Latitude (N) In Decimal:	29.54656		28. Longitude (W) In Decimal:	98.65498	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	32	47.61	98	39	17.94

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)
1521	1623	236117	236115

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

Single Family Residential Housing

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
	WPAP (TCEQ-0584)			
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	SCS (TCEQ-0582)			

SECTION IV: Preparer Information

40. Name:	Mary Jane Phillips	41. Title:	PE / Director

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 581-3616		( ) -	mjphillips@bgeinc.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:	Gehan Homes, LTD.	Job Title:	President of Land Operations
Name *(In Print)*:	Chris Lyncin	Phone:	(512)658-3975
Signature:		Date:	8/4/22

PIEDMONT TRACT

TEXAS COMMISSIONS ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN APPROVAL LETTER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 13, 2023

Mr. Chris Lynch
Gehan Homes, Ltd.
3815 S Capital of Texas Hwy #275
Austin, Texas 78704

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Piedmont; Located approximately 500 feet northeast from the S. Hausman Road and Prue Road 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. RN111595765; Additional ID. No. 13001653

Dear Mr. Lynch:

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 BGE, Inc. on behalf of Gehan Homes, Ltd. on November 14, 2022. Final review of the WPAP was completed after additional material was received on December 29, 2022. 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 project is located on the Transition Zone and Recharge Zone with 14.0-acres of the site requiring treatment by permanent BMPs. New impervious cover totals 6.38 acres (45.57 percent) with 0.94 acres of pre-Rule impervious cover. The project proposes the construction of 76 single-family residential lots and associated roadways. Project wastewater will be disposed of by conveyance to the existing Leon Creek Water Recycling Center owned and operated by the San Antonio Water System.

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 and one (1) grassy swale, 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 4,439 pounds of TSS generated from the 6.38 acres of total 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 Buda Limestone, Del Rio Clay, and Georgetown Formation. Thirteen (13) non-sensitive manmade features in bedrock and two (2) non-sensitive geologic features were noted by the project geologist. The site assessment conducted on December 19, 2022, revealed that the site was generally as described in the application.

SPECIAL CONDITIONS

I. The permanent pollution abatement measures shall be operational prior to first occupancy of the facility.

II. All sediment and/or media removed from the water quality basin 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. Six (6) wells exist on 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,

Lillian Butler

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/dpm

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

cc: Mr. Aaron Neuman, P.E., BEG, Inc.